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SENT VIA OVERNIGHT COURIER

Originally Submitted: May 31, 2024
Revised Submittal: May 12, 2025

Mr. Bradley Demo
Division of Environmental Remediation
New York State Department of Environmental Conservation
700 Delaware Ave.
Buffalo, NY 14209

Re: Industrial Welding Site, Niagara Falls, New York
Site No. 932050
Annual Periodic Review Report – 2024
Periodic Review Report – May 01, 2023 through May 01, 2024

Dear Mr. Demo:

As requested by NYSDEC, we have submitted this IWS PRR and certification via Olin's cloud-based service portal as well as via overnight carrier. This report summarizes the site conditions and activities performed from May 01, 2023 through May 01, 2024 for the monitoring, operation, and maintenance of the containment remedy for the Industrial Welding site in Niagara Falls, New York. This report is being submitted in accordance with the requirements and schedule listed in Site Management Plan.

Should you have questions, please contact me at (423) 508-2768. Should you have technical difficulties with the download/BOX process, please contact Lisa Harper (423) 336-4587 or ldharper@olin.com.

Sincerely,
OLIN CORPORATION

Adam Carringer, CHMM
Sr. Environmental Specialist

Industrial Welding Site
Site No. 932050
2024 Periodic Review Report

Originally Submitted: May 31, 2024
Revision 1: May 12, 2025

Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation
700 Delaware Avenue
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Prepared by:

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1 Introduction

This Periodic Review Report (PRR) presents an assessment of Remedial Action Objectives (RAOs) for the Industrial Welding Site (IWS or "the Site") in Niagara Falls, New York. IWS is currently listed in the Inactive Hazardous Waste Disposal Site Remedial Program as Site No. 932050 which is administered by New York State Department of Environmental Conservation (NYSDEC).

In accordance with the Site Management Plan (SMP), a PRR is provided annually to assure that the RAOs are maintained and that the Site Institutional Controls (ICs) and Engineering Controls (ECs) remain effective in protecting the public health and environment. This PRR discusses the protections in place and their effectiveness over the 2023–2024 Certifying Period.

1.1 Site Location

IWS comprises three parcels. The original IWS (159.12-1-2.2) and the American Legion Post (ALP) property (159.12-1-10) are known as Operable Unit (OU) 2, and they lie immediately west of Veterans Drive, approximately 0.2 miles north of Buffalo Avenue in the City of Niagara Falls, New York. The third parcel (159.12-1-7), known as OU-3, was formerly called the Packard Road Parcel and lies immediately south of the ALP parcel. Gill Creek lies immediately to the east of Veterans Drive and, in 1998, was the site of a completed remedial action of what was known as OU-1. A map detailing the Site and OUs is presented in Figures 1-1 and 1-2.

1.2 Site History

The ownership and usage of the IWS property have varied over the past 60 years. The High Energy Fuels Division of the Olin Corporation (formerly Olin Mathieson Corporation) operated a research laboratory and pilot process plant at the property from 1952 until 1956. In 1956, the High Energy Fuels Division was disbanded, and the laboratory and plant buildings demolished. The eastern side of the property was filled with fly ash, concrete debris, salt dirt (brine muds), and rubble from a building possibly contaminated with hexachlorocyclohexane (commonly known as benzene hexachloride [BHC]).

In 1966, Olin conveyed the IWS property to Niagara County Community College. This property was subsequently transferred to Niagara County. The Cerebral Palsy

Association of Niagara County leases a building on property owned by Niagara County. Olin reacquired the IWS from Niagara County in 1997. The ALP property, part of OU-2, has been used as a meeting and event hall in the past.

1.3 Previous Investigations

Investigations were initiated at the IWS in 1981 when a soil sample containing mercury, BHC, and hexachlorobenzene was collected by the Niagara Department of Health from near the Niagara Cerebral Palsy Association property. Subsequently, Olin conducted a hydrogeological investigation in 1982 to determine the extent of the waste material, identify contaminants of concern, and evaluate the potential of contaminant migration through groundwater.

A Remedial Investigation (RI) was conducted between 1988 and 1989. RI activities included sampling soil, groundwater, sediment and surface water in Gill Creek, and ambient air vapor. Results confirmed the presence of mercury, BHC, and polycyclic aromatic hydrocarbons in Gill Creek sediment, in IWS groundwater in the overburden aquifer, and in IWS soil including areas outside of the footprint of the waste disposal area: the western portion of the IWS, on the Cerebral Palsy Association property, and on the ALP property. The RI results concluded that risks were posed by exposure to Gill Creek sediment (OU-1) and Site soils.

A final RI Feasibility Study (FS) was submitted to NYSDEC in July 1993. An addendum to the final FS was issued in November 1993.

The RI was performed in two phases. RI activities consisted of the following:

- Collecting soil samples to delineate the horizontal and vertical extent of contamination as well as to determine the physical properties of the underlying soils.
- Installing monitoring wells and piezometers to evaluate groundwater quality and determine the hydrogeologic properties of the IWS.
- Hydraulic monitoring of groundwater at the IWS and Gill Creek water levels to determine the groundwater flow direction, relationship to Gill Creek, and off-site migration.
- Collecting air samples to assess the existence of any airborne constituents.
- Collecting and analyzing sediments from catch basins adjacent to the IWS.

The data collected during the RI/FS were compared with NYSDEC Standards, Criteria, and Guidance for groundwater, drinking water, surface water, soils, and site-specific, risk-based criteria. Mercury, BHCs, and polycyclic aromatic hydrocarbons were determined to be the contaminants of concern.

1.4 Remediation Chronology

Predesign sampling and analysis was performed in 1997 and 1998. Additional soil sampling was conducted at OU-3 and evaluated to determine the appropriate remedy.

The selected remedy for the Site as stated in the 1997 Record of Decision consists of a multilayer final cover system over an area of approximately 4 acres. The sediments that were currently present at the Site under the temporary cover system were consolidated under the IWS final cover system. The height of the final cover system was no greater than 8 feet. The modified multilayer IWS final cover system consists of the following:

- Six inches of a compacted soil layer or 20-millimeter (mm) PVC geomembrane.
- Forty mm linear high-density polyethylene geomembrane liner.
- Eighteen inches of cover soil consisting of 6 inches of topsoil and 12 inches of compacted soil material with a top slope not less than 2 percent and side slopes not greater than 33 percent. The topsoil was seeded and mulched to establish vegetative cover.

The final cover system installed over the main disposal area served to minimize the potential for contaminant migration from Site soils and prevent direct human exposure. Except for the ALP property and OU-3, which received asphalt-concrete cover, impacted soils outside the boundaries of the IWS was excavated and consolidated beneath the final cover system. Sediments from the Gill Creek Excavation and Restoration Project completed in 1998 were also consolidated beneath the final cover system.

Surface drainage from the IWS final cover system was captured by a perimeter drainage swale and was directed either to Gill Creek or through the existing combined storm sewer system located adjacent to the Site.

Based on the results of the predesign sampling and analysis, impacted soils from areas outside the IWS were excavated and consolidated under the IWS final cover system.

The remedial design of the IWS final cover system was based upon the estimated volume of soils and sediments that were consolidated. The material consolidated beneath the IWS cover system was approximately 2,900 cubic yards of impacted soils and 6,900 cubic yards of sediments from the eastern perimeter. The volume of sediments was based on a survey of the consolidated material placed on IWS in 1998. The limits of excavation are based on the RI/FS sampling and the results of the predesign field activities. An asphalt cover was installed at The ALP and the OU-3 subsequent to the IWS cap construction.

Further details pertaining to the remedial actions on the IWS can be found in the SMP dated November 2021.

2 Remedy Performance, Effectiveness, and Protectiveness

The work performed for the IWS during the reporting period was reviewed and found to be in accordance with the approved Institutional and Engineering, Monitoring and Sampling and Operation and Maintenance (O&M) Plans presented in the SMP. Activities to support the remedy performance, effectiveness and protectiveness are detailed in the Sections 3 and 4 below.

3 Institutional Controls/Engineering Controls Plan

Because remaining contamination exists at the IWS, IC/ECs are required to protect human health and the environment. Below is a brief summary of the IC/EC Plan, which describes the procedures for the implementation and management of all IC/ECs at the Site. Details of the IC/EC Plan can also be found in the SMP.

3.1 Institutional Controls/Engineering Controls Requirements

A series of ICs is required by the SMP to: (1) maintain and monitor EC systems; (2) prevent future exposure to remaining contamination; and (3) limit the use and development of the Site to existing uses only. Details of ICs are outlined in the SMP.

ECs at the Site include the following:

- Two types of landfill cover systems (LCS):
  - The northern portion of OU-2, where waste is overlain by vegetated cover, has a landfill cap made of clay, 40 mm high-density polyethylene geomembrane, well-drained soils and topsoil, and a LCRS.
  - The southern portion of OU-2 and OU-3 is a consolidated aggregate base, with asphalt-concrete binder and asphalt.
- Surface water drainage system that discharges into Gill Creek.
- Clean soil cover and asphalt cover on the landfill, restricting infiltration and promoting runoff.
- A chain link fence to secure the Site from unauthorized access.

ICs at the Site include the following:

- Groundwater sampling activities to monitor IWS water quality.

Details on the operation and maintenance of the ECs are provided in O&M Plan included with the SMP.

3.2 Assessment of Institutional Controls/Engineering Controls

Based on semiannual inspections, the LCS remains active and intact. The LCRS and surface water drainage system remains effective for the entire Site. Inspection documentation can be reviewed in **Appendix B.**

Currently, there are no outstanding maintenance items to be addressed. No excavations, change of use, or groundwater use occurred during the Certifying Period.

3.3 Certification

IC/EC certification is included in **Appendix A.**

4 Monitoring and Sampling Plan Compliance Report

4.1 Components of Monitoring and Sampling Plan

Operation, maintenance, and monitoring activities performed included:

- Sitewide inspection of IC/ECs (see Section 3).
- Monitoring of the LCS (see Section 3).
- Remedial System Sampling – semiannual collection from surface water discharge (SD-1) and annual collection of the LCRS discharge (MS-1).
- Post-Remediation Media Monitoring and Sampling – semiannual monitoring well sampling of two downgradient monitoring wells (MW-1 and MW-2) in accordance with the SMP to evaluate the effectiveness of the remedial system. Water levels of the two monitoring wells and six piezometers are included to evaluate groundwater flow at the Site.

4.2 Summary and Comparison to Remedial Objectives

Monitoring and sampling were performed on a semiannual basis. A sitewide inspection of all IC/ECs, including the LCS, was conducted during August 2023 (fall) and March 2024 (spring) monitoring and sampling events. Annual sample collection of the LCRS discharge was performed in November 2023. No deficiencies were observed as documented in the Inspection Report Forms in **Appendix B.**

Appendix E presents the analytical results for the two downgradient monitoring wells and surface water discharge point during fall 2023 and spring 2024. Also included are the analytical results from the November 2023 sampling of the LCRS discharge.

Results are compared to New York State Part 703 Groundwater Quality Standards or Guidance Values as applicable. Non-detect results are reported as less than the laboratory method reporting limits.

4.2.1 Groundwater Results

The fall 2023 and spring 2024 data had no detections of semivolatile organic compounds in either of the monitoring wells. The only detections observed in MW-1 were during the fall 2024 sampling event where mercury, alpha-BHC, and gamma-BHC were detected in exceedance of their respective Class GA water quality standards. At MW-2, mercury was detected in exceedance of Class GA standards for each sampling event in the certifying period. Beta-BHC was detected in MW-2 during both 2023 sampling events, but only exceeded Class GA standards during the fall of 2023. Mercury concentrations appear to be trending toward historical concentrations observed during previous sampling events. Historical detections of mercury in MW-1 and MW-2 are presented in **Appendix C.**

Groundwater analytical results are summarized in Table 4-1, showing analytes detected in at least one sample in the 2023-2024 certifying period. Comprehensive results can be found in Appendix E.

4.2.2 Surface Water Discharge Results

No detections were present in the fall 2023 or spring 2024 sample data with the exception of acenaphthylene, which has no NYSDEC Class GA standard.

Surface water analytical results are summarized in Table 4-1, showing analytes detected in at least one sample in the 2023-2024 certifying period. Comprehensive results can be found in Appendix E.

4.2.3 Leachate Capture and Recovery System Discharge Results

The November 2023 results had detected compounds: trichloroethene, 1,2 – dichloroethane, beta-BHC, and mercury. However, none of the concentrations exceed the limits set forth by the Niagara Falls Water Board wastewater discharge permit. A summary of the results are presented in Table 4-2, and annual Discharge Monitoring Report are presented in **Appendix D.**

4.2.4 Groundwater Elevations

Water elevation data collected from the piezometers and standpipes were used to confirm groundwater within the capped area remains at or below the LCRS drainage pipe and is maintained by current operation and maintenance activities. March 2024 elevations indicate higher water table within the capped area, however, the lack of water in both standpipes (SP1 and SP2) confirms capped area groundwater continues to be captured by the LCRS and no blockages are present. In general, groundwater flow remains east-southeast under the losing stream, Gill Creek. Elevations at piezometers and monitoring wells outside the capped area are generally lower elevations than capped areas and represent the natural groundwater flow. Water level elevations from August 2023 and March 2024 are provided in **Appendix B** and are shown with the LCRS drainage pipe elevations (shown as standpipe elevations) in Figures 4-1 and 4-2.

4.3 Deficiencies

None.

4.4 Recommendations for Changes

No recommendations. Conditions at the Site appear to be stable.

5 Operation and Maintenance Plan Compliance Report

5.1 Components of the Operation and Maintenance Plan

Operation, maintenance, and monitoring activities to be performed semiannually include:

- Inspection of security fencing for evidence of vandalism, missing or deteriorated warning signs, fencing member failure or degradation, and soil erosion.
- Inspection of the cover for settlement, surface erosion, vegetation, and asphalt-concrete conditions.
- Inspection of the surface water drainage and erosion control system for erosion, settlement, obstructions, and damage to vegetative-lined swales, drainage piping, and inlets.
- Inspection of the LCRS for proper pump operation, condition of cleanouts and pipes, and presence of standing water and debris.
- Inspection of the access ways for surface deterioration and erosion of shoulders.
- Maintenance of records for Site inspections and monitoring.

Engineering and institutional control boundaries/features are presented in **Figure 5-1.**

5.2 Operation and Maintenance Summary

Inspection reports, sampling logs, and site activities reports are presented in **Appendix B.** Inspections are conducted per the items listed on the Site Activities Report format. Information entered on these forms includes the inspector's name, date, item inspected, and any comments. The inspector indicates whether the condition of each item was acceptable or unacceptable per the requirements of this O&M Plan. The completed site activities reports are maintained at Olin Environmental Remediation offices in Cleveland, Tennessee.

The inspection of the LCRS and surface water drainage system was performed concurrently with inspection of the capped areas. No components of the LCRS and surface water drainage system were found to be damaged or malfunctioning; therefore, repairs or replacements were not identified.

The capped area is mowed regularly to prevent establishment of woody vegetation. The capped area functions as designed and complies with the O&M Plan.

LCRS discharge volumes and concentrations to the City of Niagara Falls Publicly Owned Treatment Works did not exceed permit limits during the Certifying Period. The most recent annual Discharge Monitoring Report to the City Publicly Owned Treatment Works is included in **Appendix D.**

5.3 Evaluation of Remedial Systems

All components are performing as designed.

5.4 Operation and Maintenance Deficiencies

None. There are no outstanding maintenance items.

5.5 Conclusions

The O&M system is operating as designed and does not require additions or modifications at this time.

6 Conclusions and Recommendations

6.1 Compliance with Site Management Plan

Based on information provided in Sections 3, 4, and 5, Olin has adhered to the requirements outlined in the SMP. No new exposure pathways were identified at the Site, and additional plans or modifications are not necessary.

6.2 Remedy Effectiveness

The groundwater elevation data indicate that groundwater within the capped area is consistent with historical data and is being maintained by current O&M activities. The groundwater chemistry at the monitoring wells has been consistent across sampling events. No semi volatile organic compounds were detected at concentrations above the New York State Class GA standards in the monitoring wells surrounding the capped area, providing evidence that contaminants are not migrating from beneath the cap.

Overall, no appreciable difference in mercury concentrations were noted for MW-1 during this time frame. The mercury concentrations reported for MW-2 indicated an upward departure from the overall trend. Historically, mercury spikes have been detected but returned to historic levels in the following years. Over the past 19 years, the higher concentrations generally occurred during the spring events, with exception of the fall 2013 event. Whenever there were elevated levels in the spring, the results generally reduce within the historic ranges during the next sampling event. The spring outlier will be closely monitored in future sampling events. The trends for mercury concentrations are illustrated by the graph and data included in **Appendix C.**

Based on the data developed to date, the remedy has been effective in attaining the remedial objectives.

6.3 Recommendations

The O&M activities, inspections, and sampling activities remain consistent and within expected results. Remedial measures continue to remain effective over a long-term monitoring program. The IWS does not pose an immediate threat to human health or the environment with the current remedy in place.

Hydraulic control continues to be maintained on Site, and recent groundwater and surface water discharge data are generally non-detect or below Guidance Values. As a reduction in sampling locations, parameters, or frequency may be warranted. Olin will perform an evaluation of historical groundwater data and prepare a Monitoring Optimization Request for NYSDEC approval, with the goal of establishing a reduced Monitoring Plan in 2024.

6.4 Future Submittals

This report will continue to be submitted annually, typically on or around May 31 of each year, as dictated by NYSDEC.

Tables

Table 4-1: Groundwater and Surface Water Analytical Results
Industrial Welding, The Olin Corporation
Niagara Falls, New York

				Location ID:		MW-1		MW-1		MW-1		MW-1		MW-2		MW-2		MW-2		MW-2		SD-1		SD-1		SD-1		SD-1	
				Sample ID:		IWS-MW1-031423		IWS-MW-1-082823		IWS-MW1-031924		IWS-MW1-090424		IWS-MW2-031423		IWS-MW-2-082823		IWS-MW2-031924		IWS-MW2-090424		IWS-SD1-031423		IWS-SD1-082823		IWS-SD1-031924		IWS-SD1-090424	
				Sample Date:		3/14/2023		8/28/2023		3/19/2024		9/4/2024		3/14/2023		8/28/2023		3/19/2024		9/4/2024		3/14/2023		8/28/2023		3/19/2024		9/4/2024	
Method	**Chemical Name**	**Screening Criteria [1]**	**Units**																										
SW7470	Mercury	0.7	ug/l	< 0.2	U	< 0.2	U	< 0.2	U	**2.10**		**6.81**		**18.1**		**2.97**		**2.67**		< 0.2	U	< 0.2	U	< 0.2	U	**0.37**	
SW8081B	alpha-BHC	0.01	ug/l	< 0.045	U	< 0.046	U	< 0.049	U	**0.068**		< 0.045	U	< 0.045	U	< 0.049	U	< 0.048	U	< 0.045	U	< 0.046	U	< 0.049	U	< 0.048	U
SW8081B	beta-BHC	0.04	ug/l	< 0.045	U	< 0.046	U	< 0.049	U	< 0.057	U	**0.048**		**0.068**		< 0.049	U	< 0.048	U	< 0.045	U	< 0.046	U	< 0.049	U	**0.087**	
SW8081B	gamma-BHC	0.05	ug/l	< 0.045	U	< 0.046	U	< 0.049	U	**0.076**		< 0.045	U	< 0.045	U	< 0.049	U	< 0.048	U	< 0.045	U	< 0.046	U	< 0.049	U	< 0.048	U
SW8270D	Acenaphthylene	NA	ug/l	< 8.9	U	< 9.3	U	< 9.6	U	--		< 8.9	U	< 9.1	U	< 9.6	U	--		< 10	U	**1.4**	J	< 9.8	U	--	

Notes:

mg/l = milligrams per liter
ug/l = micrograms per liter
Bold values denote detections
Shaded cells exceed NYSDEC groundwater standard.
-- = analyte not tested
NA = not regulated/no available criteria
Only analytes detected in at least one sample during the 2023 - 2024 certifying period are shown.

Data Qualifier Definitions:

J = Estimated based on QC criteria or detected between the Method Detection Limit (MDL) and the Reporting Limit (RL)
U = Not Detected above the associated Reporting Limit

1. New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.

Table 4-2: Leachate Control and Recovery System Analytical Results
Industrial Welding, The Olin Corporation
Niagara Falls, New York

Parameter	Method	Results (mg/l)	Flag	Results (lb/day)	Daily Max Discharge Limits (lb/day)
Total Suspended Solids	SM 2540 D	1		0.004	15
Soluble Organic Carbon	SM 5310 B	2.8		0.011	10
Acetone	EPA 624.1	0.00500	U	0.000019	0.01
Dichloroethanes	EPA 624.1	0.001326	J	0.000005	0.01
Trichloroethylenes	EPA 624.1	0.00675		0.000026	0.01
BHCs total	EPA 608.3	0.000196	U	0.0000007	0.001
Mercury	EPA 245.1	0.00025	U	0.0000009	0.008

Notes:

mg/l = milligrams per liter
lb/day = pounds per day
U = Analyte was analyzed but not detected
J = Estimated value
Results (lb/day) = Results (mg/l) X Flow (Gal/Day) X 0.00000834
Flows calculatede based on avg daily flow for year rather than for sampling month, due to flow variability and sampling month dry weather conditions

ICU PERMIT NAME Olin Corporation - Industrial Welding Site

ICU PERMIT NUMBER ICU - 23

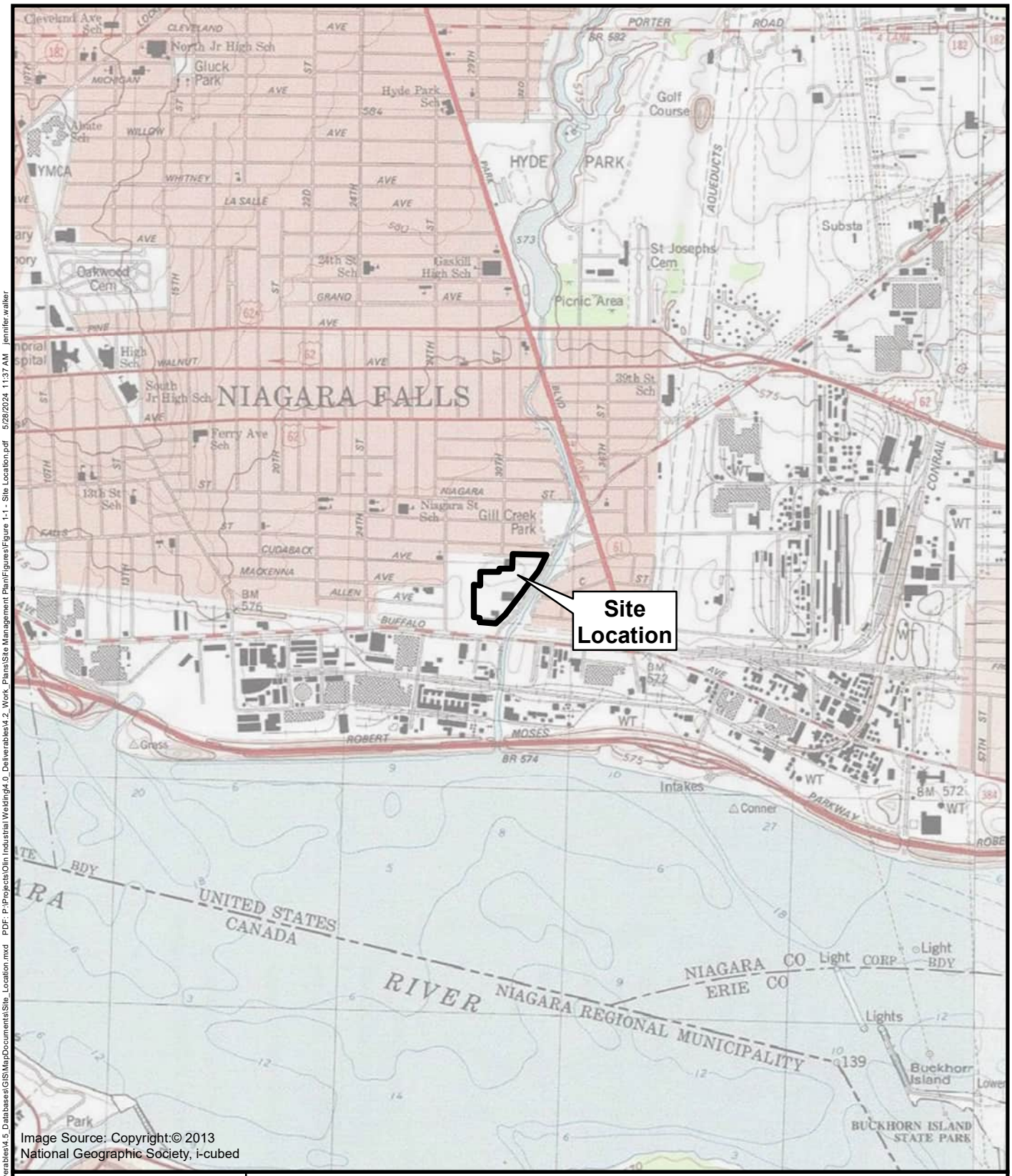
SAMPLE LOCATION MS#1

DATE SAMPLED 11/9/2023

ANALYSIS DATES Nov 13-29, 2023

ANALYTICAL LABORATORY ALS Environmental

Figures

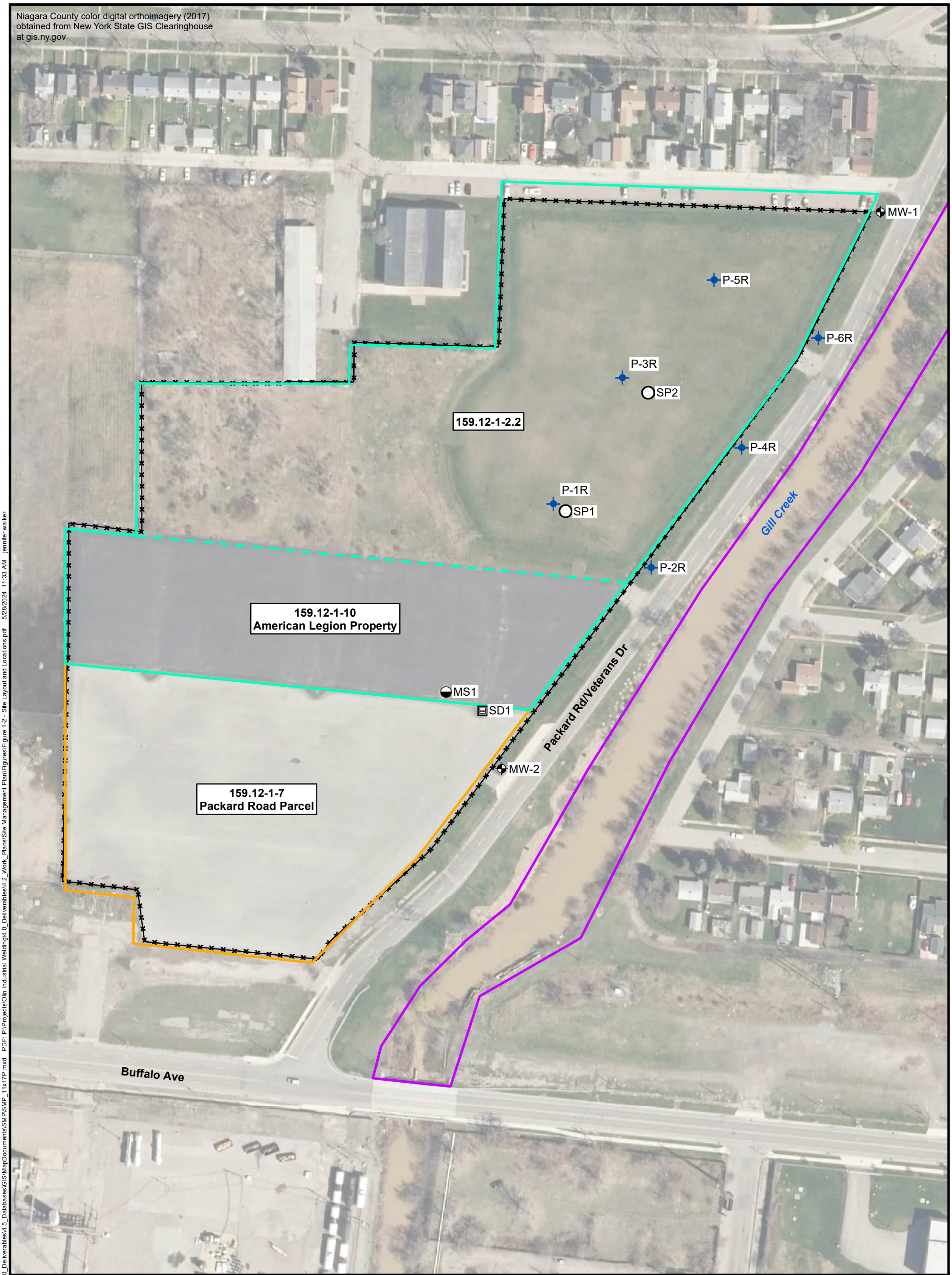


Prepared/Date: JSW 5/28/24 | Checked/Date:

Figure 1-1
Site Location

Periodic Review Report
Industrial Welding
The Olin Corporation
Niagara Falls, New York

Document: P:\Projects\Olin Industrial Welding\4.0_Deliverables\4.5_Databases\GIS\MapDocuments\Site_Location.mxd PDF: P:\Projects\Olin Industrial Welding\4.0_Deliverables\4.2_Work_Plans\Site Management Plan\Figures\Figure 1-1 - Site Location.pdf 5/28/2024 11:37 AM jennifer.walker



Document: P:\Projects\Olin Industrial Welding\4.0_Deliverables\4.2_Work_Plans\Site Management Plan\Figures\Figure 1-2 - Site Layout and Locations.pdf 5/28/2024 11:33 AM jennifer.walker
PDF: P:\Projects\Olin Industrial Welding\4.0_Deliverables\4.5_Databases\GIS\MapDocuments\SMP\SMP_11x17P.mxd

N

0 60 120 Feet

Prepared/Date: JSW 5/28/24 | Checked/Date:

Legend

- Standpipe
- Monitoring Well
- LCRS Recovery Well
- Piezometer
- Catch Basin
- OU-1
- OU-2
- OU-3
- Perimeter Fence

Figure 1-2
Site Layout and Sampling/Monitoring Locations

Periodic Review Report
Industrial Welding
The Olin Corporation
Niagara Falls, New York

Niagara County color digital orthoimagery (2017)
obtained from New York State GIS Clearinghouse
at gis.ny.gov

MW-1
564.46

North End LCRS
Invert Elevation
567.02

P-5R
564.45

P-6R
564.31

SP2
Invert Elevation
566.4

P-3R
565.36

159.12-1-2.2

MH1

P-4R
562.44

SP1
Invert Elevation
565.21

P-1R
Dry

Gill Creek

P-2R
563.13

159.12-1-10
American Legion Property

Invert Elevation of
Pipe at Recovery Well
564.3

Packard Rd/Veterans Dr

MS1
564.84

MW-2
567.12

159.12-1-7
Packard Road Parcel

MH2

Buffalo Ave

Monitoring Well
Recovery Well
Piezometer

OU-1
OU-2
OU-3
Clay Barrier
LCRS Enclosure

Catch Basin
Cleanout
Culvert
Drop Inlet
Manhole
Outfall/Headwall
Standpipe

Drain Pipe
Drainage Ditch
LCRS Discharge Pipe
LCRS Trench Drain
Combined Sewer
Storm Drain
Perimeter Fence

N
0 60 120
Feet

Prepared/Date: BGM 4/22/2025

Figure 4-1
Groundwater Elevation Map
August 2023
Site Management Plan
Industrial Welding
The Olin Corporation
Niagara Falls, New York

Document: P:\Projects\Olin Industrial Welding\4.0_Deliverables\4.2_Work_Plans\Site Management Plan\Figures\Figure 5-1 - E&I Con Boundaries.pdf 5/5/2025 11:19 AM jennifer.walker
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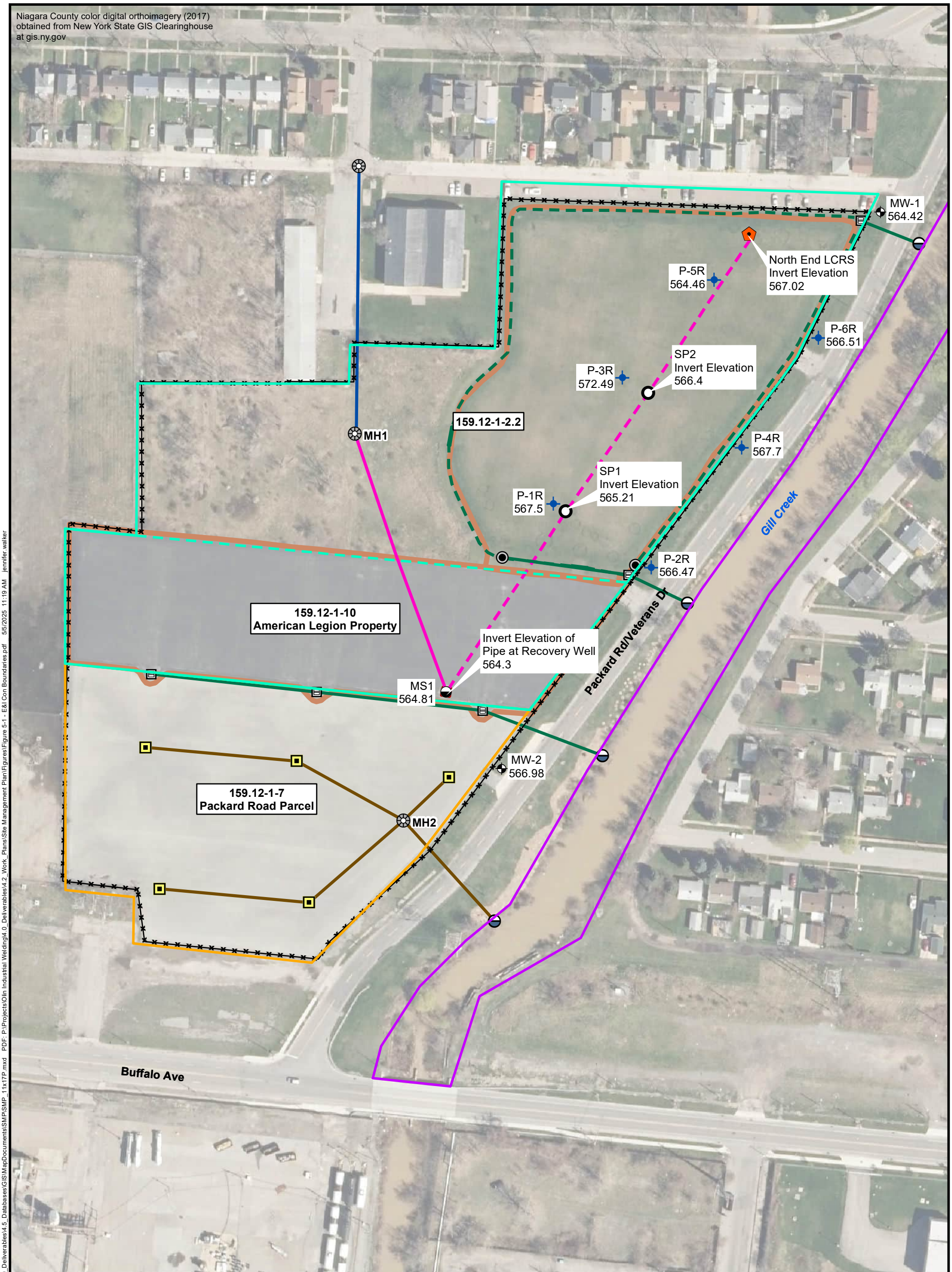

Figure 4-1
Groundwater Elevation Map
March 2024
Site Management Plan
Industrial Welding
The Olin Corporation
Niagara Falls, New York

Document: P:\Projects\Olin Industrial Welding\4.0_Deliverables\4.2_Work_Plans\Site Management Plan\Figures\Figure 5-1 - E&I Con Boundaries.pdf 5/5/2025 11:19 AM jennifer.walker
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Niagara County color digital orthoimagery (2017)
obtained from New York State GIS Clearinghouse
at gis.ny.gov

MH1

MH2

Gill Creek

Packard Rd/Veterans Dr

Buffalo Ave

Legend

- Catch Basin
- Cleanout
- Culvert
- Drop Inlet
- Manhole
- Outfall/Headwall
- Standpipe
- Clay Barrier
- Asphalt Cover
- Northern Cover
- LCRS Enclosure
- Drain Pipe
- Drainage Ditch
- LCRS Discharge Pipe
- LCRS Trench Drain
- Combined Sewer
- Storm Drain
- Perimeter Fence

N

0 60 120 Feet

Prepared/Date: JSW 5/28/24 | Checked/Date:

Figure 5-1
Engineering and Institutioal Control Boundaries
Periodic Review Report
Industrial Welding
The Olin Corporation
Niagara Falls, New York

Document: P:\Projects\Olin Industrial Welding\4.0_Deliverables\4.2_Work_Plans\Site Management Plan\Figures\Figure 5-1 - E&I Con Boundaries.pdf 5/28/2024 12:52 PM jennifer.walker
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A Institutional and Engineering Certification Form

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **932050**

Site Name Olin Corporation-Industrial Welding

Site Address: Packard Road near 30th Street Zip Code: 14303
City/Town: Niagara Falls
County: Niagara
Site Acreage: 13.290

Reporting Period: May 01, 2023 to May 01, 2024

	YES	NO
1. Is the information above correct?	✓	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	✓
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	✓
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	✓
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	✓

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Closed Landfill	✓	☐
7. Are all ICs in place and functioning as designed?	✓	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

[signature] 5/31/24

Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. 932050 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
159.12-1-10	Olin Corporation	Soil Management Plan Monitoring Plan O&M Plan

Record of Decision; November 3, 1994 for Operable Units one and two (OU1 and OU2).

Deed Restriction; December 7, 2001.

159.12-1-2.2	Olin Corporation	Monitoring Plan Soil Management Plan O&M Plan

Record of Decision (ROD) November 3, 1994 for Operable Units 1 and 2 (OU1 and OU2.)

Deed Restriction; December 7, 2001.

159.12-1-7	Olin Corporation	Site Management Plan O&M Plan

Operable Unit 3 (OU3) Packard Road Parcel.

Record of Decision (ROD) March 24, 2006.

Environmental Easement; June 24, 2010.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
159.12-1-10	Monitoring Wells Cover System Fencing/Access Control Groundwater Containment Leachate Collection

Southern Cover System (American Legion Post Parcel, 136 Packard Road):

Operable Unit Two (OU2) was constructed as a subgrade, aggregate base course, asphalt concrete pavement (binder and top course), storm drainage, catch basins, storm drain piping with landscaping and security fencing.

A leachate collection and recovery system is active and extends beneath both the northern (150 Packard) and southern (136 Packard) covers. An extraction well pump is under the southern asphalt cover and automatically activates at a pre-set leachate level. Leachate is discharged to the Niagara Falls sewer system by City Permit No. ICU-23. The status of pump operations are monitored remotely.

159.12-1-2.2

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
✓	☐

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

   (a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
✓	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Adam B Conger

Signature of Owner, Remedial Party or Designated Representative

5/31/24

Date

Parcel	Engineering Control
	Monitoring Wells Cover System Groundwater Containment Leachate Collection Fencing/Access Control

The remediation consisted of the consolidation of sediments, soils and demolition debris from Gill Creek the American Legion Post and other excavated materials.

The North Cover System (150 Packard Road, IWS Parcel) was constructed as a leachate collection and recovery system, consisting of a trench, geotextile, coarse stone aggregate, collection piping, recovery well, leachate extraction pumping system with a force main and a clay barrier.

The cap details are a six inch clay buffer layer, 40-mil. geomembrane liner, eighteen inch protective/drainage soil layer and six inch vegetative soil layer and vegetative cover.

A leachate collection and recovery system is active and extends beneath both the northern (150 Packard) and southern (136 Packard) covers. A extraction well pump is under the southern asphalt cover and automatically activates at a pre-set leachate level. Leachate is discharged to the Niagara Falls sewer system by City Permit No. ICU-23. The status of pump operations are monitored remotely.

159.12-1-7

Monitoring Wells
Cover System
Fencing/Access Control

Operable Unit 3 (OU3) Packard Road Parcel: The remediation consists of an asphalt cover to the equivalent specifications as the cover system of south OU2.

IC CERTIFICATIONS
SITE NO. 932050

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____Adam Carringer_____ at _____490 Stuart Rd NE, Cleveland, TN 37312____,
print name print business address

am certifying as _____Site Owner - Olin Corporation_____(Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

_____ 5/31/24_____
Signature of Owner, Remedial Party, or Designated Representative Date
Rendering Certification

EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Adam B Carringer at 440 Stuart Rd NE Cleveland, TN 37312.

print name — print business address

am certifying as a Qualified Environmental Professional for the Site Owner - Olin Corporation

(Owner or Remedial Party)

Adam B Carringer CHMM # 32670 5/31/2024

Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification — Stamp (Required for PE) — Date

B Field Forms (Inspections, Sampling and Elevations) and Photo Log

August 2023 Field Forms

Site Activities Report

Sevenson Environmental Services, Inc.
Niagara Falls, New York

REPORT NO.	Sevenson Job No. 1305,	DATE: 8/28/23		
PROJECT TITLE	OLIN CORPORATION, INDUSTRIAL WELDING SITE			
LOCATION OF WORK	VETERANS DRIVE, NIAGARA FALLS, NEW YORK			
DESCRIPTION	O & M OF REMEDIATION SITE			
WEATHER: Sunny	RAINFALL INCHES: None	TEMP (Deg F) 60°F	Min: —	Max: —

1. **Work performed today by Prime Contractor (Include Labor Breakdown):**
   Semi Annual inspection
   Fall 2023 Samples taken at MW1, MW2, & SD1
   LCRS Flow Meter Calibration

2. **Work Performed Today By Subcontractors (Include Labor Breakdown):**
   None

3. **Materials and/Or Equipment Delivered To Site (Include Equipment Demobilization)**
   None

4. **Type And Results Of Inspection:**
   LCRS Flow Meter Calibration
   Semi Annual inspection

FIELD DATA LOG FOR WATER ELEVATION MEASUREMENTS

Industrial Welding Site, Niagara Falls, New York

Name of Sampler: Max Liffiton

Organization: Severson

Weather: 60° F Sunny

Water Level Indicator Make: Solinist Model: 101 Serial No.: 63882

Location	Location ID	Date/Time Measured	Top of Riser Elevation (ft msl)	Measured Depth to Water (Feet Below Top of Riser)	Water Elevation (ft msl)
LCRS Stand Pipe	SP1 ✓	8/28/23 1119		Dry at ~~16.49~~ 16.74	
LCRS Stand Pipe	SP2 /	8/28/23 1108		Dry at ~~14.30~~	
LCRS Recovery Well	LCRS1	8/28/23 1135	573.43	8.59	
Cover Area Piezometer	P1R ✓	8/28/23 1117	582.10	Dry at 17.41	
East Easement Piezometer	P2R ✓	8/28/23 1128	572.17	~~9.24~~ 9.04	
Cover Area Piezometer	P3R ✓	8/28/23 1105	581.90	16.54	
East Easement Piezometer	P4R ✓	8/28/23 1130	571.09	8.65	
Cover Area Piezometer	P5R	8/28/23 1112	578.46	14.01 (nearly dry)	
East Easement Piezometer	P6R ✓	8/28/23 1135	570.91	6.60	
NE Easement Monitoring Well	MW1 ✓	8/28/23 1010	570.87	6.41	
SE Easement Monitoring Well	MW2 ✓	8/28/23 0920	572.76	5.64	

COMMENTS:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: MW-1

Date: 8/28/23

INSPECTOR: Max Lifton

YES	NO	
X		**Is the wellhead clearly labeled?**
X		**Is there a lock on the well?**
X		**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	X	**Is there evidence of frost heave on the protective casing?**
	X	**Is there settlement around the well?**
X		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: MW-2

Date: 8/28/13

INSPECTOR: Mark Lifton

YES	NO	
X		**Is the wellhead clearly labeled?**
X		**Is there a lock on the well?**
X		**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	X	**Is there evidence of frost heave on the protective casing?**
	X	**Is there settlement around the well?**
X		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P1R

Date: 8/28/23

INSPECTOR: Max Lifflan

YES	NO	
X		**Is the wellhead clearly labeled?**
X		**Is there a lock on the well?**
X		**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	X	**Is there evidence of frost heave on the protective casing?**
	X	**Is there settlement around the well?**
X		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P2R

Date: 8/28/23

INSPECTOR: Max Liffiton

YES	NO	
x		**Is the wellhead clearly labeled?**
x		**Is there a lock on the well?**
x		**Is the concrete pad around the well in good condition**
	x	**Has there been physical damage to the well?**
x		**Is the wellhead protected from standing water?**
	x	**Is there evidence of frost heave on the protective casing?**
	x	**Is there settlement around the well?**
x		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P3R

Date: 8/28/23

INSPECTOR: Max Liffiton

YES	NO	
✓		**Is the wellhead clearly labeled?**
✓		**Is there a lock on the well?**
✓		**Is the concrete pad around the well in good condition**
	✓	**Has there been physical damage to the well?**
✓		**Is the wellhead protected from standing water?**
	✓	**Is there evidence of frost heave on the protective casing?**
	✓	**Is there settlement around the well?**
✓		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P4R

Date: 8/28/23

INSPECTOR: Max Lifton

YES	NO	
X		**Is the wellhead clearly labeled?**
X		**Is there a lock on the well?**
X		**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	X	**Is there evidence of frost heave on the protective casing?**
	X	**Is there settlement around the well?**
X		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P5R

Date: 8/28/23

INSPECTOR: Max Lifton

YES	NO	
X		**Is the wellhead clearly labeled?**
X		**Is there a lock on the well?**
	X	**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	X	**Is there evidence of frost heave on the protective casing?**
	X	**Is there settlement around the well?**
X		**Is the well depth consistent with the installed depth?**

COMMENTS:

Concrete pad is loose around well standpipe/casing

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P6R

Date: 8/28/23

INSPECTOR: Max Liffiton

YES	NO	
X		**Is the wellhead clearly labeled?**
X		**Is there a lock on the well?**
X		**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	X	**Is there evidence of frost heave on the protective casing?**
	X	**Is there settlement around the well?**
		Is the well depth consistent with the installed depth?

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: SP-1

Date: 8/28/25

INSPECTOR: Mel Lifton

YES	NO	
X		**Is the wellhead clearly labeled?**
X		**Is there a lock on the well?**
X		**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	X	**Is there evidence of frost heave on the protective casing?**
	X	**Is there settlement around the well?**
X		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: SP-2

Date: 8/28/23

INSPECTOR: Max Liffiton

YES	NO	
x		**Is the wellhead clearly labeled?**
x		**Is there a lock on the well?**
x		**Is the concrete pad around the well in good condition**
	x	**Has there been physical damage to the well?**
x		**Is the wellhead protected from standing water?**
	x	**Is there evidence of frost heave on the protective casing?**
	x	**Is there settlement around the well?**
x		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

FIELD DATA LOG FOR STORM WATER SAMPLING
Industrial Welding Site, Niagara Falls, New York

Location Description: Storm Drain Sample Point East of Catch Basin

Sampler(s): Max Lippa

Weather: 60°F, Sunny

Date: 8/28/23 Time: 0850

Sample ID: IWS-SD1-082823

Sampling Method: Peristaltic Pump w/ dedicated tubing

Pipe Invert Elevation at Sample Point Riser (ft msl)	Measured Depth of Water Sample Point (ft)	Calculated Water Elevation - Sample Point (ft)	Outfall Invert Elevation (ft msl)	Measured Depth of Water Outfall Pipe (ft)	Calculated Outfall Water Elevation (ft msl)
	5.24				

COMMENTS:

Conditions at Sample

Temp: 20.79°C
pH: 6.32
pHmV: 32
ORPmV: 228
mS/cm: 0.052
NTU: 0.0
mg/L DO: 4.17
% DO: 47.8%

Sample taken at 0850
MS/MSD volume taken here

FIELD DATA LOG FOR GROUNDWATER SAMPLING
Industrial Welding Site, Niagara Falls, New York

Well ID: MW-1 Date: 082823

Sampler(s): Max Lifflam

Weather: 60°F, Sunny

Calibration of Field Equipment:

pH Meter:	Date:	082823	Time	0845
Spec. Conduct. Meter:	Date:	082823	Time	0845
Turbidity Meter:	Date:	082823	Time	0845

Purging Method/Sampling Method: peristaltic pump w/ dedicated tubing

Sample ID: IWS-MW-1-082823

Well Purging Data:

± 0.5 ± 10% ± 1°C ≤ 50 NTU

Time	Water Level (Feet Below Top of Riser)	Volume Purged (~~Liters~~ Gallons)	pH (Std. Units)	Specific Conductivity (~~Umhos~~ mS/cm)	Tem (EC)	Turbidity (NTUs)
1010	6.41	0	6.73	1.22	21.26	0.0
1015	7.55	0.3	6.60	1.05	21.02	0.0
1020	7.93	0.45	6.59	1.04	21.23	0.0
1025	8.38	0.6	6.57	1.09	21.17	0.0

COMMENTS:

Sampled at 1026

FIELD DATA LOG FOR GROUNDWATER SAMPLING
Industrial Welding Site, Niagara Falls, New York

Well ID: MW-2 Date: 082823
Sampler(s): Max Lifton
Weather: 60°F, Sunny
Calibration of Field Equipment:

pH Meter: Date: 082823 Time 0845
Spec. Conduct. Meter: Date: 082823 Time 0845
Turbidity Meter: Date: 082823 Time 0845

Purging Method/Sampling Method: peristaltic pump w/dedicated tubing

Sample ID: IWS-MW2-082823

Well Purging Data:

±0.5 ±10% ±1°C 50≥ NTu

Time	Water Level (Feet Below Top of Riser)	Volume Purged (~~Liters~~ Gallon)	pH (Std. Units)	Specific Conductivity (~~Umhos~~ mS/cm)	Tem (EC)	Turbidity (NTUs)
0920	5.64					
0927	6.06	0	6.66	1.12	20.16	0.0
0932	6.31	0.3	6.68	1.07	20.18	0.0
0937	6.61	0.6	6.61	0.945	20.26	0.0
0942	6.97	0.9	6.61	0.943	20.27	0.0
0947	7.14	1.2	6.64	0.913	20.36	0.0

COMMENTS:

Sample taken at 0948

SEMI-ANNUAL INSPECTION REPORT FORM

DATE: 8/28/23 **REPORT NO.:**

QUESTIONS	RESPONSE		COMMENTS AND RECOMMENDATIONS
	YES	NO	
1. Security Fence			
Is damage evident? If Yes, describe the type of damage(s), and indicate the location(s) the attached map.		X	
Are warning signs missing or damaged? If Yes, describe the type of damage and indicate the location(s) on the attached map.		X	Some signs secured
Is erosion evident under chain-link sections or around posts? If Yes, describe the type of erosion (rills, gullies, valleys, washouts), record approximate dimensions (length, width, depth) and indicate location(s) on the attached map.		X	
Has failure of any fencing members occurred? If Yes, describe the failure(s) and indicate location(s) on attached map.		X	
2. Vegetative Soil Cover			
Is settlement or standing water evident? If Yes, describe the degree of settlement(s) (slight, moderate, significant), record approximate dimensions, and indicate the location(s) on the attached map.		X	
Is erosion evident? If Yes, describe the type of erosion (rills, gullies, valleys, washouts, slope failure), record approximate dimensions (length, width, depth) and indicate location(s) on the attached map.		X	
Is vegetation distressed or are bare areas evident? If Yes, describe the type of disorder (distressed, sparsely vegetated, bare), record approximate dimensions and indicate location(s) on the attached map.		X	
Is any other damage evident? If Yes, describe the type of damage(s) and indicate the location(s) on the attached map.		X	
Are obstruction(s) (brush, debris, timber, leaves, sediment) interfering with the proper functioning of swales? Outlets from swales? If Yes, describe the type(s) of obstruction(s) and indicate the location(s) on the map attached. Is sediment deposited ins wales impending drainage? If Yes, record approximate dimensions and indicate location(s) on the attached map.		X	

QUESTIONS	RESPONSE		COMMENTS AND RECOMMENDATIONS
	YES	NO	
3. Surface Water Drainage System			
Are catch basin(s) damaged? If Yes, describe the catch basin inspected, conditions observed (spalling, cracking, exposed reinforcement, joint separation) and indicate location(s) of damaged catch basin(s) on the attached map.		X	
Are obstruction(s) (brush, debris, leaves, sediment) interfering with the proper functioning of the catch basin(s)? If Yes, describe the type(s) of obstruction(s) and indicated the location(s) on the attached map.		X	
Is erosion evident? If Yes, describe the drainage structure inspected (swale, outfall) the type of erosion (rills, gullies, valley, washouts, slope failure), record approximate dimensions (length, width, depth) and indicate location(s) on the attached map.		X	
Is sediment deposited in drainage pipe(s) deeper than 1/4 of the pipe diameter (shown on the contract drawings)? If Yes, record approximate dimension and indicate locations on the attached map.		X	
Is structural damage to headwalls evident? If Yes, describe the type of damage (upheaval, cracking, undermined, overturned, fractured, broken) and indicate damaged structures on the map.		X	
Have stones been dislodged at rip-rapped drainage outlet aprons? If Yes, record approximate dimensions and indicate location(s) on the attached map.		X	
4. Asphalt Concrete Cover System			
Is pavement distress evident? If Yes, describe (cracking, pothole(s), upheaval, failed patch), record the approximate dimensions (length, width, and depth) and indicate location(s) on the attached map.	X		Some vegetation breakthrough observed on Asphalt cover
Is settlement or standing surface water evident? If Yes, describe the degree of settlement(s) (slight, moderate, significant), record approximate dimensions and indicate the location(s) on the attached map.		✓	
Are obstructions present in the catch basins? If Yes, describe the obstacle(s) (leaves, brush, sediment) and indicate the location(s) on the map attached.		X	
Is sediment deposited in swale(s) impeding drainage? If Yes, record approximate dimensions and indicate location(s) on the map attached.		X	

QUESTIONS	RESPONSE		COMMENTS AND RECOMMENDATIONS
	YES	NO	
5. Leachate Collection and Recovery System			
Is standing water present at the LCRS cleanout? If Yes, describe the depth of the standing water.		X	
Is there evidence of any pipes or valves leaking at the recovery well? If Yes, describe the magnitude of the leak (drip, steady discharge, single overflow) and ~~tag location(s) of leak(s).~~		X	
Is leachate extraction well pump operating properly based on visual inspection? If No, describe the condition.	X		
Is damage or degradation evident at the extraction well or stand pipe(s)? If Yes, describe the type of damage (vent/well riser cover missing, vent/well riser cracked, overturned, leaning, broken) and indicate damaged vent/well riser(s) on the map attached.		X	
Is damage or degradation evident at these system components? Extraction well pump and associated piping? Leachate collection pipe cleanout?		X	

Date: 8/28/23

INSPECTOR: Max Liffton

INDUSTRIAL WELDING SITE
NIAGARA FALLS, NY
GROUNDWATER SAMPLING FIELD PARAMETERS
FIELD INSTRUMENTATION CALIBRATION FORM

DATE: 8/28/23 SAMPLING EVENT: IWS Fall 2023 Sampling

PERSON CALIBRATING METER: Greg Grant

INSTRUMENT USED:

MANUFACTURER: Horiba

MODEL NUMBER: U-52

HGS NUMBER: NU8D4GY2

DATE OF MANUFACTURE: Jan 2012

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: _____

STANDARD 4.00 METER READ: X

STANDARD 10.00 METER READ: _____

CALIBRATION SOLUTION EXPIRATION DATE: May 2024

	PRE CALIBRATION READINGS	POST CALIBRATION READINGS
TEMPERATURE (°F or °C):	20.37	20.73
pH:	4.06	4.01
pHmv:	167	166
OX-RED POT (ORPmv):	318	304
CONDUCTIVITY (ms/cm):	4.65	4.44
TURBIDITY (NTU):	0.0	0.0
mg/L DO:	13.92	9.08
% DO:	159.1%	105.0%

OTHER CALIBRATION COMMENTS: _____

Chain of Custody / Analytical Request Form

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380 • alsglobal.com

SR#:

Page 1 of 1

Report To:	ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER
Company: Olin Corp	Project Name: Industrial Welding
Contact: Adam Carringer	Project Number: 1505
Email: ABCarringer@Olin.com	ALS Quote #:
Phone: 423 508 2768	Sampler's Signature: Matt Griffith
Address: 490 Short Rd	Email CC: ABCarringer@olin.com
Cleveland, TN 37312	Email CC:
	State Samples Collected (Circle or Write): NY, MA, PA, CT, Other:

Preservative: 0 = None; 1 = HCl; 2 = HNO3; 3 = H2SO4; 4 = NAOH; 5 = Zn Acet.; 6 = MeOH; 7 = NaHSO4; 8 = Other

Lab ID (ALS)	Sample Collection Information: Sample ID:	Date	Time	Matrix (GW, WW, SW, DW, S, L, NA)	Number of Containers	MS/MSD?	GC/MS VOA - 8260•624•524•TCLP	GC/MS SVOA (8270) • 625 • TCLP	Pesticides (8081) • 608 • TCLP	PCBs - 8082 • 608	Herbicides - 8151 • TCLP	Metals, Total - Select Below	Metals, Dissolved - Field / In-Lab Filter	Notes:
	IWS-SD2-082823	082823	0850	GW	15	Y	6	6				3		MS/MSD Vol
	IWS-MW-1-082823	082823	1026	GW	5	N	2	2				1		
	IWS-MW-2-082823	082823	0948	GW	5	N	2	2				1		
	Temp Blank	—	—	—	1	—								Provided by

Special Instructions / Comments:

Total Mercury

Turnaround Requirements

___ Rush (Surcharges Apply)
Subject to Availability
Please Check with your PM
X Standard (10 Business Days)

Date Required: Standard

Report Requirements

___ Tier II/Cat A - Results/QC
___ Tier IV/Cat B - Data Validation Report w/ Data
EDD: ___ Yes ___ No
EDD Type:

Metals: RCRA 8•PP 13•TAL 23•TCLP•Other (List)

VOA/SVOA Report List: TCL • BTEX • TCLP • CP-51/Stars •THM • Other: _____

Invoice To: (X Same as Report To)

PO #:

Company:

Contact:

Email:

Phone:

Address:

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature						
Printed Name	Matt Griffith	Randy Dice				
Company		ALS				
Date/Time	8/25/23 1415	8/25/23 1415				

March 2024 Field Forms

Site Activities Report

Sevenson Environmental Services, Inc.
Niagara Falls, New York

REPORT NO.	**Sevenson Job No. ~~1305,~~ 1332**	DATE: 3/14/24		
PROJECT TITLE	**OLIN CORPORATION, INDUSTRIAL WELDING SITE**			
LOCATION OF WORK	**VETERANS DRIVE, NIAGARA FALLS, NEW YORK**			
DESCRIPTION	**O & M OF REMEDIATION SITE**			
WEATHER: Overcast	**RAINFALL INCHES:** none	**TEMP (Deg F)**	**Min:** 28	**Max:** 37

1. Work performed today by Prime Contractor (Include Labor Breakdown):

Greg Frost & Max Liffiton (SES) on site with Steve Walsh (Olin). Site Inspection Performed. Water levels recorded at wells SP1, SP2, P1R, P2R, P3R, P4R, P5R, P6R, MW1, & MW2, as well as SD1. Samples taken at SD1, MW1, & MW2 for SVOA, pesticides, & total Hgs with MS/MSD volumes taken at SD1.

2. Work Performed Today By Subcontractors (Include Labor Breakdown):

N/A

3. Materials and/Or Equipment Delivered To Site (Include Equipment Demobilization)

N/A

4. Type And Results Of Inspection:

Site conditions looked good
Sampling went smoothly
Packed samples on ice & shipped to ALS for Analysis

SEMI-ANNUAL INSPECTION REPORT FORM

DATE: 3/19/24 **REPORT NO.:**

QUESTIONS	RESPONSE		COMMENTS AND RECOMMENDATIONS
	YES	NO	
1. Security Fence			
Is damage evident? If Yes, describe the type of damage(s), and indicate the location(s) the attached map.		✓	
Are warning signs missing or damaged? If Yes, describe the type of damage and indicate the location(s) on the attached map.		✓	Several signs resecured
Is erosion evident under chain-link sections or around posts? If Yes, describe the type of erosion (rills, gullies, valleys, washouts), record approximate dimensions (length, width, depth) and indicate location(s) on the attached map.		✓	
Has failure of any fencing members occurred? If Yes, describe the failure(s) and indicate location(s) on attached map.		✓	
2. Vegetative Soil Cover			
Is settlement or standing water evident? If Yes, describe the degree of settlement(s) (slight, moderate, significant), record approximate dimensions, and indicate the location(s) on the attached map.		✓	
Is erosion evident? If Yes, describe the type of erosion (rills, gullies, valleys, washouts, slope failure), record approximate dimensions (length, width, depth) and indicate location(s) on the attached map.		✓	
Is vegetation distressed or are bare areas evident? If Yes, describe the type of disorder (distressed, sparsely vegetated, bare), record approximate dimensions and indicate location(s) on the attached map.		✓	
Is any other damage evident? If Yes, describe the type of damage(s) and indicate the location(s) on the attached map.		✓	
Are obstruction(s) (brush, debris, timber, leaves, sediment) interfering with the proper functioning of swales? Outlets from swales? If Yes, describe the type(s) of obstruction(s) and indicate the location(s) on the map attached. Is sediment deposited ins wales impending drainage? If Yes, record approximate dimensions and indicate location(s) on the attached map.		✓	

QUESTIONS	RESPONSE		COMMENTS AND RECOMMENDATIONS
	YES	NO	
3. Surface Water Drainage System			
Are catch basin(s) damaged? If Yes, describe the catch basin inspected, conditions observed (spalling, cracking, exposed reinforcement, joint separation) and indicate location(s) of damaged catch basin(s) on the attached map.		✓	
Are obstruction(s) (brush, debris, leaves, sediment) interfering with the proper functioning of the catch basin(s)? If Yes, describe the type(s) of obstruction(s) and indicated the location(s) on the attached map.		✓	
Is erosion evident? If Yes, describe the drainage structure inspected (swale, outfall) the type of erosion (rills, gullies, valley, washouts, slope failure), record approximate dimensions (length, width, depth) and indicate location(s) on the attached map.		✓	
Is sediment deposited in drainage pipe(s) deeper than 1/4 of the pipe diameter (shown on the contract drawings)? If Yes, record approximate dimension and indicate locations on the attached map.		✓	
Is structural damage to headwalls evident? If Yes, describe the type of damage (upheaval, cracking, undermined, overturned, fractured, broken) and indicate damaged structures on the map.		✓	
Have stones been dislodged at rip-rapped drainage outlet aprons? If Yes, record approximate dimensions and indicate location(s) on the attached map.		✓	
4. Asphalt Concrete Cover System			
Is pavement distress evident? If Yes, describe (cracking, pothole(s), upheaval, failed patch), record the approximate dimensions (length, width, and depth) and indicate location(s) on the attached map.		✓	
Is settlement or standing surface water evident? If Yes, describe the degree of settlement(s) (slight, moderate, significant), record approximate dimensions and indicate the location(s) on the attached map.		✓	
Are obstructions present in the catch basins? If Yes, describe the obstacle(s) (leaves, brush, sediment) and indicate the location(s) on the map attached.		✓	
Is sediment deposited in swale(s) impeding drainage? If Yes, record approximate dimensions and indicate location(s) on the map attached.		✓	

QUESTIONS	RESPONSE		COMMENTS AND RECOMMENDATIONS
	YES	NO	
5. Leachate Collection and Recovery System			
Is standing water present at the LCRS cleanout? If Yes, describe the depth of the standing water.		✓	
Is there evidence of any pipes or valves leaking at the recovery well? If Yes, describe the magnitude of the leak (drip, steady discharge, single overflow) and ~~tag location(s) of leak(s).~~		✓	
Is leachate extraction well pump operating properly based on visual inspection? If No, describe the condition.	✓		
Is damage or degradation evident at the extraction well or stand pipe(s)? If Yes, describe the type of damage (vent/well riser cover missing, vent/well riser cracked, overturned, leaning, broken) and indicate damaged vent/well riser(s) on the map attached.		✓	
Is damage or degradation evident at these system components? Extraction well pump and associated piping? Leachate collection pipe cleanout?		✓	

Date: 3/19/24

INSPECTOR: Greg Ernst
Max Lifton
Steve Walsh

FIELD DATA LOG FOR STORM WATER SAMPLING
Industrial Welding Site, Niagara Falls, New York

Location Description: Storm Drain Sample Point East of Catch Basin

Sampler(s): Steve Walsh, Greg ERNST, Max Liston

Weather: part/y cloudy

Date: 3-19-24 Time: 0835

Sample ID: IWS-SD-1-031924

Sampling Method: peristaltic

Pipe Invert Elevation at Sample Point Riser (ft msl)	Measured Depth of Water Sample Point (ft)	Calculated Water Elevation - Sample Point (ft)	Outfall Invert Elevation (ft msl)	Measured Depth of Water Outfall Pipe (ft)	Calculated Outfall Water Elevation (ft msl)
	5.1				

COMMENTS: ph - 7.69 Cond. 0.05 DO 9.06 Temp 5.43 Turb. 40

FIELD DATA LOG FOR GROUNDWATER SAMPLING
Industrial Welding Site, Niagara Falls, New York

Well ID: MW-1 Date: 3/19/24

Sampler(s): Steve Walsh, Greg Ernst, Max Lifton

Weather: 29°F, overcast

Calibration of Field Equipment:

pH Meter:	Date:	3/19/24	Time 0800
Spec. Conduct. Meter:	Date:	3/19/24	Time 0800
Turbidity Meter:	Date:	3/19/24	Time 0800

Purging Method/Sampling Method: Peristaltic

Sample ID: IWS-MW1-031924

Well Purging Data:

(<0.1m) (±0.5) (±10%) (±1°C) (<50 NTU)

Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity (Φmhos/cm)	Tem (EC)	Turbidity (NTUs)
0905	6.45	0	6.08	1.05	6.35	0.13
0915	7.64	0.8	6.10	1.04	6.43	0.25
0920	8.04	1.2	6.02	1.00	6.39	0.20

COMMENTS:

Sampled at 0920

FIELD DATA LOG FOR GROUNDWATER SAMPLING
Industrial Welding Site, Niagara Falls, New York

Well ID: MW-2 Date: 3/19/24
Sampler(s): Steve Walsh, Greg Ernst, Max Litton
Weather: Light Snow
Calibration of Field Equipment:

pH Meter: Date: 3/19/24 Time 0800
Spec. Conduct. Meter: Date: 3/19/24 Time 0800
Turbidity Meter: Date: 3/19/24 Time 0800

Purging Method/Sampling Method: Peristaltic low flow with AquaTroll

Sample ID: IWS-MW2-031924

Well Purging Data:

Time	Water Level (Feet Below Top of Riser) (<0.1m)	Volume Purged (Liters)	pH (Std. Units) (±0.5)	Specific Conductivity (~~Φmhos/cm~~ mS/cm) (±10%)	Tem (EC) (±1°C)	Turbidity (NTUs) (<50 NTU)
0935	5.78	0	6.60	1.16	6.99	9.17
0940	6.59	0.3	6.75	1.15	7.22	0.00
0945	7.01	0.6	6.70	1.14	7.19	0.00
0950	7.33	1.0	6.48	1.05	7.15	0.00

COMMENTS: Samples taken 0950.

INDUSTRIAL WELDING SITE
NIAGARA FALLS, NY
GROUNDWATER SAMPLING FIELD PARAMETERS
FIELD INSTRUMENTATION CALIBRATION FORM

DATE: 3-19-24 SAMPLING EVENT: Spring 2024

PERSON CALIBRATING METER: Steve Walsh

INSTRUMENT USED:

MANUFACTURER: EW SiTV

MODEL NUMBER: AQUA TROLL

HGS NUMBER: _____

DATE OF MANUFACTURE: _____

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: 6.97

STANDARD 4.00 METER READ: 4.02

STANDARD 10.00 METER READ: 10.01

CALIBRATION SOLUTION EXPIRATION DATE: _____

	PRE CALIBRATION READINGS	POST CALIBRATION READINGS
TEMPERATURE (°F or °C):		
pH:		
pHmv:		
OX-RED POT (ORPmv):		
CONDUCTIVITY (ms/cm):		
TURBIDITY (NTU):		
mg/L DO:		
% DO:		

OTHER CALIBRATION COMMENTS: _____

FIELD DATA LOG FOR WATER ELEVATION MEASUREMENTS
Industrial Welding Site, Niagara Falls, New York

Name of Sampler: Steve Welch, Greg Frost, Max Liffiton

Organization: Olin, Sevenson

Weather: 29°F, Overcast

Water Level Indicator Make: Solinist Model: 102 Serial No.:

Location	Location ID	Date/Time Measured	Top of Riser Elevation (ft msl)	Measured Depth to Water (Feet Below Top of Riser)	Water Elevation (ft msl)
LCRS Stand Pipe	SP1	1012 3/19/24		16.60	
LCRS Stand Pipe	SP2	1016 3/19/24		14.30	
LCRS Recovery Well	LCRS1	1028 3/19/24	573.43	8.62	564.81
Cover Area Piezometer	P1R	1013 3/19/24	582.10	14.60	567.50
East Easement Piezometer	P2R	1011 3/19/24	572.17	5.70	566.47
Cover Area Piezometer	P3R	1018 3/19/24	581.90	9.41	572.49
East Easement Piezometer	P4R	1014 3/19/24	571.09	3.39	567.70
Cover Area Piezometer	P5R	1024	578.46	14.00	564.46
East Easement Piezometer	P6R	1016 3/19/24	570.91	4.40	566.51
NE Easement Monitoring Well	MW1	0905 3/19/24	570.87	6.45	564.42
SE Easement Monitoring Well	MW2	0935 3/19/24	572.76	5.78	566.98

COMMENTS:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: SP-1

Date: 3/19/24

INSPECTOR: Greg Ernst, Max Liffiton, Steve Walsh

YES	NO	
X		**Is the wellhead clearly labeled?**
X		**Is there a lock on the well?**
X		**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	X	**Is there evidence of frost heave on the protective casing?**
	X	**Is there settlement around the well?**
X		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: SP-2

Date: 3/19/24

INSPECTOR: Greg Ernst, Max Littler, Steve Wicks

YES	NO	
✓		**Is the wellhead clearly labeled?**
x		**Is there a lock on the well?**
x		**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	✓	**Is there evidence of frost heave on the protective casing?**
	x	**Is there settlement around the well?**
✓		**Is the well depth consistent with the installed depth?**

COMMENTS:

none

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P1R

Date: 3/19/24

INSPECTOR: Greg Crosby, Max Liffiton, Steve Wolfe

YES	NO	
X		**Is the wellhead clearly labeled?**
X		**Is there a lock on the well?**
X		**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	X	**Is there evidence of frost heave on the protective casing?**
	X	**Is there settlement around the well?**
X		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P2R

Date: 3/19/24

INSPECTOR: Greyfind / MexLift. - Steve Welsh

YES	NO	
✓		**Is the wellhead clearly labeled?**
✓		**Is there a lock on the well?**
✓		**Is the concrete pad around the well in good condition**
	✓	**Has there been physical damage to the well?**
✓		**Is the wellhead protected from standing water?**
	✓	**Is there evidence of frost heave on the protective casing?**
	✓	**Is there settlement around the well?**
✓		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P3R

Date: 3/19/24

INSPECTOR: Greg Finst, Max Liffiter, Steve Walsh

YES	NO	
x		**Is the wellhead clearly labeled?**
x		**Is there a lock on the well?**
x		**Is the concrete pad around the well in good condition**
	x	**Has there been physical damage to the well?**
x		**Is the wellhead protected from standing water?**
	x	**Is there evidence of frost heave on the protective casing?**
	x	**Is there settlement around the well?**
x		**Is the well depth consistent with the installed depth?**

COMMENTS:

none

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P4R

Date: 3/19/24

INSPECTOR: Greg Frost, Max Lifton, Steve Walsh

YES	NO	
x		**Is the wellhead clearly labeled?**
x		**Is there a lock on the well?**
x		**Is the concrete pad around the well in good condition**
	x	**Has there been physical damage to the well?**
x		**Is the wellhead protected from standing water?**
	x	**Is there evidence of frost heave on the protective casing?**
	x	**Is there settlement around the well?**
x		**Is the well depth consistent with the installed depth?**

COMMENTS:

Next

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P5R

Date: 3/19/24

INSPECTOR: Greg Ernst, Max Liffrig, Steve Wekl

YES	NO	
X		**Is the wellhead clearly labeled?**
	X	**Is there a lock on the well?**
X		**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	X	**Is there evidence of frost heave on the protective casing?**
	X	**Is there settlement around the well?**
X		**Is the well depth consistent with the installed depth?**

COMMENTS:

hinge rusted off well stand cover, needs repair

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P6R

Date: 3/19/24

INSPECTOR: Graytmost, Mcdiffit., Steve Walsh

YES	NO	
x		**Is the wellhead clearly labeled?**
x		**Is there a lock on the well?**
x		**Is the concrete pad around the well in good condition**
	x	**Has there been physical damage to the well?**
x		**Is the wellhead protected from standing water?**
	x	**Is there evidence of frost heave on the protective casing?**
	x	**Is there settlement around the well?**
x		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: MW-1

Date: 3/19/24

INSPECTOR: Greg Finsty, Max Lifftin, Steve Walsh

YES	NO	
X		**Is the wellhead clearly labeled?**
X		**Is there a lock on the well?**
X		**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	X	**Is there evidence of frost heave on the protective casing?**
	X	**Is there settlement around the well?**
X		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: MW-2

Date: 3/19/24

INSPECTOR: Grey Frost, Max Liffit, Steve Wakl

YES	NO	
X		**Is the wellhead clearly labeled?**
X		**Is there a lock on the well?**
X		**Is the concrete pad around the well in good condition**
	X	**Has there been physical damage to the well?**
X		**Is the wellhead protected from standing water?**
	X	**Is there evidence of frost heave on the protective casing?**
	X	**Is there settlement around the well?**
X		**Is the well depth consistent with the installed depth?**

COMMENTS:

None

Chain of Custody / Analytical Request Form

69247

SR#:

Page 1 of 1

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380 ● alsglobal.com

Report To:	ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER
Company: Olin Corporation	Project Name: Industrial Welding
Contact: Adam Garringer	Project Number: 1332
Email: ABGarringer@Olin.com	ALS Quote #:
Phone: 423 336 4987	Sampler's Signature: Steve Walsh
Address: 490 Stuart Rd	Email CC:
Cleveland TN 37312	Email CC:
	State Samples Collected (Circle or Write): NY, MA, PA, CT, Other:

Preservative: 0 0 2

Lab ID (ALS)	Sample ID:	Date	Time	Matrix (GW WW SW DW S L NA)	Number of Containers	MS/MSD?	GC/MS VOA - 8260●624●524●TCLP	GC/MS SVOA - 8270 ● 625 ● TCLP	Pesticides - 8081 ● 608 ● TCLP	PCBs - 8082 ● 608	Herbicides - 8151 ● TCLP	Metals, Total - Select Below	Metals, Dissolved - Field / In-Lab Filter	Notes:
	IWS-SA1-031924	031924	0835	GW	15	Y		6	6			3		MS/MSD Hg only
	IWS-MW1-031924	031924	0920	GW	5	N		2	2			1		
	IWS-MW2-031924	031924	0950	GW	5	N		2	2			1		

0. None
1. HCl
2. HNO3
3. H2SO4
4. NAOH
5. Zn Acet.
6. MeOH
7. NaHSO4
8. Other

Special Instructions / Comments:

Metals - total Mercury (Hg)

Turnaround Requirements

____Rush (Surcharges Apply)
Subject to Availability
Please Check with your PM
X Standard (10 Business Days)

Date Required: Standard

Report Requirements

____Tier II/Cat A -Results/QC

____Tier IV/Cat B - Data Validation Report w/. Data

EDD: ____Yes ____No

EDD Type:

Metals: RCRA 8●PP 13●TAL 23●TCLP●Other (List)

VOA/SVOA Report List: TCL ● BTEX ● TCLP ● CP-51/Stars ●THM ● Other: _____

Invoice To: (☒ Same as Report To)

PO #:

Company:

Contact:

Email:

Phone:

Address:

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature						
Printed Name	Grey Ernst					
Company	Sedgwick					
Date/Time	3/19/24 1115					

Distribution: White - Lab Copy; Yellow - Return to Originator

PHOTOGRAPHIC LOG		
Olin Corp	**Industrial Welding Site** **Niagara Falls, NY**	**PRR 2024**

Photo No.	**Date**	
1	April 9, 2024	
Looking South at Veterans Drive (OU2 foreground & OU3 hardscape background)		

PHOTOGRAPHIC LOG		
Olin Corp	**Industrial Welding Site** **Niagara Falls, NY**	**PRR 2024**

Photo No.	**Date**	
2	April 9, 2024	
Looking Northwest at vegetated cap of OU2.		

PHOTOGRAPHIC LOG		
Olin Corp	**Industrial Welding Site** **Niagara Falls, NY**	**PRR 2024**

Photo No.	**Date**
3	April 9, 2024

Looking Northeast of the former American Legion Property

PHOTOGRAPHIC LOG		
Olin Corp	**Industrial Welding Site** **Niagara Falls, NY**	**PRR 2024**

Photo No.	**Date**	
4	April 9, 2024	
Looking South toward Buffalo Ave at the hardscaped Packard Road Parcel (OU3)		

PHOTOGRAPHIC LOG		
Olin Corp	**Industrial Welding Site** **Niagara Falls, NY**	**PRR 2024**

Photo No.	**Date**
5	April 9, 2024

Leachate Collection and Recovery System Well

PHOTOGRAPHIC LOG		
Olin Corp	**Industrial Welding Site** **Niagara Falls, NY**	**PRR 2024**

Photo No.	**Date**	
6	April 9, 2024	
Minor depression on the western side of OU3 - Cap		

C Summary of Mercury Historical Detections in Monitoring Wells

IW GROUNDWATER MONITORING
ANALYTICAL RESULTS FOR Hg MONITORING WELL BY PERIOD
SUMMARY SPRING 2003 - SPRING 2024

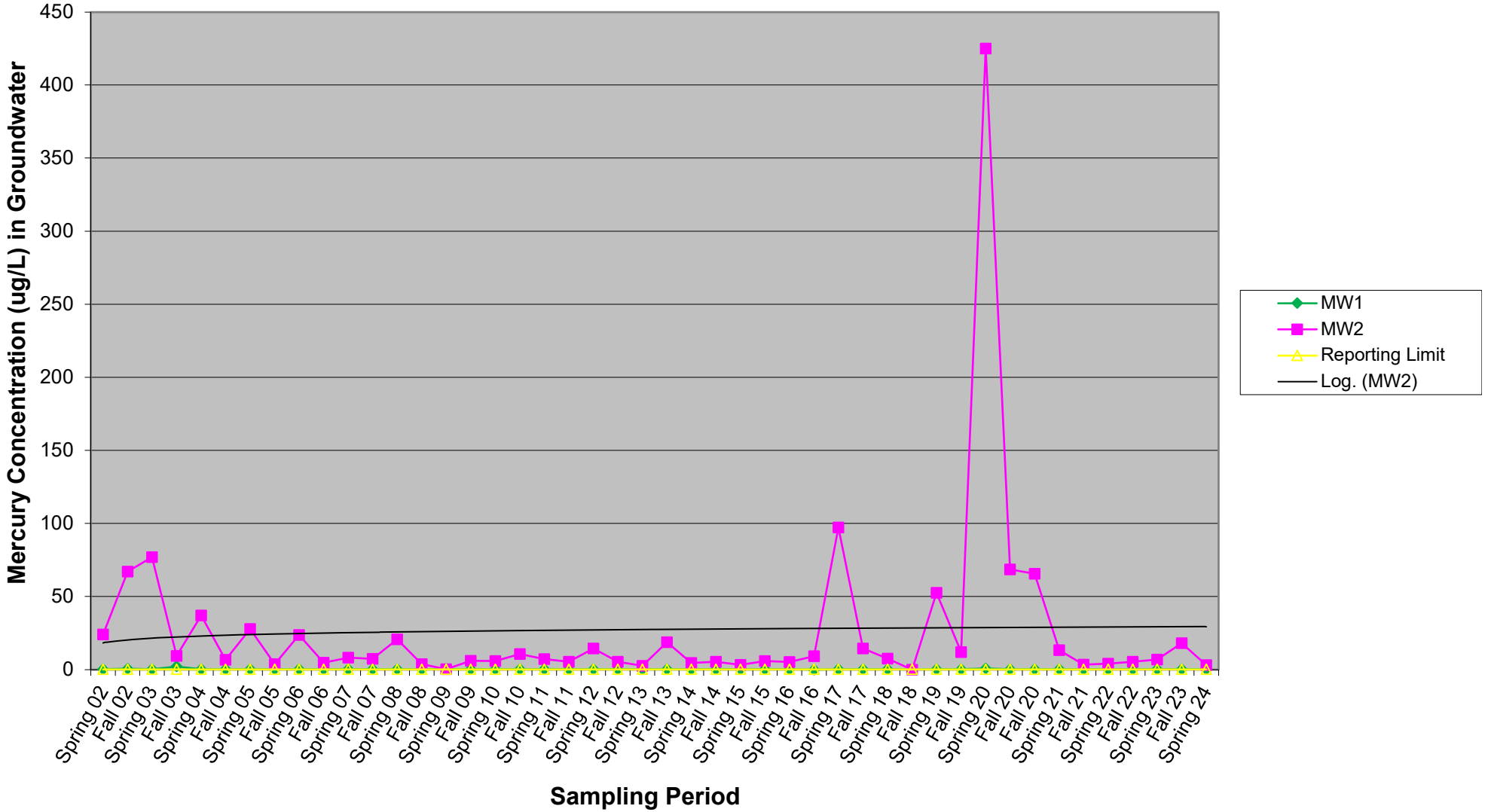
Sampling Period	MW1 (ug/L)	MW2 (ug/L)	Rptg. Limit (ug/L)
Spring 02	0.2	**24**	0.2
Fall 02	**0.5**	**67**	0.2
Spring 03	0.2	**77**	0.2
Fall 03	**2.2**	**9.3**	0.2
Spring 04	0.2	**37**	0.2
Fall 04	0.2	**6.6**	0.2
Spring 05	0.2	**27.8**	0.2
Fall 05	0.2	**3.7**	0.2
Spring 06	0.2	**23.7**	0.2
Fall 06	0.2	**4.7**	0.2
Spring 07	0.2	**8.2**	0.2
Fall 07	0.2	**7.3**	0.2
Spring08	0.2	**20.7**	0.2
Fall08	0.2	**3.7**	0.2
Spring09	0.2	**0.2**	0.2
Fall09	0.2	**6.1**	0.2
Spring10	0.2	**5.8**	0.2
Fall10	0.2	**10.6**	0.2
Spring11	0.2	**7.2**	0.2
Fall 11	0.2	**5.3**	0.2
Spring 12	0.2	**14.4**	0.2
Fall 12	0.2	**5.3**	0.2
Spring 13	0.2	**2.5**	0.2
Fall 13	0.2	**18.7**	0.2
Spring 14	0.2	**4.5**	0.2
Fall 14	0.2	**5.4**	0.2
Spring 15	0.2	**3.2**	0.2
Fall 15	0.2	**5.9**	0.2
Spring 16	0.2	**5.2**	0.2
Fall 16	NA	**9.1**	0.2
Spring 17	0.2	**97.2**	0.2
Fall 17	0.2	**14.4**	0.2
Spring 18	0.2	**7.5**	0.2
Fall 18	dry	dry	0.2
Spring 19	0.2	**52.5**	0.2
Fall 19	0.2	**11.9**	0.2
Spring 20	**0.7**	**425**	0.2
*Summer 20[1]	0.2	**68.6**	0.2
Fall 20	0.2	**65.6**	0.2
Spring 21	0.2	**13.3**	0.2
Fall 21	0.2	**3.4**	0.2
Spring 22	0.2	**4**	0.2
Fall 22	0.2	**5.42**	0.2
Spring 23	0.2	**6.81**	0.2
Fall 23	0.2	**18.1**	0.2
Spring 24	0.2	**2.97**	0.2

= Detected value

*Resampled due to anomalous values from spring sampling event

[1]ERRATA: 2020 Sampling results/date were inadvertently reported.

Industrial Welding
Mercury Concentrations in Groundwater Over Time



D

Leachate Collect and Recovery System Annual Discharge Report

Environmental Remediation Group

490 Stuart Road NE
Cleveland, TN. 37312
(423) 508-2768
abcarringer@olin.com

SENT VIA OVERNIGHT COURIER

February 28, 2024

Industrial Monitoring Coordinator
City of Niagara Falls
Department of Wastewater Facilities
Enforcement Division
1200 Buffalo Avenue
PO Box 69
Niagara Falls, NY 14302-0069

Re: Olin Industrial Welding Site – No Violations
Niagara Falls, New York
Wastewater Discharge Permit No. ICU-23
Periodic Self-Monitoring Report

Dear Industrial Monitoring Coordinator:

Please find enclosed the annual Periodic Self-Monitoring Report in accordance with the reporting requirements of the Wastewater Discharge Permit for the Olin Industrial Welding Site. The site is in compliance for all monitored parameters; there are no violations.

Discharge during this monitoring period (January-2023 through December-2023) totaled 165,233 gallons. Daily flow documentation is included in Attachment 1. The annual monitoring samples were taken on November 9, 2023. The laboratory analytical report for compliance monitoring is included on CD, along with a printed summary sheet, in Attachment 2. The analytical results and loading data are tabulated in Part I of the report. There were no exceedances.

Please direct any questions or comments to me at 423/508-2768.

Sincerely,
OLIN CORPORATION

Adam Carringer
Senior Environmental Specialist

Attachments

PERIODIC SELF MONITORING REPORT
INDUSTRIAL COMMERCIAL USER

PART II of the report is the Compliance Monitoring section. The user is obligated to determine if the analysis results indicate compliance or noncompliance. All violations noted should be brought to the City's attention immediately upon noting and should also be reported in this section. The analysis result should be compared against all applicable federal, state, and local standards and limitations. If no violations are noted, then "NO VIOLATIONS" should appear on the report.

Pursuant to 40 CFR Part 403.12 g of the federal standards, all violations noted must be followed up by a sample recollect/analysis and the results submitted to the City within thirty (30) days of first becoming aware of the violation.

Pursuant to 40 CFR Part 403.12 g, all Periodic self-Monitoring Reports must be signed by a 'responsible company official' certifying the following statement:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: _____ Date: 2/28/2024

PART 1
ANALYTICAL RESULTS

ICU PERMIT NAME	Olin Corporation - Industrial Welding Site
ICU PERMIT NUMBER	ICU - 23
SAMPLE LOCATION	MS#1
DATE SAMPLED	11/9/2023
ANALYSIS DATES	Nov 13-29,2023
ANALYTICAL LABORATORY	ALS Environmental

Parameter	Method	Results (mg/l)	Flag	Results (lb/day)	Daily Max Discharge Limits (lb/day)
Total Suspended Solids	SM 2540 D	1		0.004	15
Soluble Organic Carbon	SM 5310 B	2.8		0.011	10
Acetone	EPA 624.1	0.00500	U	0.000019	0.01
Dichloroethanes	EPA 624.1	0.001326	J	0.000005	0.01
Trichloroethylenes	EPA 624.1	0.00675		0.000026	0.01
BHCs total	EPA 608.3	0.000196	U	0.0000007	0.001
Mercury	EPA 245.1	0.00025	U	0.0000009	0.008

Parameter	Value
Avg. Daily Flow (gal/day) for 2023	453
Avg. Daily Flow (Mgal/day) for 2023	0.000453
Discharge Limitations (Annual Avg. MGD)	0.005
Discharge Limitations (Daily Max MGD)	0.008

Note:
U = Analyte was analyzed for but not detected
J = Estimated value
Results (lb/day) = Results (mg/l) X Flow (Gal/Day) X .00000834
Flows calculated based on avg daily flow for year rather than for sampling month, due to flow variability and sampling month dry weather conditions.

PART II
COMPLIANCE MONITORING

INDUSTRY NAME Olin Corporation - Industrial Welding Site

PERMIT NO. ICU - 23

			SAMPLE			TYPE **
VIOLATION		FLOW	POINT	ACTUAL *	PERMIT	LIMIT
PARAMETER	DATE	(MGD)	LOCATION	DISCHARGE	LIMIT	VIOLATED
through	**Dec. 1999**	**NO VIOLATIONS**				
through	**Dec. 2000**	**NO VIOLATIONS**				
through	**Dec. 2001**	**NO VIOLATIONS**				
through	**Dec. 2002**	**NO VIOLATIONS**				
through	**Dec. 2003**	**NO VIOLATIONS**				
through	**Dec. 2004**	**NO VIOLATIONS**				
through	**Dec. 2005**	**NO VIOLATIONS**				
through	**Dec. 2006**	**NO VIOLATIONS**				
through	**Dec. 2007**	**NO VIOLATIONS**				
through	**Dec. 2008**	**NO VIOLATIONS**				
through	**Dec. 2009**	**NO VIOLATIONS**				
through	**Dec. 2010**	**NO VIOLATIONS**				
through	**Dec. 2011**	**NO VIOLATIONS**				
through	**Dec. 2012**	**NO VIOLATIONS**				
through	**Dec. 2013**	**NO VIOLATIONS**				
through	**Dec. 2014**	**NO VIOLATIONS**				
through	**Dec. 2015**	**NO VIOLATIONS**				
through	**Dec. 2016**	**NO VIOLATIONS**				
through	**Dec. 2017**	**NO VIOLATIONS**				
through	**Dec. 2018**	**NO VIOLATIONS**				
through	**Dec. 2019**	**NO VIOLATIONS**				
through	**Dec. 2020**	**NO VIOLATIONS**				
through	**Dec. 2021**	**NO VIOLATIONS**				
through	**Dec. 2022**	**NO VIOLATIONS**				
through	**Dec. 2023**	**NO VIOLATIONS**				

NOTE: * - Actual Discharge - List actual analytical results and appropriate units
** - Type Limit violated
A.A. = Annual Average
D.M = Daily Maximum
L.L. Local Limits (Ordinance 250.5.1)

ATTACHMENT 1

Industrial Welding Site - Discharge Flows: 2023

Month	Monthly Flow (gal)	gal/day
Jan	42,563	1,373
Feb	16,518	590
Mar	56,659	1,828
Apr	39,064	1,302
May	6,725	217
Jun	0	0
Jul	0	0
Aug	568	18
Sep	0	0
Oct	0	0
Nov	238	8
Dec	2,898	93
Total	**165,233**	
MONTHLY AVERAGE	13,769	
daily average	453	
daily avg Mgal	0.000453	

Daily Avg. Limit = 0.005 Mgal

Industrial Welding Site Flows
Jan-23

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **42,563**

Date	Time	Hours	Gallons
1/1/2023	3:58:13	8	2762
1/2/2023	3:58:13	5.5	1930
1/3/2023	3:58:13	5.2	1832
1/4/2023	3:58:13	6.1	2152
1/5/2023	3:58:13	10.6	3639
1/6/2023	3:58:13	8.3	2877
1/7/2023	3:58:12	5.2	1785
1/8/2023	3:58:18	4.8	1688
1/9/2023	3:58:13	3.1	1082
1/10/2023	3:58:11	3.9	1354
1/11/2023	3:58:12	2.2	781
1/12/2023	3:58:17	2.3	795
1/13/2023	3:58:13	2.4	789
1/14/2023	3:58:13	2.2	767
1/15/2023	3:58:13	2.2	759
1/16/2023	3:58:12	2.3	767
1/17/2023	3:58:15	2.9	980
1/18/2023	3:58:12	2.4	810
1/19/2023	3:58:13	4.7	1628
1/20/2023	3:58:11	2.5	850
1/21/2023	3:58:12	4.7	1643
1/22/2023	3:58:13	2.4	810
1/23/2023	3:58:12	4.7	1649
1/24/2023	3:58:13	2.4	807
1/25/2023	3:58:12	2.2	785
1/26/2023	3:58:13	2.8	963
1/27/2023	3:58:13	1.7	591
1/28/2023	3:58:13	3.6	1245
1/29/2023	3:58:12	4.7	1574
1/30/2023	3:58:13	4.9	1685
1/31/2023	3:58:12	2.3	784
January Total Discharge		**123.2**	**42,563**

Daily Discharge Limits: **Max = 8,000 gal**

Industrial Welding Site Flows
Feb-23

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **16,518**

Date	Time	Hours	Gallons
2/1/2023	3:58:11	2.2	765
2/2/2023	3:58:11	2.2	767
2/3/2023	3:58:11	0	0
2/4/2023	3:58:11	2.2	756
2/5/2023	3:58:11	2.2	754
2/6/2023	3:58:11	0	0
2/7/2023	3:58:11	2.1	747
2/8/2023	3:58:11	0	0
2/9/2023	3:58:11	3.7	1273
2/10/2023	3:58:11	3.5	1237
2/11/2023	3:58:11	3.3	1125
2/12/2023	3:58:11	2.3	774
2/13/2023	3:58:11	2.3	779
2/14/2023	3:58:11	2.2	751
2/15/2023	3:58:11	2.2	751
2/16/2023	3:58:11	0	0
2/17/2023	3:58:11	4.7	1578
2/18/2023	3:58:11	0.2	72
2/19/2023	3:58:11	2	691
2/20/2023	3:58:11	2.2	751
2/21/2023	3:58:11	1.9	642
2/22/2023	3:58:11	0.2	82
2/23/2023	3:58:11	2.2	744
2/24/2023	3:58:11	0	0
2/25/2023	3:58:11	0	0
2/26/2023	3:58:11	2	730
2/27/2023	3:58:11	0.1	54
2/28/2023	3:58:11	2	695

February Total Discharge **47.9** **16,518**

Daily Discharge Limits: **Max = 8,000 gal**

Industrial Welding Site Flows
Mar-23

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **56,659**

Date	Time	Hours	Gallons
3/1/2023	3:58:11	6.5	2211
3/2/2023	3:58:13	5.4	1862
3/3/2023	3:58:13	5	1696
3/4/2023	3:58:12	13.9	4747
3/5/2023	3:58:13	11.1	3792
3/6/2023	3:58:13	10.2	3482
3/7/2023	3:58:12	5.7	2000
3/8/2023	3:58:11	5.7	1944
3/9/2023	3:58:14	4.9	1652
3/10/2023	3:58:12	5.5	1867
3/11/2023	3:58:14	8	2765
3/12/2023	5:00:01	6.3	2185
3/13/2023	0:30:17	2.8	956
3/14/2023	3:58:13	5.1	1718
3/15/2023	3:58:13	4.7	1627
3/16/2023	3:58:13	2.3	794
3/17/2023	3:58:12	5.4	1843
3/18/2023	3:58:14	5.2	1768
3/19/2023	3:58:12	5.1	1731
3/20/2023	3:58:13	5.1	1726
3/21/2023	3:58:11	4.9	1660
3/22/2023	3:58:13	2.3	820
3/23/2023	3:58:13	4.7	1619
3/24/2023	3:58:13	2.3	794
3/25/2023	3:58:12	4.8	1673
3/26/2023	3:58:13	3.4	1176
3/27/2023	3:58:12	4	1377
3/28/2023	3:58:15	4.9	1681
3/29/2023	3:57:55	2.4	816
3/30/2023	3:58:11	4.7	1612
3/31/2023	3:58:12	3.1	1065
March Total Discharge		**165**	**56,659**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows
Apr-23

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **39,064**

Date	Time	Hours	Gallons
4/1/2023	3:58:12	7.5	2591
4/2/2023	3:58:11	9.5	3250
4/3/2023	3:58:18	5.7	1953
4/4/2023	3:58:14	8.4	2869
4/5/2023	3:58:13	6	2027
4/6/2023	3:58:13	11.2	3784
4/7/2023	3:58:12	9.2	3145
4/8/2023	3:58:13	5.3	1846
4/9/2023	3:58:13	5.1	1764
4/10/2023	3:58:13	5	1712
4/11/2023	3:58:13	2.4	824
4/12/2023	3:58:14	4.7	1644
4/13/2023	3:58:13	2.2	787
4/14/2023	3:58:11	2.4	804
4/15/2023	3:58:12	2.2	783
4/16/2023	3:58:12	2.3	789
4/17/2023	3:58:14	4	1355
4/18/2023	3:58:13	1.5	521
4/19/2023	3:58:11	1.7	574
4/20/2023	3:58:12	2.3	779
4/21/2023	3:58:15	2.2	774
4/22/2023	3:58:15	2.2	748
4/23/2023	3:58:11	0	0
4/24/2023	3:58:12	2.3	766
4/25/2023	3:58:13	2.2	741
4/26/2023	3:58:13	0	0
4/27/2023	3:58:12	2.2	739
4/28/2023	3:58:13	0	0
4/29/2023	3:58:14	2.2	738
4/30/2023	3:58:14	2.2	757

April Total Discharge **114** **39,064**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows
May-23

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **6,725**

Date	Time	Hours	Gallons
5/1/2023	3:58:12	0	0
5/2/2023	3:58:12	2.2	761
5/3/2023	4:00:16	2.2	763
5/4/2023	3:58:12	0	0
5/5/2023	3:58:12	2.2	755
5/6/2023	3:58:14	0	0
5/7/2023	3:58:23	2.2	748
5/8/2023	3:58:14	0	0
5/9/2023	3:58:12	2.1	737
5/10/2023	3:58:16	0	0
5/11/2023	3:58:13	2.1	751
5/12/2023	3:58:13	0	0
5/13/2023	3:58:13	0	0
5/14/2023	3:58:34	0.8	297
5/15/2023	3:58:13	1.3	444
5/16/2023	3:58:16	0	0
5/17/2023	3:58:14	0	0
5/18/2023	3:58:12	0	0
5/19/2023	3:58:12	2.2	735
5/20/2023	3:58:14	0	0
5/21/2023	3:58:14	0	0
5/22/2023	3:58:13	0	0
5/23/2023	3:58:13	0	0
5/24/2023	3:58:12	0	0
5/25/2023	3:58:14	0	0
5/26/2023	3:58:12	0	0
5/27/2023	3:58:34	0	0
5/28/2023	3:58:14	2.1	734
5/29/2023	3:58:12	0	0
5/30/2023	3:58:13	0	0
5/31/2023	3:58:13	0	0

May Total Discharge **19.4** **6,725**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows
Jun-23

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **0**

Date	Time	Hours	Gallons
6/1/2023	3:58:13	0	0
6/2/2023	3:58:12	0	0
6/3/2023	3:58:13	0	0
6/4/2023	3:58:13	0	0
6/5/2023	3:58:12	0	0
6/6/2023	3:58:12	0	0
6/7/2023	3:58:12	0	0
6/8/2023	3:58:13	0	0
6/9/2023	3:58:13	0	0
6/10/2023	3:58:13	0	0
6/11/2023	3:58:12	0	0
6/12/2023	3:58:14	0	0
6/13/2023	3:58:13	0	0
6/14/2023	3:58:12	0	0
6/15/2023	3:58:14	0	0
6/16/2023	3:59:41	0	0
6/17/2023	3:58:35	0	0
6/18/2023	3:58:13	0	0
6/19/2023	3:58:14	0	0
6/20/2023	3:58:14	0	0
6/21/2023	3:58:12	0	0
6/22/2023	3:58:12	0	0
6/23/2023	3:58:13	0	0
6/24/2023	3:58:19	0	0
6/25/2023	3:58:13	0	0
6/26/2023	3:58:13	0	0
6/27/2023	3:58:12	0	0
6/28/2023	3:58:12	0	0
6/29/2023	3:58:12	0	0
6/30/2023	4:04:18	0	0

June Total Discharge **0** **0**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows
Jul-23

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **0**

Date	Time	Hours	Gallons
7/1/2023	3:58:13	0	0
7/2/2023	3:58:13	0	0
7/3/2023	3:58:13	0	0
7/4/2023	3:58:13	0	0
7/5/2023	3:57:46	0	0
7/6/2023	3:58:13	0	0
7/7/2023	3:58:11	0	0
7/8/2023	3:58:13	0	0
7/9/2023	3:58:13	0	0
7/10/2023	3:58:12	0	0
7/11/2023	3:58:12	0	0
7/12/2023	3:58:13	0	0
7/13/2023	3:58:12	0	0
7/14/2023	3:58:13	0	0
7/15/2023	3:58:14	0	0
7/16/2023	3:58:14	0	0
7/17/2023	3:58:13	0	0
7/18/2023	3:58:12	0	0
7/19/2023	3:58:14	0	0
7/20/2023	3:58:13	0	0
7/21/2023	3:58:11	0	0
7/22/2023	3:58:12	0	0
7/23/2023	3:58:13	0	0
7/24/2023	3:58:12	0	0
7/25/2023	3:58:13	0	0
7/26/2023	3:58:12	0	0
7/27/2023	3:58:14	0	0
7/28/2023	3:58:13	0	0
7/29/2023	3:58:13	0	0
7/30/2023	3:58:12	0	0
7/31/2023	3:58:20	0	0

July Total Discharge **0** **0**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows
Aug-23

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **568**

Date	Time	Hours	Gallons
8/1/2023	3:58:15	0	0
8/2/2023	3:58:12	0	0
8/3/2023	3:58:13	0	0
8/4/2023	3:58:13	0	0
8/5/2023	3:58:13	0	0
8/6/2023	3:58:13	0	0
8/7/2023	3:58:14	0	0
8/8/2023	3:58:13	0	0
8/9/2023	3:58:13	0	0
8/10/2023	3:58:13	0	0
8/11/2023	3:58:13	0	0
8/12/2023	3:58:15	0	0
8/13/2023	3:58:13	0	0
8/14/2023	3:58:12	0	0
8/15/2023	3:58:12	0	0
8/16/2023	3:58:22	0	0
8/17/2023	3:58:12	0	0
8/18/2023	3:58:12	0	0
8/19/2023	3:58:13	0	0
8/20/2023	3:58:14	0	0
8/21/2023	3:58:19	0	0
8/22/2023	3:58:14	0	0
8/23/2023	3:58:12	0	0
8/24/2023	3:58:11	0	0
8/25/2023	3:58:18	0	0
8/26/2023	3:58:14	0	0
8/27/2023	3:58:11	0	0
8/28/2023	3:58:12	1.7	568
8/29/2023	3:58:12	0	0
8/30/2023	3:58:13	0	0
8/31/2023	3:58:12	0	0

August Total Discharge **1.7** **568**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows
Sep-23

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **0**

Date	Time	Hours	Gallons
9/1/2023	3:58:13	0	0
9/2/2023	3:58:15	0	0
9/3/2023	3:58:13	0	0
9/4/2023	3:58:14	0	0
9/5/2023	3:58:12	0	0
9/6/2023	3:58:14	0	0
9/7/2023	3:58:14	0	0
9/8/2023	3:58:14	0	0
9/9/2023	3:58:13	0	0
9/10/2023	3:58:14	0	0
9/11/2023	3:58:13	0	0
9/12/2023	3:58:17	0	0
9/13/2023	3:58:13	0	0
9/14/2023	3:58:12	0	0
9/15/2023	3:58:13	0	0
9/16/2023	3:58:12	0	0
9/17/2023	3:58:13	0	0
9/18/2023	3:58:13	0	0
9/19/2023	3:58:33	0	0
9/20/2023	3:58:13	0	0
9/21/2023	3:58:12	0	0
9/22/2023	3:58:12	0	0
9/23/2023	3:58:12	0	0
9/24/2023	3:58:14	0	0
9/25/2023	3:58:11	0	0
9/26/2023	9:58:13	0	0
9/27/2023	5:58:12	0	0
9/28/2023	1:58:13	0	0
9/29/2023	3:58:16	0	0

September Total Discharge **0** **0**

Daily Discharge Limits: **Max = 8,000 gal**

Industrial Welding Site Flows
Oct-23

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **0**

Date	Time	Hours	Gallons
10/2/2023	15:58:13	0	0
10/3/2023	3:59:24	0	0
10/4/2023	3:58:12	0	0
10/5/2023	3:58:13	0	0
10/6/2023	3:58:12	0	0
10/7/2023	3:58:16	0	0
10/8/2023	3:58:12	0	0
10/9/2023	3:58:23	0	0
10/10/2023	3:58:14	0	0
10/11/2023	3:58:12	0	0
10/12/2023	3:58:12	0	0
10/13/2023	3:58:13	0	0
10/14/2023	3:58:12	0	0
10/15/2023	3:58:12	0	0
10/16/2023	3:58:16	0	0
10/17/2023	3:58:11	0	0
10/18/2023	3:58:12	0	0
10/19/2023	3:58:12	0	0
10/20/2023	3:58:12	0	0
10/21/2023	3:58:13	0	0
10/22/2023	3:58:13	0	0
10/23/2023	3:58:13	0	0
10/24/2023	3:58:14	0	0
10/25/2023	3:58:13	0	0
10/26/2023	3:58:13	0	0
10/27/2023	3:58:12	0	0
10/28/2023	3:58:13	0	0
10/29/2023	3:58:12	0	0
10/30/2023	3:58:16	0	0
10/31/2023	3:58:17	0	0

October Total Discharge 0 0

Daily Discharge Limits: **Max = 8,000 gal**

Industrial Welding Site Flows
Nov-23

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **238**

Date	Time	Hours	Gallons
11/1/2023	3:58:12	0	0
11/2/2023	3:58:13	0	0
11/3/2023	3:58:33	0	0
11/4/2023	3:59:36	0	0
11/5/2023	2:57:46	0	0
11/6/2023	3:58:14	0	0
11/7/2023	3:58:12	0	0
11/8/2023	3:58:12	0.7	238
11/9/2023	3:58:11	0	0
11/10/2023	3:58:12	0	0
11/11/2023	3:58:12	0	0
11/12/2023	3:58:14	0	0
11/13/2023	3:58:12	0	0
11/14/2023	3:58:13	0	0
11/15/2023	3:58:12	0	0
11/16/2023	3:58:12	0	0
11/17/2023	3:58:12	0	0
11/18/2023	3:58:13	0	0
11/19/2023	3:58:11	0	0
11/20/2023	3:58:13	0	0
11/21/2023	3:58:12	0	0
11/22/2023	3:58:14	0	0
11/23/2023	3:58:11	0	0
11/24/2023	3:58:11	0	0
11/25/2023	3:58:11	0	0
11/26/2023	3:58:12	0	0
11/27/2023	3:58:12	0	0
11/28/2023	3:58:11	0	0
11/29/2023	3:58:12	0	0
11/30/2023	3:59:36	0	0

November Total Discharge 0.7 238

Daily Discharge Limits: **Max = 8,000 gal**

Industrial Welding Site Flows
Dec-23

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **2,898**

Date	Time	Hours	Gallons
12/1/2023	3:58:12	0	0
12/2/2023	3:58:13	0	0
12/3/2023	3:58:12	0	0
12/4/2023	3:58:12	0	0
12/5/2023	3:58:12	0	0
12/6/2023	3:59:46	0	0
12/7/2023	3:58:14	0	0
12/8/2023	3:58:11	0	0
12/9/2023	3:58:12	0	0
12/10/2023	3:58:12	0	0
12/11/2023	3:58:14	0	0
12/12/2023	3:58:12	0	0
12/13/2023	3:58:20	0	0
12/14/2023	3:58:12	0	0
12/15/2023	3:58:14	0	0
12/16/2023	3:58:12	0	0
12/17/2023	3:58:12	0	0
12/18/2023	3:58:11	0	0
12/19/2023	3:58:12	2.2	777
12/20/2023	3:59:38	0	0
12/21/2023	3:58:13	0	0
12/22/2023	3:58:12	0	0
12/23/2023	3:58:11	0	0
12/24/2023	3:58:13	0	0
12/25/2023	3:58:12	2	697
12/26/2023	3:58:11	0	0
12/27/2023	3:58:18	0	0
12/28/2023	3:58:12	2	708
12/29/2023	3:58:13	0	0
12/30/2023	3:58:12	2.1	716
12/31/2023	3:58:14	0	0

November Total Discharge **8.3** **2,898**

Daily Discharge Limits: **Max = 8,000 gal**

ATTACHMENT 2

Olin Corporation Industrial Welding Site

November-23

SDG-R2310409

Sample	Date Collected	Date Received	Date Analyzed	Component	MRL	Result	Flag	Units
IWS-MS-110823	11/8/2023	11/9/2023	11/18/2023	Carbon, Dissolved Organic (DOC)	1.0	**2.8**		mg/L
IWS-MS-110823	11/8/2023	11/9/2023	11/13/2023	Solids, Total Suspended (TSS)	1.0	1	U	mg/L
IWS-MS-110823	11/8/2023	11/9/2023	11/15/2023	Mercury, Total	0.20	0.20	U	ug/L
IWS-MS-110823	11/8/2023	11/9/2023	11/14/2023	Acetone	5.00	5.00	U	ug/L
IWS-MS-110823	11/8/2022	11/9/2023	11/14/2023	1,1-Dichloroethane (1,1-DCA)	1.00	1.00	U	ug/L
IWS-MS-110823	11/8/2023	11/9/2023	11/14/2023	1,2-Dichloroethane	1.00	0.326	J	ug/L
IWS-MS-110823	11/8/2023	11/9/2023	11/14/2023	Trichloroethene (TCE)	1.00	**6.75**		ug/L
IWS-MS-110823	11/8/2023	11/9/2023	11/29/2023	alpha-BHC	0.0481	0.0481	U	ug/L
IWS-MS-110823	11/8/2023	11/9/2023	11/29/2023	beta-BHC	0.0481	**0.0518**		ug/L
IWS-MS-110823	11/8/2023	11/9/2023	11/29/2023	delta-BHC	0.0481	0.0481	U	ug/L
IWS-MS-110823	11/8/2023	11/9/2023	11/29/2023	gamma-BHC (Lindane)	0.0481	0.0481	U	ug/L

Notes:

U = Analyte was analyzed for but not detected
J = Estimated value
MRL = Method Reporting Limit
Values in the "Results" column that are in bold font represent values above the the MRL

E Lab Reports

September 13, 2023 Service Request No:R2307813

Ms. Libby Bowen
Olin Corporation
1090 Elm Street
Suite 201
Rocky Hill, CT 06067

Laboratory Results for: Industrial Welding

Dear Ms.Bowen,

Enclosed are the results of the sample(s) submitted to our laboratory August 28, 2023
For your reference, these analyses have been assigned our service request number **R2307813.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7475. You may also contact me via email at Meghan.Pedro@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro
Project Manager

CC: Adam Carringer

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Olin Corporation
Project: Industrial Welding
Sample Matrix: Water

Service Request: R2307813
Date Received: 08/28/2023

CASE NARRATIVE

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

Sample Receipt:

Three water samples were received for analysis at ALS Environmental on 08/28/2023. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

No significant anomalies were noted with this analysis.

Semivoa GC:

Method 8081B, 09/08/2023: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Metals:

No significant anomalies were noted with this analysis.

Approved by _____ Date 09/13/2023

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Olin Corporation **Service Request:**R2307813
Project: Industrial Welding/1305

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2307813-001	IWS-SD1-082823	8/28/2023	0850
R2307813-002	IWS-MW-1-082823	8/28/2023	1026
R2307813-003	IWS-MW-2-082823	8/28/2023	0948

Chain of Custody / Analytical Request Form

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380 • alsglobal.com

SR#:
Page 1 of 1

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER

Report To:

Company: Olin Corp	Project Name: Industrial Welding
Contact: Adam Carringer	Project Number: 1305
Email: ABCarringer@Olin.com	ALS Quote #:
Phone: 423 508 2768	Sampler's Signature: Max [signature]
Address: 490 Stuart Rd	Email CC: ABCarringer@olin.com
Cleveland, TN 37312	Email CC:
	State Samples Collected (Circle or Write): NY, MA, PA, CT, Other:

Matrix: GW WW SW DW S L NA

Preservative: 0. None 1. HCl 2. HNO3 3. H2SO4 4. NAOH 5. Zn Acet. 6. MeOH 7. NaHSO4 8. Other

Lab ID (ALS)	Sample ID	Date	Time	Matrix	Number of Containers	MS/MSD?	GC/MS VOA - 8260•624•524•TCLP	GC/MS SVOA (8270) • 625 • TCLP	Pesticides (8081) • 608 • TCLP	PCBs - 8082 • 608	Herbicides - 8151 • TCLP	Metals, Total - Select Below	Metals, Dissolved - Field / In-Lab Filter						Notes
	Preservative							0	0			2							
	IWS-SD1-082823	082823	0850	GW	15	Y		6	6			3							MS/MSD Volume
	IWS-MW-1-082823	082823	1026	GW	5	N		2	2			1							
	IWS-MW-2-082823	082823	0948	GW	5	N		2	2			1							
	Temp Blank	—	—	—	1	—													Provided by Lab

Special Instructions / Comments:
Total Mercury

Turnaround Requirements
____ Rush (Surcharges Apply)
Subject to Availability
Please Check with your PM
X Standard (10 Business Days)
Date Required: Standard

Report Requirements
____ Tier II/Cat A -Results/QC
____ Tier IV/Cat B - Data Validation Report w/. Data
EDD: ____ Yes ____ No
EDD Type:

Metals: RCRA 8•PP 13•TAL 23•TCLP•Other (List)

VOA/SVOA Report List: TCL • BTEX • TCLP • CP-51/Stars •THM • Other:

Invoice To: (X Same as Report To)
PO #:
Company:
Contact:
Email:

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	[signature]	[signature]				
Printed Name	Micaela Edwards	Randy Dix				
Company	Stantec	ALS				
Date/Time	8/25/23 1415	8/25/23 1415				

R2307813 5
Olin Corporation
Industrial Welding

R2307813 5
Olin Corporation
Industrial Welding

Cooler Receipt and Preservation Check Form

Project/Client Olin Corp Folder Number

Cooler received on 8/28/23 by: NE

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y	N
2	**Custody papers** properly completed (ink, signed)?	Y	N
3	Did all bottles arrive in good **condition** (unbroken)?	Y	N
4	Circle: **Wet Ice** **Dry Ice** **Gel packs** present?	Y	N

5a	**Perchlorate** samples have required headspace?	Y	N	NA
5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y	N	NA
6	Where did the bottles originate?	ALS/ROC	CLIENT	
7	Soil VOA received as: Bulk Encore 5035set			NA

8. Temperature Readings Date: 8/28/23 Time: 14:45 ID: IR#12 IR#11 From: Temp Blank Sample Bottle

Observed Temp (°C)	10.9						
Within 0-6°C?	Y (N)	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R002 by NE on 8/28/23 at 14:52

5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 8/29/23 Time: 915 by: SES

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? YES NO
10. Did all bottle labels and tags agree with custody papers? YES NO
11. Were correct containers used for the tests indicated? YES NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO N/A
13. Were dissolved metals filtered in the field? YES NO N/A
14. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2	225320	HNO_3	✓		21390141	1/25				
≤2		H_2SO_4								
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 060523-2AES, 062623-1GJ

Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: SES

PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Internal Chain of Custody Report

Client: Olin Corporation **Service Request:** R2307813
Project: Industrial Welding/1305

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2307813-001.01					
	7470A				
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
R2307813-001.02					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
R2307813-001.03					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
R2307813-001.04					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
R2307813-001.05					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
R2307813-001.06					
	8270D				
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
		8/30/2023	0950	In Lab / EDEGRAY	
R2307813-001.07					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
		8/30/2023	0950	In Lab / EDEGRAY	
R2307813-001.08					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
R2307813-001.09					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
		8/30/2023	0950	In Lab / EDEGRAY	
R2307813-001.10					

Client: Olin Corporation **Service Request:** R2307813
Project: Industrial Welding/1305

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
R2307813-001.11					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
		8/30/2023	0949	In Lab / EDEGRAY	
R2307813-001.12					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
		8/30/2023	0949	In Lab / EDEGRAY	
R2307813-001.13					
	8081B				
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
		8/30/2023	0949	In Lab / EDEGRAY	
R2307813-002.01					
	7470A				
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
R2307813-002.02					
	8081B				
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
		8/30/2023	0950	In Lab / EDEGRAY	
R2307813-002.03					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
R2307813-002.04					
	8270D				
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
		8/30/2023	0950	In Lab / EDEGRAY	
R2307813-002.05					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	

ALS Group USA, Corp.
dba ALS Environmental

Internal Chain of Custody Report

Client: Olin Corporation **Service Request:** R2307813
Project: Industrial Welding/1305

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2307813-003.01					
	7470A				
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
R2307813-003.02					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
R2307813-003.03					
	8081B				
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
		8/30/2023	0950	In Lab / EDEGRAY	
R2307813-003.04					
	8270D				
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	
		8/30/2023	0950	In Lab / EDEGRAY	
R2307813-003.05					
		8/29/2023	0744	SMO / GESMERIAN	
		8/29/2023	0922	R-002 / GESMERIAN	

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Accreditations[1]

NELAP States
Florida ID # E87674
New Hampshire ID # 2941
New York ID # 10145
Pennsylvania ID# 68-786
Virginia #460167

Non-NELAP States
Connecticut ID #PH0556
Delaware Approved
Maine ID #NY01587
North Carolina #36701
North Carolina #676
Rhode Island LAO00333

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

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

Client: Olin Corporation
Project: Industrial Welding/1305

Service Request: R2307813

Sample Name: IWS-SD1-082823
Lab Code: R2307813-001
Sample Matrix: Water

Date Collected: 08/28/23
Date Received: 08/28/23

Analysis Method	Extracted/Digested By	Analyzed By
7470A	ECASTROVINCI	ECASTROVINCI
8081B	JVANHEYNINGEN	AFELSER
8270D	JVANHEYNINGEN	AMOSES

Sample Name: IWS-MW-1-082823
Lab Code: R2307813-002
Sample Matrix: Water

Date Collected: 08/28/23
Date Received: 08/28/23

Analysis Method	Extracted/Digested By	Analyzed By
7470A	ECASTROVINCI	ECASTROVINCI
8081B	JVANHEYNINGEN	AFELSER
8270D	JVANHEYNINGEN	AMOSES

Sample Name: IWS-MW-2-082823
Lab Code: R2307813-003
Sample Matrix: Water

Date Collected: 08/28/23
Date Received: 08/28/23

Analysis Method	Extracted/Digested By	Analyzed By
7470A	ECASTROVINCI	ECASTROVINCI
8081B	JVANHEYNINGEN	AFELSER
8270D	JVANHEYNINGEN	AMOSES

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Sample Results

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Semivolatile Organic Compounds by GC/MS

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Analytical Report

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	08/28/23 08:50
Sample Matrix:	Water	**Date Received:**	08/28/23 14:15
Sample Name:	IWS-SD1-082823	**Units:**	ug/L
Lab Code:	R2307813-001	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	9.3 U	9.3	1.3	1	08/31/23 22:30	8/30/23	
Acenaphthene	9.3 U	9.3	1.4	1	08/31/23 22:30	8/30/23	
Acenaphthylene	**1.4 J**	9.3	1.4	1	08/31/23 22:30	8/30/23	
Anthracene	9.3 U	9.3	1.3	1	08/31/23 22:30	8/30/23	
Benz(a)anthracene	9.3 U	9.3	1.6	1	08/31/23 22:30	8/30/23	
Benzo(a)pyrene	9.3 U	9.3	1.2	1	08/31/23 22:30	8/30/23	
Benzo(b)fluoranthene	9.3 U	9.3	1.2	1	08/31/23 22:30	8/30/23	
Benzo(g,h,i)perylene	9.3 U	9.3	1.0	1	08/31/23 22:30	8/30/23	
Benzo(k)fluoranthene	9.3 U	9.3	1.3	1	08/31/23 22:30	8/30/23	
Chrysene	9.3 U	9.3	1.2	1	08/31/23 22:30	8/30/23	
Dibenz(a,h)anthracene	9.3 U	9.3	1.1	1	08/31/23 22:30	8/30/23	
Fluoranthene	9.3 U	9.3	1.5	1	08/31/23 22:30	8/30/23	
Fluorene	9.3 U	9.3	1.3	1	08/31/23 22:30	8/30/23	
Indeno(1,2,3-cd)pyrene	9.3 U	9.3	1.8	1	08/31/23 22:30	8/30/23	
Naphthalene	9.3 U	9.3	1.2	1	08/31/23 22:30	8/30/23	
Phenanthrene	9.3 U	9.3	1.4	1	08/31/23 22:30	8/30/23	
Pyrene	9.3 U	9.3	1.5	1	08/31/23 22:30	8/30/23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	68	25 - 99	08/31/23 22:30	
Nitrobenzene-d5	70	22 - 104	08/31/23 22:30	
p-Terphenyl-d14	80	10 - 143	08/31/23 22:30	

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	08/28/23 10:26
Sample Matrix:	Water	**Date Received:**	08/28/23 14:15
Sample Name:	IWS-MW-1-082823	**Units:**	ug/L
Lab Code:	R2307813-002	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	9.3 U	9.3	1.3	1	08/31/23 23:41	8/30/23	
Acenaphthene	9.3 U	9.3	1.4	1	08/31/23 23:41	8/30/23	
Acenaphthylene	9.3 U	9.3	1.4	1	08/31/23 23:41	8/30/23	
Anthracene	9.3 U	9.3	1.3	1	08/31/23 23:41	8/30/23	
Benz(a)anthracene	9.3 U	9.3	1.6	1	08/31/23 23:41	8/30/23	
Benzo(a)pyrene	9.3 U	9.3	1.2	1	08/31/23 23:41	8/30/23	
Benzo(b)fluoranthene	9.3 U	9.3	1.2	1	08/31/23 23:41	8/30/23	
Benzo(g,h,i)perylene	9.3 U	9.3	1.0	1	08/31/23 23:41	8/30/23	
Benzo(k)fluoranthene	9.3 U	9.3	1.3	1	08/31/23 23:41	8/30/23	
Chrysene	9.3 U	9.3	1.2	1	08/31/23 23:41	8/30/23	
Dibenz(a,h)anthracene	9.3 U	9.3	1.1	1	08/31/23 23:41	8/30/23	
Fluoranthene	9.3 U	9.3	1.5	1	08/31/23 23:41	8/30/23	
Fluorene	9.3 U	9.3	1.3	1	08/31/23 23:41	8/30/23	
Indeno(1,2,3-cd)pyrene	9.3 U	9.3	1.8	1	08/31/23 23:41	8/30/23	
Naphthalene	9.3 U	9.3	1.2	1	08/31/23 23:41	8/30/23	
Phenanthrene	9.3 U	9.3	1.4	1	08/31/23 23:41	8/30/23	
Pyrene	9.3 U	9.3	1.5	1	08/31/23 23:41	8/30/23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	63	25 - 99	08/31/23 23:41	
Nitrobenzene-d5	66	22 - 104	08/31/23 23:41	
p-Terphenyl-d14	65	10 - 143	08/31/23 23:41	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	08/28/23 09:48
Sample Matrix:	Water	**Date Received:**	08/28/23 14:15
Sample Name:	IWS-MW-2-082823	**Units:**	ug/L
Lab Code:	R2307813-003	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	9.1 U	9.1	1.3	1	09/01/23 00:05	8/30/23	
Acenaphthene	9.1 U	9.1	1.4	1	09/01/23 00:05	8/30/23	
Acenaphthylene	9.1 U	9.1	1.4	1	09/01/23 00:05	8/30/23	
Anthracene	9.1 U	9.1	1.3	1	09/01/23 00:05	8/30/23	
Benz(a)anthracene	9.1 U	9.1	1.6	1	09/01/23 00:05	8/30/23	
Benzo(a)pyrene	9.1 U	9.1	1.2	1	09/01/23 00:05	8/30/23	
Benzo(b)fluoranthene	9.1 U	9.1	1.2	1	09/01/23 00:05	8/30/23	
Benzo(g,h,i)perylene	9.1 U	9.1	1.0	1	09/01/23 00:05	8/30/23	
Benzo(k)fluoranthene	9.1 U	9.1	1.3	1	09/01/23 00:05	8/30/23	
Chrysene	9.1 U	9.1	1.2	1	09/01/23 00:05	8/30/23	
Dibenz(a,h)anthracene	9.1 U	9.1	1.1	1	09/01/23 00:05	8/30/23	
Fluoranthene	9.1 U	9.1	1.5	1	09/01/23 00:05	8/30/23	
Fluorene	9.1 U	9.1	1.3	1	09/01/23 00:05	8/30/23	
Indeno(1,2,3-cd)pyrene	9.1 U	9.1	1.8	1	09/01/23 00:05	8/30/23	
Naphthalene	9.1 U	9.1	1.2	1	09/01/23 00:05	8/30/23	
Phenanthrene	9.1 U	9.1	1.4	1	09/01/23 00:05	8/30/23	
Pyrene	9.1 U	9.1	1.5	1	09/01/23 00:05	8/30/23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	53	25 - 99	09/01/23 00:05	
Nitrobenzene-d5	56	22 - 104	09/01/23 00:05	
p-Terphenyl-d14	50	10 - 143	09/01/23 00:05	

Semivolatile Organic Compounds by GC

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Analytical Report

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	08/28/23 08:50
Sample Matrix:	Water	**Date Received:**	08/28/23 14:15
Sample Name:	IWS-SD1-082823	**Units:**	ug/L
Lab Code:	R2307813-001	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.046 U	0.046	1	09/08/23 14:58	8/31/23	
beta-BHC	0.046 U	0.046	1	09/08/23 14:58	8/31/23	
delta-BHC	0.046 U	0.046	1	09/08/23 14:58	8/31/23	
gamma-BHC (Lindane)	0.046 U	0.046	1	09/08/23 14:58	8/31/23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	28	10 - 111	09/08/23 14:58	
Tetrachloro-m-xylene	69	10 - 101	09/08/23 14:58	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	08/28/23 10:26
Sample Matrix:	Water	**Date Received:**	08/28/23 14:15
Sample Name:	IWS-MW-1-082823	**Units:**	ug/L
Lab Code:	R2307813-002	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.046 U	0.046	1	09/08/23 15:52	8/31/23	
beta-BHC	0.046 U	0.046	1	09/08/23 15:52	8/31/23	
delta-BHC	0.046 U	0.046	1	09/08/23 15:52	8/31/23	
gamma-BHC (Lindane)	0.046 U	0.046	1	09/08/23 15:52	8/31/23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	42	10 - 111	09/08/23 15:52	
Tetrachloro-m-xylene	84	10 - 101	09/08/23 15:52	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	08/28/23 09:48
Sample Matrix:	Water	**Date Received:**	08/28/23 14:15
Sample Name:	IWS-MW-2-082823	**Units:**	ug/L
Lab Code:	R2307813-003	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.045 U	0.045	1	09/12/23 13:32	8/31/23	
beta-BHC	**0.068**	0.045	1	09/12/23 13:32	8/31/23	
delta-BHC	0.045 U	0.045	1	09/12/23 13:32	8/31/23	
gamma-BHC (Lindane)	0.045 U	0.045	1	09/12/23 13:32	8/31/23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	38	10 - 111	09/12/23 13:32	
Tetrachloro-m-xylene	64	10 - 101	09/12/23 13:32	

Metals

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Analytical Report

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	08/28/23 08:50
Sample Matrix:	Water	**Date Received:**	08/28/23 14:15
Sample Name:	IWS-SD1-082823	**Basis:**	NA
Lab Code:	R2307813-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Mercury, Total	7470A	0.20 U	ug/L	0.20	1	09/01/23 11:31	08/31/23	

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	08/28/23 10:26
Sample Matrix:	Water	**Date Received:**	08/28/23 14:15
Sample Name:	IWS-MW-1-082823	**Basis:**	NA
Lab Code:	R2307813-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Mercury, Total	7470A	0.20 U	ug/L	0.20	1	09/01/23 11:37	08/31/23	

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	08/28/23 09:48
Sample Matrix:	Water	**Date Received:**	08/28/23 14:15
Sample Name:	IWS-MW-2-082823	**Basis:**	NA
Lab Code:	R2307813-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Mercury, Total	7470A	**18.1**	ug/L	0.60	3	09/01/23 11:50	08/31/23	

QC Summary Forms

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Semivolatile Organic Compounds by GC/MS

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Client: Olin Corporation **Service Request:** R2307813
Project: Industrial Welding/1305
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	2-Fluorobiphenyl 25 - 99	Nitrobenzene-d5 22 - 104	p-Terphenyl-d14 10 - 143
IWS-SD1-082823	R2307813-001	68	70	80
IWS-MW-1-082823	R2307813-002	63	66	65
IWS-MW-2-082823	R2307813-003	53	56	50
IWS-SD1-082823 MS	RQ2311205-01	73	75	72
IWS-SD1-082823 DMS	RQ2311205-02	62	61	65
Method Blank	RQ2311205-03	59	66	93
Lab Control Sample	RQ2311205-04	61	62	75
Duplicate Lab Control Sample	RQ2311205-05	65	68	76

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	08/28/23
Sample Matrix:	Water	**Date Received:**	08/28/23
		Date Analyzed:	08/31/23
		Date Extracted:	08/30/23

Duplicate Matrix Spike Summary
Semivolatile Organic Compounds by GC/MS

Sample Name:	IWS-SD1-082823	**Units:**	ug/L
Lab Code:	R2307813-001	**Basis:**	NA
Analysis Method:	8270D		
Prep Method:	EPA 3510C		

		Matrix Spike RQ2311205-01			Duplicate Matrix Spike RQ2311205-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	9.3 U	41.4	74.1	56	34.0	74.1	46	34-102	20	30
Acenaphthene	9.3 U	49.0	74.1	66	40.7	74.1	55	43-117	18	30
Acenaphthylene	1.4 J	52.4	74.1	69	43.2	74.1	56	45-119	21	30
Anthracene	9.3 U	60.2	74.1	81	51.5	74.1	70	45-127	15	30
Benz(a)anthracene	9.3 U	61.2	74.1	83	52.4	74.1	71	46-126	16	30
Benzo(a)pyrene	9.3 U	69.1	74.1	93	58.8	74.1	79	44-114	16	30
Benzo(b)fluoranthene	9.3 U	65.0	74.1	88	55.8	74.1	75	41-127	16	30
Benzo(g,h,i)perylene	9.3 U	72.4	74.1	98	64.3	74.1	87	50-143	12	30
Benzo(k)fluoranthene	9.3 U	64.2	74.1	87	55.4	74.1	75	46-139	15	30
Chrysene	9.3 U	62.8	74.1	85	54.5	74.1	74	47-126	14	30
Dibenz(a,h)anthracene	9.3 U	77.2	74.1	104	67.5	74.1	91	43-136	13	30
Fluoranthene	9.3 U	61.1	74.1	82	52.4	74.1	71	43-135	14	30
Fluorene	9.3 U	55.7	74.1	75	46.8	74.1	63	43-113	17	30
Indeno(1,2,3-cd)pyrene	9.3 U	75.0	74.1	101	67.5	74.1	91	49-140	10	30
Naphthalene	9.3 U	40.2	74.1	54	33.9	74.1	46	37-108	16	30
Phenanthrene	9.3 U	60.1	74.1	81	51.9	74.1	70	46-123	15	30
Pyrene	9.3 U	61.6	74.1	83	52.8	74.1	71	44-129	16	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2311205-03	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	10 U	10	1.3	1	08/31/23 16:35	8/30/23	
Acenaphthene	10 U	10	1.4	1	08/31/23 16:35	8/30/23	
Acenaphthylene	10 U	10	1.4	1	08/31/23 16:35	8/30/23	
Anthracene	10 U	10	1.3	1	08/31/23 16:35	8/30/23	
Benz(a)anthracene	10 U	10	1.6	1	08/31/23 16:35	8/30/23	
Benzo(a)pyrene	10 U	10	1.2	1	08/31/23 16:35	8/30/23	
Benzo(b)fluoranthene	10 U	10	1.2	1	08/31/23 16:35	8/30/23	
Benzo(g,h,i)perylene	10 U	10	1.0	1	08/31/23 16:35	8/30/23	
Benzo(k)fluoranthene	10 U	10	1.3	1	08/31/23 16:35	8/30/23	
Chrysene	10 U	10	1.2	1	08/31/23 16:35	8/30/23	
Dibenz(a,h)anthracene	10 U	10	1.1	1	08/31/23 16:35	8/30/23	
Fluoranthene	10 U	10	1.5	1	08/31/23 16:35	8/30/23	
Fluorene	10 U	10	1.3	1	08/31/23 16:35	8/30/23	
Indeno(1,2,3-cd)pyrene	10 U	10	1.8	1	08/31/23 16:35	8/30/23	
Naphthalene	10 U	10	1.2	1	08/31/23 16:35	8/30/23	
Phenanthrene	10 U	10	1.4	1	08/31/23 16:35	8/30/23	
Pyrene	10 U	10	1.5	1	08/31/23 16:35	8/30/23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	59	25 - 99	08/31/23 16:35	
Nitrobenzene-d5	66	22 - 104	08/31/23 16:35	
p-Terphenyl-d14	93	10 - 143	08/31/23 16:35	

Client: Olin Corporation
Project: Industrial Welding/1305
Sample Matrix: Water

Service Request: R2307813
Date Analyzed: 08/31/23

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

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2311205-04			RQ2311205-05					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	8270D	46.9	80.0	59	45.8	80.0	57	35-94	3	30
Acenaphthene	8270D	52.7	80.0	66	50.4	80.0	63	46-103	5	30
Acenaphthylene	8270D	54.4	80.0	68	52.1	80.0	65	51-114	5	30
Anthracene	8270D	58.8	80.0	74	58.9	80.0	74	61-115	<1	30
Benz(a)anthracene	8270D	60.7	80.0	76	60.6	80.0	76	60-110	<1	30
Benzo(a)pyrene	8270D	67.0	80.0	84	67.7	80.0	85	68-137	1	30
Benzo(b)fluoranthene	8270D	64.4	80.0	80	65.4	80.0	82	59-114	2	30
Benzo(g,h,i)perylene	8270D	73.4	80.0	92	74.1	80.0	93	60-123	1	30
Benzo(k)fluoranthene	8270D	62.5	80.0	78	63.0	80.0	79	62-122	1	30
Chrysene	8270D	62.9	80.0	79	61.8	80.0	77	64-116	3	30
Dibenz(a,h)anthracene	8270D	76.5	80.0	96	76.1	80.0	95	34-140	1	30
Fluoranthene	8270D	58.1	80.0	73	58.4	80.0	73	58-129	<1	30
Fluorene	8270D	57.2	80.0	71	55.7	80.0	70	54-111	1	30
Indeno(1,2,3-cd)pyrene	8270D	75.6	80.0	95	74.5	80.0	93	54-119	2	30
Naphthalene	8270D	48.1	80.0	60	47.3	80.0	59	32-91	2	30
Phenanthrene	8270D	60.0	80.0	75	59.5	80.0	74	60-111	1	30
Pyrene	8270D	64.4	80.0	81	63.0	80.0	79	62-111	3	30

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Olin Corporation **Service Request:** R2307813
Project: Industrial Welding/1305
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3510C

Sample Name	Lab Code	Decachlorobiphenyl 10 - 111	Tetrachloro-m-xylene 10 - 101
IWS-SD1-082823	R2307813-001	28	69
IWS-MW-1-082823	R2307813-002	42	84
IWS-MW-2-082823	R2307813-003	38	64
Method Blank	RQ2311284-01	38	54
Method Blank	RQ2311284-01	31	47
Lab Control Sample	RQ2311284-02	29	54
Duplicate Lab Control Sample	RQ2311284-03	33	52
IWS-SD1-082823 MS	RQ2311284-04	34	97
IWS-SD1-082823 DMS	RQ2311284-05	28	91

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	08/28/23
Sample Matrix:	Water	**Date Received:**	08/28/23
		Date Analyzed:	09/8/23
		Date Extracted:	08/31/23

Duplicate Matrix Spike Summary
Organochlorine Pesticides by Gas Chromatography

Sample Name:	IWS-SD1-082823	**Units:**	ug/L
Lab Code:	R2307813-001	**Basis:**	NA
Analysis Method:	8081B		
Prep Method:	EPA 3510C		

		Matrix Spike			Duplicate Matrix Spike					
		RQ2311284-04			RQ2311284-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	0.046 U	0.347	0.370	94	0.329	0.370	89	27-154	6	30
beta-BHC	0.046 U	0.362	0.370	98	0.339	0.370	92	32-184	7	30
delta-BHC	0.046 U	0.357	0.370	97	0.337	0.370	91	10-182	6	30
gamma-BHC (Lindane)	0.046 U	0.364	0.370	98	0.345	0.370	93	43-164	5	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2311284-01	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.050 U	0.050	1	09/08/23 13:47	8/31/23	
beta-BHC	0.050 U	0.050	1	09/08/23 13:47	8/31/23	
delta-BHC	0.050 U	0.050	1	09/08/23 13:47	8/31/23	
gamma-BHC (Lindane)	0.050 U	0.050	1	09/08/23 13:47	8/31/23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	38	10 - 111	09/08/23 13:47	
Tetrachloro-m-xylene	54	10 - 101	09/08/23 13:47	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2311284-01	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.050 U	0.050	1	09/12/23 12:10	8/31/23	
beta-BHC	0.050 U	0.050	1	09/12/23 12:10	8/31/23	
delta-BHC	0.050 U	0.050	1	09/12/23 12:10	8/31/23	
gamma-BHC (Lindane)	0.050 U	0.050	1	09/12/23 12:10	8/31/23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	31	10 - 111	09/12/23 12:10	
Tetrachloro-m-xylene	47	10 - 101	09/12/23 12:10	

Client: Olin Corporation
Project: Industrial Welding/1305
Sample Matrix: Water

Service Request: R2307813
Date Analyzed: 09/12/23

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2311284-02			RQ2311284-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	8081B	0.272	0.400	68	0.282	0.400	70	39-107	4	30
beta-BHC	8081B	0.288	0.400	72	0.299	0.400	75	47-110	4	30
delta-BHC	8081B	0.289	0.400	72	0.302	0.400	75	43-109	4	30
gamma-BHC (Lindane)	8081B	0.273	0.400	68	0.284	0.400	71	41-105	4	30

Metals

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www.alsglobal.com

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2307813-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Mercury, Total	7470A	0.20 U	ug/L	0.20	1	09/01/23 11:00	08/31/23	

Client:	Olin Corporation	**Service Request:**	R2307813
Project:	Industrial Welding/1305	**Date Collected:**	08/28/23
Sample Matrix:	Water	**Date Received:**	08/28/23
		Date Analyzed:	09/1/23
		Date Extracted:	08/31/23

Duplicate Matrix Spike Summary
Inorganic Parameters

Sample Name:	IWS-SD1-082823	**Units:**	ug/L
Lab Code:	R2307813-001	**Basis:**	NA
Analysis Method:	7470A		
Prep Method:	Method		

		Matrix Spike R2307813-001MS			Duplicate Matrix Spike R2307813-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Mercury, Total	0.20 U	0.98	1.00	98	1.04	1.00	104	75-125	6	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client: Olin Corporation
Project: Industrial Welding/1305
Sample Matrix: Water

Service Request: R2307813
Date Analyzed: 09/01/23

Lab Control Sample Summary
Inorganic Parameters

Units:ug/L
Basis:NA

Lab Control Sample
R2307813-LCS

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury, Total	7470A	1.13	1.00	113	80-120

Industrial Welding Site
Data Evaluation Narrative
August 2023 Groundwater/Storm Drain Sampling Event

SDG R2307813: ALS Environmental, Rochester, NY

Deliverables

The data package as submitted to Olin Corporation is complete as stipulated under the Industrial Welding Site Quality Assurance Project Plan (QAPP) as approved by the New York State Department of Environmental Conservation. United States Environmental Protection Agency (USEPA) Methods 8270D, 8081B, and 7470A were utilized in the laboratory testing.

Samples submitted within this sample delivery group (SDG) were submitted to the ALS Environmental laboratory in Rochester, NY for analysis of select semi-volatile organic compounds, organochlorine pesticides, and total mercury. The laboratory subsequently applied login numbers to the SDG. The SDG number for this sampling event is R2307813. This evaluation narrative follows the listing of groundwater and storm drain sample field identifications. The topics are ordered to first assess issues affecting the entire data set.

Sample Integrity

Information provided on the Chain of Custody and Cooler Receipt Form provided by the laboratory confirmed the samples arrived at the laboratory intact. The cooler temperature as received by the laboratory (10.9 ^{o}C) was outside of the temperature control limits of 4.0^{o}C ± 2.0^{o}C, however, a closer inspection revealed that the lab reported wet ice in the cooler and the transit time (via courier) did not allow enough time for the cooler to reach the desired temperature. Therefore, no data qualification is warranted. The proper bottles and preservatives were used, and the correct analytical methods were employed.

Sample Identification

This SDG contains the following samples collected on August 28, 2023:

SAMPLE	SAMPLE	SAMPLE
IWS-SD1-082823	IWS-MW-1-082823	IWS-MW-2-082823

Semi-Volatile Organic Compounds (EPA Method 8270D)

The samples in this SDG were submitted for analysis of select semi-volatile organic compounds—polyaromatic hydrocarbons (PAHs), by USEPA Method 8270D.

Holding Times:

The extraction and analytical logs indicate that applicable holding times were met for samples submitted for PAH analysis. The holding times of 7 days for extraction and 40 days for analysis were met.

GC/MS Instrument Performance Check:

The GC/MS tuning and mass calibration checks were performed with decafluorotriphenylphospine (DFTPP) and met the performance criteria as established by the method.

Calibration:
The initial calibration and continuing calibration verification data (ICV and CCV respectively) indicate that applicable calibration criteria were met for samples submitted for PAH analysis. The RSDs for each calibration check were within the applicable criteria.

Blank Summary:
The analytical results of the laboratory method blank indicated no PAHs were detected.

Laboratory Control Sample (LCS)/LCS Duplicate (LCSD):
The LCS/LCSD spike recoveries were within the applicable QC advisory limits, as were the relative percent differences (RPDs).

Matrix Spike/Matrix Spike Duplicate:
Sufficient sample volumes of IWS-SD1-082823 were submitted to the laboratory for MS/MSD analysis. The MS/MSD recoveries and RPDs were within laboratory control limits.

Internal Standards and Surrogates:
The internal standard area counts/retention times and the surrogate recoveries were within applicable QC advisory limits.

Organochlorine Pesticides (EPA Method 8081B)
The samples in this SDG were submitted for total HCCH (hexachlorocyclohexanes) analysis by USEPA Method 8081B.

Holding Times:
The extraction and analytical logs indicate that applicable holding times were met for samples submitted for HCCH analyses. The holding times of 7 days for extraction and 40 days for analysis were met.

Calibration:
The initial calibration data met method criteria. The continuing calibration verification (CCV) data associated with samples analyzed on 9-8-23 had several recoveries above laboratory control limits indicating a potential high bias; since all project samples analyzed on that day were non-detect for all compounds, no data qualification based on the potential high bias is warranted. All CCV data on 9-12-23 were within laboratory control limits. The injection port inertness checks (column breakdown) for DDT and Endrin were within QC limits each day that samples associated with this SDG were analyzed.

Surrogates:
The surrogate recoveries were within applicable QC advisory limits.

Blank Summary:
The analytical results of the laboratory method blank indicated no HCCHs were detected.

Laboratory Control Sample (LCS)/LCS Duplicate (LCSD):
The LCS/LCSD spike recoveries were within the applicable QC advisory limits as were the RPDs.

Matrix Spike/Matrix Spike Duplicate:
Sufficient sample volumes of IWS-SD1-082823 were submitted to the laboratory for MS/MSD analysis. The MS/MSD recoveries and RPDs were within laboratory control limits.

Dual Column Confirmation:
The RPDs between the primary and confirmation results were within laboratory QC guidelines.

Total Mercury Analyses (EPA Method 7470A)
The samples in this SDG were submitted for total mercury analysis by USEPA Method 7470A.

Holding Times:
The extraction and analytical logs indicate that applicable holding times were met for samples submitted for total mercury analysis.

Calibration:
The initial and continuing calibration data for this SDG indicate that applicable calibration criteria were met for samples submitted for total mercury analysis. The low-level check standard recoveries were within QC advisory limits.

Blank Summary:
The analytical results of the initial and continuing laboratory method blanks indicated that total mercury was not detected.

Laboratory Control Sample:
The laboratory control sample (LCS) spike recovery was within the applicable QC advisory limits.

Matrix Spike/Matrix Spike Duplicate:
Sample IWS-SD1-082823 was submitted to the laboratory for MS/MSD analysis. The percent recoveries and RPD were within laboratory control limits.

Overall Site Evaluation and Professional Judgment Flagging Changes
The data within this SDG were compared to site data and edits to the DQE flags were not required based on professional judgment. Monitoring period completeness, which is the percentage of analytical results judged valid, including estimated values, was 100 percent for the August 2023 sampling event.

Prepared by: *Randy T. Morris* Date: *September 30, 2023*

November 30, 2023 Service Request No:R2310409

Adam Carringer
Olin Corporation
490 Stuart Road
Cleveland, TN 37312

Laboratory Results for: Olin Industrial Welding Site

Dear Adam,

Enclosed are the results of the sample(s) submitted to our laboratory November 09, 2023
For your reference, these analyses have been assigned our service request number **R2310409.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7475. You may also contact me via email at Meghan.Pedro@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro
Project Manager

CC: Randy Morris

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Olin Corporation
Project: Olin Industrial Welding Site
Sample Matrix: Water

Service Request: R2310409
Date Received: 11/09/2023

CASE NARRATIVE

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

Sample Receipt:

Two water samples were received for analysis at ALS Environmental on 11/09/2023. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

Method 608 Modified, 11/29/2023: The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

Method 608 Modified, 11/29/2023: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

Method 624, R2310409-002: Analysis was performed on a sample with headspace. Headspace-free sample was not available.

Approved by _____ Date 11/30/2023

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Olin Corporation **Service Request:**R2310409

Project: Olin Industrial Welding Site/release order ERRE9845

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2310409-001	IWS-MS1-110823	11/8/2023	0845
R2310409-002	Trip Blank	11/8/2023	

ALS

Chain of Custody / Analytical Request Form

75942

SR#:

Page 1 of 1

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380 • alsglobal.com

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER

Report To:

Company: Olin Corp
Contact: Adam Carringer
Email: ABCarringer@Olin.com
Phone: 423-336-4000
Address: 490 Stuart Road, Cleveland, TN 37312

Project Name: Olin Industrial Welding Site
Project Number:
ALS Quote #:
Sampler's Signature: [signature]
Email CC: ABCarringer@Olin.com
Email CC:
State Samples Collected (Circle or Write): NY (circled), MA, PA, CT, Other:

Matrix: GW, WW, SW, DW, S, L, NA

Preservative codes: 0. None; 1. HCl; 2. HNO3; 3. H2SO4; 4. NAOH; 5. Zn Acet.; 6. MeOH; 7. NaHSO4; 8. Other

Lab ID (ALS)	Sample ID	Date	Time	Matrix	Number of Containers	MS/MSD?	GC/MS VOA - 8260•624•524•TCLP	GC/MS SVOA - 8270 • 625 • TCLP	Pesticides - 8081 • 608 • TCLP	PCBs - 8082 • 608	Herbicides - 8151 • TCLP	Metals, Total - Select Below	Metals, Dissolved - Field / In-Lab Filter	TSS	DOC					Notes
Preservative							0		0			2		0	0					
	IWS-MSI-110823	110823	0845	GW	31	Y	9		4			3		3	12					
	Trip Blank	—	—	—	2															
	Temp Blank	—	—	—	1															

Special Instructions / Comments:
Metals - total Hg
DOC samples were field filtered to 0.45µm.

Turnaround Requirements
____ Rush (Surcharges Apply)
Subject to Availability
Please Check with your PM
✓ Standard (10 Business Days)
Date Required:

Report Requirements
✓ Tier II/Cat A - Results/QC
____ Tier IV/Cat B - Data Validation Report w/. Data
EDD: ____ Yes ____ No
EDD Type:

Metals: RCRA 8•PP 13•TAL 23•TCLP•Other (List)

VOA/SVOA Report List: TCL • BTEX • TCLP • CP-51/Stars •THM • Other: ________

Invoice To: (□ Same as Report To)
PO #:
Company: Olin Corp
Contact: Adam Carringer
Email:

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	[signature]	[signature]				
Printed Name	Gd Gast	Gregory O. Esmenian				
Company	Sevenson	ALS				
Date/Time	110823 1000	11/9/23 09:45				

R2310409 5
Olin Corporation
Olin Industrial Welding Site

Distribution: White - Lab Copy; Yellow - Return to Originator

R2310409 5
Olin Corporation
Olin Industrial Welding Site

Cooler Receipt and Preservati

Project/Client Olin Corp Folder Number

Cooler received on 11/9/23 by: HE

COURIER: ALS (UPS) FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y) N	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk, or Sulfide have sig* **bubbles**?	Y (N) NA
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	(ALS/ROC) CLIENT
4	Circle: (**Wet Ice**) **Dry Ice** **Gel packs** present?	(Y) N	7	Soil VOA received as: Bulk Encore 5035set	(NA)

8. Temperature Readings Date: 11/9/23 Time: 0950 ID: IR#12 (IR#11) From: Temp Blank (Sample Bottle)

Observed Temp (°C)	1.9						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: SMO by HE on 11/9/23 at 0952
5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 11/13/23 Time: 0658 by: HE

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
10. Did all bottle labels and tags agree with custody papers? (YES) NO
11. Were correct containers used for the tests indicated? (YES) NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (N/A)
13. Were dissolved metals filtered in the field? YES NO (N/A)
14. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated (N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2	206722	HNO_3	X		Bottle Labels					
≤2		H_2SO_4								
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 091823-1GJ, 091823-2EFQ, 052923-2ADS, 100223-3AWA, Bottle Labels
Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: MS
PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Accreditations[1]

NELAP States
Florida ID # E87674
New Hampshire ID # 2941
New York ID # 10145
Pennsylvania ID# 68-786
Virginia #460167

Non-NELAP States
Connecticut ID #PH0556
Delaware Approved
Maine ID #NY01587
North Carolina #36701
North Carolina #676
Rhode Island LAO00333

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory. To verify NH accredited analytes, go to https://www4.des.state.nh.us/CertifiedLabs/Certified-Method.aspx.

ALS Laboratory Group

Acronyms

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

Client:	Olin Corporation	**Service Request:**	R2310409
Project:	Olin Industrial Welding Site/release order ERRE9845		

Sample Name:	IWS-MS1-110823	**Date Collected:**	11/8/23
Lab Code:	R2310409-001	**Date Received:**	11/9/23
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
245.1	ECASTROVINCI	ECASTROVINCI
608 Modified	EDEGRAY	AFELSER
624		FNAEGLER
SM 2540 D-2015		HCASTROVINCI
SM 5310 B-2014		KWONG

Sample Name:	Trip Blank	**Date Collected:**	11/8/23
Lab Code:	R2310409-002	**Date Received:**	11/9/23
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624		FNAEGLER

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Sample Results

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Volatile Organic Compounds by GC/MS

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Analytical Report

Client:	Olin Corporation	**Service Request:**	R2310409
Project:	Olin Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/23 08:45
Sample Matrix:	Water	**Date Received:**	11/09/23 09:45
Sample Name:	IWS-MS1-110823	**Units:**	ug/L
Lab Code:	R2310409-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624.1

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00	U	1.00	0.200	1	11/14/23 12:49	
1,2-Dichloroethane	**0.326**	**J**	1.00	0.200	1	11/14/23 12:49	
Acetone	5.00	U	5.00	2.10	1	11/14/23 12:49	
Trichloroethene (TCE)	**6.75**		1.00	0.200	1	11/14/23 12:49	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	99	73 - 125	11/14/23 12:49	
4-Bromofluorobenzene	98	85 - 122	11/14/23 12:49	
Toluene-d8	97	87 - 121	11/14/23 12:49	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2310409
Project:	Olin Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/23
Sample Matrix:	Water	**Date Received:**	11/09/23 09:45
Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	R2310409-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624.1

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	1	11/14/23 12:26	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	11/14/23 12:26	
Acetone	5.00 U	5.00	2.10	1	11/14/23 12:26	
Trichloroethene (TCE)	1.00 U	1.00	0.200	1	11/14/23 12:26	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	102	73 - 125	11/14/23 12:26	
4-Bromofluorobenzene	100	85 - 122	11/14/23 12:26	
Toluene-d8	97	87 - 121	11/14/23 12:26	

Semivolatile Organic Compounds by GC

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Analytical Report

Client:	Olin Corporation	**Service Request:**	R2310409
Project:	Olin Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/23 08:45
Sample Matrix:	Water	**Date Received:**	11/09/23 09:45
Sample Name:	IWS-MS1-110823	**Units:**	ug/L
Lab Code:	R2310409-001	**Basis:**	NA

Organochlorine Pesticides by GC/ECD

Analysis Method: 608.3
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.0481 U	0.0481	0.0200	1	11/29/23 04:48	11/14/23	
beta-BHC	**0.0518**	0.0481	0.0200	1	11/29/23 04:48	11/14/23	
delta-BHC	0.0481 U	0.0481	0.0200	1	11/29/23 04:48	11/14/23	
gamma-BHC (Lindane)	0.0481 U	0.0481	0.0200	1	11/29/23 04:48	11/14/23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	52	10 - 95	11/29/23 04:48	
Decachlorobiphenyl	63	10 - 110	11/29/23 04:48	

Metals

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Form 1

Inorganic Analysis Data Sheet

EPA 245.1

Workorder

R2310409

Client

Olin Corporation

Project

Olin Industrial Welding Site

11/30/2023

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Form 1 - Inorganic Analysis Data Sheet

Client	Olin Corporation	Workorder	
Project	Olin Industrial Welding Site	**R2310409**	

EPA 245.1

IWS-MS1-110823	Collected	Received	Matrix	Prep Method
R2310409-001	11/08/23 0845	11/09/23 0945	Water	Method

Analyte	Units	MC	Result	Q	DL	LOQ	DF	Analysis Date	Run ID	PrepBatch
Mercury, Total	ug/L	CV	0.25		0.08	0.20	1	11/15/23 10:06	RCVAA03_824103	429955

MC - Method Class CV - Cold Vapor/AA P - ICP/AES MS - ICP/MS

Form 1 - Inorganic Analysis Data Sheet

Client	Olin Corporation	Workorder	
Project	Olin Industrial Welding Site	**R2310409**	

EPA 245.1

Method Blank

	Matrix	Prep Method
R2310409-MB	Water	Method

Analyte	Units	MC	Result	Q	DL	LOQ	DF	Analysis Date	Run ID	PrepBatch
Mercury, Total	ug/L	CV	0.20	U	0.08	0.20	1	11/15/23 09:24	RCVAA03_824103	429955

MC - Method Class CV - Cold Vapor/AA P - ICP/AES MS - ICP/MS

General Chemistry

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Client:	Olin Corporation	**Service Request:**	R2310409
Project:	Olin Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/23 08:45
Sample Matrix:	Water	**Date Received:**	11/09/23 09:45
Sample Name:	IWS-MS1-110823	**Basis:**	NA
Lab Code:	R2310409-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Carbon, Dissolved Organic (DOC)	SM 5310 B-2014	**2.8**	mg/L	1.0	1	11/18/23 02:10	
Solids, Total Suspended (TSS)	SM 2540 D-2015	1.0 U	mg/L	1.0	1	11/13/23 10:45	

QC Summary Forms

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Volatile Organic Compounds by GC/MS

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Client: Olin Corporation **Service Request:** R2310409

Project: Olin Industrial Welding Site/release order ERRE9845

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624.1

Sample Name	Lab Code	1,2-Dichloroethane-d4 73 - 125	4-Bromofluorobenzene 85 - 122	Toluene-d8 87 - 121
IWS-MS1-110823	R2310409-001	99	98	97
Trip Blank	R2310409-002	102	100	97
Lab Control Sample	RQ2314985-03	99	99	97
Method Blank	RQ2314985-05	100	97	98
IWS-MS1-110823 MS	RQ2314985-07	103	102	101
IWS-MS1-110823 DMS	RQ2314985-08	100	97	97

Client:	Olin Corporation	**Service Request:**	R2310409
Project:	Olin Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/23
Sample Matrix:	Water	**Date Received:**	11/09/23
		Date Analyzed:	11/14/23

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Sample Name:	IWS-MS1-110823	**Units:**	ug/L
Lab Code:	R2310409-001	**Basis:**	NA
Analysis Method:	624.1		

		Matrix Spike RQ2314985-07			**Duplicate Matrix Spike** RQ2314985-08					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1-Dichloroethane (1,1-DCA)	1.00 U	51.9	50.0	104	52.7	50.0	105	59-155	2	40
1,2-Dichloroethane	0.326 J	49.0	50.0	97	50.9	50.0	101	49-155	4	49
Acetone	5.00 U	41.8	50.0	84	41.4	50.0	83	35-183	<1	30
Trichloroethene (TCE)	6.75	55.7	50.0	98	57.5	50.0	101	70-157	3	48

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2310409
Project:	Olin Industrial Welding Site/release order ERRE9845	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2314985-05	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624.1

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	1	11/14/23 11:41	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	11/14/23 11:41	
Acetone	5.00 U	5.00	2.10	1	11/14/23 11:41	
Trichloroethene (TCE)	1.00 U	1.00	0.200	1	11/14/23 11:41	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	100	73 - 125	11/14/23 11:41	
4-Bromofluorobenzene	97	85 - 122	11/14/23 11:41	
Toluene-d8	98	87 - 121	11/14/23 11:41	

Client: Olin Corporation
Project: Olin Industrial Welding Site/release order ERRE9845
Sample Matrix: Water

Service Request: R2310409
Date Analyzed: 11/14/23

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Units:ug/L
Basis:NA

Lab Control Sample
RQ2314985-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1-Dichloroethane (1,1-DCA)	624.1	20.8	20.0	104	70-130
1,2-Dichloroethane	624.1	20.0	20.0	100	70-130
Acetone	624.1	16.6	20.0	83	40-161
Trichloroethene (TCE)	624.1	19.5	20.0	98	65-135

Semivolatile Organic Compounds by GC

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Client: Olin Corporation **Service Request:** R2310409

Project: Olin Industrial Welding Site/release order ERRE9845

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/ECD

Analysis Method: 608.3

Extraction Method: Method

Sample Name	Lab Code	Decachlorobiphenyl 10 - 110	Tetrachloro-m-xylene 10 - 95
IWS-MS1-110823	R2310409-001	63	52
Method Blank	RQ2314975-01	63	80
Lab Control Sample	RQ2314975-02	94	84
Duplicate Lab Control Sample	RQ2314975-03	103	93
IWS-MS1-110823 MS	RQ2314975-06	88	68
IWS-MS1-110823 DMS	RQ2314975-07	79	65

Client:	Olin Corporation	**Service Request:**	R2310409
Project:	Olin Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/23
Sample Matrix:	Water	**Date Received:**	11/09/23
		Date Analyzed:	11/29/23
		Date Extracted:	11/14/23

Duplicate Matrix Spike Summary
Organochlorine Pesticides by GC/ECD

Sample Name:	IWS-MS1-110823	**Units:**	ug/L
Lab Code:	R2310409-001	**Basis:**	NA
Analysis Method:	608.3		
Prep Method:	Method		

		Matrix Spike RQ2314975-06			Duplicate Matrix Spike RQ2314975-07					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	0.0481 U	0.391	0.385	102	0.363	0.385	94	37-140	7	36
beta-BHC	0.0518	0.455	0.385	105	0.416	0.385	95	17-147	9	44
delta-BHC	0.0481 U	0.408	0.385	106	0.370	0.385	96	19-140	10	52
gamma-BHC (Lindane)	0.0481 U	0.403	0.385	105	0.369	0.385	96	32-140	9	39

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2310409
Project:	Olin Industrial Welding Site/release order ERRE9845	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2314975-01	**Basis:**	NA

Organochlorine Pesticides by GC/ECD

Analysis Method: 608.3
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.0500 U	0.0500	0.0200	1	11/29/23 01:17	11/14/23	
beta-BHC	0.0500 U	0.0500	0.0200	1	11/29/23 01:17	11/14/23	
delta-BHC	0.0500 U	0.0500	0.0200	1	11/29/23 01:17	11/14/23	
gamma-BHC (Lindane)	0.0500 U	0.0500	0.0200	1	11/29/23 01:17	11/14/23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	80	10 - 95	11/29/23 01:17	
Decachlorobiphenyl	63	10 - 110	11/29/23 01:17	

Client: Olin Corporation
Project: Olin Industrial Welding Site/release order ERRE9845
Sample Matrix: Water

Service Request: R2310409
Date Analyzed: 11/29/23

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by GC/ECD

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2314975-02			RQ2314975-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	608.3	0.470	0.400	118	0.525	0.400	131	37-140	11	36
beta-BHC	608.3	0.463	0.400	116	0.506	0.400	127	17-147	9	44
delta-BHC	608.3	0.454	0.400	113	0.508	0.400	127	19-140	11	52
gamma-BHC (Lindane)	608.3	0.480	0.400	120	0.529	0.400	132	32-140	10	39

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Form 3

Blanks

EPA 245.1

Workorder

R2310409

Client

Olin Corporation

Project

Olin Industrial Welding Site

11/30/2023

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Form 3 - Blanks

Client	Olin Corporation	Workorder	
Project	Olin Industrial Welding Site	**R2310409**	

EPA 245.1

RCVAA03_824103			ICB		CCB		MB-824103		CCB		CCB		CCB	
Units		Run Date	11/15/23		11/15/23		11/15/23		11/15/23		11/15/23		11/15/23	
ug/L		Run Time	09:13		09:21		09:24		09:51		10:16		10:34	
Analyte	DL	LOQ	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Mercury, Total	0.08	0.20	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U

Q - Result Flag * - Result Outside Limits

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Form 5A

Matrix Spike Sample Recovery

EPA 245.1

Workorder

R2310409

Client

Olin Corporation

Project

Olin Industrial Welding Site

11/30/2023

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Form 5A - Matrix Spike Sample Recovery

Client Olin Corporation

Project Olin Industrial Welding Site

Workorder **R2310409**

RunID RCVAA03-824103

EPA 245.1

IWS-MS1-110823				R2310409-001			R2310409-001MS			R2310409-001DMS					
Samp Matrix	Water		**Run Date**	11/15/23			11/15/23			11/15/23					
Prep Method	Method	**Units**	**Run Time**	10:06			10:08			10:11					
Prep Batch	429955 11/14/23	ug/L	**Prep Amt**	25 mL			25 mL			25 mL					
Analyte	%R Limits	Spike Added	DF	Sample Result	Q	MS Result	%R	Q	MSD Result	%R	Q	RPD Limit	RPD	Q
Mercury, Total	70-130	1.00	1	0.25		1.21	96		1.18	93		20	3	

Q - %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

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Form 7

Laboratory Control Sample

EPA 245.1

Workorder

R2310409

Client

Olin Corporation

Project

Olin Industrial Welding Site

11/30/2023

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Form 7 - Laboratory Control Sample

Client	Olin Corporation	Workorder	
Project	Olin Industrial Welding Site	**R2310409**	

EPA 245.1

RunID: RCVAA03-824103

RCVAA03_824103				R2310409-LCS				
Spike Matrix	Water	Result Units	ug/L	Run Date	11/15/23			
Prep Date	11/14/23	Analysis Batch	824103	Run Time	09:26			
Prep Method	Method	Prep Batch	429955	Prep Amt	25 mL			

Analyte	%Recovery Limits	Spike Added	LCS Result	%R	Q		
Mercury, Total	85-115	1.00	1.01	101			

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2310409
Project:	Olin Industrial Welding Site/release order ERRE9845	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2310409-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Carbon, Dissolved Organic (DOC)	SM 5310 B-2014	1.0 U	mg/L	1.0	1	11/17/23 18:30	
Solids, Total Suspended (TSS)	SM 2540 D-2015	1.0 U	mg/L	1.0	1	11/13/23 10:45	

Client:	Olin Corporation	**Service Request:**	R2310409
Project:	Olin Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/23
Sample Matrix:	Water	**Date Received:**	11/09/23
		Date Analyzed:	11/18/23

Duplicate Matrix Spike Summary
Carbon, Dissolved Organic (DOC)

Sample Name:	IWS-MS1-110823	**Units:**	mg/L
Lab Code:	R2310409-001	**Basis:**	NA
Analysis Method:	SM 5310 B-2014		

		Matrix Spike R2310409-001MS			**Duplicate Matrix Spike** R2310409-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon, Dissolved Organic (DOC)	2.8	26.6	25.0	95	26.6	25.0	95	48-135	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Olin Corporation	**Service Request:**	R2310409
Project	Olin Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/23
Sample Matrix:	Water	**Date Received:**	11/09/23
		Date Analyzed:	11/13/23

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	IWS-MS1-110823	**Units:**	mg/L
Lab Code:	R2310409-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R2310409-001DUP Result	Average	RPD	RPD Limit
Solids, Total Suspended (TSS)	SM 2540 D-2015	1.0	1.0 U	1.0 U	NC	NC	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Olin Corporation
Project: Olin Industrial Welding Site/release order ERRE9845
Sample Matrix: Water

Service Request: R2310409
Date Analyzed: 11/13/23 - 11/17/23

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2310409-LCS

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Dissolved Organic (DOC)	SM 5310 B-2014	24.4	25.0	98	80-121
Solids, Total Suspended (TSS)	SM 2540 D-2015	183	214	85	80-120

Industrial Welding Site
Data Evaluation Narrative
November 2023 Discharge Sampling Event

SDG R2310409: ALS Environmental, Rochester, NY

Deliverables

The data package as submitted to Olin Corporation is complete as stipulated under the Industrial Welding Site Quality Assurance Project Plan (QAPP) as approved by the New York State Department of Environmental Protection. United States Environmental Protection Agency (USEPA) Methods 624, 608, 245.1, SM 2540D and SM 5310B were utilized in the laboratory testing.

Samples submitted within this sample delivery group (SDG) were submitted to the ALS Environmental laboratory in Rochester, NY for select volatile organic compounds and organochlorine pesticides, total mercury, total suspended solids, and dissolved organic carbon analyses. The laboratory subsequently applied login numbers to the SDG. The SDG number for this sampling event is R2310409. This evaluation narrative for the SDG follows the listing of discharge sample field identifications. The topics of each narrative are ordered to first assess issues affecting the entire data set.

Sample Integrity

Information provided on the Chain of Custody and Login Sample Receipt Checklist provided by the laboratory confirmed that the samples arrived at the laboratory intact and within the recommended temperature limits. The proper bottles and preservatives were used, and the correct analytical methods were employed.

Sample Identification

This SDG contains the following water samples collected on November 8, 2023:

SAMPLE ID	SAMPLE ID
IWS-MS1-110823	Trip Blank (Analyzed for VOCs only)

Volatile Organic Compounds (EPA Method 624)

The samples in this SDG were submitted for select volatile organic compounds (VOCs) by USEPA Method 624.

Holding Times:

The analytical logs indicate that applicable holding times were met.

Practical Quantitation Limits:

The practical quantitation limits (PQLs) were met for the analysis of VOCs by USEPA Method 624.

GC/MS Instrument Performance Check:

The GC/MS tuning and mass calibration checks were performed with bromofluorobenzene (BFB) and met the performance criteria as established by the method.

Calibration:

The initial and continuing calibration data for this SDG indicate that applicable criteria were met for samples submitted for VOC analysis. The RSDs for each calibration check were within the applicable criteria.

Blank Summary:
The analytical results of the laboratory method blank and the trip blank indicated no target VOCs were detected above the reporting limit (RL).

Laboratory Control Sample (LCS):
The LCS spike recoveries were within the applicable QC advisory limits.

Surrogates:
The surrogate recoveries were within applicable QC advisory limits.

Matrix Spike/Matrix Spike Duplicate:
Sample IWS-MS1-110823 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. The percent recoveries and relative percent differences (RPDs) were within applicable QC advisory limits.

Organochlorine Pesticides (EPA Method 608)
The sample in this SDG was submitted for HCCH (hexachlorocyclohexanes) analysis by USEPA Method 608.

Holding Times:
The extraction and analytical logs indicate that applicable holding times were met for HCCH analyses. The holding times of 7 days for extraction and 40 days for analysis were met.

Practical Quantitation Limits:
The practical quantitation limits (PQLs) were met for the analysis of HCCHs by USEPA Method 608.

Calibration:
The initial calibration data for this SDG indicate that applicable calibration criteria were met. All continuing calibration verification samples (CCVs) associated with project samples were also within applicable control criteria on the primary column except for one compound which exceeded the upper control criteria; since the compound was not detected in the project sample no qualification of the data was warranted.

Surrogates:
Surrogate recoveries for all project related samples were within laboratory control limits.

Blank Summary:
The analytical results of the laboratory method blank indicated no HCCHs were detected.

Laboratory Control Sample (LCS) and LCS Duplicate (LCSD):
The LCS/LCSD recoveries were within laboratory control limits for all four BHC compounds.

Matrix Spike/Matrix Spike Duplicate:
Sample IWS-MS1-110823 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. The percent recoveries and relative percent differences (RPDs) were within applicable QC advisory limits.

Total Mercury Analyses (EPA Method 245.1)
The sample in this SDG was submitted for total mercury analysis by USEPA Method 245.1.

Holding Times:
The extraction and analytical logs indicate that applicable holding times were met.

Practical Quantitation Limits:
The practical quantitation limit (PQL) was met for the analysis of total mercury by USEPA Method 245.1.

Calibration:
The initial and continuing calibration data for this SDG indicate that applicable calibration criteria were met. The low-level check standard recoveries were within QC advisory limits.

Blank Summary:
The analytical results of the method blank and the initial/continuing calibration blanks indicated that total mercury was not detected.

Laboratory Control Sample:
The laboratory control sample (LCS) spike recovery was within the applicable QC advisory limits.

Matrix Spike/Matrix Spike Duplicate:
Sample IWS-MS1-110823 was submitted for MS/MSD analysis. The percent recoveries and RPD were within laboratory control limits.

Total Suspended Solids (SM 2540D)
The sample in this SDG was submitted for total suspended solids (TSS) analysis by SM 2540D.

Holding Times:
The holding time of 7 days was met as the sample was analyzed within this holding period.

Practical Quantitation Limits:
The practical quantitation limit (PQL) was met for the analysis of TSS.

Blank Summary:
The analytical results of the laboratory method blank indicated that no TSS were detected.

Laboratory Control Sample:
The laboratory control sample (LCS) recovery was within the applicable QC advisory limits.

Duplicate Sample:
The laboratory performed a duplicate analysis on IWS-MS1-110823. The RPD was within control limits.

Soluble Organic Carbon (SM 5310B)
The sample in this SDG was submitted for soluble (dissolved) organic carbon (DOC) analysis by SM 5310C.

Holding Times:
The holding time of 28 days was met.

Practical Quantitation Limits:
The practical quantitation limit (PQL) was met for the analysis of DOC.

Calibration Summary:
The initial and continuing calibration data for this SDG indicates that applicable calibration criteria were met.

Blank Summary:
The analytical results of the laboratory method blank and continuing calibration blanks (CCBs) indicated that no DOC was detected.

Laboratory Control Sample:
The laboratory control sample (LCS) recovery was within the applicable QC advisory limits.

Matrix Spike/Matrix Spike Duplicate:
Sample IWS-MS1-110823 was submitted for MS/MSD analysis. The percent recoveries and RPD were within applicable QC advisory limits.

Overall Site Evaluation and Professional Judgment Flagging Changes
The data within this SDG were compared to site data and edits to the DQE flags were not required based on professional judgment. Monitoring period completeness, which is the percentage of analytical results judged valid, including estimated values, was 100 percent for the November 2023 sampling event. Typically, project objectives are met when completeness is 90 percent or better.

Prepared by: *Randy T. Morris* Date: *January 9, 2024*

March 29, 2024 Service Request No:R2402213

Adam Carringer
Olin Corporation
490 Stuart Road
Cleveland, TN 37312

Laboratory Results for: Industrial Welding

Dear Adam,

Enclosed are the results of the sample(s) submitted to our laboratory March 20, 2024
For your reference, these analyses have been assigned our service request number **R2402213.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7475. You may also contact me via email at Meghan.Pedro@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro
Project Manager

CC: Randy Morris

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Olin Corporation
Project: Industrial Welding
Sample Matrix: Water

Service Request: R2402213
Date Received: 03/20/2024

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.
Manual Integrations may have been used in the quantitation of the results in this report. Manual Integrations are readily identified in the raw data on the Quantitation Reports (Organics) by the automatic placement of an “m” next to the sample result. For Ion Chromatography, the manual integrations are identified by the automatic placement of “manipulated” or "manually integrated" in the upper left corner of the chromatogram (Hexavalent Chromium) or “M” by the result in the “Type” column (anions). The reason for the manual integration is noted on the “after” chromatogram, which is found with the original chromatogram and quantitation report. All integrations follow the lab SOP ADM-INT “Manual Integration.”

Sample Receipt:

Three water samples were received for analysis at ALS Environmental on 03/20/2024. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

No significant anomalies were noted with this analysis.

Semivoa GC:

The RPD between the MS and the MSD was greater than the RPD limit.

Metals:

No significant anomalies were noted with this analysis.

Approved by _____ Date 03/29/2024

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Olin Corporation **Service Request:**R2402213
Project: Industrial Welding/1332

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2402213-001	IWS-SD1-031924	3/19/2024	0835
R2402213-002	IWS-MW1-031924	3/19/2024	0920
R2402213-003	IWS-MW2-031924	3/19/2024	0950

ALS

Chain of Custody / Analytical Request Form

69247

SR#:

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380 • alsglobal.com

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER

Report To:	
Company: Olin Corporation	Project Name: Industrial Welding
Contact: Adam Carringer	Project Number: 1332
Email: ABCarringer@Olin.com	ALS Quote #:
Phone: 423 336 4987	Sampler's Signature: Steve Walsh
Address: 490 Stuart Rd	Email CC:
Cleveland TN 37312	Email CC:
	State Samples Collected (Circle or Write): (NY) MA, PA, CT, Other:

Matrix: (GW) WW SW DW S L NA

Preservative: 0. None; 1. HCl; 2. HNO3; 3. H2SO4; 4. NAOH; 5. Zn Acet.; 6. MeOH; 7. NaHSO4; 8. Other

Lab ID (ALS)	Sample ID	Date	Time	Matrix	Number of Containers	MS/MSD?	GC/MS VOA - 8260•624•524•TCLP	GC/MS SVOA - 8270 • 625 • TCLP	Pesticides - 8081 • 608 • TCLP	PCBs - 8082 • 608	Herbicides - 8151 • TCLP	Metals, Total - Select Below	Metals, Dissolved - Field / In-Lab Filter							Notes:
Preservative								0	0			2								
	IWS-SD1-031924	031924	0835	GW	15	Y		6	6			3								MS/MSD Volume
	IWS-MW1-031924	031924	0920	GW	5	N		2	2			1								
	IWS-MW2-031924	031924	0950	GW	5	N		2	2			1								

Special Instructions / Comments:

Metals - total Mercury (Hg)

Turnaround Requirements

____ Rush (Surcharges Apply)
Subject to Availability
Please Check with your PM
X Standard (10 Business Days)

Date Required: Standard

Report Requirements

____ Tier II/Cat A - Results/QC

____ Tier IV/Cat B - Data Validation Report w/. Data

EDD: ____ Yes ____ No

EDD Type:

Metals: RCRA 8•PP 13•TAL 23•TCLP•Other (List)

VOA/SVOA Report List: TCL • BTEX • TCLP • CP-51/Stars •THM • Other: ________

Invoice To: (X Same as Report To)

PO #:

Company:

Contact:

Email:

Ph

Ad

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	[signature]	[signature]				
Printed Name	Greg Ernst	Randy Diaz				
Company	Semnson	ALS				
Date/Time	3/19/24 1115	3/20/25 1155				

R2402213 5
Olin Corporation
Industrial Welding

Distribution: White - Lab Copy; Yellow - Return to Originator

Cooler Receipt and Preservation Check Form

R2402213 5
Olin Corporation
Industrial Welding

Project/Client _____ Folder Number _____

Cooler received on 3/20/24 by: RJH

COURIER: ALS (UPS) FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y)	N
2	**Custody papers** properly completed (ink, signed)?	(Y)	N
3	Did all bottles arrive in good **condition** (unbroken)?	(Y)	N
4	Circle: Wet Ice Dry Ice Gel packs present?	(Y)	N

5a	**Perchlorate** samples have required headspace?	Y	N	(NA)
5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y	N	(NA)
6	Where did the bottles originate?	(ALS/ROC)	CLIENT	
7	Soil-VOA received as: Bulk Encore 5035set			(N/A)

8. Temperature Readings Date: 3/20/24 Time: 1135 ID: (IR#12) IR#11 From: Temp Blank (Sample Bottle)

Observed Temp (°C)	3.1						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: SMO by RJH on 3/20/24 at 1135
5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 3/20/24 Time: 1300 by: SES.

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
10. Did all bottle labels and tags agree with custody papers? (YES) NO
11. Were correct containers used for the tests indicated? (YES) NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (N/A)
13. Were dissolved metals filtered in the field? YES NO (N/A)
14. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated (N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2	213623	HNO_3	✓		label →					
≤2		H_2SO_4								
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$	-	-						
		ZnAcetate	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 111323-1GJ,
Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: SES.
PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm ; WC >1 in. diameter

P:\INTRANET\QAQC\Forms Controlled\Cooler Receipt r20.doc 01/23/2023

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Accreditations[1]

NELAP States
Florida ID # E87674
New Hampshire ID # 2941
New York ID # 10145
Pennsylvania ID# 68-786
Virginia #460167

Non-NELAP States
Connecticut ID #PH0556
Delaware Approved
Maine ID #NY01587
North Carolina #36701
North Carolina #676
Rhode Island LAO00333

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory. To verify NH accredited analytes, go to https://www4.des.state.nh.us/CertifiedLabs/Certified-Method.aspx.

ALS Laboratory Group

Acronyms

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

Client: Olin Corporation
Project: Industrial Welding/1332
Service Request: R2402213

Sample Name: IWS-SD1-031924
Lab Code: R2402213-001
Sample Matrix: Water
Date Collected: 03/19/24
Date Received: 03/20/24

Analysis Method	Extracted/Digested By	Analyzed By
7470A	ECASTROVINCI	ECASTROVINCI
8081B	JVANHEYNINGEN	AFELSER
8270D	JVANHEYNINGEN	AMOSES

Sample Name: IWS-MW1-031924
Lab Code: R2402213-002
Sample Matrix: Water
Date Collected: 03/19/24
Date Received: 03/20/24

Analysis Method	Extracted/Digested By	Analyzed By
7470A	ECASTROVINCI	ECASTROVINCI
8081B	JVANHEYNINGEN	AFELSER
8270D	JVANHEYNINGEN	AMOSES

Sample Name: IWS-MW2-031924
Lab Code: R2402213-003
Sample Matrix: Water
Date Collected: 03/19/24
Date Received: 03/20/24

Analysis Method	Extracted/Digested By	Analyzed By
7470A	ECASTROVINCI	ECASTROVINCI
8081B	JVANHEYNINGEN	AFELSER
8270D	JVANHEYNINGEN	AMOSES

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Sample Results

ALS Environmental—Rochester Laboratory
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Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2402213
Project:	Industrial Welding/1332	**Date Collected:**	03/19/24 08:35
Sample Matrix:	Water	**Date Received:**	03/20/24 11:15
Sample Name:	IWS-SD1-031924	**Units:**	ug/L
Lab Code:	R2402213-001	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	9.8 U	9.8	1.3	1	03/26/24 20:02	3/21/24	
Acenaphthene	9.8 U	9.8	1.4	1	03/26/24 20:02	3/21/24	
Acenaphthylene	9.8 U	9.8	1.4	1	03/26/24 20:02	3/21/24	
Anthracene	9.8 U	9.8	1.3	1	03/26/24 20:02	3/21/24	
Benz(a)anthracene	9.8 U	9.8	1.6	1	03/26/24 20:02	3/21/24	
Benzo(a)pyrene	9.8 U	9.8	1.2	1	03/26/24 20:02	3/21/24	
Benzo(b)fluoranthene	9.8 U	9.8	1.2	1	03/26/24 20:02	3/21/24	
Benzo(g,h,i)perylene	9.8 U	9.8	2.1	1	03/26/24 20:02	3/21/24	
Benzo(k)fluoranthene	9.8 U	9.8	1.3	1	03/26/24 20:02	3/21/24	
Chrysene	9.8 U	9.8	1.2	1	03/26/24 20:02	3/21/24	
Dibenz(a,h)anthracene	9.8 U	9.8	1.1	1	03/26/24 20:02	3/21/24	
Fluoranthene	9.8 U	9.8	1.5	1	03/26/24 20:02	3/21/24	
Fluorene	9.8 U	9.8	1.3	1	03/26/24 20:02	3/21/24	
Indeno(1,2,3-cd)pyrene	9.8 U	9.8	1.8	1	03/26/24 20:02	3/21/24	
Naphthalene	9.8 U	9.8	1.2	1	03/26/24 20:02	3/21/24	
Phenanthrene	9.8 U	9.8	1.4	1	03/26/24 20:02	3/21/24	
Pyrene	9.8 U	9.8	1.5	1	03/26/24 20:02	3/21/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	76	25 - 99	03/26/24 20:02	
Nitrobenzene-d5	82	22 - 104	03/26/24 20:02	
p-Terphenyl-d14	80	10 - 143	03/26/24 20:02	

Client:	Olin Corporation	**Service Request:**	R2402213
Project:	Industrial Welding/1332	**Date Collected:**	03/19/24 09:20
Sample Matrix:	Water	**Date Received:**	03/20/24 11:15
Sample Name:	IWS-MW1-031924	**Units:**	ug/L
Lab Code:	R2402213-002	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	9.6 U	9.6	1.3	1	03/26/24 21:12	3/21/24	
Acenaphthene	9.6 U	9.6	1.4	1	03/26/24 21:12	3/21/24	
Acenaphthylene	9.6 U	9.6	1.4	1	03/26/24 21:12	3/21/24	
Anthracene	9.6 U	9.6	1.3	1	03/26/24 21:12	3/21/24	
Benz(a)anthracene	9.6 U	9.6	1.6	1	03/26/24 21:12	3/21/24	
Benzo(a)pyrene	9.6 U	9.6	1.2	1	03/26/24 21:12	3/21/24	
Benzo(b)fluoranthene	9.6 U	9.6	1.2	1	03/26/24 21:12	3/21/24	
Benzo(g,h,i)perylene	9.6 U	9.6	2.1	1	03/26/24 21:12	3/21/24	
Benzo(k)fluoranthene	9.6 U	9.6	1.3	1	03/26/24 21:12	3/21/24	
Chrysene	9.6 U	9.6	1.2	1	03/26/24 21:12	3/21/24	
Dibenz(a,h)anthracene	9.6 U	9.6	1.1	1	03/26/24 21:12	3/21/24	
Fluoranthene	9.6 U	9.6	1.5	1	03/26/24 21:12	3/21/24	
Fluorene	9.6 U	9.6	1.3	1	03/26/24 21:12	3/21/24	
Indeno(1,2,3-cd)pyrene	9.6 U	9.6	1.8	1	03/26/24 21:12	3/21/24	
Naphthalene	9.6 U	9.6	1.2	1	03/26/24 21:12	3/21/24	
Phenanthrene	9.6 U	9.6	1.4	1	03/26/24 21:12	3/21/24	
Pyrene	9.6 U	9.6	1.5	1	03/26/24 21:12	3/21/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	68	25 - 99	03/26/24 21:12	
Nitrobenzene-d5	66	22 - 104	03/26/24 21:12	
p-Terphenyl-d14	68	10 - 143	03/26/24 21:12	

Client:	Olin Corporation	**Service Request:**	R2402213
Project:	Industrial Welding/1332	**Date Collected:**	03/19/24 09:50
Sample Matrix:	Water	**Date Received:**	03/20/24 11:15
Sample Name:	IWS-MW2-031924	**Units:**	ug/L
Lab Code:	R2402213-003	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	9.6 U	9.6	1.3	1	03/26/24 21:35	3/21/24	
Acenaphthene	9.6 U	9.6	1.4	1	03/26/24 21:35	3/21/24	
Acenaphthylene	9.6 U	9.6	1.4	1	03/26/24 21:35	3/21/24	
Anthracene	9.6 U	9.6	1.3	1	03/26/24 21:35	3/21/24	
Benz(a)anthracene	9.6 U	9.6	1.6	1	03/26/24 21:35	3/21/24	
Benzo(a)pyrene	9.6 U	9.6	1.2	1	03/26/24 21:35	3/21/24	
Benzo(b)fluoranthene	9.6 U	9.6	1.2	1	03/26/24 21:35	3/21/24	
Benzo(g,h,i)perylene	9.6 U	9.6	2.1	1	03/26/24 21:35	3/21/24	
Benzo(k)fluoranthene	9.6 U	9.6	1.3	1	03/26/24 21:35	3/21/24	
Chrysene	9.6 U	9.6	1.2	1	03/26/24 21:35	3/21/24	
Dibenz(a,h)anthracene	9.6 U	9.6	1.1	1	03/26/24 21:35	3/21/24	
Fluoranthene	9.6 U	9.6	1.5	1	03/26/24 21:35	3/21/24	
Fluorene	9.6 U	9.6	1.3	1	03/26/24 21:35	3/21/24	
Indeno(1,2,3-cd)pyrene	9.6 U	9.6	1.8	1	03/26/24 21:35	3/21/24	
Naphthalene	9.6 U	9.6	1.2	1	03/26/24 21:35	3/21/24	
Phenanthrene	9.6 U	9.6	1.4	1	03/26/24 21:35	3/21/24	
Pyrene	9.6 U	9.6	1.5	1	03/26/24 21:35	3/21/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	70	25 - 99	03/26/24 21:35	
Nitrobenzene-d5	66	22 - 104	03/26/24 21:35	
p-Terphenyl-d14	69	10 - 143	03/26/24 21:35	

Semivolatile Organic Compounds by GC

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Analytical Report

Client:	Olin Corporation	**Service Request:**	R2402213
Project:	Industrial Welding/1332	**Date Collected:**	03/19/24 08:35
Sample Matrix:	Water	**Date Received:**	03/20/24 11:15
Sample Name:	IWS-SD1-031924	**Units:**	ug/L
Lab Code:	R2402213-001	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.049 U	0.049	1	03/25/24 23:14	3/21/24	
beta-BHC	0.049 U	0.049	1	03/25/24 23:14	3/21/24	
delta-BHC	0.049 U	0.049	1	03/25/24 23:14	3/21/24	
gamma-BHC (Lindane)	0.049 U	0.049	1	03/25/24 23:14	3/21/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	18	10 - 111	03/25/24 23:14	
Tetrachloro-m-xylene	70	10 - 101	03/25/24 23:14	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2402213
Project:	Industrial Welding/1332	**Date Collected:**	03/19/24 09:20
Sample Matrix:	Water	**Date Received:**	03/20/24 11:15
Sample Name:	IWS-MW1-031924	**Units:**	ug/L
Lab Code:	R2402213-002	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.049 U	0.049	1	03/26/24 00:06	3/21/24	
beta-BHC	0.049 U	0.049	1	03/26/24 00:06	3/21/24	
delta-BHC	0.049 U	0.049	1	03/26/24 00:06	3/21/24	
gamma-BHC (Lindane)	0.049 U	0.049	1	03/26/24 00:06	3/21/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	31	10 - 111	03/26/24 00:06	
Tetrachloro-m-xylene	55	10 - 101	03/26/24 00:06	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2402213
Project:	Industrial Welding/1332	**Date Collected:**	03/19/24 09:50
Sample Matrix:	Water	**Date Received:**	03/20/24 11:15
Sample Name:	IWS-MW2-031924	**Units:**	ug/L
Lab Code:	R2402213-003	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.049 U	0.049	1	03/26/24 00:23	3/21/24	
beta-BHC	0.049 U	0.049	1	03/26/24 00:23	3/21/24	
delta-BHC	0.049 U	0.049	1	03/26/24 00:23	3/21/24	
gamma-BHC (Lindane)	0.049 U	0.049	1	03/26/24 00:23	3/21/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	32	10 - 111	03/26/24 00:23	
Tetrachloro-m-xylene	59	10 - 101	03/26/24 00:23	

Metals

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Form 1

Inorganic Analysis Data Sheet

7470A

Workorder

R2402213

Client

Olin Corporation

Project

Industrial Welding

03/29/2024

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Form 1 - Inorganic Analysis Data Sheet

Client	Olin Corporation	Workorder	
Project	Industrial Welding	**R2402213**	

7470A

IWS-SD1-031924

	Collected	Received	Matrix	Prep Method
R2402213-001	03/19/24 0835	03/20/24 1115	Water	Method

Analyte	Units	MC	Result	Q	DL	LOQ	DF	Analysis Date	Run ID	PrepBatch
Mercury, Total	ug/L	CV	0.20	U	0.08	0.20	1	03/28/24 09:45	RCVAA03_836220	435990

MC - Method Class CV - Cold Vapor/AA P - ICP/AES MS - ICP/MS

Form 1 - Inorganic Analysis Data Sheet

Client	Olin Corporation	Workorder	
Project	Industrial Welding	**R2402213**	

7470A

IWS-MW1-031924	Collected	Received	Matrix	Prep Method
R2402213-002	03/19/24 0920	03/20/24 1115	Water	Method

Analyte	Units	MC	Result	Q	DL	LOQ	DF	Analysis Date	Run ID	PrepBatch
Mercury, Total	ug/L	CV	0.20	U	0.08	0.20	1	03/28/24 09:57	RCVAA03_836220	435990

MC - Method Class CV - Cold Vapor/AA P - ICP/AES MS - ICP/MS

Form 1 - Inorganic Analysis Data Sheet

Client	Olin Corporation	Workorder	
Project	Industrial Welding	**R2402213**	

7470A

IWS-MW2-031924	Collected	Received	Matrix	Prep Method
R2402213-003	03/19/24 0950	03/20/24 1115	Water	Method

Analyte	Units	MC	Result	Q	DL	LOQ	DF	Analysis Date	Run ID	PrepBatch
Mercury, Total	ug/L	CV	2.97		0.08	0.20	1	03/28/24 10:00	RCVAA03_836220	435990

MC - Method Class CV - Cold Vapor/AA P - ICP/AES MS - ICP/MS

Form 1 - Inorganic Analysis Data Sheet

Client	Olin Corporation	Workorder	
Project	Industrial Welding	**R2402213**	

7470A

Method Blank

	Matrix	Prep Method
R2402213-MB	Water	Method

Analyte	Units	MC	Result	Q	DL	LOQ	DF	Analysis Date	Run ID	PrepBatch
Mercury, Total	ug/L	CV	0.20	U	0.08	0.20	1	03/28/24 09:32	RCVAA03_836220	435990

MC - Method Class CV - Cold Vapor/AA P - ICP/AES MS - ICP/MS

QC Summary Forms

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Semivolatile Organic Compounds by GC/MS

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Client: Olin Corporation **Service Request:** R2402213
Project: Industrial Welding/1332
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	2-Fluorobiphenyl 25 - 99	Nitrobenzene-d5 22 - 104	p-Terphenyl-d14 10 - 143
IWS-SD1-031924	R2402213-001	76	82	80
IWS-MW1-031924	R2402213-002	68	66	68
IWS-MW2-031924	R2402213-003	70	66	69
Method Blank	RQ2402935-01	64	72	81
Lab Control Sample	RQ2402935-02	70	67	74
Duplicate Lab Control Sample	RQ2402935-03	79	81	84
IWS-SD1-031924 MS	RQ2402935-04	80	80	75
IWS-SD1-031924 DMS	RQ2402935-05	81	81	76

Client:	Olin Corporation	**Service Request:**	R2402213
Project:	Industrial Welding/1332	**Date Collected:**	03/19/24
Sample Matrix:	Water	**Date Received:**	03/20/24
		Date Analyzed:	03/26/24
		Date Extracted:	03/21/24

Duplicate Matrix Spike Summary
Semivolatile Organic Compounds by GC/MS

Sample Name:	IWS-SD1-031924	**Units:**	ug/L
Lab Code:	R2402213-001	**Basis:**	NA
Analysis Method:	8270D		
Prep Method:	EPA 3510C		

		Matrix Spike			Duplicate Matrix Spike					
		RQ2402935-04			RQ2402935-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	9.6 U	57.5	76.9	75	58.5	76.9	76	34-102	1	30
Acenaphthene	9.6 U	66.4	76.9	86	66.5	76.9	86	43-117	<1	30
Acenaphthylene	9.6 U	68.7	76.9	89	68.8	76.9	89	45-119	<1	30
Anthracene	9.6 U	69.3	76.9	90	68.1	76.9	88	45-127	2	30
Benz(a)anthracene	9.6 U	71.4	76.9	93	71.6	76.9	93	46-126	<1	30
Benzo(a)pyrene	9.6 U	75.4	76.9	98	75.7	76.9	98	44-114	<1	30
Benzo(b)fluoranthene	9.6 U	74.1	76.9	96	73.2	76.9	95	41-127	1	30
Benzo(g,h,i)perylene	9.6 U	76.3	76.9	99	73.5	76.9	96	50-143	3	30
Benzo(k)fluoranthene	9.6 U	76.1	76.9	99	74.9	76.9	97	46-139	2	30
Chrysene	9.6 U	72.7	76.9	94	72.8	76.9	95	47-126	1	30
Dibenz(a,h)anthracene	9.6 U	53.3	76.9	69	53.1	76.9	69	43-136	<1	30
Fluoranthene	9.6 U	71.8	76.9	93	69.2	76.9	90	43-135	3	30
Fluorene	9.6 U	71.1	76.9	92	70.6	76.9	92	43-113	<1	30
Indeno(1,2,3-cd)pyrene	9.6 U	72.5	76.9	94	71.2	76.9	93	49-140	1	30
Naphthalene	9.6 U	58.0	76.9	75	59.6	76.9	77	37-108	3	30
Phenanthrene	9.6 U	72.2	76.9	94	70.2	76.9	91	46-123	3	30
Pyrene	9.6 U	74.3	76.9	97	73.4	76.9	95	44-129	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2402213
Project:	Industrial Welding/1332	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2402935-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	10 U	10	1.3	1	03/26/24 15:21	3/21/24	
Acenaphthene	10 U	10	1.4	1	03/26/24 15:21	3/21/24	
Acenaphthylene	10 U	10	1.4	1	03/26/24 15:21	3/21/24	
Anthracene	10 U	10	1.3	1	03/26/24 15:21	3/21/24	
Benz(a)anthracene	10 U	10	1.6	1	03/26/24 15:21	3/21/24	
Benzo(a)pyrene	10 U	10	1.2	1	03/26/24 15:21	3/21/24	
Benzo(b)fluoranthene	10 U	10	1.2	1	03/26/24 15:21	3/21/24	
Benzo(g,h,i)perylene	10 U	10	2.1	1	03/26/24 15:21	3/21/24	
Benzo(k)fluoranthene	10 U	10	1.3	1	03/26/24 15:21	3/21/24	
Chrysene	10 U	10	1.2	1	03/26/24 15:21	3/21/24	
Dibenz(a,h)anthracene	10 U	10	1.1	1	03/26/24 15:21	3/21/24	
Fluoranthene	10 U	10	1.5	1	03/26/24 15:21	3/21/24	
Fluorene	10 U	10	1.3	1	03/26/24 15:21	3/21/24	
Indeno(1,2,3-cd)pyrene	10 U	10	1.8	1	03/26/24 15:21	3/21/24	
Naphthalene	10 U	10	1.2	1	03/26/24 15:21	3/21/24	
Phenanthrene	10 U	10	1.4	1	03/26/24 15:21	3/21/24	
Pyrene	10 U	10	1.5	1	03/26/24 15:21	3/21/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	64	25 - 99	03/26/24 15:21	
Nitrobenzene-d5	72	22 - 104	03/26/24 15:21	
p-Terphenyl-d14	81	10 - 143	03/26/24 15:21	

Client: Olin Corporation
Project: Industrial Welding/1332
Sample Matrix: Water

Service Request: R2402213
Date Analyzed: 03/26/24

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

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2402935-02			RQ2402935-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	8270D	49.8	80.0	62	57.3	80.0	72	35-94	15	30
Acenaphthene	8270D	60.3	80.0	75	66.7	80.0	83	46-103	10	30
Acenaphthylene	8270D	63.9	80.0	80	69.9	80.0	87	51-114	8	30
Anthracene	8270D	68.1	80.0	85	76.1	80.0	95	61-115	11	30
Benz(a)anthracene	8270D	69.0	80.0	86	76.9	80.0	96	60-110	11	30
Benzo(a)pyrene	8270D	69.1	80.0	86	78.4	80.0	98	68-137	13	30
Benzo(b)fluoranthene	8270D	66.5	80.0	83	76.7	80.0	96	59-114	15	30
Benzo(g,h,i)perylene	8270D	64.2	80.0	80	74.1	80.0	93	60-123	15	30
Benzo(k)fluoranthene	8270D	71.4	80.0	89	80.6	80.0	101	62-122	13	30
Chrysene	8270D	69.1	80.0	86	78.8	80.0	99	64-116	14	30
Dibenz(a,h)anthracene	8270D	46.6	80.0	58	55.3	80.0	69	34-140	17	30
Fluoranthene	8270D	66.7	80.0	83	72.6	80.0	91	58-129	9	30
Fluorene	8270D	66.2	80.0	83	73.7	80.0	92	54-111	10	30
Indeno(1,2,3-cd)pyrene	8270D	60.7	80.0	76	70.0	80.0	87	54-119	13	30
Naphthalene	8270D	51.5	80.0	64	59.7	80.0	75	32-91	16	30
Phenanthrene	8270D	67.6	80.0	84	75.1	80.0	94	60-111	11	30
Pyrene	8270D	70.3	80.0	88	77.6	80.0	97	62-111	10	30

Semivolatile Organic Compounds by GC

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Client: Olin Corporation **Service Request:** R2402213
Project: Industrial Welding/1332
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3510C

Sample Name	Lab Code	Decachlorobiphenyl 10 - 111	Tetrachloro-m-xylene 10 - 101
IWS-SD1-031924	R2402213-001	18	70
IWS-MW1-031924	R2402213-002	31	55
IWS-MW2-031924	R2402213-003	32	59
IWS-SD1-031924 MS	RQ2402926-01	23	69
IWS-SD1-031924 DMS	RQ2402926-02	20	60
Method Blank	RQ2402926-03	37	67
Lab Control Sample	RQ2402926-04	28	62
Duplicate Lab Control Sample	RQ2402926-05	38	68

Client:	Olin Corporation	**Service Request:**	R2402213
Project:	Industrial Welding/1332	**Date Collected:**	03/19/24
Sample Matrix:	Water	**Date Received:**	03/20/24
		Date Analyzed:	03/25/24
		Date Extracted:	03/21/24

Duplicate Matrix Spike Summary
Organochlorine Pesticides by Gas Chromatography

Sample Name:	IWS-SD1-031924	**Units:**	ug/L
Lab Code:	R2402213-001	**Basis:**	NA
Analysis Method:	8081B		
Prep Method:	EPA 3510C		

		Matrix Spike			Duplicate Matrix Spike					
		RQ2402926-01			RQ2402926-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	0.049 U	0.365	0.392	93	0.307	0.392	78	27-154	17	30
beta-BHC	0.049 U	0.370	0.392	94	0.324	0.392	83	32-184	13	30
delta-BHC	0.049 U	0.365	0.392	93	0.292	0.392	75	10-182	22	30
gamma-BHC (Lindane)	0.049 U	0.358	0.392	91	0.311	0.392	79	43-164	14	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2402213
Project:	Industrial Welding/1332	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2402926-03	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: Method

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.050 U	0.050	1	03/25/24 19:29	3/21/24	
beta-BHC	0.050 U	0.050	1	03/25/24 19:29	3/21/24	
delta-BHC	0.050 U	0.050	1	03/25/24 19:29	3/21/24	
gamma-BHC (Lindane)	0.050 U	0.050	1	03/25/24 19:29	3/21/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	37	10 - 111	03/25/24 19:29	
Tetrachloro-m-xylene	67	10 - 101	03/25/24 19:29	

Client: Olin Corporation
Project: Industrial Welding/1332
Sample Matrix: Water

Service Request: R2402213
Date Analyzed: 03/25/24

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2402926-04			RQ2402926-05					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	8081B	0.293	0.400	73	0.331	0.400	83	39-107	12	30
beta-BHC	8081B	0.300	0.400	75	0.339	0.400	85	47-110	12	30
delta-BHC	8081B	0.291	0.400	73	0.334	0.400	84	43-109	14	30
gamma-BHC (Lindane)	8081B	0.295	0.400	74	0.336	0.400	84	41-105	13	30

Metals

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Form 3

Blanks

7470A

Workorder

R2402213

Client

Olin Corporation

Project

Industrial Welding

03/29/2024

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Form 3 - Blanks

Client	Olin Corporation	Workorder	
Project	Industrial Welding	**R2402213**	

7470A

RCVAA03_836220			ICB		CCB		MB-836220		CCB		CCB		CCB	
Units		Run Date	03/28/24		03/28/24		03/28/24		03/28/24		03/28/24		03/28/24	
ug/L		Run Time	09:22		09:30		09:32		09:55		10:15		10:38	
Analyte	DL	LOQ	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Mercury, Total	0.08	0.20	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U

Q - Result Flag * - Result Outside Limits

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Form 5A

Matrix Spike Sample Recovery

7470A

Workorder

R2402213

Client

Olin Corporation

Project

Industrial Welding

03/29/2024

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Form 5A - Matrix Spike Sample Recovery

Client	Olin Corporation	Workorder	
Project	Industrial Welding	**R2402213**	

7470A

RunID: RCVAA03-836220

IWS-SD1-031924 (R2402213-001)				R2402213-001MS		R2402213-001DMS	
Spike Matrix	Water	Result Units	ug/L	Run Date	03/28/24	Run Date	03/28/24
Instrument ID	RCVAA03	Analysis	836220	Run Time	09:47	Run Time	09:50
Prep Date	03/27/24	Prep Batch	435990		NA		NA
Prep Method	Method			Prep Amt	25 mL	Prep Amt	25 mL

Analyte	%R Limits	DF	Sample Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
Mercury, Total	75-125	1	0	0.98	1.00	98		0.98	1.00	98		20	0	

Q - %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits %R - %Recovery DF - Dilution Factor Amt - Amount (weight or volume)

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Form 7

Laboratory Control Sample

7470A

Workorder

R2402213

Client

Olin Corporation

Project

Industrial Welding

03/29/2024

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Form 7 - Laboratory Control Sample

Client	Olin Corporation	Workorder	
Project	Industrial Welding	**R2402213**	

7470A

RunID: RCVAA03-836220

RCVAA03_836220				R2402213-LCS		
Spike Matrix	Water	Result Units	ug/L	Run Date	03/28/24	
Prep Date	03/27/24	Analysis Batch	836220	Run Time	09:37	
Prep Method	Method	Prep Batch	435990	Prep Amt	25 mL	

Analyte	%Recovery Limits	Spike Added	LCS Result	%R	Q		
Mercury, Total	80-120	1.00	0.97	97			

Industrial Welding Site
Data Evaluation Narrative
March 2024 Groundwater/Storm Drain Sampling Event

SDG R2402213: ALS Environmental, Rochester, NY

Deliverables

The data package as submitted to Olin Corporation is complete as stipulated under the Industrial Welding Site Quality Assurance Project Plan (QAPP) as approved by the New York State Department of Environmental Conservation. United States Environmental Protection Agency (USEPA) Methods 8270D, 8081B, and 7470A were utilized in the laboratory testing.

Samples submitted within this sample delivery group (SDG) were submitted to the ALS Environmental laboratory in Rochester, NY for analysis of select semi-volatile organic compounds, organochlorine pesticides, and total mercury. The laboratory subsequently applied login numbers to the SDG. The SDG number for this sampling event is R2402213. This evaluation narrative follows the listing of groundwater and storm drain sample field identifications. The topics are ordered to first assess issues affecting the entire data set.

Sample Integrity

Information provided on the Chain of Custody and Cooler Receipt Form provided by the laboratory confirmed the samples arrived at the laboratory intact. The cooler temperature as received by the laboratory was within the temperature control limits of 4.0°C ± 2.0°C. The proper bottles and preservatives were used, and the correct analytical methods were employed.

Sample Identification

This SDG contains the following samples collected on March 19, 2024:

SAMPLE	SAMPLE	SAMPLE
IWS-SD1-031924	IWS-MW1-031924	IWS-MW2-031924

Semi-Volatile Organic Compounds (EPA Method 8270D)

The samples in this SDG were submitted for analysis of select semi-volatile organic compounds—polyaromatic hydrocarbons (PAHs), by USEPA Method 8270D.

Holding Times:

The extraction and analytical logs indicate that applicable holding times were met for samples submitted for PAH analysis. The holding times of 7 days for extraction and 40 days for analysis were met.

GC/MS Instrument Performance Check:

The GC/MS tuning and mass calibration checks were performed with decafluorotriphenylphospine (DFTPP) and met the performance criteria as established by the method.

Calibration:

The initial calibration and continuing calibration data (ICV and CCV respectively) indicate that applicable calibration criteria were met for samples submitted for PAH analysis. The RSDs for each calibration check were within the applicable criteria.

Blank Summary:
The analytical results of the laboratory method blank indicated no PAHs were detected.

Laboratory Control Sample (LCS)/LCS Duplicate (LCSD):
The LCS/LCSD spike recoveries were within the applicable QC advisory limits, as were the relative percent differences (RPDs).

Matrix Spike/Matrix Spike Duplicate:
Sufficient sample volumes of IWS-SD1-031924 were submitted to the laboratory for MS/MSD analysis. The MS/MSD recoveries and RPDs were within laboratory control limits.

Internal Standards and Surrogates:
The internal standard area counts/retention times and the surrogate recoveries were within applicable QC advisory limits.

Organochlorine Pesticides (EPA Method 8081B)
The samples in this SDG were submitted for total HCCH (hexachlorocyclohexanes) analysis by USEPA Method 8081B.

Holding Times:
The extraction and analytical logs indicate that applicable holding times were met for samples submitted for HCCH analyses. The holding times of 7 days for extraction and 40 days for analysis were met.

Calibration:
The initial calibration data met method and QAPP criteria. The injection port inertness checks (column breakdown) for DDT and Endrin were within QC limits each day that samples associated with this SDG were analyzed. The continuing calibration data were within lab control limits.

Surrogates:
The surrogate recoveries were within applicable QC advisory limits.

Blank Summary:
The analytical results of the laboratory method blank indicated no HCCHs were detected.

Laboratory Control Sample (LCS)/LCS Duplicate (LCSD):
The LCS/LCSD spike recoveries were within the applicable QC advisory limits as were the RPDs.

Matrix Spike/Matrix Spike Duplicate:
Sufficient sample volumes of IWS-SD1-031924 were submitted to the laboratory for MS/MSD analysis. The MS/MSD recoveries and RPDs were within laboratory control limits.

Dual Column Confirmation:
The RPDs between the primary and confirmation results were within laboratory QC guidelines.

Total Mercury Analyses (EPA Method 7470A)
The samples in this SDG were submitted for total mercury analysis by USEPA Method 7470A.

Holding Times:
The extraction and analytical logs indicate that applicable holding times were met for samples submitted for total mercury analysis.

Calibration:
The initial and continuing calibration data for this SDG indicate that applicable calibration criteria were met for samples submitted for total mercury analysis. The low-level check standard recoveries were within QC advisory limits.

Blank Summary:
The analytical results of the initial and continuing laboratory method blanks indicated that total mercury was not detected.

Laboratory Control Sample:
The laboratory control sample (LCS) spike recovery was within the applicable QC advisory limits.

Matrix Spike/Matrix Spike Duplicate:
Sample IWS-SD1-031924 was submitted to the laboratory for MS/MSD analysis. The percent recoveries and RPD were within lab control limits.

Overall Site Evaluation and Professional Judgment Flagging Changes
The data within this SDG were compared to site data and edits to the DQE flags were not required based on professional judgment. Monitoring period completeness, which is the percentage of analytical results judged valid, including estimated values, was 100 percent for the March 2024 sampling event.

Prepared by: *Randy T. Morris* Date: *April 5, 2024*