Environmental Remediation Group

490 Stuart Road NE
Cleveland, TN 37312
(423) 336-4057
FAX (423) 336-4166
abcarringer@olin.com

SENT VIA OVERNIGHT CARRIER AND FILE TRANSFER PORTAL

August 1, 2022

Mr. Glenn May
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203-2915

RE: Industrial Welding Site
NYSDEC Registry No. 9-32-050
Periodic Review Report – September 2021 through March 2022 REVISION

Dear Mr. May:

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 September 2021 through March 2022 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 the notification letter dated March 15, 2022.

Should you have questions, please contact me at (423) 336-4057. 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 B. Carringer
Senior Environmental Specialist

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, 2021 to May 01, 2022

	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 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

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.

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.

Signature of Owner, Remedial Party or Designated Representative

Date

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 (print name) at 490 Stuart Rd NE Cleveland TN 37312 (print business address),

am certifying as Olin's Representative (Owner or Remedial Party)

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

Adam B [illegible]
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

5/31/2022
Date

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 Carrie Hunt (print name) at 490 Stuart RD NE, Cleveland, TN 37312 (print business address),

am certifying as a Qualified Environmental Professional for the Owner's Representative (Owner or Remedial Party)

Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification	Stamp (Required for PE)	Date
Carrie Hunt	11148	5-26-2022

ANNUAL PERIODIC REVIEW REPORT
INDUSTRIAL WELDING SITE
NIAGARA FALLS, NEW YORK

Site Number: 932050

Prepared By:

OLIN CORPORATION

490 Stuart Road NE

Cleveland, Tennessee 37312

August 1, 2022
(revision)

TABLE OF CONTENTS

I. Executive Summary

A. Brief summary, nature and extent, remedial history: The site is comprised of three parcels. The original Industrial Welding Site (IWS) and the subsequently added American Legion Post (ALP) property lie immediately west of Veterans Drive and approximately 0.2 miles north of Buffalo Avenue in the City of Niagara Falls, New York. The third parcel, formerly called the Packard Road Parcel, lies immediately south of the American Legion Post parcel. Gill Creek, the site of a remedial action in 1998, lies immediately to the east of Veterans Drive. A site location map is presented in Figure 1, ***Attachment A***, of this report.

The ownership and usage of the IWS property have varied over the past 60 years. The High Energy Fuels (HEF) 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 HEF Division was disbanded, and the laboratory and plant buildings demolished. The eastern side of the property was filled with fly ash, concrete debris, rubble from a building possibly contaminated with hexachlorocyclohexane (commonly known as benzene hexachloride [BHC]) and salt dirt (brine muds).

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 has formerly been utilized as a meeting and event hall.

B. Effectiveness of remedial program: The isolation of ground water within the capped area has been established and is being maintained by current operation and maintenance activities. The remedial program is achieving the objectives of containing groundwater flow and discharging to the local sewer authority via permitted discharge.

C. Compliance: There are no areas of non-compliance.

D. Recommendations: The Operation and Maintenance program has shown that the conditions at the site are stable and consistent.

II. SITE OVERVIEW

A. Site description and nature/extent prior to remediation: A map showing site features is included in ***Attachment A***. The nature and extent of contamination were evaluated during the Remedial Investigation (RI) and Feasibility Study (FS), which was conducted by International Technology Corporation, Knoxville, Tennessee. The final RI/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 ground-water 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 (SCGs) for groundwater, drinking water, surface water, soils and site-specific, risk-based criteria. Mercury, BHCs, and polycyclic aromatic hydrocarbons (PAHs) were determined to be the contaminants of concern.

Remediation chronology:

Pre-design sampling and analysis was performed in 1997 and 1998. Additional soil sampling was conducted on the Packard Road Parcel and evaluated to determine the appropriate remedy.

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

The selected remedy for the IWS as stated in the ROD consists of a multi-layer final cover system over an area of approximately 4 acres. The sediments currently present at the IWS under the temporary cover system were consolidated under the IWS final cover system. The height of the final cover system was no greater than eight feet. The modified multi-layer IWS final cover system consists of the following.

- Six (6) inches of a compacted soil layer or 20-mil PVC geomembrane.

- 40-mil linear high-density polyethylene (HDPE) geomembrane liner.

- Eighteen (18) 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.

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 IWS.

Based on the results of the pre-design 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 is based upon the estimated volume of soils and sediments that are to be consolidated. The material to be consolidated beneath the IWS cover system was approximately 2,900 cubic yards of impacted soils from the eastern perimeter and 6,900 cubic yards of sediments. The volume of sediments is based on a survey of the consolidated material placed on IWS in 1998. The limits of excavation are based on the RI/FS and the sampling and the results of the pre-design field activities. The American Legion Parcel and the Packard Road Parcel was asphalted subsequent to the IWS cap construction.

III. REMEDY PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS

The work performed for the Site during the reporting period was reviewed and found to be in accordance with the approved O&M Manual. The ground water monitoring data for the September 2021 and March 2022 monitoring events are presented in ***Attachment B*** along with the surface drainage data from November 2021***.***

IV. IC/EC Plan (not applicable)

A. IC/EC requirements:

- Fence is in place around the landfill, effectively restricting access.
- Clean soil cover and asphalt cover is in place on the landfill, restricting infiltration and promoting runoff.

B. Certification:

- Attached.

V. MONITORING PLAN COMPLIANCE REPORT

A. Components of Monitoring Plan: Routine operation of the leachate control and recovery system (LCRS) consists of the extraction well pump automatically discharging leachate from the extraction well to the City of Niagara Falls sewer system, per city permit No. ICU-23. The pump is controlled by float switches in the extraction well. The status of pump operations is monitored remotely.

B, C. Summary and comparison to remedial objectives:
Groundwater monitoring is performed semi-annually. Monitoring includes:

1. Measurements of water levels in each of the piezometers installed in the swale during the remedial construction. These water levels are provided in Attachment E.

2. Annual collection of groundwater samples from the LCRS recovery well for chemical analysis for mercury, BHC and PAH compounds and semiannual monitoring at two onsite monitoring wells. Lab reports are provided in Attachment B, while historic mercury results and trend plots are provided in Attachment F.

   The isolation of ground water within the capped area has been established and is being maintained by current operation and maintenance activities.
   The ground water chemistry at the monitoring wells has been consistent across sampling events. Semivolatile organics were generally undetected. No SVOCs 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.

The isolation of ground water within the capped area has been established and is being maintained by current operation and maintenance activities.

D. Deficiencies: None

E. Recommendations for changes: The groundwater monitoring program has shown consistent results throughout this monitoring period.

VI. O&M PLAN COMPLIANCE REPORT

A. Components of the O&M Plan: Operation, maintenance, and monitoring activities to be performed include:

- Security fencing is inspected for evidence of vandalism, missing or deteriorated warning signs, fencing member failure or degradation, and soil erosion.

- The cover is inspected for settlement, surface erosion, vegetation, and asphalt concrete conditions.

- The surface water drainage and erosion control system is inspected for erosion, settlement, obstructions, and damage to:

  - Vegetative-lined swales
  - Drainage piping and inlets

- The LCRS is inspected for proper pump operation, condition of cleanouts and pipes, and presence of standing water and debris. The most recent annual Discharge Monitoring Report to the City POTW is included in ***Attachment C***.

- The site access ways are inspected for surface deterioration and erosion

of shoulders.

- Recordkeeping is maintained for site inspections and monitoring.

B. <u>O&M Summary</u>: Groundwater samples are collected from the sampling port at the LCRS recovery well annually. The samples are submitted to the off-site laboratory for analysis for mercury, BHC, and semi-volatile compounds. These results, along with the lab report, are provided in Attachment C.

Calendar-year flows by day for 2021 and for 2022 through April are presented in ***Attachment D***.

Inspection reports, sampling logs, and site activities reports are presented in ***Attachment E.*** 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 the O&M Plan. The completed Site Activities Reports are maintained at Olin Environmental Remediation offices in Cleveland, TN.

C. Evaluation of remedial systems: All components are performing as designed

D. O&M deficiencies: None

E. Conclusions: The O&M system is being run and maintained properly and does not require additions or modifications at this time.

VII. OVERALL PRR CONCLUSIONS AND RECOMMENDATIONS

A. Compliance with Site Monitoring Plan: Based on the operations and maintenance documentation listed above, the system requirements are being met. There are no new exposure pathways. Additional plans and modifications are not necessary.

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

- The isolation of ground water within the capped area has been established and is being maintained by current operation and maintenance activities.

- The ground water chemistry at the monitoring wells has been consistent across sampling events. Semivolatile organics were generally undetected. No SVOCs 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 timeframe. The mercury concentrations reported for MW-2 indicated an upward departure from the overall trend. Historically, concentration spikes have been detected but fell back to historic levels in the following years. Over the past 19 years, the higher concentrations have occurred in the spring of the calendar years, with exception of the fall 2013 event. Whenever there were elevated hits in the spring, the results immediately fell back within the historic ranges during the next sampling event. We will closely monitor the spring outlier in future sampling events. The trends for mercury concentrations are illustrated by the graph and data included in ***Attachment F.***

C. Future submittals: Future submittals of reports will be done on an annual basis in the appropriate Periodic Review Report format.

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ATTACHMENT A

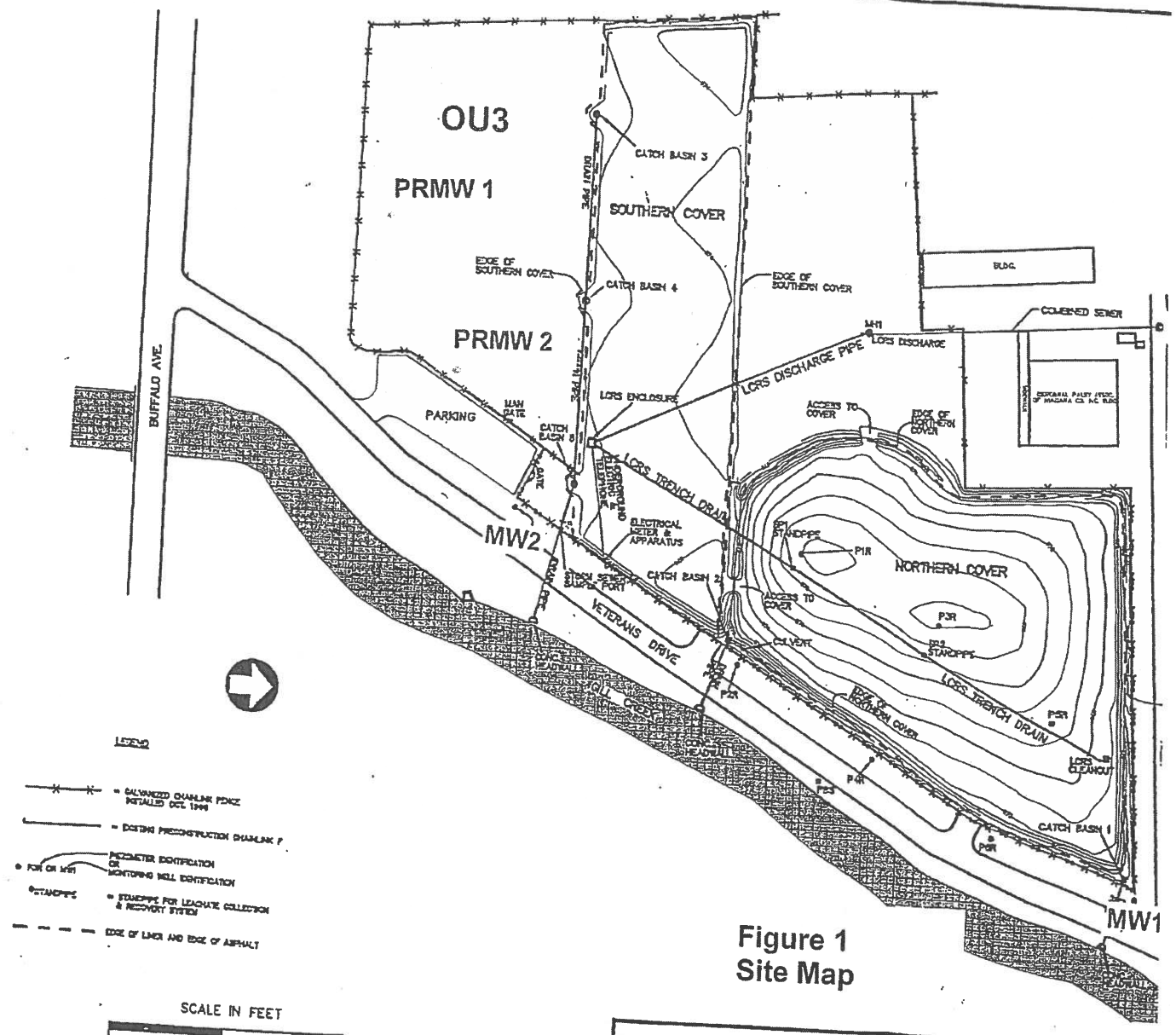

Figure 1
Site Map

OLIN CORPORATION
INDUSTRIAL WELDING SITE
NIAGARA FALLS, NEW YORK

ATTACHMENT B

October 05, 2021 Service Request No:R2109832

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 September 22, 2021
For your reference, these analyses have been assigned our service request number **R2109832.**

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: R2109832
Date Received: 09/22/2021

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 09/22/2021. 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:

No significant anomalies were noted with this analysis.

Metals:

No significant anomalies were noted with this analysis.

Approved by _____ Date 10/05/2021

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:**R2109832
Project: Olin Industrial Welding Site/1259

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2109832-001	IWS-SD1-092121	9/21/2021	0915
R2109832-002	IWS-MW1-092121	9/21/2021	1054
R2109832-003	IWS-MW2-092121	9/21/2021	1010

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

061201

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: OLIN INDUSTRIAL WELDING SITE	Project Number: 1259
Project Manager: ADAM CARLINGER	Report CC: ADAM CARLINGER
Company/Address: OLIN CORPORATION - Corp ENVIRONMENTAL REMEDIATION GROUP 490 STUART RD CLEVELAND, TN 37312	
Phone #: 423-508-2768	Email: ABCARLINGER@OLIN.COM
Sampler's Signature:	Sampler's Printed Name: MICHAEL B WALKER

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs • 8260 • 624 • CLP	GC/MS SVOAs • 8270 • 625	GC VOAs • 8021 • 601/602	PESTICIDES • 8081 • 608	PCBs • 8082 • 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	Hexavalent Chromium (total)								REMARKS/ ALTERNATE DESCRIPTION
PRESERVATIVE								0		0			2								
IWS-SD1-092121		9/21/21	0915	GW	15		6		6				3								MS/MSD
IWS-MW1-092121		9/21/21	1054	GW	5		2		2				1								
IWS-MW2-092121		9/21/21	1010	GW	5		2		2				1								
TRIP BLANK		9/21/21	—	—	1																

Preservative Key: 0. NONE ✓ 1. HCL ✓ 2. HNO_3 ✓ 3. H_2SO_4 4. NaOH 5. Zn. Acetate 6. MeOH 7. $NaHSO_4$ 8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals – TOTAL MERCURY

Samples shipped in 1 cooler

See QAPP ☐

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
X Standard (10 business days-No Surcharge)
REQUESTED REPORT DATE
STANDARD

REPORT REQUIREMENTS
____ I. Results Only
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
Edata ____ Yes ____ No

INVOICE INFORMATION
PO #
BILL TO: OLIN CORP

STATE WHERE SAMPLES WERE COLLECTED NEW YORK

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature UPS DRIVER	Signature	Signature	Signature	Signature
Printed Name MICHAEL B WALKER	Printed Name	Printed Name	Printed Name JP BOARD	Printed Name	Printed Name
Firm SEVERN	Firm UPS	Firm	Firm ALS	Firm	Firm
Date/Time 9/21/21 1330	Date/Time 9/21/21 1330	Date/Time	Date/Time 9/22/21 10:15	Date/Time	Date/Time

R2109832 5
Olin Corporation
Olin Industrial Welding Site

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

R2109832 5

Olin Corporation
Olin Industrial Welding Site

Cooler Receipt and Preservation Ch

Project/Client Olin Corp. Folder Number

Cooler received on 9/22/21 by: JRB/KE

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: 9/22/21 Time: 10:30 ID: IR#7 (IR#11) From: (Temp Blank) Sample Bottle

Observed Temp (°C)	4.8						
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: R-002 by JRB on 9/22/21 at 11:00
5035 samples placed in storage location: by on at within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 9/23/21 Time: 16:45 by: KE

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. 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	223419	HNO_3	X		1121042	6/22				
≤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: 21-07-12, 77327C2724

Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: KE

PC Secondary Review: MP

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

ALS Group USA, Corp.
dba ALS Environmental

Internal Chain of Custody Report

Client: Olin Corporation **Service Request:** R2109832
Project: Olin Industrial Welding Site/1259

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2109832-001.01					
	7470A				
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/28/2021	1302	In Lab / BDIAMOND	
		9/28/2021	1322	R-A01 / BDIAMOND	
R2109832-001.02					
	8081B				
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/23/2021	0758	In Lab / VSTAUFFER	
R2109832-001.03					
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/23/2021	0757	In Lab / VSTAUFFER	
R2109832-001.04					
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
R2109832-001.05					
	8270D				
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
R2109832-001.06					
		9/22/2021	1707	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
R2109832-001.07					
		9/22/2021	1707	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
R2109832-001.08					
		9/22/2021	1707	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
R2109832-001.09					
		9/22/2021	1707	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	

Client: Olin Corporation **Service Request:** R2109832

Project: Olin Industrial Welding Site/1259

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2109832-001.10					
		9/22/2021	1707	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/23/2021	0757	In Lab / VSTAUFFER	
R2109832-001.11					
		9/22/2021	1707	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/27/2021	0831	In Lab / VSTAUFFER	
R2109832-001.12					
		9/22/2021	1707	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
R2109832-001.13					
		9/22/2021	1707	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/27/2021	0831	In Lab / VSTAUFFER	
R2109832-001.14					
		9/22/2021	1707	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
R2109832-001.15					
		9/22/2021	1707	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/27/2021	0831	In Lab / VSTAUFFER	
R2109832-002.01					
	7470A				
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/28/2021	1302	In Lab / BDIAMOND	
		9/28/2021	1322	R-A01 / BDIAMOND	
R2109832-002.02					
	8081B				
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/23/2021	0757	In Lab / VSTAUFFER	
R2109832-002.03					

Client: Olin Corporation **Service Request:** R2109832
Project: Olin Industrial Welding Site/1259

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/27/2021	0831	In Lab / VSTAUFFER	
R2109832-002.04					
	8270D				
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
R2109832-002.05					
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
R2109832-003.01					
	7470A				
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/28/2021	1302	In Lab / BDIAMOND	
		9/28/2021	1322	R-A01 / BDIAMOND	
R2109832-003.02					
	8081B				
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/23/2021	0757	In Lab / VSTAUFFER	
R2109832-003.03					
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
R2109832-003.04					
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
R2109832-003.05					
	8270D				
		9/22/2021	1656	SMO / GESMERIAN	
		9/22/2021	1707	R-002 / GESMERIAN	
		9/27/2021	0831	In Lab / VSTAUFFER	

Miscellaneous Forms

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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 Method Reporting Limit. Also known as:
LOQ 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	**Service Request:**	R2109832
Project:	Olin Industrial Welding Site/1259		

Sample Name:	IWS-SD1-092121	**Date Collected:**	09/21/21
Lab Code:	R2109832-001	**Date Received:**	09/22/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
7470A	NMANSEN	NMANSEN
8081B	KSERCU	AMOSES
8270D	KSERCU	JMISIUREWICZ

Sample Name:	IWS-MW1-092121	**Date Collected:**	09/21/21
Lab Code:	R2109832-002	**Date Received:**	09/22/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
7470A	NMANSEN	NMANSEN
8081B	KSERCU	AMOSES
8270D	KSERCU	JMISIUREWICZ

Sample Name:	IWS-MW2-092121	**Date Collected:**	09/21/21
Lab Code:	R2109832-003	**Date Received:**	09/22/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
7470A	NMANSEN	NMANSEN
8081B	KSERCU	AMOSES
8270D	KSERCU	JMISIUREWICZ

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:**	R2109832
Project:	Olin Industrial Welding Site/1259	**Date Collected:**	09/21/21 09:15
Sample Matrix:	Water	**Date Received:**	09/22/21 10:15
Sample Name:	IWS-SD1-092121	**Units:**	ug/L
Lab Code:	R2109832-001	**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	ND U	9.1	1.3	1	09/29/21 14:44	9/27/21	
Acenaphthene	ND U	9.1	1.4	1	09/29/21 14:44	9/27/21	
Acenaphthylene	ND U	9.1	1.4	1	09/29/21 14:44	9/27/21	
Anthracene	ND U	9.1	1.3	1	09/29/21 14:44	9/27/21	
Benz(a)anthracene	ND U	9.1	1.6	1	09/29/21 14:44	9/27/21	
Benzo(a)pyrene	ND U	9.1	1.2	1	09/29/21 14:44	9/27/21	
Benzo(b)fluoranthene	ND U	9.1	1.2	1	09/29/21 14:44	9/27/21	
Benzo(g,h,i)perylene	ND U	9.1	1.0	1	09/29/21 14:44	9/27/21	
Benzo(k)fluoranthene	ND U	9.1	1.3	1	09/29/21 14:44	9/27/21	
Chrysene	ND U	9.1	1.2	1	09/29/21 14:44	9/27/21	
Dibenz(a,h)anthracene	ND U	9.1	1.1	1	09/29/21 14:44	9/27/21	
Fluoranthene	ND U	9.1	1.5	1	09/29/21 14:44	9/27/21	
Fluorene	ND U	9.1	1.3	1	09/29/21 14:44	9/27/21	
Indeno(1,2,3-cd)pyrene	ND U	9.1	1.8	1	09/29/21 14:44	9/27/21	
Naphthalene	ND U	9.1	1.2	1	09/29/21 14:44	9/27/21	
Phenanthrene	ND U	9.1	1.4	1	09/29/21 14:44	9/27/21	
Pyrene	ND U	9.1	1.5	1	09/29/21 14:44	9/27/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	65	31 - 118	09/29/21 14:44	
Nitrobenzene-d5	57	31 - 110	09/29/21 14:44	
p-Terphenyl-d14	76	10 - 165	09/29/21 14:44	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2109832
Project:	Olin Industrial Welding Site/1259	**Date Collected:**	09/21/21 10:54
Sample Matrix:	Water	**Date Received:**	09/22/21 10:15
Sample Name:	IWS-MW1-092121	**Units:**	ug/L
Lab Code:	R2109832-002	**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	ND U	10	1.3	1	09/29/21 11:33	9/27/21	
Acenaphthene	ND U	10	1.4	1	09/29/21 11:33	9/27/21	
Acenaphthylene	ND U	10	1.4	1	09/29/21 11:33	9/27/21	
Anthracene	ND U	10	1.3	1	09/29/21 11:33	9/27/21	
Benz(a)anthracene	ND U	10	1.6	1	09/29/21 11:33	9/27/21	
Benzo(a)pyrene	ND U	10	1.2	1	09/29/21 11:33	9/27/21	
Benzo(b)fluoranthene	ND U	10	1.2	1	09/29/21 11:33	9/27/21	
Benzo(g,h,i)perylene	ND U	10	1.0	1	09/29/21 11:33	9/27/21	
Benzo(k)fluoranthene	ND U	10	1.3	1	09/29/21 11:33	9/27/21	
Chrysene	ND U	10	1.2	1	09/29/21 11:33	9/27/21	
Dibenz(a,h)anthracene	ND U	10	1.1	1	09/29/21 11:33	9/27/21	
Fluoranthene	ND U	10	1.5	1	09/29/21 11:33	9/27/21	
Fluorene	ND U	10	1.3	1	09/29/21 11:33	9/27/21	
Indeno(1,2,3-cd)pyrene	ND U	10	1.8	1	09/29/21 11:33	9/27/21	
Naphthalene	ND U	10	1.2	1	09/29/21 11:33	9/27/21	
Phenanthrene	ND U	10	1.4	1	09/29/21 11:33	9/27/21	
Pyrene	ND U	10	1.5	1	09/29/21 11:33	9/27/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	70	31 - 118	09/29/21 11:33	
Nitrobenzene-d5	61	31 - 110	09/29/21 11:33	
p-Terphenyl-d14	73	10 - 165	09/29/21 11:33	

Client:	Olin Corporation	**Service Request:**	R2109832
Project:	Olin Industrial Welding Site/1259	**Date Collected:**	09/21/21 10:10
Sample Matrix:	Water	**Date Received:**	09/22/21 10:15
Sample Name:	IWS-MW2-092121	**Units:**	ug/L
Lab Code:	R2109832-003	**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	ND U	9.1	1.3	1	09/29/21 12:00	9/27/21	
Acenaphthene	ND U	9.1	1.4	1	09/29/21 12:00	9/27/21	
Acenaphthylene	ND U	9.1	1.4	1	09/29/21 12:00	9/27/21	
Anthracene	ND U	9.1	1.3	1	09/29/21 12:00	9/27/21	
Benz(a)anthracene	ND U	9.1	1.6	1	09/29/21 12:00	9/27/21	
Benzo(a)pyrene	ND U	9.1	1.2	1	09/29/21 12:00	9/27/21	
Benzo(b)fluoranthene	ND U	9.1	1.2	1	09/29/21 12:00	9/27/21	
Benzo(g,h,i)perylene	ND U	9.1	1.0	1	09/29/21 12:00	9/27/21	
Benzo(k)fluoranthene	ND U	9.1	1.3	1	09/29/21 12:00	9/27/21	
Chrysene	ND U	9.1	1.2	1	09/29/21 12:00	9/27/21	
Dibenz(a,h)anthracene	ND U	9.1	1.1	1	09/29/21 12:00	9/27/21	
Fluoranthene	ND U	9.1	1.5	1	09/29/21 12:00	9/27/21	
Fluorene	ND U	9.1	1.3	1	09/29/21 12:00	9/27/21	
Indeno(1,2,3-cd)pyrene	ND U	9.1	1.8	1	09/29/21 12:00	9/27/21	
Naphthalene	ND U	9.1	1.2	1	09/29/21 12:00	9/27/21	
Phenanthrene	ND U	9.1	1.4	1	09/29/21 12:00	9/27/21	
Pyrene	ND U	9.1	1.5	1	09/29/21 12:00	9/27/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	63	31 - 118	09/29/21 12:00	
Nitrobenzene-d5	61	31 - 110	09/29/21 12:00	
p-Terphenyl-d14	73	10 - 165	09/29/21 12:00	

Semivolatile Organic Compounds by GC

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Client:	Olin Corporation	**Service Request:**	R2109832
Project:	Olin Industrial Welding Site/1259	**Date Collected:**	09/21/21 09:15
Sample Matrix:	Water	**Date Received:**	09/22/21 10:15
Sample Name:	IWS-SD1-092121	**Units:**	ug/L
Lab Code:	R2109832-001	**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	ND U	0.045	1	09/24/21 20:39	9/23/21	
beta-BHC	ND U	0.045	1	09/24/21 20:39	9/23/21	
delta-BHC	ND U	0.045	1	09/24/21 20:39	9/23/21	
gamma-BHC (Lindane)	ND U	0.045	1	09/24/21 20:39	9/23/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	52	10 - 164	09/24/21 20:39	
Tetrachloro-m-xylene	69	10 - 147	09/24/21 20:39	

Client:	Olin Corporation	**Service Request:**	R2109832
Project:	Olin Industrial Welding Site/1259	**Date Collected:**	09/21/21 10:54
Sample Matrix:	Water	**Date Received:**	09/22/21 10:15
Sample Name:	IWS-MW1-092121	**Units:**	ug/L
Lab Code:	R2109832-002	**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	ND U	0.045	1	09/24/21 21:37	9/23/21	
beta-BHC	ND U	0.045	1	09/24/21 21:37	9/23/21	
delta-BHC	ND U	0.045	1	09/24/21 21:37	9/23/21	
gamma-BHC (Lindane)	ND U	0.045	1	09/24/21 21:37	9/23/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	63	10 - 164	09/24/21 21:37	
Tetrachloro-m-xylene	51	10 - 147	09/24/21 21:37	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2109832
Project:	Olin Industrial Welding Site/1259	**Date Collected:**	09/21/21 10:10
Sample Matrix:	Water	**Date Received:**	09/22/21 10:15
Sample Name:	IWS-MW2-092121	**Units:**	ug/L
Lab Code:	R2109832-003	**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	ND U	0.045	1	09/24/21 21:56	9/23/21	
beta-BHC	ND U	0.045	1	09/24/21 21:56	9/23/21	
delta-BHC	ND U	0.045	1	09/24/21 21:56	9/23/21	
gamma-BHC (Lindane)	ND U	0.045	1	09/24/21 21:56	9/23/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	68	10 - 164	09/24/21 21:56	
Tetrachloro-m-xylene	62	10 - 147	09/24/21 21:56	

Metals

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METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

IWS-SD1-092121

Contract: R2109832

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0921

Matrix (soil/water): WATER Lab Sample ID: R2109832-001

Level (low/med): LOW Date Received: 9/22/2021

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.200	U		CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

METALS

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

IWS-MW1-092121

Contract: R2109832

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0921

Matrix (soil/water): WATER Lab Sample ID: R2109832-002

Level (low/med): LOW Date Received: 9/22/2021

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.200	U		CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

METALS

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

IWS-MW2-092121

Contract: R2109832

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0921

Matrix (soil/water): WATER Lab Sample ID: R2109832-003

Level (low/med): LOW Date Received: 9/22/2021

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	3.4			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

QC Summary Forms

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Semivolatile Organic Compounds by GC/MS

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Phone (585) 288-5380 Fax (585) 288-8475
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Client: Olin Corporation **Service Request:** R2109832
Project: Olin Industrial Welding Site/1259
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 31-118	Nitrobenzene-d5 31-110	p-Terphenyl-d14 10-165
IWS-SD1-092121	R2109832-001	65	57	76
IWS-MW1-092121	R2109832-002	70	61	73
IWS-MW2-092121	R2109832-003	63	61	73
IWS-SD1-092121 MS	RQ2111964-01	70	62	80
IWS-SD1-092121 DMS	RQ2111964-02	66	63	69
Method Blank	RQ2111964-03	50	50	74
Lab Control Sample	RQ2111964-04	65	69	75
Duplicate Lab Control Sample	RQ2111964-05	84	80	82

Client:	Olin Corporation	**Service Request:**	R2109832
Project:	Olin Industrial Welding Site/1259	**Date Collected:**	09/21/21
Sample Matrix:	Water	**Date Received:**	09/22/21
		Date Analyzed:	09/29/21
		Date Extracted:	09/27/21

Duplicate Matrix Spike Summary
Semivolatile Organic Compounds by GC/MS

Sample Name:	IWS-SD1-092121	**Units:**	ug/L
Lab Code:	R2109832-001	**Basis:**	NA
Analysis Method:	8270D		
Prep Method:	EPA 3510C		

		Matrix Spike RQ2111964-01			Duplicate Matrix Spike RQ2111964-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	ND U	54.6	80.0	68	47.5	72.7	65	34-102	5	30
Acenaphthene	ND U	62.7	80.0	78	53.2	72.7	73	43-117	7	30
Acenaphthylene	ND U	68.9	80.0	86	57.1	72.7	78	45-119	10	30
Anthracene	ND U	70.2	80.0	88	62.2	72.7	85	45-127	3	30
Benz(a)anthracene	ND U	66.8	80.0	83	57.0	72.7	78	46-126	6	30
Benzo(a)pyrene	ND U	78.5	80.0	98	65.1	72.7	90	44-114	9	30
Benzo(b)fluoranthene	ND U	64.8	80.0	81	54.1	72.7	74	41-127	9	30
Benzo(g,h,i)perylene	ND U	73.1	80.0	91	61.6	72.7	85	50-143	7	30
Benzo(k)fluoranthene	ND U	68.5	80.0	86	60.5	72.7	83	46-139	4	30
Chrysene	ND U	73.2	80.0	92	61.1	72.7	84	47-126	9	30
Dibenz(a,h)anthracene	ND U	71.3	80.0	89	58.7	72.7	81	43-136	9	30
Fluoranthene	ND U	77.1	80.0	96	66.6	72.7	92	43-135	4	30
Fluorene	ND U	66.9	80.0	84	61.4	72.7	84	43-113	<1	30
Indeno(1,2,3-cd)pyrene	ND U	69.0	80.0	86	56.6	72.7	78	49-140	10	30
Naphthalene	ND U	50.4	80.0	63	46.7	72.7	64	37-108	2	30
Phenanthrene	ND U	69.4	80.0	87	59.9	72.7	82	46-123	6	30
Pyrene	ND U	70.2	80.0	88	58.5	72.7	80	44-129	10	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:**	R2109832
Project:	Olin Industrial Welding Site/1259	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2111964-03	**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	ND U	10	1.3	1	09/29/21 08:09	9/27/21	
Acenaphthene	ND U	10	1.4	1	09/29/21 08:09	9/27/21	
Acenaphthylene	ND U	10	1.4	1	09/29/21 08:09	9/27/21	
Anthracene	ND U	10	1.3	1	09/29/21 08:09	9/27/21	
Benz(a)anthracene	ND U	10	1.6	1	09/29/21 08:09	9/27/21	
Benzo(a)pyrene	ND U	10	1.2	1	09/29/21 08:09	9/27/21	
Benzo(b)fluoranthene	ND U	10	1.2	1	09/29/21 08:09	9/27/21	
Benzo(g,h,i)perylene	ND U	10	1.0	1	09/29/21 08:09	9/27/21	
Benzo(k)fluoranthene	ND U	10	1.3	1	09/29/21 08:09	9/27/21	
Chrysene	ND U	10	1.2	1	09/29/21 08:09	9/27/21	
Dibenz(a,h)anthracene	ND U	10	1.1	1	09/29/21 08:09	9/27/21	
Fluoranthene	ND U	10	1.5	1	09/29/21 08:09	9/27/21	
Fluorene	ND U	10	1.3	1	09/29/21 08:09	9/27/21	
Indeno(1,2,3-cd)pyrene	ND U	10	1.8	1	09/29/21 08:09	9/27/21	
Naphthalene	ND U	10	1.2	1	09/29/21 08:09	9/27/21	
Phenanthrene	ND U	10	1.4	1	09/29/21 08:09	9/27/21	
Pyrene	ND U	10	1.5	1	09/29/21 08:09	9/27/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	50	31 - 118	09/29/21 08:09	
Nitrobenzene-d5	50	31 - 110	09/29/21 08:09	
p-Terphenyl-d14	74	10 - 165	09/29/21 08:09	

Client: Olin Corporation
Project: Olin Industrial Welding Site/1259
Sample Matrix: Water

Service Request: R2109832
Date Analyzed: 09/29/21

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

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2111964-04			RQ2111964-05					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	8270D	52.3	80.0	65	60.7	80.0	76	34-102	16	30
Acenaphthene	8270D	61.4	80.0	77	67.0	80.0	84	52-107	9	30
Acenaphthylene	8270D	64.3	80.0	80	74.9	80.0	94	55-109	16	30
Anthracene	8270D	67.2	80.0	84	74.9	80.0	94	55-116	11	30
Benz(a)anthracene	8270D	66.7	80.0	83	73.7	80.0	92	61-121	10	30
Benzo(a)pyrene	8270D	76.0	80.0	95	83.3	80.0	104	44-114	9	30
Benzo(b)fluoranthene	8270D	68.3	80.0	85	69.6	80.0	87	62-115	2	30
Benzo(g,h,i)perylene	8270D	69.8	80.0	87	81.3	80.0	102	63-136	16	30
Benzo(k)fluoranthene	8270D	68.8	80.0	86	74.9	80.0	94	49-133	9	30
Chrysene	8270D	68.8	80.0	86	78.4	80.0	98	57-118	13	30
Dibenz(a,h)anthracene	8270D	72.9	80.0	91	83.7	80.0	105	54-135	14	30
Fluoranthene	8270D	71.2	80.0	89	83.6	80.0	105	66-127	16	30
Fluorene	8270D	68.3	80.0	85	76.7	80.0	96	54-106	12	30
Indeno(1,2,3-cd)pyrene	8270D	70.0	80.0	88	73.6	80.0	92	62-137	4	30
Naphthalene	8270D	51.3	80.0	64	60.2	80.0	75	38-99	16	30
Phenanthrene	8270D	66.1	80.0	83	74.3	80.0	93	58-118	11	30
Pyrene	8270D	69.8	80.0	87	79.2	80.0	99	61-122	13	30

Semivolatile Organic Compounds by GC

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Client: Olin Corporation **Service Request:** R2109832
Project: Olin Industrial Welding Site/1259
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3510C

Sample Name	Lab Code	Decachlorobiphenyl 10-164	Tetrachloro-m-xylene 10-147
IWS-SD1-092121	R2109832-001	52	69
IWS-MW1-092121	R2109832-002	63	51
IWS-MW2-092121	R2109832-003	68	62
Method Blank	RQ2111792-03	66	54
Lab Control Sample	RQ2111792-04	65	57
Duplicate Lab Control Sample	RQ2111792-05	73	60
IWS-SD1-092121 MS	RQ2111792-01	48	56
IWS-SD1-092121 DMS	RQ2111792-02	55	56

Client:	Olin Corporation	**Service Request:**	R2109832
Project:	Olin Industrial Welding Site/1259	**Date Collected:**	09/21/21
Sample Matrix:	Water	**Date Received:**	09/22/21
		Date Analyzed:	09/24/21
		Date Extracted:	09/23/21

Duplicate Matrix Spike Summary
Organochlorine Pesticides by Gas Chromatography

Sample Name:	IWS-SD1-092121	**Units:**	ug/L
Lab Code:	R2109832-001	**Basis:**	NA
Analysis Method:	8081B		
Prep Method:	EPA 3510C		

		Matrix Spike			Duplicate Matrix Spike					
		RQ2111792-01			RQ2111792-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	ND U	0.259	0.364	71	0.264	0.364	73	27-154	2	30
beta-BHC	ND U	0.273	0.364	75	0.282	0.364	78	32-184	3	30
delta-BHC	ND U	0.246	0.364	68	0.266	0.364	73	10-182	8	30
gamma-BHC (Lindane)	ND U	0.253	0.364	69	0.258	0.364	71	43-164	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:**	R2109832
Project:	Olin Industrial Welding Site/1259	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2111792-03	**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	ND U	0.050	1	09/24/21 18:06	9/23/21	
beta-BHC	ND U	0.050	1	09/24/21 18:06	9/23/21	
delta-BHC	ND U	0.050	1	09/24/21 18:06	9/23/21	
gamma-BHC (Lindane)	ND U	0.050	1	09/24/21 18:06	9/23/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	66	10 - 164	09/24/21 18:06	
Tetrachloro-m-xylene	54	10 - 147	09/24/21 18:06	

Client: Olin Corporation
Project: Olin Industrial Welding Site/1259
Sample Matrix: Water

Service Request: R2109832
Date Analyzed: 09/24/21

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2111792-04			RQ2111792-05					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	8081B	0.303	0.400	76	0.312	0.400	78	36-151	3	30
beta-BHC	8081B	0.322	0.400	80	0.315	0.400	79	55-149	2	30
delta-BHC	8081B	0.313	0.400	78	0.304	0.400	76	29-159	3	30
gamma-BHC (Lindane)	8081B	0.306	0.400	77	0.309	0.400	77	41-149	<1	30

Metals

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METALS

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BLANKS

Contract: R2109832

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0921

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Mercury	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	CV

Comments:

METALS

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BLANKS

Contract: R2109832

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0921

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Mercury			0.200	U							CV

Comments:

METALS

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SPIKE SAMPLE RECOVERY

SAMPLE NO.

IWS-SD1-092121S

Contract: R2109832

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0921

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	1.060		0.200	U	1.00	106		CV

Comments:

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

IWS-SD1-092121SD

Contract: R2109832

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0921

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	1.030		0.200	U	1.00	103		CV

Comments:

METALS
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DUPLICATES

SAMPLE NO.

IWS-SD1-092121SD

Contract: R2109832

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0921

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		1.060		1.030		3		CV

Comments: _____

METALS

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LABORATORY CONTROL SAMPLE

Contract: R2109832

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0921

Solid LCS Source: _____

Aqueous LCS Source: JT BAKER

Analyte	Aqueous (ug/L			Solid (mg/K				
	True	Found	%R	True	Found	C	Limits	%R
Mercury	1.000	1.040	104					

Comments: _____

Industrial Welding Site
Data Evaluation Narrative
September 2021 Groundwater/Storm Drain Sampling Event

SDG R2109832: 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 R2109832. 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 September 21, 2021:

SAMPLE	SAMPLE	SAMPLE
IWS-SD1-092121	IWS-MW1-092121	IWS-MW2-092121

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:
Sample IWS-SD1-092121 was submitted to the laboratory for MS/MSD analysis. The percent recoveries and RPD were within control limits.

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

Duplicate Samples:
No samples were selected by the field or laboratory for duplicate analysis.

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 and continuing 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.

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:
Sample IWS-SD1-092121 was submitted to the laboratory for MS/MSD analysis. The percent recoveries and RPD were within control limits.

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

Duplicate Samples:
No samples were selected by the field or laboratory for duplicate analysis.

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-SD1-092121 was submitted to the laboratory for MS/MSD analysis. The percent recoveries and RPD were within control limits.

Duplicate Samples:
No samples were selected by the field or laboratory for duplicate analysis.

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 September 2021 sampling event.

Prepared by: *Randy T. Morris* Date: *October 20, 2021*

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rpt. Limit	Detection	Result	Flag
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	2-Methylnaphthalene	1	9.1	1.3	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Acenaphthene	1	9.1	1.4	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Acenaphthylene	1	9.1	1.4	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Anthracene	1	9.1	1.3	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benz(a)anthracene	1	9.1	1.6	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benzo(a)pyrene	1	9.1	1.2	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benzo(b)fluoranthene	1	9.1	1.2	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	9.1	1	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benzo(k)fluoranthene	1	9.1	1.3	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Chrysene	1	9.1	1.2	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	9.1	1.1	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Fluoranthene	1	9.1	1.5	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Fluorene	1	9.1	1.3	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	9.1	1.8	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Naphthalene	1	9.1	1.2	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Phenanthrene	1	9.1	1.4	9.1	U
IWS-SD1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Pyrene	1	9.1	1.5	9.1	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	2-Methylnaphthalene	1	10	1.3	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Acenaphthene	1	10	1.4	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Acenaphthylene	1	10	1.4	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Anthracene	1	10	1.3	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benz(a)anthracene	1	10	1.6	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benzo(a)pyrene	1	10	1.2	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benzo(b)fluoranthene	1	10	1.2	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	10	1	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benzo(k)fluoranthene	1	10	1.3	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Chrysene	1	10	1.2	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	10	1.1	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Fluoranthene	1	10	1.5	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Fluorene	1	10	1.3	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	10	1.8	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Naphthalene	1	10	1.2	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Phenanthrene	1	10	1.4	10	U
IWS-MW1-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Pyrene	1	10	1.5	10	U

IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	2-Methylnaphthalene	1	9.1	1.3	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Acenaphthene	1	9.1	1.4	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Acenaphthylene	1	9.1	1.4	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Anthracene	1	9.1	1.3	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benz(a)anthracene	1	9.1	1.6	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benzo(a)pyrene	1	9.1	1.2	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benzo(b)fluoranthene	1	9.1	1.2	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	9.1	1	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Benzo(k)fluoranthene	1	9.1	1.3	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Chrysene	1	9.1	1.2	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	9.1	1.1	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Fluoranthene	1	9.1	1.5	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Fluorene	1	9.1	1.3	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	9.1	1.8	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Naphthalene	1	9.1	1.2	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Phenanthrene	1	9.1	1.4	9.1	U
IWS-MW2-092121	9/21/2021	9/29/2021	8270D	Water	UG/L	Pyrene	1	9.1	1.5	9.1	U
IWS-SD1-092121	9/21/2021	9/24/2021	8081B	Water	UG/L	alpha-BHC	1	0.045	0.02	0.045	U
IWS-SD1-092121	9/21/2021	9/24/2021	8081B	Water	UG/L	beta-BHC	1	0.045	0.02	0.045	U
IWS-SD1-092121	9/21/2021	9/24/2021	8081B	Water	UG/L	delta-BHC	1	0.045	0.02	0.045	U
IWS-SD1-092121	9/21/2021	9/24/2021	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.045	0.02	0.045	U
IWS-MW1-092121	9/21/2021	9/24/2021	8081B	Water	UG/L	alpha-BHC	1	0.045	0.02	0.045	U
IWS-MW1-092121	9/21/2021	9/24/2021	8081B	Water	UG/L	beta-BHC	1	0.045	0.02	0.045	U
IWS-MW1-092121	9/21/2021	9/24/2021	8081B	Water	UG/L	delta-BHC	1	0.045	0.02	0.045	U
IWS-MW1-092121	9/21/2021	9/24/2021	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.045	0.02	0.045	U
IWS-MW2-092121	9/21/2021	9/24/2021	8081B	Water	UG/L	alpha-BHC	1	0.045	0.02	0.045	U
IWS-MW2-092121	9/21/2021	9/24/2021	8081B	Water	UG/L	beta-BHC	1	0.045	0.02	0.045	U
IWS-MW2-092121	9/21/2021	9/24/2021	8081B	Water	UG/L	delta-BHC	1	0.045	0.02	0.045	U
IWS-MW2-092121	9/21/2021	9/24/2021	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.045	0.02	0.045	U
IWS-SD1-092121	9/21/2021	9/29/2021	7470A	Water	UG/L	Mercury, Total	1	0.2	0.2	0.2	U
IWS-MW1-092121	9/21/2021	9/29/2021	7470A	Water	UG/L	Mercury, Total	1	0.2	0.2	0.2	U
IWS-MW2-092121	9/21/2021	9/29/2021	7470A	Water	UG/L	Mercury, Total	1	0.2	0.2	3.4	

November 30, 2021 Service Request No:R2111809

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, 2021
For your reference, these analyses have been assigned our service request number **R2111809.**

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: R2111809
Date Received: 11/09/2021

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 11/09/2021. 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 8081B, 11/17/2021: The control limit was exceeded for one or more analytes in the Laboratory Control Sample (LCS). The discrepancy indicates a potential bias for results reported from this analytical batch. The analytes affected are flagged in the LCS Summary Report. lcsd/ms/msd were all okay in the batch.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

No significant anomalies were noted with this analysis.

Approved by _____ Date 11/30/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: IWS-MS1-110821			Lab ID: R2111809-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Dissolved Organic (DOC)	4.4			2.0	mg/L	SM 5310 C-2000 (2011)
Solids, Total Suspended (TSS)	4.4			1.0	mg/L	SM 2540 D-1997 (2011)
Trichloroethene (TCE)	0.814	J	0.200	1.00	ug/L	624.1

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:**R2111809

Project: Olin - Industrial Welding Site/release order ERRE9845

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2111809-001	IWS-MS1-110821	11/8/2021	1400
R2111809-002	Trip Blank-110821	11/8/2021	

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM 061758

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: OLIN - INDUSTRIAL WELDING SITE	Project Number:
Project Manager: ADAM CARLINGER	Report CC:
Company/Address: OLIN CORP 3855 NORTH OCOEE Rd CLEVELAND, TN 37312	
Phone #: 423-336-4000	Email: ABCARLINGER@OLIN.COM
Sampler's Signature:	Sampler's Printed Name: MICHAEL E WALKER

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 0 | 0 | 2 | 0 | 0

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	DOC	TSS						REMARKS/ ALTERNATE DESCRIPTION
IWS-MSI-110821		11-08-21	1400	GW	28	9			4		3		9	3						MS/MSD Volume
TRIP BLANK-110821					3															
TEMP BLANK					1															

Preservative Key: 0. NONE 1. HCL 2. HNO_3 3. H_2SO_4 4. NaOH 5. Zn. Acetate 6. MeOH 7. $NaHSO_4$ 8. Other

SPECIAL INSTRUCTIONS/COMMENTS

Metals T - Hg

DOC's were filtered in field (limited volume due to breakage)

MS/MSD Volume

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED: NEW YORK

TURNAROUND REQUIREMENTS

____ RUSH (SURCHARGES APPLY)

____ 1 day ____ 2 day ____ 3 day

____ 4 day ____ 5 day

X Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE: _____

REPORT REQUIREMENTS

____ I. Results Only

X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)

____ III. Results + QC and Calibration Summaries

____ IV. Data Validation Report with Raw Data

Edata ____ Yes ____ No

INVOICE INFORMATION

PO #:

BILL TO: OLIN CORP

ADAM CARLINGER

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature: UPS DRIVER	Signature:	Signature:	Signature:	Signature:
Printed Name: MICHAEL E WALKER	Printed Name:	Printed Name:	Printed Name:	Printed Name:	
Firm: SEVIERVILLE	Firm: SHIPPING DEPT	Firm:	Firm: OLIN	Firm:	
Date/Time: 11/8/21 / 4:00 PM	Date/Time: UPS FED TIME	Date/Time:	Date/Time: 11/9/21 0935	Date/Time:	

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

R2111809 5
Olin Corporation
Olin - Industrial Welding Site

R2111809 5
Olin Corporation
Olin - Industrial Welding Site

Cooler Receipt and Preservation Chec

Project/Client Olin Folder Number .

Cooler received on 11/9/21 by: e

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: 11/9/21 Time: 0946 ID: IR#7 (IR#11) From: (Temp Blank) Sample Bottle

Observed Temp (°C)	4.5						
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: Room by e on 11/9/21 at 0958
5035 samples placed in storage location: by on at within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 11/9/21 Time: 13:44 by: ME

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. 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	X		1121062	10/22				
≤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	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: 1027-009, 90821-02, 21-1020, 90821-02
Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: ME
PC Secondary Review:

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

Client: Olin Corporation **Service Request:** R2111809

Project: Olin - Industrial Welding Site/release order ERRE9845

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2111809-001.01					
	624				
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
		11/13/2021	1223	In Lab / KRUEST	
		11/13/2021	1248	R-001-S12 / KRUEST	
R2111809-001.02					
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.03					
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.05					
	SM 2540 D-1997(2011)				
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
R2111809-001.06					
	245.1				
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
		11/10/2021	1056	In Lab / BDIAMOND	
		11/10/2021	1345	R-A01 / BDIAMOND	
R2111809-001.07					
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
		11/15/2021	0827	In Lab / MMCMAHON	
R2111809-001.08					
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
		11/15/2021	0827	In Lab / MMCMAHON	
R2111809-001.09					
		11/9/2021	1341	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.10					
		11/9/2021	1341	SMO / GESMERIAN	

Client: Olin Corporation **Service Request:** R2111809

Project: Olin - Industrial Welding Site/release order ERRE9845

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.11					
		11/9/2021	1341	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.12					
		11/9/2021	1341	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.13					
		11/9/2021	1341	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.14					
		11/9/2021	1341	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.15					
	SM 5310 C-2000(2011)				
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.16					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.17					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.18					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	

Client: Olin Corporation **Service Request:** R2111809

Project: Olin - Industrial Welding Site/release order ERRE9845

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.19					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.20					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.21					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.22					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.23					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.24					
		11/9/2021	1342	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
R2111809-001.25					
		11/9/2021	1342	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
R2111809-001.26					

Client: Olin Corporation **Service Request:** R2111809

Project: Olin - Industrial Welding Site/release order ERRE9845

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		11/9/2021	1342	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
		11/10/2021	1345	R-A01 / BDIAMOND	
R2111809-001.27					
		11/9/2021	1342	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
		11/10/2021	1345	R-A01 / BDIAMOND	
R2111809-001.28					
		11/9/2021	1342	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
R2111809-001.29					
	608 Modified				
		11/9/2021	1342	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
		11/15/2021	0827	In Lab / MMCMAHON	
R2111809-002.01					
	624				
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
		11/13/2021	1223	In Lab / KRUEST	
		11/13/2021	1248	R-001-S12 / KRUEST	
R2111809-002.02					
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-002.03					
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	

Miscellaneous Forms

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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 Method Reporting Limit. Also known as:
LOQ 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	**Service Request:**	R2111809
Project:	Olin - Industrial Welding Site/release order ERRE9845		

Sample Name:	IWS-MS1-110821	**Date Collected:**	11/8/21
Lab Code:	R2111809-001	**Date Received:**	11/9/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
245.1	BDIAMOND	NMANSEN
608 Modified	KSERCU	BALLGEIER
624		KRUEST
SM 2540 D-1997(2011)		KAWONG
SM 5310 C-2000(2011)		CWOODS

Sample Name:	Trip Blank-110821	**Date Collected:**	11/8/21
Lab Code:	R2111809-002	**Date Received:**	11/9/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624		KRUEST

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:**	R2111809
Project:	Olin - Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/21 14:00
Sample Matrix:	Water	**Date Received:**	11/09/21 09:35
Sample Name:	IWS-MS1-110821	**Units:**	ug/L
Lab Code:	R2111809-001	**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	11/13/21 15:12	
1,2-Dichloroethane	1.00	U	1.00	0.200	1	11/13/21 15:12	
Acetone	5.00	U	5.00	2.10	1	11/13/21 15:12	
Trichloroethene (TCE)	**0.814**	**J**	1.00	0.200	1	11/13/21 15:12	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	92	73 - 125	11/13/21 15:12	
4-Bromofluorobenzene	96	85 - 122	11/13/21 15:12	
Toluene-d8	105	87 - 121	11/13/21 15:12	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2111809
Project:	Olin - Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/21
Sample Matrix:	Water	**Date Received:**	11/09/21 09:35
Sample Name:	Trip Blank-110821	**Units:**	ug/L
Lab Code:	R2111809-002	**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	11/13/21 14:50	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	11/13/21 14:50	
Acetone	5.00 U	5.00	2.10	1	11/13/21 14:50	
Trichloroethene (TCE)	1.00 U	1.00	0.200	1	11/13/21 14:50	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	92	73 - 125	11/13/21 14:50	
4-Bromofluorobenzene	96	85 - 122	11/13/21 14:50	
Toluene-d8	105	87 - 121	11/13/21 14:50	

Semivolatile Organic Compounds by GC

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Analytical Report

Client:	Olin Corporation	**Service Request:**	R2111809
Project:	Olin - Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/21 14:00
Sample Matrix:	Water	**Date Received:**	11/09/21 09:35
Sample Name:	IWS-MS1-110821	**Units:**	ug/L
Lab Code:	R2111809-001	**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	0.0455 U	0.0455	0.0200	1	11/17/21 03:38	11/15/21	
beta-BHC	0.0455 U	0.0455	0.0200	1	11/17/21 03:38	11/15/21	
delta-BHC	0.0455 U	0.0455	0.0200	1	11/17/21 03:38	11/15/21	
gamma-BHC (Lindane)	0.0455 U	0.0455	0.0200	1	11/17/21 03:38	11/15/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	33	13 - 131	11/17/21 03:38	
Decachlorobiphenyl	42	10 - 156	11/17/21 03:38	

Metals

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

IWS-MS1-110821

Contract: R2111809

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-MS1-1108

Matrix (soil/water): WATER Lab Sample ID: R2111809-001

Level (low/med): LOW Date Received: 11/9/2021

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.956			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

General Chemistry

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Analytical Report

Client:	Olin Corporation	**Service Request:**	R2111809
Project:	Olin - Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/21 14:00
Sample Matrix:	Water	**Date Received:**	11/09/21 09:35
Sample Name:	IWS-MS1-110821	**Basis:**	NA
Lab Code:	R2111809-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Carbon, Dissolved Organic (DOC)	SM 5310 C-2000(2011)	**4.4**	mg/L	2.0	2	11/19/21 19:03	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	**4.4**	mg/L	1.0	1	11/13/21 17:15	

QC Summary Forms

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Volatile Organic Compounds by GC/MS

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Client: Olin Corporation **Service Request:** R2111809

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-MS1-110821	R2111809-001	92	96	105
Trip Blank-110821	R2111809-002	92	96	105
Method Blank	RQ2114607-03	92	98	106
Lab Control Sample	RQ2114607-02	94	100	106
IWS-MS1-110821 MS	RQ2114607-04	92	100	106
IWS-MS1-110821 DMS	RQ2114607-05	92	99	105

Client:	Olin Corporation	**Service Request:**	R2111809
Project:	Olin - Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/21
Sample Matrix:	Water	**Date Received:**	11/09/21
		Date Analyzed:	11/13/21

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

Sample Name:	IWS-MS1-110821	**Units:**	ug/L
Lab Code:	R2111809-001	**Basis:**	NA
Analysis Method:	624.1		

		Matrix Spike RQ2114607-04			Duplicate Matrix Spike RQ2114607-05					
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	50.4	50.0	101	53.7	50.0	107	59-155	6	40
1,2-Dichloroethane	1.00 U	42.9	50.0	86	45.9	50.0	92	49-155	7	49
Acetone	5.00 U	52.0	50.0	104	55.5	50.0	111	35-183	7	30
Trichloroethene (TCE)	0.814 J	51.3	50.0	101	54.3	50.0	107	70-157	6	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:**	R2111809
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:	RQ2114607-03	**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	11/13/21 12:44	
1,2-Dichloroethane	1.00	U	1.00	0.200	1	11/13/21 12:44	
Acetone	5.00	U	5.00	2.10	1	11/13/21 12:44	
Trichloroethene (TCE)	1.00	U	1.00	0.200	1	11/13/21 12:44	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	92	73 - 125	11/13/21 12:44	
4-Bromofluorobenzene	98	85 - 122	11/13/21 12:44	
Toluene-d8	106	87 - 121	11/13/21 12:44	

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

Service Request: R2111809
Date Analyzed: 11/13/21

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

Units:ug/L
Basis:NA

Lab Control Sample
RQ2114607-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1-Dichloroethane (1,1-DCA)	624.1	19.7	20.0	98	70-130
1,2-Dichloroethane	624.1	17.6	20.0	88	70-130
Acetone	624.1	17.3	20.0	87	40-161
Trichloroethene (TCE)	624.1	19.4	20.0	97	65-135

Semivolatile Organic Compounds by GC

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Client: Olin Corporation **Service Request:** R2111809

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	Tetrachloro-m-xylene 13-131	Decachlorobiphenyl 10-156
IWS-MS1-110821	R2111809-001	33	42
Method Blank	RQ2114622-01	41	51
Lab Control Sample	RQ2114622-02	39	66
Duplicate Lab Control Sample	RQ2114622-03	38	64
IWS-MS1-110821 MS	RQ2114622-04	54	50
IWS-MS1-110821 DMS	RQ2114622-05	51	48

Client:	Olin Corporation	**Service Request:**	R2111809
Project:	Olin - Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/21
Sample Matrix:	Water	**Date Received:**	11/09/21
		Date Analyzed:	11/17/21
		Date Extracted:	11/15/21

Duplicate Matrix Spike Summary
Organochlorine Pesticides by GC/ECD

Sample Name:	IWS-MS1-110821	**Units:**	ug/L
Lab Code:	R2111809-001	**Basis:**	NA
Analysis Method:	608.3		
Prep Method:	Method		

		Matrix Spike RQ2114622-04			Duplicate Matrix Spike RQ2114622-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	0.0455 U	0.229	0.364	63	0.211	0.364	58	34-140	8	36
beta-BHC	0.0455 U	0.268	0.364	74	0.247	0.364	68	17-147	8	44
delta-BHC	0.0455 U	0.253	0.364	69	0.235	0.364	65	19-140	7	52
gamma-BHC (Lindane)	0.0455 U	0.232	0.364	64	0.214	0.364	59	32-140	8	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:**	R2111809
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:	RQ2114622-01	**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	11/16/21 23:58	11/15/21	
beta-BHC	0.0500 U	0.0500	0.0200	1	11/16/21 23:58	11/15/21	
delta-BHC	0.0500 U	0.0500	0.0200	1	11/16/21 23:58	11/15/21	
gamma-BHC (Lindane)	0.0500 U	0.0500	0.0200	1	11/16/21 23:58	11/15/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	41	13 - 131	11/16/21 23:58	
Decachlorobiphenyl	51	10 - 156	11/16/21 23:58	

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

Service Request: R2111809
Date Analyzed: 11/17/21

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by GC/ECD

Units:ug/L
Basis:NA

			Lab Control Sample		Duplicate Lab Control Sample					
			RQ2114622-02		RQ2114622-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	608.3	0.0473 J	0.400	12 *	0.203	0.400	51	37-140	124*	36
beta-BHC	608.3	0.0599	0.400	15 *	0.257	0.400	64	17-147	124*	44
delta-BHC	608.3	0.0526	0.400	13 *	0.250	0.400	62	19-140	130*	52
gamma-BHC (Lindane)	608.3	0.0456 J	0.400	11 *	0.219	0.400	55	32-140	131*	39

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BLANKS

Contract: R2111809

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-MS1-1108

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Mercury	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	CV

Comments:

METALS

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BLANKS

Contract: R2111809

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-MS1-1108

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Mercury			0.200	U	0.200	U					CV

Comments:

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

IWS-MS1-110821S

Contract: R2111809

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-MS1-1108

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	2.010		0.956		1.00	105		CV

Comments:

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

IWS-MS1-110821SD

Contract: R2111809

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-MS1-1108

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	1.990		0.956		1.00	103		CV

Comments:

METALS
-6-
DUPLICATES

SAMPLE NO.: IWS-MS1-110821SD

Contract: R2111809

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-MS1-1108

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		2.010		1.990		1		CV

Comments: _____

METALS

-7-

LABORATORY CONTROL SAMPLE

Contract: R2111809

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-MS1-1108

Solid LCS Source: _____

Aqueous LCS Source: JT BAKER

Analyte	Aqueous (ug/L			Solid (mg/K				
	True	Found	%R	True	Found	C	Limits	%R
Mercury	1.000	1.080	108					

Comments: _____

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:**	R2111809
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:	R2111809-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Carbon, Dissolved Organic (DOC)	SM 5310 C-2000(2011)	1.0 U	mg/L	1.0	1	11/19/21 17:49	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	1.0 U	mg/L	1.0	1	11/13/21 17:15	

Client:	Olin Corporation	**Service Request:**	R2111809
Project:	Olin - Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/21
Sample Matrix:	Water	**Date Received:**	11/09/21
		Date Analyzed:	11/19/21

Duplicate Matrix Spike Summary
Carbon, Dissolved Organic (DOC)

Sample Name:	IWS-MS1-110821	**Units:**	mg/L
Lab Code:	R2111809-001	**Basis:**	NA
Analysis Method:	SM 5310 C-2000(2011)		

		Matrix Spike R2111809-001MS			**Duplicate Matrix Spike** R2111809-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon, Dissolved Organic (DOC)	4.4	26.7	20.0	112	27.5	20.0	116	48-135	3	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:**	R2111809
Project	Olin - Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/21
Sample Matrix:	Water	**Date Received:**	11/09/21
		Date Analyzed:	11/13/21

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	IWS-MS1-110821	**Units:**	mg/L
Lab Code:	R2111809-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R2111809-001DUP Result	Average	RPD	RPD Limit
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	1.0	4.4	4.3	4.35	2	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: R2111809
Date Analyzed: 11/13/21 - 11/19/21

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2111809-LCS

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Dissolved Organic (DOC)	SM 5310 C-2000(2011)	10.0	10.0	100	80-121
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	190	214	89	80-120

Industrial Welding Site
Data Evaluation Narrative
November 2021 Discharge Sampling Event

SDG R2111809: 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 5310C 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 soluble organic carbon analyses. The laboratory subsequently applied login numbers to the SDG. The SDG number for this sampling event is R2111809. 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, 2021:

SAMPLE ID	SAMPLE ID
IWS-MS1-110821	Trip Blank-110821 (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 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-MS1-110821 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.

Duplicate Samples:
No samples were selected by the laboratory or field for duplicate analysis.

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 Site project and QC samples were also within applicable control criteria.

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 recoveries were below the lower laboratory control limits for all four BHC compounds. However, the LCSD, MS/MSD and Performance Evaluation Sample (PES) recoveries were easily within control limits. It is suspected that the LCS was not properly spiked; by professional judgment no data qualification was deemed necessary.

Matrix Spike/Matrix Spike Duplicate:
Sample IWS-MS1-110821 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. All percent recoveries and RPDs were within control limits.

Duplicate Samples:
No samples were selected by the laboratory or field for duplicate analysis.

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-MS1-110821 was submitted for MS/MSD analysis. The percent recoveries and RPD were within laboratory control limits.

Duplicate Samples:
No samples were selected by the laboratory or field for duplicate analysis.

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-MS1-110821. The RPD was within control limits.

Soluble Organic Carbon (SM 5310C)

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-MS1-110821 was submitted for MS/MSD analysis. The percent recoveries and RPD were within applicable QC advisory limits.

Duplicate Samples:

No samples were selected by the laboratory or field for duplicate analysis.

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 2021 sampling event. Typically, project objectives are met when completeness is 90 percent or better.

Prepared by: *Randy T. Morris* Date: *November 30, 2021*

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rpt. Limit	Detection	Result	Flag
IWS-MS1-110821	11/8/2021	11/19/2021	SM 5310 C-2000(2011)	Water	mg/L	Carbon, Dissolved Organic (DOC)	2	2	0.9	4.4	
IWS-MS1-110821	11/8/2021	11/13/2021	SM 2540 D-1997(2011)	Water	mg/L	Solids, Total Suspended (TSS)	1	1	1	4.4	
IWS-MS1-110821	11/8/2021	11/13/2021	624.1	Water	UG/L	1,1-Dichloroethane (1,1-DCA)	1	1	0.2	1	U
IWS-MS1-110821	11/8/2021	11/13/2021	624.1	Water	UG/L	1,2-Dichloroethane	1	1	0.2	1	U
IWS-MS1-110821	11/8/2021	11/13/2021	624.1	Water	UG/L	Acetone	1	5	2.1	5	U
IWS-MS1-110821	11/8/2021	11/13/2021	624.1	Water	UG/L	Trichloroethene (TCE)	1	1	0.2	0.814	J
Trip Blank-110821	11/8/2021	11/13/2021	624.1	Water	UG/L	1,1-Dichloroethane (1,1-DCA)	1	1	0.2	1	U
Trip Blank-110821	11/8/2021	11/13/2021	624.1	Water	UG/L	1,2-Dichloroethane	1	1	0.2	1	U
Trip Blank-110821	11/8/2021	11/13/2021	624.1	Water	UG/L	Acetone	1	5	2.1	5	U
Trip Blank-110821	11/8/2021	11/13/2021	624.1	Water	UG/L	Trichloroethene (TCE)	1	1	0.2	1	U
IWS-MS1-110821	11/8/2021	11/17/2021	608.3	Water	UG/L	alpha-BHC	1	0.0455	0.02	0.0455	U
IWS-MS1-110821	11/8/2021	11/17/2021	608.3	Water	UG/L	beta-BHC	1	0.0455	0.02	0.0455	U
IWS-MS1-110821	11/8/2021	11/17/2021	608.3	Water	UG/L	delta-BHC	1	0.0455	0.02	0.0455	U
IWS-MS1-110821	11/8/2021	11/17/2021	608.3	Water	UG/L	gamma-BHC (Lindane)	1	0.0455	0.02	0.0455	U
IWS-MS1-110821	11/8/2021	11/11/2021	245.1	Water	UG/L	Mercury, Total	1	0.2	0.2	0.956	

March 29, 2022 Service Request No:R2202268

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 16, 2022
For your reference, these analyses have been assigned our service request number **R2202268.**

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

ALS Environmental

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

Service Request: R2202268
Date Received: 03/16/2022

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 03/16/2022. 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:

Method 8270D, 03/22/2022: 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.

Semivoa GC:

No significant anomalies were noted with this analysis.

Metals:

No significant anomalies were noted with this analysis.

Approved by Meghan Pedro Date 03/29/2022

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:**R2202268
Project: Industrial Welding/1229

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2202268-001	IWS-SD1-031522	3/15/2022	1000
R2202268-002	IWS-MW1-031522	3/15/2022	1140
R2202268-003	IWS-MW2-031522	3/15/2022	1055

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

063079

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: Industrial Welding	Project Number: 1229
Project Manager: Adam Carringer	Report CC: Adam Carringer
Company/Address: OLIN Corp.	
3855 North Ocoee St. Suite 200	
Cleveland TN 37312	
Phone #: 423 336 4987	Email: ABcarringer@Olin.com
Sampler's Signature: Max Liffiton	Sampler's Printed Name: Max Liffiton

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 0 | 0 | 2

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs • 8260 • 624 • CLP	GC/MS SVOAs • 8270 • 625	GC VOAs • 8021 • 601/602	PESTICIDES • 8081 • 608	PCBs • 8082 • 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	REMARKS/ ALTERNATE DESCRIPTION
IWS-SD1-031522		3/15/22	1000	GW	15	6		6		3			MS/MSD Volume
IWS-MW1-031522		3/15/22	1140	GW	5	2		2		1			
IWS-MW2-031522		3/15/22	1055	GW	5	2		2		1			
Temp Blank					1								Provided by lab

SPECIAL INSTRUCTIONS/COMMENTS
Metals
Tot. Mercury.

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
X Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE
Standard

REPORT REQUIREMENTS
____ I. Results Only
Q II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data

Edata ____ Yes ____ No

INVOICE INFORMATION
PO #
BILL TO: Olin Corp

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Maxwell Liffiton	UPS				
Signature: Maxwell Liffiton	Signature	Signature	Signature	Signature	
Printed Name: Maxwell Liffiton	Printed Name	Printed Name	Printed Name: Gregory L. Emerson	Printed Name	
Firm: SES	Firm	Firm	Firm: ALS	Firm	
Date/Time: 3/15/22 1425	Date/Time	Date/Time	Date/Time: 3/16/22 09:40	Date/Time	

R2202268 5
Olin Corporation
Industrial Welding

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

R2202268 5
Olin Corporation
Industrial Welding

Cooler Receipt and Preservation Check Form

Project/Client Olin Corp Folder Number

Cooler received on 3/16/22 by: KE

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: 3/16/22 Time: 09:51 ID: IR#7 (IR#11) From: Temp Blank (Sample Bottle)

Observed Temp (°C)	3.4						
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: R-002 by KE on 3/16/22 at 09:56

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

Cooler Breakdown/Preservation Check**: Date: 3/16/22 Time: 1240 by: AO

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. 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	205320	HNO_3	✓		1121081					
≤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: 21-12H, 80346-C2796

Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: (A)

PC Secondary Review: _____

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

ALS Group USA, Corp.
dba ALS Environmental

Internal Chain of Custody Report

Client: Olin Corporation **Service Request:** R2202268
Project: Industrial Welding/1229

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2202268-001.01					
	7470A				
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
		3/23/2022	1239	In Lab / BDIAMOND	
		3/23/2022	1734	R-A01 / BDIAMOND	
R2202268-001.02					
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-001.03					
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-001.04					
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-001.05					
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-001.06					
	8081B				
		3/16/2022	1241	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-001.07					
		3/16/2022	1241	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-001.08					
		3/16/2022	1241	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-001.09					
		3/16/2022	1241	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-001.10					

Client: Olin Corporation **Service Request:** R2202268
Project: Industrial Welding/1229

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		3/16/2022	1241	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-001.11					
		3/16/2022	1241	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-001.12					
		3/16/2022	1241	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-001.13					
	8270D				
		3/16/2022	1241	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-002.01					
	7470A				
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
		3/23/2022	1239	In Lab / BDIAMOND	
		3/23/2022	1734	R-A01 / BDIAMOND	
R2202268-002.02					
	8081B				
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-002.03					
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-002.04					
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-002.05					
	8270D				
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-003.01					
	7470A				
		3/16/2022	1240	SMO / GLAFORCE	

ALS Group USA, Corp.
dba ALS Environmental

Internal Chain of Custody Report

Client: Olin Corporation **Service Request:** R2202268
Project: Industrial Welding/1229

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
	7470A				
		3/16/2022	1242	R-002 / GLAFORCE	
		3/23/2022	1239	In Lab / BDIAMOND	
		3/23/2022	1734	R-A01 / BDIAMOND	
R2202268-003.02					
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-003.03					
	8081B				
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-003.04					
	8270D				
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	
R2202268-003.05					
		3/16/2022	1240	SMO / GLAFORCE	
		3/16/2022	1242	R-002 / GLAFORCE	

Miscellaneous Forms

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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 Method Reporting Limit. Also known as:
LOQ 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 **Service Request:** R2202268
Project: Industrial Welding/1229

Sample Name: IWS-SD1-031522 **Date Collected:** 03/15/22
Lab Code: R2202268-001 **Date Received:** 03/16/22
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
7470A	BDIAMOND	BDIAMOND
8081B	JBOEDICKER	BALLGEIER
8270D	JBOEDICKER	AMOSES

Sample Name: IWS-MW1-031522 **Date Collected:** 03/15/22
Lab Code: R2202268-002 **Date Received:** 03/16/22
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
7470A	BDIAMOND	BDIAMOND
8081B	JBOEDICKER	BALLGEIER
8270D	JBOEDICKER	AMOSES

Sample Name: IWS-MW2-031522 **Date Collected:** 03/15/22
Lab Code: R2202268-003 **Date Received:** 03/16/22
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
7470A	BDIAMOND	BDIAMOND
8081B	JBOEDICKER	BALLGEIER
8270D	JBOEDICKER	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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Client:	Olin Corporation	**Service Request:**	R2202268
Project:	Industrial Welding/1229	**Date Collected:**	03/15/22 10:00
Sample Matrix:	Water	**Date Received:**	03/16/22 09:40
Sample Name:	IWS-SD1-031522	**Units:**	ug/L
Lab Code:	R2202268-001	**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	9.1 U	9.1	1.3	1	03/22/22 17:51	3/17/22	
Acenaphthene	9.1 U	9.1	1.4	1	03/22/22 17:51	3/17/22	
Acenaphthylene	9.1 U	9.1	1.4	1	03/22/22 17:51	3/17/22	
Anthracene	9.1 U	9.1	1.3	1	03/22/22 17:51	3/17/22	
Benz(a)anthracene	9.1 U	9.1	1.6	1	03/22/22 17:51	3/17/22	
Benzo(a)pyrene	9.1 U	9.1	1.2	1	03/22/22 17:51	3/17/22	
Benzo(b)fluoranthene	9.1 U	9.1	1.2	1	03/22/22 17:51	3/17/22	
Benzo(g,h,i)perylene	9.1 U	9.1	1.0	1	03/22/22 17:51	3/17/22	
Benzo(k)fluoranthene	9.1 U	9.1	1.3	1	03/22/22 17:51	3/17/22	
Chrysene	9.1 U	9.1	1.2	1	03/22/22 17:51	3/17/22	
Dibenz(a,h)anthracene	9.1 U	9.1	1.1	1	03/22/22 17:51	3/17/22	
Fluoranthene	9.1 U	9.1	1.5	1	03/22/22 17:51	3/17/22	
Fluorene	9.1 U	9.1	1.3	1	03/22/22 17:51	3/17/22	
Indeno(1,2,3-cd)pyrene	9.1 U	9.1	1.8	1	03/22/22 17:51	3/17/22	
Naphthalene	9.1 U	9.1	1.2	1	03/22/22 17:51	3/17/22	
Phenanthrene	9.1 U	9.1	1.4	1	03/22/22 17:51	3/17/22	
Pyrene	9.1 U	9.1	1.5	1	03/22/22 17:51	3/17/22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	56	31 - 118	03/22/22 17:51	
Nitrobenzene-d5	61	31 - 110	03/22/22 17:51	
p-Terphenyl-d14	69	10 - 165	03/22/22 17:51	

Client:	Olin Corporation	**Service Request:**	R2202268
Project:	Industrial Welding/1229	**Date Collected:**	03/15/22 11:40
Sample Matrix:	Water	**Date Received:**	03/16/22 09:40
Sample Name:	IWS-MW1-031522	**Units:**	ug/L
Lab Code:	R2202268-002	**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	9.1 U	9.1	1.3	1	03/22/22 18:15	3/17/22	
Acenaphthene	9.1 U	9.1	1.4	1	03/22/22 18:15	3/17/22	
Acenaphthylene	9.1 U	9.1	1.4	1	03/22/22 18:15	3/17/22	
Anthracene	9.1 U	9.1	1.3	1	03/22/22 18:15	3/17/22	
Benz(a)anthracene	9.1 U	9.1	1.6	1	03/22/22 18:15	3/17/22	
Benzo(a)pyrene	9.1 U	9.1	1.2	1	03/22/22 18:15	3/17/22	
Benzo(b)fluoranthene	9.1 U	9.1	1.2	1	03/22/22 18:15	3/17/22	
Benzo(g,h,i)perylene	9.1 U	9.1	1.0	1	03/22/22 18:15	3/17/22	
Benzo(k)fluoranthene	9.1 U	9.1	1.3	1	03/22/22 18:15	3/17/22	
Chrysene	9.1 U	9.1	1.2	1	03/22/22 18:15	3/17/22	
Dibenz(a,h)anthracene	9.1 U	9.1	1.1	1	03/22/22 18:15	3/17/22	
Fluoranthene	9.1 U	9.1	1.5	1	03/22/22 18:15	3/17/22	
Fluorene	9.1 U	9.1	1.3	1	03/22/22 18:15	3/17/22	
Indeno(1,2,3-cd)pyrene	9.1 U	9.1	1.8	1	03/22/22 18:15	3/17/22	
Naphthalene	9.1 U	9.1	1.2	1	03/22/22 18:15	3/17/22	
Phenanthrene	9.1 U	9.1	1.4	1	03/22/22 18:15	3/17/22	
Pyrene	9.1 U	9.1	1.5	1	03/22/22 18:15	3/17/22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	56	31 - 118	03/22/22 18:15	
Nitrobenzene-d5	63	31 - 110	03/22/22 18:15	
p-Terphenyl-d14	60	10 - 165	03/22/22 18:15	

Client:	Olin Corporation	**Service Request:**	R2202268
Project:	Industrial Welding/1229	**Date Collected:**	03/15/22 10:55
Sample Matrix:	Water	**Date Received:**	03/16/22 09:40
Sample Name:	IWS-MW2-031522	**Units:**	ug/L
Lab Code:	R2202268-003	**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	03/22/22 18:39	3/17/22	
Acenaphthene	9.1 U	9.1	1.4	1	03/22/22 18:39	3/17/22	
Acenaphthylene	9.1 U	9.1	1.4	1	03/22/22 18:39	3/17/22	
Anthracene	9.1 U	9.1	1.3	1	03/22/22 18:39	3/17/22	
Benz(a)anthracene	9.1 U	9.1	1.6	1	03/22/22 18:39	3/17/22	
Benzo(a)pyrene	9.1 U	9.1	1.2	1	03/22/22 18:39	3/17/22	
Benzo(b)fluoranthene	9.1 U	9.1	1.2	1	03/22/22 18:39	3/17/22	
Benzo(g,h,i)perylene	9.1 U	9.1	1.0	1	03/22/22 18:39	3/17/22	
Benzo(k)fluoranthene	9.1 U	9.1	1.3	1	03/22/22 18:39	3/17/22	
Chrysene	9.1 U	9.1	1.2	1	03/22/22 18:39	3/17/22	
Dibenz(a,h)anthracene	9.1 U	9.1	1.1	1	03/22/22 18:39	3/17/22	
Fluoranthene	9.1 U	9.1	1.5	1	03/22/22 18:39	3/17/22	
Fluorene	9.1 U	9.1	1.3	1	03/22/22 18:39	3/17/22	
Indeno(1,2,3-cd)pyrene	9.1 U	9.1	1.8	1	03/22/22 18:39	3/17/22	
Naphthalene	9.1 U	9.1	1.2	1	03/22/22 18:39	3/17/22	
Phenanthrene	9.1 U	9.1	1.4	1	03/22/22 18:39	3/17/22	
Pyrene	9.1 U	9.1	1.5	1	03/22/22 18:39	3/17/22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	53	31 - 118	03/22/22 18:39	
Nitrobenzene-d5	58	31 - 110	03/22/22 18:39	
p-Terphenyl-d14	65	10 - 165	03/22/22 18:39	

Semivolatile Organic Compounds by GC

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Analytical Report

Client:	Olin Corporation	**Service Request:**	R2202268
Project:	Industrial Welding/1229	**Date Collected:**	03/15/22 10:00
Sample Matrix:	Water	**Date Received:**	03/16/22 09:40
Sample Name:	IWS-SD1-031522	**Units:**	ug/L
Lab Code:	R2202268-001	**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	0.045 U	0.045	1	03/21/22 19:45	3/18/22	
beta-BHC	0.045 U	0.045	1	03/21/22 19:45	3/18/22	
delta-BHC	0.045 U	0.045	1	03/21/22 19:45	3/18/22	
gamma-BHC (Lindane)	0.045 U	0.045	1	03/21/22 19:45	3/18/22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	23	10 - 164	03/21/22 19:45	
Tetrachloro-m-xylene	42	10 - 147	03/21/22 19:45	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2202268
Project:	Industrial Welding/1229	**Date Collected:**	03/15/22 11:40
Sample Matrix:	Water	**Date Received:**	03/16/22 09:40
Sample Name:	IWS-MW1-031522	**Units:**	ug/L
Lab Code:	R2202268-002	**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	0.045 U	0.045	1	03/21/22 20:05	3/18/22	
beta-BHC	0.045 U	0.045	1	03/21/22 20:05	3/18/22	
delta-BHC	0.045 U	0.045	1	03/21/22 20:05	3/18/22	
gamma-BHC (Lindane)	0.045 U	0.045	1	03/21/22 20:05	3/18/22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	51	10 - 164	03/21/22 20:05	
Tetrachloro-m-xylene	56	10 - 147	03/21/22 20:05	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2202268
Project:	Industrial Welding/1229	**Date Collected:**	03/15/22 10:55
Sample Matrix:	Water	**Date Received:**	03/16/22 09:40
Sample Name:	IWS-MW2-031522	**Units:**	ug/L
Lab Code:	R2202268-003	**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	03/21/22 20:24	3/18/22	
beta-BHC	0.045 U	0.045	1	03/21/22 20:24	3/18/22	
delta-BHC	0.045 U	0.045	1	03/21/22 20:24	3/18/22	
gamma-BHC (Lindane)	0.045 U	0.045	1	03/21/22 20:24	3/18/22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	47	10 - 164	03/21/22 20:24	
Tetrachloro-m-xylene	44	10 - 147	03/21/22 20:24	

Metals

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METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

IWS-SD1-031522

Contract: R2202268

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0315

Matrix (soil/water): WATER Lab Sample ID: R2202268-001

Level (low/med): LOW Date Received: 3/16/2022

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.200	U		CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

IWS-MW1-031522

Contract: R2202268

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0315

Matrix (soil/water): WATER Lab Sample ID: R2202268-002

Level (low/med): LOW Date Received: 3/16/2022

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.200	U		CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

IWS-MW2-031522

Contract: R2202268

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0315

Matrix (soil/water): WATER Lab Sample ID: R2202268-003

Level (low/med): LOW Date Received: 3/16/2022

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	4.0			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

QC Summary Forms

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Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
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www.alsglobal.com

Client: Olin Corporation **Service Request:** R2202268
Project: Industrial Welding/1229
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 31-118	Nitrobenzene-d5 31-110	p-Terphenyl-d14 10-165
IWS-SD1-031522	R2202268-001	56	61	69
IWS-MW1-031522	R2202268-002	56	63	60
IWS-MW2-031522	R2202268-003	53	58	65
Method Blank	RQ2202674-01	51	54	71
Lab Control Sample	RQ2202674-02	65	62	75
Duplicate Lab Control Sample	RQ2202674-03	59	61	64

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2202268
Project:	Industrial Welding/1229	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2202674-01	**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	03/22/22 15:03	3/17/22	
Acenaphthene	10 U	10	1.4	1	03/22/22 15:03	3/17/22	
Acenaphthylene	10 U	10	1.4	1	03/22/22 15:03	3/17/22	
Anthracene	10 U	10	1.3	1	03/22/22 15:03	3/17/22	
Benz(a)anthracene	10 U	10	1.6	1	03/22/22 15:03	3/17/22	
Benzo(a)pyrene	10 U	10	1.2	1	03/22/22 15:03	3/17/22	
Benzo(b)fluoranthene	10 U	10	1.2	1	03/22/22 15:03	3/17/22	
Benzo(g,h,i)perylene	10 U	10	1.0	1	03/22/22 15:03	3/17/22	
Benzo(k)fluoranthene	10 U	10	1.3	1	03/22/22 15:03	3/17/22	
Chrysene	10 U	10	1.2	1	03/22/22 15:03	3/17/22	
Dibenz(a,h)anthracene	10 U	10	1.1	1	03/22/22 15:03	3/17/22	
Fluoranthene	10 U	10	1.5	1	03/22/22 15:03	3/17/22	
Fluorene	10 U	10	1.3	1	03/22/22 15:03	3/17/22	
Indeno(1,2,3-cd)pyrene	10 U	10	1.8	1	03/22/22 15:03	3/17/22	
Naphthalene	10 U	10	1.2	1	03/22/22 15:03	3/17/22	
Phenanthrene	10 U	10	1.4	1	03/22/22 15:03	3/17/22	
Pyrene	10 U	10	1.5	1	03/22/22 15:03	3/17/22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	51	31 - 118	03/22/22 15:03	
Nitrobenzene-d5	54	31 - 110	03/22/22 15:03	
p-Terphenyl-d14	71	10 - 165	03/22/22 15:03	

Client: Olin Corporation
Project: Industrial Welding/1229
Sample Matrix: Water

Service Request: R2202268
Date Analyzed: 03/22/22

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

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2202674-02			RQ2202674-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2-Methylnaphthalene	8270D	46.5	80.0	58	45.2	80.0	57	34-102	2	30
Acenaphthene	8270D	54.4	80.0	68	50.4	80.0	63	52-107	8	30
Acenaphthylene	8270D	62.9	80.0	79	60.0	80.0	75	55-109	5	30
Anthracene	8270D	70.4	80.0	88	66.5	80.0	83	55-116	6	30
Benz(a)anthracene	8270D	62.7	80.0	78	60.1	80.0	75	61-121	4	30
Benzo(a)pyrene	8270D	78.6	80.0	98	76.8	80.0	96	68-144	2	30
Benzo(b)fluoranthene	8270D	59.9	80.0	75	58.7	80.0	73	62-115	3	30
Benzo(g,h,i)perylene	8270D	66.9	80.0	84	65.1	80.0	81	63-136	4	30
Benzo(k)fluoranthene	8270D	65.9	80.0	82	65.2	80.0	82	49-133	<1	30
Chrysene	8270D	66.3	80.0	83	63.6	80.0	80	57-118	4	30
Dibenz(a,h)anthracene	8270D	110	80.0	138 *	105	80.0	131	54-135	5	30
Fluoranthene	8270D	68.6	80.0	86	65.6	80.0	82	66-127	5	30
Fluorene	8270D	57.7	80.0	72	53.4	80.0	67	54-106	7	30
Indeno(1,2,3-cd)pyrene	8270D	59.9	80.0	75	57.8	80.0	72	62-137	4	30
Naphthalene	8270D	44.2	80.0	55	42.4	80.0	53	38-99	4	30
Phenanthrene	8270D	68.3	80.0	85	64.5	80.0	81	58-118	5	30
Pyrene	8270D	65.0	80.0	81	61.6	80.0	77	61-122	5	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:** R2202268
Project: Industrial Welding/1229
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3510C

Sample Name	Lab Code	Decachlorobiphenyl 10-164	Tetrachloro-m-xylene 10-147
IWS-SD1-031522	R2202268-001	23	42
IWS-MW1-031522	R2202268-002	51	56
IWS-MW2-031522	R2202268-003	47	44
Method Blank	RQ2202748-01	37	42
Lab Control Sample	RQ2202748-02	52	52
Duplicate Lab Control Sample	RQ2202748-03	20	54

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2202268
Project:	Industrial Welding/1229	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2202748-01	**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	03/21/22 18:28	3/18/22	
beta-BHC	0.050 U	0.050	1	03/21/22 18:28	3/18/22	
delta-BHC	0.050 U	0.050	1	03/21/22 18:28	3/18/22	
gamma-BHC (Lindane)	0.050 U	0.050	1	03/21/22 18:28	3/18/22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	37	10 - 164	03/21/22 18:28	
Tetrachloro-m-xylene	42	10 - 147	03/21/22 18:28	

Client: Olin Corporation
Project: Industrial Welding/1229
Sample Matrix: Water

Service Request: R2202268
Date Analyzed: 03/21/22

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2202748-02			RQ2202748-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	8081B	0.265	0.400	66	0.255	0.400	64	36-151	4	30
beta-BHC	8081B	0.292	0.400	73	0.301	0.400	75	55-149	3	30
delta-BHC	8081B	0.285	0.400	71	0.298	0.400	75	29-159	5	30
gamma-BHC (Lindane)	8081B	0.267	0.400	67	0.276	0.400	69	41-149	3	30

Metals

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

METALS

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BLANKS

Contract: R2202268

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0315

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Mercury	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	CV

Comments:

METALS

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BLANKS

Contract: R2202268

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0315

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Mercury			0.200	U	0.200	U					CV

Comments:

METALS

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SPIKE SAMPLE RECOVERY

SAMPLE NO.

IWS-SD1-031522S

Contract: R2202268

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0315

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	1.010		0.200	U	1.000	101		CV

Comments:

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

IWS-SD1-031522SD

Contract: R2202268

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0315

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	1.030		0.200	U	1.000	103		CV

Comments:

METALS
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DUPLICATES

SAMPLE NO.: IWS-SD1-031522SD

Contract: R2202268

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0315

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		1.010		1.030		2		CV

Comments: _____

METALS

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LABORATORY CONTROL SAMPLE

Contract: R2202268

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-SD1-0315

Solid LCS Source: _____

Aqueous LCS Source: JT BAKER

Analyte	Aqueous (ug/L			Solid (mg/K				
	True	Found	%R	True	Found	C	Limits	%R
Mercury	1.000	1.020	102					

Comments: _____

Industrial Welding Site
Data Evaluation Narrative
March 2022 Groundwater/Storm Drain Sampling Event

SDG R2202268: 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 R2202268. 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 15, 2022:

SAMPLE	SAMPLE	SAMPLE
IWS-SD1-031522	IWS-MW1-031522	IWS-MW2-031522

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) with one exception. One compound was slightly above the control limits for the LCS recovery indicating a possible high bias; since all samples were non-detect for this compound, there was no effect on data quality.

Matrix Spike/Matrix Spike Duplicate:
Sufficient sample volumes of IWS-SD1-031522 were submitted to the laboratory for MS/MSD analysis. The MS/MSD analyses were not performed, however, due to a laboratory error.

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

Duplicate Samples:
No samples were selected by the field or laboratory for duplicate analysis.

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 and continuing 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.

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-SD1-031522 were submitted to the laboratory for MS/MSD analysis. The MS/MSD analyses were not performed, however, due to a laboratory error.

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

Duplicate Samples:
No samples were selected by the field or laboratory for duplicate analysis.

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-SD1-031522 was submitted to the laboratory for MS/MSD analysis. The percent recoveries and RPD were within control limits.

Duplicate Samples:
No samples were selected by the field or laboratory for duplicate analysis.

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 2022 sampling event.

Prepared by: *Randy T. Morris* Date: *April 22, 2022*

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rpt. Limit	Detection	Result	Flag
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	2-Methylnaphthalene	1	9.1	1.3	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Acenaphthene	1	9.1	1.4	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Acenaphthylene	1	9.1	1.4	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Anthracene	1	9.1	1.3	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benz(a)anthracene	1	9.1	1.6	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benzo(a)pyrene	1	9.1	1.2	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benzo(b)fluoranthene	1	9.1	1.2	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	9.1	1	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benzo(k)fluoranthene	1	9.1	1.3	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Chrysene	1	9.1	1.2	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	9.1	1.1	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Fluoranthene	1	9.1	1.5	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Fluorene	1	9.1	1.3	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	9.1	1.8	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Naphthalene	1	9.1	1.2	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Phenanthrene	1	9.1	1.4	9.1	U
IWS-SD1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Pyrene	1	9.1	1.5	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	2-Methylnaphthalene	1	9.1	1.3	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Acenaphthene	1	9.1	1.4	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Acenaphthylene	1	9.1	1.4	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Anthracene	1	9.1	1.3	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benz(a)anthracene	1	9.1	1.6	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benzo(a)pyrene	1	9.1	1.2	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benzo(b)fluoranthene	1	9.1	1.2	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	9.1	1	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benzo(k)fluoranthene	1	9.1	1.3	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Chrysene	1	9.1	1.2	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	9.1	1.1	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Fluoranthene	1	9.1	1.5	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Fluorene	1	9.1	1.3	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	9.1	1.8	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Naphthalene	1	9.1	1.2	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Phenanthrene	1	9.1	1.4	9.1	U
IWS-MW1-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Pyrene	1	9.1	1.5	9.1	U

IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	2-Methylnaphthalene	1	9.1	1.3	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Acenaphthene	1	9.1	1.4	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Acenaphthylene	1	9.1	1.4	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Anthracene	1	9.1	1.3	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benz(a)anthracene	1	9.1	1.6	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benzo(a)pyrene	1	9.1	1.2	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benzo(b)fluoranthene	1	9.1	1.2	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	9.1	1	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Benzo(k)fluoranthene	1	9.1	1.3	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Chrysene	1	9.1	1.2	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	9.1	1.1	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Fluoranthene	1	9.1	1.5	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Fluorene	1	9.1	1.3	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	9.1	1.8	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Naphthalene	1	9.1	1.2	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Phenanthrene	1	9.1	1.4	9.1	U
IWS-MW2-031522	3/15/2022	3/22/2022	8270D	Water	UG/L	Pyrene	1	9.1	1.5	9.1	U
IWS-SD1-031522	3/15/2022	3/21/2022	8081B	Water	UG/L	alpha-BHC	1	0.045	0.02	0.045	U
IWS-SD1-031522	3/15/2022	3/21/2022	8081B	Water	UG/L	beta-BHC	1	0.045	0.02	0.045	U
IWS-SD1-031522	3/15/2022	3/21/2022	8081B	Water	UG/L	delta-BHC	1	0.045	0.02	0.045	U
IWS-SD1-031522	3/15/2022	3/21/2022	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.045	0.02	0.045	U
IWS-MW1-031522	3/15/2022	3/21/2022	8081B	Water	UG/L	alpha-BHC	1	0.045	0.02	0.045	U
IWS-MW1-031522	3/15/2022	3/21/2022	8081B	Water	UG/L	beta-BHC	1	0.045	0.02	0.045	U
IWS-MW1-031522	3/15/2022	3/21/2022	8081B	Water	UG/L	delta-BHC	1	0.045	0.02	0.045	U
IWS-MW1-031522	3/15/2022	3/21/2022	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.045	0.02	0.045	U
IWS-MW2-031522	3/15/2022	3/21/2022	8081B	Water	UG/L	alpha-BHC	1	0.045	0.02	0.045	U
IWS-MW2-031522	3/15/2022	3/21/2022	8081B	Water	UG/L	beta-BHC	1	0.045	0.02	0.045	U
IWS-MW2-031522	3/15/2022	3/21/2022	8081B	Water	UG/L	delta-BHC	1	0.045	0.02	0.045	U
IWS-MW2-031522	3/15/2022	3/21/2022	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.045	0.02	0.045	U
IWS-SD1-031522	3/15/2022	3/24/2022	7470A	Water	UG/L	Mercury, Total	1	0.2	0.2	0.2	U
IWS-MW1-031522	3/15/2022	3/24/2022	7470A	Water	UG/L	Mercury, Total	1	0.2	0.2	0.2	U
IWS-MW2-031522	3/15/2022	3/24/2022	7470A	Water	UG/L	Mercury, Total	1	0.2	0.2	4	

ATTACHMENT C

Environmental Remediation Group

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

SENT VIA OVERNIGHT COURIER

February 25, 2022

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-2021 through December-2021) totaled 57,357 gallons. Daily flow documentation is included in Attachment 1. The annual monitoring samples were taken on November 8, 2021. 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

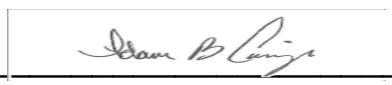
PERIODIC SELF MONITORING REPORT
INDUSTRIAL COMMERCIAL USER

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: 2-28-2022

PART 1
ANALYTICAL RESULTS

ICU PERMIT NAME	Olin Corporation - Industrial Welding Site
ICU PERMIT NUMBER	ICU - 23
SAMPLE LOCATION	MS#1
DATE SAMPLED	11/8/2021
ANALYSIS DATES	Nov 11-19, 2021
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	4.4		0.006	15
Soluble Organic Carbon	SM 5310 C	4.4		0.006	10
Acetone	EPA 624.1	0.00500	U	0.000007	0.01
Dichloroethanes	EPA 624.1	0.00200	U	0.000003	0.01
Trichloroethylenes	EPA 624.1	0.000814	J	0.000001	0.01
BHCs total	EPA 608.3	0.000182	U	0.0000002	0.001
Mercury	EPA 245.1	0.000956		0.0000013	0.008

Parameter	Value
Avg. Daily Flow (gal/day) for 2021	157
Avg. Daily Flow (Mgal/day) for 2021	0.000157
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**				

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: 2021

Month	Monthly Flow (gal)	gal/day
Jan	5,686	183
Feb	4,823	172
Mar	7,297	235
Apr	8,778	293
May	788	25
Jun	0	0
Jul	10,563	341
Aug	693	22
Sep	349	12
Oct	703	23
Nov	5,458	182
Dec	12,219	394
Total	**57,357**	
MONTHLY AVERAGE	4,780	
daily average	157	
daily avg Mgal	0.000157	

Daily Avg. Limit = 0.005 Mgal

Industrial Welding Site Flows
Jan-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **5,686**

Date	Time	Hours	Gallons
1/1/2021	0:57:30	0	0
1/2/2021	0:57:28	7	2,151
1/3/2021	0:57:28	2.4	747
1/4/2021	0:57:29	0	0
1/5/2021	0:57:28	2.3	718
1/6/2021	0:57:31	0	0
1/7/2021	0:57:29	2.3	707
1/8/2021	0:57:33	0	0
1/9/2021	0:57:31	0	0
1/10/2021	0:57:33	2.2	690
1/11/2021	0:57:31	0	0
1/12/2021	0:57:30	0	0
1/13/2021	0:57:32	0	0
1/14/2021	0:57:31	2.2	673
1/15/2021	0:57:31	0	0
1/16/2021	0:57:28	0	0
1/17/2021	0:57:31	0	0
1/18/2021	0:58:58	0	0
1/19/2021	0:57:30	0	0
1/20/2021	0:57:31	0	0
1/21/2021	0:57:29	0	0
1/22/2021	0:57:34	0	0
1/23/2021	0:57:29	0	0
1/24/2021	0:57:30	0	0
1/25/2021	0:57:27	0	0
1/26/2021	0:57:29	0	0
1/27/2021	0:57:34	0	0
1/28/2021	0:57:32	0	0
1/29/2021	0:57:26	0	0
1/30/2021	0:57:32	0	0
1/31/2021	0:57:28	0	0

January Total Discharge **18.4** **5,686**

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

Industrial Welding Site Flows
Feb-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **4,823**

Date	Time	Hours	Gallons
2/1/2021	0:57:31	0	0
2/2/2021	0:57:29	0	0
2/3/2021	0:57:30	0	0
2/4/2021	0:57:29	0	0
2/5/2021	0:57:30	0	0
2/6/2021	0:57:29	0	0
2/7/2021	0:57:28	0	0
2/8/2021	0:57:29	0	0
2/9/2021	0:57:29	0	0
2/10/2021	0:57:29	0	0
2/11/2021	0:57:32	0	0
2/12/2021	0:57:30	0	0
2/13/2021	0:57:29	0	0
2/14/2021	0:57:31	0	0
2/15/2021	0:57:32	0	0
2/16/2021	0:57:29	0	0
2/17/2021	0:57:33	0	0
2/18/2021	0:57:29	0	0
2/19/2021	0:57:27	0	0
2/20/2021	0:57:31	0	0
2/21/2021	0:57:27	0	0
2/22/2021	0:57:30	0	0
2/23/2021	0:57:29	0	0
2/24/2021	0:57:31	1.8	521
2/25/2021	0:57:29	7.2	2,148
2/26/2021	0:57:30	0	0
2/27/2021	0:57:32	7.3	2,154
2/28/2021	0:57:32	0	0

February Total Discharge **16.3** **4,823**

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

Industrial Welding Site Flows
Mar-21

RTU NAME: Olin Industrial Welding

CUMULATEVE VALUES

Discharge Flow Meter **7,297**

Date	Time	Hours	Gallons
3/1/2021	0:57:32	2.4	731
3/2/2021	0:57:30	0	0
3/3/2021	0:57:28	2.4	758
3/4/2021	0:57:31	2.4	730
3/5/2021	0:57:26	2.4	735
3/6/2021	0:57:28	2.4	722
3/7/2021	0:57:30	0	0
3/8/2021	0:57:32	2.3	702
3/9/2021	0:57:31	0	0
3/10/2021	0:57:32	2.3	676
3/11/2021	0:57:18	0	0
3/12/2021	0:57:30	0	0
3/13/2021	0:57:29	0.1	21
3/14/2021	0:57:31	2.2	681
3/15/2021	1:57:18	0	0
3/16/2021	0:57:30	0	0
3/17/2021	0:57:32	0	0
3/18/2021	0:57:27	0	0
3/19/2021	0:57:30	0	0
3/20/2021	0:57:30	0	0
3/21/2021	0:57:32	0	0
3/22/2021	0:57:30	0	0
3/23/2021	0:57:28	0	0
3/24/2021	0:57:29	0	0
3/25/2021	0:57:31	0	0
3/26/2021	0:57:28	2.7	823
3/27/2021	0:57:31	0	0
3/28/2021	0:57:28	0	0
3/29/2021	0:57:31	0	0
3/30/2021	0:57:30	0	0
3/31/2021	0:57:28	2.3	718
March Total Discharge		**23.9**	**7,297**

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

Industrial Welding Site Flows
Apr-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **8,778**

Date	Time	Hours	Gallons
4/1/2021	0:57:31	0	0
4/2/2021	0:57:32	0	0
4/3/2021	0:57:30	0	0
4/4/2021	0:57:30	0	0
4/5/2021	0:57:29	0	0
4/6/2021	0:57:28	0	0
4/7/2021	0:57:31	0	0
4/8/2021	1:03:30	0	0
4/9/2021	0:57:30	0	0
4/10/2021	0:57:32	2.3	682
4/11/2021	0:57:31	0	0
4/12/2021	0:57:29	0	0
4/13/2021	0:57:32	2.3	676
4/14/2021	0:57:33	0	0
4/15/2021	0:57:50	0	0
4/16/2021	0:57:31	2.4	722
4/17/2021	0:57:52	0	0
4/18/2021	0:57:32	0	0
4/19/2021	0:57:28	2.3	697
4/20/2021	0:57:31	0	0
4/21/2021	0:57:29	5.5	1,676
4/22/2021	0:57:42	2.4	755
4/23/2021	0:57:32	0	0
4/24/2021	0:57:28	2.4	730
4/25/2021	0:57:31	2.3	711
4/26/2021	0:57:29	0	0
4/27/2021	0:57:29	2.4	715
4/28/2021	0:57:28	0	0
4/29/2021	0:57:28	2.3	697
4/30/2021	0:57:28	2.4	717

April Total Discharge **29** **8,778**

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

Industrial Welding Site Flows
May-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **788**

Date	Time	Hours	Gallons
5/13/2021	20:19:26	0	0
5/14/2021	3:57:45	0	0
5/15/2021	3:58:14	0	0
5/16/2021	3:58:16	0	0
5/17/2021	3:58:18	0	0
5/18/2021	3:58:14	0	0
5/19/2021	3:58:23	0	0
5/20/2021	3:58:19	0	0
5/21/2021	3:58:15	0	0
5/22/2021	3:58:15	0	0
5/23/2021	3:58:12	0	0
5/24/2021	3:58:18	0	0
5/25/2021	3:58:15	0	0
5/26/2021	3:58:13	0	0
5/27/2021	3:58:16	0	0
5/28/2021	3:58:15	2.5	788
5/29/2021	3:58:20	0	0
5/30/2021	3:58:15	0	0
5/31/2021	3:58:19	0	0

May Total Discharge **2.5** **788**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows

Jun-21

RTU NAME: Olin Industrial Welding

CUMULATEVE VALUES

Discharge Flow Meter **0**

Date	Time	Hours	Gallons
6/1/2021	3:58:14	0	0
6/2/2021	3:58:16	0	0
6/3/2021	3:58:16	0	0
6/4/2021	3:58:14	0	0
6/5/2021	3:58:14	0	0
6/6/2021	3:58:14	0	0
6/7/2021	3:58:18	0	0
6/8/2021	3:58:13	0	0
6/9/2021	3:58:27	0	0
6/10/2021	3:57:53	0	0
6/11/2021	3:57:59	0	0
6/12/2021	3:57:57	0	0
6/13/2021	3:57:57	0	0
6/14/2021	3:57:57	0	0
6/15/2021	3:57:59	0	0
6/16/2021	3:57:52	0	0
6/17/2021	3:57:54	0	0
6/18/2021	3:59:06	0	0
6/19/2021	3:57:55	0	0
6/20/2021	3:57:56	0	0
6/21/2021	3:57:57	0	0
6/22/2021	3:58:01	0	0
6/23/2021	3:57:54	0	0
6/24/2021	3:57:52	0	0
6/25/2021	3:58:14	0	0
6/26/2021	3:57:54	0	0
6/27/2021	3:57:54	0	0
6/28/2021	3:57:59	0	0
6/29/2021	3:57:55	0	0
6/30/2021	3:57:58	0	0

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

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows

Jul-21

RTU NAME: Olin Industrial Welding

CUMULATEVE VALUES

Discharge Flow Meter **10,563**

Date	Time	Hours	Gallons
7/1/2021	2:57:52	0	0
7/2/2021	2:57:52	0	0
7/3/2021	2:57:56	0	0
7/4/2021	2:57:53	0	0
7/5/2021	2:57:58	0	0
7/6/2021	2:57:54	0	0
7/7/2021	2:57:57	0	0
7/8/2021	2:57:57	0	0
7/9/2021	2:57:53	0	0
7/10/2021	2:57:53	0	0
7/11/2021	2:57:58	0	0
7/12/2021	2:57:53	0	0
7/13/2021	2:57:56	0	0
7/14/2021	2:57:54	0	0
7/15/2021	2:57:53	0	0
7/16/2021	2:57:57	0	0
7/17/2021	2:57:52	5.8	1779
7/18/2021	2:57:55	5.8	1780
7/19/2021	2:57:55	3.2	998
7/20/2021	2:57:56	5	1525
7/21/2021	2:57:52	3.4	1068
7/22/2021	2:57:54	1.7	524
7/23/2021	2:58:00	2.4	754
7/24/2021	2:57:54	2.4	731
7/25/2021	2:57:56	0	0
7/26/2021	2:57:53	2.3	704
7/27/2021	2:57:51	0	0
7/28/2021	2:57:54	0	0
7/29/2021	2:58:07	2.3	700
7/30/2021	2:57:56	0	0
7/31/2021	2:57:54	0	0
July Total Discharge		**34.3**	**10,563**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows
Aug-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **693**

Date	Time	Hours	Gallons
8/1/2021	3:57:53	0	0
8/2/2021	3:57:55	0	0
8/3/2021	3:57:56	0	0
8/4/2021	3:57:52	2.2	693
8/5/2021	3:57:58	0	0
8/6/2021	3:57:56	0	0
8/7/2021	3:57:54	0	0
8/8/2021	3:57:55	0	0
8/9/2021	3:57:53	0	0
8/10/2021	3:57:56	0	0
8/11/2021	3:57:55	0	0
8/12/2021	3:57:53	0	0
8/13/2021	3:57:55	0	0
8/14/2021	3:57:56	0	0
8/15/2021	3:57:54	0	0
8/16/2021	3:57:55	0	0
8/17/2021	3:57:56	0	0
8/18/2021	3:57:58	0	0
8/19/2021	3:57:57	0	0
8/20/2021	3:58:00	0	0
8/21/2021	3:57:53	0	0
8/22/2021	3:57:52	0	0
8/23/2021	3:57:54	0	0
8/24/2021	3:57:57	0	0
8/25/2021	3:57:57	0	0
8/26/2021	3:57:55	0	0
8/27/2021	3:57:55	0	0
8/28/2021	3:57:56	0	0
8/29/2021	3:57:58	0	0
8/30/2021	3:57:55	0	0
8/31/2021	3:57:56	0	0

August Total Discharge **2.2** **693**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows
Sep-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **349**

Date	Time	Hours	Gallons
9/1/2021	3:57:54	0	0
9/2/2021	3:57:57	0	0
9/3/2021	3:57:53	0	0
9/4/2021	3:57:52	0	0
9/5/2021	3:57:55	0	0
9/6/2021	3:57:57	0	0
9/7/2021	3:58:00	0	0
9/8/2021	3:59:17	0	0
9/9/2021	3:57:56	0	0
9/10/2021	3:57:54	0	0
9/11/2021	3:57:52	0	0
9/12/2021	3:58:02	0	0
9/13/2021	3:57:56	0	0
9/14/2021	3:57:55	0	0
9/15/2021	3:57:54	0	0
9/16/2021	3:57:54	0	0
9/17/2021	3:57:55	0	0
9/18/2021	3:57:53	0	0
9/19/2021	3:57:57	0	0
9/20/2021	3:57:53	0	0
9/21/2021	3:57:53	1.1	349
9/22/2021	3:57:56	0	0
9/23/2021	3:57:55	0	0
9/24/2021	3:57:53	0	0
9/25/2021	3:58:37	0	0
9/26/2021	3:57:53	0	0
9/27/2021	3:57:56	0	0
9/28/2021	3:57:55	0	0
9/29/2021	3:57:54	0	0
9/30/2021	3:57:56	0	0

September Total Discharge **1.1** **349**

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

Industrial Welding Site Flows
Oct-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **703**

Date	Time	Hours	Gallons
10/1/2021	3:57:55	0	0
10/2/2021	3:57:57	0	0
10/3/2021	3:57:54	0	0
10/4/2021	3:57:52	0	0
10/5/2021	3:57:53	0	0
10/6/2021	3:57:57	0	0
10/7/2021	3:57:57	0	0
10/8/2021	3:57:55	0	0
10/9/2021	3:59:14	0	0
10/10/2021	3:57:54	0	0
10/11/2021	3:57:54	0	0
10/12/2021	3:57:55	0	0
10/13/2021	3:57:56	0	0
10/14/2021	3:57:52	0	0
10/15/2021	3:57:56	0	0
10/16/2021	3:57:54	0	0
10/17/2021	3:57:54	0	0
10/18/2021	3:57:56	0	0
10/19/2021	3:57:57	0	0
10/20/2021	3:57:52	0	0
10/21/2021	3:57:56	0	0
10/22/2021	3:57:53	0	0
10/23/2021	3:57:56	0	0
10/24/2021	3:57:55	0	0
10/25/2021	3:57:56	0	0
10/26/2021	3:57:57	0	0
10/27/2021	3:57:58	0	0
10/28/2021	3:57:55	2.2	703
10/29/2021	3:57:56	0	0
10/30/2021	3:58:04	0	0
10/31/2021	3:57:53	0	0

October Total Discharge **2.2** **703**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows
Nov-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **5,458**

Date	Time	Hours	Gallons
11/1/2021	3:57:56	0	0
11/2/2021	3:57:54	2.2	713
11/3/2021	3:57:53	0	0
11/4/2021	3:57:55	0	0
11/5/2021	3:57:55	0	0
11/6/2021	3:57:57	0	0
11/7/2021	2:57:45	0	0
11/8/2021	3:57:53	0.3	117
11/9/2021	3:57:53	0	0
11/10/2021	3:57:57	0	0
11/11/2021	3:57:58	0	0
11/12/2021	3:57:53	0	0
11/13/2021	3:57:56	0	0
11/14/2021	3:57:53	0.1	47
11/15/2021	3:57:57	2.4	770
11/16/2021	3:57:54	0	0
11/17/2021	3:57:51	2.1	715
11/18/2021	3:57:53	0	0
11/19/2021	3:57:54	0	0
11/20/2021	3:57:51	0	0
11/21/2021	3:57:55	2.2	724
11/22/2021	3:57:56	0	0
11/23/2021	3:57:57	0	0
11/24/2021	3:57:56	0	0
11/25/2021	3:57:52	0	0
11/26/2021	3:57:53	2.2	728
11/27/2021	3:57:57	0	0
11/28/2021	3:57:54	0	0
11/29/2021	3:57:56	2.3	757
11/30/2021	3:58:13	2.7	887

November Total Discharge **16.5** **5,458**

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

Industrial Welding Site Flows
Dec-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **12,219**

Date	Time	Hours	Gallons
12/1/2021	3:57:45	0	0
12/2/2021	3:57:53	2.2	725
12/3/2021	3:57:57	0	0
12/4/2021	3:57:56	0	0
12/5/2021	3:57:56	0	0
12/6/2021	3:57:54	2.6	857
12/7/2021	3:57:55	2.2	753
12/8/2021	3:57:57	2.2	763
12/9/2021	3:57:54	0	0
12/10/2021	3:57:56	2.2	743
12/11/2021	3:57:55	2.3	752
12/12/2021	3:57:53	0	0
12/13/2021	3:59:04	2.2	743
12/14/2021	3:57:55	0	0
12/15/2021	3:57:53	0	0
12/16/2021	3:57:54	2.2	735
12/17/2021	3:57:52	0	0
12/18/2021	3:57:52	2.7	897
12/19/2021	3:57:57	2.2	752
12/20/2021	3:57:54	0	0
12/21/2021	3:57:55	2.1	707
12/22/2021	3:57:56	0.1	26
12/23/2021	3:57:54	0	0
12/24/2021	3:57:56	0	0
12/25/2021	3:57:56	4.4	1517
12/26/2021	3:57:53	0	0
12/27/2021	3:57:57	2.2	740
12/28/2021	3:57:53	0	0
12/29/2021	3:57:55	2.3	789
12/30/2021	3:57:55	2.2	720
12/31/2021	3:57:55	0	0

December Total Discharge **36.3** **12,219**

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

ATTACHMENT 2

Olin Corporation Industrial Welding Site

November-21

SDG-R2111809

Sample	Date Collected	Date Received	Date Analyzed	Component	MRL	Result	Flag	Units
IWS-MS-110821	11/8/2021	11/9/2021	11/19/2021	Carbon, Dissolved Organic (DOC)	2.0	**4.4**		mg/L
IWS-MS-110821	11/8/2021	11/9/2021	11/13/2021	Solids, Total Suspended (TSS)	1.0	**4.4**		mg/L
IWS-MS-110821	11/8/2021	11/9/2021	11/11/2021	Mercury, Total	0.200	**0.956**		ug/L
IWS-MS-110821	11/8/2021	11/9/2021	11/13/2021	Acetone	5.00	5.00	U	ug/L
IWS-MS-110821	11/8/2021	11/9/2021	11/13/2021	1,1-Dichloroethane (1,1-DCA)	1.00	1.00	U	ug/L
IWS-MS-110821	11/8/2021	11/9/2021	11/13/2021	1,2-Dichloroethane	1.00	1.00	U	ug/L
IWS-MS-110821	11/8/2021	11/9/2021	11/13/2021	Trichloroethene (TCE)	1.00	0.814	J	ug/L
IWS-MS-110821	11/8/2021	11/9/2021	11/17/2021	alpha-BHC	0.0455	0.0455	U	ug/L
IWS-MS-110821	11/8/2021	11/9/2021	11/17/2021	beta-BHC	0.0455	0.0455	U	ug/L
IWS-MS-110821	11/8/2021	11/9/2021	11/17/2021	delta-BHC	0.0455	0.0455	U	ug/L
IWS-MS-110821	11/8/2021	11/9/2021	11/17/2021	gamma-BHC (Lindane)	0.0455	0.0455	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

November 30, 2021 Service Request No:R2111809

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, 2021
For your reference, these analyses have been assigned our service request number **R2111809.**

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
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dba ALS Environmental

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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: R2111809
Date Received: 11/09/2021

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 11/09/2021. 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 8081B, 11/17/2021: The control limit was exceeded for one or more analytes in the Laboratory Control Sample (LCS). The discrepancy indicates a potential bias for results reported from this analytical batch. The analytes affected are flagged in the LCS Summary Report. lcsd/ms/msd were all okay in the batch.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

No significant anomalies were noted with this analysis.

Approved by _____ Date 11/30/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: IWS-MS1-110821	Lab ID: R2111809-001					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Dissolved Organic (DOC)	4.4			2.0	mg/L	SM 5310 C-2000 (2011)
Solids, Total Suspended (TSS)	4.4			1.0	mg/L	SM 2540 D-1997 (2011)
Trichloroethene (TCE)	0.814	J	0.200	1.00	ug/L	624.1

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:**R2111809

Project: Olin - Industrial Welding Site/release order ERRE9845

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2111809-001	IWS-MS1-110821	11/8/2021	1400
R2111809-002	Trip Blank-110821	11/8/2021	

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM 061758

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: OLIN - INDUSTRIAL WELDING SITE	Project Number:
Project Manager: ADAM CARLINGER	Report CC:
Company/Address: OLIN CORP 3855 NORTH OCOEE Rd CLEVELAND, TN 37312	
Phone #: 423-336-4000	Email: ABCARLINGER@OLIN.COM
Sampler's Signature:	Sampler's Printed Name: MICHAEL E WALKER

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 0 | 0 | 2 | 0 | 0

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	DOC	TSS						REMARKS/ ALTERNATE DESCRIPTION
IWS-MSI-110821		11-08-21	1400	GW	28	9			4		3		9	3						MS/MSD Volume
TRIP BLANK-110821					3															
TEMP BLANK					1															

Preservative Key: 0. NONE — 1. HCl 2. HNO_3 — 3. H_2SO_4 4. NaOH 5. Zn. Acetate 6. MeOH 7. $NaHSO_4$ 8. Other ____

SPECIAL INSTRUCTIONS/COMMENTS

Metals T - Hg

DOC's were filtered in field (limited volume due to breakage)

MS/MSD Volume

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED: NEW YORK

TURNAROUND REQUIREMENTS

____ RUSH (SURCHARGES APPLY)

____ 1 day ____ 2 day ____ 3 day

____ 4 day ____ 5 day

X Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE: _____

REPORT REQUIREMENTS

____ I. Results Only

X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)

____ III. Results + QC and Calibration Summaries

____ IV. Data Validation Report with Raw Data

Edata ____ Yes ____ No

INVOICE INFORMATION

PO #:

BILL TO: OLIN CORP

ADAM CARLINGER

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature: UPS DRIVER	Signature:	Signature:	Signature:	Signature:
Printed Name: MICHAEL E WALKER	Printed Name:	Printed Name:	Printed Name:	Printed Name:	
Firm: SEVIERVILLE	Firm: SHIPPING LATE TIME	Firm:	Firm: OLIN	Firm:	
Date/Time: 11/8/21 / 4:00 PM	Date/Time: UPS FED	Date/Time:	Date/Time: 11/9/21 0935	Date/Time:	

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

R2111809 5
Olin Corporation
Olin - Industrial Welding Site

R2111809 5
Olin Corporation
Olin - Industrial Welding Site

Cooler Receipt and Preservation Chec

Project/Client Olin Folder Number .

Cooler received on 11/9/21 by: e

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: 11/9/21 Time: 0946 ID: IR#7 (IR#11) From: (Temp Blank) Sample Bottle

Observed Temp (°C)	4.5						
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: Room by e on 11/9/21 at 0958
5035 samples placed in storage location: by on at within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 11/9/21 Time: 13:44 by: ME

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. 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	X		1121062	10/22				
≤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	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: 1027-009, 90821-02, 21-1020, 90821-02
Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: ME
PC Secondary Review:

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

Client: Olin Corporation **Service Request:** R2111809

Project: Olin - Industrial Welding Site/release order ERRE9845

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2111809-001.01					
	624				
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
		11/13/2021	1223	In Lab / KRUEST	
		11/13/2021	1248	R-001-S12 / KRUEST	
R2111809-001.02					
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.03					
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.05					
	SM 2540 D-1997(2011)				
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
R2111809-001.06					
	245.1				
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
		11/10/2021	1056	In Lab / BDIAMOND	
		11/10/2021	1345	R-A01 / BDIAMOND	
R2111809-001.07					
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
		11/15/2021	0827	In Lab / MMCMAHON	
R2111809-001.08					
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
		11/15/2021	0827	In Lab / MMCMAHON	
R2111809-001.09					
		11/9/2021	1341	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.10					
		11/9/2021	1341	SMO / GESMERIAN	

Client: Olin Corporation **Service Request:** R2111809
Project: Olin - Industrial Welding Site/release order ERRE9845

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.11					
		11/9/2021	1341	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.12					
		11/9/2021	1341	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.13					
		11/9/2021	1341	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.14					
		11/9/2021	1341	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-001.15					
	SM 5310 C-2000(2011)				
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.16					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.17					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.18					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	

Client: Olin Corporation **Service Request:** R2111809
Project: Olin - Industrial Welding Site/release order ERRE9845

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.19					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.20					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.21					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.22					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.23					
		11/9/2021	1342	SMO / GESMERIAN	
		11/10/2021	1132	R-017 / GESMERIAN	
		11/10/2021	1133	RT000544 / GESMERIAN	
		11/24/2021	1457	R-002 / GESMERIAN	
R2111809-001.24					
		11/9/2021	1342	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
R2111809-001.25					
		11/9/2021	1342	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
R2111809-001.26					

Client: Olin Corporation **Service Request:** R2111809

Project: Olin - Industrial Welding Site/release order ERRE9845

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		11/9/2021	1342	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
		11/10/2021	1345	R-A01 / BDIAMOND	
R2111809-001.27					
		11/9/2021	1342	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
		11/10/2021	1345	R-A01 / BDIAMOND	
R2111809-001.28					
		11/9/2021	1342	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
R2111809-001.29					
	608 Modified				
		11/9/2021	1342	SMO / GESMERIAN	
		11/9/2021	1344	R-002 / GESMERIAN	
		11/15/2021	0827	In Lab / MMCMAHON	
R2111809-002.01					
	624				
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
		11/13/2021	1223	In Lab / KRUEST	
		11/13/2021	1248	R-001-S12 / KRUEST	
R2111809-002.02					
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	
R2111809-002.03					
		11/9/2021	1340	SMO / GESMERIAN	
		11/9/2021	1343	R-001 / GESMERIAN	

Miscellaneous Forms

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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 **Service Request:** R2111809
Project: Olin - Industrial Welding Site/release order ERRE9845

Sample Name: IWS-MS1-110821 **Date Collected:** 11/8/21
Lab Code: R2111809-001 **Date Received:** 11/9/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
245.1	BDIAMOND	NMANSEN
608 Modified	KSERCU	BALLGEIER
624		KRUEST
SM 2540 D-1997(2011)		KAWONG
SM 5310 C-2000(2011)		CWOODS

Sample Name: Trip Blank-110821 **Date Collected:** 11/8/21
Lab Code: R2111809-002 **Date Received:** 11/9/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
624		KRUEST

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:**	R2111809
Project:	Olin - Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/21 14:00
Sample Matrix:	Water	**Date Received:**	11/09/21 09:35
Sample Name:	IWS-MS1-110821	**Units:**	ug/L
Lab Code:	R2111809-001	**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	11/13/21 15:12	
1,2-Dichloroethane	1.00	U	1.00	0.200	1	11/13/21 15:12	
Acetone	5.00	U	5.00	2.10	1	11/13/21 15:12	
Trichloroethene (TCE)	**0.814**	**J**	1.00	0.200	1	11/13/21 15:12	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	92	73 - 125	11/13/21 15:12	
4-Bromofluorobenzene	96	85 - 122	11/13/21 15:12	
Toluene-d8	105	87 - 121	11/13/21 15:12	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2111809
Project:	Olin - Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/21
Sample Matrix:	Water	**Date Received:**	11/09/21 09:35
Sample Name:	Trip Blank-110821	**Units:**	ug/L
Lab Code:	R2111809-002	**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	11/13/21 14:50	
1,2-Dichloroethane	1.00	U	1.00	0.200	1	11/13/21 14:50	
Acetone	5.00	U	5.00	2.10	1	11/13/21 14:50	
Trichloroethene (TCE)	1.00	U	1.00	0.200	1	11/13/21 14:50	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	92	73 - 125	11/13/21 14:50	
4-Bromofluorobenzene	96	85 - 122	11/13/21 14:50	
Toluene-d8	105	87 - 121	11/13/21 14:50	

Semivolatile Organic Compounds by GC

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Analytical Report

Client:	Olin Corporation	**Service Request:**	R2111809
Project:	Olin - Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/21 14:00
Sample Matrix:	Water	**Date Received:**	11/09/21 09:35
Sample Name:	IWS-MS1-110821	**Units:**	ug/L
Lab Code:	R2111809-001	**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	0.0455 U	0.0455	0.0200	1	11/17/21 03:38	11/15/21	
beta-BHC	0.0455 U	0.0455	0.0200	1	11/17/21 03:38	11/15/21	
delta-BHC	0.0455 U	0.0455	0.0200	1	11/17/21 03:38	11/15/21	
gamma-BHC (Lindane)	0.0455 U	0.0455	0.0200	1	11/17/21 03:38	11/15/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	33	13 - 131	11/17/21 03:38	
Decachlorobiphenyl	42	10 - 156	11/17/21 03:38	

Metals

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METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

IWS-MS1-110821

Contract: R2111809

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: IWS-MS1-1108

Matrix (soil/water): WATER Lab Sample ID: R2111809-001

Level (low/med): LOW Date Received: 11/9/2021

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.956			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

General Chemistry

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Analytical Report

Client:	Olin Corporation	**Service Request:**	R2111809
Project:	Olin - Industrial Welding Site/release order ERRE9845	**Date Collected:**	11/08/21 14:00
Sample Matrix:	Water	**Date Received:**	11/09/21 09:35
Sample Name:	IWS-MS1-110821	**Basis:**	NA
Lab Code:	R2111809-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Carbon, Dissolved Organic (DOC)	SM 5310 C-2000(2011)	**4.4**	mg/L	2.0	2	11/19/21 19:03	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	**4.4**	mg/L	1.0	1	11/13/21 17:15	

Industrial Welding Site
Data Evaluation Narrative
November 2021 Discharge Sampling Event

SDG R2111809: 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 5310C 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 soluble organic carbon analyses. The laboratory subsequently applied login numbers to the SDG. The SDG number for this sampling event is R2111809. 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, 2021:

SAMPLE ID	SAMPLE ID
IWS-MS1-110821	Trip Blank-110821 (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 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-MS1-110821 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.

Duplicate Samples:
No samples were selected by the laboratory or field for duplicate analysis.

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 Site project and QC samples were also within applicable control criteria.

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 recoveries were below the lower laboratory control limits for all four BHC compounds. However, the LCSD, MS/MSD and Performance Evaluation Sample (PES) recoveries were easily within control limits. It is suspected that the LCS was not properly spiked; by professional judgment no data qualification was deemed necessary.

Matrix Spike/Matrix Spike Duplicate:
Sample IWS-MS1-110821 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. All percent recoveries and RPDs were within control limits.

Duplicate Samples:
No samples were selected by the laboratory or field for duplicate analysis.

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-MS1-110821 was submitted for MS/MSD analysis. The percent recoveries and RPD were within laboratory control limits.

Duplicate Samples:
No samples were selected by the laboratory or field for duplicate analysis.

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-MS1-110821. The RPD was within control limits.

Soluble Organic Carbon (SM 5310C)

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-MS1-110821 was submitted for MS/MSD analysis. The percent recoveries and RPD were within applicable QC advisory limits.

Duplicate Samples:

No samples were selected by the laboratory or field for duplicate analysis.

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 2021 sampling event. Typically, project objectives are met when completeness is 90 percent or better.

Prepared by: *Randy T. Morris* Date: *November 30, 2021*

ATTACHMENT D

Industrial Welding Site Flows
Jan-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **5,686**

Date	Time	Hours	Gallons
1/1/2021	0:57:30	0	0
1/2/2021	0:57:28	7	2,151
1/3/2021	0:57:28	2.4	747
1/4/2021	0:57:29	0	0
1/5/2021	0:57:28	2.3	718
1/6/2021	0:57:31	0	0
1/7/2021	0:57:29	2.3	707
1/8/2021	0:57:33	0	0
1/9/2021	0:57:31	0	0
1/10/2021	0:57:33	2.2	690
1/11/2021	0:57:31	0	0
1/12/2021	0:57:30	0	0
1/13/2021	0:57:32	0	0
1/14/2021	0:57:31	2.2	673
1/15/2021	0:57:31	0	0
1/16/2021	0:57:28	0	0
1/17/2021	0:57:31	0	0
1/18/2021	0:58:58	0	0
1/19/2021	0:57:30	0	0
1/20/2021	0:57:31	0	0
1/21/2021	0:57:29	0	0
1/22/2021	0:57:34	0	0
1/23/2021	0:57:29	0	0
1/24/2021	0:57:30	0	0
1/25/2021	0:57:27	0	0
1/26/2021	0:57:29	0	0
1/27/2021	0:57:34	0	0
1/28/2021	0:57:32	0	0
1/29/2021	0:57:26	0	0
1/30/2021	0:57:32	0	0
1/31/2021	0:57:28	0	0

January Total Discharge **18.4** **5,686**

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

Industrial Welding Site Flows
Feb-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **4,823**

Date	Time	Hours	Gallons
2/1/2021	0:57:31	0	0
2/2/2021	0:57:29	0	0
2/3/2021	0:57:30	0	0
2/4/2021	0:57:29	0	0
2/5/2021	0:57:30	0	0
2/6/2021	0:57:29	0	0
2/7/2021	0:57:28	0	0
2/8/2021	0:57:29	0	0
2/9/2021	0:57:29	0	0
2/10/2021	0:57:29	0	0
2/11/2021	0:57:32	0	0
2/12/2021	0:57:30	0	0
2/13/2021	0:57:29	0	0
2/14/2021	0:57:31	0	0
2/15/2021	0:57:32	0	0
2/16/2021	0:57:29	0	0
2/17/2021	0:57:33	0	0
2/18/2021	0:57:29	0	0
2/19/2021	0:57:27	0	0
2/20/2021	0:57:31	0	0
2/21/2021	0:57:27	0	0
2/22/2021	0:57:30	0	0
2/23/2021	0:57:29	0	0
2/24/2021	0:57:31	1.8	521
2/25/2021	0:57:29	7.2	2,148
2/26/2021	0:57:30	0	0
2/27/2021	0:57:32	7.3	2,154
2/28/2021	0:57:32	0	0

February Total Discharge **16.3** **4,823**

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

Industrial Welding Site Flows
Mar-21

RTU NAME: Olin Industrial Welding

CUMULATEVE VALUES

Discharge Flow Meter **7,297**

Date	Time	Hours	Gallons
3/1/2021	0:57:32	2.4	731
3/2/2021	0:57:30	0	0
3/3/2021	0:57:28	2.4	758
3/4/2021	0:57:31	2.4	730
3/5/2021	0:57:26	2.4	735
3/6/2021	0:57:28	2.4	722
3/7/2021	0:57:30	0	0
3/8/2021	0:57:32	2.3	702
3/9/2021	0:57:31	0	0
3/10/2021	0:57:32	2.3	676
3/11/2021	0:57:18	0	0
3/12/2021	0:57:30	0	0
3/13/2021	0:57:29	0.1	21
3/14/2021	0:57:31	2.2	681
3/15/2021	1:57:18	0	0
3/16/2021	0:57:30	0	0
3/17/2021	0:57:32	0	0
3/18/2021	0:57:27	0	0
3/19/2021	0:57:30	0	0
3/20/2021	0:57:30	0	0
3/21/2021	0:57:32	0	0
3/22/2021	0:57:30	0	0
3/23/2021	0:57:28	0	0
3/24/2021	0:57:29	0	0
3/25/2021	0:57:31	0	0
3/26/2021	0:57:28	2.7	823
3/27/2021	0:57:31	0	0
3/28/2021	0:57:28	0	0
3/29/2021	0:57:31	0	0
3/30/2021	0:57:30	0	0
3/31/2021	0:57:28	2.3	718
March Total Discharge		**23.9**	**7,297**

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

Industrial Welding Site Flows
Apr-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **8,778**

Date	Time	Hours	Gallons
4/1/2021	0:57:31	0	0
4/2/2021	0:57:32	0	0
4/3/2021	0:57:30	0	0
4/4/2021	0:57:30	0	0
4/5/2021	0:57:29	0	0
4/6/2021	0:57:28	0	0
4/7/2021	0:57:31	0	0
4/8/2021	1:03:30	0	0
4/9/2021	0:57:30	0	0
4/10/2021	0:57:32	2.3	682
4/11/2021	0:57:31	0	0
4/12/2021	0:57:29	0	0
4/13/2021	0:57:32	2.3	676
4/14/2021	0:57:33	0	0
4/15/2021	0:57:50	0	0
4/16/2021	0:57:31	2.4	722
4/17/2021	0:57:52	0	0
4/18/2021	0:57:32	0	0
4/19/2021	0:57:28	2.3	697
4/20/2021	0:57:31	0	0
4/21/2021	0:57:29	5.5	1,676
4/22/2021	0:57:42	2.4	755
4/23/2021	0:57:32	0	0
4/24/2021	0:57:28	2.4	730
4/25/2021	0:57:31	2.3	711
4/26/2021	0:57:29	0	0
4/27/2021	0:57:29	2.4	715
4/28/2021	0:57:28	0	0
4/29/2021	0:57:28	2.3	697
4/30/2021	0:57:28	2.4	717

April Total Discharge **29** **8,778**

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

Industrial Welding Site Flows
May-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **788**

Date	Time	Hours	Gallons
5/13/2021	20:19:26	0	0
5/14/2021	3:57:45	0	0
5/15/2021	3:58:14	0	0
5/16/2021	3:58:16	0	0
5/17/2021	3:58:18	0	0
5/18/2021	3:58:14	0	0
5/19/2021	3:58:23	0	0
5/20/2021	3:58:19	0	0
5/21/2021	3:58:15	0	0
5/22/2021	3:58:15	0	0
5/23/2021	3:58:12	0	0
5/24/2021	3:58:18	0	0
5/25/2021	3:58:15	0	0
5/26/2021	3:58:13	0	0
5/27/2021	3:58:16	0	0
5/28/2021	3:58:15	2.5	788
5/29/2021	3:58:20	0	0
5/30/2021	3:58:15	0	0
5/31/2021	3:58:19	0	0

May Total Discharge **2.5** **788**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows

Jun-21

RTU NAME: Olin Industrial Welding

CUMULATEVE VALUES

Discharge Flow Meter **0**

Date	Time	Hours	Gallons
6/1/2021	3:58:14	0	0
6/2/2021	3:58:16	0	0
6/3/2021	3:58:16	0	0
6/4/2021	3:58:14	0	0
6/5/2021	3:58:14	0	0
6/6/2021	3:58:14	0	0
6/7/2021	3:58:18	0	0
6/8/2021	3:58:13	0	0
6/9/2021	3:58:27	0	0
6/10/2021	3:57:53	0	0
6/11/2021	3:57:59	0	0
6/12/2021	3:57:57	0	0
6/13/2021	3:57:57	0	0
6/14/2021	3:57:57	0	0
6/15/2021	3:57:59	0	0
6/16/2021	3:57:52	0	0
6/17/2021	3:57:54	0	0
6/18/2021	3:59:06	0	0
6/19/2021	3:57:55	0	0
6/20/2021	3:57:56	0	0
6/21/2021	3:57:57	0	0
6/22/2021	3:58:01	0	0
6/23/2021	3:57:54	0	0
6/24/2021	3:57:52	0	0
6/25/2021	3:58:14	0	0
6/26/2021	3:57:54	0	0
6/27/2021	3:57:54	0	0
6/28/2021	3:57:59	0	0
6/29/2021	3:57:55	0	0
6/30/2021	3:57:58	0	0

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

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows

Jul-21

RTU NAME: Olin Industrial Welding

CUMULATEVE VALUES

Discharge Flow Meter **10,563**

Date	Time	Hours	Gallons
7/1/2021	2:57:52	0	0
7/2/2021	2:57:52	0	0
7/3/2021	2:57:56	0	0
7/4/2021	2:57:53	0	0
7/5/2021	2:57:58	0	0
7/6/2021	2:57:54	0	0
7/7/2021	2:57:57	0	0
7/8/2021	2:57:57	0	0
7/9/2021	2:57:53	0	0
7/10/2021	2:57:53	0	0
7/11/2021	2:57:58	0	0
7/12/2021	2:57:53	0	0
7/13/2021	2:57:56	0	0
7/14/2021	2:57:54	0	0
7/15/2021	2:57:53	0	0
7/16/2021	2:57:57	0	0
7/17/2021	2:57:52	5.8	1779
7/18/2021	2:57:55	5.8	1780
7/19/2021	2:57:55	3.2	998
7/20/2021	2:57:56	5	1525
7/21/2021	2:57:52	3.4	1068
7/22/2021	2:57:54	1.7	524
7/23/2021	2:58:00	2.4	754
7/24/2021	2:57:54	2.4	731
7/25/2021	2:57:56	0	0
7/26/2021	2:57:53	2.3	704
7/27/2021	2:57:51	0	0
7/28/2021	2:57:54	0	0
7/29/2021	2:58:07	2.3	700
7/30/2021	2:57:56	0	0
7/31/2021	2:57:54	0	0
July Total Discharge		**34.3**	**10,563**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows
Aug-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **693**

Date	Time	Hours	Gallons
8/1/2021	3:57:53	0	0
8/2/2021	3:57:55	0	0
8/3/2021	3:57:56	0	0
8/4/2021	3:57:52	2.2	693
8/5/2021	3:57:58	0	0
8/6/2021	3:57:56	0	0
8/7/2021	3:57:54	0	0
8/8/2021	3:57:55	0	0
8/9/2021	3:57:53	0	0
8/10/2021	3:57:56	0	0
8/11/2021	3:57:55	0	0
8/12/2021	3:57:53	0	0
8/13/2021	3:57:55	0	0
8/14/2021	3:57:56	0	0
8/15/2021	3:57:54	0	0
8/16/2021	3:57:55	0	0
8/17/2021	3:57:56	0	0
8/18/2021	3:57:58	0	0
8/19/2021	3:57:57	0	0
8/20/2021	3:58:00	0	0
8/21/2021	3:57:53	0	0
8/22/2021	3:57:52	0	0
8/23/2021	3:57:54	0	0
8/24/2021	3:57:57	0	0
8/25/2021	3:57:57	0	0
8/26/2021	3:57:55	0	0
8/27/2021	3:57:55	0	0
8/28/2021	3:57:56	0	0
8/29/2021	3:57:58	0	0
8/30/2021	3:57:55	0	0
8/31/2021	3:57:56	0	0

August Total Discharge **2.2** **693**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows
Sep-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **349**

Date	Time	Hours	Gallons
9/1/2021	3:57:54	0	0
9/2/2021	3:57:57	0	0
9/3/2021	3:57:53	0	0
9/4/2021	3:57:52	0	0
9/5/2021	3:57:55	0	0
9/6/2021	3:57:57	0	0
9/7/2021	3:58:00	0	0
9/8/2021	3:59:17	0	0
9/9/2021	3:57:56	0	0
9/10/2021	3:57:54	0	0
9/11/2021	3:57:52	0	0
9/12/2021	3:58:02	0	0
9/13/2021	3:57:56	0	0
9/14/2021	3:57:55	0	0
9/15/2021	3:57:54	0	0
9/16/2021	3:57:54	0	0
9/17/2021	3:57:55	0	0
9/18/2021	3:57:53	0	0
9/19/2021	3:57:57	0	0
9/20/2021	3:57:53	0	0
9/21/2021	3:57:53	1.1	349
9/22/2021	3:57:56	0	0
9/23/2021	3:57:55	0	0
9/24/2021	3:57:53	0	0
9/25/2021	3:58:37	0	0
9/26/2021	3:57:53	0	0
9/27/2021	3:57:56	0	0
9/28/2021	3:57:55	0	0
9/29/2021	3:57:54	0	0
9/30/2021	3:57:56	0	0

September Total Discharge **1.1** **349**

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

Industrial Welding Site Flows
Oct-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **703**

Date	Time	Hours	Gallons
10/1/2021	3:57:55	0	0
10/2/2021	3:57:57	0	0
10/3/2021	3:57:54	0	0
10/4/2021	3:57:52	0	0
10/5/2021	3:57:53	0	0
10/6/2021	3:57:57	0	0
10/7/2021	3:57:57	0	0
10/8/2021	3:57:55	0	0
10/9/2021	3:59:14	0	0
10/10/2021	3:57:54	0	0
10/11/2021	3:57:54	0	0
10/12/2021	3:57:55	0	0
10/13/2021	3:57:56	0	0
10/14/2021	3:57:52	0	0
10/15/2021	3:57:56	0	0
10/16/2021	3:57:54	0	0
10/17/2021	3:57:54	0	0
10/18/2021	3:57:56	0	0
10/19/2021	3:57:57	0	0
10/20/2021	3:57:52	0	0
10/21/2021	3:57:56	0	0
10/22/2021	3:57:53	0	0
10/23/2021	3:57:56	0	0
10/24/2021	3:57:55	0	0
10/25/2021	3:57:56	0	0
10/26/2021	3:57:57	0	0
10/27/2021	3:57:58	0	0
10/28/2021	3:57:55	2.2	703
10/29/2021	3:57:56	0	0
10/30/2021	3:58:04	0	0
10/31/2021	3:57:53	0	0

October Total Discharge **2.2** **703**

Daily Discharge Limits: Max = 8,000 gal

Industrial Welding Site Flows
Nov-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **5,458**

Date	Time	Hours	Gallons
11/1/2021	3:57:56	0	0
11/2/2021	3:57:54	2.2	713
11/3/2021	3:57:53	0	0
11/4/2021	3:57:55	0	0
11/5/2021	3:57:55	0	0
11/6/2021	3:57:57	0	0
11/7/2021	2:57:45	0	0
11/8/2021	3:57:53	0.3	117
11/9/2021	3:57:53	0	0
11/10/2021	3:57:57	0	0
11/11/2021	3:57:58	0	0
11/12/2021	3:57:53	0	0
11/13/2021	3:57:56	0	0
11/14/2021	3:57:53	0.1	47
11/15/2021	3:57:57	2.4	770
11/16/2021	3:57:54	0	0
11/17/2021	3:57:51	2.1	715
11/18/2021	3:57:53	0	0
11/19/2021	3:57:54	0	0
11/20/2021	3:57:51	0	0
11/21/2021	3:57:55	2.2	724
11/22/2021	3:57:56	0	0
11/23/2021	3:57:57	0	0
11/24/2021	3:57:56	0	0
11/25/2021	3:57:52	0	0
11/26/2021	3:57:53	2.2	728
11/27/2021	3:57:57	0	0
11/28/2021	3:57:54	0	0
11/29/2021	3:57:56	2.3	757
11/30/2021	3:58:13	2.7	887

November Total Discharge **16.5** **5,458**

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

Industrial Welding Site Flows
Dec-21

RTU NAME: Olin Industrial Welding
CUMULATEVE VALUES

Discharge Flow Meter **12,219**

Date	Time	Hours	Gallons
12/1/2021	3:57:45	0	0
12/2/2021	3:57:53	2.2	725
12/3/2021	3:57:57	0	0
12/4/2021	3:57:56	0	0
12/5/2021	3:57:56	0	0
12/6/2021	3:57:54	2.6	857
12/7/2021	3:57:55	2.2	753
12/8/2021	3:57:57	2.2	763
12/9/2021	3:57:54	0	0
12/10/2021	3:57:56	2.2	743
12/11/2021	3:57:55	2.3	752
12/12/2021	3:57:53	0	0
12/13/2021	3:59:04	2.2	743
12/14/2021	3:57:55	0	0
12/15/2021	3:57:53	0	0
12/16/2021	3:57:54	2.2	735
12/17/2021	3:57:52	0	0
12/18/2021	3:57:52	2.7	897
12/19/2021	3:57:57	2.2	752
12/20/2021	3:57:54	0	0
12/21/2021	3:57:55	2.1	707
12/22/2021	3:57:56	0.1	26
12/23/2021	3:57:54	0	0
12/24/2021	3:57:56	0	0
12/25/2021	3:57:56	4.4	1517
12/26/2021	3:57:53	0	0
12/27/2021	3:57:57	2.2	740
12/28/2021	3:57:53	0	0
12/29/2021	3:57:55	2.3	789
12/30/2021	3:57:55	2.2	720
12/31/2021	3:57:55	0	0

December Total Discharge **36.3** **12,219**

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

Industrial Welding Site - Discharge Flows: 2021

Month	Monthly Flow (gal)	gal/day
Jan	5,686	183
Feb	4,823	172
Mar	7,297	235
Apr	8,778	293
May	788	25
Jun	0	0
Jul	10,563	341
Aug	693	22
Sep	349	12
Oct	703	23
Nov	5,458	182
Dec	12,219	394
Total	**57,357**	
MONTHLY AVERAGE	4,780	
daily average	157	
daily avg Mgal	0.000157	

Daily Avg. Limit = 0.005 Mgal

Industrial Welding Site Flows
Jan-22

RTU NAME: Olin Industrial Welding

CUMULATEVE VALUES

Discharge Flow Meter **5,266**

Date	Time	Hours	Gallons
1/1/2022	3:57:56	2.1	715
1/2/2022	3:57:53	0.3	129
1/3/2022	3:57:53	2.2	748
1/4/2022	3:57:53	0	0
1/5/2022	3:57:52	2.3	800
1/6/2022	3:57:54	0	0
1/7/2022	3:57:54	2.1	736
1/8/2022	3:57:53	0	0
1/9/2022	3:57:55	2.1	722
1/10/2022	3:57:53	0	0
1/11/2022	3:57:52	0	0
1/12/2022	3:57:53	0.4	161
1/13/2022	3:57:56	1.6	550
1/14/2022	3:57:59	0	0
1/15/2022	3:57:53	0	0
1/16/2022	3:57:52	0	0
1/17/2022	3:57:53	0	0
1/18/2022	3:57:58	0	0
1/19/2022	3:57:55	2.2	705
1/20/2022	3:57:56	0	0
1/21/2022	3:57:59	0	0
1/22/2022	3:57:53	0	0
1/23/2022	3:57:57	0	0
1/24/2022	3:57:53	0	0
1/25/2022	3:57:57	0	0
1/26/2022	3:57:52	0	0
1/27/2022	3:57:56	0	0
1/28/2022	3:57:54	0	0
1/29/2022	3:57:53	0	0
1/30/2022	3:57:58	0	0
1/31/2022	3:57:56	0	0
January Total Discharge		**15.3**	**5,266**

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

Industrial Welding Site Flows
Feb-22

RTU NAME: Olin Industrial Welding

CUMULATEVE VALUES

Discharge Flow Meter **46,341**

Date	Time	Hours	Gallons
2/1/2022	3:58:01	0	0
2/2/2022	3:57:55	0	0
2/3/2022	3:57:54	2.2	727
2/4/2022	3:57:58	0	0
2/5/2022	3:57:57	0	0
2/6/2022	3:57:58	0	0
2/7/2022	3:57:57	0	0
2/8/2022	3:57:55	0	0
2/9/2022	3:57:56	0	0
2/10/2022	3:57:54	0	0
2/11/2022	3:57:54	4	1303
2/12/2022	3:57:58	8.3	2730
2/13/2022	3:57:55	2.1	718
2/14/2022	3:57:58	0	0
2/15/2022	3:57:57	2.2	732
2/16/2022	3:57:54	6.4	2110
2/17/2022	3:57:56	17	5543
2/18/2022	3:57:53	20.6	6928
2/19/2022	3:57:52	8.5	2898
2/20/2022	3:58:00	8.1	2706
2/21/2022	3:57:54	5.4	1751
2/22/2022	3:57:53	8.4	2710
2/23/2022	3:57:52	15.7	5212
2/24/2022	3:57:58	9.7	3272
2/25/2022	3:57:54	8.4	2786
2/26/2022	3:57:56	5.3	1749
2/27/2022	3:57:55	5	1666
2/28/2022	3:57:57	2.4	800

February Total Discharge **46481** **46,341**

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

Industrial Welding Site Flows
Mar-22

RTU NAME: Olin Industrial Welding

CUMULATEVE VALUES

Discharge Flow Meter **30,508**

Date	Time	Hours	Gallons
3/1/2022	15:57:45	2.4	800
3/2/2022	3:57:45	4.8	1603
3/3/2022	3:57:57	2.3	781
3/4/2022	3:57:52	2.3	778
3/5/2022	3:57:53	2.3	763
3/6/2022	3:57:56	4.2	1404
3/7/2022	3:57:55	5.1	1725
3/8/2022	3:57:57	5.4	1831
3/9/2022	3:57:53	3.1	1056
3/10/2022	3:57:53	4.7	1623
3/11/2022	3:57:54	3.2	1098
3/12/2022	3:57:54	4.7	1613
3/13/2022	5:00:01	6.3	1660
3/14/2022	1:28:01	2.3	773
3/15/2022	3:57:58	2.3	771
3/16/2022	3:57:58	2.2	755
3/17/2022	3:57:52	1.3	437
3/18/2022	3:57:56	0.9	314
3/19/2022	3:57:57	2.5	848
3/20/2022	3:57:53	2.3	764
3/21/2022	3:57:53	2.4	763
3/22/2022	3:57:59	2.2	745
3/23/2022	3:57:58	2.5	852
3/24/2022	3:57:56	5.1	1706
3/25/2022	3:57:52	2.3	771
3/26/2022	3:57:53	2.2	747
3/27/2022	3:57:56	2.3	773
3/28/2022	3:57:54	10.1	0
3/29/2022	3:57:59	18.6	1230
3/30/2022	3:57:54	2.3	772
3/31/2022	3:57:53	2.3	752
January Total Discharge		**116.9**	**30,508**

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

Industrial Welding Site Flows
Apr-22

RTU NAME: Olin Industrial Welding

CUMULATEVE VALUES

Discharge Flow Meter **15,724**

Date	Time	Hours	Gallons
4/1/2022	3:57:56	2.2	767
4/2/2022	3:57:58	0	0
4/3/2022	3:57:55	2.3	767
4/4/2022	3:57:52	2.3	735
4/5/2022	3:57:53	0	0
4/6/2022	3:57:56	2.3	750
4/7/2022	3:57:51	2.3	750
4/8/2022	3:57:58	0	0
4/9/2022	3:57:56	2.3	763
4/10/2022	3:57:57	2.2	741
4/11/2022	3:57:54	0	0
4/12/2022	3:57:53	2.1	722
4/13/2022	3:57:55	0	0
4/14/2022	3:57:54	2.2	726
4/15/2022	3:57:58	0	0
4/16/2022	3:57:59	2.4	794
4/17/2022	3:57:55	0	0
4/18/2022	3:58:02	4.7	1559
4/19/2022	3:57:54	2.4	795
4/20/2022	3:57:55	2.2	737
4/21/2022	3:57:55	2.2	728
4/22/2022	3:57:56	0	0
4/23/2022	3:57:56	2.2	722
4/24/2022	3:57:57	0	0
4/25/2022	3:57:53	2.2	723
4/26/2022	3:58:08	2.2	721
4/27/2022	3:57:56	2.3	765
4/28/2022	3:57:55	2.2	734
4/29/2022	3:57:58	0	0
4/30/2022	3:57:58	2.2	725

April Total Discharge **47.4** **15,724**

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

ATTACHMENT E

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

Name of Sampler: Mike Walker

Organization: Sevenson Environmental Services

Weather: Cloudy, windy 70 F.

Water Level Indicator Make: Solonist Model: Model 101 Serial No.: 27068

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	09/21/21 1135		Dry	
LCRS Stand Pipe	SP2	09/21/21 1138		Dry	
LCRS Recovery Well	LCRS1	09/21/21 1155	573.43	8.71	
Cover Area Piezometer	P1R	09/21/21 1133	582.10	Dry	
East Easement Piezometer	P2R	09/21/21 1144	572.17	8.83	
Cover Area Piezometer	P3R	09/21/21 1141	581.90	Dry	
East Easement Piezometer	P4R	09/21/21 1147	571.09	8.00	
Cover Area Piezometer	P5R	09/21/21 1125	578.46	Dry	
East Easement Piezometer	P6R	09/21/21 1149	570.91	7.89	
NE Easement Monitoring Well	MW1	09/21/21 1038	570.87	7.37	
SE Easement Monitoring Well	MW2	09/21/21 0953	572.76	5.87	

COMMENTS:

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

Location ID: MS #1 MS#1 IS NOT ON THE SAMPLE SCHEDULE FOR TODAY.

Date: _____ Time: _____

Sampler(s) _____

Weather: _____

System Status (Check): On _____ Off _____

Sample ID: _____

Sampling Method: _____

Sample ID: _____

COMMENTS:

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): Mike Walker

Weather: Cloudy Windy 70 F.

Date: 09/21/21 Time: 0905

Sample ID: IWS-SD1-092121

Sampling Method: Peristaltic Pump with 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)
	5.27			0	0

COMMENTS:
Took grab sample from the catch basin nearest to the LCR well.

Temp.: 19.73
pH: 5.75
ORP: 250 ORP mV
Cond.: 0.137 ms/cm
Turbidity: 1.4 NTU

Sampled at 0915

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

Well ID: MW1 Date: 09/21/21
Sampler(s): Mike Walker
Weather: Cloudy, windy 70 F.
Calibration of Field Equipment:

pH Meter: Date: 09/21/21 Time 0830
Spec. Conduct. Meter: Date: 09/21/21 Time 0830
Turbidity Meter: Date: 09/21/21 Time 0830

Purging Method/Sampling Method: Peristaltic Pump with dedicated tubing

Sample ID: IWS-MW1-092121

Well Purging Data:

Time	Water Level (Feet Below Top of Riser)	Volume Purged	pH (Std. Units)	Specific Conductivity (Φmhos/cm)	Tem (EC)	Turbidity (NTUs)
1038	7.37	0	6.05	1.21	19.85	7.8
1043	7.95	1000 ml	6.06	1.21	19.89	6.4
1048	8.11	1000 ml	6.07	1.21	19.93	2.6
1053	8.21	1000 ml	6.08	1.20	19.98	2.0
Sampled at 1054						

COMMENTS:

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

Well ID: MW-2 Date: 09/21/21
Sampler(s): Mike Walker
Weather: Cloudy, windy 70 F.
Calibration of Field Equipment:

pH Meter: Date: 09/21/21 Time 0830
Spec. Conduct. Meter: Date: 09/21/21 Time 0830
Turbidity Meter: Date: 09/21/21 Time 0830

Purging Method/Sampling Method: : Peristaltic Pump with dedicated tubing

Sample ID: IWS- MW2- 092121

Well Purging Data:

Time	Water Level (Feet Below Top of Riser)	Volume Purged	pH (Std. Units)	Specific Conductivity (Φmhos/cm)	Tem (EC)	Turbidity (NTUs)
0953	5.87	0	5.93	1.25	19.49	1.7
0957	6.60	800 ml	5.88	1.18	19.54	1.4
1004	7.21	1500 ml	5.83	1.02	19.67	1.3
1009	7.51	1000 ml	5.83	1.02	19.70	1.5
Sampled at 1010						

COMMENTS:

SEMI-ANNUAL INSPECTION REPORT FORM

DATE: 09/21/21 **REPORT NO.: 002**

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	
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	
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.		X	
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: 09/21/21

INSPECTOR: Mike Walker

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: SP-1

Date: 09/21/21

INSPECTOR: Mike Walker

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:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: SP-2

Date: 09/21/21

INSPECTOR: Mike Walker

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:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P1R

Date: 09/21/21

INSPECTOR: Mike Walker

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:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P2R

Date: 09/21/21

INSPECTOR: Mike Walker

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:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P3R

Date: 09/21/21

INSPECTOR: Mike Walker

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:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P4R

Date: 09/21/21

INSPECTOR: Mike Walker

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:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P5R

Date: 09/21/21

INSPECTOR: Mike Walker

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:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P6R

Date: 09/21/21

INSPECTOR: Mike Walker

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:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: MW-1

Date: 09/21/21

INSPECTOR: Mike Walker

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:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: MW-2

Date: 09/21/21

INSPECTOR: Mike Walker

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:

OLIN INDUSTRIAL WELDING SITE
Flow Meter Calibration

1. Recirculate water back into the well for 1 minute.
2. Record flow rate that is on meter.
3. Using valves in the system, redirect the water flow to the sample port and let it flow back down into the well.
4. Using a stop watch or a watch with a second hand, get ready to time how long it takes to fill a 5 gallon bucket by directing the sample port hose into it while starting the stop watch.
5. Record the time to fill the bucket.
6. Shut down the system, return all valves to normal operation mode, set system to AUTO.

Enter data below:

DATE	RECIRULATION RATE	TIME TO FILL 5 GALLON BUCKET	ESTIMATED ACTUAL FLOW
	(In GPM) 5.48	(In Seconds)	(In GPM) 4.4118 GPM
9/21/2021		68	
		1.13 minutes	

* Differences between Recirculation Rate (on meter readout) and Estimated Actual Flow Rate, may be attributed to reduction in the diameter of the sample port hose (3/8") when flowing through the sample port, as opposed to flow through the recirculation piping (3/4" pipe).

TECHNICIAN: M. Walker

Site Activities Report

Sevenson Environmental Services, Inc.
Niagara Falls, New York

REPORT NO.	**Sevenson Job No. 1259, div.1**	DATE: 09/21/21		
PROJECT TITLE	**OLIN CORPORATION, INDUSTRIAL WELDING SITE**			
LOCATION OF WORK	**VETERANS DRIVE, NIAGARA FALLS, NEW YORK**			
DESCRIPTION	**O & M OF REMEDIATION SITE**			
WEATHER: Cloudy, windy	**RAINFALL INCHES: Trace in the am**	**TEMP (Deg F)**	**Min: 62 F.**	**Max: 70 F.**

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

Walker on site at 0800 to perform semi annual site inspection, Ground water and Storm Drain sampling for the fall of 2021.
Also performed the calibration check on the LCRS flow meter.

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:
The site looked good, no evidence of damage from either vandals or varmints.
The sink hole repairs to the asphalt cap from last year are holding up well.

There are a few very small field mice that had taken up residence in the hotbox enclosure over the LCRS pumping well.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

061201

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: OLIN INDUSTRIAL WELDING SITE	Project Number: 1259
Project Manager: ADAM CARLINGER	Report CC: ADAM CARLINGER
Company/Address: OLIN CORPORATION - Corp ENVIRONMENTAL Remediation Group 490 Stuart Rd CLEVELAND, TN 37312	
Phone #: 423-508-2768	Email: ABCARLINGER@OLIN.COM
Sampler's Signature:	Sampler's Printed Name: MICHAEL E WALKER

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 0 | 0 | 2

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ◦ 8260 ◦ 624 ◦ CLP	GC/MS SVOAs ◦ 8270 ◦ 625	GC VOAs ◦ 8021 ◦ 601/602	PESTICIDES ◦ 8081 ◦ 608	PCBs ◦ 8082 ◦ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	MERCURY (TOTAL)							REMARKS/ ALTERNATE DESCRIPTION
IWS-SD1-092121		9/21/21	0915	GW	15		6		6				3							MS/MSD
IWS-MW1-092121		9/21/21	1054	GW	5		2		2				1							
IWS-MW2-092121		9/21/21	1010	GW	5		2		2				1							
Trip Blank		9/21/21	—	—	1															

Preservative Key: 0. NONE ✓ 1. HCL ✓ 2. HNO_3 ✓ 3. H_2SO_4 4. NaOH 5. Zn. Acetate 6. MeOH 7. $NaHSO_4$ 8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals – TOTAL MERCURY

Samples shipped in 1 cooler

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED: New York

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
X Standard (10 business days-No Surcharge)
REQUESTED REPORT DATE: STANDARD

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
Edata _____ Yes _____ No

INVOICE INFORMATION
PO #
BILL TO: OLIN Corp

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature: UPS DRIVER	Signature	Signature	Signature	Signature
Printed Name: MICHAEL E WALKER	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: SEVERN	Firm: UPS	Firm	Firm	Firm	Firm
Date/Time: 9/21/21 1330	Date/Time: 9/21/21 1330	Date/Time	Date/Time	Date/Time	Date/Time

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

Site Activities Report

Sevenson Environmental Services, Inc.
Niagara Falls, New York

REPORT NO.	**Sevenson Job No. 1229, div.1**	DATE: 11-8-21		
PROJECT TITLE	**OLIN CORPORATION, INDUSTRIAL WELDING SITE**			
LOCATION OF WORK	**VETERANS DRIVE, NIAGARA FALLS, NEW YORK**			
DESCRIPTION	**O & M OF REMEDIATION SITE**			
WEATHER: Sunny 65°F	**RAINFALL INCHES:** 0	**TEMP (Deg F)**	**Min:** 45°	**Max:** 65°

1. **Work performed today by Prime Contractor (Include Labor Breakdown):**
   Walker on site to collect Leachate samples from "LCR" well (MS-1).
   Turned on heater in Pumping well Hot box.

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

3. **Materials and/Or Equipment Delivered To Site (Include Equipment Demobilization)**
   Sample Bottles, Dedicated tubing, filter for DOC sample.

4. **Type And Results Of Inspection:**
   Site looked good all went well.
   Collected samples plus MS/MSD volume from MS-1,
   Packed samples in ice and shipped to the Lab (ALS) for analysis.

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

Location ID: MS #1

Date: 11-8-21 Time: 2:00 pm

Sampler(s) Mike Walker

Weather: Sunny 65° F windy

System Status (Check): On X Off

Sample ID: IWS - MS1 - 110821

Sampling Method: GRAB from Dedicated System Sample Port

Sample ID: IWS- MS1 - 110821

COMMENTS:

Sample Taken at 1400 Hrs on 11-8-21

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

061758

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: OLIN - INDUSTRIAL WELDING SITE	Project Number:
Project Manager: ADAM CARLINGER	Report CC:
Company/Address: OLIN CORP 3855 NORTH OCOEE Rd CLEVELAND, TN 37312	
Phone #: 423-336-4003	Email: ABCARLINGER@OLIN.COM
Sampler's Signature:	Sampler's Printed Name: MICHAEL E. WALKER

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	PRESERVATIVE	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	DOC	TSS					REMARKS/ ALTERNATE DESCRIPTION
						0			0		2		00							
INS-MSI-110821		11-08-21	1400	GW	29 26		9			4		3		9	3					MS/MSD VOLUME
TRIP BLANK-110821					3															
TEMP BLANK					1															

Preservative Key
0. NONE
1. HCl
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS

Metals T-Hg

DOC's were filtered in field (Limited Volume due to Breakage)

MS/MSD Volume

See QAPP ☐

TURNAROUND REQUIREMENTS

_____ RUSH (SURCHARGES APPLY)

_____ 1 day _____ 2 day _____ 3 day

_____ 4 day _____ 5 day

X Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE

_____

REPORT REQUIREMENTS

_____ I. Results Only

X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)

_____ III. Results + QC and Calibration Summaries

_____ IV. Data Validation Report with Raw Data

Edata _____ Yes _____ No

INVOICE INFORMATION

PO #

BILL TO: OLIN CORP

ADAM CARLINGER

STATE WHERE SAMPLES WERE COLLECTED NEW YORK

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature UPS DRIVER	Signature	Signature	Signature	Signature
Printed Name MICHAEL E WALKER	Printed Name SHIPPING UPS	Printed Name	Printed Name	Printed Name	Printed Name
Firm TENNESSEE	Firm TIME	Firm	Firm	Firm	Firm
Date/Time 11/8/21 / 400 PM	Date/Time UPS FED	Date/Time	Date/Time	Date/Time	Date/Time

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

Site Activities Report

Sevenson Environmental Services, Inc.
Niagara Falls, New York

REPORT NO.	Sevenson Job No. 1283,	DATE: 3/15/22		
PROJECT TITLE	OLIN CORPORATION, INDUSTRIAL WELDING SITE			
LOCATION OF WORK	VETERANS DRIVE, NIAGARA FALLS, NEW YORK			
DESCRIPTION	O & M OF REMEDIATION SITE			
WEATHER: Cloudy 35°F	RAINFALL INCHES: 0	TEMP (Deg F)	Min: 33°F	Max: 45°F

1. **Work performed today by Prime Contractor (Include Labor Breakdown):**
   Site inspection performed. Water levels taken at wells SP1, SP2, LCRS1, P1R, P2R, P3R, P4R, P5R, P6R, MW1 and MW2. Samples for SVOA, pesticides, and tot Hg taken at MW1, MW2, and SD1. 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:**
   One sign had fallen from security fence and was reattached.
   All else okay.

SEMI-ANNUAL INSPECTION REPORT FORM

DATE: 3/15/21 **REPORT NO.:** Spring 2022

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.		✓	One sign had fallen down. It was reattached upon discovery.
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: 3/15/22

INSPECTOR: Max Liffiton

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 Liffiton + Greg Ernst

Weather: Cloudy 35°F

Date: 3/15/22 Time: 0956

Sample ID: IWS-SD1-031522

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)
	5.29			0	0

COMMENTS:

Sampled 1000.

3.12°C
5.71 pH
94 pH mV
318 ORP mV
0.105 mS/cm
9.2 NTU
11.08 mg/L O_2

} Initial conditions at sample time.

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

Well ID: MW-1 Date: 3/15/22
Sampler(s): Max Liffiton, Greg Ernst
Weather: Cloudy 35°F
Calibration of Field Equipment:

pH Meter: Date: 3/15/22 Time 0935
Spec. Conduct. Meter: Date: 3/15/22 Time 0935
Turbidity Meter: Date: 3/15/22 Time 0935

Purging Method/Sampling Method: Peristaltic w/ dedicated tubing, low flow

Sample ID: ~~IWS-MW2-031522~~ IWS-MW1-031522

Well Purging Data:

Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity (Φmhos/cm)	Tem (EC)	Turbidity (NTUs)
1114	6.53	0	7.11	1.23	6.14	1.9
1119	7.11	1.0	6.87	1.25	6.15	0.8
1124	7.34	1.75	6.84	1.26	5.93	1.1
1129	7.47	2.25	6.84	1.23	6.11	0.6
1134	7.58	2.75	6.86	1.22	5.99	0.6

COMMENTS:
sampled at 1140.

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

Well ID: MW-2 Date: 3/15/22
Sampler(s): Max Lifton, Greg Ernst
Weather: Cloudy 35°F
Calibration of Field Equipment:

pH Meter: Date: 3/15/22 Time 0935
Spec. Conduct. Meter: Date: 3/15/22 Time 0935
Turbidity Meter: Date: 3/15/22 Time 0935

Purging Method/Sampling Method: Peristaltic w/ dedicated tubing, low flow

Sample ID: IWS-MW2-031522

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) (10%)	Tem (EC) (±1°C)	Turbidity (NTUs) (±50 NTU)
1032	5.65	0	6.69	1.15	547	2.0
1037	6.40	1.5	7.14	1.19	5.99	2.7
1042	6.69	2.75	7.19	1.21	6.02	0.1
1047	6.72	3.75	7.04	1.17	5.75	0.5
1052	6.71	4.75	6.95	1.15	5.60	0.7

COMMENTS:
samples taken 1055.

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

DATE: 3/15/22 SAMPLING EVENT: IWS Spring Sampling + Site Inspection

PERSON CALIBRATING METER: Max Liffiton

INSTRUMENT USED:

MANUFACTURER: Horiba

MODEL NUMBER: U-52

HGS NUMBER: Serial # 3NXMYRKC

DATE OF MANUFACTURE: —

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: _____

STANDARD 4.00 METER READ: ✓

STANDARD 10.00 METER READ: _____

CALIBRATION SOLUTION EXPIRATION DATE: Oct 22

	PRE CALIBRATION READINGS	POST CALIBRATION READINGS
TEMPERATURE (°F or °C):	7.67	7.66
pH:	4.15	4.00
pHmv:	173	191
OX-RED POT (ORPmv):	299	338
CONDUCTIVITY (ms/cm):	4.54	4.57
TURBIDITY (NTU):	0.0	0.0
mg/L DO:	19.10	11.84
% DO:	NA	NA

OTHER CALIBRATION COMMENTS: ✓

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

Name of Sampler: Max Liffton, Greg Ernst

Organization: SES

Weather: Cloudy

Water Level Indicator Make: Solinist Model: #101 Serial No.: 503882

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	3/15/22 0908		dry @ 17.0	
LCRS Stand Pipe	SP2	3/15/22 0915		14.25	
LCRS Recovery Well	LCRS1	3/15/22 0857	573.43	8.55	564.88
Cover Area Piezometer	P1R	3/15/22 0912	582.10	dry @ 17.7	
East Easement Piezometer	P2R	3/15/22 0909	572.17	5.94	566.23
Cover Area Piezometer	P3R	3/15/22 0920	581.90	5.25	576.65
East Easement Piezometer	P4R	3/15/22 0913	571.09	3.27	567.82
Cover Area Piezometer	P5R	3/15/22 0925	578.46	14.10	564.36
East Easement Piezometer	P6R	3/15/22 0916	570.91	3.27	567.64
NE Easement Monitoring Well	MW1	3/15/22 0919	570.87	6.20	564.67
SE Easement Monitoring Well	MW2	3/15/22 0906	572.76	5.65	567.11

COMMENTS:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: SP-1

Date: 3/15/22

INSPECTOR: Greg Eliff

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: 3/18/2022

INSPECTOR: Greg Grant

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	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:

Concrete pad is cracked in half, part sinking in but well doesn't appear settled.

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P1R

Date: 3/15/12

INSPECTOR: Greg Engt

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: 3/15/22

INSPECTOR: Max Lifton

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.

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Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P3R

Date: 3/15/22

INSPECTOR: Greg Grant

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 seems in good condition but is slightly loose

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P4R

Date: 3/15/22

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.

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Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P5R

Date: 3/15/22

INSPECTOR: Greg Frost

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.
Hinge on well head is rusty and difficult to close.

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P6R

Date: 3/15/22

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.

3.27 @ 09/6

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: MW-1

Date: 3/15/22

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.

6.20 Q 9/9

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: MW-2

Date: 3/15/22

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.

(505 to 906

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

163079

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: Industrial Welding	Project Number: 1229
Project Manager: Adam Carringer	Report CC: Adam Carringer
Company/Address: OLIN Corp. 3855 North Ocoee St. Suite 200 Cleveland TN 37312	
Phone #: 423 336 4987	Email: ABCarringer@Olin.com
Sampler's Signature: Max Lifton	Sampler's Printed Name: Max Lifton

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	PRESERVATIVE		0		0		2										REMARKS/ ALTERNATE DESCRIPTION
							GC/MS VOAs ◦ 8260 ◦ 624 ◦ CLP	GC/MS SVOAs ◦ 8270 ◦ 625	GC VOAs ◦ 8021 ◦ 601/602	PESTICIDES ◦ 8081 ◦ 608	PCBs ◦ 8082 ◦ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)									
IWS-SD1-031522		3/15/22	1000	GW	15		6		6		3											MS/MSD Volume
IWS-MW1-031522		3/15/22	1140	GW	5		2		2		1											
IWS-MW2-031522		3/15/22	1055	GW	5		2		2		1											
Temp Blank					1																	Provided by lab

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals

Tot. Mercury

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
✓ Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE
Standard

REPORT REQUIREMENTS
_____ I. Results Only
Q II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data

Edata _____Yes _____No

INVOICE INFORMATION
PO #
BILL TO: Olin Corp

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Maxwell Lifton	UPS				
Signature: Maxwell Lifton	Signature	Signature	Signature	Signature	Signature
Printed Name: Maxwell Lifton	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: SES	Firm	Firm	Firm	Firm	Firm
Date/Time: 3/15/22 1425	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

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

HEALTH AND SAFETY PLAN SIGNATURE PAGE
INDUSTRIAL WELDING SITE, NIAGARA FALLS, NEW YORK

By signing below, I certify that I have read Sections 8.0 and 9.0 of this O & M Manual about health, safety and emergency procedures for the Industrial Welding Site and I agree to conform to those procedures.

Signature	Printed Name	Organization	Date
	MICHAEL E. WALKER	Sevenson	3-4-22
	Maxwell Lifton	Sevenson	3/15/22
	Greg Engl	Sevenson	3/15/22

ATTACHMENT F

IW GROUNDWATER MONITORING
ANALYTICAL RESULTS FOR Hg MONITORING WELL BY PERIOD
SUMMARY SPRING 2002 - SPRING 2022

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	NT	NT	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**	0.2

= Detected value

*MW1 & MW2 were dry, no analysis available

**Resampled due to anomalous values from spring sampling event

NT = Not Tested

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

Industrial Welding
Mercury Concentrations in Groundwater Over Time