

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 EMAIL

May 31, 2021

Mr. Brian Sadowski 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 - August 20, 2020 - March 21, 2021

Dear Mr. Sadowski:

As requested by NYSDEC, we have submitted this IWS PRR and certification via Olin's cloud-based service portal, BOX as well as via overnight carrier. This report summarizes the site conditions and activities performed from August 20, 2020 through March 21, 2021 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 22, 2021.

Should you have questions, please contact me at (423) 336-4057. Should you have technical difficulties with the download/BOX process, please contact Lisa Wildes at (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



Sit	Site Details e No. 932050	Box 1	
Sit	e Name Olin Corporation-Industrial Welding		
Cit	e Address: Packard Road near 30th Street Zip Code: 14303 y/Town: Niagara Falls unty: Niagara e Acreage: 13.290		
Re	porting Period: May 01, 2020 to May 01, 2021		
	and the second that the second the second the second that the second the second the second the second that the second the second the second that the second the second the second the second that the second the second the second that the se	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?		1
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?		1
	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		О
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 a DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.	ınd	
Α(Corrective Measures Work Plan must be submitted along with this form to address the	nese iss	ues.
Sig	nature of Owner, Remedial Party or Designated Representative Date		

SITE NO. 932050 Box 3

Description of Institutional Controls

Parcel

<u>Owner</u>

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

<u>Parcel</u>

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.

	Periodic Review Report (PRR) Certification Statements
	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 statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section Penal Law. 490 Stuart Rd NC print name at Clevelard TN 3.7312 print business address	that a false on 210.45 of the
The second of th	or Remedial Party)
for the Site named in the Site Details Section of this form. Signature of Owner, Remedial Party or Designated Representative Date	
Rendering Certification	

EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

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

Print name	at 490 STUDRT RD NE, CLEVELDNO TN373/2 print business address
am certifying as a Qualified Environr	mental Professional for the <u>OUNERS REPRESOUTS TIVE</u> (Owner or Remedial Party)

Signature of Qualified Environmental Professional, for

Stamp

the Owner or Remedial Party, Rendering Certification

(Required for PE)

Enclosure 3 Periodic Review Report (PRR) General Guidance

- I. Executive Summary: (1/2-page or less)
 - A. Provide a brief summary of site, nature and extent of contamination, and remedial history.
 - B. Effectiveness of the Remedial Program Provide overall conclusions regarding;
 - 1. progress made during the reporting period toward meeting the remedial objectives for the site
 - 2. the ultimate ability of the remedial program to achieve the remedial objectives for the site.
 - C. Compliance
 - 1. Identify any areas of non-compliance regarding the major elements of the Site Management Plan (SMP, i.e., the Institutional/Engineering Control (IC/EC) Plan, the Monitoring Plan, and the Operation & Maintenance (O&M) Plan).
 - 2. Propose steps to be taken and a schedule to correct any areas of non-compliance.
 - D. Recommendations
 - 1. recommend whether any changes to the SMP are needed
 - 2. recommend any changes to the frequency for submittal of PRRs (increase, decrease)
 - 3. recommend whether the requirements for discontinuing site management have been met.
- II. Site Overview (one page or less)
- A. Describe the site location, boundaries (figure), significant features, surrounding area, and the nature extent of contamination prior to site remediation.
 - B. Describe the chronology of the main features of the remedial program for the site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection.
- III. Evaluate Remedy Performance, Effectiveness, and Protectiveness

Using tables, graphs, charts and bulleted text to the extent practicable, describe the effectiveness of the remedy in achieving the remedial goals for the site. Base findings, recommendations, and conclusions on objective data. Evaluations and should be presented simply and concisely.

- IV. IC/EC Plan Compliance Report (if applicable)
 - A. IC/EC Requirements and Compliance
 - 1. Describe each control, its objective, and how performance of the control is evaluated.
 - 2. Summarize the status of each goal (whether it is fully in place and its effectiveness).
 - 3. Corrective Measures: describe steps proposed to address any deficiencies in ICECs.
 - 4. Conclusions and recommendations for changes.
 - B. IC/EC Certification
 - 1. The certification must be complete (even if there are IC/EC deficiencies), and certified by the appropriate party as set forth in a Department-approved certification form(s).
- V. Monitoring Plan Compliance Report (if applicable)
 - A. Components of the Monitoring Plan (tabular presentations preferred) Describe the requirements of the monitoring plan by media (i.e., soil, groundwater, sediment, etc.) and by any remedial technologies being used at the site.
 - B. Summary of Monitoring Completed During Reporting Period Describe the monitoring tasks actually completed during this PRR reporting period. Tables and/or figures should be used to show all data.
 - C. Comparisons with Remedial Objectives Compare the results of all monitoring with the remedial objectives for the site. Include trend analyses where possible.
 - D. Monitoring Deficiencies Describe any ways in which monitoring did not fully comply with the monitoring plan.
 - E. Conclusions and Recommendations for Changes Provide overall conclusions regarding the monitoring completed and the resulting evaluations regarding remedial effectiveness.
- VI. Operation & Maintenance (O&M) Plan Compliance Report (if applicable)
 - A. Components of O&M Plan Describe the requirements of the O&M plan including required activities, frequencies, recordkeeping, etc.
 - B. Summary of O&M Completed During Reporting Period Describe the O&M tasks actually completed during this PRR reporting period.
 - C. Evaluation of Remedial Systems Based upon the results of the O&M activities completed, evaluated

the ability of each component of the remedy subject to O&M requirements to perform as designed/expected.

- D. O&M Deficiencies Identify any deficiencies in complying with the O&M plan during this PRR reporting period.
- E. Conclusions and Recommendations for Improvements Provide an overall conclusion regarding O&M for the site and identify any suggested improvements requiring changes in the O&M Plan.

VII. Overall PRR Conclusions and Recommendations

- A. Compliance with SMP For each component of the SMP (i.e., IC/EC, monitoring, O&M), summarize;
 - 1. whether all requirements of each plan were met during the reporting period
 - 2. any requirements not met
 - 3. proposed plans and a schedule for coming into full compliance.
- B. Performance and Effectiveness of the Remedy Based upon your evaluation of the components of the SMP, form conclusions about the performance of each component and the ability of the remedy to achieve the remedial objectives for the site.
- C. Future PRR Submittals
 - 1. Recommend, with supporting justification, whether the frequency of the submittal of PRRs should be changed (either increased or decreased).
 - 2. If the requirements for site closure have been achieved, contact the Departments Project Manager for the site to determine what, if any, additional documentation is needed to support a decision to discontinue site management.

VIII. Additional Guidance

Additional guidance regarding the preparation and submittal of an acceptable PRR can be obtained from the Departments Project Manager for the site.

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

May 31, 2021

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Attachments

Attachment A – Site Features Map

Attachment B - Groundwater Monitoring Data

Attachment C - Discharge Monitoring Report

Attachment D - Calendar Year Flows

Attachment E – Site Activities Reports, Inspections, and Sampling Logs

Attachment F – Mercury Data

I. <u>Executive Summary</u>

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 1-1, 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. <u>Compliance</u>: 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. <u>SITE OVERVIEW</u>

A. <u>Site description and nature/extent prior to remediation</u>: Maps showing the site features are 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 and monitoring data for the August 2020, October 2020, and March 2021 monitoring events and the surface drainage data for the September 2020 and November 2020 monitoring events are presented in *Attachment B*.

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. <u>Components of Monitoring Plan</u>: 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
- 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

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.** <u>Components of the O&M Plan</u>: 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
 - Record keeping is maintained for site inspections and monitoring
 - **B.** O&M Summary: 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 of mercury, BHC, and semi-volatile compounds.

Calendar-year flows by day for 2020 and for 2021 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 this O&M Plan. 0

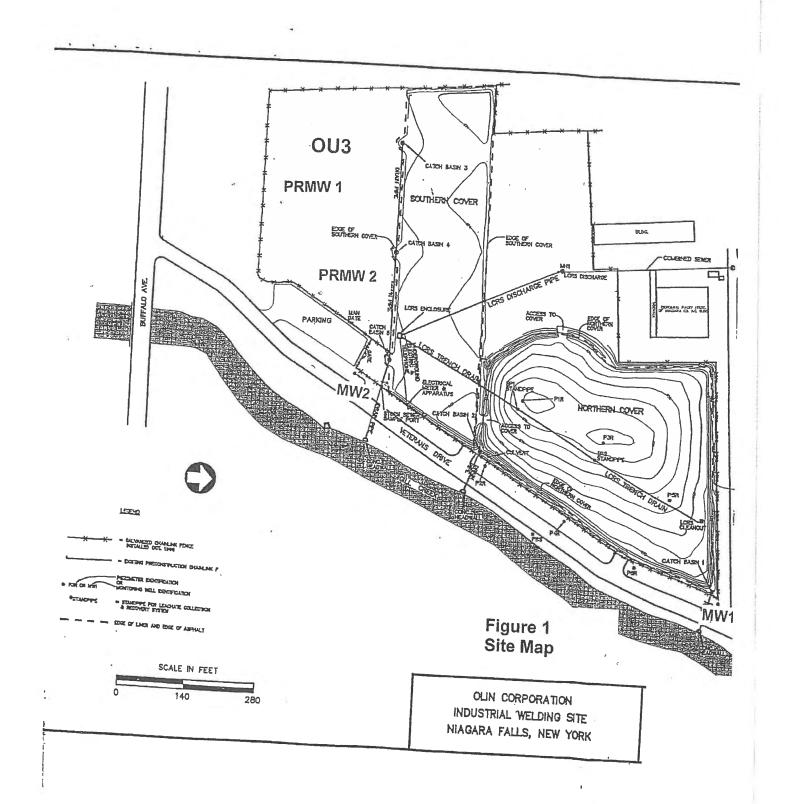
- **C.** Evaluation of remedial systems: All components are performing as designed
- D. O&M deficiencies: None
- **E.** <u>Conclusions</u>: The O&M system is being run and maintained properly and does not require additions or modifications at this time.

VII. OVERALL PRR CONCLUSIONS AND RECOMMENDATIONS

- A. <u>Compliance with Site Monitoring Plan</u>: 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 following 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. Semi-volatile 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 a result consistent with the overall trend. Historically, concentration spikes have been detected but fell back to historic levels in the following years. Over the past 17 years, the higher concentrations have occurred in the spring of the calendar years, with exception of the fall 2013 event. This trend was evident in the spring sampling of 2020. We resampled in August and sampled again in October and the results were significantly lower than the spring 2020 event. The spring 2021 concentrations were lower than that of the fall. We anticipate even lower concentrations of mercury in the upcoming fall event. The trends for mercury concentrations are illustrated by the graph and data included in *Attachment F.*
- **C.** <u>Future submittals</u>: Future submittals of reports will be done on an annual basis in the appropriate Periodic Review Report format.

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Service Request No:R2007319

Adam Carringer
Olin Corporation
3855 North Ocoee Street
Suite 200
Cleveland, TN 37312

Laboratory Results for: Industrial Welding Site

Dear Adam,

Enclosed are the results of the sample(s) submitted to our laboratory August 13, 2020 For your reference, these analyses have been assigned our service request number **R2007319**.

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,

Mighou tedio

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro Project Manager

CC: Randy Morris



Narrative Documents



Client:

Olin Corporation

Project:

Industrial Welding Site

Sample Matrix: Water

Service Request: R2007319

Date Received: 08/13/2020

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 08/13/2020. 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.

Metals:

No significant anomalies were noted with this analysis.

	INCHEVANC	NUM C		
Approved by _	U		Date	08/25/2020

M. Ass. Dolo



Sample Receipt Information

Client: Project: Olin Corporation

Industrial Welding Site/1229

Service Request:R2007319

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID		DATE	TIME
R2007319-001	IWS-MW1-081220		8/12/2020	0855
R2007319-002	IWS-MW2-081220		8/12/2020	0905



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003391

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

servative Key NONE HCL HNO3 H2SO4 NaOH Zh. Acetate MeOH NaHSO4 REMARKS/ ALTERNATE DESCRIPTION INVOICE INFORMATION OHN GRP 8. Other RECEIVED BY R2007319 Oiln Corporation Industrial Weiding Ste ANALYSIS REQUESTED (Include Method Number and Container Preservative) **BIL TO:** 8 N. Data Validation Report with Rew Data Edete Yes No (LCS, DUP, MS/MSD as required) REPORT REQUIREMENTS III. Results + OC and Calibration Summaries 1. Results + OC Summarles RELINQUISHED BY . 1. Results Only H Marting Name Date/Time X TURNAROUND REQUIREMENTS 2920 RUSH (SURCHARGES APPLY) - 1 day --- 2 day --- 3 day Of Standard (10 bushoss days-N REQUESTED REPORT DATE RECEIVED BY · 4 day ___ \$ day PRESERVATIVE NUMBER OF CONTAINERS RELINOUISHED BY MATRIX 3 3 9 Surger Printed Mine Color Color Surgers Printed Mine Colors 855 TIME Printed Name 200 Oute/Time ADAD CARNINGER Ę SAMPLING 277/2 3855 NOLTH OCOTE ST SUITE 200 K 172 20 1229 DATE RECEIVED BY hoject Mumber 2 FOR OFFICE USE ONLY LABID Printed Mame STATE WHERE SAMPLES WERE COLLECTED Date/Time INDIATEDAL WEDING SHE 37312 145- My 2 - C81220 1645 - MUI-081220 Date 1 12 20 17 50 SPECIAL INSTRUCTIONS/COMMENTS THE MERCIT **CLIENT SAMPLE ID** TEMP BLANK CLEVELAND TH 423 336 4987 Project Mainson Apple Callanicel RELINQUISHED BY PHILL JONES SEVENSON DUN CORP Signature Co See OAPP Project Name Metals

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ALS	Cooler Re	ceipt and P	reserv	ation (Check F	orm F	R200731 in Corporation dustrial Welding Six	19	5	
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Cooler received on 8/13/2	<u>හැට</u> by:_	B	COUR	EER: A	ls (Ps)	FEDEX VE	LOCITYTUE	irn i- · · ·		
Were Custody seals on outs	ide of cooler?	N	5a	Perchlor	ate samples	have required h	eadspace?	YN	(A)	
2 Custody papers properly co	empleted (ink, si	gned)? (Y) N	5b	Did VOA	vials, Alk,	or Sulfide have	sig* bubbles?	YN	NA	
3 Did all bottles arrive in good	_		6	Where di	d the bottles	originate?	ALS/ROO	CLIE	TI	
4 Circle: (Wet Ice) Dry Ice	-	resent? (Y) N			A received as		Encore 503	Sset ((A)	
	Date: 8/13/20	20 Time: 09	18	ID: II	t#7 AT #10) From	n: Temp Blan	Sam	ple Bottle	
Observed Temp (°C)	4.7									
Within 0-6°C?	N (Y)	YN	Y 1	N L	YN	Y N	. Y N	Y		
If <0°C, were samples frozen?	YN	YN	Υì	N	YN	YN	YN	Y	N	
If out of Temperature, note &Client Approval to Run S	Samples:	Standing A ₁	proval.		ware at drop	off Client no		Same D	Day Rule	
All samples held in storage lo 5035 samples placed in storag		by	on on	\$/13/kn2v 	atat	within 48 hour	s of sampling	Y	N	
Cooler Breakdown/Preservat	ion Check**: I	Date: 8/13/2	70 ·	Time: 1	१८८	by: Din	J			التخصير
9. Were all bottle labe	ls complete (i.e.	analysis, preserv				ES NO				
Did all bottle labels					ď	E S NO				
Were correct contain						ES NO		-		
12. Were 5035 vials ac	ceptable (no exti	ra labels, not leak	ing)?			es no		NUR		
13. Air Samples: Casse	ttes / Tubes Inta	ct with MS?	Canisters !	Pressuriza	ed	Tedlar® Bags	inflated	ATA		

13. A	Lot of test	Cassettes / Tubes Reagent	Preser		Lot Received	Ехр	Sample ID	Vol.	Lot Added	Final
-	рарег		Yes	No	_		Adjusted	Added		pН
≥12	_	NaOH	1	-				=		
≤2	223419	HNO ₃			112002					
≤2		H ₂ SO ₄	Ī							100
<4		NaHSO ₄				1				
5-9		For 608pest			No=Notify for 3day				<u> </u>	
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522	-1		If +, contact PM to add Na ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).	-				
		Na ₂ S ₂ O ₃								
		ZnAcetate	-	- **VOAs and 1664		64 Not to be to	ested before analysis.			
		HCI	**	**		T	Otnerwise, all be	mies of all Sar	nples with chemical	hi eser astriac

Bottle lot numbers: 70-07-17

Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: PC Secondary Review: _

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



Miscellaneous Forms



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).
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- E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
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- * 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.
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- 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.
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Rochester Lab ID # for State Certifications1

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
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^{&#}x27;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-vork/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

POL 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.



INORGANIC PREPARATION METHODS

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



Sample Results



Metals

METALS

-1-

		INORGANIC ANALYSIS DATA SHEET			E I	SAMPLE NO.		
Contract: R2	2007319					IWS-MW1-081220		
Lab Code:		Case No.:	SAS No	o.:	s	DG NO.:	IWS-MW1-0812	
Matrix (soil/w	water):	WATER	<u>=. </u>	Lab Sample I	D: R200	7319-001		
Level (low/med	i): LOW			Date Receive	d: 8/13	3/2020		
						_=		

Concentration

0.200

С

U

Q

CV

Analyte

Mercury

CAS No.

7439-97-6

Color Before:	Clarity Before:	Texture:
Color After:	Clarity After:	Artifacts:
Comments:	III IF EV F	

METALS

-1-

					SAMPLE IWS-MW2	2-081220
Contract:	R2007319			_		
Lab Code:	111	Case No.:	SAS No.:	1 22	SDG NO.:	IWS-MW1-0812
Matrix (soi	11/water):	WATER	Lab Samp	ole ID:	R2007319-002	2
Level (low,	/med): L	OW	Date Rec	ceived:	8/13/2020	112

Concentration

С

CV

68.6

Analyte

Mercury

CAS No.

7439-97-6

Color Before: Clarity Before: Texture: Color After: Artifacts:

Comments:



QC Summary Forms



Metals

ALS Environmenta

-3-

BLANKS

Contract:	R2007319			
Lab Code:	Case No.:	SAS No.:	SDG NO.:	IWS-MW1-0812
Preparation	Blank Matrix (soil/water):	WATER		
Preparation	Blank Concentration Units (ug/	'L, ppt, or mg/kg): UG/L		

	Initial Calib. Blank		Con	tinuing	Calibr	ation Bl	ank ug/	L	Preparation Blank			
Analyte	ug/L	С	1	С	2	С	3	С		С	П	M
Mercury	0.20	00 0	0.20	ן ט	0.2	ן ט 00	0.20	00 0	0.200	ט	П	CV

4	I.S	En	viro	nm	onto	./
_	<i>II /</i> 1 7	11/11	<i>YII ()</i>		CILIA	

-3-

BLANKS

Contract:	R2007319					
Lab Code:		Case No.:	SAS No.:		SDG NO.:	IWS-MW1-0812
Preparation	Blank Matrix	(soil/water):	WATER			
Preparation	Blank Concen	tration Units (ug/	L, ppt, or mg/kg):	UG/L		

	Initial Calib. Blank		Continuing Calibration Blank ug/L						Preparation Blank	111	
Analyte	ug/L	С	1	С	2	C	3	c	577	С	M
Mercury	i i i		0.200	u	0.2	00 0	0.200	ט			CV

-7-

LABORATORY CONTROL SAMPLE

Contract: <u>R2007319</u>				
Lab Code:	Case No.:	SAS No.:	 SDG NO.:	IWS-MW1-0812
Solid LCS Source:			 	
Aqueous LCS Source:	JT BAKER			

	Aqueous	(ug/L		11	112	Solid	(mg/K	
Analyte	True	Found	₹R	True	Found	С	Limits	%R
Mercury	1.000	1.010	101					

Industrial Welding Site Data Evaluation Narrative August 2020 Groundwater Resampling Event

SDG R2007319: 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) Method 7470A was 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 total mercury. The laboratory subsequently applied login numbers to the SDG. The SDG number for this sampling event is R2007319. This evaluation narrative follows the listing of groundwater 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 $4.0^{\circ}\text{C} \pm 2.0^{\circ}\text{C}$. The proper bottles and preservatives were used, the Chain of Custody was properly relinquished by the sampler, and the correct analytical method was employed.

Sample Identification

This SDG contains the following samples collected on August 12, 2020:

SAMPLE

SAMPLE

IWS-MW1-081220

IWS-MW2-081220

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 (MS/MSD):

No project MS/MSD samples were analyzed by the laboratory.

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 August 2020 resampling event.

Prepared by: Randy T. Morris Date: Oeptomber 16, 2020

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rpt. Limit	Detection Limit	Result	Flag*
IWS-MW1-081220	8/12/2020	8/20/2020	7470A	Water	UG/L	Mercury, Total	1	0.2	0.2	0.2	U
IWS-MW2-081220	8/12/2020	8/20/2020	7470A	Water	UG/L	Mercury, Total	10	2	2	68.6	
*U = Non-detect; J = 6	estimated concent	ation between De	etection Limit and Re	eporting Lim	iit						



Service Request No:R2009793

Mr. Dennis Turner Olin Corporation 3855 North Ocoee St. Ste. 200 Cleveland, TN 37312

Laboratory Results for: Industrial Welding - Olin

Dear Mr. Turner,

Enclosed are the results of the sample(s) submitted to our laboratory October 20, 2020 For your reference, these analyses have been assigned our service request number **R2009793**.

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

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

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro Project Manager

CC: Adam Carringer



Narrative Documents



Client:Olin CorporationService Request: R2009793Project:Industrial Welding - OlinDate Received: 10/20/2020

Sample Matrix: Water

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 10/20/2020. 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.

The sample extract(s) required cleanup with TBA (Tetrabutylammonium sulfate) to reduce analytical interference from sulfur. Endrin aldehyde is degraded by TBA cleanup, resulting in low LCS recoveries, and a likely low bias in the associated samples.

Semivolatiles by GC/MS:

No significant anomalies were noted with this analysis.

Metals:

No significant anomalies were noted with this analysis.

	INTERVEN	Temo		
Approved by	U		Date	11/02/2020

M.A. Dolo



Sample Receipt Information

Client: Project: Olin Corporation

Industrial Welding - Olin/1229

Service Request:R2009793

SAMPLE CROSS-REFERENCE

SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
R2009793-001	IWS-MW-2-101620	10/19/2020	0910
R2009793-002	IWS-MW-2-101920	10/19/2020	0830
R2009793-003	IWS-MW-1-101920	10/19/2020	0845



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003813

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

Preservative Key 0. NONE 1. HCL 2. HNO3 3. H-SO4 No No H 5. Zh. Acetate 6. MeOH 7. NaHSO4 ALTERNATE DESCRIPTION INVOICE INFORMATION 8. Other RECEIVED BY かんと ANALYSIS REQUESTED (Include Method Number and Container Preservative) R2009793 BIL 10: N. Data Validation Report with Raw Data **₽** REPORT REQUIREMENTS (LCS, DUP, MS/MSD as required) ... III. Results + OC and Celibration Summaries M. II. Resutts + OC Summaries RELINOUISHED BY E L . I. Results Only Edens Watted Name DeterTme 7 TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) - 1 day - 2 day - 3 day Standard (10 business days-REQUESTED REPORT DATE RECEIVED BY STAMBOAD 0 **PRESERVATIVE** NUMBER OF CONTAINERS RELINOUISHED BY MATRIX 3 3 3 Aplaninger & Olin. Colon. Printed Name 830 **Sh8 Date/Ime** 960 ADAM CARRY LEA SAMPLING 02/11/61 2/901 10 R 2 DATE 1229 RECEIVED BY Project Number FOR OFFICE USE ONLY LAB ID Printed Marne STATE WHERE SAMPLES WERE COLLECTED miles | 26 | 31 | 01 @ * JMITED VOUNE いる CLEKTAND, TN 37312 3855 NOTURE OCOEE 120 Tot Mercury SPECIAL INSTRUCTIONS/COMMENTS WS-MW-1-1019 20 JUS-MM-2-101920 INDUSTRIAL LACTORS 145-MH-2-101620 **CLIENT SAMPLE ID** Project Manager ADAM CATUMS EK RELINQUISHED BY 4 es 336 4981 TEMP BLONK Company/Address
OLIA CORP Ses See GAPP

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

(ALS)

Cooler Receipt and Preservation Check Form

ĺ	R2009793 Oiln Corporation Industrial Welding - Oiln	5
ļ		

roject/Clie		•			T 11 N 1					HE HEN İSMI COM		
	nt_ <i>Olu</i>	n_{-}			_Folder Numl							
Cooler receive	ed on	70/2020	by: <i>(1</i> 2	2	COUR	IER: ALS	OP	S FEDER	> VELO	CITY CLIE	NI	
1 Were Cus	stody seals on	outside of cooler	? .	7	Y) N 5a	Perchlorate	samp	les have requ	uired hea	dspace?	YN	(NA)
2 Custody	papers proper	ly completed (in	k, signe	d)?	Y) N 5b	Did VOA vi	als, A	lk,or Sulfide	have sig	• bubbles?	YN	MA
3 Did all bo	ttles arrive in	good condition (unbroke	en)?	V N 6	Where did t	he bott	tles originate	? . (ALS/ROC	CLIE	11
4 Circle: /	Vet Ice Dry	Ice Gel packs	prese	nt?		Soil VOA re				core 5035	set (1	<u>A</u>
<u></u>	. D 1:	54.46	4			ID: IR#7	¥57	170	Coom	Temp Blank	Comm	le Bottle
. Temperatur		Date: /()/20/	2020_	ıme:	0146	ID: IK#/	(KA	F100	Ltom: C	Temp Blank	Sanib	TE BOILLE
Observed Te	• ' '	1.2							-			
Within 0-6°C		(Y) N			N Y N				N	Y N	Y	N
lf <0°C, wer	e samples froz	en? Y N		Y	NY	1 Y	N	Y	N	YN	Y	N
9. V 10. E 11. V	Vere all bottle Did all bottle la Vere correct co	ervation Check** labels complete (bels and tags agrontainers used for acceptable (no	(i.e. anal ee with r the test	lysis, custo ts ind	preservation, etc.) dy papers? icated?	Time: [%)?	5	by:	NO NO NO NO		K (R	
			CAU a la		•				-			
	ir Samples (Intact Y	/ N '		Canisters P	ressur	izeu ie	diarw Ba	ags intlated	N/A	
13. A		Cassettes / Tubes	Intact Y		Lot Received	Canisters P			Vol.	ags Inflated Lot Adde		Final
	Lot of test paper						Sa	mple ID djusted				Final pH
13. A	Lot of test paper	Cassettes / Tubes	Preserv	red?	Lot Received		Sa	mple ID	Vol.			
13. A	Lot of test	Cassettes / Tubes Reagent	Preserv	red?			Sa	mple ID	Vol.			
13. A pH ≥12	Lot of test paper	Reagent NaOH HNO ₃ H ₂ SO ₄	Preserv Yes	red?	Lot Received		Sa	mple ID	Vol.			
13. A pH ≥12 ≤2 ≤2 <4	Lot of test paper	Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄	Preserv Yes	red?	Lot Received	Exp	Sa	mple ID	Vol.			
13. A pH ≥12 ≤2 <4 5-9	Lot of test paper	Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest	Preserv Yes	red?	Totoo4314 No=Notify for 3	day	Sa	mple ID	Vol.			
13. A pH ≥12 ≤2 <4 5-9 Residual Chlorine	Lot of test paper	Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625,	Preserv Yes	red?	Lot Received	day o add 8,	Sa	mple ID	Vol.			
13. A pH ≥12 ≤2 <4 5-9 Residual	Lot of test paper	Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522	Preserv Yes	red?	No=Notify for 3: If +, contact PM t Na ₂ S ₂ O ₃ (625, 60	day o add 8,	Sa Ac	mple ID djusted	Vol. Added	Lot Adde	ed .	
13. A pH ≥12 ≤2 <4 5-9 Residual Chlorine	Lot of test paper	Reagent NaOH HNO3 H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃	Preserv Yes	red?	No=Notify for 3: If +, contact PM t Na ₂ S ₂ O ₃ (625, 60	day o add 8,	Sa Ac	mple ID djusted	Vol. Added	Lot Adde	ed	pH
13. A pH ≥12 ≤2 ≤2 <4 5-9 Residual Chlorine	Lot of test paper	Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522	Presen Yes	red? No	No=Notify for 3: If +, contact PM t Na ₂ S ₂ O ₃ (625, 60	day o add 8,	Sa Ac	mple ID djusted	Vol. Added	Lot Adde	ed	pH

HPROD	BULK
HTR	FLDT
SUB :	HGFB
ALS	LL3541

Labels secondary reviewed by:	
PC Secondary Review:	1147/1

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

10/20/2020



Miscellaneous Forms



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 within the linear range of the calibration. For
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- 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).
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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.

Analyst Summary report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/1229

Service Request: R2009793

Sample Name:

IWS-MW-2-101620

Lab Code:

R2009793-001

Sample Matrix:

Water

Date Collected: 10/19/20

Date Received: 10/20/20

Analysis Method

8270D

Extracted/Digested By

Analyzed By

KSERCU

JMISIUREWICZ

Sample Name:

IWS-MW-2-101920

Lab Code:

R2009793-002

Sample Matrix:

Water

Date Collected: 10/19/20
Date Received: 10/20/20

Analysis Method

Extracted/Digested By

Analyzed By

AKONZEL

AKONZEL

Sample Name:

IWS-MW-1-101920

Lab Code:

7470A

R2009793-003

Sample Matrix:

Water

Date Collected: 10/19/20

Date Received: 10/20/20

Analysis Method

7470A

Extracted/Digested By

AKONZEL

Analyzed By AKONZEL



INORGANIC PREPARATION METHODS

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
- <u> </u>	Method
6010C	3050B
6020A	3050B
6010C TCLP (1311)	3005A/3010A
extract	1 4 1
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/	DI extraction
353.2/ SM 2320B/ SM	
5210B/ 9056A Anions	
For analytical methods not listed,	
method is the same as the analytic reference.	ical method
rererence.	



Sample Results



Semivolatile Organic Compounds by GC/MS

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/1229

Sample Matrix:

Water

Service Request: R2009793

Date Collected: 10/19/20 09:10

Date Received: 10/20/20 09:35

Sample Name:

IWS-MW-2-101620

Lab Code:

R2009793-001

Units: ug/L 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	11 U	11	1.5	1	10/27/20 23:39	10/22/20	
Acenaphthene	11 U	11	1.5	1	10/27/20 23:39	10/22/20	
Acenaphthylene	11 U	11	1.5	1	10/27/20 23:39	10/22/20	
Anthracene	11 U	11	1.4	1	10/27/20 23:39	10/22/20	
Benz(a)anthracene	11 U	<u> </u>	1.8	1	10/27/20 23:39	10/22/20	
Benzo(a)pyrene	11 U	11	1.3	1	10/27/20 23:39	10/22/20	
Benzo(b)fluoranthene	11 U	11	1.3	1	10/27/20 23:39	10/22/20	
Benzo(g,h,i)perylene	11 U	11	1.2	1	10/27/20 23:39	10/22/20	
Benzo(k)fluoranthene	11 U	11	1.4	1	10/27/20 23:39	10/22/20	
Chrysene	11 U	11	1.3	1	10/27/20 23:39	10/22/20	
Dibenz(a,h)anthracene	11 U	-11	1.2	1	10/27/20 23:39	10/22/20	
Fluoranthene	11 U	11	1.7	1	10/27/20 23:39	10/22/20	
Fluorene	11 U	11	1.4	1	10/27/20 23:39	10/22/20	
Indeno(1,2,3-cd)pyrene	11 U	11	2.0	1	10/27/20 23:39	10/22/20	
Naphthalene	11 U	11	1.3	1	10/27/20 23:39	10/22/20	
Phenanthrene	11 U	11	1.5	1	10/27/20 23:39	10/22/20	11
Pyrene	11 U	11	1.6	1	10/27/20 23:39	10/22/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
2-Fluorobiphenyl	49	31 - 118	10/27/20 23:39		
Nitrobenzene-d5	48	31 - 110	10/27/20 23:39		
p-Terphenyl-d14	75	10 - 165	10/27/20 23:39		



Metals

-1-INORGANIC ANALYSIS DATA SHEET

		INORGANIC ANALISIS DATA SHEET	SAMPLE NO.		
Contract:	R2009793		IWS-MW-2-101920		
Lab Code:	Case No.:	SAS No.:	SDG NO.: IWS-MW-2-109		
Matrix (soi	1/water): WATER	Lab Sample ID:	R2009793-002		
Level (low/med): LOW		Date Received:	10/20/2020		

CAS No.	Analyte	Concentration	С	Q	М
7439-97-6	Mercury	65.6			CV

Color Before:	Clarity Before:		Texture:	
Color After:	Clarity After:	1 311 013	Artifacts:	
Comments:				
_				

Comments:

METALS

						SAMPLI	
Contract: R2009793						IWS-MW	-1-101920
Lab Code:	Case No.:	SI	AS No.:		SDG	NO.:	IWS-MW-2-109
Matrix (soil/water):	WATER		Lab Sample I	D:	R2009	793-00	3
Level (low/med): LOW			Date Receive	d:	10/20	/2020	<u> </u>
						-	•
Concen	tration Units	(ug/L or mo	g/kg dry weight)	: UG	J/L		
	CAS No.	Analyte	Concentration	c	Q	М	
	7439-97-6	Mercury	0.200	U		cv	



QC Summary Forms



Semivolatile Organic Compounds by GC/MS

QA/QC Report

Client:

Olin Corporation

Service Request: R2009793

Project:

Industrial Welding - Olin/1229

Sample Matrix:

Water

SURROGATE RECOVERY SUMMARY Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Extraction Method:

EPA 3510C

		2-Fluorobiphenyl	Nitrobenzene-d5	p-Terphenyl-d14
Sample Name	Lab Code	31-118	31-110	10-165
IWS-MW-2-101620	R2009793-001	49	48	75
Method Blank	RQ2012776-01	53	58	81
Lab Control Sample	RQ2012776-02	65	55	79
Duplicate Lab Control Sample	RQ2012776-03	75	72	81

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/1229

Sample Matrix:

Water

Service Request: R2009793

Date Collected: NA

Date Received: NA

Sample Name:

Method Blank

Lab Code:

RQ2012776-01

Units: ug/L 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	10/27/20 18:54	10/22/20	
Acenaphthene	10 U	10	1.4	1	10/27/20 18:54	10/22/20	
Acenaphthylene	10 U	10	1.4	1	10/27/20 18:54	10/22/20	
Anthracene	10 U	10	1.3	1	10/27/20 18:54	10/22/20	
Benz(a)anthracene	10 U	10	1.6	1	10/27/20 18:54	10/22/20	
Benzo(a)pyrene	10 U	10	1.2	1	10/27/20 18:54	10/22/20	
Benzo(b)fluoranthene	10 U	10	1.2	1	10/27/20 18:54	10/22/20	
Benzo(g,h,i)perylene	10 U	10	1.0	1	10/27/20 18:54	10/22/20	
Benzo(k)fluoranthene	10 U	10	1.3	1	10/27/20 18:54	10/22/20	
Chrysene	10 U	10	1.2	1	10/27/20 18:54	10/22/20	
Dibenz(a,h)anthracene	10 U	10	1.1	1	10/27/20 18:54	10/22/20	
Fluoranthene	10 U	10	1.5	1	10/27/20 18:54	10/22/20	
Fluorene	10 U	10	1.3	1	10/27/20 18:54	10/22/20	
Indeno(1,2,3-cd)pyrene	10 U	10	1.8	-1	10/27/20 18:54	10/22/20	
Naphthalene	10 U	10	1.2	1	10/27/20 18:54	10/22/20	
Phenanthrene	10 U	10	1.4	1	10/27/20 18:54	10/22/20	
Pyrene	10 U	10	1.5	1	10/27/20 18:54	10/22/20	

Surrogate Name		% Rec	Control Limits	Date Analyzed	Q	HC.
2-Fluorobiphenyl	 	53	31 - 118	10/27/20 18:54		
Nitrobenzene-d5		58	31 - 110	10/27/20 18:54		
p-Terphenyl-d14		81	10 - 165	10/27/20 18:54		

QA/QC Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/1229

Sample Matrix:

Water

Service Request: R2009793

Date Analyzed: 10/27/20

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

> Units:ug/L Basis:NA

Lab Control Sample

Duplicate Lab Control Sample

RQ2012776-02

RQ2012776-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
2-Methylnaphthalene	8270D	49.6	80.0	62	56.9	80.0	71	34-102	14	30
Acenaphthene	8270D	59.5	80.0	74	64.0	80.0	80	52-107	8	30
Acenaphthylene	8270D	62.8	80.0	79	69.7	80.0	87	55-109	10	30
Anthracene	8270D	73.6	80.0	92	75.8	80.0	95	55-116	3	30
Benz(a)anthracene	8270D	68.2	80.0	85	68.2	80.0	85	61-121	<1	30
Benzo(a)pyrene	8270D	82.8	80.0	103	86.3	80.0	108	44-114	5	30
Benzo(b)fluoranthene	8270D	68.8	80.0	86	70.2	80.0	88	62-115	2	30
Benzo(g,h,i)perylene	8270D	75.6	80.0	94	79.0	80.0	99	63-136	5	30
Benzo(k)fluoranthene	8270D	74.5	80.0	93	77.2	80.0	97	49-133	4	30
Chrysene	8270D	72.3	80.0	90	72.1	80.0	90	57-118	<1	30
Dibenz(a,h)anthracene	8270D	78.2	80.0	98	78.0	80.0	97	54-135	1	30
Fluoranthene	8270D	80.9	80.0	101	81.0	80.0	101	66-127	<1	30
Fluorene	8270D	67.7	80.0	85	69.6	80.0	87	54-106	2	30
Indeno(1,2,3-cd)pyrene	8270D	72.8	80.0	91	74.8	80.0	93	62-137	2	30
Naphthalene	8270D	44.7	80.0	56	53.5	80.0	67	38-99	18	30
Phenanthrene	8270D	69.8	80.0	87	72.6	80.0	91	58-118	4	30
Pyrene	8270D	73.6	80.0	92	73.0	80.0	91	61-122	1	30



Metals

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-3-

BLANKS

Contract:	R2009793	m nE* d.1 1/1		
Lab Code:	Case No.:	SAS No.:	SDG NO.:	IWS-MW-2-109
Preparation	Blank Matrix (soil/water): WATER		
Preparation	Blank Concentration Unit	s (ug/L, ppt, or mg/kg): UG/L		

	Initial Calib. Blank		Со	ntinuing	Calibr	ation Bl	ank ug/	'L	Prepa: Blank	ration	=	
Analyte	ug/L	С	1	С	2	С	3	С		С		M
Mercury	0.2	00 ¤	0.20	00 u	0.2	00 0	0.2	00 U		0,200 0	Ш	CV

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-3-

BLANKS

Contract:	R2009793					
Lab Code:		Case No.:	SAS No.:		SDG NO.:	IWS-MW-2-109
Preparation	Blank Matrix	(soil/water):	WATER			
Preparation	Blank Concent	tration Units (ug	/L, ppt, or mg/kg): (UG/L		

	Initial Calib. Blank		Co	ntinuin	g Calibr	ation Bl	ank ug/	L	Preparation Blank	· · · · ·	
Analyte	ug/L	С	1	С	2	С	3	С	40	С	M
Mercury	_		0.20	ן ט סכ					_ 1 - 1	ı	CV

-7-

LABORATORY CONTROL SAMPLE

Contract: <u>R2009793</u>				
Lab Code:	Case No.:	SAS No.:	SDG NO.:	IWS-MW-2-109
Solid LCS Source:				
Aqueous LCS Source:	JT BAKER			
			1000	

	Aqueous (ug/L			Solid (mg/K				
Analyte	True	Found	₹R	True	Found	С	Limits	₹R
Mercury	1.000	1.030	103	1				

Industrial Welding Site Data Evaluation Narrative Fall 2020 Groundwater/Storm Drain Sampling Event

SDGs R2009115 & R2009793: ALS Environmental, Rochester, NY

Deliverables

The data packages as submitted to Olin Corporation are 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 these sample delivery groups (SDGs) were submitted to the ALS Environmental laboratory in Rochester, NY for analysis of select semi-volatile organic compounds, organochlorine pesticides, and total mercury. The samples were collected on three different days due to drought conditions in Western NY. Even with sampling being conducted on three different days, insufficient water prevented some of the normal lab analyses from being completed. 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 Chains of Custody and Cooler Receipt Forms provided by the laboratory confirmed the samples arrived at the laboratory intact. Both cooler temperatures as received by the laboratory were within the proper temperature control limits. The proper bottles and preservatives were used, the Chains of Custody were properly relinquished by the sampler, and the correct analytical methods were employed.

Sample Identification

The following samples collected in Fall 2020 are included in the data evaluation:

Field Sample ID	ALS ID	Sample Date	Lab Analyses
IWS-SD1-093020	R2009115-001	9/30/2020	SVOCs, Pesticides, Hg
IWS-MW-2-101620	R2009793-001	10/16/2020	SVOCs
IWS-MW-2-101920	R2009793-002	10/19/2020	Hg
IWS-MW-1-101920	R2009793-003	10/19/2020	Hg

Semi-Volatile Organic Compounds (EPA Method 8270D)

Two samples in the data set were submitted for analysis of select semi-volatile organic compounds (SVOCs)—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 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 blanks 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).

Internal Standards and Surrogates:

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

Matrix Spike/Matrix Spike Duplicate:

Sample IWS-SD1-093020 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. All recoveries were within control limits; the RPDs between the MS/MSD results were easily within lab QC guidelines.

Duplicate Samples:

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

Organochlorine Pesticides (EPA Method 8081B)

One sample in the data set was submitted for total HCCH (hexachlorocyclohexanes) analysis by USEPA Method 8081B.

Holding Times:

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

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.

SDGs: R2009115 & R2009793 Groundwater and Storm Drain Testing Fall 2020

Matrix Spike/Matrix Spike Duplicate:

Sample IWS-SD1-093020 was submitted for MS/MSD analysis. The spike recoveries and RPDs were within QC guidelines.

Duplicate Samples:

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

Total Mercury Analyses (EPA Method 7470A)

Three samples 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 the SDGs 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 recoveries were within the applicable QC advisory limits.

Matrix Spike/Matrix Spike Duplicate:

Sample IWS-SD1-093020 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 the SDGs were compared to site data and edits to the DQE flags were not required. Monitoring period completeness, which is the percentage of analytical results judged valid, including estimated values, was 100 percent for the Fall 2020 sampling event.

Prepared by: Randy T. Morris Date: November 30, 2020

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rpt. Limit	Detection Limit	Result	Flag
IWS-SD1-093020	9/30/2020	10/5/2020	7470A	Water	UG/L	Mercury, Total	1	0.2	0.08	0.2	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	2-Methylnaphthalene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Acenaphthene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Acenaphthylene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Anthracene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benz(a)anthracene	1	10	1.7	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(a)pyrene	1	10	1.2	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(b)fluoranthene	1	10	1.2	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	10	1.1	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(k)fluoranthene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Chrysene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	10	1.1	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Fluoranthene	1	10	1.6	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Fluorene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	10	1.9	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Naphthalene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Phenanthrene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Pyrene	1	10	1.5	10	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	alpha-BHC	1	0.057	0.023	0.057	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	beta-BHC	1	0.057	0.023	0.057	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	delta-BHC	1	0.057	0.023	0.057	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.057	0.023	0.057	U
*U = Non-detect	I = estimated con	L centration betw	l veen Detection Lim	l nit and Ren	orting Lim	it					

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rep. Limit	Detection Limit	Result	Flag
IWS-MW-2-101920	10/19/2020	10/23/2020	7470A	Water	UG/L	Mercury, Total	10	2	0.8	65.6	
IWS-MW-1-101920	10/19/2020	10/23/2020	7470A	Water	UG/L	Mercury, Total	1	0.2	0.08	0.2	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	2-Methylnaphthalene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Acenaphthene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Acenaphthylene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Anthracene	1	11	1.4	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benz(a)anthracene	1	11	1.8	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(a)pyrene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(b)fluoranthene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	11	1.2	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(k)fluoranthene	1	11	1.4	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Chrysene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	11	1.2	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Fluoranthene	1	11	1.7	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Fluorene	1	11	1.4	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	11	2	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Naphthalene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Phenanthrene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Pyrene	1	11	1.6	11	U
*U = Non-detect; J = es	 		Dakaakian Linait	d Danas :		:.					



Service Request No:R2009115

Mr. Dennis Turner Olin Corporation 3855 North Ocoee St. Ste. 200 Cleveland, TN 37312

Laboratory Results for: Industrial Welding - Olin

Dear Mr. Turner,

Enclosed are the results of the sample(s) submitted to our laboratory October 01, 2020 For your reference, these analyses have been assigned our service request number **R2009115**.

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

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

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro Project Manager

CC: Adam Carringer



Narrative Documents



Client: Project: Olin Corporation

Industrial Welding - Olin

Sample Matrix: Water

Service Request: R2009115

Date Received: 10/01/2020

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:

One water sample was received for analysis at ALS Environmental on 10/01/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

No significant anomalies were noted with this analysis.

Semivoa GC:

Method 8081B, 10/05/2020: The control limit was exceeded for one or more surrogates in the Continuing Calibration Verification (CCV). The surrogates were within acceptance limits for the associated field samples. The data quality was not significantly affected and no further corrective action was taken.

Method 8081B, 10/06/2020: The control limit was exceeded for one or more surrogates in the Continuing Calibration Verification (CCV). The surrogates were within acceptance limits for the associated field samples. The data quality was not significantly affected and no further corrective action was taken.

Metals:

No significant anomalies were noted with this analysis.

	Mystran Pedro			
Approved by	G	Date _	10/22/2020	



Sample Receipt Information

Client: Project:

Olin Corporation

Industrial Welding - Olin/1229

Service Request:R2009115

SAMPLE CROSS-REFERENCE

SAMPLE # R2009115-001 **CLIENT SAMPLE ID**

IWS-SD1-093020

DATE

TIME 0900

9/30/2020

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003748

P

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

Preservative Key
0. NONE
1. HCL
2. HNC3
3. H₂SO₄
4. NaCH
6. Zn. Acetate
6. MeOH
7. NaHSO₄ HNO3 H2SO4 NSOH Zn. Acetate MeOH NaHSO4 REMARKS/ ALTERNATE DESCRIPTION * 843 ところろう INVOICE INFORMATION Ogge Ogge inso volume RECEIVED BY Photoso by ANALYSIS REQUESTED (Include Method Number and Container Preservative) R2009115 Printed Name BILL TO: 8 N. Oats Validation Report with Raw Data 8 REPORT REQUIREMENTS ALCS, DUP, MS/MSD as required) III. Results + OC and Calibration Summaries 64. B. Results + OC Summaries RELINQUISHED BY Edota Tes . I. Results Only Printed Name **Date/Time** 7 TURNAROUND REQUIREMENTS V333 RUSH (SURCHARGES APPLY) _ 1 dsy ____2 day ____3 dsy 0 3 REQUESTED REPORT DATE RECEIVED BY __ 4 day ____5 day Standard (10 bush 100 STAUDANG 0 ٧ PRESERVATIVE 7 7 NUMBER OF CONTAINERS RELINOUISHED BY MATRIX 3 ABGERTINGER BOLINCOM Printed Name Date/Time Signature DOAM CARLINGER 900 SAMPLING 1229 2 DATE PS Project Number FOR OFFICE USE ONLY LAB ID SHIFTED I SI CONTENTS 370312 120-341 CLEW Yated Name STATE WHERE SAMPLES WERE COLLECTED **DeterTime** 3855 NOWTH OCORE RD TOT MENCURY SPECIAL INSTRUCTIONS/COMMENTS (500 CLEVELAND TH ADAM CARRINGER 16x -501.043020 **CLIENT SAMPLE ID** 423 336 4987 RELINQUISHED BY TEMP BLANK Date/Time of 120 22 Company/Address
Out a Coile P NOVSTRIAL See OAPP SES Printed Name CLA NAS Metals

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

1 A 1000
(ALS)

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ject/Clie	nt_Oles	n			_Folder	Number_				- 1000000				
oler receive	ed on 10/1	pos	by:_@	B		COURTER	: ALS (UPS	FEDE	X VEL	OCITY	CLIE	:N1	
Were Cus	stody seals on	outside of coole	r?		YN	5a Perc	hlorate s	amples	have rec	puired he	adspac	e?	YN	AM V
Custody	papers proper	ly completed (in	k, signe	xd)? (NG	5b Did	VOA vial	s, Alk,	or Sulfid	e have si	g * bub	bles?	YN	NA
Did all bo	ttles arrive in	good condition (unbrok	en)?	Y) N	6 Whe	re did the	bottles	originat	:e?	ALS/	ROC	· CLIE	NT.
Circle:	Vet Ice Dry	Ice Gel packs	pres	ent?	N	7 Soil	VOA rec	eived as	s: Bu	ulk E	ncore	5035	set (NA
emperatur	e Readings	Date: 10/1/2	NO.	Time:	0937	<u></u>): IR#7	₫₹ #]0		From:	Temp	Blank) Sam	ple Bott
served Te	mp (°C)	3.1	-1 -							<u> </u>			1	
ithin 0-6°C	?	N (V)		Y	N	Y N	Y	N	Y	N	Y	N	Y	N
<0°C, were	e samples froz	en? Y N		Y	N	Y N	Y	N	Y	N	Y	N	Y	N
		note packing/ic			ding App	Ice me	elted P	•	•	lescribed		•	Same I	Day Rul
Cooler Bre		orage location: ervation Check**	: Date		(\\Toto	on	at			8 hours	of sam	pling?	Y	N
9. V 10. D	akdown/Preso Vere all bottle Did all bottle la	ervation Check** labels complete ((<i>i.e</i> . ana ee with	:(0 alysis, j	/// <i>loto</i> preservati dy papers	Time		<u> </u>	by: ES	NO NO	of sam	pling?	Y	N
9. V 10. D 11. V	eakdown/Prese Vere all bottle bid all bottle la Vere correct co	ervation Check** labels complete (abels and tags agr ontainers used for	(i.e. and ree with r the tes	:(0 alysis, j custo sts indi	preservation of the control of the c	Time on, etc.)? ?		\d \d \d	by:	SMC :	of sam	pling?	Y SIZA	N
9. V 10. D 11. V 12. V	eakdown/Prese Vere all bottle Did all bottle la Vere correct co Vere 5035 vial	ervation Check** labels complete ((i.e. ana ee with the tes extra la	e:{0} alysis, j custo sts indi	preservati dy papers cated?	Time on, etc.)? ?	: 1540	X X Y	by: ES ES ES ES Tedlar®	NO NO NO NO NO		pling?		N
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9. V 10. D 11. V 12. V 13. A	cakdown/Prese Vere all bottle la Vere correct co Vere 5035 vial Air Samples: C	ervation Check** labels complete (abels and tags agr ontainers used for ls acceptable (no Cassettes / Tubes Reagent	(i.e. ana ree with r the tes extra la Intact	e:(0 alysis, j custo sts indi abels, r with M	preservati dy papers cated? not leaking	Time on, etc.)? ? g)?	: 1540	X X Y	by: ES ES ES Tedlar®	NO NO NO NO NO	flated L		esiza NVA	
9. V 10. D 11. V 12 V 13. A pH	cakdown/Press Vere all bottle la Vere correct co Vere 5035 vial air Samples: O Lot of test paper	ervation Check** labels complete (abels and tags agr ontainers used for ls acceptable (no Cassettes / Tubes Reagent NaOH	i.e. ana ee with the tes extra la Intact Preser Yes	:(c alysis, custo sts indi abels, r with M	preservati dy papers icated? iot leaking fS? Ca Lot Rec	Time on, etc.)? ? g)? nisters Press	: 1540	X X Y Samp	by: ES ES ES Tedlar®	NO NO NO NO NO NO Vol.	flated L		esiza NVA	Final
9. V 10. D 11. V 12. V 13. A pH ≥12	cakdown/Press Vere all bottle la Vere correct co Vere 5035 vial Lir Samples: C	ervation Check** labels complete (abels and tags agr entainers used for s acceptable (no Cassettes / Tubes Reagent NaOH HNO3	i.e. ana ree with the tes extra la Intact	:(c alysis, custo sts indi abels, r with M	preservati dy papers cated? not leaking	Time on, etc.)? ? g)? nisters Press	: 1540	X X Y Samp	by: ES ES ES Tedlar®	NO NO NO NO NO NO Vol.	flated L		esiza NVA	Final
9. V 10. D 11. V 12. V 13. A pH ≥12 ≤2	cakdown/Press Vere all bottle la Vere correct co Vere 5035 vial air Samples: O Lot of test paper	ervation Check** labels complete (abels and tags agrontainers used for acceptable (no cassettes / Tubes Reagent NaOH HNO ₃ H ₂ SO ₄	i.e. ana ee with the tes extra la Intact Preser Yes	:(c alysis, custo sts indi abels, r with M	preservati dy papers icated? iot leaking fS? Ca Lot Rec	Time on, etc.)? ? g)? nisters Press	: 1540	X X Y Samp	by: ES ES ES Tedlar®	NO NO NO NO NO NO Vol.	flated L		esiza NVA	Final
9. V 10. D 11. V 12. V 13. A pH ≥12 ≤2 ≤2 <4	cakdown/Press Vere all bottle la Vere correct co Vere 5035 vial air Samples: O Lot of test paper	ervation Check** labels complete (abels and tags agrontainers used for acceptable (no cassettes / Tubes Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄	i.e. ana ee with the tes extra la Intact Preser Yes	:(c alysis, custo sts indi abels, r with M	preservatidy papers cated? not leaking IS? Ca	Time on, etc.)? ? g)? nisters Press eived	: 1540	X X Y Samp	by: ES ES ES Tedlar®	NO NO NO NO NO NO Vol.	flated L		esiza NVA	Final
9. V 10. D 11. V 12. V 13. A pH ≥12 ≤2 ≤2 ≤4 5-9	cakdown/Press Vere all bottle la Vere correct co Vere 5035 vial air Samples: O Lot of test paper	ervation Check** labels complete (abels and tags agrontainers used for acceptable (no cassettes / Tubes Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest	i.e. ana ee with the tes extra la Intact Preser Yes	:(c alysis, custo sts indi abels, r with M	preservatidy papers cated? not leaking IS? Ca Lot Rec	Time on, etc.)? ? g)? nisters Press eived fy for 3day	urized Exp	X X Y Samp	by: ES ES ES Tedlar®	NO NO NO NO NO NO Vol.	flated L		esiza NVA	Final
9. V 10. D 11. V 12. V 13. A pH ≥12 ≤2 ≤2 <4 5-9 Residual	cakdown/Press Vere all bottle la Vere correct co Vere 5035 vial air Samples: O Lot of test paper	ervation Check** labels complete (abels and tags agrontainers used for acceptable (no cassettes / Tubes Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN,	i.e. ana ee with the tes extra la Intact Preser Yes	:(c alysis, custo sts indi abels, r with M	preservatidy papers cated? not leaking IS? Ca Lot Rec	Time on, etc.)? ? g)? nisters Press eived	urized Exp	X X Y Samp	by: ES ES ES Tedlar®	NO NO NO NO NO NO Vol.	flated L		esiza NVA	Final
9. V 10. D 11. V 12. V 13. A pH ≥12 ≤2 ≤2 <4 5-9 Residual Chlorine	cakdown/Press Vere all bottle la Vere correct co Vere 5035 vial air Samples: O Lot of test paper	rvation Check** labels complete (abels and tags agrontainers used for acceptable (no cassettes / Tubes Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625,	i.e. ana ee with the tes extra la Intact Preser Yes	:(c alysis, custo sts indi abels, r with M	preservatidy papers cated? not leaking IS? Ca Lot Rec I\Zoo\Z	Time on, etc.)? ? g)? nisters Press eived fy for 3day act PM to add	Exp	X X Y Samp	by: ES ES ES Tedlar®	NO NO NO NO NO NO Vol.	flated L		esiza NVA	Final
9. V 10. D 11. V 12. V 13. A pH ≥12 ≤2 ≤2 <4 5-9 Residual Chlorine	cakdown/Press Vere all bottle la Vere correct co Vere 5035 vial air Samples: O Lot of test paper	rvation Check** labels complete of the sand tags agrontainers used for sacceptable (no cassettes / Tubes Reagent NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522	i.e. ana ee with the tes extra la Intact Preser Yes	:(c alysis, custo sts indi abels, r with M	preservatidy papers cated? not leaking IS? Ca Lot Rec I\Zoo\Z	Time on, etc.)? ? g)? nisters Press eived fy for 3day act PM to add (625, 608,	Exp	X X Y Samp	by: ES ES ES Tedlar®	NO NO NO NO NO NO Vol.	flated L		esiza NVA	Final
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HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed	
PC Secondary Review:	

Bottle lot numbers: 080370-1340C
Explain all Discrepancies/ Other Comments:



Miscellaneous Forms



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 Certifications1

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

^{&#}x27;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.

ALS Group USA, Corp. dba ALS Environmental

Analyst Summary report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/1229

Service Request: R2009115

Sample Name:

IWS-SD1-093020

Lab Code:

R2009115-001

Sample Matrix:

Water

Date Collected: 09/30/20

Date Received: 10/1/20

Analysis Method

7470A

8081B 8270D Extracted/Digested By

KMCLAEN

KSERCU KSERCU **Analyzed By**

AKONZEL

JMISIUREWICZ JMISIUREWICZ

Superset Reference:20-0000565266 rev 00



INORGANIC PREPARATION METHODS

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)	3005A/3010A
extract	
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/	DI extraction
353.2/ SM 2320B/ SM	
5210B/ 9056A Anions	
For analytical methods not listed,	
method is the same as the analytic	ical method
reference.	



Sample Results



Semivolatile Organic Compounds by GC/MS

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/1229

Water

Service Request: R2009115

Date Collected: 09/30/20 09:00

Date Received: 10/01/20 09:30

inite: no/I

Sample Name:

Sample Matrix:

IWS-SD1-093020

Lab Code:

R2009115-001

Units: ug/L 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	1.4	1	10/08/20 02:47	10/6/20	
Acenaphthene	10 U	10	1.4	1	10/08/20 02:47	10/6/20	
Acenaphthylene	10 U	10	1.4	1	10/08/20 02:47	10/6/20	
Anthracene	10 U	10	1.3	1	10/08/20 02:47	10/6/20	
Benz(a)anthracene	10 U	10	1.7	1	10/08/20 02:47	10/6/20	
Benzo(a)pyrene	10 U	10	1.2	1	10/08/20 02:47	10/6/20	
Benzo(b)fluoranthene	10 U	10	1.2	1	10/08/20 02:47	10/6/20	
Benzo(g,h,i)perylene	10 U	10	1.1	1	10/08/20 02:47	10/6/20	
Benzo(k)fluoranthene	10 U	10	1.3	1	10/08/20 02:47	10/6/20	
Chrysene	10 U	10	1.3	1	10/08/20 02:47	10/6/20	
Dibenz(a,h)anthracene	10 U	10	1.1	1	10/08/20 02:47	10/6/20	
Fluoranthene	10 U	10	1.6	1	10/08/20 02:47	10/6/20	
Fluorene	10 U	10	1.3	1	10/08/20 02:47	10/6/20	
Indeno(1,2,3-cd)pyrene	10 U	10	1.9	1	10/08/20 02:47	10/6/20	
Naphthalene	10 U	10	1.3	1	10/08/20 02:47	10/6/20	
Phenanthrene	10 U	10	1.4	1	10/08/20 02:47	10/6/20	
Pyrene	10 U	10	1.5	1	10/08/20 02:47	10/6/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	50	31 - 118	10/08/20 02:47	
Nitrobenzene-d5	51	31 - 110	10/08/20 02:47	
p-Terphenyl-d14	93	10 - 165	10/08/20 02:47	



Semivolatile Organic Compounds by GC

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/1229

Sample Matrix:

Water

Service Request: R2009115

Date Collected: 09/30/20 09:00

Date Received: 10/01/20 09:30

Sample Name:

IWS-SD1-093020

Lab Code:

R2009115-001

Units: ug/L 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	0.057 U	0.057	1	10/05/20 21:23	10/2/20	
beta-BHC	0.057 U	0.057	1	10/05/20 21:23	10/2/20	
delta-BHC	0.057 U	0.057	1	10/05/20 21:23	10/2/20	
gamma-BHC (Lindane)	0.057 U	0.057	1	10/05/20 21:23	10/2/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
Decachlorobiphenyl	31	10 - 164	10/05/20 21:23		
Tetrachloro-m-xylene	62	10 - 147	10/05/20 21:23		



Metals

METALS

-1-

		IN	ORGANIC ANALYSIS DAT	TA SHEET	SAMPLE	NO.
Contract: 1	R2009115				IWS-SD	1-093020
Lab Code:		Case No.:	SAS No.:		SDG NO.:	IWS-SDI-0930
Matrix (soil	/water):	WATER	Lab Sa	mple ID:	R2009115-00	1
Level (low/m	ed): L	OW	Date R	eceived:	10/1/2020	111 1112 1112 1
- 			to the desired free			•
	Conce	entration Units	(ug/L or mg/kg dry we	eight): \	JG/L	
		CAS No.	Analyte Concentra	tion C	lo M	

Mercury

0.200

Colorless Clarity Before: Clear Color Before: Texture: Colorless Clarity After: Clear Color After: Artifacts: Comments:



QC Summary Forms



Semivolatile Organic Compounds by GC/MS

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:

Olin Corporation

Service Request: R2009115

Project:

Industrial Welding - Olin/1229

Sample Matrix:

Water

SURROGATE RECOVERY SUMMARY Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Extraction Method:

EPA 3510C

	2-Fluorobiphenyl	Nitrobenzene-d5	p-Terphenyl-d14
Lab Code	31-118	31-110	10-165
R2009115-001	50	51	93
RQ2011897-05	44	46	78
RQ2011897-06	78	72	115
RQ2011897-07	75	67	108
RQ2011897-01	60	59	76
RQ2011897-02	65	60	87
	R2009115-001 RQ2011897-05 RQ2011897-06 RQ2011897-07 RQ2011897-01	Lab Code 31-118 R2009115-001 50 RQ2011897-05 44 RQ2011897-06 78 RQ2011897-07 75 RQ2011897-01 60	Lab Code 31-118 31-110 R2009115-001 50 51 RQ2011897-05 44 46 RQ2011897-06 78 72 RQ2011897-07 75 67 RQ2011897-01 60 59

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:

Sample Matrix:

Olin Corporation

Service Request:

R2009115

Project:

Industrial Welding - Olin/1229 Water

Date Collected: Date Received:

09/30/20

Date Analyzed:

10/01/20

Date Extracted:

10/8/20 10/6/20

Duplicate Matrix Spike Summary Semivolatile Organic Compounds by GC/MS

Sample Name:

IWS-SD1-093020

Units:

ug/L

Lab Code:

R2009115-001

Basis:

NA

Analysis Method: Prep Method:

8270D

EPA 3510C

Matrix Spike	e
RQ2011897-0	1

Duplicate Matrix Spike

RO2011897-02

			KQ201189	/-01		KQ201189	97-02			
	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
2-Methylnaphthalene	10 U	46.0	83.3	55	46.5	83.3	56	34-102	2	30
Acenaphthene	10 U	52.4	83.3	63	55.2	83.3	66	43-117	5	30
Acenaphthylene	10 U	54.3	83.3	65	57.6	83.3	69	45-119	6	30
Anthracene	10 U	57.5	83.3	69	62.3	83.3	75	45-127	8	30
Benz(a)anthracene	10 U	57.0	83.3	68	60.6	83.3	73	46-126	7	30
Benzo(a)pyrene	10 U	58.6	83.3	70	63.4	83.3	76	44-114	8	30
Benzo(b)fluoranthene	10 U	56.2	83.3	67	61.9	83.3	74	41-127	10	30
Benzo(g,h,i)perylene	10 U	64.3	83.3	77	71.0	83.3	85	50-143	10	30
Benzo(k)fluoranthene	10 U	62.2	83.3	75	67.6	83.3	81	46-139	8	30
Chrysene	10 U	61.8	83.3	74	67.6	83.3	81	47-126	9	30
Dibenz(a,h)anthracene	10 U	61.5	83.3	74	68.7	83.3	82	43-136	10	30
Fluoranthene	10 U	66.5	83.3	80	70.8	83.3	85	43-135	6	30
Fluorene	10 U	55.7	83.3	67	57.7	83.3	69	43-113	3	30
Indeno(1,2,3-cd)pyrene	10 U	56.5	83.3	68	63.6	83.3	76	49-140	11	30
Naphthalene	10 U	45.2	83.3	54	45.4	83.3	54	37-108	<1	30
Phenanthrene	10 U	57.2	83.3	69	63.4	83.3	76	46-123	10	30
Pyrene	10 U	61.1	83.3	73	64.2	83.3	77	44-129	5	30

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

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

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

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

Superset Reference:20-0000565266 rev 00

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/1229

Date Collected: NA

Service Request: R2009115

Sample Matrix:

Water

Date Received: NA

Sample Name:

Method Blank

Lab Code:

RQ2011897-05

Units: ug/L 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	10/07/20 16:31	10/6/20	
Acenaphthene	10 U	10	1.4	1	10/07/20 16:31	10/6/20	
Acenaphthylene	10 U	10	1.4	1	10/07/20 16:31	10/6/20	
Anthracene	10 U	10	1.3	1	10/07/20 16:31	10/6/20	
Benz(a)anthracene	10 U	10	1.6	1	10/07/20 16:31	10/6/20	
Benzo(a)pyrene	10 U	10	1.2	1	10/07/20 16:31	10/6/20	
Benzo(b)fluoranthene	10 U	10	1.2	1	10/07/20 16:31	10/6/20	
Benzo(g,h,i)perylene	10 U	10	1.0	1	10/07/20 16:31	10/6/20	
Benzo(k)fluoranthene	10 U	10	1.3	1	10/07/20 16:31	10/6/20	
Chrysene	10 U	10	1.2	1	10/07/20 16:31	10/6/20	
Dibenz(a,h)anthracene	10 U	10	1.1	1	10/07/20 16:31	10/6/20	
Fluoranthene	10 U	10	1.5	1	10/07/20 16:31	10/6/20	
Fluorene	10 U	10	1.3	1	10/07/20 16:31	10/6/20	
Indeno(1,2,3-cd)pyrene	10 U	10	1.8	1	10/07/20 16:31	10/6/20	
Naphthalene	10 U	10	1.2	1	10/07/20 16:31	10/6/20	
Phenanthrene	10 U	10	1.4	1	10/07/20 16:31	10/6/20)
Pyrene	10 U	10	1.5	1	10/07/20 16:31	10/6/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
2-Fluorobiphenyl	44	31 - 118	10/07/20 16:31		
Nitrobenzene-d5	46	31 - 110	10/07/20 16:31		
p-Terphenyl-d14	78	10 - 165	10/07/20 16:31		

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/1229

Sample Matrix:

Water

Service Request: R2009115

Date Analyzed: 10/07/20

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

Units:ug/L Basis:NA

Lab Control Sample

Duplicate Lab Control Sample

RQ2011897-06

RQ2011897-07

	Analytical		Spike			Spike		% Rec		RPD
Analyte Name	Method	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
2-Methylnaphthalene	8270D	49.8	80.0	62	47.9	80.0	60	34-102	3	30
Acenaphthene	8270D	57.9	80.0	72	55.3	80.0	69	52-107	4	30
Acenaphthylene	8270D	62.2	80.0	78	60.0	80.0	75	55-109	4	30
Anthracene	8270D	78.6	80.0	98	71.7	80.0	90	55-116	9	30
Benz(a)anthracene	8270D	73.9	80.0	92	68.4	80.0	86	61-121	7	30
Benzo(a)pyrene	8270D	76.3	80.0	95	71.3	80.0	89	44-114	7	30
Benzo(b)fluoranthene	8270D	74.7	80.0	93	69.5	80.0	87	62-115	7	30
Benzo(g,h,i)perylene	8270D	82.7	80.0	103	76.2	80.0	95	63-136	8	30
Benzo(k)fluoranthene	8270D	79.8	80.0	100	76.7	80.0	96	49-133	4	30
Chrysene	8270D	79.0	80.0	99	74.2	80.0	93	57-118	6	30
Dibenz(a,h)anthracene	8270D	80.0	80.0	100	72.3	80.0	90	54-135	11	30
Fluoranthene	8270D	85.8	80.0	107	80.6	80.0	101	66-127	6	30
Fluorene	8270D	66.4	80.0	83	61.5	80.0	77	54-106	8	30
Indeno(1,2,3-cd)pyrene	8270D	73.0	80.0	91	68.4	80.0	86	62-137	6	30
Naphthalene	8270D	49.5	80.0	62	46.4	80.0	58	38-99	7	30
Phenanthrene	8270D	74.4	80.0	93	69.5	80.0	87	58-118	7	30
Pyrene	8270D	76.9	80.0	96	72.5	80.0	91	61-122	5	30



Semivolatile Organic Compounds by GC

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:

Olin Corporation

Service Request: R2009115

Project:

Industrial Welding - Olin/1229

Sample Matrix:

Water

SURROGATE RECOVERY SUMMARY

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Extraction Method:

EPA 3510C

	• •	Tetrachloro-m-xylene	
Lab Code	10-164	10-147	
R2009115-001	31	62	
RQ2011738-05	64	59	
RQ2011738-06	61	58	
RQ2011738-07	60	57	
RQ2011738-03	27	60	
RQ2011738-04	24	63	
	R2009115-001 RQ2011738-05 RQ2011738-06 RQ2011738-07 RQ2011738-03	R2009115-001 31 RQ2011738-05 64 RQ2011738-06 61 RQ2011738-07 60 RQ2011738-03 27	R2009115-001 31 62 RQ2011738-05 64 59 RQ2011738-06 61 58 RQ2011738-07 60 57 RQ2011738-03 27 60

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:

Olin Corporation

Service Request:

R2009115

Project:

Industrial Welding - Olin/1229

Date Collected:

09/30/20

Sample Matrix:

Water

Date Received:

10/01/20

Date Analyzed:

10/5/20

Date Extracted:

10/2/20

Duplicate Matrix Spike Summary

Organochlorine Pesticides by Gas Chromatography

Sample Name:

IWS-SD1-093020

Units:

ug/L

Lab Code:

R2009115-001

Basis:

NA

Analysis Method: Prep Method:

8081B

EPA 3510C

Matrix Spike RQ2011738-03 **Duplicate Matrix Spike**

RQ2011738-04

Spike % Rec **RPD** Sample **Spike** RPD **Analyte Name** Result % Rec Amount % Rec Limits Limit Result Amount Result alpha-BHC 0.057 U 0.301 0.455 66 0.334 0.455 73 27-154 10 30 beta-BHC 0.057 U 0.314 0.455 69 0.351 0.455 77 32-184 11 30 delta-BHC 0.455 0.328 0.455 10-182 9 30 0.057 U 0.300 66 72 gamma-BHC (Lindane) 0.057 U 0.455 69 0.350 0.455 77 43-164 10 30 0.316

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.

Printed 10/22/2020 5:28:53 PM

Superset Reference:20-0000565266 rev 00

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Industrial Welding - Olin/1229

Service Request: R2009115 Date Collected: NA

Project:

Water

Date Received: NA

Sample Name:

Sample Matrix:

Method Blank

Units: ug/L

Lab Code:

RQ2011738-05

Basis: NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	0
			ווע.			<u> </u>
alpha-BHC	0.050 U	0.050	1	10/05/20 18:49	10/2/20	
beta-BHC	0.050 U	0.050	1	10/05/20 18:49	10/2/20	
delta-BHC	0.050 U	0.050	1	10/05/20 18:49	10/2/20	
gamma-BHC (Lindane)	0.050 U	0.050	1	10/05/20 18:49	10/2/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	64	10 - 164	10/05/20 18:49	
Tetrachloro-m-xylene	59	10 - 147	10/05/20 18:49	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/1229

Date Analyzed: 10/05/20

Service Request: R2009115

Sample Matrix:

Water

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/L Basis:NA

Lab Control Sample

Duplicate Lab Control Sample

RQ2011738-06

RQ2011738-07

	Analytical		Spike			Spike		% Rec		RPD
Analyte Name	Method	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
alpha-BHC	8081B	0.262	0.400	66	0.272	0.400	68	36-151	4	30
beta-BHC	8081B	0.287	0.400	72	0.301	0.400	75	55-149	5	30
delta-BHC	8081B	0.255	0.400	64	0.265	0.400	66	29-159	4	30
gamma-BHC (Lindane)	8081B	0.260	0.400	65	0.271	0.400	68	41-149	4	30



Metals

METALS

-3-

BLANKS

Contract:	R2009115			
Lab Code:	Case No.:	SAS No.:	SDG NO.:	IWS-SDI-0930
Preparation	Blank Matrix (soil/water):	WATER		
Preparation	Blank Concentration Units (ug/	L, ppt, or mg/kg): UG/L		

	Initial Calib. Blank		Cos	ntinuing	g Calibr	ation Bl	lank ug/L		Preparation Blank			
Analyte	ug/L	С	1	С	2	С	3	С		С	M	1
Mercury	0.20	00 0	0.20	0 0	0.2	00 0	0.200	ū	0.200	ם כ	C/	刁

Comments:

4	I.S	En	viro	nm	oni	tal
~		#'/##	<i>V I I I I I</i>			

METALS

-3-

BLANKS

Contract:	R2009115				
Lab Code:		Case No.:	SAS No.:	SDG NO.:	IWS-SDI-0930
Preparation	Blank Matrix	(soil/water):	WATER		
Preparation	Blank Concen	tration Units (ug/L	, ppt, or mg/kg): UG/L		

	Initial Calib. Blank		Co	ntinuing	Calibr	ation Bl	lank ug/	L	Preparation Blank		
Analyte	ug/L	С	1	C	2	С	3	С		С	М
Mercury	ĺ		0.20	00 U	0.2	00 0					CV

Comments:

METALS -5A-

SPIKE SAMPLE RECOVERY

SA	MPLE	NO

						0.2 2	
Contract:	R2009115		-1	- 1		IWS-SD1-09	3020s
Lab Code:		Case No	.:	SAS No.:		SDG NO.:	IWS-SDI-0930
Matrix (so	il/water):	WATER			Level	(low/med):	TOM
% Solids fo	or 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	0.988	0.200 U	1.00	99		CV

comments:			
	distriction of the second		- Table 1
	-		

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

Contract:	R2009115				IWS-SD1-09	3020SD
Lab Code:		Case No.:	SAS No.:		SDG NO.:	IWS-SDI-0930
Matrix (so	il/water):	WATER	<u> </u>	Level	(low/med):	TOM
% Solids fo	or 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 บ	1.00	101		CV

nents:		

METALS -6DUPLICATES

SA	MP	LE	NO	

IWS-SD1-093020SD	

Contract: R2009115

Lab Code: Case No.:

SAS No.:

SDG NO.: IWS

IWS-SDI-0930

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)	С	Duplicate (D) с	RPD	Q	м
Mercury		0.98	8		1.010	2		cv

Commonho.			
Comments:	1 MAN C 15		

METALS

-7-

LABORATORY CONTROL SAMPLE

Contract: R2009115				
Lab Code:	Case No.:	SAS No.:	SDG NO.:	G NO.: IWS-SDI-0930
Solid LCS Source:				
Aqueous LCS Source:	JT BAKER			

	Aqueous	(ug/L		111		Solid	(mg/K	(41
Analyte	True	Found	₹R	True	Found	С	Limits	%R
Mercury	1.000	1.020	102					_

Comments:

Industrial Welding Site Data Evaluation Narrative Fall 2020 Groundwater/Storm Drain Sampling Event

SDGs R2009115 & R2009793: ALS Environmental, Rochester, NY

Deliverables

The data packages as submitted to Olin Corporation are 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 these sample delivery groups (SDGs) were submitted to the ALS Environmental laboratory in Rochester, NY for analysis of select semi-volatile organic compounds, organochlorine pesticides, and total mercury. The samples were collected on three different days due to drought conditions in Western NY. Even with sampling being conducted on three different days, insufficient water prevented some of the normal lab analyses from being completed. 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 Chains of Custody and Cooler Receipt Forms provided by the laboratory confirmed the samples arrived at the laboratory intact. Both cooler temperatures as received by the laboratory were within the proper temperature control limits. The proper bottles and preservatives were used, the Chains of Custody were properly relinquished by the sampler, and the correct analytical methods were employed.

Sample Identification

The following samples collected in Fall 2020 are included in the data evaluation:

Field Sample ID	ALS ID	Sample Date	Lab Analyses
IWS-SD1-093020	R2009115-001	9/30/2020	SVOCs, Pesticides, Hg
IWS-MW-2-101620	R2009793-001	10/16/2020	SVOCs
IWS-MW-2-101920	R2009793-002	10/19/2020	Hg
IWS-MW-1-101920	R2009793-003	10/19/2020	Hg

Semi-Volatile Organic Compounds (EPA Method 8270D)

Two samples in the data set were submitted for analysis of select semi-volatile organic compounds (SVOCs)—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 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 blanks 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).

Internal Standards and Surrogates:

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

Matrix Spike/Matrix Spike Duplicate:

Sample IWS-SD1-093020 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. All recoveries were within control limits; the RPDs between the MS/MSD results were easily within lab QC guidelines.

Duplicate Samples:

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

Organochlorine Pesticides (EPA Method 8081B)

One sample in the data set was submitted for total HCCH (hexachlorocyclohexanes) analysis by USEPA Method 8081B.

Holding Times:

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

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.

SDGs: R2009115 & R2009793 Groundwater and Storm Drain Testing Fall 2020

Matrix Spike/Matrix Spike Duplicate:

Sample IWS-SD1-093020 was submitted for MS/MSD analysis. The spike recoveries and RPDs were within QC guidelines.

Duplicate Samples:

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

Total Mercury Analyses (EPA Method 7470A)

Three samples 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 the SDGs 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 recoveries were within the applicable QC advisory limits.

Matrix Spike/Matrix Spike Duplicate:

Sample IWS-SD1-093020 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 the SDGs were compared to site data and edits to the DQE flags were not required. Monitoring period completeness, which is the percentage of analytical results judged valid, including estimated values, was 100 percent for the Fall 2020 sampling event.

Prepared by: Randy T. Morris

Date: November 30, 2020

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rpt. Limit	Detection Limit	Result	Flag
IWS-SD1-093020	9/30/2020	10/5/2020	7470A	Water	UG/L	Mercury, Total	1	0.2	0.08	0.2	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	2-Methylnaphthalene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Acenaphthene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Acenaphthylene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Anthracene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benz(a)anthracene	1	10	1.7	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(a)pyrene	1	10	1.2	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(b)fluoranthene	1	10	1.2	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	10	1.1	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(k)fluoranthene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Chrysene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	10	1.1	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Fluoranthene	1	10	1.6	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Fluorene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	10	1.9	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Naphthalene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Phenanthrene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Pyrene	1	10	1.5	10	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	alpha-BHC	1	0.057	0.023	0.057	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	beta-BHC	1	0.057	0.023	0.057	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	delta-BHC	1	0.057	0.023	0.057	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.057	0.023	0.057	U
*U = Non-detect	I = estimated con	L centration betw	l veen Detection Lim	l nit and Ren	orting Lim	it					

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rep. Limit	Detection Limit	Result	Flag
IWS-MW-2-101920	10/19/2020	10/23/2020	7470A	Water	UG/L	Mercury, Total	10	2	0.8	65.6	
IWS-MW-1-101920	10/19/2020	10/23/2020	7470A	Water	UG/L	Mercury, Total	1	0.2	0.08	0.2	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	2-Methylnaphthalene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Acenaphthene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Acenaphthylene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Anthracene	1	11	1.4	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benz(a)anthracene	1	11	1.8	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(a)pyrene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(b)fluoranthene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	11	1.2	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(k)fluoranthene	1	11	1.4	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Chrysene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	11	1.2	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Fluoranthene	1	11	1.7	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Fluorene	1	11	1.4	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	11	2	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Naphthalene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Phenanthrene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Pyrene	1	11	1.6	11	U
*U = Non-detect; J = es	 		Dakaakian Linait	d Danas :		:.					



Service Request No:R2010748

Mr. Dennis Turner Olin Corporation 3855 North Ocoee St. Ste. 200 Cleveland, TN 37312

Laboratory Results for: Industrial Welding - Olin

Dear Mr. Turner.

Enclosed are the results of the sample(s) submitted to our laboratory November 12, 2020 For your reference, these analyses have been assigned our service request number R2010748.

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.

Mighan tedro

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro **Project Manager**

CC: Adam Carringer



Narrative Documents



Client:

Olin Corporation

Project:

Industrial Welding - Olin

Sample Matrix: Water

Service Request: R2010748

Date Received: 11/12/2020

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 11/12/2020. 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:

No significant anomalies were noted with this analysis.

No significant anomalies were noted with this analysis.

General Chemistry:

Method SM 2540 D-1997(2011), R2010748-001 (and duplicate): The Method Reporting Limit (MRL) for was elevated due to less than optimal sample volume/mass available for analysis.

Volatiles by GC/MS:

No significant anomalies were noted with this analysis.

	MUSEUM TEMO		
Approved by		Date _	12/23/2020

M.A. Dia



Sample Receipt Information

Client:

Olin Corporation

Service Request:R2010748

Project:

Industrial Welding - Olin/release order ERRE9845

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	<u>DATE</u>	<u>TIME</u>
R2010748-001	IWS-MS1-111120	11/11/2020	0900
R2010748-002	Trip Blank	11/11/2020	0900



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

001583

P.

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

servative Key NONE Preservative Key
0. NONE
1. NONE
1. HOS
3. H2SO₄
4. NaOH
6. M6OH
7. NaHSO₄ REMARKS/ ALTERNATE DESCRIPTION KOLUME INVOICE INFORMATION 929 8. Other RECEIVED BY OCIN O MS MSD ANALYSIS REQUESTED (Include Method Number and Container Preservative) R2010748 oth Corporation Industrial Worlding - oth BILL TO: 8 N. Data Validation Report with Raw Data REPORT REQUIREMENTS (LCS, DUP, MS/MSD as required) III. Results • OC and Calibration Summarles M. R. Results • OC Summeries RELINQUISHED BY **₽** 0 L. Results Only 0 Edeta + Date/Time 200 7 G TURNAROUND REQUIREMENTS 1015 RUSH (SURCHARGES APPLY) - 1 day - 2 day - 3 day 0 7 REQUESTED REPORT DATE RECEIVED BY CONTINUE | FRAIDS W Standard (10 bushu STANDARD + 0 PRESERVATIVE 6 2 NUMBER OF CONTAINERS M RELINQUISHED BY MATRIX 1 3 ABCALTANAGE Olin.com Sender Printed Name CAINS JANES Printed Name Optie/Time 900 1 ADDM CANNOER SAMPLING £ 1229 11 120 1 FIELD RECEIVED BY Project Number FOR OFFICE USE ONLY LAB ID DOCS WELL FILTERED 2 Printed Name STATE WHERE SAMPLES WERE COLLECTED Date/Time NOWTHAN WRONG - OLL 31312 SCORE Detertine (1 | 11 | 23 | 230 SPECIAL INSTRUCTIONS/COMMENTS
Metals T 11, Ms/mso volume MS - MS1 - 111120 **CLIENT SAMPLE ID** CALAMER CLENETAND FL RELINQUISHED BY 423 336 4000 3855 MONTH TEMP BLANK SEP CHAIRS JONES TRIO BLANK See OAPP **SEC** 0CI MADO

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

© 2012 by ALS Group



Cooler Receipt and Preservation Check Form

ler receive		outside of cooler	y: 12	7	N. 5a Perchl	orate s	amples have re	couired head	space?	Y N.	NA
	•					_	s, Alk, or Sulfi			YN	NA
		y completed (ink			<u> </u>						
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			Z-68V			t) at	k16				× = _
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i samples 35 sample	held in storages placed in st	e location: orage location:	Z-8v	2 b	y 15 on Hard	at	within		sampling?	Ÿ	N .
l samples 35 sample Cooler Bre	held in storages placed in storages	e location: orage location:	Z-Gu : Date	2 b b	y 15 on 1-1976 y on	at	within		sampling?	Y .	N .
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HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	113541

Labels secondary review	wed by:	(D)
PC Secondary Review:		w



Miscellaneous Forms



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 Certifications1

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

^{&#}x27; 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

9/28/18

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.

ALS Group USA, Corp. dba ALS Environmental

Analyst Summary report

Client:

Olin Corporation

Service Request: R2010748

Project:

Industrial Welding - Olin/release order ERRE9845

Sample Name:

IWS-MS1-111120

Lab Code:

R2010748-001

Sample Matrix:

Water

Date Collected: 11/11/20

Date Received: 11/12/20

Analysis Method

245.1 608 Modified

624

SM 2540 D-1997(2011)

SM 5310 C-2000(2011)

Extracted/Digested By

AKONZEL KSERCU

Analyzed By AKONZEL

> **BALLGEIER** KRUEST **KAWONG**

SMEDBURY

Sample Name:

IWS-MS1-111120

Lab Code:

R2010748-001.R01

Sample Matrix:

Water

Date Collected: 11/11/20

Date Received: 11/12/20

Analysis Method

608 Modified

Extracted/Digested By

Analyzed By

KSERCU

BALLGEIER

Sample Name:

Trip Blank

Lab Code:

R2010748-002

Sample Matrix:

Water

Date Collected: 11/11/20

Date Received: 11/12/20

Analysis Method

624

Extracted/Digested By

Analyzed By

KRUEST



INORGANIC PREPARATION METHODS

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

Preparation
Method
3050B
3050B
3005A/3010A
3005A/3010A
3060A
DI extraction
the preparation ical method



Sample Results



Volatile Organic Compounds by GC/MS

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/release order ERRE9845

Service Request: R2010748

Sample Matrix:

Water

Date Collected: 11/11/20 09:00 Date Received: 11/12/20 10:15

Sample Name:

IWS-MS1-111120

Units: ug/L Basis: NA

Lab Code:

R2010748-001

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method:

624.1

Prep Method:

EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	1 -	11/16/20 16:21	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	11/16/20 16:21	
Acetone	5.00 U	5.00	2.10	1	11/16/20 16:21	
Trichloroethene (TCE)	3.39	1.00	0.200	1	11/16/20 16:21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
1,2-Dichloroethane-d4	94	73 - 125	11/16/20 16:21		
4-Bromofluorobenzene	94	85 - 122	11/16/20 16:21		
Toluene-d8	99	87 - 121	11/16/20 16:21		

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/release order ERRE9845

Date Collected: 11/11/20 09:00

Sample Matrix:

Water

Date Received: 11/12/20 10:15

Sample Name:

Trip Blank

Units: ug/L

Service Request: R2010748

Lab Code:

R2010748-002

Basis: NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method:

624.1

Prep Method:

EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	1	11/16/20 15:59	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	11/16/20 15:59	
Acetone	5.00 U	5.00	2.10	1	11/16/20 15:59	
Trichloroethene (TCE)	1.00 U	1.00	0.200	1	11/16/20 15:59	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
1,2-Dichloroethane-d4	96	73 - 125	11/16/20 15:59		
4-Bromofluorobenzene	94	85 - 122	11/16/20 15:59		
Toluene-d8	98	87 - 121	11/16/20 15:59		



Semivolatile Organic Compounds by GC

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/release order ERRE9845

Date Collected: 11/11/20 09:00

Service Request: R2010748

Sample Matrix:

Water

Date Received: 11/12/20 10:15

Sample Name:

IWS-MS1-111120

Lab Code:

R2010748-001

Units: ug/L 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	11/18/20 20:09	11/17/20	
beta-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	
delta-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	
gamma-BHC (Lindane)	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
Tetrachloro-m-xylene	266 *	13 - 131	11/18/20 20:09	*	
Decachlorobiphenyl	341 *	10 - 156	11/18/20 20:09	*	



Metals

METALS

			NALYSIS DATA SHEE		Г.	SAMPLE		0
ontract: R2010748						TWS-MS	1-11112	J
ab Code:	Case No.:	S.F	AS No.:	ш_	SDG	NO.:	IWS-MS	1-1111
atrix (soil/water):	WATER	lind.	Lab Sample II): I	R2010	748-00	1	
evel (low/med): LO)W		Date Received	i: _	11/12	/2020		
	ers and	100			. ! ! ! !	111		11
Conce	ntration Units	(ug/L or mo	g/kg dry weight):	UG,	/L		•	
		="	<u> </u>					
	CAS No.	Analyte	Concentration	C	Q	M		
	7439-97-6	Mercury	0.200	U		cv		
	111							

Color Before:	Clarity Before:	Texture:
Color After:	Clarity After:	Artifacts:
Comments:		



General Chemistry

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/release order ERRE9845

Service Request: R2010748

Water

Date Collected: 11/11/20 09:00

Sample Matrix:

Date Received: 11/12/20 10:15

Sample Name:

IWS-MS1-111120

Basis: NA

Lab Code:

R2010748-001

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	1.0	1	11/19/20 16:01	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	1.1 U	mg/L	1.1	1	11/18/20 09:50	



QC Summary Forms



Volatile Organic Compounds by GC/MS

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:

Olin Corporation

Service Request: R2010748

Project:

Industrial Welding - Olin/release order ERRE9845

Sample Matrix:

Water

SURROGATE RECOVERY SUMMARY

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method:

624.1

Extraction Method:

EPA 5030C

		1,2-Dichloroethane-d4	4-Bromofluorobenzene	Toluene-d8
Sample Name	Lab Code	73-125	85-122	87-121
IWS-MS1-111120	R2010748-001	94	94	99
Trip Blank	R2010748-002	96	94	98
Method Blank	RQ2014073-05	94	92	99
Lab Control Sample	RQ2014073-04	91	95	98
IWS-MS1-111120 MS	RQ2014073-07	94	99	100
IWS-MS1-111120 DMS	RQ2014073-08	95	97	99

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:

Olin Corporation

Service Request:

R2010748

Project:

Industrial Welding - Olin/release order ERRE9845

Date Collected:

11/11/20

Sample Matrix:

Water

Date Received:

Date Extracted:

11/12/20

Date Analyzed:

11/16/20 NA

Duplicate Matrix Spike Summary

Volatile Organic Compounds by GC/MS, Unpreserved

Sample Name:

IWS-MS1-111120

Units:

ug/L

Lab Code:

R2010748-001

Basis:

NA

Analysis Method:

624.1

Prep Method:

EPA 5030C

Matrix Spike

Duplicate Matrix Spike

RQ2014073-07

RQ2014073-08

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
1,1-Dichloroethane (1,1-DCA)	1.00 U	48.5	50.0	97	50.1	50.0	100	59-155	3	40
1,2-Dichloroethane	1.00 U	43.2	50.0	86	46.4	50.0	93	49-155	7	49
Acetone	5.00 U	46.3	50.0	93	46.7	50.0	93	35-183	<1	30
Trichloroethene (TCE)	3.39	45.7	50.0	85	48.2	50.0	90	70-157	5	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.

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Service Request: R2010748

Project:

Industrial Welding - Olin/release order ERRE9845

Date Collected: NA

Sample Matrix:

Water

Date Received: NA

Sample Name:

Method Blank

Units: ug/L

Lab Code:

RQ2014073-05

Basis: NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method:

624.1

Prep Method:

EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	1 -	11/16/20 11:49	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	11/16/20 11:49	
Acetone	5.00 U	5.00	2.10	1	11/16/20 11:49	
Trichloroethene (TCE)	1.00 U	1.00	0.200	1	11/16/20 11:49	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	 94	73 - 125	11/16/20 11:49	
4-Bromofluorobenzene	92	85 - 122	11/16/20 11:49	
Toluene-d8	99	87 - 121	11/16/20 11:49	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/release order ERRE9845

Service Request: R2010748

Date Analyzed: 11/16/20

Sample Matrix:

Water

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

Units:ug/L Basis:NA

Lab Control Sample RQ2014073-04

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1-Dichloroethane (1,1-DCA)	624.1	21.2	20.0	106	70-130
1,2-Dichloroethane	624.1	18.8	20.0	94	70-130
Acetone	624.1	20.3	20.0	102	40-161
Trichloroethene (TCE)	624.1	18.2	20.0	91	65-135



Semivolatile Organic Compounds by GC

QA/QC Report

Client:

Olin Corporation

Service Request: R2010748

Project:

Industrial Welding - Olin/release order ERRE9845

Sample Matrix:

Water

SURROGATE RECOVERY SUMMARY Organochlorine Pesticides by GC/ECD

Analysis Method:

608.3

Extraction Method:

Method

		Tetrachloro-m-xylene	Decachlorobiphenyl	
Sample Name	Lab Code	13-131	10-156	
IWS-MS1-111120	R2010748-001	266*	341*	
Method Blank	RQ2014111-03	68	66	
Lab Control Sample	RQ2014111-04	64	60	
Duplicate Lab Control Sample	RQ2014111-05	68	70	
IWS-MS1-111120 MS	RQ2014111-01	379*	383*	
IWS-MS1-111120 DMS	RQ2014111-02	354*	366*	

QA/QC Report

Client:

Olin Corporation

Service Request:

R2010748

Project:

Industrial Welding - Olin/release order ERRE9845

Date Collected:

11/11/20

Sample Matrix:

Water

Date Received: Date Analyzed: 11/12/20

Date Extracted:

11/18/20 11/17/20

Duplicate Matrix Spike Summary Organochlorine Pesticides by GC/ECD

Sample Name:

IWS-MS1-111120

Units:

ug/L

Lab Code:

Basis:

NA

R2010748-001

Prep Method:

Analysis Method:

608.3 Method

Matrix Spike

Duplicate Matrix Spike

RQ2014111-01

RQ2014111-02

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
alpha-BHC	0.0455 U	0.572	0.364	157 *	0.516	0.364	142 *	34-140	10	36
beta-BHC	0.0455 U	0.575	0.364	158 *	0.528	0.364	145	17-147	9	44
delta-BHC	0.0455 U	0.586	0.364	161 *	0.535	0.364	147 *	19-140	9	52
gamma-BHC (Lindane)	0.0455 U	0.562	0.364	155 *	0.514	0.364	141 *	32-140	9	39

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

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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.

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Analytical Report

Client:

Olin Corporation

Service Request: R2010748

Project:

Industrial Welding - Olin/release order ERRE9845

Date Collected: NA

Sample Matrix:

Water

Date Received: NA

Sample Name:

Method Blank

Units: ug/L

Basis: NA

Lab Code:

RQ2014111-03

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	11/18/20 18:33	11/17/20	
beta-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 18:33	11/17/20	
delta-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 18:33	11/17/20	
gamma-BHC (Lindane)	0.0500 U	0.0500	0.0200	1	11/18/20 18:33	11/17/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	68	13 - 131	11/18/20 18:33	
Decachlorobiphenyl	66	10 - 156	11/18/20 18:33	

QA/QC Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/release order ERRE9845

Service Request: R2010748

Date Analyzed: 11/18/20

Sample Matrix:

Water

Duplicate Lab Control Sample Summary Organochlorine Pesticides by GC/ECD

> Units:ug/L Basis:NA

Lab Control Sample

Duplicate Lab Control Sample

RQ2014111-04

RQ2014111-05

	Analytical		Spike			Spike		% Rec		RPD
Analyte Name	Method	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
alpha-BHC	608.3	0.107	0.400	27 *	0.116	0.400	29 *	37-140	8	36
beta-BHC	608.3	0.130	0.400	33	0.145	0.400	36	17-147	10	44
delta-BHC	608.3	0.119	0.400	30	0.129	0.400	32	19-140	8	52
gamma-BHC (Lindane)	608.3	0.109	0.400	27 *	0.118	0.400	30 *	32-140	8	39



Metals

METALS

-3-

BLANKS

Contract:	R2010748				
Lab Code:		Case No.:	SAS No.:	SDG NO.:	IWS-MS1-1111
Preparation	Blank Matrix	(soil/water):	WATER		
Preparation	Blank Concent	tration Units (ug/L	, ppt, or mg/kg): UG/L		

	Initial Calib. Blank		Con	tinuin	g Calibr	ation Bl	lank ug/	L	Preparation Blank		
Analyte	ug/L	С	1	С	2	С	3	С		С	M
Mercury	0.20	00 0	0.200	ט	0.2	00 u	0.20	ם סכ	0.200	ט	CV

Comments:

4	LS	En	vira	nm	ental
_	4 /1 7	# 'J##	V		CILLAI

Mercury

С

0.200 U

METALS

-3-

BLANKS

	Matrix (soil/wat		WATER				ii.	
reparation Blank	Concentration Un							
	- Concentration on	nits (ug/I	, ppt, or mg/ke	g): UG/L				
=								
	Initial							П
	Calib.	Con	tinuing Calibra	tion Blank	ug/L	Prepara	tion	Ш
Analyte	Blank ug/L					Blank		l m

С

C

Comments:

METALS -5A-

SPIKE SAMPLE RECOVERY

SA	MPLE	NO.

Contract: R2010748				IWS-MS1-11	1120S
Lab Code:	Case No.:	SAS No.:		SDG NO.:	IWS-MS1-1111
Matrix (soil/water):	WATER		Level	(low/med):	LOW
% Solids for Sample:	100.0				

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	1.160	0.200 บ	1.00	116	CV

Comments:					
	9 2	10-10-1	//////////////////////////////////////		
		1.00	THE RESERVE OF THE PARTY OF THE	9,000	 Manual

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE N	O	
----------	---	--

Contract: R2010748				IWS-MS1-11	1120SD
Lab Code:	Case No.:	SAS No.:		SDG NO.:	IWS-MS1-1111
Matrix (soil/water):	WATER		Level	(low/med):	TOM
% Solids for Sample:	100.0				

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	М
Ì	Mercury	75 - 125	1.150	0.200 ป	1.00	115	CV

omments:			
		en dilubus Michael	
		 No. of the Control of	

METALS -6DUPLICATES

SAMPLE NO.

IWS-MS	31-111120SD	

Contract: R2010748

Lab Code:

Case No.: SAS No.:

SDG NO.:

IWS-MS1-1111

Matrix (soil/water):

WATER

Level (low/med):

LOW

% Solids for Sample:

100.0

% Solids for Duplicate:

100.0

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

Analyte	Control Limit	Sample (S)	С	Duplicate	(D) C	RPD	Q	M
Mercury	1	1.16	0		1.150	1		CV

Comments:				and an increase and	

Mercury

METALS

-7-

LABORATORY CONTROL SAMPLE

Contract: R2010	748								
Lab Code:	Case N	o.:	SAS No.:	SAS No.:		_	SDG NO.:	IWS-MS1-1111	
Solid LCS Source:									
Aqueous LCS Sourc	e: JT BAK	ER							<u>.</u>
	Aqueous	ug/L		<u> </u>		Solid	(mg/K		
Analyte	True	Found	%R	True	Found	C	Lim	its %R	

100

1.000

1.000



General Chemistry

Analytical Report

Client:

Olin Corporation

Service Request: R2010748

Project:

Industrial Welding - Olin/release order ERRE9845

Date Collected: NA

Sample Matrix:

Water

Date Received: NA

Sample Name:

Method Blank

Basis: NA

Lab Code:

R2010748-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	11/19/20 14:34	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	1.0 U	mg/L	1.0	1	11/18/20 09:50	

QA/QC Report

Client:

Olin Corporation

Service Request:

R2010748

Project:

Industrial Welding - Olin/release order ERRE9845

Date Collected:

Date Analyzed:

11/11/20

Sample Matrix:

Water

Date Received:

11/12/20

Carbon, Dissolved Organic (DOC)

11/19/20

Duplicate Matrix Spike Summary

mg/L

Sample Name: Lab Code:

IWS-MS1-111120

Units:

R2010748-001

Basis:

NA

Analysis Method:

SM 5310 C-2000(2011)

Matrix Spike

Duplicate Matrix Spike

R2010748-001MS

R2010748-001DMS

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Carbon, Dissolved Organic (DOC)	4.4	13.6	10.0	93	13.2	10.0	88	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.

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QA/QC Report

Client:

Olin Corporation

Project

Industrial Welding - Olin/release order ERRE9845

Service Request: R2010748 Date Collected: 11/11/20

Sample Matrix:

Water

Date Received: 11/12/20

Date Analyzed: 11/18/20

Replicate Sample Summary General Chemistry Parameters

Sample Name:

IWS-MS1-111120

Units: mg/L

Lab Code:

R2010748-001

Basis: NA

Duplicate Sample

R2010748-

Sample

001DUP

Analyte Name

Analysis Method

MRL

Result

Result

Average

RPD RPD Limit

Solids, Total Suspended (TSS)

SM 2540 D-1997(2011)

1.1 U

NC

NC

1.1 U

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.

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Superset Reference:20-0000570687 rev 00

QA/QC Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/release order ERRE9845

Service Request: R2010748

Sample Matrix:

Date Analyzed: 11/18/20 - 11/19/20

Lab Control Sample Summary **General Chemistry Parameters**

> Units:mg/L Basis:NA

Lab Control Sample R2010748-LCS

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Dissolved Organic (DOC)	SM 5310 C-2000(2011)	9.5	10.0	95	80-121
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	217	214	101	80-120

Industrial Welding Site Data Evaluation Narrative November 2020 Discharge Sampling Event

SDG R2010748: 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 R2010748. 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 11, 2020:

SAMPLE ID SAMPLE ID TRIP BLANK (Analyzed for VOCs only)

Volatile Organic Compounds (EPA Method 624)

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

Holding Times:

The analytical logs indicate that applicable holding times were met.

Practical Quantitation Limits:

The practical quantitation limits (POLs) 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.

SDG# R2010748 Discharge Sampling November 11, 2020 Page 2 of 4

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-MS1-111120 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:

The surrogate recoveries for the sample and MS/MSD samples were above the applicable control limits. However, the sample was non-detect (U) for all HCCHs; no data qualification was deemed necessary by professional judgment.

Blank Summary:

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

Laboratory Control Sample (LCS) and LCS Duplicate (LCSD):

The LCS/LCSD recoveries were below the lower laboratory control limit of 37 for alpha-BHC (27/29) and below the lower control limit of 32 for gamma-BHC (27/30). The sample was non-detect for both compounds; reporting limits were qualified as estimated (UJ) by professional judgment as indicated below.

Sample ID	<u>Analytes</u>	<u>Data Flag</u>
IWS-MS1-111120	alpha-BHC, gamma-BHC	UJ

Matrix Spike/Matrix Spike Duplicate:

Sample IWS-MS1-111120 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. The percent recoveries were above the upper laboratory control limits in the MS and/or MSD for all four BHC compounds. Since the sample was non-detect for all BHCs, no data qualification based on the potential for high bias was warranted by professional judgment.

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 for the sample submitted. 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-MS1-111120 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 slightly elevated due to a less than optimal sample volume available for analysis.

Blank Summary:

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

SDG# R2010748 Discharge Sampling November 11, 2020 Page 4 of 4

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-MS1-111120. Both the sample and lab duplicate were non-detect for TSS.

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-MS1-111120 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 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 2020 sampling event. Typically, project objectives are met when completeness is 90 percent or better.

Date: January 22, 2021

Prepared by: Randy T. Morris



Service Request No:R2102423

Adam Carringer
Olin Corporation
3855 North Ocoee Street
Suite 200
Cleveland, TN 37312

Laboratory Results for: Industrial Welding

Dear Adam.

Enclosed are the results of the sample(s) submitted to our laboratory March 17, 2021 For your reference, these analyses have been assigned our service request number **R2102423**.

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,

Mighan bodio

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro Project Manager

CC: Randy Morris



Narrative Documents



Client:

Olin Corporation

Project:

Industrial Welding

Sample Matrix: Water

Service Request: R2102423

Date Received: 03/17/2021

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 03/17/2021. 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.

	MULLY THE		
Approved by	O	Date	04/05/2021

M.A. Dolo



Sample Receipt Information

Client:

Olin Corporation

Service Request:R2102423

Project:

Industrial Welding/release order ERRE9845

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	<u>DATE</u>	TIME
R2102423-001	IWS-SD1-031621	3/16/2021	0920
R2102423-002	IWS-MW2-031621	3/16/2021	1000
R2102423-003	IWS-MW1-031621	3/16/2021	1100



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

004518

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

1. HCi. 2. HNO3 4. NeO4 5. Zn. Acelate 6. MeOH 7. NaHSO4 REMARKS/ ALTERNATE DESCRIPTION INVOICE INFORMATION 8. Other_ RECEIVED BY BULTO: Oliv Corp MS/MSD ANALYSIS REQUESTED (include Method Number and Container Preservative) R2102423 offin Composition Industrial Weights 8 . N. Data Valdation Report with Raw Data **₽** REPORT REQUIREMENTS 0/2 II. Results + OC Summaries (LCS, DUP, MS/ASD es required) III. Results + OC and Calibration Summaries RELINQUISHED BY Ę L. Results Orby Edata Yarted Name Dette/Time 4 TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) - 1 day - 2 day - 3 day 12_ Standard (10 bushness days-No 0 REQUESTED REPORT DATE RECEIVED BY - 4 day ___ \$ day 0 2 ٤, H PRESERVATIVE 4 2 NUMBER OF CONTAINERS S N RELINQUISHED BY MATRIX Dary 1650 BB Printed Name 0260 ABCovinge @ Oliv.com **Date/Time** SAMPLING 1100 Æ Report Carry of 03/16/21 U191/50 12/9//20 240 11/1/1/10 Project Number UPS Sire FOR OFFICE USE ONLY LABID Printed Name 2855 Noth Olde St. STATE WHERE SAMPLES WERE COLLECTED CIEVELOND TN 37312 Date/Time Shipped in I cooler Project News NELDING SPECIAL INSTRUCTIONS/COMMENTS WS-MW2-03/18/21 423 336 4987 Tot Moreny CLIENT SAMPLE ID ROLLIN CONTINETO 145-501-03/16/2 429180-1MW-5M Samoon Sympa Late RELINGUISHED BY No Park Chilles of the self of the sel Philad Hamp Mass Liffston Olin Caro 12/91/60 emmerad See OAPP Trimp FINCES Metals

Distribution: Write - Lab Copy, Yellow - Return to Originator

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Cooler Receipt and Preservation Check Form

R2102423 Olin Corporation Industrial Welding	111	5	

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11. Were correct containers used for the tests indicated? 12. Were 5035 vials acceptable (no extra labels, not leaking)? 13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated N/A	11. Were correct containers used for the tests indicated? 12. Were 5035 vials acceptable (no extra labels, not leaking)? 13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated N/A 14. Lot of test paper 15. No 16. Tedlar® Bags Inflated N/A 17. Canisters Pressurized Tedlar® Bags Inflated N/A 18. Sample ID Adjusted Added PH 19. Sample ID Adjusted PH 19. Samp	11. Were correct containers used for the tests indicated? 12. Were 5035 vials acceptable (no extra labels, not leaking)? 13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated N/A 14. Lot of test paper Reagent Pressure? Lot Received Exp Sample ID Adjusted Added Final paper 15. NaOH 16. NaOH 17. NaOH 18. NaOH 19. NaOH 19. NaOH 20. NaHSO4 30. NaHSO4 31. NaHSO4 32. NaHSO4 33. NaHSO4 34. NaHSO4 35.9 For 608pest No=Notify for 3day Residual Pror CN, Phenol, 625, 608, CN), ascorbic (phenol). 16. Na ₂ S ₂ O ₃ 17. Na ₂ S ₂ O ₃ 18. No 18. No 19. No 1	9. Were	all bottle	labels complete (Le. ana	rysis,	preservano:	II, CI C.)	l f					•		
12. Were 5035 vials acceptable (no extra labels, not leaking)? 13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated N/A	12. Were 5035 vials acceptable (no extra labels, not leaking)? 13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated N/A 14. Lot of test paper 15. No 16. Tedlar® Bags Inflated N/A 17. Canisters Pressurized Tedlar® Bags Inflated N/A 18. Exp Sample ID Adjusted Added PH 19. Adjusted Added PH 19. Added PH 19. Added PH 19. Adjusted Added PH 19. Adjusted Added PH 19. Adjusted Added PH 19. Adjusted PH 1	12. Were 5035 vials acceptable (no extra labels, not leaking)? 13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated N/A PH Lot of test Reagent Preserved? Lot Received Exp Sample ID Adjusted Added Final pH 212 NaOH 22 H2SO4 44 NaHSO4 5-9 For 608pest No=Notify for 3day Residual Chlorine (-) For CN, Phenol, 625, 608pest, 522 Na2s2O3 Na2s2O3 Na2s2O3 Na2s2O3 P*VOAs and 1664 Not to be tested before analysis. Otherwise all bottles of all samples with chemical preservative.	10. Did al	II DOME IN	ocis and days agr	the tec	te indi	uy papersi icoted?				YES			<i>1</i> 0		
13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated N/A	13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated NA PH Lot of test paper Preservet? Lot Received Exp Sample ID Adjusted Added Final pH 2 3349 HNO3 P1120092 4 NaHSO4 5-9 For 608pest No=Notify for 3day	13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated NA PH Lot of test paper Pressure? Lot Received Exp Sample ID Adjusted Added PH ≥12 NaOH □ NaOH □ NaOH □ NaHSO₄ □ NaHSO							?			YES				NA	
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	paper Yes No Adjusted Added pH	Paper Yes No Adjusted Added PH								Canist	ers Pre	ssurized	Te	dlar® Bag	s Inflated	NVA	
The late of the la	≥12 NaOH ≤2 ∂a34i9 HNO3 Image: Index of the property of the prop	≥12 NaOH ≤2 ∂34/3 HNO3 ✓ \$112.00 92 ≤2 H ₂ SO ₄ 4 NaHSO ₄ 5-9 For 608pest Residual For CN, Phenol, 625, CN, ascorbic (phenol). (-) 608pest, 522 Na ₂ S ₂ O ₃ CN), ascorbic (phenol). ZnAcetate -	nH LLOI	LULICALI		11000	Ved?	Lot Rece		Canist							
>12 NaOH	S ∂∂∂34/19 HNO3 V \$112.00 92 S H₂SO4 V H₂SO4 V C4 NaHSO4 No=Notify for 3day V 5-9 For 608pest No=Notify for 3day V		•		Reagent			Lot Rece		Canist		Sample I	D	Vol.			
	≤2 H ₂ SO ₄ <4 NaHSO ₄ 5-9 For 608pest No=Notify for 3day	H ₂ SO ₄	рар						ived			Sample I	D	Vol.			
	5-9 For 608pest No=Notify for 3day	S-9 For 608pest No=Notify for 3day Residual For CN, If +, contact PM to add Na ₂ SxO ₂ (625, 608, CN), ascorbic (phenol). Na ₂ SyO ₃ Phenol		per	NaOH	Yes			ived			Sample I	D	Vol.			
<4 NaHSO ₄	5-7	Residual Chlorine (-) Residual Chlorine (-) Residual Chlorine (-) Residual Chlorine (-) Residual Phenol, 625, 608, CN), ascorbic (phenol). Na ₂ S ₂ O ₃ ZnAcetate - **VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservative		per	NaOH HNO ₃	Yes			ived			Sample I	D	Vol.			
Nambaile, for 2day	Provident For CN If +, contact PM to add	Chlorine (-) Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃ ZnAcetate Na ₂ S ₂ O ₃ Na ₂ S ₂ O ₃ **VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservative	pag ≥12 ⊈ ∂a ⊈ ∂a	per	NaOH HNO ₃ H ₂ SO ₄	Yes		\$ 1/2	oo 9	2.		Sample I	D	Vol.			
1 J"/ 1 14 000 Aux	Mesidual 101 City (Ag (Ag	Chlorine (-) 608pest, 522 CN), ascorbic (phenol). Na ₂ S ₂ O ₃ ZnAcetate Otherwise, all bottles of all samples with chemical preservative.	pap ≥12 ≤2 ∂a ≤2 <4	per	NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄	Yes		# //2.	00 9	ŽŽ.		Sample I	D	Vol.			
Residual For CN, If +, contact PM to add	Chloring	(-) 608pest, 322 Na ₂ S ₂ O ₃ ZnAcetate Otherwise all bottles of all samples with chemical preservative	pag ≥12 ≤2 ∂a ≤2 ≪4 5-9	per	NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN,	Yes		No=Notif	oo 9	Z.		Sample I	D	Vol.			
Residual For CN, If +, contact PM to add Na ₂ S ₂ O ₂ (625, 608, Chlorine Phenol, 625, Chlorine Phenol, 625, Chlorine Phenol (phenol)	Chiorine Filetion, 023, Can second (phenol)	ZnAcetate Otherwise, all bottles of all samples with chemical preservative	pap ≥12 ≤2 ∂a ≤2 ⟨√√√√√√√√√√√√√√√√√√√√√√√√√√√√√√√√√√√	per	NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625,	Yes		No=Notify If +, conta Na ₂ S ₂ O ₂ (6	on 9. y for 3c ct PM t	day		Sample I	D	Vol.			
Residual For CN, If +, contact PM to add Na ₂ S ₂ O ₂ (625, 608, CN), ascorbic (phenol).	Chlorine Friction, 52.3, CN), ascorbic (phenol). (-) 608pest, 522 CN), ascorbic (phenol).	Otherwise all bottles of all samples with chemical preservative	pap ≥12 ≤2 ∂a ≤4 5-9 Residual Chlorine	per	NaOH HINO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522	Yes		No=Notify If +, conta Na ₂ S ₂ O ₂ (6	on 9. y for 3c ct PM t	day		Sample I	D	Vol.			
Residual For CN,	(-) Friction, 02.3, (CN), ascorbic (phenol). (Na ₂ S ₂ O ₃ (Na ₂	Table 1 AA 1 AA 1	pap ≥12 ≤2 ∂a ≤4 5-9 Residual Chlorine	per	NaOH HINO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃	Yes		No=Notify If +, conta Na ₂ S ₂ O ₂ (6	on 9. y for 3c ct PM t	day		Sample I Adjusted	D	Vol. Added	Lot Ad	ded	pH
Residual Chlorine (-) Na ₂ S ₂ O ₃ ZnAcetate If +, contact PM to add Na ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol). Na ₂ S ₂ O ₃ **VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical parts of the state of	Chlorine (-) 608pest, 522 CN), ascorbic (phenol). Na ₂ S ₂ O ₃ ZnAcetate - Cherryise all bottles of all samples with chemical preservative.	HCI ** ** are checked (not just representatives).	pap ≥12 ≤2 ∂a ≤4 5-9 Residual Chlorine	per	NaOH HINO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃ ZnAcetate	Yes	No	No=Notify If +, conta Na ₂ S ₂ O ₂ (6	on 9. y for 3c ct PM t	day		Sample Adjusted	D	Vol. Added	Lot Ad	ded	pH
Residual For CN, If +, contact PM to add Na ₂ S ₂ O ₂ (625, 608, Chlorine Phenol, 625, Ch) exceptive (phenol)	Chiorine Filetion, 023, Can second (phenol)	ZnAcetate Otherwise, all bottles of all samples with chemical preservative	pap ≥12 ≤2 ∂a ≤2 ⟨√√√√√√√√√√√√√√√√√√√√√√√√√√√√√√√√√√√	per	NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625,	Yes		No=Notify If +, conta Na ₂ S ₂ O ₂ (6	on 9. y for 3c ct PM t	day		Sample I	D	Vol.			
Residual For CN, If +, contact PM to add Na ₂ S ₂ O ₂ (625, 608, Chlorine Phenol, 625, Ch) exceptive (phenol)	Chiorine Filetion, 023, Can second (phenol)	ZnAcetate Otherwise, all bottles of all samples with chemical preservative	pap ≥12 ≤2 ∂a ≤4 5-9 Residual Chlorine	per	NaOH HNO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625,	Yes		No=Notify If +, conta Na ₂ S ₂ O ₂ (6	on 9. y for 3c ct PM t	day		Sample I	D	Vol.			
Residual For CN, If +, contact PM to add Na ₂ S ₂ O ₂ (625, 608, CN), ascorbic (phenol).	Chlorine Friction, 52.3, CN), ascorbic (phenol). (-) 608pest, 522 CN), ascorbic (phenol).	Otherwise all bottles of all samples with chemical preservative	pap ≥12 ≤2 ∂a ≤4 5-9 Residual Chlorine	per	NaOH HINO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522	Yes		No=Notify If +, conta Na ₂ S ₂ O ₂ (6	on 9. y for 3c ct PM t	day		Sample I	D	Vol.			
Residual For CN,	(-) Friction, 02.3, (CN), ascorbic (phenol). (-) Na ₂ S ₂ O ₃ (Na ₂ S ₂ O ₃ (Part of the period before analysis.		pap ≥12 ≤2 ∂a ≤4 5-9 Residual Chlorine	per	NaOH HINO ₃ H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃	Yes	No	No=Notify If +, conta Na ₂ S ₂ O ₂ (6	on 9. y for 3c ct PM t	day		Sample Adjusted	D	Vol. Added	Lot Ad	ded	pH

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by:	
PC Secondary Review:	W



Miscellaneous Forms



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 Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

^{&#}x27;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.

Analyst Summary report

Client: Olin Corporation

Project: Industrial Welding/release order ERRE9845

Service Request: R2102423

 Sample Name:
 IWS-SD1-031621

 Lab Code:
 R2102423-001

Sample Matrix: Water

Date Collected: 03/16/21

Date Received: 03/17/21

Analysis Method

7470A 8081B 8270D Extracted/Digested By

AKONZEL

KSERCU

KSERCU

AKONZEL

BALLGEIER

JMISIUREWICZ

 Sample Name:
 IWS-MW2-031621

 Lab Code:
 R2102423-002

Sample Matrix: Water

Date Collected: 03/16/21

Date Received: 03/17/21

Analysis Method

7470A 8081B 8270D

Analysis Method

7470A

8081B

8270D

Extracted/Digested By

AKONZEL

KSERCU

KSERCU

AKONZEL

BALLGEIER

JMISIUREWICZ

 Sample Name:
 IWS-MW1-031621

 Lab Code:
 R2102423-003

Sample Matrix: Water

Date Collected: 03/16/21
Date Received: 03/17/21

Extracted/Digested By
AKONZEL
AKONZEL
AKONZEL

KSERCU BALLGEIER
KSERCU JMISIUREWICZ



INORGANIC PREPARATION METHODS

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)	3005A/3010A
extract	
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/	DI extraction
353.2/ SM 2320B/ SM	11
5210B/ 9056A Anions	
For analytical methods not listed, method is the same as the analyti reference.	



Sample Results



Semivolatile Organic Compounds by GC/MS

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding/release order ERRE9845

Sample Matrix:

Water

Service Request: R2102423

Date Collected: 03/16/21 09:20 **Date Received:** 03/17/21 09:50

Sample Name:

IWS-SD1-031621

Lab Code:

R2102423-001

Units: ug/L Basis: NA

Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Prep Method:

EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	9.6 U	9.6	1.3	1	03/24/21 18:49	3/23/21	
Acenaphthene	9.6 U	9.6	1.4	1	03/24/21 18:49	3/23/21	
Acenaphthylene	9.6 U	9.6	1.4	1	03/24/21 18:49	3/23/21	
Anthracene	9.6 U	9.6	1.3	. 1	03/24/21 18:49	3/23/21	
Benz(a)anthracene	9.6 U	9.6	1.6	1	03/24/21 18:49	3/23/21	
Benzo(a)pyrene	9.6 U	9.6	1.2	1	03/24/21 18:49	3/23/21	
Benzo(b)fluoranthene	1.9 J	9.6	1.2	1	03/24/21 18:49	3/23/21	
Benzo(g,h,i)perylene	1.3 ј	9.6	1.0	1	03/24/21 18:49	3/23/21	
Benzo(k)fluoranthene	9.6 U	9.6	1.3	1	03/24/21 18:49	3/23/21	
Chrysene	1.3 Ј	9.6	1.2	1	03/24/21 18:49	3/23/21	
Dibenz(a,h)anthracene	9.6 U	9.6	1.1	1	03/24/21 18:49	3/23/21	
Fluoranthene	2.7 ј	9.6	1.5	1	03/24/21 18:49	3/23/21	
Fluorene	9.6 U	9.6	1.3	1	03/24/21 18:49	3/23/21	
Indeno(1,2,3-cd)pyrene	9.6 U	9.6	1.8	1	03/24/21 18:49	3/23/21	
Naphthalene	9.6 U	9.6	1.2	1	03/24/21 18:49	3/23/21	
Phenanthrene	9.6 U	9.6	1.4	1	03/24/21 18:49	3/23/21	
Pyrene	1.6 J	9.6	1.5	1	03/24/21 18:49	3/23/21	
-							

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
2-Fluorobiphenyl	52	31 - 118	03/24/21 18:49		
Nitrobenzene-d5	52	31 - 110	03/24/21 18:49		
p-Terphenyl-d14	82	10 - 165	03/24/21 18:49		

Analytical Report

Client: Olin Corporation

Project: Industrial Welding/release order ERRE9845

and a second control of the control

Sample Matrix: Water

Sample Name:

IWS-MW2-031621

Lab Code: R2102423-002

Service Request: R2102423

Date Collected: 03/16/21 10:00

Date Received: 03/17/21 09:50

Units: ug/L Basis: NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D **Prep Method:** EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	9.6 U	9.6	1.3	1	03/24/21 19:18	3/23/21	
Acenaphthene	9.6 U	9.6	1.4	1	03/24/21 19:18	3/23/21	
Acenaphthylene	9.6 U	9.6	1.4	1	03/24/21 19:18	3/23/21	
Anthracene	9.6 U	9.6	1.3	1	03/24/21 19:18	3/23/21	
Benz(a)anthracene	9.6 U	9.6	1.6	1	03/24/21 19:18	3/23/21	
Benzo(a)pyrene	9.6 U	9.6	1.2	1	03/24/21 19:18	3/23/21	
Benzo(b)fluoranthene	9.6 U	9.6	1.2	1	03/24/21 19:18	3/23/21	
Benzo(g,h,i)perylene	9.6 U	9.6	1.0	1	03/24/21 19:18	3/23/21	
Benzo(k)fluoranthene	9.6 U	9.6	1.3	1	03/24/21 19:18	3/23/21	
Chrysene	9.6 U	9.6	1.2	1	03/24/21 19:18	3/23/21	
Dibenz(a,h)anthracene	9.6 U	9.6	1.1	1	03/24/21 19:18	3/23/21	
Fluoranthene	9.6 U	9.6	1.5	1	03/24/21 19:18	3/23/21	
Fluorene	9.6 U	9.6	1.3	1	03/24/21 19:18	3/23/21	
Indeno(1,2,3-cd)pyrene	9.6 U	9.6	1.8	1	03/24/21 19:18	3/23/21	
Naphthalene	9.6 U	9.6	1.2	1	03/24/21 19:18	3/23/21	
Phenanthrene	9.6 U	9.6	1.4	1	03/24/21 19:18	3/23/21	
Pyrene	9.6 U	9.6	1.5	1	03/24/21 19:18	3/23/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
2-Fluorobiphenyl	33	31 - 118	03/24/21 19:18		
Nitrobenzene-d5	34	31 - 110	03/24/21 19:18		
p-Terphenyl-d14	81	10 - 165	03/24/21 19:18		

Analytical Report

Client: Olin Corporation

Project: Industrial Welding/release order ERRE9845

Sample Matrix: Water

Sample Name:

Lab Code:

Service Request: R2102423

Date Collected: 03/16/21 11:00

Date Received: 03/17/21 09:50

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	1.4	1	03/24/21 19:47	3/23/21	
Acenaphthene	10 U	10	1.5	1	03/24/21 19:47	3/23/21	
Acenaphthylene	10 U	10	1.5	<u> </u>	03/24/21 19:47	3/23/21	
Anthracene	10 U	10	1.4	1	03/24/21 19:47	3/23/21	
Benz(a)anthracene	10 U	10	1.7	1	03/24/21 19:47	3/23/21	
Benzo(a)pyrene	10 U	10	1.3	1	03/24/21 19:47	3/23/21	
Benzo(b)fluoranthene	10 U	10	1.3	1	03/24/21 19:47	3/23/21	
Benzo(g,h,i)perylene	10 U	10	1.1	1	03/24/21 19:47	3/23/21	
Benzo(k)fluoranthene	10 U	10	1.4	1	03/24/21 19:47	3/23/21	
Chrysene	10 U	10	1.3	1	03/24/21 19:47	3/23/21	
Dibenz(a,h)anthracene	10 U	10	1.2	1	03/24/21 19:47	3/23/21	
Fluoranthene	10 U	10	1.6	1	03/24/21 19:47	3/23/21	
Fluorene	10 U	10	1.4	1	03/24/21 19:47	3/23/21	
Indeno(1,2,3-cd)pyrene	10 U	10	1.9	1	03/24/21 19:47	3/23/21	
Naphthalene	10 U	10	1.3	1	03/24/21 19:47	3/23/21	
Phenanthrene	10 U	10	1.5	1	03/24/21 19:47	3/23/21	
Pyrene	10 U	10	1.6	1	03/24/21 19:47	3/23/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
2-Fluorobiphenyl	39	31 - 118	03/24/21 19:47		
Nitrobenzene-d5	40	31 - 110	03/24/21 19:47		
p-Terphenyl-d14	75	10 - 165	03/24/21 19:47		



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

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding/release order ERRE9845

Service Request: R2102423

Date Collected: 03/16/21 09:20

Sample Matrix:

Water

Date Received: 03/17/21 09:50

Sample Name:

IWS-SD1-031621

Lab Code:

R2102423-001

Units: ug/L Basis: NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.045 U	0.045	1	03/19/21 20:21	3/18/21	
beta-BHC	0.045 U	0.045	1	03/19/21 20:21	3/18/21	
delta-BHC	0.045 U	0.045	1	03/19/21 20:21	3/18/21	
gamma-BHC (Lindane)	0.045 U	0.045	1	03/19/21 20:21	3/18/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
Decachlorobiphenyl	25	10 - 164	03/19/21 20:21		
Tetrachloro-m-xylene	50	10 - 147	03/19/21 20:21		

Analytical Report

Client:

Olin Corporation

Industrial Welding/release order ERRE9845

Service Request: R2102423

Project:

Date Collected: 03/16/21 10:00

Water

Date Received: 03/17/21 09:50

Sample Name:

Sample Matrix:

IWS-MW2-031621

Units: ug/L Basis: NA

Lab Code:

R2102423-002

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.050 U	0.050	1	03/19/21 20:40	3/18/21	
beta-BHC	0.050 U	0.050	1	03/19/21 20:40	3/18/21	
delta-BHC	0.050 U	0.050	1	03/19/21 20:40	3/18/21	
gamma-BHC (Lindane)	0.050 U	0.050	1	03/19/21 20:40	3/18/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
Decachlorobiphenyl	40	10 - 164	03/19/21 20:40		
Tetrachloro-m-xylene	52	10 - 147	03/19/21 20:40		

Analytical Report

Client:

Olin Corporation

Project: Industrial Welding/release order ERRE9845 Service Request: R2102423 Date Collected: 03/16/21 11:00

Sample Matrix:

Water

Date Received: 03/17/21 09:50

Sample Name:

IWS-MW1-031621

Units: ug/L Basis: NA

Lab Code:

R2102423-003

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.052 U	0.052	1	03/19/21 20:59	3/18/21	0
beta-BHC	0.052 U	0.052	1	03/19/21 20:59	3/18/21	
delta-BHC	0.052 U	0.052	1	03/19/21 20:59	3/18/21	
gamma-BHC (Lindane)	0.052 U	0.052	1	03/19/21 20:59	3/18/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	52	10 - 164	03/19/21 20:59	
Tetrachloro-m-xylene	53	10 - 147	03/19/21 20:59	



Metals

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		INORGANIC AN	-1- NALYSIS DATA SHEET	:= ¹	SAMPLE	NO.
Contract: R21024	423			= :	[WS-SD	1-031621
Lab Code:	Case No.:	Si	AS No.:	SDG	NO.:	IWS-SD1-0316
Matrix (soil/water): WATER		Lab Sample ID:	R21024	123-00	1
Level (low/med):	LOW		Date Received:	3/17/2	2021	<u> </u>
<u> </u>	Concentration Units	s (ug/L or mo	g/kg dry weight):	UG/L		•
	CAS No.	Analyte	Concentration	Q	М	
	7439-97-6	Mercury	0.200		CV	
					<u></u>	
Color Before:	Cla	rity Before:	1 7	Texture:	Ī	
Color After:	Cla	rity After:		Artifact	s:	

			-1- INORGANIC ANALYSIS DATA SHEET					SAMPLE NO.			
ontract:	R2102423					IWS-MW2-031621					
Lab Code:		Case No.:	sı	AS No.:		SE	G NO.:	IWS-SD1-0316			
atrix (soil	./water):	WATER		Lab Sample ID	: _ :	R210	2423-00	2			
evel (low/m	ned):	LOW		Date Received	:	3/17	/2021				
1	Conc	centration Unit	s (ug/L or mo	g/kg dry weight):	υG	/L		•			
		CAS No.	Analyte	Concentration	С	Q	М				
		7439-97-6	Mercury	13.3		-	cv				

Color Before:	Clarity Before:	Texture:	
Color After:	Clarity After:	Artifacts:	
Comments:			

-1-

	II	NORGANIC AN	IALYSIS DATA SHEET	Γ	SAMPLE TWS_MW	1-031621	٦
Contract: R2102423 Lab Code:	Case No.:	11111	AS No.:	q	DG NO.:	IWS-SD1-0316	ل
Matrix (soil/water):	WATER LOW		Lab Sample ID:	R210	2 423 -00 /2021		
Con	centration Units	(ug/L or mo	g/kg dry weight):	UG/L C Q	м		
	7439-97-6	Mercury	0.200	U	cv		

Clarity Before: Color 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 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

QA/QC Report

Client:

Olin Corporation

Service Request: R2102423

Project:

Industrial Welding/release order ERRE9845

Sample Matrix:

Water

SURROGATE RECOVERY SUMMARY Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Extraction Method:

		2-Fluorobiphenyl	Nitrobenzene-d5	p-Terphenyl-d14	
Sample Name	Lab Code	31-118	31-110	10-165	
IWS-SD1-031621	R2102423-001	52	52	82	
IWS-MW2-031621	R2102423-002	33	34	81	
IWS-MW1-031621	R2102423-003	39	40	75	
Method Blank	RQ2102949-03	48	52	103	
Lab Control Sample	RQ2102949-04	56	61	86	
Duplicate Lab Control Sample	RQ2102949-05	64	66	91	

Analytical Report

Client:

Olin Corporation

Service Request: R2102423

Project:

Industrial Welding/release order ERRE9845

Date Collected: NA

Sample Matrix:

Water

Date Received: NA

Sample Name:

Method Blank

Units: ug/L

Lab Code:

RQ2102949-03

Basis: NA

Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Prep Method:

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	10 U	10	1.3	1	03/24/21 17:23	3/23/21	
Acenaphthene	10 U	10	1.4	1	03/24/21 17:23	3/23/21	
Acenaphthylene	10 U	10	1.4	1	03/24/21 17:23	3/23/21	
Anthracene	10 U	10	1.3	1	03/24/21 17:23	3/23/21	
Benz(a)anthracene	10 U	10	1.6	1	03/24/21 17:23	3/23/21	
Benzo(a)pyrene	10 U	10	1.2	1	03/24/21 17:23	3/23/21	
Benzo(b)fluoranthene	10 U	10	1.2	1	03/24/21 17:23	3/23/21	
Benzo(g,h,i)perylene	10 U	10	1.0	1	03/24/21 17:23	3/23/21	
Benzo(k)fluoranthene	10 U	10	1.3	1	03/24/21 17:23	3/23/21	
Chrysene	10 U	10	1.2	1	03/24/21 17:23	3/23/21	
Dibenz(a,h)anthracene	10 U	10	1.1	1	03/24/21 17:23	3/23/21	
Fluoranthene	10 U	10	1.5	1	03/24/21 17:23	3/23/21	
Fluorene	10 U	10	1.3	1	03/24/21 17:23	3/23/21	
Indeno(1,2,3-cd)pyrene	10 U	10	1.8	1	03/24/21 17:23	3/23/21	
Naphthalene	10 U	10	1.2	1	03/24/21 17:23	3/23/21	
Phenanthrene	10 U	10	1.4	1	03/24/21 17:23	3/23/21	
Pyrene	10 U	10	1.5	1	03/24/21 17:23	3/23/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	48	31 - 118	03/24/21 17:23	
Nitrobenzene-d5	52	31 - 110	03/24/21 17:23	
p-Terphenyl-d14	103	10 - 165	03/24/21 17:23	

QA/QC Report

Client:

Olin Corporation

Project:

Industrial Welding/release order ERRE9845

Date Analyzed: 03/24/21

Service Request: R2102423

Sample Matrix:

Water

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

Units:ug/L Basis:NA

Lab Control Sample

Duplicate Lab Control Sample

RQ2102949-04

RQ2102949-05

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
2-Methylnaphthalene	8270D	48.3	80.0	60	52.2	80.0	65	34-102	8	30
Acenaphthene	8270D	52.3	80.0	65	57.7	80.0	72	52-107	10	30
Acenaphthylene	8270D	56.5	80.0	71	63.3	80.0	79	55-109	11	30
Anthracene	8270D	63.6	80.0	79	66.8	80.0	83	55-116	5	30
Benz(a)anthracene	8270D	57.9	80.0	72	59.9	80.0	75	61-121	4	30
Benzo(a)pyrene	8270D	61.7	80.0	77	65.4	80.0	82	44-114	6	30
Benzo(b)fluoranthene	8270D	55.1	80.0	69	56.9	80.0	71	62-115	3	30
Benzo(g,h,i)perylene	8270D	67.3	80.0	84	70.1	80.0	88	63-136	5	30
Benzo(k)fluoranthene	8270D	59.9	80.0	75	63.9	80.0	80	49-133	6	30
Chrysene	8270D	60.7	80.0	76	62.6	80.0	78	57-118	3	30
Dibenz(a,h)anthracene	8270D	61.6	80.0	77	61.4	80.0	77	54-135	<1	30
Fluoranthene	8270D	68.3	80.0	85	71.8	80.0	90	66-127	6	30
Fluorene	8270D	58.3	80.0	73	63.8	80.0	80	54-106	9	30
Indeno(1,2,3-cd)pyrene	8270D	55.4	80.0	69	57.8	80.0	72	62-137	4	30
Naphthalene	8270D	48.1	80.0	60	51.8	80.0	65	38-99	8	30
Phenanthrene	8270D	61.5	80.0	77	64.6	80.0	81	58-118	5	30
Pyrene	8270D	60.3	80.0	75	63.4	80.0	79	61-122	5	30



Semivolatile Organic Compounds by GC

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QA/QC Report

Client:

Olin Corporation

Service Request: R2102423

Project:

Industrial Welding/release order ERRE9845

Sample Matrix:

Water

SURROGATE RECOVERY SUMMARY

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Extraction Method:

		Decachlorobiphenyl	Tetrachloro-m-xylene	
Sample Name	Lab Code	10-164	10-147	
IWS-SD1-031621	R2102423-001	25	50	
IWS-MW2-031621	R2102423-002	40	52	
IWS-MW1-031621	R2102423-003	52	53	
Method Blank	RQ2102805-01	56	52	
Lab Control Sample	RQ2102805-02	59	59	
Duplicate Lab Control Sample	RQ2102805-03	57	62	

Analytical Report

Client:

Olin Corporation

Service Request: R2102423

Project:

Industrial Welding/release order ERRE9845

Date Collected: NA

Sample Matrix:

Water

Date Received: NA

Sample Name:

Method Blank

Units: ug/L

Lab Code:

RQ2102805-01

Basis: NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.050 U	0.050	1	03/19/21 19:25	3/18/21	
beta-BHC	0.050 U	0.050	1	03/19/21 19:25	3/18/21	
delta-BHC	0.050 U	0.050	1	03/19/21 19:25	3/18/21	
gamma-BHC (Lindane)	0.050 U	0.050	11	03/19/21 19:25	3/18/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
Decachlorobiphenyl	56	10 - 164	03/19/21 19:25		
Tetrachloro-m-xylene	52	10 - 147	03/19/21 19:25		

QA/QC Report

Client:

Olin Corporation

Project:

Industrial Welding/release order ERRE9845

Service Request: R2102423

Date Analyzed: 03/19/21

Sample Matrix:

Water

Duplicate Lab Control Sample Summary Organochlorine Pesticides by Gas Chromatography

Units:ug/L Basis:NA

Lab Control Sample

Duplicate Lab Control Sample

RQ2102805-02

RQ2102805-03

	Analytical		Spike			Spike		% Rec		RPD
Analyte Name	Method	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
alpha-BHC	8081B	0.289	0.400	72	0.282	0.400	70	36-151	3	30
beta-BHC	8081B	0.300	0.400	75	0.291	0.400	73	55-149	3	30
delta-BHC	8081B	0.333	0.400	83	0.307	0.400	77	29-159	8	30
gamma-BHC (Lindane)	8081B	0.291	0.400	73	0.282	0.400	71	41-149	3	30



Metals

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4	LS	En	viro	nme	ntal

-3-

BLANKS

Contract:	R2102423	<u>H</u> H		
Lab Code:	Case No.:	SAS No.:	SDG NO.:	IWS-SD1-0316
Preparation	Blank Matrix (soil/water):	WATER		
Preparation	Blank Concentration Units (ug/L,	ppt, or mg/kg): UG/L	100	

	Initial Calib. Blank		Cor	Continuing Calibration Blank ug/L					Preparation		
Analyte	ug/L	С	1	С	2	С	3	С		С	М
Mercury	0.20	ן ט וסס	0.20	0 0	0.2	00 0	0.20	0 u	0.200	ם	CV

Comments:

4	LS	En	viro	nm	ental
		11/11/11	V 4 4 4 7 1		CIILAI

-3-

BLANKS

Contract:	R2102423	<u> </u>			
Lab Code:	Case No.:	SAS No.:	SDG NO.:	IWS-SD1-0316	
Preparation	Blank Matrix (soil/water):	WATER			
Preparation	Blank Concentration Units (ug/L,	ppt, or mg/kg): UG/L			

	Initial Calib. Blank		Con	Continuing Calibration Blank ug/L					Preparation Blank			
Analyte	ug/L	С	1	С	2	С	3	С		С		M
Mercury		1-1	0.20	ا تا ٥					Test to the second		$\overline{\Pi}$	CV

Comments:

METALS -5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

Contract:	R2102423				IWS-SD1-03	1621S
Lab Code:		Case No.:	SAS No.:		SDG NO.:	IWS-SD1-0316
Matrix (soil	L/water):	WATER		Level	(low/med):	LOW
& Solids for	Sample:	100.0				

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	М
Mercury	75 - 125	1.060	0.200 U	1.00	106	CV

Comments:				
	Y			
			2000	

METALS -5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

				IWS-SD1-03	31621SD
Contract: R2102	2423				
Lab Code:	Case No.:	SAS No.:		SDG NO.:	IWS-SD1-0316
Matrix (soil/wate	er): WATER	<u> </u>	Level	(low/med):	LOW
& Solide for Same	100 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	1.070	0.200 บ	1.00	107	cv

omments:					
	 V	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	 1 2000 100		
			 	- Indiana	

METALS DUPLICATES

MPLE	NO.

	IWS-SD1-031621SD	
ı		

Contract: R2102423

Lab Code:

Case No.:

SAS No.:

SDG NO.: IWS-SD1-0316

Matrix (soil/water):

WATER

Level (low/med):

LOW

% Solids for Sample:

100.0

% Solids for Duplicate:

100.0

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

Analyte	Control Limit	Sample (S)	С	Duplicate	(D) C	RPD	Q	м
Mercury		1.060			1.070	1		CV

Comments:

-7-

LABORATORY CONTROL SAMPLE

Aqueous LCS Source:	JT BAKER			
Solid LCS Source:				
Lab Code:	Case No.:	SAS No.:	SDG NO.	IWS-SD1-0316
Contract: R2102423	***			

is II.	Aqueous	(ug/L		!! -	= 12	Solid	(mg/K	11:3
Analyte	True	Found	%R	True	Found	С	Limits	%R
Mercury	1.000	0.996	100	11				-

Comments:

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

SDG R2102423: 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 R2102423. 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 $\pm 2.0^{\circ}$ C. The proper bottles and preservatives were used, and the correct analytical methods were employed. The sampler failed to denote the time he relinquished the samples on the Chain of Custody; the contractor was notified and reminded of the proper protocols.

Sample Identification

This SDG contains the following samples collected on March 16, 2021:

SAMPLE IWS-SD1-031621

<u>SAMPLE</u> IWS-MW2-031621 SAMPLE IWS-MW1-031621

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).

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.

Reporting Limits:

Sample IWS-SD1-031621 had five detections of PAH compounds between the method detection limit and the reporting limit. The laboratory qualified these detections as estimated concentrations (J).

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.

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-SD1-031621 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.

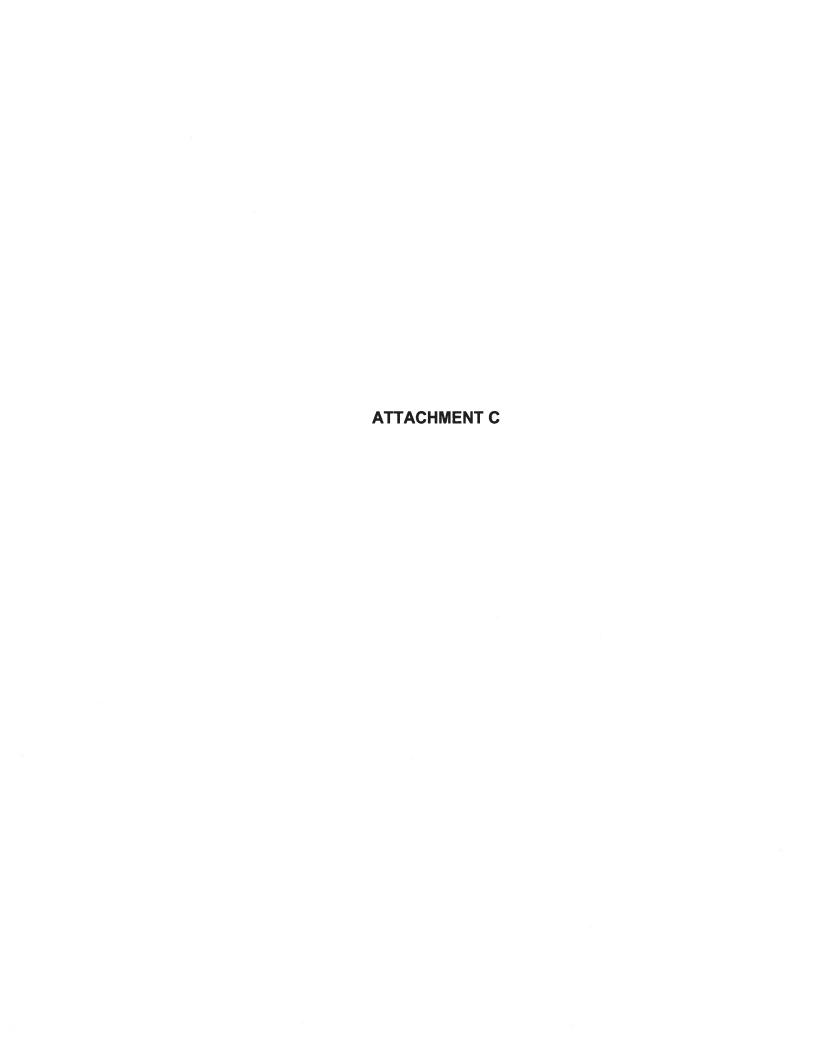
Overall Site Evaluation and Professional Judgment Flagging Changes

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 2021 sampling event.

Prepared by: Randy T. Morris Date: April 15, 2021

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rpt. Limit	Detection	Result	Flag
IWS-SD1-031621	3/16/2021	3/19/2021	7470A	Water	UG/L	Mercury, Total	1	0.2	0.08	0.2	U
IWS-MW2-031621	3/16/2021	3/19/2021	7470A	Water	UG/L	Mercury, Total	5	1	0.4	13.3	
IWS-MW1-031621	3/16/2021	3/19/2021	7470A	Water	UG/L	Mercury, Total	1	0.2	0.08	0.2	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	2-Methylnaphthalene	1	9.6	1.3	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Acenaphthene	1	9.6	1.4	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Acenaphthylene	1	9.6	1.4	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Anthracene	1	9.6	1.3	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benz(a)anthracene	1	9.6	1.6	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(a)pyrene	1	9.6	1.2	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(b)fluoranthene	1	9.6	1.2	1.9	J
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	9.6	1	1.3	J
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(k)fluoranthene	1	9.6	1.3	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Chrysene	1	9.6	1.2	1.3	J
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	9.6	1.1	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Fluoranthene	1	9.6	1.5	2.7	J
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Fluorene	1	9.6	1.3	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	9.6	1.8	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Naphthalene	1	9.6	1.2	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Phenanthrene	1	9.6	1.4	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Pyrene	1	9.6	1.5	1.6	J
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	2-Methylnaphthalene	1	9.6	1.3	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Acenaphthene	1	9.6	1.4	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Acenaphthylene	1	9.6	1.4	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Anthracene	1	9.6	1.3	9.6	
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benz(a)anthracene	1	9.6	1.6	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(a)pyrene	1	9.6	1.2	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(b)fluoranthene	1	9.6	1.2	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	9.6	1	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(k)fluoranthene	1	9.6	1.3	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Chrysene	1	9.6	1.2	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	9.6	1.1	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Fluoranthene	1	9.6	1.5	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Fluorene	1	9.6	1.3	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	9.6	1.8	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Naphthalene	1	9.6	1.2	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Phenanthrene	1	9.6	1.4	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Pyrene	1	9.6	1.5	9.6	U
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	2-Methylnaphthalene	1	10	1.4	10	U

IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Acenaphthene	1	10	1.5	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Acenaphthylene	1	10	1.5	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Anthracene	1	10	1.4	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benz(a)anthracene	1	10	1.7	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(a)pyrene	1	10	1.3	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(b)fluoranthene	1	10	1.3	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	10	1.1	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(k)fluoranthene	1	10	1.4	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Chrysene	1	10	1.3	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	10	1.2	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Fluoranthene	1	10	1.6	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Fluorene	1	10	1.4	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	10	1.9	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Naphthalene	1	10	1.3	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Phenanthrene	1	10	1.5	10 U	
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Pyrene	1	10	1.6	10 U	
IWS-SD1-031621	3/16/2021	3/19/2021	8081B	Water	UG/L	alpha-BHC	1	0.045	0.02	0.045 U	
IWS-SD1-031621	3/16/2021	3/19/2021	8081B	Water	UG/L	beta-BHC	1	0.045	0.02	0.045 U	
IWS-SD1-031621	3/16/2021	3/19/2021	8081B	Water	UG/L	delta-BHC	1	0.045	0.02	0.045 U	
IWS-SD1-031621	3/16/2021	3/19/2021	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.045	0.02	0.045 U	
IWS-MW2-031621	3/16/2021	3/19/2021	8081B	Water	UG/L	alpha-BHC	1	0.05	0.02	0.05 U	
IWS-MW2-031621	3/16/2021	3/19/2021	8081B	Water	UG/L	beta-BHC	1	0.05	0.02	0.05 U	
IWS-MW2-031621	3/16/2021	3/19/2021	8081B	Water	UG/L	delta-BHC	1	0.05	0.02	0.05 U	
IWS-MW2-031621	3/16/2021	3/19/2021	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.05	0.02	0.05 U	
IWS-MW1-031621	3/16/2021	3/19/2021	8081B	Water	UG/L	alpha-BHC	1	0.052	0.021	0.052 U	
IWS-MW1-031621	3/16/2021	3/19/2021	8081B	Water	UG/L	beta-BHC	1	0.052	0.021	0.052 U	
IWS-MW1-031621	3/16/2021	3/19/2021	8081B	Water	UG/L	delta-BHC	1	0.052	0.021	0.052 U	
IWS-MW1-031621	3/16/2021	3/19/2021	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.052	0.021	0.052 U	
*U = Non-detect; J =	estimated conce	entration betwe	en Detectio	n Limit and Repo	rting Limi	t					





Environmental Remediation Group

3855 North Ocoee Street, Suite 200 Cleveland, TN. 37312 (423) 336-4057 FAX (423) 336-4166 abcarringer@olin.com

SENT VIA OVERNIGHT COURIER AND FILE TRANSFER PORTAL

February 13, 2021

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-2020 through December-2020) totaled 80,540 gallons. Daily flow documentation is included in Attachment 1. The annual monitoring samples were taken on November 11, 2020. 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 423/336-4057.

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: Man Blans

Date: 02/13/2021

PART 1 ANALYTICAL RESULTS

ICU PERMIT NAME

Olin Corporation - Industrial Welding Site

ICU PERMIT NUMBER

ICU - 23

SAMPLE LOCATION

MS#1

DATE SAMPLED

11/11/2020

ANALYSIS DATES

Nov 16-19, 2020

ANALYTICAL LABORATORY

ALS Environmental

Parameter	Method	Results (mg/l)	Results (lb/day)	Daily Max Discharge Limits (lb/day)
Total Suspended Solids	EPA 160.2	y 1.1	0.003	15
Soluble Organic Carbon	EPA 415.1	4.4	0.013	10
Acetone	EPA 624	0.005	0.000014	0.01
Dichloroethanes	EPA 624	0.002	0.000006	0.01
Trichloroethylenes	EPA 624	0.00339	0.000010	0.01
BHCs total	EPA 608	0.0002	0.0000006	0.001
Mercury	EPA 245.1	0.0002	0.0000006	0.008

Parameter	Value
Avg. Daily Flow (gal/day) for 2019	347
Avg. Daily Flow (Mgal/day) for 2019	0.000347
Discharge Limitations (Annual Avg. MGD)	0.005
Discharge Limitations (Daily Max MGD)	0.008

Note:

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	N	O VIOLATION	S		
through	Dec. 2000		IO VIOLATION			
through	Dec. 2001	٨	O VIOLATION	S		
through	Dec. 2002	N	IO VIOLATION	S		
through	Dec. 2003	N	IO VIOLATION	S		
through	Dec. 2004	٨	O VIOLATION	S		
through	Dec. 2005		IO VIOLATION			
through	Dec. 2006		IO VIOLATION			
through	Dec. 2007	N	IO VIOLATION	S		
through	Dec. 2008		IO VIOLATION			
through	Dec. 2009		IO VIOLATION	S		
through	Dec. 2010		IO VIOLATION			
through	Dec. 2011		IO VIOLATION			
through	Dec. 2012		IO VIOLATION			
through	Dec. 2013		IO VIOLATION			
through	Dec. 2014		IO VIOLATION			
through	Dec. 2015		IO VIOLATION			
through	Dec. 2016		IO VIOLATION			
through	Dec. 2017		O VIOLATION			
through	Dec. 2018		IO VIOLATION			
through	Dec. 2019		IO VIOLATION			
through	Dec. 2020	. 1	IO VIOLATION	S		

NOTE:

* - Actual Discharge - List actual analytical results and appropriate units ** - Type Limit violated

** - 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: 2020

Month	Monthly Flow (gal)	gal/day
Jan	23,510	758
Feb	11,459	395
Mar	19,734	637
Apr	11,282	376
May	5,941	192
Jun	670	22
Jul	0	0
Aug	0	0
Sep	0	0
Oct	0	0
Nov	1,623	54
Dec	6,321	204
Total	80,540	
MONTHLY AVERAGE	6,712	
daily average	221	12
daily avg Mgal	0.000221	

Daily Avg. Limit = 0.005 Mgal

Industrial Welding Site Flows Jan-20

RTU NAME: Olin Industrial Welding CUMULATEVE VALUES

Discharge Flow Meter		23,510	
Date	Time	Hours	Gallons
1/1/2020	0:57:31	24	572
1/2/2020	0:57:30	24	641
1/3/2020	0:57:31	24	595
1/4/2020	0:57:29	24	595
1/5/2020	0:57:30	24	310
1/6/2020	0:57:32	24	556
1/7/2020	0:57:50	24	455
1/8/2020	0:57:31	24	103
1/9/2020	0:57:33	24	49
1/10/2020	0:57:32	24	48
1/11/2020	0:57:27	24	1,105
1/12/2020	0:57:30	24	1,798
1/13/2020	0:57:31	24	1,605
1/14/2020	0:57:33	24	1,477
1/15/2020	0:57:30	24	1,072
1/16/2020	0:57:31	24	909
1/17/2020	0:57:29	24	689
1/18/2020	0:57:31	24	614
1/19/2020	0:57:27	24	599
1/20/2020	0:57:29	24	53
1/21/2020	0:57:30	24	612
1/22/2020	0:57:32	24	238
1/23/2020	0:57:30	24	143
1/24/2020	0:57:28	15	380
1/25/2020	0:57:32	24	1,987
1/26/2020	0:57:30	24	1,142
1/27/2020	0:57:30	24	1,408
1/28/2020	0:57:30	24	1,239
1/29/2020	0:57:30	24	1,005
1/30/2020	0:57:29	24	859
1/31/2020	0:57:31	24	652
January Total Discharge		735	23,510

Industrial Welding Site Flows Feb-20

RTU NAME: Olin Industrial Welding CUMULATIVE VALUES

Discharge Flow Meter		11,459	
Date	Time	Hours	Gallons
2/1/2020	0:57:28	24	531
2/2/2020	0:57:29	24	580
2/3/2020	0:57:30	24	658
2/4/2020	0:57:31	12.1	264
2/5/2020	0:57:29	0	0
2/6/2020	0:57:28	6.8	865
2/7/2020	0:57:30	5.6	92
2/8/2020	0:57:30	0	0
2/9/2020	0:57:32	0	0
2/10/2020	0:57:31	11.3	1,788
2/11/2020	0:57:32	24	1,048
2/12/2020	0:57:33	24	607
2/13/2020	0:57:29	24	642
2/14/2020	0:57:30	24	476
2/15/2020	0:57:32	24	305
2/16/2020	0:57:31	24	135
2/17/2020	0:57:18	24	52
2/18/2020	0:57:34	24	651
2/19/2020	0:57:28	24	401
2/20/2020	0:57:33	24	166
2/21/2020	0:57:31	24	186
2/22/2020	0:57:31	24	126
2/23/2020	0:57:28	24	30
2/24/2020	0:57:28	24	46
2/25/2020	0:57:33	24	177
2/26/2020	0:57:30	24	354
2/27/2020	0:57:27	24	899
2/28/2020	0:57:28	24	335
2/29/2020	0:57:30	24	45
February Total Discharge		563.8	11,459

Industrial Welding Site Flows Mar-20

RTU NAME: Olin Industrial Welding CUMULATIVE VALUES

Discharge Flow Meter		19,734	
Date	Time	Hours	Gallons
3/1/2020	0:57:28	24	337
3/2/2020	0:57:29	24	978
3/3/2020	0:57:30	24	1,341
3/4/2020	0:57:30	24	1,341
3/5/2020	0:57:31	24	1,379
3/6/2020	0:57:28	24	1,375
3/7/2020	0:57:31	24	1,314
3/8/2020	0:57:32	23	931
3/9/2020	1:57:18	23.9	777
3/10/2020	0:57:27	24	923
3/11/2020	0:57:30	24	691
3/12/2020	0:57:28	24	608
3/13/2020	0:57:31	24	796
3/14/2020	0:57:29	24	550
3/15/2020	0:57:31	24	438
3/16/2020	0:57:30	14	371
3/17/2020	0:57:33	0	0
3/18/2020	0:57:30	2	620
3/19/2020	0:57:29	0.3	100
3/20/2020	0:57:32	2.4	731
3/21/2020	0:57:28	0	0
3/22/2020	0:57:29	2.3	649
3/23/2020	0:57:40	0	0
3/24/2020	0:57:30	2.3	676
3/25/2020	0:57:33	0	0
3/26/2020	0:57:33	2.3	651
3/27/2020	0:57:31	0	0
3/28/2020	0:57:32	3.1	920
3/29/2020	0:57:31	1	318
3/30/2020	0:57:28	1.2	378
3/31/2020	0:57:30	1.8	541
March Total Discharge		392	19,734

Industrial Welding Site Flows Apr-20

RTU NAME: Olin Industrial Welding CUMULATEVE VALUES

Discharge Flow Meter		11,282	
Date	Time	Hours	Gallons
4/1/2020	0:57:31	0.5	156
4/2/2020	0:57:32	0	0
4/3/2020	0:57:29	2.3	680
4/4/2020	0:57:30	0	0
4/5/2020	0:57:33	1.9	534
4/6/2020	0:57:31	0.3	105
4/7/2020	0:57:31	0	0
4/8/2020	0:57:30	2.1	706
4/9/2020	0:57:30	2.5	710
4/10/2020	0:57:29	0	0
4/11/2020	0:57:29	2.3	644
4/12/2020	0:57:28	0	0
4/13/2020	0:57:32	2.5	771
4/14/2020	0:57:29	2.3	671
4/15/2020	0:57:30	0	0
4/16/2020	0:57:27	2.3	640
4/17/2020	0:57:29	1	267
4/18/2020	0:57:29	1.3	355
4/19/2020	0:57:28	2.5	697
4/20/2020	0:57:33	0	0
4/21/2020	0:57:28	2.3	702
4/22/2020	0:57:31	0	0
4/23/2020	0:57:32	2.3	688
4/24/2020	0:57:31	0	0
4/25/2020	0:57:31	0	0
4/26/2020	0:57:29	3.2	982
4/27/2020	0:57:30	1.8	573
4/28/2020	0:57:33	2.3	657
4/29/2020	0:57:28	0	0
4/30/2020	0:57:31	2.5	744
April Total Discharge		38.2	11,282

Industrial Welding Site Flows May-20

RTU NAME: Olin Industrial Welding CUMULATEVE VALUES

Discharge Flow Meter		5,941	
Date	Time	Hours	Gallons
5/1/2020	0:57:30	2.3	676
5/2/2020	0:57:32	0	0
5/3/2020	0:57:29	2.3	658
5/4/2020	0:57:29	0	0
5/5/2020	0:57:31	2.3	657
5/6/2020	0:57:28	0	0
5/7/2020	0:57:31	2.3	654
5/8/2020	0:57:26	0	0
5/9/2020	0:57:31	0	0
5/10/2020	0:57:32	0.3	93
5/11/2020	0:57:30	1.9	532
5/12/2020	0:57:29	0	0
5/13/2020	0:57:31	0	0
5/14/2020	0:57:30	2.2	633
5/15/2020	0:57:31	0	0
5/16/2020	0:57:29	0	0
5/17/2020	0:57:32	0	0
5/18/2020	0:57:31	2.3	700
5/19/2020	0:57:33	0	0
5/20/2020	0:57:30	0	0
5/21/2020	0:57:31	0	0
5/22/2020	0:57:30	2.2	693
5/23/2020	0:57:30	0	0
5/24/2020	0:57:30	0	0
5/25/2020	0:57:33	0	0
5/26/2020	0:57:30	0	0
5/27/2020	0:57:29	0	0
5/28/2020	0:57:31	0	0
5/29/2020	0:57:18	1.2	333
5/30/2020	0:57:31	1.1	312
5/31/2020	0:57:32	0	0
May Total Discharge		20.4	5,941

Industrial Welding Site Flows Jun-20

RTU NAME: Olin Industrial Welding CUMULATIVE VALUES

Discharge Flow Meter		670	
Date	Time	Hours	Gallons
6/1/2020	0:57:30	0	0
6/2/2020	0:57:33	0	0
6/3/2020	0:57:32	0	0
6/4/2020	0:57:28	. 0	0
6/5/2020	0:57:28	0	0
6/6/2020	0:57:29	0	0
6/7/2020	0:57:30	0	0
6/8/2020	0:57:28	0	0
6/9/2020	0:57:27	0	0
6/10/2020	0:57:31	0	0
6/11/2020	0:57:30	2.3	670
6/12/2020	0:57:31	0	0
6/13/2020	0:57:29	0	0
6/14/2020	0:57:32	0	0
6/15/2020	0:57:30	0	0
6/16/2020	0:57:29	0	0
6/17/2020	0:57:29	0	0
6/18/2020	0:57:31	0	0
6/19/2020	0:57:30	0	0
6/20/2020	0:57:30	0	0
6/21/2020	0:57:31	0	0
6/22/2020	0:57:27	0	0
6/23/2020	0:57:30	0	0
6/24/2020	0:57:32	0	0
6/25/2020	0:57:28	0	0
6/26/2020	0:57:29	0	0
6/27/2020	0:57:30	0	0
6/28/2020	0:57:31	0	0
6/29/2020	0:57:30	0	0
6/30/2020	0:57:32	0	0
June Total Discharge		2.3	670

Industrial Welding Site Flows Jul-20

RTU NAME: Olin Industrial Welding CUMULATIVE VALUES

Discharge Flow Meter		0	
Date	Time	Hours	Gallons
7/1/2020	0:57:19	0	0
7/2/2020	0:57:30	0	0
7/3/2020	0:57:30	0	0
7/4/2020	0:57:28	0	0
7/5/2020	0:57:27	0	0
7/6/2020	0:57:30	0	0
7/7/2020	0:57:32	0	0
7/8/2020	0:57:29	0	0
7/9/2020	0:57:28	0	0
7/10/2020	0:57:30	0	0
7/11/2020	0:57:32	0	0
7/12/2020	0:57:28	0	0
7/13/2020	0:57:33	0	0
7/14/2020	0:57:27	0	0
7/15/2020	0:57:31	0	0
7/16/2020	0:57:30	0	0
7/17/2020	0:57:31	0	0
7/18/2020	0:57:36	0	0
7/19/2020	0:57:27	0	0
7/20/2020	0:57:31	0	0
7/21/2020	0:57:28	0	0
7/22/2020	0:57:32	0	0
7/23/2020	0:57:32	0	0
7/24/2020	0:57:31	0	0
7/25/2020	0:57:29	0	0
7/26/2020	0:57:18	0	0
7/27/2020	0:57:30	0	0
7/28/2020	0:57:31	0	0
7/29/2020	0:57:30	0	0
7/30/2020	0:57:27	0	0
7/31/2020	0:57:29	0	0
July Total Discharge		0	0

Industrial Welding Site Flows Aug-20

RTU NAME: Olin Industrial Welding CUMULATIVE VALUES

Daily Discharge Limits:

Discharge Flow Meter		0	
Date	Time	Hours	Gallons
8/1/2020	0:57:28	0	0
8/2/2020	0:57:28	0	0
8/3/2020	0:57:31	0	0
8/4/2020	0:57:32	0	0
8/5/2020	0:57:31	0	0
8/6/2020	0:57:30	0	0
8/7/2020	0:57:27	0	0
8/8/2020	0:57:28	0	0
8/9/2020	0:57:30	0	0
8/10/2020	0:57:28	0	0
8/11/2020	0:57:31	0	0
8/12/2020	0:57:31	0	0
8/13/2020	0:57:33	0	0
8/14/2020	0:57:29	0	0
8/15/2020	0:57:29	0	0
8/16/2020	0:57:27	0	0
8/17/2020	0:57:29	0	0
8/18/2020	0:57:18	0	0
8/19/2020	0:57:27	0	0 '
8/20/2020	0:57:31	0	0
8/21/2020	0:57:28	0	0
8/22/2020	0:57:28	0	0
8/23/2020	0:57:31	0	0
8/24/2020	0:57:31	0	0
8/25/2020	0:57:31	0	0
8/26/2020	0:57:30	0	0
8/27/2020	0:57:32	0	0
8/28/2020	0:57:30	0	0
8/29/2020	0:57:31	0	0
8/30/2020	0:57:29	0	0
8/31/2020	0:57:31	0	0
August Total Discharge		0	0

Max = 8,000 gal.

Industrial Welding Site Flows Sep-20

RTU NAME: Olin Industrial Welding CUMULATIVE VALUES

Discharge Flow Meter		0	
Date	Time	Hours	Gallons
9/1/2020	0:57:30	0	0
9/2/2020	0:57:30	0	0
9/3/2020	0:57:30	0	0
9/4/2020	0:57:32	0	0
9/5/2020	0:57:29	0	0
9/6/2020	0:57:28	0	0
9/7/2020	0:57:31	0	0
9/8/2020	0:57:29	0	0
9/9/2020	0:57:29	0	0
9/10/2020	0:57:31	0	0
9/11/2020	0:57:29	0	0
9/12/2020	0:57:31	0	0
9/13/2020	0:57:29	0	0
9/14/2020	0:57:30	0	0
9/15/2020	0:57:30	0	0
9/16/2020	0:57:30	0	0
9/17/2020	0:57:32	0	0
9/18/2020	0:57:28	0	0
9/19/2020	0:57:31	0	0
9/20/2020	0:57:28	0	0
9/21/2020	0:57:32	0	0
9/22/2020	0:57:27	0	0
9/23/2020	0:57:29	0	0
9/24/2020	0:57:34	0	0
9/25/2020	0:57:31	0	0
9/26/2020	0:57:28	0	0
9/27/2020	0:57:31	0	0
9/28/2020	0:57:32	0	0
9/29/2020	0:57:28	0	0
9/30/2020	0:57:28	0.1	0
September Total Discharge	`	0.1	0

Daily Discharge Limits:

Max = 8,000 gal

Industrial Welding Site Flows Oct-20

RTU NAME: Olin Industrial Welding CUMULATEVE VALUES

Discharge Flow Meter		0	
Date	Time	Hours	Gallons
10/1/2020	0:57:31	0	0
10/2/2020	0:57:31	0	0
10/3/2020	0:57:31	0	0
10/4/2020	0:57:29	0	0
10/5/2020	0:57:29	0	0
10/6/2020	0:57:31	0	0
10/7/2020	0:57:31	0	0
10/8/2020	0:57:28	0	0
10/9/2020	0:57:30	0	0
10/10/2020	0:57:32	0	0
10/11/2020	0:57:29	0	0
10/12/2020	0:57:31	0	0
10/13/2020	0:57:30	0	0
10/14/2020	0:57:32	0	0
10/15/2020	0:57:32	0	0
10/16/2020	0:57:31	0	0
10/17/2020	0:57:30	0	0
10/18/2020	0:57:29	0	0
10/19/2020	0:57:29	0	0
10/20/2020	0:57:28	0	0
10/21/2020	0:57:28	0	0
10/22/2020	0:57:32	0	0
10/23/2020	0:57:31	0	0
10/24/2020	0:57:33	0	0
10/25/2020	0:57:28	0	0
10/26/2020	0:57:29	0	0
10/27/2020	0:57:28	0	0
10/28/2020	0:57:32	0	0
10/29/2020	0:57:27	0	0
10/30/2020	0:57:31	0	0
10/31/2020	0:57:27	0	0
October Total Discharge		0	0

Industrial Welding Site Flows Nov-20

RTU NAME: Olin Industrial Welding CUMULATEVE VALUES

Discharge Flow Meter		1,623	
Date	Time	Hours	Gallons
11/1/2020	0:57:40	0	0
11/2/2020	0:57:18	0	0
11/3/2020	0:57:30	0	0
11/4/2020	0:57:29	0	0
11/5/2020	0:57:28	0	0
11/6/2020	0:57:33	0	0
11/7/2020	0:57:27	0	0
11/8/2020	0:57:29	0	0
11/9/2020	0:57:31	0	0
11/10/2020	0:57:28	0	0
11/11/2020	0:57:29	0.2	67
11/12/2020	0:57:32	0.1	7
11/13/2020	0:57:28	0	0
11/14/2020	0:57:28	0	0
11/15/2020	0:57:32	0	0
11/16/2020	0:57:30	0	0
11/17/2020	0:57:26	0	0
11/18/2020	0:57:18	0	0
11/19/2020	0:57:30	0	0
11/20/2020	0:57:29	0	0
11/21/2020	0:57:29	0	0
11/22/2020	0:57:30	0	0
11/23/2020	0:57:30	2.5	772
11/24/2020	0:57:30	0	0
11/25/2020	0:57:31	0	0
11/26/2020	0:57:28	0	0
11/27/2020	0:57:28	0	0
11/28/2020	0:57:31	0	0
11/29/2020	0:57:33	0	0
11/30/2020	0:57:32	2.5	777
November Total Discharg	е	5.3	1,623

Industrial Welding Site Flows Dec-20

RTU NAME: Olin Industrial Welding CUMULATEVE VALUES

Discharge	Flow	Meter	
Digonal No	1 10 44	INICIOI	

6,321

Date	Time	Hours	Gallons
12/1/2020	0:57:30	0	0
12/2/2020	0:57:30	2.4	731
12/3/2020	0:57:32	0	0
12/4/2020	0:57:33	0	0
12/5/2020	0:57:32	0	0
12/6/2020	0:57:30	0	0
12/7/2020	0:57:32	0	0
12/8/2020	0:57:29	0	0
12/9/2020	0:57:31	0	0
12/10/2020	0:57:32	0	0
12/11/2020	0:57:32	0	0
12/12/2020	0:57:28	2.3	701
12/13/2020	0:57:28	0	0
12/14/2020	0:57:32	0	0
12/15/2020	0:57:31	0	0
12/16/2020	0:57:30	0	0
12/17/2020	0:57:33	0	0
12/18/2020	0:57:32	0	0
12/19/2020	0:57:29	0	0
12/20/2020	0:57:33	0	0
12/21/2020	0:57:31	0.9	275
12/22/2020	1.4:57:29	1.4	430
12/23/2020	0:57:29	0	0
12/24/2020	0:57:31	0	0
12/25/2020	0:57:33	2.4	756
12/26/2020	0:57:25	0	0
12/27/2020	0:57:28	0	0
12/28/2020	0:57:31	4.6	1,450
12/29/2020	1.7:57:30	1.7	528
12/30/2020	0:57:31	2.3	712
12/31/2020	0:57:30	2.4	738
December Total Disch	arge	20.4	6,321

ATTACHMENT 2

Olin Corporation Industrial Welding Site

November-20

SDG-R2010748

Sample	Date Collected	Date Received	Date Analyzed	Component	MRL	Result	Flag	Units
IWS-MS-110719	11/11/2020	11/12/2020	11/19/2020	Carbon, Dissolved Organic (DOC)	1.0	4.4		mg/L
IWS-MS-110719	11/11/2020	11/12/2020	11/18/2020	Solids, Total Suspended (TSS)	1.1	1.1	n	mg/L
IWS-MS-110719	11/11/2020	11/12/2020	11/18/2020	Mercury, Total	0.2	0.2	ם	ng/L
IWS-MS-110719	11/11/2020	11/12/2020	11/16/2020	Acetone	1.0	1.0	כ	ng/L
IWS-MS-110719	11/11/2020	11/12/2020	11/16/2020	1,1-Dichloroethane (1,1-DCA)	5.0	5.0	ח	ng/L
IWS-MS-110719	11/11/2020	11/12/2020	11/16/2020	1,2-Dichloroethane	1.0	1.0	ס	1/8n
IWS-MS-110719	11/11/2020	11/12/2020	11/16/2020	Trichloroethene (TCE)	1.0	3.39		ng/L
IWS-MS-110719	11/11/2020	11/12/2020	11/18/2020	alpha-BHC	0.0500	0.0500	ß	ng/L
IWS-MS-110719	11/11/2020	11/12/2020	11/18/2020	beta-BHC	0.0500	0.0500	n	ng/L
IWS-MS-110719	11/11/2020	11/12/2020	11/18/2020	delta-BHC	0.0500	0.0500	ם	ng/L
IWS-MS-110719	11/11/2020	11/12/2020	11/18/2020	gamma-BHC (Lindane)	0.0500	0.0500	3	ng/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 MRL



Service Request No:R2010748

Mr. Adam Carringer Olin Corporation 3855 North Ocoee St. Ste. 200 Cleveland, TN 37312

Laboratory Results for: Industrial Welding - Olin

Dear Mr. Carringer,

Enclosed are the results of the sample(s) submitted to our laboratory November 12, 2020 For your reference, these analyses have been assigned our service request number **R2010748**.

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

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

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro Project Manager

CC: Adam Carringer



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SM 2540 D-1997(2011) - TSS - 703968	516



Narrative Documents

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





Client:

Olin Corporation

Project:

Industrial Welding - Olin

Sample Matrix: Water

Service Request: R2010748

Date Received: 11/12/2020

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 11/12/2020. 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:

No significant anomalies were noted with this analysis.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

Method SM 2540 D-1997(2011), R2010748-001 (and duplicate): The Method Reporting Limit (MRL) for was elevated due to less than optimal sample volume/mass available for analysis.

Volatiles by GC/MS:

No significant anomalies were noted with this analysis.

	Mighan	Pedro		
Approved by			Date	12/23/2020



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: Project: Olin Corporation

Industrial Welding - Olin/release order ERRE9845

Service Request:R2010748

SAMPLE CROSS-REFERENCE

SAMPLE#

CLIENT SAMPLE ID

R2010748-001 R2010748-002 IWS-MS1-111120

Trip Blank

DATE

TIME

11/11/2020

0900

11/11/2020

0900



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

001583

P

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

Preservative Key 0. NONE 1. HCL 2. HNO3 4. NaCSO4 5. Zn. Acetate 6. MeOH 7. NeHSO4 REMARKS/ ALTERNATE DESCRIPTION MS MSD VOLUME INVOICE INFORMATION 929 RECEIVED BY OLIN ANALYSIS REQUESTED (include Method Number and Container Preservative) BILL 70: <u>و</u> REPORT REQUIREMENTS W. B. Results • OC Summaries (LCS, DUP, MS/MSD as maying) III. Results + OC and Calibration Summarks RELINCUISHED BY 0 I. Results Only 0 Edata Printed Name **+** Date/Time 7 ٥ TURNAROUND REQUIREMENTS 11115 BMENAM RUSH (SURCHARGES APPLY) - 1 dhy -2 day -3 day K Standard (10 business days-No 0 7 REQUESTED REPORT DATE RECEIVED BY STANDARD Cate/Time | | De-3100 - 4 day ---- 5 day + 0 PRESERVATIVE 5 NUMBER OF CONTRINERS N M RELINQUISHED BY MATRIX 3 ABLATKARY GOlin. COM Surper Prince Nemo CAINS LOJES TIME Printed Name 900 Date/Time ADAM CARMERA SAMPLING Firm 1229 11 11 20 FEED RECEIVED BY Project Number POR OFFICE USE CINLY LAB ID DOCS WELL FILTERED IN Distribution: White - Leb Copy, Yellow - Return to Originator STATE WHERE SAMPLES WERE COLLECTED NOWTHAN WELDING - OLIL Octo/Time 37312 3855 NOWAN OCDEE Date/Thre (1/11/20) |200 SPECIAL INSTRUCTIONS/COMMENTS IMS - MS1 - (11120 Ms/mso volume CLIENT SAMPLE ID CALANCER CLEVELPNO TO 423 336 4000 TEMP BLANK RELINGUISHED BY TRIP BLANK OLIN CORP Philoghems Johnes Metals T HS See OAPP MODEL

Page 10 of 521

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R2010748	5
Industriel Welding - Olin	

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A			-	Ą
C	D.	L	4	

(AL	5)	4	lecei	pt ar	nd Pr	eservation	Che	ck Form	. 14	Sinum ild sider		, 1991 FIGURE 1
Project/Clie	nt Olin	Corp			Folde	r Number						
Cooler receive	4.6	(0.0 t	y: 1 12			COURIER:	ALS	UPS FEDE	VELOC	ITY CLU	ENT "	
1 Were Cus	stody seals on	outside of cooler		16	N	5a Perchi	orate s	amples have req	uired heads	pace?	Y N	(NA)
2 Custody	naners nmoer	ty completed (ink	sione	xd)? (Y	N	5b DidVo	OA vial	Alk,or Sulfide	e have sig* l	bubbles?	YON	NA
		good condition (1		. 10	< 1			bottles originat		LS/ROC	CLIE	NT
	and the second second											2
4 Circle:	Wet Ice Dry	Ice Gel packs	pres						ilk Enco			IA
8. Temperatur		Date: 11-12-0	(2)0	Time:	Ma	ID:	IR#7(IR#10	From	emp Blank	Samp	ole Bottle
Observed Te		3,6				-6					ļ	
Within 0-6°C		(Y) N			1	YN	<u>Y</u>		-	Y N	Y	N
If <0°C, wen	e samples froz	en? Y. N		Yì	V	YN	Y	NY	N	YN	<u>Y</u>	N
&Client A	held in storag	note packing/ice nn Samples: e location: orage location:	condi Z-Gv	Stand	15	lce melto proval Client on Hard	aware a	oorly Packed (don't drop-off Cl		i by:		N Rule
9. V 10. E 11. V	Vere all bottle Fid all bottle la Vere correct co	ervation Check** labels complete (lbels and tags agrontainers used for ls acceptable (no	i.e. ama ee with the tes	alysis, r custod sts indi	ly paper cated?	nion, etc.)? s?		OFS OFS OFS OFS VES	NO NO NO		MA	
		Cassettes / Tubes					ters Pre		edlar® Bag	s Inflated	N/A)	
pH	Lot of test	Reagent	Preser		Lot Re		Ехр	Sample ID	Vol.	Lot Add	led	Final
	paper		Yes	No				Adjusted	Added	1		pH
≥12	0001/10	NaOH	V	4		171-01	-	,				
2	223419	HNO ₃	-			20081		-		+		
<u>\$2</u> \$4		H ₂ SO ₄ NaHSO ₄					+		+			
5-9	273419	For 608 pest	1	4	No=No	tify for 3day		0.3				
Residual	1003111	For CN,		_	If +, co	ntact PM to add		110				
Chlorine (-)		Phenol, 625, 608pest 522	1			625, 608, corbic (phenol).	-1			1		
		Na ₂ S ₂ O ₃				•						
		ZnAcetate	-	- '				**VOAs and 16 Otherwise, all b	64 Not to be to ottles of all sau	ested before : mples with c	analysis. herpical or	eservatives
		HCI	**	**		[1+1]		are checked (no	t just represent	tatives)	•	
Bottle lot Explain a	numbers:	00-10-02 4 ies/ Other Comm	<u>") ~ / .3</u> nents:	22-00	01_07	130/8-DBH	2), c	792120-18	BMC			
										7**	ROD E	ULK
		7								H		LDT
										St		IGFB
	-									A		13541

	els second			@	
PC	Secondary	Review:	<u> </u>		W

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

10/20/2020

Internal Chain of Custody Report

Client:

Olin Corporation

Service Request: R2010748

Project:

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2010748-001.01					
	624	11/12/2020	1140	CMO LODGMEDIANI	
		11/13/2020	1142	SMO/GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
		11/16/2020	1221	In Lab / KRUEST	
R2010748-001.02					
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-001/GESMERIAN	
R2010748-001.03		11:15:2020	1142	R-001 / GESMERIAN	
K2010/48-001.03					
		11/13/2020	1142	SMO/GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
R2010748-001.04					-
1240101101001101	SM 5310 C-2000(2011)			
		11/13/2020	1142	SMO/GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017/GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
R2010748-001.05					
	608 Modified				
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-002 / GESMERIAN	
		11/17/2020	8080	In Lab / VSTAUFFER	
R2010748-001.06					
	608 Modified				
		11/13/2020	1142	SMO/GESMERIAN	
		11/13/2020	1142	R-002 / GESMERIAN	
		12/1/2020	0823	In Lab / VSTAUFFER	
R2010748-001.07					
	SM 2540 D-1997			0.40 (0.70)	
		11/13/2020	1142	SMO / GESMERIAN	
424	7	11/20/2020	1259	R-Dumpster / KAWONG	
R2010748-001.08	245.1				
	245.1	11/12/2020	1142	CMO (CECMEDIANI	
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-002 / GESMERIAN	
R2010748-001.09					
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1141	R-001 / GESMERIAN	
		11-1J-2020	1172	K.oot Georgeman	
Printed 12 23/2020 3:35:51 PM			Page 12 of 521		

Internal Chain of Custody Report

Client:

Olin Corporation

Service Request: R2010748

Project:

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2010748-001.10					
		11/12/2020	1141	CMO CECMEDIAN	
		11/13/2020 11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
R2010748-001.11					
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-001/GESMERIAN	
R2010748-001.12					
		11/13/2020	1141	SMO GESMEDIAN	
		11/13/2020	1141	SMO⊅GESMERIAN R-001⊅GESMERIAN	
R2010748-001.13		11113-2020	1172	R-001 = GESMERIAN	
14.010740-001.13					
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-001/GESMERIAN	
R2010748-001.14					
		11 12 2000			
		11/13/2020	1141	SMO/GESMERIAN	
D 4010710 001 15		11/13/2020	1142	R-001 / GESMERIAN	
R2010748-001.15					
		11/13/2020	1141	SMO/GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017/GLAFORCE	
		12/7/2020	1139	R-002/GLAFORCE	
R2010748-001.16					
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017/GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
R2010748-001.17					
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
R2010748-001.18		12/7/2020	1139	R-002 / GLAFORCE	

Internal Chain of Custody Report

Client:

Olin Corporation

Service Request: R2010748

Project:

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
R2010748-001.19				***	
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017/GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
R2010748-001.20					
		11/13/2020	1141	SMO GESMERIAN	
		11/14/2020	1122	RT000136 GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
		12/7/2020	1139	R-002 GLAFORCE	
R2010748-001.21					
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017 GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
R2010748-001.22	***************************************			The state of the s	
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
		12/7/2020	1139	R-002 GLAFORCE	
R2010748-001.23	***************************************				
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-002 / GESMERIAN	
		11/17/2020	0808	In Lab / VSTAUFFER	
R2010748-001.24					
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-002 GESMERIAN	

Internal Chain of Custody Report

Client:

Olin Corporation

Service Request: R2010748

Project:

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		11/13/2020	1141	SMO / GESMERIAN	
		11/20/2020	1259	R-Dumpster / KAWONG	
R2010748-001.26	8				
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-002 / GESMERIAN	
R2010748-002.01					·····
	624				
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
		11/16/2020	1221	In Lab / KRUEST	
R2010748-002.02		· · · · · · · · · · · · · · · · · · ·		,	
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
R2010748-002.03		A A MARKET MARKE	***************************************		
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	



Miscellaneous Forms

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



REPORT QUALIFIERS AND DEFINITIONS

- U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
- J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
- B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
- E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
- E Organics- Concentration has exceeded the calibration range for that specific analysis.
- D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
- * Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
- H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
- # Spike was diluted out.

- + Correlation coefficient for MSA is <0.995.
- N Inorganics- Matrix spike recovery was outside laboratory limits.
- N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
- S Concentration has been determined using Method of Standard Additions (MSA).
- W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
- P Concentration >40% difference between the two GC columns.
- C Confirmed by GC/MS
- Q DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
- X See Case Narrative for discussion.
- MRL 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 Certifications1

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

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

	2 x C 0 12 3 11 12 5
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.

Analyst Summary report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/release order ERRE9845

Service Request: R2010748

Sample Name:

IWS-MS1-111120

Lab Code:

R2010748-001

Sample Matrix:

Water

Date Collected: 11/11/20

Date Received: 11/12/20

Analysis Method

245.1

608 Modified

624

SM 2540 D-1997(2011) SM 5310 C-2000(2011)

Extracted/Digested By

AKONZEL **KSERCU**

AKONZEL BALLGEIER

Analyzed By

KRUEST KAWONG

SMEDBURY

Sample Name:

IWS-MS1-111120

Lab Code:

R2010748-001.R01

Sample Matrix:

Water

Date Collected: 11/11/20

Date Received: 11/12/20

Analysis Method

608 Modified

Extracted/Digested By

Analyzed By

KSERCU

BALLGEIER

Sample Name:

Trip Blank

Lab Code:

R2010748-002

Sample Matrix:

Water

Date Collected: 11/11/20

Date Received: 11/12/20

Analysis Method

624

Extracted/Digested By

Analyzed By

KRUEST



INORGANIC PREPARATION METHODS

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



Sample Results

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



Volatile Organic Compounds by GC/MS

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

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/release order ERRE9845

Date Collected: 11/11/20 09:00

Service Request: R2010748

Sample Matrix:

Date Received: 11/12/20 10:15

Sample Name:

IWS-MS1-111120

Units: ug/L Basis: NA

Lab Code:

R2010748-001

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method:

624.1

Prep Method:

EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	1	11/16/20 16:21	
1,2-Dichloroethane	1.00 U	1.00	0.200	I	11/16/20 16:21	
Acetone	5.00 U	5.00	2.10	1	11/16/20 16:21	
Trichloroethene (TCE)	3.39	1.00	0.200	1	11/16/20 16:21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	94	73 - 125	11/16/20 16:21	
4-Bromofluorobenzene	94	85 - 122	11/16/20 16:21	
Toluene-d8	99	87 - 121	11/16/20 16:21	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Project:

Industrial Welding - Olin/release order ERRE9845

Service Request: R2010748 Date Collected: 11/11/20 09:00

Sample Matrix:

Water

Date Received: 11/12/20 10:15

Sample Name: Lab Code:

Trip Blank

R2010748-002

Units: ug/L Basis: NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method:

624.1

Prep Method:

EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	ı	11/16/20 15:59	
1,2-Dichloroethane	1.00 U	1.00	0.200	i	11/16/20 15:59	
Acetone	5.00 U	5.00	2.10	1	11/16/20 15:59	
Trichloroethene (TCE)	1.00 U	1.00	0.200	I	11/16/20 15:59	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	96	73 - 125	11/16/20 15:59	
4-Bromofluorobenzene	94	85 - 122	11/16/20 15:59	
Toluene-d8	98	87 - 121	11/16/20 15:59	



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

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Service Request: R2010748

Project:

Industrial Welding - Olin/release order ERRE9845

Date Collected: 11/11/20 09:00

Sample Matrix:

Water

Date Received: 11/12/20 10:15

Sample Name:

IWS-MS1-111120

Units: ug/L

Lab Code:

R2010748-001

Basis: NA

Organochlorine Pesticides by GC/ECD

Analysis Method:

608.3

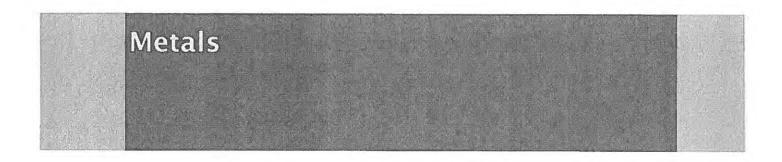
Prep Method:

Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	
beta-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	
delta-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	
gamma-BHC (Lindane)	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
Tetrachloro-m-xylene	266 *	13 - 131	11/18/20 20:09	*	
Decachlorobiphenyl	341 *	10 - 156	11/18/20 20:09	*	





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

METALS

			INORGANIC ANALYSIS DATA SHEET	SAMPL	E NO.
Contract:	R2010748			IWS-MS	31-111120
Lab Code:		Case No.:	SAS No.:	SDG NO.:	IWS-MS1-1111
Matrix (soi	1/water):	WATER	Lab Sample ID:	R2010748-00	1
Level (low/	med): LO	W	Date Received:	11/12/2020	

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

CAS No.	Analyte	Concentration	С	¹ G	М
7439-97-6	Mercury	0.200	บ		cv

Color Before:	ahannin and and and and and and and and and an	Clarity Before:	Texture:	***************************************
Color After:		Clarity After:	Artifacts:	
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

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:

Olin Corporation

Project: Sample Matrix: Industrial Welding - Olin/release order ERRE9845

Water

IWS-MS1-111120

Sample Name: Lab Code:

R2010748-001

Service Request: R2010748

Date Collected: 11/11/20 09:00

Date Received: 11/12/20 10:15

Basis: NA

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	1.0	1	11/19/20 16:01	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	1.1 U	mg/L	1.1	1	11/18/20 09:50	

SDG# R2010748 Discharge Sampling November 11, 2020 Page 1 of 4

Industrial Welding Site Data Evaluation Narrative November 2020 Discharge Sampling Event

SDG R2010748: 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 R2010748. 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 11, 2020:

SAMPLE ID IWS-MS-1-111120 **SAMPLE ID**

TRIP BLANK (Analyzed for VOCs only)

Volatile Organic Compounds (EPA Method 624)

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

Holding Times:

The analytical logs indicate that applicable holding times were met.

Practical Quantitation Limits:

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

GC/MS Instrument Performance Check:

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

Calibration:

The initial 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.

SDG# R2010748 Discharge Sampling November 11, 2020 Page 2 of 4

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-MS1-111120 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:

The surrogate recoveries for the sample and MS/MSD samples were above the applicable control limits. However, the sample was non-detect (U) for all HCCHs; no data qualification was deemed necessary by professional judgment.

Blank Summary:

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

Laboratory Control Sample (LCS) and LCS Duplicate (LCSD):

The LCS/LCSD recoveries were below the lower laboratory control limit of 37 for alpha-BHC (27/29) and below the lower control limit of 32 for gamma-BHC (27/30). The sample was non-detect for both compounds; reporting limits were qualified as estimated (UJ) by professional judgment as indicated below.

Sample ID IWS-MS1-111120 Analytes alpha-BHC, gamma-BHC

Data Flag

UJ

SDG# R2010748 Discharge Sampling November 11, 2020 Page 3 of 4

Matrix Spike/Matrix Spike Duplicate:

Sample IWS-MS1-111120 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. The percent recoveries were above the upper laboratory control limits in the MS and/or MSD for all four BHC compounds. Since the sample was non-detect for all BHCs, no data qualification based on the potential for high bias was warranted by professional judgment.

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 for the sample submitted. 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-MS1-111120 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 slightly elevated due to a less than optimal sample volume available for analysis.

Blank Summary:

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

SDG# R2010748 Discharge Sampling November 11, 2020 Page 4 of 4

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-MS1-111120. Both the sample and lab duplicate were non-detect for TSS.

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-MS1-111120 was submitted for MS/MSD analysis. The percent recoveries and RPD were within applicable QC advisory limits.

Duplicate Samples:

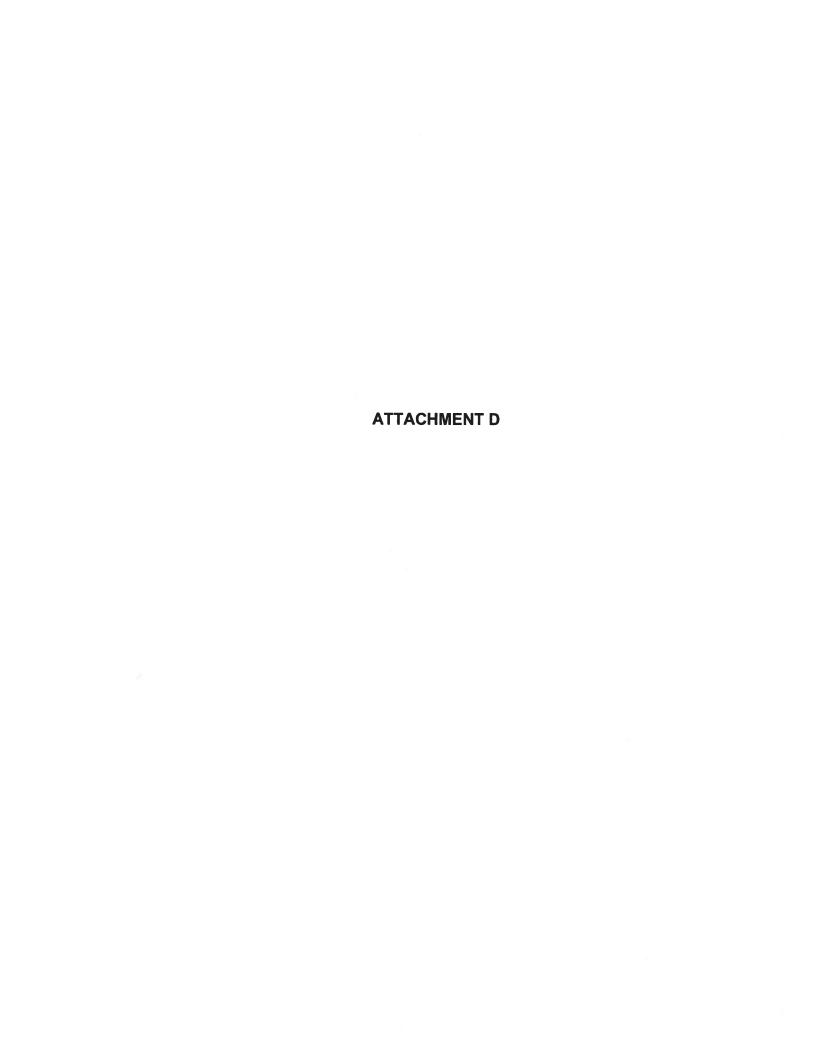
No samples were selected by the laboratory or field for duplicate analysis.

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 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 2020 sampling event. Typically, project objectives are met when completeness is 90 percent or better.

Prepared by: Randy T. Morris

Date: January 22, 2021



Industrial Welding Site Flows Jan-20

RTU NAME: Olin Industrial Welding CUMULATEVE VALUES

Discharge Flow Meter		23,510	
Date	Time	Hours	Gallons
1/1/2020	0:57:31	24	572
1/2/2020	0:57:30	24	641
1/3/2020	0:57:31	24	595
1/4/2020	0:57:29	24	595
1/5/2020	0:57:30	24	310
1/6/2020	0:57:32	24	556
1/7/2020	0:57:50	24	455
1/8/2020	0:57:31	24	103
1/9/2020	0:57:33	24	49
1/10/2020	0:57:32	24	48
1/11/2020	0:57:27	24	1,105
1/12/2020	0:57:30	24	1,798
1/13/2020	0:57:31	24	1,605
1/14/2020	0:57:33	24	1,477
1/15/2020	0:57:30	24	1,072
1/16/2020	0:57:31	24	909
1/17/2020	0:57:29	24	689
1/18/2020	0:57:31	24	614
1/19/2020	0:57:27	24	599
1/20/2020	0:57:29	24	53
1/21/2020	0:57:30	24	612
1/22/2020	0:57:32	24	238
1/23/2020	0:57:30	24	143
1/24/2020	0:57:28	15	380
1/25/2020	0:57:32	24	1,987
1/26/2020	0:57:30	24	1,142
1/27/2020	0:57:30	24	1,408
1/28/2020	0:57:30	24	1,239
1/29/2020	0:57:30	24	1,005
1/30/2020	0:57:29	24	859
1/31/2020	0:57:31	24	652
January Total Discharge		735	23,510

Industrial Welding Site Flows Feb-20

RTU NAME: Olin Industrial Welding

CUMULATIVE VALUES

Discharge Flow Meter		11,459	
Date	Time	Hours	Gallons
2/1/2020	0:57:28	24	531
2/2/2020	0:57:29	24	580
2/3/2020	0:57:30	24	658
2/4/2020	0:57:31	12.1	264
2/5/2020	0:57:29	0	0
2/6/2020	0:57:28	6.8	865
2/7/2020	0:57:30	5.6	92
2/8/2020	0:57:30	0	0
2/9/2020	0:57:32	0	0
2/10/2020	0:57:31	11.3	1,788
2/11/2020	0:57:32	24	1,048
2/12/2020	0:57:33	24	607
2/13/2020	0:57:29	24	642
2/14/2020	0:57:30	24	476
2/15/2020	0:57:32	24	305
2/16/2020	0:57:31	24	135
2/17/2020	0:57:18	24	52
2/18/2020	0:57:34	24	651
2/19/2020	0:57:28	24	401
2/20/2020	0:57:33	24	166
2/21/2020	0:57:31	24	186
2/22/2020	0:57:31	24	126
2/23/2020	0:57:28	24	30
2/24/2020	0:57:28	24	46
2/25/2020	0:57:33	24	177
2/26/2020	0:57:30	24	354
2/27/2020	0:57:27	24	899
2/28/2020	0:57:28	24	335
2/29/2020	0:57:30	24	45
February Total Discharge		563.8	11,459

Industrial Welding Site Flows Mar-20

RTU NAME: Olin Industrial Welding CUMULATIVE VALUES

Discharge Flow Meter		19,734	
Date	Time	Hours	Gallons
3/1/2020	0:57:28	24	337
3/2/2020	0:57:29	24	978
3/3/2020	0:57:30	24	1,341
3/4/2020	0:57:30	24	1,341
3/5/2020	0:57:31	24	1,379
3/6/2020	0:57:28	24	1,375
3/7/2020	0:57:31	24	1,314
3/8/2020	0:57:32	23	931
3/9/2020	1:57:18	23.9	777
3/10/2020	0:57:27	24	923
3/11/2020	0:57:30	24	691
3/12/2020	0:57:28	24	608
3/13/2020	0:57:31	24	796
3/14/2020	0:57:29	24	550
3/15/2020	0:57:31	24	438
3/16/2020	0:57:30	14	371
3/17/2020	0:57:33	0	0
3/18/2020	0:57:30	2	620
3/19/2020	0:57:29	0.3	100
3/20/2020	0:57:32	2.4	731
3/21/2020	0:57:28	0	0
3/22/2020	0:57:29	2.3	649
3/23/2020	0:57:40	0	0
3/24/2020	0:57:30	2.3	676
3/25/2020	0:57:33	0	0
3/26/2020	0:57:33	2.3	651
3/27/2020	0:57:31	0	0
3/28/2020	0:57:32	3.1	920
3/29/2020	0:57:31	1	318
3/30/2020	0:57:28	1.2	378
3/31/2020	0:57:30	1.8	541
March Total Discharge		392	19,734

Industrial Welding Site Flows Apr-20

RTU NAME: Olin Industrial Welding CUMULATEVE VALUES

Discharge Flow Meter		11,282	
Date	Time	Hours	Gallons
4/1/2020	0:57:31	0.5	156
4/2/2020	0:57:32	0	0
4/3/2020	0:57:29	2.3	680
4/4/2020	0:57:30	0	0
4/5/2020	0:57:33	1.9	534
4/6/2020	0:57:31	0.3	105
4/7/2020	0:57:31	0	0
4/8/2020	0:57:30	2.1	706
4/9/2020	0:57:30	2.5	710
4/10/2020	0:57:29	0	0
4/11/2020	0:57:29	2.3	644
4/12/2020	0:57:28	0	0
4/13/2020	0:57:32	2.5	771
4/14/2020	0:57:29	2.3	671
4/15/2020	0:57:30	0	0
4/16/2020	0:57:27	2.3	640
4/17/2020	0:57:29	1	267
4/18/2020	0:57:29	1.3	355
4/19/2020	0:57:28	2.5	697
4/20/2020	0:57:33	0	0
4/21/2020	0:57:28	2.3	702
4/22/2020	0:57:31	0	0
4/23/2020	0:57:32	2.3	688
4/24/2020	0:57:31	0	0
4/25/2020	0:57:31	0	0
4/26/2020	0:57:29	3.2	982
4/27/2020	0:57:30	1.8	573
4/28/2020	0:57:33	2.3	657
4/29/2020	0:57:28	0	0
4/30/2020	0:57:31	2.5	744
April Total Discharge		38.2	11,282

Max = 8,000 gal Daily Discharge Limits:

Industrial Welding Site Flows May-20

RTU NAME: Olin Industrial Welding

CUMULATEVE VALUES

Discharge Flow Meter		5,941	
Date	Time	Hours	Gallons
5/1/2020	0:57:30	2.3	676
5/2/2020	0:57:32	0	0
5/3/2020	0:57:29	2.3	658
5/4/2020	0:57:29	0	0
5/5/2020	0:57:31	2.3	657
5/6/2020	0:57:28	0	0
5/7/2020	0:57:31	2.3	654
5/8/2020	0:57:26	0	0
5/9/2020	0:57:31	0	0
5/10/2020	0:57:32	0.3	93
5/11/2020	0:57:30	1.9	532
5/12/2020	0:57:29	0	0
5/13/2020	0:57:31	0	0
5/14/2020	0:57:30	2.2	633
5/15/2020	0:57:31	0	0
5/16/2020	0:57:29	0	0
5/17/2020	0:57:32	0	0
5/18/2020	0:57:31	2.3	700
5/19/2020	0:57:33	0	0
5/20/2020	0:57:30	0	0
5/21/2020	0:57:31	0	0
5/22/2020	0:57:30	2.2	693
5/23/2020	0:57:30	0	0
5/24/2020	0:57:30	0	0
5/25/2020	0:57:33	0	0
5/26/2020	0:57:30	0	0
5/27/2020	0:57:29	0	0
5/28/2020	0:57:31	0	0
5/29/2020	0:57:18	1.2	333
5/30/2020	0:57:31	1.1	312
5/31/2020	0:57:32	0	0
May Total Discharge		20.4	5,941

Industrial Welding Site Flows Jun-20

RTU NAME: Olin Industrial Welding CUMULATIVE VALUES

Discharge Flow Meter		670	
Date	Time	Hours	Gallons
6/1/2020	0:57:30	0	0
6/2/2020	0:57:33	0	0
6/3/2020	0:57:32	0	0
6/4/2020	0:57:28	0	0
6/5/2020	0:57:28	0	0
6/6/2020	0:57:29	0	0
6/7/2020	0:57:30	0	0
6/8/2020	0:57:28	0	0
6/9/2020	0:57:27	0	0
6/10/2020	0:57:31	0	0
6/11/2020	0:57:30	2.3	670
6/12/2020	0:57:31	0	0
6/13/2020	0:57:29	0	0
6/14/2020	0:57:32	0	0
6/15/2020	0:57:30	0	0
6/16/2020	0:57:29	0	0
6/17/2020	0:57:29	0	0
6/18/2020	0:57:31	0	0
6/19/2020	0:57:30	0	0
6/20/2020	0:57:30	0	0
6/21/2020	0:57:31	0	0
6/22/2020	0:57:27	0	0
6/23/2020	0:57:30	0	0
6/24/2020	0:57:32	0	0
6/25/2020	0:57:28	0	0
6/26/2020	0:57:29	0	0
6/27/2020	0:57:30	0	0
6/28/2020	0:57:31	0	0
6/29/2020	0:57:30	0	0
6/30/2020	0:57:32	0	0
June Total Discharge		2.3	670

Industrial Welding Site Flows Jul-20

RTU NAME: Olin Industrial Welding CUMULATIVE VALUES

Discharge	Flow	Meter	0
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Date	Time	Hours	Gallons
7/1/2020	0:57:19	0	0
7/2/2020	0:57:30	0	0
7/3/2020	0:57:30	0	0
7/4/2020	0:57:28	0	0
7/5/2020	0:57:27	0	0
7/6/2020	0:57:30	0	0
7/7/2020	0:57:32	0	0
7/8/2020	0:57:29	0	0
7/9/2020	0:57:28	0	0
7/10/2020	0:57:30	0	0
7/11/2020	0:57:32	0	0
7/12/2020	0:57:28	0	0
7/13/2020	0:57:33	0	0
7/14/2020	0:57:27	0	0
7/15/2020	0:57:31	0	0
7/16/2020	0:57:30	0	0
7/17/2020	0:57:31	0	0
7/18/2020	0:57:36	0	0
7/19/2020	0:57:27	0	0
7/20/2020	0:57:31	0	0
7/21/2020	0:57:28	0	0
7/22/2020	0:57:32	0	0
7/23/2020	0:57:32	0	0
7/24/2020	0:57:31	0	0
7/25/2020	0:57:29	0	0
7/26/2020	0:57:18	0	0
7/27/2020	0:57:30	0	0
7/28/2020	0:57:31	0	0
7/29/2020	0:57:30	0	0
7/30/2020	0:57:27	0	0
7/31/2020	0:57:29	0	0
July Total Discharge		0	0

Industrial Welding Site Flows Aug-20

RTU NAME: Olin Industrial Welding CUMULATIVE VALUES

Discharge Flow Meter 0

Date	Time	Hours	Gallons
8/1/2020	0:57:28	0	0
8/2/2020	0:57:28	0	0
8/3/2020	0:57:31	0	0
8/4/2020	0:57:32	0	0
8/5/2020	0:57:31	0	0
8/6/2020	0:57:30	0	0
8/7/2020	0:57:27	0	0
8/8/2020	0:57:28	0	0
8/9/2020	0:57:30	0	0
8/10/2020	0:57:28	0	0
8/11/2020	0:57:31	0	0
8/12/2020	0:57:31	0	0
8/13/2020	0:57:33	0	0
8/14/2020	0:57:29	0	0
8/15/2020	0:57:29	0	0
8/16/2020	0:57:27	0	0
8/17/2020	0:57:29	0	0
8/18/2020	0:57:18	0	0
8/19/2020	0:57:27	0	0
8/20/2020	0:57:31	0	0
8/21/2020	0:57:28	0	0
8/22/2020	0:57:28	0	0
8/23/2020	0:57:31	0	0
8/24/2020	0:57:31	0	0
8/25/2020	0:57:31	0	0
8/26/2020	0:57:30	0	0
8/27/2020	0:57:32	0	0
8/28/2020	0:57:30	0	0
8/29/2020	0:57:31	0	0
8/30/2020	0:57:29	0	0
8/31/2020	0:57:31	0	0

August Total Discharge 0 0

Industrial Welding Site Flows Sep-20

RTU NAME: Olin Industrial Welding CUMULATIVE VALUES

Discharge Flow Meter 0

Date 9/1/2020	Time 0:57:30	Hours 0	Gallons 0
9/2/2020	0:57:30	0	0
9/3/2020	0:57:30	0	0
9/4/2020	0:57:32	0	0
9/5/2020	0:57:32	0	0
9/6/2020	0:57:28	0	0
9/7/2020	0:57:20	0	0
9/8/2020	0:57:29	0	0
9/9/2020	0:57:29	0	0
9/10/2020	0:57:23	0	0
9/11/2020	0:57:29	0	0
9/12/2020	0:57:31	0	0
9/13/2020	0:57:29	0	0
9/14/2020	0:57:30	Ö	0
9/15/2020	0:57:30	0	0
9/16/2020	0:57:30	0	0
9/17/2020	0:57:32	0	0
9/18/2020	0:57:28	0	0
9/19/2020	0:57:31	0	0
9/20/2020	0:57:28	0	0
9/21/2020	0:57:32	0	0
9/22/2020	0:57:27	0	0
9/23/2020	0:57:29	0	0
9/24/2020	0:57:34	0	0
9/25/2020	0:57:31	0	0
9/26/2020	0:57:28	0	0
9/27/2020	0:57:31	0	0
9/28/2020	0:57:32	0	0
9/29/2020	0:57:28	0	0
9/30/2020	0:57:28	0.1	0
September Total Discharge		0.1	0

Industrial Welding Site Flows Oct-20

RTU NAME: Olin Industrial Welding CUMULATEVE VALUES

Discharge Flow Meter 0

Date	Time	Hours	Gallons
10/1/2020	0:57:31	0	0
10/2/2020	0:57:31	0	0
10/3/2020	0:57:31	0	0
10/4/2020	0:57:29	0	0
10/5/2020	0:57:29	0	0
10/6/2020	0:57:31	0	0
10/7/2020	0:57:31	0	0
10/8/2020	0:57:28	0	0
10/9/2020	0:57:30	0	0
10/10/2020	0:57:32	0	0
10/11/2020	0:57:29	0	0
10/12/2020	0:57:31	0	0
10/13/2020	0:57:30	0	0
10/14/2020	0:57:32	0	0
10/15/2020	0:57:32	0	0
10/16/2020	0:57:31	0	0
10/17/2020	0:57:30	0	0
10/18/2020	0:57:29	0	0
10/19/2020	0:57:29	0	0
10/20/2020	0:57:28	0	0
10/21/2020	0:57:28	0	0
10/22/2020	0:57:32	0	0
10/23/2020	0:57:31	0	0
10/24/2020	0:57:33	0	0
10/25/2020	0:57:28	0	0
10/26/2020	0:57:29	0	0
10/27/2020	0:57:28	0	0
10/28/2020	0:57:32	0	0
10/29/2020	0:57:27	0	0
10/30/2020	0:57:31	0	0
10/31/2020	0:57:27	0	0

October Total Discharge 0 0

Industrial Welding Site Flows Nov-20

RTU NAME: Olin Industrial Welding CUMULATEVE VALUES

Discharge Flow Meter		1,623	
Date	Time	Hours	Gallons
11/1/2020	0:57:40	0	0
11/2/2020	0:57:18	0	0
11/3/2020	0:57:30	0	0
11/4/2020	0:57:29	0	0
11/5/2020	0:57:28	0	0
11/6/2020	0:57:33	0	0
11/7/2020	0:57:27	0	0
11/8/2020	0:57:29	0	0
11/9/2020	0:57:31	0	0
11/10/2020	0:57:28	0	0
11/11/2020	0:57:29	0.2	67
11/12/2020	0:57:32	0.1	7
11/13/2020	0:57:28	0	0
11/14/2020	0:57:28	0	0
11/15/2020	0:57:32	0	0
11/16/2020	0:57:30	0	0
11/17/2020	0:57:26	0	0
11/18/2020	0:57:18	0	0
11/19/2020	0:57:30	0	0
11/20/2020	0:57:29	0	0
11/21/2020	0:57:29	0	0
11/22/2020	0:57:30	0	0
11/23/2020	0:57:30	2.5	772
11/24/2020	0:57:30	0	0
11/25/2020	0:57:31	0	0
11/26/2020	0:57:28	0	0
11/27/2020	0:57:28	0	0
11/28/2020	0:57:31	0	0
11/29/2020	0:57:33	0	0
11/30/2020	0:57:32	2.5	777
November Total Discharg	e	5.3	1,623

Industrial Welding Site Flows Dec-20

RTU NAME: Olin Industrial Welding CUMULATEVE VALUES

Discharge Flow Meter 6,321

Date	Time	Hours	Gallons
12/1/2020	0:57:30	0	0
12/2/2020	0:57:30	2.4	731
12/3/2020	0:57:32	0	0
12/4/2020	0:57:33	0	0
12/5/2020	0:57:32	0	0
12/6/2020	0:57:30	0	0
12/7/2020	0:57:32	0	0
12/8/2020	0:57:29	0	0
12/9/2020	0:57:31	0	0
12/10/2020	0:57:32	0	0
12/11/2020	0:57:32	0	0
12/12/2020	0:57:28	2.3	701
12/13/2020	0:57:28	0	0
12/14/2020	0:57:32	0	0
12/15/2020	0:57:31	0	0
12/16/2020	0:57:30	0	0
12/17/2020	0:57:33	0	0
12/18/2020	0:57:32	0	0
12/19/2020	0:57:29	0	0
12/20/2020	0:57:33	0	0
12/21/2020	0:57:31	0.9	275
12/22/2020	1.4:57:29	1.4	430
12/23/2020	0:57:29	0	0
12/24/2020	0:57:31	0	0
12/25/2020	0:57:33	2.4	756
12/26/2020	0:57:25	0	0
12/27/2020	0:57:28	0	0
12/28/2020	0:57:31	4.6	1,450
12/29/2020	1.7:57:30	1.7	528
12/30/2020	0:57:31	2.3	712
12/31/2020	0:57:30	2.4	738

December Total Discharge 6,321 20.4

Industrial Welding Site - Discharge Flows: 2020

Month	Monthly Flow (gal)	gal/day
Jan	23,510	758
Feb	11,459	395
Mar	19,734	637
Apr	11,282	376
May	5,941	192
Jun	670	22
Jul	0	0
Aug	0	0
Sep	0	0
Oct	0	0
Nov	1,623	54
Dec	6,321	204
Total	80,540	
MONTHLY AVERAGE	6,712	·
daily average	221	
daily avg Mgal	0.000221	

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	2151
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	5686

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	2148
2/26/2021	0:57:30	0	0
2/27/2021	0:57:32	7.3	2154
2/28/2021	0:57:32	0	0
February Total Discharge		16.3	4823

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	7297

Daily Discharge Limits: Max

Max = 8,000 gal

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	2151
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	5686

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	2148
2/26/2021	0:57:30	0	0
2/27/2021	0:57:32	7.3	2154
2/28/2021	0:57:32	0	0
February Total Discharge		16.3	4823

Industrial Welding Site Flows Mar-21

RTU NAME: Olin Industrial Welding

CUMULATEVE VALUES

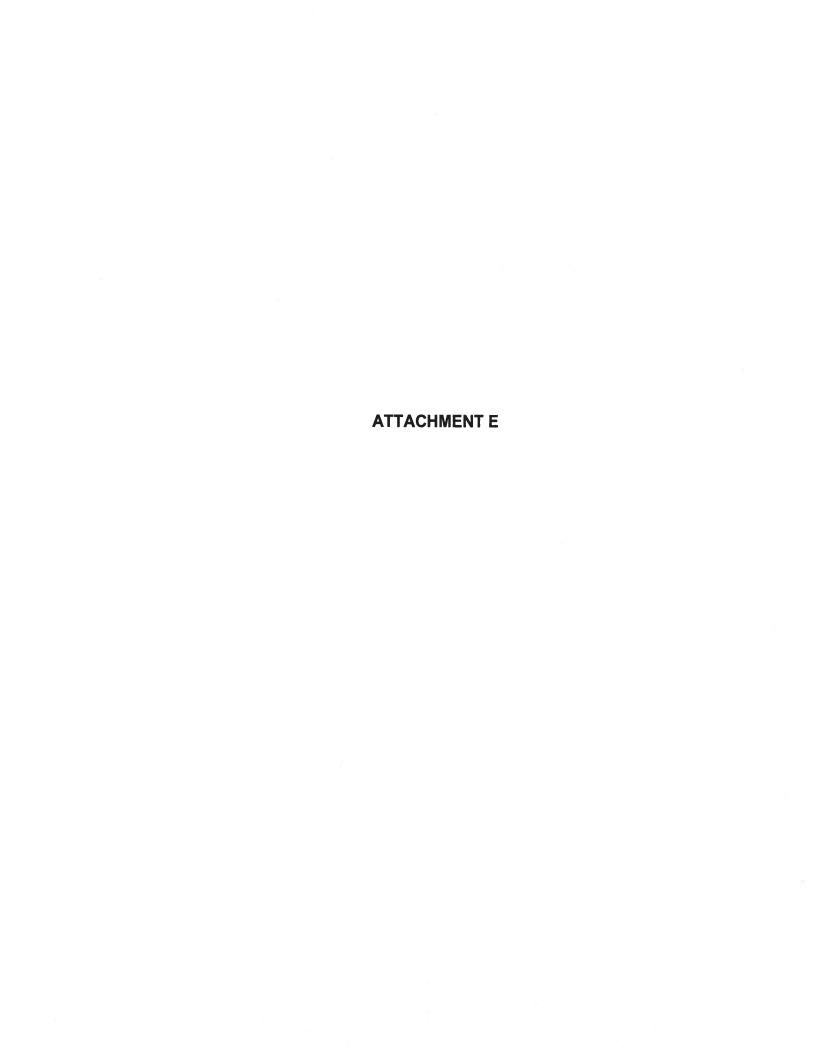
Discharge Flow Meter		7,297	
Date	Time	Hours	Gallons
3/1/2021	0:57:32	2.4	731
3/2/2021	0:57:30	0	0
3/3/2021	0:57:28	2.4	758
3/4/2021	0:57:31	2.4	730
3/5/2021	0:57:26	2.4	735
3/6/2021	0:57:28	2.4	722
3/7/2021	0:57:30	0	0
3/8/2021	0:57:32	2.3	702
3/9/2021	0:57:31	0	0
3/10/2021	0:57:32	2.3	676
3/11/2021	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	7297

Industrial Welding Site Flows Apr-21

Discharge Flow Meter

Pumping Hours

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	1676
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	8778



Site Activities Report

Sevenson Environmental Services, Inc. Niagara Falls, New York

REPORT NO.	Sevenson Job No. 1229, div.1	DATE	9/50/20	
PROJECT TITLE	OLIN CORPORATION, IND	USTRIAL	WELDING S	ITE
LOCATION OF WORK	VETERANS DRIVE, NIAGA	RA FALLS	, NEW YOR	K
DESCRIPTION	O & M OF REMEDIATION S	SITE		
WEATHER:		TEMP Deg F)	Min: 58°	Max:

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

SEMI- ANNUAL SITE INSPECTION SEMI-ANNUAL GROUND CHATER SAMPLING

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

NIA

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

SAMPUNG Equipment

4. Type And Results Of Inspection:

9/36/20- SEVENSON SAMPLED THE STORM DRAW (INS.501.093UZO)
SAIPPED SAMPLES TO ALS ROCHESTER.

MUI + MWZ WERE DRY, SES WILL RETURN IN A FEW DAYS TO CHECK

- PENFORMED A SEM! ANNUAL HIYECTION

10/05/20 - SEVENSON PLETURNED TO CHELL MW | MNO MW-Z . BOTH WERE DRY NO SOMPLES TAKEN.

O:\walkerm\Site Activities Report.doc



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

065743

Q

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

Preservative Key 0. NONE HCL HNO3 H2SO4 NaOH Zn. Acetate MeOH NaHSO4 REMARKS/ ALTERNATE DESCRIPTION × INVOICE INFORMATION OLIN CORP Other mso verime RECEIVED BY PROVIDED BY し えきよららて ANALYSIS REQUESTED (Include Method Number and Container Preservative) Pnnted Name BILL TO: Date/Time 8 N. Data Validation Report with Raw Data Ş. REPORT REQUIREMENTS (LCS, DUP, MS/MSD as required) III. Results + OC and Calibration OK II. Results + OC Summanes RELINQUISHED BY Edata Yes 1. Resutts Only ruted Name Date/Time 7 TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) - 1 day ---- 2 day ---- 3 day 0 Standard (10 business days-No 2 REQUESTED REPORT DATE RECEIVED BY 4 day _____ 5 day STAUBARO 0 ٧ Printed Name Date/Time PRESERVATIVE 7 Firm NUMBER OF CONTAINERS 3 RELINQUISHED BY MATRIX 3 ABCECTITION COM Printed Name 900 DOAM CALLINGER Date/Time SAMPLING Ē Sampler's Printed Name
CHRS Johes 1225 28 DATE PECENED BY NOUSTHAL WEDING - Out Properthumbs FOR OFFICE USE ONLY LAB ID Stiffe is I Golde 370312 Printed Name STATE WHERE SAMPLES WERE COLLECTED Date/Time CH 33CXC ALVOY E TOT MERCURY SPECIAL INSTRUCTIONS/COMMENTS コト ADAM CARRINGER 1500 UNS-501.093020 CLIENT SAMPLE ID 423 336 4987 TEMP BLANK RELINQUISHED BY CLE VELAND Girp 23-05 Date/Time S 30 20 Company/Address 38.55 てゴロ **SES** Printed Name CLA 6.15 Metals

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

© 2012 by ALS Group

SEMI-ANNUAL INSPECTION REPORT FORM

14 114 114 114 114 114 114 114 114 114	Control of the Gifty of Control of the	1.56 (1982) 1994	
	RESP	ONSE	COMMENTS AND
QUESTIONS	YES	NO	RECOMMENDATIONS
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.		×	
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.	9	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.		×	
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	

	RESP	PONSE	COMMENTS AND
QUESTIONS	YES	NO	RECOMMENDATIONS
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.		K	e e e e e e e e e e e e e e e e e e e
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.	z.	×	
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.	N	×	
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.		×	

	RESPONSE		COMMENTS AND
QUESTIONS	YES	NO	RECOMMENDATIONS
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.	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?		α	A NEW SPACE HEATER WAS INSTRUCTO

Date:	q	130	20	
Date.		0 -		

INSPECTOR:

CANS JONES

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

Well ID:	WM-1		Date:	- 8	10 20		
Sampler(s):	C JONES						
Weather: _	80° 52804						
Calibration of Fiel	d Equipment:						
pH Meter:		Date:	8/10/20	Time _	0815		
Spec. Cond	duct. Meter:	Date:	8/10/20	Time _	0815	*********	
Turbidity I	Meter:	Date:	10/20	Time	0815		
Purging Method/S	ampling Method:	-	PETASTACTIC PUMP	NEW	TUBING		
Sample ID:	INS-MW-1.	- ०४।७२	.0	•			

Well Purging Data:

ms/cm

			processors	11/2/6/2	***************************************	····
Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity (Фmhos/cm)	Tem (EC)	Turbidity (NTUs)
910	8.55	<u>ی</u>	6.06	1.(4	18.01	18,4
915	Day	**************************************				

COMMENTS:

8/10/20 - WELL WENT DRY AFTER S NIN OF PURGING 8/12/20 - SAMPLED AT 855 MAN 1WS-MULL. 08/220

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

Well ID:	MW-2		Date:	8/1	0/20	
Sampler(s):	€ JONES	>				
Weather:	80° 500 1	الم				
Calibration of Fiel	d Equipment:	<i>)</i>				
pH Meter: Spec. Cond Turbidity I	duct. Meter: Meter:	Date: Date: Date:	8/10/20	Time _ Time _ Time _	0815	- - -
Purging Method/S	ampling Metho	d:	PERASTALTIC PUR	PNEW	TUBING	
Sample ID:	IWS. MY	12-0810	20			

Well Purging Data:

na Clem

		······································		MSICM		
Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity (Omhos/cm)	Tem (EC)	Turbidity (NTUs)
942	7.62	0	7.07	1.19	19.06	36.4
947	DRY	,				
				U		
	-					-

COMMENTS:

8/10/20 - WELL VENT DRY AFTER & MINUTER OF FRUING 8/12/20 - SAMPLEDAT 905 IWS-MW 2. 091220

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

Well ID:	MW-	2		Date:	9/3/20		
Sampler(s):		110185					
Weather:	<u> 58°</u>						
Calibration of	f Field Equipm						
-	eter: Conduct. Mete dity Meter:	Dat r: Dat Dat	e:	13120 T	ime so		
Purging Meth Sample ID:	od/Sampling N WS -	MW・ひょ		c P.ME / DE	Digned TUB	ge (Harmon
Well Purging				m5/cm			_
Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity (Omhos/cm)	Tem (EC)	Turbidity (NTUs)	
835	9.03	, 5	7.36	1 4 3	16.45	44.3	
840	DRY				101.12		
1		***************************************					
7,						***************************************	
-							

COMMENTS:

9/30/20 WELL WENT DRY WITHIN 5 MINUTES
10/05/20 NO WATER IN WELL NO SAMPLE

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

Well ID:		MM -1			Date	:	9/30	05/0		
Sampler	(s):	C JONES					•			
Weather	•	58° CLOUP.								
Calibrati	on of Field E	quipment:	,							
S	H Meter: Spec. Conductor Surbidity Met		Date: Date:	- -	9 30 20	_ Ti	me _ me _ me _	800 890 800		
Purging	Method/Sam	pling Method:		PENAS	TALTIC PL	mp	DE	DICATED	TUBING	
Sample l	ID: <u>\</u>	WS-MW-1-	0930	vo					· · · · · · · · · · · · · · · · · · ·	

Well Purging Data:

Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity (Omhos/cm)	Tem (EC)	Turbidity (NTUs)
900	Dry					

<u> </u>						
		· · · · · · · · · · · · · · · · · · ·		1-00-	100000	
					17.00	

COMMENTS:

9/30/20 DUY NO SAMPLE 10/05/20 NO SAMPLE

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):	C JONES				
Weather:	58° Choip	ή			
Date: 9	30/20	<u>უ</u>	Time:	900	
Sample ID:	145-501-	093020		Appropriate Communication Comm	
Sampling Meth	nod: PERNOS	PENDSTALTIC	Pomp		
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 (A msl)	Measured Depth of Water Outfall Pipe (ft)	Calculated Outfall Water Elevation (ft msl)

COMMENTS:

ph 7.41 COPD 1.43 m3/cm TURB 4.2 TEMP 15.03

SAMPLED AT 900 ON 9/50/20 MS/MSO TAIRN HERE

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

Name of Sampler: MAX CIFTON			
Organization: SEVENSON			
Weather: 58° Cloupy			
Water Level Indicator Make: Solingt	Model:	101	Serial No.: 2,1360

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	9/30/20		dry at 16.75 dry of	
LCRS Stand Pipe	SP2	9/30/20		dry of 14.30	
LCRS Recovery Well	LCRS1	9/30/20	573.43	9.07	
Cover Area Piezometer	PIR	9/30/20	582.10	dry at 17.44	
East Easement Piezometer	P2R	9/30/20	572.17	9.37	Volla construction of the
Cover Area Piezometer	P3R ∵•	9/30/20	581.90	dry at 17.78	
East Easement Piezometer	P4R	9/30/20	571.09	17.78 avy 26 9,36	
Cover Area Piezometer	P5R	9/36/20	578.46	dry at 14.35	
East Easement Piezometer	P6R	9/30/20 OSCXS	570.91		
NE Easement Monitoring Well	MWI	9/36/20	570.87	dry at 9.51	100
SE Easement Monitoring Well	MW2	9/30/70	572.76	9.03	

Piezometer and Monitoring Well

INSPECTION FORM

Inspec	tion of V	Vell/Pie	ezometer No.: SP-1	
Date:	-	91	30/20	
INSPE	ECTOR:	<i>و</i> ل	~ES	_
	YES	NO		
	oc		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?	
		X	Is there evidence of frost heave on the protective casing?	
	Ti I	X	Is there settlement around the well?	
	ox.		Is the well depth consistent with the installed depth?	

Piezometer and Monitoring Well

INSPECTION FORM

Inspec	tion of W	ell/Piez	zometer No.: SP-2
Date: 91		9/3	0 20
INSPE	ECTOR:	Jo	wes
	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?
	(X		Is the well depth consistent with the installed depth?

Piezometer and Monitoring Well

INSPECTION FORM

ion of W	'ell/Piez	zometer No.: PIR	
, <u> </u>	9/3	30/20	
CTOR: _	70	₩£?	
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?	
9	×	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?	
	YES X X	YES NO X X X X	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 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?

Piezometer and Monitoring Well

INSPECTION FORM

Inspec	tion of W	ell/Piez	ometer No.: P2K
Date:		9/3	30 20
INSPE	ECTOR:	JONE	
	YES	NO	
	×		Is the wellhead clearly labeled?
	ø	11	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?
		ox.	Is there settlement around the well?
	X		Is the well depth consistent with the installed depth?

Piezometer and Monitoring Well

INSPECTION FORM

Inspect	ion of W	'ell/Piez	zometer No.: P3R
Date:	_	9 (30	20
INSPE	CTOR: _	You	JES .
		1	1
	YES	NO	
	×		Is the wellhead clearly labeled?
	X		Is there a lock on the well?
	×		Is the concrete pad around the well in good condition
		ø	Has there been physical damage to the well?
	Ø.		Is the wellhead protected from standing water?
		D.	Is there evidence of frost heave on the protective casing?
		×	Is there settlement around the well?
	X	=	Is the well depth consistent with the installed depth?

Piezometer and Monitoring Well

INSPECTION FORM

Inspect	tion of W	ell/Pie	zometer No.: P4R
Date:_	9/30	120	
INSPE	CTOR:_	JONES	
	YES	NO	
	ø		Is the wellhead clearly labeled?
	X		Is there a lock on the well?
	×		Is the concrete pad around the well in good condition
		DX.	Has there been physical damage to the well?
	×		Is the wellhead protected from standing water?
		V	Is there evidence of frost heave on the protective casing?
		0×	Is there settlement around the well?
			Is the well depth consistent with the installed depth?

Piezometer and Monitoring Well

INSPECTION FORM

Inspect	ion of W	/ell/Pie:	zometer No.: P5R
Date:	9/30	120	
INSPE	CTOR:_	JONE	
	YES	NO	
	_ X		Is the wellhead clearly labeled?
	K		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?
		X	Is there evidence of frost heave on the protective casing?
		×	Is there settlement around the well?
	X		Is the well depth consistent with the installed depth?

Piezometer and Monitoring Well

INSPECTION FORM

Inspect	ion of W	ell/Piez	zometer No.: P6R	
Date:_	9(5	0 20		
INSPE	CTOR:_	YONE	2	
	YES	NO		
	ø		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?	
		ox	Is there evidence of frost heave on the protective casing?	
		<	Is there settlement around the well?	
	X		Is the well depth consistent with the installed depth?	

Piezometer and Monitoring Well

INSPECTION FORM

Inspect	ion of W	ell/Piez	zometer No.: MW-1
Date:_	9 (50	120	
INSPE	CTOR:_	Vone	<u>ંડ</u>
	YES	NO	
	×		Is the wellhead clearly labeled?
	×		Is there a lock on the well?
	o _C		Is the concrete pad around the well in good condition
		~	Has there been physical damage to the well?
	ø		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?

Piezometer and Monitoring Well

INSPECTION FORM

Inspect	ion of W	/ell/Pie	zometer No.: MW-2
Date:	9/30	120	
INSPE	CTOR:_	JON	ES
	YES	NO	
	K		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?
	Ш	×	Is there settlement around the well?
	~		Is the well depth consistent with the installed depth?

Site Activities Report

Sevenson Environmental Services, Inc. Niagara Falls, New York

REPORT NO.	Sevenson Job No. 1259, div.1	DATE:	3/16/21			
PROJECT TITLE	OLIN CORPORATION, INI	DUSTRIAL	WELDING SI	UTID GTTV		
LOCATION OF WORK	VETERANS DRIVE, NIAGA	RA FALLS	, NEW YORK	ζ.		
DESCRIPTION	O & M OF REMEDIATION	O & M OF REMEDIATION SITE				
WEATHER:	NEW ASSESSMENT	TEMP (Deg F)	Min: Yo	Max:		

pm-14			
1. Work performed today by Prim Water levels taken and recorde Samples for SVOA, pesticides, and	e Contractor (Include La	bor Breakdown): Lpze poskytyk poskytyk	MWI and MWZ.
performed at SYI.		at MIVI AVZ, and 51	"1. M3/MSP
Semi annual site inspection	perloyand a		
2. Work Performed Today By Sub	contractors (Include Lab	or Breakdown):	
3. Materials and/Or Equipment Do	elivered To Site (Include)	Equipment Demobilization	o n)
			>
4. Type And Results Of Inspection		4.	,
Semi annual site inspection drainage system, asphalt con	of security tence, ,	restration soil cover, sur	face nate-
drawage system, asphalt con	clete cover system, le	eachete addiction and r	ecovery system.
Breach in NW corner	of security tempe re	eported. REPAIRS SCHO	DULED Son 3/22/21

O:\walkerm\Site Activities Report.doc



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

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

OF

Project Name		Project Number				ANAL	SIS REQUESTED	(Include N	ANALYSIS REQUESTED (Include Method Number and Container Preservative)	ntainer Pre	servative)
Project Manager	R	Report CC	-		PRESERVATIVE	INE		1 1			
Company/Address		Annual property and the second			SH	//	1		////	1	Preservative Key 0. NONE
		**************************************			IBNIATI	///	///	The state of the s		/	2. HNO3 3. H2SO4
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				DE CON	8	/	MOJOG SIL	///	/	5. Zn. Acetate 6. MeOH
Phone #	in .	Email	4 1 1		S SONON SONO	0.601/e	8090	commer SiOis	///	/	7. NaHSO4
Sampler's Signature	186	Sampler's Printed Name				15080	POBS 8082 META	UI ZEZZ	////	\	REMARKS/ ALTERNATE DESCRIPTION
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	DATE	SAMPLING	MATRIX							
INS. SULLYANCE		1/91/10									
9		January States	Contract of the second	**	Y	-1					
						10					
70-014 30 2A			\								
and the same of th											
SPECIAL INSTRUCTIONS/COMMENTS Metals						TURNABOUN RUSH (SUF	TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY)	<u> </u>	REPORT REQUIREMENTS 1. Results Only		INVOICE INFORMATION
The second second	andere						_2 day3 day		II. Results + OC Summanes	# Od	
					Page No. of the Commons	4 day Standard (1	4 day5 day Standard (10 business days-No Surcharge)		III. Results + QC and Calibration Summaries	BILL TO	TO:
						REQUESTED REPORT DATE	ORT DATE	2	N. Data Validation Report with Raw Data	w Data	
See OAPP				1000				1			
STATE WHERE SAMPLES WERE COLLECTED	OLLECTED								Edata Yes No	_	
RELINQUISHED BY	U.S. REC	RECEIVED BY	-	RELINQUISHED BY		RECI	RECEIVED BY		RELINQUISHED BY		RECEIVED BY
Signature	Signature		Signature			Signature		Signature		Signature	iture
Printed Name	Printed Name	de de la companya de	Printed Name			Printed Name		Printed Name	me	Printe	Printed Name
Fim	Firm		Firm			Firm		Firm		Firm	
Date/Time	Date/Time		Date/Time			Date/Time		Date/Time		Date/Time	Time

SEMI-ANNUAL INSPECTION REPORT FORM

DATE: 03/16/21 REPORT NO.:

			State Addition of the education of the			
	RESPONSE		COMMENTS AND			
QUESTIONS	YES	NO	RECOMMENDATIONS			
1. Security Fence						
Is damage evident? If Yes, describe the type of damage(s), and indicate the location(s) the attached map.	V		breach in tence at NW corner			
Are warning signs missing or damaged? If Yes, describe the type of damage and indicate the location(s) on the attached map.		/				
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.		\checkmark				
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.		1				
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.						

	RESPONSE		COMMENTS AND	
QUESTIONS	YES	NO	RECOMMENDATIONS	
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.		J		
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.		✓ <u> </u>		
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.		J		
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.		\checkmark		
Is sediment deposited in swale(s) impeding drainage? If Yes, record approximate dimensions and indicate location(s) on the map attached.		$\sqrt{}$		

	RESI	PONSE	COMMENTS AND
QUESTIONS	YES	NO	RECOMMENDATIONS
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).		1	
Is leachate extraction well pump operating properly based on visual inspection? If No, describe the condition.		J	
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.		J	
Is damage or degradation evident at these system components? Extraction well pump and associated piping? Leachate collection pipe cleanout?		>	

Date:

INSPECTOR: May Liftin

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

Well ID:	MWI		Date:	03/16/21	
Sampler(s):	Max Little			water and the state of the stat	10000000000
Weather:	cloudy				-
Calibration of Fiel	ld Equipment:				
pH Meter:		Date:	03/16/21	Time 9:10 AM	
Spec. Cone	duct. Meter:	Date:	63/16/21	Time div AM	
Turbidity I	Meter:	Date:	03/16/21	Time 4.16 PM	
Purging Method/S	ampling Method:	dedica	ated heing-p	tristalki pump	
Sample ID:	1W3-NW1	-031621			

Well Purging Data:

Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity (Omhos/cm)	Tem (EC)	Turbidity (NTUs)
632	0	7.31	0.75	447	4.5
7.41	1/2 00	7.33	0.67	4.48	4.3
7.5	150	7.36	0.64	4.17	4.1
	(Feet Below Top of Riser)	(Feet Below Top of Riser) 6 32 7.41 1/2 00	(Feet Below Top of Riser) Purged (Liters) (Std. Units) 6 32 0 7.24 7.41 1/2 ad 7.33	(Feet Below Top of Riser) Purged (Liters) (Std. Units) Conductivity (Φmhos/cm) 6 32 0 7.24 0.75 7.41 1/2 4d 7.33 0.67	(Feet Below Top of Riser) (Liters) (Std. Units) (Onductivity (EC) (Omhos/cm) (EC) (7.4) (7.4) (7.4) (A) (A) (B) (BC) (BC)

COMMENTS:

Sampled at 11 AM

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

Well ID:	MW-2		Date:	03/16	121	
Sampler(s)): Max citche	^		0.0		
Weather:	_ levay	***************************************				
Calibration	n of Field Equipment:					
Sp	Meter: ec. Conduct. Meter: rbidity Meter:	Date: Date:		Time	9:20 AM 9:20 AM	
Purging M	ethod/Sampling Method:		dedicated hims	frishlike	finit	
Sample ID	: INS-MAZ	-03167				

Well Purging Data:

Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity (Omhos/cm)	Tem (EC)	Turbidity (NTUs)
1:15	6.00	6	6.25	0.82	572	99
1:17	7.15	1/2 gol	714	0.79	5.07	4,9
9:19	7.70	2 90	7.29	0.78	49	5.4
					-	
		2				
					=	

COMMENTS:

Sampled of MILLER 10 VAM

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

Name of Sampler: ///e £Y//7					
Organization: 5E5					
Weather: doudy 31°5					
Water Level Indicator Make:	Model:	101	Serial No.:	09557 v	

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	SPI	3/16/21		16.7 DRY	ORY 16.7
LCRS Stand Pipe	SP2	3/16/21		14.30Ry	
LCRS Recovery Well	LCRS1	3/16/21	573.43	9.02	564.41
Cover Area Piezometer	P1R	3/16/21	582.10	DRY 17.4	
East Easement Piezometer	P2R	3/16/21	572.17	630	565.87
Cover Area Piezometer	P3R	3/16/21	581.90	ORY 17.8	
East Easement Piezometer	P4R	3/16/21	571.09	4,29	56680
Cover Area Piezometer	P5R	3/16/21	578.46	14.3	
East Easement Piezometer	P6R	3/16/24	570.91	458	566.33
NE Easement Monitoring Well	MWI	3/16/21	570.87	7.2	563.67
SE Easement Monitoring Well	MW2	3/16/21	572.76	6.00	566.76

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: MW-1						
Date:_	03/16	6/21				
INSPE	CTOR:_	Ma	ax Liffton			
		,	*			
	YES	NO				
	$\sqrt{}$		Is the wellhead clearly labeled?			
	J		Is there a lock on the well?			
	J		Is the concrete pad around the well in good condition			
		J	Has there been physical damage to the well?			
			Is the wellhead protected from standing water?			
		1	Is there evidence of frost heave on the protective casing?			
		1	Is there settlement around the well?			
	1		Is the well depth consistent with the installed depth?			

Piezometer and Monitoring Well

INSPECTION FORM

Inspect	ion of W	ell/Piez	cometer No.: MW-2	
Date:	3/10	6/21	2 · · · · · · · · · · · · · · · · · · ·	
INSPE	CTOR:_	Mo	ex liftfor	
	YES	NO		
	$\overline{}$		Is the wellhead clearly labeled?	
	/		Is there a lock on the well?	
	1		Is the concrete pad around the well in good condition	
	Fr.	1	Has there been physical damage to the well?	
	/		Is the wellhead protected from standing water?	
		J	Is there evidence of frost heave on the protective casing?	
		/	Is there settlement around the well?	
	1		Is the well depth consistent with the installed depth?	

Piezometer and Monitoring Well

INSPECTION FORM

Inspec	tion of V	Vell/Pie	ezometer No.: SP-1
INSPE	ECTOR:		ax Liffiton
	YES	NO	
	$\sqrt{}$		Is the wellhead clearly labeled?
	J		Is there a lock on the well?
	5		Is the concrete pad around the well in good condition
		1	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?
4		/	Is there settlement around the well?
			Is the well depth consistent with the installed depth?

Piezometer and Monitoring Well

INSPECTION FORM

Inspect	ion of W	ell/Piez	cometer No.: SP-2
Date:	_	3/16	/21
INSPE	CTOR:	Ma	x Liffiton
	YES	NO	
	V		Is the wellhead clearly labeled?
	\checkmark		Is there a lock on the well?
		1	Is the concrete pad around the well in good condition
		1	Has there been physical damage to the well?
			Is the wellhead protected from standing water?
		1	Is there evidence of frost heave on the protective casing?
		1	Is there settlement around the well?
	1		Is the well depth consistent with the installed depth?
	MENTS:		I needs sealant.

Piezometer and Monitoring Well

INSPECTION FORM

Inspect	ion of W	ell/Piez	cometer No.: P1R
Date:		3/16	/21
INSPE	CTOR: _	Max	x Liftston
	YES	NO	
:			Is the wellhead clearly labeled?
	√ ,		Is there a lock on the well?
	/		Is the concrete pad around the well in good condition
	72	\	Has there been physical damage to the well?
8	/		Is the wellhead protected from standing water?
		/	Is there evidence of frost heave on the protective casing?
		1	Is there settlement around the well?
	5		Is the well depth consistent with the installed depth?

Piezometer and Monitoring Well

INSPECTION FORM

Inspec	tion of W	ell/Piezo	ometer No.: P2R
Date:	_	3/16	/21
INSPE	CTOR: _	Max	Liffiton
1	YES	NO	
			Is the wellhead clearly labeled?
	$\sqrt{}$		Is there a lock on the well?
	\checkmark		Is the concrete pad around the well in good condition
	=" "	5	Has there been physical damage to the well?
	$\sqrt{}$		Is the wellhead protected from standing water?
a	· •	$\sqrt{}$	Is there evidence of frost heave on the protective casing?
		1	Is there settlement around the well?
	V		Is the well depth consistent with the installed depth?

Piezometer and Monitoring Well

INSPECTION FORM

Inspect	ion of W	ell/Piez	cometer No.: P3R	
Date:	_	3/16	:/21	
INSPE	CTOR: _	Μ	axwell Liffton	_
	YES	NO		
			Is the wellhead clearly labeled?	
	$\sqrt{}$		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?	
		J	Is there evidence of frost heave on the protective casing?	
	#	J	Is there settlement around the well?	
			Is the well depth consistent with the installed depth?	

Piezometer and Monitoring Well

INSPECTION FORM

Inspect	ion of W	ell/Piez	zometer No.: P4R
	03/16		
INSPE	CTOR:_	Ma	x Liff, ton
	YES	NO	
	1		Is the wellhead clearly labeled?
	J		Is there a lock on the well?
	1		Is the concrete pad around the well in good condition
	×	J	Has there been physical damage to the well?
	1		Is the wellhead protected from standing water?
		J	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?

Piezometer and Monitoring Well

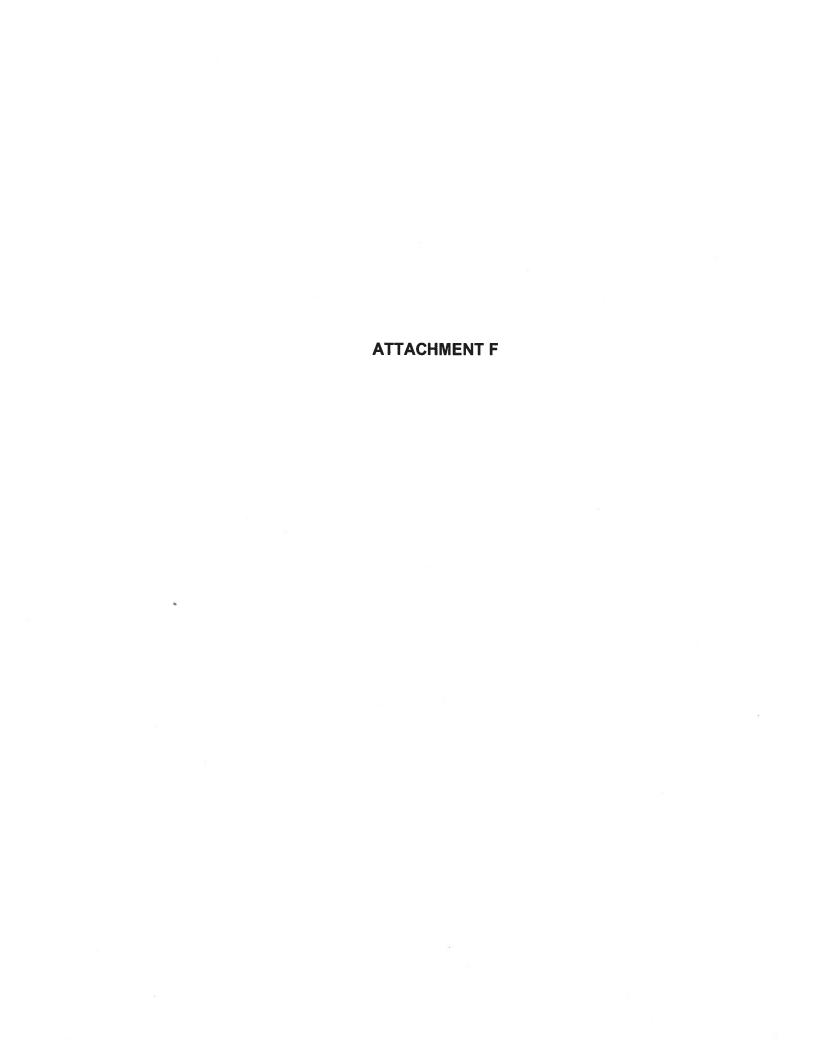
INSPECTION FORM

Inspection of Well/Piezometer No.: P5R				
Date:	3/16	/21		
INSPE	CTOR:_	Max	Liffitor	
	YES	NO		
15			Is the wellhead clearly labeled?	
			Is there a lock on the well?	
	J		Is the concrete pad around the well in good condition	
		J	Has there been physical damage to the well?	
	J		Is the wellhead protected from standing water?	
		1	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?	
		•		
COMM	MENTS:	by h	inge makes the well difficult to open/close. should be loosened/replaced.	
	(Lie	, 0		

Piezometer and Monitoring Well

INSPECTION FORM

Inspect	ion of W	ell/Piez	cometer No.: P6R
Date:	Peple	3/16	1/21
INSPE	CTOR:_	Ma	x Liff.tor
	YES	NO	
			Is the wellhead clearly labeled?
	V		Is there a lock on the well?
44	J	,	Is the concrete pad around the well in good condition
		1	Has there been physical damage to the well?
	J		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?



IW GROUNDWATER MONITORING ANALYTICAL RESULTS FOR Hg MONITORING WELL BY PERIOD SUMMARY SPRING 2002 - SPRING 2021

Sampling	MW1 (ug/L)	MW2 (ug/L)	Rptg. Limit (ug/L)
Period			
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
**Fall 20	0.2	65.6	0.2
Fall 20		68.6	0.2
Spring 21	0.2	13.3	0.2

= Detected value

^{*}MW1 & MW2 were dry, no analysis available

^{**}Resampled due to anomalous values from spring sampling event NT = Not Tested

Industrial Welding Mercury Concentrations in Groundwater Over Time

