

Environmental Remediation Group

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SENT VIA OVERNIGHT COURIER AND FILE TRANSFER PORTAL

June 11, 2021

Mr. Brian Sadowski Division of Environmental Remediation New York State Department of Environmental Conservation 270 Michigan Avenue Buffalo, New York 14203-2999

Re: Charles Gibson Site, Niagara Falls, New York

Site No. 932063

Annual Periodic Review Report Revison – 2020

Post Closure Operation, Maintenance, and Monitoring Activities

Dear Mr. Sadowski:

Olin hereby submits a CD containing a PDF of the 2020 Annual Periodic Review Report on the Post-Closure Operation, Maintenance, and Monitoring activities for the Charles Gibson Site. The annual certification is attached as hard copy and as part of the PDF. The full document is also available via Olin's File Transfer Portal.

Please direct any questions or comments to me at 423/336-4057 or by email at abcarringer@olin.com.

Sincerely,

OLIN CORPORATION

Adam Carringer

Sr. Environmental Specialist

Charles Gibson Site Site No. 932063 Periodic Review Report Revision

June 11, 2021

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I. INTRODUCTION

Brief Summary, Nature and Extent, Remedial History:

Construction of the remedy on the Charles Gibson Site concluded in 1990. The remedy consisted of rerouting Cayuga Creek around and away from the waste, installation of a fully circumscribed soil-bentonite slurry wall barrier and installation of a double flexible membrane liner cap with a perimeter collection drain system. The first year of operations and maintenance (O&M) of the containment remedy for the site and the groundwater monitoring program began in 1993. Waters collected in the site perimeter collection drain system are managed by direct discharge to the City of Niagara Falls Wastewater Treatment Facility. The Charles Gibson site is classified as a commercial/small industrial/residential user (CSIRU) and does not require a permit.

Effectiveness of Remedial Program:

Groundwater monitoring indicates there are no increased concentrations of compounds being monitored. Evaluation of the monitor well and sediment analytical results indicate the containment remedy is effective. An evaluation of data from the piezometer pairs at the Site indicates that a materially inward hydraulic gradient has been established in the containment area of the site. The remedial program is achieving the objectives of containing groundwater flow and maintaining groundwater quality standards.

Compliance:

There are no areas of non-compliance.

Recommendations:

No recommendations. Conditions at the Site are stable.

II. SITE OVERVIEW

<u>Site Description and Nature/Extent Prior to Remediation</u>:

The Site as now defined incorporates approximately two acres bounded to the east and north by Cayuga Creek, to the west by Tuscarora Road and to the south by Niagara Mohawk Power Corporation right-of-way and the Auto Zone Incorporated auto parts store and parking lot. The Site cap is slightly mounded with the center of the capped area essentially flat. The capped area is enclosed by a chain link fence. A wooden privacy fence is immediately next to and outside of the chain link fence on portions of the perimeter.

Remediation Chronology:

The Agreement includes a provision in the event that after seven years following the delivery of a Release of Liability (issued December 15, 1992), Olin demonstrates that conditions at the Site are such that the stated frequency or duration of the requirements are no longer necessary to determine whether the remediation is effective, Olin may reduce the frequency and duration of such monitoring or inspections. Olin has submitted annual reports and has conducted the required monitoring for the duration of the remediation.

III. REMEDY PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS

The work performed for the Site during 2019 was reviewed and found to be in accordance with the approved O&M Manual (Revised 2019), the Site Management Plan approved by NYSDEC on July 17, 2020, as well as the NYSDEC approved reduction in annual sampling dated April 25, 2013. Groundwater monitoring indicates there are no increased concentrations of the Site compounds being monitored. Evaluation of the groundwater data generated during the 2020 monitoring year indicates that the containment remedy is effective. Drawdown in both manholes was effectively maintained.

IV. IC/EC PLAN

IC/EC Requirements:

Fence is in place around the landfill, effectively restricting access

Clean soil cover is in place on the landfill, restricting infiltration and promoting runoff

A hydraulic control system is in place, effectively controlling groundwater flow direction

Certification:

Attachment A

V. MONITORING PLAN COMPLIANCE REPORT

Components of Monitoring Plan:

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

- Performance of a groundwater monitoring program to monitor ground water quality at the site and to verify the inward hydraulic gradient within the capped area.
- The current groundwater level monitoring system for the Site consists of six piezometers (P-1 through P-6) and two manholes (A and B). Piezometers P-1, P-2 and Manhole A are located in the northeast section of the Site; P-3, P-4, and Manhole B are located in the southeast section; and P-5 and P-6 are located toward the southwest (see *Attachment B*).
- All piezometers are constructed of Schedule 80 PVC and are 2 inches in diameter. Each piezometer has been constructed with 5 feet of screen and was screened at the water table.
- The construction of the piezometer screens at the water table allows for continued monitoring of the water table elevation inside and outside of the containment area during periods of water level fluctuations. Piezometers P-1, P-3, and P-5 are located outside of the slurry wall that runs along the perimeter of the Site. Piezometers P-2, P-4, and P-6 are inside the slurry wall and paired opposite the three piezometers outside the slurry wall.
- Water level elevations are measured quarterly at the Site in Manholes A and B and piezometers P-1 through P-6. Water level elevations are measured by means of an acoustical sounder or electronic water level probe. The sounder or probe is lowered into the manhole or piezometer until it makes contact with the free water surface. The depth

from the top of the piezometer riser pipe or manhole rim to the water surface is measured to an accuracy of 0.01 ft. Depth to water measurements are converted into mean sea level elevations by referring to the surveyed elevation of the top of the piezometer riser pipe or manhole rim provided on the Groundwater Elevation Form. The depth to water measurements for Manholes A and B are checked to see that they are not greater than 10.27 feet and 12.41 feet, respectively to ensure that the automatic sump pump is functioning.

Summary and Comparison to Remedial Objectives:

The isolation of groundwater within the capped area has been established and is being maintained by current operation and maintenance activities. The groundwater monitoring and sampling is performed on an annual basis in rotating quarters to help assess seasonal variability with Groundwater Sampling Field Parameters presented in **Attachment C**.

Currently two locations, immediately upstream and downstream of the Site and the adjacent remediated portion of the Cayuga Creek bed, are sampled once per year, in the Fall or 'low water' period. Beginning with the October 2000 sample event, annual creek sediment samples have been analyzed for BHC isomers only. Sample collection and analysis of creek sediments are performed annually during the second half of the calendar year. The fall 2019 data appeared to be an outlier while the downstream collection point did not have any sample, so we resampled in the spring of 2020. Results for the upstream sample dropped by an order of magnitude while the downstream data was within historic ranges. The fall 2020 data showed no detections in either the upstream and downstream locations (Table 3).

The water elevation data collected from the piezometers and groundwater wells was used to determine whether an inward hydraulic gradient exists. Gradient direction was made by comparing water level measurements within the capped area to those measured outside the capped area. The groundwater elevation data indicates that groundwater within the capped area is consistent with historical data. An evaluation of data from the piezometer pairs at the Site indicates that an inward gradient exists during the spring and summer seasons while the fall/winter seasons exhibit conditions that reflect outward gradients. An evaluation of the seasonal trends from 2008 through 2020 shows that the spring elevations have remained consistent with all piezometers (Table 6). The fall data has shown roughly a 3 foot drop among the wells outside the slurry wall while elevations within the slurry wall has remained consistent. This is further evidence that the remedy has remained effective.

Table 4 and Table 4B shows the most recent piezometric data and graphs.

Deficiencies:

None

Recommendations for Changes:

Olin lowered the wet well set points on the system controls in the spring of 2020 which resulted in inward gradients being achieved for the spring season. We are exploring options to reset the set point on the controls seasonally so we can more effectively capture the inward gradient in the fall.

VI. O&M PLAN COMPLIANCE REPORT

Components of the O&M Plan:

Site remediation requirements have been met by Olin through rerouting of Cayuga Creek around and away from the waste, by constructing a fully circumscribing soil-bentonite slurry wall barrier, and through installing a double flexible membrane liner cap as part of the final cover with a perimeter collection drain system. This O&M Plan safeguards that remedy and provides for monitoring of the Gibson Site in compliance with the Settlement Agreement.

Quarterly inspections of the Gibson Site are conducted to identify any potential problems with physical deterioration of structures, possible malfunctions of the slurry wall or of the perforated CPVC drain system, and to ensure that all site remedial measures components are operating effectively, in accordance with the Settlement Agreement.

The Environmental Inspector conducts the inspections to ensure that the remedial measures at the Site will remain operative. Additionally, the inspections address the safeguards to control, minimize or eliminate threats to human health and the environment. Operation, maintenance, and monitoring activities are conducted to identify proposed changes to the O&M Manual or site procedures which would provide a safer and/or more efficient and cost-effective operation.

Recordkeeping is conducted for each site visit and inspection.

Operation & Monitoring (O&M) Summary:

The groundwater collection system is inspected for the buildup of hard or soft scale-like deposits. The inspection is performed concurrently with inspection of the capped area. If a component of the groundwater collection system is found to be damaged or malfunctioning, it is repaired or replaced.

The capped area is mowed on a regular basis to prevent establishment of woody vegetation during this reporting period. The capped area functions as designed and complies with the O&M Plan.

Inspections are conducted using the items listed on the Site Inspection Form presented in **Attachment D**. Information to be entered on these forms includes the inspector's name, date, and time of inspection, item inspected and any comments. The inspector indicates on the forms whether the condition of each item was acceptable or unacceptable to ensure that the requirements of this O&M Plan are fulfilled. The scheduled Site monitoring inspections are performed by a qualified individual assigned to inspect the items and systems noted on the Site Inspection Form. The completed Site Inspection Forms are maintained at Olin Environmental Remediation offices in Cleveland, TN. Inspections are performed, at a minimum, on a quarterly basis.

Evaluation of Remedial Systems:

All components are performing as designed.

O&M deficiencies:

None

Conclusions:

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

VII. OVERALL PRR CONCLUSIONS AND RECOMMENDATIONS

Compliance with SMP:

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.

Remedy Effectiveness:

The groundwater elevation data indicates that groundwater within the capped area is consistent with historical data and is being maintained by current operation and maintenance activities.

Review of the groundwater elevation data indicate that inward hydraulic gradients were observed between piezometers within the capped area and piezometers outside of the capped area with previously noted exceptions. Fluctuations of groundwater elevations indicate that minor outward hydraulic gradients historically occur, but typically revert back to inward gradients by the next quarter.

Currently two locations, immediately upstream and downstream of the Site and the adjacent remediated portion of the Cayuga Creek bed, are sampled once per year, in the Fall or 'low water' period. A sample is collected downstream of the Site to monitor changes in levels of contaminants in creek sediments, if any. The other sample, immediately upstream of the Site is used to monitor potential upstream contaminant sources or potential 'backwash' effects caused by the changing level of the Niagara River. Beginning with the October 2000 sample event, annual creek sediment samples have been analyzed for BHC isomers only. Downstream sample collection amounts were insufficient for analysis and the upstream analysis revealed concentrations of BHC that are not typical.

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

Future Submittals:

Future submittals of this report will continue to be submitted annually.

Attachment A

Institutional & Engineering Certification Form



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



S	ite No.	932063	S	ite Details		Box 1							
S	ite Name Ch	arles Gibson	Site										
C	ite Address: ity/Town: Nia ounty: Niagar ite Acreage:	agara Falls a	agara Falls Blvo	l. & Tuscarora Rd.	Zip Code: 14304								
R	eporting Perio	od: January 31	, 2020 to Janua	ry 31, 2021									
						YES	NO						
1.	Is the inform	mation above c	orrect?			1							
	If NO, inclu	de handwritten	above or on a	separate sheet.									
2.	Has some of tax map arr	or all of the site nendment durin	property been s g this Reporting	sold, subdivided, m pPeriod?	nerged, or undergone a		/						
3.		een any chang RR 375-1.11(d)	e of use at the s	site during this Rep	porting Period		/						
4.	Have any fe for or at the	ederal, state, ar property during	nd/or local perm g this Reporting	its (e.g., building, d Period?	lischarge) been issued		/						
	If you answ that docum	vered YES to one	uestions 2 thr been previousl	u 4, include docur y submitted with t	mentation or evidence this certification form.								
5.	Is the site c	urrently underg	oing developme	ent?									
						Box 2							
						YES	NO						
6.	Is the currer Closed Land	nt site use cons Ifill	istent with the u	se(s) listed below?	x								
7.	Are all ICs in	n place and fun	ctioning as desi	gned?	~								
	IF THI	E ANSWER TO DO NOT COMP	EITHER QUES' LETE THE RES	TION 6 OR 7 IS NO, T OF THIS FORM.	, sign and date below a Otherwise continue.	nd							
AC	Corrective Me	asures Work P	lan must be sul	omitted along with	this form to address th	ese issu	es.						
Sig	nature of Own	er, Remedial Pa	arty or Designate	d Representative	Date	- -							

SITE NO. 932063

Box 3

Description of Institutional Controls

Parcel

Owner

161.05-3-7

OLIN CORPORATION

Institutional Control

Monitoring Plan O&M Plan

Consent Judgement 3/12/85 including IC stipulations p. 23 Permits and Easements, sections 11-24. Operation and Maintenance Manual; September 30, 2009.

- Groundwater Quality Monitoring.
- Leachate Monitoring.
- Creek Sediment Monitoring.

161.05-5-12

OLIN CORPORATION

Monitoring Plan O&M Plan

Consent Judgment 3/12/85 including IC stipulations p. 23 Permits and Easements, sections 11-24.

- Groundwater Quality Monitoring.
- Leachate Monitoring.
- Creek Sediment Monitoring.

Box 4

Description of Engineering Controls

<u>Parcel</u>

Engineering Control

161.05-3-7

Cover System

Groundwater Containment Leachate Collection Fencing/Access Control

- Realignment of Cayuga Creek from the waste.
- Fully circumscribed soil-bentonite slurry wall barrier.
- Double flexible membrane liner cap.
- Perimeter Leachate Collection System with discharge to NFWWTP.
- Final cover soil cap.
- Perimeter chain link and portions of wooden privacy fencing with locked gates.

161.05-5-12

Cover System Groundwater Containment Leachate Collection Fencing/Access Control

- Realignment of Cayuga Creek away from the waste.
- Fully circumscribed soil-bentonite slurry barrier wall.
- Double flexible membrane liner cap.
- Perimeter leachate collection system with discharge to the NFWWTP.
- Final soil cover cap.
- Perimeter chain link with portions of wooden privacy fencing with locked gates.

Periodic Review Report (PRR) Certification Statements

- 1. I certify by checking "YES" below that:
 - a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;
 - b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES NO

- 2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:
 - (a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;
 - (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;
 - (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;
 - (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and
 - (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO

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

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

Signature of Owner, Remedial Party or Designated Representative Date

IC CERTIFICATIONS SITE NO. 932063

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

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

print name	at 3855 N. Occe 5	E. Chiefad TN 37312
am certifying as	Corporation	(Owner or Remedial Party)
Signature of Owner, Remedial Pa	ails Section of this form.	2/25/2021 Date / 2021

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 print business address TN 373/I am certifying as a Qualified Environmental Professional for the OUN CORPOLATION (Owner or Remedial Party)

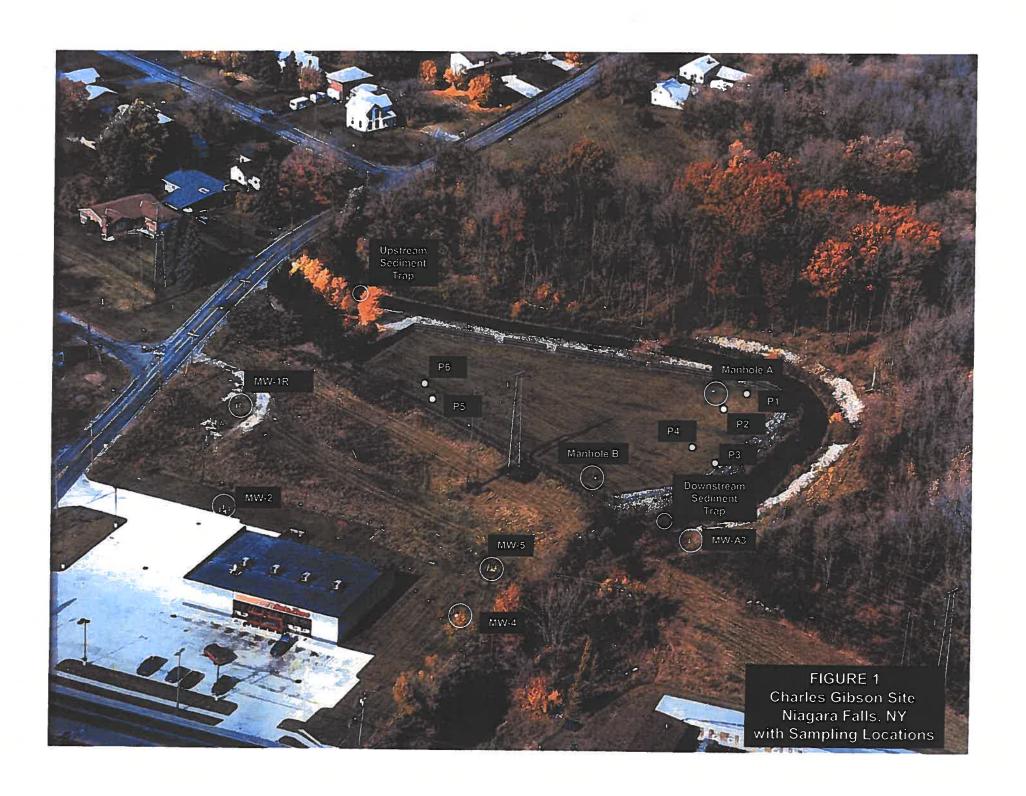
Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)

Date

Attachment B

Site Features Map
Figure 1



<u>Attachment C</u>

Field Sampling Forms

Horriba Calibration

Horriba u-52

Model number TPJ17T2S

Before Calibration

After Calibration

Temp 18.20 C

Temp 18.49 C

pH 4.04

pH 3.97

ORP 222

ORP 267

SPEC COND 4.58 mS/cm

SPEC COND 4.49 mS/cm

Calibration Solution

Code: UEAC6004-P

Lot #: 0GH063

Expires: Aug21

RECORDED BY: CHELS JONES	SAMPLE ID: U5-1-051825
SAMPLED BY: CURIS JONES	SAMPLING EVENT/DATE: SEDIMENT
COMPANY: JENENSUN	MONITORING WELL:
	CONDITION:
GROUNDWATER PURGE DATA PURGE	
DEPTH TO BOTTOM FROM TOP OF RISER:	NOTE: ALL GIBSON SITE (FT.) MONITORING WELLS ARE
DEPTH TO WATER FROM TOP OF RISER:	(FT.) 2-INCH DIAMETER STAIN-
WATER COLUMN:	(FT.) JESS STEEL. WELL DEPTHS:
2" DIA. WELL CONSTANT:	0.16 MW-1R 12.10'
ONE-WELL VOLUME=	(GALS) MW-2 12.13'
PURGE METHOD: BOTTOM OF WELL/SILT BUILDUP:	MW-A3 11.95' MW-4 13.75' MW-5 15.28'
PURGE START TIME: PURGE OBSERVATIONS: STOP TH	ME:
FIELD PARAMETER MEASUREMENTS:	
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2	HD.
3	
4/	
TOTAL VOLUME PURGED:	
GROUNDWATER OR SEDIMENT SAMPLING DATA:	SAMPLE DATE: 5 (18 20
MEDIA: GROUNDWATER	SAMPLE TIME: 1015
CREEK SEDIMENT	
LOCATION: UY STILLAM	
SAMPLE METHOD: SEDIMENT THAP	
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QC SAMPLES TAKEN: A DUPLICATE WAS T	TAKEN HERE LABELED M5-1-05820 945
OTHER OBSERVATIONS/COMMENTS: SAWFIE	TIGHTEN AT 105 ON 5/18/20
	SC measured
Note: specific conductivity formula to 25 degrees Celciu	us: SC(25)= {{T-25)(0.02)}+1

RECORDED BY: Chus Jones	SAMPLE ID: D5-01- 05(820
SAMPLED BY: CHMS JUNES	SAMPLING EVENT/DATE: SEDIMENT
COMPANY: SEVENSON	MONITORING WELL:
	CONDITION:
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	NOTE: ALL GIBSON SITE
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DEPTH TO WATER FROM TOP OF RISER:	(FT.) 2-INCH DIAMETER STAIN-
WATER COLUMN:	(FT.) LESS STEEL. WELL DEPTHS:
2" DIA_WELL CONST <u>ANT:</u>	<u>0.16</u> MW-1R 12.10'
ONE WELL VOLUME=	(GALS) MW-2 12.13'
DUDGE METUOD	MW-A3 11.95'
PURGE METHOD: BOTTOM OF WELL/SILT BUILDUP:	MW-4 13.75' MW-5 15.28'
PURGE START TIME: STOP TIL	
PURGE OBSERVATIONS:	
FIELD PARAMETER MEASUREMENTS:	
SPECIFIC	
WELL CONDUC	
VOLUME pH umhos/cr	
1	
2	
3	
4	
5	
TOTAL VOLUME PURGED:	
/	
GROUNDWATER OR SEDIMENT SAMPLING DATA:	SAMPLE DATE: 5(18/20
MEDIA: GROUNDWATER	SAMPLE TIME: 930
CREEK SEDIMENT 🔍	2
LOCATION: DOWN STREAM	
SAMPLE METHOD: SEDIMENT THAP	
SAMPLING OBSERVATIONS:	
OAM LING OBSERVATIONS.	
QC SAMPLES TAKEN:	
OTHER OBSERVATIONS/COMMENTS: Spra	100 NT 930 ON 5 18 20
	SC measured
Note: specific conductivity formula to 25 degrees Celciu	



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

60754

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

CHANES GIBSON - OL		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																							
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RECORDED BY: CHILIS JOINES	CAMPIE ID. (. C.)
	SAMPLE ID: ()5-1-092220
00400404	SAMPLING EVENT/DATE: 9 22 20
	MONITORING WELL: NIA
	CONDITION:
GROUNDWATER PURGE DATA PURGE DA	
DEPTH TO SOTTOM FROM TOP OF RISER:	NOTE: ALL GIBSON SITE (FT.) MONITORING WELLS ARE
DEPTH TO WATER FROM TOP OF RISER:	
WATER COLUMN:	(FT.) 2-INCH DIAMETER STAIN-
2" DIA. WELL CONSTANT:	(FT.) LESS STEEL. WELL DEPTHS:
ONE WELL VOLUME=	
	(GALS) MW-2 12.13' MW-A3 11.95'
PURGE METHOD: BOTTOM OF WELL/SILT BUILDUP:	MW-4 13.75'
PURGE START TIME:	MW-5 15.28'
PURGE OBSERVATIONS:	
FIELD PARAMETER MEASUREMENTS:	
SPECIFIC SOUDLISTS	
CONDUCTION	
1 pH umhos/cm)	(C OR F) NOTES:
2	
3	
4	
5	
TOTAL VOLUME PURGED:	
GROUNDWATER OR SEDIMENT SAMPLING DATA:	SAMPLE DATE: 9 22 20
MEDIA: GROUNDWATER	SAMPLE TIME: 950
CREEK SEDIMENT	
OCATION: UPSTILLERY	
SAMPLE METHOD: SEDIMENT TRAP	
SAMPLING OBSERVATIONS: LIMITED VOLUM	AG.
RC SAMPLES TAKEN: NONE	
THER OBSERVATIONS/COMMENTS:	
ote: specific conductivity formula to 25 degrees Celcius: So	SC measured
A \$143 (1) Applicant to 20 degrees Celcius. St	U(20)- {{1-20}(U.U2)}+1

RECORDED BY: CHICAS , DINES	SAMPLE ID: 15-1-092220
SAMPLED BY: CAMES JONES	SAMPLING EVENT/DATE: 9(22/20
COMPANY: 5 EVENSUA	MONITORING WELL: NIA
	CONDITION:
GROUNDWATER PURGE DATA PURGE	
DEPTH TO BOTTOM FROM TOP OF RISER:	NOTE: ALL GIBSON SITE (FT.) MONITORING WELLS ARE
DEPTH TO WATER FROM TOP OF RISER:	
WATER COLUMN:	(FT.) 2-INCH DIAMETER STAIN-
2" DIA. WELL CONSTANT:	(FT.) LESS STEEL WELL DEPTHS:
ONE WELL VOLUME=	0.16 MW-1B 12.10'
CIAT AAETT AOTOME	(GALS) MW-2 12.13' MW-A3 11.95'
PURGE METHOD:	MW-4 13.75'
BOTTOM OF WELL/SILT BUILDUP: PURGE START TIME: STOP TI	MW-5 15.28'
PURGE START TIME: PURGE OBSERVATIONS: STOP TI	IME:
FIELD PARAMETER MEASUREMENTS:	
SPECIFIC	
WELL VOLUME pH umbos/or	1
VOLUME pH umhos/cr	m) (C OR F) NOTES:
2	
3	
4	
5	
OTAL VOLUME PURGED:	
ROUNDWATER OR SEDIMENT SAMPLING DATA:	SAMPLE DATE: O Land
	SAMPLE DATE: 01/22/20
IEDIA: GROUNDWATER CREEK SEDIMENT	SAMPLE TIME: (017
OREER SEDIMENT	
OCATION: DOWNSTREAM	
AMPLE METHOD: SEDIMENT TRAP	
AMPLING OBSERVATIONS: _ Umited vo	LAMAF
C SAMPLES TAKEN: H BURD DUP W	AS TAKEN HERE LABRAD MS-1-0922
THER OBSERVATIONS/COMMENTS:	
The state of the s	
te: specific conductivity formula to 25 degrees Celcius	SC measured
MA (I) - D. III). 3U(20)= \{\(1-25\\(U.U2\)\}+1



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003813

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE Project Number CHARLES GIBSING - OLIN 1229 ANALYSIS REQUESTED (Include Method Number and Container Preservative) Report CC PRESERVATIVE ADAM CALLINGER ADAM CALLINGER Ç Company/Address DLIN CORP Preservative Key

0. NONE CONTAINERS U. NONE
1. HCL
2. HNO3
3. H2SO4
4. NaOH
5. Zn. Acetate
6. MeOH
7. NaHSO4 3835 NORTH OKNEE ST 37312 CLEVELAND . NUMBER OF 423 836 4989 ABCrisinger Colin com 8. Other Sampler's Printed Name CHELL CHIM REMARKS/ **ALTERNATE DESCRIPTION** FOR OFFICE USE SAMPLING ONLY LAS ID **CLIENT SAMPLE ID** DATE TIME MATRIX US -1. 092220 7/22/20 950 CJ3, ms - 1- 092220 935 ı. . ೧೧೮ DS-1.092220 1 22 23 SW ١ 13:5 TEMP BLANIZ SPECIAL INSTRUCTIONS/COMMENTS **TURNAROUND REQUIREMENTS** REPORT REQUIREMENTS INVOICE INFORMATION LIMITED VOLUME WAS CALCUTED RUSH (SURCHARGES APPLY) I. Results Only PO . DL II. Results + QC Summaries . 1 day _____2 day _____3 day (LCS, DUP, MS/MSD as required) . 4 day5 day BILL TO: K. Standard (10 business days-No Surcharge) OLIN III. Results + QC and Calibration Summaries REQUESTED REPORT DATE IV. Data Validation Report with Raw Data STAMO See QAPP STATE WHERE SAMPLES WERE COLLECTED Edata ____No RELINQUISHED BY RECEIVED BY RELINQUISHED BY RECEIVED BY RELINCUISHED BY RECEIVED BY UPS Signature Signature Signature Signature Signature Printed Name
CLIMA Junio **Printed Name** Printed Name Printed Name nated Name Printed Name SERNIUM Fem 3/22/20 Date/Time Date/Time 1500 Date/Time Date/Time Date/Time Distribution, White - Lab Copy: Yellow - Return to Originator

RECORDED BY: Jovies	SAMPL	EID: MAL	1 00 1 003170
SAMPLED BY: Junes		1.7	DATE: ALLMAN Glasta
COMPANY: SEVEN,		ORING WELL	
	CONDIT		
GROUNDWATER PURGE DATA	PURGE DATE:	1014.	0
			NOTE: ALL GIBSON SITE
DEPTH TO BOTTOM FROM TOP OF RISE		(FT.)	MONITORING WELLS ARE
DEPTH TO WATER FROM TOP OF RISEF	₹: 11.63	(FT.)	2-INCH DIAMETER STAIN-
WATER COLUMN:	3 65	(FT.)	LESS STEEL. WELL DEPTHS
2" DIA. WELL CONS		16	MW-1R 12.10'
ONE WELL VOLUM	E= 0.58	(GALS)	MW-2 12.13'
PURGE METHOD:			MW-A3 11.95' MW-4 13.75'
BOTTOM OF WELL/SILT BUILDUP:		-	MW-4 13.75' MW-5 15.28'
PURGE START TIME: PURGE OBSERVATIONS:	STOP TIME:		
FIELD PARAMETER MEASUREMENTS:			
WELL	SPECIFIC		
VOLUME pH	CONDUCTIVITY	TEMP. (C)OR F)	NOTES:
INT \$ 6,39	1.95	15.23 C	NOTES: SLICHLY Training
12 6.43	1.69	15.10	1001
1.3 6.45	1.66	15.15	Clu-
34 6.47	1.66	15.05	(lon.
5 6.19	1.66	14.87	ches
Dily			
TOTAL VOLUME PURGED: AMON US	: جدال من		
RETURNED - 9/28/ 20 TO SIMM			
SROUNDWATER OR SEDIMENT SAMPLIN		SAMPLE D	ATE: 9 25 20
MEDIA: GROUNDWATER *			
CREEK SEDIMENT	-	SAMPLE TI	ME: 160
OCATION: WW -5	-		
SAMPLE METHOD: PERMITTIE PUM	DEDI LATED T	UBINC.	
AMPLING OBSERVATIONS:			
C SAMPLES TAKEN: ms mso TA	nar liene		
THER OBSERVATIONS/COMMENTS:		0	
ote: specific conductivity formula to 25 degre	es Celcius: SC(25)=	SC measure ((T-25)(0.02)))+1
		11. 20/(0.02)	

SAMPLED BY:	clares		PLE ID: MW	-4. 072820
		SAMI	PLING EVENT/D	ATE: ANNUAL 9/28/2
COMPANY: 5	sevenson	MON	ITORING WELL:	mw 4
		CONI	DITION: C	1000
GROUNDWATE	R PURGE DATA	PURGE DATE:		
DEPTH TO BOT	TOM FROM TOP OF RIS	SER: 13.75	(FT.)	NOTE: ALL GIBSON SITE MONITORING WELLS ARE
DEPTH TO WAT	ER FROM TOP OF RISE	R: 8 27	(FT.)	2-INCH DIAMETER STAIN-
	WATER COLUMN:	5.48	(FT.)	LESS STEEL. WELL DEPT
1	2" DIA. WELL CON	STANT:	0.16	MW-1R 12.10'
1	ONE WELL VOLUM	NE= ,87	(GALS)	MW-2 12.13'
PURGE METHO	٦٠			MW-A311.95'
BOTTOM OF WE	LL/SILT BUILDUP:		<	MW-4 13.78' MW-5 15.28'
PURGE START T	TIME:	STOP TIME:		10.20
PURGE OBSERV	ATIONS:			
FIELD PARAMET	ER MEASUREMENTS:			
		SPECIFIC		
WELL VOLUME	m1.1	CONDUCTIVITY	TEMP.	
101 (NC)	pH	umhos/cm) ~, (~	(C OR F)	NOTES:
1 8	6.73	<u>। ती</u> । ५२	15 28	TURRIE ANTO 1
2 3	6.98 6.79	1.62	15. 82	(Kenk
3 4	0 17	1.67	15,97	cethin
	Drs			
ч Б	-			
ч 5	•			
	PURGED US.			
	PURGED: VELL VEL	ot Day. Retur	web on 4(:	exter to somewhite
TOTAL VOLUME			wep w 9(:	exter to somewhite
TOTAL VOLUME	PURGED: WELL WELL		SAMPLE DA	
TOTAL VOLUME	OR SEDIMENT SAMPL		SAMPLE DA	ATE: 1/1/10
TOTAL VOLUME GROUNDWATER MEDIA: GROU	OR SEDIMENT SAMPL			ATE: 1/11/10
TOTAL VOLUME I GROUNDWATER MEDIA: GROUI CREEK	OR SEDIMENT SAMPL NDWATER SEDIMENT	ING DATA:	SAMPLE DA	ATE: 1/1/10
TOTAL VOLUME GROUNDWATER MEDIA: GROUN CREEK LOCATION:	OR SEDIMENT SAMPL NDWATER (SEDIMENT		SAMPLE DA	ATE: 1/1/10
TOTAL VOLUME I GROUNDWATER MEDIA: GROUI CREEK	OR SEDIMENT SAMPL NDWATER (SEDIMENT	ING DATA:	SAMPLE DA	ATE: 1/1/10
GROUNDWATER MEDIA: GROUND CREEK LOCATION: SAMPLE METHOD	OR SEDIMENT SAMPL NDWATER (SEDIMENT WOO'T DY AVIO	ING DATA: - LOTE PROPERTY - LOTE PROPERTY	SAMPLE DA SAMPLE TII TUBING	ATE: 1/1/10
GROUNDWATER MEDIA: GROUND CREEK LOCATION: SAMPLE METHOD SAMPLING OBSER	OR SEDIMENT SAMPL NDWATER (SEDIMENT WO - 1 DV AVTO C PERMITAGE PUR RVATIONS: 50ME	ING DATA: - LUTE PRUPERTY - LUTE PRUPERTY - DEPLICATION - DEACH SEDIMEN	SAMPLE DA SAMPLE TII TUBING	ATE: 1/1/10
GROUNDWATER MEDIA: GROUND CREEK LOCATION: SAMPLE METHOD SAMPLING OBSER	OR SEDIMENT SAMPL NDWATER (SEDIMENT WOO'T DY AVIO	ING DATA: - LUTE PRUPERTY - LUTE PRUPERTY - DEPLICATION - DEACH SEDIMEN	SAMPLE DA SAMPLE TII TUBING	ATE: 1/1/10
GROUNDWATER MEDIA: GROUND CREEK LOCATION: SAMPLE METHOD SAMPLING OBSERVED COMPLES TAKE	OR SEDIMENT SAMPL NDWATER (SEDIMENT WOO'T DY AVIO PERMITANE DY RVATIONS: 50ME KEN: BUIND DY	ING DATA: - Lorb Professor -	SAMPLE DA SAMPLE TIL TUBIOL TUBIOL MENE 940	ATE: 1/28/20 ME: 925
GROUNDWATER MEDIA: GROUND CREEK LOCATION: SAMPLE METHOD SAMPLING OBSERVED COMPLES TAKE	OR SEDIMENT SAMPL NDWATER (SEDIMENT WO - 1 DV AVTO C PERMITAGE PUR RVATIONS: 50ME	ING DATA: - LUTE PRUPERTY - LUTE PRUPERTY - DEPLICATION - DEACH SEDIMEN	SAMPLE DA SAMPLE TIL TUBIOL TUBIOL MENE 940	ATE: 1/28/20 ME: 925
GROUNDWATER MEDIA: GROUND CREEK LOCATION: SAMPLE METHOD SAMPLING OBSERVED COMPLES TAKE	OR SEDIMENT SAMPL NDWATER (SEDIMENT WOO'T DY AVIO PERMITANE DY RVATIONS: 50ME KEN: BUIND DY	ING DATA: - Lorb Professor -	SAMPLE DA SAMPLE TIL TUBIOL TUBIOL MENE 940	ATE: 1/28/20 ME: 925

RECORDED BY: 1 wes		SAMPLE	ID. No.		
	_			-A3	
	-		G EVENT/[-
COMPANY: SEVENSON			RING WELL		13
		CONDITIO	ON:	GOO	
GROUNDWATER PURGE DATA	PURGE DA	ATE:			
DEPTH TO BOTTOM FROM TOP OF RISE	· D.		· (FT.)		LL GIBSON SITE
	*		(FT.)		RING WELLS ARE
DEPTH TO WATER FROM TOP OF RISER	1/2		_(FT.)	2-INCH	DIAMETER STAIN-
WATER COLUMN:			(FT.)	LESS ST	EEL. WELL DEPTHS:
2" DIA. WELL CONS	TANT:	0.16	<u> </u>	MW-1R	12.10'
ONE WELL VOLUME	:=		(GALS)	MW-2	12.13'
PURGE METHOD:			2	MW-A3 MW-4	11.95° 13.75°
BOTTOM OF WELL/SILT BUILDUP:				MW-5	15.28'
PURGE START TIME:	STOP TIME	E:			
PURGE OBSERVATIONS:					
FIELD PARAMETER MEASUREMENTS:					
	SPECIFIC				
WELL	CONDUCT	IVITY	PEMP.		
VOLUME pH	umhos/cm)		(C OR F)	_	NOTES:
1					_
2	\rightarrow		······		
3					
4					
5			$\overline{}$		
TOTAL VOLUME PURGED:					
GROUNDWATER OR SEDIMENT SAMPLIN	IG DATA:		SAMPLE [DATE:	
MEDIA: GROUNDWATER			04451.5		
CREEK SEDIMENT	**		SAMPLE 1	IME:	
LOCATION:	•				
LOOATION.	······································				
SAMPLE METHOD:					
SAMPLING OBSERVATIONS:					
QC SAMPLES TAKEN:					
OTHER OBSERVATIONS/COMMENTS:	N6 500	· 0. * 'i	Dry		
ODDLINATIONOJONINIEN 13.	NO SAP	IVLE	שייטי		
			<i>,</i>		
Note: specific conductivity formula to 25 degre	eee Celaius		SC measur		
Total opening conductivity formula to 25 degr	ses Celcius.	3U(23)≅	{{T-25)(0.0	<i>4)}</i> +7	



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

-			_		
Ü	11	14	1	19	7
4	$\boldsymbol{\varphi}$	~	1	1	. 4

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

Project Number																						-		
CHARLES GIBSON			ANALYSIS REQUESTED (Include Method Number and Container Preservative)																					
Project Manager		Report CC				PDE	SERVAT	TR/E		15			Γ	T	Г	Т	Т	$\overline{}$		T^{-}		Т		
ADEIA CALLIPLA		<u> </u>	anals re	un ver		I TAL	SCHVA	IIVE	<u> </u>	0		0												
Company Address SUN 1014						SE SE			/	/ /	/ /									$\overline{}$	7	7	Preservat 0. NONE 1. HCL	ive Key
3855 NORTH &	DEF 3T					OF CONTAINERS		/					/,	./,								/	1. HCL 2. HNO ₃ 3. H ₂ SO ₄ 4. NaOH	ı
CLEVELAND TH						֓֞֝֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	/	, ३/	/ /	ر ۾	/ ,	/ /	# \$ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \		"	/ ,	/ ,	/ /	/	/ .	/ /	'	 Zn. Ac MeOH 	cetate 1
+23 336 4989 Abl sanger Colonicum				~	NUMBER	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3			8/8	88/	METALS TO	S S S										 NaHS Other 		
Sempler's Sympture		Sampler's	Printed Name	<i>ڪت</i> م		ş	18	<i>ૢૺ</i> ૽ૢૼ૾ૢ૽	ૢૺૺઌૢ૽ૺૼ૾ૢૄ			A SELECTION OF THE PERSON OF T			/							R	EMARKS/	
CLIENT SAMPLE ID	FOR OFFIC		SAMI DATE	PLING TIME	MATRIX											,						TERNA	IE DESCRI	PHON
FIELD GLANK - 5.7820			3/28/20	345	(SW	ч		2		۷										\vdash				
MW-5- 392820			9 28 10	900	(5.0)	4		4		4							\vdash			 	ins	1	- /:-	i
MW-4- 272520			9/20/20	925	(,,,,	4		2		2							_			<u> </u>	10.5	1 20 3	12 Air	CUME
MUJ 7 35.2820			9/24/20	940	(,,,	4		Z		2			$\overline{}$							\vdash				
M4-6- 292820			9/20/20	1200	(5~	4		٤		2.														
TEMP GLAIDIN				-)	1															Ena	LOC I		
																					10.47	100	ام ل	4-2
																				Ш				
		i																						
	Total State																							
SPECIAL INSTRUCTIONS/COMMENTS							- 1	TUF	RNAR	DUND	REQUI	REMEN	(TS		REPO	RT RE	OUIRE	MENT	 s	Т	INVC	ACE IN	FORMATI	ON
Metale SHIPPEO IN ON	E COR	<u>_ در</u>					- [RUSH	(SURC	HARGES	APPLY)		REPORT REQUIREMENTSL Results Only										···
									_ 1 day		day	3 day		12			Summa			PO#				
							[-	_	_ 4 day	5	day			1	(LCS, D	UP, MS	/MSD as	required	Q	BILL	70.			
							-	0	Stand	ard (10 b	rusiness d	aya-No Si	ncharge)	1—	III. Resu Summa		Cand Ca	alibration	ij.		<u>ී</u> ව	LIN	1	
							- [1				RT DATI	Ē					on Been	rt with R	C	.1				
See QAPP							-		(1637)	با ۱۰ دور	3				. 14. 0010	чанцац	oir nepo	at was n	aw Dau					
STATE WHERE SAMPLES WERE CO	DLLECTED													1	Edata	_	_Yes	N	lo					
RELINQUISHED BY		ECEIVED	BY	RELI	NQUISHED B	Υ			F	RECEIV	ED BY				RE	LINQU	ISHED	BY		+		RECEIV	ED BY	
	_	<u>PS</u>																						- !
Signature	Signature			Signature			Si	gnature	,					Signatu	re		_			Signal	ture			
Printed Name	Printed Name			Printed Name			Pr	inted N	ame			_		Printed	Name		_			Printe	Printed Name			
366 7636 6	Firm			Firm			Fir	m						Firm						Firm				
Date/Time 9 28 20 ,500	Date/Time			Date/Time		Date/Time						Date/Time (Date/I	Date/Time					

Attachment D

Site Inspection Forms

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS
DATE: 3-16-20 TIME: 12%
INSPECTOR: WALKER COMPANY: SEVENSON
WEATHER: JUNNY 38° F
REASON FOR INSPECTION (QUARTERLY OR OTHER): REDICUP BATTERY IN AUTODIALE
GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE (Note: For general site conditions note existence of bare areas (number, size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)
COMMENTS
ACCESS ROAD A
COVER VEGETATION
TREES
LITTER A
EROSION (CAP)
EROSION (BANK)
SECURITY:
FENCE/LOCKS A
PIEZOMETERS/LOCKS A
MONITORING WELLS/LOCKS
MANHOLES/LIDS/LOCKS
ELECTRICAL PANEL
ADDITIONAL COMMENTS: WALKER ON SITE WITH TEMP-PRES INC
REPRESENTITIVES TO REPLACE THE BACKUP BUTTERY IN THE
AUTO DINLER. I ALSO DID A PERIMETER SITE WALK
INSPECTION TO CHECK OUT THE SITE. ALL LOOKED GOOD.

THIS FORM TO BE USED FOR	RQUARTERLY	AND ALL O	THER SITE INSPECTIONS
DATE: 3 19 20	TIME:	c08	
INSPECTOR: CAMIS JONES	,c	COMPANY:	SEVENSIN
WEATHER: كيلي در ضوم	į.		145
REASON FOR INSPECTION (Q	QUARTERLY OF	₹ OTHER <u>):</u>	
and rodent burrows.	site conditions not), ponded water, For site security	ote existence , stressed veg tv. note abse	PTABLE A=ACCEPTABLE e of bare areas (number,size), cracks, egetation, soil discoloration or seeps, ence of locks, gates open or damaged, ny other unusual occurences.)
200000000000000000000000000000000000000	_	cc	OMMENTS
ACCESS ROAD	<u>A</u>		
COVER VEGETATION TREES	<u>4</u>		
	<u> </u>		
LITTER EBOSION (CAR)	<u>A</u>		
EROSION (CAP)	4	-	
EROSION (BANK)	A		
SECURITY:			
FENCE/LOCKS	_A_		
PIEZOMETERS/LOCKS	A	•	
MONITORING WELLS/LOCKS			
MANHOLES/LIDS/LOCKS	A		
ELECTRICAL PANEL	4		
ADDITIONAL COMMENTS:			
SITE WAS SECURE U	ALLEA (LICE)	1 1 2 3 4	
Street Company	YOU WHOME	<u> (205</u>	HERE CUBED.

THIS FORM TO BE USED FOR O	TIME: 939	OTHER SITE INSPECTIONS
INSPECTOR: M WALKE	COMPANY:	SEVENSON
WEATHER: Packly Cloudy		
REASON FOR INSPECTION (QU	IARTERLY OR OTHER	: 2nd Quarton site inspection 2020
subsidence (sinking), լ and rodent burrows. F	conditions note existent conded water, stressed v for site security, note abs	EPTABLE A=ACCEPTABLE ce of bare areas (number,size), cracks, vegetation, soil discoloration or seeps, sence of locks, gates open or damaged, any other unusual occurences.)
	(COMMENTS
ACCESS ROAD COVER VEGETATION TREES	<u>A</u>	SOME BUTE SPOTS ON CAP DEMEROPING
LITTER		
EROSION (CAP) EROSION (BANK)	<u>A</u> _	SOME BIRE Spots ON CAP - NO DROSION
SECURITY:		
FENCE/LOCKS PIEZOMETERS/LOCKS MONITORING WELLS/LOCKS MANHOLES/LIDS/LOCKS ELECTRICAL PANEL	A	un trom Box undre Flow motor @ MHB CRACKED
ADDITIONAL COMMENTS:	Sits book Good or	KNALL ALL LOCKS SECURE UPON
		E. Plastic junction box under
		support starts but RAMINS
		anotous we locked + in
good Repure.	11822	agiens we develop the
le les wall		

INSPECTOR: C	une bre			
LAST ATLINES.	With Collect	.5	COMPANY:	Sevenson
WEATHER: 70	° SUNMY			
REASON FOR IN	ISPECTION (QUARTERL	Y OR OTHER <u>):</u>	ANNAL CREEK BED SAMPLING
				AMMUAL GW SAMPLING 31-1 QUANTER INSPECTION
GENERAL SITE (U=UNACCE	PTARIF A=ACCEPTARIE
and ro	edent burrows.	, ponded wa For site sed	ns note existence rater, stressed ve ecurity, note abse	e of bare areas (number, size), cracks, egetation, soil discoloration or seeps, ence of locks, gates open or damaged, ny other unusual occurences.)
ACCESS ROAD		A	Cr	OMMENTS
COVER VEGETA	TION	A A		
rees	HOIN	<u> </u>		
ITTER		A		
ROSION (CAP)		A		
EROSION (CAP) EROSION (BANK)			_	
•		A		
SECURITY:				
ENCE/LOCKS				
PIEZOMETERS/LO	OCKS	Δ.	-	
ONITORING WE		A		
MANHOLES/LIDS/		A	_	
LECTRICAL PAN		A		
DDITIONAL COM	IMENTS:			
UPN ARM	AL TWO	tents	NO WAY	DEBRIS WERE FOUND ON
				EVENSOR ALEXTOD CANG FROM
DUN SELLI	مرازع ما	Abana F	inus PD	Strong up Folked By The
YOUN DE	NIBGALA	PO. TH	K TOWN SHY	ATED THEY ISNEW THE PERSON
mis owne	o the pr	of enty	AND WEN	E GOING TO ADVISE HIM to MOVE IT.
		J		

	_TIME:	900	
NSPECTOR: CLIAIS JUNES		COMPANY:	रहाका २० ०
WEATHER: 43° CLOWY			
REASON FOR INSPECTION (Q	UARTERLY	OR OTHER <u>):</u>	4th Quanter
and rodent burrows.	ponded wat For site secu	note existence er, stressed ve irity, note abse	PTABLE A=ACCEPTABLE of bare areas (number,size), cracks, getation, soil discoloration or seeps, ence of locks, gates open or damaged, y other unusual occurences.)
	•	co	DMMENTS
ACCESS ROAD COVER VEGETATION	<u>A</u>		
COVER VEGETATION TREES	<u>A</u>	_	
ITTER	<u>A</u>		
ROSION (CAP)	A	F	illeo up a Garance Bal of Litter
ROSION (CAP)	<u>A</u>		G
ECURITY:	<u>A</u>		
FENCE/LOCKS	A	RE	PAILED 6 SELTION OF STOCKABE FENCE
IEZOMETERS/LOCKS	A		. 8466
MONITORING WELLS/LOCKS	Α	_	
MANHOLES/LIDS/LOCKS	A		
LECTRICAL PANEL	A		
DDITIONAL COMMENTS:			
UPON ARRIUND SEV	でんろぎ	NOTICED	A SIX FOOT SECTION OF
THE STOCKADE BENCE	CO417 .		
		E TO FE	NCE, LAST INSPECTION SEVENS!
	ine ma		
IN TACT. REPAIRS WE DOCUMENTED THERE WE	the man	a couple	OF TENTS ON PROBERTY, THE

<u>Tables</u>

TABLE 1 **CHARLES GIBSON SITE NIAGARA FALLS, NEW YORK**

ANALYTICAL SUMMARY GROUND WATER SAMPLING 2014-2020

MONITOR WELL: MW-A3

		2014		2015		2016		2017		2018		2019		2020
Parameter	April	September	May	September	May	September	May	September	May	September	May	September	May	September
Alpha-BHC	NR	0.047U	0.047U	NR	NR	-	0.047U	NR	NR	-	-	NR	NR	-
Beta-BHC	NR	0.047U	0.047U	NR	NR	-	0.047U	NR	NR	-		NR	NR	
Gamma-BHC	NR	0.047U	0.047U	NR	NR	-	0.047U	NR	NR			NR NR	NR	
Delta-BHC	NR	0.047U	0.047U	NR	NR	-	0.047U	NR	NR			NR NR	NR	-
Hexachlorobenzene	NR	9.4U	NR	NR	NR	-	NR	NR	NR		-	NR NR	NR	

MONITOR WELL: MW-4

		2014		2015		2016		2017		2018		2019		2020
Parameter Parameter	April	September	May	September	May	September	May	September	Mav	September	May	September	May	Septembe
Alpha-BHC	NR	0.047U	0.047U	NR	NR	0.056U	0.047U		NR	0.047U	0.13	NR	NR	0.047U
Beta-BHC	NR	0.047U	0.047U	NR	NR	0.056U	0.047U	NR	NR	0.047U	0.047U	NR	NR	0.047U
Gamma-BHC	NR	0.047U	0.047U	NR	NR	0.056U	0.047U		NR	0.047U	0.48	NR	NR	0.047U
Delta-BHC	NR	0.047U	0.047U	NR	NR	0.056U	0.047U		NR	0.047U	0.18	NR NR	NR	
Hexachlorobenzene	NR	9.4U	NR	NR	NR							NIC		0.047U
Ticadoniorobenzene	INIX	9.40	INK	INIK	NR	10U	NR	NR	NR	9.4U	NR	NR	NR	9.41

MONITOR WELL: MW-5

		2014		2015		2016		2017		2018		2019		2020
Parameter	April	September	May	September	May	September	May	September	Mav	September	May	September	Mav	September
Alpha-BHC	NR	0.050U	0.047U	NR	NR	0.056U	0.047U	NR	NR	0.047U	0.1	NR	NR	0.047U
Beta-BHC	NR	0.050U	0.047U	NR	NR	0.056U	0.047U	NR	NR	0.047U	0.047U	NR NR	NR	0.047U
Gamma-BHC	NR	0.050U	0.047U	NR	NR		0.047U	NR	NR	0.047U	0.41	NR NR	NR	0.047U
Delta-BHC	NR	0.050U	0.047U	NR	NR		0.047U	NR	NR	0.047U	0.25	NR NR	NR	
Hexachlorobenzene	NR	9.4U	NR	NR	NR	10U	NR	NR	NR	9.4U	NR	NR NR	NR NR	0.047U 9.4U

Notes: Concentration in ug/l - insufficient sample

U Undetected

J Estimated value

NR Not required

Table 2 **Annual Manhole B Sampling**

CHARLES GIBSON SITE NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY ANNUAL LEACHATE SAMPLING

September 28, 2020

	MANHOLE B (MHB)
PARAMETER	
alpha-BHC	0.057U
beta-BHC	0.25
delta-BHC	2.2
gamma-BHC	0.057U
Hexachlorobenzene	10U

Notes:

U

Undetected

J Estimated value

NR

Not Required

Concentration in ug/l

Field blank was non-detect for all parameters of interest.

Data has been validated and judged acceptable as qualified.

Next hexachlorobenzene (HCB) sampling scheduled for fall 2022

TABLE 3 Charles Gibson Site Niagara Falls, New York

ANALYTICAL SUMMARY

Annual Cayuga Creek Sediment Sampling 2010 - 2020

UPSTREAM

2010	2011	2012	2013	2014	2015	2016	2017	2049	2040		-
September	September	September	September	September							2020
94	200J	17	170J	120							September
97	120J	48	190J	280							32U
33J	190U	5.5U	28U	49U							32U
52J	140J	23	28U								32U 32U
	September 94 97 33J	September September 94 200J 97 120J 33J 190U	September September September 94 200J 17 97 120J 48 33J 190U 5.5U 52 J 140 J 23	September September September September 94 200J 17 170J 97 120J 48 190J 33J 190U 5.5U 28U	September September September September September 94 200J 17 170J 120 97 120J 48 190J 280 33J 190U 5.5U 28U 49U	September September September September September September September 94 200J 17 170J 120 NS 97 120J 48 190J 280 NS 33J 190U 5.5U 28U 49U NS	September September <t< th=""><th>September September <t< th=""><th>September September <t< th=""><th>September September <t< th=""><th>September September May 97 120J 48 190J 280 NS 25 190 57U 1100 350 33J 190U 5.5U 28U 49U NS 5.6U 51U 57U 510U 59U</th></t<></th></t<></th></t<></th></t<>	September September <t< th=""><th>September September <t< th=""><th>September September <t< th=""><th>September September May 97 120J 48 190J 280 NS 25 190 57U 1100 350 33J 190U 5.5U 28U 49U NS 5.6U 51U 57U 510U 59U</th></t<></th></t<></th></t<>	September September <t< th=""><th>September September <t< th=""><th>September September May 97 120J 48 190J 280 NS 25 190 57U 1100 350 33J 190U 5.5U 28U 49U NS 5.6U 51U 57U 510U 59U</th></t<></th></t<>	September September <t< th=""><th>September September May 97 120J 48 190J 280 NS 25 190 57U 1100 350 33J 190U 5.5U 28U 49U NS 5.6U 51U 57U 510U 59U</th></t<>	September May 97 120J 48 190J 280 NS 25 190 57U 1100 350 33J 190U 5.5U 28U 49U NS 5.6U 51U 57U 510U 59U

DOWNSTREAM

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2040		
Parameter	September	September	September	September		September	September	September		2019		020
Alpha- BHC	53J	230J	9.8	29U	55	52U	7		September	September	May	September
Beta- BHC	62J	130J	37	89	100	76	10	69U	63U	NS	73U	40U
Gamma- BHC	63U	220U	5.9U	29U	52U		10	87	63U	NS	110	40U
Delta- BHC	56J	170J	18			52U	4.9U	69U	63U	NS	73U	40U
		1703	10	29U	52U	52U	15	69U	63U	NS	73U	40U

Notes

Concentration in microgram per kilogram (ug/kg)

U Not Detected

J Estimated value

NS No sample in trap

Table 4
2020 Quarterly Groundwater Elevations Summary

Piezometer Pair	3/19/2020	Inward gradient	5/18/2020	Inward gradient	9/22/2020	Inward gradient	11/12/2020	Inward gradient
P1 outside P2 inside	565.57 566.69	Outward	566.49 565.55	Inward	563.89 565.36	Outward	563.02 565.17	Outward
P3 outside P4 inside	568.44 566.59	Inward	567.55 565.41	Inward	563.63 565.19	Outward	562.54 564.89	Outward
P5 outside P6 inside	569.24 567.78	Inward	568.85 567.58	Inward	566.49 566.62	Outward	565.75 566.16	Outward
		Below 565 ft msl		Below 565 ft msl		Below 565 ft msl		Below 565 ft msl
Manhole A Manhole B	566.53 566.62	No No	560.67 560.72	Yes Yes	561.88 561.98	Yes Yes	562.03 562.09	Yes Yes

Notes: Measurement units are in feet above MSL.

Piezometers P1, P3, P5 are outside the slurry wall.

Piezometers P2, P4, P6 are located within the containment area.

NA - Not Available

Manhole monitoring:

- Maintain water level below 565 feet to prevent hydrostatic pressure buildup under concrete slab.
- Pump Manhole B as required to maintain an inward gradient.

Table 4B - Groundwater Elevations Data

			PI	EZOMETER				
DATE	P1	P2	P3	P4	P5	P6	MHA	МНВ
2/13/2008	NA	NA	NA	NA	NA	NA	NA	NA
4/3/2008	565.44	565.5	567.55	565.44	569.84	567.99	564.13	564.17
9/11/2008	566.13	565.28	566.31	565.2	568.37	567.39	564.11	564.23
11/5/2008	565.46	565.24	566.52	565.17	568.76	567.43	563.81	563.89
2/13/2009	NA	NA	NA	NA	NA	NA	NA	NA
4/2/2009	565.46	565.43	566.81	565.34	569.11	567.77	563.97	564.03
9/17/2009	566.37	565.42	566.51	565.29	568.6	567.58	563.67	563.74
11/23/2009	565.31	565.29	566.41	565.24	568.7	567.37	563.52	563.61
3/3/2010	565.27	565.42	566.18	565.22	568.83	567.57	563.77	563.84
4/14/2010	565.72	565.46	567.05	565.19	569.45	567.77	564.02	564.09
9/17/2010	566.4	565.2	564.91	565.07	567.23	566.93	564.2	563.68
11/11/2010	564.53	565.16	565.57	565.02	567.4	566.78	563.82	563.88
3/9/2011	565.05	565.49	568.11	565.42	569.75	567.88	563.94	564.03
4/19/2011	565.5	565.48	567.74	565.26	569.46	567.77	564.01	564.15
9/22/2011	565.54	565.28	565.11	565.18	567.27	567.09	563.42	563.46
11/8/2011	565.33	565.41	567.41	565.28	568.77	567.53	563.32	563.4
3/15/2012	565.36	565.54	568.25	565.34	569.23	567.75	564.21	567.27
5/22/2012	566.01	565.5	567.4	565.46	569.01	567.75	563.4	563.49
9/17/2012	564.5	565.26	564.37	565.16	566.77	566.8	563.47	563.53
11/9/2012	564.51	565.38	568.28	565.22	568.4	567.25	563.62	563.99
3/6/2013	565.32	565.54	569.56	565.34	569.35	567.83	563.92	564.09
5/13/2013	565.63	565.43	567.74	565.24	568.75	567.63	563.67	563.73
9/18/2013	565.62	565.33	566.04	565.26	567.79	567.24	563.29	563.33
11/6/2013	565.35	565.51	569.11	566.09	569.17	567.7	563.36	563.42
3/18/2014	565.34	565.49	569.24	565.19	569.35	567.76	563.86	563.89
5/9/2014	565.5	565.5	568.44	565.35	569.36	567.82	563.83	563.91
9/18/2014	565.54	566.88	565.37	568.55	567.76	567.17	563.27	563.32
12/8/2014	566.65	565.08	568.15	565.15	568.14	566.86	563.5	563.56
3/11/2015	565.15	564.68	567.45	565.15	568.39	567.07	568.8	563.89
5/27/2015	565.84	565.53	566.71	565.44	568.46	567.49	563.84	563.83
9/1/2015	565.16	565.41	565.17	565.49	567.46	577.07	563.51	563.54
11/10/2015	564.97	565.4	566.11	565.34	568.92	567.07	563.67	563.76
3/8/2016	565.08	565.67	570.39	565.46	569.34	567.67	563.51	563.59
5/27/2016	565.87	565.56	567.24	565.5	568.6	567.88	563.94	563.48
9/8/2016	564.27	565.37	563.95	565.33	566.18	566.53	563.32	563.49
11/11/2016	563.28	565.11	565.17	565.17	565.44	566.13	563.36	563.39
3/7/2017	565.22	565.58	570.75	565.37	568.68	567.07	563.64	563.74
5/30/2017	566	566.31	568.71	565.43	569.09	567.63	563.57	563.63
9/6/2017	565.12	565.48	565.88	565.49	566.6	567.33	563.4	563.49
11/21/2017	565.01	565.51	569.92	565.43	569.24	567.6	563.52	563.6
3/13/2018	565.64	565.54	568.64	565.49	568.26	567.77	563.77	563.79
5/24/2018	565.9	565.53	567.21	565.35	568.7	567.57	563.24	563.31
9/25/2018 11/18/2018	564.33	565.34	563.86	569.13	566.2	567.12	563.1	563.14
1 ' '	563.33 565.53	565.19	568.91 567.96	568.16	568.85	566.57 567.67	563.21	563.25
3/7/2019 5/21/2019	565.52	565.58	568.87	567.75	569.08 569.43	567.67	563.9	563.99 563.69
	566.11	565.58		565.46		567.88	563.63	
9/24/2019	564.91	565.35	564.71	565.22	567.9	567.17	562.94	563.03
11/6/2019	564.74	565.4	567.51 568.44	565.19	568.85 560.24	567.36	563.08	563.14
3/19/2020	565.57 566.40	566.69		566.59	569.24	567.78	566.53	566.62
5/18/2020	566.49	565.55	567.55	565.51	568.85	567.58	560.67	560.72
9/22/2020	563.89	565.36	563.63	565.19	566.49	566.62	561.88	561.98
11/12/2020	563.02	565.17	562.54	564.89	565.75	566.16	562.03	562.09
3/17/2021	563.99	570.51	567.72	565.28	568.79	567.12	562.61	562.66
5/12/2021	565.47	565.44	568.11	565.18	568.62	567.15	562.87	562.94

Table 4B - Groundwater Elevations Data

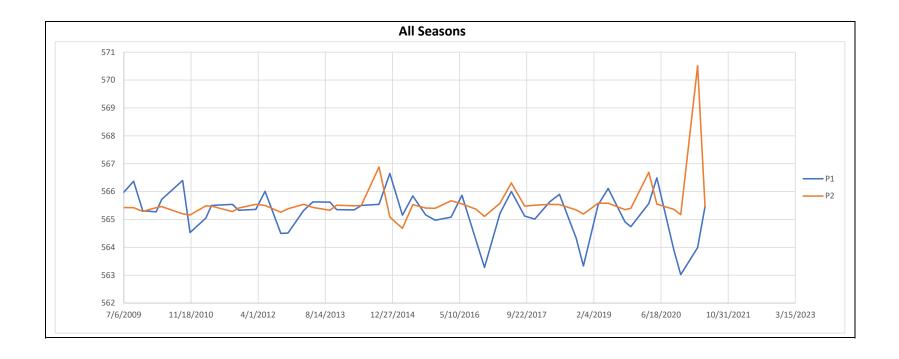


Table 4B - Groundwater Elevations Data

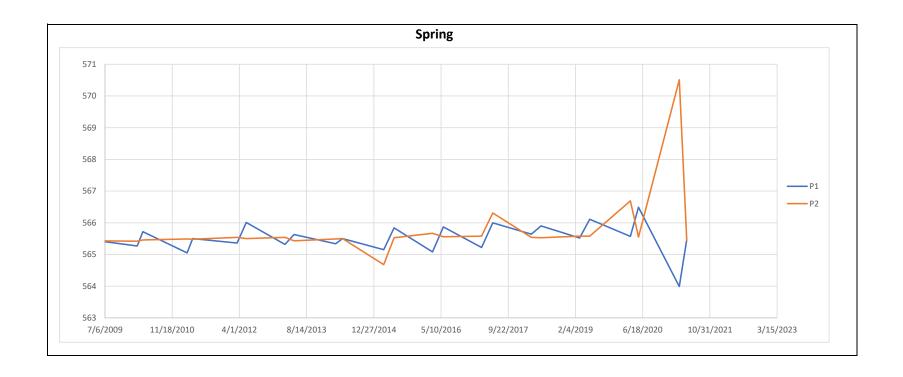


Table 4B - Groundwater Elevations Data

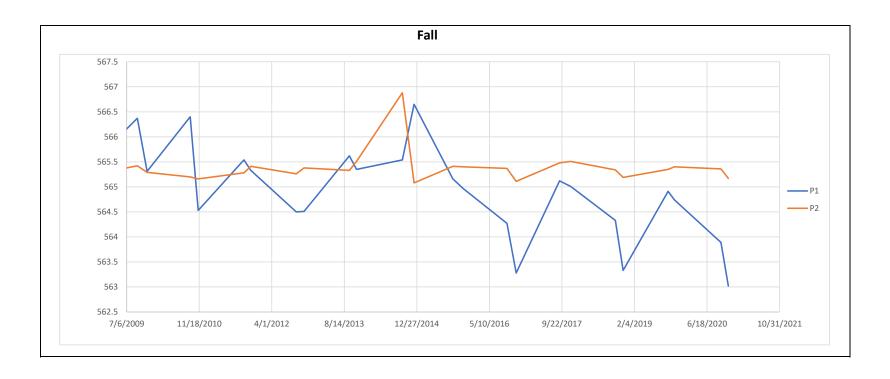


Table 4B - Groundwater Elevations Data

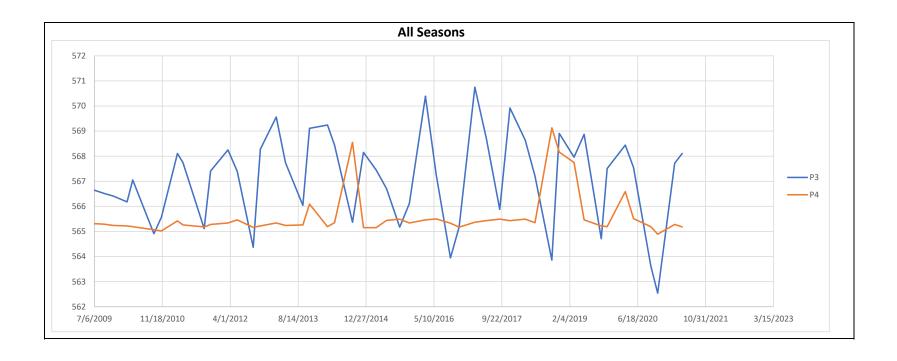


Table 4B - Groundwater Elevations Data

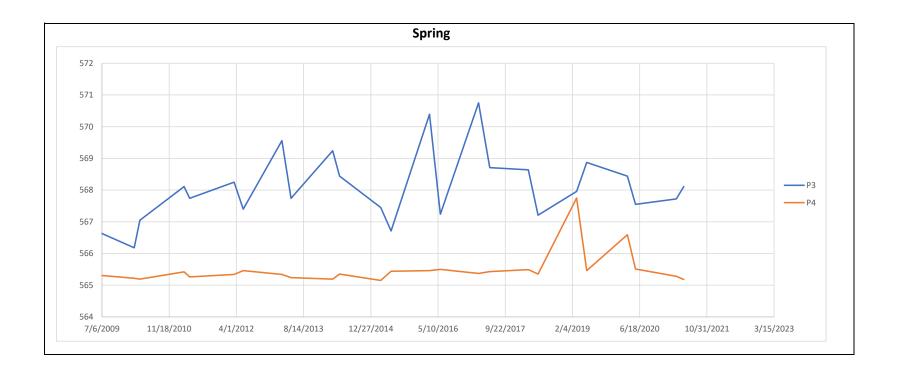


Table 4B - Groundwater Elevations Data

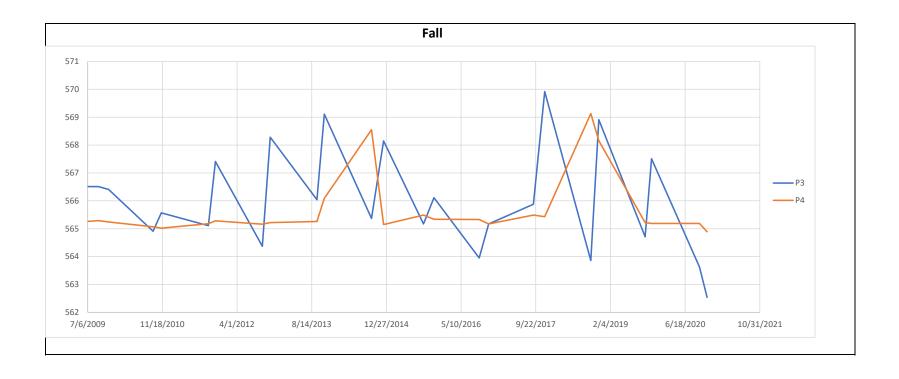


Table 4B - Groundwater Elevations Data

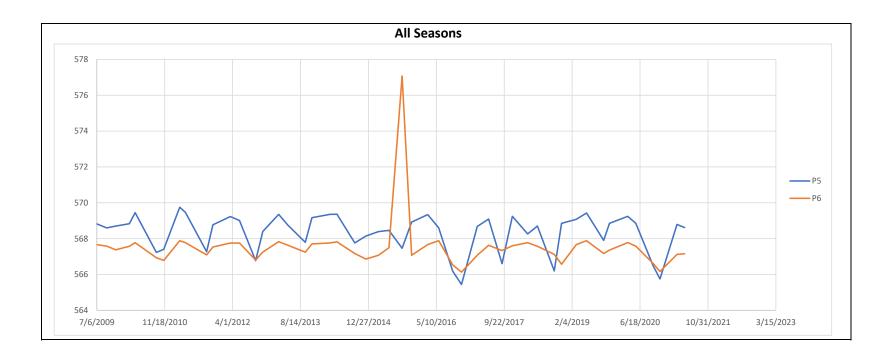


Table 4B - Groundwater Elevations Data

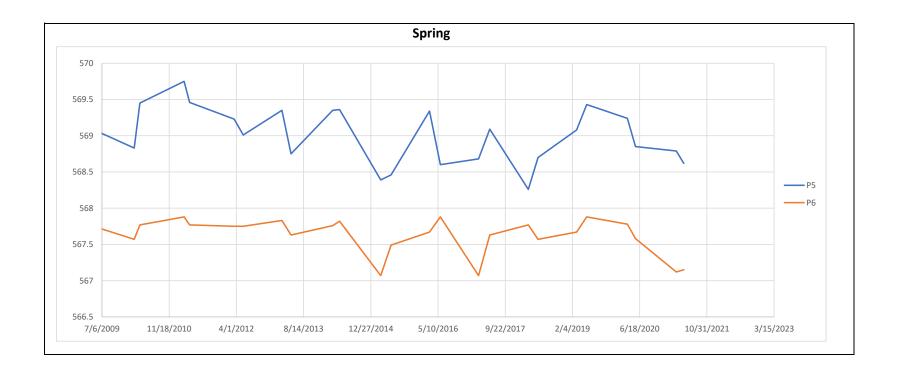


Table 4B - Groundwater Elevations Data

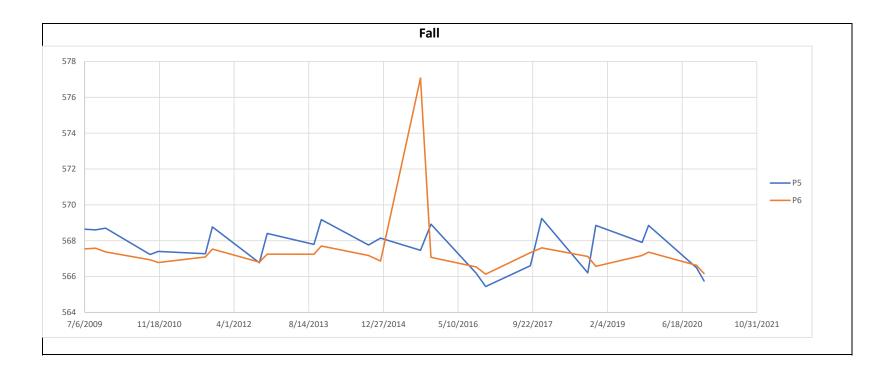


Table 4B - Groundwater Elevations Data

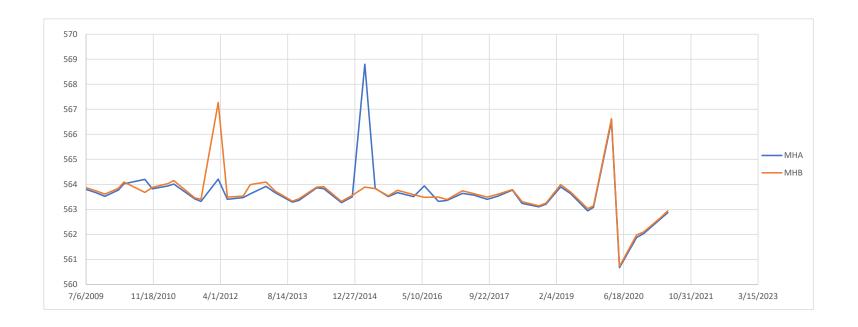


Table 5 Olin Corp. Gibson Site Discharge Volumes

Monthly Discharge Volumes 2020

Summary of Yearly Discharge Volumes

Date	Volume (gallons)
2010	28,118
2011	40,625
2012	29,623
2013	46,766
2014	33,564
2015	18,537
2016	28,172
2017	35,492
2018	33,837
2019	47,182
2020	297,712
TOTALS	382,103

Month	Volume (gallons)
Jan	3
Feb	0
Mar	0
*Apr	45,850
*May	251,858
Jun	0
Jul	0
Aug	0
Sep	0
Oct	0
Nov	1
Dec	0
Total	297,712

^{*} Due to inconsistent inward hydraulic gradients, we lowered the setpoints on the system controls. We installed new level sensors and reset the set points to keep wet well level lower. The result of this ended up pumping down the wet well and all the water that was hydraulically backed up throughout the site. Once the water pumped down, further pumping evened out.

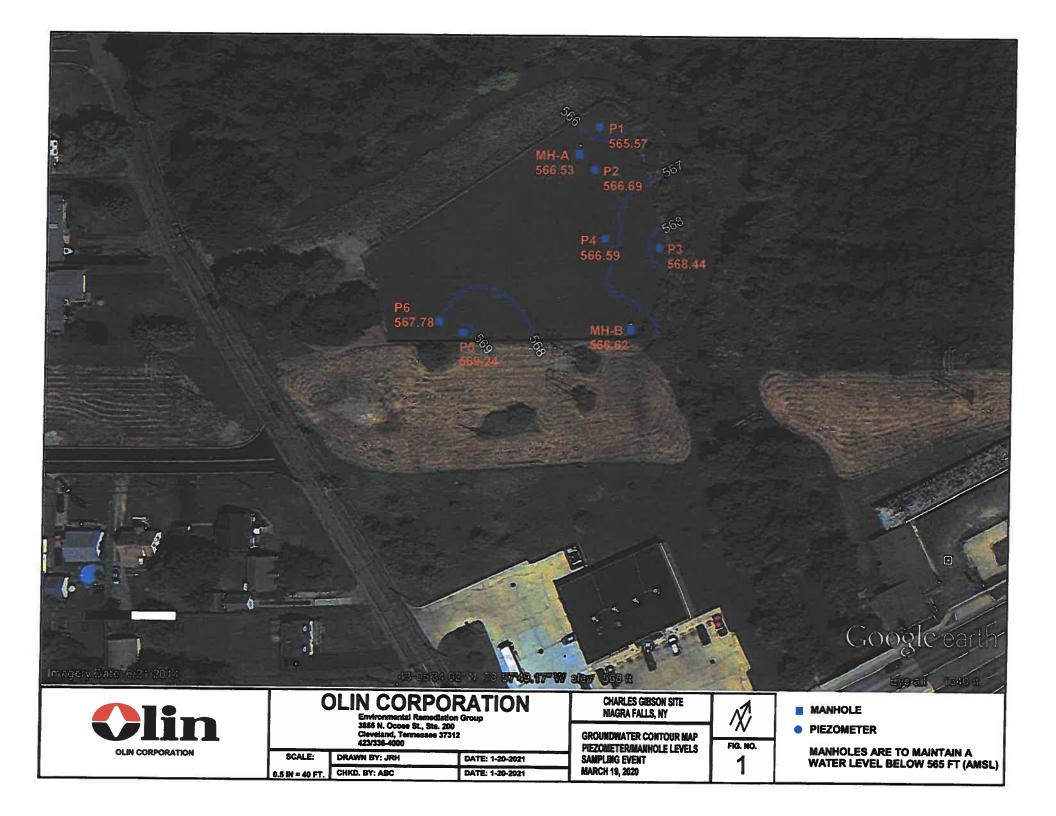
Table 6 - Seasonal Piezometer Data

			PIEZO	METER - Sp	ring			
DATE	P1	P2	Р3	P4	P5	P6	MHA	МНВ
2/13/2008	NA	NA	NA	NA	NA	NA	NA	NA
4/3/2008	565.44	565.5	567.55	565.44	569.84	567.99	564.13	564.17
2/13/2009	NA	NA	NA	NA	NA	NA	NA	NA
4/2/2009	565.46	565.43	566.81	565.34	569.11	567.77	563.97	564.03
3/3/2010	565.27	565.42	566.18	565.22	568.83	567.57	563.77	563.84
4/14/2010	565.72	565.46	567.05	565.19	569.45	567.77	564.02	564.09
3/9/2011	565.05	565.49	568.11	565.42	569.75	567.88	563.94	564.03
4/19/2011	565.5	565.48	567.74	565.26	569.46	567.77	564.01	564.15
3/15/2012	565.36	565.54	568.25	565.34	569.23	567.75	564.21	567.27
5/22/2012	566.01	565.5	567.4	565.46	569.01	567.75	563.4	563.49
3/6/2013	565.32	565.54	569.56	565.34	569.35	567.83	563.92	564.09
5/13/2013	565.63	565.43	567.74	565.24	568.75	567.63	563.67	563.73
3/18/2014	565.34	565.49	569.24	565.19	569.35	567.76	563.86	563.89
5/9/2014	565.5	565.5	568.44	565.35	569.36	567.82	563.83	563.91
3/11/2015	565.15	564.68	567.45	565.15	568.39	567.07	568.8	563.89
5/27/2015	565.84	565.53	566.71	565.44	568.46	567.49	563.84	563.83
3/8/2016	565.08	565.67	570.39	565.46	569.34	567.67	563.51	563.59
5/27/2016	565.87	565.56	567.24	565.5	568.6	567.88	563.94	563.48
3/7/2017	565.22	565.58	570.75	565.37	568.68	567.07	563.64	563.74
5/30/2017	566	566.31	568.71	565.43	569.09	567.63	563.57	563.63
3/13/2018	565.64	565.54	568.64	565.49	568.26	567.77	563.77	563.79
5/24/2018	565.9	565.53	567.21	565.35	568.7	567.57	563.24	563.31
3/7/2019	565.52	565.58	567.96	567.75	569.08	567.67	563.9	563.99
5/21/2019	566.11	565.58	568.87	565.46	569.43	567.88	563.63	563.69
3/19/2020	565.57	566.69	568.44	566.59	569.24	567.78	566.53	566.62
5/18/2020	566.49	565.55	567.55	565.51	568.85	567.58	560.67	560.72

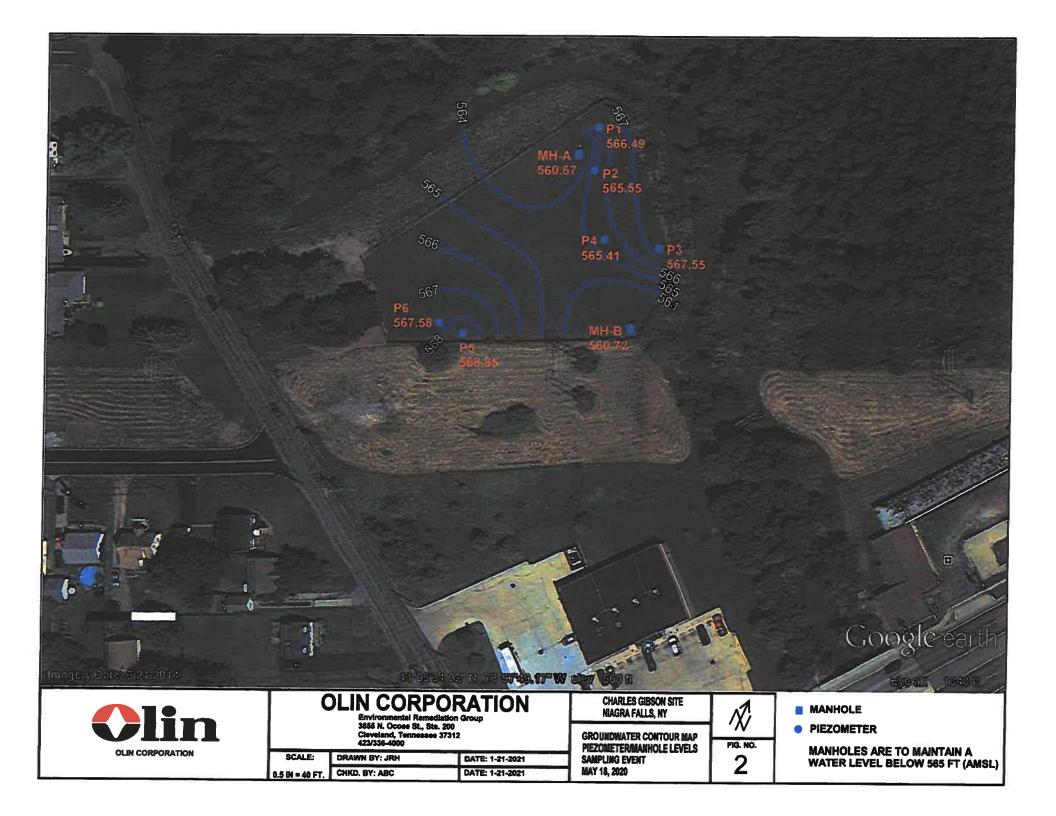
NA-Not Available

			PIEZ	OMETER - F	all			
DATE	P1	P2	Р3	P4	P5	P6	МНА	МНВ
9/11/2008	566.13	565.28	566.31	565.2	568.37	567.39	564.11	564.23
11/5/2008	565.46	565.24	566.52	565.17	568.76	567.43	563.81	563.89
9/17/2009	566.37	565.42	566.51	565.29	568.6	567.58	563.67	563.74
11/23/2009	565.31	565.29	566.41	565.24	568.7	567.37	563.52	563.61
9/17/2010	566.4	565.2	564.91	565.07	567.23	566.93	564.2	563.68
11/11/2010	564.53	565.16	565.57	565.02	567.4	566.78	563.82	563.88
9/22/2011	565.54	565.28	565.11	565.18	567.27	567.09	563.42	563.46
11/8/2011	565.33	565.41	567.41	565.28	568.77	567.53	563.32	563.4
9/17/2012	564.5	565.26	564.37	565.16	566.77	566.8	563.47	563.53
11/9/2012	564.51	565.38	568.28	565.22	568.4	567.25	563.62	563.99
9/18/2013	565.62	565.33	566.04	565.26	567.79	567.24	563.29	563.33
11/6/2013	565.35	565.51	569.11	566.09	569.17	567.7	563.36	563.42
9/18/2014	565.54	566.88	565.37	568.55	567.76	567.17	563.27	563.32
12/8/2014	566.65	565.08	568.15	565.15	568.14	566.86	563.5	563.56
9/1/2015	565.16	565.41	565.17	565.49	567.46	577.07	563.51	563.54
11/10/2015	564.97	565.4	566.11	565.34	568.92	567.07	563.67	563.76
9/8/2016	564.27	565.37	563.95	565.33	566.18	566.53	563.32	563.49
11/11/2016	563.28	565.11	565.17	565.17	565.44	566.13	563.36	563.39
9/6/2017	565.12	565.48	565.88	565.49	566.6	567.33	563.4	563.49
11/21/2017	565.01	565.51	569.92	565.43	569.24	567.6	563.52	563.6
9/25/2018	564.33	565.34	563.86	569.13	566.2	567.12	563.1	563.14
11/18/2018	563.33	565.19	568.91	568.16	568.85	566.57	563.21	563.25
9/24/2019	564.91	565.35	564.71	565.22	567.9	567.17	562.94	563.03
11/6/2019	564.74	565.4	567.51	565.19	568.85	567.36	563.08	563.14
9/22/2020	563.89	565.36	563.63	565.19	566.49	566.62	561.88	561.98
11/12/2020	563.02	565.17	562.54	564.89	565.75	566.16	562.03	562.09

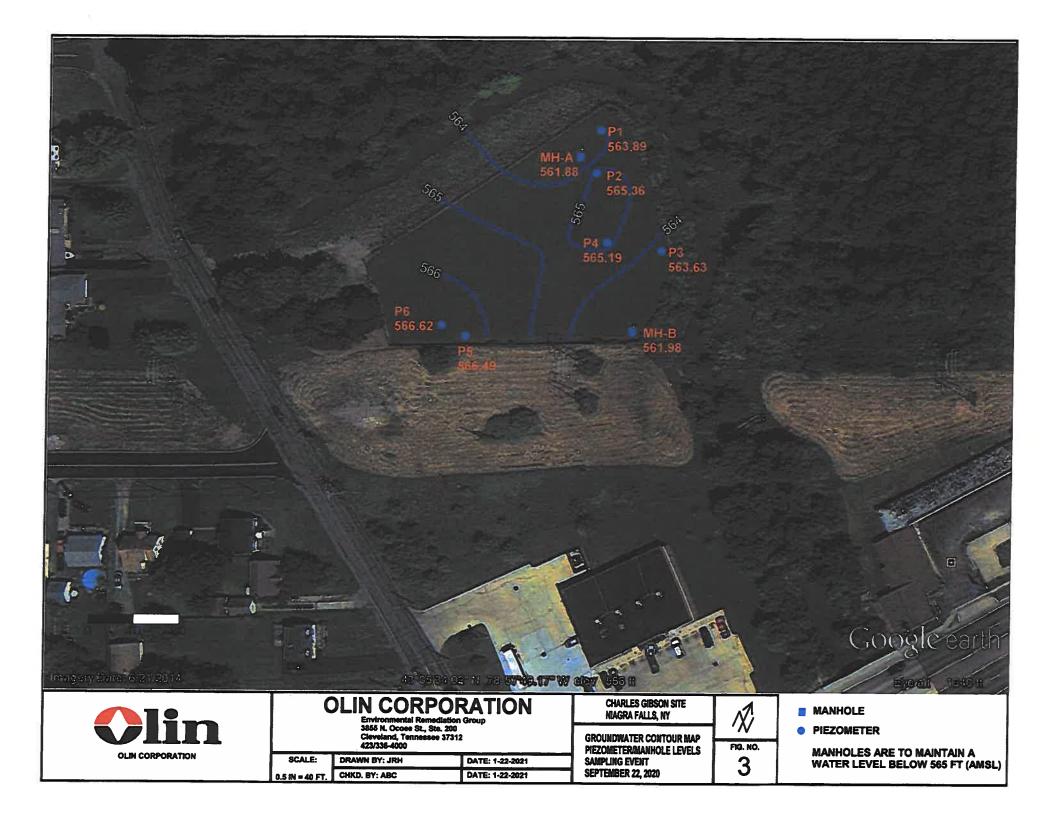
DATE:	3/19	20	_TIME: _	800				
INSPECTOR:	CHM	s Junes	COMPANY:	SEL	IEH24H			
WEATHER:	_35°	CLOUDY	- 0					
PIEZOMETER		RISER ELEVATION (INSIDE CASING)	DEPTH TO V (FT.)	VATER	WATER ELEVATION	COMMENTS		
P-1	+1	572.72	7.15		565.57			
P-2		574.89	8,20	t.	566.69			~
P-3		574.16	5.72		'568.44			-
P-4	4	576.14	9.55		566.59			
P-5		575.05	5 81		569.24			
P-6		578.28	10.50		567.78		4_	
1 -0								
MANHOLE A		575.22	8 69		566.53			
MANHOLE A MANHOLE B (Note: Manhole	A empti	575.22 577.34 ies into Manhole B by	१७.२२ gravity feed an	nd Manh	566 62	automatically to the	Town of	
MANHOLE A MANHOLE B (Note: Manhole Niagara Tuscar in Manhole B (a water distance	rora Road and by ex from the vations (I	575.22 577.34	gravity feed and by a float control below an eleval not be less than her, 1999 by West St. Sittle Care	tion of 56 n 12.41 f endel Su	ole B is pumped mp pump which at Manhole B rveyors)	maintains groundwa In sea level. Therefi and 10.22 ft. at Man	iter elevations	
MANHOLE A MANHOLE B (Note: Manhole Niagara Tuscar in Manhole B (a water distance Note: riser elevance) ADDITIONAL C	rora Road and by ex from the vations (I	575.22 577.34 ies into Manhole B by d sanitary sewer line extension Manhole A) to manhole rim should re)surveyed Septemb	gravity feed and by a float control below an eleval not be less than her, 1999 by West St. Sittle Care	tion of 56 n 12.41 f endel Su	ole B is pumped mp pump which at Manhole B rveyors)	maintains groundwa In sea level. Therefi and 10.22 ft. at Man	iter elevations	
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WATER ELE	TO BE USED FOR ALL QUAR' VATION MEASURING EVENT	TERLY PIEZO S	METER AND MANHOLE G	ROUND-	
DATE: _	5-18-20	_TIME:	830-100		
INSPECTO <u>R</u>	: WALKON_	_COMPANY:	SEVENSON		
WEATHER:	CLOUDY 53°F	RAIN	overnight.		
PIEZOMETE	RISER ELEVATION R (INSIDE CASING)	DEPTH TO \((FT.)	WATER WATER ELEVATION	COMMENTS	
P-1	572.72	6.23	566.49		
P-2	574.89	9.34	565.55		
P-3	574.16	6.6i	<u>567.5</u> 5		
P-4	576.14	10.73	565.41		
P-5	575.05	6.20	<u>568.85</u>	· · · · · · · · · · · · · · · · · · ·	
P-6	578.28	10.70	567.58		
MANHOLE A	575.22	14.55	560.67		
MANHOLE B	577.34	16.62	560.72		
Niagara Tusc in Manhole B water distanc	le A empties into Manhole B by arora Road sanitary sewer line (and by extension Manhole A) le e from the manhole rim should evations (re)surveyed Septemb	by a float cont below an eleva not be <u>less</u> tha	rolled sump pump which ma ation of 565 ft. above mean s an 12.41 ft. at Manhole B and	nintains groundwa sea level. Therefo	ter elevations ore. Depth to
ADDITIONAL	COMMENTS/OBSERVATION	S: Profun	med Site inspect	ion, took	
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09 44	E CAP. TOOK A ? Abelse I "MS" En	had duph	cols of the upor	REAM SAMPL	5
and L	abolic it "Ms" fon	_ & LAB	phenoses. (ac.)		
			<u> </u>		
10.0030	120				



PIEZOMETER 70° SUNNI PIEZOMETER RISER ELEVATION (INSIDE CASING) (FT.) 572.72 8.83 563.89 2-2 574.89 9.53 565.36 2-3 574.16 10.53 563.63 2-4 576.14 10.95 565.19 2-5 575.05 8.56 566.49 2-6 578.28 11.66 566.62 MANHOLE A 575.22 13.34 561.88	DATE:	22 20	_TIME: _	700		
RISER ELEVATION (INSIDE CASING) (FT.) 2-1 572.72 8.83 563.89 2-2 574.89 9.53 565.36 2-3 574.16 10.53 563.63 2-4 576.14 10.95 565.19 2-5 575.05 8.56 566.49 2-6 578.28 11.66 566.62 MANHOLE A 575.22 13.34 561.88 MANHOLE B 577.34 15.36 561.98 Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of lagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation. Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth ater distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. Mote: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	INSPECTOR: C	(उँभव)	_COMPANY:_	SE	VENSON	
PIEZOMETER (INSIDE CASING) (FT.) ELEVATION 2-1 572.72 8.83 563.89 2-2 574.89 9.53 565.36 2-3 574.16 10.53 565.19 2-5 576.14 10.95 565.19 2-6 578.28 11.66 566.62 IANHOLE A 575.22 13.37 561.88 IANHOLE B 577.34 15.36 561.98 Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of lagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth after distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. lote: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	WEATHER: 7	0° SUNNY				
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574.16 10.53 563.63 2-4 576.14 10.95 565.19 2-5 575.05 8.56 566.49 2-6 578.28 11.66 566.62 MANHOLE A 575.22 13.34 561.88 MANHOLE B 577.34 15.36 561.98 Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of iagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation. Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth of a distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	P-1	572.72	8.83		563.89	
576.14 576.14 10.95 575.19 575.05 8.56 576.49 576.62 IANHOLE A 575.22 13.37 561.38 IANHOLE B 577.34 15.36 S61.98 Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of iagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth of attentions (re)surveyed September, 1999 by Wendel Surveyors)	P-2	574.89	9.53		565.36	
2-5 575.05 8.56 56.49 2-6 578.28 11.66 56.62 MANHOLE A 575.22 13.34 561.88 MANHOLE B 577.34 15.36 561.98 Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of lagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth of ater distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	P-3	574.16	10.53		563.63	
ANHOLE A 575.22 13.37 561.88 Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of iagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth fater distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. lote: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	P-4	576.14	10.95		565.19	
ANHOLE A 575.22 3.37 561.88 Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of iagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth fater distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. Hote: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	P-5	575.05	8.56		566.49	
Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of iagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth of ater distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. Hote: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	2-6	578.28	11.66		566.62	
Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of iagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth ater distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. lote: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	MANHOLE A	575.22	13.34		561.88	
Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of iagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth ater distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. Hote: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	MANHOLE B	577.34	15.36		561.98	
	Note: Manhole A en		gravity loca and			
	Manhole B (and by rater distance from the Note: riser elevation	y extension Manhole A) b the manhole rim should r is (re)surveyed Septembe	by a float contropelow an elevation of be less than er, 1999 by Wel	olled sun on of 56 12 41 f	np pump which ma 55 ft. above mean t. at Manhole B an	aintains groundwater elevatio
	n Manhole B (and by rater distance from the Note: riser elevation	y extension Manhole A) b the manhole rim should r is (re)surveyed Septembe	by a float contropelow an elevation of be less than er, 1999 by Wel	olled sun on of 56 12 41 f	np pump which ma 55 ft. above mean t. at Manhole B an	aintains groundwater elevatio
·	n Manhole B (and by rater distance from the Note: riser elevation	y extension Manhole A) b the manhole rim should r is (re)surveyed Septembe	by a float contropelow an elevation of be less than er, 1999 by Wel	olled sun on of 56 12 41 f	np pump which ma 55 ft. above mean t. at Manhole B an	aintains groundwater elevatio
·	n Manhole B (and by rater distance from the Note: riser elevation	y extension Manhole A) b the manhole rim should r is (re)surveyed Septembe	by a float contropelow an elevation of be less than er, 1999 by Wel	olled sun on of 56 12 41 f	np pump which ma 55 ft. above mean t. at Manhole B an	aintains groundwater elevatio



Charles Gibson

Annual Ground Water Monitoring Sampling Narrative

09/23/20

Both monitoring wells MW-4 and MW-5 went dry during purge before sample was collected. Sevenson contacted Adam Carringer of Olin Corp. Adam told Sevenson to wait a few days and sample the recharge. Also MW-A3 was completely dry and no sample was taken.

9/28/20

Sevenson returned to site to sample recharge. The field blank was sampled at 0845. MW-5 was sampled at 0900. MS/MSD volume was also collected. MW-4 was sampled at 0925. A blind duplicate was taken here and labeled MW-7. Man Hole B was sampled at 1000.

This narrative will also be sent to the lab with COC but will not mention the blind duplicate (MW-7) being taken at MW-4.

Charles Gibson

Annual Ground Water Monitoring Sampling Narrative

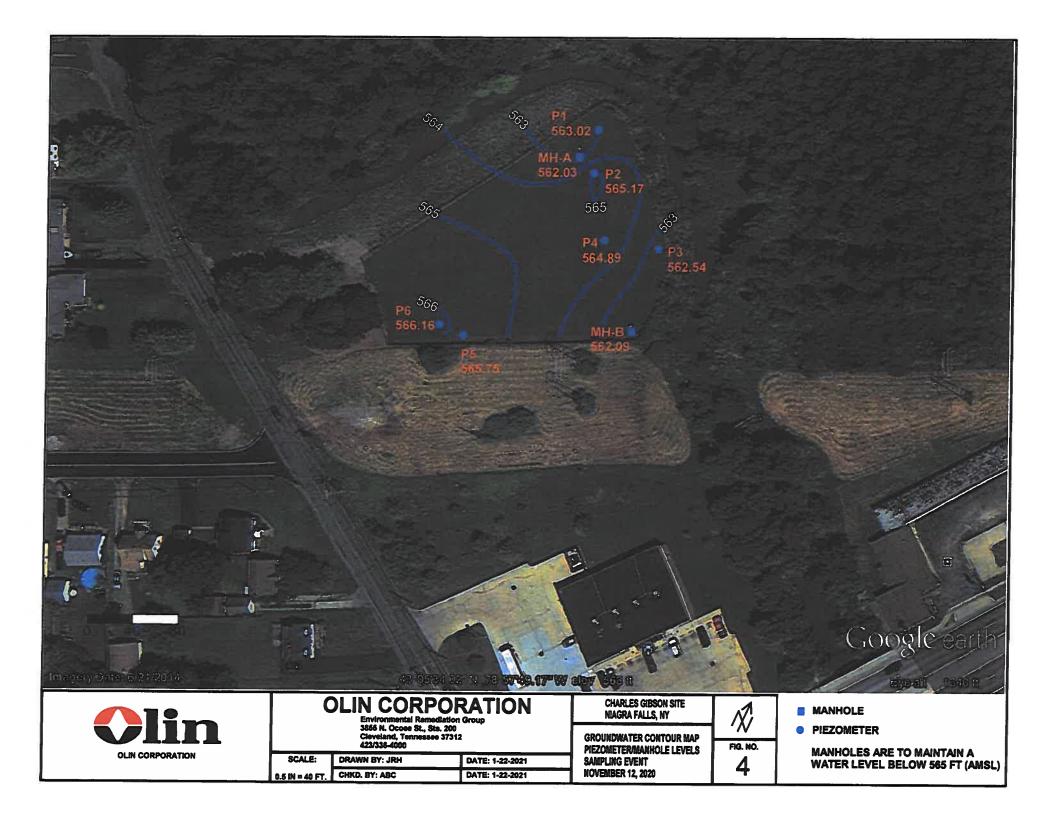
09/23/20

Both monitoring wells MW-4 and MW-5 went dry during purge before sample was collected. Sevenson contacted Adam Carringer of Olin Corp. Adam told Sevenson to wait a few days and sample the recharge. Also MW-A3 was completely dry and no sample was taken.

9/28/20

Sevenson returned to site to sample recharge. The field blank was sampled at 0845. MW-5 was sampled at 0900. MS/MSD volume was also collected. MW-4 was sampled at 0925. MW-7 was sampled at 0940. Man Hole B was sampled at 1000.

INSPECTOR:	11/12/20	TIME:	900		
Norec IOA.	CHUS THES	_COMPANY:_	Seve	100m	
WEATHER:	43° CLOVOZ				
PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO W	/ATER	WATER ELEVATION	COMMENTS
P-1	572.72	9.70		563.02	
P-2	574.89	9 .72		565.17	_
P-3	574.16	11.62		562.54	
9-4	576.14	11.25		564,89	
P-5	575.05 •	9.30		565.75	
P-6	578.28	12.12	*	566.16	
MANHOLE A	575.22	13.19	2	562,03	71
MANHOLE B	577.34	15.25		562.09	
vater distance from Note: riser elevati	the extension Manhole A) but the manhole rim should not into t	not be <u>less</u> than per, 1999 by Wen	ion of 56 12.41 fi	65 ft. above mean s ft. at Manhole R and	aintains groundwater elevations sea level. Therefore, Depth to nd 10.22 ft. at Manhole A.
		Ti .			





Service Request No:R2004148

Mr. Dave Share
Olin Corporation
3855 North Ocoee Street
Suite 200
Cleveland, TN 37312

Laboratory Results for: Charles Gibson - Olin

Dear Mr. Share,

Enclosed are the results of the sample(s) submitted to our laboratory May 19, 2020 For your reference, these analyses have been assigned our service request number **R2004148**.

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



ALS Environmental ALS Group USA, Corp 1565 Jefferson Road, Building 300, Suite 360 Rochester, NY 14623

T: +1 585 288 5380 F: +1 585 288 8475 www.alsglobal.com

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Narrative Documents

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



Client:

Olin Corporation

Project:

Charles Gibson - Olin

Sample Matrix: Soil

Service Request: R2004148

Date Received: 05/19/2020

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:

Three soil samples were received for analysis at ALS Environmental on 05/19/2020. 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:

Method 8081B, 05/22/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8081B, 05/22/2020: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Method 8081B, 05/22/2020: The control limits were exceeded for analytes in the Continuing Calibration Verification (CCV). The QC failure was most likely due to the composition of the sample(s) immediately preceding the failing CCV. In order to protect the integrity of the instrument, no further corrective action was taken. Results should be considered estimated. Samples were ran 2x with the same result both times.

General Chemistry:

No significant anomalies were noted with this analysis.

	1,000 mc	1600C		
Approved by			Date	05/29/2020

M. Ass. Dolo



SAMPLE DETECTION SUMMARY

CLIENT ID: DS-1-051820		Lab	ID: R2004	148-001	average of	
Analyte	Results	Flag	MDL	MRL	Units	Method
Total Solids	24.3				Percent	ALS SOP
beta-BHC	110			73	ug/Kg	8081B
CLIENT ID: MS-1-051820		Lab	ID: R2004	1148-002		
Analyte	Results	Flag	MDL	MRL	Units	Method
Total Solids	35.9		***************************************		Percent	ALS SOP
alpha-BHC	130			47	ug/Kg	8081B
beta-BHC	180			47	ug/Kg	8081B
delta-BHC	54			47	ug/Kg	8081B
CLIENT ID: US-1-051820		Lab	ID: R2004	1148-003		
Analyte	Results	Flag	MDL	MRL	Units	Method
Total Solids	30.9	***************************************	***************************************		Percent	ALS SOF
alpha-BHC	270			59	ug/Kg	8081B
beta-BHC	350			59	ug/Kg	8081B



Sample Receipt Information

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

Olin Corporation

Project:

Charles Gibson - Olin/1229

Service Request:R2004148

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	<u>DATE</u>	TIME
R2004148-001	DS-1-051820	5/18/2020	0930
R2004148-002	MS-1-051820	5/18/2020	0945
R2004148-003	US-1-051820	5/18/2020	1015



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

60754

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

Project Name CHARLES GIBSON - OLI	~1	Project Nurr	1229	· · · · · ·					A	NALYS	SIS RE	QUES1	ED (includ	Meth	od Ni	ımber	and C	ontair	er Pr	eservati	ve)		
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CLIENT SAMPLE ID	FOR OFFI		SAMP DATE	LING TIME	MATRIX																			
D5-1-051820			5/18/20	930	SED	1				1														
M5-1-051820			5/18/20	945	5ED	7				1													,	
U5-1-051820			5/18/20	1015	SEO	1				4										_				
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STATE WHERE SAMPLES WERE CO	PLECIED	RECEIVED	D BY	REI	JNQUISHED	BY		\vdash		RECE	IVED BY			+			UISHE			+		REÇE	VED BY	
righteolorico o	j	195							11	1			9											
Signature	Signature			Signature				Signal					9	Signa	ture		-				ature			Ä,
Printed Namo	Printed Name			Printed Name			-	1	8277	10.	FSI	geni	11)	Printo	d Name			R	200)41	48		5	e.
Firm SKAKE-SAV	Firm			Firm				Firm	4	AU)			Firm				Char	Corpora les Gib	on - 0	lin {{ 64 531 0		2(43) (14) (u
Dato/Time 5 19 20 1200	Date/Time			Date/Time				Date/T	imo S	42	120	09:	45	Date/	Time			į.						

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

Page 10 of 218

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Labels secondary reviewed by:_PC Secondary Review:_____

P:\INTRANET\QAQC\Forms Controlled\Cooler Receipt r17.doc

Cooler Receipt and Preservation Check Form



(AL	S)	000101		.p				. 021				8		
Project/Clie	nt		01	ا: ا	Folde	er Num	ber				•			201
Cooler receive	C 10	2020	by:	2		COU	RIER:	ALS (UPS	FEDEX	· VELO	CITY CI	LIENT	
1 Were Cus	stody seals on	outside of coole	r?	7	Y) N	5a				10	uired head		Y	N NA
		ly completed (in		×4)5 \	$\sqrt{\frac{2}{N}}$	5b			••			bubbles		N (NA
		good condition (- '- IS	YN	6		e did the			-	ALS/ROC		JENT)
				. 1									_	
4 Circle:	vet ice Dry	Ice Gel packs		ent?		7	5011 V	OA rec	eived as	Bu	uk End	core 50)35set (NA
3. Temperatur	e Readings	Date: 5/9/	302C	Time:	09:5	6	ID:	IR#7(IR#10		From	Temp Bla	nk Sa	ample Bottle
Observed Te	mp (°C)	2												
Within 0-6°C	7?	(Y) N		Y	N ·	Y	N	Y	N	Y	N	Y N		YN
If <0°C, were	e samples froz	en? Y N	10	Y	N	Y	N	Y	N	Y	N	YN		YN
If out of T	emperature.	note packing/ic	e condi	tion:		I	ce mel	ed P	oorly Pa	cked (d	escribed b	elow)	Sam	e Day Rule
	-	un Samples:							-		ient notifi	-		,
			1 - NI		11			4						
	held in storag		K-00		y 112	on on	210	0 at [0	100					
5035 sample	s placed in st	orage location:		l	ру	on on	·	at _	1	vithin 4	8 hours of	sampling	3? Y	N
Cooler Bre	akdown/Prese	ryation Check**	· Date		5/19/	70170	Time	12	30	by:	(A)			
		labels complete							AU X	<u> </u>	NO			36.74
		bels and tags agr					.,.		X	ES	NO -			29
		ontainers used for							Se Se	ES .	NO			
12. V	Vere 5035 vial	s acceptable (no	extra la	bels,	not leakin	ng)?			Y	ES	NO		N/B	•
		Cassettes / Tubes				anisters	Pressu	rized	7	edlar®	Bags Infla	ated	(N/A	l .
pΗ	Lot of test	Reagent	Preser			ceived		Exp	Samp		Vol.	Lot A	dded	Final
	paper	_	Yes	No	1				Adjus	ted	Added			pН
≥12		NaOH												5).
≤2		HNO₃								•				
≲2		H₂SO₄ ·	1	1					·					
<4		NaHSO ₄	_			- 50								
5-9		For 608pest	-	 		otify for 3								
Residual		For CN,				ntact PM 3 (625, 60								
Chlorine		Phenol, 625,	15			corbic (pl								W.
(-)		608pest, 522 Na ₂ S ₂ O ₃	-	-			-	+						
L		Zn A cetate	+		 			+	**VOA	s and 166	4 Not to be	tested before	e analysis	<u> </u>
		HCI	**	**				+	Otherw	ise, all bo	ttles of all s	amples with		preservatives
	*/				<u> </u>			1	are che	cked (not	just represer	ntatives).		
Dottle let	numbers:	11110 110												
Evoluin a	numbers.	////9-/JR es/ Other Comm	onts:											
Explain a	Discrepance	es Outer Contin	iciits.			9.								
											101			
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		11*17												
		1995						- 6						
												H	IPROD	BULK
												H	(TR	FLDT
	100											s	UB	HGFB
												⊢	J.S	113541

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

1/16/2020

Internal Chain of Custody Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Service Request: R2004148

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2004148-001.01					
	8081B,ALS SOP				
		5/19/2020	1231	R-002 / GLAFORCE	
		5/19/2020	1231	SMO/GLAFORCE	
		5/20/2020	0804	In Lab / KSERCU	
		5/20/2020	0901	R-002 / KSERCU	
R2004148-002.01	,				·
	ALS SOP,8081B				
		5/19/2020	1231	R-002 / GLAFORCE	
		5/19/2020	1231	SMO/GLAFORCE	
		5/20/2020	0804	In Lab // KSERCU	
		5/20/2020	0901	R-002 / KSERCU	
R2004148-003.01					
	ALS SOP,8081B				
		5/19/2020	1231	R-002 / GLAFORCE	
		5/19/2020	1231	SMO/GLAFORCE	
		5/20/2020	0804	In Lab / KSERCU	
		5/20/2020	0901	R-002 / KSERCU	



Miscellaneous Forms

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REPORT QUALIFIERS AND DEFINITIONS

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

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

 The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
- MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
- LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.
- ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.



Rochester Lab ID # for State 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

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 POL but

greater than or equal to the MDL.

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Service Request: R2004148

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method Matrix Analyte ALS SOP Soil Total Solids

Analyst Summary report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Service Request: R2004148

Sample Name:

DS-1-051820

Lab Code:

R2004148-001

Sample Matrix:

Soil

Date Collected: 05/18/20

Date Received: 05/19/20

Analysis Method

8081B

ALS SOP

Extracted/Digested By

KSERCU

Analyzed By

BALLGEIER

KWONG

Sample Name:

Lab Code:

MS-1-051820 R2004148-002

Sample Matrix:

Soil

Date Collected: 05/18/20

Date Received: 05/19/20

Analysis Method

8081B ALS SOP

Sample Name:

Lab Code:

US-1-051820 R2004148-003

Sample Matrix:

Soil

Extracted/Digested By

KSERCU

Analyzed By

BALLGEIER

KWONG

Date Collected: 05/18/20

Date Received: 05/19/20

Analysis Method

8081B ALS SOP Extracted/Digested By

KSERCU

Analyzed By

BALLGEIER

KWONG



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 analytical method					
reference.					



Sample Results

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Semivolatile Organic Compounds by GC

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Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2004148

Date Collected: 05/18/20 09:30

Date Received: 05/19/20 09:45

Sample Name:

DS-1-051820

Lab Code:

R2004148-001

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	73	10	05/22/20 14:57	5/20/20	
beta-BHC	110	73	10	05/22/20 14:57	5/20/20	
delta-BHC	ND U	73	10	05/22/20 14:57	5/20/20	
gamma-BHC (Lindane)	ND U	73	10	05/22/20 14:57	5/20/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	73	10 - 145	05/22/20 14:57	
Tetrachloro-m-xylene	75	10 - 123	05/22/20 14:57	

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2004148

Date Collected: 05/18/20 09:45

Date Received: 05/19/20 09:45

Sample Name:

MS-1-051820

Lab Code:

R2004148-002

Units: ug/Kg Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

EPA 3541

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	130	47	10	05/22/20 15:16	5/20/20	
beta-BHC	180	47	10	05/22/20 15:16	5/20/20	
delta-BHC	54	47	10	05/22/20 15:16	5/20/20	
gamma-BHC (Lindane)	ND U	47	10	05/22/20 15:16	5/20/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	51	10 - 145	05/22/20 15:16	
Tetrachloro-m-xylene	61	10 - 123	05/22/20 15:16	

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2004148

Date Collected: 05/18/20 10:15

Date Received: 05/19/20 09:45

Sample Name:

US-1-051820

Units: ug/Kg
Basis: Dry

Lab Code:

R2004148-003

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	270	59	10	05/22/20 15:35	5/20/20	
beta-BHC	350	59	10	05/22/20 15:35	5/20/20	
delta-BHC	ND U	59	10	05/22/20 15:35	5/20/20	
gamma-BHC (Lindane)	ND U	59	10	05/22/20 15:35	5/20/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	49	10 - 145	05/22/20 15:35	
Tetrachloro-m-xylene	50	10 - 123	05/22/20 15:35	



General Chemistry

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Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

DS-1-051820

Sample Name: Lab Code:

R2004148-001

Service Request: R2004148

Date Collected: 05/18/20 09:30

Date Received: 05/19/20 09:45

Basis: As Received

Inorganic Parameters

	Analysis						
Analyte Name	Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Total Solids	ALS SOP	24.3	Percent	-	1	05/27/20 09:45	

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

.

Service Request: R2004148

Date Collected: 05/18/20 09:45

Date Received: 05/19/20 09:45

Basis: As Received

Sample Name:

MS-1-051820

Lab Code:

R2004148-002

Inorganic Parameters

Analysis
Analyte Name Method Result Units MRL Dil. Date Analyzed Q
Total Solids ALS SOP 35.9 Percent - 1 05/27/20 09:45

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Sample Name:

Soil

US-1-051820

Lab Code:

R2004148-003

Service Request: R2004148

Date Collected: 05/18/20 10:15

Date Received: 05/19/20 09:45

Basis: As Received

Inorganic Parameters

	Analysis						
Analyte Name	Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Total Solids	ALS SOP	30.9	Percent	-	1	05/27/20 09:45	



QC Summary Forms

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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

QA/QC Report

Client:

Olin Corporation

Service Request: R2004148

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

SURROGATE RECOVERY SUMMARY

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Extraction Method:

		Decachlorobiphenyl	Tetrachloro-m-xylene	
Sample Name	Lab Code	10-145	10-123	
DS-1-051820	R2004148-001	73	75	
MS-1-051820	R2004148-002	51	61	
US-1-051820	R2004148-003	49	50	
Method Blank	RQ2005120-01	83	78	
Lab Control Sample	RQ2005120-02	77	73	
Duplicate Lab Control Sample	RQ2005120-03	86	83	*

QA/QC Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2004148

Date Analyzed: NA

Method Blank Summary

Organochlorine Pesticides by Gas Chromatography

Sample Name:

Lab Code:

Instrument ID:

File ID:

Analysis Method: 8081B

Analysis Lot:681306

This Method Blank applies to the following analyses.

Sample Name

Lab Code

File ID

Date Analyzed

Performance Evaluation

RQ2005364-01

I:\ACQUDATA\7890m\DATA\052220\az5144.D\ 05/22/20 11:55

QA/QC Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2004148

Date Analyzed: 05/22/20 14:00

Date Extracted: 05/20/20

Method Blank Summary

Organochlorine Pesticides by Gas Chromatography

Sample Name:

Method Blank

Instrument ID:R-GC-62

Lab Code:

RQ2005120-01

File ID:I:\ACQUDATA\7890m\DATA\052220\az5147.D\

Analysis Method: 8081B Prep Method:

EPA 3541

Analysis Lot:681306

Extraction Lot:358744

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2005120-02	I:\ACQUDATA\7890m\DATA\052220\az5148.D\	05/22/20 14:19
Duplicate Lab Control Sample	RQ2005120-03	I:\ACQUDATA\7890m\DATA\052220\az5149.D\	05/22/20 14:38
DS-1-051820	R2004148-001	I:\ACQUDATA\7890m\DATA\052220\az5150.D\	05/22/20 14:57
MS-1-051820	R2004148-002	I:\ACQUDATA\7890m\DATA\052220\az5151.D\	05/22/20 15:16
US-1-051820	R2004148-003	I:\ACQUDATA\7890m\DATA\052220\az5152.D\	05/22/20 15:35

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2004148

Date Collected: NA

...

Date Received: NA

Sample Name: Lab Code: Method Blank RQ2005120-01 Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	1.7	1	05/22/20 14:00	5/20/20	
beta-BHC	ND U	1.7	1	05/22/20 14:00	5/20/20	
delta-BHC	ND U	1.7	1	05/22/20 14:00	5/20/20	
gamma-BHC (Lindane)	ND U	1.7	1	05/22/20 14:00	5/20/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	83	10 - 145	05/22/20 14:00	
Tetrachloro-m-xylene	78	10 - 123	05/22/20 14:00	

QA/QC Report

Client: Project: Olin Corporation

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2004148

Date Analyzed: NA

Lab Control Sample Summary

Organochlorine Pesticides by Gas Chromatography

Sample Name:

Instrument ID:

Lab Code:

File ID:

Analysis Method: 8081B

Analysis Lot:681306

This Lab Control Sample applies to the following analyses.

Sample Name

Lab Code

File ID

Date Analyzed

Performance Evaluation

RQ2005364-01

I:\ACQUDATA\7890m\DATA\052220\az5144.D\ 05/22/20 11:55

QA/QC Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2004148

Date Analyzed: 05/22/20 14:19

Date Extracted: 05/20/20

Lab Control Sample Summary

Organochlorine Pesticides by Gas Chromatography

Sample Name:

Lab Control Sample

Instrument ID:R-GC-62

Lab Code:

RQ2005120-02

File ID:I:\ACQUDATA\7890m\DATA\052220\az5148.D\

Prep Method:

Analysis Method: 8081B EPA 3541 Analysis Lot:681306

Extraction Lot:358744

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ2005120-01	I:\ACQUDATA\7890m\DATA\052220\az5147.D\	05/22/20 14:00
Duplicate Lab Control Sample	RQ2005120-03	I:\ACQUDATA\7890m\DATA\052220\az5149.D\	05/22/20 14:38
DS-1-051820	R2004148-001	I:\ACQUDATA\7890m\DATA\052220\az5150.D\	05/22/20 14:57
MS-1-051820	R2004148-002	I:\ACQUDATA\7890m\DATA\052220\az5151.D\	05/22/20 15:16
US-1-051820	R2004148-003	I:\ACQUDATA\7890m\DATA\052220\az5152.D\	05/22/20 15:35

QA/QC Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2004148

Date Analyzed: 05/22/20

Duplicate Lab Control Sample Summary Organochlorine Pesticides by Gas Chromatography

Units:ug/Kg
Basis:Dry

Lab Control Sample

Duplicate Lab Control Sample

RQ2005120-02

RQ2005120-03

	Analytical		Spike			Spike		% Rec		RPD
Analyte Name	Method	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
alpha-BHC	8081B	4.94	6.79	73	5.80	6.70	87	28-145	16	30
beta-BHC	8081B	4.80	6.79	71	5.57	6.70	83	38-144	15	30
delta-BHC	8081B	4.98	6.79	73	5.78	6.70	86	30-153	15	30
gamma-BHC (Lindane)	8081B	4.96	6.79	73	5.74	6.70	86	32-145	15	30

Confirmation Results

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

SRM Matrix:

Soil

Service Request: R2004148

Date Collected: 05/18/20 09:30

Date Received: 5/19/20

Sample Name:

DS-1-051820

Lab Code:

R2004148-001

Units: ug/Kg

Basis: Dry

Percent Solids: 24.3

Organochlorine Pesticides by Gas Chromatography

Analytical Method: 8081B

Prep Method:

		Primary	Confirmation			Dilution	
Analyte Name	MRL	Result	Result	RPD	Q	Factor	Date Analyzed
beta-BHC	73	110	140	24		10	05/22/20 14:57

Confirmation Results

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

SRM Matrix:

Soil

Service Request: R2004148 Date Collected: 05/18/20 09:45

Date Received: 5/19/20

Sample Name:

MS-1-051820

Lab Code:

R2004148-002

Units: ug/Kg

Basis: Dry

Percent Solids: 35.9

Organochlorine Pesticides by Gas Chromatography

Analytical Method: 8081B

Prep Method:

		Primary	Confirmation			Dilution	
Analyte Name	MRL	Result	Result	RPD	Q	Factor	Date Analyzed
alpha-BHC	47	130	180	32		10	05/22/20 15:16
beta-BHC	47	180	220	20		10	05/22/20 15:16
delta-BHC	47	54	68	23		10	05/22/20 15:16

Confirmation Results

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

SRM Matrix:

Soil

Service Request: R2004148

Date Collected: 05/18/20 10:15

Date Received: 5/19/20

Sample Name:

US-1-051820

Lab Code:

R2004148-003

Units: ug/Kg

Basis: Dry

Percent Solids: 30.9

Organochlorine Pesticides by Gas Chromatography

Analytical Method: 8081B

Prep Method:

		Primary	Confirmation			Dilution	
Analyte Name	MRL	Result	Result	RPD	Q	Factor	Date Analyzed
alpha-BHC	59	270	350	26		10	05/22/20 15:35
beta-BHC	59	350	400	13		10	05/22/20 15:35

Confirmation Results

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

SRM Matrix:

Sample Name:

Lab Control Sample

Lab Code:

RQ2005120-02

Service Request: R2004148

Date Collected: NA **Date Received:**

Units: ug/Kg

Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analytical Method: 8081B

Prep Method:

		Primary	Confirmation			Dilution	
Analyte Name	MRL	Result	Result	RPD	Q	Factor	Date Analyzed
alpha-BHC	1.7	4.94	5.22	6		1	05/22/20 14:19
beta-BHC	1.7	4.80	5.79	19		1	05/22/20 14:19
delta-BHC	1.7	4.98	5.76	15		1	05/22/20 14:19
gamma-BHC (Lindane)	1.7	4.96	5.26	6		1	05/22/20 14:19

Confirmation Results

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

SRM Matrix:

Sample Name:

Soil

Duplicate Lab Control Sample

Lab Code:

RQ2005120-03

Service Request: R2004148

Date Collected: NA **Date Received:**

Units: ug/Kg

Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analytical Method: 8081B

Prep Method:

		Primary	Confirmation			Dilution	
Analyte Name	MRL	Result	Result	RPD	Q	Factor	Date Analyzed
alpha-BHC	1.7	5.80	5.85	<1		1	05/22/20 14:38
beta-BHC	1.7	5.57	6.21	11		1	05/22/20 14:38
delta-BHC	1.7	5.78	6.42	10		1	05/22/20 14:38
gamma-BHC (Lindane)	1.7	5.74	5.98	4		1	05/22/20 14:38

Confirmation Results

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

SRM Matrix:

Soil

Service Request: R2004148

Date Collected: NA

Date Received:

Sample Name:

Performance Evaluation

Lab Code:

RQ2005364-01

Units: ug/Kg

Basis: Dry

Organochlorine Pesticides by Gas Chromatography

8081B

Prep Method:

	Primary	Confirmation Result			Dilution	
	Result		RPD	Q	Factor	Date Analyzed
alpha-BHC	11	12	9		1	05/22/20 11:55
beta-BHC	12	12	<1		1	05/22/20 11:55
delta-BHC	0	0			1	05/22/20 11:55
gamma-BHC (Lindane)	11	12	9		1	05/22/20 11:55



Service Request No:R2008776

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

Laboratory Results for: Charles Gibson - Olin

Dear Adam.

Enclosed are the results of the sample(s) submitted to our laboratory September 23, 2020 For your reference, these analyses have been assigned our service request number **R2008776**.

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: Randy Morris

ADDRESS



ALS Environmental ALS Group USA, Corp 1565 Jefferson Road, Building 300, Suite 360 Rochester, NY 14623

T: +1 585 288 5380 F: +1 585 288 8475 www.alsglobal.com

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Narrative Documents



Client:

Olin Corporation

Project:

Charles Gibson - Olin

Sample Matrix: Soil

Service Request: R2008776

Date Received: 09/23/2020

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:

Three soil samples were received for analysis at ALS Environmental on 09/23/2020. 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:

Method 8081B, 10/06/2020: The control limits were exceeded for analytes in the Continuing Calibration Verification (CCV). The QC failure was most likely due to the composition of the sample(s) immediately preceding the failing CCV. In order to protect the integrity of the instrument, no further corrective action was taken. Results should be considered estimated. Sample ran 2x with the same result to closing ccv.

Method 8081B, 698449s: The control limits were exceeded for one or more surrogates due to matrix interferences. Due to the presence of non-target background components that prevented adequate resolution of the surrogate, accurate quantitation was not possible. No further corrective action was appropriate.

Method 8081B, 698449: The Method Reporting Limit (MRL) was elevated due to dark color of the extract of sample.

General Chemistry:

No significant anomalies were noted with this analysis.

Mighan Pedro			
Approved by	Date _	10/13/2020	_



SAMPLE DETECTION SUMMARY

CLIENT ID: US-1-092220		Lab ID: R2008776-001							
Analyte	Results	Flag	MDL	MRL	Units	Method			
Total Solids	26.9				Percent	ALS SOP			
CLIENT ID: MS-1-092220		Lab	ID: R2008	3776-002					
Analyte	Results	Flag	MDL	MRL	Units	Method			
Total Solids	24.2				Percent	ALS SOP			
CLIENT ID: DS-1-092220		Lab	ID: R2008	3776-003					
Analyte	Results	Flag	MDL	MRL	Units	Method			
Total Solids	20.8				Percent	ALS SOP			



Sample Receipt Information

Client: Project: Olin Corporation

Charles Gibson - Olin/1229

Service Request:R2008776

SAMPLE CROSS-REFERENCE

SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
R2008776-001	US-1-092220	9/22/2020	0950
R2008776-002	MS-1-092220	9/22/2020	1000
R2008776-003	DS-1-092220	9/22/2020	1015



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003813

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

Project Name CHARLES GIBSON - OI	-OLIN Project Number 1229					ANALYSIS REQUESTED (Include Method Number and Container Preservative)																	
Project Manager	Report CC				PRE	SERVA	TIVE				0						0						
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Cooler Receipt and Preservation Check Form

R2008776	5
Charles Gibson - Olin	

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&Client Approv	al to Run Samples:		Stan	ding App	roval Clien	aware	at drop-off C	lient notifi	ed by:		
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11. Were co 12. Were 50 13. Air Sam pH Lot o paper ≥12 ≤2 ≤4 5-9 Residual Chlorine (-)	oottle labels and tags ag rrect containers used for 135 vials acceptable (no aples: Cassettes / Tubes of test Reagent NaOH HNO3 H2SO4 NaHSO4 For 608pest For CN, Phenol, 625, 608pest, 522 Na2S2O3 ZnAcetate HCl	(i.e. anal ree with or the test extra lal Intact v Preserv Yes	ysis, custo s indi sels, r vith M ed? No	préservat dy papers cated? not leakin IS? Ca Lot Rea No=Not If+, con Na ₂ S ₂ O ₃	g)? anisters Pressuceived ify for 3day tact PM to add (625, 608,	rized	YES YES YES Tedlar® Sample ID Adjusted **VOAs and 16 Otherwise, all b	NO NO NO NO D Bags Infl Vol. Added	Lot Add	nalysis.	pH

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by:_	Q.
PC Secondary Review:	Wy .

P:\INTRANET\QAQC\Forms Controlled\Cooler Receipt r17.doc

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

Internal Chain of Custody Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Service Request: R2008776

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2008776-001.01					
	8081B,ALS SOP				
		9/23/2020	1701	R-002 / GLAFORCE	
		9/23/2020	1702	SMO / GLAFORCE	
		10/1/2020	0753	In Lab / KAWONG	
		10/1/2020	0843	R-002 / KAWONG	
R2008776-002.01					·
	ALS SOP,8081B				
		9/23/2020	1701	R-002 / GLAFORCE	
		9/23/2020	1702	SMO/GLAFORCE	
		10/1/2020	0753	In Lab / KAWONG	
		10/1/2020	0843	R-002 / KAWONG	
R2008776-003.01					
	ALS SOP,8081B				
		9/23/2020	1701	R-002 / GLAFORCE	
		9/23/2020	1702	SMO / GLAFORCE	
		10/1/2020	0753	In Lab / KAWONG	
		10/1/2020	0842	R-002 / KAWONG	



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	

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 <a href="https://www.alsglobal.com/locations/americas/north-america/north-

ALS Laboratory Group

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a

substance allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but

greater than or equal to the MDL.

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Service Request: R2008776

Non-Certified Analytes

Certifying Agency:

New York Department of Health

MethodMatrixAnalyteALS SOPSoilTotal Solids

Analyst Summary report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Service Request: R2008776

Sample Name:

US-1-092220

Lab Code:

R2008776-001

Sample Matrix:

Soil

Date Collected: 09/22/20

Date Received: 09/23/20

Analysis Method

8081B ALS SOP Extracted/Digested By

Analyzed By

KSERCU

BALLGEIER

KAWONG

Sample Name:

MS-1-092220

Lab Code:

8081B

ALS SOP

R2008776-002

Date Collected: 09/22/20

Date Received: 09/23/20

Sample Matrix:

Analysis Method

Soil

Extracted/Digested By

KSERCU

Analyzed By

BALLGEIER

KAWONG

Sample Name:

DS-1-092220

Lab Code:

R2008776-003

Sample Matrix:

Soil

Date Collected: 09/22/20

Date Received: 09/23/20

Analysis Method

8081B ALS SOP Extracted/Digested By

KSERCU

Analyzed By

BALLGEIER

KAWONG



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					
method is the same as the analytical method reference.					



Sample Results



Semivolatile Organic Compounds by GC

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2008776

Date Collected: 09/22/20 09:50

Date Received: 09/23/20 09:25

2:

S011

Date

veu: 09/23/20/09:2

Sample Name: Lab Code: US-1-092220 R2008776-001

Units: ug/Kg

Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

EPA 3541

i rep wiemou.	EFA 3341

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	32	5	10/06/20 17:21	9/25/20	
beta-BHC	ND U	32	5	10/06/20 17:21	9/25/20	
delta-BHC	ND U	32	5	10/06/20 17:21	9/25/20	
gamma-BHC (Lindane)	ND U	32	5	10/06/20 17:21	9/25/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	162 *	10 - 145	10 06 20 17:21	*
Tetrachloro-m-xylene	69	10 - 123	10/06/20 17:21	*/

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2008776

Date Collected: 09/22/20 10:00

Date Received: 09/23/20 09:25

Sample Name:

MS-1-092220

Lab Code:

R2008776-002

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	35	5	10/06/20 17:40	9/25/20	
beta-BHC	ND U	35	5	10/06/20 17:40	9/25/20	
delta-BHC	ND U	35	5	10/06/20 17:40	9/25/20	
gamma-BHC (Lindane)	ND U	35	5	10/06/20 17:40	9/25/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
Decachlorobiphenyl	205 *	10 - 145	10/06/20 17:40	*	
Tetrachloro-m-xylene	72	10 - 123	10 06 20 17:40		

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2008776

Date Collected: 09/22/20 10:15

Date Received: 09/23/20 09:25

Sample Name:

DS-1-092220

Lab Code:

R2008776-003

Units: ug/Kg

Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	40	5	10/06/20 17:59	9/25/20	
beta-BHC	ND U	40	5	10/06/20 17:59	9/25/20	
delta-BHC	ND U	40	5	10/06/20 17:59	9/25/20	
gamma-BHC (Lindane)	ND U	40	5	10/06/20 17:59	9/25/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
Decachlorobiphenyl	206 *	10 - 145	10/06/20 17:59	*	
Tetrachloro-m-xylene	76	10 - 123	10/06/20 17:59		



General Chemistry

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2008776

Date Collected: 09/22/20 09:50

Date Received: 09/23/20 09:25

Sample Name:

US-1-092220

Lab Code:

R2008776-001

Basis: As Received

Inorganic Parameters

	Analysis						
Analyte Name	Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Total Solids	ALS SOP	26.9	Percent	-	1	10/01/20 08:10	

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2008776

Date Collected: 09/22/20 10:00

Date Received: 09/23/20 09:25

Sample Name:

Lab Code:

MS-1-092220 R2008776-002

Basis: As Received

Inorganic Parameters

	Analysis						
Analyte Name	Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Total Solids	ALS SOP	24.2	Percent		1	10/01/20 08:10	

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson - Olin/1229

Sample Matrix:

Soil

Service Request: R2008776

Date Collected: 09/22/20 10:15

Date Received: 09/23/20 09:25

Sample Name:

DS-1-092220

Lab Code:

R2008776-003

Basis: As Received

Inorganic Parameters

	Analysis						
Analyte Name	Method	Result	Units	MRL	Dil.	Date Analyzed	O
Total Solids	ALS SOP	20.8	Percent	-	ı	10/01/20 08:10	



Service Request No:R2008989

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

Laboratory Results for: Charles Gibson

Dear Adam,

Enclosed are the results of the sample(s) submitted to our laboratory September 29, 2020 For your reference, these analyses have been assigned our service request number **R2008989**.

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

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

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro Project Manager

CC: Randy Morris



ALS Environmental ALS Group USA, Corp 1565 Jefferson Road, Building 300, Suite 360 Rochester, NY 14623

T: +1 585 288 5380 F: +1 585 288 8475 www.alsglobal.com

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Narrative Documents



Client:

Olin Corporation

Project:

Charles Gibson

Sample Matrix: Water

Service Request: R2008989 Date Received: 09/29/2020

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:

Five water samples were received for analysis at ALS Environmental on 09/29/2020. 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.

Semivoa GC:

No significant anomalies were noted with this analysis.

	Midrae Pedro		
Approved by	<u> </u>	Date	10/15/2020



SAMPLE DETECTION SUMMARY

CLIENT ID: MH-B - 092820		Lab	ID: R2008	8989-005		
Analyte	Results	Flag	MDL	MRL	Units	Method
beta-BHC	0.25	***************************************		0.057	ug/L	8081B
delta-BHC	2.2			0.057	ug/L	8081B



Sample Receipt Information

Client:

Olin Corporation

Project:

Charles Gibson/1229

Service Request:R2008989

SAMPLE CROSS-REFERENCE

SAMPLE#	CLIENT SAMPLE ID	<u>DATE</u>	<u>TIME</u>
R2008989-001	Field Blank - 092820	9/28/2020	0845
R2008989-002	MW-5 - 092820	9/28/2020	0900
R2008989-003 [']	MW-4 - 092820	9/28/2020	0925
R2008989-004	MW-7 - 092820	9/28/2020	0940
R2008989-005	MH-B - 092820	9/28/2020	1000



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003820

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

Project Name CHARLES GIBSON	Project Nur	Project Number ANALYSIS REQUESTED (Include Method Number and Container Preservative)																				
Project Manager ADARA CALLINGTH	Report CC	m carri	NEK		PRES	SERVA	TIVE		ව		0											
Company/Address OLIN CON					NERS		7	7	7	$\overline{}$	7		$\overline{}$	7	7	7	7	7	7	//	Preservat 0. NONE 1. HCL 2. HNO	
3855 NORTH OCES	£ 5T				OF CONTAINERS	l ,	/ ,		/	/		/				/		/ ,	/	/ /	 H₂SO NaOH Zn. A 	4
CLEVELAND TH	37312				OFC		3/3	\$ /	8/	/	~ /s	7 S S S S S S S S S S S S S S S S S S S	Sommen Series	' /				' /		' /	6. MeOH 7. NaHS	04
423 336 4989	ABC	arringer Q		~	NUMBER	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		8 0	8/86	METALS OGG	TALS	8								8. Other	
Sampler's Signature	, , , , , , , , , , , , , , , , , , , 	Printed Name			ž	\8 &	\&\ \	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1/5,8	13.15	1 2 2	_	\leftarrow	\angle		\sqsubseteq	_		ALTERN	REMARKS/ ATE DESCR	RIPTION
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	DATE SAMP	TIME	MATRIX	_																	
FIELD BLANK - 0972270		9/28/20	845	GW	4		2		٧													
MM. 5- 042850	-	9 28 30	900	رس	8		4		4			_								1	SD No	WINE
MW. 4 - 091820		9/28/20	925	GW	4		2		2											•		
MUN-7-092820		9/24/20	940	Gu	17		2		2													
M4-B-092820		9 22 20	1000	GW	4		٤		2					\vdash								
TEMP BLANK				~	1															FROVIDE	137 L	AG.
				ļ	\vdash							_	_	\vdash						 		
				ļ	_				ļ			_	_									
				ļ	<u> </u>					<u> </u>												
					<u> </u>	-									<u> </u>							
				1	<u> </u>		,			<u> </u>		<u></u>	<u> </u>						<u> </u>	İ		
SPECIAL INSTRUCTIONS/COMMENTS Metals						TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY)						REPORT REQUIREMENTS INVOICE INFORMATI							NON			
PHOTO IN ONE	contin											•	1~				aries		PO	•		
					1 day2 day						a.cs					II. Results + OC Summaries (LCS, DUP, MS/MSD as required)						
						Standard (10 business days-No Surcharge)(II). Results + OC and Calibration						DLIN										
						REQUESTED REPORT DATE																
					STAVOAND								IV. Oat	ta Valida	tion Rep	ort with	Raw Oat	▞			-	
See QAPP													4						\vdash			
STATE WHERE SAMPLES WERE CO							<u> </u>						- -	EdataYesNo						957	EIVED BY	
RELINQUISHED BY RELINQUISHED					BY			A	MEGE	MED B		•		RELINQUISHED BY						ne.	CIVED B1	
Signatura	Signature		Signature				Signer	1				IN	Signa	Signature					Sign	ature		
Printed Name	Printed Name		Printed Name				PG	ame	ow.	0,5	mei	(UV)		d Name				R2	00	8989		5
Fim SEVENSON	Firm		Firm				Fam	प	1/4	13			Firm					Charles	Gibso	lon In		_
	Date/Time		Date/Time				Date/T	- 7	129	~187	009	131)	Date	Time								

-Gharles-Gibson

Annual Ground Water Monitoring Sampling Narrative

09/23/20

Both monitoring wells MW-4 and MW-5 went dry during purge before sample was collected. Sevenson contacted Adam Carringer of Olin Corp. Adam told Sevenson to wait a few days and sample the recharge. Also MW-A3 was completely dry and no sample was taken.

9/28/20

Sevenson returned to site to sample recharge. The field blank was sampled at 0845. MW-5 was sampled at 0900. MS/MSD volume was also collected. MW-4 was sampled at 0925. MW-7 was sampled at 0940. Man Hole B was sampled at 1000.

(ALS)

Dooler received on 9-29-2020

3. Temperature Readings Observed Temp (°C) Within 0-6°C?

If <0°C, were samples frozen?

Were Custody seals on outside of cooler?

Circle: (Wet Ice Dry Ice Gel packs

Custody papers properly completed (ink, signed)?

Did all bottles arrive in good condition (unbroken)?

?roject/Client

Cooler Receipt and Preservation	Check	Form
--	-------	------

Folder Number

5b

present?

N

N

Date: 199000 Time:

N

N

COURIER: ALS (UPS

N

ation Check Form	Olin Corporation)3	9	;
ber				,
RIER: ALS UPS FEDEX	VELOCITY	CLIENT		
Perchlorate samples have req	uired headspace	? Y	N NA	1
Did VOA vials, Alk, or Sulfide	have sig* bubb	les? Y	N (NA	7
Where did the bottles originate	? ALS/R	oc ci	LIENT	
Soil VOA received as: Bu	lk Encore	5035set	(NA)	1
ID: IR#7 IR#10	From: Temp	Blank S	ample Bottl	e le
*				

D2002020

NO

If out of Temperature, note packing/ice &Client Approval to Run Samples:	condition:Standing Approv		Poorly Packed (described below) re at drop-off Client notified by:	Same Day Rule
All samples held in storage location: 5035 samples placed in storage location:	R.002 by MZ by	on 9-29-20 at on at		Y N
Cooler Breakdown/Preservation Check**: 9. Were all bottle labels complete (Date: 9/29/2070 i.e. analysis, preservation,	Time:_1715	by: NO	

N

N

10.		ibels and tags agr	~~	40000	ay papers.		4E2	NO		
11.	Were correct co	ntainers used for the tests indicated?					YES YES	NO		
12.	Were 5035 vial	ls acceptable (no	extra la	bels, 1	ot leaking)?		YES	NO	₹	
13.					15? Canisters Pressur	ized	Tedlar®	Bags Inflat	ted $\Delta \sqrt{A}$	
pН	Lot of test	Reagent	Preser	ved?	Lot Received	Exp	Sample ID	Vol.	Lot Added	Final
. •	рарег		Yes	No			Adjusted	Added		pН
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO ₄								
<4		NaHSO ₄						<u> </u>		
5-9		For 608pest			No=Notify for 3day	Ι		1	ļ. <u></u>	
Residua	1	For CN,	:		If+, contact PM to add					1
Chlorine	e	Phenol, 625,			Na ₂ S ₂ O ₃ (625, 608,					
(-)		608pest, 522	10	<u> </u>	CN), ascorbic (phenol).					
		Na ₂ S ₂ O ₃							<u> </u>	
		ZnAcetate	-	-			1		ested before analysis.	

Bottle lot numbers: _ 096076-113MC

Explain all Discrepancies/ Other Comments:

HCI

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by:	d	
PC Secondary Review:		W

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

Otherwise, all bottles of all samples with chemical preservatives

are checked (not just representatives).

Internal Chain of Custody Report

Client:

Olin Corporation

Project:

Charles Gibson/1229

Service Request: R2008989

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2008989-001.01					
	8081B				
		9/29/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
		9/30/2020	0745	In Lab / VSTAUFFER	
		9/30/2020	0747	In Lab / VSTAUFFER	
R2008989-001.02					
		9/29/2020	1714	SMO/GLAFORCE	
		9/29/2020	1714	R-002/GLAFORCE	
R2008989-001.03					
	8270D				
		9/29/2020	1714	SMO/GLAFORCE	
		9/29/2020	1714	R-002/GLAFORCE	
		10/2/2020	0803	In Lab / VSTAUFFER	
R2008989-001.04					"
		0.00.000	1714	CAO ACT A FORCE	
		9/29/2020	1714	SMO/GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
R2008989-002.01					
		9/29/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002/GLAFORCE	
R2008989-002.02			· · · · · · · · · · · · · · · · · · ·		
	8081B				
		9/29/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002/GLAFORCE	
		10/2/2020	0804	In Lab / VSTAUFFER	
R2008989-002.03					
		9/29/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002/GLAFORCE	
R2008989-002.04					
	8270D				
		9/29/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
		10/2/2020	0803	In Lab / VSTAUFFER	
R2008989-002.05					
		9/29/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
Dalmond (Addisolated to all	-02 AM		Page 14 of 615		
Printed 10/15/2020 10:34	IVIA CU.				

Internal Chain of Custody Report

Client:

Olin Corporation

Project:

Charles Gibson/1229

Service Request: R2008989

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		10/2/2020	0803	In Lab / VSTAUFFER	
R2008989-002.06					
		9/29/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
		10/2/2020	0803	In Lab / VSTAUFFER	
R2008989-002.07					
		9/29/2020	1714	SMO/GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
		10/2/2020	0804	In Lab / VSTAUFFER	
R2008989-002.08		···			
		9/29/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002 GLAFORCE	
		10/2/2020	0804	In Lab / VSTAUFFER	
R2008989-003.01	00015				
	8081B	0/20/2020	1714	SMO/GLAFORCE	
		9/29/2020 9/29/2020	1714	R-002 / GLAFORCE	
		10/2/2020	0804	In Lab / VSTAUFFER	
		10/2/2020	1403	R-002 / VSTAUFFER	
R2008989-003.02					· · · · · · · · · · · · · · · · · · ·
		9/29/2020	1714	SMO/GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
R2008989-003.03			· · · · · · · · · · · · · · · · · · ·		
	8270D	0/20/2020	1714	CMO CLAFORCE	
		9/29/2020	1714	SMO/GLAFORCE	
		9/29/2020 10/2/2020	1714 0803	R-002 / GLAFORCE In Lab / VSTAUFFER	
R2008989-003.04					
		9/29/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002 GLAFORCE	
		9/30/2020	0745	In Lab / VSTAUFFER	
		9/30/2020	0743	In Lab / VSTAUFFER	
R2008989-004.01	·····				
	8081B				
		9/29/2020	1714	SMO/GLAFORCE	

Internal Chain of Custody Report

Client:

Olin Corporation

Project:

Charles Gibson/1229

Service Request: R2008989

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
	8081B				
		9/29/2020	1714	R-002 / GLAFORCE	
		10/2/2020	0804	In Lab / VSTAUFFER	
R2008989-004.02					
		9/29/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
R2008989-004.03					
	8270D	0/20/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
		9/29/2020	1714		
		9/30/2020	0745	In Lab / VSTAUFFER In Lab / VSTAUFFER	
		9/30/2020	0747 1623	R-002 / VSTAUFFER	
		9/30/2020		In Lab / VSTAUFFER	
		10/2/2020	0803	In Lab / VSTAOFFER	
R2008989-004.04					
		9/29/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002 GLAFORCE	
R2008989-005.01					
		9/29/2020	1714	SMO / GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
R2008989-005.02	?		· · · · · · · · · · · · · · · · · · ·		
	8081B				
		9/29/2020	1714	SMO/GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
		10/2/2020	0804	In Lab / VSTAUFFER	
R2008989-005.03	3				
		9/29/2020	1714	SMO/GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
R2008989-005.04	1				
	8270D				
		9/29/2020	1714	SMO/GLAFORCE	
		9/29/2020	1714	R-002 / GLAFORCE	
		10/2/2020	0803	In Lab / VSTAUFFER	



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

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:

Charles Gibson/1229

Service Request: R2008989

Sample Name:

Field Blank - 092820

Lab Code:

R2008989-001

Sample Matrix:

Water

Date Collected: 09/28/20

Date Received: 09/29/20

Analysis Method

8081B 8270D Extracted/Digested By

KSERCU KSERCU Analyzed By

JMISIUREWICZ JMISIUREWICZ

Sample Name:

Lab Code: Sample Matrix: MW-5 - 092820

R2008989-002

Water

Date Collected: 09/28/20

Date Received: 09/29/20

Analysis Method

8081B 8270D Extracted/Digested By

KSERCU KSERCU Analyzed By

JMISIUREWICZ JMISIUREWICZ

Sample Name:

Lab Code:

MW-4 - 092820 R2008989-003

Sample Matrix:

Water

Date Collected: 09/28/20

Date Received: 09/29/20

Analysis Method

8081B 8270D Extracted/Digested By

KSERCU KSERCU Analyzed By

JMISIUREWICZ JMISIUREWICZ

Sample Name:

Lab Code:

MW-7 - 092820 R2008989-004

Sample Matrix:

Water

Date Collected: 09/28/20

Date Received: 09/29/20

Analysis Method

8081B 8270D Extracted/Digested By

KSERCU KSERCU Analyzed By

JMISIUREWICZ JMISIUREWICZ

Printed 10/15/2020 10:34:06 AM

Analyst Summary report

Client:

Olin Corporation

Service Request: R2008989

Project:

Charles Gibson/1229

Sample Name:

MH-B - 092820

Lab Code:

R2008989-005

Sample Matrix:

Water

Date Collected: 09/28/20

Date Received: 09/29/20

Analysis Method

Extracted/Digested By

Analyzed By

8081B 8270D KSERCU KSERCU JMISIUREWICZ 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
Anarytical Method	Freparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
	,
6020A	1LM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual	SM 4500-CN-G
Cyanide	
'	
SM 4500-CN-E WAD	SM 4500-CN-I
Cyanide	
	1

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



Semivolatile Organic Compounds by GC/MS

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

Analytical Report

Client:

Olin Corporation

Service Request: R2008989

Project:

Charles Gibson/1229

Date Collected: 09/28/20 08:45

Sample Matrix:

Water

Date Received: 09/29/20 09:30

Sample Name:

Field Blank - 092820

Units: ug/L

Lab Code:

R2008989-001

Basis: NA

Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Hexachlorobenzene	ND U	11	1	10/06/20 22:48	10/2/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	76	35 - 141	10/06/20 22:48	
2-Fluorobiphenyl	61	31 - 118	10/06/20 22:48	
2-Fluorophenol	43	10 - 105	10/06/20 22:48	
Nitrobenzene-d5	58	31 - 110	10/06/20 22:48	
Phenol-d6	29	10 - 107	10/06/20 22:48	
p-Terphenyl-d14	77	10 - 165	10/06/20 22:48	

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson/1229

Sample Matrix:

Water

Service Request: R2008989

Date Collected: 09/28/20 09:00

Date Received: 09/29/20 09:30

Sample Name:

MW-5 - 092820

Lab Code:

R2008989-002

Units: ug/L Basis: NA

Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Hexachlorobenzene	ND U	11	1	10/07/20 20:20	10/2/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	87	35 - 141	10/07/20 20:20	
2-Fluorobiphenyl	64	31 - 118	10/07/20 20:20	
2-Fluorophenol	43	10 - 105	10/07/20 20:20	
Nitrobenzene-d5	63	31 - 110	10/07/20 20:20	
Phenol-d6	30	10 - 107	10/07/20 20:20	
p-Terphenyl-d14	71	10 - 165	10/07/20 20:20	

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson/1229

Sample Matrix:

Water

Service Request: R2008989

Date Collected: 09/28/20 09:25

Date Received: 09/29/20 09:30

Sample Name:

MW-4 - 092820

Lab Code:

R2008989-003

Units: ug/L

Basis: NA

Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Hexachlorobenzene	ND U	10	1	10/06/20 23:17	10/2/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	61	35 - 141	10/06/20 23:17	
2-Fluorobiphenyl	57	31 - 118	10/06/20 23:17	
2-Fluorophenol	39	10 - 105	10/06/20 23:17	
Nitrobenzene-d5	57	31 - 110	10/06/20 23:17	
Phenol-d6	27	10 - 107	10/06/20 23:17	
p-Terphenyl-d14	55	10 - 165	10/06/20 23:17	

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson/1229

Sample Matrix:

Water

Service Request: R2008989

Date Collected: 09/28/20 09:40

Date Received: 09/29/20 09:30

Sample Name:

MW-7 - 092820

Lab Code:

R2008989-004

Units: ug/L Basis: NA

Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Hexachlorobenzene	ND U	11	1	10/07/20 21:46	10/2/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	- 63	35 - 141	10/07/20 21:46	
2-Fluorobiphenyl	52	31 - 118	10/07/20 21:46	
2-Fluorophenol	38	10 - 105	10/07/20 21:46	
Nitrobenzene-d5	49	31 - 110	10/07/20 21:46	
Phenol-d6	25	10 - 107	10/07/20 21:46	
p-Terphenyl-d14	62	10 - 165	10/07/20 21:46	

Analytical Report

Client:

Olin Corporation

Project:

Charles Gibson/1229

Sample Matrix:

Water

Service Request: R2008989

Date Collected: 09/28/20 10:00

Date Received: 09/29/20 09:30

Sample Name:

MH-B - 092820

Lab Code:

R2008989-005

Units: ug/L

Basis: NA

Date Extracted

10/07/20 22:14

Q

Semivolatile Organic Compounds by GC/MS

Dil.

10 - 165

Date Analyzed

Analysis Method:

8270D

Prep Method:

Analyte Name

p-Terphenyl-d14

EPA 3510C

Result

Hexachlorobenzene	ND Ü	10	1 10/07/2	20 22:14	10/2/20	
Surrogate Name		% Rec	Control Limits	Date Analyzo	ed Q	
2,4,6-Tribromophenol		80	35 - 141	10/07/20 22:	4	
2-Fluorobiphenyl		67	31 - 118	10/07/20 22:	14	
2-Fluorophenol		39	10 - 105	10/07/20 22:1	4	
Nitrobenzene-d5		55	31 - 110	10/07/20 22:1	14	
Phenol-d6		28	10 - 107	10/07/20 22:1	14	

75

MRL