ARCADIS Design & Consultancy for natural and built assets

Payson Long
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
Bureau of Program Management
625 Broadway, 12th Floor
Albany, NY 12233-7012

Arcadis CE, Inc.
855 Route 146
Suite 210
Clifton Park
New York 12065
Tel 518 250 7300
Fax 518 371 2757
www.arcadis.com

ENVIRONMENT

Subject:
Monitoring Well MW-6 Additional Sampling Results
Oswego Castings
NYSDEC Site No. 738033
Contract No. D007618-11

Date:
August 26, 2019

Contact:
Andy Vitolins

Phone:
518.250.7300

Email:
Andy.vitolins@arcadis.com

Our ref:
30001350

Dear Mr. Long:

Arcadis CE, Inc. (Arcadis) has prepared this letter report to summarize the non-routine groundwater sampling event conducted on May 29, 2019 at the above-referenced site.

Non-Routine Groundwater Sampling

At the request of the NYSDEC, a groundwater sample was collected from upgradient monitoring well MW-6 on May 29, 2019 to further assess the concentrations of poly-chlorinated biphenyls (PCBs) that were detected during two groundwater sampling events conducted in March 2019. Details of both sampling events are discussed in the 2019 Annual Groundwater Monitoring Report (Arcadis 2019).

The groundwater sample was collected using low-flow groundwater purging and sampling procedures. Prior to collecting the groundwater sample, pH, conductivity, turbidity, dissolved oxygen (DO), temperature, and REDOX were measured using a Horiba U-52 water quality meter and recorded on a groundwater sampling purge log. The groundwater sample was collected and submitted to Eurofins Spectrum Analytical by chain-of-custody procedures and analyzed for PCBs by USEPA Method 8082. The laboratory analytical data are provided as Attachment A.

As shown in Attachment A, the groundwater sample collected from MW-6 contained PCB Aroclor 1248 (7.7 micrograms per liter (µg/L)) at a concentration that exceeds the corresponding NYSDEC Class GA Standard of 0.09 µg/L. PCBs

were previously not detected at this monitoring well until detected at 8.1 µg/L (PCB Aroclor-1248) on March 13, 2019.

Recommendations

Based on results from the 2019 groundwater sampling events, the following actions are suggested.

- Perform groundwater investigation upgradient of monitoring well MW-6 to evaluate the potential source of PCBs and extent of contamination. The groundwater investigation would include a desktop search of historic environmental sites and monitoring wells within a one-mile radius of the site, and installation and development of additional wells both off-site and on-site. Groundwater samples would be collected from new wells and existing site wells to determine vertical and horizontal extent of PCB contamination.
- Increase sampling frequency from every five quarters to semi-annual to evaluate trends and mobility of existing contamination.

References

Arcadis 2019, Oswego Castings Site 2019 Annual Groundwater Monitoring Report, NYSDEC Site Number 7-38-033, May 2019.

If you would like to discuss the results of this sampling event or have any questions regarding this issue, please do not hesitate to contact me.

Sincerely,

Arcadis CE, Inc.

Andy Vitolins, P.G.
Vice President

Copies:
Jeremy Wyckoff, Arcadis
File

Enclosures:

Attachments

A Analytical Data Package – June 2019

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☑ Final Report
☐ Revised Report

Report Date:
14-Jun-19 11:43

Laboratory Report
SC54941

ARCADIS
855 Route 146
Suite 210
Clifton Park, NY 12065

Project: Oswego Castings
Project #: 00266404.0000

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2972/2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00348
USDA # P330-15-00375
Vermont # VT-11393

Authorized by:

Dawn Wojcik
Laboratory Director

Dawn E Wojcik

Eurofins Spectrum Analytical holds primary NELAC certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 8 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

Eurofins Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Eurofins Spectrum Analytical, Inc. is currently accredited for the specific method or analyte indicated. Please refer to our 'Quality' web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Eurofins Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (PA-68-04426).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

Sample Summary

Work Order: SC54941

Project: Oswego Castings

Project Number: 00266404.0000

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC54941-01	MW-6-20190529	Ground Water	29-May-19 12:35	30-May-19 10:12

CASE NARRATIVE:

Data has been reported to the MDL. This report includes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the detection limit are reported as "<" (less than) the detection limit in this report.

The samples were received 1.0 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group. If method or program required MS/MSD/Dup were not performed, sufficient sample was not provided to the laboratory.

General Comments:
See the Laboratory Sample Analysis Record section of the Analysis Report for the method references .
All QC met criteria unless otherwise noted in an Analysis Specific Comment below .
Refer to the QC Summary for specific values and acceptance criteria.
Project specific QC samples are not included in this data set.
Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.
Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below .
The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.
Analysis Specific Comments:
No additional comments are necessary.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW-846 8082A

Samples:

SC54941-01 *MW-6-20190529*

Indicates for dual column analyses that the result is reported from column 1

PCB-1016
PCB-1221
PCB-1232
PCB-1242
PCB-1254
PCB-1260
PCB-1262
PCB-1268

Indicates for dual column analyses that the result is reported from column 2

PCB-1248

Sample Acceptance Check Form

Client:	ARCADIS - Clifton Park, NY
Project:	Oswego Castings / 00266404.0000
Work Order:	SC54941
Sample(s) received on:	5/30/2019

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☑	☐	☐
Were custody seals intact?	☑	☐	☐
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples cooled on ice upon transfer to laboratory representative?	☑	☐	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☑	☐	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☑	☐	☐

Summary of Hits

Lab ID: SC54941-01 **Client ID:** MW-6-20190529

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
PCB-1248	7.7	D2	0.48	ug/l	SW-846 8082A
Total PCBs	7.7		0.48	ug/l	SW-846 8082A

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-6-20190529 SC54941-01	00266404.0000	Ground Water	29-May-19 12:35	30-May-19

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses Prepared by method SW-846 3510C													
Analysis performed by Eurofins Lancaster Laboratories Environmental - 10670													
12674-11-2	PCB-1016	< 0.096	D1	ug/l	0.48	0.096	1	SW-846 8082A	03-Jun-19 16:30	07-Jun-19 00:15	10670	91540014	
11104-28-2	PCB-1221	< 0.096	D1	ug/l	0.48	0.096	1	"	"	"	"	"	
11141-16-5	PCB-1232	< 0.096	D1	ug/l	0.48	0.096	1	"	"	"	"	"	
53469-21-9	PCB-1242	< 0.096	D1	ug/l	0.48	0.096	1	"	"	"	"	"	
12672-29-6	PCB-1248	**7.7**	D2	ug/l	0.48	0.096	1	"	"	"	"	"	
11097-69-1	PCB-1254	< 0.096	D1	ug/l	0.48	0.096	1	"	"	"	"	"	
11096-82-5	PCB-1260	< 0.096	D1	ug/l	0.48	0.096	1	"	"	"	"	"	
37324-23-5	PCB-1262	< 0.096	D1	ug/l	0.48	0.096	1	"	"	"	"	"	
11100-14-4	PCB-1268	< 0.096	D1	ug/l	0.48	0.096	1	"	"	"	"	"	
1336-36-3	Total PCBs	**7.7**		ug/l	0.48	0.096	1	"	"	"	"	"	
Surrogate recoveries:													
2051-24-3	*Decachlorobiphenyl-D1*	*115*			*10-148 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl-D2*	*93*			*10-148 %*			"	"	"	"	"	
877-09-8	*Tetrachloro-m-xylene-D1*	*93*			*33-137 %*			"	"	"	"	"	
877-09-8	*Tetrachloro-m-xylene-D2*	*97*			*33-137 %*			"	"	"	"	"	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW-846 8082A										
Batch 191540014A - SW-846 3510C										
LCS (LCS14154Q)							Prepared: 03-Jun-19 Analyzed: 06-Jun-19			
PCB-1260	**4.7**		ug/l	0.50	5.0		94	70-130		
PCB-1016	**4.0**		ug/l	0.50	5.0		80	70-130		
Surrogate: Tetrachloro-m-xylene-D1	*0.19*		ug/l		*0.30*		*64*	*33-137*		
Surrogate: Decachlorobiphenyl-D2	*0.26*		ug/l		*0.30*		*86*	*10-148*		
Surrogate: Decachlorobiphenyl-D1	*0.31*		ug/l		*0.30*		*103*	*10-148*		
Surrogate: Tetrachloro-m-xylene-D2	*0.20*		ug/l		*0.30*		*65*	*33-137*		
Blank (PBLK14154B)							Prepared: 03-Jun-19 Analyzed: 06-Jun-19			
PCB-1268	< 0.10		ug/l	0.10				-		
PCB-1016	< 0.10		ug/l	0.10				-		
PCB-1221	< 0.10		ug/l	0.10				-		
PCB-1232	< 0.10		ug/l	0.10				-		
PCB-1242	< 0.10		ug/l	0.10				-		
PCB-1248	< 0.10		ug/l	0.10				-		
PCB-1254	< 0.10		ug/l	0.10				-		
PCB-1262	< 0.10		ug/l	0.10				-		
Total PCBs	< 0.10		ug/l	0.10				-		
PCB-1260	< 0.10		ug/l	0.10				-		
Surrogate: Decachlorobiphenyl-D1	*0.25*		ug/l		*0.30*		*83*	*10-148*		
Surrogate: Tetrachloro-m-xylene-D1	*0.21*		ug/l		*0.30*		*70*	*33-137*		
Surrogate: Tetrachloro-m-xylene-D2	*0.22*		ug/l		*0.30*		*73*	*33-137*		
Surrogate: Decachlorobiphenyl-D2	*0.21*		ug/l		*0.30*		*68*	*10-148*		

Notes and Definitions

D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
[2C]	Indicates concentration was reported from the secondary, confirmation column.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

SC54941 PM

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:

X Standard TAT - 7 to 10 business days

☐ Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 30 days unless otherwise instructed.

Report To: Arcadis-US
EG ~~Vigilant Ferry Rd~~ 855 Rt 146 Suite 210
Clifton Park, NY
Attn. Jasmine Mullins
Telephone #: 646-248-4208 / ~~518-250-7308~~
Project Mgr: Jeremy Wyckoff

Invoice To: Jasmine Mullins / Jeremy Wyckoff
855 Rt 146 Suite 210
Clifton Park, NY 12065
Jeremy.Wyckoff@Arcadis.com
518-250-7335
P.O No.: 30266404.0000 Quote #: _____

Project No: 30266404.0000
Site Name: Oswego Castings
Location: Oswego State: NY
Sampler(s): E. Grey

F=Field Filtered 1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= _____ 12= _____

List Preservative Code below: None

QA/QC Reporting Notes:
* additional charges may appply

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1= _____ X2= _____ X3= _____

G= Grab C=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: 8082 PCBs	Check if chlorinated
SC54941-01	MW-6-20190529	5/29/19	1235	G	GW		2			X	☐
											☐
											☐
											☐
											☐
											☐
											☐
											☐
											☐
											☐

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☐ Standard ☐ No QC
EG ☐ DQA*
~~☐ ASP A*~~ ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
X Other: NYSDEC EQUIS
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp °C
EG		5/29/19	1235	Observed 1.0
[signature]	[signature]	5/30/19	1012	Corrected 1.0
				IR ID # 01

X EDD format: NYSDEC EQUIS
X E-mail to: Jasmine.Mullins@Arcadis.Com
Jeremy.Wyckoff@Arcadis.Com

Condition upon receipt: Custody Seals: ~~☐ Present~~ ~~☐ Intact~~ ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SC54941 PN

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- [X] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: ______

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 30 days unless otherwise instructed.

Report To: Arcadis-US
(EG) ~~Vischer Ferry Rd~~ 855 Rt 146 Suite 210
Clifton Park, NY
Attn. Jasmine Mullins
Telephone #: 646-248-4208 / 518-250-7308
Project Mgr: Jeremy Wyckoff

Invoice To: Jasmine Mullins / Jeremy Wyckoff
855 Rt 146 Suite 210
Clifton Park, NY 12065
Jeremy.wyckoff@Arcadis.com
518-250-7335
P.O No.: 02266404.0000 Quote #:

Project No: 00266404.0000
Site Name: Oswego Castings
Location: Oswego State: NY
Sampler(s): E. Gray

F=Field Filtered 1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=______ 12=______

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1=______ X2=______ X3=______

G= Grab C=Compsite

List Preservative Code below: None

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	8082 PCBs								Check if chlorinated
SC54941-01	MW-6-20190529	5/29/19	1235	G	GW		2			X								[ ]
																		[ ]
																		[ ]
																		[ ]
																		[ ]
																		[ ]
																		[ ]
																		[ ]
																		[ ]
																		[ ]

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? [ ] Yes [ ] No
CT DPH RCP Report? [ ] Yes [ ] No
[ ] Standard [ ] No QC
[ ] DQA*
EG ~~[ ] ASP A*~~ [ ] ASP B*
[ ] NJ Reduced* [ ] NJ Full*
[ ] Tier II* [ ] Tier IV*
[X] Other: NYSDEC EQuIS
State-specific reporting standards:

CAT A package needed per client
bm 5/31

Relinquished by:	Received by:	Date:	Time:	Temp °C
EG W		5/29/19	1235	Observed 1.0
FedEx	[signature]	5/30/19	1012	Correction Factor 0
				Corrected 1.0
				IR ID # 01

[X] EDD format: NYSDEC EQuIS
[X] E-mail to: Jasmine.Mullins@Arcadis.com
Jeremy.wyckoff@Arcadis.com

Condition upon receipt: Custody Seals: ~~[ ] Present~~ ~~[ ] Intact~~ [ ] Broken
[ ] Ambient ~~[ ] Iced~~ [ ] Refrigerated [ ] DI VOA Frozen [ ] Soil Jar Frozen

ORIGIN ID:EHTA (518) 250-7308
ATTN: EVEN GREEN - ARCADIS

4 DWIGHT PARK DRIVE

SYRACUSE, NY 13209
UNITED STATES US

SHIP DATE: 23MAY19
ACTWGT: 28.00 LB MAN
CAD: 0654830/CAFE3211

TO ROBERT BRISTOL
EUROFINS SPECTRUM ANALYTICAL, INC.
11 ALMGREN DRIVE

AGAWAM MA 01001
(413) 789-9018
REF: SAMPLE RETURNS

RMA:

FedEx
Express

FedEx
TRK# 0221 4846 2533 5338

THU - 30 MAY 10:30A
PRIORITY OVERNIGHT

EB EHTA

01001
MA-US BDL

#2625553 05/29 565J1/D66C/23AD

Part # 156146-434 RIT EXP 06/19

EXP 06/20

Batch Summary

191540014A

Subcontracted Analyses

LCS14154Q
PBLK14154B
SC54941-01 (MW-6-20190529)