ANALYTICAL REPORT

Job Number: 410-77654-1

Job Description: USACE ANG SI Rochester AASF #2

For:
EA Engineering, Science, and Technology
225 Schilling Circle
Suite 400
Hunt Valley, MD 21031

Attention: Tara Lamond

Approved for release.
Vanessa Badman
Project Manager
4/11/2022 9:00 AM

Vanessa Badman, Project Manager
2425 New Holland Pike, Lancaster, PA, 17601
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Vanessa.Badman@et.eurofinsus.com
04/11/2022

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Job Number: 410-77654-1

Job Description: USACE ANG SI Rochester AASF #2

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Qualifiers

General Chemistry

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job Narrative
410-77654-1

Receipt
The sample was received on 3/25/2022 10:46 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.7°C

General Chemistry
Method 9060A_DW: Opening CCV and CCB were not run consecutively. The "sync" peak was ran between the CCV and CCB.(LCS 410-241426/4), (MB 410-241426/5), (410-78446-A-17), (410-78446-A-17 MS) and (410-78446-A-17 MSD)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Geotechnical
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: EA Engineering, Science, and Technology
Project/Site: USACE ANG SI Rochester AASF #2

Job ID: 410-77654-1

Client Sample ID: AOI01-03-SB-3-5

Lab Sample ID: 410-77654-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	3900		360	120	mg/Kg	1	☼	9060A	Total/NA
pH	7.1		0.01	0.01	S.U.	1		9045D	Soluble
Temperature	21.3		0.01	0.01	Degrees C	1		9045D	Soluble
75 mm	100.0		1.0	0.5	% Passing	1		D422	Total/NA
37.5 mm	100.0		1.0	0.5	% Passing	1		D422	Total/NA
19 mm	100.0		1.0	0.5	% Passing	1		D422	Total/NA
4.75 mm	89.0		1.0	0.5	% Passing	1		D422	Total/NA
3.35 mm	84.7		1.0	0.5	% Passing	1		D422	Total/NA
2.36 mm	78.2		1.0	0.5	% Passing	1		D422	Total/NA
1.18 mm	75.9		1.0	0.5	% Passing	1		D422	Total/NA
0.6 mm	74.1		1.0	0.5	% Passing	1		D422	Total/NA
0.3 mm	70.8		1.0	0.5	% Passing	1		D422	Total/NA
0.15 mm	65.3		1.0	0.5	% Passing	1		D422	Total/NA
0.064 mm	56.0		1.0	0.5	% Passing	1		D422	Total/NA
0.05 mm	49.0		1.0	0.5	% Passing	1		D422	Total/NA
0.02 mm	36.5		1.0	0.5	% Passing	1		D422	Total/NA
0.005 mm	24.5		1.0	0.5	% Passing	1		D422	Total/NA
0.002 mm	17.5		1.0	0.5	% Passing	1		D422	Total/NA
0.001 mm	13.5		1.0	0.5	% Passing	1		D422	Total/NA
0.075 mm	58.8		1.0	0.5	% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: AOI01-03-SB-3-5
Lab Sample ID: 410-77654-1

Date Collected: 03/23/22 14:10
Matrix: Solid
Date Received: 03/25/22 10:46

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.1		1.0	1.0	%			03/26/22 10:23	1
Percent Solids	82.9		1.0	1.0	%			03/26/22 10:23	1

General Chemistry - Soluble

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.1		0.01	0.01	S.U.			04/04/22 13:15	1
Temperature	21.3		0.01	0.01	Degrees C			04/04/22 13:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
75 mm	100.0		1.0	0.5	% Passing			03/28/22 11:15	1
37.5 mm	100.0		1.0	0.5	% Passing			03/28/22 11:15	1
19 mm	100.0		1.0	0.5	% Passing			03/28/22 11:15	1
4.75 mm	89.0		1.0	0.5	% Passing			03/28/22 11:15	1
3.35 mm	84.7		1.0	0.5	% Passing			03/28/22 11:15	1
2.36 mm	78.2		1.0	0.5	% Passing			03/28/22 11:15	1
1.18 mm	75.9		1.0	0.5	% Passing			03/28/22 11:15	1
0.6 mm	74.1		1.0	0.5	% Passing			03/28/22 11:15	1
0.3 mm	70.8		1.0	0.5	% Passing			03/28/22 11:15	1
0.15 mm	65.3		1.0	0.5	% Passing			03/28/22 11:15	1
0.064 mm	56.0		1.0	0.5	% Passing			03/28/22 11:15	1
0.05 mm	49.0		1.0	0.5	% Passing			03/28/22 11:15	1
0.02 mm	36.5		1.0	0.5	% Passing			03/28/22 11:15	1
0.005 mm	24.5		1.0	0.5	% Passing			03/28/22 11:15	1
0.002 mm	17.5		1.0	0.5	% Passing			03/28/22 11:15	1
0.001 mm	13.5		1.0	0.5	% Passing			03/28/22 11:15	1
0.075 mm	58.8		1.0	0.5	% Passing			03/28/22 11:15	1

Client Sample ID: AOI01-03-SB-3-5
Lab Sample ID: 410-77654-1

Date Collected: 03/23/22 14:10
Matrix: Solid
Date Received: 03/25/22 10:46
Percent Solids: 82.9

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3900		360	120	mg/Kg	☼		04/05/22 17:30	1

eurofins | Lancaster Laboratories Environmental	Document Title: Particle Size Distribution/ Grain Size Classification		
	Eurofins Document Reference : T-WC-FRM11473	Revision: 7.3	Historical Reference: 1-P-QM-FQR-9008039: Form3606
	Effective date : 19 Aug 2020		Effective

Sample: 410-77654-A-1 Date/Time: 3/28/22 1115 Init./Emp. #: VS41049

Batch #: 240651 sodium hexametaphosphate:

Sieve Size (Mr)	Tare+Sample Wt.(g)	Tare Weight (g)
3 Inch	538.67	538.67
1.5 Inch	559.21	559.21
0.75 Inch	555.45	555.45
#4 ③	~~538~~ 539.97	502.97
#6	496.84	482.37
#8	451.24	429.52
PAN	647.32	385.28

PanBalance: 9458

Comments:

Sieve Size (Mr)	Tare+Sample Wt.(g)	Tare Weight (g)
#16	453.64	452.19
#30	295.21	294.06
#50	267.93	265.83
#100	321.93	318.41
#200	220.73	③ ~~429.61~~ 216.60
PAN	385.40	385.31

③ VS41049 4/4/22

Grain Size Classification	
% Gravel	11.02
% Sand	30.21
% Silt	34.27
% Clay	24.5
%Clay + Silt	—

Balance ID#: 18959 Oven ID# 18961

Oven Date/Time/Temp In: 4/3/22 1140 104° Oven Date/Time/Temp Out: 4/4/22 0655 104°

Moisture

Tare Weight (g)	Sample Weight (g)	Oven Dry Wt. (g)
0.8039	5.0316	5.8129

Init./Emp. #: VS41049

Bulk Density

Tare Weight (g)	Sample Weight (g)	DI H_2O+Sple Wt. (g)
53.3206	6.1968	103.1016

Init./Emp. #: VS41049

Hydrometer Readings Sample Wt. 49.97 Hydrometer ID #: 237666 Init./Emp #: VS41049

Time	Temp	Reading
2 minutes	22	1.019
5 minutes	22	1.018
15 minutes	22	1.016
30 minutes	22	1.015
60 minutes	22	1.014
250 minutes	22	1.012
1440 minutes	22	1.010

Comments :

Oven ID#: 16859

Oven Date/Time/Temp In: 4-1-22 1230 109°

Oven Date/Time/Temp Out: 4-4-22 0905 109°

Particle Size Distribution

Sample:	Date:	Init/Emp #
410-77654-A-1	3/28/22	VS41049

Sieve Size (Mr)	Tare + Smp. Wt.	Tare Weight	Diff. (Mr)	% Passing
3 inch	538.67	538.67	0.00	100
1.5 inch	559.21	559.21	0.00	100
0.75 inch	555.45	555.45	0.00	100
# 4	539.92	502.97	36.95	88.9760726
# 6	496.84	482.37	14.47	84.6589892
# 8	451.24	429.52	21.72	78.178889
PAN	647.32	385.28	262.04	

Sieve Size (Mr)	Tare + Smp. Wt.	Tare Weight	Diff. (Mr)	% Passing
# 16	453.64	452.19	1.45	75.9001046
# 30	295.21	294.06	1.15	74.0927929
# 50	267.93	265.83	2.10	70.7924846
# 100	321.93	318.41	3.52	65.2605392
# 200	220.73	216.60	4.13	58.7699328
PAN	385.40	385.31	0.09	

Moisture Tare Weight	Sample Weight	Oven Dry Weight	Ratio
0.8039	5.0316	5.8129	0.9955

Bulk Density Tare Weight	Sample Weight	DI H2O + Smp. Wt.	Vol H2O	Vol Soil	Result
53.3206	6.1968	103.6016	97.4048	2.5952	2.3878

Hydrometer Readings Time	Sample Weight Temp	49.97 Reading	Hydrometer #: 237666 Corr. Rdng.	 Part. Size	 % Passing
2 minutes	22.0	1.0190	1.015	0.0345	40.2355697
5 minutes	22.0	1.0180	1.014	0.0220	37.5315663
15 minutes	22.0	1.0160	1.012	0.0130	32.1235597
30 minutes	22.0	1.0150	1.011	0.0093	29.4195563
60 minutes	22.0	1.0140	1.010	0.0066	26.715553
250 minutes	22.0	1.0120	1.008	0.0033	21.3075463
1440 minutes	22.0	1.0100	1.006	0.0014	15.8995396

Particle Size Distribution

Sample:	Date:	Init/Emp #
410-77654-A-1	3/28/22	VS41049

Percent Passing		Particle Size
100.00		75
100.00		37.5
100.00		19
88.98		4.75
84.66		3.35
78.18		2.36
75.90		1.18
74.09		0.6
70.79		0.3
65.26		0.15
58.77	*	0.075
40.24	*	0.03449
37.53	***	0.02200
32.12	**	0.01303
29.42	**	0.00929
26.72	**	0.00665
21.31	**	0.00332
15.90	**	0.00142

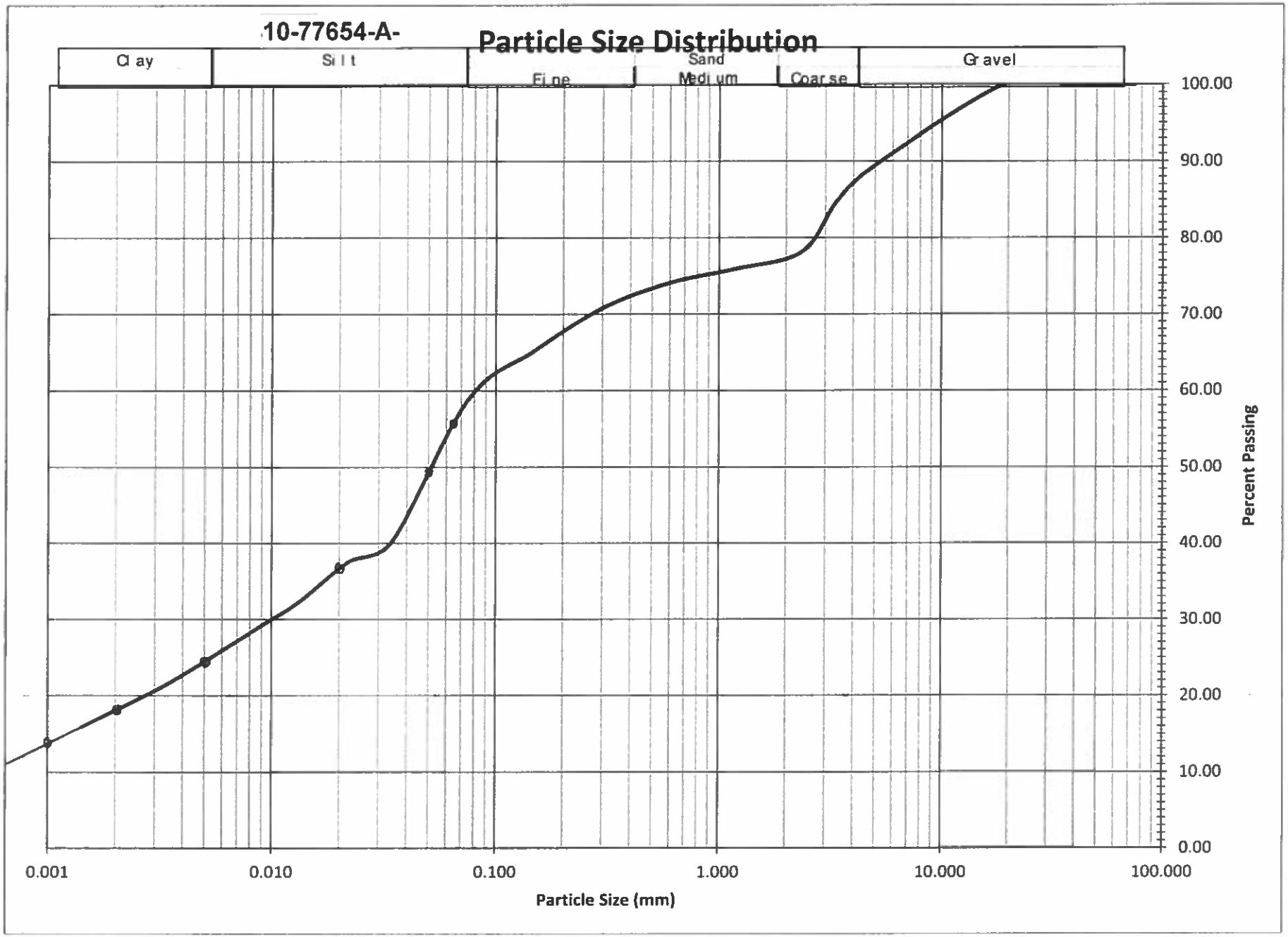
* Used for line 1
** Used for line 2
*** Used for lines 1 and 2
\+ Calculated from line 1
++ Calculated from line 2

Log(particle size)
-1.124939
-1.462350
-1.657511
-1.885028
-2.031983
-2.177265
-2.478709
-2.849196

Line 1 Regression Output:	
Constant	104.2851950
Std Err of Y Est	4.0983509
R Squared	0.9371626
No. of Observations	3
Degrees of Freedom	1
X Coefficient(s)	41.5375328
Std Err of Coef.	10.7557875

Line 2 Regression Output:	
Constant	66.3069646
Std Err of Y Est	0.7586846
R Squared	0.9922882
No. of Observations	6
Degrees of Freedom	4
X Coefficient(s)	17.9548944
Std Err of Coef.	0.7914264

Particle Size	Calculated	% Passing
0.064 56	+	54.70
0.05 49	+	50.24
0.02 36.5	++	35.80
0.005 24.5	++	24.99
0.002 17.5	++	17.85
0.001 13.5	++	12.44


10-77654-A-
Particle Size Distribution
Clay
Silt
Sand
Fine
Medium
Coarse
Gravel
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Percent Passing
0.001
0.010
0.100
1.000
10.000
100.000
Particle Size (mm)

Default Detection Limits

Client: EA Engineering, Science, and Technology
Job ID: 410-77654-1
Project/Site: USACE ANG SI Rochester AASF #2

General Chemistry

Analyte	LOQ	DL	Units
Total Organic Carbon	300	100	mg/Kg
Percent Moisture	1.0	1.0	%
Percent Solids	1.0	1.0	%

General Chemistry - Soluble

Leach: DI Leach

Analyte	LOQ	DL	Units
pH	0.01	0.01	S.U.
Temperature	0.01	0.01	Degrees C

Method: D422 - Grain Size

Analyte	LOQ	DL	Units
0.001 mm	1.0	0.5	% Passing
0.002 mm	1.0	0.5	% Passing
0.005 mm	1.0	0.5	% Passing
0.02 mm	1.0	0.5	% Passing
0.05 mm	1.0	0.5	% Passing
0.064 mm	1.0	0.5	% Passing
0.075 mm	1.0	0.5	% Passing
0.15 mm	1.0	0.5	% Passing
0.3 mm	1.0	0.5	% Passing
0.6 mm	1.0	0.5	% Passing
1.18 mm	1.0	0.5	% Passing
19 mm	1.0	0.5	% Passing
2.36 mm	1.0	0.5	% Passing
3.35 mm	1.0	0.5	% Passing
37.5 mm	1.0	0.5	% Passing
4.75 mm	1.0	0.5	% Passing
75 mm	1.0	0.5	% Passing

Method: 9045D - pH

Lab Sample ID: LCS 410-240634/1-A
Matrix: Solid
Analysis Batch: 240658

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH			7.00	6.9		S.U.		99	95 - 105		

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 410-241426/5
Matrix: Solid
Analysis Batch: 241426

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	200	U cn	300	100	mg/Kg			04/05/22 14:57	1

Lab Sample ID: LCS 410-241426/4
Matrix: Solid
Analysis Batch: 241426

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon			3810	4360	cn	mg/Kg		114	50 - 153		

General Chemistry

Analysis Batch: 237930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-77654-1	AOI01-03-SB-3-5	Total/NA	Solid	Moisture	

Leach Batch: 240634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-77654-1	AOI01-03-SB-3-5	Soluble	Solid	DI Leach	
LCS 410-240634/1-A	Lab Control Sample	Soluble	Solid	DI Leach	

Analysis Batch: 240658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-77654-1	AOI01-03-SB-3-5	Soluble	Solid	9045D	240634
LCS 410-240634/1-A	Lab Control Sample	Soluble	Solid	9045D	240634

Analysis Batch: 241426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-77654-1	AOI01-03-SB-3-5	Total/NA	Solid	9060A	
MB 410-241426/5	Method Blank	Total/NA	Solid	9060A	
LCS 410-241426/4	Lab Control Sample	Total/NA	Solid	9060A	

Geotechnical

Analysis Batch: 240651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-77654-1	AOI01-03-SB-3-5	Total/NA	Solid	D422	

Client Sample ID: AOI01-03-SB-3-5
Lab Sample ID: 410-77654-1

Date Collected: 03/23/22 14:10
Matrix: Solid

Date Received: 03/25/22 10:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			240634	04/04/22 11:23	F8TI	ELLE
Soluble	Analysis	9045D		1	240658	04/04/22 13:15	F8TI	ELLE
Total/NA	Analysis	Moisture		1	237930	03/26/22 10:23	UVJN	ELLE
Total/NA	Analysis	D422		1	240651	03/28/22 11:15	DZU8	ELLE

Client Sample ID: AOI01-03-SB-3-5
Lab Sample ID: 410-77654-1

Date Collected: 03/23/22 14:10
Matrix: Solid

Date Received: 03/25/22 10:46
Percent Solids: 82.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	241426	04/05/22 17:30	P684	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: EA Engineering, Science, and Technology
Job ID: 410-77654-1
Project/Site: USACE ANG SI Rochester AASF #2

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	1.01	11-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
D422		Solid	0.001 mm
D422		Solid	0.002 mm
D422		Solid	0.005 mm
D422		Solid	0.02 mm
D422		Solid	0.05 mm
D422		Solid	0.064 mm
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: EA Engineering, Science, and Technology
Job ID: 410-77654-1
Project/Site: USACE ANG SI Rochester AASF #2

Method	Method Description	Protocol	Laboratory
9045D	pH	SW846	ELLE
9060A	Organic Carbon, Total (TOC)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
D422	Grain Size	ASTM	ELLE
DI Leach	Deionized Water Leaching Procedure	ASTM	ELLE

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: EA Engineering, Science, and Technology
Job ID: 410-77654-1
Project/Site: USACE ANG SI Rochester AASF #2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-77654-1	AOI01-03-SB-3-5	Solid	03/23/22 14:10	03/25/22 10:46

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env, I Job No.: 410-77654-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
WC_pHBuffer7_00013	02/29/24	Ricca, Lot 2202G37			(Purchased Reagent)		pH	7 PH Units
WC_TOC_SLCSCC_00006	01/21/24	ERA, Lot D110-542			(Purchased Reagent)		Total Organic Carbon	3810 mg/Kg

Reagent

WC_pHBuffer7_00013

RICCA CHEMICAL COMPANY®

1841 Broad Street
Pocomoke City, MD 21851
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

Buffer, Reference Standard, pH 7.00 ± 0.01 at 25°C (Color Coded Yellow)

Lot Number: 2202G37 **Product Number:** 1551

Manufacture Date: FEB 19, 2022
Expiration Date: FEB 2024

The certified value for this product is confirmed in independent testing by a second qualified chemist.
The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	45	50
pH	7.12	7.09	7.06	7.04	7.02	7.00	6.99	6.98	6.98	6.97	6.97

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Phosphate Dibasic	7558-79-4	ACS
Potassium Dihydrogen Phosphate	7778-77-0	ACS
Preservative	Proprietary	
Yellow Dye	Proprietary	
Sodium Hydroxide	1310-73-2	Reagent

Test	Specification	Result	NIST SRM#
Appearance	Yellow liquid	Passed	
pH at 25°C (Method: SQCP027, SQCP033)	6.990-7.010	7.006	186-I-g, 186-II-g, 191d
pH at 25°C (Method: SQCP027, SQCP033) Uncertainty	0.01	0.01	

Specification	Reference
Commercial Buffer Solutions	ASTM (D 1293 B)
Buffer A	ASTM (D 5464)
Buffer A	ASTM (D 5128)

pH measurements were performed in our Pocomoke City, MD laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.01) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution.

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1551-1	4 L natural poly	24 months
1551-16	500 mL natural poly	24 months
1551-1CT	4 L Cubitainer®	24 months
1551-32	1 L natural poly	24 months

1551-5	20 L Cubitainer®	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Myrlande Gilles (02/19/2022)

Quality Control

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

ANAB
ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17025
TESTING LABORATORY

Certificate # L2387.01 Testing

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories En Job Number: 410-77654-1

SDG No.:

Project: USACE ANG SI Rochester AASF #2

Client Sample ID	Lab Sample ID
AOI01-03-SB-3-5	410-77654-1

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: AOI01-03-SB-3-5 Lab Sample ID: 410-77654-1

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-77654-1

SDG ID.:

Matrix: Solid Date Sampled: 03/23/2022 14:10

Reporting Basis: DRY Date Received: 03/25/2022 10:46

% Solids: 82.9

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Total Organic Carbon	3900	360	240	120	mg/Kg			1	9060A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY - SOLUBLE

Client Sample ID: AOI01-03-SB-3-5 Lab Sample ID: 410-77654-1

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-77654-1

SDG ID.:

Matrix: Solid Date Sampled: 03/23/2022 14:10

Reporting Basis: WET Date Received: 03/25/2022 10:46

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
pH	7.1	0.01	0.01	0.01	S.U.			1	9045D
Temperature	21.3	0.01	0.01	0.01	Degrees C			1	9045D

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-77654-1

SDG No.:

Analyst: F8TI Batch Start Date: 04/04/2022

Reporting Units: Degrees C Analytical Batch No.: 240658

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
12	CCV	12:32	Temperature	20.2					
16	CCV	12:33	Temperature	20.6					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-77654-1

SDG No.:

Analyst: F8TI Batch Start Date: 04/04/2022

Reporting Units: SU Analytical Batch No.: 240658

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
12	CCV	12:32	pH	7.0	7.00	100	95-105		WC_pHBuffer7_00013
16	CCV	12:33	pH	7.0	7.00	100	95-105		WC_pHBuffer7_00013

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-77654-1

SDG No.:

Analyst: P684 Batch Start Date: 04/05/2022

Reporting Units: mg/Kg Analytical Batch No.: 241426

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	14:06	Total Organic Carbon	4590	3810	120	50-153		WC_TOC_SLCSCC_00006
3	CCB	14:32	Total Organic Carbon	200				U	
14	CCV	16:52	Total Organic Carbon	4140	3810	109	50-153		WC_TOC_SLCSCC_00006
15	CCB	17:04	Total Organic Carbon	200				U	
26	CCV	19:24	Total Organic Carbon	5700	3810	149	50-153		WC_TOC_SLCSCC_00006
27	CCB	19:37	Total Organic Carbon	200				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories En Job No.: 410-77654-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	LOQ	Dil
Batch ID: 241426 Date: 04/05/2022 14:57							
9060A	MB 410-241426/5	Total Organic Carbon	200	U cn	mg/Kg	300	1

FORM III-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-77654-1

SDG No.:

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 240658	Date: 04/04/2022 13:15										
						LCS Source: WC_pHBuffer7_00013					
9045D	LCS 410-240634/1-A	pH	6.9		S.U.	7.00	99	95-105			
Batch ID: 241426	Date: 04/05/2022 14:44										
						LCS Source: WC_TOC_SLCSCC_00006					
9060A	LCS 410-241426/4	Total Organic Carbon	4360		mg/Kg	3810	114	50-153			cn

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY - SOLUBLE

Lab Name: Eurofins Lancaster Laboratories E Job Number: 410-77654-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: 9045D DL Date: 01/01/2018 22:58

Leach Method: DI Leach

Analyte	Wavelength/ Mass	LOQ (Degrees C)	DL (Degrees C)
Temperature		0.01	0.01

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY - SOLUBLE

Lab Name: Eurofins Lancaster Laboratories E Job Number: 410-77654-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: 9045D XMDL Date: 01/01/2018 11:23

Analyte	Wavelength/ Mass	XRL (Degrees C)	XMDL (Degrees C)
Temperature		0.01	0.01

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY - SOLUBLE

Lab Name: Eurofins Lancaster Laboratories E Job Number: 410-77654-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: 9045D DL Date: 01/01/2018 22:58

Leach Method: DI Leach

Analyte	Wavelength/ Mass	LOQ (S.U.)	DL (S.U.)
pH		0.01	0.01

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY - SOLUBLE

Lab Name: Eurofins Lancaster Laboratories E Job Number: 410-77654-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: 9045D XMDL Date: 01/01/2018 11:23

Analyte	Wavelength/ Mass	XRL (SU)	XMDL (SU)
pH		0.01	0.01

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories E Job Number: 410-77654-1

SDG Number:

Matrix: Solid Instrument ID: 26799

Method: 9060A DL Date: 11/28/2018 08:55

Analyte	Wavelength/ Mass	LOQ (mg/Kg)	DL (mg/Kg)
Total Organic Carbon		300	100

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories E Job Number: 410-77654-1

SDG Number:

Matrix: Solid Instrument ID: 26799

Method: 9060A XMDL Date: 07/14/2018 12:52

Analyte	Wavelength/ Mass	XRL (mg/Kg)	XMDL (mg/Kg)
Total Organic Carbon		300	100

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories E Job Number: 410-77654-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: Moisture DL Date: 10/16/2018 12:54

Analyte	Wavelength/ Mass	LOQ (%)	DL (%)
Percent Moisture		1	0.1
Percent Solids		1	0.1

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories E Job Number: 410-77654-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: Moisture XMDL Date: 10/16/2018 09:12

Analyte	Wavelength/ Mass	XRL (%)	XMDL (%)
Percent Moisture		1	0.1
Percent Solids		1	0.1

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories Env, LI Job No.: 410-77654-1

SDG No.:

Instrument ID: NOEQUIP Analysis Method: 9045D

Start Date: 04/04/2022 12:32 End Date: 04/04/2022 13:15

Lab Sample Id	D/F	Type	Time	Analytes: pH	Analytes: Temp
CCV 410-240658/12	1		12:32	X	X
ZZZZZZ			12:32		
ZZZZZZ			12:32		
ZZZZZZ			12:32		
CCV 410-240634/16-A	1		12:33	X	X
LCS 410-240634/1-A	1	S	13:15	X	X
ZZZZZZ			13:15		
410-77654-1	1	S	13:15	X	X
ZZZZZZ			13:15		
ZZZZZZ			13:15		
ZZZZZZ			13:15		
ZZZZZZ			13:15		
ZZZZZZ			13:15		
ZZZZZZ			13:15		
ZZZZZZ			13:15		
ZZZZZZ			13:15		

Prep Types:
S = Soluble

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories Env, LI Job No.: 410-77654-1

SDG No.:

Instrument ID: 26799 Analysis Method: 9060A

Start Date: 04/05/2022 14:06 End Date: 04/05/2022 20:40

Lab Sample Id	D/F	Type	Time	Analytes																								
				TOC																								
CCV 410-241426/1	1		14:06	X																								
ZZZZZZ			14:19																									
CCB 410-241426/3	1		14:32	X																								
LCS 410-241426/4	1	T	14:44	X																								
MB 410-241426/5	1	T	14:57	X																								
ZZZZZZ			15:10																									
ZZZZZZ			15:23																									
ZZZZZZ			15:35																									
ZZZZZZ			15:48																									
ZZZZZZ			16:01																									
ZZZZZZ			16:13																									
ZZZZZZ			16:26																									
ZZZZZZ			16:39																									
CCV 410-241426/14	1		16:52	X																								
CCB 410-241426/15	1		17:04	X																								
ZZZZZZ			17:17																									
410-77654-1	1	T	17:30	X																								
ZZZZZZ			17:42																									
ZZZZZZ			17:55																									
ZZZZZZ			18:08																									
ZZZZZZ			18:21																									
ZZZZZZ			18:33																									
ZZZZZZ			18:46																									
ZZZZZZ			18:59																									
ZZZZZZ			19:11																									
CCV 410-241426/26	1		19:24	X																								
CCB 410-241426/27	1		19:37	X																								
ZZZZZZ			19:50																									
ZZZZZZ			20:02																									
ZZZZZZ			20:15																									
CCV 410-241426/31			20:28																									
CCB 410-241426/32			20:40																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins Lancaster Laboratories Env, LI Job No.: 410-77654-1

SDG No.:

Instrument ID: NOEQUIP Analysis Method: Moisture

Start Date: 03/26/2022 09:14 End Date: 03/26/2022 10:23

Lab Sample Id	D/F	Type	Time	Analytes: %Sol	Analytes: Moist
ZZZZZZ			09:14		
ZZZZZZ			09:14		
ZZZZZZ			09:14		
ZZZZZZ			09:14		
ZZZZZZ			09:14		
ZZZZZZ			09:14		
ZZZZZZ			09:14		
ZZZZZZ			09:14		
ZZZZZZ			09:14		
ZZZZZZ			09:14		
ZZZZZZ			09:14		
ZZZZZZ			09:14		
410-77654-1	1	T	10:23	X	X

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-77654-1

SDG No.:

Batch Number: 240634 Batch Start Date: 04/04/22 11:23 Batch Analyst: Shelmet, Lauren T

Batch Method: DI Leach Batch End Date: 04/04/22 12:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount				
LCS 410-240634/1		DI Leach, 9045D		25 g	25 mL				
410-77654-B-1	AOI01-03-SB-3-5	DI Leach, 9045D	S	23.31 g	25 mL				
CCV 410-240634/16		DI Leach, 9045D		25 g	25 mL				

Batch Notes	
Balance ID	12071
Tumble Start Time	04/04/2022 11:45
Tumble End Time	04/04/2022 12:15

Basis	Basis Description
S	Soluble

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-77654-1

SDG No.:

Batch Number: 240658 Batch Start Date: 04/04/22 13:15 Batch Analyst: Shelmet, Lauren T

Batch Method: 9045D Batch End Date: 04/04/22 13:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	WC_pHBuffer7 00013				
LCS 410-240634/1-A		9045D		25 mL	# mL				
410-77654-B-1-A	AOI01-03-SB-3-5	9045D	S	25 mL					
CCV 410-240658/12		9045D		25 mL	# mL				
CCV 410-240634/16-A		9045D		25 mL	# mL				

Batch Notes	
pH Meter ID	10537
Probe ID	A161202015
pH Buffer 1 ID	2112A62
pH Buffer 2 ID	2107E70
pH Buffer 3 ID	2109F62
pH Meter Calibration Slope	104.1
Calibration Date and Time	04/04/2022 10:30
Balance ID	12071
Sufficient volume for sample dup	yes

Basis	Basis Description
S	Soluble

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-77654-1

SDG No.:

Batch Number: 241426 Batch Start Date: 04/05/22 14:06 Batch Analyst: Cornelius, Ashlynn M

Batch Method: 9060A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	WC_TOC_SLCSCC 00006				
CCV 410-241426/1		9060A		101.6 mg	# mg				
CCB 410-241426/3		9060A		1000 mg					
LCS 410-241426/4		9060A		100.4 mg	# mg				
MB 410-241426/5		9060A		1000 mg					
CCV 410-241426/14		9060A		101.3 mg	# mg				
CCB 410-241426/15		9060A		1000 mg					
410-77654-C-1	AOI01-03-SB-3-5	9060A	T	964.5 mg					
CCV 410-241426/26		9060A		117.3 mg	# mg				
CCB 410-241426/27		9060A		1000 mg					

Batch Notes	
Phosphoric Acid ID	WC_TOC_1:1PA_00005
Pipette/Syringe/Dispenser ID	TOC

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-77654-1

SDG No.:

Batch Number: 237930 Batch Start Date: 03/26/22 09:14 Batch Analyst: Norton, Vincent J

Batch Method: Moisture Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry	%_Moisture	%_Solid
410-77654-B-1	AOI01-03-SB-3-5	Moisture	T	930-13	0.80 g	6.31 g	5.37 g	17.059891107078 %	82.940108892922 %

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
410-77654-B-1	AOI01-03-SB-3-5	Moisture	T	clay					

Batch Notes	
Balance ID	22870
Oven ID	8948
Thermometer ID	1262
Date samples were placed in the oven	03/26/2022
Time samples were place in the oven	09:34
Oven Temp In	105 Degrees C
Date samples were removed from oven	03/28/2022
Time Samples were removed from oven	07:31
Oven Temp Out	105 Degrees C
Batch Comment	cal. 2-4-23

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

General Chemistry Raw Data Report

Job ID: 410-77654-1

Batch: 240658 **Analyst Initials: F8TI**

Method: 9045D **Instrument: NONE**

Lab Sample ID: CCV 410-240658/12 **Analysis Date: Apr 04, 2022 12:32**

Analyte	Detector	Dilution	Raw Result	Unit	Final Amount
pH	None	1	7.02	SU	25 mL
Temperature	None	1	20.2	Celsius	25 mL

Lab Sample ID: CCV 410-240634/16-A **Analysis Date: Apr 04, 2022 12:33**

Analyte	Detector	Dilution	Raw Result	Unit	Final Amount
pH	None	1	7.01	SU	25 mL
Temperature	None	1	20.6	Celsius	25 mL

Lab Sample ID: LCS 410-240634/1-A **Analysis Date: Apr 04, 2022 13:15**

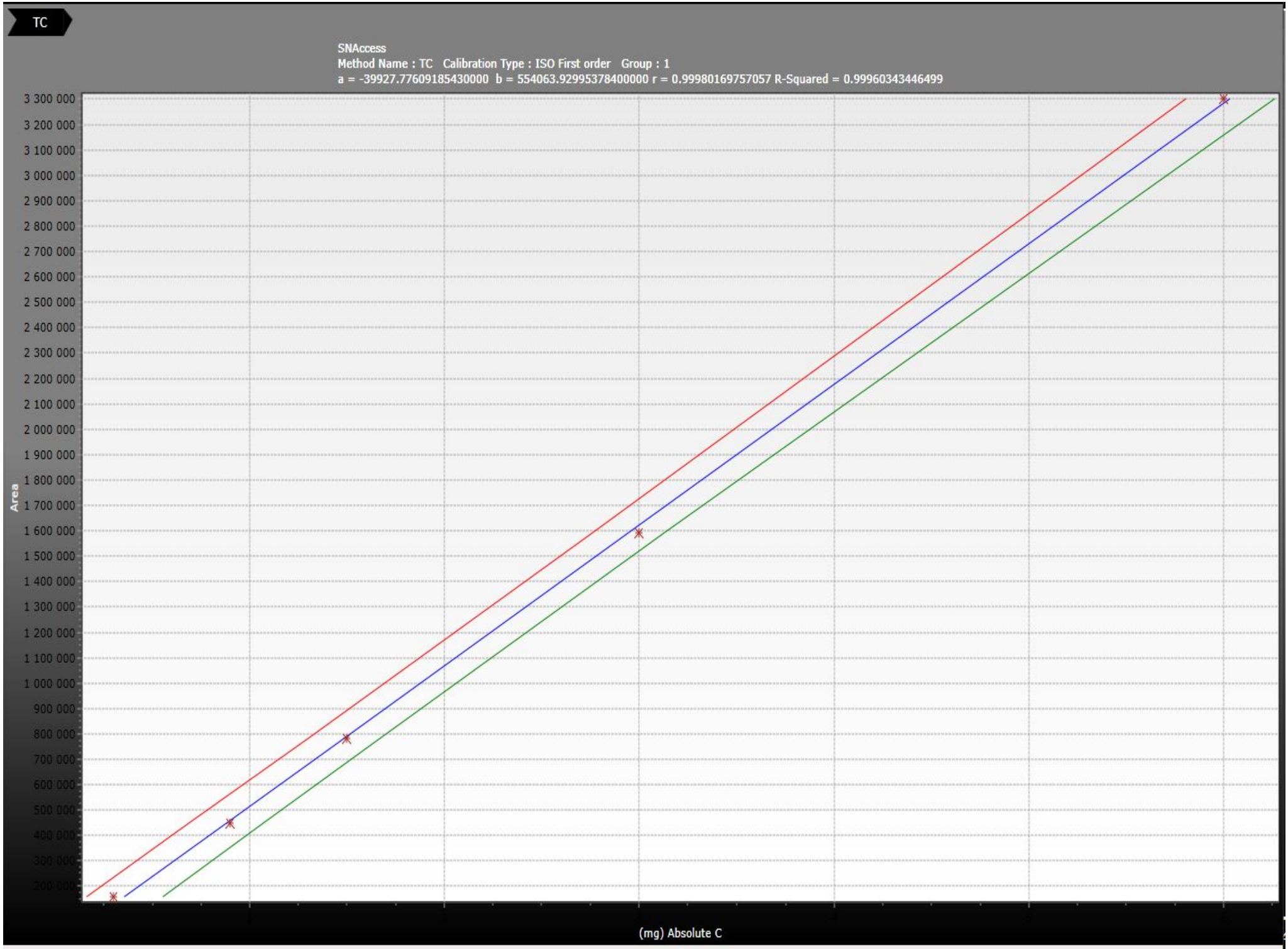
Analyte	Detector	Dilution	Raw Result	Unit	Final Amount
pH	None	1	6.91	SU	25 mL
Temperature	None	1	21.0	Celsius	25 mL

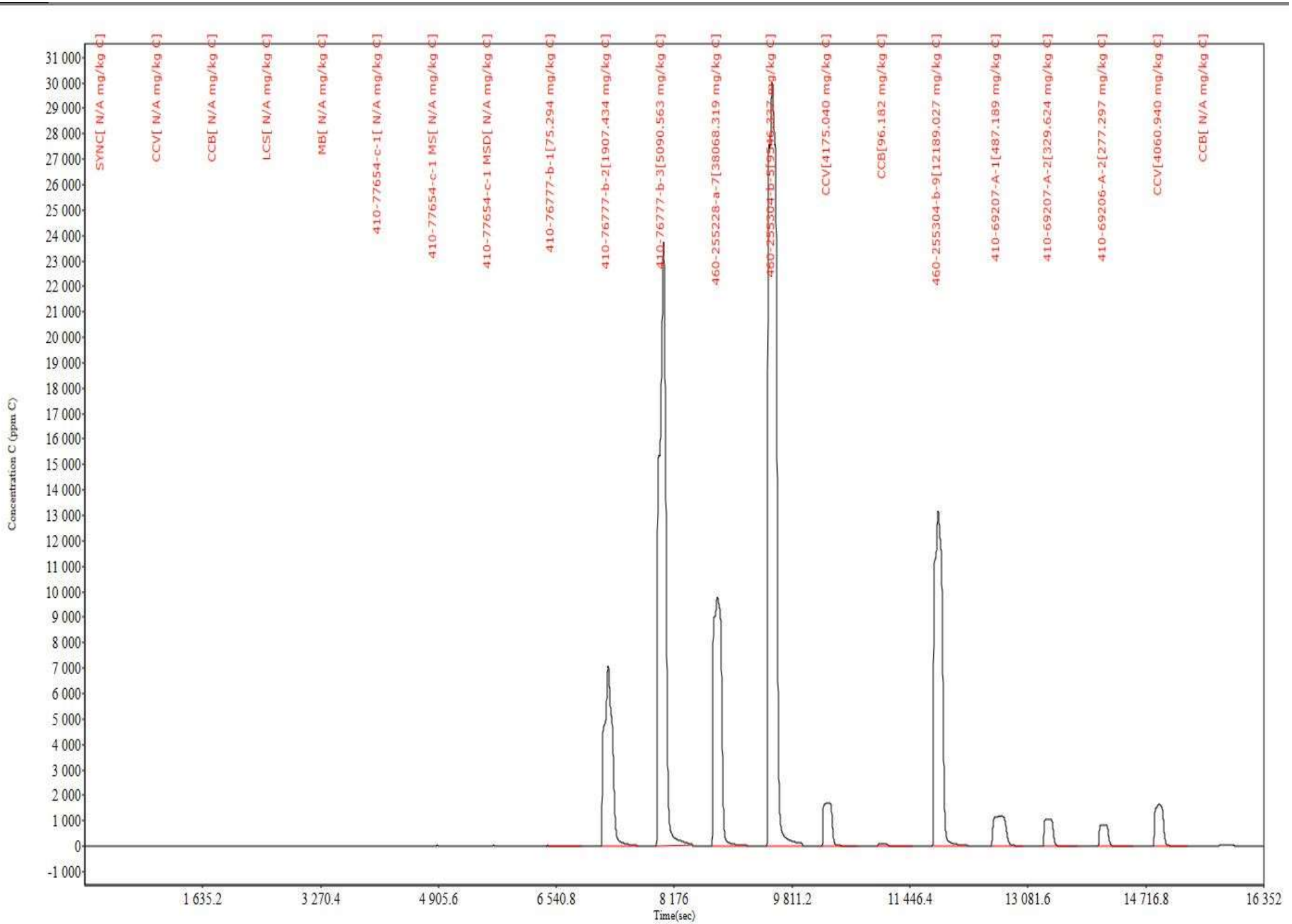
Lab Sample ID: 410-77654-B-1-A **Analysis Date: Apr 04, 2022 13:15**

Analyte	Detector	Dilution	Raw Result	Unit	Final Amount
pH	None	1	7.12	SU	25 mL
Temperature	None	1	21.3	Celsius	25 mL

Method:	TC	Run Start Date:	3/16/2022 5:14:11	Calibration:	
Run Name:	22075CAL	Run End Date:	3/17/2022 10:48:0		
Analyst:		Device ID:	17171		

Sample ID	Result(mg C abs)	Weight(mg)	Peak Area	Description	Result Flag	Analysed Date and	Final Result (mg/kg
SYNC	2.99	10	1616987.72		N	3/17/2022 8:35:27	299047.709
BLANK	N/A	1000	0.00		L	3/17/2022 8:48:28	N/A
0.3 STD	0.359	1	158848.89		N	3/17/2022 9:01:08	358761.246
0.9 STD	0.88	3	447914.10		N	3/17/2022 9:13:48	293493.133
1.5 STD	1.485	5	782999.86		N	3/17/2022 9:26:32	297051.51
3.0 STD	2.944	10	1591043.80		N	3/17/2022 9:39:16	294365.233
6.0 STD	6.032	20	3302102.45		N	3/17/2022 9:52:00	301592.474
ICV 3.0	2.972	10	1606553.29		N	3/17/2022 10:04:4	297164.456
ICB	N/A	1000	0.00		L	3/17/2022 10:17:2	N/A
TEST	0.801	176.8	403928.50		N	3/17/2022 10:30:1	4531.064


TC
SNAccess
Method Name : TC Calibration Type : ISO First order Group : 1
a = -39927.77609185430000 b = 554063.92995378400000 r = 0.99980169757057 R-Squared = 0.99960343446499
3 300 000
3 200 000
3 100 000
3 000 000
2 900 000
2 800 000
2 700 000
2 600 000
2 500 000
2 400 000
2 300 000
2 200 000
2 100 000
2 000 000
1 900 000
1 800 000
1 700 000
1 600 000
1 500 000
1 400 000
1 300 000
1 200 000
1 100 000
1 000 000
900 000
800 000
700 000
600 000
500 000
400 000
300 000
200 000
Area
(mg) Absolute C
Result Post Mode Database Reference: TOC20220316A2 Run Name: 22075CAL Run Made Version : 1.0.41
Start Date : 3/16/2022 5:14:11 PM End Date : 3/17/2022 10:48:00 AM



Result Post Mode Database Reference: TOC20220401A0 Run Name: 2209101 Run Made Version : 1.0.41 Start Date : 4/1/2022 1:28:31 PM End Date : 4/1/2022 6:01:31 PM

Date:	4/1/2022	**Balance ID:**	18959	**Oven ID:**	974
Analyst:	AMC26520	**Sucrose:**	2053856	**Oven Temperature (°C):**	75
Run:		**CCV/LCS:**	1699854	**Time In:**	13:00
		H3PO4:	1480429	**Time Out:**	13:.15

Tray #	Tray Position	Sample #	Sample Weight (mg)	Factor	LOQ	MDL	Comments
1	*A1*	SYNC	109.6	9.12	2737	912	
	A2	CCV	109.5	9.13	2740	913	
	A3	CCB	1000.0	1.00	300	100	
	A4	LCS	104.1	9.61	2882	961	
	A5	MB	1000.0	1.00	300	100	
	A6	410-77654-C-1	393.9	2.54	762	254	
	A7	410-77654-C-1 MS	350.9	2.85	855	285	
	A8	410-77654-C-1 MSD	378.6	2.64	792	264	
	B1	410-76777-B-1	952.5	1.05	315	105	
	B2	410-76777-B-2	912.4	1.10	329	110	
	B3	410-76777-B-3	897.6	1.11	334	111	
	B4	460-255228-A-7	61.5	16.26	4878	1626	
	B5	460-255304-B-5	735.5	1.36	408	136	
	B6	CCV	117.6	8.50	2551	850	
	B7	CCB	1000.0	1.00	300	100	
	B8	460-255304-B-9	248.9	4.02	1205	402	
	C1	410-69207-a-1 MDLS	1000.0	1.00	300	100	
	C2	410-69207-a-2 MDLS	1000.0	1.00	300	100	
	C3	410-69206-a-2	1000.0	1.00	300	100	
	C4	CCV	111.9	8.94	2681	894	
	C5	CCB	1000.0	1.00	300	100	
	C6			#DIV/0!	#DIV/0!	#DIV/0!	
	C7			#DIV/0!	#DIV/0!	#DIV/0!	
	C8			#DIV/0!	#DIV/0!	#DIV/0!	

Method:	TC	Run Start Date:	4/5/2022 2:05:55 F
Run Name:	2209501	Run End Date:	4/5/2022 8:58:40 F
Analyst:		Device ID:	17171

Calibration:

Sample ID	Result(mg C abs)	Weight(mg)	Peak Area	Description	Result Flag	Analysed Date and	Final Result (mg/kg
SYNC	0.466	101.6	218334.26		N	4/5/2022 2:06:05 F	4587.826
CCV	0.137	117.5	35916.38		L	4/5/2022 2:19:24 F	1164.996
CCB	N/A	1000	0.00		L	4/5/2022 2:32:08 F	N/A
LCS	0.438	100.4	202715.37		N	4/5/2022 2:44:51 F	4361.887
MB	N/A	1000	0.00		L	4/5/2022 2:57:34 F	N/A
410-78446-a-17	7.469	923.1	4098395.17		O	4/5/2022 3:10:18 F	8091.252
410-78446-a-17 MS	6.996	613.4	3836168.73		O	4/5/2022 3:23:01 F	11404.886
410-78446-a-17 MS	6.187	682.1	3388046.98		O	4/5/2022 3:35:43 F	9070.468
410-76777-b-1	8.784	997.7	4827041.74		O	4/5/2022 3:48:26 F	8804.38
410-76777-b-2	2.044	991.1	1092586.85		N	4/5/2022 4:01:09 F	2062.369
410-76777-b-3	1.911	524.6	1019152.30		N	4/5/2022 4:13:53 F	3643.683
460-255228-a-7	2.358	63.3	1266284.66		N	4/5/2022 4:26:36 F	37243.478
460-255304-b-5	2.119	314.1	1134172.16		N	4/5/2022 4:39:19 F	6746.48
CCV	0.419	101.3	192353.89		N	4/5/2022 4:52:02 F	4138.525
CCB	N/A	1000	0.00		L	4/5/2022 5:04:46 F	N/A
460-255304-b-9	2.497	525.9	1343835.77		N	4/5/2022 5:17:29 F	4748.964
410-77654-c-1	3.092	964.5	1673159.04		N	4/5/2022 5:30:12 F	3205.659
410-78336-c-1	3.854	982.1	2095227.77		N	4/5/2022 5:42:56 F	3923.864
410-78446-a-13	1.2	113.5	624917.85		N	4/5/2022 5:55:39 F	10572.193
410-78446-a-14	9.544	403.7	5247925.04		O	4/5/2022 6:08:22 F	23640.722
410-78446-a-15	3.797	669.4	2064078.85		N	4/5/2022 6:21:04 F	5672.853
410-78446-a-16	14.646	916.4	8074873.73		O	4/5/2022 6:33:47 F	15982.067
410-78446-a-18	0.918	960.2	468712.70		N	4/5/2022 6:46:30 F	956.069
410-78446-a-19	0.892	881.9	454231.43		N	4/5/2022 6:59:13 F	1011.318
410-78446-a-20	9.855	286.2	5420115.48		O	4/5/2022 7:11:56 F	34432.343
CCV	0.668	117.3	330250.24		N	4/5/2022 7:24:38 F	5695.774
CCB	N/A	1000	0.00		L	4/5/2022 7:37:21 F	N/A
410-78446-a-21	10.858	607.5	5976055.75		O	4/5/2022 7:50:05 F	17873.124
410-78446-a-22	4.927	987.3	2689826.49		N	4/5/2022 8:02:48 F	4990.161
410-78446-a-23	1.491	877.1	786319.25		N	4/5/2022 8:15:30 F	1700.204
CCV	0.558	105.1	269070.45		N	4/5/2022 8:28:14 F	5306.319
CCB	N/A	1000	0.00		L	4/5/2022 8:40:57 F	N/A

General Chemistry Raw Data Report

Job ID: 410-77654-1

Batch: 237930 **Analyst Initials: UVJN**

Method: Moisture **Instrument: NONE**

Lab Sample ID: 410-77654-B-1 **Analysis Date: Mar 26, 2022 10:23**

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	17.059891107078	%
Percent Solids	None	1	82.940108892922	%

COVER PAGE
GEOTECHNICAL

Lab Name: Eurofins Lancaster Laboratories En Job Number: 410-77654-1

SDG No.:

Project: USACE ANG SI Rochester AASF #2

Client Sample ID	Lab Sample ID
AOI01-03-SB-3-5	410-77654-1

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: AOI01-03-SB-3-5 Lab Sample ID: 410-77654-1

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-77654-1

SDG ID.:

Matrix: Solid Date Sampled: 03/23/2022 14:10

Reporting Basis: WET Date Received: 03/25/2022 10:46

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
75 mm	100.0	1.0	1.0	0.5	% Passing			1	D422
37.5 mm	100.0	1.0	1.0	0.5	% Passing			1	D422
19 mm	100.0	1.0	1.0	0.5	% Passing			1	D422
4.75 mm	89.0	1.0	1.0	0.5	% Passing			1	D422
3.35 mm	84.7	1.0	1.0	0.5	% Passing			1	D422
2.36 mm	78.2	1.0	1.0	0.5	% Passing			1	D422
1.18 mm	75.9	1.0	1.0	0.5	% Passing			1	D422
0.6 mm	74.1	1.0	1.0	0.5	% Passing			1	D422
0.3 mm	70.8	1.0	1.0	0.5	% Passing			1	D422
0.15 mm	65.3	1.0	1.0	0.5	% Passing			1	D422
0.064 mm	56.0	1.0	1.0	0.5	% Passing			1	D422
0.05 mm	49.0	1.0	1.0	0.5	% Passing			1	D422
0.02 mm	36.5	1.0	1.0	0.5	% Passing			1	D422
0.005 mm	24.5	1.0	1.0	0.5	% Passing			1	D422
0.002 mm	17.5	1.0	1.0	0.5	% Passing			1	D422
0.001 mm	13.5	1.0	1.0	0.5	% Passing			1	D422
0.075 mm	58.8	1.0	1.0	0.5	% Passing			1	D422

Shipping and Receiving Documents

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Phone (717) 656-2300

Chain of Custody Record

410-77654 Chain of Custody

eurofins Environment Testing America

Client Information	Sampler: Mike Wright	Lab PM: Badman, Vanessa	COC No: 410-36016-11260 1
Client Contact: Tara Lamond	Phone: 315 644 2436	E-Mail: vanessa.badman@eurofinset.com	Page: Page 1 of 1
Company: EA Engineering, Science, and Technology	PWSID:	Analysis Requested	Job #:
Address: 225 Schilling Circle Suite 400	Due Date Requested:		Preservation Codes:
City: Hunt Valley	TAT Requested (days): Standard		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: MD, 21031	Compliance Project: Yes / No		
Phone: 410-771-4950(Tel)	PO #: 21322		Other:
Email: tlamond@eaest.com	WO #: 634250383 MAES		
Project Name: USACE ANG SI Rochester: pH,TOC,GS	Project #: 41006059		
Site: Rochester AASF #2	SSOW#:		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9045D, 9060A_DW, Moisture	D422 - (MOD) Grain Size with hydrometer	Number of containers	Special Instructions/Note:
Preservation Code:					X	X	N	N	X	
AOI 01-03 - SB-3-5	3/23/22	1410	G	S	N	N	X	X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	10/22/21 1435				
[signature]	3/22/22 1500	EA			
			[signature]	3/25/22 1046	

Custody Seals Intact: ☒ Yes ☐ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: i.7

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: EA Engineering, Science, and Technology

Job Number: 410-77654-1

Login Number: 77654

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Reiff, Nicole L

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	