



MANAGEMENT SERVICES DEPARTMENT

Purchasing Division

241 West South Street

Kalamazoo, MI 49007-4796

Phone: 269.337.8020

Fax: 269.337.8500

www.kalamazoocity.org

purchasing@kalamazoocity.org

ADDENDUM #2

November 16, 2022

TO: ALL Prospective Bidders
PROJECT NAME: Biosolids Loading, Transport & Disposal
BID REFERENCE #: 96871-016.0
BID DUE/OPENING DATE: Wednesday, November 30, 2022 at 3:00 p.m. Local Time

The purpose of this addendum is to clarify and/or modify the Specifications and Special Conditions for this project. All work affected is subject to all applicable terms and conditions of the Bidding and Contract Documents.

1. QUESTIONS FROM 11/15/2022 PRE-BID MEETING

Q1: Does the City have formaldehyde data for the biosolids?

A1: No, the City does not have any formaldehyde data for the biosolids currently. The City will be conducting a round of biosolids formaldehyde sampling from November 28, 2022 through December 19, 2022.

Q2: Does the City have current biosolids PFAS data?

A2: Yes, the report is attached (*Addendum #2, Attachment A*).

Q3: Does the City have a Safety Data Sheet (SDS) for the odor reducing chemical used for the biosolids?

A3: Yes, SDS is attached (*Addendum #2, Attachment B*).

The Addendum can be viewed and downloaded from the City's website at <https://www.kalamazoocity.org/bidopportunities>.

In order for a bid to be responsive, this addendum should be returned, signed and dated, with your bid. If you have already submitted your bid, acknowledge receipt and acceptance of this addendum by signing in the place provided and returning it to the undersigned and it shall be incorporated in your bid. Please identify your return envelope with the bid reference number and project description.

Sincerely,

Michelle Emig

Purchasing Division Manager

c: James Cornell, Public Services
Steve Helmer, Public Services

FIRM: _____

SIGNED: _____

NAME: _____

DATE: _____

(Type or Print)



ADDENDUM #2

Attachment A

PFAS REPORTS

Biosolids Loading, Transport & Disposal

96871-016.0

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673



231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

May 10, 2022

Ms. Malissa Drzick
Kalamazoo, City of
1415 N. Harrison St.
Kalamazoo, MI 49007

RE: Trace Project 22D0635
Client Project CMBPC PFAS & Additional Analyses

Dear Ms. Drzick:

Enclosed are your analytical results. The results of this report relate only to the samples listed in the body of this report.

All reports were examined through Trace's validation process to ensure that requirements for quality and completeness were satisfied. All reported analytical results were obtained in accordance with the methods referenced on the reports. Every practical effort was made to meet the reporting limit specifications for this work, however, some results may have raised reporting limits to correct for percent solids.

For clients that require NELAP Accreditation, Trace certifies that these test results meet all requirements of the NELAP Standard, except for those analytes with a "N" notation. These analytes have not been evaluated by NELAP at Trace's discretion and will not be reported unless requested by client.

If you have questions concerning this report, please contact me at 231.773.5998 or by email at jmink@trace-labs.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Jon Mink".

Jon Mink
Senior Project Manager
Enclosures



NJDEP Accreditation No. MI008

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Muskegon, MI 49444-2673



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SAMPLE SUMMARY

Trace Project ID: 22D0635
Client Project ID: CMBPC PFAS & Additional Analyses

Trace ID	Sample ID	Matrix	Collected By	Date Collected	Date Received
22D0635-01	22-108-CMBPC	Solid	MA	04/18/22 09:30	04/18/22 11:25

CERTIFICATE OF ANALYSIS

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AN EXPLANATION OF TERMS AND SYMBOLS WHICH MAY OCCUR IN THIS REPORT

DEFINITIONS

LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
DUP	Matrix Duplicate
RDL	Reporting Detection Limit
MCL	Maximum Contamination Limit
TIC	Tentatively Identified Compound
<, ND or U	Indicates the compound was analyzed for but not detected
*	Indicates a result that exceeds its associated MCL or Surrogate control limits
N	Indicates that the laboratory is not accredited by NELAP for this compound
NA	Indicates that the compound is not available.

NOTE: Samples for volatiles that have been extracted with a water miscible solvent were corrected for the total volume of the solvent/water mixture.
Solid matrices Method Blanks are at 100% solids as such results are the same wet or dry.

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 Muskegon, MI 49444-2673



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 888-979-4469 Fax
 www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 22D0635
 Client Project ID: CMBPC PFAS & Additional Analyses

Trace ID: 22D0635-01 Matrix: Solid Date Collected: 04/18/22 09:30
 Sample ID: 22-108-CMBPC Date Received: 04/18/22 11:25

PARAMETERS	RESULTS UNITS	RDL	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	MCL
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METALS, TOTAL

Analysis Method: EPA 6010D

Batch: T122133

Barium	140 mg/kg dry	1.0	1	04/26/22	mrh	04/26/22	acs		
Copper	190 mg/kg dry	1.0	1	04/26/22	mrh	04/26/22	acs		
Selenium	2.0 mg/kg dry	2.0	1	04/26/22	mrh	04/29/22	acs		
Zinc	220 mg/kg dry	1.0	1	04/26/22	mrh	04/26/22	acs		

METALS, TCLP

Analysis Method: EPA 6010D

Batch: T122118

Arsenic	<0.30 mg/L	0.30	1	04/25/22	mrh	04/26/22	acs		5.0
Cadmium	<0.10 mg/L	0.10	1	04/20/22	mrh	04/21/22	acs		1.0
Chromium	<0.50 mg/L	0.50	1	04/20/22	mrh	04/21/22	acs		5.0
Lead	<0.50 mg/L	0.50	1	04/20/22	mrh	04/21/22	acs		5.0
Silver	<0.10 mg/L	0.10	1	04/25/22	mrh	04/26/22	acs		5.0

Analysis Method: EPA 7470A

Batch: T122119

Mercury	<0.010 mg/L	0.010	1	04/25/22	mrh	04/25/22	dc		0.20
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VOLATILE ORGANIC COMPOUNDS BY GC-MS

Analysis Method: EPA 8260D

Batch: T122063

Benzene	<140 ug/kg dry	140	50	04/22/22	nw	04/22/22	nw		
Toluene	760 ug/kg dry	140	50	04/22/22	nw	04/22/22	nw		
Ethylbenzene	<140 ug/kg dry	140	50	04/22/22	nw	04/22/22	nw		
m,p-Xylene	<280 ug/kg dry	280	50	04/22/22	nw	04/22/22	nw	N	
o-Xylene	<140 ug/kg dry	140	50	04/22/22	nw	04/22/22	nw	N	
Xylenes, total	<420 ug/kg dry	420	50	04/22/22	nw	04/22/22	nw		
Surrogates:									
1,2-Dichloroethane-d4	93 %	68-133	50	04/22/22	nw	04/22/22	nw		
Toluene-d8	103 %	75-120	50	04/22/22	nw	04/22/22	nw		

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Muskegon, MI 49444-2673



231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 22D0635
Client Project ID: CMBPC PFAS & Additional Analyses

Trace ID: 22D0635-01 Matrix: Solid Date Collected: 04/18/22 09:30
Sample ID: 22-108-CMBPC Date Received: 04/18/22 11:25

PARAMETERS	RESULTS UNITS	RDL	DILUTION	PREPARED BY	ANALYZED BY	NOTES	MCL
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WET CHEMISTRY

Analysis Method: ASTM D2974-07a

Batch: T122010

% Solids	19 % by Wt.	0.10	1	04/21/22	ats	04/21/22	ats	N
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QUALITY CONTROL RESULTS

Trace Project ID: 22D0635
 Client Project ID: CMBPC PFAS & Additional Analyses

QC Batch: T121953	Analysis Description: Cadmium, TCLP
QC Batch Method: EPA 3015 Microwave Assisted Digestions for Liquids	Analysis Method: EPA 6010D

METHOD BLANK: T121953-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Cadmium	mg/L	<0.10	0.10	
Chromium	mg/L	<0.50	0.50	
Lead	mg/L	<0.50	0.50	

METHOD BLANK: T121953-BLK2

Parameter	Units	Blank Result	Reporting Limit	Notes
Cadmium	mg/L	<0.10	0.10	
Chromium	mg/L	<0.50	0.50	
Lead	mg/L	<0.50	0.50	

LABORATORY CONTROL SAMPLE: T121953-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Cadmium	mg/L	0.0278	<0.10	102	80-120	
Chromium	mg/L	0.0278	<0.50	103	80-120	
Lead	mg/L	0.0556	<0.50	104	80-120	

Trace Project ID: 22D0635
 Client Project ID: CMBPC PFAS & Additional Analyses

QC Batch: T122118	Analysis Description: Arsenic, TCLP
QC Batch Method: EPA 3015 Microwave Assisted Digestions for Liquids	Analysis Method: EPA 6010D

METHOD BLANK: T122118-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Silver	mg/L	<0.10	0.10	
Arsenic	mg/L	<0.30	0.30	

METHOD BLANK: T122118-BLK2

Parameter	Units	Blank Result	Reporting Limit	Notes
Silver	mg/L	<0.10	0.10	

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METHOD BLANK: T122118-BLK2

Parameter	Units	Blank Result	Reporting Limit	Notes
Arsenic	mg/L	<0.30	0.30	

LABORATORY CONTROL SAMPLE: T122118-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Silver	mg/L	0.0278	<0.10	112	80-120	
Arsenic	mg/L	0.0556	<0.30	105	80-120	

Trace Project ID: 22D0635
 Client Project ID: CMBPC PFAS & Additional Analyses

QC Batch: T122133	Analysis Description: Zinc, Total
QC Batch Method: EPA 3051A Microwave Assisted Digestions for Solids	Analysis Method: EPA 6010D

METHOD BLANK: T122133-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Barium	mg/kg dry	<1.0	1.0	
Copper	mg/kg dry	<1.0	1.0	
Selenium	mg/kg dry	<2.0	2.0	
Zinc	mg/kg dry	<1.0	1.0	

LABORATORY CONTROL SAMPLE: T122133-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Barium	mg/kg dry	40.0	39.3	98	80-120	
Copper	mg/kg dry	40.0	38.0	95	80-120	
Selenium	mg/kg dry	5.00	5.02	100	80-120	
Zinc	mg/kg dry	40.0	42.1	105	80-120	

Trace Project ID: 22D0635
 Client Project ID: CMBPC PFAS & Additional Analyses

QC Batch: T122119	Analysis Description: Mercury, TCLP
QC Batch Method: EPA 7470A Prep	Analysis Method: EPA 7470A

METHOD BLANK: T122119-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Mercury	mg/L	<0.010	0.010	

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METHOD BLANK: T122119-BLK2

Parameter	Units	Blank Result	Reporting Limit	Notes
Mercury	mg/L	<0.010	0.010	

LABORATORY CONTROL SAMPLE: T122119-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Mercury	mg/L	0.00200	<0.010	101	80-120	

Trace Project ID: 22D0635
 Client Project ID: CMBPC PFAS & Additional Analyses

QC Batch: T121930	Analysis Description: TCLP Extraction, Metals
QC Batch Method: Leaching procedures	Analysis Method: EPA 1311

Trace Project ID: 22D0635
 Client Project ID: CMBPC PFAS & Additional Analyses

QC Batch: T122063	Analysis Description: Volatiles, BTEX Only
QC Batch Method: EPA 5035A Purge-and-Trap for Solids and Wastes	Analysis Method: EPA 8260D

METHOD BLANK: T122063-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Benzene	ug/kg wet	<50	50	
Toluene	ug/kg wet	<100	100	
Ethylbenzene	ug/kg wet	<50	50	
m,p-Xylene	ug/kg wet	<100	100	
o-Xylene	ug/kg wet	<50	50	
Xylenes, total	ug/kg wet	<150	150	
1,2-Dichloroethane-d4 (S)	%	99	68-133	
Toluene-d8 (S)	%	102	75-120	

LABORATORY CONTROL SAMPLE: T122063-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Benzene	ug/kg wet	2500	2390	96	80-120	
Toluene	ug/kg wet	2500	2450	98	80-120	
1,2-Dichloroethane-d4 (S)	%	30.0	28.3	94	68-133	
Toluene-d8 (S)	%	30.0	30.7	102	75-120	

Trace Project ID: 22D0635
 Client Project ID: CMBPC PFAS & Additional Analyses

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2241 Black Creek Road
Muskegon, MI 49444-2673



231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

QC Batch: T122010

QC Batch Method: % Solids

Analysis Description: Solids, Dry Weight

Analysis Method: ASTM D2974-07a

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CHAIN-OF-CUSTODY RECORD



Trace Analytical Laboratories, Inc.
 2241 Black Creek Road
 Muskegon, MI 49444-2673

Phone 231.773.5998
 Fax 888.979.4469
 www.trace-labs.com

Page _____ of _____

Trace ID No.
220635

Report Results To:

Company Name: City of Kalamazoo	PO #:
Report To: Malissa Dzik	Contact Name:
Mailing Address: 1415 N Harrison St	Billing Address (if different):
City, State, Zip Code: Kalamazoo, MI 49007	City, State, Zip Code:
Office Phone:	Cell Phone: 269-337-4753
Email Address: dztickm@kalamazoocty.org	Phone Number:
	Billing Email Address:

Trace Use:

Logged By: BV

Checked By: MC

Soil Volatiles Preserved (circle if applicable):
 MeOH Low Level Lab

Sampling Time:

Turnaround Requirements:

- Standard, 5-10 Days
- 3 Day*
- 1 Day*

*Results provided end of business day, requires prior approval.

Matrix Key:

- S = Soil / Solid
- W = Water
- SL = Sludge
- OI = Oil
- WI = Wipes
- LW = Liquid Waste
- A = Air
- D = Drinking Water

Project Name: **CMBPC PFAS**

Sampled By: **M ADKINS**

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y / N)	Matrix	Number of Containers	Preservation							Remarks					
							Cool	HCl	HNO ₃	H ₂ SO ₄	NaOH	Other	PFAS		TCLP BTEX	TCLP Cd, Cr, Pb			
1	4/18/2022	09:30	22-108-CMBPC	N	S	1	X												
Released By		Received By		Date	Time	Released By		Date	Time	Released By		Date	Time						
		<u>SPAC</u>		4/18/22	11:22	<u>SPAC</u>		4/18/22	16:00	<u>MADKINS</u>		4/18/22	16:00						

Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads. Form 70-Z-1

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TRACE

ANALYTICAL LABORATORIES, INC.

CHAIN-OF-CUSTODY RECORD

Trace Analytical Laboratories, Inc.
 2241 Black Creek Road
 Muskegon, MI 49444-2673

Phone 231.773.5998
 Fax 888.979.4469
 www.trace-labs.com

Report Results To:

Company Name: City of Kalamazoo
 Report To: Malissa Dzick
 Mailing Address: 1415 N Harrison St
 City, State, Zip Code: Kalamazoo, MI 49007
 Office Phone: Cell Phone: 269-337-4753
 Email Address: dzickm@kalamazoo-city.org
 Billing Email Address:

Bill To:

PO #:
 Contact Name:
 Billing Address (if different):
 City, State, Zip Code:
 Phone Number:
 Billing Email Address:

Trace Use:

Logged By: RY
 Checked By: NC
 Soil Volatiles Preserved (circle if applicable):
 MeOH Low Level Lab
 Sampling Time:

Trace ID No.
220635

Page _____ of _____

- Turnaround Requirements:**
- Standard, 5-10 Days
 - 3 Day*
 - 1 Day*
- Matrix Key:**
- S = Soil / Solid
 - W = Water
 - SL = Sludge
 - OI = Oil
 - WI = Wipes
 - LW = Liquid Waste
 - A = Air
 - D = Drinking Water
- *Results provided end of business day, requires prior approval.

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y / N)	Matrix	Number of Containers	Preservation						Analysis Requested	Remarks	Possible Health Hazards?			
							Cool	HCl	HNO ₃	H ₂ SO ₄	NaOH	Other						
1	4/18/2022	09:30	22-108-CMBPC	N	S	1												
Project Name: CMBPC PFAS				Sampled By: M ADKINS				PFAS										
Please Sign		Released By	Received By	Date	Time	Released By	Received By	Date	Time									
		<u>[Signature]</u>	<u>[Signature]</u>	4/18/2022		<u>[Signature]</u>	<u>[Signature]</u>	4/18/22	11:25									

Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement

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Sample Log In Checklist

Date: 4/18/22	Original Observation	Corrected Temperature	IR-9 (CF: +0.4°C)	IR-10 (CF: +0.4°C)	20B12743 (CF: -0.2°C)	Temp Blank	Client Sample
Time: 16:00							
Logged by: NE							
Package Description: Cooler							
Package Temp °C	-1.7	-1.3	✓				
Representative Sample Temp °C	0.3	0.7	✓				✓

Sample Receipt

- Yes No
- Received on ice or other coolant
- Ice still present upon receipt
- Custody seals present
- Trace Courier Client Drop-off
- Yes No Custody seals intact (if applicable)
- UPS Fed Ex US Mail Other

Sample Condition

- Yes No N/A
- All sample containers arrived unbroken and labeled
- Sufficient sample to run requested analyses
- Correct chemical preservative added to samples
- Samples preserved at Trace
- Chemical preservation verified, check EMD pH test strip used (if applicable)
- pH 0-2.5 (Lot: HC046681) pH 11.0-13.0 (Lot: HC022540) Other
- Air bubbles absent from VOAs

Chain of Custody (COC)

- Yes No
- All bottle labels agree with COC
- COC filled out properly
- COC signed by client

Notes:

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2241 Black Creek Road
Muskegon, MI 49444-2673



231-773-5998 Phone
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May 10, 2022

Ms. Malissa Drzick
Kalamazoo, City of
1415 N. Harrison St.
Kalamazoo, MI 49007

RE: Trace Project 22D0635
Client Project CMBPC PFAS & Additional Analyses

Dear Ms. Drzick:

Enclosed are your analytical results. The results of this report relate only to the samples listed in the body of this report.

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The results were obtained from Fibertec Environmental Services.

For clients that require NELAC Accreditation, Trace certifies that these test results meet all requirements of the NELAC Standard, except for those analytes with a "N" notation. These analytes have not been evaluated by NELAC at Trace's discretion and will not be reported unless requested by client.

If you have questions concerning this report, please contact me at 231.773.5998 or by email at jmink@trace-labs.com.

Sincerely,

A handwritten signature in black ink that reads "Jon Mink".

Jon Mink
Senior Project Manager

Enclosures



NJDEP Accreditation No. MI008

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673



231-773-5998 Phone
888-979-4469 Fax
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SAMPLE SUMMARY

Trace Project ID: 22D0635
Client Project ID: CMBPC PFAS & Additional Analyses

Trace ID	Sample ID	Matrix	Collected By	Date Collected	Date Received
22D0635-01	22-108-CMBPC Site name: City of Kalamazoo	Solid	MA	04/18/22 09:30	04/18/22 11:25

Trace Analytical Laboratories, Inc.
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Muskegon, MI 49444-2673



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AN EXPLANATION OF TERMS AND SYMBOLS WHICH MAY OCCUR IN THIS REPORT

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LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
DUP	Matrix Duplicate
RDL	Reporting Detection Limit
MCL	Maximum Contamination Limit
TIC	Tentatively Identified Compound
<, ND or U	Indicates the compound was analyzed for but not detected
*	Indicates a result that exceeds its associated MCL or Surrogate control limits
N	Indicates that the compound has not been evaluated by NELAC
NA	Indicates that the compound is not available.



Tuesday, May 10, 2022

Fibertec Project Number: A08090
Project Identification: PFAS ANALYSIS /
Submittal Date: 04/20/2022

Mr. Jon Mink
Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444

Dear Mr. Mink,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Bailey Welch at 10:08 AM, May 10, 2022

For Daryl P. Strandbergh
Laboratory Director

Enclosures

1914 Holloway Drive
11766 E Grand River
8660 S Mackinaw Trail

Hbt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: A08090
Laboratory Sample Number: A08090-001

Order: A08090
 Date: 05/10/22

Client Identification: Trace Analytical Laboratories, Inc.	Sample Description: 22-108-CMBPC 22D0635-01	Chain of Custody: NA
Client Project Name: PFAS ANALYSIS	Sample No:	Collect Date: 04/18/22
Client Project No: NA	Sample Matrix: Soil/Solid	Collect Time: 09:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **A08090-001** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **22-108-CMBPC 22D0635-01**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	81		%	1	1.0	04/26/22	MC220426	04/27/22	MC220426	LJK

PFAS Aliquot ID: **A08090-001A** Matrix: **Soil/Solid**
 Method: **ASTM D7968-17a** Description: **22-108-CMBPC 22D0635-01**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. ADONA	290		ng/kg	120	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 2. 9Cl-PF3ONS	U		ng/kg	120	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 3. 11Cl-PF3OUdS	U	EIS-	ng/kg	120	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 4. N-EtFOSAA	1900	EIS-	ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 5. FtS 4:2	U		ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 6. FtS 6:2	520		ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 7. FtS 8:2	270		ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 8. HFPO-DA	U	C+	ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 9. N-MeFOSAA	1800		ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 10. PFBA	1000	C+	ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 11. PFBS	U		ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 12. PFDA	930		ng/kg	530	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 13. PFDoA	450	EIS-	ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 14. PFDS	370	EIS-	ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 15. PFHpA	U		ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 16. PFHpS	U		ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 17. PFHxA	670		ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 18. PFHxS-Total	U		ng/kg	160	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 19. PFNA	590		ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 20. PFNS	U	EIS-	ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 21. PFOA	730		ng/kg	530	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 22. PFOSA	340		ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 23. PFOS-Total	8400		ng/kg	160	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 24. PFPeA	240		ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 25. PFPeS	U		ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 26. PFTeA	U		ng/kg	530	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 27. PFTriA	U	EIS-	ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG
‡ 28. PFUnA	390	EIS-	ng/kg	130	1.0	05/02/22	PS22E02I	05/02/22	SM22E02A	SKG

1914 Holloway Drive
 11766 E Grand River
 8660 S Mackinaw Trail

Hbt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584

Acronym (Param)	Analyte Name	CAS Number
1. ADONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4
2. 9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	756426-58-1
3. 11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9
4. N-EtFOSAA	2-(N-Ethylperfluorooctanesulfonamido) acetic acid	2991-50-6
5. FtS 4:2	Fluorotelomer sulphonic acid 4:2	757124-72-4
6. FtS 6:2	Fluorotelomer sulphonic acid 6:2	27619-97-2
7. FtS 8:2	Fluorotelomer sulphonic acid 8:2	39108-34-4
8. HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6
9. N-MeFOSAA	2-(N-Methylperfluorooctanesulfonamido) acetic acid	2355-31-9
10. PFBA	Perfluorobutanoic acid	375-22-4
11. PFBS	Perfluorobutanesulfonic acid	375-73-5
12. PFDA	Perfluorodecanoic acid	335-76-2
13. PFDoA	Perfluorododecanoic acid	307-55-1
14. PFDS	Perfluorodecanesulfonic acid	335-77-3
15. PFHpA	Perfluoroheptanoic acid	375-85-9
16. PFHpS	Perfluoroheptanesulfonic acid	375-92-8
17. PFHxA	Perfluorohexanoic acid	307-24-4
18. PFHxS-Total	Perfluorohexanesulfonic acid	355-46-4
19. PFNA	Perfluorononanoic acid	375-95-1
20. PFNS	Perfluoronananesulfonic acid	68259-12-1
21. PFOA	Perfluorooctanoic acid	335-67-1
22. PFOSA	Perfluorooctanesulfonamide	754-91-6
23. PFOS-Total	Perfluorooctanesulfonic acid	1763-23-1
24. PFPeA	Perfluoropentanoic acid	2706-90-3
25. PFPeS	Perfluoropentanesulfonic acid	2706-91-4
26. PFTeA	Perfluorotetradecanoic acid	376-06-7
27. PFTriA	Perfluorotridecanoic acid	72629-94-8
28. PFUnA	Perfluoroundecanoic acid	2058-94-8

Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
- B:** The analyte was detected in the associated method blank.
- E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J:** The concentration is an estimated value.
- M:** Modified Method
- U:** The analyte was not detected at or above the reporting limit.
- X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- W:** Results reported on a wet-weight basis.
- *:** Value reported is outside QC limits

Exception Summary:

- C+** : Recovery in the Reporting Limit Check Sample (RLCS) exceeds the upper control limit. Results may be biased high.
- EIS-** : The Isotope Dilution/Extracted Internal Standard area exceeds the lower control limit.

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

1914 Holloway Drive
11766 E Grand River
8660 S Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

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TRACE
 ANALYTICAL LABORATORIES, INC.

CHAIN-OF-CUSTODY RECORD

Trace Analytical Laboratories, Inc.
 2241 Black Creek Road
 Muskegon, MI 49444-2673
 Phone 231.773.5998
 Fax 888.979.4469
 www.trace-labs.com

Report Results To:

Company Name: City of Kalamazoo
 Report To: Malissa Drzick
 Mailing Address: 1415 N Harrison St
 City, State, Zip Code: Kalamazoo, MI 49007
 Office Phone: Cell Phone: 269-337-4753
 Email Address: drzickm@kalamazoo-city.org
 Billing Email Address:

Bill To:

PO #:
 Contact Name:
 Billing Address (if different):
 City, State, Zip Code:
 Phone Number:
 Billing Email Address:

Trace Use:
 Logged By: RV
 Checked By: NC
 Soil Volatiles Preserved (circle if applicable):
 MeOH Low Level Lab
 Sampling Time:

Turnaround Requirements:

- Standard, 5-10 Days
 3 Day*
 1 Day*
- Matrix Key:**
 S = Soil / Solid W = Wipes
 W = Water LW = Liquid Waste
 SL = Sludge A = Air
 O = Oil D = Drinking Water

*Results provided end of business day, requires prior approval.

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y/N)	Matrix	Number of Containers	Preservation						Analysis Requested	Remarks	Possible Health Hazards?
							Cool	HCl	HNO ₃	H ₂ SO ₄	NaOH	Other			
1	4/18/2022	09:30	22-108-CMBPC	N	S	1	X						PFAS		
Project Name: CMBPC PFAS Sampled By: M ADKINS															
Released By: <u>[Signature]</u> Received By: <u>[Signature]</u> Date: <u>4/18/2022</u> Time: <u>11:25</u>															

Please Sign: In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-2.1

Trace ID No.
220635

Sample Log In Checklist

Date: 4/8/22	Original Observation	Corrected Temperature	IR-9 (CF: +0.4°C)	IR-10 (CF: +0.4°C)	20B12743 (CF: -0.2°C)	Temp Blank	Client Sample
Time: 16:00							
Logged by: NE							
Package Description: Cooler							
Package Temp °C	-1.7	-1.3	✓				
Representative Sample Temp °C	0.3	0.7	✓				✓

Sample Receipt

- Yes No
- Received on ice or other coolant
- Ice still present upon receipt
- Custody seals present
- Trace Courier Client Drop-off
- Yes No Custody seals intact (if applicable)
- UPS Fed Ex US Mail Other

Sample Condition

- Yes No N/A
- All sample containers arrived unbroken and labeled
- Sufficient sample to run requested analyses
- Correct chemical preservative added to samples
- Samples preserved at Trace _____
- Chemical preservation verified, check EMD pH test strip used (if applicable)
- pH 0-2.5 (Lot: HC046681) pH 11.0-13.0 (Lot: HC022540) Other
- Air bubbles absent from VOAs _____

Chain of Custody (COC)

- Yes No
- All bottle labels agree with COC
- COC filled out properly
- COC signed by client

Notes:



ADDENDUM #2

Attachment B

SAFETY DATA SHEET (SDS) for Industrial Odor Suppressant CX-900

Biosolids Loading, Transport & Disposal

96871-016.0

SAFETY DATA SHEET

Industrial Odor Suppressant CX-900



Trade Name: **Remedia™ Industrial Odor Suppressant CX-900 Concentrate**

Date Prepared: 10/2022

1	Health
0	Flammability
0	Reactivity
0	Protective Equipment

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Remedia™ Industrial Odor Treatment CX-400**
Product Description: **Liquid, water-based.**
Manufacturer: **Solterra Group LLC
501 Capitol Trail
Suite G11
Newark DE 19711
Phone Number 844-329-1400**
Distributor: **Solterra Group LLC
501 Capitol Trail, Ste G-11
Newark DE 19711
Phone Number 844-329-1400**
In case of Emergency call: **1-302-690-3911**
For Customer Service Call: **1-844-329-1400**

2. HAZARDS IDENTIFICATION



SIGNAL WORD ----- WARNING

Eye Contact: **Irritant**
Skin Contact: **May cause irritation**
Inhalation: **Spray mist may cause some irritation to mucus membranes**
Chronic Hazards: **No known chronic hazards. Not listed by NTP, IARC or OSHA as a carcinogen**

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common name and synonyms	CAS #	%
2-Propenal, 3-phenyl-	None	104-55-2	<1
Cymbopogon nardus oil	None	8000-29-1	<1
Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethyl-, (1S,5S)-	None	7785-26-4	<1
3-Cyclohexene-1-methanol, .alpha.,.alpha.,4-trimethyl-	None	98-55-5	<1
4,5,6-Trimethylcyclohex-3-ene-1-carbaldehyde	None	1335-66-6	<1

One or more hazardous ingredient(s) is claimed as a trade secret under the OSHA Hazard Communication Standard. The hazards of this (these) ingredient(s) are given on this SDS.

4. FIRST AID MEASURES

Eye:	In case of contact, immediately flush eyes with plenty of water.
Skin:	In case of contact, immediately flush skin with soap and water.
Inhalation: ..	Remove to fresh air. If breathing is difficult have trained person administer oxygen.
Ingestion:	If swallowed, DO NOT induce vomiting. Give large quantities of water or milk to dilute. Give medical provider this SDS.

5. FIRE FIGHTING MEASURES

Extinguishing Media:	water mist if sprayed and swept across the base of the flames, CO2, Alcohol resistant Foam, Dry Chemical
....	
Hazards to fire-fighters	CO2, CO
Fire-fighting equipment:	Standard issue fire fighting equipment. Beware of potential vapors.
Specific Hazards of the chemical:	Vapors may combine with other chemicals in an industrial setting. Vapors tend to be heavier than air.
.	

6. ACCIDENTAL RELEASE MEASURES

Personal protection:	Wear appropriate safety gear. No health effects expected from the clean up if this Material if contact can be avoided.
....	
Environmental Hazards:	Totally miscible with water. Water will evaporate from spill of this material.
Spill cleanup	Mop up and neutralize liquid with water, then discharge in accordance with federal, state and local regulations or permits.
CERCLA RQ:	There is no CERCLA Reportable Quantity for this material. If a spill goes off site, notification of state and local authorities is recommended.

7. HANDLING AND STORAGE

Store in plastic tanks or containers. Shipments may be made in plastic bottles, 5 gallon pails, 55 gallon plastic drums, 275 gallon plastic totes. Storage temperature 0°-38°C (32° - 98°F)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Use chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses.

Wear appropriate chemical resistant gloves when handling this product.

See Section 3 and Section 4. HMIS Ratings: (scale 0-4) Health = 1, Fire = 0, Physical Hazard = 0

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid
Color	Very pale yellow to water clear.
Odor	Characteristic
pH	NA
Specific gravity	1.05
Flash Point	170° F
Solubility in water	Miscible

10. STABILITY AND REACTIVITY

Stability	This material is stable under normal conditions of use and storage
Conditions to Avoid	Temperatures above flash point in combination with sparks or open flame.
Materials to avoid	Strong acids or alkalis, strong oxidizers, acid chlorides, acid anhydrides.
Hazardous decomposition products	CO, CO2

11. TOXICOLOGICAL INFORMATION

Ingestion Toxicity:	Harmful if swallowed
Eye:	Can cause redness, tearing, irritation, but not likely to cause permanent damage.
Skin:	Can cause irritation, defatting, dermatitis – not likely to cause permanent damage.

12. ECOLOGICAL INFORMATION

Eco toxicity: **No data available**
Environmental Fate: **This material is not expected to harmfully bioaccumulate.**
Physical/Chemical: **Totally miscible with water.**

13. DISPOSAL CONSIDERATION

Classification: **Disposed material may be a hazardous waste depending upon concentration.**
Disposal Method: **Recycle container in accordance with federal, state and local regulations. Dispose of in accordance with federal, state and local regulations and permits.**

14. TRANSPORT INFORMATION

DOT UN Status: **This material is not regulated for surface transportation.**

5. REGULATORY INFORMATION

CERCLA: **No CERCLA Reportable Quantity has been established for this material.**
SARA TITLE III: **Not an extremely hazardous substance under §313 or under §§311/312.**
TSCA: **All ingredients of this material are listed on the TSCA inventory.**

California Prop. 65 **Not Listed. We do not knowingly add any Prop. 65 chemical nor do we know of any impurity in any ingredient that is on the Prop 65 list.**

16. OTHER INFORMATION

Prepared by: TR
Supersedes revision of 04/2021

THIS INFORMATION ON THIS SAFETY DATA SHEET IS BELIEVED TO BE ACCURATE AND IT IS THE BEST INFORMATION AVAILABLE TO RPS ENVIRONMENTAL SOLUTIONS, LP. THIS DOCUMENT IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONS FOR HANDLING A CHEMICAL BY PERSONS TRAINED IN CHEMICAL HANDLING. RPS ENVIRONMENTAL SOLUTIONS, LP MAKES NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED WITH RESPECT TO SUCH INFORMATION OR THE PRODUCT TO WHICH IT RELATES, AND WE ASSUME NO LIABILITY RESULTING FROM THE USE OR HANDLING OF THE PRODUCT TO WHICH THIS SAFETY DATA SHEET RELATES. USERS AND HANDLERS OF THIS PRODUCT SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION PROVIDED HEREIN FOR THEIR OWN PURPOSE.