

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



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

October 19, 2023

Ms. Jennifer Jermalowicz-Jones
Restorative Lake Sciences
18406 W. Spring Lake Rd.
Spring Lake, MI 49456

RE: Trace Project 2311360
Client Project Houghton Lake Herbicides

Dear Ms. Jermalowicz-Jones:

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.

The results were obtained from Summit Environmental Technologies, Inc..

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". The signature is written in a cursive style with a large initial "J" and "M".

Jon Mink
Senior Project Manager

Enclosures

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SAMPLE SUMMARY

Trace Project ID: 2311360
Client Project ID: Houghton Lake Herbicides

Trace ID	Sample ID	Matrix	Collected By	Date Collected	Date Received
2311360-01	23-501 (MG1)	Solid	GS/LG/BS	08/30/23 10:24	08/31/23 09:06
2311360-02	23-502 (MG2)	Solid	GS/LG/BS	08/30/23 10:33	08/31/23 09:06
2311360-03	23-503 (MG3)	Solid	GS/LG/BS	08/30/23 10:40	08/31/23 09:06
2311360-04	23-504 (MG4)	Solid	GS/LG/BS	08/30/23 10:48	08/31/23 09:06
2311360-05	23-505 (MG5)	Solid	GS/LG/BS	08/30/23 11:01	08/31/23 09:06
2311360-06	23-506 (MG6)	Solid	GS/LG/BS	08/30/23 11:07	08/31/23 09:06
2311360-07	23-507 (SW1)	Solid	GS/LG/BS	08/30/23 11:45	08/31/23 09:06
2311360-08	23-508 (SW2)	Solid	GS/LG/BS	08/30/23 11:52	08/31/23 09:06
2311360-09	23-509 (SW3)	Solid	GS/LG/BS	08/30/23 11:57	08/31/23 09:06
2311360-10	23-510 (SW4)	Solid	GS/LG/BS	08/30/23 12:03	08/31/23 09:06
2311360-11	23-511 (SW5)	Solid	GS/LG/BS	08/30/23 12:07	08/31/23 09:06
2311360-12	23-512 (SW6)	Solid	GS/LG/BS	08/30/23 12:12	08/31/23 09:06



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October 16, 2023

Jon Mink
Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444
TEL: (231) 773-5998
FAX: (231) 773-6537

RE: 23I1360

Dear Jon Mink:

Order No.: 23100177

Summit Environmental Technologies, Inc. received 12 sample(s) on 10/3/2023 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Holly Florea
Project Manager
3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, ISO/IEC 17025:2017 119125 L22-544, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 68-01335, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C



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Case Narrative

WO#: 23100177
Date: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc.
Project: 231I1360

WorkOrder Narrative:

This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

WorkOrder Comments:

23100177: State required accreditation not specified; results may not be reported as certified data.

Analytical Sequence Sample Notes:

23100177-001 through 006 SVOC-Herb_S(8321M): Hold time for sample preparation and analysis was exceeded. Possible low bias for Triclopyr due to low LCS recovery for Triclopyr, which was confirmed by reanalysis. Insufficient sample left for reprep/reanalysis.

23100177-007 through 012 SVOC-Herb_S(8321M): Hold time for sample preparation and analysis was exceeded. Analytical Sequence's Prep Method hold time was exceeded by 22 days.

Original



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Workorder
Sample Summary
WO#: **23100177**
16-Oct-23

CLIENT: Trace Analytical Laboratories, Inc.
Project: 23I1360

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
23100177-001	23I1360-01		8/30/2023 10:24:00 AM	10/3/2023 10:10:00 AM	Solid
23100177-002	23I1360-02		8/30/2023 10:33:00 AM	10/3/2023 10:10:00 AM	Solid
23100177-003	23I1360-03		8/30/2023 10:40:00 AM	10/3/2023 10:10:00 AM	Solid
23100177-004	23I1360-04		8/30/2023 10:48:00 AM	10/3/2023 10:10:00 AM	Solid
23100177-005	23I1360-05		8/30/2023 11:01:00 AM	10/3/2023 10:10:00 AM	Solid
23100177-006	23I1360-06		8/30/2023 11:07:00 AM	10/3/2023 10:10:00 AM	Solid
23100177-007	23I1360-07		8/30/2023 11:45:00 AM	10/3/2023 10:10:00 AM	Solid
23100177-008	23I1360-08		8/30/2023 11:52:00 AM	10/3/2023 10:10:00 AM	Solid
23100177-009	23I1360-09		8/30/2023 11:57:00 AM	10/3/2023 10:10:00 AM	Solid
23100177-010	23I1360-10		8/30/2023 12:03:00 PM	10/3/2023 10:10:00 AM	Solid
23100177-011	23I1360-11		8/30/2023 12:07:00 PM	10/3/2023 10:10:00 AM	Solid
23100177-012	23I1360-12		8/30/2023 12:12:00 PM	10/3/2023 10:10:00 AM	Solid



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Analytical Report

(consolidated)

WO#: 23100177

Date Reported: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc. **Collection Date:** 8/30/2023 10:24:00 AM
Project: 23I1360
Lab ID: 23100177-001 **Matrix:** SOLID
Client Sample ID: 23I1360-01

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIQUAT AND PARAQUAT BY SV HPLC (EPA 549.2)				E549.2	E549.2	Analyst: PGP
Diquat	ND	2		mg/Kg	1	10/13/2023 7:15:00 PM
HERBICIDES HERBICIDES BY EPA 8321A MODIFIED				SW8321A	SW8321A	Analyst: MTG
Triclopyr	ND	0.509	UHQL-	mg/Kg	10	10/9/2023 9:00:00 AM
Surr: 2,4-Dichlorophenylacetic aci	74.4	70 - 130	H	%Rec	10	10/5/2023 11:55:50 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL
W	Sample container temperature is out of limit as specified at testcode		

Original



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Analytical Report

(consolidated)

WO#: 23100177

Date Reported: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc. **Collection Date:** 8/30/2023 10:33:00 AM
Project: 23I1360
Lab ID: 23100177-002 **Matrix:** SOLID
Client Sample ID: 23I1360-02

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIQUAT AND PARAQUAT BY SV HPLC (EPA 549.2)					E549.2	E549.2 Analyst: PGP
Diquat	ND	0.7		mg/Kg	1	10/13/2023 7:25:00 PM
HERBICIDES					SW8321A	SW8321A Analyst: MTG
HERBICIDES BY EPA 8321A MODIFIED						
Triclopyr	ND	0.502	UHQL-	mg/Kg	10	10/9/2023 9:00:00 AM
Surr: 2,4-Dichlorophenylacetic aci	97.8	70 - 130	H	%Rec	10	10/6/2023 12:44:26 AM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL
W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(consolidated)

WO#: 23100177

Date Reported: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc. **Collection Date:** 8/30/2023 10:40:00 AM
Project: 23I1360
Lab ID: 23100177-003 **Matrix:** SOLID
Client Sample ID: 23I1360-03

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIQUAT AND PARAQUAT BY SV HPLC (EPA 549.2)					E549.2	E549.2 Analyst: PGP
Diquat	ND	0.7	*	mg/Kg	1	10/13/2023 7:36:00 PM
HERBICIDES					SW8321A	SW8321A Analyst: MTG
HERBICIDES BY EPA 8321A MODIFIED						
Triclopyr	ND	0.494	UHQL-	mg/Kg	10	10/9/2023 9:00:00 AM
Surr: 2,4-Dichlorophenylacetic aci	70.9	70 - 130	H	%Rec	10	10/6/2023 1:33:03 AM

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response
 ND Not Detected PL Permit Limit
 RL Reporting Detection Limit U Samples with CalcVal < MDL
 W Sample container temperature is out of limit as specified at testcode

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Analytical Report

(consolidated)

WO#: 23100177

Date Reported: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc. **Collection Date:** 8/30/2023 10:48:00 AM
Project: 23I1360
Lab ID: 23100177-004 **Matrix:** SOLID
Client Sample ID: 23I1360-04

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIQUAT AND PARAQUAT BY SV HPLC (EPA 549.2)					E549.2	E549.2 Analyst: PGP
Diquat	ND	0.5		mg/Kg	1	10/13/2023 7:47:00 PM
HERBICIDES					SW8321A	SW8321A Analyst: MTG
HERBICIDES BY EPA 8321A MODIFIED						
Triclopyr	ND	0.499	UHQL-	mg/Kg	10	10/9/2023 9:00:00 AM
Surr: 2,4-Dichlorophenylacetic aci	74.4	70 - 130	H	%Rec	10	10/6/2023 2:21:39 AM

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response
 ND Not Detected PL Permit Limit
 RL Reporting Detection Limit U Samples with CalcVal < MDL
 W Sample container temperature is out of limit as specified at testcode

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Analytical Report

(consolidated)

WO#: 23100177

Date Reported: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc. **Collection Date:** 8/30/2023 11:01:00 AM
Project: 23I1360
Lab ID: 23100177-005 **Matrix:** SOLID
Client Sample ID: 23I1360-05

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIQUAT AND PARAQUAT BY SV HPLC (EPA 549.2)				E549.2	E549.2	Analyst: PGP
Diquat	ND	0.5		mg/Kg	1	10/13/2023 7:58:00 PM
HERBICIDES HERBICIDES BY EPA 8321A MODIFIED				SW8321A	SW8321A	Analyst: MTG
Triclopyr	ND	0.503	UHQL-	mg/Kg	10	10/9/2023 9:00:00 AM
Surr: 2,4-Dichlorophenylacetic aci	72.2	70 - 130	H	%Rec	10	10/6/2023 3:10:16 AM

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response
 ND Not Detected PL Permit Limit
 RL Reporting Detection Limit U Samples with CalcVal < MDL
 W Sample container temperature is out of limit as specified at testcode

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Analytical Report

(consolidated)

WO#: 23100177

Date Reported: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc. **Collection Date:** 8/30/2023 11:07:00 AM
Project: 23I1360
Lab ID: 23100177-006 **Matrix:** SOLID
Client Sample ID: 23I1360-06

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIQUAT AND PARAQUAT BY SV HPLC (EPA 549.2)				E549.2	E549.2	Analyst: PGP
Diquat	ND	1		mg/Kg	1	10/13/2023 8:08:00 PM
HERBICIDES HERBICIDES BY EPA 8321A MODIFIED				SW8321A	SW8321A	Analyst: MTG
Triclopyr	ND	0.486	UHQL-	mg/Kg	10	10/9/2023 9:00:00 AM
Surr: 2,4-Dichlorophenylacetic aci	75.1	70 - 130	H	%Rec	10	10/6/2023 3:58:53 AM

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response
 ND Not Detected PL Permit Limit
 RL Reporting Detection Limit U Samples with CalcVal < MDL
 W Sample container temperature is out of limit as specified at testcode

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Analytical Report

(consolidated)

WO#: 23100177

Date Reported: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc. **Collection Date:** 8/30/2023 11:45:00 AM
Project: 23I1360
Lab ID: 23100177-007 **Matrix:** SOLID
Client Sample ID: 23I1360-07

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
HERBICIDES					SW8321A	SW8321A Analyst: MTG
HERBICIDES BY EPA 8321A MODIFIED						
2,4-D	ND	0.494	UH	mg/Kg	10	10/6/2023 4:47:29 AM
Surr: 2,4-Dichlorophenylacetic aci	70.4	70 - 130	H	%Rec	10	10/6/2023 4:47:29 AM

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response
 ND Not Detected PL Permit Limit
 RL Reporting Detection Limit U Samples with CalcVal < MDL
 W Sample container temperature is out of limit as specified at testcode

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Analytical Report

(consolidated)

WO#: 23100177

Date Reported: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc. **Collection Date:** 8/30/2023 11:52:00 AM
Project: 23I1360
Lab ID: 23100177-008 **Matrix:** SOLID
Client Sample ID: 23I1360-08

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
HERBICIDES					SW8321A	SW8321A Analyst: MTG
HERBICIDES BY EPA 8321A MODIFIED						
2,4-D	ND	0.503	UH	mg/Kg	10	10/6/2023 5:36:06 AM
Surr: 2,4-Dichlorophenylacetic aci	85.5	70 - 130	H	%Rec	10	10/6/2023 5:36:06 AM

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response
 ND Not Detected PL Permit Limit
 RL Reporting Detection Limit U Samples with CalcVal < MDL
 W Sample container temperature is out of limit as specified at testcode

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Analytical Report

(consolidated)

WO#: 23100177

Date Reported: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc. **Collection Date:** 8/30/2023 11:57:00 AM
Project: 23I1360
Lab ID: 23100177-009 **Matrix:** SOLID
Client Sample ID: 23I1360-09

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
HERBICIDES					SW8321A	SW8321A Analyst: MTG
HERBICIDES BY EPA 8321A MODIFIED						
2,4-D	ND	0.501	UH	mg/Kg	10	10/6/2023 6:24:42 AM
Surr: 2,4-Dichlorophenylacetic aci	91.9	70 - 130	H	%Rec	10	10/6/2023 6:24:42 AM

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response
 ND Not Detected PL Permit Limit
 RL Reporting Detection Limit U Samples with CalcVal < MDL
 W Sample container temperature is out of limit as specified at testcode

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Analytical Report

(consolidated)

WO#: 23100177

Date Reported: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc. **Collection Date:** 8/30/2023 12:03:00 PM
Project: 23I1360
Lab ID: 23100177-010 **Matrix:** SOLID
Client Sample ID: 23I1360-10

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
HERBICIDES					SW8321A	SW8321A Analyst: MTG
HERBICIDES BY EPA 8321A MODIFIED						
2,4-D	ND	0.500	UH	mg/Kg	10	10/6/2023 7:13:19 AM
Surr: 2,4-Dichlorophenylacetic aci	84.4	70 - 130	H	%Rec	10	10/6/2023 7:13:19 AM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL
W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(consolidated)

WO#: 23100177

Date Reported: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc. **Collection Date:** 8/30/2023 12:07:00 PM
Project: 23I1360
Lab ID: 23100177-011 **Matrix:** SOLID
Client Sample ID: 23I1360-11

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
HERBICIDES					SW8321A	SW8321A Analyst: MTG
HERBICIDES BY EPA 8321A MODIFIED						
2,4-D	ND	0.505	UH	mg/Kg	10	10/6/2023 8:01:55 AM
Surr: 2,4-Dichlorophenylacetic aci	103	70 - 130	H	%Rec	10	10/6/2023 8:01:55 AM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL
W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(consolidated)

WO#: 23100177

Date Reported: 10/16/2023

CLIENT: Trace Analytical Laboratories, Inc. **Collection Date:** 8/30/2023 12:12:00 PM
Project: 23I1360
Lab ID: 23100177-012 **Matrix:** SOLID
Client Sample ID: 23I1360-12

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
HERBICIDES					SW8321A	SW8321A Analyst: MTG
HERBICIDES BY EPA 8321A MODIFIED						
2,4-D	ND	0.496	UH	mg/Kg	10	10/6/2023 8:50:31 AM
Surr: 2,4-Dichlorophenylacetic aci	89.1	70 - 130	H	%Rec	10	10/6/2023 8:50:31 AM

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response
 ND Not Detected PL Permit Limit
 RL Reporting Detection Limit U Samples with CalcVal < MDL
 W Sample container temperature is out of limit as specified at testcode

Original



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QC SUMMARY REPORT

WO#: 23100177
 16-Oct-23

Client: Trace Analytical Laboratories, Inc.
Project: 23I1360

BatchID: 69300

Sample ID: MB-68996	SampType: MBLK	TestCode: SVOC-Herb_	Units: mg/Kg	Prep Date: 10/5/2023	RunNo: 172235						
Client ID: PBS	Batch ID: 69300	TestNo: SW8321A	SW8321A	Analysis Date: 10/5/2023	SeqNo: 4637663						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-D	ND	0.491	0.9817	0	0	0	0				U
Surr: 2,4-Dichlorophenylacetic acid	1.08		0.9817		110	70	130				

Sample ID: LCS-68996	SampType: LCS	TestCode: SVOC-Herb_	Units: mg/Kg	Prep Date: 10/5/2023	RunNo: 172235						
Client ID: LCSS	Batch ID: 69300	TestNo: SW8321A	SW8321A	Analysis Date: 10/5/2023	SeqNo: 4637664						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-D	1.08	0.509	1.018	0	107	10	196				
Surr: 2,4-Dichlorophenylacetic acid	1.16		1.018		114	70	130				

Sample ID: LCSD-68996	SampType: LCSD	TestCode: SVOC-Herb_	Units: mg/Kg	Prep Date: 10/5/2023	RunNo: 172235						
Client ID: LCSS02	Batch ID: 69300	TestNo: SW8321A	SW8321A	Analysis Date: 10/5/2023	SeqNo: 4637665						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-D	1.27	0.502	1.003	0	126	10	196	1.085	15.4	20	
Surr: 2,4-Dichlorophenylacetic acid	1.19		1.003		119	70	130		0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Original



Summit Environmental Technologies, Inc.
 3310 Win St.
 Cuyahoga Falls, Ohio 44223
 TEL: (330) 253-8211 FAX: (330) 253-4489
 Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 23100177
 16-Oct-23

Client: Trace Analytical Laboratories, Inc.
Project: 23I1360

BatchID: 69429

Sample ID: MB-69429	SampType: MBLK	TestCode: SVOC-Herb_	Units: %Rec	Prep Date: 10/9/2023	RunNo: 172552						
Client ID: PBS	Batch ID: 69429	TestNo: SW8321A	SW8321A	Analysis Date: 10/10/2023	SeqNo: 4650265						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2,4-Dichlorophenylacetic acid	0.105		0.1009		104	70	130				

Sample ID: LCS-69429	SampType: LCS	TestCode: SVOC-Herb_	Units: mg/Kg	Prep Date: 10/9/2023	RunNo: 172552						
Client ID: LCSS	Batch ID: 69429	TestNo: SW8321A	SW8321A	Analysis Date: 10/10/2023	SeqNo: 4650266						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Triclopyr	0.0646	0.0493	0.09859	0	65.5	70	130				S
Surr: 2,4-Dichlorophenylacetic acid	0.106		0.09859		108	70	130				

Sample ID: LCSD-69429	SampType: LCSD	TestCode: SVOC-Herb_	Units: mg/Kg	Prep Date: 10/9/2023	RunNo: 172552						
Client ID: LCSS02	Batch ID: 69429	TestNo: SW8321A	SW8321A	Analysis Date: 10/10/2023	SeqNo: 4650267						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Triclopyr	0.0632	0.0501	0.1001	0	63.1	70	130	0.06457	2.21	30	S
Surr: 2,4-Dichlorophenylacetic acid	0.0918		0.1001		91.7	70	130		0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OGI		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Original



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 Cuyahoga Falls, Ohio 44223
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QC SUMMARY REPORT

WO#: 23100177
 16-Oct-23

Client: Trace Analytical Laboratories, Inc.
Project: 23I1360

BatchID: 69429

Sample ID: MB-69429	SampType: MBLK	TestCode: SVOC-Herb_	Units: mg/Kg	Prep Date: 10/9/2023	RunNo: 172378						
Client ID: PBS	Batch ID: 69429	TestNo: SW8321A	SW8321A	Analysis Date: 10/9/2023	SeqNo: 4644228						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Triclopyr	ND	0.505									U
Surr: 2,4-Dichlorophenylacetic acid	1.07		1.009		106	70	130				

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range	H Holding times for preparation or analy
	J Analyte detected below quantitation limits	M Manual Integration used to determine area response	MC Value is below Minimum Compound
	ND Not Detected	OG1	P Second column confirmation exceeds
	PL Permit Limit	R RPD outside accepted recovery limits	RL Reporting Detection Limit

Original



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QC SUMMARY REPORT

WO#: 23100177
 16-Oct-23

Client: Trace Analytical Laboratories, Inc.
Project: 23I1360

BatchID: 69594

Sample ID: MB-69594	SampType: MBLK	TestCode: svoc_dw(549)	Units: mg/L	Prep Date: 10/13/2023	RunNo: 172716						
Client ID: PBW	Batch ID: 69594	TestNo: E549.2	E549.2	Analysis Date: 10/13/2023	SeqNo: 4657472						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diquat	ND	0.002									U

Sample ID: LCS-69594	SampType: LCS	TestCode: svoc_dw(549)	Units: mg/L	Prep Date: 10/13/2023	RunNo: 172716						
Client ID: LCSW	Batch ID: 69594	TestNo: E549.2	E549.2	Analysis Date: 10/13/2023	SeqNo: 4657473						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diquat	0.02	0.002	0.02	0	101	70	130				

Sample ID: LCSD-69594	SampType: LCSD	TestCode: svoc_dw(549)	Units: mg/L	Prep Date: 10/13/2023	RunNo: 172716						
Client ID: LCSS02	Batch ID: 69594	TestNo: E549.2	E549.2	Analysis Date: 10/13/2023	SeqNo: 4657474						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diquat	0.02	0.002	0.02	0	101	70	130	0.02	0.138	30	

Sample ID: RLC-69594	SampType: RLC	TestCode: svoc_dw(549)	Units: mg/L	Prep Date: 10/13/2023	RunNo: 172716						
Client ID: BatchQC	Batch ID: 69594	TestNo: E549.2	E549.2	Analysis Date: 10/13/2023	SeqNo: 4657475						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diquat	0.002	0.002	0.002	0	112	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Original



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 Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 23100177
 16-Oct-23

Client: Trace Analytical Laboratories, Inc.
Project: 23I1360

BatchID: 69594

Sample ID: RLC-69594	SampType: RLC	TestCode: svoc_dw(549)	Units: mg/L	Prep Date: 10/13/2023	RunNo: 172716						
Client ID: BatchQC	Batch ID: 69594	TestNo: E549.2	E549.2	Analysis Date: 10/13/2023	SeqNo: 4657475						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range	H Holding times for preparation or analy
	J Analyte detected below quantitation limits	M Manual Integration used to determine area response	MC Value is below Minimum Compound
	ND Not Detected	OG1	P Second column confirmation exceeds
	PL Permit Limit	R RPD outside accepted recovery limits	RL Reporting Detection Limit

Original

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B/MB+	The analyte was detected in the associated blank.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	RL	Reporting Limit
QC	Quality Control	MDL	Method Detection Limit
MB	Method Blank	LOD	Level of Detection
LCS	Laboratory Control Sample	LOQ	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	PQL	Practical Quantitation Limit
QCS	Quality Control Sample	CRQL	Contract Required Quantitation Limit
DUP	Duplicate	PL	Permit Limit
MS	Matrix Spike	RegLvl	Regulatory Limit
MSD	Matrix Spike Duplicate	MCL	Maximum Contamination Limit
RPD	Relative Percent Different	MinCL	Minimum Compound Limit
ICV	Initial Calibration Verification	RA	Reanalysis
ICB	Initial Calibration Blank	RE	Reextraction
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound
CCB	Continuing Calibration Blank	RT	Retention Time
RLC	Reporting Limit Check	CF	Calibration Factor
DF	Dilution Factor	RF	Response Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.

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



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

SUBCONTRACT ORDER

23I1360

23100177

SENDING LABORATORY:

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444
Phone: 231.773.5998

RECEIVING LABORATORY:

Summit Environmental Technologies, Inc.
3310 Win Street
Cuyahoga Falls, OH 44223
Phone : (330) 253-8211

Temp: 3.1 +
0.1 = 3.20C

Project Manager: Jon Mink

Note Our New Email address: TraceSubOut@trace-labs.com

PO # 23I1360

OK to run past hold.

Sample ID: 23-501 (MG1) 23I1360-01 Matrix: Solid Sampled: 08/30/23 10:24 TAT: Standard

Sampled By: GS/LG/BS

Analysis Needed:

Special Analysis Comments: Triclopyr & Diquat Dibromide

Sample ID: 23-502 (MG2) 23I1360-02 Matrix: Solid Sampled: 08/30/23 10:33 TAT: Standard

Sampled By: GS/LG/BS

Analysis Needed:

Special Analysis Comments: Triclopyr & Diquat Dibromide

Sample ID: 23-503 (MG3) 23I1360-03 Matrix: Solid Sampled: 08/30/23 10:40 TAT: Standard

Sampled By: GS/LG/BS

Analysis Needed:

Special Analysis Comments: Triclopyr & Diquat Dibromide

Box, cooler, Ice,
UPS

Released By: [Signature] Date: 9/29/23 Received By: [Signature] Date: 10/3/23 10:10

Released By _____ Date _____ Received By _____ Date _____

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Muskegon, MI 49444-2673



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SUBCONTRACT ORDER

23I1360

Matrix: Solid Sampled: 08/30/23 10:48 TAT: Standard
Sample ID: 23-504 (MG4) 23I1360-04

Sampled By: GS/LG/BS

Analysis Needed:

Special Analysis

Comments: Triclopyr & Diquat Dibromide

Matrix: Solid Sampled: 08/30/23 11:01 TAT: Standard
Sample ID: 23-505 (MG5) 23I1360-05

Sampled By: GS/LG/BS

Analysis Needed:

Special Analysis

Comments: Triclopyr & Diquat Dibromide

Matrix: Solid Sampled: 08/30/23 11:07 TAT: Standard
Sample ID: 23-506 (MG6) 23I1360-06

Sampled By: GS/LG/BS

Analysis Needed:

Special Analysis

Comments: Triclopyr & Diquat Dibromide

Matrix: Solid Sampled: 08/30/23 11:45 TAT: Standard
Sample ID: 23-507 (SW1) 23I1360-07

Sampled By: GS/LG/BS

Analysis Needed:

Special Analysis

Comments: 2-4 D Residue

TEMP: 3.1 to .1
= 3.2°C

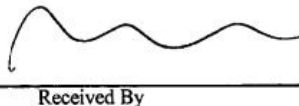
Box, cooler, ice, UPS



Released By

9/29/23

Date



Received By

10/3/23 10:10

Date

Released By

Date

Received By

Date

Page 2 of 4

SUBCONTRACT ORDER

23I1360

Matrix: Solid Sampled: 08/30/23 11:52 TAT: Standard
Sample ID: 23-508 (SW2) 23I1360-08

Sampled By: GS/LG/BS

Analysis Needed:

Special Analysis Comments: 2-4 D Residue

Matrix: Solid Sampled: 08/30/23 11:57 TAT: Standard
Sample ID: 23-509 (SW3) 23I1360-09

Sampled By: GS/LG/BS

Analysis Needed:

Special Analysis Comments: 2-4 D Residue

Matrix: Solid Sampled: 08/30/23 12:03 TAT: Standard
Sample ID: 23-510 (SW4) 23I1360-10

Sampled By: GS/LG/BS

Analysis Needed:

Special Analysis Comments: 2-4 D Residue

Matrix: Solid Sampled: 08/30/23 12:07 TAT: Standard
Sample ID: 23-511 (SW5) 23I1360-11


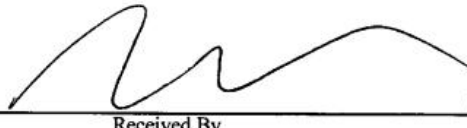
Sampled By: GS/LG/BS

Analysis Needed:

Special Analysis Comments: 2-4 D Residue

Temp: 30.1 ± 0.1
= 3.2°C

BOX, cooler, ICE, UPS

Released By:  Date: 9/29/23 Received By:  Date: 10/3/23 10:10

Released By _____ Date _____ Received By _____ Date _____

Page 3 of 4

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



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

SUBCONTRACT ORDER

23I1360

Sample ID: 23-512 (SW6) 23I1360-12

Matrix: Solid

Sampled: 08/30/23 12:12 TAT: Standard


Sampled By: GS/LG/BS

Analysis Needed:

Special Analysis

Comments: 2-4 D Residue

Temp: $3.1 \pm 0.1 = 3.2^{\circ}\text{C}$
BOX, COOLER, ICE, UPS

 9/19/23
Released By Date Received By 10/3/23 10:10 Date



Released By Date Received By Date



Summit Environmental Technologies, Inc.
 3310 Win St.
 Cuyahoga Falls, Ohio 44223
 TEL: (330) 253-8211 FAX: (330) 253-4489
 Website: <http://www.settek.com>

Sample Log-In Check List

Client Name: **TRA-MI-49444** Work Order Number: **23100177** RcptNo: **1**

Logged by:	Meghan Weinberg	10/3/2023 10:10:00 AM	
Completed By:	Tegan A. Richards	10/3/2023 3:23:17 PM	
Reviewed By:	Holly Florea	10/4/2023 10:02:25 AM	

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? UPS

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:
 Client approved to run past hold

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.2	Good	Not Present			



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

Trace ID No.
2311560

Report Results To:

Company Name: Restorative Lake Services PO #: _____
 Report To: Janet Contact Name: _____
 Mailing Address: _____ Billing Address (if different): _____
 City, State, Zip Code: _____ City, State, Zip Code: _____
 Office Phone: _____ Cell Phone: _____ Phone Number: _____
 Email Address: _____ Billing Email Address: _____

Trace Use:

Logged By: [Signature]
 Checked By: [Signature]
 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 WI = Wipes
 W = Water LW = Liquid Waste
 SL = Sludge A = Air
 OI = 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						Released By	Date	Time	Remarks	Possible Health Hazards?	
							Cool	HCl	HNO ₃	H ₂ SO ₄	NaOH	Other						
1	2/16/23	1024	23-S01 (MG1)			1												
2	1033	23-S02	(MG2)			1												
3	1040	23-S03	(MG3)			1												
4	1048	23-S04	(MG4)			1												
5	1101	23-S05	(MG5)			1												
6	1107	23-S06	(MG6)			1												
7	1145	23-S07	(SW1)			1												
8	1152	23-S08	(SW2)			1												
9	1157	23-S09	(SW3)			1												
10	1203	23-S10	(SW4)			1												
Please Sign		Released By	Received By	Date	Time	Released By	Received By	Date	Time									
1) <u>[Signature]</u>																		
3) <u>[Signature]</u>																		

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

