RMR INVESTIGATION

Project CUY-14-6.93 PID # 104132 Garfield Heights, Cuyahoga County, Ohio

By:

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Submitted by:

HZW Environmental Consultants, LLC 1234 Weathervane Lane Akron, Summit County, Ohio 330-208-2717

Lead Agency: Ohio Department of Transportation



December 19, 2024



SIGNATURE PAGE

GENERAL INFORMATION

Project C-R-S / Name:	Parcel 14 and Parcel 17	PID:	104132	District:	12	
Report Author(s):	Jacob W. Wingert					
Report Author(s):	Kevin M. Reaman.					
Affiliation:	HZW Environmental Consultants, LLC					

CERTIFICATION (Must be acknowledged by Prequalified Individual)

	I certify that I have personally examined and am familiar with the information in this document and all attachments, and that the data collection was supervised by an individual(s) prequalified to conduct the RMR for ODOT or by trained ODOT Environmental staff. Based on my						
	inquiry of those persons immediately responsible for obtaining the information contained herein, I believe that the information has been						
	collected in a	accordance with the ODOT RMR Manual current at th	e time of this submittal	, and is true, accurate, and complete.			
Nan	ne:	Doug Wetzel	Signature:	Doug Wetzel			
Title	e:	Group Leader, Phase II ESAs	Date:	12/19/2024			
Ema	ail:	Dwetzel@hzwenv.com	Phone Number:	440-357-1260			



TABLE OF CONTENTS

 EXECUTIVE SUMMARY	PAGE
 INTRODUCTION	2
 PROPERTY HISTORY FIELD ACTIVITIES AND ANALYTICAL PROCEDURES INVESTIGATION OVERVIEW AND DATA GAPS. PUBLISHED GEOLOGIC AND HYDROGEOLOGIC INFORMATION FIELD CONDITION DOCUMENTATION AND OVERVIEW FIELD CONDITION DOCUMENTATION AND OVERVIEW GEOPHYSICAL SURVEY. SAMPLING EFFORT. ANALYTICAL METHODS, RESULTS, AND COMPARISON TO REGULATORY LEVELS 	
 4. FIELD ACTIVITIES AND ANALYTICAL PROCEDURES 4.1 INVESTIGATION OVERVIEW AND DATA GAPS. 4.2 PUBLISHED GEOLOGIC AND HYDROGEOLOGIC INFORMATION 4.3 FIELD CONDITION DOCUMENTATION AND OVERVIEW 4.4 GEOPHYSICAL SURVEY. 4.5 SAMPLING EFFORT. 4.6 ANALYTICAL METHODS, RESULTS, AND COMPARISON TO REGULATORY LEVELS 5. CONCLUSIONS & RECOMMENDATIONS 	
5. CONCLUSIONS & RECOMMENDATIONS	3 3 4 4 4 4 5
	7

TABLES

Table 1 - RMR Investigation Properties Table 2 - Summary of Investigation Findings & Recommendations

Table 3 - RMR Investigation Properties Investigation Rationale

APPENDICES

Appendix A - Project Figures

Figure 1 - USGS Topographic Map

Figure 2 - Property Diagram

Figure 3 - General Sample Location Map

Appendix B - Project Site Photographs

Appendix C - Parcel 14 Investigation Documentation Laboratory Analytical Reports Chain of Custody Laboratory QA/QC Report

Appendix D - Parcel 17 Investigation Documentation Laboratory Analytical Reports Chain of Custody Laboratory QA/QC Report

Appendix E - Project Plan Sheets



1. EXECUTIVE SUMMARY

<u>HZW Environmental Consultants, LLC</u> completed an RMR Investigation in conformance with the Ohio Department of Transportation's (ODOT) Regulated Materials Review (RMR) Manual dated February 2023 for the Parcel 14 and Parcel 17 project in Newburg Township, Outlets 483, 484, 485- T-7-N and R-12W, Garfield Heights, Cuyahoga County, Ohio ("Project"). The RMR Investigation proposed to composite sample waste from a former magnesium recycler where a fire once occurred. The sampling was to ultimately determine the disposition of the material as recyclable or to be disposed.

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Project CUY-14-6.93/Name: Parcel			PID: 104132	
14 and Parcel 17				
Property ID# &Tenant Tenant/Ad		t/Address Current Land Use		
Parcel 14	Former Garfield Alloys, Garfield Heights, Cuyahoga County, Ohio		Vacant/Commercia	l/Industrial
Parcel 17	Form Cuyał	er Garfield Alloys, Garfield Heights, 10ga County, Ohio	Vacant/Commercia	l/Industrial

Table 1: RMR Investigation Properties

This RMR Investigation was conducted on November 13, 2024 and included the collection of three (3) composite waste stockpile samples from a former magnesium recycler near the trailer on Parcel 14, and six (6) composite samples from a former magnesium waste recycler beneath the bridge and under the building from Parcel 17 for laboratory analysis of aluminum, magnesium, and manganese and flashpoint. Information revealed during the RMR Investigation was used to reach the following recommendations:

 Table 2: Summary of Investigation Findings & Recommendations

Project C-R-S / Name:	CUY-14-6.93/Parcel 14 and Parcel 17	PID:	104132	Project City	Garfield Heights	
Property ID#, Tenant Name & Address	Findings			Next Step Recommendations		
Parcel 14	Concentrations of aluminum and manganese in the waste samples from a former magnesium recycler are below Ohio Voluntary Action Program (VAP) Generic Numerical Direct Contact Soil Standards (GNDCSS) for Commercial/Industrial land use as promulgated under 3745-300-08 of the Ohio Administrative Code (OAC). No Ohio VAP standard exists for magnesium. The material was found non-ignitable via flashpoint testing.			RM Plan Note: Recycle or Dispose Waste Material for a Former Magnesium Recycler		
Parcel 17	Concentrations of aluminu waste samples from a for below Ohio VAP GNDCSS. magnesium. The material via flashpoint testing.	um and mar mer magne No stand was found	nganese in the sium recycler ard exists for non-ignitable	RM Plan Note: Recycle or Dispose Was Material for a Former Magnesium Recycler		

*Recommendations include: RM Plan Note, Further Investigation, Remedial Action, No Further Action, or Other.



2. INTRODUCTION

The Project is identified by ODOT as CUY-14-6.93, Parcel 14 and Parcel 17, Newburg Township, Outlets 483, 484, 485- T-7-N and R-12W, Garfield Heights, Cuyahoga County, Ohio. The Project site further identified as situated beneath the Broadway Avenue(State Route. 14) overpass between STA. 377+50 to STA. 382+50 and approximately 1,500 to 2,000-feet west of East 131 Street. The CUY-14-6.93, PID 104132 project is an ODOT bridge preservation project. ODOT proposes to replace the Whitehouse Crossing Bridge (SR14) over the Norfolk Southern Railroad in Garfield Heights, Cuyahoga County. The sampling was conducted from waste stockpiles left from an old magnesium recycler. **Figure 1** in **Appendix A** shows the general site location. **Figure 2** in **Appendix A** presents a site diagram of the Project, and **Figure 3** in **Appendix A** depicts the general sample locations. **Appendix B** contains site photographs. **Appendix C** contains investigation documentation (e.g., laboratory analytical results) for Parcel 14 for the metals analysis. **Appendix D** contains sheets for Parcel 14 and Parcel 17.

The RMR Investigation also included surveys for asbestos, lead paint and hazardous substances and universal wastes which may have special handling needs. Each of these investigation reports are documented under separate cover.

The Properties in the following table were investigated as part of the RMR Investigation effort. The Properties are proposed for demolition, deep excavation, or some combination. The RMR Investigation was conducted to determine the recyclability of the waste material from a former magnesium recycler.

Project C-R-S / Name:	CUY-14-6.93/Parcel 14 and Parcel 17	PID:	104132	Project City	Garfield Heights
Property ID#	Tenant Name & Address	Proposed Take	Acquisition	Rationale for Inv	estigation
Parcel 14	Former Garfield Alloys, Garfield Heights, Cuyahoga County, Ohio	ODOT already owns		Stockpiled material is it appropriate for recycling and/or disposal	
Parcel 17	Former Garfield Alloys, Garfield Heights, Cuyahoga County, Ohio	ODOT already	owns	Stockpiled mater for recycling and,	'ial is it appropriate /or disposal

Table 3: RMR Investigation Properties Rationale for Investigation

3. PROPERTY HISTORY

Bothe parcels of the Property appeared to be utilized as a former magnesium metal recycler. Leftover metal waste material that is stockpiled on each parcel from a former magnesium recycler. A fire did occur on the Property.

4. FIELD ACTIVITIES AND ANALYTICAL PROCEDURES

4.1 Investigation Overview and Data Gaps

The investigation only included surface composite sampling of waste materials from a former magnesium recycler from discrete stockpiles associated with Parcel 14 and Parcel 17. Specifically, this investigation included the collection of three (3) composite stockpile samples near the trailer on Parcel 14 (identified as Parcel 14-1, Parcel 14-2, and Parcel 14-3), and six (6) composite samples from beneath the bridge and under the building from Parcel 17 (identified as Parcel 17-1, Parcel 17-2, Parcel 17-3, Parcel 17-4, Parcel 17-5 and



Parcel 17-6) for laboratory analysis of aluminum, magnesium, and manganese and flashpoint. There were no data gaps associated with this Project.

The RMR Investigation also included surveys for asbestos, lead paint and hazardous substances and universal wastes which may have special handling needs. Each of these investigation reports are documented under separate cover.

4.2 Published Geologic and Hydrogeologic Information

Since geologic and hydrogeologic investigations were not conducted as part of this investigation and only surface composite samples of process waste (i.e., a former magnesium recycler) were collected for characterization, no published information review was warranted.

4.3 Field Condition Documentation and Overview

There were no unordinary field conditions at the time of the sampling effort. The sampling went according to the designed plan.

4.4 Geophysical Survey

No geophysical survey was conducted.

4.5 Sampling Effort

4.5.1 Soil Sampling

No soil samples were collected. Only composite metal samples of stockpiled material from a former magnesium recycler. **Figure 3** in **Appendix A** presents the general sample locations. Pictures depicting the material are in **Appendix B**. Samples were collected using plastic trowels decontaminated between sample locations with non-phosphatic soap and water. For Parcel 14, Samples were collected of a stockpiled material suspected of being recycled magnesium. The material consisted of a dark gray, fine, powdery substance. The stockpile near the entrance of the trailer was segregated into three (3) approximately equal areas, and a total of three (3) surface composite samples was collected. The samples were submitted to Summit Environmental Technologies (SET) to be analyzed for total aluminum, magnesium, and manganese using U.S. EPA Method SW 6010. Each of the samples was analyzed for flashpoint using U.S. EPA Method SW 1010.

Similarly, for Parcel 17, Samples were collected of a stockpiled material suspected of being recycled magnesium. The stockpiled material was present in large quantities northeast of the structure and inside the machinery. The material consisted of a white, fine, powdery substance. A total of six (6) surface composite samples were collected with one (1) sample collected from inside the structure, and the other five (5) samples collected spatially throughout the exterior stockpile. The samples were submitted to SET to be analyzed for total aluminum, magnesium, and manganese using U.S. EPA Method SW 6010. Each of the samples was analyzed for flashpoint using U.S. EPA Method SW 1010.

4.5.2 Groundwater Sampling

No groundwater monitoring well installation or sampling was conducted as part of this investigation.

4.5.3 Investigation-Derived Waste (IDW) Management

No investigative waste was generated by sampling the waste material from a former magnesium recycler.



4.6 Analytical Methods, Results, and Comparison to Regulatory Levels

As noted above, the samples from Parcel 14 and Parcel 17 were submitted to SET for analysis of total aluminum, magnesium, and manganese using U.S. EPA Method 6010. Additionally, each sample was analyzed for flashpoint using U.S. EPA Method SW 1010.

4.6.1 Metals Sample Results for Parcel14

The metals data are summarized in **Table 1** below. **Appendix C** contains the laboratory analytical reports for Parcel 14.

Project CUY-14-6.93/Parcel 14, Former Garfield Alloys, Garfield Heights, Cuyahoga County, Ohio							
Parameter	Ohio VAP Risk Base	ed Standards (1)		Identi	Sample fication/R (mg/kg)	esults	
	Commercial/ Industrial Direct Contact Standard	Construction Activity Direct Contact Standard	Average US Soil Concentrations ⁽⁴⁾	Parcel 14-1	Parcel 14-2	Parcel 14-3	
Aluminum	77,000/1,100,000 ⁽²⁾	NA ⁽³⁾	71,000	35,300	36,100	38,000	
Magnesium	NA	NA	9,000	352,000	347,000	355,000	
Manganese	88,000	12,000	550	7,780	7,180	6,470	

Table 1 Metal Sample Results for Parcel 14

Notes:

(1) Ohio VAP Risk Based Standards per Appendix A of OAC 3745-300-08 effective October 17, 2019 and/or VAP CIDARS.

(2) US EPA Regional Screening Levels (or RSLs). The value listed first is for residential land use.

(3) NA denotes not applicable, or no standard exists.

(4) The average concentrations of the metals in us soils according to the US Geological Survey Professional Paper 127, dated 1984.

A review of the tabulated data for Parcel 14 (refer to data table in **Appendix C**) indicates that aluminum, magnesium, and manganese were detected in all samples submitted for laboratory analysis. The average concentrations of the metals in US soils according to the US Geological Survey (USGS) Professional Paper 1270 entitled "*Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States*" dated 1984 are 71,000 milligrams per kilogram (mg/kg), 9,000 mg/kg, and 550 mg/kg, for aluminum, magnesium, and manganese respectively. Based on this data, both the magnesium and manganese concentrations exceed typical average US soil concentrations.

As a method of comparison, the detected compounds were evaluated to the Ohio EPA's VAP risk-based generic numerical direct contact standards (or GNDCSS) for commercial/industrial land use promulgated under the Appendix to rule 3745-300-08 of the Ohio Administrative Code (OAC) and effective October 17, 2019 as well as the Ohio EPA's Supplemental Criteria as provided in the Chemical Information Database and Applicable Regulatory Standards (or CIDARS) dated October 17, 2019. Direct contact with soil includes ingestion, dermal contact, inhalation of volatile compounds in outdoor air, and inhalation and ingestion of particulate emissions.

The GNDCSS are only available for the constituent manganese. A comparison of the laboratory analytical data to the Ohio VAP GNDCSS indicates that all manganese concentrations in the samples submitted for analysis are below the GNDCSS for commercial/industrial land use category (refer to data table in **Appendix C**). As there are no VAP GNDCSS for aluminum, the analytical results of aluminum were compared to the



U.S. EPA regional screening level (RSL) for contaminants. The RSL of aluminum for residential soil direct contact is 77,000 mg/kg, and the RSL for commercial/industrial area soil direct contact is 1,100,000 mg/kg. As depicted in the data table in **Appendix C**, the laboratory analytical results for the detected aluminum in all samples submitted fall below the RSL for commercial/industrial exposure. It should be noted that RSLs are not cleanup standards, but they provide comparison values for exposure and risk. RSLs do not exist for the compound magnesium.

In summary, based on the initial analysis, the aluminum, magnesium and manganese concentrations do not appear to present an elevated exposure risk based on the current and future intended use and activity. Magnesium has no documented risk standards pursuant to US EPA and Ohio EPA sources. If the material is to be disposed of or potentially recycled, additional analyses most likely would be required for (e.g. TCLP metals).

4.6.2 Metals Sample Results for Parcel17

The metals data are summarized in **Table 2** below. **Appendix D** contains the laboratory analytical reports for Parcel 17.

Project CUY-14-6.93/Parcel 17, Former Garfield Alloys, Garfield Heights, Cuyahoga County, Ohio									
Parameter	Ohio VAP Risk Based Standards ⁽¹⁾			Sa	ample Id	entificati	on/Resu	lts (mg/k	(g)
	Commonoial/	Construction Activity	Average US Soil Concentrations ⁽⁴⁾						
	Industrial Direct Contact Standard	Contact Standard		Parcel 17-1	Parcel 17-2	Parcel 17-3	Parcel 17-4	Parcel 17-5	Parcel 17-6
Aluminum	77,000/1,100,000 ⁽²⁾	NA ⁽³⁾	71,000	13,200	8,640	13,300	17,000	8,750	11,600
Magnesium	NA	NA	9,000	11,000	6,780	20,300	15,300	8,030	13,600
Manganese	88,000	12,000	550	234	168	850	1,120	187	357

Table 2 Metal Sample Results for Parcel 17

Notes:

(1) Ohio VAP Risk Based Standards per Appendix A of OAC 3745-300-08 effective October 17, 2019 and/or VAP CIDARS.

(2) US EPA Regional Screening Levels (or RSLs). The value listed first is for residential land use.

(3) NA denotes not applicable or non standard exists.

(4) The average concentrations of the metals in us soils according to the US Geological Survey Professional Paper 127, dated 1984

A review of the tabulated data in **Appendix D** indicates that aluminum, magnesium, and manganese were detected in all samples submitted for laboratory analysis. Based on US average soil concentrations as reported by the USGS in Paper 1270, most of the magnesium and a couple manganese concentrations exceed typical average US soil concentrations for these metals.

The average concentrations of the metals in US soils according to the US Geological Survey Professional Paper 1270 entitled "*Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States*" dated 1984 are 71,000 milligrams per kilogram (mg/kg), 9,000 mg/kg, and 550 mg/kg, for aluminum, magnesium, and manganese respectively.



A comparison of the laboratory analytical data to the Ohio VAP GNDCSS indicates that all manganese concentrations in the samples submitted for analysis are below the GNDCSS for commercial/industrial land use (refer to the table in **Appendix D**). As depicted in the data table for Parcel 17 in **Appendix D**, the laboratory analytical results for the detected aluminum in all samples submitted fall below the RSL for both resident land commercial/industrial exposure. As noted, RSLs are not cleanup standards, but they provide comparison values for exposure and risk. Again, RSLs do not exist for the compound magnesium. The data for the six (6) flashpoint samples are provided in Appendix D. The results indicated that none of the samples exceeded the >140° F threshold indicating the material does not flash.

Like Parcel 14, based on the initial analysis, the aluminum, magnesium and manganese concentrations do not appear to present an elevated exposure risk based on the current and future intended use and activity. Magnesium has no documented risk standards pursuant to US EPA and Ohio EPA sources. If the material is to be disposed of or potentially recycled, additional analyses most likely would be required for (e.g. TCLP metals).

4.6.3 Laboratory QA/QC

Since the sampling was limited and for material characteristics primarily, no blank, duplicate, etc. or other Quality Assurance/Quality Control (QA/QC) data was collected. The analytical limits were acceptable for the parameters collected. Although some inconsistencies did occur for the laboratory QA/QC these did not affect laboratory data quality. For instance, a sample for moisture content exhibited high relative percent difference (RPD) due to sample inhomogeneity. Some laboratory spikes were not accurately recovered, but overall laboratory samples demonstrated control.

For flashpoint, the qualifier: Method deviation, due to instrument/matrix limitations, could not stir to 250 RPM as required by the method. Again, this was due to sample inhomogeneity and is a frequent issue analyzing flashpoint with any solid. Multiple samples were analyzed from each parcel to account for inhomogeneity, and the data indicate that the materials are not ignitable and the data valid.

5. CONCLUSIONS & RECOMMENDATIONS

Present information revealed during the RMR Investigation used to reach the following recommendations:

Project C-R-S / Name:	CUY-14-6.93/Parcel 14 and Parcel 17	PID:	104132	Project City/County	Garfield Heights, Ohio	
Property ID#	Findings			Next Step Recommendations		
Parcel 17	Concentrations of aluminum and manganese in waste samples from a former magnesium recycler below Ohio VAP GNDCSS. No standard exists for magnesium. The material was found non- ignitable via flashpoint testing.			RM Plan Note: Recycle or Dispose Waste Material for a Former Magnesium Recycler		
Parcel 14	Concentrations of alumin waste samples from a for below Ohio VAP GNDCSS. magnesium. The materia ignitable via flashpoint te	um and mai mer magne No standar I was founc isting	nganese in sium recycler d exists for I non-	RM Plan Note: Recycle or Material for a Former Mag	Dispose Waste gnesium Recycler	

Table 7: RMR Investigation Findings & Recommendations

*Recommendations include: RM Plan Note, Further Investigation, Remedial Action, No Further Action, or Other.



APPENDIX A

PROJECT FIGURES



REFERENCE: USGS Topographic Map Dated: 2013 PARCEL 14 LATITUDE/LONGITUDE: 41.431617° N/-81.599643° W PARCEL 17 LATITUDE/LONGITUDE: 41.431126° N/-81.598063° W

SCALE (ft):	
0	1,000

	FIGURE 1			
HZW Environmental Consultants	SITE LOCATION MAP			
		DRAWN BY:	RS	
		APPROVED BY:	KR	
	PARCELS 14 & 17 GARFIELD HEIGHTS, CUVAHOGA COUNTY, OHIO	PROJECT NO.	A24035-01	
1234 Weathervane, Akron, OH 44313		DRAWING NO.: FIG1 SITE LOCATE		



Parcels 14 and 17 Garfield Heights, Cuyahoga County, Ohio CUY- 14-6.93 PID 104132 **ODOT District 12**





	Ň	Figure 3-General Sampl
HZW Environmental Consultants	A24035-01	Parcels 14 and 17 Garfield Heigh CUY- 14-6.93 P ODOT Disti

le Location Diagram

nts, Cuyahoga County, Ohio PID 104132 rict 12

APPENDIX B

PROJECT SITE PHOTOGRAPHS

Parcel 14



View of the entrance to the trailer with stockpiled material.



View of the southern side of the trailer and stockpiled material.



View of the northern side of the trailer.



View of the wood scrap, metal scrap, and fiberglass inside the trailer.



Photographic Documentation A24035-01

Parcel 17



View of the entrance to the building.



View of the southern side of the building.



View of stockpiled material inside the concrete mixing machine in the building.



View of pipe wrap located in the building.



Photographic Documentation A24035-01



View of stockpiled material facing west.



View of stockpiled material facing north.



View of stockpiled material facing south with the building in the background.



Photographic Documentation A24035-01

APPENDIX C

PARCEL 14 INVESTIGATION DOCUMENTATION



November 21, 2024

Kevin Reaman HZW Environmental 1234 Weathervane Lane Akron, OH 44313 TEL: 330-208-2717 FAX: 330-208-2799

RE: Parcel 14-Garfield Heights

Dear Kevin Reaman:

Order No.: 24111046

Summit Environmental Technologies, Inc. received 3 sample(s) on 11/14/2024 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,

aly Stree

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



Case Narrative

WO#:	24111046
Date:	11/21/2024

CLIENT: HZW Environmental Project: Parcel 14-Garfield Heights

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 Sample Summary

WO#: 24111046 21-Nov-24

I ah SamnlaID (^a lient Somale ID	Тад No	Data Collected	Data Raca
Project:	Parcel 14-Garfield Heig	ghts		
CLIENT:	HZW Environmental			

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
24111046-001	Parcel 14-1		11/13/2024 1:00:00 PM	11/14/2024 8:20:00 AM	Solid
24111046-002	Parcel 14-2		11/13/2024 1:02:00 PM	11/14/2024 8:20:00 AM	Solid
24111046-003	Parcel 14-3		11/13/2024 1:04:00 PM	11/14/2024 8:20:00 AM	Solid



Analytical Report

(consolidated) WO#: 24111046 Date Reported: 11/21/2024

11/19/2024 11:49:00 AM

11/14/2024 6:10:00 PM

Analyst: JPN

CLIENT:	HZW Environmenta	al		Collection Date:	11/13/2	2024 1:0	00:00 PM
Project:	Parcel 14-Garfield I	Heights					
Lab ID:	24111046-001			Matrix:	SOLID)	
Client Sample II	D: Parcel 14-1						
Analyses		Result	RL Qua	l Units	DF	Date A	Analyzed
METALS ANAL	YSIS (6010D)			SW6010	SW3	\$050B	Analyst: RJE
Aluminum(Al)		35300	3270	mg/Kg-dry	100	11/19	/2024 11:49:00 AM
Magnesium(Mg)		352000	26100	mg/Kg-dry	2000	11/20	/2024 3:25:00 PM

327

0.200

7780

27.8

PERCENT	MOISTURE E	BY SM2	540MOD

Percent Moisture	
------------------	--

Manganese(Mn)

Qualifiers:

Value above quantitation range

- M Manual Integration used to determine area response
- PL Permit Limit

Е

RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded

ND Not Detected

mg/Kg-dry

%

A2540B

100

1

R RPD outside accepted recovery limits

W Sample container temperature is out of limit as specified at testcode Original



Analytical Report

(consolidated) WO#: 24111046 Date Reported: 11/21/2024

11/14/2024 6:10:00 PM

CLIENT:	HZW Environmental	mental Collection Date: 11/13/2024 1:				2024 1:0	02:00 PM
Project:	Parcel 14-Garfield He	ights					
Lab ID:	24111046-002			Matrix:	SOLID)	
Client Sample ID	: Parcel 14-2						
Analyses		Result	RL Qual	Units	DF	Date A	Analyzed
METALS ANALY	SIS (6010D)			SW6010	swa	3050B	Analyst: RJE
Aluminum(Al)		36100	3020	mg/Kg-dry	100	11/19	/2024 11:52:00 AM
Magnesium(Mg)		347000	24200	mg/Kg-dry	2000	11/20	/2024 3:28:00 PM
Manganese(Mn)		7180	302	mg/Kg-dry	100	11/19	/2024 11:52:00 AM
PERCENT MOIS	TURE BY SM2540MOD			A2540B			Analyst: JPN

0.200

%

1

24.8

PERCENT MOISTURE BY SM2540MOD

Percent Moisture	
------------------	--

Е **Qualifiers:**

Value above quantitation range

- М Manual Integration used to determine area response
- PL Permit Limit
- RL Reporting Detection Limit

Н Holding times for preparation or analysis exceeded

ND Not Detected

- R RPD outside accepted recovery limits
- W Sample container temperature is out of limit as specified at testcode Original



Analytical Report

(consolidated) WO#: 24111046 Date Reported: 11/21/2024

11/16/2024 6:15:00 PM

CLIENT:	HZW Environmental		Collection Date: 11/13/20				04:00 PM
Project:	Parcel 14-Garfield Hei	ghts					
Lab ID:	24111046-003			Matrix:	SOLID)	
Client Sample ID	Parcel 14-3						
Analyses		Result	RL Qual	Units	DF	Date A	Analyzed
METALS ANALY	SIS (6010D)			SW6010	SW3	3050B	Analyst: RJE
Aluminum(Al)		38000	2520	mg/Kg-dry	100	11/19	/2024 11:55:00 AM
Magnesium(Mg)		355000	20200	mg/Kg-dry	2000	11/20	/2024 3:31:00 PM
Manganese(Mn)		6470	252	mg/Kg-dry	100	11/19	/2024 11:55:00 AM
PERCENT MOIS	TURE BY SM2540MOD			A2540B			Analyst: AAA

0.100

%

1

17.4

PERCENT MOISTURE BY SM2540MC	D
------------------------------	---

Percent Moisture	
------------------	--

Е **Qualifiers:**

Value above quantitation range

- М Manual Integration used to determine area response
- PL Permit Limit

RL Reporting Detection Limit Η Holding times for preparation or analysis exceeded

ND Not Detected

R RPD outside accepted recovery limits

W Sample container temperature is out of limit as specified at testcode Original



QC SUMMARY REPORT

WO#: 24111046

21-Nov-24

Client:	HZW Environmental							
Project:	Parcel 14-Garfield Heights					BatchID:	80238	
Sample ID: MB-802	38 SampType: MBLK	TestCode: MtI-ICF	P_S(60 Units: mg/Kg		Prep Dat	e: 11/15/2024	RunNo: 197202	
Client ID: PBS	Batch ID: 80238	TestNo: SW601	0 SW3050B		Analysis Dat	e: 11/18/2024	SeqNo: 5333234	
Analyte	Result	PQL SPK val	ue SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Va	al %RPD RPDLimit	Qual
Aluminum(Al)	ND	23.4						
Magnesium(Mg)	ND	9.35						
Manganese(Mn)	ND	2.34						
Sample ID: LCS-80	238 SampType: LCS	TestCode: MtI-ICF	P_S(60 Units: mg/Kg		Prep Dat	e: 11/15/2024	RunNo: 197202	
Client ID: LCSS	Batch ID: 80238	TestNo: SW601	0 SW3050B		Analysis Dat	e: 11/18/2024	SeqNo: 5333235	
Analyte	Result	PQL SPK val	ue SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Va	al %RPD RPDLimit	Qual
Aluminum(Al)	192	24.5 196	5.1 0	98.0	80	120		
Magnesium(Mg)	197	9.80 196	6.1 0	101	80	120		
Manganese(Mn)	189	2.45 196	6.1 0	96.2	80	120		
Sample ID: LCS-80	238 SampType: LCS	TestCode: MtI-ICF	P_S(60 Units: mg/Kg		Prep Dat	e: 11/15/2024	RunNo: 197202	
Client ID: LCSS	Batch ID: 80238	TestNo: SW601	0 SW3050B		Analysis Dat	e: 11/18/2024	SeqNo: 5333236	
Analyte	Result	PQL SPK val	ue SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Va	al %RPD RPDLimit	Qual
Aluminum(Al)	ND	245 196	6.1 0	101	80	120		
Magnesium(Mg)	205	98.0 196	6.1 0	104	80	120		
Manganese(Mn)	200	24.5 196	6.1 0	102	80	120		

Qualifiers:

E Value above quantitation range ND Not Detected

RL

Reporting Detection Limit

H Holding times for preparation or analysis exceeded

PL Permit Limit

S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response R RPD outside accepted recovery limits

R RI

W Sample container temperature is out of limit as spec

Original

Page 7 of 14



HZW Environmental

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#: 24111046

21-Nov-24

Project:	Parcel 14-G	arfield Heights						В	atchID: 8	0238		
Sample ID: 241 Client ID: Bat	11045-005AMS chQC	SampType: MS Batch ID: 80238	TestCod TestN	le: MtI-ICP_S lo: SW6010	(60 Units: mg/ł SW3050B	रg-dry	Prep Dat Analysis Dat	e: 11/15/2 e: 11/18/2	024 024	RunNo: 197 SeqNo: 533	7202 33247	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum(Al)		7470	25.6	205.0	6283	581	75	125				ES
Magnesium(Mg))	4180	10.3	205.0	3838	165	75	125				ES
Manganese(Mn))	338	2.56	205.0	187.1	73.7	75	125				S
Sample ID: 241	11045-005AMSD	SampType: MSD	TestCoc	le: MtI-ICP_S	(60 Units: mg/l	۲g-dry	Prep Dat	e: 11/15/2	024	RunNo: 197	7202	

Client ID: BatchQC	Batch ID: 80238	TestN	lo: SW6010	SW3050B	SW3050B Analysis Date: 11/18/2024				SeqNo: 5333248		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum(Al)	7170	25.2	201.5	6283	440	75	125	7473	4.14	20	ES
Magnesium(Mg)	3670	10.1	201.5	3838	-83.9	75	125	4177	13.0	20	ES
Manganese(Mn)	331	2.52	201.5	187.1	71.3	75	125	338.1	2.19	20	S

Qualifiers:

Client:

RL

Reporting Detection Limit

W Sample container temperature is out of limit as spec

 PL
 Permit Limit

 S
 Spike Recovery outside accepted recovery limits

Page 8 of 14

H Holding times for preparation or analysis exceeded

M Manual Integration used to determine area response

R RPD outside accepted recovery limits



QC SUMMARY REPORT

WO#: 24111046

21-Nov-24

Client:	HZW Envir	onmental			
Project:	Parcel 14-G	arfield Heights		BatchID: F	2197076
Sample ID:	: MB-R197076	SampType: MBLK	TestCode: PctMoist_S(2 Units: %	Prep Date:	RunNo: 197076
Client ID:	PBS	Batch ID: R197076	TestNo: A2540B	Analysis Date: 11/14/2024	SeqNo: 5330204
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Percent Mo	oisture	ND	0.200		
Sample ID	· 24111030-0034DUP	SampType: DUP	TestCode: PctMoist S(2 Units: %	Pren Date:	RunNo: 197076
Client ID:	BatchQC	Batch ID: R197076	TestNo: A2540B	Analysis Date: 11/14/2024	SeqNo: 5330213
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Percent Mo	oisture	7.15	0.200	6.896	3.58 5
Sample ID:	24111045-005ADUP	SampType: DUP	TestCode: PctMoist S(2 Units: %	Prep Date:	RunNo: 197076
Client ID:	BatchQC	Batch ID: R197076	TestNo: A2540B	Analysis Date: 11/14/2024	SeqNo: 5330223
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Percent Mo	oisture	15.7	0.200	14.43	8.43 5 R

Qualifiers:

RL

Spike Recovery outside accepted recovery limits

PL

S

RPD outside accepted recovery limits R

W Sample container temperature is out of limit as spec

Original

Н Holding times for preparation or analysis exceeded Permit Limit

М Manual Integration used to determine area response



QC SUMMARY REPORT

WO#: 24111046

21-Nov-24

Client:	HZW Envir	onmental			
Project:	Parcel 14-G	arfield Heights		BatchID: F	R197180
Sample ID:	MB-R197180	SampType: MBLK	TestCode: PctMoist_S(2 Units: %	Prep Date:	RunNo: 197180
Client ID:	PBS	Batch ID: R197180	TestNo: A2540B	Analysis Date: 11/16/2024	SeqNo: 5332781
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Percent Mo	bisture	ND	0.100		
Sample ID:	24111079-005ADUP	SampType: DUP	TestCode: PctMoist_S(2 Units: %	Prep Date:	RunNo: 197180
Client ID:	BatchQC	Batch ID: R197180	TestNo: A2540B	Analysis Date: 11/16/2024	SeqNo: 5332790
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Percent Mo	bisture	11.8	0.100	11.52	2.01 5
Sample ID:	24111079-014ADUP	SampType: DUP	TestCode: PctMoist_S(2 Units: %	Prep Date:	RunNo: 197180
Client ID:	BatchQC	Batch ID: R197180	TestNo: A2540B	Analysis Date: 11/16/2024	SeqNo: 5332800
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Percent Mo	pisture	19.7	0.100	19.66	0.0354 5

Qualifiers:

RL

Reporting Detection Limit

W Sample container temperature is out of limit as spec

Original

Spike Recovery outside accepted recovery limits

PL

S

Page 10 of 14

Н Holding times for preparation or analysis exceeded Permit Limit

М Manual Integration used to determine area response

RPD outside accepted recovery limits R



Qualifiers and Acronyms

WO#:24111046Date:11/21/2024

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

Qualifiers

DF

Dilution Factor

U	The compound was analyzed for but w	as not detec	cted.						
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.								
Н	The hold time for sample preparation and/or analysis was exceeded.								
D	The result is reported from a dilution								
Ē	The result exceeded the linear range of	f the calibrat	tion or is estimated due to interference.						
MC	The result is below the Minimum Com	pound Limi	it.						
*	The result exceeds the Regulatory Lim	it or Maxim	um Contamination Limit						
m	Manual integration was used to determ	ine the area	response						
d	Manual integration in which peak was	deleted	Tesponse.						
N	The result is presumptive based on a N	lass Spectra	l library search assuming a 1.1 response						
P	The second column confirmation exce	eded 25% di	ifference						
C	The result has been confirmed by GC/	MS	interenee.						
v	The result was not confirmed when G	7/MS Analy	reis was performed						
A R/MR⊥	The analyte was detected in the associ	ated blank	sis was performed.						
C	The ICB or CCB contained reportable	amounts of	analyte						
	The CCV recovery failed low (-) or hi	$a = (\pm)$	anaryte.						
	The RPD was outside of accepted reco	yory limits							
	The LCS or LCSD recovery failed low	() or high	(1)						
	The LCS/LCSD RPD was outside of a	The LCS OF LCSD recovery failed low (-) of nigh (+).							
	The LCS/LCSD KFD was outside of accepted fecovery finnes.								
	The MS/MSD PDD was outside of acc	-) of high (+	ery limite						
	The ICV recovery failed low (-) or high	$h(\pm)$	ery mints.						
Q • -/ + S	The spike result was outside of accept	n (+).	limite						
7	Deviation: A deviation from the metho	d was perfo	mmod: Please refer to the Case Narrative for						
L	additional information	d was perio	sinied, i lease lefer to the Case Narrative for						
	additional information								
Acronyn	ns								
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	Dupncate PL Permit Limit								
MSD	Matrix Spike Duplicate MCI Maximum Contamination Limit								
DDD	Palative Percent Different	MinCI	Minimum Compound Limit						
ICV	Initial Calibration Verification	RA	Reanalysis						
ICB	Initial Calibration Blank	RE	Reextraction						
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound						
ССВ	Continuing Calibration Blank	RT	Retention Time						
RIC	Reporting Limit Check	CF	Calibration 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.

Response Factor

RF

DATES REPORT

WO#: 24111046 21-Nov-24



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

Client: Project:	HZW Environm Parcel 14-Garfie	ental eld Heights			
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate I
24111046-001A	Parcel 14-1	11/13/2024 1:00:00 PM	Solid	Metals Analysis (6010D)	
				Metals Analysis (6010D)	
				Metals Analysis (6010D)	
				Percent Moisture by SM2540Mod	
24111046-002A	Parcel 14-2	11/13/2024 1:02:00 PM		Metals Analysis (6010D)	
				Motels Applysis (6010D)	

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
24111046-001A	Parcel 14-1	11/13/2024 1:00:00 PM	Solid	Metals Analysis (6010D)		11/15/2024 9:00:00 AM	11/20/2024 3:25:00 PM
				Metals Analysis (6010D)		11/15/2024 9:00:00 AM	11/19/2024 11:49:00 AM
				Metals Analysis (6010D)		11/15/2024 9:00:00 AM	11/18/2024 11:10:00 AM
				Percent Moisture by SM2540Mod			11/14/2024 6:10:00 PM
24111046-002A	Parcel 14-2	11/13/2024 1:02:00 PM		Metals Analysis (6010D)		11/15/2024 9:00:00 AM	11/20/2024 3:28:00 PM
				Metals Analysis (6010D)		11/15/2024 9:00:00 AM	11/19/2024 11:52:00 AM
				Metals Analysis (6010D)		11/15/2024 9:00:00 AM	11/18/2024 11:16:00 AM
				Percent Moisture by SM2540Mod			11/14/2024 6:10:00 PM
24111046-003A	Parcel 14-3	11/13/2024 1:04:00 PM		Metals Analysis (6010D)		11/15/2024 9:00:00 AM	11/20/2024 3:31:00 PM
				Metals Analysis (6010D)		11/15/2024 9:00:00 AM	11/19/2024 11:55:00 AM
				Metals Analysis (6010D)		11/15/2024 9:00:00 AM	11/18/2024 11:20:00 AM
				Percent Moisture by SM2540Mod			11/16/2024 6:15:00 PM

DC-QACOC	Balance Street Contraction Con			Analy: Refer	sis Requ • to Terms an	1est / 1d Cond	Chai	n of C	C usto(ek.com	dy		SET WO		For S		vironmen	ta Techno	Effect	ive Date: 1 F . use only	0/12/2023 age 1 of 1
Client Name HZ	W]	Project Identification	harfield	e Heigi	+5		Ę	te; 5)			An	1 alytica	l Para	meters	and N	/lethod	s Requ	ested	<u> </u>
1234 City ALL	Wlathen 101 State	Unch On Zip ⁴⁴³³	Garfield Ht City Sta Report To	S, DH te Zip	44125			0 = Oil, A = . g Water	4) Zinc Aceta n comments)											outine
Contact Person Client Email	208-7		Kevin Ke A2403501 PWSID	Quote Number	r 			(e, L = Liquid,)W = Drinkin	SO4; 3) HCl; ther (specify h	Sample	1000	z	J							pliance or R
Sampled By (Print: Sign: FbrOW only, lab fee may a	MU(d) hZu Prine Name and Provid Prine Name and Prine And Provid Prine Name and Prine A	e Signature) e Signature) testate by lab? If yes,	Comporting/Accreditation Re Ohio VAP Drinking Water Compl Other Compliance (List	quirements: Ohio EP auce State/ Program):	A Pb, Cu	àample	site Sample	S = Solid, SL = Sludg Non-Potable Water, I	ation: 1) HNO3; 2) H2 6) EDA; 7) none; 8) ot	r of Containers per	0441 9100	magnesis1	Dag gans	2						/ Only: Special Com
#	Sample Point ID	Sample	Identification	Date Collected	Time Collected	Grab S	Compo	Matrix: NPW =	Preserv 'NaOH;	Numbe	K	*	q							For DW (S/R)
		Parcel M-	-)	11/13/24	13:30		X	5	7		X	ĸ	\succ							
2		Parcel 14-	-2	11/3/24	13:02		X	5	/		X	K	X							
5		farcel 19	-3		13:04		×	5		1	X	X	X							
) 																				
Reinquish			Time S:12	Receiv	/ed by:	D	ate		Time		Notes / C	omment	s: A A	<u>u/n</u>			_			
The	i our	[]/[4][2]									Dro Da	NILWI		1.1	امده	م زیما	-			
		<u> </u>									Sufficient	7 volume	provide	d to run	<u>+رجزر</u> OC?	YES	0	Cooler?		
Received at	t Summit by:	Date	Time 0870	Car ()//e	rier h	Rusl Myð	h Reques	ted: ový¢d þý L	Da ab Mana	y(s) Iger	Received	Temp.: Z	°C	Cooler S	Seals? [PRES	ENT	NOT PR	ESENT	<u>N/A</u>
		· 1 ·			-		_				5.3	-0	·1-							

	ENV Ana	IRONMENTAL T	ECHNOLOGIES, IN tories	Summit Envir C. TEL: (330) 253 We	ronmental T Cuyahoga I 3-8211 FAX ebsite: http:	Techno 3. Falls, C X: (330 Wwww	logies, Inc. 310 Win St. Dhio 44223) 253-4489 .settek.com	Sam	nple Log-I	n Check List
Clien	t Name:	HZW-OH-443	313	Work Order N	lumber: 24	41110	46		Rc	ptNo: 1
Logg	ed by:	Christina N. (Gemma	11/14/2024 8:2	0:00 AM		_	C. Cer	ma	-
Com	pleted By:	Christina N.	Gemma	11/14/2024 4:2	5:51 PM			C. Cer	ma	-
Revie	ewed By:	Holly Florea		11/15/2024 11:	14:25 AM		(Allys	Krea	
<u>Chai</u>	in of Cus	stody								
1.	Is Chain of	Custody comp	lete?			Yes	✓	No	Not Preser	nt 🗌
2. 1	How was th	ne sample deliv	rered?			<u>Clien</u>	t			
Log	<u>In</u>									
3. (Coolers are	e present?				Yes	✓	No 🗌	N	A 🗌
4	Shippina ca	ontainer/cooler	in agod condition	?		Yes	✓	No 🗌		
ч. (Custody se	als intact on sh	hipping container/o	cooler?		Yes		No 🗌	Not Preser	nt 🖌
I	No.		Seal Date:		S	Signe	d By:			
5. \	Was an att	empt made to	cool the samples?			Yes	✓	No 🗌	N	A 🗌
6. \	Were all sa	amples received	d at a temperature	e of >0° C to 6.0)°C	Yes	✓	No 🗌	Ν	А 🗌
7. 3	Sample(s)	in proper conta	iner(s)?			Yes	✓	No 🗌		
8. 3	Sufficient s	ample volume	for indicated test(s)?		Yes	✓	No 🗌		
9. /	Are sample	es (except VOA	and ONG) prope	rly preserved?		Yes	✓	No 🗌		
10. \	Was prese	rvative added t	o bottles?			Yes		No 🗹	NA	A 🗌
11.	Is the head	Ispace in the V	OA vials less than	1/4 inch or 6 m	m?	Yes		No 🗌	No VOA Via	Is 🖌
12. \	Were any s	sample contain	ers received broke	en?		Yes		No 🗹		
13.	Does pape (Note discr	rwork match bo epancies on ch	ottle labels? ain of custody)			Yes	✓	No 🗌		
14.	Are matrice	es correctly ide	ntified on Chain of	Custody?		Yes	✓	No 🗌		
15.	ls it clear w	/hat analyses w	vere requested?			Yes	✓	No 🗌		
16.	Were all ho	olding times abl	le to be met? authorization.)			Yes	✓	No 🗌		
Spec	cial Hand	dling (if app	licable)							
17.	Was client	notified of all d	iscrepancies with	this order?		Yes		No 🗌	N	A
	Perso	n Notified:			Date:				•	
	By WI	hom:			Via:	eMai	I 🗌 Pho	one 🗌 Fax	In Person	
	Regar	rding:								
	Client	Instructions:								
18.	Additional r	remarks:								
Coole	<u>r Informati</u>	<u>ion</u>								

Cooler No	Temp ⁰C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Not Present			

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December 12, 2024

Kevin Reaman HZW Environmental 1234 Weathervane Lane Akron, OH 44313 TEL: 330-208-2717 FAX: 330-208-2799

RE: Parcel 14-Garfield Heights

Dear Kevin Reaman:

Order No.: 24120365

Summit Environmental Technologies, Inc. received 3 sample(s) on 12/6/2024 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,

aly Stree

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



Case Narrative

WO#:	24120365
Date:	12/12/2024

CLIENT: HZW Environmental Project: Parcel 14-Garfield Heights

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.

Analytical Sequence Sample Notes:

24120365-001, 002, 003 FlashPt_S(1010): Z = Method deviation, due to sample matrix could not stir to 250 RPM as required by the method.



Workorder Sample Summary

WO#: 24120365 12-Dec-24

CLIENT:	HZW Environmental
Project:	Parcel 14-Garfield Heights

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
24120365-001	Parcel 14-1		11/13/2024 1:00:00 PM	11/14/2024 8:20:00 AM	Solid
24120365-002	Parcel 14-2		11/13/2024 1:02:00 PM	11/14/2024 8:20:00 AM	Solid
24120365-003	Parcel 14-3		11/13/2024 1:04:00 PM	11/14/2024 8:20:00 AM	Solid



Analytical Report

 (consolidated)

 WO#:
 24120365

 Date Reported:
 12/12/2024

CLIENT: HZW Environmental		Collection Date: 11/13/2024 1:00:00 PM						
Project:	Parcel 14-Garfield Hei	ghts						
Lab ID:	24120365-001	365-001 Matrix: SOLID						
Client Sample ID: Parcel 14-1								
Analyses		Result	RL	Qual	Units		DF	Date Analyzed
	ETERMINATION (1010)					SW1010		Analyst: TAH
Flashpoint (140°f	=)	>140		z	°F		1	12/11/2024 4:41:44 PM

NOTES:

Z = Method deviation, due to sample matrix could not stir to 250 RPM as required by the method.

Qualifiers:

Holding times for preparation or analysis exceeded

ND Not Detected

Η

RL Reporting Detection Limit

M Manual Integration used to determine area response

PL Permit Limit

W Sample container temperature is out of limit as specified at testcode


Analytical Report

(consolidated) WO#: 24120365 Date Reported: 12/12/2024

CLIENT:	HZW Environmental				Colle	ction Date:	11/13/2	024 1:02:00 PM
Project:	Parcel 14-Garfield H	eights						
Lab ID:	24120365-002					Matrix:	SOLID	
Client Sample	ID: Parcel 14-2							
Analyses		Result	RL	Qual	Units	5	DF	Date Analyzed
FLASHPOINT	DETERMINATION (1010)				SW1010		Analyst: TAH
Flashpoint (14	40°F)	>140		Z	°F		1	12/11/2024 4:41:44 PM

NOTES:

Z = Method deviation, due to sample matrix could not stir to 250 RPM as required by the method.

Qualifiers:

Holding times for preparation or analysis exceeded

ND Not Detected

Η

RL Reporting Detection Limit

M Manual Integration used to determine area response

PL Permit Limit



Analytical Report

 (consolidated)

 WO#:
 24120365

 Date Reported:
 12/12/2024

CLIENT:	HZW Environmenta	1			Colle	ction Date:	11/13/2	2024 1:04:00 PM
Project:	Parcel 14-Garfield H	leights						
Lab ID:	24120365-003					Matrix:	SOLID	
Client Sample	ID: Parcel 14-3							
Analyses		Result	RL	Qual	Units	5	DF	Date Analyzed
FLASHPOINT	DETERMINATION (101)))				SW1010		Analyst: TAH
Flashpoint (14	0°F)	>140		Z	°F		1	12/11/2024 4:41:44 PM

NOTES:

Z = Method deviation, due to sample matrix could not stir to 250 RPM as required by the method.

Qualifiers:

Holding times for preparation or analysis exceeded

ND Not Detected

Η

RL Reporting Detection Limit

M Manual Integration used to determine area response

PL Permit Limit



QC SUMMARY REPORT

WO#: 24120365

12-Dec-24

20

Ζ

Client: Project:	HZW En Parcel 14	vironmental -Garfield Heights		BatchID: I	R198624
Sample ID: L(Client ID: Ba	CS-R198624 atchQC	SampType: LCS Batch ID: R198624	TestCode: FlashPt_S(10 Units: °F TestNo: SW1010	Prep Date: Analysis Date: 12/11/2024	RunNo: 198624 SeqNo: 5370199
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Flashpoint (14 NOTES: Z = Method dev	0°F) viation, due to ins	140 strument/matrix limitations, cou	140.0 0 Id not stir to 250 RPM as required by the me	100 99 103 ethoD	Z
Sample ID: LO	CSD-R198624 atchQC	SampType: LCSD Batch ID: R198624	TestCode: FlashPt_S(10 Units: °F TestNo: SW1010	Prep Date: Analysis Date: 12/11/2024	RunNo: 198624 SeqNo: 5370200
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual

0

101

99

103

140.0

NOTES:

Flashpoint (140°F)

Z = Method deviation, due to instrument/matrix limitations, could not stir to 250 RPM as required by the methoD

142

ND Not Detected

W Sample container temperature is out of limit as spec

140.1

1.35



Qualifiers and Acronyms

WO#:24120365Date:12/12/2024

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

The compound was analyzed for but was not detected.

Qualifiers

U

DF

Dilution Factor

J	The reported value is greater than the l	Method Dete	ection Limit but less than the Reporting Limit.					
Н	The hold time for sample preparation a	and/or analy	sis was exceeded.					
D	The result is reported from a dilution.	j						
Ē	The result exceeded the linear range of	f the calibrat	ion or is estimated due to interference.					
MC	The result is below the Minimum Con	nound Limi	t					
*	The result exceeds the Regulatory Lim	it or Maxim	um Contamination Limit.					
m	Manual integration was used to determ	nine the area	response.					
d	Manual integration in which peak was	deleted						
Ň	The result is presumptive based on a N	Aass Spectra	l library search assuming a 1:1 response.					
P	The second column confirmation exce	eded 25% di	ifference.					
Ċ	The result has been confirmed by GC/	MS.						
x	The result was not confirmed when G	C/MS Analy	sis was performed.					
B/MB+	The analyte was detected in the associ	ated blank.						
G	The ICB or CCB contained reportable	amounts of	analyte					
OC-/+	The CCV recovery failed low (-) or hi	gh (+).	j					
R/ODR	The RPD was outside of accepted recovery limits.							
OL-/+	The LCS or LCSD recovery failed low (-) or high (+)							
OLR	The LCS/LCSD RPD was outside of a	ccented reco	overv limits.					
QM-/+	The MS or MSD recovery failed low (-) or high (+	·).					
OMR	The MS/MSD RPD was outside of acc	cented recov	erv limits.					
OV-/+	The ICV recovery failed low (-) or high	h (+).						
Š	The spike result was outside of accept	ed recovery	limits					
z Z	Deviation: A deviation from the metho	od was perfo	rmed: Please refer to the Case Narrative for					
-	additional information							
Aeronyn								
Actonyn	115							
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 D. J. J.	Permit Limit					
MS	Matrix Spike	RegLvi	Regulatory Limit					
MSD	Palativa Paraant Different	MCL	Minimum Contamination Limit					
ICV	Initial Calibration Verification	RA	Reanalysis					
ICR	Initial Calibration Blank	RE	Reextraction					
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound					
ССВ	Continuing Calibration Blank	RT	Retention Time					
RLC	Reporting Limit Check	CF	Calibration Eactor					

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.

Response Factor

RF



DATES REPORT

WO#: 24120365

12-Dec-24

Client:	HZW Environme	ental					
Project:	Parcel 14-Garfie	ld Heights					
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
24120365-001A	Parcel 14-1	11/13/2024 1:00:00 PM	Solid	Flashpoint Determination (1010)			12/11/2024 4:41:44 PM
24120365-002A	Parcel 14-2	11/13/2024 1:02:00 PM		Flashpoint Determination (1010)			12/11/2024 4:41:44 PM
24120365-003A	Parcel 14-3	11/13/2024 1:04:00 PM		Flashpoint Determination (1010)			12/11/2024 4:41:44 PM

	N M M	עסע	Analysis	s Reques	t / Chi	tin of (Custody	~				Effective	Date: 10/12/2023 Page 1 of 1
ENVIRONME 3310 Wh Stre Curatinga falls 800-278-0140	NTAL TECHNOLO	GIES, INC.	Refer to	Terms and C	onditions s	it www.seti	tek.com		SET WO NO.:	いい	I Ericonneuta	Fechnologies, Inc. u	se only
Dient Name K Z W Dient Street Address		Project Identification γ_{CA} γ_{CA} γ_{J} - C_{J} Project Street Address	antield	Heights	<u> </u>	,чь.	ate; 5)		Ana	ytical Param	eters and Me	sthods Reques	ted
1234 Weather	rech zputs3	Carfield Hr Report To Sta	12, OH 4	4152		, O == Oil, A == Water	teeta A ceta (\$100 A ceta) n common (\$						əntino
232) 208 - ' Datat Person Reg. Med. Med.	5112	12403501	AAA Quote Number			J biupi1 = J niAnind = V	r (specify h A; 3) HCl;	əĮdui	6				ance or R
Client Email Address KT & MUN M h2 Sampled By (Prink Name and Prov	w &NU , (~M ide Signature),	PWS ID Propring/Accreditation Re	Facility ID quirgments:			= Sludge,] Water, DW	19110 (8 ;91 19110 (8 ;91	ts per Sa	W - 15	7571			ilqmo⊃ la
Print: Falls Winn Sign: Falls to be reported For Signaly and the second	ductate by lab? If yes,	Other Compliance (List	Dhio EPA P lance State/ Program):	л С Ф	ample site Sample	s = Solid, SL • Von-Potable V	tion: (7; AUG) 1001 (7; AUG)	entaine	74 654 D 1540	ofine			eiooq2 :VInO
# Sample Polat ID	Sample	e Identification	Date Collected	Time	Compo Compo	:xirisM = WqN	Preservs MaOH; 6	uəquun _N	и , ,	1			(S/R) For DW
_	Parcel M.	-)	11/13/24	13:20	X	6	- !	8	X	X			
2	Purcel 14	-2-	1/13/24	3;02	<u>,</u> Х	5		-	<	X		-	
~	Parcel 14	1-3	1 42/21/11	3:0H	X	S	Ĺ		×	X			
												-	
								_					
								-					
Relinguished by:	Date	Time	Received	py:	Date		Time	Note	s / Comments:				
freenchikit	11/11/11	8:18							Jandard	tiv.			
				-			١	- - -	1 4	wight .	الموالمء، حر		
								UJINS	cient volume p	v rovided to run QC		Cooler?	YES NO
Recreived at Summit by:	Date Date	11me 0820	Q Carrie	Ţ	Rush Regu Mujshbearl	csted: 3°oyéd bý I	Day(s ab Manage	Rece	ived Temp.:	Cooler Sea	s? DPRESEN	T NOT PRE	SENT N/A
									3-0	1	1]	

Т

	ENV	IRONMENTAL TECHNOLOGIES	Summit Environmenta 5, INC. Cuyahog TEL: (330) 253-8211 F. Website: ht	Il Technologies, 1 3310 Win a Falls, Ohio 44 AX: (330) 253-44 tp://www.settek.c	Inc. 223 Samp 489 com	le Log-In Cheo	ck List
Clier	nt Name:	HZW-OH-44313	Work Order Number:	24120365		RcptNo: 1	
Logo	ged by:	Christina N. Gemma	12/6/2024		C. Cen	ma	
Com	pleted By:	Christina N. Gemma	12/6/2024 2:21:39 PM		C. Cer	ma	
Revi	ewed By:	Holly Florea	12/6/2024 3:32:43 PM		Alley He	rea	
Cha	in of Cu	stody					
1.	Is Chain of	Custody complete?		Yes 🖌	No	Not Present	
2.	How was th	he sample delivered?		<u>Client</u>			
Log	In						
3.	Coolers are	e present?		Yes 🗹	No 🗌		
4.	Shipping c	ontainer/cooler in good condi	tion?	Yes 🖌	No 🗌		
	Custody se	eals intact on shipping contain	ner/cooler?	Yes 🗌	No 🗌	Not Present 🗹	
	No.	Seal Date	e:	Signed By:			
5.	Was an att	tempt made to cool the samp	les?	Yes 🖌	No 🗌		
6.	Were all sa	amples received at a tempera	ature of >0° C to 6.0°C	Yes 🖌	No 🗌	NA 🗌	
7.	Sample(s)	in proper container(s)?		Yes 🗹	No 🗌		
8.	Sufficient s	sample volume for indicated t	est(s)?	Yes 🗹	No 🗌		
9.	Are sample	es (except VOA and ONG) pr	operly preserved?	Yes 🖌	No 🗌		
10.	Was prese	ervative added to bottles?		Yes	No 🗹	NA 🗌	
11.	Is the head	dspace in the VOA vials less	than 1/4 inch or 6 mm?	Yes	No 🗌	No VOA Vials 🖌	
12.	Were any	sample containers received b	proken?	Yes 🗌	No 🗹		
13.	Does pape (Note discr	rwork match bottle labels? epancies on chain of custod	/)	Yes 🗹	No 🗌		
14.	Are matrice	es correctly identified on Cha	in of Custody?	Yes 🖌	No 🗌		
15.	Is it clear v	vhat analyses were requested	<u>}</u> ?	Yes 🖌	No 🗌		
16.	Were all he	olding times able to be met?)	Yes 🔽	No 🗌		
Spe	cial Han	dling (if applicable)					
17.	Was client	notified of all discrepancies	with this order?	Yes	No 🗌	NA 🗹	
	Perso	on Notified:	Date:				
	By W	hom:	Via:	eMail 🗌 F	Phone 🗌 Fax	In Person	
	Rega	rding:					
	Client	t Instructions:					
18.	Additional	remarks:					
Coole	r Informat	ion					

Cooler No	Temp ⁰C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Not Present			

_ _ _ _ _

_

APPENDIX D

PARCEL 17 INVESTIGATION DOCUMENTATION



November 19, 2024

Kevin Reaman HZW Environmental 1234 Weathervane Lane Akron, OH 44313 TEL: 330-208-2717 FAX: 330-208-2799

RE: Parcel 17-Garfield Heights

Dear Kevin Reaman:

Order No.: 24111045

Summit Environmental Technologies, Inc. received 6 sample(s) on 11/14/2024 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,

aly Stree

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



Case Narrative

WO#:	24111045
Date:	11/19/2024

CLIENT: HZW Environmental Project: Parcel 17-Garfield Heights

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.

Analytical Sequence Sample Notes:

24111045-005A PctMoist_S(2540): Parent sample and DUP exhibited high RPD due to suspected sample inhomogeneity.

24111045-005A Mtl-ICP_S(6010D): Corresponding MS/MSD spike recoveries unable to be accurately resolved due to parent sample concentration. LCS demonstrates control.



Workorder Sample Summary

WO#: 24111045 19-Nov-24

CLIENT:HZW EnvironmentalProject:Parcel 17-Garfield Heights

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
24111045-001	Parcel 17-1		11/13/2024 12:30:00 PM	11/14/2024 8:20:00 AM	Solid
24111045-002	Parcel 17-2		11/13/2024 12:32:00 PM	11/14/2024 8:20:00 AM	Solid
24111045-003	Parcel 17-3		11/13/2024 12:34:00 PM	11/14/2024 8:20:00 AM	Solid
24111045-004	Parcel 17-4		11/13/2024 12:36:00 PM	11/14/2024 8:20:00 AM	Solid
24111045-005	Parcel 17-5		11/13/2024 12:38:00 PM	11/14/2024 8:20:00 AM	Solid
24111045-006	Parcel 17-6		11/13/2024 12:40:00 PM	11/14/2024 8:20:00 AM	Solid



Analytical Report

(consolidated) WO#: 24111045 Date Reported: 11/19/2024

CLIENT:	HZW Environmenta	1		Collection Date:	11/13/2	2024 12:	30:00 PM
Project:	Parcel 17-Garfield H	leights					
Lab ID:	24111045-001			Matrix:	SOLID)	
Client Sample ID:	Parcel 17-1						
Analyses		Result	RL Qual	Units	DF	Date A	nalyzed
METALS ANALYS	SIS (6010D)			SW6010	SW3	3050B	Analyst: RJE

Percent Moisture	4.43	0.200	%	1	11/14/2024 6:10:00 PM
PERCENT MOISTURE BY SM2540MOD			A2540E	3	Analyst: JPN
Manganese(Mn)	234	2.54	mg/Kg-dry	1	11/18/2024 10:32:00 AM
Magnesium(Mg)	11000	1020	mg/Kg-dry	100	11/19/2024 11:15:00 AM
Aluminum(Al)	13200	2540	mg/Kg-dry	100	11/19/2024 11:15:00 AM

Qualifiers:

Е Value above quantitation range

- М Manual Integration used to determine area response
- PL Permit Limit
- RL Reporting Detection Limit

Η Holding times for preparation or analysis exceeded

ND Not Detected

- R RPD outside accepted recovery limits
- W Sample container temperature is out of limit as specified at testcode



Analytical Report

(consolidated) WO#: 24111045 Date Reported: 11/19/2024

11/19/2024 11:25:00 AM

11/18/2024 10:35:00 AM

11/14/2024 6:10:00 PM

Analyst: JPN

CLIENT:	HZW Environment	al		Collection Date:	11/13/	2024 12	:32:00 PM
Project:	Parcel 17-Garfield	Heights					
Lab ID:	24111045-002			Matrix:	SOLIE)	
Client Sample ID	: Parcel 17-2						
Analyses		Result	RL Qua	l Units	DF	Date A	Analyzed
METALS ANALY	'SIS (6010D)			SW6010	SW	3050B	Analyst: RJE
Aluminum(Al)		8640	2470	mg/Kg-dry	100	11/19	/2024 11:25:00 AM

989

2.47

0.200

mg/Kg-dry

mg/Kg-dry

%

A2540B

100

1

1

6780

168

11.3

PERCENT	MOISTURF BY	SM2540MOD
FLICENT	MOISTORE DI	2141224014100

Percent Moisture	
------------------	--

Magnesium(Mg)

Manganese(Mn)

Qualifiers:

Value above quantitation range

- M Manual Integration used to determine area response
- PL Permit Limit

Е

RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded

ND Not Detected

R RPD outside accepted recovery limits

W Sample container temperature is out of limit as specified at testcode



Analytical Report

(consolidated) WO#: 24111045 Date Reported: 11/19/2024

CLIENT: HZW Environmental Collection Date				Collection Date:	e: 11/13/2024 12:34:00 PM			
Project:	Parcel 17-Garfield	Heights						
Lab ID:	24111045-003			Matrix:	SOLII)		
Client Sample	D: Parcel 17-3							
Analyses		Result	RL Qua	al Units	DF	Date A	Analyzed	
METALS ANA	LYSIS (6010D)			SW6010	SW	3050B	Analyst: RJE	
Aluminum(Al)		13300	494	mg/Kg-dry	20	11/19)/2024 11:32:00 AM	
Magnesium(Mg	a)	20300	988	mg/Kg-dry	100	11/19	/2024 11:28:00 AM	

Magnesium(Mg) Manganese(Mn)	20300 850	49.4 mg/Kg-d		100 20	11/19/2024 11:28:00 AM 11/19/2024 11:32:00 AM		
PERCENT MOISTURE BY SM2540MOD			A2540E	3	Analyst: JPN		
Percent Moisture	2.70	0.200	%	1	11/14/2024 6:10:00 PM		

Qualifiers:

E Value above quantitation range

- M Manual Integration used to determine area response
- PL Permit Limit
- RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded

ND Not Detected

- R RPD outside accepted recovery limits
- W Sample container temperature is out of limit as specified at testcode



Analytical Report

(consolidated) WO#: 24111045 Date Reported: 11/19/2024

11/14/2024 6:10:00 PM

CLIENT: HZW Environmental			Collection Date: 11/13/2024 12:36:00 PM					
Project:	Parcel 17-Garfield H	Heights						
Lab ID:	24111045-004			Matrix:	SOLII)		
Client Sample	D: Parcel 17-4							
Analyses		Result	RL Qu	al Units	DF	Date	Analyzed	
METALS ANA	LYSIS (6010D)			SW6010	SW	3050B	Analyst: RJE	
Aluminum(Al)		17000	447	mg/Kg-dry	20	11/19	9/2024 11:39:00 AM	
Magnesium(Mg	g)	15300	894	mg/Kg-dry	100	11/19	9/2024 11:35:00 AM	
Manganese(Mr	n)	1120	44.7	mg/Kg-dry	20	11/19	9/2024 11:39:00 AM	
PERCENT MO	ISTURE BY SM2540MC	D		A2540B			Analyst: JPN	

0.200

%

1

1.90

Percent	Moisture
---------	----------

Е **Qualifiers:**

Value above quantitation range

- М Manual Integration used to determine area response
- PL Permit Limit

RL Reporting Detection Limit Η Holding times for preparation or analysis exceeded

ND Not Detected

R RPD outside accepted recovery limits



Analytical Report

(consolidated) WO#: 24111045 Date Reported: 11/19/2024

Analyst: JPN

11/14/2024 6:10:00 PM

CLIENT:HZW EnvironmentalProject:Parcel 17-Garfield Heights			Collection Date: 11/13/2024 12:38:00 PM					
Client Sample ID	Parcel 17-5							
Analyses		Result	RL Qua	al Units	DF	Date A	Analyzed	
METALS ANALY	SIS (6010D)			SW6010	SW	3050B	Analyst: RJE	
Aluminum(Al)		8750	2480	mg/Kg-dry	100	11/19)/2024 11:42:00 AM	
Magnesium(Mg)		8030	990	ma/Ka-drv	100	11/19)/2024 11:42:00 AM	
				3. 3. 7				

0.200 QDR %

14.4

PERCENT MOISTURE BY SM2540MOD

Percent	Moisture
---------	----------

Qualifiers:

Value above quantitation range

- M Manual Integration used to determine area response
- PL Permit Limit

Е

RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded

ND Not Detected

R RPD outside accepted recovery limits

A2540B

1



Analytical Report

(consolidated) WO#: 24111045 Date Reported: 11/19/2024

11/14/2024 6:10:00 PM

CLIENT:HZW EnvironmentalProject:Parcel 17-Garfield Heights			Collection Date: 11/13/2024 12:40:00 PM					
Lab ID:	24111045-006			Matrix:	SOLII)		
Client Sample	ID: Parcel 17-6							
Analyses		Result	RL Qu	al Units	DF	Date A	Analyzed	
METALS ANA	LYSIS (6010D)			SW6010	SW	3050B	Analyst: RJE	
Aluminum(Al)		11600	2500	mg/Kg-dry	100	11/19	9/2024 11:45:00 AM	
Magnesium(Mg	g)	13600	1000	mg/Kg-dry	100	11/19	9/2024 11:45:00 AM	
Manganese(M	n)	357	2.50	mg/Kg-dry	1	11/18	3/2024 10:55:00 AM	
PERCENT MOISTURE BY SM2540MOD				A2540B			Analyst: JPN	

0.200

%

1

1.09

PERCENT MOISTURE BY SM2540MOD

Percent	Moisture
---------	----------

Qualifiers:

Value above quantitation range

- М Manual Integration used to determine area response
- PL Permit Limit

Е

RL Reporting Detection Limit Н Holding times for preparation or analysis exceeded

ND Not Detected

R RPD outside accepted recovery limits



QC SUMMARY REPORT

WO#: 24111045

19-Nov-24

Client:	HZW Environmental							
Project:	Parcel 17-Garfield Heights					BatchID: 8	80238	
Sample ID: MB-802	38 SampType: MBLK	TestCode: MtI-ICP_	S(60 Units: mg/Kg		Prep Date:	11/15/2024	RunNo: 197202	
Client ID: PBS	Batch ID: 80238	TestNo: SW6010	SW3050B	/	Analysis Date:	11/18/2024	SeqNo: 5333234	
Analyte	Result	PQL SPK value	SPK Ref Val	%REC	LowLimit Hig	ghLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum(Al)	ND	23.4						
Magnesium(Mg)	ND	9.35						
Manganese(Mn)	ND	2.34						
Sample ID: LCS-802	238 SampType: LCS	TestCode: MtI-ICP_	S(60 Units: mg/Kg		Prep Date:	11/15/2024	RunNo: 197202	
Client ID: LCSS	Batch ID: 80238	TestNo: SW6010	SW3050B	1	Analysis Date:	11/18/2024	SeqNo: 5333235	
Analyte	Result	PQL SPK value	SPK Ref Val	%REC	LowLimit Hig	ghLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum(Al)	192	24.5 196.1	0	98.0	80	120		
Magnesium(Mg)	197	9.80 196.1	0	101	80	120		
Manganese(Mn)	189	2.45 196.1	0	96.2	80	120		
Sample ID: LCS-802	238 SampType: LCS	TestCode: MtI-ICP_	S(60 Units: mg/Kg		Prep Date:	11/15/2024	RunNo: 197202	
Client ID: LCSS	Batch ID: 80238	TestNo: SW6010	SW3050B	1	Analysis Date:	11/18/2024	SeqNo: 5333236	
Analyte	Result	PQL SPK value	SPK Ref Val	%REC	LowLimit Hig	ghLimit RPD Ref Val	%RPD RPDLimit	Qual
Aluminum(Al)	ND	245 196.1	0	101	80	120		
Magnesium(Mg)	205	98.0 196.1	0	104	80	120		
Manganese(Mn)	200	24.5 196.1	0	102	80	120		

Qualifiers:

E Value above quantitation range ND Not Detected

RL

Reporting Detection Limit

H Holding times for preparation or analysis exceeded

PL Permit Limit

S Spike Recovery outside accepted recovery limits

Page 10 of 16

M Manual Integration used to determine area response

R RPD outside accepted recovery limits

W Sample container temperature is out of limit as spec

Original

-



QC SUMMARY REPORT

WO#: 24111045

19-Nov-24

Client:	HZW Envir	onmental										
Project:	Parcel 17-G	arfield Heights						В	atchID: 8	0238		
Sample ID: 241	111045-005AMS	SampType: MS	TestCod	de: MtI-ICP_S	(60 Units: mg/K	g-dry	Prep Dat	e: 11/15/2	.024	RunNo: 197	7202	
Client ID: Par	rcel 17-5	Batch ID: 80238	TestN	lo: SW6010	SW3050B		Analysis Dat	e: 11/18/2	024	SeqNo: 533	33247	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum(Al)		7470	25.6	205.0	6283	581	75	125				ES
Magnesium(Mg	J)	4180	10.3	205.0	3838	165	75	125				ES
Manganese(Mn	1)	338	2.56	205.0	187.1	73.7	75	125				S
Sample ID: 241	111045-005AMSD	SampType: MSD	TestCod	le: MtI-ICP_S	(60 Units: mg/K	g-dry	Prep Dat	e: 11/15/2	.024	RunNo: 197	7202	I

Client ID: Parcel 17-5	Batch ID: 80238	TestN	lo: SW6010	SW3050B		Analysis Da	te: 11/18/2	024	SeqNo: 533	3248	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum(Al)	7170	25.2	201.5	6283	440	75	125	7473	4.14	20	ES
Magnesium(Mg)	3670	10.1	201.5	3838	-83.9	75	125	4177	13.0	20	ES
Manganese(Mn)	331	2.52	201.5	187.1	71.3	75	125	338.1	2.19	20	S

Qualifiers:

RL

Reporting Detection Limit

W Sample container temperature is out of limit as spec

Original

Spike Recovery outside accepted recovery limits

S

Page 11 of 16

H Holding times for preparation or analysis exceeded PL Permit Limit

M Manual Integration used to determine area response

R RPD outside accepted recovery limits



QC SUMMARY REPORT

WO#: 24111045

19-Nov-24

Client:	HZW Envir	onmental			
Project:	Parcel 17-G	arfield Heights		BatchID: F	197076
Sample ID	: MB-R197076	SampType: MBLK	TestCode: PctMoist_S(2 Units: %	Prep Date:	RunNo: 197076
Client ID:	PBS	Batch ID: R197076	TestNo: A2540B	Analysis Date: 11/14/2024	SeqNo: 5330204
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Percent Mo	oisture	ND	0.200		
Sample ID	24111030-003ADUP	SampType: DUP	TestCode: PctMoist_S(2 Units: %	Prep Date:	RunNo: 197076
Client ID:	BatchQC	Batch ID: R197076	TestNo: A2540B	Analysis Date: 11/14/2024	SeqNo: 5330213
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Percent Mo	oisture	7.15	0.200	6.896	3.58 5
Sample ID	24111045-005ADUP	SampType: DUP	TestCode: PctMoist_S(2 Units: %	Prep Date:	RunNo: 197076
Client ID:	Parcel 17-5	Batch ID: R197076	TestNo: A2540B	Analysis Date: 11/14/2024	SeqNo: 5330223
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Percent Mo	oisture	15.7	0.200	14.43	8.43 5 R

Qualifiers:

RL

М Manual Integration used to determine area response

Permit Limit PL

Spike Recovery outside accepted recovery limits S

RPD outside accepted recovery limits R

W Sample container temperature is out of limit as spec

Page 12 of 16

Н Holding times for preparation or analysis exceeded



Qualifiers and Acronyms

WO#: 24111045 Date: 11/19/2024

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

Qualifiers

U	The compound was analyzed for but w	vas not detec	ted.							
J	The reported value is greater than the	Method Dete	ection Limit but less than the Reporting Limit.							
Н	The hold time for sample preparation	and/or analy	sis was exceeded.							
D	The result is reported from a dilution.									
Е	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 is below the Nummun Compound Limit. The result exceeds the Regulatory Limit or Maximum Contamination Limit									
m	The result exceeds the Regulatory Limit of Maximum Containination Limit.									
d	Manual integration in which neak was	deleted	response.							
u N	The result is presumptive based on a N	Jass Spectra	l library search assuming a 1.1 response							
D	The second column confirmation even	adad 25% di	ifference							
I C	The regult has been confirmed by CC	MS	interence.							
v	The result was not confirmed when C	IVIS.	ais was performed							
А D/A/D	The result was not commined when of	C/MS Allary	sis was performed.							
B/IVIB+	The analyte was detected in the associ	ated Dialik.								
G	The ICB of CCB contained reportable	amounts of	analyte.							
QC-/+	The CCV recovery failed low (-) or hi	gn (+).								
R/QDR	The RPD was outside of accepted reco	overy limits.	/							
QL-/+	The LCS or LCSD recovery failed low	v (-) or high	(+).							
QLR	The LCS/LCSD RPD was outside of a	iccepted reco	overy limits.							
QM-/+	The MS or MSD recovery failed low (-) or high (+	-).							
QMR	The MS/MSD RPD was outside of acc	cepted recov	ery limits.							
QV-/+	The ICV recovery failed low (-) or high	gh (+).								
S	The spike result was outside of accept	ed recovery	limits.							
Z	Deviation; A deviation from the method	od was perfo	rmed; Please refer to the Case Narrative for							
	additional information									
Acronyn	ns									
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		Contract Required Quantitation Limit							
DUP	Duplicate Materia Sailar	PL Deel ei	Permit Limit							
MED	Matrix Spike	KegLvi MCI	Regulatory Limit							
NISD	Polotivo Percont Different	MCL	Minimum Compound Limit							
ICV	Initial Calibration Verification	PA	Reanalysis							
ICR	Initial Calibration Blank RE Reextraction									
CCV	Continuing Calibration Verification TIC Tentatively Identified Compound									
ССВ	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.

DATES REPORT

24111045 WO#: 19-Nov-24



HZW Environmental

Client:

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

Project:	Parcel 17-Garfie	eld Heights					
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
24111045-001A	Parcel 17-1	11/13/2024 12:30:00 PM	Solid	Metals Analysis (6010D)		11/15/2024 9:00:00 AM	II1/19/2024 11:15:00 AM
				Metals Analysis (6010D)		11/15/2024 9:00:00 AM	II1/18/2024 10:32:00 AM
				Percent Moisture by SM2540Mod			11/14/2024 6:10:00 PM
24111045-002A	Parcel 17-2	11/13/2024 12:32:00 PM		Metals Analysis (6010D)		11/15/2024 9:00:00 AM	II1/18/2024 10:35:00 AM
				Metals Analysis (6010D)		11/15/2024 9:00:00 AM	II1/19/2024 11:25:00 AM
				Percent Moisture by SM2540Mod			11/14/2024 6:10:00 PM
24111045-003A	Parcel 17-3	11/13/2024 12:34:00 PM		Metals Analysis (6010D)		11/15/2024 9:00:00 AM	II1/19/2024 11:32:00 AM
				Metals Analysis (6010D)		11/15/2024 9·00·00 AN	111/18/2024 10·38·00 AM

24111045-002A	Parcel 17-2	11/13/2024 12:32:00 PM	Metals Analysis (6010D)	11/15/2024 9:00:00 AM11/18/2024 10:35:00 AM
			Metals Analysis (6010D)	11/15/2024 9:00:00 AM11/19/2024 11:25:00 AM
			Percent Moisture by SM2540Mod	11/14/2024 6:10:00 PM
24111045-003A	Parcel 17-3	11/13/2024 12:34:00 PM	Metals Analysis (6010D)	11/15/2024 9:00:00 AM11/19/2024 11:32:00 AM
			Metals Analysis (6010D)	11/15/2024 9:00:00 AM11/18/2024 10:38:00 AM
			Metals Analysis (6010D)	11/15/2024 9:00:00 AM11/19/2024 11:28:00 AM
			Percent Moisture by SM2540Mod	11/14/2024 6:10:00 PM
24111045-004A	Parcel 17-4	11/13/2024 12:36:00 PM	Metals Analysis (6010D)	11/15/2024 9:00:00 AM11/19/2024 11:35:00 AM
			Metals Analysis (6010D)	11/15/2024 9:00:00 AM11/19/2024 11:39:00 AM
			Metals Analysis (6010D)	11/15/2024 9:00:00 AM11/18/2024 10:42:00 AM
			Percent Moisture by SM2540Mod	11/14/2024 6:10:00 PM
24111045-005A	Parcel 17-5	11/13/2024 12:38:00 PM	Metals Analysis (6010D)	11/15/2024 9:00:00 AM11/18/2024 10:45:00 AM
			Metals Analysis (6010D)	11/15/2024 9:00:00 AM11/19/2024 11:42:00 AM
			Percent Moisture by SM2540Mod	11/14/2024 6:10:00 PM
24111045-006A	Parcel 17-6	11/13/2024 12:40:00 PM	Metals Analysis (6010D)	11/15/2024 9:00:00 AM11/18/2024 10:55:00 AM
			Metals Analysis (6010D)	11/15/2024 9:00:00 AM11/19/2024 11:45:00 AM
			Percent Moisture by SM2540Mod	11/14/2024 6:10:00 PM

Client Name HZW Client Street Address 1234 W Cuthern City AVACON St Client Plage	MENTAL TECHNOLOGIES, INC. Mental TECHNOLOGIES, INC. Mentality Onto 44223 40 Project Identify Project Street A Project Street A Project Street A And Ln Mentality Garfi	Analysi Refer to Cation 47-Giwfield W ddress	o Terms and Condi	Chain of Cus	stody	SET WO NO.:	nalytical P	For Summit En	and Metho	Effective J	Date: 10/12/20 Page 1 of only
a (33-3) 2.00 -2 Contact Person L.W. A Plath Contact Person Cillent Email Address Sampled By (Print Name and Provid Sampled By (Print Name and Provid Print: AUOS WAY For DW only, results to be reported to Iab fee may apply: IY # Sample Point ID I 2 Y Print # Sample Point ID I 2 Y Print K Sample Point ID I 2 G Print Relinguished by: E M.W.W.M. III	$\frac{117}{A + 240}$	State Zip State Zip Requirements: Ohio EPA Pb, Ci Ohio EPA Pb, Ci Ohio EPA Pb, Ci Compliance Ohio EPA Pb, Ci Collected Collected Il///3/24 12:32 I2:32 I2:32 I2:32 I2:32 I2:32 I2:40 Received by: I2:40	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	V V <td>X X X X X</td> <td>XXXXX Magne, in</td> <td>XXXX Manganzie</td> <td></td> <td></td> <td>ods Requeste</td> <td>P For DW Only: Special Compliance or Routine (S/R)</td>	X X X X X	XXXXX Magne, in	XXXX Manganzie			ods Requeste	P For DW Only: Special Compliance or Routine (S/R)
Received at Summit by: Dat	e Time 24 KZD	Carrier J CILCH M	Rush Requested: Tust be approved Page 1	Time Day(s) by Lab Manager 5 of 16	Notes / Cl Street Sufficient Received T S. 2 S-2	omments:	747 Ied to run QC Cooler Seals Ice Present	Mal75) ? Uves ? Dres ? Mres		oler? YES	NO N/A

	ENV	IRONMENTAL TE	CHNOLOGIES, IN Ories	Summit Envi c. TEL: (330) 25. Wa	ronmental T Cuyahoga I 3-8211 FAX ebsite: http:	Fechno 3 Falls, 6 X: (330	logies, Inc. 310 Win St. Ohio 44223 1) 253-4489 2.settek.com	Sam	ple Log-In	Check List
Clien	t Name:	HZW-OH-443	13	Work Order N	lumber: 24	41110	45		Rcpt	No: 1
Logg	ed by:	Christina N. C	Semma	11/14/2024 8:2	20:00 AM			C. Cer	ma	
Com	pleted By:	Christina N. C	Gemma	11/14/2024 4:0	7:05 PM			C. Cer	ma	
Revie	ewed By:	Holly Florea		11/15/2024 10:	:57:33 AM		(Halfs	Unea	
<u>Chai</u>	in of Cus	stody								
1. ^I	ls Chain of	Custody compl	ete?			Yes	✓	No	Not Present	
2. H	How was th	ne sample delive	ered?			<u>Clien</u>	<u>t</u>			
Log	<u>In</u>									
3. (Coolers are	e present?				Yes	✓	No	NA	
4 5	Shippina ca	ontainer/cooler i	n aood condition	?		Yes	✓	No 🗌		
ч. (Custody se	als intact on sh	ipping container/	cooler?		Yes		No 🗌	Not Present	✓
1	No.		Seal Date:		S	Signe	ed By:			
5. \	Was an att	empt made to c	ool the samples?	,		Yes		No 🗌	NA	
6. \	Were all sa	amples received	l at a temperature	e of >0° C to 6.0)°C	Yes	✓	No 🗌	NA	
7. \$	Sample(s)	in proper contai	ner(s)?			Yes	✓	No 🗌		
8. 3	Sufficient s	ample volume f	or indicated test(s)?		Yes	✓	No 🗌		
9. /	Are sample	es (except VOA	and ONG) prope	rly preserved?		Yes	✓	No 🗌		
10. \	Was prese	rvative added to	bottles?			Yes		No 🔽	NA	
11.	ls the head	Ispace in the VC	DA vials less thar	1/4 inch or 6 m	ım?	Yes		No 🗌	No VOA Vials	
12. \	Were any s	sample containe	ers received broke	en?		Yes		No 🗹		
13. [[] (Does pape (Note discr	rwork match bo epancies on ch	ttle labels? ain of custody)			Yes	✓	No 🗌		
14.	Are matrice	es correctly ider	ntified on Chain o	f Custody?		Yes	✓	No 🗌		
15.	ls it clear w	/hat analyses w	ere requested?			Yes	✓	No 🗌		
16.\	Were all ho	olding times able	e to be met?			Yes	✓	No 🗌		
Spec	cial Hand	dling (if app	licable)							
17.\	Was client	notified of all di	screpancies with	this order?		Yes		No 🗌	NA	
	Perso	n Notified:			Date:					
	By WI	hom:			Via:] eMa	il 🗌 Pho	ne 🗌 Fax	In Person	
	Regar	rding:								
	Client	Instructions:								
18. /	Additional r	remarks:								
<u>Cooler</u>	r Informati	ion								

Cooler No	Temp ⁰C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Not Present			

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December 12, 2024

Kevin Reaman HZW Environmental 1234 Weathervane Lane Akron, OH 44313 TEL: 330-208-2717 FAX: 330-208-2799

RE: Parcel 17-Garfield Heights

Dear Kevin Reaman:

Order No.: 24120367

Summit Environmental Technologies, Inc. received 6 sample(s) on 12/6/2024 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,

Cely Stree

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



Case Narrative

WO#:	24120367
Date:	12/12/2024

CLIENT: HZW Environmental Project: Parcel 17-Garfield Heights

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.

Analytical Sequence Sample Notes:

24120367-001 through 006 FlashPt_S(1010): Z = Method deviation, due to sample matrix could not stir to 250 RPM as required by the method.



Workorder Sample Summary

WO#: 24120367 12-Dec-24

CLIENT:HZW EnvironmentalProject:Parcel 17-Garfield Heights

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
24120367-001	Parcel 17-1		11/13/2024 12:30:00 PM	11/14/2024 8:20:00 AM	Solid
24120367-002	Parcel 17-2		11/13/2024 12:32:00 PM	11/14/2024 8:20:00 AM	Solid
24120367-003	Parcel 17-3		11/13/2024 12:34:00 PM	11/14/2024 8:20:00 AM	Solid
24120367-004	Parcel 17-4		11/13/2024 12:36:00 PM	11/14/2024 8:20:00 AM	Solid
24120367-005	Parcel 17-5		11/13/2024 12:38:00 PM	11/14/2024 8:20:00 AM	Solid
24120367-006	Parcel 17-6		11/13/2024 12:40:00 PM	11/14/2024 8:20:00 AM	Solid



Analytical Report

 (consolidated)

 WO#:
 24120367

 Date Reported:
 12/12/2024

CLIENT:	HZW Environmenta	ıl			Colle	ction Date:	11/13/2	.024 12:30:00 PM
Project:	Parcel 17-Garfield I	Heights						
Lab ID:	24120367-001					Matrix:	SOLID	
Client Sample	ID: Parcel 17-1							
Analyses		Result	RL	Qual	Units	5	DF	Date Analyzed
FLASHPOINT	DETERMINATION (101	0)				SW1010		Analyst: TAH
Flashpoint (14	0°F)	>140		Z	°F		1	12/11/2024 4:41:44 PM

NOTES:

Z = Method deviation, due to sample matrix could not stir to 250 RPM as required by the method.

Qualifiers:

Holding times for preparation or analysis exceeded

ND Not Detected

Η

RL Reporting Detection Limit

M Manual Integration used to determine area response

PL Permit Limit



Analytical Report

 (consolidated)

 WO#:
 24120367

 Date Reported:
 12/12/2024

CLIENT: HZW Environmental				Collection Date: 11/13/2024 12:32:00 PM					
Project:	Parcel 17-Garfield He	eights							
Lab ID:	24120367-002		Matrix: SOLID						
Client Sample I	D: Parcel 17-2								
Analyses		Result	RL	Qual	Units		DF	Date Analyzed	
FLASHPOINT DETERMINATION (1010)						SW1010		Analyst: TAH	
Flashpoint (140°	°F)	>140		z	°F		1	12/11/2024 4:41:44 PM	

NOTES:

Z = Method deviation, due to sample matrix could not stir to 250 RPM as required by the method.

Qualifiers:

Holding times for preparation or analysis exceeded

ND Not Detected

Η

RL Reporting Detection Limit

M Manual Integration used to determine area response

PL Permit Limit



Analytical Report

(consolidated) WO#: 24120367 Date Reported: 12/12/2024

CLIENT: HZW Environmental				Collection Date: 11/13/2024 12:34:00 PM					
Project:	Parcel 17-Garfield H	leights							
Lab ID:	24120367-003					Matrix:	SOLID		
Client Sample	ID: Parcel 17-3								
Analyses		Result	RL	Qual	Units	5	DF	Date Analyzed	
FLASHPOINT	DETERMINATION (1010))				SW1010		Analyst: TAH	
Flashpoint (140	0°F)	>140		z	°F		1	12/11/2024 4:41:44 PM	

NOTES:

Z = Method deviation, due to sample matrix could not stir to 250 RPM as required by the method.

Qualifiers:

Holding times for preparation or analysis exceeded

ND Not Detected

Η

RL Reporting Detection Limit

M Manual Integration used to determine area response

PL Permit Limit



Analytical Report

(consolidated) WO#: 24120367 Date Reported: 12/12/2024

CLIENT: HZW Environmental				Collection Date: 11/13/2024 12:36:00 PM						
Project:	Parcel 17-Garfield	Heights								
Lab ID:	24120367-004					Matrix:	SOLID			
Client Sample	ID: Parcel 17-4									
Analyses		Result	RL	Qual	Units	5	DF	Date Analyzed		
FLASHPOINT	DETERMINATION (101	0)				SW1010		Analyst: TAH		
Flashpoint (140	D°F)	>140		z	°F		1	12/11/2024 4:41:44 PM		

NOTES:

Z = Method deviation, due to sample matrix could not stir to 250 RPM as required by the method.

Qualifiers:

Holding times for preparation or analysis exceeded

ND Not Detected

Η

RL Reporting Detection Limit

M Manual Integration used to determine area response

PL Permit Limit



Analytical Report

 (consolidated)

 WO#:
 24120367

 Date Reported:
 12/12/2024

CLIENT:	JENT: HZW Environmental Collection				tion Date:	11/13/2024 12:38:00 PM		
Project:	Parcel 17-Garfield H	leights						
Lab ID:	24120367-005					Matrix:	SOLID	
Client Sample	ID: Parcel 17-5							
Analyses		Result	RL ()ual	Units		DF	Date Analyzed
FLASHPOINT	DETERMINATION (1010))				SW1010		Analyst: TAH
Flashpoint (14	40°F)	>140		z	°F		1	12/11/2024 4:41:44 PM

NOTES:

Z = Method deviation, due to sample matrix could not stir to 250 RPM as required by the method.

Qualifiers:

Holding times for preparation or analysis exceeded

ND Not Detected

Η

RL Reporting Detection Limit

M Manual Integration used to determine area response

PL Permit Limit



Analytical Report

 (consolidated)

 WO#:
 24120367

 Date Reported:
 12/12/2024

CLIENT:	: HZW Environmental			Colle	ction Date:	11/13/2024 12:40:00 PM		
Project:	Parcel 17-Garfield I	Heights						
Lab ID:	24120367-006				Matrix:	SOLID		
Client Sample	ID: Parcel 17-6							
Analyses		Result	RL Qua	l Unit	5	DF	Date Analyzed	
FLASHPOINT	DETERMINATION (101	0)			SW1010		Analyst: TAH	
Flashpoint (14	0°F)	>140	Z	°F		1	12/11/2024 4:41:44 PM	

NOTES:

Z = Method deviation, due to sample matrix could not stir to 250 RPM as required by the method.

Qualifiers:

Holding times for preparation or analysis exceeded

ND Not Detected

Η

RL Reporting Detection Limit

M Manual Integration used to determine area response

PL Permit Limit



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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#: 24120367

12-Dec-24

20

Ζ

Client: Project:	HZW Env Parcel 17	vironmental -Garfield Heights		BatchID: R198624							
Sample ID: L(Client ID: B	.CS-R198624 BatchQC	SampType: LCS Batch ID: R198624	TestCode: FlashPt_\$ TestNo: SW1010	S(10 Units: °F		Prep Dat Analysis Da	te: te: 12/11/2	2024	RunNo: 198 SeqNo: 537	3624 70199	
Analyte		Result	PQL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Flashpoint (14 NOTES: Z = Method de ⁻	40°F) viation, due to ins	140 trument/matrix limitations, coul	140.0 Id not stir to 250 RPM as	0 required by the me	100 ethoD	99	103				Z
Sample ID: LC Client ID: B	CSD-R198624 JatchQC	SampType: LCSD Batch ID: R198624	TestCode: FlashPt_S TestNo: SW1010	3(10 Units: °F	Prep Date: Analysis Date: 12/11/2024		RunNo: 198624 SeqNo: 5370200				
Analyte		Result	PQL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

0

101

99

103

140.0

NOTES:

Flashpoint (140°F)

Z = Method deviation, due to instrument/matrix limitations, could not stir to 250 RPM as required by the methoD

142

ND Not Detected

Sample container temperature is out of limit as spec W

140.1

1.35



Qualifiers and Acronyms

WO#: 24120367 Date: 12/12/2024

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

Qualifiers

U	The compound was analyzed for but w	vas not detec	eted.						
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.								
Н	The reported value is greater than the Method Detection Limit but less than the Reporting Limit. The hold time for sample preparation and/or analysis was exceeded.								
D	The result is reported from a dilution.								
Ē	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 I in	it or Maxim	um Contamination I imit						
m	Manual integration was used to determ	nit of Maxin							
ш d	Manual integration in which peak was	delated	response.						
u N	The result is presumptive based on a	lass Smooth	1 library coards accuming a 1,1 reasons						
IN D	The result is presumptive based on a r	hass spectra	in norary search assuming a 1.1 response.						
r	The second column confirmation exce		merence.						
C	The result has been confirmed by GC/	MS.							
X	The result was not confirmed when G	C/MS Analy	sis was performed.						
B/MB+	The analyte was detected in the associ	ated blank.							
G	The ICB or CCB contained reportable	amounts of	analyte.						
QC-/+	The CCV recovery failed low (-) or hi	gh (+).							
R/QDR	The RPD was outside of accepted reco	overy limits.							
QL-/+	The LCS or LCSD recovery failed lov	v (-) or high	(+).						
QLR	The LCS/LCSD RPD was outside of a	accepted reco	overy limits.						
QM-/+	The MS or MSD recovery failed low ((-) or high (+	-).						
QMR	The MS/MSD RPD was outside of acc	cepted recov	ery limits.						
QV-/+	The ICV recovery failed low (-) or high	gh (+).							
S	The spike result was outside of accept	ed recovery	limits.						
Z	Deviation; A deviation from the method	od was perfo	ormed; Please refer to the Case Narrative for						
	additional information								
Acronyn	ns								
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						
	Initial Calibration Verification	KA	Reanalysis						
ICB	Initial Calibration Blank	KE TIC	Reexiraction						
	Continuing Calibration Verification	IIC DT	Petention Time						
	Reporting Limit Check	CF	Calibration Factor						
DF	Dilution Factor	CF RF	Response Factor						
DT .		1/1							

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.



DATES REPORT

WO#: 24120367 12-Dec-24

Client: HZW Environmental

Project: Parcel 17-Garfield Heights

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
24120367-001A	Parcel 17-1	11/13/2024 12:30:00 PM	Solid	Flashpoint Determination (1010)			12/11/2024 4:41:44 PM
24120367-002A	Parcel 17-2	11/13/2024 12:32:00 PM		Flashpoint Determination (1010)			12/11/2024 4:41:44 PM
24120367-003A	Parcel 17-3	11/13/2024 12:34:00 PM		Flashpoint Determination (1010)			12/11/2024 4:41:44 PM
24120367-004A	Parcel 17-4	11/13/2024 12:36:00 PM		Flashpoint Determination (1010)			12/11/2024 4:41:44 PM
24120367-005A	Parcel 17-5	11/13/2024 12:38:00 PM		Flashpoint Determination (1010)			12/11/2024 4:41:44 PM
24120367-006A	Parcel 17-6	11/13/2024 12:40:00 PM		Flashpoint Determination (1010)			12/11/2024 4:41:44 PM


	ENV	IRONMENTAL TECHNOLOGIE	Summit Environmenta s, INC. Cuyahoga TEL: (330) 253-8211 F. Website: htt	l Technologies, 1 3310 Wir a Falls, Ohio 44 AX: (330) 253-44 tp://www.settek.c	Inc. 1 St. 223 Samp 489 com	ole Log-In Cheo	ck List
Clien	nt Name:	HZW-OH-44313	Work Order Number:	24120367		RcptNo: 1	
Logg	ged by:	Christina N. Gemma	12/6/2024		C. Cen	ma	
Com	pleted By:	Christina N. Gemma	12/6/2024 2:21:55 PM		C. Cen	Ma	
Revie	ewed By:	Holly Florea	12/6/2024 3:33:01 PM		Alley He	Ula	
Chai	in of Cu	<u>stody</u>					
1.	Is Chain of	Custody complete?		Yes 🗹	No 🗌	Not Present	
2.	How was tl	he sample delivered?		<u>Client</u>			
Log	<u>In</u>						
3.	Coolers ar	e present?		Yes 🖌	No 🗌		
4	Shipping c	ontainer/cooler in good cond	lition?	Yes 🗹	No 🗌		
	Custody se	eals intact on shipping conta	iner/cooler?	Yes 🗌	No 🗌	Not Present 🗹	
	No.	Seal Dat	e:	Signed By:			
5.	Was an at	tempt made to cool the sam	oles?	Yes 🗹	No 🗌	NA 🗌	
6.	Were all sa	amples received at a temper	ature of >0° C to 6.0°C	Yes 🖌	No 🗌		
7.	Sample(s)	in proper container(s)?		Yes 🗹	No 🗌		
8.	Sufficient s	sample volume for indicated	test(s)?	Yes 🗹	No 🗌		
9.	Are sample	es (except VOA and ONG) p	roperly preserved?	Yes 🖌	No 🗌		
10.	Was prese	ervative added to bottles?		Yes 🗌	No 🔽	NA 🗌	
11.	Is the head	dspace 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 pape	erwork match bottle labels?		Yes 🖌	No 🗌		
4.4	(Note disci	repancies on chain of custoo	ly) ain of Custody?	Voc 🖌			
14.	le it clear v	what analyses were requested	all of Custody?	Ves 🖌			
10.	Were all h	olding times able to be met?		Yes 🗸			
10.	(If no, notif	y customer for authorization	.)				
<u>Spec</u>	cial Han	dling (if applicable)		_	_	_	
17.	Was client	notified of all discrepancies	with this order?	Yes	No 🗌	NA 🗹	
	Perso	on Notified:	Date:				
	By W	hom:	Via:	eMail 🔤 I	Phone 🗌 Fax	In Person	
	Rega	rding:					
	Client	t Instructions:					
18.	Additional	remarks:					
Coole	r Informat	ion					

Cooler No	Temp ^o C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Not Present			

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APPENDIX E

PROJECT PLAN SHEETS



