



PHASE II INVESTIGATION

Proposed Rosemount Industrial Development
160th Street West and South Robert Trail
Rosemount, MN 55068
Project Number: 28.0241100.10

Prepared for:
McGough Development
2737 Fairview Avenue North
St. Paul, MN 55113

Prepared by:
Vieau Associates,
a Division of GZA GeoEnvironmental
7505 Metro Boulevard
Edina, MN 55439

July 21, 2022

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1. INTRODUCTION

1.1 Purpose

Vieau Associates, a Division of GZA GeoEnvironmental, Inc. (Vieau Associates) was retained by McGough Development to complete a Phase II Investigation of the Rosemount Redevelopment Property located northeast of the intersection of 160th Street West and South Robert Trail, Rosemount, MN 55068 (Figure 1).

The purpose of this Phase II Investigation was to evaluate the property for soil impacts associated with the historical land use as a storage tank refurbishment service. Vieau Associates initiated this investigation upon receipt of authorization from McGough Development on July 11, 2022.

1.2 Background Information

The proposed development is located at the northeast intersection of 160th Street W and S Robert Trail in Rosemount, Minnesota. The site is bordered to the north by agricultural field, to the east by commercial development, to the south by agricultural field and 160th St W (Route 46), and to the west by S Robert Trail (Route 3) and a natural gas liquid commercial facility/agricultural field. The property is currently undeveloped with grass cover and agricultural fields. The property was formerly occupied by Lange Gas and was subject to extensive remediation in 2004, which consisted of the excavation and off-site disposal of approximately 750 tons of soil impacted with lead and polycyclic aromatic hydrocarbons (PAHs). Subsequent confirmation sampling detected no chemicals of concern exceeding commercial soil reference values (SRVs). A No Further Action determination letter was issued by the MPCA for soil impacts in 2006.

It is our understanding that the proposed development consists of the construction of a one-story 325,000 square-foot industrial facility with associated access roadways and parking areas.

2. SCOPE OF PHASE II INVESTIGATION

The Phase II Investigation included the following components:

- A site-specific Health and Safety Plan was prepared.
- The Phase II Investigation field work was performed contemporaneously with a geotechnical evaluation being completed by American Engineering Testing (AET). All clearing of underground utilities and advancement of soil borings were handled by AET.
- Representative soil samples were collected from 12 geotechnical borings and six shallow test pits and screened with a MiniRAE photoionization detector (PID) equipped with a 10.6 eV lamp.
- A total of 30 soil samples were submitted for laboratory analysis of lead.
- This report was prepared.

3. DEVIATIONS AND LIMITATIONS

Due to a communication error, the AET geotechnical exploration began on the subject property prior to Vieau Associates arrival on site. Four geotechnical borings targeted for Phase II analysis were advanced on the subject property without Vieau present to observe, screen soils with a PID, and collect samples. In lieu of advancing additional borings and incurring further costs, soil samples from these borings were re-sampled from geotechnical split spoon samples collected by AET at the AET Soil Classification Laboratory in St. Paul, Minnesota on July 7, 2022. Due to the length of time since the samples were collected (approximately one week), no PID screening was conducted; however, as lead is not volatile, the deviation from the proposed sampling plan is unlikely to have affected the results of the laboratory analysis.

No other deviations or limitations were encountered during the course of this assessment.

4. INVESTIGATION METHODS AND PROCEDURES

The fieldwork was initiated on July 5 and completed on July 7, 2022. The weather was generally inconsequential, approximately 70s to 80s degrees Fahrenheit and sunny or overcast. Soil boring locations were chosen by AET. Soil borings targeted for Phase II sampling were advanced throughout the southern portion of the property, in the area formerly occupied by Lange Gas. The remaining hand-collected surface soil sampling locations were chosen by Vieau Associates and advanced throughout the southern portion of the property in areas of limited soil boring coverage. All sampling locations are shown on Figure 2.

The soil borings were numbered and drilled by AET. A CME 750X 3.25" ATV-mounted hollow-stem auger (HSA) drilling rig with split spoon sampler was used at each drilling location. All down-hole tools were washed prior to being used at the property and cleaned between all auger drilling locations targeted for Phase II sampling.

Soil boring samples were retrieved from a 2-foot split-spoon sampler at 2 to 5-foot intervals from each individual boring. Immediately upon retrieving each split spoon, the soil samples were examined by the field technician for evidence of staining, incidental odors or other apparent signs of contamination. Refer to the geotechnical evaluation report prepared by AET for associated soil boring logs in Appendix A. Standard soil boring sampling procedures are presented in Appendix B.

Shallow test pits were completed using a garden spade to excavate soil to a depth of approximately 2 feet bgs. The spade was washed prior to being used at the property and cleaned between all test pit locations. The shallow test pits were then examined by the field technician for evidence of staining, incidental odors or other evidence of contamination. Soil samples from each location were collected from each associated test pit stockpile.

Representative portions of each soil sample were screened for the presence of organic vapors utilizing a PID to perform headspace analysis. A portion of each soil sample was placed into a new, plastic, sealable bag, shaken and kept at ambient temperature for approximately 15 minutes to allow for headspace organic vapors to develop, if present. The actual time allowed for headspace readings to develop for each sample varied and was influenced by field activities.

A total of 30 soil samples were collected for laboratory analysis. Soil samples for laboratory analysis were collected from the 0-2 foot and 2-4 foot intervals of 12 soil borings and samples from the six shallow test pits were collected from the 0-2 foot interval. Soil samples submitted for laboratory analysis were taken from each sampling location. The samples collected for chemical analysis were placed in laboratory supplied containers. A new pair of disposable nitrile gloves was always worn when handling the soil samples submitted for chemical analysis. The sample containers were immediately labeled and placed in a cooler with ice for temporary storage pending transportation to Test America's fixed-base laboratory for the specified analysis.

Test methods for all samples are specified in the laboratory report in Appendix C. A Chain of Custody form was completed, and is included with the laboratory report in Appendix C.

5. INVESTIGATION RESULTS

5.1 Subsurface Physical Conditions

Detailed soil descriptions are included in the AET geotechnical evaluation report with their soil boring logs attached in Appendix A. No evidence of staining, debris, or other signs of contamination were encountered during field activities. Groundwater was not encountered at the site.

5.2 Soil PID Headspace Results

Headspace measurements from soil borings and surface soil samples are given in Table 1. No elevated soil headspace readings (above 10.0 ppm) were encountered in the soil borings with readings ranging from 0.0 to 0.2 ppm.

5.3 Soil Analytical Results

Soil samples were collected and submitted for analysis of total lead. All soil results are presented in milligrams per kilogram (mg/kg). Based on the proposed industrial use of the property, soil analytical results were compared to their respective MPCA Commercial-Industrial Soil Reference Values (Com-Ind SRVs). Soil analytical results are summarized in Tables 2 and 3. A complete copy of the analytical results is included in Appendix C.

In summary, lead was identified in 24 of the 30 soil samples at concentrations ranging from 4.05 to 435 mg/kg. Lead was not detected at concentrations exceeding the MPCA Com-Ind SRV of 460 mg/kg in any of the soil samples analyzed.

5.4 QA/QC

Trip blanks for soil were included in the sample shipment during this investigation. A soil trip blank contains contaminant-free methanol. The blanks are prepared in the laboratory and travel in the cooler from the laboratory to the project site and then back to the laboratory. The blanks are kept closed during the site investigation. The purpose of the trip blanks is to ensure that if any contaminants were found in the actual samples that it would indeed be from site conditions. No detections were identified within the soil trip blank.

Due to the wide range of compounds associated with environmental analysis and a variety of matrices and procedures involved with EPA testing methods, it is very common for results to fall outside of established ranges; hence, the result being flagged with a qualifier. All data is valid and useable unless the laboratory report indicates that it is not useable or that it is "rejected."

6. CONCLUSIONS AND RECOMMENDATIONS

Based on the results of this Phase II investigation, Vieau Associates concludes the following:

- Lead was detected in 24 of the 30 soil samples at concentrations up to 435 mg/kg, below the Com-Ind SRV of 460 mg/kg. Based on the detected concentrations, it does not appear likely that significant remediation will be needed as part of the proposed redevelopment.

Prior investigations and assessments encountered piles of paint chips and waste blasting sand and while the majority was removed during prior remediation, the potential exists that such material will be encountered which may have elevated concentrations of lead. We recommend completing and submitting a Construction Contingency Plan (CCP) for MPCA approval prior to commencing redevelopment activities (e.g., earth moving activities, grading, etc.) on the subject property.

7. USER RELIANCE AND GENERAL REMARKS

This Phase II Investigation report is for the exclusive use of the McGough Development, LLC. No other party may rely on this report without the written authorization of Vieau Associates.

The environmental services performed by Vieau Associates have been conducted with that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its industry practicing in the same locality under similar budget and time constraints. No other warranty, expressed or implied, is made.

Sincerely,

Vieau Associates, a Division of GZA GeoEnvironmental, Inc.



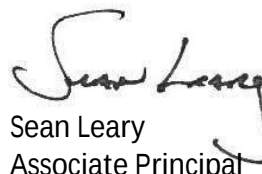
Jeremy Pavlish, PG
Senior Project Manager



Aubrey Dunshee
Scientist I



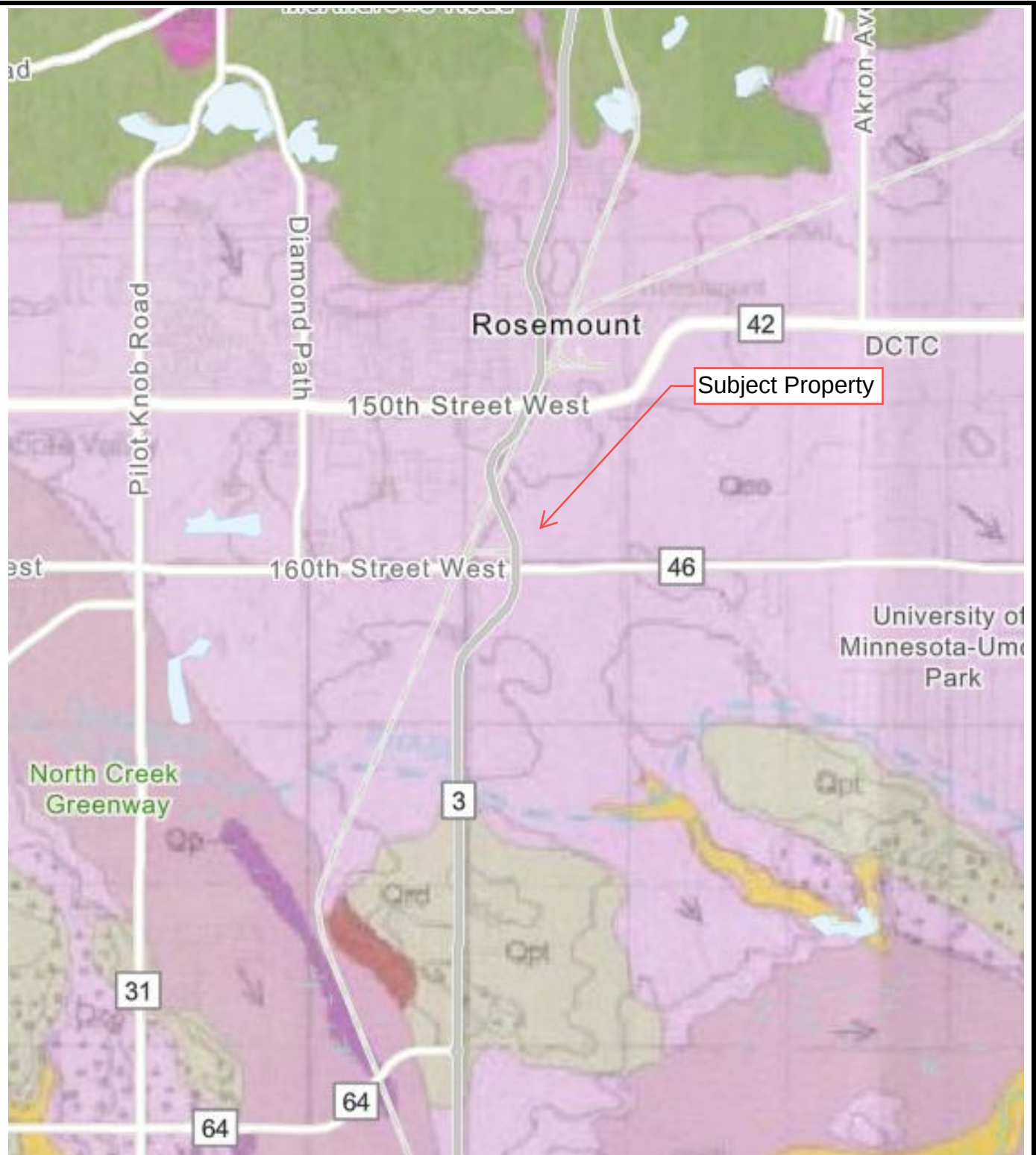
David Vieau, PG
Associate Principal



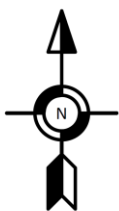
Sean Leary
Associate Principal

Attachments

FIGURES



Source: NGMDB MapView (Online Capture)



Subject Property Location

160th St. W. & S. Robert Trail
Rosemount, MN 55068





AMERICAN ENGINEERING TESTING, INC.	PROJECT Rosemount Industrial, County Road 46 and MN Highway 3, Rosemount, Minnesota			AET NO. P-0013733
	SUBJECT Boring Locations			DATE July 6, 2022
	SCALE As shown	DRAWN BY Google Earth	CHECKED BY RLF	FIGURE 1

TABLES

Table 1
Soil Boring PID Screening Results (ppm)

Sample ID	Sample Date	PID (ppm)	Sample ID	Sample Date	PID (ppm)
B-4 (0-2)	7/6/2022	0.0	B-13 (7-9)	7/5/2022	0.0
B-4 (2-4)	7/6/2022	0.0	B-13 (9.5-11.5)	7/5/2022	0.0
B-4 (4.5-6.5)	7/6/2022	0.0	B-13 (12-14)	7/5/2022	0.2
B-4 (7-9)	7/6/2022	NR	B-13 (14.5-16.5)	7/5/2022	0.0
B-4 (9.5-11.5)	7/6/2022	0.0	B-13 (19.5-21.5)	7/5/2022	0.0
B-4 (12-14)	7/6/2022	0.0	B-14 (0-2)	7/5/2022	0.0
B-4 (14.5-16.5)	7/6/2022	0.0	B-14 (2-4)	7/5/2022	0.0
B-4 (19.5-21.5)	7/6/2022	NR	B-14 (4.5-6.5)	7/5/2022	0.0
B-5 (0-2)	7/5/2022	0.0	B-14 (7-9)	7/5/2022	0.0
B-5 (2-4)	7/5/2022	0.0	B-14 (9.5-11.5)	7/5/2022	0.0
B-5 (4.5-6.5)	7/5/2022	0.0	B-14 (12-14)	7/5/2022	0.0
B-5 (7-9)	7/5/2022	0.0	B-14 (14.5-16.5)	7/5/2022	0.1
B-5 (9.5-11.5)	7/5/2022	0.0	B-14 (19.5-21.5)	7/5/2022	0.0
B-5 (12-14)	7/5/2022	NR	B-16 (0-2)	7/6/2022	0.0
B-5 (14.5-16.5)	7/5/2022	0.0	B-16 (2-4)	7/6/2022	0.0
B-5 (19.5-21.5)	7/5/2022	0.0	B-16 (4.5-6.5)	7/6/2022	0.0
B-9 (0-2)	7/5/2022	0.0	B-16 (7-9)	7/6/2022	0.0
B-9 (2-4)	7/5/2022	0.0	B-16 (9.5-11.5)	7/6/2022	0.0
B-9 (4.5-6.5)	7/5/2022	0.0	B-17 (0-2)	7/5/2022	0.2
B-9 (7-9)	7/5/2022	0.0	B-17 (2-4)	7/5/2022	0.1
B-9 (9.5-11.5)	7/5/2022	0.0	B-17 (4.5-6.5)	7/5/2022	0.0
B-9 (12-14)	7/5/2022	0.0	B-17 (7-9)	7/5/2022	0.0
B-9 (14.5-16.5)	7/5/2022	0.0	B-17 (9.5-11.5)	7/5/2022	0.0
B-9 (19.5-21.5)	7/5/2022	0.0	B-20 (0-2)	7/5/2022	0.0
B-13 (0-2)	7/5/2022	0.0	B-20 (2-4)	7/5/2022	0.0
B-13 (2-4)	7/5/2022	0.0	B-20 (4.5-6.5)	7/5/2022	0.0
B-13 (4.5-6.5)	7/5/2022	0.0	B-20 (7-9)	7/5/2022	0.0
			B-20 (9.5-11.5)	7/5/2022	0.0

NR	No Recovery
----	-------------

Table 2
Analytical Soil Boring Results (mg/kg)

Sample ID	B-4 (0-2)	B-4 (2-4)	B-5 (0-2)	B-5 (2-4)	B-7 (0-2)	B-7 (2-4)	B-8 (0-2)	B-8 (2-4)	B-9 (0-2)	B-9 (2-4)	Tier II Soil Reference Values
Sample Date	7/6/2022	7/6/2022	7/5/2022	7/5/2022	7/7/2022	7/7/2022	7/7/2022	7/7/2022	7/5/2022	7/5/2022	
PID	0	0.0	0.0	0.0	NA	NA	NA	NA	0.0	0.0	
Lead	13.9	8.73	48.2	8.73	14.3	10.7	15.4	15.2	ND	22.2	460

ND = Not Detected
NA = Not Analyzed
Exceeds Regulatory Criteria

Table 2 Continued
Analytical Soil Boring Results (mg/kg)

Sample ID	B-12 (0-2)	B-12 (2-4)	B-13 (0-2)	B-13 (2-4)	B-14 (0-2)	B-14 (2-4)	B-16 (0-2)	B-16 (2-4)	B-17 (0-2)	B-17 (2-4)	Tier II Soil Reference Values
Sample Date	7/7/2022	7/7/2022	7/5/2022	7/5/2022	7/5/2022	7/5/2022	7/6/2022	7/6/2022	7/5/2022	7/5/2022	
PID	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	
Lead	4.05	ND	19.7	15.1	12.3	ND	16.7	7.46	435	5.72	460

ND = Not Detected
NA = Not Analyzed
Exceeds Regulatory Criteria

Table 2 Continued
Analytical Soil Boring Results (mg/kg)

Sample ID	B-19 (0-2)	B-19 (2-4)	B-20 (0-2)	B-20 (2-4)	Tier II Soil Reference Values
Sample Date	7/7/2022	7/7/2022	7/5/2022	7/5/2022	
PID	NA	NA	0.0	0.0	
Lead	15.5	ND	4.35	ND	460

ND = Not Detected
NA = Not Analyzed
Exceeds Regulatory Criteria

Table 3
Test Pit Analytical Results (mg/kg)

Sample ID Sample Date PID	TP-1 7/6/2022 0.0	TP-2 7/6/2022 0.0	TP-3 7/6/2022 0.0	TP-4 7/6/2022 0.0	TP-5 7/6/2022 0.0	TP-6 7/6/2022 0.0	Tier II Soil Reference Values
Lead	ND	10.5	142	32.8	146	23.3	460

ND = Not Detected
Exceeds Regulatory Criteria

APPENDIX A



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-1 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 955.4		LATITUDE: 44.7208		LONGITUDE: -93.1273							
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly slightly organic sandy lean clay, trace roots, black and brown	FILL	6	M	SS	9	20				
2	FILL, mixture of sandy lean clay and silty sand, a little gravel, brown		7	M	SS	10	21				
3											
4											
5	SAND, a little gravel, fine grained, light brown, moist, medium dense (SP)	COARSE ALLUVIUM	19	M	SS	14					
6											
7											
8				23	M	SS	14				
9											
10	SAND WITH GRAVEL, fine grained, light brown, moist, dense (SP)			31	M	SS	12				
11											
12	SAND, a little gravel, fine grained, brown, moist, dense (SP) (possible cobbles)			46	M	SS	13				
13											
14											
15	SAND WITH GRAVEL, fine to medium grained, brown, moist, medium dense (SP)		16	M	SS	11					
16											
17											
18											
19											
20	SAND, a little gravel, fine grained, light brown, moist, dense (SP)		38	M	SS	15					
21	END OF BORING										

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/7/22	9:25	21.0	19.5	21.0		None	
BORING COMPLETED: 7/7/22									
DR: SD LG: AG Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-10 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 955.0		LATITUDE: 44.7208			LONGITUDE: 93.1284						
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly slightly organic sandy lean clay, trace roots, black and brown	FILL	7	M	SS	11	20				
2	FILL, mixture of gravelly sand with silt and slightly organic sandy lean clay, trace roots, grayish brown and dark brown		18	M	SS	8	21				
3											
4	SAND WITH GRAVEL, fine grained, light brown, very dense to medium dense (SP)	COARSE ALLUVIUM	57	M	SS	10					
5											
6											
7											
8											
9	SAND, a little gravel, fine grained, light brown, moist, medium dense (SP)		36	M	SS	15					
10											
11											
12	SAND, a little gravel, fine grained, light brown, moist, medium dense (SP)		20	M	SS	15					
13											
14											
15	SAND WITH GRAVEL, fine to medium grained, light brown to brown, moist, dense (SP)		41	M	SS	14					
16											
17											
18	GRAVELLY SAND, fine to medium grained, brown, moist, dense (SP)		36	M	SS	11					
19											
20											
21	END OF BORING										

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/7/22	11:06	21.0	19.5	21.0		None	
BORING COMPLETED: 7/7/22									
DR: SD LG: AG Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: **P-0014270** LOG OF BORING NO. **B-11 (p. 1 of 1)**
 PROJECT: **Rosemount Industrial; 30XX 160th Street West; Rosemount, MN**
 SURFACE ELEVATION: **950.6** LATITUDE: **44.7201** LONGITUDE: **-93.1285**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
							WC	DEN	LL	PL	%-#200		
1	FILL, mostly silt, a little gravel, trace roots, brown	FILL	26	M		SS	20						
2	FILL, mostly sand with silt, a little silt and gravel, brown												
3	SAND, a little gravel, fine to medium grained, brown, moist, medium dense to dense to medium dense to dense (SP)	COARSE ALLUVIUM	20	M		SS	15						
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													GRAVELLY SAND, fine to medium grained, light brown, moist, dense (SP)
16													
17													
18													
19													
20													
21													
END OF BORING													

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	7/1/22	10:45	21.5	19.5	21.5		None	
BORING COMPLETED: 7/1/22									
DR: SD LG: AG Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: **P-0014270** LOG OF BORING NO. **B-12 (p. 1 of 1)**
 PROJECT: **Rosemount Industrial; 30XX 160th Street West; Rosemount, MN**
 SURFACE ELEVATION: **951.9** LATITUDE: **44.7195** LONGITUDE: **-93.1285**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly sand with silt with gravel, trace roots, grayish brown	FILL	21	M	SS	17					
2	FILL, mostly sand, a little clayey sand with gravel, brown		31	M	SS	15					
3	FILL, mostly clayey sand with gravel, brown										
4											
5	FILL, mostly lean clay, trace roots, brown		13	M	SS	9					
6											
7	FILL, mostly lean clay, brown		8	M	SS	14					
8											
9											
10	FILL, mixture of silty sand and clayey sand, a little gravel, brown	COARSE ALLUVIUM	9	M	SS	15					
11	SILTY SAND, a little gravel, fine to medium grained, brown, moist, loose (SM)										
12	SAND WITH SILT, fine to medium grained, brown, moist, loose (SP-SM)		7	M	SS	14					
13											
14											
15			7	M	SS	14					
16											
17	GRAVELLY SILTY SAND, medium grained, dark brown, moist, loose (SM)		5	W	SS	1					
18											
19											
20	SAND WITH SILT, a little gravel, brown, moist, loose (SP-SM)		6	M	SS	22					
21	SAND, a little gravel, medium grained, brown, moist, loose (SP)										
END OF BORING											

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/1/22	1:47	18.5	17.0	18.1		None	
		7/1/22	1:58	21.5	19.5	21.3		None	
BORING COMPLETED: 7/1/22									
DR: SD LG: AG Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: **P-0014270** LOG OF BORING NO. **B-13 (p. 1 of 1)**
 PROJECT: **Rosemount Industrial; 30XX 160th Street West; Rosemount, MN**
 SURFACE ELEVATION: **952.1** LATITUDE: **44.7188** LONGITUDE: **-93.1284**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mixture of silty sand and clayey sand, a little gravel, trace roots, brown and dark brown	FILL	24	M		SS	18	16				
2	FILL, mostly clayey sand, brown and dark brown		18	M		SS	18	18				
3												
4												
5	FILL, mixture of clayey sand and sand, trace roots, brown		19	M		SS	18	16				
6												
7	SAND WITH GRAVEL, fine to medium grained, light brown, moist, dense (SP)		COARSE ALLUVIUM	50	M		SS	18				
8												
9												
10	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP)		COARSE ALLUVIUM	23	M		SS	18				
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21	25	M		SS	18							
END OF BORING												

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/5/22	1:20	21.5	19.5	21.3		None	
BORING COMPLETED: 7/5/22									
DR: SD LG: DA Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-14 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 952.2		LATITUDE: 44.7181			LONGITUDE: -93.1284						
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mixture of silty sand and sandy lean clay, a little gravel, dark brown	FILL	16	M	SS	18	21				
2	FILL, mixture of sand and clayey sand, a little gravel, brown		13	M	SS	16	12				
3											
4											
5	FILL, mostly sand, a little silty sand with gravel, light brown, possible cobbles			50/.3	M	SS	10				
6											
7											
8	FILL, mostly sand with gravel, light brown		33	M	SS	16					
9											
10											
11	SAND, a little gravel, fine to medium grained, brown, moist, medium dense (SP)	COARSE ALLUVIUM	20	M	SS	18					
12											
13											
14											
15											
16											
17											
18											
19											
20											
21			28	M	SS	16					
END OF BORING											
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG		
0-19½' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL			
		7/5/22	12:25	21.5	19.5	20.3		None			
BORING COMPLETED: 7/5/22											
DR: SD LG: DA Rig: 96											

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-15 (p. 1 of 1)													
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN															
SURFACE ELEVATION: 951.7		LATITUDE: 44.721			LONGITUDE: -93.1265										
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS								
							WC	DEN	LL	PL	%-#200				
1	FILL, mostly slightly organic sandy lean clay, trace roots, dark brown and brown	FILL	10	M		SS	16	19							
2															
3															
4															
5	SAND, a little gravel, fine grained, brown, moist, medium dense (SP)		22	M		SS	12								
6															
7	SAND, a little gravel, fine to medium grained, brown, moist, medium dense, laminations of sandy lean clay from 9.5' to 11.5' (SP)		14	M		SS	18								
8															
9															
10															
11			20	M		SS	5								
END OF BORING															

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-9½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/7/22	8:43	11.5	9.5	11.5		None	
BORING COMPLETED: 7/7/22									
DR: SD LG: AG Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22

SUBSURFACE BORING LOG



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-18 (p. 1 of 1)												
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN														
SURFACE ELEVATION: 953.2		LATITUDE: 44.7208			LONGITUDE: -93.1295									
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS							
							WC	DEN	LL	PL	%-#200			
1	FILL, mostly silty sand with organic fines, a little gravel, trace roots, dark brown	FILL	24	M	SS	14								
2	FILL, mixture of sand and sandy lean clay with gravel, brown		25	M	SS	16								
3														
4														
5	SILTY SAND, a little gravel, fine to medium grained, brown, moist, medium dense, laminations of clayey sand (SM)	COARSE ALLUVIUM	11	M	SS	12								
6			60	M	SS	18								
7	SAND WITH SILT, a little gravel, fine to medium grained, brown, moist, very dense to dense, laminations of clayey sand (SP-SM)													
8														
9			32	M	SS	17								
10														
11	END OF BORING													

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-9½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/6/22	1:23	11.0	9.5	11.0		None	
BORING COMPLETED: 7/6/22									
DR: SD LG: AG Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-19 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 949.8		LATITUDE: 44.7196			LONGITUDE: -93.129						
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with organic fines, a little gravel with roots, dark brown	FILL	21	M		SS	22				
2	FILL, mostly silty sand with organic fines, a little gravel, trace roots, dark brown										
3	FILL, mixture of silty sand and clayey sand, a little gravel, brown										
4											
5	FILL, mostly clayey sand, a little gravel, trace roots, dark brown										
6		FILL	40	M		SS	17	13			
7											
8	FILL, mostly silty sand with gravel, dark brown										
9											
10	FILL, mostly silty sand, a little clayey sand with gravel, dark brown										
11		FILL	8	M		SS	13				
		FILL	14	M		SS	20				
END OF BORING											

DEPTH: 0-9½' DRILLING METHOD: 3.25" HSA		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/1/22	9:48	11.5	9.5	11.5		None	
BORING COMPLETED: 7/1/22									
DR: SD LG: AG Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-2 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 953.6		LATITUDE: 44.7201		LONGITUDE: -93.1273							
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly slightly organic silt, trace roots, brown	FILL	9	M	SS	15	18				
2	FILL, mixture of slightly organic sandy lean clay and sand with silt, trace roots, dark brown and brown		5	M	SS	3	19				
3											
4											
5	GRAVELLY SAND, fine to medium grained, light brown, moist, dense (SP)	COARSE ALLUVIUM	40	M	SS	14					
6											
7	SAND, fine grained, light brown, medium dense (SP)		17	M	SS	15					
8											
9											
10	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense to very dense (SP) (possible cobbles below 15')		27	M	SS	19					
11											
12											
13			28	M	SS	18					
14											
15		58	M	SS	5						
16											
17											
18											
19											
20	GRAVELLY SAND, fine to medium grained, light brown, moist, very dense (SP)		53	M	SS	9					
21	END OF BORING										

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/6/22	12:40	21.0	19.5	21.0		None	
BORING COMPLETED: 7/6/22									
DR: SD LG: AG Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-20 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 952.1		LATITUDE: 44.7185			LONGITUDE: -93.1289						
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mixture of sand (highly weathered sandstone) and silt sand with organic fines and roots, light brown to dark brown	FILL	12	M	SS	18					
2	FILL, mixture of clayey sand and silty sand, a little gravel, trace roots, dark brown, possible cobbles		52	M	SS	18	6				
3											
4	FILL, mostly clayey sand, a little gravel, trace roots, brown		26	M	SS	18					
5											
6	FILL, mostly clayey sand, a little gravel, brown	16	M	SS	16	10					
7											
8											
9	FILL, mostly clayey sand with gravel, dark brown	9	M	SS	16	15					
10											
11	END OF BORING										

DEPTH: 0-9½' DRILLING METHOD: 3.25" HSA		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/5/22	2:10	11.5	9.5	11.0		None	
BORING COMPLETED: 7/5/22									
DR: SD LG: DA Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-3 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 951.1		LATITUDE: 44.7195			LONGITUDE: -93.1273						
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with organic fines, trace roots, black	FILL	10	M	SS	10					
2	FILL, mostly sandy lean clay, trace roots, dark brown		7	M	SS	14	18				
3											
4											
5	FILL, mostly sandy lean clay, a little gravel, brown			9	M	SS	14	17			
6	FILL, mixture of sand and silty sand, a little gravel, light brown and dark brown										
7	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense to dense (SP)	COARSE ALLUVIUM									
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21	END OF BORING										

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/6/22	11:25	21.0	19.5	21.0		None	
BORING COMPLETED: 7/6/22									
DR: SD LG: AG Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-4 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 951.5		LATITUDE: 44.7188			LONGITUDE: -93.1273						
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly sandy lean clay, a little gravel, trace roots and pieces of metal, black and brown	FILL	10	M		17	17				
2											
3											
4											
5	FILL, mostly silty sand, a little gravel, brown, possible cobbles		14	M		22					
6											
7											
8											
9			55	M		5					
10											
11											
12											
13	SAND, fine to medium grained, light brown, moist, medium dense (SP)	COARSE ALLUVIUM	11	M		18					
14											
15											
16											
17	SAND WITH GRAVEL, fine to medium grained, light brown, moist, dense (SP) (possible cobbles)		50	M		15					
18											
19											
20											
21	SAND, a little gravel, fine to medium gained, light brown and brown, moist, dense (SP)		33	M		19					
22											
23											
24											
END OF BORING											
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG		
0-19½' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL			
		7/6/22	9:40	21.5	19.5	21.5		None			
BORING COMPLETED: 7/6/22											
DR: SD LG: AG Rig: 96											

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-5 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 953.1		LATITUDE: 44.7182			LONGITUDE: -93.1273						
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with organic fines, a little gravel, trace roots, dark brown	FILL	25	M	SS	16					
2	FILL, mostly clayey sand, a little gravel, trace roots, brown		13	M	SS	18	16				
3											
4											
5	SAND WITH GRAVEL, fine to medium grained, brown, moist, dense (SP)	COARSE ALLUVIUM	39	M	SS	18					
6											
7											
8	SAND, a little gravel, fine to medium grained, brown, moist, dense to medium dense (SP)		39	M	SS	18					
9											
10											
11											
12											
13	GRAVELLY SAND, medium grained, brown, moist, medium dense (SP)		24	M	SS	1					
14											
15	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense (SP)		30	M	SS	16					
16											
17											
18											
19											
20	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP)		22	M	SS	18					
21											
END OF BORING											

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/5/22	10:15	21.5	19.5	20.1		None	
BORING COMPLETED: 7/5/22									
DR: SD LG: DA Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-6 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 954.1		LATITUDE: 44.7205			LONGITUDE: -93.1279						
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly slightly organic sandy lean clay, trace roots, black and dark brown	FILL	7	M	SS	11	18				
2											
3											
4											
5	SAND WITH GRAVEL, fine to medium grained, brown, moist, dense (SP)	COARSE ALLUVIUM	35	M	SS	14					
6											
7											
8											
9	SAND, fine grained, light brown, moist, medium dense to dense (SP)		29	M	SS	17					
10											
11											
12											
13	SAND WITH GRAVEL, fine grained, light brown, moist, dense (SP)		50	M	SS	16					
14											
15											
16											
17	SAND WITH GRAVEL, fine to medium grained, light brown, moist, dense to very dense (SP) (possible cobbles)		31	M	SS	12					
18											
19											
20											
21	END OF BORING		60	M	SS	8					

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/7/22	10:16	21.0	19.5	21.0		None	
BORING COMPLETED: 7/7/22									
DR: SD LG: AG Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-7 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 952.6		LATITUDE: 44.7198			LONGITUDE: -93.1279						
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly sand with silt, with organic fines and gravel, trace roots, dark brown	FILL	9	M		14	22				
	FILL, mostly organic lean clay, black										
2											
3	FILL, mostly slightly organic sandy lean clay, brown										
4		COARSE ALLUVIUM	7	M		9	23				
5	SAND WITH GRAVEL, fine to medium grained, brown, moist, medium dense (SP)										
6											
7											
8	SAND, a little gravel, medium grained, brown, moist, medium dense (SP)										
9											
10											
11											
12											
13	SAND, medium grained, brown, moist, medium dense (SP)										
14		COARSE ALLUVIUM	15	M		15					
15	GRAVELLY SAND, fine to medium grained, brown, moist, dense to very dense (SP) (possible cobbles)										
16											
17											
18											
19											
20											
21											
21	END OF BORING										

DEPTH: 0-19½'		DRILLING METHOD: 3.25" HSA		WATER LEVEL MEASUREMENTS					NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/1/22	11:31	21.0	19.5	21.0		None	
BORING COMPLETED: 7/1/22									
DR: SD LG: AG Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-8 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 953.8		LATITUDE: 44.7191		LONGITUDE: -93.1279							
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly gravelly silty sand, trace roots, gray and brown	FILL	16	M	SS	20					
2	FILL, mostly silt, trace roots, dark brown										
3											
4			12	M	SS	12					
5	LEAN CLAY, trace roots, dark brown, firm (CL)	FINE ALLUVIUM	7	M	SS	10	22				
6											
7	SAND, a little gravel, fine to medium grained, brown, moist, medium dense (SP)	COARSE ALLUVIUM	26	M	SS	14					
8											
9											
10			20	M	SS	13					
11											
12	SAND WITH GRAVEL, fine to medium grained, brown, moist, medium dense (SP)		23	M	SS	12					
13											
14											
15	SAND, a little gravel, fine to medium grained, brown, moist, medium dense to loose (SP)		27	M	SS	14					
16											
17											
18											
19											
20			7	M	SS	15					
21	END OF BORING										

DEPTH: 0-19½'		DRILLING METHOD: 3.25" HSA		WATER LEVEL MEASUREMENTS					NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/1/22	12:57	21.0	19.5	21.0		None	
BORING COMPLETED: 7/1/22									
DR: SD LG: AG Rig: 96									

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22



SUBSURFACE BORING LOG

AET JOB NO: P-0014270		LOG OF BORING NO. B-9 (p. 1 of 1)									
PROJECT: Rosemount Industrial; 30XX 160th Street West; Rosemount, MN											
SURFACE ELEVATION: 952.6		LATITUDE: 44.7185			LONGITUDE: -93.1279						
DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little slightly organic clayey sand with gravel, trace roots, dark brown	FILL	47	M	SS	18					
2	FILL, mostly silty sand with gravel, trace roots, dark brown, possible cobbles		56/5	M	SS	2	10				
3											
4	FILL, mixture of clayey sand and sand, a little gravel, brown to dark brown		25	M	SS	18	24				
5											
6	SAND, a little gravel, fine to medium grained, brown, moist, medium dense to loose to medium dense (SP)	COARSE ALLUVIUM	30	M	SS	16	26				
7											
8											
9											
10											
11											
12											
13											
14											
15											
16	22	M	SS	18	11						
17											
18											
19											
20											
21	22	M	SS	18							
22											
END OF BORING											
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG		
0-19½' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL			
		7/5/22	11:10	21.5	19.5	20.1		None			
BORING COMPLETED: 7/5/22											
DR: SD LG: DA Rig: 96											

AET CORP W-LAT-LONG P-0014270.GPJ AET-CPT+WELL.GDT 7/21/22

APPENDIX B

Preparation

Soil samples are screened for organic vapors with a photoionization detector (PID) equipped with a 10.6 eV or 11.7 eV lamp. When in use, the photoionization detector (PID) is calibrated daily, or more frequently if necessary. Following on-screen prompts, the MiniRAE 2000 PID is first zeroed in ambient air and then calibrated for a direct equivalent reading of parts per million (ppm) benzene using a calibration gas consisting of 100 ppm isobutylene. The PID probe is connected to a calibration-gas cylinder by a flexible tube and after allowing the gas to flow through the instrument for 30 seconds, automatically calibrates to the known gas. Calibration dates and notes are recorded in a log book.

Soil Organic Vapor Screening

Organic vapor concentrations are recorded in fresh soil samples using a head space method set forth by the Minnesota Pollution Control Agency (MPCA). Using this method, organic vapors generated from the soil sample are allowed to collect in the head space of a sealed container and then the head-space concentrations are measured with a PID. Fresh soil sample is placed in a sealable quart-size polyethylene bag and then the bag is immediately sealed. Enough sample is placed in the bag to provide a 1:1 volume ratio of soil to air. Soil clumps are manually broken up within the bag. Organic vapors are allowed to develop in the headspace for at least 15 minutes at room temperature; during cold weather, head space readings are taken in a heated space. The bag is vigorously shaken for 15 seconds both at the beginning and end of the head-space development period. The bag is then unsealed enough to insert the PID probe to a point about one half of the head-space depth and the reading is recorded on the field logs.

Soil Classification

As the samples are obtained in the field, they are visually and manually classified by a Vieau representative in general accordance with ASTM D2488 and the soil samples are examined for evidence of staining, incidental odors or other apparent signs of contamination. Representative portions of the samples are then returned to Vieau's office in the event there is need for further examination and verification of the field classification. The classification of soil samples are recorded on logs.

Documentation

Field logs include a description of grain size, color, soil type, odors, debris, staining, or other notable features. The field logs also include any notes on problems with the PID or other field screening equipment or deviations from the scope of work. Soil sample number, date, employees and contractors on site, final depths, identification of the various strata, and pertinent information regarding the method of collecting the samples are recorded on field logs. The locations of the samples and any notable features are depicted on the site figure while in the field.

Sample Collection

Soil samples submitted for chemical analysis are collected using new, disposable sampling tools. If disposable tools are not available, dedicated or decontaminated sampling tools are utilized. A new pair of disposable nitrile gloves is worn when handling the soil samples targeted for chemical analysis. Unless otherwise specified, soil samples collected for laboratory analysis are “discrete” samples which represent soil at a specific location and depth. Composite samples are prepared by collecting subsamples from multiple intervals in a profile or across several sample locations to obtain an average contaminant concentration. The subsamples are combined in equal amounts in a clean, stainless-steel mixing bowl and mixed until a homogenous sample is obtained. Due to volatility of the chemicals of concern, composite sampling is not appropriate for volatile organic compound (VOC), gasoline range organics (GRO), diesel range organics (DRO), semi-volatile organic compounds (SVOC), or polycyclic aromatic hydrocarbons (PAH) analysis.

In general accordance with Minnesota Pollution Control Agency (MPCA) guidelines, following collection of headspace samples from push probes, the soils remaining in the dedicated plastic liner are covered and placed away from vehicles. Headspace readings are collected and recorded following the guidance set forth by the MPCA. Soil samples for VOC or petroleum chemical analysis are generally taken from the depth interval of each probe that exhibits the highest PID reading, from areas of obvious chemical staining, near the water table or from the base of the probe.

Discrete soil samples for VOC or GRO analysis are collected with a new, disposable Terra Core® sampler with the 10 gram (g) capacity following the steps set forth in the En Novative Technologies, Inc. document entitled “Recommended Use of the Terra Core®.” Following the document, a 40ml VOA vial containing methanol preservative is placed on a field scale and the tare button is pressed to give a 0g reading. With the plunger seated in the handle, the Terra Core® is pressed into freshly exposed soil from the dedicated plastic liner until the sample chamber is filled. Any excess soil or debris is wiped off the Terra Core® sampler. The soil plug should be flush with the mouth of the sampler and any excess soil that extends beyond the mouth of the sampler is removed. The plunger that was seated in the handle top is rotated 90° until it is aligned with the slots in the body. The mouth of the sampler is placed into the 40ml VOA vial containing the appropriate preservative and the sample is extruded by pushing the plunger down. The weight of the sample is verified at $\pm 10g$, and then the lid is quickly placed back on the 40ml VOA vial. Any soil or debris that may have adhered to the threads of the vial is removed prior to screwing the cap back on the vial.

Soil samples for DRO analysis are collected using laboratory furnished 4 ounce (oz) jars with no preservative. The open jar is placed on the field scale and fresh soil from the depth exhibiting the highest PID reading is collected from the dedicated plastic liner using the Terra Core® and placed into the jar. Three soil plugs are placed into the jar which will be 25g-35g of soil and then the jar is immediately closed to prevent volatilization of the sample. Prior to sealing the jar, the threads are wiped off to remove any foreign matter that might prevent the jar from closing tightly.

Soil samples for PAH, SVOC, polychlorinated biphenyls (PCB), and metals analysis are collected using laboratory furnished 4oz jars with no preservative. The jars are completely filled with fresh

soil from the dedicated plastic liner from the desired sample depth. Prior to sealing the jar, the threads are wiped off to remove any foreign matter that might prevent the jar from closing tightly.

Soil samples for other analytical methods should follow the specified methodology set for by the laboratory and by the methods and procedures set forth by the specific analytical method. Laboratory provided jars should be used for all sampling events.

Additional soil samples will be collected from each interval and/or location and sampled for Dry Weight analysis. The samples are collected using laboratory furnished 8oz jars with no preservative. The jars are completely filled with fresh soil from the dedicated plastic liner from the desired sample depth. Prior to sealing the jar, the treads are wiped off to remove any foreign matter that might prevent the jar from closing tightly.

Once the samples are collected, the labeled jars are placed in a cooler with ice, chilled to approximately 4 degrees Celsius, and delivered to the laboratory via overnight or express service. The soil samples are kept out of direct sunlight. Where required, trip blanks are transported with the samples. Sample containers shipped to the laboratory are labeled with the work order number, sample number, date sampled, preservatives, and initials of the individual sampler.

Documentation

A chain-of-custody form is completed and accompanies the samples to the laboratory. Information on the chain-of-custody form includes the project name and number, the sampling company, the sampler name and signature, the sample number, the date and time the sample was collected, the sample location, the analyses required, the preservation method, the number of containers, the sample matrix, the date the samples are shipped or delivered, and signatures/dates/times showing by whom and when the samples are relinquished and received. Upon arrival at the laboratory, the samples are checked in and signed over to the appropriate laboratory personnel. A copy of the chain-of-custody form is retained and returned to the Vieau Project Manager. For samples delivered to a Contract Laboratory Program (CLP), all CLP requirements are followed.

APPENDIX C

ANALYTICAL REPORT

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-235628-1

Client Project/Site: Rosemount Vacant Land

For:

Vieau Associates
7505 Metro Boulevard
Suite 300
Minneapolis, Minnesota 55439

Attn: Mr. Jeremy Pavlish



Authorized for release by:
7/19/2022 1:56:56 PM

Zach Bindert, Project Manager I
(319)277-2401
Zach.Bindert@et.eurofinsus.com

LINKS

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results through



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www.eurofinsus.com/Env

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

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Job ID: 310-235628-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-235628-1

Comments

No additional comments.

Receipt

The samples were received on 7/12/2022 1:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.1° C and 1.8° C.

Metals

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

General Chemistry

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

Sample Summary

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-235628-1	B-16 (0-2)	Solid	07/06/22 13:50	07/12/22 13:30
310-235628-2	B-16 (2-4)	Solid	07/06/22 13:55	07/12/22 13:30
310-235628-3	B-4 (0-2)	Solid	07/06/22 13:40	07/12/22 13:30
310-235628-4	B-4 (2-4)	Solid	07/06/22 13:45	07/12/22 13:30
310-235628-5	B-13 (0-2)	Solid	07/05/22 13:25	07/12/22 13:30
310-235628-6	B-13 (2-4)	Solid	07/05/22 13:30	07/12/22 13:30
310-235628-7	B-9 (0-2)	Solid	07/05/22 11:15	07/12/22 13:30
310-235628-8	B-9 (2-4)	Solid	07/05/22 11:20	07/12/22 13:30
310-235628-9	B-5 (0-2)	Solid	07/05/22 10:15	07/12/22 13:30
310-235628-10	B-5 (2-4)	Solid	07/05/22 10:20	07/12/22 13:30
310-235628-11	B-17 (0-2)	Solid	07/05/22 09:10	07/12/22 13:30
310-235628-12	B-17 (2-4)	Solid	07/05/22 09:15	07/12/22 13:30
310-235628-13	B-20 (0-2)	Solid	07/05/22 14:20	07/12/22 13:30
310-235628-14	B-20 (2-4)	Solid	07/05/22 14:25	07/12/22 13:30
310-235628-15	B-14 (0-2)	Solid	07/05/22 12:30	07/12/22 13:30
310-235628-16	B-14 (2-4)	Solid	07/05/22 12:35	07/12/22 13:30
310-235628-17	TP-1	Solid	07/06/22 13:05	07/12/22 13:30
310-235628-18	TP-2	Solid	07/06/22 13:07	07/12/22 13:30
310-235628-19	TP-3	Solid	07/06/22 13:09	07/12/22 13:30
310-235628-20	TP-4	Solid	07/06/22 13:10	07/12/22 13:30
310-235628-21	TP-5	Solid	07/06/22 13:12	07/12/22 13:30
310-235628-22	TP-6	Solid	07/06/22 13:15	07/12/22 13:30
310-235628-23	B-12 (0-2)	Solid	07/07/22 14:00	07/12/22 13:30
310-235628-24	B-12 (2-4)	Solid	07/07/22 14:05	07/12/22 13:30
310-235628-25	B-19 (0-2)	Solid	07/07/22 13:55	07/12/22 13:30
310-235628-26	B-19 (2-4)	Solid	07/07/22 13:57	07/12/22 13:30
310-235628-27	B-8 (0-2)	Solid	07/07/22 13:50	07/12/22 13:30
310-235628-28	B-8 (2-4)	Solid	07/07/22 13:52	07/12/22 13:30
310-235628-29	B-7 (0-2)	Solid	07/07/22 13:40	07/12/22 13:30
310-235628-30	B-7 (2-4)	Solid	07/07/22 13:45	07/12/22 13:30

Detection Summary

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-16 (0-2)

Lab Sample ID: 310-235628-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	16.7		4.74		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: B-16 (2-4)

Lab Sample ID: 310-235628-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	7.46		4.45		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: B-4 (0-2)

Lab Sample ID: 310-235628-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	13.9		4.60		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: B-4 (2-4)

Lab Sample ID: 310-235628-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	10.6		5.10		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: B-13 (0-2)

Lab Sample ID: 310-235628-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	19.7		4.27		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: B-13 (2-4)

Lab Sample ID: 310-235628-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	15.1		4.90		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: B-9 (0-2)

Lab Sample ID: 310-235628-7

No Detections.

Client Sample ID: B-9 (2-4)

Lab Sample ID: 310-235628-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	22.2		7.87		mg/Kg	2	✱	6010D	Total/NA

Client Sample ID: B-5 (0-2)

Lab Sample ID: 310-235628-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	48.2		4.22		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: B-5 (2-4)

Lab Sample ID: 310-235628-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	8.73		4.41		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: B-17 (0-2)

Lab Sample ID: 310-235628-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	435		7.83		mg/Kg	2	✱	6010D	Total/NA

Client Sample ID: B-17 (2-4)

Lab Sample ID: 310-235628-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	5.72		4.36		mg/Kg	1	✱	6010D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-20 (0-2)

Lab Sample ID: 310-235628-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	4.35		3.85		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: B-20 (2-4)

Lab Sample ID: 310-235628-14

No Detections.

Client Sample ID: B-14 (0-2)

Lab Sample ID: 310-235628-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	12.3		7.93		mg/Kg	2	✱	6010D	Total/NA

Client Sample ID: B-14 (2-4)

Lab Sample ID: 310-235628-16

No Detections.

Client Sample ID: TP-1

Lab Sample ID: 310-235628-17

No Detections.

Client Sample ID: TP-2

Lab Sample ID: 310-235628-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	10.5		3.99		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: TP-3

Lab Sample ID: 310-235628-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	142		4.89		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: TP-4

Lab Sample ID: 310-235628-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	32.8		4.67		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: TP-5

Lab Sample ID: 310-235628-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	146		8.10		mg/Kg	2	✱	6010D	Total/NA

Client Sample ID: TP-6

Lab Sample ID: 310-235628-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	23.3		4.31		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: B-12 (0-2)

Lab Sample ID: 310-235628-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	4.05		3.77		mg/Kg	1	✱	6010D	Total/NA

Client Sample ID: B-12 (2-4)

Lab Sample ID: 310-235628-24

No Detections.

Client Sample ID: B-19 (0-2)

Lab Sample ID: 310-235628-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	15.5		4.47		mg/Kg	1	✱	6010D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-19 (2-4)

Lab Sample ID: 310-235628-26

No Detections.

Client Sample ID: B-8 (0-2)

Lab Sample ID: 310-235628-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	15.4		3.97		mg/Kg	1	✳	6010D	Total/NA

Client Sample ID: B-8 (2-4)

Lab Sample ID: 310-235628-28

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	15.2		4.15		mg/Kg	1	✳	6010D	Total/NA

Client Sample ID: B-7 (0-2)

Lab Sample ID: 310-235628-29

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	14.3		4.64		mg/Kg	1	✳	6010D	Total/NA

Client Sample ID: B-7 (2-4)

Lab Sample ID: 310-235628-30

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	10.7		9.06		mg/Kg	2	✳	6010D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-16 (0-2)

Lab Sample ID: 310-235628-1

Date Collected: 07/06/22 13:50

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	16.7		4.74		mg/Kg	☼	07/14/22 09:30	07/18/22 11:50	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.3		0.1		%			07/13/22 15:28	1
Percent Solids	82.7		0.1		%			07/13/22 15:28	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-16 (2-4)

Lab Sample ID: 310-235628-2

Date Collected: 07/06/22 13:55

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	7.46		4.45		mg/Kg	☼	07/14/22 09:30	07/18/22 18:48	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	12.9		0.1		%			07/13/22 15:28	1
Percent Solids	87.1		0.1		%			07/13/22 15:28	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-4 (0-2)

Lab Sample ID: 310-235628-3

Date Collected: 07/06/22 13:40

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	13.9		4.60		mg/Kg	☼	07/14/22 09:30	07/18/22 18:50	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.7		0.1		%			07/13/22 15:28	1
Percent Solids	84.3		0.1		%			07/13/22 15:28	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-4 (2-4)

Lab Sample ID: 310-235628-4

Date Collected: 07/06/22 13:45

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	10.6		5.10		mg/Kg	☼	07/14/22 09:30	07/18/22 18:52	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.2		0.1		%			07/13/22 15:28	1
Percent Solids	83.8		0.1		%			07/13/22 15:28	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-13 (0-2)

Lab Sample ID: 310-235628-5

Date Collected: 07/05/22 13:25

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	19.7		4.27		mg/Kg	☼	07/14/22 09:30	07/18/22 18:58	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.6		0.1		%			07/13/22 15:11	1
Percent Solids	89.4		0.1		%			07/13/22 15:11	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-13 (2-4)

Lab Sample ID: 310-235628-6

Date Collected: 07/05/22 13:30

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	15.1		4.90		mg/Kg	☼	07/14/22 09:30	07/18/22 19:00	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.3		0.1		%			07/13/22 15:11	1
Percent Solids	83.7		0.1		%			07/13/22 15:11	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-9 (0-2)

Date Collected: 07/05/22 11:15

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-7

Matrix: Solid

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<3.93		3.93		mg/Kg	☼	07/14/22 09:30	07/18/22 19:02	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.4		0.1		%			07/13/22 15:11	1
Percent Solids	96.6		0.1		%			07/13/22 15:11	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-9 (2-4)

Date Collected: 07/05/22 11:20

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-8

Matrix: Solid

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	22.2		7.87		mg/Kg	☼	07/14/22 09:30	07/19/22 11:06	2

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.7		0.1		%			07/13/22 15:11	1
Percent Solids	97.3		0.1		%			07/13/22 15:11	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-5 (0-2)

Lab Sample ID: 310-235628-9

Date Collected: 07/05/22 10:15

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	48.2		4.22		mg/Kg	☼	07/14/22 09:30	07/18/22 19:06	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.3		0.1		%			07/13/22 15:11	1
Percent Solids	88.7		0.1		%			07/13/22 15:11	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-5 (2-4)

Lab Sample ID: 310-235628-10

Date Collected: 07/05/22 10:20

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	8.73		4.41		mg/Kg	☼	07/14/22 09:30	07/18/22 19:08	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.7		0.1		%			07/13/22 15:11	1
Percent Solids	88.3		0.1		%			07/13/22 15:11	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-17 (0-2)

Lab Sample ID: 310-235628-11

Date Collected: 07/05/22 09:10

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	435		7.83		mg/Kg	☼	07/14/22 09:30	07/19/22 11:08	2

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.5		0.1		%			07/13/22 15:11	1
Percent Solids	91.5		0.1		%			07/13/22 15:11	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-17 (2-4)

Lab Sample ID: 310-235628-12

Date Collected: 07/05/22 09:15

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	5.72		4.36		mg/Kg	☼	07/14/22 09:30	07/18/22 17:44	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.9		0.1		%			07/13/22 15:11	1
Percent Solids	93.1		0.1		%			07/13/22 15:11	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-20 (0-2)

Lab Sample ID: 310-235628-13

Date Collected: 07/05/22 14:20

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	4.35		3.85		mg/Kg	☼	07/14/22 09:30	07/18/22 17:55	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.2		0.1		%			07/13/22 15:11	1
Percent Solids	96.8		0.1		%			07/13/22 15:11	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-20 (2-4)

Lab Sample ID: 310-235628-14

Date Collected: 07/05/22 14:25

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<4.12		4.12		mg/Kg	☼	07/14/22 09:30	07/18/22 17:57	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.1		0.1		%			07/13/22 15:11	1
Percent Solids	94.9		0.1		%			07/13/22 15:11	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-14 (0-2)

Lab Sample ID: 310-235628-15

Date Collected: 07/05/22 12:30

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	12.3		7.93		mg/Kg	☼	07/14/22 09:30	07/19/22 11:14	2

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.1		0.1		%			07/13/22 15:28	1
Percent Solids	97.9		0.1		%			07/13/22 15:28	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-14 (2-4)

Lab Sample ID: 310-235628-16

Date Collected: 07/05/22 12:35

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<3.87		3.87		mg/Kg	☼	07/14/22 09:30	07/18/22 18:01	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.1		0.1		%			07/13/22 15:28	1
Percent Solids	93.9		0.1		%			07/13/22 15:28	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: TP-1

Lab Sample ID: 310-235628-17

Date Collected: 07/06/22 13:05

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<3.91		3.91		mg/Kg	☼	07/14/22 09:30	07/18/22 18:03	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.2		0.1		%			07/13/22 15:28	1
Percent Solids	97.8		0.1		%			07/13/22 15:28	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: TP-2

Lab Sample ID: 310-235628-18

Date Collected: 07/06/22 13:07

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	10.5		3.99		mg/Kg	☼	07/14/22 09:30	07/18/22 18:09	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.5		0.1		%			07/13/22 15:28	1
Percent Solids	97.5		0.1		%			07/13/22 15:28	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: TP-3

Lab Sample ID: 310-235628-19

Date Collected: 07/06/22 13:09

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	142		4.89		mg/Kg	☼	07/14/22 09:30	07/18/22 18:11	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.6		0.1		%			07/13/22 15:28	1
Percent Solids	76.4		0.1		%			07/13/22 15:28	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: TP-4

Lab Sample ID: 310-235628-20

Date Collected: 07/06/22 13:10

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	32.8		4.67		mg/Kg	☼	07/14/22 09:30	07/18/22 18:13	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.0		0.1		%			07/13/22 15:28	1
Percent Solids	83.0		0.1		%			07/13/22 15:28	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: TP-5

Date Collected: 07/06/22 13:12

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-21

Matrix: Solid

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	146		8.10		mg/Kg	☼	07/14/22 09:30	07/19/22 11:20	2

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.5		0.1		%			07/13/22 15:38	1
Percent Solids	88.5		0.1		%			07/13/22 15:38	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: TP-6

Lab Sample ID: 310-235628-22

Date Collected: 07/06/22 13:15

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	23.3		4.31		mg/Kg	☼	07/14/22 09:30	07/18/22 18:17	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.2		0.1		%			07/13/22 15:38	1
Percent Solids	96.8		0.1		%			07/13/22 15:38	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-12 (0-2)

Lab Sample ID: 310-235628-23

Date Collected: 07/07/22 14:00

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	4.05		3.77		mg/Kg	☼	07/14/22 09:30	07/18/22 18:22	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	1.4		0.1		%			07/13/22 15:38	1
Percent Solids	98.6		0.1		%			07/13/22 15:38	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-12 (2-4)

Lab Sample ID: 310-235628-24

Date Collected: 07/07/22 14:05

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<4.66		4.66		mg/Kg	☼	07/14/22 09:30	07/18/22 18:24	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.7		0.1		%			07/13/22 15:38	1
Percent Solids	90.3		0.1		%			07/13/22 15:38	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-19 (0-2)

Lab Sample ID: 310-235628-25

Date Collected: 07/07/22 13:55

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	15.5		4.47		mg/Kg	☼	07/14/22 09:30	07/18/22 18:26	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.0		0.1		%			07/13/22 15:38	1
Percent Solids	91.0		0.1		%			07/13/22 15:38	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-19 (2-4)

Lab Sample ID: 310-235628-26

Date Collected: 07/07/22 13:57

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<4.38		4.38		mg/Kg	☼	07/14/22 09:30	07/18/22 18:28	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.1		0.1		%			07/13/22 15:38	1
Percent Solids	95.9		0.1		%			07/13/22 15:38	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-8 (0-2)

Lab Sample ID: 310-235628-27

Date Collected: 07/07/22 13:50

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	15.4		3.97		mg/Kg	☼	07/14/22 09:30	07/18/22 18:34	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.3		0.1		%			07/13/22 15:38	1
Percent Solids	94.7		0.1		%			07/13/22 15:38	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-8 (2-4)

Lab Sample ID: 310-235628-28

Date Collected: 07/07/22 13:52

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	15.2		4.15		mg/Kg	☼	07/14/22 09:30	07/18/22 18:36	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.2		0.1		%			07/13/22 15:38	1
Percent Solids	88.8		0.1		%			07/13/22 15:38	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-7 (0-2)

Lab Sample ID: 310-235628-29

Date Collected: 07/07/22 13:40

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	14.3		4.64		mg/Kg	☼	07/14/22 09:30	07/18/22 18:38	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.2		0.1		%			07/13/22 15:38	1
Percent Solids	88.8		0.1		%			07/13/22 15:38	1

Client Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-7 (2-4)

Lab Sample ID: 310-235628-30

Date Collected: 07/07/22 13:45

Matrix: Solid

Date Received: 07/12/22 13:30

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	10.7		9.06		mg/Kg	☼	07/14/22 09:30	07/19/22 11:22	2

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.2		0.1		%			07/13/22 15:38	1
Percent Solids	81.8		0.1		%			07/13/22 15:38	1

Definitions/Glossary

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Qualifiers

Metals

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

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

QC Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 310-359233/1-A
Matrix: Solid
Analysis Batch: 359772

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 359233

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<3.85		3.85		mg/Kg		07/14/22 09:30	07/18/22 11:45	1

Lab Sample ID: LCS 310-359233/2-A
Matrix: Solid
Analysis Batch: 359772

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 359233

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	175	171.5		mg/Kg		98	80 - 120

Lab Sample ID: 310-235628-1 MS
Matrix: Solid
Analysis Batch: 359772

Client Sample ID: B-16 (0-2)
Prep Type: Total/NA
Prep Batch: 359233

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	16.7		187	200.3		mg/Kg	✱	98	75 - 125

Lab Sample ID: 310-235628-1 MSD
Matrix: Solid
Analysis Batch: 359772

Client Sample ID: B-16 (0-2)
Prep Type: Total/NA
Prep Batch: 359233

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lead	16.7		189	206.1		mg/Kg	✱	100	75 - 125	3	20

Lab Sample ID: 310-235628-11 DU
Matrix: Solid
Analysis Batch: 359899

Client Sample ID: B-17 (0-2)
Prep Type: Total/NA
Prep Batch: 359233

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	435		343.6	F3	mg/Kg	✱	24	20

Lab Sample ID: MB 310-359283/1-A
Matrix: Solid
Analysis Batch: 359871

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 359283

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<4.50		4.50		mg/Kg		07/14/22 09:30	07/18/22 17:37	1

Lab Sample ID: LCS 310-359283/2-A
Matrix: Solid
Analysis Batch: 359871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 359283

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	158	155.6		mg/Kg		99	80 - 120

Lab Sample ID: 310-235628-12 MS
Matrix: Solid
Analysis Batch: 359871

Client Sample ID: B-17 (2-4)
Prep Type: Total/NA
Prep Batch: 359283

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	5.72		177	173.8		mg/Kg	✱	95	75 - 125

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QC Sample Results

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Method: 6010D - Metals (ICP)

Lab Sample ID: 310-235628-12 MSD
Matrix: Solid
Analysis Batch: 359871

Client Sample ID: B-17 (2-4)
Prep Type: Total/NA
Prep Batch: 359283

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lead	5.72		174	175.3		mg/Kg	☆	97	75 - 125	1	20

Lab Sample ID: 310-235628-22 DU
Matrix: Solid
Analysis Batch: 359871

Client Sample ID: TP-6
Prep Type: Total/NA
Prep Batch: 359283

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	23.3		23.34		mg/Kg	☆	0.3	20

Method: Moisture - Percent Moisture

Lab Sample ID: 310-235628-5 DU
Matrix: Solid
Analysis Batch: 359327

Client Sample ID: B-13 (0-2)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	10.6		9.5		%		11	39
Percent Solids	89.4		90.5		%		1	10

Lab Sample ID: 310-235628-15 DU
Matrix: Solid
Analysis Batch: 359327

Client Sample ID: B-14 (0-2)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	2.1		2.1		%		2	39
Percent Solids	97.9		97.9		%		0	10

Lab Sample ID: 310-235628-21 DU
Matrix: Solid
Analysis Batch: 359327

Client Sample ID: TP-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	11.5		11.5		%		0.5	39
Percent Solids	88.5		88.5		%		0.06	10

QC Association Summary

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Metals

Prep Batch: 359233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-235628-1	B-16 (0-2)	Total/NA	Solid	3050B	
310-235628-2	B-16 (2-4)	Total/NA	Solid	3050B	
310-235628-3	B-4 (0-2)	Total/NA	Solid	3050B	
310-235628-4	B-4 (2-4)	Total/NA	Solid	3050B	
310-235628-5	B-13 (0-2)	Total/NA	Solid	3050B	
310-235628-6	B-13 (2-4)	Total/NA	Solid	3050B	
310-235628-7	B-9 (0-2)	Total/NA	Solid	3050B	
310-235628-8	B-9 (2-4)	Total/NA	Solid	3050B	
310-235628-9	B-5 (0-2)	Total/NA	Solid	3050B	
310-235628-10	B-5 (2-4)	Total/NA	Solid	3050B	
310-235628-11	B-17 (0-2)	Total/NA	Solid	3050B	
MB 310-359233/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 310-359233/2-A	Lab Control Sample	Total/NA	Solid	3050B	
310-235628-1 MS	B-16 (0-2)	Total/NA	Solid	3050B	
310-235628-1 MSD	B-16 (0-2)	Total/NA	Solid	3050B	
310-235628-11 DU	B-17 (0-2)	Total/NA	Solid	3050B	

Prep Batch: 359283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-235628-12	B-17 (2-4)	Total/NA	Solid	3050B	
310-235628-13	B-20 (0-2)	Total/NA	Solid	3050B	
310-235628-14	B-20 (2-4)	Total/NA	Solid	3050B	
310-235628-15	B-14 (0-2)	Total/NA	Solid	3050B	
310-235628-16	B-14 (2-4)	Total/NA	Solid	3050B	
310-235628-17	TP-1	Total/NA	Solid	3050B	
310-235628-18	TP-2	Total/NA	Solid	3050B	
310-235628-19	TP-3	Total/NA	Solid	3050B	
310-235628-20	TP-4	Total/NA	Solid	3050B	
310-235628-21	TP-5	Total/NA	Solid	3050B	
310-235628-22	TP-6	Total/NA	Solid	3050B	
310-235628-23	B-12 (0-2)	Total/NA	Solid	3050B	
310-235628-24	B-12 (2-4)	Total/NA	Solid	3050B	
310-235628-25	B-19 (0-2)	Total/NA	Solid	3050B	
310-235628-26	B-19 (2-4)	Total/NA	Solid	3050B	
310-235628-27	B-8 (0-2)	Total/NA	Solid	3050B	
310-235628-28	B-8 (2-4)	Total/NA	Solid	3050B	
310-235628-29	B-7 (0-2)	Total/NA	Solid	3050B	
310-235628-30	B-7 (2-4)	Total/NA	Solid	3050B	
MB 310-359283/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 310-359283/2-A	Lab Control Sample	Total/NA	Solid	3050B	
310-235628-12 MS	B-17 (2-4)	Total/NA	Solid	3050B	
310-235628-12 MSD	B-17 (2-4)	Total/NA	Solid	3050B	
310-235628-22 DU	TP-6	Total/NA	Solid	3050B	

Analysis Batch: 359772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-235628-1	B-16 (0-2)	Total/NA	Solid	6010D	359233
MB 310-359233/1-A	Method Blank	Total/NA	Solid	6010D	359233
LCS 310-359233/2-A	Lab Control Sample	Total/NA	Solid	6010D	359233
310-235628-1 MS	B-16 (0-2)	Total/NA	Solid	6010D	359233
310-235628-1 MSD	B-16 (0-2)	Total/NA	Solid	6010D	359233

Eurofins Cedar Falls

QC Association Summary

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Metals

Analysis Batch: 359871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-235628-2	B-16 (2-4)	Total/NA	Solid	6010D	359233
310-235628-3	B-4 (0-2)	Total/NA	Solid	6010D	359233
310-235628-4	B-4 (2-4)	Total/NA	Solid	6010D	359233
310-235628-5	B-13 (0-2)	Total/NA	Solid	6010D	359233
310-235628-6	B-13 (2-4)	Total/NA	Solid	6010D	359233
310-235628-7	B-9 (0-2)	Total/NA	Solid	6010D	359233
310-235628-9	B-5 (0-2)	Total/NA	Solid	6010D	359233
310-235628-10	B-5 (2-4)	Total/NA	Solid	6010D	359233
310-235628-12	B-17 (2-4)	Total/NA	Solid	6010D	359283
310-235628-13	B-20 (0-2)	Total/NA	Solid	6010D	359283
310-235628-14	B-20 (2-4)	Total/NA	Solid	6010D	359283
310-235628-16	B-14 (2-4)	Total/NA	Solid	6010D	359283
310-235628-17	TP-1	Total/NA	Solid	6010D	359283
310-235628-18	TP-2	Total/NA	Solid	6010D	359283
310-235628-19	TP-3	Total/NA	Solid	6010D	359283
310-235628-20	TP-4	Total/NA	Solid	6010D	359283
310-235628-22	TP-6	Total/NA	Solid	6010D	359283
310-235628-23	B-12 (0-2)	Total/NA	Solid	6010D	359283
310-235628-24	B-12 (2-4)	Total/NA	Solid	6010D	359283
310-235628-25	B-19 (0-2)	Total/NA	Solid	6010D	359283
310-235628-26	B-19 (2-4)	Total/NA	Solid	6010D	359283
310-235628-27	B-8 (0-2)	Total/NA	Solid	6010D	359283
310-235628-28	B-8 (2-4)	Total/NA	Solid	6010D	359283
310-235628-29	B-7 (0-2)	Total/NA	Solid	6010D	359283
MB 310-359283/1-A	Method Blank	Total/NA	Solid	6010D	359283
LCS 310-359283/2-A	Lab Control Sample	Total/NA	Solid	6010D	359283
310-235628-12 MS	B-17 (2-4)	Total/NA	Solid	6010D	359283
310-235628-12 MSD	B-17 (2-4)	Total/NA	Solid	6010D	359283
310-235628-22 DU	TP-6	Total/NA	Solid	6010D	359283

Analysis Batch: 359899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-235628-8	B-9 (2-4)	Total/NA	Solid	6010D	359233
310-235628-11	B-17 (0-2)	Total/NA	Solid	6010D	359233
310-235628-15	B-14 (0-2)	Total/NA	Solid	6010D	359283
310-235628-21	TP-5	Total/NA	Solid	6010D	359283
310-235628-30	B-7 (2-4)	Total/NA	Solid	6010D	359283
310-235628-11 DU	B-17 (0-2)	Total/NA	Solid	6010D	359233

General Chemistry

Analysis Batch: 359327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-235628-1	B-16 (0-2)	Total/NA	Solid	Moisture	
310-235628-2	B-16 (2-4)	Total/NA	Solid	Moisture	
310-235628-3	B-4 (0-2)	Total/NA	Solid	Moisture	
310-235628-4	B-4 (2-4)	Total/NA	Solid	Moisture	
310-235628-5	B-13 (0-2)	Total/NA	Solid	Moisture	
310-235628-6	B-13 (2-4)	Total/NA	Solid	Moisture	
310-235628-7	B-9 (0-2)	Total/NA	Solid	Moisture	
310-235628-8	B-9 (2-4)	Total/NA	Solid	Moisture	

Eurofins Cedar Falls

QC Association Summary

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

General Chemistry (Continued)

Analysis Batch: 359327 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-235628-9	B-5 (0-2)	Total/NA	Solid	Moisture	
310-235628-10	B-5 (2-4)	Total/NA	Solid	Moisture	
310-235628-11	B-17 (0-2)	Total/NA	Solid	Moisture	
310-235628-12	B-17 (2-4)	Total/NA	Solid	Moisture	
310-235628-13	B-20 (0-2)	Total/NA	Solid	Moisture	
310-235628-14	B-20 (2-4)	Total/NA	Solid	Moisture	
310-235628-15	B-14 (0-2)	Total/NA	Solid	Moisture	
310-235628-16	B-14 (2-4)	Total/NA	Solid	Moisture	
310-235628-17	TP-1	Total/NA	Solid	Moisture	
310-235628-18	TP-2	Total/NA	Solid	Moisture	
310-235628-19	TP-3	Total/NA	Solid	Moisture	
310-235628-20	TP-4	Total/NA	Solid	Moisture	
310-235628-21	TP-5	Total/NA	Solid	Moisture	
310-235628-22	TP-6	Total/NA	Solid	Moisture	
310-235628-23	B-12 (0-2)	Total/NA	Solid	Moisture	
310-235628-24	B-12 (2-4)	Total/NA	Solid	Moisture	
310-235628-25	B-19 (0-2)	Total/NA	Solid	Moisture	
310-235628-26	B-19 (2-4)	Total/NA	Solid	Moisture	
310-235628-27	B-8 (0-2)	Total/NA	Solid	Moisture	
310-235628-28	B-8 (2-4)	Total/NA	Solid	Moisture	
310-235628-29	B-7 (0-2)	Total/NA	Solid	Moisture	
310-235628-30	B-7 (2-4)	Total/NA	Solid	Moisture	
310-235628-5 DU	B-13 (0-2)	Total/NA	Solid	Moisture	
310-235628-15 DU	B-14 (0-2)	Total/NA	Solid	Moisture	
310-235628-21 DU	TP-5	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-16 (0-2)

Date Collected: 07/06/22 13:50

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359233	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359772	07/18/22 11:50	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:28	N7RT	TAL CF

Client Sample ID: B-16 (2-4)

Date Collected: 07/06/22 13:55

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359233	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:48	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:28	N7RT	TAL CF

Client Sample ID: B-4 (0-2)

Date Collected: 07/06/22 13:40

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359233	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:50	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:28	N7RT	TAL CF

Client Sample ID: B-4 (2-4)

Date Collected: 07/06/22 13:45

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359233	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:52	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:28	N7RT	TAL CF

Client Sample ID: B-13 (0-2)

Date Collected: 07/05/22 13:25

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359233	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:58	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:11	N7RT	TAL CF

Eurofins Cedar Falls

Lab Chronicle

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-13 (2-4)

Date Collected: 07/05/22 13:30

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359233	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 19:00	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:11	N7RT	TAL CF

Client Sample ID: B-9 (0-2)

Date Collected: 07/05/22 11:15

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-7

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359233	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 19:02	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:11	N7RT	TAL CF

Client Sample ID: B-9 (2-4)

Date Collected: 07/05/22 11:20

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-8

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359233	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		2	359899	07/19/22 11:06	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:11	N7RT	TAL CF

Client Sample ID: B-5 (0-2)

Date Collected: 07/05/22 10:15

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-9

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359233	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 19:06	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:11	N7RT	TAL CF

Client Sample ID: B-5 (2-4)

Date Collected: 07/05/22 10:20

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-10

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359233	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 19:08	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:11	N7RT	TAL CF

Eurofins Cedar Falls

Lab Chronicle

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-17 (0-2)

Date Collected: 07/05/22 09:10

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-11

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359233	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		2	359899	07/19/22 11:08	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:11	N7RT	TAL CF

Client Sample ID: B-17 (2-4)

Date Collected: 07/05/22 09:15

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-12

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 17:44	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:11	N7RT	TAL CF

Client Sample ID: B-20 (0-2)

Date Collected: 07/05/22 14:20

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-13

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 17:55	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:11	N7RT	TAL CF

Client Sample ID: B-20 (2-4)

Date Collected: 07/05/22 14:25

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-14

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 17:57	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:11	N7RT	TAL CF

Client Sample ID: B-14 (0-2)

Date Collected: 07/05/22 12:30

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-15

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		2	359899	07/19/22 11:14	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:28	N7RT	TAL CF

Lab Chronicle

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-14 (2-4)

Date Collected: 07/05/22 12:35

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-16

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:01	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:28	N7RT	TAL CF

Client Sample ID: TP-1

Date Collected: 07/06/22 13:05

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-17

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:03	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:28	N7RT	TAL CF

Client Sample ID: TP-2

Date Collected: 07/06/22 13:07

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-18

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:09	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:28	N7RT	TAL CF

Client Sample ID: TP-3

Date Collected: 07/06/22 13:09

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-19

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:11	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:28	N7RT	TAL CF

Client Sample ID: TP-4

Date Collected: 07/06/22 13:10

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-20

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:13	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:28	N7RT	TAL CF

Lab Chronicle

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: TP-5

Date Collected: 07/06/22 13:12

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-21

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		2	359899	07/19/22 11:20	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:38	N7RT	TAL CF

Client Sample ID: TP-6

Date Collected: 07/06/22 13:15

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-22

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:17	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:38	N7RT	TAL CF

Client Sample ID: B-12 (0-2)

Date Collected: 07/07/22 14:00

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-23

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:22	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:38	N7RT	TAL CF

Client Sample ID: B-12 (2-4)

Date Collected: 07/07/22 14:05

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-24

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:24	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:38	N7RT	TAL CF

Client Sample ID: B-19 (0-2)

Date Collected: 07/07/22 13:55

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-25

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:26	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:38	N7RT	TAL CF

Lab Chronicle

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Client Sample ID: B-19 (2-4)

Date Collected: 07/07/22 13:57

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-26

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:28	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:38	N7RT	TAL CF

Client Sample ID: B-8 (0-2)

Date Collected: 07/07/22 13:50

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-27

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:34	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:38	N7RT	TAL CF

Client Sample ID: B-8 (2-4)

Date Collected: 07/07/22 13:52

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-28

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:36	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:38	N7RT	TAL CF

Client Sample ID: B-7 (0-2)

Date Collected: 07/07/22 13:40

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-29

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		1	359871	07/18/22 18:38	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:38	N7RT	TAL CF

Client Sample ID: B-7 (2-4)

Date Collected: 07/07/22 13:45

Date Received: 07/12/22 13:30

Lab Sample ID: 310-235628-30

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			359283	07/14/22 09:30	QTZ5	TAL CF
Total/NA	Analysis	6010D		2	359899	07/19/22 11:22	ZRI4	TAL CF
Total/NA	Analysis	Moisture		1	359327	07/13/22 15:38	N7RT	TAL CF

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Eurofins Cedar Falls

Accreditation/Certification Summary

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Minnesota	NELAP	019-999-319	12-31-22
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: Vieau Associates
Project/Site: Rosemount Vacant Land

Job ID: 310-235628-1

Method	Method Description	Protocol	Laboratory
6010D	Metals (ICP)	SW846	TAL CF
Moisture	Percent Moisture	EPA	TAL CF
3050B	Preparation, Metals	SW846	TAL CF

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401



Environment Testing
America



310-235628 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>Viteau/GZA</u>			
City/State:	CITY <u>Edina</u>	STATE <u>MN</u>	Project:
Receipt Information			
Date/Time Received:	DATE <u>7-12-22</u>	TIME <u>1330</u>	Received By: <u>EM</u>
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID:
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>1</u> of <u>2</u>
Cooler Custody Seals Present?		☒ Yes ☐ No	If yes: Cooler custody seals intact? ☒ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes: Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☒ Yes ☐ No	If yes: Which VOA samples are in cooler? ↓
<u>2 x Meolt</u>			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>T</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.1</u>		Corrected Temp (°C): <u>0.1</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			
<u>Contains B16, B4, B20, B12, B19, B7, B8, TP3, TP4, TP5, TP6</u>			



Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>Vitacell/GZA</u>			
City/State:	CITY <u>Edina</u>	STATE <u>MN</u>	Project.
Receipt Information			
Date/Time Received:	DATE <u>7-12-22</u>	TIME <u>1330</u>	Received By: <u>EM</u>
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID: _____
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>2</u> of <u>2</u>
Cooler Custody Seals Present?		☒ Yes ☐ No	If yes: Cooler custody seals intact? ☒ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes: Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☒ Yes ☐ No	If yes: Which VOA samples are in cooler? ↓
<u>2x MeOH</u>			
Temperature Record			
Coolant. ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>T</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>1.8</u>		Corrected Temp (°C): <u>1.8</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			
<u>Contains: TP1, TP2, B17, B14, B13, B9, B5</u>			

Chain of Custody Record

50050

Environmental Testing
TestAmericaEurofins Minneapolis SC
213

Address

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TAL-8210

Client Contact		Project Manager: <i>Romy Paulish</i>		Site Contact:		Date:		COC No	
Company Name	<i>Vieau 167A</i>	Tel/Email:	<i>romy.paulish@eurofins.com</i>	Lab Contact:		Carrier:		1 of 3 COCs	
Address	<i>7505 Metro Blvd, Sk 300</i>	Analyst's Turnaround Time		Perform MS / MSD (Y / N)		Filtered Sample (Y / N)		Sampler: <i>Anna Dancer</i>	
City/State/Zip	<i>Edina, MN, 55439</i>	☐ CALENDAR DAYS	☐ WORKING DAYS					For Lab Use Only	
Phone		TAT if different from Below						Walk-in Client:	
Fax		☐ 2 weeks						Lab Sampling	
Project Name	<i>Regeneration vacant Land</i>	☐ 1 week						Job / SDG No	
Site	<i>Robert Tel and Kothu St</i>	☐ 2 days							
P.O.#		☐ 1 day							
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes		
<i>B-16 (0-2)</i>		<i>7/6/22</i>	<i>1350</i>	<i>G</i>	<i>Soil</i>	<i>1</i>	<i>X</i>		
<i>B-16 (2-4)</i>		<i>7/6/22</i>	<i>1355</i>	<i>G</i>	<i>Soil</i>	<i>1</i>	<i>X</i>		
<i>B-4 (0-2)</i>		<i>7/6/22</i>	<i>1340</i>	<i>G</i>	<i>Soil</i>	<i>1</i>	<i>X</i>		
<i>B-4 (2-4)</i>		<i>7/6/22</i>	<i>1345</i>	<i>G</i>	<i>Soil</i>	<i>1</i>	<i>X</i>		
<i>B-13 (0-2)</i>		<i>7/5/22</i>	<i>1325</i>	<i>G</i>	<i>Soil</i>	<i>1</i>	<i>X</i>		
<i>B-13 (2-4)</i>		<i>7/5/22</i>	<i>1330</i>	<i>G</i>	<i>Soil</i>	<i>1</i>	<i>X</i>		
<i>B-9 (0-2)</i>		<i>7/5/22</i>	<i>1115</i>	<i>G</i>	<i>Soil</i>	<i>1</i>	<i>X</i>		
<i>B-9 (2-4)</i>		<i>7/5/22</i>	<i>1120</i>	<i>G</i>	<i>Soil</i>	<i>1</i>	<i>X</i>		
<i>B-5 (0-2)</i>		<i>7/5/22</i>	<i>1015</i>	<i>G</i>	<i>Soil</i>	<i>1</i>	<i>X</i>		
<i>B-5 (2-4)</i>		<i>7/5/22</i>	<i>1020</i>	<i>G</i>	<i>Soil</i>	<i>1</i>	<i>X</i>		
<i>B-17 (0-2)</i>		<i>7/5/22</i>	<i>0910</i>	<i>G</i>	<i>Soil</i>	<i>1</i>	<i>X</i>		
<i>B-17 (2-4)</i>		<i>7/5/22</i>	<i>0915</i>	<i>G</i>	<i>Soil</i>	<i>1</i>	<i>X</i>		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other									
Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample									
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown									
Special Instructions/QC Requirements & Comments:									
Custody Seals Intact: ☒ Yes ☐ No		Custody Seal No		Cooler Temp (°C) Obs'd		Corr'd		Therm ID No	
Relinquished by <i>Cole</i>		Company: <i>Vieau</i>		Received by: <i>Barry Sutton</i>		Company: <i>Eurofins</i>		Date/Time: <i>7-11-22 1345</i>	
Relinquished by <i>Barry Sutton</i>		Company: <i>Eurofins</i>		Received by: <i>1700 Kim M</i>		Company: <i>Eurofins</i>		Date/Time: <i>7-12-22 1330</i>	
Relinquished by		Company:		Received in Laboratory by:		Company:		Date/Time:	

Address

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact		Project Manager: <u>Jenny Paulish</u>		Site Contact:		Date:		COC No											
Company Name <u>Vital 172A</u>		Tel/Email: <u>Jenny Paulish@epa.gov</u>		Lab Contact:		Carrier:		2 of 3 COCs											
Address <u>7505 Duke St, Ste 300</u>		Analysis/Turnaround Time						Sampler <u>Liberty Dunshee</u>											
City/State/Zip <u>Edina, MN 55439</u>		CALENDAR DAYS ☐ WORKING DAYS ☐						For Lab Use Only											
Phone <u></u>		TAT if different from Below <u></u>						Walk-in Client:											
Fax <u></u>		☐ 2 weeks						Lab Sampling											
		☐ 1 week						Job / SDG No											
		☐ 2 days																	
		☐ 1 day																	
Project Name <u>Replacement Vacant Land</u>		Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		Matrix		# of Cont.		Filtered Sample (Y/N)		Perform MS / MSD (Y/N)		Sample Specific Notes	
		B-20 (0-2)		7/5/22		1420		G		Soil		1							
		B-20 (2-4)		7/5/22		1425		G		Soil		1							
		B-14 (0-2)		7/5/22		1230		G		Soil		1							
		B-14 (2-4)		7/5/22		1235		G		Soil		1							
		TP-1		7/6/22		1305		G		Soil		1							
		TP-2		7/6/22		1307		G		Soil		1							
		TP-3		7/6/22		1309		G		Soil		1							
		TP-4		7/6/22		1310		G		Soil		1							
		TP-5		7/6/22		1312		G		Soil		1							
		TP-6		7/6/22		1315		G		Soil		1							
		B-12 (0-2)		7/7/22		1400		G		Soil		1							
		B-12 (2-4)		7/7/22		1405		G		Soil		1							

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other

Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Special Instructions/QC Requirements & Comments:

Custody Seal No		Cooler Temp (°C) Obs'd		Corr'd		Therm ID No	
Company: <u>Vital</u>	Date/Time: <u>7/11/22, 1345</u>	Received by: <u>Barb Suter</u>	Company: <u>Evergreen</u>	Date/Time: <u>7/11/22</u>	<u>1345</u>		
Company: <u>Evergreen</u>	Date/Time: <u>7/11/22</u>	Received by: <u>ATW</u>	Company:	Date/Time:			
Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:			

Address

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

[illegible]

Login Sample Receipt Checklist

Client: Vieau Associates

Job Number: 310-235628-1

SDG Number:

Login Number: 235628

List Number: 1

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX D



Aubrey J. Dunshee, GIT

Environmental Professional I

Summary of Experience

Ms. Dunshee is an Environmental Professional I of Vieau Associates, a Division of GZA GeoEnvironmental. Her educational background includes a Bachelor of Arts and Master of Science degrees in Earth Sciences from the University of Minnesota-Twin Cities. Throughout her education, Aubrey has specialized in hydrogeology, water chemistry, and soil geochemistry utilizing computational modeling and field-based techniques. Since joining Vieau Associates in 2020, she has gained experience in the conduct of Phase I Environmental Site Assessments, Phase II Subsurface Investigations, and regulatory file reviews.

Education

B.A., 2016, Earth Sciences
University of Minnesota
M.S., 2020, Earth Sciences/Hydrology
University of Minnesota

Licenses & Registrations

Geologist-In-Training – 2018
40 hour HAZWOPER certification

Areas of Specialization

- Environmental Site Assessments
- Subsurface Investigations

Relevant Project Experience

Environmental Site Assessments, Predominantly in Minnesota

Completed or aided in the completion of numerous Phase-I Environmental Site Assessments for subject properties of various land uses. Completed tasks include historical and government records review, web-based database searches, hydrogeological analysis, conducting interviews with stakeholders and government officials, site reconnaissance, and the generation of supporting technical documents.

Subsurface Investigations, Predominantly in Minnesota.

Conducted several Phase-II Subsurface Investigations, including field work such as soil screening and classification, vapor monitoring, and collection of soil and soil vapor samples for laboratory analysis.

Affiliations/Memberships

American Geophysical Union
Geological Society of America
American Institute for Professional Geologists
Association of Women Geoscientists



Jeremy A. Pavlish, PG

Senior Project Manager

Summary of Experience

Mr. Pavlish is a Senior Project Manager with over 20 years of experience in the environmental field. He has experience in all areas of hydrogeology including dye tracing, surface and groundwater sampling, characterization, mapping, protection, and remediation. He has completed over a 1,000 Phase I Environmental Site Assessments and hundreds of Phase II Investigations; underground storage tank removals; petroleum release investigations and cleanups; and brownfield site investigation, cleanup, and redevelopment. In addition, Mr. Pavlish has prepared cleanup grant applications that have secured funding for the redevelopment of contaminated properties.

Relevant Project Experience

VOLUNTARY INVESTIGATION AND CLEANUP

Senior Project Manager, Vapor Mitigation of Large Apartment Building, Anoka, Minnesota. As part of an on-going investigation into a dry cleaner release, we collected sub-slab soil vapor samples from beneath an apartment building and found tetrachloroethene in soil vapor below the slab at concentrations exceeding criteria that were viewed as posing a risk of vapor intrusion through the building slab. Indoor air samples also detected tetrachloroethene exceeding safe criteria indicating that the volatile organic compound was migrating through the building slab and potentially impacting resident's health. Due to the presence of tetrachloroethene exceeding indoor air criteria, we worked with the Minnesota Pollution Control Agency, and a mitigation system contractor to complete a pilot test, design, approve, and install a retrofit vapor mitigation system under an expedited process. Following installation of the system and confirmation testing that showed that the system was operating as designed and sub-slab concentrations were significantly reduced, the owner of the apartment building was issued a No Further Action letter for soil vapor. Following completion of the system installation, the property owner needed to refinance so we prepared a Phase I Environmental Site Assessment compliant to the ASTM E1527-13 standard. Due to the presence of a vapor mitigation system and the confirmation testing, we were able to classify the sub-slab vapors as a controlled recognized environmental condition and the facility was able to obtain financing to keep operating.

VOLUNTARY SUPERFUND INVESTIGATION AND CLEANUP

Senior Project Manager, Former Trucking Terminal, Roseville, Minnesota. Prior investigations identified an area of soil and groundwater impacted by chlorinated volatile organic compounds. In order to define the extent of the impacts, we have been directed by the Minnesota Pollution Control Agency Voluntary Superfund Program to complete a passive soil vapor investigation, advance soil probes, install monitoring wells, complete a membrane interface probe investigation, and conduct a treatability study. Throughout the investigation we have worked closely with the agency to ensure that their objectives are being met while working within budgetary and time constraints of the client.

Education

B.S., Environmental Technology,
University of Wisconsin- River Falls
M.S., Water Resources, University of
Minnesota- Twin Cities

Licenses & Registrations

Professional Geologist – Minnesota,
#47325
Professional Geologist – Wisconsin,
#1296-13
Groundwater Professional – Iowa, #2116
Petroleum Release Remediator – South
Dakota, #11139
Asbestos Inspector – Minnesota,
#AI10724

Areas of Specialization

- Hydrology
- Dye Tracing
- Surface & Groundwater Sampling
- Characterization
- Mapping
- Phase I/II Environmental Site Assessments
- Underground Storage Tank Removal
- Petroleum Release Investigation/ Cleanup
- Brownfields Site Investigation/ Cleanup/ Redevelopment

Jeremy A. Pavlish, P.G.
Senior Project Manager

Experience Prior to GZA

- Worked on a four-year study in Minnesota evaluating the effects of quarries and gravel pits on groundwater quantity and quality to help local governments, the public, and mining companies understand the potential issues that may arise when locating new quarries or gravel pits.
- Completion of over a 1,000 Phase I Environmental Site Assessments including automotive service facilities, industrial properties, machine shops, retail centers, dry cleaners, farmland, and large vacant tracts targeted for new development.
- Field supervision and project management of hundreds of Phase II investigations in Minnesota, Wisconsin, North Dakota, South Dakota, Illinois, Michigan, Ohio, and Iowa employing a wide variety of drilling techniques, ground penetrating radar surveys, membrane interface probes investigations, soil screening and vapor monitoring, and collection of soil, groundwater, soil vapor, and indoor air samples for laboratory analysis.
- Completed dozens of petroleum tank release investigations and worked with Minnesota Pollution Control Agency (MPCA) and clients to close the sites.
- Oversaw all aspects of the investigation and remediation of brownfield sites including gas stations, drycleaners, manufacturing facilities, and former dump sites. Secured funding for the cleanup of sites through contamination cleanup grants.
- Worked closely with clients and the Minnesota Pollution Control Agency (MPCA), Minnesota Department of Agriculture (MDA), Wisconsin Department of Natural Resources (WDNR), Iowa Department of Natural Resources (IDNR), South Dakota Department of Environment and Natural Resources (SDDENR), and North Dakota Department of Health (NDDH) to obtain assurance and liability letters for contaminated properties.
- Oversaw the installation of vapor mitigation systems in industrial buildings, office buildings, grocery stores, and apartment buildings ranging in size from 2,000-square feet to 45,000- square feet.

Publications and Presentations

Green, J.A., Pavlish, J.A., Leete, J.H., and Alexander, E.C., Jr., 2003, Quarrying impacts on groundwater flow paths, in Proceedings of the ninth multidisciplinary conference on sinkholes and the engineering and environmental impacts of karst, Huntsville, Ala., Sept. 6- 10, 2003: Reston, Va., American Society of Civil Engineers.

Green, J.A., Pavlish, J.A., Merritt, R.G., Leete, J.H. 2005, Hydraulic Impacts of Quarries and Gravel Pits. Report to the Legislative Commission on Minnesota Resource.

Affiliations/Memberships

- Minnesota Groundwater Association