

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-231971-2

Laboratory Sample Delivery Group: 13227046

Client Project/Site: 508 Edwards Street - Waterloo, IA

**For:**

Terracon Consulting Eng & Scientists  
3105 Capital Way  
Suite 5  
Cedar Falls, Iowa 50613

Attn: Dave Cleary



Authorized for release by:

6/6/2022 1:05:16 PM

Shawn Hayes, Senior Project Manager  
(319)229-8211

[Shawn.Hayes@et.eurofinsus.com](mailto:Shawn.Hayes@et.eurofinsus.com)

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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: Terracon Consulting Eng & Scientists  
Project/Site: 508 Edwards Street - Waterloo, IA

Job ID: 310-231971-2  
SDG: 13227046

**Job ID: 310-231971-2**

**Laboratory: Eurofins Cedar Falls**

### Narrative

**Job Narrative**  
**310-231971-2**

### Comments

No additional comments.

### Receipt

The samples were received on 5/23/2022 12:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 15.6° C.

### Metals

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

## Sample Summary

Client: Terracon Consulting Eng & Scientists  
Project/Site: 508 Edwards Street - Waterloo, IA

Job ID: 310-231971-2  
SDG: 13227046

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-231971-2	TMW-2 (6-8')	Soil	05/23/22 09:40	05/23/22 12:00

1

2

3

4

5

6

7

8

9

10

11

12

13

14

## Detection Summary

Client: Terracon Consulting Eng & Scientists  
Project/Site: 508 Edwards Street - Waterloo, IA

Job ID: 310-231971-2  
SDG: 13227046

Client Sample ID: TMW-2 (6-8')

Lab Sample ID: 310-231971-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.40		1.00	0.361	mg/Kg	5	☆	6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

## Client Sample Results

Client: Terracon Consulting Eng & Scientists  
Project/Site: 508 Edwards Street - Waterloo, IA

Job ID: 310-231971-2  
SDG: 13227046

**Client Sample ID: TMW-2 (6-8')**

**Lab Sample ID: 310-231971-2**

Date Collected: 05/23/22 09:40

Matrix: Soil

Date Received: 05/23/22 12:00

Percent Solids: 89.6

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.40		1.00	0.361	mg/Kg	☼	05/24/22 10:15	06/03/22 15:44	5

## Definitions/Glossary

Client: Terracon Consulting Eng & Scientists  
Project/Site: 508 Edwards Street - Waterloo, IA

Job ID: 310-231971-2  
SDG: 13227046

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
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: Terracon Consulting Eng & Scientists  
Project/Site: 508 Edwards Street - Waterloo, IA

Job ID: 310-231971-2  
SDG: 13227046

## Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-354036/1-A ^5  
Matrix: Solid  
Analysis Batch: 355362

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 354036

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.329		0.913	0.329	mg/Kg		05/24/22 10:15	06/03/22 15:37	5

Lab Sample ID: LCS 310-354036/2-A ^20  
Matrix: Solid  
Analysis Batch: 355362

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 354036

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	154	158.8		mg/Kg		103	80 - 120



## QC Association Summary

Client: Terracon Consulting Eng & Scientists  
Project/Site: 508 Edwards Street - Waterloo, IA

Job ID: 310-231971-2  
SDG: 13227046

### Metals

#### Prep Batch: 354036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-231971-2	TMW-2 (6-8')	Total/NA	Soil	3050B	
MB 310-354036/1-A ^5	Method Blank	Total/NA	Solid	3050B	
LCS 310-354036/2-A ^20	Lab Control Sample	Total/NA	Solid	3050B	

#### Analysis Batch: 355362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-231971-2	TMW-2 (6-8')	Total/NA	Soil	6020A	354036
MB 310-354036/1-A ^5	Method Blank	Total/NA	Solid	6020A	354036
LCS 310-354036/2-A ^20	Lab Control Sample	Total/NA	Solid	6020A	354036

Lab Chronicle

Client: Terracon Consulting Eng & Scientists  
Project/Site: 508 Edwards Street - Waterloo, IA

Job ID: 310-231971-2  
SDG: 13227046

Client Sample ID: TMW-2 (6-8')  
Date Collected: 05/23/22 09:40  
Date Received: 05/23/22 12:00

Lab Sample ID: 310-231971-2  
Matrix: Soil  
Percent Solids: 89.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			354036	05/24/22 10:15	QTZ5	TAL CF
Total/NA	Analysis	6020A		5	355362	06/03/22 15:44	DHM5	TAL CF

Laboratory References:

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

## Accreditation/Certification Summary

Client: Terracon Consulting Eng & Scientists  
Project/Site: 508 Edwards Street - Waterloo, IA

Job ID: 310-231971-2  
SDG: 13227046

### Laboratory: Eurofins Cedar Falls

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-22
Georgia	State	IA100001 (OR)	09-29-22
Illinois	NELAP	200024	11-29-22
Iowa	State	007	12-01-21 *
Kansas	NELAP	E-10341	01-31-23
Minnesota	NELAP	019-999-319	12-31-22
Minnesota (Petrofund)	State	3349	01-18-24
North Dakota	State	R-186	09-29-22
Oregon	NELAP	IA100001	09-29-22

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Cedar Falls

## Method Summary

Client: Terracon Consulting Eng & Scientists  
Project/Site: 508 Edwards Street - Waterloo, IA

Job ID: 310-231971-2  
SDG: 13227046

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CF
3050B	Preparation, Metals	SW846	TAL CF

### Protocol References:

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

## Hayes, Shawn M.

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**From:** Cleary, Dave <Dave.Cleary@terracon.com>  
**Sent:** Thursday, June 2, 2022 12:33 PM  
**To:** Hayes, Shawn M.  
**Subject:** RE: Eurofins Environment Testing North Central, LLC EDD and report files from 310-231971-1 508 Edwards Street - Waterloo, IA

**Categories:** Follow Up

EXTERNAL EMAIL\*

How long would it take to rerun the arsenic for TMW-2?

**Dave Cleary, REM**

Department Manager | Environmental



3105 Capital Way, Suite 5, Cedar Falls, Iowa 50613  
D (319) 268-4728 | F (319) 277-4320 | M (319) 231-2882  
[Dave.Cleary@terracon.com](mailto:Dave.Cleary@terracon.com) | [Terracon.com](http://Terracon.com)

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**From:** Shawn Hayes <Shawn.Hayes@et.eurofinsus.com>  
**Sent:** Wednesday, June 1, 2022 4:26 PM  
**To:** Cleary, Dave <Dave.Cleary@terracon.com>  
**Subject:** Eurofins Environment Testing North Central, LLC EDD and report files from 310-231971-1 508 Edwards Street - Waterloo, IA

Hello,

Attached please find the EDD and report files for job 310-231971-1; 508 Edwards Street - Waterloo, IA.

The Waterloo Marina will also report yet today.

We ran the RCRA soils by ICP for this job. Let me know if you need sample -2 TMW-2 (6-8) rerun ICPMS to get the Arsenic limit below 1.9 mg/Kg. Currently reported <2.21 mg/Kg.

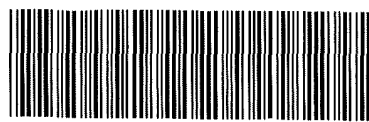
Please feel free to contact me if you have any questions.

Thank you.

**Shawn M Hayes**  
Project Manager



Environment Testing  
America



310-231971 Chain of Custody

### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>Terrecon</u>			
City/State:	CITY <u>Cedar Falls</u>	STATE <u>IA</u>	Project: <u>71433</u>
<b>Receipt Information</b>			
Date/Time Received:	DATE <u>5/23/22</u>	TIME <u>1200</u>	Received By: <u>LO</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____
Cooler Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?		<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
<b>Temperature Record</b>			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>N</u>		Correction Factor (°C): <u>0.0</u>	
• <b>Temp Blank Temperature</b> – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>15.6</u>		Corrected Temp (°C): <u>15.6</u>	
• <b>Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			



## Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Job Number: 310-231971-2

SDG Number: 13227046

**Login Number: 231971**

**List Source: Eurofins Cedar Falls**

**List Number: 1**

**Creator: Thompson, Shirley J**

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.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	Received same day of collection; chilling process has begun.
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.	False	R'cud Trip Blank not on COC
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	