PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report For

Lu Engineers, Inc.

For Lab Project ID

182519

Referencing

Jay-Hague

Prepared

Wednesday, June 13, 2018

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182519

Client: **Lu Engineers, Inc.**

Project Reference: Jay-Hague

Sample Identifier:	IW-01_060618		
Lab Sample ID:	182519-01	**Date Sampled:**	6/6/2018
Matrix:	Groundwater	**Date Received:**	6/6/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/11/2018 17:02
1,3-Dichlorobenzene	< 2.00	ug/L		6/11/2018 17:02
cis-1,2-Dichloroethene	**4.92**	ug/L		6/11/2018 17:02
Tetrachloroethene	< 2.00	ug/L		6/11/2018 17:02
Trichloroethene	< 2.00	ug/L		6/11/2018 17:02

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**91.9**	77.2 - 121		6/11/2018 17:02
4-Bromofluorobenzene	**96.1**	70 - 123		6/11/2018 17:02
Pentafluorobenzene	**97.7**	85.4 - 110		6/11/2018 17:02
Toluene-D8	**102**	83.8 - 112		6/11/2018 17:02

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x51530.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182519

Client: **Lu Engineers, Inc.**

Project Reference: Jay-Hague

Sample Identifier: IW-02_060618
Lab Sample ID: 182519-02 **Date Sampled:** 6/6/2018
Matrix: Groundwater **Date Received:** 6/6/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/11/2018 17:25
1,3-Dichlorobenzene	< 2.00	ug/L		6/11/2018 17:25
cis-1,2-Dichloroethene	**4.33**	ug/L		6/11/2018 17:25
Tetrachloroethene	< 2.00	ug/L		6/11/2018 17:25
Trichloroethene	**2.65**	ug/L		6/11/2018 17:25

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**91.1**	77.2 - 121		6/11/2018 17:25
4-Bromofluorobenzene	**95.8**	70 - 123		6/11/2018 17:25
Pentafluorobenzene	**97.3**	85.4 - 110		6/11/2018 17:25
Toluene-D8	**101**	83.8 - 112		6/11/2018 17:25

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51531.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182519

Client: **Lu Engineers, Inc.**

Project Reference: Jay-Hague

Sample Identifier:	IW-03_060618		
Lab Sample ID:	182519-03	**Date Sampled:**	6/6/2018
Matrix:	Groundwater	**Date Received:**	6/6/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/11/2018 17:48
1,3-Dichlorobenzene	< 2.00	ug/L		6/11/2018 17:48
cis-1,2-Dichloroethene	**135**	ug/L		6/11/2018 17:48
Tetrachloroethene	**33.9**	ug/L		6/11/2018 17:48
Trichloroethene	**66.2**	ug/L		6/11/2018 17:48

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**93.9**	77.2 - 121		6/11/2018 17:48
4-Bromofluorobenzene	**92.2**	70 - 123		6/11/2018 17:48
Pentafluorobenzene	**98.2**	85.4 - 110		6/11/2018 17:48
Toluene-D8	**100**	83.8 - 112		6/11/2018 17:48

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x51532.D

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182519

Client: **Lu Engineers, Inc.**

Project Reference: Jay-Hague

Sample Identifier:	GPMW-21_060618		
Lab Sample ID:	182519-04	**Date Sampled:**	6/6/2018
Matrix:	Groundwater	**Date Received:**	6/6/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	**2.18**	ug/L		6/11/2018 18:12
1,3-Dichlorobenzene	< 2.00	ug/L		6/11/2018 18:12
cis-1,2-Dichloroethene	< 2.00	ug/L		6/11/2018 18:12
Tetrachloroethene	< 2.00	ug/L		6/11/2018 18:12
Trichloroethene	**11.2**	ug/L		6/11/2018 18:12

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**94.5**	77.2 - 121		6/11/2018 18:12
4-Bromofluorobenzene	**90.2**	70 - 123		6/11/2018 18:12
Pentafluorobenzene	**97.5**	85.4 - 110		6/11/2018 18:12
Toluene-D8	**102**	83.8 - 112		6/11/2018 18:12

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x51533.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182519

Client: **Lu Engineers, Inc.**

Project Reference: Jay-Hague

Sample Identifier:	GPMW-27_060618		
Lab Sample ID:	182519-05	**Date Sampled:**	6/6/2018
Matrix:	Groundwater	**Date Received:**	6/6/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	**5.91**	ug/L		6/11/2018 18:35
1,3-Dichlorobenzene	< 2.00	ug/L		6/11/2018 18:35
cis-1,2-Dichloroethene	< 2.00	ug/L		6/11/2018 18:35
Tetrachloroethene	< 2.00	ug/L		6/11/2018 18:35
Trichloroethene	**8.56**	ug/L		6/11/2018 18:35

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**92.3**	77.2 - 121		6/11/2018 18:35
4-Bromofluorobenzene	**90.4**	70 - 123		6/11/2018 18:35
Pentafluorobenzene	**95.6**	85.4 - 110		6/11/2018 18:35
Toluene-D8	**100**	83.8 - 112		6/11/2018 18:35

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x51534.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182519

Client: **Lu Engineers, Inc.**

Project Reference: Jay-Hague

Sample Identifier: Trip Blank
Lab Sample ID: 182519-06 **Date Sampled:** 6/6/2018
Matrix: Water **Date Received:** 6/6/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/11/2018 16:38
1,3-Dichlorobenzene	< 2.00	ug/L		6/11/2018 16:38
cis-1,2-Dichloroethene	< 2.00	ug/L		6/11/2018 16:38
Tetrachloroethene	< 2.00	ug/L		6/11/2018 16:38
Trichloroethene	< 2.00	ug/L		6/11/2018 16:38

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**90.5**	77.2 - 121		6/11/2018 16:38
4-Bromofluorobenzene	**100**	70 - 123		6/11/2018 16:38
Pentafluorobenzene	**100**	85.4 - 110		6/11/2018 16:38
Toluene-D8	**103**	83.8 - 112		6/11/2018 16:38

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51529.D

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, tern or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

PARADIGM ENVIRONMENTAL SERVICES, INC

REPORT TO:		INVOICE TO:		
CLIENT: LW Engineers		CLIENT:		LAB PROJECT ID: 182519
ADDRESS: 339 East Avenue Suite 200		ADDRESS:		
CITY: Rochester	STATE: NY ZIP: 14604	CITY: Same	STATE: ZIP:	Quotation #:
PHONE: 585 - 385 - 7417		PHONE:		Email: gregandrus@lwengineers.com
ATTN: Greg Andrus		ATTN:		

PROJECT REFERENCE: Jay - Hague

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	VOCs plus CP-51	REMARKS	PARADIGM LAB SAMPLE NUMBER
06/06/18	10:05			IW-01_060618	WG	2	✓	Test for 1,3-Dichlorobenzene;	01
06/06/18	10:55			IW-02_060618	WG	2	✓	1,1,1-Trichloroethane;	02
06/06/18	11:30			IW-03_060618	WG	2	✓	cis-1,2-Dichloroethene;	03
06/06/18	12:15			GPMW-21_060618	WG	2	✓	Trichloroethylene; Tetrachloroethylene	04
06/06/18	12:55			GPMW-27_060618	WG	2	✓	only per client email. CPG 6/6/18	05
06/06/18				Trip blank	WA	1	✓	T840 per sample label @ 6/6/18	06

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☑	None Required	☐	None Required	☐
10 day	☐	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☐
Rush 2 day	☐	Category B	☐		
Rush 1 day	☐				
Other please indicate date needed:	☐	Other please indicate package needed:	☐	Other EDD please indicate EDD needed:	☐

Sampled By: Benjamin Scott — Date/Time: 06/06/18 13:45 — Total Cost:

Relinquished By: Benjamin Scott — Date/Time: 06/06/18 14:40

Received By: [signature] — Date/Time: 6/6/18 1440 — P.I.F.

Received @ Lab By: Emily Jackson — Date/Time: 6/6/18 14:57

14°C iced started in field 6/6/18 14:50

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

Chain of Custody Supplement

Client: Lu Engineers **Completed by:** Emily Jackson

Lab Project ID: 182519 **Date:** 6/6/18

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt: Yes	No	N/A
Container Type	X		
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)	X		
Comments			
Preservation	X		
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		
Comments	14°C iced Started in field		
Sufficient Sample Quantity	X		
Comments			

PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC

Analytical Report For

Lu Engineers, Inc.

For Lab Project ID

184277

Referencing

50380

Prepared

Tuesday, September 25, 2018

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 184277

Client: **Lu Engineers, Inc.**

Project Reference: 50380

Sample Identifier:	IW-1_091718		
Lab Sample ID:	184277-01	**Date Sampled:**	9/17/2018
Matrix:	Groundwater	**Date Received:**	9/18/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		9/24/2018 16:37
1,3-Dichlorobenzene	< 2.00	ug/L		9/24/2018 16:37
cis-1,2-Dichloroethene	**3.19**	ug/L		9/24/2018 16:37
Tetrachloroethene	< 2.00	ug/L		9/24/2018 16:37
Trichloroethene	< 2.00	ug/L		9/24/2018 16:37

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**89.7**	80.7 - 121		9/24/2018 16:37
4-Bromofluorobenzene	**84.3**	74.3 - 121		9/24/2018 16:37
Pentafluorobenzene	**94.0**	86.2 - 111		9/24/2018 16:37
Toluene-D8	**90.6**	86.2 - 112		9/24/2018 16:37

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x54451.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 184277

Client: **Lu Engineers, Inc.**

Project Reference: 50380

Sample Identifier:	IW-2_091718		
Lab Sample ID:	184277-02	**Date Sampled:**	9/17/2018
Matrix:	Groundwater	**Date Received:**	9/18/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		9/24/2018 17:01
1,3-Dichlorobenzene	< 2.00	ug/L		9/24/2018 17:01
cis-1,2-Dichloroethene	< 2.00	ug/L		9/24/2018 17:01
Tetrachloroethene	< 2.00	ug/L		9/24/2018 17:01
Trichloroethene	< 2.00	ug/L		9/24/2018 17:01

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**91.8**	80.7 - 121		9/24/2018 17:01
4-Bromofluorobenzene	**86.1**	74.3 - 121		9/24/2018 17:01
Pentafluorobenzene	**96.7**	86.2 - 111		9/24/2018 17:01
Toluene-D8	**88.9**	86.2 - 112		9/24/2018 17:01

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x54452.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 184277

Client: **Lu Engineers, Inc.**

Project Reference: 50380

Sample Identifier:	IW-3_091718		
Lab Sample ID:	184277-03	**Date Sampled:**	9/17/2018
Matrix:	Groundwater	**Date Received:**	9/18/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		9/24/2018 17:24
1,3-Dichlorobenzene	< 2.00	ug/L		9/24/2018 17:24
cis-1,2-Dichloroethene	**145**	ug/L		9/24/2018 17:24
Tetrachloroethene	**13.6**	ug/L		9/24/2018 17:24
Trichloroethene	**18.3**	ug/L		9/24/2018 17:24

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**90.4**	80.7 - 121		9/24/2018 17:24
4-Bromofluorobenzene	**82.3**	74.3 - 121		9/24/2018 17:24
Pentafluorobenzene	**95.0**	86.2 - 111		9/24/2018 17:24
Toluene-D8	**90.9**	86.2 - 112		9/24/2018 17:24

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x54453.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 184277

Client: **Lu Engineers, Inc.**

Project Reference: 50380

Sample Identifier:	GPMW-25_091718		
Lab Sample ID:	184277-04	**Date Sampled:**	9/17/2018
Matrix:	Groundwater	**Date Received:**	9/18/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		9/24/2018 17:47
1,3-Dichlorobenzene	< 2.00	ug/L		9/24/2018 17:47
cis-1,2-Dichloroethene	< 2.00	ug/L		9/24/2018 17:47
Tetrachloroethene	< 2.00	ug/L		9/24/2018 17:47
Trichloroethene	**5.50**	ug/L		9/24/2018 17:47

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**94.0**	80.7 - 121		9/24/2018 17:47
4-Bromofluorobenzene	**82.7**	74.3 - 121		9/24/2018 17:47
Pentafluorobenzene	**94.0**	86.2 - 111		9/24/2018 17:47
Toluene-D8	**92.4**	86.2 - 112		9/24/2018 17:47

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x54454.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 184277

Client: **Lu Engineers, Inc.**

Project Reference: 50380

Sample Identifier:	GPMW-27_091718		
Lab Sample ID:	184277-05	**Date Sampled:**	9/17/2018
Matrix:	Groundwater	**Date Received:**	9/18/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		9/24/2018 18:11
1,3-Dichlorobenzene	< 2.00	ug/L		9/24/2018 18:11
cis-1,2-Dichloroethene	< 2.00	ug/L		9/24/2018 18:11
Tetrachloroethene	< 2.00	ug/L		9/24/2018 18:11
Trichloroethene	**4.08**	ug/L		9/24/2018 18:11

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**101**	80.7 - 121		9/24/2018 18:11
4-Bromofluorobenzene	**85.0**	74.3 - 121		9/24/2018 18:11
Pentafluorobenzene	**95.7**	86.2 - 111		9/24/2018 18:11
Toluene-D8	**96.0**	86.2 - 112		9/24/2018 18:11

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x54455.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 184277

Client: **Lu Engineers, Inc.**

Project Reference: 50380

Sample Identifier:	Trip Blank		
Lab Sample ID:	184277-06	**Date Sampled:**	9/17/2018
Matrix:	Water	**Date Received:**	9/18/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		9/24/2018 16:14
1,3-Dichlorobenzene	< 2.00	ug/L		9/24/2018 16:14
cis-1,2-Dichloroethene	< 2.00	ug/L		9/24/2018 16:14
Tetrachloroethene	< 2.00	ug/L		9/24/2018 16:14
Trichloroethene	< 2.00	ug/L		9/24/2018 16:14

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**92.1**	80.7 - 121		9/24/2018 16:14
4-Bromofluorobenzene	**90.7**	74.3 - 121		9/24/2018 16:14
Pentafluorobenzene	**94.3**	86.2 - 111		9/24/2018 16:14
Toluene-D8	**94.0**	86.2 - 112		9/24/2018 16:14

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x54450.D

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

Each page of this document is part of a multipage report. This document may not be reproduced except in its entirety, without the prior consent of Paradigm Environmental Services, Inc.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

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NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, tern or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

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Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

1 of 2

CHAIN OF CUSTODY

PARADIGM ENVIRONMENTAL SERVICES, INC.

REPORT TO:		INVOICE TO:		
CLIENT:	LU Engineers	CLIENT:		LAB PROJECT ID: 184277
ADDRESS:	339 East Ave	ADDRESS:		
CITY:	Rochester STATE: NY ZIP 14604	CITY:	STATE: ZIP:	Quotation #:
PHONE:	(585) 385-7417	PHONE:	Same	Email: gregandrus@lwengineers.com
ATTN:	Greg Andrus	ATTN:		

PROJECT REFERENCE: 50380

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	VOC	REMARKS	PARADIGM LAB SAMPLE NUMBER
9/17/18	13:00			IW-1_091718	WG	2		Test for: 1,3-Dichlorobenzene	01
	13:20			IW-2_091718	WG	2		1,1,1-Trichloroethane	02
	13:40			IW-3_091718	WG	2		Cis-1,2-Dichloroethene	03
	14:00			GPMW-25_091718	WG	2		Trichloroethylene	04
	14:20			GPMW-27_091718	WG	2		Tetrachloroethylene BGS	05
9/14/18 per sample label @ 9/18/18	~~13:00~~ @ 9/18/18			Trip blank T858 per sample label @ 9/18/18	WA	1		BGS 9/17/18	06

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☑	None Required	☑	None Required	☑
10 day	☐	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☐
Rush 2 day	☐	Category B	☐		
Rush 1 day	☐				
Other please indicate date needed:	☐	Other please indicate package needed:	☐	Other EDD please indicate EDD needed:	☐

Sampled By	09/17/18 15:30 Date/Time	Total Cost:
Relinquished By	09/18/18 09:15 Date/Time	
Received By	9/18/18 09:15 Date/Time	P.I.F.
Received @ Lab By	9/18/18 09:50 Date/Time	

3°C iced 9/18/18 09:27

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

Chain of Custody Supplement

Client: Lu Engineers **Completed by:** Glenn Pezzulo

Lab Project ID: 184277 **Date:** 9/18/18

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt: Yes	No	N/A
Container Type	X		
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)	X		
Comments			
Preservation	X		
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		
Comments	3°C iced		
Sufficient Sample Quantity	X		
Comments			

PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report For

Lu Engineers, Inc.

For Lab Project ID

184784

Referencing

50380

Prepared

Tuesday, October 23, 2018

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 184784

Client: **Lu Engineers, Inc.**

Project Reference: 50380

Sample Identifier:	GP-22_101518 (10-12')		
Lab Sample ID:	184784-01	**Date Sampled:**	10/15/2018
Matrix:	Soil	**Date Received:**	10/15/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 6.43	ug/Kg		10/19/2018 18:55
1,3-Dichlorobenzene	< 6.43	ug/Kg		10/19/2018 18:55
cis-1,2-Dichloroethene	< 6.43	ug/Kg		10/19/2018 18:55
Tetrachloroethene	< 6.43	ug/Kg		10/19/2018 18:55
Trichloroethene	**354**	ug/Kg		10/19/2018 18:55
Vinyl chloride	< 6.43	ug/Kg		10/19/2018 18:55

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**140**	85.5 - 126	*	10/19/2018 18:55
4-Bromofluorobenzene	**82.1**	78.8 - 116		10/19/2018 18:55
Pentafluorobenzene	**87.3**	86 - 110		10/19/2018 18:55
Toluene-D8	**93.3**	86.7 - 111		10/19/2018 18:55

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x55826.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 184784

Client: **Lu Engineers, Inc.**

Project Reference: 50380

Sample Identifier:	GP-25_101518 (10-12')		
Lab Sample ID:	184784-02	**Date Sampled:**	10/15/2018
Matrix:	Soil	**Date Received:**	10/15/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	**8.16**	ug/Kg		10/19/2018 19:19
1,3-Dichlorobenzene	< 7.77	ug/Kg		10/19/2018 19:19
cis-1,2-Dichloroethene	< 7.77	ug/Kg		10/19/2018 19:19
Tetrachloroethene	**26.9**	ug/Kg		10/19/2018 19:19
Trichloroethene	**8.38**	ug/Kg		10/19/2018 19:19
Vinyl chloride	< 7.77	ug/Kg		10/19/2018 19:19

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**134**	85.5 - 126	*	10/19/2018 19:19
4-Bromofluorobenzene	**81.3**	78.8 - 116		10/19/2018 19:19
Pentafluorobenzene	**88.8**	86 - 110		10/19/2018 19:19
Toluene-D8	**91.1**	86.7 - 111		10/19/2018 19:19

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x55827.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 184784

Client: Lu Engineers, Inc.

Project Reference: 50380

Sample Identifier:	GP-20_101518 (10-12')		
Lab Sample ID:	184784-03	**Date Sampled:**	10/15/2018
Matrix:	Soil	**Date Received:**	10/15/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 7.58	ug/Kg		10/19/2018 19:43
1,3-Dichlorobenzene	< 7.58	ug/Kg		10/19/2018 19:43
cis-1,2-Dichloroethene	< 7.58	ug/Kg		10/19/2018 19:43
Tetrachloroethene	< 7.58	ug/Kg		10/19/2018 19:43
Trichloroethene	**424**	ug/Kg		10/19/2018 19:43
Vinyl chloride	< 7.58	ug/Kg		10/19/2018 19:43

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**142**	85.5 - 126	*	10/19/2018 19:43
4-Bromofluorobenzene	**79.1**	78.8 - 116		10/19/2018 19:43
Pentafluorobenzene	**91.5**	86 - 110		10/19/2018 19:43
Toluene-D8	**91.9**	86.7 - 111		10/19/2018 19:43

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x55828.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 184784

Client: **Lu Engineers, Inc.**

Project Reference: 50380

Sample Identifier:	GPMW-25 (10/15/18)		
Lab Sample ID:	184784-04	**Date Sampled:**	10/15/2018
Matrix:	Groundwater	**Date Received:**	10/15/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		10/19/2018 17:44
1,3-Dichlorobenzene	< 2.00	ug/L		10/19/2018 17:44
cis-1,2-Dichloroethene	< 2.00	ug/L		10/19/2018 17:44
Tetrachloroethene	< 2.00	ug/L		10/19/2018 17:44
Trichloroethene	**6.87**	ug/L		10/19/2018 17:44
Vinyl chloride	< 2.00	ug/L		10/19/2018 17:44

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**133**	86.4 - 119	*	10/19/2018 17:44
4-Bromofluorobenzene	**82.8**	76 - 118		10/19/2018 17:44
Pentafluorobenzene	**86.7**	87 - 112	*	10/19/2018 17:44
Toluene-D8	**89.1**	88.4 - 111		10/19/2018 17:44

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x55823.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 184784

Client: **Lu Engineers, Inc.**

Project Reference: 50380

Sample Identifier:	GPMW-21 (10/15/18)		
Lab Sample ID:	184784-05	**Date Sampled:**	10/15/2018
Matrix:	Groundwater	**Date Received:**	10/15/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	**5.32**	ug/L		10/19/2018 18:08
1,3-Dichlorobenzene	< 2.00	ug/L		10/19/2018 18:08
cis-1,2-Dichloroethene	< 2.00	ug/L		10/19/2018 18:08
Tetrachloroethene	< 2.00	ug/L		10/19/2018 18:08
Trichloroethene	**12.0**	ug/L		10/19/2018 18:08
Vinyl chloride	< 2.00	ug/L		10/19/2018 18:08

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**132**	86.4 - 119	*	10/19/2018 18:08
4-Bromofluorobenzene	**83.4**	76 - 118		10/19/2018 18:08
Pentafluorobenzene	**84.9**	87 - 112	*	10/19/2018 18:08
Toluene-D8	**92.0**	88.4 - 111		10/19/2018 18:08

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x55824.D

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“J” = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
“P” = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
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Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

PARADIGM ENVIRONMENTAL SERVICES, INC

REPORT TO:		INVOICE TO:		
CLIENT:	LU Engineers	CLIENT:		LAB PROJECT ID: 184784
ADDRESS:	339 East Ave Suite 200	ADDRESS:		
CITY:	Rochester STATE: NY ZIP: 14604	CITY:	SAME STATE: ZIP:	Quotation #:
PHONE:	585-385-7417	PHONE:		Email: gandrus@lwengineers.com
ATTN:	Greg Andrus	ATTN:		

PROJECT REFERENCE: 50380

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	1,1,1,-Trichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride	REMARKS	PARADIGM LAB SAMPLE NUMBER
10/15/18	12:00		X	GP-22_101518 (10-12')	SO	1	X	X	X	X	X	X		01
10/15/18	13:00		X	GP-25_101518 (10-12')	SO	1								02
10/15/18	14:00		X	GP-20_101518 (10-12')	SO	1								03
10/15/18	14:15		X	GPMW-25 (10/15/18)	WG	2								04
10/15/18	14:30		X	GPMW-28 (10/15/18)	WG	2								05
				1 preserved										
				MW 10/16/18										

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	X	None Required	X	None Required	X
10 day		Batch QC		Basic EDD	
Rush 3 day		Category A		NYSDEC EDD	
Rush 2 day		Category B			
Rush 1 day					
Other please indicate date needed:		Other please indicate package needed:		Other EDD please indicate EDD needed :	

Sampled By	10/15/18 14:35 Date/Time	Total Cost:
Relinquished By	10/15/18 16:20 Date/Time	
Received By	10/15/18 16:20 Date/Time	P.I.F.
Received @ Lab By	10/15/18 1634 Date/Time	

13°C iced started in field 10/15/18 16:27

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

2 of 2

Chain of Custody Supplement

Client: L4 Eng Completed by: Molly Kail

Lab Project ID: 184784 Date: 10/15/18

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt: Yes	No	N/A
Container Type	X	5039-01-03	
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)	X 04, 05		X
Comments			
Preservation	04, 05		X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		
Comments	13° iced started in field		
Sufficient Sample Quantity	X		
Comments			

PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report For

Lu Engineers, Inc.

For Lab Project ID

191052

Referencing

50380 - Jay Hague

Prepared

Monday, March 25, 2019

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191052

Client: **Lu Engineers, Inc.**

Project Reference: 50380 - Jay Hague

Sample Identifier:	IW-01_031519		
Lab Sample ID:	191052-01	**Date Sampled:**	3/15/2019
Matrix:	Groundwater	**Date Received:**	3/18/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/19/2019 12:53
1,3-Dichlorobenzene	< 2.00	ug/L		3/19/2019 12:53
cis-1,2-Dichloroethene	< 2.00	ug/L		3/19/2019 12:53
Tetrachloroethene	< 2.00	ug/L		3/19/2019 12:53
Trichloroethene	< 2.00	ug/L		3/19/2019 12:53
Vinyl chloride	< 2.00	ug/L		3/19/2019 12:53

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**106**	75.3 - 127		3/19/2019 12:53
4-Bromofluorobenzene	**82.9**	67.4 - 122		3/19/2019 12:53
Pentafluorobenzene	**94.2**	86.8 - 110		3/19/2019 12:53
Toluene-D8	**90.3**	85 - 112		3/19/2019 12:53

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x59334.D

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191052

Client: **Lu Engineers, Inc.**

Project Reference: 50380 - Jay Hague

Sample Identifier:	IW-02_031519		
Lab Sample ID:	191052-02	**Date Sampled:**	3/15/2019
Matrix:	Groundwater	**Date Received:**	3/18/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/19/2019 13:15
1,3-Dichlorobenzene	< 2.00	ug/L		3/19/2019 13:15
cis-1,2-Dichloroethene	**4.05**	ug/L		3/19/2019 13:15
Tetrachloroethene	< 2.00	ug/L		3/19/2019 13:15
Trichloroethene	**3.27**	ug/L		3/19/2019 13:15
Vinyl chloride	< 2.00	ug/L		3/19/2019 13:15

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**110**	75.3 - 127		3/19/2019 13:15
4-Bromofluorobenzene	**80.8**	67.4 - 122		3/19/2019 13:15
Pentafluorobenzene	**94.8**	86.8 - 110		3/19/2019 13:15
Toluene-D8	**91.2**	85 - 112		3/19/2019 13:15

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x59335.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191052

Client: **Lu Engineers, Inc.**

Project Reference: 50380 - Jay Hague

Sample Identifier:	IW-03_031519		
Lab Sample ID:	191052-03	**Date Sampled:**	3/15/2019
Matrix:	Groundwater	**Date Received:**	3/18/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/19/2019 13:38
1,3-Dichlorobenzene	< 2.00	ug/L		3/19/2019 13:38
cis-1,2-Dichloroethene	**2.32**	ug/L		3/19/2019 13:38
Tetrachloroethene	< 2.00	ug/L		3/19/2019 13:38
Trichloroethene	< 2.00	ug/L		3/19/2019 13:38
Vinyl chloride	< 2.00	ug/L		3/19/2019 13:38

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**109**	75.3 - 127		3/19/2019 13:38
4-Bromofluorobenzene	**80.8**	67.4 - 122		3/19/2019 13:38
Pentafluorobenzene	**94.3**	86.8 - 110		3/19/2019 13:38
Toluene-D8	**87.3**	85 - 112		3/19/2019 13:38

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x59336.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191052

Client: **Lu Engineers, Inc.**

Project Reference: 50380 - Jay Hague

Sample Identifier:	GPMW-21_031519		
Lab Sample ID:	191052-04	**Date Sampled:**	3/15/2019
Matrix:	Groundwater	**Date Received:**	3/18/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	**4.17**	ug/L		3/19/2019 14:01
1,3-Dichlorobenzene	< 2.00	ug/L		3/19/2019 14:01
cis-1,2-Dichloroethene	< 2.00	ug/L		3/19/2019 14:01
Tetrachloroethene	< 2.00	ug/L		3/19/2019 14:01
Trichloroethene	**12.4**	ug/L		3/19/2019 14:01
Vinyl chloride	< 2.00	ug/L		3/19/2019 14:01

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**109**	75.3 - 127		3/19/2019 14:01
4-Bromofluorobenzene	**80.5**	67.4 - 122		3/19/2019 14:01
Pentafluorobenzene	**94.2**	86.8 - 110		3/19/2019 14:01
Toluene-D8	**90.5**	85 - 112		3/19/2019 14:01

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x59337.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191052

Client: **Lu Engineers, Inc.**

Project Reference: 50380 - Jay Hague

Sample Identifier:	GPMW-25_031519		
Lab Sample ID:	191052-05	**Date Sampled:**	3/15/2019
Matrix:	Groundwater	**Date Received:**	3/18/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/19/2019 14:24
1,3-Dichlorobenzene	< 2.00	ug/L		3/19/2019 14:24
cis-1,2-Dichloroethene	< 2.00	ug/L		3/19/2019 14:24
Tetrachloroethene	< 2.00	ug/L		3/19/2019 14:24
Trichloroethene	**5.30**	ug/L		3/19/2019 14:24
Vinyl chloride	< 2.00	ug/L		3/19/2019 14:24

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**117**	75.3 - 127		3/19/2019 14:24
4-Bromofluorobenzene	**82.7**	67.4 - 122		3/19/2019 14:24
Pentafluorobenzene	**93.7**	86.8 - 110		3/19/2019 14:24
Toluene-D8	**91.2**	85 - 112		3/19/2019 14:24

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x59338.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191052

Client: **Lu Engineers, Inc.**

Project Reference: 50380 - Jay Hague

Sample Identifier:	GPMW-27_031519		
Lab Sample ID:	191052-06	**Date Sampled:**	3/15/2019
Matrix:	Groundwater	**Date Received:**	3/18/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	**8.37**	ug/L		3/19/2019 14:46
1,3-Dichlorobenzene	< 2.00	ug/L		3/19/2019 14:46
cis-1,2-Dichloroethene	< 2.00	ug/L		3/19/2019 14:46
Tetrachloroethene	< 2.00	ug/L		3/19/2019 14:46
Trichloroethene	**6.22**	ug/L		3/19/2019 14:46
Vinyl chloride	< 2.00	ug/L		3/19/2019 14:46

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**113**	75.3 - 127		3/19/2019 14:46
4-Bromofluorobenzene	**85.5**	67.4 - 122		3/19/2019 14:46
Pentafluorobenzene	**94.2**	86.8 - 110		3/19/2019 14:46
Toluene-D8	**92.4**	85 - 112		3/19/2019 14:46

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x59339.D

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191052

Client: **Lu Engineers, Inc.**

Project Reference: 50380 - Jay Hague

Sample Identifier:	Trip Blank		
Lab Sample ID:	191052-07	**Date Sampled:**	3/14/2019
Matrix:	Water	**Date Received:**	3/18/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/19/2019 12:30
1,3-Dichlorobenzene	< 2.00	ug/L		3/19/2019 12:30
cis-1,2-Dichloroethene	< 2.00	ug/L		3/19/2019 12:30
Tetrachloroethene	< 2.00	ug/L		3/19/2019 12:30
Trichloroethene	< 2.00	ug/L		3/19/2019 12:30
Vinyl chloride	< 2.00	ug/L		3/19/2019 12:30

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**105**	75.3 - 127		3/19/2019 12:30
4-Bromofluorobenzene	**79.5**	67.4 - 122		3/19/2019 12:30
Pentafluorobenzene	**95.9**	86.8 - 110		3/19/2019 12:30
Toluene-D8	**88.8**	85 - 112		3/19/2019 12:30

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x59333.D

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

Each page of this document is part of a multipage report. This document may not be reproduced except in its entirety, without the prior consent of Paradigm Environmental Services, Inc.

All soil/sludge samples have been reported on a dry weight basis, unless qualified “reported as received”. Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an “A” suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

“<” = Analyzed for but not detected at or above the quantitation limit.
“E” = Result has been estimated, calibration limit exceeded.
“Z” = See case narrative.
“D” = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
“M” = Matrix spike recoveries outside QC limits. Matrix bias indicated.
“B” = Method blank contained trace levels of analyte. Refer to included method blank report.
“J” = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
“P” = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, tern or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM
ENVIRONMENTAL SERVICES, INC

CHAIN OF CUSTODY

REPORT TO:			INVOICE TO:		
CLIENT: Lu Engineers			CLIENT:		LAB PROJECT ID: 191052
ADDRESS: 339 East Avenue Suite 200			ADDRESS: SAME		Quotation #:
CITY: Rochester	STATE: NY	ZIP: 14620	CITY:	STATE: ZIP:	
PHONE: 585-385-7417			PHONE:		Email: bseifert@luengineers.com
ATTN: Ben Seifert			ATTN: Greg Andrus		

PROJECT REFERENCE: 50380 - Jay Hagre

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS: 1,1,1-Trichloroethane; 1,3-dichlorobenzene; cis-1,2-dichloroethene; Tetrachloroethene; Trichloroethene; Vinyl chloride

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	REMARKS	PARADIGM LAB SAMPLE NUMBER
03/15/19			X	IW-01_031519	WG	2		01
03/15/19				IW-02_031519	WG	2		02
03/15/19				IW-03_031519	WG	2		03
03/15/19				GPMW-21_031519	WG	2		04
03/15/19				GPMW-25_031519	WG	2		05
03/15/19				GPMW-27_031519	WG	2		06
~~03/15/19~~ 3/14/19 per sample of 3/15/19	label			Trip Blank	WA	1	T891 per sample label GP 3/15/19	07

Turnaround Time		Report Supplements		
Availability contingent upon lab approval; additional fees may apply.				
Standard 5 day	☒	None Required	☒	None Required ☒
10 day	☐	Batch QC	☐	Basic EDD ☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD ☐
Rush 2 day	☐	Category B	☐	
Rush 1 day	☐			
Date Needed _____ please indicate date needed:		Other ☐ please indicate package needed:		Other EDD ☐ please indicate EDD needed :

Sampled By	03/15/19 Date/Time	13:45
Relinquished By	03/15/19 Date/Time	4:26 pm
Received By	3/15/19 Date/Time	1626
Received @ Lab By	3/18/19 Date/Time	08:35

Total Cost:

P.I.F.

9°C ice is started in field 3/15/19 16:30

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

Chain of Custody Supplement

Client: Lu Engineers **Completed by:** Glenn Pezzulo

Lab Project ID: 191052 **Date:** 3/18/19

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt: Yes	No	N/A
Container Type	X		
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)	X		
Comments			
Preservation	X		
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		
Comments	9°C iced started in field		
Sufficient Sample Quantity	X		
Comments			

PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report For

Lu Engineers, Inc.

For Lab Project ID

191919

Referencing

50380-01 Jay-Hague

Prepared

Monday, May 13, 2019

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191919

Client: **Lu Engineers, Inc.**

Project Reference: 50380-01 Jay-Hague

Sample Identifier:	GP-20_050419 (10-12')		
Lab Sample ID:	191919-01	**Date Sampled:**	5/4/2019
Matrix:	Soil	**Date Received:**	5/6/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 7.50	ug/Kg		5/7/2019 19:47
1,3-Dichlorobenzene	< 7.50	ug/Kg		5/7/2019 19:47
cis-1,2-Dichloroethene	< 7.50	ug/Kg		5/7/2019 19:47
Tetrachloroethene	< 7.50	ug/Kg		5/7/2019 19:47
Trichloroethene	**429**	ug/Kg		5/7/2019 19:47
Vinyl chloride	< 7.50	ug/Kg		5/7/2019 19:47

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**111**	70.5 - 138		5/7/2019 19:47
4-Bromofluorobenzene	**67.2**	66.2 - 124		5/7/2019 19:47
Pentafluorobenzene	**93.9**	86 - 110		5/7/2019 19:47
Toluene-D8	**86.9**	81.6 - 113		5/7/2019 19:47

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x60645.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191919

Client: **Lu Engineers, Inc.**

Project Reference: 50380-01 Jay-Hague

Sample Identifier:	GP-22_050419 (10-12')		
Lab Sample ID:	191919-02	**Date Sampled:**	5/4/2019
Matrix:	Soil	**Date Received:**	5/6/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 7.96	ug/Kg		5/7/2019 20:11
1,3-Dichlorobenzene	< 7.96	ug/Kg		5/7/2019 20:11
cis-1,2-Dichloroethene	< 7.96	ug/Kg		5/7/2019 20:11
Tetrachloroethene	< 7.96	ug/Kg		5/7/2019 20:11
Trichloroethene	**578**	ug/Kg		5/7/2019 20:11
Vinyl chloride	< 7.96	ug/Kg		5/7/2019 20:11

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**108**	70.5 - 138		5/7/2019 20:11
4-Bromofluorobenzene	**71.1**	66.2 - 124		5/7/2019 20:11
Pentafluorobenzene	**91.0**	86 - 110		5/7/2019 20:11
Toluene-D8	**86.8**	81.6 - 113		5/7/2019 20:11

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x60646.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191919

Client: **Lu Engineers, Inc.**

Project Reference: 50380-01 Jay-Hague

Sample Identifier:	GP-25_050419 (10-12')		
Lab Sample ID:	191919-03	**Date Sampled:**	5/4/2019
Matrix:	Soil	**Date Received:**	5/6/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 35.3	ug/Kg		5/8/2019 13:27
1,3-Dichlorobenzene	< 35.3	ug/Kg		5/8/2019 13:27
cis-1,2-Dichloroethene	< 35.3	ug/Kg		5/8/2019 13:27
Tetrachloroethene	< 35.3	ug/Kg		5/8/2019 13:27
Trichloroethene	**636**	ug/Kg		5/8/2019 13:27
Vinyl chloride	< 35.3	ug/Kg		5/8/2019 13:27

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**122**	70.5 - 138		5/8/2019 13:27
4-Bromofluorobenzene	**69.4**	66.2 - 124		5/8/2019 13:27
Pentafluorobenzene	**92.0**	86 - 110		5/8/2019 13:27
Toluene-D8	**86.5**	81.6 - 113		5/8/2019 13:27

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x60681.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

Each page of this document is part of a multipage report. This document may not be reproduced except in its entirety, without the prior consent of Paradigm Environmental Services, Inc.

All soil/sludge samples have been reported on a dry weight basis, unless qualified “reported as received”. Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an “A” suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

“<” = Analyzed for but not detected at or above the quantitation limit.
“E” = Result has been estimated, calibration limit exceeded.
“Z” = See case narrative.
“D” = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
“M” = Matrix spike recoveries outside QC limits. Matrix bias indicated.
“B” = Method blank contained trace levels of analyte. Refer to included method blank report.
“J” = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
“P” = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, tern or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

1 of 2

CHAIN OF CUSTODY

PARADIGM ENVIRONMENTAL SERVICES, INC

REPORT TO:		INVOICE TO:		
CLIENT: LU Engineers		CLIENT:		LAB PROJECT ID: 191919
ADDRESS: 339 East Avenue		ADDRESS: SAME		Quotation #:
CITY: Rochester	STATE: NY ZIP: 14604	CITY:	STATE: ZIP:	
PHONE: 585-385-7417		PHONE:		Email: bseifert@luengineers.com gregandrus@luengineers.com
ATTN: Greg Andrus, Ben Seifert		ATTN: Greg Andrus		

PROJECT REFERENCE: 50380-01 Jay-Hague

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	1,1,1-TCA	1,3-Dichlorobenzene	cis-1,2-Dichloroethene	PCE	TCE	Vinyl chloride					REMARKS	PARADIGM LAB SAMPLE NUMBER
05/04/19	12:40		✓	GP-20_050419 (10-12')	SO	1	X	→	→	→	→	→					All samples frozen on 05/04/19	01
05/04/19	11:20		✓	GP-22_050419 (10-12')	SO	1	X	→	→	→	→	→					@ 1632 hours	02
05/04/19	12:05		✓	GP-25_050419 (10-12')	SO	1	X	→	→	→	→	→					Site specific VOA	03

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☒	None Required	☒	None Required	☒
10 day	☐	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☐
Rush 2 day	☐	Category B	☐		
Rush 1 day	☐				
Other please indicate date needed:	☐	Other please indicate package needed:	☐	Other EDD please indicate EDD needed:	☐

Sampled By: Ben Seifert	Date/Time: 05/04/19	1245
Relinquished By: Ben Seifert	Date/Time: 05/06/19	0855
Received By: Jane Jakola	Date/Time: 5/6/19	0855
Received @ Lab By: [signature]	Date/Time: 5/6/19	09:47

Total Cost:

P.I.F.

1°C rcd 5/6/19 09:25

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

PARADIGM

Chain of Custody Supplement

Client: Lu Engineers **Completed by:** Glenn Perrello

Lab Project ID: 191919 **Date:** 5/6/19

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	*NELAC compliance with the sample condition requirements upon receipt* Yes	No	N/A
Container Type	X	X 5035	
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		
Comments	1°C iced		
Sufficient Sample Quantity	X		
Comments			

PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report For

Lu Engineers, Inc.

For Lab Project ID

193505

Referencing

50380-01

Prepared

Thursday, August 1, 2019

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

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This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193505

Client: Lu Engineers, Inc.

Project Reference: 50380-01

Sample Identifier:	IW-01_072419		
Lab Sample ID:	193505-01	**Date Sampled:**	7/24/2019
Matrix:	Groundwater	**Date Received:**	7/24/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	**3.08**	ug/L		7/31/2019 20:59
1,3-Dichlorobenzene	< 2.00	ug/L		7/31/2019 20:59
cis-1,2-Dichloroethene	< 2.00	ug/L		7/31/2019 20:59
Tetrachloroethene	< 2.00	ug/L		7/31/2019 20:59
Trichloroethene	< 2.00	ug/L		7/31/2019 20:59
Vinyl chloride	< 2.00	ug/L		7/31/2019 20:59

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**97.4**	73.4 - 131		7/31/2019 20:59
4-Bromofluorobenzene	**81.5**	57.2 - 129		7/31/2019 20:59
Pentafluorobenzene	**97.2**	87 - 112		7/31/2019 20:59
Toluene-D8	**94.1**	78.3 - 115		7/31/2019 20:59

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x63155.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193505

Client: Lu Engineers, Inc.

Project Reference: 50380-01

Sample Identifier:	IW-02_072419		
Lab Sample ID:	193505-02	**Date Sampled:**	7/24/2019
Matrix:	Groundwater	**Date Received:**	7/24/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		7/31/2019 21:21
1,3-Dichlorobenzene	< 2.00	ug/L		7/31/2019 21:21
cis-1,2-Dichloroethene	**4.93**	ug/L		7/31/2019 21:21
Tetrachloroethene	< 2.00	ug/L		7/31/2019 21:21
Trichloroethene	**3.77**	ug/L		7/31/2019 21:21
Vinyl chloride	< 2.00	ug/L		7/31/2019 21:21

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**96.6**	73.4 - 131		7/31/2019 21:21
4-Bromofluorobenzene	**81.4**	57.2 - 129		7/31/2019 21:21
Pentafluorobenzene	**105**	87 - 112		7/31/2019 21:21
Toluene-D8	**94.5**	78.3 - 115		7/31/2019 21:21

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x63156.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193505

Client: Lu Engineers, Inc.

Project Reference: 50380-01

Sample Identifier:	IW-03_072419		
Lab Sample ID:	193505-03	**Date Sampled:**	7/24/2019
Matrix:	Groundwater	**Date Received:**	7/24/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		7/31/2019 21:44
1,3-Dichlorobenzene	< 2.00	ug/L		7/31/2019 21:44
cis-1,2-Dichloroethene	**165**	ug/L		7/31/2019 21:44
Tetrachloroethene	**23.4**	ug/L		7/31/2019 21:44
Trichloroethene	**39.3**	ug/L		7/31/2019 21:44
Vinyl chloride	**5.89**	ug/L		7/31/2019 21:44

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**97.7**	73.4 - 131		7/31/2019 21:44
4-Bromofluorobenzene	**80.8**	57.2 - 129		7/31/2019 21:44
Pentafluorobenzene	**104**	87 - 112		7/31/2019 21:44
Toluene-D8	**98.7**	78.3 - 115		7/31/2019 21:44

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x63157.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193505

Client: Lu Engineers, Inc.

Project Reference: 50380-01

Sample Identifier:	GPMW-21_072419		
Lab Sample ID:	193505-04	**Date Sampled:**	7/24/2019
Matrix:	Groundwater	**Date Received:**	7/24/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	**3.53**	ug/L		7/31/2019 22:06
1,3-Dichlorobenzene	< 2.00	ug/L		7/31/2019 22:06
cis-1,2-Dichloroethene	< 2.00	ug/L		7/31/2019 22:06
Tetrachloroethene	< 2.00	ug/L		7/31/2019 22:06
Trichloroethene	**13.9**	ug/L		7/31/2019 22:06
Vinyl chloride	< 2.00	ug/L		7/31/2019 22:06

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**103**	73.4 - 131		7/31/2019 22:06
4-Bromofluorobenzene	**83.6**	57.2 - 129		7/31/2019 22:06
Pentafluorobenzene	**100**	87 - 112		7/31/2019 22:06
Toluene-D8	**96.6**	78.3 - 115		7/31/2019 22:06

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x63158.D

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193505

Client: **Lu Engineers, Inc.**

Project Reference: 50380-01

Sample Identifier:	Trip Blank		
Lab Sample ID:	193505-05	**Date Sampled:**	7/23/2019
Matrix:	Water	**Date Received:**	7/24/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		7/31/2019 20:36
1,3-Dichlorobenzene	< 2.00	ug/L		7/31/2019 20:36
cis-1,2-Dichloroethene	< 2.00	ug/L		7/31/2019 20:36
Tetrachloroethene	< 2.00	ug/L		7/31/2019 20:36
Trichloroethene	< 2.00	ug/L		7/31/2019 20:36
Vinyl chloride	< 2.00	ug/L		7/31/2019 20:36

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**96.8**	73.4 - 131		7/31/2019 20:36
4-Bromofluorobenzene	**79.3**	57.2 - 129		7/31/2019 20:36
Pentafluorobenzene	**106**	87 - 112		7/31/2019 20:36
Toluene-D8	**95.7**	78.3 - 115		7/31/2019 20:36

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x63154.D

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified “reported as received”. Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an “A” suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

“<” = Analyzed for but not detected at or above the quantitation limit.
“E” = Result has been estimated, calibration limit exceeded.
“Z” = See case narrative.
“D” = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
“M” = Matrix spike recoveries outside QC limits. Matrix bias indicated.
“B” = Method blank contained trace levels of analyte. Refer to included method blank report.
“J” = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
“P” = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, tern or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM
ENVIRONMENTAL SERVICES, INC

CHAIN OF CUSTODY

1 of 2

REPORT TO:		INVOICE TO:		
CLIENT:	L.U. Engineers	CLIENT:		LAB PROJECT ID: 193505
ADDRESS:	999 East Avenue Suite 200	ADDRESS:	SAME	Quotation #:
CITY:	Rochester STATE: NY ZIP: 14604	CITY:	STATE: ZIP:	Email: bseifert@luengineers.com gregandrus@luengineers.com
PHONE:	585 - 385 - 7417	PHONE:		
ATTN:	Ben Seifert, Greg Andrus	ATTN:	Greg Andrus	

PROJECT REFERENCE: 50380-01

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	1,1,1-Trichloroethane	1,3-Dichlorobenzene	cis-1,2-Dichloroethene	TCE	PCE	Vinyl chloride	REMARKS	PARADIGM LAB SAMPLE NUMBER
07/24/19	11:51		✓	IW-01_072419	WG	2								01
07/24/19	12:36		✓	IW-02_072419	WG	2								02
07/24/19	13:21		✓	IW-03_072419	WG	2								03
07/24/19	14:48		✓	GPMW-21_072419	WG	2								04
~~07/24/19~~ 7/23/19			✓	Trip blank	WA	1								05
	T935													
	per sample	label	CP 7/24/19											
													8260 client started in field mw 7/24/19 1637	

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	✓	None Required	✓	None Required	✓
10 day		Batch QC		Basic EDD	
Rush 3 day		Category A		NYSDEC EDD	
Rush 2 day		Category B			
Rush 1 day					
Other please indicate date needed:		Other please indicate package needed:		Other EDD please indicate EDD needed :	

Sampled By: Ben Seifert — Date/Time: 07/24/19 15:36

Relinquished By: [illegible] — Date/Time: 7/24/19 16:30

Received By: [illegible] — Date/Time: 7/24/19 1630

Received @ Lab By: [illegible] — Date/Time: 7/24/19 16:50

Total Cost:

P.I.F.

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

Chain of Custody Supplement

Client: Lu Engineers **Completed by:** Glenn Pezzulo

Lab Project ID: 193505 **Date:** 7/25/19

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	*NELAC compliance with the sample condition requirements upon receipt* Yes	No	N/A
Container Type	X		
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)	X		
Comments			
Preservation	X		
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		
Comments	8° Iced started in field		
Compliant Sample Quantity/Type	X		
Comments			

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