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June 25, 2018

Todd Caffoe
New York State Department of Environmental Conservation
Region 8 Division of Environmental Remediation
6274 East Avon-Lima Road
Avon, New York 14414

Subject:
Orchard-Whitney Site (#E828123)
415 Orchard Street & 354 Whitney Street, Rochester, NY
Periodic Review Report (March 17, 2017- May 31, 2018)

Dear Mr. Caffoe,

Please find the attached Periodic Review Report for the reporting period of March 17, 2017 to May 31, 2018.

We look forward to your review and approval of this document. Please call or email with any questions you may have that might facilitate this process.

Respectfully,

Gregory L. Andrus, P.G., CHMM
Group Leader, Investigation/Remediation

Enclosures as noted

Cc:
Anne Spaulding – City of Rochester
Joseph Biondolillo – City of Rochester
Jane Forbes – City of Rochester
Dennis Peck – City of Rochester
Bernette Schilling – NYSDEC
Laura Gregor – Lu Engineers

Periodic Review Report
March 17, 2017- May 31, 2018

Environmental Restoration Program
Orchard Whitney Site #E828123
415 Orchard Street and 354 Whitney Street
Monroe County
Rochester, New York

Prepared For:

City of Rochester
City Hall, Room 300B
30 Church Street
Rochester, New York 14614

Prepared by:

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL
339 East Avenue Suite 200
Rochester, New York 14604

June 2018

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Executive Summary

The Orchard Whitney Site #E828123 (hereinafter referred to as the "Site"), located at 415 Orchard Street and 354 Whitney Street in the City of Rochester, Monroe County, New York is a 4.073-acre parcel (Figure 1). Delco Appliance Division of General Motors occupied the Site from 1930 to 1967. Historical activities included the manufacture of electrical equipment, various metal finishing operations, coal storage, boiler operation, power generation, petroleum storage, as well as industrial wastewater treatment. The City of Rochester acquired ownership of the Orchard and Whitney parcels through tax foreclosure proceedings in 2000 and 2005, respectively.

Previous environmental assessments and two (2) phases of a subsurface investigation conducted by Lu Engineers indicated the presence of impacted soil and groundwater at the Site. A comprehensive description of investigation findings is provided in the *Site Investigation/Remedial Alternatives Report* (Lu Engineers, January 2014). The Site Investigation (SI) identified the following contaminants of concern (COC): chromium, lead, petroleum products, trichloroethene (TCE), and cadmium.

The selected remedy included the following: 1) Interim Remedial Measure (IRM) removals; 2) Institutional Controls; 3) Engineering Controls; and 4) Groundwater monitoring.

A summary of completed IRM removals is provided in the Final Engineering Report (Lu Engineers, January 2014). The Supplemental Site Investigation (SSI) and subsequent IRMs conducted at the Site in July, August, and October 2015 are included in the Interim Remedial Measures Construction Completion Report (Lu Engineers, November 2015). The effectiveness of the remedial program, as outlined in the Site Management Plan (SMP), is monitored through quarterly groundwater sampling and an annual Site-wide inspection. Post-remedial groundwater samples collected during this reporting period indicate low-level and stable detections of volatile organic compounds (VOCs) and RCRA metals.

The implemented remedies to manage residual contamination are effective, protective and are progressing towards the remedial action objectives (RAOs). The Institutional Controls (ICs) and Engineering Controls (ECs) outlined in the Monitoring and Sampling Plan were fully in place and effective during this reporting period. These ICs/ECs include land use restriction, groundwater use restriction, SMP, and a soil cover system (cap). No deficiencies were present and therefore, no corrective measures are recommended. The cap was in good condition as indicated on the Site Inspection Form during this reporting period (Attachment A). Following inspection, repairs were made to the curb boxes for wells MW-16, MW-22, and MW-23.

No structures have been constructed on the Site and no change of use has occurred on the Site.

Lu Engineers recommends decommissioning monitoring wells still present on the Site that are not sampled as part of the SMP and are not anticipated to be used in the future.

The required IC/EC certification has been completed as a component of this PRR report and a copy is included as Attachment D.

1.0 Periodic Review Report

This Periodic Review Report (PRR) was prepared by Lu Engineers, on behalf of the City of Rochester, in accordance with the requirements set forth in the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines provided by the NYSDEC. The reporting period for this PRR is from March 17, 2017 to May 31, 2018. The following items are included in this PRR:

- Identification, assessment, and certification of all ICs/ECs required by the remedy for the Site;
- Results of the Site inspection and sampling events including applicable inspection forms and other records generated for the Site during the reporting period;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Data summary tables of groundwater contaminants of concern by media;
- Laboratory analysis results and the required laboratory data deliverables for each sample collected during the reporting period have been and will continue to be submitted electronically in a NYSDEC-approved EQuIS format; and
- A Site evaluation, which includes the following:

  I. The compliance of the remedy with the requirements of the Site-specific Record of Decision (ROD) including ICs/ECs;
  II. The operation and the effectiveness of each treatment unit, including identification of any needed repairs or modifications;
  III. Any new conclusions or observations regarding Site contamination based on inspection or lab data generated during the monitoring events;
  IV. Recommendations regarding any necessary changes to the remedy and/or SMP; and
  V. The overall performance and effectiveness of the remedy to date.

2.0 Site Overview

The Site is located in the City of Rochester, Monroe County, New York and is identified as Sections 105.66-3-24 (354 Whitney Street) and 105.66-3-23 (415 Orchard Street) on the City of Rochester Tax Map. The Site is approximately 4.073-acres and is bounded by mixed residential and commercial/industrial uses (refer to Figure 2 – Site Plan). The Site is currently a vacant lot covered primarily with concrete slabs, crushed masonry, and recycled concrete. A wall remains along the southern portion of the property line of 415 Orchard Street and is covered with a sloped berm consisting of crushed masonry and recycled concrete.

The North East Electric Company occupied the Site from 1915 to 1922 which was subsequently used as a plant for the Delco Appliance Division of General Motors (1930-1967).

The plant closed in 1967 and the Site became a location for metal finishing, synthetic foam production, printing, plastics, electronic manufacturing, and warehousing until 1990. Commercial use of the Site ceased in 1990. After a series of fires and vandalism incidents, the City of Rochester acquired ownership of the Orchard and Whitney parcels via tax foreclosure in 2000 and 2005, respectively.

The SI and IRMs were completed in a phased process which prioritized the investigation of probable contaminant source areas to facilitate the development of effective IRMs as the RI process progressed. The contaminants of concern (COC) identified at the Site include cadmium, chromium, lead, petroleum products, and trichloroethene (TCE). IRMs included the following:

- 354 Whitney Street Demolition (October 2010)
- Underground Storage Tank (UST) and Soil Removal (June 2011)
- Soil Removal and In-situ Groundwater Treatment (March 2012)
- 415 Orchard Street "High Rise" Building Demolition (March 2015)
- Soil Removal and Asbestos Abatement (October 2015)

IRM activities are summarized in the Final Engineering Report (FER) (Lu Engineers, January 2014) and Interim Remedial Measures Construction Completion Report (Lu Engineers, November 2015). Selected Site Soil Cleanup Objectives (SCOs) are Commercial Use, therefore, IRM confirmatory results were compared to 6 NYCRR Part 375-6.8(a) Unrestricted Use and Part 375-6.8(b) Commercial Use. Cleanup objectives for groundwater are 6 NYCRR Part 703.5 Class GA Ambient Groundwater Quality Standards. These regulatory criteria are considered to be Site-specific for cleanup goals/objectives for this project.

The factors considered during the selection of the remedy are those listed in 6 NYCRR Part 375-1.8. No Further Action (NFA) with IC/ECs was selected as the remedy for the Site as stated in the Record of Decision (March 2016). ICs/ECs include an environmental easement, cover system (cap), groundwater monitoring, and SMP.

ICs are required in the form of an environmental easement that entails a) limiting the use and development of the Site to commercial or industrial use; b) compliance with the approved SMP; c) restriction on the use of groundwater as a source of potable water, without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH); and d) the Site owner or remedial party to complete and submit an annual certification of ICs/ECs.

Long-term management of the residual impacts, as required by the ROD, includes the following plans for ECs:

- Monitoring;
- Operation and Maintenance; and
- Reporting.

The specific ECs implemented at the Site include:

- Annual groundwater sampling of monitoring wells MW-16, MW-22, MW-23, MW-26, MW-27, MW-28, and MW-29 for VOCs by EPA Method 8260 and RCRA Metals by EPA Method 6010 and
- Management and inspection of the existing soil cover system. No changes to the remedy have occurred since remedy selection.

It is recommended that monitoring wells not part of the SMP and not anticipated to be used in the future be decommissioned.

3.0 Remedy Performance, Effectiveness, and Protectiveness

Post-remedial groundwater sampling indicates that low-level residual groundwater contamination persists at the Site since completion of the IRM. Four (4) post-remedial quarterly sampling events were conducted in accordance with and as outlined in the SMP on:

- October 2017
- November 2017
- March 2018
- May 2018

Tables 1 and 2 illustrate concentrations of VOCs and RCRA metals since initiation of the groundwater monitoring program. Figures 3-6 show analytical exceedances and the groundwater contour for each quarterly sampling event in this reporting period. Concentrations in groundwater samples were compared to the applicable 6 NYCRR Part 703.5 Class GA Ambient Groundwater Quality Standards. Analytical reports are provided in Attachment C.

Constituents were generally detected at low (below applicable groundwater standards) and stable concentrations. The following summarizes the analytical findings:

<u>VOCs</u>

- Benzene concentrations at MW-16 slightly increased in October and November 2017 and then declined to levels below the standard of 1.0 µg/L by March 2018 and May 2018.
- Low concentrations of chlorinated solvents, including acetone, chloroform, and TCE, were observed at MW-23, MW-26, MW-28, and MW-29 at concentrations below applicable groundwater standards.
- No additional groundwater VOC exceedances were detected during this reporting period.
- Other than the exceedance of benzene noted above, VOC concentrations were generally low (below applicable groundwater standards) and stable.

<u>RCRA Metals</u>

- Low-level concentration exceedances occurred in selenium and cadmium at MW-16, MW-22, MW-23, MW-26, MW-27, and MW-29 during this reporting period.

- Other than the exceedances for selenium and cadmium noted above, concentrations of metals were generally low (below applicable groundwater standards) and stable.

Based on the compiled data, the remedy is effective in achieving the Site RAOs. Though stable and low-level contamination exists in soil and groundwater, the ICs and ECs reduce the potential for human exposure. The ICs and ECs established for the Site are in compliance with the SMP.

4.0 Institutional Controls/Engineering Control Plan Compliance

Since remaining impacted soil and groundwater exists beneath the Site, ICs/ECs are required to protect human health and the environment.

Institutional Controls (ICs)

A series of ICs is required by the Record of Decision (ROD) to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the Site to commercial and industrial uses only. Adherence to these Institutional Controls is required by the Environmental Easement and are implemented under the SMP.

These Institutional Controls are:

- The property may be used for: commercial or light industrial use;
- City permit restriction flag in accordance with Building Information System (BIS);
- All ECs must be operated and maintained as specified in the SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP;
- The use of groundwater underlying the property is prohibited the City of Rochester Ordnance without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) or the Monroe County Department of Health to render if safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;
- Groundwater and other environment or public health monitoring must be performed as defined in the SMP;
- Data and information pertinent to the Site management must be reported at the frequency and in a manner as defined in the SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with the SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined the SMP;
- Operation, maintenance, monitoring, inspections, and reporting of any mechanical or physical component of the remedy shall be performed as defined in the SMP;

- Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environment Easement;
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries and any potential impacts that are identified must be monitoring or mitigated; and
- Vegetable gardens and farming on the Site are prohibited.

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The performance of the ICs is measured through changes to the Site that occur during the reporting period. The Site was not used or disturbed during the reporting period. No permits or unauthorized uses were issued to the Site during this reporting period.

Engineering Controls (ECs)

Cover (Cap) – Exposure to remaining contamination in subsurface soil/fill at the Site is prevented by a soil cover system placed over the Site (the "Cap"). This cover system is comprised of a minimum of one (1) foot recycled brick and concrete. One (1) area of an exposed tunnel void space has been covered with a steel plate bolted to the concrete pad and subsequently covered with a one (1) foot layer of recycled brick and concrete.

The Site cover system is inspected annually as a requirement to the SMP. The cover system is a permanent control and the quality and integrity of this system (performance measure) is inspected at defined intervals pursuant to the SMP.

The Excavation Work Plan (EWP), provided in Appendix B of the SMP, outlines procedures required to be implemented in the event that the cover system is breached, penetrated or temporarily removed and underlying remaining impacts are disturbed. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan including in Section 4.0 of the SMP. Work conducted in accordance to the EWP must also be conducted in accordance with the procedures defined in the Site-specific Health and Safety Plan (HASP) and associated Community Air Monitoring Plan (CAMP), included as Appendix H and I of the SMP, respectively.

The performance of Site controls were evaluated during the Site inspection on November 29, 2017. The Site inspection assesses the following performance measures:

- Compliance with all ICs, including Site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General Site conditions at the time of the inspection;
- The Site management activities being conducting including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that Site records are up to date.

ECs/ICs were fully in place and effective. No deficiencies were present and therefore, no corrective measures are recommended. The Cap was in good condition as indicated on the Site Inspection Form during this reporting period (Attachment A). It is noted that the need for monitoring well curb box repairs at MW-16, MW-22, and MW-23 was identified during the November2017 Site inspection; the monitoring wells were repaired following inspection.

No structures had been constructed on Site and no change of use has occurred on Site (Attachment A).

The required IC/EC certification has been completed as a component of this report and a copy is included as Attachment D.

5.0 Monitoring Plan Compliance Report

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the Site; the soil cover system; and all affected Site media identified in the table below.

Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Groundwater Monitoring	Quarterly	Groundwater	VOCs by EPA Method 8260 VOCs RCRA Metals by EPA Method 6010
Site-Wide Inspection	Annual	Cover System	Visual Inspection; determine whether maintenance is required

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC

Monitoring activities completed during this reporting period included the following:

- In accordance with the SMP, quarterly groundwater sampling of the following Site wells: MW-16, MW-22, MW-23, MW-26, MW-27, MW-28, and MW-29. Refer to Tables 1 and 2 and Attachments B and C.
- Site-wide inspection, including annual inspection of the Cover System (Cap). Refer to Attachment A, Site Inspection Form.

<u>Groundwater Sampling</u>

The following table summarizes the details of the groundwater sampling program to be completed during each quarterly sampling event.

Media Sampling and Analysis Summary

Sample Type	Sample Location	Analytical Parameters	Frequency	QA/QC	Total
Groundwater	MW-16, MW-22, MW-23, MW-26, MW-27, MW-28, and MW-29	TCL VOCs by EPA Method 8260 RCRA Metals by EPA Method 6010	Quarterly	MS/MSD Field Duplicate	10

*The frequency of events will be conducted as specified until otherwise approved by NYSDEC

Site wells were sampled October 2, 2017, November 29, 2017, March 21, 2018, and May 4, 2018 by low flow sampling methods per the procedures outlined in the SMP. Wells were initially developed and sampled as a part of the Supplemental Site Investigation (SSI) in July 2015.

Groundwater quality measurements, including temperature, turbidity, pH, conductivity, dissolved oxygen (DO), and oxidation reduction potential (ORP), were collected during the purging process at each well. Purge water from each well was released to the ground surface near the well. At each well, samples were collected for Target Compound List (TCL) VOCs list compounds by EPA Method 8260 and RCRA Metals by EPA Method 6010. Groundwater sampling logs are included as Attachment B of this report.

Samples were analyzed at Paradigm Environmental Services, Inc., a New York State Department of Health Environmental Laboratory Approval Program- certified laboratory (ELAP) located in Rochester, New York. Sampling methods and QA/QC measures were adhered to as outlined in the approved SMP.

Results of the groundwater sampling conducted during this period are summarized in Tables 1 and 2 and in Figures 3-6. Tables 1 and 2 present analytical results of VOCs and RCRA Metals detected in groundwater during this period in comparison to applicable 6 NYCRR Part 703.5 standards. Figures 3-6 illustrate detected analytical exceedances from each sampling event during this reporting period. Each figure also presents groundwater contours based on water level measurements collected at each monitoring well. It is noted that MW-27 was omitted from the data used for groundwater contour map development due to its low elevation representative of deeper flow conditions; bedrock at MW-27, located at the south end of the former petroleum storage/plating area(s), is substantially deeper than other areas of the Site.

As indicated on Figures 3-6, groundwater elevations are highest on the southwestern portion of the property and lowest along the northeastern portion, resulting in a general northeastward groundwater flow direction.

The following sections summarize the analytical results for each year within this reporting.

October 2017 (per SMP)
Low-level concentrations of TCE, below the NYSDEC standard of 5 µg/L, were detected at MW-23 and MW-28. One (1) VOC exceedance of benzene occurred at MW-16. Acetone, a common laboratory contaminant, was also detected below the applicable regulatory standard of 50 µg/L at MW-16.

Reductions in RCRA metals, including arsenic, cadmium, chromium, lead, and mercury occurred in monitoring wells MW-16, MW-27, and MW-28. Exceedances in selenium, slightly above the groundwater standard of 0.01 mg/L, were detected at MW-16, MW-22, MW-23, MW-26, and MW-27.

November 2017 (per SMP)
A slight exceedance (1.06 µg/L) in the concentration of benzene occurred at MW-16. No other VOC exceedances were detected, as indicated on Table 1. Detections of acetone, TCE, and chloroform were also found at MW-16, MW-23, MW-26, MW-28, and MW-29; below applicable groundwater standards.

One (1) RCRA metal exceedance of cadmium occurred at MW-29. Additional low-level inorganic detections were observed at the other monitoring wells.

March 2018 (per SMP)
Concentrations below applicable standards of acetone, chloroform, and TCE were detected during this event. No VOC analytical exceedances occurred.

Slight exceedances occurred in cadmium and selenium were detected at MW-16 and MW-22, respectively. No additional inorganic exceedances were detected in March 2018.

May 2018 (per SMP)
Concentrations of acetone and benzene were detected at MW-16 at concentrations below applicable NYSDEC groundwater standards. No additional VOC detections occurred during this reporting period.

Slight exceedances to regulatory limits of selenium were detected at MW-23, MW-26, MW-27 in May 2018. No other inorganic exceedances were detected.

Groundwater monitoring fully complied with the monitoring plan and no changes and/or corrective measures to the plan are recommended.

6.0 Operation and Maintenance Plan Compliance Report

The Site remedy does not rely on any mechanical systems, such as groundwater treatment systems, sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment. Therefore, this section is not applicable.

7.0 Conclusions and Recommendations

IC/EC Compliance

The requirements and regulations set forth in the SMP for ICs were adhered to during this reporting period. This includes the following:

Land Use Restriction – The Site is currently vacant and has met the requirements of this restriction in this reporting period.

Groundwater Use Restriction – The Site is currently vacant and does not use the Site groundwater in any capacity, therefore meeting the requirements of this restriction in this reporting period.

Site Management Plan (SMP) – The Site is currently in compliance with all components of the Site-specific SMP and all requirements have been met during this reporting period.

The requirements set forth in the SMP for all ECs were met during this reporting period. This includes the following:

Soil Cover System (Cap) – The Site Cap was undisturbed during this reporting period. The Site Inspection Form is included in Attachment A.

Based upon initial groundwater sampling as part of the SSI/IRM in July 2015, overall reductions in constituent concentrations have occurred. In general, low-level VOCs and RCRA metals were detected at concentrations near or below applicable groundwater standards. Constituent concentrations were stable during this reporting period. The Site-specific ICs and ECs continue to meet the remedial objectives while maintaining protection of public health and the environment.

The continued effectiveness of the ICs/ECs has allowed the remedial objectives at the Site to be met for this reporting period. Lu Engineers recommends decommissioning monitoring wells not currently used as part of the SMP and not anticipated to be used in the future.

Tables

City of Rochester
Orchard-Whitney Site (#E828123)
Groundwater Monitoring Results
Periodic Review Report (March 17, 2017- May 31, 2018)

Table 1: Groundwater TCL VOCs Results

		MW-16				MW-22			
Analyzed Parameters[1]	**NYS Groundwater Standard Class GA[2]**	**10/2/2017**	**11/29/2017**	**3/21/2018**	**5/4/2018**	**10/2/2017**	**11/29/2017**	**3/21/2018**	**5/4/2018**
EPA 8260 - Volatile Organics									
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	-	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	50*	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	50*	**28.3**	**11.2**	**8.57 J**	**11.3**	ND	ND	ND	ND
Benzene	1	**1.28**	**1.06**	**0.847 J**	**0.991 J**	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	-	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl Ether	-	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	-	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND

1 - All values presented in micrograms per kilogram (µg/L).

2 - NYS Ambient Groundwater Standard (6 NYCRR Part 703.5)

Value Exceeds NYS Ambient Groundwater Standards

ND - not detected above method detection limit

* - NYSDEC Guidance Value (TOGS 1.1.1)

J - compound detected below the laboratory quantitation limit

B - compound detected in associated method blank

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City of Rochester
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Table 1: Groundwater TCL VOCs Results

		MW-23				MW-26				MW-27			
Analyzed Parameters[1]	**NYS Groundwater Standard Class GA[2]**	**10/2/2017**	**11/29/2017**	**3/21/2018**	**5/4/2018**	**10/2/2017**	**11/29/2017**	**3/21/2018**	**5/4/2018**	**10/2/2017**	**11/29/2017**	**3/21/2018**	**5/4/2018**
EPA 8260 - Volatile Organics													
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	50*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	50*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	ND	**1.62 J**	**1.43 J**	**1.18 J**	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl Ether	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	**1.97 J**	ND	ND	ND	ND	ND	**1.13 J**	ND	ND	ND	ND	ND
Xylenes (total)	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

1 - All values presented in micrograms per kilogram (µg/L).

2 - NYS Ambient Groundwater Standard (6 NYCRR Part 703.5)

Value Exceeds NYS Ambient Groundwater Standards

ND - not detected above method detection limit

* - NYSDEC Guidance Value (TOGS 1.1.1)

J - compound detected below the laboratory quantitation limit

B - compound detected in associated method blank

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City of Rochester
Orchard-Whitney Site (#E828123)
Groundwater Monitoring Results
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Table 1: Groundwater TCL VOCs Results

		MW-28				MW-29			
Analyzed Parameters[1]	**NYS Groundwater Standard Class GA[2]**	**10/2/2017**	**11/29/2017**	**3/21/2018**	**5/4/2018**	**10/2/2017**	**11/29/2017**	**3/21/2018**	**5/4/2018**
EPA 8260 - Volatile Organics									
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	-	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	50*	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	50*	ND	ND	ND	ND	**5.76 J**	ND	ND	ND
Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	-	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl Ether	-	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	**1.55 J**	**1.08 J**	**1.70 J**	ND	ND	ND	**1.32 J**	ND
Xylenes (total)	-	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND

1 - All values presented in micrograms per kilogram (µg/L).

2 - NYS Ambient Groundwater Standard (6 NYCRR Part 703.5)

Value Exceeds NYS Ambient Groundwater Standards

ND - not detected above method detection limit

* - NYSDEC Guidance Value (TOGS 1.1.1)

J - compound detected below the laboratory quantitation limit

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Periodic Review Report (March 17, 2017- May 31, 2018)

Table 2: Groundwater RCRA Metals Results

		MW-16				MW-22			
Analyzed Parameters[1]	**NYS Groundwater Standard Class GA[2]**	**10/2/2017**	**11/29/2017**	**3/21/2018**	**5/4/2018**	**10/2/2017**	**11/29/2017**	**3/21/2018**	**5/4/2018**
EPA 6010-Metals									
Arsenic	0.025	**0.0113**	**0.014**	**0.0074 J**	**0.0106**	<0.0100	<0.0100	**0.00946 J**	<0.0100
Barium	1	<0.100	<0.100	**0.0566 J**	<0.100	**0.0806 J**	**0.0833 J**	**0.0735 J**	**0.0645 J**
Cadmium	0.005	**0.00488 J**	**0.00359 J**	**0.00672**	<0.00500	<0.00500 J	<0.00500	<0.00500	<0.00500
Chromium	0.05	**0.00564 J**	**0.00576 J**	**0.0115**	**0.00654 J**	**0.00504 J**	**0.00568 J**	**0.00541 J**	**0.0119**
Lead	0.025	<0.0100	<0.0100	**0.00872 J**	<0.0100	**<0.0100**	<0.0100	<0.0100	<0.0100
Mercury	0.0007	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<.000200
Selenium	0.01	**0.0165 J**	<0.0200	<0.0200	<0.0200	**0.0126 J**	**<0.0200**	**0.0157 J**	<0.0200
Silver	0.05	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100

1 - All values presented in micrograms per kilogram (mg/L).
2 - NYS Ambient Groundwater Standard (6 NYCRR Part 703.5)
Value Exceeds NYS Ambient Groundwater Standards
ND - not detected above method detection limit
NA - not analyzed
* - NYSDEC Guidance Value (TOGS 1.1.1)
J - compound detected below the laboratory quantitation limit
B - compound detected in associated method blank

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City of Rochester
Orchard-Whitney Site (#E828123)
Groundwater Monitoring Results
Periodic Review Report (March 17, 2017- May 31, 2018)

Table 2: Groundwater RCRA Metals Results

		MW-23				MW-26				MW-27			
Analyzed Parameters[1]	NYS Groundwater Standard Class GA[2]	10/2/2017	11/29/2017	3/21/2018	5/4/2018	10/2/2017	11/29/2017	3/21/2018	5/4/2018	10/2/2017	11/29/2017	3/21/2018	5/4/2018
EPA 6010-Metals													
Arsenic	0.025	<0.0100	**0.00540 J**	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	**0.00513 J**	<0.0100	<0.0100	<0.0100
Barium	1	**0.126**	**0.112**	**0.114**	**0.105**	**0.0791 J**	**0.0721 J**	**0.0645 J**	**0.0576 J**	<0.100	<0.100	<0.100	<0.100
Cadmium	0.005	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	**0.0038 J**	<0.00500	<0.00500	<0.00500
Chromium	0.05	<0.0100	<0.0100	<0.0100	<0.0100	**0.00759 J**	**0.0068 J**	<0.0100	**0.00997 J**	<0.0100	<0.0100	<0.0100	<0.0100
Lead	0.025	**0.00507 J**	**0.00626 J**	**0.00805 J**	**0.00586 J**	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Mercury	0.0007	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Selenium	0.01	**0.0113 J**	**<0.0200**	<0.0200	**0.0113 J**	**0.017 J**	<0.0200	<0.0200	**0.0158 J**	**0.02013**	<0.0200	<0.0200	**0.0137 J**
Silver	0.05	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100

1 - All values presented in micrograms per kilogram (mg/L).
2 - NYS Ambient Groundwater Standard (6 NYCRR Part 703.5)
Value Exceeds NYS Ambient Groundwater Standards
ND - not detected above method detection limit
NA - not analyzed
* - NYSDEC Guidance Value (TOGS 1.1.1)
J - compound detected below the laboratory quantitation limit
B - compound detected in associated method blank

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City of Rochester
Orchard-Whitney Site (#E828123)
Groundwater Monitoring Results
Periodic Review Report (March 17, 2017- May 31, 2018)

Table 2: Groundwater RCRA Metals Results

		MW-28				MW-29			
Analyzed Parameters[1]	NYS Groundwater Standard Class GA[2]	10/2/2017	11/29/2017	3/21/2018	5/4/2018	10/2/2017	11/29/2017	3/21/2018	5/4/2018
EPA 6010-Metals									
Arsenic	0.025	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Barium	1	**0.0562 J**	**0.0553 J**	<0.100	**0.0648 J**	<0.100	<0.100	**0.0571 J**	<0.100
Cadmium	0.005	<0.00500	<0.00500	<0.00500	<0.00500	**0.00615**	**0.00553**	**0.00386 J**	<0.00500
Chromium	0.05	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Lead	0.025	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Mercury	0.0007	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Selenium	0.01	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Silver	0.05	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100

1 - All values presented in micrograms per kilogram (mg/L).
2 - NYS Ambient Groundwater Standard (6 NYCRR Part 703.5)
Value Exceeds NYS Ambient Groundwater Standards
ND - not detected above method detection limit
NA - not analyzed
* - NYSDEC Guidance Value (TOGS 1.1.1)
J - compound detected below the laboratory quantitation limit
B - compound detected in associated method blank

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Figures

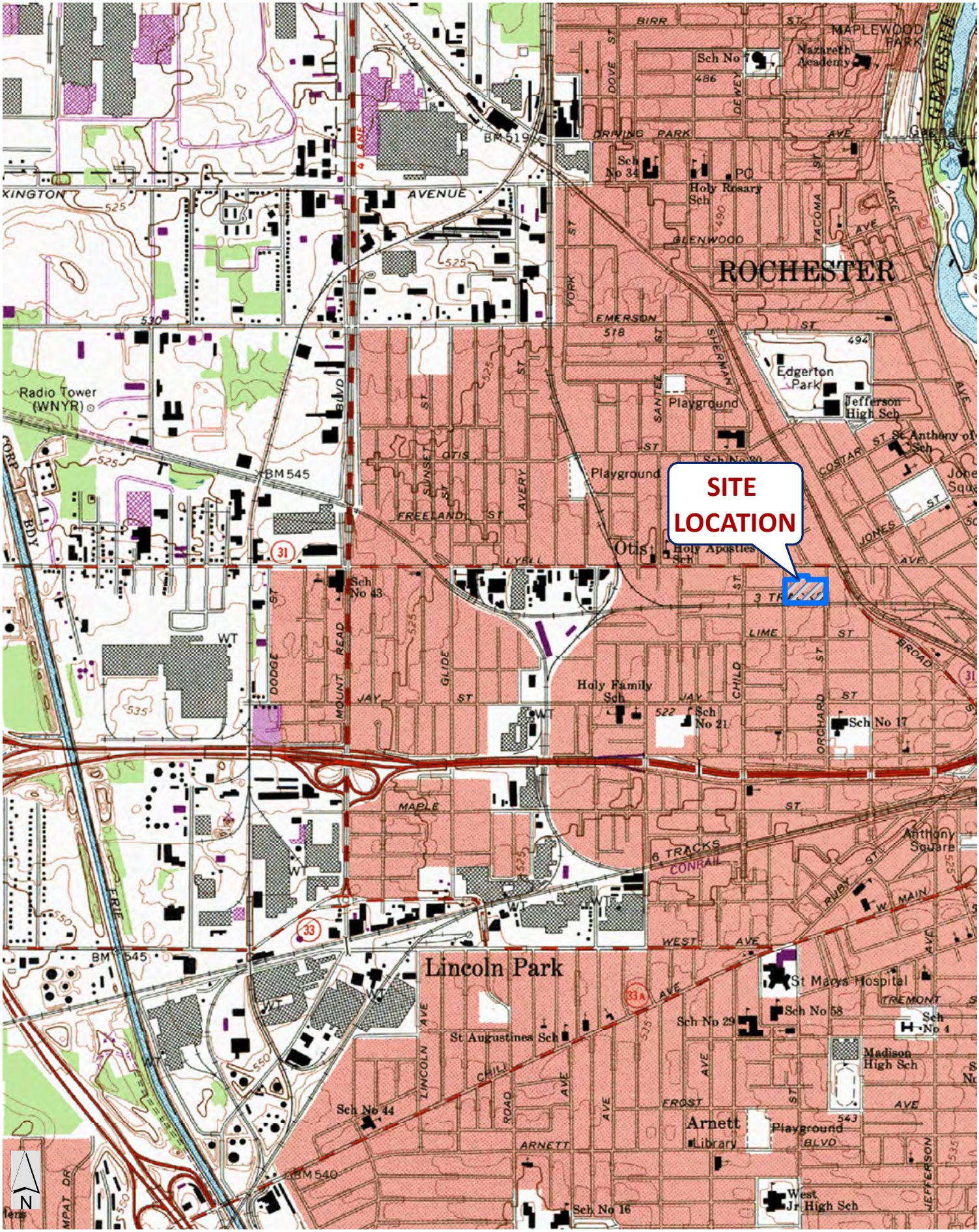

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FIGURE 1.
ORCHARD WHITNEY SITE LOCATION
ERP SITE #EB28123
ROCHESTER, NY

FLOUR CITY-FLOWER CITY-CITY OF ROCHESTER, NY

DATE: DECEMBER 2017
SCALE: N/A
DRAWN/CHECKED: CB/GLA
DATA SOURCE: ROCHESTER WEST QUAD. NEW YOR-MONROE COUNTY 7.5 MINUTES SERIES (TOPO) 1971: REVISED 1978

MW-10
MW-03
MW-19
MW-14
MW-08
MW-07
MW-06
MW-05
MW-18
MW-12
MW-13
MW-20
MW-15
MW-23
Lasalle
354 Whitney St.
415 Orchard St.
MW-17
MW-11
MW-21
MW-22
Orchard
MW-16
MW-28
MW-29
MW-26
MW-27
Whitney
MW-24
MW-25
MW-09

Legend

- Wells for Proposed Decomission
- PRR Sampled Wells
- Property Line

0 25 50 100 Feet

1 inch = 50 feet

N W E S

DATE: June 2018
SCALE: 1" = 50 ft.
DRAWN/CHECKED: BGS/GLA
DATA SOURCE: PICTOMETRY

FIGURE. 2 - SITE PLAN
ORCHARD WHITNEY PERIODIC REVIEW REPORT
ERP SITE #E828123
ROCHESTER, NY

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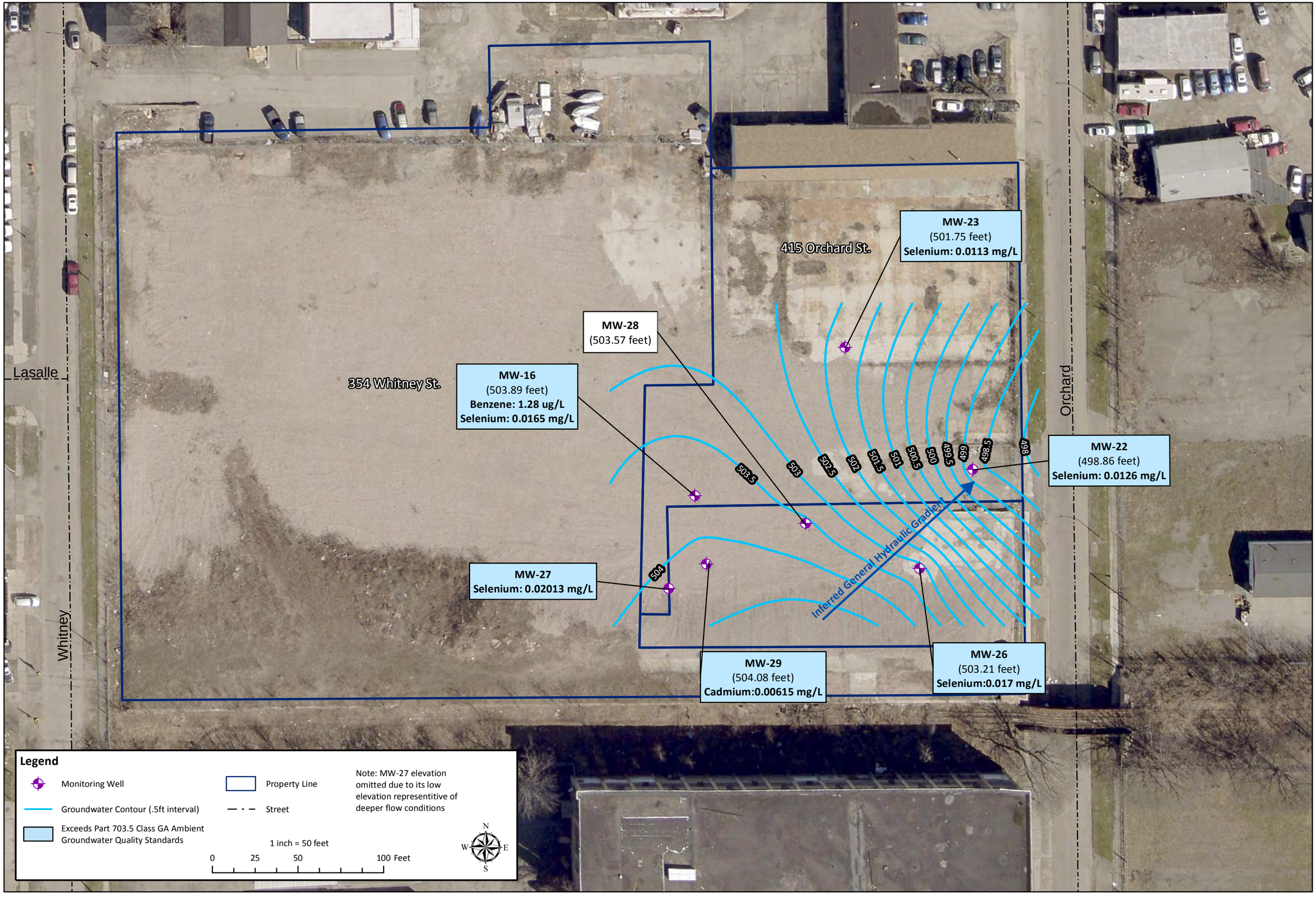

DATE: June 2018
SCALE: 1"= 50 ft.
DRAWN/CHECKED: BGS/GLA
DATA SOURCE: PICTOMETRY

FIGURE 3. GROUNDWATER CONTOUR & SAMPLE RESULTS OCTOBER 2017
ORCHARD WHITNEY PERIODIC REVIEW REPORT
ERP SITE #E828123
ROCHESTER, NY

FLOUR CITY-FLOWER CITY-CITY OF ROCHESTER-N.Y.

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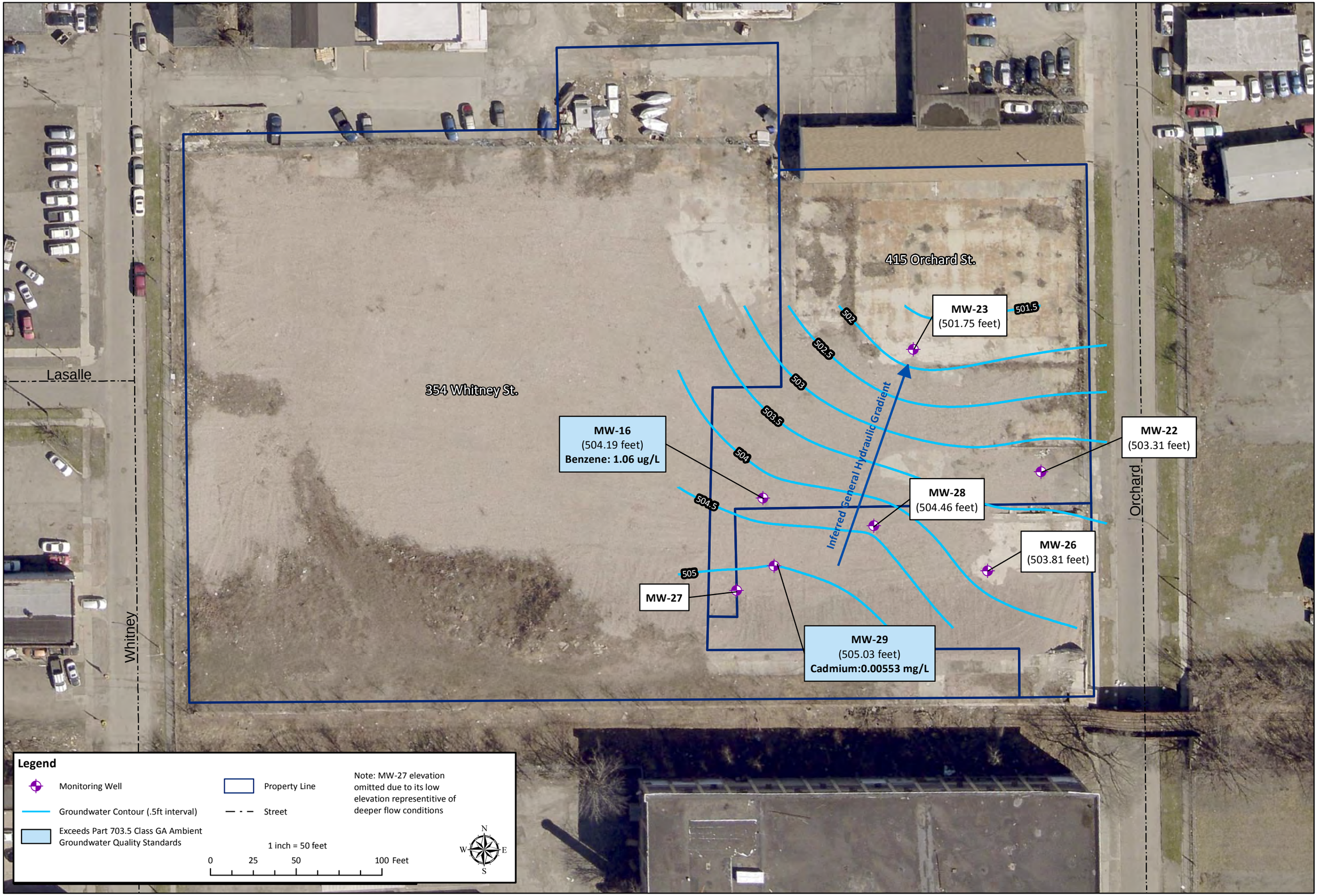

DATE: June 2018
SCALE: 1" = 50 ft.
DRAWN/CHECKED: BGS/GLA
DATA SOURCE: PICTOMETRY

FIGURE 4. GROUNDWATER CONTOUR & SAMPLE RESULTS NOVEMBER 2017
ORCHARD WHITNEY PERIODIC REVIEW REPORT
ERP SITE #E828123
ROCHESTER, NY

CITY OF ROCHESTER · FLOWER CITY · FLOUR CITY

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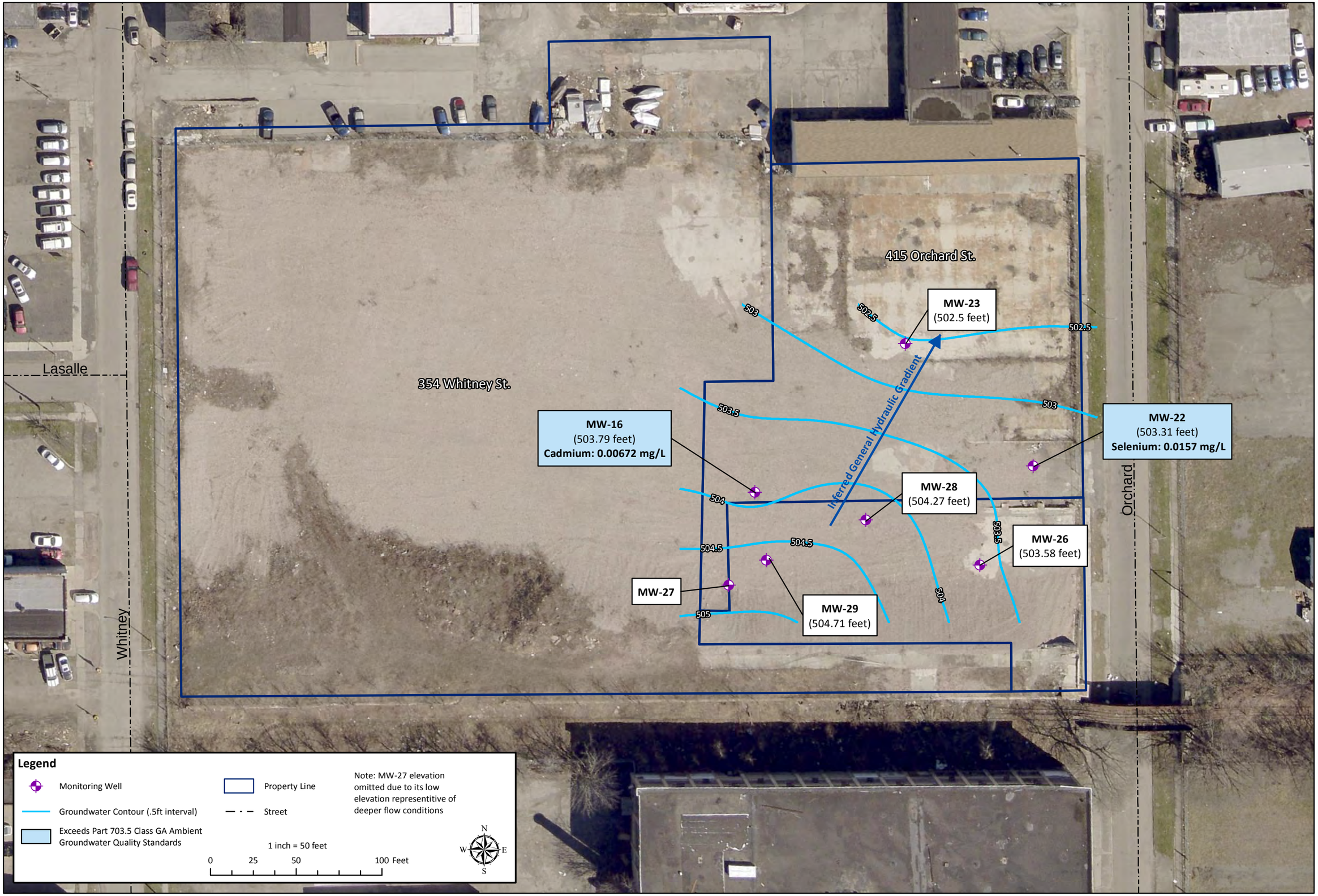

DATE: June 2018
SCALE: 1" = 50 ft.
DRAWN/CHECKED: BGS/GLA
DATA SOURCE: PICTOMETRY

CITY OF ROCHESTER, NY - FLOWER CITY - FLOUR CITY

FIGURE 5. GROUNDWATER CONTOUR & SAMPLE RESULTS MARCH 2018
ORCHARD WHITNEY PERIODIC REVIEW REPORT
ERP SITE #E828123
ROCHESTER, NY

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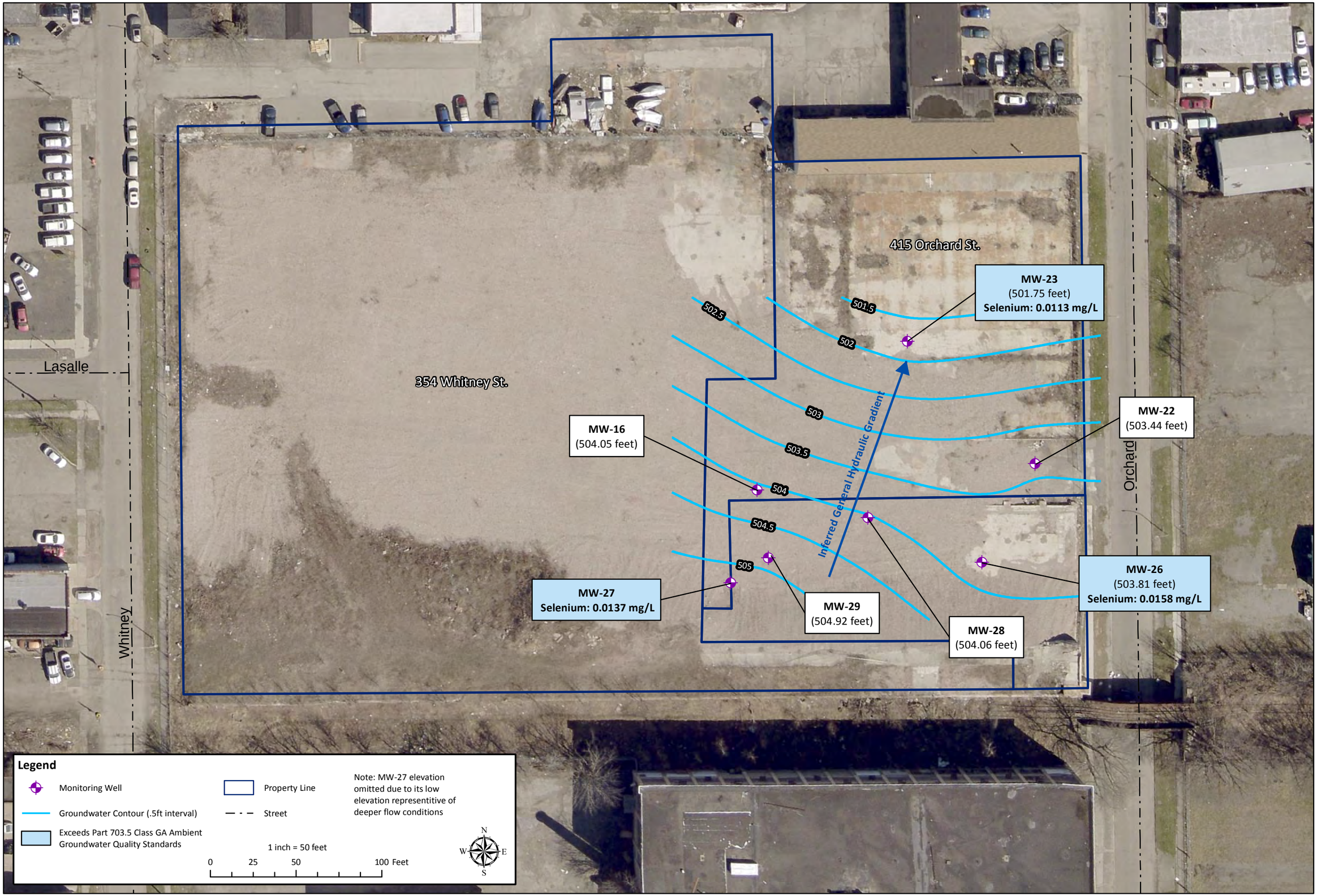

DATE: June 2018

SCALE: 1"= 50 ft.

DRAWN/CHECKED: BGS/GLA

DATA SOURCE: PICTOMETRY

FIGURE 6. GROUNDWATER CONTOUR & SAMPLE RESULTS MAY 2018
ORCHARD WHITNEY PERIODIC REVIEW REPORT

ERP SITE #E828123
ROCHESTER, NY

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SITE-WIDE INSPECTION FORM

Orchard-Whitney #E828123
City of Rochester, Monroe County

NAME OF INSPECTOR: Laura Gregor

COMPANY OF INSPECTOR: Lu Engineers

DATE OF INSPECTION: 11/29/2017

CURRENT USE OF SITE: vacant lot

HAS A CHANGE OF USE OCCURRED SINCE THE LAST CERTIFICATION?
_____ YES ___✓___ NO
IF YES, THEN EXPLAIN: _____

GENERAL DESCRIPTION OF SITE CONTROLS: Site cover system (cap) consisting of demolition debris (crushed brick & stone). An exposed tunnel void is covered with a steel plate & bolted. Site use is limited to commercial + industrial uses. Refer to SMP Sections 3.2 + 3.3

HAS THE SITE COVER (CAP) BEEN COMPROMISED? _____ YES ___✓___ NO
IF YES, THEN EXPLAIN: _____

HAVE ANY STRUCTURES BEEN CONSTRUCTED ON THE SITE SINCE THE LAST INSPECTION?
_____ YES ___✓___ NO
IF YES, THEN EXPLAIN: (This is the 1st inspection as part of the PRR)

HAVE COVER CONDITIONS CHANGED SINCE THE LAST INSPECTION?
_____ YES ___✓___ NO
IF YES, THEN EXPLAIN: (This is the 1st inspection as part of the PRR)

IS ANY MAINTENANCE OF THE SITE CONTROLS REQUIRED?

_____YES ___✓___NO

IF YES, THEN EXPLAIN: _____

_____

_____

ADDITIONAL OBSERVATIONS, CONCLUSIONS OR RECCOMMENDATIONS:

The following monitoring wells required repair: MW-16, MW-22, MW-23, ~~MW-26~~ GW6 wells were repaired following this Site Inspection. of curb boxes

NOTE: It is recommended that unused monitoring wells (not anticipated to be used in the future) be decommissioned.

ANY CHANGES TO THE SITE OR REQUIRED MAINTENANCE SHOULD BE MARKED IN THE CORRESPONDING LOCATION ON THE ATTACHED MAP

Low Flow Groundwater Sampling Field Record

Lu Engineers
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Project Name Orchard-Whitney
Location ID MW-16
Activity Time 9:40

Field Sample ID OW-MW-16_100217
Sample Time 10:20

Job # 4216-08
Sampling Event # __
Date 10/02/17

SAMPLING NOTES

Initial Depth to Water 7.90 feet
Final Depth to Water 8.56 feet
Screen Length ____ feet
Total Volume Purged ~3.0 gallons

Measurement Point TOR
Well Depth 10.25 feet
Pump Intake Depth ____
PID Well Head ____

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
9:45	8.43		13.7	10.19	1.01	15.7	1.05	-5.2	
9:50	8.52		13.9	10.23	0.06	10.42	1.05	-76.7	
9:59	8.56		14.3	10.24	–	12.70	1.06	-107.2	
10:04	8.56		14.5	10.10	–	23.50	1.04	-103.3	
10:10	8.56		14.7	10.05	–	16.0	1.04	-77.1	
10:15	8.56		14.8	10.14	–	11.3	1.05	-81.0	

Purge Observations: clear, no odor
Purge Water Containerized: NO

EQUIPMENT DOCUMENTATION

Type of Pump: Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020
Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 3x 40 ml	✓
RCRA metals		✓

LOCATION NOTES

NO DO readings (see above data)

Signature: Laura K Hughes
Checked By: ____

Low Flow Groundwater Sampling Field Record

Lu Engineers
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Project Name Orchard-Whitney
Location ID MW-22
Activity Time 1045

Field Sample ID ON-MW-22_100217
Sample Time 1150

Job # 4216
Sampling Event # __
Date _____

SAMPLING NOTES

Initial Depth to Water 10.75 feet
Final Depth to Water _____ feet
Screen Length _____ feet
Total Volume Purged _____ gallons

Measurement Point TOR
Well Depth _____ feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap _____
Casing _____
Locked _____
Collar _____

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

PURGE DATA

6.75

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
1055	~~6.75~~		17	7.24	3.56	81	1.01	140.7	
1105	6.4		17.7	7.23	3.24	4.8	1.01	148.2	
1115	6.4		17.2	7.23	33.2	3.39	1.01	149.0	
1125	6.4		17.2	7.22	3.74	4.0	1.02	147.3	
1130	6.4		17.2	7.22	3.19	4.3	1.01	147.5	

Purge Observations: clear
Purge Water Containerized: NO

EQUIPMENT DOCUMENTATION

Type of Pump: Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020

Calibrated: YES

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 3x 40 ml	✓
RCRA metals		✓

LOCATION NOTES

Well head needs repair

Signature: _____
Checked By: _____

Low Flow Groundwater Sampling Field Record

Lu Engineers
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Project Name Orchard-Whitney
Location ID MW-23
Activity Time 10:05

Field Sample ID OW-MW-23_100217
Sample Time 11:05

Job # 4216-08
Sampling Event # __
Date 10/2/17

SAMPLING NOTES

Initial Depth to Water 10.75 feet
Final Depth to Water 11.05 feet
Screen Length _____ feet
Total Volume Purged ~3.0 gallons
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth 20.0 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
10:15	11.1	150	15.2	7.46	1.03	75.7	0.81	-111.7	
1025	11.2		14.9	7.45	0.88	71.0	085	-106.6	
1035	11.45		14.8	7.47	0.84	27.5	0.90	-99.0	
10:40	11.43		14.7	7.49	0.90	19.6	0.91	-96.5	
10:45	11.43		15.3	7.52	0.72	19.8	0.86	-93.0	
10:52	11.05		16.3	7.52	0.71	14.3	0.90	-84.0	
11:00	11.05		16.3	7.50	0.73	13.4	0.94	-81.5	

Purge Observations: Clear, no odor
Purge Water Containerized: NO

EQUIPMENT DOCUMENTATION

Type of Pump: Alexas / Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020
Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	✓
RCRA metals		✓

LOCATION NOTES

Signature: Laura K Kreamer
Checked By: _____

Low Flow Groundwater Sampling Field Record

Lu Engineers
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Project Name Orchard-Whitney
Location ID MW-26
Activity Time 12
Field Sample ID OW-MW-26-100217
Sample Time 1240
Job # 426-08
Sampling Event # --
Date 10/2/17

SAMPLING NOTES

Initial Depth to Water 8.6 feet
Final Depth to Water 9 feet
Screen Length ____ feet
Total Volume Purged ____ gallons
Measurement Point TOR
Well Depth 17.0 feet
Pump Intake Depth ____
PID Well Head ____
Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
1205	8.7		14.01	7.22	1.09	7.97	1.33	143.6	
1215	8.9		14	7.3	1.28	3.55	1.21	123.7	
1225	9		14.6	7.21	1.19	2.6	1.27	117.5	
1235	9		14.6	7.31	1.21	1.95	1.31	113.4	

Purge Observations: ____
Purge Water Containerized: NO

EQUIPMENT DOCUMENTATION

Type of Pump: Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020
Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	✓
RCRA metals		✓

LOCATION NOTES

Signature: ____
Checked By: Laura K Gregor

Low Flow Groundwater Sampling Field Record

Lu Engineers
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Project Name O(cntrl) - whitney
Location ID MW-27
Activity Time _____

Field Sample ID OW-MW-27_100217
Sample Time 1400

Job # 4216-08
Sampling Event # __
Date 10/2/17

SAMPLING NOTES

Initial Depth to Water 18.2 feet
Final Depth to Water 18.3 feet
Screen Length _____ feet
Total Volume Purged _____ gallons
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth _____ feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
110	18.0		12.3	7.4	0.70	55.6	1.48	-30.9	
120	18.85		12.2	7.39	0.67	33.1	1.48	-31.1	
130	18.3		13.7	7.38	2.20	72.1	1.47	-25.8	
140	18.3		13.7	7.37	2.4	71.3	1.43	-28	
145	18.3		14.2	7.36	2.9	67.8	1.46	-32.5	

Purge Observations: _____
Purge Water Containerized: ND

EQUIPMENT DOCUMENTATION

Type of Pump: _____
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020
Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	✓
RCRA metals		✓

LOCATION NOTES

Signature: _____
Checked By: Laura K Thompson

Low Flow Groundwater Sampling Field Record

Lu Engineers
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Project Name Orchard Whitney
Location ID MW-28
Activity Time 11:52

Field Sample ID OW-MW-28_100217
Sample Time 12:35

Job # 4216-08
Sampling Event # __
Date 10/02/17

SAMPLING NOTES

Initial Depth to Water 8.10 feet
Final Depth to Water 10.40 feet
Screen Length _____ feet
Total Volume Purged ~4.0 gallons
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth 18.15 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar _____

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
11:57	8.55		14.2	8.10	0.24	5.58	0.77	26.4	
12:02	9.05		14.6	7.66	0.64	14.7	0.75	0.1	
12:08	9.40		14.7	7.43	0.60	23.4	0.75	-7.3	
12:14	9.56		14.8	7.36	0.48	25.9	0.95	-11.9	
12:19	9.90		14.8	7.28	0.34	27.1	1.35	-12.7	
12:24	10.30		14.7	7.30	0.23	10.12	1.35	-19.0	
12:30	10.40		14.8	7.30	0.24	11.12	1.33	-19.0	

Purge Observations: clear, no odor
Purge Water Containerized: no

EQUIPMENT DOCUMENTATION

Type of Pump: Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020
Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	✓
RCRA metals		✓

LOCATION NOTES

monitoring well cover needs to be repaired (see photographs)

Signature: Laura K Gregor
Checked By: _____

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney
Location ID MW-29
Activity Time 12:50

Field Sample ID OW-MW-29_100217
Sample Time 13:50

Job # 4216-08
Sampling Event # __
Date 10/02/17

SAMPLING NOTES

Initial Depth to Water 7.65 feet
Final Depth to Water 8.98 feet
Screen Length _____ feet
Total Volume Purged ~4.5 gallons

Measurement Point TOR
Well Depth 16.80 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
12:36	8.30		14.2	7.40	0.17	8.78	0.17	4.7	
13:02	8.64		14.6	7.25	0.16	5.61	0.94	10.1	
13:08	8.75		15.2	7.34	0.37	30.0	0.94	10.5	
13:15	8.82		15.2	7.30	0.29	36.7	0.92	-16	
13:20	8.90		15.3	7.36	0.24	32.6	0.90	5.5	
13:26	8.90		15.2	7.38	0.22	26.6	0.89	9.6	
13:35	8.95		15.3	7.35	0.33	19.1	0.90	11.6	
13:42	8.98		15.3	7.35	0.39	25.4	0.90	11.3	

Purge Observations: Relatively clear, no odor
Purge Water Containerized: NO

EQUIPMENT DOCUMENTATION

Type of Pump: Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020

Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	✓
RCRA metals		✓

LOCATION NOTES

Signature: Laura K Kreyer
Checked By: _____

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney
Location ID MW-16 Field Sample ID GW-MW-16_112917 Job # 426-08
Activity Time 10:15 Sample Time 10:55 Sampling Event # 02
Date 11-29-17

SAMPLING NOTES

Initial Depth to Water 7.6 feet Measurement Point TOR Well Diameter 2"
Final Depth to Water 8 feet Well Depth 10 feet Well Integrity:
Screen Length ____ feet Pump Intake Depth ____ Cap ____
Total Volume Purged ~3 gallons PID Well Head ____ Casing ____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ____
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth Collar ____

Missing/ needs repair

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
1015	7.6		12.9	11.03	.16	17.6	1.23	-215.6	
1020	8		12.8	11.00	.24	26.3	1.23	-175.9	
1025	8		13.0	11.01	.08	24.4	1.22	-196.4	
1030	8		13	10.94	.15	33.9	1.20	-190.7	
1035	8		13	10.88	.18	30.7	1.19	-180.4	
1040	8		13	10.89	.17	25.7	1.19	-174.5	
1045	8		12.9	10.90	.18	26.2	1.20	-174.5	
1050	8		12.9	10.93	.13	17.2	1.20	-169.4	
1055	8		12.9	10.95	.12	11.5	1.20	-168.1	

Purge Observations: clear, no unusual odors
Purge Water Containerized: NO

EQUIPMENT DOCUMENTATION

Type of Pump: Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	✓
RCRA Metals		✓

LOCATION NOTES

No concrete casing or metal cover
3gal placed

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney
Job # 4216-08
Location ID MW-22 Field Sample ID OW-MW-22-112917 Sampling Event # 02
Activity Time 11:15 Sample Time 1155 Date 11-29-17

SAMPLING NOTES

Initial Depth to Water 5.6 feet Measurement Point TOR Well Diameter 2"
Final Depth to Water 5.6 feet Well Depth 15 feet Well Integrity: needs repair
Screen Length ____ feet Pump Intake Depth ____ Cap ____
Total Volume Purged ~3 gallons PID Well Head ____ Casing ____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ____
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth Collar ____

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
1115	5.6		12.2	7.26	2.84	34.6	.93	9.2	
1120	5.6		12.1	7.23	2.79	47.2	.92	11.7	
1125	5.6		12.1	7.23	2.82	41.8	.92	12.1	
1130	5.6		11.4	7.31	3.04	28.1	.92	24.2	
1135	5.6		12.0	7.21	2.98	14.7	.93	23.0	
1140	5.6		11.9	7.20	2.88	7.24	.93	25.9	
1145	5.6		11.9	7.21	2.84	7.00	.93	26.8	
1150	5.6		11.9	7.21	2.84	4.35	.93	27.7	
1155	5.6		11.4	7.21	2.74	4.79	.92	29.3	Sample Collected

Purge Observations: clear, no odor
Purge Water Containerized: NO

EQUIPMENT DOCUMENTATION

Type of Pump: Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	✓
RCRA Metals		✓

LOCATION NOTES

3 Gall purged, well needs repair

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney Job # 4216-08
Location ID MW-23 Field Sample ID OW-MW-23_112917 Sampling Event # 02
Activity Time 12:18 Sample Time 13:00 Date 11/29/17

SAMPLING NOTES

Initial Depth to Water – / water level meter stopped working. feet Measurement Point TOR Well Diameter 2"
Final Depth to Water – feet Well Depth 20.0 feet Well Integrity:
Screen Length ____ feet Pump Intake Depth ____ Cap ____
Total Volume Purged ____ gallons PID Well Head ____ Casing ____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ____
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth Collar ____

needs repair

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
12:25	–		13.4	7.77	0.35	25.5	0.73	-116.0	
1230	–		13.5	8.65	.22	21.5	.77	-148.2	
1235	–		13.5	8.68	.23	22.2	.78	-149.7	
1240	–		13.5	8.80	.19	20.4	.83	-155.1	
1245	–		13.5	9.02	.18	12.7	.85	-152.1	
1250	–		13.5	8.82	.26	7.26	.86	-132	
1255	–		13.6	8.86	.14	6.17	.86	-134.8	
1300	–		13.6	8.84	0.15	4.52	0.87	-131.3	

Purge Observations: slightly turbid, no odor
Purge Water Containerized: NO

EQUIPMENT DOCUMENTATION

Type of Pump: Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	✓
RCRA	metals	✓

LOCATION NOTES

well head needs to be repaired

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney
Location ID MW-26 Field Sample ID OW-MW-26-112917 Job # 4216-08
Activity Time 11:20 Sample Time 12:05 Sampling Event # 02
Date 11/29/17

SAMPLING NOTES

Initial Depth to Water 8.00 feet Measurement Point TOR Well Diameter 2"
Final Depth to Water 8.75 feet Well Depth 16.7 feet Well Integrity:
Screen Length ____ feet Pump Intake Depth ____ Cap ✓
Total Volume Purged ~3.5 gallons PID Well Head ____ Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ✓
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
11:25	8.52		12.7	7.25	4.54	5.78	1.00	26.3	
11:30	8.62		12.8	7.25	5.37	6.62	1.09	24.4	
11:35	8.74		12.8	7.32	8.99	4.17	1.14	21.3	
11:40	8.75		12.8	7.46	8.45	2.54	1.17	10.3	
11:53	8.75		12.8	7.47	7.79	2.82	1.18	8.9	
12:00	8.75		12.8	7.68	7.56	2.47	1.18	3.1	

Purge Observations: clear, no odor
Purge Water Containerized: NO

EQUIPMENT DOCUMENTATION

Type of Pump: Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	✓
RCRA Metals		✓

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Wk Hwy Job # 4216-08
Location ID MW-27 Field Sample ID OW-MW-27_112917 Sampling Event # 2
Activity Time 9:10 Sample Time 9:55 Date 11/29/17

SAMPLING NOTES

Initial Depth to Water 16.69 feet Measurement Point TOR Well Diameter 2"
Final Depth to Water 16.90 feet Well Depth 34.0 feet Well Integrity:
Screen Length ____ feet Pump Intake Depth ____ Cap ✓
Total Volume Purged ~3.5 gallons PID Well Head ____ Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ✓
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L) (9.88)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
~~9:20~~	16.88		11.6	7.40	~~96.5~~ ✓	11.3	1.11	-51.4	
9:25	16.90		11.7	8.20	9.44	10.7	1.40	-50.4	
9:30	16.90		11.7	8.49	8.22	14.1	1.48	-45.2	
9:35	16.90		11.5	8.53	7.56	17.8	1.50	-37.8	
9:40	16.90		11.5	8.56	7.78	14.4	1.49	-37.1	
9:45	16.90		11.5	8.56	7.15	15.1	1.49	-38.8	

Purge Observations: clear, no odor
Purge Water Containerized: NO

EQUIPMENT DOCUMENTATION

Type of Pump: Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	✓
RCRA Metals		✓

LOCATION NOTES

MS+MSD collected

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney Job # 4216-08
Location ID MW-28 Field Sample ID OW-GW-MW-28-112917 Sampling Event # 02
Activity Time 10:15 Sample Time 11:05 Date 11/29/17

SAMPLING NOTES

Initial Depth to Water 7.71 feet Measurement Point TOR Well Diameter 2"
Final Depth to Water 7.68 feet Well Depth 17.92 feet Well Integrity:
Screen Length feet Pump Intake Depth Cap ✓
Total Volume Purged ~4 gallons PID Well Head Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ✓
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
10:25	7.54		12.2	7.53	1.92	23.8	1.20	-1.4	
10:30	7.59		12.5	7.85	0.34	12.1	1.13	-17.9	
10:35	7.68		12.6	8.00	0.43	11.6	1.09	-21.2	
10:40	7.69		12.5	7.95	1.73	12.6	1.05	-7.0	
10:50	7.50		12.3	7.96	1.58	8.45	1.07	-6.1	
10:55	7.52		11.7	7.77	1.92	7.52	1.09	-4.8	
11:00	7.52		11.4	7.92	1.18	5.46	1.12	-5.8	
11:05	7.66		12.8	7.93	1.13	5.71	1.00	-7.6	

Purge Observations: clear, no odor
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump:
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	✓
RCRA Metals		✓

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney
Location ID MW-29 Field Sample ID GW-MW-29_112917 Job # 4216-08
Activity Time 9:10 Sample Time 9:50 Sampling Event # 02
Date 11-29-17

SAMPLING NOTES

Initial Depth to Water 6.7 feet Measurement Point TOR Well Diameter 2"
Final Depth to Water 8.1 feet Well Depth _____ feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap ✓
Total Volume Purged ~3.0 gallons PID Well Head _____ Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ✓
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
0915	6.7		12.4	7.38	.54	2.89	.94	-115	
0920	6.7		13	7.27	.53	2.38	1.00	-98.1	
0925	7.7		13	7.27	.65	5.21	1.01	-77.9	
0930	7.7		12.4	7.30	.85	15.1	1.01	-32.4	
0935	7.7		12.4	7.28	.82	16.2	1.02	-19.1	
0940	8.1		12.9	7.27	.79	-26	1.01	-11.5	
0945	8.1		12.9	7.27	.76	17.6	1.02	-10.1	
0950	8.1		12.9	7.46	.71	13.0	1.02	-6.9	Sample Collected

Purge Observations: clear, no odor
Purge Water Containerized: NO

EQUIPMENT DOCUMENTATION

Type of Pump: Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	✓
RCRA Metals		✓

LOCATION NOTES

3 gal purged
Field Duplicate collected @ MW-29

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney
Job # 4216-08
Location ID MW-16
Field Sample ID QW-MW-16_032118
Sampling Event # __
Activity Time 10:00
Sample Time 10:45
Date 3/21/2018

SAMPLING NOTES

couldn't get final depth due to snow falling in well.

Initial Depth to Water 8.00 feet
Measurement Point TOR
Well Diameter 2"
Final Depth to Water ____ feet
Well Depth 10 feet
Well Integrity:
Screen Length ____ feet
Pump Intake Depth ____
Cap –
Total Volume Purged ~4 gallons
PID Well Head ____
Casing –
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Locked –
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth
Collar –

PURGE DATA

snow kept falling in well + couldn't get accurate DTW

↳ needs repair

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
10:15	8.00		7.3	10.88	1.28	8.49	1.14	-84.8	
10:20			7.1	10.88	0.43	8.67	1.16	-83.8	
10:25			7.0	10.93	0.39	8.62	1.13	-85.5	
10:31			6.5	10.89	0.43	17.1	1.12	-83.5	
10:36			6.4	10.89	0.54	18.0	1.11	-83.7	
10:40			6.2	10.89	0.68	20.9	1.10	-85.1	

Purge Observations: clear, no odor
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	✓
RCRA Metals		✓

LOCATION NOTES

- Field Duplicate collected
- well needs repair

Low Flow Groundwater Sampling Field Record

Lu Engineers
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Project Name Orchard-Whitney
Location ID MW-22
Activity Time ~~1:10~~ 1:00

Field Sample ID ~~MW-MW-22~~ GW-MW-22_032118
Sample Time _____

Job # 4216-08
Sampling Event # _ _
Date 3/21/2018

SAMPLING NOTES well needs repair

Initial Depth to Water 5.60 feet
Final Depth to Water 5.61 feet
Screen Length _____ feet
Total Volume Purged ~1.00 gallons

Measurement Point TOR
Well Depth 15.87 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap needs Replace
Casing _____
Locked no
Collar _____

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
1:05	5.66		7.7	6.93	7.20	12.4	0.86	64.7	
1:10	5.64		7.3	6.80	15.44	10.07	0.86	66.7	
1:15	5.64		7.2	6.76	7.15	5.28	0.86	67.7	
1:20	5.64		7.3	6.73	6.85	7.58	0.86	66.0	
1:25	5.64		7.2	6.75	6.72	5.11	0.86	65.4	

Purge Observations: clear, no odor
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020 Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	✓
RCRA Metals		✓

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney
Location ID MW-23
Activity Time 8:44

Field Sample ID ON-MW-23-032118
Sample Time 9:35

Job # 4216-08
Sampling Event # __
Date 3/21/2018

SAMPLING NOTES

Initial Depth to Water 9.50 feet
Final Depth to Water 11.26 feet
Screen Length ____ feet
Total Volume Purged ~2.5 gallons

Measurement Point TOR
Well Depth 21.1 feet
Pump Intake Depth ____
PID Well Head ____

Well Diameter 2"
Well Integrity:
Cap NO
Casing ✓
Locked NO
Collar NO

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
~~8:00~~	10.0		9.4	7.04	2.83	15.1	0.90	81.1	
9:05	10.35		9.7	6.96	1.95	12.6	0.89	76.8	
9:10	10.70		9.4	6.96	1.52	13.5	0.89	72	
9:14	10.67		9.9	6.92	0.86	23.2	0.90	2.9	
9:25	11.07		10.1	7.03	0.92	11.8	0.91	17.8	
9:30	11.26		10.2	7.05	0.95	10.29	0.92	19.4	

1 needs repair

Purge Observations: clear, no odor
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney
Location ID MW-26
Activity Time ~~12:20~~ 12:10

Field Sample ID GW-MW-26-032118
Sample Time _____

Job # 4216-08
Sampling Event # _ _
Date 3/21/2018

SAMPLING NOTES

Initial Depth to Water 7.98 feet
Final Depth to Water 8.79 (Pump stop) feet
Screen Length _____ feet
Total Volume Purged ~2.25 gallons
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth 16.9 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
12:17	8.91		9.2	7.39	7.06	11.4	0.94	382.8	
12.22	8.96		9.1	7.47	4.62	3.53	1.00	379.6	
12.27	9.01		9.1	7.48	4.04	1.91	1.04	378.5	
12.32	9.05		9.2	7.50	3.74	1.83	1.07	377.8	

Purge Observations: clear, no odor
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020 Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	✓
RCRA Metals		✓

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney
Location ID MW-27
Activity Time 9:45

Field Sample ID DW-MW-27-03212018
Sample Time _____

Job # 4216-08
Sampling Event # _ _
Date 3/21/2018

SAMPLING NOTES

Initial Depth to Water 16.36 feet
Final Depth to Water 16.56 feet
Screen Length _____ feet
Total Volume Purged ~2.5 gallons
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth 33.52 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
~~10:02~~			~~10.5~~	~~7.60~~	~~4.03~~		~~1.25~~		
10:04	16.49		11.2	7.25	1.39	2.92	1.23	-35.6	
10:09	16.50		11.2	6.64	0.60	4.40	1.43	-118.0	
10:14	16.50		11.2	6.69	0.44	1.56	1.47	-120.7	
10:20	16.52		11.3	6.67	0.25	1.49	1.46	-124.8	
10:25	16.53		11.4	6.73	0.23	2.49	1.47	-130.4	

* change battery

Purge Observations: _____
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020 Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	
RCRA Metals		

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney
Location ID MW-28
Activity Time 11:10

Field Sample ID ON-MW-28_032218
Sample Time 11:40

Job # 4216-08
Sampling Event # __
Date 3/21/2018
22

SAMPLING NOTES

Initial Depth to Water 7.40 feet
Final Depth to Water 8.12 feet
Screen Length ____ feet
Total Volume Purged ~2.5 gallons
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth 18.0 feet
Pump Intake Depth ____
PID Well Head ____

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

PURGE DATA

Missing bolts, not locked

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
11:20	7.78		8.9	7.63	0.29	4.87	1.06	350.5	
11:25	7.96		9.0	7.66	0.22	5.88	1.08	348.1	
11:30	8.00		9.0	7.67	0.27	4.80	1.11	346.5	
11:35	~~8.60~~ 8.06		9.1	7.68	0.32	5.29	1.12	344.8	

Purge Observations: clear, no odor
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020 Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	✓
RCRA Metals		✓

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard-Whitney
Location ID MW-29
Activity Time 9:45

Field Sample ID OW-MW-29-032218 Sunny, 34°F
Sample Time 10:55

Job # 4216-08
Sampling Event # --
Date 3/~~21~~22/2018

SAMPLING NOTES

Initial Depth to Water 7.02 feet
Final Depth to Water 8.12 feet
Screen Length ____ feet
Total Volume Purged ~3.5 gallons

Measurement Point TOR
Well Depth 16.65 feet
Pump Intake Depth ____
PID Well Head ____

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
10:00	7.78		8.8	7.81	1.32	4.47	0.77	365.8	
10:05	7.80		8.5	7.64	1.12	5.95	0.721	361.3	
10:10	7.95		8.5	7.62	1.13	4.77	0.704	359.0	
10:20	7.90		8.8	7.59	1.52	9.25	0.687	354.9	
10:25	8.10		8.8	7.54	1.87	12.7	0.677	356.0	
10:30	8.12		8.6	7.56	1.30	11.67	0.700	353.8	
10:35	8.12		8.6	7.56	1.17	12.60	0.701	352.1	
10:42	8.12		8.6	7.57	0.59	24.80	0.700	350.2	
10:46	8.12		8.6	7.57	0.70	26.90	0.699	349.6	

Purge Observations: clear, no odor
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020 Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	✓
RCRA Metals		✓

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard Whitney
Job # 4216-08
Location ID MW-16
Field Sample ID ow-MW-16-050418
Sampling Event # __
Activity Time 14:20
Sample Time 14:42
Date 05/04/18

SAMPLING NOTES

Initial Depth to Water 7.74 feet
Measurement Point TOR
Well Diameter 2"
Final Depth to Water 7.81 feet
Well Depth 10 feet
Well Integrity:
Screen Length ____ feet
Pump Intake Depth ____
Cap ✓
Total Volume Purged ~1.5 gallons
PID Well Head ____
Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Locked ✓
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
14:25	7.78		11.33	11.68	0.28	11.50	0.133	58.0	
14:30	7.78		10.79	11.68	0.18	7.62	0.132	53.0	
14:35	7.78		10.92	11.69	0.06	7.63	0.134	52.1	
14:40	7.80		10.60	11.69	0.13	5.63	0.126	48.5	

Purge Observations: clear, no odor / sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	Yes
RCRA Metals		Yes
PCBs		—
Pesticides		—

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard Whitney
Job # 4216-08
Location ID MW-22
Field Sample ID ow-MW-22-050418
Sampling Event # __
Activity Time 16:10
Sample Time 16:30
Date 05/04/18

SAMPLING NOTES

Initial Depth to Water 5.47 feet
Measurement Point TOR
Well Diameter 2"
Final Depth to Water 5.57 feet
Well Depth 15.88 feet
Well Integrity:
Screen Length ____ feet
Pump Intake Depth ____
Cap Needs new
Total Volume Purged ~1 gallons
PID Well Head ____
Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Locked N/D
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
16:15			9.41	7.39	6.63	4.65	0.183	103.6	
16:20			9.38	7.40	6.53	5.04	0.220	104.9	
16:25			9.32	7.40	6.55	3.30	0.481	107.0	
16:30	—	Sample	taken	early	due	to	rain	—	

Purge Observations: Clear, no odor / sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	Yes
RCRA Metals		Yes
PCBs		—
Pesticides		—

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard Whitney
Job # 4216-08
Location ID MW-23
Field Sample ID QA-MW-23.050418
Sampling Event # __
Activity Time 15:20
Sample Time 15:40
Date 05/04/18

SAMPLING NOTES

Initial Depth to Water 10.25 feet
Measurement Point TOR
Well Diameter 2"
Final Depth to Water 10.33 feet
Well Depth 21.1 feet
Well Integrity:
Screen Length ____ feet
Pump Intake Depth ____
Cap NO
Total Volume Purged ~1.5 gallons
PID Well Head ____
Casing ✓
Locked NO
(purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth
Collar NO

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
15:20	10.25		11.60	7.86	0.84	20.14	0.156	79.7	
15:25	10.27		11.53	7.86	0.87	13.46	0.153	77.0	
15:30	10.30		11.57	7.86	0.90	11.28	0.164	79.2	
15:35	10.33		11.56	7.83	0.60	11.13	0.158	69.8	

Purge Observations: clear, no odor/sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	Yes
RCRA Metals		Yes
PCBs		—
Pesticides		✓

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard Whitney
Job # 4216-08
Location ID MW-26
Field Sample ID OW-MW-26_050418
Sampling Event # __
Activity Time 15:50
Sample Time 16:08
Date 05/04/18

SAMPLING NOTES

Initial Depth to Water 7.75 feet
Measurement Point TOR
Well Diameter 2"
Final Depth to Water 8.65 feet
Well Depth 17.0 feet
Well Integrity:
Screen Length ____ feet
Pump Intake Depth ____
Cap ✓
Total Volume Purged ~1.5 gallons
PID Well Head ____
Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Locked ✓
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
15:50	8.50		10.48	7.40	6.16	5.20	0.118	81.8	
15:55	8.50		10.33	7.39	5.88	2.80	0.121	86.5	
16:00	8.60		10.25	7.34	5.61	2.79	0.119	91.6	
16:05	8.65		10.36	7.33	5.05	1.68	0.116	95.7	

Purge Observations: clear, no odor / sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	Yes
RCRA Metals		Yes
PCBs		—
Pesticides		—

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard Whitney
Job # 4216-08
Location ID MW-27
Field Sample ID QW-MW-27_050418
Sampling Event # __
Activity Time 12:45
Sample Time 13:12
Date 05/04/18

SAMPLING NOTES

Initial Depth to Water 16.20 feet
Final Depth to Water 16.34 feet
Screen Length ____ feet
Total Volume Purged ~2 gallons
(purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth 33.50 feet
Pump Intake Depth ____
PID Well Head ____

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
12:50	16.25		12.82	7.56	3.83	16.60	0.707	16.2	
12:55	16.30		12.99	7.42	0.45	12.80	0.629	-13.2	
13:00	16.31		12.75	7.41	0.24	12.31	0.605	-17.9	
13:05	16.31		12.58	7.40	0.17	7.06	0.626	-20.0	
13:10	16.34		12.44	7.40	0.12	6.87	0.710	-22.9	

Purge Observations: Clear, no odors/sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	Yes
RCRA Metals		Yes
PCBs		—
Pesticides		—

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard Whitney
Job # 4216-08
Location ID MW-28
Field Sample ID OW-MW-28-050418
Sampling Event # __
Activity Time 14:55
Sample Time 15:13
Date 05/04/18

SAMPLING NOTES

Initial Depth to Water 7.61 feet
Measurement Point TOR
Well Diameter 2"
Final Depth to Water 7.72 feet
Well Depth 18.1 feet
Well Integrity:
Screen Length ____ feet
Pump Intake Depth ____
Cap ✓
Total Volume Purged ~2 gallons
PID Well Head ____
Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Locked No
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
14:55	7.61		10.86	8.61	0.34	15.50	0.122	68.5	
15:00	7.71		10.87	8.23	0.07	33.80	0.122	71.4	
15:05	7.71		10.33	8.04	0.11	51.60	0.124	72.8	
15:10	7.72		10.28	7.89	0.17	53.80	0.115	73.9	
15:15	7.72		10.26	7.84	0.20	53.63	0.123	74.0	

Purge Observations: Clear, no odors / sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	Yes
RCRA Metals		Yes
PCBs		—
Pesticides		—

LOCATION NOTES

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Orchard Whitney
Job # 4216-08
Location ID MW-29
Field Sample ID QW-MW-29_050418
Sampling Event # __
Activity Time 13:40
Sample Time 14:10
Date 05/04/18

SAMPLING NOTES

Initial Depth to Water 6.81 feet
Measurement Point TOR
Well Diameter 2"
Final Depth to Water 7.45 feet
Well Depth 16.66 feet
Well Integrity:
Screen Length ____ feet
Pump Intake Depth ____
Cap ✓
Total Volume Purged 2 gallons
PID Well Head ____
Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Locked ✓
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
13:40	7.41		11.59	7.53	0.21	2.85	0.397	37.8	
13:45	7.50		11.64	7.48	0.25	3.19	0.437	49.4	
13:50	7.50		11.24	7.46	0.44	4.26	0.378	54.5	
13:55	7.50		11.31	7.47	0.46	5.72	0.354	57.6	
14:00	7.50		11.23	7.48	0.40	6.18	0.342	61.8	
14:10	7.45								

Purge Observations: Very light sheen in bucket
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	2 x 40 ml	Yes
RCRA Metals		Yes
PCBs		—
Pesticides		—

LOCATION NOTES

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-16_100217		
Lab Sample ID:	174404-01	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		10/3/2017 13:56

Method Reference(s): EPA 7470A
Preparation Date: 10/3/2017
Data File: Hg171003A

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.

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-16_100217		
Lab Sample ID:	174404-01	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	**0.0113**	mg/L		10/5/2017 17:11
Barium	< 0.100	mg/L		10/4/2017 22:41
Cadmium	**0.00488**	mg/L	J	10/4/2017 22:41
Chromium	**0.00564**	mg/L	J	10/4/2017 22:41
Lead	< 0.0100	mg/L		10/4/2017 22:41
Selenium	**0.0165**	mg/L	J	10/4/2017 22:41
Silver	< 0.0100	mg/L		10/5/2017 17:11

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 10/3/2017
Data File: 171005B

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-16_100217		
Lab Sample ID:	174404-01	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		10/3/2017 14:23
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		10/3/2017 14:23
1,1,2-Trichloroethane	< 2.00	ug/L		10/3/2017 14:23
1,1-Dichloroethane	< 2.00	ug/L		10/3/2017 14:23
1,1-Dichloroethene	< 2.00	ug/L		10/3/2017 14:23
1,2,3-Trichlorobenzene	< 5.00	ug/L		10/3/2017 14:23
1,2,4-Trichlorobenzene	< 5.00	ug/L		10/3/2017 14:23
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		10/3/2017 14:23
1,2-Dibromoethane	< 2.00	ug/L		10/3/2017 14:23
1,2-Dichlorobenzene	< 2.00	ug/L		10/3/2017 14:23
1,2-Dichloroethane	< 2.00	ug/L		10/3/2017 14:23
1,2-Dichloropropane	< 2.00	ug/L		10/3/2017 14:23
1,3-Dichlorobenzene	< 2.00	ug/L		10/3/2017 14:23
1,4-Dichlorobenzene	< 2.00	ug/L		10/3/2017 14:23
1,4-dioxane	< 20.0	ug/L		10/3/2017 14:23
2-Butanone	< 10.0	ug/L		10/3/2017 14:23
2-Hexanone	< 5.00	ug/L		10/3/2017 14:23
4-Methyl-2-pentanone	< 5.00	ug/L		10/3/2017 14:23
Acetone	**28.3**	ug/L		10/3/2017 14:23
Benzene	**1.28**	ug/L		10/3/2017 14:23
Bromochloromethane	< 5.00	ug/L		10/3/2017 14:23
Bromodichloromethane	< 2.00	ug/L		10/3/2017 14:23
Bromoform	< 5.00	ug/L		10/3/2017 14:23
Bromomethane	< 2.00	ug/L		10/3/2017 14:23
Carbon disulfide	< 2.00	ug/L		10/3/2017 14:23
Carbon Tetrachloride	< 2.00	ug/L		10/3/2017 14:23
Chlorobenzene	< 2.00	ug/L		10/3/2017 14:23

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-16_100217
Lab Sample ID: 174404-01 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Chloroethane	< 2.00	ug/L	10/3/2017	14:23
Chloroform	< 2.00	ug/L	10/3/2017	14:23
Chloromethane	< 2.00	ug/L	10/3/2017	14:23
cis-1,2-Dichloroethene	< 2.00	ug/L	10/3/2017	14:23
cis-1,3-Dichloropropene	< 2.00	ug/L	10/3/2017	14:23
Cyclohexane	< 10.0	ug/L	10/3/2017	14:23
Dibromochloromethane	< 2.00	ug/L	10/3/2017	14:23
Dichlorodifluoromethane	< 2.00	ug/L	10/3/2017	14:23
Ethylbenzene	< 2.00	ug/L	10/3/2017	14:23
Freon 113	< 2.00	ug/L	10/3/2017	14:23
Isopropylbenzene	< 2.00	ug/L	10/3/2017	14:23
m,p-Xylene	< 2.00	ug/L	10/3/2017	14:23
Methyl acetate	< 2.00	ug/L	10/3/2017	14:23
Methyl tert-butyl Ether	< 2.00	ug/L	10/3/2017	14:23
Methylcyclohexane	< 2.00	ug/L	10/3/2017	14:23
Methylene chloride	< 5.00	ug/L	10/3/2017	14:23
o-Xylene	< 2.00	ug/L	10/3/2017	14:23
Styrene	< 5.00	ug/L	10/3/2017	14:23
Tetrachloroethene	< 2.00	ug/L	10/3/2017	14:23
Toluene	< 2.00	ug/L	10/3/2017	14:23
trans-1,2-Dichloroethene	< 2.00	ug/L	10/3/2017	14:23
trans-1,3-Dichloropropene	< 2.00	ug/L	10/3/2017	14:23
Trichloroethene	< 2.00	ug/L	10/3/2017	14:23
Trichlorofluoromethane	< 2.00	ug/L	10/3/2017	14:23
Vinyl chloride	< 2.00	ug/L	10/3/2017	14:23

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-16_100217
Lab Sample ID: 174404-01 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**97.2**	85.9 - 118		10/3/2017 14:23
4-Bromofluorobenzene	**85.9**	69.4 - 123		10/3/2017 14:23
Pentafluorobenzene	**94.1**	81.6 - 114		10/3/2017 14:23
Toluene-D8	**92.4**	82.7 - 112		10/3/2017 14:23

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x45636.D

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-29_100217		
Lab Sample ID:	174404-02	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		10/3/2017 13:59

Method Reference(s): EPA 7470A
Preparation Date: 10/3/2017
Data File: Hg171003A

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Report Prepared Friday, October 6, 2017

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-29_100217		
Lab Sample ID:	174404-02	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		10/4/2017 22:45
Barium	< 0.100	mg/L		10/4/2017 22:45
Cadmium	**0.00615**	mg/L		10/4/2017 22:45
Chromium	< 0.0100	mg/L		10/4/2017 22:45
Lead	< 0.0100	mg/L		10/4/2017 22:45
Selenium	< 0.0200	mg/L		10/4/2017 22:45
Silver	< 0.0100	mg/L		10/5/2017 17:15

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 10/3/2017
Data File: 171004E

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-29_100217		
Lab Sample ID:	174404-02	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		10/3/2017 14:47
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		10/3/2017 14:47
1,1,2-Trichloroethane	< 2.00	ug/L		10/3/2017 14:47
1,1-Dichloroethane	< 2.00	ug/L		10/3/2017 14:47
1,1-Dichloroethene	< 2.00	ug/L		10/3/2017 14:47
1,2,3-Trichlorobenzene	< 5.00	ug/L		10/3/2017 14:47
1,2,4-Trichlorobenzene	< 5.00	ug/L		10/3/2017 14:47
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		10/3/2017 14:47
1,2-Dibromoethane	< 2.00	ug/L		10/3/2017 14:47
1,2-Dichlorobenzene	< 2.00	ug/L		10/3/2017 14:47
1,2-Dichloroethane	< 2.00	ug/L		10/3/2017 14:47
1,2-Dichloropropane	< 2.00	ug/L		10/3/2017 14:47
1,3-Dichlorobenzene	< 2.00	ug/L		10/3/2017 14:47
1,4-Dichlorobenzene	< 2.00	ug/L		10/3/2017 14:47
1,4-dioxane	< 20.0	ug/L		10/3/2017 14:47
2-Butanone	< 10.0	ug/L		10/3/2017 14:47
2-Hexanone	< 5.00	ug/L		10/3/2017 14:47
4-Methyl-2-pentanone	< 5.00	ug/L		10/3/2017 14:47
Acetone	**5.76**	ug/L	J	10/3/2017 14:47
Benzene	< 1.00	ug/L		10/3/2017 14:47
Bromochloromethane	< 5.00	ug/L		10/3/2017 14:47
Bromodichloromethane	< 2.00	ug/L		10/3/2017 14:47
Bromoform	< 5.00	ug/L		10/3/2017 14:47
Bromomethane	< 2.00	ug/L		10/3/2017 14:47
Carbon disulfide	< 2.00	ug/L		10/3/2017 14:47
Carbon Tetrachloride	< 2.00	ug/L		10/3/2017 14:47
Chlorobenzene	< 2.00	ug/L		10/3/2017 14:47

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-29_100217
Lab Sample ID: 174404-02 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Chloroethane	< 2.00	ug/L	10/3/2017	14:47
Chloroform	< 2.00	ug/L	10/3/2017	14:47
Chloromethane	< 2.00	ug/L	10/3/2017	14:47
cis-1,2-Dichloroethene	< 2.00	ug/L	10/3/2017	14:47
cis-1,3-Dichloropropene	< 2.00	ug/L	10/3/2017	14:47
Cyclohexane	< 10.0	ug/L	10/3/2017	14:47
Dibromochloromethane	< 2.00	ug/L	10/3/2017	14:47
Dichlorodifluoromethane	< 2.00	ug/L	10/3/2017	14:47
Ethylbenzene	< 2.00	ug/L	10/3/2017	14:47
Freon 113	< 2.00	ug/L	10/3/2017	14:47
Isopropylbenzene	< 2.00	ug/L	10/3/2017	14:47
m,p-Xylene	< 2.00	ug/L	10/3/2017	14:47
Methyl acetate	< 2.00	ug/L	10/3/2017	14:47
Methyl tert-butyl Ether	< 2.00	ug/L	10/3/2017	14:47
Methylcyclohexane	< 2.00	ug/L	10/3/2017	14:47
Methylene chloride	< 5.00	ug/L	10/3/2017	14:47
o-Xylene	< 2.00	ug/L	10/3/2017	14:47
Styrene	< 5.00	ug/L	10/3/2017	14:47
Tetrachloroethene	< 2.00	ug/L	10/3/2017	14:47
Toluene	< 2.00	ug/L	10/3/2017	14:47
trans-1,2-Dichloroethene	< 2.00	ug/L	10/3/2017	14:47
trans-1,3-Dichloropropene	< 2.00	ug/L	10/3/2017	14:47
Trichloroethene	< 2.00	ug/L	10/3/2017	14:47
Trichlorofluoromethane	< 2.00	ug/L	10/3/2017	14:47
Vinyl chloride	< 2.00	ug/L	10/3/2017	14:47

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-29_100217
Lab Sample ID: 174404-02 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**95.1**	85.9 - 118		10/3/2017	14:47
4-Bromofluorobenzene	**85.4**	69.4 - 123		10/3/2017	14:47
Pentafluorobenzene	**95.5**	81.6 - 114		10/3/2017	14:47
Toluene-D8	**92.9**	82.7 - 112		10/3/2017	14:47

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x45637.D

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-28_100217		
Lab Sample ID:	174404-03	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		10/3/2017 14:01

Method Reference(s): EPA 7470A
Preparation Date: 10/3/2017
Data File: Hg171003A

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Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-28_100217		
Lab Sample ID:	174404-03	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		10/4/2017 22:49
Barium	**0.0562**	mg/L	J	10/4/2017 22:49
Cadmium	< 0.00500	mg/L		10/4/2017 22:49
Chromium	< 0.0100	mg/L		10/4/2017 22:49
Lead	< 0.0100	mg/L		10/4/2017 22:49
Selenium	< 0.0200	mg/L		10/4/2017 22:49
Silver	< 0.0100	mg/L		10/5/2017 17:19

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 10/3/2017
Data File: 171004E

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-28_100217		
Lab Sample ID:	174404-03	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		10/3/2017 15:11
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		10/3/2017 15:11
1,1,2-Trichloroethane	< 2.00	ug/L		10/3/2017 15:11
1,1-Dichloroethane	< 2.00	ug/L		10/3/2017 15:11
1,1-Dichloroethene	< 2.00	ug/L		10/3/2017 15:11
1,2,3-Trichlorobenzene	< 5.00	ug/L		10/3/2017 15:11
1,2,4-Trichlorobenzene	< 5.00	ug/L		10/3/2017 15:11
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		10/3/2017 15:11
1,2-Dibromoethane	< 2.00	ug/L		10/3/2017 15:11
1,2-Dichlorobenzene	< 2.00	ug/L		10/3/2017 15:11
1,2-Dichloroethane	< 2.00	ug/L		10/3/2017 15:11
1,2-Dichloropropane	< 2.00	ug/L		10/3/2017 15:11
1,3-Dichlorobenzene	< 2.00	ug/L		10/3/2017 15:11
1,4-Dichlorobenzene	< 2.00	ug/L		10/3/2017 15:11
1,4-dioxane	< 20.0	ug/L		10/3/2017 15:11
2-Butanone	< 10.0	ug/L		10/3/2017 15:11
2-Hexanone	< 5.00	ug/L		10/3/2017 15:11
4-Methyl-2-pentanone	< 5.00	ug/L		10/3/2017 15:11
Acetone	< 10.0	ug/L		10/3/2017 15:11
Benzene	< 1.00	ug/L		10/3/2017 15:11
Bromochloromethane	< 5.00	ug/L		10/3/2017 15:11
Bromodichloromethane	< 2.00	ug/L		10/3/2017 15:11
Bromoform	< 5.00	ug/L		10/3/2017 15:11
Bromomethane	< 2.00	ug/L		10/3/2017 15:11
Carbon disulfide	< 2.00	ug/L		10/3/2017 15:11
Carbon Tetrachloride	< 2.00	ug/L		10/3/2017 15:11
Chlorobenzene	< 2.00	ug/L		10/3/2017 15:11

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-28_100217
Lab Sample ID: 174404-03 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Chloroethane	< 2.00	ug/L		10/3/2017	15:11
Chloroform	< 2.00	ug/L		10/3/2017	15:11
Chloromethane	< 2.00	ug/L		10/3/2017	15:11
cis-1,2-Dichloroethene	< 2.00	ug/L		10/3/2017	15:11
cis-1,3-Dichloropropene	< 2.00	ug/L		10/3/2017	15:11
Cyclohexane	< 10.0	ug/L		10/3/2017	15:11
Dibromochloromethane	< 2.00	ug/L		10/3/2017	15:11
Dichlorodifluoromethane	< 2.00	ug/L		10/3/2017	15:11
Ethylbenzene	< 2.00	ug/L		10/3/2017	15:11
Freon 113	< 2.00	ug/L		10/3/2017	15:11
Isopropylbenzene	< 2.00	ug/L		10/3/2017	15:11
m,p-Xylene	< 2.00	ug/L		10/3/2017	15:11
Methyl acetate	< 2.00	ug/L		10/3/2017	15:11
Methyl tert-butyl Ether	< 2.00	ug/L		10/3/2017	15:11
Methylcyclohexane	< 2.00	ug/L		10/3/2017	15:11
Methylene chloride	< 5.00	ug/L		10/3/2017	15:11
o-Xylene	< 2.00	ug/L		10/3/2017	15:11
Styrene	< 5.00	ug/L		10/3/2017	15:11
Tetrachloroethene	< 2.00	ug/L		10/3/2017	15:11
Toluene	< 2.00	ug/L		10/3/2017	15:11
trans-1,2-Dichloroethene	< 2.00	ug/L		10/3/2017	15:11
trans-1,3-Dichloropropene	< 2.00	ug/L		10/3/2017	15:11
Trichloroethene	**1.55**	ug/L	J	10/3/2017	15:11
Trichlorofluoromethane	< 2.00	ug/L		10/3/2017	15:11
Vinyl chloride	< 2.00	ug/L		10/3/2017	15:11

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-28_100217
Lab Sample ID: 174404-03 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**94.0**	85.9 - 118		10/3/2017	15:11
4-Bromofluorobenzene	**83.2**	69.4 - 123		10/3/2017	15:11
Pentafluorobenzene	**96.7**	81.6 - 114		10/3/2017	15:11
Toluene-D8	**92.7**	82.7 - 112		10/3/2017	15:11

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x45638.D

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-23_100217		
Lab Sample ID:	174404-04	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		10/3/2017 14:04

Method Reference(s): EPA 7470A
Preparation Date: 10/3/2017
Data File: Hg171003A

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Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-23_100217
Lab Sample ID: 174404-04 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		10/4/2017 22:54
Barium	**0.126**	mg/L		10/4/2017 22:54
Cadmium	< 0.00500	mg/L		10/4/2017 22:54
Chromium	< 0.0100	mg/L		10/4/2017 22:54
Lead	**0.00507**	mg/L	J	10/4/2017 22:54
Selenium	**0.0113**	mg/L	J	10/4/2017 22:54
Silver	< 0.0100	mg/L		10/5/2017 17:23

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 10/3/2017
Data File: 171004E

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-23_100217		
Lab Sample ID:	174404-04	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		10/3/2017 17:09
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		10/3/2017 17:09
1,1,2-Trichloroethane	< 2.00	ug/L		10/3/2017 17:09
1,1-Dichloroethane	< 2.00	ug/L		10/3/2017 17:09
1,1-Dichloroethene	< 2.00	ug/L	M	10/3/2017 17:09
1,2,3-Trichlorobenzene	< 5.00	ug/L		10/3/2017 17:09
1,2,4-Trichlorobenzene	< 5.00	ug/L		10/3/2017 17:09
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		10/3/2017 17:09
1,2-Dibromoethane	< 2.00	ug/L		10/3/2017 17:09
1,2-Dichlorobenzene	< 2.00	ug/L		10/3/2017 17:09
1,2-Dichloroethane	< 2.00	ug/L		10/3/2017 17:09
1,2-Dichloropropane	< 2.00	ug/L		10/3/2017 17:09
1,3-Dichlorobenzene	< 2.00	ug/L		10/3/2017 17:09
1,4-Dichlorobenzene	< 2.00	ug/L		10/3/2017 17:09
1,4-dioxane	< 20.0	ug/L		10/3/2017 17:09
2-Butanone	< 10.0	ug/L		10/3/2017 17:09
2-Hexanone	< 5.00	ug/L		10/3/2017 17:09
4-Methyl-2-pentanone	< 5.00	ug/L		10/3/2017 17:09
Acetone	< 10.0	ug/L		10/3/2017 17:09
Benzene	< 1.00	ug/L		10/3/2017 17:09
Bromochloromethane	< 5.00	ug/L		10/3/2017 17:09
Bromodichloromethane	< 2.00	ug/L		10/3/2017 17:09
Bromoform	< 5.00	ug/L		10/3/2017 17:09
Bromomethane	< 2.00	ug/L		10/3/2017 17:09
Carbon disulfide	< 2.00	ug/L		10/3/2017 17:09
Carbon Tetrachloride	< 2.00	ug/L		10/3/2017 17:09
Chlorobenzene	< 2.00	ug/L		10/3/2017 17:09

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-23_100217
Lab Sample ID: 174404-04 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Chloroethane	< 2.00	ug/L	M	10/3/2017	17:09
Chloroform	< 2.00	ug/L		10/3/2017	17:09
Chloromethane	< 2.00	ug/L		10/3/2017	17:09
cis-1,2-Dichloroethene	< 2.00	ug/L		10/3/2017	17:09
cis-1,3-Dichloropropene	< 2.00	ug/L		10/3/2017	17:09
Cyclohexane	< 10.0	ug/L		10/3/2017	17:09
Dibromochloromethane	< 2.00	ug/L		10/3/2017	17:09
Dichlorodifluoromethane	< 2.00	ug/L		10/3/2017	17:09
Ethylbenzene	< 2.00	ug/L		10/3/2017	17:09
Freon 113	< 2.00	ug/L		10/3/2017	17:09
Isopropylbenzene	< 2.00	ug/L		10/3/2017	17:09
m,p-Xylene	< 2.00	ug/L		10/3/2017	17:09
Methyl acetate	< 2.00	ug/L		10/3/2017	17:09
Methyl tert-butyl Ether	< 2.00	ug/L		10/3/2017	17:09
Methylcyclohexane	< 2.00	ug/L		10/3/2017	17:09
Methylene chloride	< 5.00	ug/L		10/3/2017	17:09
o-Xylene	< 2.00	ug/L		10/3/2017	17:09
Styrene	< 5.00	ug/L		10/3/2017	17:09
Tetrachloroethene	< 2.00	ug/L		10/3/2017	17:09
Toluene	< 2.00	ug/L		10/3/2017	17:09
trans-1,2-Dichloroethene	< 2.00	ug/L		10/3/2017	17:09
trans-1,3-Dichloropropene	< 2.00	ug/L		10/3/2017	17:09
Trichloroethene	**1.97**	ug/L	J	10/3/2017	17:09
Trichlorofluoromethane	< 2.00	ug/L		10/3/2017	17:09
Vinyl chloride	< 2.00	ug/L	M	10/3/2017	17:09

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-23_100217
Lab Sample ID: 174404-04 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**93.6**	85.9 - 118		10/3/2017 17:09
4-Bromofluorobenzene	**79.0**	69.4 - 123		10/3/2017 17:09
Pentafluorobenzene	**91.5**	81.6 - 114		10/3/2017 17:09
Toluene-D8	**91.5**	82.7 - 112		10/3/2017 17:09

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x45643.D

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-27_100217		
Lab Sample ID:	174404-05	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		10/3/2017 14:18

Method Reference(s): EPA 7470A
Preparation Date: 10/3/2017
Data File: Hg171003A

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Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-27_100217		
Lab Sample ID:	174404-05	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	**0.00513**	mg/L	J	10/4/2017 23:07
Barium	< 0.100	mg/L		10/4/2017 23:07
Cadmium	**0.00380**	mg/L	J	10/4/2017 23:07
Chromium	< 0.0100	mg/L		10/4/2017 23:07
Lead	< 0.0100	mg/L		10/4/2017 23:07
Selenium	**0.0213**	mg/L		10/4/2017 23:07
Silver	< 0.0100	mg/L		10/5/2017 17:36

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 10/3/2017
Data File: 171004E

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-27_100217		
Lab Sample ID:	174404-05	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		10/3/2017 15:34
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		10/3/2017 15:34
1,1,2-Trichloroethane	< 2.00	ug/L		10/3/2017 15:34
1,1-Dichloroethane	< 2.00	ug/L		10/3/2017 15:34
1,1-Dichloroethene	< 2.00	ug/L		10/3/2017 15:34
1,2,3-Trichlorobenzene	< 5.00	ug/L		10/3/2017 15:34
1,2,4-Trichlorobenzene	< 5.00	ug/L		10/3/2017 15:34
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		10/3/2017 15:34
1,2-Dibromoethane	< 2.00	ug/L		10/3/2017 15:34
1,2-Dichlorobenzene	< 2.00	ug/L		10/3/2017 15:34
1,2-Dichloroethane	< 2.00	ug/L		10/3/2017 15:34
1,2-Dichloropropane	< 2.00	ug/L		10/3/2017 15:34
1,3-Dichlorobenzene	< 2.00	ug/L		10/3/2017 15:34
1,4-Dichlorobenzene	< 2.00	ug/L		10/3/2017 15:34
1,4-dioxane	< 20.0	ug/L		10/3/2017 15:34
2-Butanone	< 10.0	ug/L		10/3/2017 15:34
2-Hexanone	< 5.00	ug/L		10/3/2017 15:34
4-Methyl-2-pentanone	< 5.00	ug/L		10/3/2017 15:34
Acetone	< 10.0	ug/L		10/3/2017 15:34
Benzene	< 1.00	ug/L		10/3/2017 15:34
Bromochloromethane	< 5.00	ug/L		10/3/2017 15:34
Bromodichloromethane	< 2.00	ug/L		10/3/2017 15:34
Bromoform	< 5.00	ug/L		10/3/2017 15:34
Bromomethane	< 2.00	ug/L		10/3/2017 15:34
Carbon disulfide	< 2.00	ug/L		10/3/2017 15:34
Carbon Tetrachloride	< 2.00	ug/L		10/3/2017 15:34
Chlorobenzene	< 2.00	ug/L		10/3/2017 15:34

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-27_100217
Lab Sample ID: 174404-05 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Chloroethane	< 2.00	ug/L	10/3/2017	15:34
Chloroform	< 2.00	ug/L	10/3/2017	15:34
Chloromethane	< 2.00	ug/L	10/3/2017	15:34
cis-1,2-Dichloroethene	< 2.00	ug/L	10/3/2017	15:34
cis-1,3-Dichloropropene	< 2.00	ug/L	10/3/2017	15:34
Cyclohexane	< 10.0	ug/L	10/3/2017	15:34
Dibromochloromethane	< 2.00	ug/L	10/3/2017	15:34
Dichlorodifluoromethane	< 2.00	ug/L	10/3/2017	15:34
Ethylbenzene	< 2.00	ug/L	10/3/2017	15:34
Freon 113	< 2.00	ug/L	10/3/2017	15:34
Isopropylbenzene	< 2.00	ug/L	10/3/2017	15:34
m,p-Xylene	< 2.00	ug/L	10/3/2017	15:34
Methyl acetate	< 2.00	ug/L	10/3/2017	15:34
Methyl tert-butyl Ether	< 2.00	ug/L	10/3/2017	15:34
Methylcyclohexane	< 2.00	ug/L	10/3/2017	15:34
Methylene chloride	< 5.00	ug/L	10/3/2017	15:34
o-Xylene	< 2.00	ug/L	10/3/2017	15:34
Styrene	< 5.00	ug/L	10/3/2017	15:34
Tetrachloroethene	< 2.00	ug/L	10/3/2017	15:34
Toluene	< 2.00	ug/L	10/3/2017	15:34
trans-1,2-Dichloroethene	< 2.00	ug/L	10/3/2017	15:34
trans-1,3-Dichloropropene	< 2.00	ug/L	10/3/2017	15:34
Trichloroethene	< 2.00	ug/L	10/3/2017	15:34
Trichlorofluoromethane	< 2.00	ug/L	10/3/2017	15:34
Vinyl chloride	< 2.00	ug/L	10/3/2017	15:34

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-27_100217
Lab Sample ID: 174404-05 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**92.6**	85.9 - 118		10/3/2017	15:34
4-Bromofluorobenzene	**85.0**	69.4 - 123		10/3/2017	15:34
Pentafluorobenzene	**93.8**	81.6 - 114		10/3/2017	15:34
Toluene-D8	**92.4**	82.7 - 112		10/3/2017	15:34

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x45639.D

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-26_100217		
Lab Sample ID:	174404-06	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		10/3/2017 14:21

Method Reference(s): EPA 7470A
Preparation Date: 10/3/2017
Data File: Hg171003A

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Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-26_100217		
Lab Sample ID:	174404-06	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		10/4/2017 23:20
Barium	**0.0791**	mg/L	J	10/4/2017 23:20
Cadmium	< 0.00500	mg/L		10/4/2017 23:20
Chromium	**0.00759**	mg/L	J	10/4/2017 23:20
Lead	< 0.0100	mg/L		10/4/2017 23:20
Selenium	**0.0170**	mg/L	J	10/4/2017 23:20
Silver	< 0.0100	mg/L		10/5/2017 17:49

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 10/3/2017
Data File: 171004E

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-26_100217		
Lab Sample ID:	174404-06	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		10/3/2017 15:58
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		10/3/2017 15:58
1,1,2-Trichloroethane	< 2.00	ug/L		10/3/2017 15:58
1,1-Dichloroethane	< 2.00	ug/L		10/3/2017 15:58
1,1-Dichloroethene	< 2.00	ug/L		10/3/2017 15:58
1,2,3-Trichlorobenzene	< 5.00	ug/L		10/3/2017 15:58
1,2,4-Trichlorobenzene	< 5.00	ug/L		10/3/2017 15:58
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		10/3/2017 15:58
1,2-Dibromoethane	< 2.00	ug/L		10/3/2017 15:58
1,2-Dichlorobenzene	< 2.00	ug/L		10/3/2017 15:58
1,2-Dichloroethane	< 2.00	ug/L		10/3/2017 15:58
1,2-Dichloropropane	< 2.00	ug/L		10/3/2017 15:58
1,3-Dichlorobenzene	< 2.00	ug/L		10/3/2017 15:58
1,4-Dichlorobenzene	< 2.00	ug/L		10/3/2017 15:58
1,4-dioxane	< 20.0	ug/L		10/3/2017 15:58
2-Butanone	< 10.0	ug/L		10/3/2017 15:58
2-Hexanone	< 5.00	ug/L		10/3/2017 15:58
4-Methyl-2-pentanone	< 5.00	ug/L		10/3/2017 15:58
Acetone	< 10.0	ug/L		10/3/2017 15:58
Benzene	< 1.00	ug/L		10/3/2017 15:58
Bromochloromethane	< 5.00	ug/L		10/3/2017 15:58
Bromodichloromethane	< 2.00	ug/L		10/3/2017 15:58
Bromoform	< 5.00	ug/L		10/3/2017 15:58
Bromomethane	< 2.00	ug/L		10/3/2017 15:58
Carbon disulfide	< 2.00	ug/L		10/3/2017 15:58
Carbon Tetrachloride	< 2.00	ug/L		10/3/2017 15:58
Chlorobenzene	< 2.00	ug/L		10/3/2017 15:58

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-26_100217
Lab Sample ID: 174404-06 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Chloroethane	< 2.00	ug/L		10/3/2017	15:58
Chloroform	**1.62**	ug/L	J	10/3/2017	15:58
Chloromethane	< 2.00	ug/L		10/3/2017	15:58
cis-1,2-Dichloroethene	< 2.00	ug/L		10/3/2017	15:58
cis-1,3-Dichloropropene	< 2.00	ug/L		10/3/2017	15:58
Cyclohexane	< 10.0	ug/L		10/3/2017	15:58
Dibromochloromethane	< 2.00	ug/L		10/3/2017	15:58
Dichlorodifluoromethane	< 2.00	ug/L		10/3/2017	15:58
Ethylbenzene	< 2.00	ug/L		10/3/2017	15:58
Freon 113	< 2.00	ug/L		10/3/2017	15:58
Isopropylbenzene	< 2.00	ug/L		10/3/2017	15:58
m,p-Xylene	< 2.00	ug/L		10/3/2017	15:58
Methyl acetate	< 2.00	ug/L		10/3/2017	15:58
Methyl tert-butyl Ether	< 2.00	ug/L		10/3/2017	15:58
Methylcyclohexane	< 2.00	ug/L		10/3/2017	15:58
Methylene chloride	< 5.00	ug/L		10/3/2017	15:58
o-Xylene	< 2.00	ug/L		10/3/2017	15:58
Styrene	< 5.00	ug/L		10/3/2017	15:58
Tetrachloroethene	< 2.00	ug/L		10/3/2017	15:58
Toluene	< 2.00	ug/L		10/3/2017	15:58
trans-1,2-Dichloroethene	< 2.00	ug/L		10/3/2017	15:58
trans-1,3-Dichloropropene	< 2.00	ug/L		10/3/2017	15:58
Trichloroethene	< 2.00	ug/L		10/3/2017	15:58
Trichlorofluoromethane	< 2.00	ug/L		10/3/2017	15:58
Vinyl chloride	< 2.00	ug/L		10/3/2017	15:58

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-26_100217
Lab Sample ID: 174404-06 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**92.6**	85.9 - 118		10/3/2017 15:58
4-Bromofluorobenzene	**82.8**	69.4 - 123		10/3/2017 15:58
Pentafluorobenzene	**95.6**	81.6 - 114		10/3/2017 15:58
Toluene-D8	**91.9**	82.7 - 112		10/3/2017 15:58

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x45640.D

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-22_100217		
Lab Sample ID:	174404-07	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		10/3/2017 14:24

Method Reference(s): EPA 7470A
Preparation Date: 10/3/2017
Data File: Hg171003A

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Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-22_100217
Lab Sample ID: 174404-07 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		10/4/2017 23:24
Barium	**0.0806**	mg/L	J	10/4/2017 23:24
Cadmium	< 0.00500	mg/L		10/4/2017 23:24
Chromium	**0.00504**	mg/L	J	10/4/2017 23:24
Lead	< 0.0100	mg/L		10/4/2017 23:24
Selenium	**0.0126**	mg/L	J	10/4/2017 23:24
Silver	< 0.0100	mg/L		10/5/2017 17:53

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 10/3/2017
Data File: 171004E

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-22_100217		
Lab Sample ID:	174404-07	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		10/3/2017 16:22
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		10/3/2017 16:22
1,1,2-Trichloroethane	< 2.00	ug/L		10/3/2017 16:22
1,1-Dichloroethane	< 2.00	ug/L		10/3/2017 16:22
1,1-Dichloroethene	< 2.00	ug/L		10/3/2017 16:22
1,2,3-Trichlorobenzene	< 5.00	ug/L		10/3/2017 16:22
1,2,4-Trichlorobenzene	< 5.00	ug/L		10/3/2017 16:22
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		10/3/2017 16:22
1,2-Dibromoethane	< 2.00	ug/L		10/3/2017 16:22
1,2-Dichlorobenzene	< 2.00	ug/L		10/3/2017 16:22
1,2-Dichloroethane	< 2.00	ug/L		10/3/2017 16:22
1,2-Dichloropropane	< 2.00	ug/L		10/3/2017 16:22
1,3-Dichlorobenzene	< 2.00	ug/L		10/3/2017 16:22
1,4-Dichlorobenzene	< 2.00	ug/L		10/3/2017 16:22
1,4-dioxane	< 20.0	ug/L		10/3/2017 16:22
2-Butanone	< 10.0	ug/L		10/3/2017 16:22
2-Hexanone	< 5.00	ug/L		10/3/2017 16:22
4-Methyl-2-pentanone	< 5.00	ug/L		10/3/2017 16:22
Acetone	< 10.0	ug/L		10/3/2017 16:22
Benzene	< 1.00	ug/L		10/3/2017 16:22
Bromochloromethane	< 5.00	ug/L		10/3/2017 16:22
Bromodichloromethane	< 2.00	ug/L		10/3/2017 16:22
Bromoform	< 5.00	ug/L		10/3/2017 16:22
Bromomethane	< 2.00	ug/L		10/3/2017 16:22
Carbon disulfide	< 2.00	ug/L		10/3/2017 16:22
Carbon Tetrachloride	< 2.00	ug/L		10/3/2017 16:22
Chlorobenzene	< 2.00	ug/L		10/3/2017 16:22

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-22_100217
Lab Sample ID: 174404-07 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Chloroethane	< 2.00	ug/L	10/3/2017	16:22
Chloroform	< 2.00	ug/L	10/3/2017	16:22
Chloromethane	< 2.00	ug/L	10/3/2017	16:22
cis-1,2-Dichloroethene	< 2.00	ug/L	10/3/2017	16:22
cis-1,3-Dichloropropene	< 2.00	ug/L	10/3/2017	16:22
Cyclohexane	< 10.0	ug/L	10/3/2017	16:22
Dibromochloromethane	< 2.00	ug/L	10/3/2017	16:22
Dichlorodifluoromethane	< 2.00	ug/L	10/3/2017	16:22
Ethylbenzene	< 2.00	ug/L	10/3/2017	16:22
Freon 113	< 2.00	ug/L	10/3/2017	16:22
Isopropylbenzene	< 2.00	ug/L	10/3/2017	16:22
m,p-Xylene	< 2.00	ug/L	10/3/2017	16:22
Methyl acetate	< 2.00	ug/L	10/3/2017	16:22
Methyl tert-butyl Ether	< 2.00	ug/L	10/3/2017	16:22
Methylcyclohexane	< 2.00	ug/L	10/3/2017	16:22
Methylene chloride	< 5.00	ug/L	10/3/2017	16:22
o-Xylene	< 2.00	ug/L	10/3/2017	16:22
Styrene	< 5.00	ug/L	10/3/2017	16:22
Tetrachloroethene	< 2.00	ug/L	10/3/2017	16:22
Toluene	< 2.00	ug/L	10/3/2017	16:22
trans-1,2-Dichloroethene	< 2.00	ug/L	10/3/2017	16:22
trans-1,3-Dichloropropene	< 2.00	ug/L	10/3/2017	16:22
Trichloroethene	< 2.00	ug/L	10/3/2017	16:22
Trichlorofluoromethane	< 2.00	ug/L	10/3/2017	16:22
Vinyl chloride	< 2.00	ug/L	10/3/2017	16:22

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-22_100217
Lab Sample ID: 174404-07 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**94.3**	85.9 - 118		10/3/2017 16:22
4-Bromofluorobenzene	**83.0**	69.4 - 123		10/3/2017 16:22
Pentafluorobenzene	**92.3**	81.6 - 114		10/3/2017 16:22
Toluene-D8	**91.9**	82.7 - 112		10/3/2017 16:22

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x45641.D

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.

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-Field Duplicate		
Lab Sample ID:	174404-08	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		10/3/2017 14:27

Method Reference(s): EPA 7470A
Preparation Date: 10/3/2017
Data File: Hg171003A

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.

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-Field Duplicate		
Lab Sample ID:	174404-08	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		10/4/2017 23:28
Barium	**0.0787**	mg/L	J	10/4/2017 23:28
Cadmium	< 0.00500	mg/L		10/4/2017 23:28
Chromium	**0.00605**	mg/L	J	10/4/2017 23:28
Lead	< 0.0100	mg/L		10/4/2017 23:28
Selenium	**0.0124**	mg/L	J	10/4/2017 23:28
Silver	< 0.0100	mg/L		10/5/2017 17:57

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 10/3/2017
Data File: 171004E

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier:	OW-MW-Field Duplicate		
Lab Sample ID:	174404-08	**Date Sampled:**	10/2/2017
Matrix:	Groundwater	**Date Received:**	10/2/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		10/3/2017 16:45
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		10/3/2017 16:45
1,1,2-Trichloroethane	< 2.00	ug/L		10/3/2017 16:45
1,1-Dichloroethane	< 2.00	ug/L		10/3/2017 16:45
1,1-Dichloroethene	< 2.00	ug/L		10/3/2017 16:45
1,2,3-Trichlorobenzene	< 5.00	ug/L		10/3/2017 16:45
1,2,4-Trichlorobenzene	< 5.00	ug/L		10/3/2017 16:45
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		10/3/2017 16:45
1,2-Dibromoethane	< 2.00	ug/L		10/3/2017 16:45
1,2-Dichlorobenzene	< 2.00	ug/L		10/3/2017 16:45
1,2-Dichloroethane	< 2.00	ug/L		10/3/2017 16:45
1,2-Dichloropropane	< 2.00	ug/L		10/3/2017 16:45
1,3-Dichlorobenzene	< 2.00	ug/L		10/3/2017 16:45
1,4-Dichlorobenzene	< 2.00	ug/L		10/3/2017 16:45
1,4-dioxane	< 20.0	ug/L		10/3/2017 16:45
2-Butanone	< 10.0	ug/L		10/3/2017 16:45
2-Hexanone	< 5.00	ug/L		10/3/2017 16:45
4-Methyl-2-pentanone	< 5.00	ug/L		10/3/2017 16:45
Acetone	< 10.0	ug/L		10/3/2017 16:45
Benzene	< 1.00	ug/L		10/3/2017 16:45
Bromochloromethane	< 5.00	ug/L		10/3/2017 16:45
Bromodichloromethane	< 2.00	ug/L		10/3/2017 16:45
Bromoform	< 5.00	ug/L		10/3/2017 16:45
Bromomethane	< 2.00	ug/L		10/3/2017 16:45
Carbon disulfide	< 2.00	ug/L		10/3/2017 16:45
Carbon Tetrachloride	< 2.00	ug/L		10/3/2017 16:45
Chlorobenzene	< 2.00	ug/L		10/3/2017 16:45

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-Field Duplicate
Lab Sample ID: 174404-08 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Chloroethane	< 2.00	ug/L	10/3/2017	16:45
Chloroform	< 2.00	ug/L	10/3/2017	16:45
Chloromethane	< 2.00	ug/L	10/3/2017	16:45
cis-1,2-Dichloroethene	< 2.00	ug/L	10/3/2017	16:45
cis-1,3-Dichloropropene	< 2.00	ug/L	10/3/2017	16:45
Cyclohexane	< 10.0	ug/L	10/3/2017	16:45
Dibromochloromethane	< 2.00	ug/L	10/3/2017	16:45
Dichlorodifluoromethane	< 2.00	ug/L	10/3/2017	16:45
Ethylbenzene	< 2.00	ug/L	10/3/2017	16:45
Freon 113	< 2.00	ug/L	10/3/2017	16:45
Isopropylbenzene	< 2.00	ug/L	10/3/2017	16:45
m,p-Xylene	< 2.00	ug/L	10/3/2017	16:45
Methyl acetate	< 2.00	ug/L	10/3/2017	16:45
Methyl tert-butyl Ether	< 2.00	ug/L	10/3/2017	16:45
Methylcyclohexane	< 2.00	ug/L	10/3/2017	16:45
Methylene chloride	< 5.00	ug/L	10/3/2017	16:45
o-Xylene	< 2.00	ug/L	10/3/2017	16:45
Styrene	< 5.00	ug/L	10/3/2017	16:45
Tetrachloroethene	< 2.00	ug/L	10/3/2017	16:45
Toluene	< 2.00	ug/L	10/3/2017	16:45
trans-1,2-Dichloroethene	< 2.00	ug/L	10/3/2017	16:45
trans-1,3-Dichloropropene	< 2.00	ug/L	10/3/2017	16:45
Trichloroethene	< 2.00	ug/L	10/3/2017	16:45
Trichlorofluoromethane	< 2.00	ug/L	10/3/2017	16:45
Vinyl chloride	< 2.00	ug/L	10/3/2017	16:45

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: OW-MW-Field Duplicate
Lab Sample ID: 174404-08 **Date Sampled:** 10/2/2017
Matrix: Groundwater **Date Received:** 10/2/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**92.3**	85.9 - 118		10/3/2017	16:45
4-Bromofluorobenzene	**80.6**	69.4 - 123		10/3/2017	16:45
Pentafluorobenzene	**91.0**	81.6 - 114		10/3/2017	16:45
Toluene-D8	**90.4**	82.7 - 112		10/3/2017	16:45

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x45642.D

Report Prepared Friday, October 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: Trip Blank
Lab Sample ID: 174404-09 **Date Sampled:** 10/2/2017
Matrix: Water **Date Received:** 10/2/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		10/3/2017 14:00
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		10/3/2017 14:00
1,1,2-Trichloroethane	< 2.00	ug/L		10/3/2017 14:00
1,1-Dichloroethane	< 2.00	ug/L		10/3/2017 14:00
1,1-Dichloroethene	< 2.00	ug/L		10/3/2017 14:00
1,2,3-Trichlorobenzene	< 5.00	ug/L		10/3/2017 14:00
1,2,4-Trichlorobenzene	< 5.00	ug/L		10/3/2017 14:00
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		10/3/2017 14:00
1,2-Dibromoethane	< 2.00	ug/L		10/3/2017 14:00
1,2-Dichlorobenzene	< 2.00	ug/L		10/3/2017 14:00
1,2-Dichloroethane	< 2.00	ug/L		10/3/2017 14:00
1,2-Dichloropropane	< 2.00	ug/L		10/3/2017 14:00
1,3-Dichlorobenzene	< 2.00	ug/L		10/3/2017 14:00
1,4-Dichlorobenzene	< 2.00	ug/L		10/3/2017 14:00
1,4-dioxane	< 20.0	ug/L		10/3/2017 14:00
2-Butanone	< 10.0	ug/L		10/3/2017 14:00
2-Hexanone	< 5.00	ug/L		10/3/2017 14:00
4-Methyl-2-pentanone	< 5.00	ug/L		10/3/2017 14:00
Acetone	< 10.0	ug/L		10/3/2017 14:00
Benzene	< 1.00	ug/L		10/3/2017 14:00
Bromochloromethane	< 5.00	ug/L		10/3/2017 14:00
Bromodichloromethane	< 2.00	ug/L		10/3/2017 14:00
Bromoform	< 5.00	ug/L		10/3/2017 14:00
Bromomethane	< 2.00	ug/L		10/3/2017 14:00
Carbon disulfide	< 2.00	ug/L		10/3/2017 14:00
Carbon Tetrachloride	< 2.00	ug/L		10/3/2017 14:00
Chlorobenzene	< 2.00	ug/L		10/3/2017 14:00

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: Trip Blank
Lab Sample ID: 174404-09 **Date Sampled:** 10/2/2017
Matrix: Water **Date Received:** 10/2/2017

Chloroethane	< 2.00	ug/L	10/3/2017	14:00
Chloroform	< 2.00	ug/L	10/3/2017	14:00
Chloromethane	< 2.00	ug/L	10/3/2017	14:00
cis-1,2-Dichloroethene	< 2.00	ug/L	10/3/2017	14:00
cis-1,3-Dichloropropene	< 2.00	ug/L	10/3/2017	14:00
Cyclohexane	< 10.0	ug/L	10/3/2017	14:00
Dibromochloromethane	< 2.00	ug/L	10/3/2017	14:00
Dichlorodifluoromethane	< 2.00	ug/L	10/3/2017	14:00
Ethylbenzene	< 2.00	ug/L	10/3/2017	14:00
Freon 113	< 2.00	ug/L	10/3/2017	14:00
Isopropylbenzene	< 2.00	ug/L	10/3/2017	14:00
m,p-Xylene	< 2.00	ug/L	10/3/2017	14:00
Methyl acetate	< 2.00	ug/L	10/3/2017	14:00
Methyl tert-butyl Ether	< 2.00	ug/L	10/3/2017	14:00
Methylcyclohexane	< 2.00	ug/L	10/3/2017	14:00
Methylene chloride	< 5.00	ug/L	10/3/2017	14:00
o-Xylene	< 2.00	ug/L	10/3/2017	14:00
Styrene	< 5.00	ug/L	10/3/2017	14:00
Tetrachloroethene	< 2.00	ug/L	10/3/2017	14:00
Toluene	< 2.00	ug/L	10/3/2017	14:00
trans-1,2-Dichloroethene	< 2.00	ug/L	10/3/2017	14:00
trans-1,3-Dichloropropene	< 2.00	ug/L	10/3/2017	14:00
Trichloroethene	< 2.00	ug/L	10/3/2017	14:00
Trichlorofluoromethane	< 2.00	ug/L	10/3/2017	14:00
Vinyl chloride	< 2.00	ug/L	10/3/2017	14:00

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 174404

Client: **Lu Engineers, Inc.**

Project Reference: 4216-08 Orchard-Whitney

Sample Identifier: Trip Blank
Lab Sample ID: 174404-09 **Date Sampled:** 10/2/2017
Matrix: Water **Date Received:** 10/2/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**92.2**	85.9 - 118		10/3/2017	14:00
4-Bromofluorobenzene	**85.4**	69.4 - 123		10/3/2017	14:00
Pentafluorobenzene	**95.5**	81.6 - 114		10/3/2017	14:00
Toluene-D8	**92.6**	82.7 - 112		10/3/2017	14:00

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x45635.D

Report Prepared Friday, October 6, 2017

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, term, 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 will 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 the 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:	SAME	LAB PROJECT ID: 174404
ADDRESS:	339 East Avenue, Suite 200	ADDRESS:		Quotation #:
CITY:	Rochester STATE: NY ZIP: 14604	CITY:	STATE: ZIP:	Email: gregandrus@luengineers.com, LGregor@luengineers.com
PHONE:	585-385-7417	PHONE:		
ATTN:	Greg Andrus / Laura Gregor	ATTN:		

PROJECT REFERENCE
4216-08
Orchard-Whitney

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 8260	RCRA Metals	REMARKS	PARADIGM LAB SAMPLE NUMBER
10/2/17	09:40		✓	OW-MW-16_100217	WG	3	✓	✓		01
	~~13:50~~ 13:50		✓	OW-MW-29_100217	WG	3	✓	✓		02
	12:35		✓	OW-MW-28_100217	WG	3	✓	✓		03
	11:05		✓	OW-MW-23_100217	WG	3	✓	✓		04
	11:05		✓	OW-MW-23_MS_100217	WG	3	✓	✓		05 04
	11:05		✓	OW-MW-23_MSD_100217	WG	3	✓	✓		06
	14:00		✓	OW-MW-27_100217	WG	3	✓	✓		07 05
	12:40		✓	OW-MW-26_100217	WG	3	✓	✓		08 06
	11:30		✓	OW-MW-22_100217	WG	3	✓	✓		09 07
			✓	OW_MW-Field Duplicate	WG	3	✓	✓		10 08
				Trip Blank per sample label	WA	1	✓			GP 10/2/17 09

Turnaround Time		Report Supplements GP 10/2/17			
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:	☐

Laura K Gregor — Sampled By — 10/02/17 / 14:30 — Date/Time

Laura K Gregor — Relinquished By — 10/02/17 / 14:50 — Date/Time

Jane J Dalessio — Received By — 10/2/17 1450 — Date/Time

Received @ Lab By — 10/2/17 15:19 — Date/Time

Total Cost:

P.I.F.

7°C iced started in field 10/2/17 15:06

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

Custody Seal N/A, samples delivered by client. GP 10/2/17

See additional page for sample conditions.

Chain of Custody Supplement

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

Lab Project ID: 174404 **Date:** 10/2/17

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 VOA		X
Comments			
Preservation	X		
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		X metals
Comments	7°C iced started in field 10/2/17 15:05		
Sufficient Sample Quantity	X		
Comments			

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-22_112917		
Lab Sample ID:	175326-01	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		11/30/2017 13:33

Method Reference(s): EPA 7470A
Preparation Date: 11/30/2017
Data File: Hg171130A

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-22_112917		
Lab Sample ID:	175326-01	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		12/1/2017 18:36
Barium	**0.0833**	mg/L	J	12/1/2017 18:36
Cadmium	< 0.00500	mg/L		12/1/2017 18:36
Chromium	**0.00568**	mg/L	J	12/1/2017 18:36
Lead	< 0.0100	mg/L		12/1/2017 18:36
Selenium	< 0.0200	mg/L		12/4/2017 12:14
Silver	< 0.0100	mg/L		12/1/2017 18:36

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 11/30/2017
Data File: 171201B

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-22_112917		
Lab Sample ID:	175326-01	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		12/5/2017 04:29
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		12/5/2017 04:29
1,1,2-Trichloroethane	< 2.00	ug/L		12/5/2017 04:29
1,1-Dichloroethane	< 2.00	ug/L		12/5/2017 04:29
1,1-Dichloroethene	< 2.00	ug/L		12/5/2017 04:29
1,2,3-Trichlorobenzene	< 5.00	ug/L		12/5/2017 04:29
1,2,4-Trichlorobenzene	< 5.00	ug/L		12/5/2017 04:29
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		12/5/2017 04:29
1,2-Dibromoethane	< 2.00	ug/L		12/5/2017 04:29
1,2-Dichlorobenzene	< 2.00	ug/L		12/5/2017 04:29
1,2-Dichloroethane	< 2.00	ug/L		12/5/2017 04:29
1,2-Dichloropropane	< 2.00	ug/L		12/5/2017 04:29
1,3-Dichlorobenzene	< 2.00	ug/L		12/5/2017 04:29
1,4-Dichlorobenzene	< 2.00	ug/L		12/5/2017 04:29
1,4-dioxane	< 20.0	ug/L		12/5/2017 04:29
2-Butanone	< 10.0	ug/L		12/5/2017 04:29
2-Hexanone	< 5.00	ug/L		12/5/2017 04:29
4-Methyl-2-pentanone	< 5.00	ug/L		12/5/2017 04:29
Acetone	< 10.0	ug/L		12/5/2017 04:29
Benzene	< 1.00	ug/L		12/5/2017 04:29
Bromochloromethane	< 5.00	ug/L		12/5/2017 04:29
Bromodichloromethane	< 2.00	ug/L	L	12/5/2017 04:29
Bromoform	< 5.00	ug/L		12/5/2017 04:29
Bromomethane	< 2.00	ug/L		12/5/2017 04:29
Carbon disulfide	< 2.00	ug/L		12/5/2017 04:29
Carbon Tetrachloride	< 2.00	ug/L		12/5/2017 04:29
Chlorobenzene	< 2.00	ug/L		12/5/2017 04:29

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-22_112917
Lab Sample ID: 175326-01 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Chloroethane	< 2.00	ug/L	12/5/2017	04:29
Chloroform	< 2.00	ug/L	12/5/2017	04:29
Chloromethane	< 2.00	ug/L	12/5/2017	04:29
cis-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	04:29
cis-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	04:29
Cyclohexane	< 10.0	ug/L	12/5/2017	04:29
Dibromochloromethane	< 2.00	ug/L	12/5/2017	04:29
Dichlorodifluoromethane	< 2.00	ug/L	12/5/2017	04:29
Ethylbenzene	< 2.00	ug/L	12/5/2017	04:29
Freon 113	< 2.00	ug/L	12/5/2017	04:29
Isopropylbenzene	< 2.00	ug/L	12/5/2017	04:29
m,p-Xylene	< 2.00	ug/L	12/5/2017	04:29
Methyl acetate	< 2.00	ug/L	12/5/2017	04:29
Methyl tert-butyl Ether	< 2.00	ug/L	12/5/2017	04:29
Methylcyclohexane	< 2.00	ug/L	12/5/2017	04:29
Methylene chloride	< 5.00	ug/L	12/5/2017	04:29
o-Xylene	< 2.00	ug/L	12/5/2017	04:29
Styrene	< 5.00	ug/L	12/5/2017	04:29
Tetrachloroethene	< 2.00	ug/L	12/5/2017	04:29
Toluene	< 2.00	ug/L	12/5/2017	04:29
trans-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	04:29
trans-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	04:29
Trichloroethene	< 2.00	ug/L	12/5/2017	04:29
Trichlorofluoromethane	< 2.00	ug/L	12/5/2017	04:29
Vinyl chloride	< 2.00	ug/L	12/5/2017	04:29

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-22_112917

Lab Sample ID: 175326-01 **Date Sampled:** 11/29/2017

Matrix: Groundwater **Date Received:** 11/29/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**87.2**	85.9 - 118		12/5/2017	04:29
4-Bromofluorobenzene	**92.5**	69.4 - 123		12/5/2017	04:29
Pentafluorobenzene	**101**	81.6 - 114		12/5/2017	04:29
Toluene-D8	**95.3**	82.7 - 112		12/5/2017	04:29

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

Data File: x47304.D

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-16_112917		
Lab Sample ID:	175326-02	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		11/30/2017 13:36

Method Reference(s): EPA 7470A
Preparation Date: 11/30/2017
Data File: Hg171130A

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-16_112917		
Lab Sample ID:	175326-02	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	**0.0140**	mg/L		12/5/2017 15:08
Barium	< 0.100	mg/L		12/1/2017 18:40
Cadmium	**0.00359**	mg/L	J	12/1/2017 18:40
Chromium	**0.00579**	mg/L	J	12/1/2017 18:40
Lead	< 0.0100	mg/L		12/1/2017 18:40
Selenium	< 0.0200	mg/L		12/1/2017 18:40
Silver	< 0.0100	mg/L		12/1/2017 18:40

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 11/30/2017
Data File: 171205C

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-16_112917
Lab Sample ID: 175326-02 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		12/5/2017 04:52
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		12/5/2017 04:52
1,1,2-Trichloroethane	< 2.00	ug/L		12/5/2017 04:52
1,1-Dichloroethane	< 2.00	ug/L		12/5/2017 04:52
1,1-Dichloroethene	< 2.00	ug/L		12/5/2017 04:52
1,2,3-Trichlorobenzene	< 5.00	ug/L		12/5/2017 04:52
1,2,4-Trichlorobenzene	< 5.00	ug/L		12/5/2017 04:52
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		12/5/2017 04:52
1,2-Dibromoethane	< 2.00	ug/L		12/5/2017 04:52
1,2-Dichlorobenzene	< 2.00	ug/L		12/5/2017 04:52
1,2-Dichloroethane	< 2.00	ug/L		12/5/2017 04:52
1,2-Dichloropropane	< 2.00	ug/L		12/5/2017 04:52
1,3-Dichlorobenzene	< 2.00	ug/L		12/5/2017 04:52
1,4-Dichlorobenzene	< 2.00	ug/L		12/5/2017 04:52
1,4-dioxane	< 20.0	ug/L		12/5/2017 04:52
2-Butanone	< 10.0	ug/L		12/5/2017 04:52
2-Hexanone	< 5.00	ug/L		12/5/2017 04:52
4-Methyl-2-pentanone	< 5.00	ug/L		12/5/2017 04:52
Acetone	**11.2**	ug/L		12/5/2017 04:52
Benzene	**1.06**	ug/L		12/5/2017 04:52
Bromochloromethane	< 5.00	ug/L		12/5/2017 04:52
Bromodichloromethane	< 2.00	ug/L	L	12/5/2017 04:52
Bromoform	< 5.00	ug/L		12/5/2017 04:52
Bromomethane	< 2.00	ug/L		12/5/2017 04:52
Carbon disulfide	< 2.00	ug/L		12/5/2017 04:52
Carbon Tetrachloride	< 2.00	ug/L		12/5/2017 04:52
Chlorobenzene	< 2.00	ug/L		12/5/2017 04:52

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-16_112917
Lab Sample ID: 175326-02 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Chloroethane	< 2.00	ug/L	12/5/2017	04:52
Chloroform	< 2.00	ug/L	12/5/2017	04:52
Chloromethane	< 2.00	ug/L	12/5/2017	04:52
cis-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	04:52
cis-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	04:52
Cyclohexane	< 10.0	ug/L	12/5/2017	04:52
Dibromochloromethane	< 2.00	ug/L	12/5/2017	04:52
Dichlorodifluoromethane	< 2.00	ug/L	12/5/2017	04:52
Ethylbenzene	< 2.00	ug/L	12/5/2017	04:52
Freon 113	< 2.00	ug/L	12/5/2017	04:52
Isopropylbenzene	< 2.00	ug/L	12/5/2017	04:52
m,p-Xylene	< 2.00	ug/L	12/5/2017	04:52
Methyl acetate	< 2.00	ug/L	12/5/2017	04:52
Methyl tert-butyl Ether	< 2.00	ug/L	12/5/2017	04:52
Methylcyclohexane	< 2.00	ug/L	12/5/2017	04:52
Methylene chloride	< 5.00	ug/L	12/5/2017	04:52
o-Xylene	< 2.00	ug/L	12/5/2017	04:52
Styrene	< 5.00	ug/L	12/5/2017	04:52
Tetrachloroethene	< 2.00	ug/L	12/5/2017	04:52
Toluene	< 2.00	ug/L	12/5/2017	04:52
trans-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	04:52
trans-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	04:52
Trichloroethene	< 2.00	ug/L	12/5/2017	04:52
Trichlorofluoromethane	< 2.00	ug/L	12/5/2017	04:52
Vinyl chloride	< 2.00	ug/L	12/5/2017	04:52

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-16_112917
Lab Sample ID: 175326-02 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**87.0**	85.9 - 118		12/5/2017 04:52
4-Bromofluorobenzene	**92.5**	69.4 - 123		12/5/2017 04:52
Pentafluorobenzene	**100**	81.6 - 114		12/5/2017 04:52
Toluene-D8	**96.7**	82.7 - 112		12/5/2017 04:52

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x47305.D

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-26_112917		
Lab Sample ID:	175326-03	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		11/30/2017 13:39

Method Reference(s): EPA 7470A
Preparation Date: 11/30/2017
Data File: Hg171130A

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-26_112917		
Lab Sample ID:	175326-03	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		12/1/2017 18:44
Barium	**0.0721**	mg/L	J	12/1/2017 18:44
Cadmium	< 0.00500	mg/L		12/1/2017 18:44
Chromium	**0.00680**	mg/L	J	12/1/2017 18:44
Lead	< 0.0100	mg/L		12/1/2017 18:44
Selenium	< 0.0200	mg/L		12/4/2017 12:23
Silver	< 0.0100	mg/L		12/1/2017 18:44

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 11/30/2017
Data File: 171201B

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-26_112917		
Lab Sample ID:	175326-03	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		12/5/2017 05:16
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		12/5/2017 05:16
1,1,2-Trichloroethane	< 2.00	ug/L		12/5/2017 05:16
1,1-Dichloroethane	< 2.00	ug/L		12/5/2017 05:16
1,1-Dichloroethene	< 2.00	ug/L		12/5/2017 05:16
1,2,3-Trichlorobenzene	< 5.00	ug/L		12/5/2017 05:16
1,2,4-Trichlorobenzene	< 5.00	ug/L		12/5/2017 05:16
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		12/5/2017 05:16
1,2-Dibromoethane	< 2.00	ug/L		12/5/2017 05:16
1,2-Dichlorobenzene	< 2.00	ug/L		12/5/2017 05:16
1,2-Dichloroethane	< 2.00	ug/L		12/5/2017 05:16
1,2-Dichloropropane	< 2.00	ug/L		12/5/2017 05:16
1,3-Dichlorobenzene	< 2.00	ug/L		12/5/2017 05:16
1,4-Dichlorobenzene	< 2.00	ug/L		12/5/2017 05:16
1,4-dioxane	< 20.0	ug/L		12/5/2017 05:16
2-Butanone	< 10.0	ug/L		12/5/2017 05:16
2-Hexanone	< 5.00	ug/L		12/5/2017 05:16
4-Methyl-2-pentanone	< 5.00	ug/L		12/5/2017 05:16
Acetone	< 10.0	ug/L		12/5/2017 05:16
Benzene	< 1.00	ug/L		12/5/2017 05:16
Bromochloromethane	< 5.00	ug/L		12/5/2017 05:16
Bromodichloromethane	< 2.00	ug/L	L	12/5/2017 05:16
Bromoform	< 5.00	ug/L		12/5/2017 05:16
Bromomethane	< 2.00	ug/L		12/5/2017 05:16
Carbon disulfide	< 2.00	ug/L		12/5/2017 05:16
Carbon Tetrachloride	< 2.00	ug/L		12/5/2017 05:16
Chlorobenzene	< 2.00	ug/L		12/5/2017 05:16

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-26_112917
Lab Sample ID: 175326-03 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Chloroethane	< 2.00	ug/L		12/5/2017	05:16
Chloroform	**1.43**	ug/L	J	12/5/2017	05:16
Chloromethane	< 2.00	ug/L		12/5/2017	05:16
cis-1,2-Dichloroethene	< 2.00	ug/L		12/5/2017	05:16
cis-1,3-Dichloropropene	< 2.00	ug/L		12/5/2017	05:16
Cyclohexane	< 10.0	ug/L		12/5/2017	05:16
Dibromochloromethane	< 2.00	ug/L		12/5/2017	05:16
Dichlorodifluoromethane	< 2.00	ug/L		12/5/2017	05:16
Ethylbenzene	< 2.00	ug/L		12/5/2017	05:16
Freon 113	< 2.00	ug/L		12/5/2017	05:16
Isopropylbenzene	< 2.00	ug/L		12/5/2017	05:16
m,p-Xylene	< 2.00	ug/L		12/5/2017	05:16
Methyl acetate	< 2.00	ug/L		12/5/2017	05:16
Methyl tert-butyl Ether	< 2.00	ug/L		12/5/2017	05:16
Methylcyclohexane	< 2.00	ug/L		12/5/2017	05:16
Methylene chloride	< 5.00	ug/L		12/5/2017	05:16
o-Xylene	< 2.00	ug/L		12/5/2017	05:16
Styrene	< 5.00	ug/L		12/5/2017	05:16
Tetrachloroethene	< 2.00	ug/L		12/5/2017	05:16
Toluene	< 2.00	ug/L		12/5/2017	05:16
trans-1,2-Dichloroethene	< 2.00	ug/L		12/5/2017	05:16
trans-1,3-Dichloropropene	< 2.00	ug/L		12/5/2017	05:16
Trichloroethene	< 2.00	ug/L		12/5/2017	05:16
Trichlorofluoromethane	< 2.00	ug/L		12/5/2017	05:16
Vinyl chloride	< 2.00	ug/L		12/5/2017	05:16

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-26_112917
Lab Sample ID: 175326-03 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**89.7**	85.9 - 118		12/5/2017	05:16
4-Bromofluorobenzene	**94.3**	69.4 - 123		12/5/2017	05:16
Pentafluorobenzene	**100**	81.6 - 114		12/5/2017	05:16
Toluene-D8	**95.4**	82.7 - 112		12/5/2017	05:16

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x47306.D

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-28_112917		
Lab Sample ID:	175326-04	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		11/30/2017 13:41

Method Reference(s): EPA 7470A
Preparation Date: 11/30/2017
Data File: Hg171130A

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-28_112917		
Lab Sample ID:	175326-04	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		12/1/2017 18:49
Barium	**0.0553**	mg/L	J	12/1/2017 18:49
Cadmium	< 0.00500	mg/L		12/1/2017 18:49
Chromium	< 0.0100	mg/L		12/1/2017 18:49
Lead	< 0.0100	mg/L		12/1/2017 18:49
Selenium	< 0.0200	mg/L		12/4/2017 12:27
Silver	< 0.0100	mg/L		12/1/2017 18:49

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 11/30/2017
Data File: 171201B

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-28_112917		
Lab Sample ID:	175326-04	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		12/5/2017 05:39
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		12/5/2017 05:39
1,1,2-Trichloroethane	< 2.00	ug/L		12/5/2017 05:39
1,1-Dichloroethane	< 2.00	ug/L		12/5/2017 05:39
1,1-Dichloroethene	< 2.00	ug/L		12/5/2017 05:39
1,2,3-Trichlorobenzene	< 5.00	ug/L		12/5/2017 05:39
1,2,4-Trichlorobenzene	< 5.00	ug/L		12/5/2017 05:39
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		12/5/2017 05:39
1,2-Dibromoethane	< 2.00	ug/L		12/5/2017 05:39
1,2-Dichlorobenzene	< 2.00	ug/L		12/5/2017 05:39
1,2-Dichloroethane	< 2.00	ug/L		12/5/2017 05:39
1,2-Dichloropropane	< 2.00	ug/L		12/5/2017 05:39
1,3-Dichlorobenzene	< 2.00	ug/L		12/5/2017 05:39
1,4-Dichlorobenzene	< 2.00	ug/L		12/5/2017 05:39
1,4-dioxane	< 20.0	ug/L		12/5/2017 05:39
2-Butanone	< 10.0	ug/L		12/5/2017 05:39
2-Hexanone	< 5.00	ug/L		12/5/2017 05:39
4-Methyl-2-pentanone	< 5.00	ug/L		12/5/2017 05:39
Acetone	< 10.0	ug/L		12/5/2017 05:39
Benzene	< 1.00	ug/L		12/5/2017 05:39
Bromochloromethane	< 5.00	ug/L		12/5/2017 05:39
Bromodichloromethane	< 2.00	ug/L	L	12/5/2017 05:39
Bromoform	< 5.00	ug/L		12/5/2017 05:39
Bromomethane	< 2.00	ug/L		12/5/2017 05:39
Carbon disulfide	< 2.00	ug/L		12/5/2017 05:39
Carbon Tetrachloride	< 2.00	ug/L		12/5/2017 05:39
Chlorobenzene	< 2.00	ug/L		12/5/2017 05:39

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-28_112917
Lab Sample ID: 175326-04 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Chloroethane	< 2.00	ug/L		12/5/2017	05:39
Chloroform	< 2.00	ug/L		12/5/2017	05:39
Chloromethane	< 2.00	ug/L		12/5/2017	05:39
cis-1,2-Dichloroethene	< 2.00	ug/L		12/5/2017	05:39
cis-1,3-Dichloropropene	< 2.00	ug/L		12/5/2017	05:39
Cyclohexane	< 10.0	ug/L		12/5/2017	05:39
Dibromochloromethane	< 2.00	ug/L		12/5/2017	05:39
Dichlorodifluoromethane	< 2.00	ug/L		12/5/2017	05:39
Ethylbenzene	< 2.00	ug/L		12/5/2017	05:39
Freon 113	< 2.00	ug/L		12/5/2017	05:39
Isopropylbenzene	< 2.00	ug/L		12/5/2017	05:39
m,p-Xylene	< 2.00	ug/L		12/5/2017	05:39
Methyl acetate	< 2.00	ug/L		12/5/2017	05:39
Methyl tert-butyl Ether	< 2.00	ug/L		12/5/2017	05:39
Methylcyclohexane	< 2.00	ug/L		12/5/2017	05:39
Methylene chloride	< 5.00	ug/L		12/5/2017	05:39
o-Xylene	< 2.00	ug/L		12/5/2017	05:39
Styrene	< 5.00	ug/L		12/5/2017	05:39
Tetrachloroethene	< 2.00	ug/L		12/5/2017	05:39
Toluene	< 2.00	ug/L		12/5/2017	05:39
trans-1,2-Dichloroethene	< 2.00	ug/L		12/5/2017	05:39
trans-1,3-Dichloropropene	< 2.00	ug/L		12/5/2017	05:39
Trichloroethene	**1.08**	ug/L	J	12/5/2017	05:39
Trichlorofluoromethane	< 2.00	ug/L		12/5/2017	05:39
Vinyl chloride	< 2.00	ug/L		12/5/2017	05:39

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-28_112917
Lab Sample ID: 175326-04 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**88.7**	85.9 - 118		12/5/2017	05:39
4-Bromofluorobenzene	**92.3**	69.4 - 123		12/5/2017	05:39
Pentafluorobenzene	**99.5**	81.6 - 114		12/5/2017	05:39
Toluene-D8	**95.1**	82.7 - 112		12/5/2017	05:39

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x47307.D

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-29_112917		
Lab Sample ID:	175326-05	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		11/30/2017 13:50

Method Reference(s): EPA 7470A
Preparation Date: 11/30/2017
Data File: Hg171130A

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-29_112917		
Lab Sample ID:	175326-05	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		12/1/2017 19:02
Barium	< 0.100	mg/L		12/1/2017 19:02
Cadmium	**0.00553**	mg/L		12/1/2017 19:02
Chromium	< 0.0100	mg/L		12/1/2017 19:02
Lead	< 0.0100	mg/L		12/1/2017 19:02
Selenium	< 0.0200	mg/L		12/1/2017 19:02
Silver	< 0.0100	mg/L		12/1/2017 19:02

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 11/30/2017
Data File: 171201B

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-29_112917
Lab Sample ID: 175326-05 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		12/5/2017 06:03
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		12/5/2017 06:03
1,1,2-Trichloroethane	< 2.00	ug/L		12/5/2017 06:03
1,1-Dichloroethane	< 2.00	ug/L		12/5/2017 06:03
1,1-Dichloroethene	< 2.00	ug/L		12/5/2017 06:03
1,2,3-Trichlorobenzene	< 5.00	ug/L		12/5/2017 06:03
1,2,4-Trichlorobenzene	< 5.00	ug/L		12/5/2017 06:03
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		12/5/2017 06:03
1,2-Dibromoethane	< 2.00	ug/L		12/5/2017 06:03
1,2-Dichlorobenzene	< 2.00	ug/L		12/5/2017 06:03
1,2-Dichloroethane	< 2.00	ug/L		12/5/2017 06:03
1,2-Dichloropropane	< 2.00	ug/L		12/5/2017 06:03
1,3-Dichlorobenzene	< 2.00	ug/L		12/5/2017 06:03
1,4-Dichlorobenzene	< 2.00	ug/L		12/5/2017 06:03
1,4-dioxane	< 20.0	ug/L		12/5/2017 06:03
2-Butanone	< 10.0	ug/L		12/5/2017 06:03
2-Hexanone	< 5.00	ug/L		12/5/2017 06:03
4-Methyl-2-pentanone	< 5.00	ug/L		12/5/2017 06:03
Acetone	< 10.0	ug/L		12/5/2017 06:03
Benzene	< 1.00	ug/L		12/5/2017 06:03
Bromochloromethane	< 5.00	ug/L		12/5/2017 06:03
Bromodichloromethane	< 2.00	ug/L	L	12/5/2017 06:03
Bromoform	< 5.00	ug/L		12/5/2017 06:03
Bromomethane	< 2.00	ug/L		12/5/2017 06:03
Carbon disulfide	< 2.00	ug/L		12/5/2017 06:03
Carbon Tetrachloride	< 2.00	ug/L		12/5/2017 06:03
Chlorobenzene	< 2.00	ug/L		12/5/2017 06:03

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-29_112917
Lab Sample ID: 175326-05 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Chloroethane	< 2.00	ug/L	12/5/2017	06:03
Chloroform	< 2.00	ug/L	12/5/2017	06:03
Chloromethane	< 2.00	ug/L	12/5/2017	06:03
cis-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	06:03
cis-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	06:03
Cyclohexane	< 10.0	ug/L	12/5/2017	06:03
Dibromochloromethane	< 2.00	ug/L	12/5/2017	06:03
Dichlorodifluoromethane	< 2.00	ug/L	12/5/2017	06:03
Ethylbenzene	< 2.00	ug/L	12/5/2017	06:03
Freon 113	< 2.00	ug/L	12/5/2017	06:03
Isopropylbenzene	< 2.00	ug/L	12/5/2017	06:03
m,p-Xylene	< 2.00	ug/L	12/5/2017	06:03
Methyl acetate	< 2.00	ug/L	12/5/2017	06:03
Methyl tert-butyl Ether	< 2.00	ug/L	12/5/2017	06:03
Methylcyclohexane	< 2.00	ug/L	12/5/2017	06:03
Methylene chloride	< 5.00	ug/L	12/5/2017	06:03
o-Xylene	< 2.00	ug/L	12/5/2017	06:03
Styrene	< 5.00	ug/L	12/5/2017	06:03
Tetrachloroethene	< 2.00	ug/L	12/5/2017	06:03
Toluene	< 2.00	ug/L	12/5/2017	06:03
trans-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	06:03
trans-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	06:03
Trichloroethene	< 2.00	ug/L	12/5/2017	06:03
Trichlorofluoromethane	< 2.00	ug/L	12/5/2017	06:03
Vinyl chloride	< 2.00	ug/L	12/5/2017	06:03

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-29_112917
Lab Sample ID: 175326-05 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**90.9**	85.9 - 118		12/5/2017 06:03
4-Bromofluorobenzene	**90.3**	69.4 - 123		12/5/2017 06:03
Pentafluorobenzene	**99.9**	81.6 - 114		12/5/2017 06:03
Toluene-D8	**94.7**	82.7 - 112		12/5/2017 06:03

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x47308.D

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-27_112917		
Lab Sample ID:	175326-06	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		11/30/2017 13:53

Method Reference(s): EPA 7470A
Preparation Date: 11/30/2017
Data File: Hg171130A

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-27_112917		
Lab Sample ID:	175326-06	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		12/1/2017 19:06
Barium	< 0.100	mg/L		12/1/2017 19:06
Cadmium	< 0.00500	mg/L		12/1/2017 19:06
Chromium	< 0.0100	mg/L		12/1/2017 19:06
Lead	< 0.0100	mg/L		12/1/2017 19:06
Selenium	< 0.0200	mg/L		12/4/2017 12:31
Silver	< 0.0100	mg/L		12/1/2017 19:06

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 11/30/2017
Data File: 171201B

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-27_112917		
Lab Sample ID:	175326-06	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		12/5/2017 06:26
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		12/5/2017 06:26
1,1,2-Trichloroethane	< 2.00	ug/L		12/5/2017 06:26
1,1-Dichloroethane	< 2.00	ug/L		12/5/2017 06:26
1,1-Dichloroethene	< 2.00	ug/L		12/5/2017 06:26
1,2,3-Trichlorobenzene	< 5.00	ug/L		12/5/2017 06:26
1,2,4-Trichlorobenzene	< 5.00	ug/L		12/5/2017 06:26
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		12/5/2017 06:26
1,2-Dibromoethane	< 2.00	ug/L		12/5/2017 06:26
1,2-Dichlorobenzene	< 2.00	ug/L		12/5/2017 06:26
1,2-Dichloroethane	< 2.00	ug/L		12/5/2017 06:26
1,2-Dichloropropane	< 2.00	ug/L		12/5/2017 06:26
1,3-Dichlorobenzene	< 2.00	ug/L		12/5/2017 06:26
1,4-Dichlorobenzene	< 2.00	ug/L		12/5/2017 06:26
1,4-dioxane	< 20.0	ug/L		12/5/2017 06:26
2-Butanone	< 10.0	ug/L		12/5/2017 06:26
2-Hexanone	< 5.00	ug/L		12/5/2017 06:26
4-Methyl-2-pentanone	< 5.00	ug/L		12/5/2017 06:26
Acetone	< 10.0	ug/L		12/5/2017 06:26
Benzene	< 1.00	ug/L		12/5/2017 06:26
Bromochloromethane	< 5.00	ug/L		12/5/2017 06:26
Bromodichloromethane	< 2.00	ug/L	LM	12/5/2017 06:26
Bromoform	< 5.00	ug/L		12/5/2017 06:26
Bromomethane	< 2.00	ug/L		12/5/2017 06:26
Carbon disulfide	< 2.00	ug/L		12/5/2017 06:26
Carbon Tetrachloride	< 2.00	ug/L		12/5/2017 06:26
Chlorobenzene	< 2.00	ug/L		12/5/2017 06:26

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-27_112917
Lab Sample ID: 175326-06 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Chloroethane	< 2.00	ug/L	12/5/2017	06:26
Chloroform	< 2.00	ug/L	12/5/2017	06:26
Chloromethane	< 2.00	ug/L	12/5/2017	06:26
cis-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	06:26
cis-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	06:26
Cyclohexane	< 10.0	ug/L	12/5/2017	06:26
Dibromochloromethane	< 2.00	ug/L	12/5/2017	06:26
Dichlorodifluoromethane	< 2.00	ug/L	12/5/2017	06:26
Ethylbenzene	< 2.00	ug/L	12/5/2017	06:26
Freon 113	< 2.00	ug/L	12/5/2017	06:26
Isopropylbenzene	< 2.00	ug/L	12/5/2017	06:26
m,p-Xylene	< 2.00	ug/L	12/5/2017	06:26
Methyl acetate	< 2.00	ug/L	12/5/2017	06:26
Methyl tert-butyl Ether	< 2.00	ug/L	12/5/2017	06:26
Methylcyclohexane	< 2.00	ug/L	12/5/2017	06:26
Methylene chloride	< 5.00	ug/L	12/5/2017	06:26
o-Xylene	< 2.00	ug/L	12/5/2017	06:26
Styrene	< 5.00	ug/L	12/5/2017	06:26
Tetrachloroethene	< 2.00	ug/L	12/5/2017	06:26
Toluene	< 2.00	ug/L	12/5/2017	06:26
trans-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	06:26
trans-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	06:26
Trichloroethene	< 2.00	ug/L	12/5/2017	06:26
Trichlorofluoromethane	< 2.00	ug/L	12/5/2017	06:26
Vinyl chloride	< 2.00	ug/L	12/5/2017	06:26

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-27_112917
Lab Sample ID: 175326-06 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**94.2**	85.9 - 118		12/5/2017	06:26
4-Bromofluorobenzene	**91.7**	69.4 - 123		12/5/2017	06:26
Pentafluorobenzene	**101**	81.6 - 114		12/5/2017	06:26
Toluene-D8	**94.8**	82.7 - 112		12/5/2017	06:26

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x47309.D

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-Field Duplicate		
Lab Sample ID:	175326-07	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		11/30/2017 14:01

Method Reference(s): EPA 7470A
Preparation Date: 11/30/2017
Data File: Hg171130A

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-Field Duplicate		
Lab Sample ID:	175326-07	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		12/1/2017 19:26
Barium	< 0.100	mg/L		12/1/2017 19:26
Cadmium	**0.00555**	mg/L		12/1/2017 19:26
Chromium	< 0.0100	mg/L		12/1/2017 19:26
Lead	< 0.0100	mg/L		12/1/2017 19:26
Selenium	< 0.0200	mg/L		12/1/2017 19:26
Silver	< 0.0100	mg/L		12/1/2017 19:26

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 11/30/2017
Data File: 171201B

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-Field Duplicate
Lab Sample ID: 175326-07 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		12/5/2017 07:37
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		12/5/2017 07:37
1,1,2-Trichloroethane	< 2.00	ug/L		12/5/2017 07:37
1,1-Dichloroethane	< 2.00	ug/L		12/5/2017 07:37
1,1-Dichloroethene	< 2.00	ug/L		12/5/2017 07:37
1,2,3-Trichlorobenzene	< 5.00	ug/L		12/5/2017 07:37
1,2,4-Trichlorobenzene	< 5.00	ug/L		12/5/2017 07:37
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		12/5/2017 07:37
1,2-Dibromoethane	< 2.00	ug/L		12/5/2017 07:37
1,2-Dichlorobenzene	< 2.00	ug/L		12/5/2017 07:37
1,2-Dichloroethane	< 2.00	ug/L		12/5/2017 07:37
1,2-Dichloropropane	< 2.00	ug/L		12/5/2017 07:37
1,3-Dichlorobenzene	< 2.00	ug/L		12/5/2017 07:37
1,4-Dichlorobenzene	< 2.00	ug/L		12/5/2017 07:37
1,4-dioxane	< 20.0	ug/L		12/5/2017 07:37
2-Butanone	< 10.0	ug/L		12/5/2017 07:37
2-Hexanone	< 5.00	ug/L		12/5/2017 07:37
4-Methyl-2-pentanone	< 5.00	ug/L		12/5/2017 07:37
Acetone	< 10.0	ug/L		12/5/2017 07:37
Benzene	< 1.00	ug/L		12/5/2017 07:37
Bromochloromethane	< 5.00	ug/L		12/5/2017 07:37
Bromodichloromethane	< 2.00	ug/L	L	12/5/2017 07:37
Bromoform	< 5.00	ug/L		12/5/2017 07:37
Bromomethane	< 2.00	ug/L		12/5/2017 07:37
Carbon disulfide	< 2.00	ug/L		12/5/2017 07:37
Carbon Tetrachloride	< 2.00	ug/L		12/5/2017 07:37
Chlorobenzene	< 2.00	ug/L		12/5/2017 07:37

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-Field Duplicate
Lab Sample ID: 175326-07 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Chloroethane	< 2.00	ug/L	12/5/2017	07:37
Chloroform	< 2.00	ug/L	12/5/2017	07:37
Chloromethane	< 2.00	ug/L	12/5/2017	07:37
cis-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	07:37
cis-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	07:37
Cyclohexane	< 10.0	ug/L	12/5/2017	07:37
Dibromochloromethane	< 2.00	ug/L	12/5/2017	07:37
Dichlorodifluoromethane	< 2.00	ug/L	12/5/2017	07:37
Ethylbenzene	< 2.00	ug/L	12/5/2017	07:37
Freon 113	< 2.00	ug/L	12/5/2017	07:37
Isopropylbenzene	< 2.00	ug/L	12/5/2017	07:37
m,p-Xylene	< 2.00	ug/L	12/5/2017	07:37
Methyl acetate	< 2.00	ug/L	12/5/2017	07:37
Methyl tert-butyl Ether	< 2.00	ug/L	12/5/2017	07:37
Methylcyclohexane	< 2.00	ug/L	12/5/2017	07:37
Methylene chloride	< 5.00	ug/L	12/5/2017	07:37
o-Xylene	< 2.00	ug/L	12/5/2017	07:37
Styrene	< 5.00	ug/L	12/5/2017	07:37
Tetrachloroethene	< 2.00	ug/L	12/5/2017	07:37
Toluene	< 2.00	ug/L	12/5/2017	07:37
trans-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	07:37
trans-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	07:37
Trichloroethene	< 2.00	ug/L	12/5/2017	07:37
Trichlorofluoromethane	< 2.00	ug/L	12/5/2017	07:37
Vinyl chloride	< 2.00	ug/L	12/5/2017	07:37

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-Field Duplicate
Lab Sample ID: 175326-07 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**92.4**	85.9 - 118		12/5/2017	07:37
4-Bromofluorobenzene	**93.5**	69.4 - 123		12/5/2017	07:37
Pentafluorobenzene	**100**	81.6 - 114		12/5/2017	07:37
Toluene-D8	**95.8**	82.7 - 112		12/5/2017	07:37

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x47312.D

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-23_112917		
Lab Sample ID:	175326-08	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		11/30/2017 14:04

Method Reference(s): EPA 7470A
Preparation Date: 11/30/2017
Data File: Hg171130A

Report Prepared Wednesday, December 6, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-23_112917		
Lab Sample ID:	175326-08	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	**0.00540**	mg/L	J	12/1/2017 19:31
Barium	**0.112**	mg/L		12/1/2017 19:31
Cadmium	< 0.00500	mg/L		12/1/2017 19:31
Chromium	< 0.0100	mg/L		12/1/2017 19:31
Lead	**0.00626**	mg/L	J	12/1/2017 19:31
Selenium	< 0.0200	mg/L		12/1/2017 19:31
Silver	< 0.0100	mg/L		12/1/2017 19:31

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 11/30/2017
Data File: 171201B

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	OW-MW-23_112917		
Lab Sample ID:	175326-08	**Date Sampled:**	11/29/2017
Matrix:	Groundwater	**Date Received:**	11/29/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		12/5/2017 08:00
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		12/5/2017 08:00
1,1,2-Trichloroethane	< 2.00	ug/L		12/5/2017 08:00
1,1-Dichloroethane	< 2.00	ug/L		12/5/2017 08:00
1,1-Dichloroethene	< 2.00	ug/L		12/5/2017 08:00
1,2,3-Trichlorobenzene	< 5.00	ug/L		12/5/2017 08:00
1,2,4-Trichlorobenzene	< 5.00	ug/L		12/5/2017 08:00
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		12/5/2017 08:00
1,2-Dibromoethane	< 2.00	ug/L		12/5/2017 08:00
1,2-Dichlorobenzene	< 2.00	ug/L		12/5/2017 08:00
1,2-Dichloroethane	< 2.00	ug/L		12/5/2017 08:00
1,2-Dichloropropane	< 2.00	ug/L		12/5/2017 08:00
1,3-Dichlorobenzene	< 2.00	ug/L		12/5/2017 08:00
1,4-Dichlorobenzene	< 2.00	ug/L		12/5/2017 08:00
1,4-dioxane	< 20.0	ug/L		12/5/2017 08:00
2-Butanone	< 10.0	ug/L		12/5/2017 08:00
2-Hexanone	< 5.00	ug/L		12/5/2017 08:00
4-Methyl-2-pentanone	< 5.00	ug/L		12/5/2017 08:00
Acetone	< 10.0	ug/L		12/5/2017 08:00
Benzene	< 1.00	ug/L		12/5/2017 08:00
Bromochloromethane	< 5.00	ug/L		12/5/2017 08:00
Bromodichloromethane	< 2.00	ug/L	L	12/5/2017 08:00
Bromoform	< 5.00	ug/L		12/5/2017 08:00
Bromomethane	< 2.00	ug/L		12/5/2017 08:00
Carbon disulfide	< 2.00	ug/L		12/5/2017 08:00
Carbon Tetrachloride	< 2.00	ug/L		12/5/2017 08:00
Chlorobenzene	< 2.00	ug/L		12/5/2017 08:00

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-23_112917
Lab Sample ID: 175326-08 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Chloroethane	< 2.00	ug/L	12/5/2017	08:00
Chloroform	< 2.00	ug/L	12/5/2017	08:00
Chloromethane	< 2.00	ug/L	12/5/2017	08:00
cis-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	08:00
cis-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	08:00
Cyclohexane	< 10.0	ug/L	12/5/2017	08:00
Dibromochloromethane	< 2.00	ug/L	12/5/2017	08:00
Dichlorodifluoromethane	< 2.00	ug/L	12/5/2017	08:00
Ethylbenzene	< 2.00	ug/L	12/5/2017	08:00
Freon 113	< 2.00	ug/L	12/5/2017	08:00
Isopropylbenzene	< 2.00	ug/L	12/5/2017	08:00
m,p-Xylene	< 2.00	ug/L	12/5/2017	08:00
Methyl acetate	< 2.00	ug/L	12/5/2017	08:00
Methyl tert-butyl Ether	< 2.00	ug/L	12/5/2017	08:00
Methylcyclohexane	< 2.00	ug/L	12/5/2017	08:00
Methylene chloride	< 5.00	ug/L	12/5/2017	08:00
o-Xylene	< 2.00	ug/L	12/5/2017	08:00
Styrene	< 5.00	ug/L	12/5/2017	08:00
Tetrachloroethene	< 2.00	ug/L	12/5/2017	08:00
Toluene	< 2.00	ug/L	12/5/2017	08:00
trans-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	08:00
trans-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	08:00
Trichloroethene	< 2.00	ug/L	12/5/2017	08:00
Trichlorofluoromethane	< 2.00	ug/L	12/5/2017	08:00
Vinyl chloride	< 2.00	ug/L	12/5/2017	08:00

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: OW-MW-23_112917
Lab Sample ID: 175326-08 **Date Sampled:** 11/29/2017
Matrix: Groundwater **Date Received:** 11/29/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**96.9**	85.9 - 118		12/5/2017	08:00
4-Bromofluorobenzene	**92.8**	69.4 - 123		12/5/2017	08:00
Pentafluorobenzene	**97.8**	81.6 - 114		12/5/2017	08:00
Toluene-D8	**94.1**	82.7 - 112		12/5/2017	08:00

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x47313.D

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier:	Trip Blank		
Lab Sample ID:	175326-09	**Date Sampled:**	11/29/2017
Matrix:	Water	**Date Received:**	11/29/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		12/5/2017 08:24
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		12/5/2017 08:24
1,1,2-Trichloroethane	< 2.00	ug/L		12/5/2017 08:24
1,1-Dichloroethane	< 2.00	ug/L		12/5/2017 08:24
1,1-Dichloroethene	< 2.00	ug/L		12/5/2017 08:24
1,2,3-Trichlorobenzene	< 5.00	ug/L		12/5/2017 08:24
1,2,4-Trichlorobenzene	< 5.00	ug/L		12/5/2017 08:24
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		12/5/2017 08:24
1,2-Dibromoethane	< 2.00	ug/L		12/5/2017 08:24
1,2-Dichlorobenzene	< 2.00	ug/L		12/5/2017 08:24
1,2-Dichloroethane	< 2.00	ug/L		12/5/2017 08:24
1,2-Dichloropropane	< 2.00	ug/L		12/5/2017 08:24
1,3-Dichlorobenzene	< 2.00	ug/L		12/5/2017 08:24
1,4-Dichlorobenzene	< 2.00	ug/L		12/5/2017 08:24
1,4-dioxane	< 20.0	ug/L		12/5/2017 08:24
2-Butanone	< 10.0	ug/L		12/5/2017 08:24
2-Hexanone	< 5.00	ug/L		12/5/2017 08:24
4-Methyl-2-pentanone	< 5.00	ug/L		12/5/2017 08:24
Acetone	< 10.0	ug/L		12/5/2017 08:24
Benzene	< 1.00	ug/L		12/5/2017 08:24
Bromochloromethane	< 5.00	ug/L		12/5/2017 08:24
Bromodichloromethane	< 2.00	ug/L	L	12/5/2017 08:24
Bromoform	< 5.00	ug/L		12/5/2017 08:24
Bromomethane	< 2.00	ug/L		12/5/2017 08:24
Carbon disulfide	< 2.00	ug/L		12/5/2017 08:24
Carbon Tetrachloride	< 2.00	ug/L		12/5/2017 08:24
Chlorobenzene	< 2.00	ug/L		12/5/2017 08:24

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: Trip Blank
Lab Sample ID: 175326-09 **Date Sampled:** 11/29/2017
Matrix: Water **Date Received:** 11/29/2017

Chloroethane	< 2.00	ug/L	12/5/2017	08:24
Chloroform	< 2.00	ug/L	12/5/2017	08:24
Chloromethane	< 2.00	ug/L	12/5/2017	08:24
cis-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	08:24
cis-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	08:24
Cyclohexane	< 10.0	ug/L	12/5/2017	08:24
Dibromochloromethane	< 2.00	ug/L	12/5/2017	08:24
Dichlorodifluoromethane	< 2.00	ug/L	12/5/2017	08:24
Ethylbenzene	< 2.00	ug/L	12/5/2017	08:24
Freon 113	< 2.00	ug/L	12/5/2017	08:24
Isopropylbenzene	< 2.00	ug/L	12/5/2017	08:24
m,p-Xylene	< 2.00	ug/L	12/5/2017	08:24
Methyl acetate	< 2.00	ug/L	12/5/2017	08:24
Methyl tert-butyl Ether	< 2.00	ug/L	12/5/2017	08:24
Methylcyclohexane	< 2.00	ug/L	12/5/2017	08:24
Methylene chloride	< 5.00	ug/L	12/5/2017	08:24
o-Xylene	< 2.00	ug/L	12/5/2017	08:24
Styrene	< 5.00	ug/L	12/5/2017	08:24
Tetrachloroethene	< 2.00	ug/L	12/5/2017	08:24
Toluene	< 2.00	ug/L	12/5/2017	08:24
trans-1,2-Dichloroethene	< 2.00	ug/L	12/5/2017	08:24
trans-1,3-Dichloropropene	< 2.00	ug/L	12/5/2017	08:24
Trichloroethene	< 2.00	ug/L	12/5/2017	08:24
Trichlorofluoromethane	< 2.00	ug/L	12/5/2017	08:24
Vinyl chloride	< 2.00	ug/L	12/5/2017	08:24

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 175326

Client: **Lu Engineers, Inc.**

Project Reference: Orchard-Whitney 4216-08

Sample Identifier: Trip Blank
Lab Sample ID: 175326-09 **Date Sampled:** 11/29/2017
Matrix: Water **Date Received:** 11/29/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**97.6**	85.9 - 118		12/5/2017	08:24
4-Bromofluorobenzene	**92.7**	69.4 - 123		12/5/2017	08:24
Pentafluorobenzene	**99.7**	81.6 - 114		12/5/2017	08:24
Toluene-D8	**93.9**	82.7 - 112		12/5/2017	08:24

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x47314.D

PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample

Client: Lu Engineers, Inc.
Project Reference: Orchard-Whitney 4216-08
Lab Project ID: 175326
SDG #: 5326-01
Matrix: Groundwater

Volatile Organics

Analyte	Spike Added	Spike Units	LCS Result	LCS % Recovery	% Rec Limits	LCS Outliers	Date Analyzed
1,1,1-Trichloroethane	20.0	ug/L	17.7	88.3	70.3 - 119		12/5/2017
1,1,2,2-Tetrachloroethane	20.0	ug/L	20.9	105	83.4 - 123		12/5/2017
1,1,2-Trichloroethane	20.0	ug/L	18.4	92.1	85.2 - 118		12/5/2017
1,1-Dichloroethane	20.0	ug/L	18.1	90.5	76.7 - 114		12/5/2017
1,1-Dichloroethene	20.0	ug/L	18.4	92.2	62.4 - 115		12/5/2017
1,2-Dichlorobenzene	20.0	ug/L	18.5	92.6	87.3 - 118		12/5/2017
1,2-Dichloroethane	20.0	ug/L	18.6	92.9	85.5 - 122		12/5/2017
1,2-Dichloropropane	20.0	ug/L	17.8	89.1	81.2 - 109		12/5/2017
1,3-Dichlorobenzene	20.0	ug/L	17.6	88.1	80.9 - 114		12/5/2017
1,4-Dichlorobenzene	20.0	ug/L	17.8	88.8	80.2 - 109		12/5/2017
Benzene	20.0	ug/L	18.8	94.2	86.6 - 114		12/5/2017
Bromodichloromethane	20.0	ug/L	16.7	83.6	85.7 - 116	*	12/5/2017
Bromoform	20.0	ug/L	17.5	87.3	69.2 - 110		12/5/2017
Bromomethane	20.0	ug/L	17.8	89.0	50.6 - 170		12/5/2017
Carbon Tetrachloride	20.0	ug/L	17.4	87.1	65.5 - 121		12/5/2017
Chlorobenzene	20.0	ug/L	17.9	89.5	84.7 - 110		12/5/2017

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.

Report Prepared Wednesday, December 06, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample

Client: Lu Engineers, Inc.
Project Reference: Orchard-Whitney 4216-08
Lab Project ID: 175326
SDG #: 5326-01
Matrix: Groundwater

Volatile Organics

Analyte	Spike Added	Spike Units	LCS Result	LCS % Recovery	% Rec Limits	LCS Outliers	Date Analyzed
Chloroethane	20.0	ug/L	17.2	85.8	78 - 140		12/5/2017
Chloroform	20.0	ug/L	18.0	90.0	82.1 - 119		12/5/2017
Chloromethane	20.0	ug/L	21.8	109	73.9 - 143		12/5/2017
cis-1,3-Dichloropropene	20.0	ug/L	17.8	89.0	74 - 114		12/5/2017
Dibromochloromethane	20.0	ug/L	18.5	92.5	81.2 - 119		12/5/2017
Ethylbenzene	20.0	ug/L	17.3	86.3	81.5 - 118		12/5/2017
Methylene chloride	20.0	ug/L	19.2	95.9	46.4 - 150		12/5/2017
Tetrachloroethene	20.0	ug/L	19.0	95.0	73.6 - 126		12/5/2017
Toluene	20.0	ug/L	17.7	88.7	87 - 113		12/5/2017
trans-1,2-Dichloroethene	20.0	ug/L	17.6	87.9	70.5 - 118		12/5/2017
trans-1,3-Dichloropropene	20.0	ug/L	16.2	80.8	65.7 - 109		12/5/2017
Trichloroethene	20.0	ug/L	18.0	90.0	76.3 - 113		12/5/2017
Trichlorofluoromethane	20.0	ug/L	18.4	92.1	62.6 - 139		12/5/2017
Vinyl chloride	20.0	ug/L	20.4	102	70.6 - 144		12/5/2017

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Report Prepared Wednesday, December 06, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample

Client: Lu Engineers, Inc.
Project Reference: Orchard-Whitney 4216-08
Lab Project ID: 175326
SDG #: 5326-01
Matrix: Groundwater

Volatile Organics

Analyte	Spike Added	Spike Units	LCS Result	LCS % Recovery	% Rec Limits	LCS Outliers	Date Analyzed
Method Reference(s):	EPA 8260C EPA 5030C						
Data File:	x47293.D						
QC Number:	1						
QC Batch ID:	voaw171205A						

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Report Prepared Wednesday, December 06, 2017

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, term, 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 will 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 the 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:	LaBella Engineers	CLIENT:		LAB PROJECT ID: 175326
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@labengineers.com
ATTN:	Greg Andrus	ATTN:		

PROJECT REFERENCE: Orchard-Whitney 4216-08

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	TCL VOCs 8260	RCRA Metals	REMARKS	PARADIGM LAB SAMPLE NUMBER
11/29/17	11:55		✓	OW-MW-22_112917	WG	3	✓	✓		01
	10:55		✓	OW-MW-16_112917	WG	3	✓	✓		02
	12:05		✓	OW-MW-26_112917	WG	3	✓	✓		03
	11:05		✓	OW-MW-28_112917	WG	3	✓	✓		04
	9:50		✓	OW-MW-29_112917	WG	3	✓	✓		05
	9:55		✓	OW-MW-27_112917	WG	3	✓	✓		06
	10:00		✓	OW-MW-27_MS_112917	WG	3	✓	✓		07
	10:05		✓	OW-MW-27_MSD_112917	WG	3	✓	✓		08
			✓	OW-MW-Field Duplicate	WG	3	✓	✓		09 07
↓	13:00		✓	OW-MW-23_112917	WG	3	✓	✓		10 08
				Trip Blank	WA	2	✓ per v.3 mail CP 11/29/17			11 09 @ 11/29/17

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:	☐

Laura K Kuzyor	11/29/17 13:05	Total Cost:
Sampled By	Date/Time	
Laura K Kuzyor	11/29/17 13:20	
Relinquished By	Date/Time	
	11/29/17 1320	P.I.F.
Received By	Date/Time	
	11/29/17 14:11	
Received @ Lab By	Date/Time	

5°C iced 11/29/17 13:47. Custody Seal N/A, samples delivered by client. CP 11/29/17

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 Peerzlo

Lab Project ID: 175326 **Date:** 11/29/17

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 VOA		X
Comments			
Preservation	X		
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		X metals
Comments	5°C iced 11/29/17 13:47		
Sufficient Sample Quantity	X		
Comments			

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-22_032118		
Lab Sample ID:	181072-01	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		3/26/2018 09:32

Method Reference(s): EPA 7470A
Preparation Date: 3/23/2018
Data File: Hg180326A

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.

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-22_032118		
Lab Sample ID:	181072-01	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	**0.00946**	mg/L	J	3/26/2018 19:56
Barium	**0.0735**	mg/L	J	3/26/2018 19:56
Cadmium	< 0.00500	mg/L		3/26/2018 19:56
Chromium	**0.00541**	mg/L	J	3/26/2018 19:56
Lead	< 0.0100	mg/L		3/26/2018 19:56
Selenium	**0.0157**	mg/L	J	3/26/2018 19:56
Silver	< 0.0100	mg/L		3/26/2018 19:56

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 3/23/2018
Data File: 180326A

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-22_032118		
Lab Sample ID:	181072-01	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/26/2018 14:48
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		3/26/2018 14:48
1,1,2-Trichloroethane	< 2.00	ug/L		3/26/2018 14:48
1,1-Dichloroethane	< 2.00	ug/L		3/26/2018 14:48
1,1-Dichloroethene	< 2.00	ug/L		3/26/2018 14:48
1,2,3-Trichlorobenzene	< 5.00	ug/L		3/26/2018 14:48
1,2,4-Trichlorobenzene	< 5.00	ug/L		3/26/2018 14:48
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		3/26/2018 14:48
1,2-Dibromoethane	< 2.00	ug/L		3/26/2018 14:48
1,2-Dichlorobenzene	< 2.00	ug/L		3/26/2018 14:48
1,2-Dichloroethane	< 2.00	ug/L		3/26/2018 14:48
1,2-Dichloropropane	< 2.00	ug/L		3/26/2018 14:48
1,3-Dichlorobenzene	< 2.00	ug/L		3/26/2018 14:48
1,4-Dichlorobenzene	< 2.00	ug/L		3/26/2018 14:48
1,4-dioxane	< 20.0	ug/L		3/26/2018 14:48
2-Butanone	< 10.0	ug/L		3/26/2018 14:48
2-Hexanone	< 5.00	ug/L		3/26/2018 14:48
4-Methyl-2-pentanone	< 5.00	ug/L		3/26/2018 14:48
Acetone	< 10.0	ug/L		3/26/2018 14:48
Benzene	< 1.00	ug/L		3/26/2018 14:48
Bromochloromethane	< 5.00	ug/L		3/26/2018 14:48
Bromodichloromethane	< 2.00	ug/L		3/26/2018 14:48
Bromoform	< 5.00	ug/L		3/26/2018 14:48
Bromomethane	< 2.00	ug/L		3/26/2018 14:48
Carbon disulfide	< 2.00	ug/L		3/26/2018 14:48
Carbon Tetrachloride	< 2.00	ug/L		3/26/2018 14:48
Chlorobenzene	< 2.00	ug/L		3/26/2018 14:48

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-22_032118
Lab Sample ID: 181072-01 **Date Sampled:** 3/21/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Chloroethane	< 2.00	ug/L	3/26/2018	14:48
Chloroform	< 2.00	ug/L	3/26/2018	14:48
Chloromethane	< 2.00	ug/L	3/26/2018	14:48
cis-1,2-Dichloroethene	< 2.00	ug/L	3/26/2018	14:48
cis-1,3-Dichloropropene	< 2.00	ug/L	3/26/2018	14:48
Cyclohexane	< 10.0	ug/L	3/26/2018	14:48
Dibromochloromethane	< 2.00	ug/L	3/26/2018	14:48
Dichlorodifluoromethane	< 2.00	ug/L	3/26/2018	14:48
Ethylbenzene	< 2.00	ug/L	3/26/2018	14:48
Freon 113	< 2.00	ug/L	3/26/2018	14:48
Isopropylbenzene	< 2.00	ug/L	3/26/2018	14:48
m,p-Xylene	< 2.00	ug/L	3/26/2018	14:48
Methyl acetate	< 2.00	ug/L	3/26/2018	14:48
Methyl tert-butyl Ether	< 2.00	ug/L	3/26/2018	14:48
Methylcyclohexane	< 2.00	ug/L	3/26/2018	14:48
Methylene chloride	< 5.00	ug/L	3/26/2018	14:48
o-Xylene	< 2.00	ug/L	3/26/2018	14:48
Styrene	< 5.00	ug/L	3/26/2018	14:48
Tetrachloroethene	< 2.00	ug/L	3/26/2018	14:48
Toluene	< 2.00	ug/L	3/26/2018	14:48
trans-1,2-Dichloroethene	< 2.00	ug/L	3/26/2018	14:48
trans-1,3-Dichloropropene	< 2.00	ug/L	3/26/2018	14:48
Trichloroethene	< 2.00	ug/L	3/26/2018	14:48
Trichlorofluoromethane	< 2.00	ug/L	3/26/2018	14:48
Vinyl chloride	< 2.00	ug/L	3/26/2018	14:48

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-22_032118
Lab Sample ID: 181072-01 **Date Sampled:** 3/21/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**103**	77.2 - 121		3/26/2018	14:48
4-Bromofluorobenzene	**92.4**	70 - 123		3/26/2018	14:48
Pentafluorobenzene	**99.8**	85.4 - 110		3/26/2018	14:48
Toluene-D8	**97.8**	83.8 - 112		3/26/2018	14:48

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x49410.D

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Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-23_032118		
Lab Sample ID:	181072-02	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		3/26/2018 09:34

Method Reference(s): EPA 7470A
Preparation Date: 3/23/2018
Data File: Hg180326A

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.

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-23_032118		
Lab Sample ID:	181072-02	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		3/26/2018 20:00
Barium	**0.114**	mg/L		3/26/2018 20:00
Cadmium	< 0.00500	mg/L		3/26/2018 20:00
Chromium	< 0.0100	mg/L		3/26/2018 20:00
Lead	**0.00805**	mg/L	J	3/26/2018 20:00
Selenium	< 0.0200	mg/L		3/26/2018 20:00
Silver	< 0.0100	mg/L		3/26/2018 20:00

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 3/23/2018
Data File: 180326A

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-23_032118		
Lab Sample ID:	181072-02	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/26/2018 15:12
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		3/26/2018 15:12
1,1,2-Trichloroethane	< 2.00	ug/L		3/26/2018 15:12
1,1-Dichloroethane	< 2.00	ug/L		3/26/2018 15:12
1,1-Dichloroethene	< 2.00	ug/L		3/26/2018 15:12
1,2,3-Trichlorobenzene	< 5.00	ug/L		3/26/2018 15:12
1,2,4-Trichlorobenzene	< 5.00	ug/L		3/26/2018 15:12
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		3/26/2018 15:12
1,2-Dibromoethane	< 2.00	ug/L		3/26/2018 15:12
1,2-Dichlorobenzene	< 2.00	ug/L		3/26/2018 15:12
1,2-Dichloroethane	< 2.00	ug/L		3/26/2018 15:12
1,2-Dichloropropane	< 2.00	ug/L		3/26/2018 15:12
1,3-Dichlorobenzene	< 2.00	ug/L		3/26/2018 15:12
1,4-Dichlorobenzene	< 2.00	ug/L		3/26/2018 15:12
1,4-dioxane	< 20.0	ug/L		3/26/2018 15:12
2-Butanone	< 10.0	ug/L		3/26/2018 15:12
2-Hexanone	< 5.00	ug/L		3/26/2018 15:12
4-Methyl-2-pentanone	< 5.00	ug/L		3/26/2018 15:12
Acetone	< 10.0	ug/L		3/26/2018 15:12
Benzene	< 1.00	ug/L		3/26/2018 15:12
Bromochloromethane	< 5.00	ug/L		3/26/2018 15:12
Bromodichloromethane	< 2.00	ug/L		3/26/2018 15:12
Bromoform	< 5.00	ug/L		3/26/2018 15:12
Bromomethane	< 2.00	ug/L		3/26/2018 15:12
Carbon disulfide	< 2.00	ug/L		3/26/2018 15:12
Carbon Tetrachloride	< 2.00	ug/L		3/26/2018 15:12
Chlorobenzene	< 2.00	ug/L		3/26/2018 15:12

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-23_032118
Lab Sample ID: 181072-02 **Date Sampled:** 3/21/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Chloroethane	< 2.00	ug/L	3/26/2018	15:12
Chloroform	< 2.00	ug/L	3/26/2018	15:12
Chloromethane	< 2.00	ug/L	3/26/2018	15:12
cis-1,2-Dichloroethene	< 2.00	ug/L	3/26/2018	15:12
cis-1,3-Dichloropropene	< 2.00	ug/L	3/26/2018	15:12
Cyclohexane	< 10.0	ug/L	3/26/2018	15:12
Dibromochloromethane	< 2.00	ug/L	3/26/2018	15:12
Dichlorodifluoromethane	< 2.00	ug/L	3/26/2018	15:12
Ethylbenzene	< 2.00	ug/L	3/26/2018	15:12
Freon 113	< 2.00	ug/L	3/26/2018	15:12
Isopropylbenzene	< 2.00	ug/L	3/26/2018	15:12
m,p-Xylene	< 2.00	ug/L	3/26/2018	15:12
Methyl acetate	< 2.00	ug/L	3/26/2018	15:12
Methyl tert-butyl Ether	< 2.00	ug/L	3/26/2018	15:12
Methylcyclohexane	< 2.00	ug/L	3/26/2018	15:12
Methylene chloride	< 5.00	ug/L	3/26/2018	15:12
o-Xylene	< 2.00	ug/L	3/26/2018	15:12
Styrene	< 5.00	ug/L	3/26/2018	15:12
Tetrachloroethene	< 2.00	ug/L	3/26/2018	15:12
Toluene	< 2.00	ug/L	3/26/2018	15:12
trans-1,2-Dichloroethene	< 2.00	ug/L	3/26/2018	15:12
trans-1,3-Dichloropropene	< 2.00	ug/L	3/26/2018	15:12
Trichloroethene	< 2.00	ug/L	3/26/2018	15:12
Trichlorofluoromethane	< 2.00	ug/L	3/26/2018	15:12
Vinyl chloride	< 2.00	ug/L	3/26/2018	15:12

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-23_032118
Lab Sample ID: 181072-02 **Date Sampled:** 3/21/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**103**	77.2 - 121		3/26/2018	15:12
4-Bromofluorobenzene	**90.0**	70 - 123		3/26/2018	15:12
Pentafluorobenzene	**97.4**	85.4 - 110		3/26/2018	15:12
Toluene-D8	**95.6**	83.8 - 112		3/26/2018	15:12

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x49411.D

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-26_032118		
Lab Sample ID:	181072-03	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		3/26/2018 09:49

Method Reference(s): EPA 7470A
Preparation Date: 3/23/2018
Data File: Hg180326A

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.

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-26_032118		
Lab Sample ID:	181072-03	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		3/26/2018 20:22
Barium	**0.0645**	mg/L	J	3/26/2018 20:22
Cadmium	< 0.00500	mg/L		3/26/2018 20:22
Chromium	< 0.0100	mg/L		3/26/2018 20:22
Lead	< 0.0100	mg/L		3/26/2018 20:22
Selenium	< 0.0200	mg/L		3/26/2018 20:22
Silver	< 0.0100	mg/L		3/26/2018 20:22

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 3/23/2018
Data File: 180326A

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-26_032118
Lab Sample ID: 181072-03 **Date Sampled:** 3/21/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/26/2018 15:35
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		3/26/2018 15:35
1,1,2-Trichloroethane	< 2.00	ug/L		3/26/2018 15:35
1,1-Dichloroethane	< 2.00	ug/L		3/26/2018 15:35
1,1-Dichloroethene	< 2.00	ug/L		3/26/2018 15:35
1,2,3-Trichlorobenzene	< 5.00	ug/L		3/26/2018 15:35
1,2,4-Trichlorobenzene	< 5.00	ug/L		3/26/2018 15:35
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		3/26/2018 15:35
1,2-Dibromoethane	< 2.00	ug/L		3/26/2018 15:35
1,2-Dichlorobenzene	< 2.00	ug/L		3/26/2018 15:35
1,2-Dichloroethane	< 2.00	ug/L		3/26/2018 15:35
1,2-Dichloropropane	< 2.00	ug/L		3/26/2018 15:35
1,3-Dichlorobenzene	< 2.00	ug/L		3/26/2018 15:35
1,4-Dichlorobenzene	< 2.00	ug/L		3/26/2018 15:35
1,4-dioxane	< 20.0	ug/L		3/26/2018 15:35
2-Butanone	< 10.0	ug/L		3/26/2018 15:35
2-Hexanone	< 5.00	ug/L		3/26/2018 15:35
4-Methyl-2-pentanone	< 5.00	ug/L		3/26/2018 15:35
Acetone	< 10.0	ug/L		3/26/2018 15:35
Benzene	< 1.00	ug/L		3/26/2018 15:35
Bromochloromethane	< 5.00	ug/L		3/26/2018 15:35
Bromodichloromethane	< 2.00	ug/L		3/26/2018 15:35
Bromoform	< 5.00	ug/L		3/26/2018 15:35
Bromomethane	< 2.00	ug/L		3/26/2018 15:35
Carbon disulfide	< 2.00	ug/L		3/26/2018 15:35
Carbon Tetrachloride	< 2.00	ug/L		3/26/2018 15:35
Chlorobenzene	< 2.00	ug/L		3/26/2018 15:35

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-26_032118
Lab Sample ID: 181072-03 **Date Sampled:** 3/21/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Chloroethane	< 2.00	ug/L		3/26/2018	15:35
Chloroform	**1.18**	ug/L	J	3/26/2018	15:35
Chloromethane	< 2.00	ug/L		3/26/2018	15:35
cis-1,2-Dichloroethene	< 2.00	ug/L		3/26/2018	15:35
cis-1,3-Dichloropropene	< 2.00	ug/L		3/26/2018	15:35
Cyclohexane	< 10.0	ug/L		3/26/2018	15:35
Dibromochloromethane	< 2.00	ug/L		3/26/2018	15:35
Dichlorodifluoromethane	< 2.00	ug/L		3/26/2018	15:35
Ethylbenzene	< 2.00	ug/L		3/26/2018	15:35
Freon 113	< 2.00	ug/L		3/26/2018	15:35
Isopropylbenzene	< 2.00	ug/L		3/26/2018	15:35
m,p-Xylene	< 2.00	ug/L		3/26/2018	15:35
Methyl acetate	< 2.00	ug/L		3/26/2018	15:35
Methyl tert-butyl Ether	< 2.00	ug/L		3/26/2018	15:35
Methylcyclohexane	< 2.00	ug/L		3/26/2018	15:35
Methylene chloride	< 5.00	ug/L		3/26/2018	15:35
o-Xylene	< 2.00	ug/L		3/26/2018	15:35
Styrene	< 5.00	ug/L		3/26/2018	15:35
Tetrachloroethene	< 2.00	ug/L		3/26/2018	15:35
Toluene	< 2.00	ug/L		3/26/2018	15:35
trans-1,2-Dichloroethene	< 2.00	ug/L		3/26/2018	15:35
trans-1,3-Dichloropropene	< 2.00	ug/L		3/26/2018	15:35
Trichloroethene	**1.13**	ug/L	J	3/26/2018	15:35
Trichlorofluoromethane	< 2.00	ug/L		3/26/2018	15:35
Vinyl chloride	< 2.00	ug/L		3/26/2018	15:35

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-26_032118
Lab Sample ID: 181072-03 **Date Sampled:** 3/21/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**101**	77.2 - 121		3/26/2018	15:35
4-Bromofluorobenzene	**91.1**	70 - 123		3/26/2018	15:35
Pentafluorobenzene	**100**	85.4 - 110		3/26/2018	15:35
Toluene-D8	**96.2**	83.8 - 112		3/26/2018	15:35

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x49412.D

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-Field Duplicate		
Lab Sample ID:	181072-04	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		3/26/2018 09:51

Method Reference(s): EPA 7470A
Preparation Date: 3/23/2018
Data File: Hg180326A

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Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-Field Duplicate		
Lab Sample ID:	181072-04	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	**0.00870**	mg/L	J	3/28/2018 14:56
Barium	**0.0544**	mg/L	J	3/28/2018 10:59
Cadmium	**0.00610**	mg/L		3/28/2018 10:59
Chromium	**0.0109**	mg/L		3/28/2018 10:59
Lead	**0.00529**	mg/L	J	3/28/2018 10:59
Selenium	< 0.0200	mg/L		3/28/2018 10:59
Silver	< 0.0100	mg/L		3/28/2018 10:59

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 3/23/2018
Data File: 180328B

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-Field Duplicate
Lab Sample ID: 181072-04 **Date Sampled:** 3/21/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/26/2018 15:59
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		3/26/2018 15:59
1,1,2-Trichloroethane	< 2.00	ug/L		3/26/2018 15:59
1,1-Dichloroethane	< 2.00	ug/L		3/26/2018 15:59
1,1-Dichloroethene	< 2.00	ug/L		3/26/2018 15:59
1,2,3-Trichlorobenzene	< 5.00	ug/L		3/26/2018 15:59
1,2,4-Trichlorobenzene	< 5.00	ug/L		3/26/2018 15:59
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		3/26/2018 15:59
1,2-Dibromoethane	< 2.00	ug/L		3/26/2018 15:59
1,2-Dichlorobenzene	< 2.00	ug/L		3/26/2018 15:59
1,2-Dichloroethane	< 2.00	ug/L		3/26/2018 15:59
1,2-Dichloropropane	< 2.00	ug/L		3/26/2018 15:59
1,3-Dichlorobenzene	< 2.00	ug/L		3/26/2018 15:59
1,4-Dichlorobenzene	< 2.00	ug/L		3/26/2018 15:59
1,4-dioxane	< 20.0	ug/L		3/26/2018 15:59
2-Butanone	< 10.0	ug/L		3/26/2018 15:59
2-Hexanone	< 5.00	ug/L		3/26/2018 15:59
4-Methyl-2-pentanone	< 5.00	ug/L		3/26/2018 15:59
Acetone	**8.75**	ug/L	J	3/26/2018 15:59
Benzene	**1.00**	ug/L		3/26/2018 15:59
Bromochloromethane	< 5.00	ug/L		3/26/2018 15:59
Bromodichloromethane	< 2.00	ug/L		3/26/2018 15:59
Bromoform	< 5.00	ug/L		3/26/2018 15:59
Bromomethane	< 2.00	ug/L		3/26/2018 15:59
Carbon disulfide	< 2.00	ug/L		3/26/2018 15:59
Carbon Tetrachloride	< 2.00	ug/L		3/26/2018 15:59
Chlorobenzene	< 2.00	ug/L		3/26/2018 15:59

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-Field Duplicate
Lab Sample ID: 181072-04 **Date Sampled:** 3/21/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Chloroethane	< 2.00	ug/L	3/26/2018	15:59
Chloroform	< 2.00	ug/L	3/26/2018	15:59
Chloromethane	< 2.00	ug/L	3/26/2018	15:59
cis-1,2-Dichloroethene	< 2.00	ug/L	3/26/2018	15:59
cis-1,3-Dichloropropene	< 2.00	ug/L	3/26/2018	15:59
Cyclohexane	< 10.0	ug/L	3/26/2018	15:59
Dibromochloromethane	< 2.00	ug/L	3/26/2018	15:59
Dichlorodifluoromethane	< 2.00	ug/L	3/26/2018	15:59
Ethylbenzene	< 2.00	ug/L	3/26/2018	15:59
Freon 113	< 2.00	ug/L	3/26/2018	15:59
Isopropylbenzene	< 2.00	ug/L	3/26/2018	15:59
m,p-Xylene	< 2.00	ug/L	3/26/2018	15:59
Methyl acetate	< 2.00	ug/L	3/26/2018	15:59
Methyl tert-butyl Ether	< 2.00	ug/L	3/26/2018	15:59
Methylcyclohexane	< 2.00	ug/L	3/26/2018	15:59
Methylene chloride	< 5.00	ug/L	3/26/2018	15:59
o-Xylene	< 2.00	ug/L	3/26/2018	15:59
Styrene	< 5.00	ug/L	3/26/2018	15:59
Tetrachloroethene	< 2.00	ug/L	3/26/2018	15:59
Toluene	< 2.00	ug/L	3/26/2018	15:59
trans-1,2-Dichloroethene	< 2.00	ug/L	3/26/2018	15:59
trans-1,3-Dichloropropene	< 2.00	ug/L	3/26/2018	15:59
Trichloroethene	< 2.00	ug/L	3/26/2018	15:59
Trichlorofluoromethane	< 2.00	ug/L	3/26/2018	15:59
Vinyl chloride	< 2.00	ug/L	3/26/2018	15:59

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-Field Duplicate
Lab Sample ID: 181072-04 **Date Sampled:** 3/21/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**104**	77.2 - 121		3/26/2018	15:59
4-Bromofluorobenzene	**95.1**	70 - 123		3/26/2018	15:59
Pentafluorobenzene	**99.3**	85.4 - 110		3/26/2018	15:59
Toluene-D8	**97.5**	83.8 - 112		3/26/2018	15:59

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x49413.D

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-16_032118		
Lab Sample ID:	181072-05	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		3/26/2018 09:54

Method Reference(s): EPA 7470A
Preparation Date: 3/23/2018
Data File: Hg180326A

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Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-16_032118		
Lab Sample ID:	181072-05	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	**0.00740**	mg/L	J	3/28/2018 15:01
Barium	**0.0566**	mg/L	J	3/28/2018 11:03
Cadmium	**0.00672**	mg/L		3/28/2018 11:03
Chromium	**0.0115**	mg/L		3/28/2018 11:03
Lead	**0.00872**	mg/L	J	3/28/2018 11:03
Selenium	< 0.0200	mg/L		3/28/2018 11:03
Silver	< 0.0100	mg/L		3/28/2018 11:03

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 3/23/2018
Data File: 180328B

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-16_032118		
Lab Sample ID:	181072-05	**Date Sampled:**	3/21/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/26/2018 16:23
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		3/26/2018 16:23
1,1,2-Trichloroethane	< 2.00	ug/L		3/26/2018 16:23
1,1-Dichloroethane	< 2.00	ug/L		3/26/2018 16:23
1,1-Dichloroethene	< 2.00	ug/L		3/26/2018 16:23
1,2,3-Trichlorobenzene	< 5.00	ug/L		3/26/2018 16:23
1,2,4-Trichlorobenzene	< 5.00	ug/L		3/26/2018 16:23
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		3/26/2018 16:23
1,2-Dibromoethane	< 2.00	ug/L		3/26/2018 16:23
1,2-Dichlorobenzene	< 2.00	ug/L		3/26/2018 16:23
1,2-Dichloroethane	< 2.00	ug/L		3/26/2018 16:23
1,2-Dichloropropane	< 2.00	ug/L		3/26/2018 16:23
1,3-Dichlorobenzene	< 2.00	ug/L		3/26/2018 16:23
1,4-Dichlorobenzene	< 2.00	ug/L		3/26/2018 16:23
1,4-dioxane	< 20.0	ug/L		3/26/2018 16:23
2-Butanone	< 10.0	ug/L		3/26/2018 16:23
2-Hexanone	< 5.00	ug/L		3/26/2018 16:23
4-Methyl-2-pentanone	< 5.00	ug/L		3/26/2018 16:23
Acetone	**8.57**	ug/L	J	3/26/2018 16:23
Benzene	**0.847**	ug/L	J	3/26/2018 16:23
Bromochloromethane	< 5.00	ug/L		3/26/2018 16:23
Bromodichloromethane	< 2.00	ug/L		3/26/2018 16:23
Bromoform	< 5.00	ug/L		3/26/2018 16:23
Bromomethane	< 2.00	ug/L		3/26/2018 16:23
Carbon disulfide	< 2.00	ug/L		3/26/2018 16:23
Carbon Tetrachloride	< 2.00	ug/L		3/26/2018 16:23
Chlorobenzene	< 2.00	ug/L		3/26/2018 16:23

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-16_032118
Lab Sample ID: 181072-05 **Date Sampled:** 3/21/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Chloroethane	< 2.00	ug/L	3/26/2018	16:23
Chloroform	< 2.00	ug/L	3/26/2018	16:23
Chloromethane	< 2.00	ug/L	3/26/2018	16:23
cis-1,2-Dichloroethene	< 2.00	ug/L	3/26/2018	16:23
cis-1,3-Dichloropropene	< 2.00	ug/L	3/26/2018	16:23
Cyclohexane	< 10.0	ug/L	3/26/2018	16:23
Dibromochloromethane	< 2.00	ug/L	3/26/2018	16:23
Dichlorodifluoromethane	< 2.00	ug/L	3/26/2018	16:23
Ethylbenzene	< 2.00	ug/L	3/26/2018	16:23
Freon 113	< 2.00	ug/L	3/26/2018	16:23
Isopropylbenzene	< 2.00	ug/L	3/26/2018	16:23
m,p-Xylene	< 2.00	ug/L	3/26/2018	16:23
Methyl acetate	< 2.00	ug/L	3/26/2018	16:23
Methyl tert-butyl Ether	< 2.00	ug/L	3/26/2018	16:23
Methylcyclohexane	< 2.00	ug/L	3/26/2018	16:23
Methylene chloride	< 5.00	ug/L	3/26/2018	16:23
o-Xylene	< 2.00	ug/L	3/26/2018	16:23
Styrene	< 5.00	ug/L	3/26/2018	16:23
Tetrachloroethene	< 2.00	ug/L	3/26/2018	16:23
Toluene	< 2.00	ug/L	3/26/2018	16:23
trans-1,2-Dichloroethene	< 2.00	ug/L	3/26/2018	16:23
trans-1,3-Dichloropropene	< 2.00	ug/L	3/26/2018	16:23
Trichloroethene	< 2.00	ug/L	3/26/2018	16:23
Trichlorofluoromethane	< 2.00	ug/L	3/26/2018	16:23
Vinyl chloride	< 2.00	ug/L	3/26/2018	16:23

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-16_032118
Lab Sample ID: 181072-05 **Date Sampled:** 3/21/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**105**	77.2 - 121		3/26/2018	16:23
4-Bromofluorobenzene	**94.8**	70 - 123		3/26/2018	16:23
Pentafluorobenzene	**98.3**	85.4 - 110		3/26/2018	16:23
Toluene-D8	**97.8**	83.8 - 112		3/26/2018	16:23

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x49414.D

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-27_032218		
Lab Sample ID:	181072-06	**Date Sampled:**	3/22/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		3/26/2018 09:57

Method Reference(s): EPA 7470A
Preparation Date: 3/23/2018
Data File: Hg180326A

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-27_032218		
Lab Sample ID:	181072-06	**Date Sampled:**	3/22/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		3/28/2018 15:05
Barium	< 0.100	mg/L		3/28/2018 11:07
Cadmium	< 0.00500	mg/L		3/28/2018 11:07
Chromium	< 0.0100	mg/L		3/28/2018 11:07
Lead	< 0.0100	mg/L		3/28/2018 11:07
Selenium	< 0.0200	mg/L		3/28/2018 11:07
Silver	< 0.0100	mg/L		3/28/2018 11:07

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 3/23/2018
Data File: 180328B

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-27_032218		
Lab Sample ID:	181072-06	**Date Sampled:**	3/22/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/26/2018 16:47
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		3/26/2018 16:47
1,1,2-Trichloroethane	< 2.00	ug/L		3/26/2018 16:47
1,1-Dichloroethane	< 2.00	ug/L		3/26/2018 16:47
1,1-Dichloroethene	< 2.00	ug/L		3/26/2018 16:47
1,2,3-Trichlorobenzene	< 5.00	ug/L		3/26/2018 16:47
1,2,4-Trichlorobenzene	< 5.00	ug/L		3/26/2018 16:47
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		3/26/2018 16:47
1,2-Dibromoethane	< 2.00	ug/L		3/26/2018 16:47
1,2-Dichlorobenzene	< 2.00	ug/L		3/26/2018 16:47
1,2-Dichloroethane	< 2.00	ug/L		3/26/2018 16:47
1,2-Dichloropropane	< 2.00	ug/L		3/26/2018 16:47
1,3-Dichlorobenzene	< 2.00	ug/L		3/26/2018 16:47
1,4-Dichlorobenzene	< 2.00	ug/L		3/26/2018 16:47
1,4-dioxane	< 20.0	ug/L		3/26/2018 16:47
2-Butanone	< 10.0	ug/L		3/26/2018 16:47
2-Hexanone	< 5.00	ug/L		3/26/2018 16:47
4-Methyl-2-pentanone	< 5.00	ug/L		3/26/2018 16:47
Acetone	< 10.0	ug/L		3/26/2018 16:47
Benzene	< 1.00	ug/L		3/26/2018 16:47
Bromochloromethane	< 5.00	ug/L		3/26/2018 16:47
Bromodichloromethane	< 2.00	ug/L		3/26/2018 16:47
Bromoform	< 5.00	ug/L		3/26/2018 16:47
Bromomethane	< 2.00	ug/L		3/26/2018 16:47
Carbon disulfide	< 2.00	ug/L		3/26/2018 16:47
Carbon Tetrachloride	< 2.00	ug/L		3/26/2018 16:47
Chlorobenzene	< 2.00	ug/L		3/26/2018 16:47

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-27_032218
Lab Sample ID: 181072-06 **Date Sampled:** 3/22/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Chloroethane	< 2.00	ug/L	3/26/2018	16:47
Chloroform	< 2.00	ug/L	3/26/2018	16:47
Chloromethane	< 2.00	ug/L	3/26/2018	16:47
cis-1,2-Dichloroethene	< 2.00	ug/L	3/26/2018	16:47
cis-1,3-Dichloropropene	< 2.00	ug/L	3/26/2018	16:47
Cyclohexane	< 10.0	ug/L	3/26/2018	16:47
Dibromochloromethane	< 2.00	ug/L	3/26/2018	16:47
Dichlorodifluoromethane	< 2.00	ug/L	3/26/2018	16:47
Ethylbenzene	< 2.00	ug/L	3/26/2018	16:47
Freon 113	< 2.00	ug/L	3/26/2018	16:47
Isopropylbenzene	< 2.00	ug/L	3/26/2018	16:47
m,p-Xylene	< 2.00	ug/L	3/26/2018	16:47
Methyl acetate	< 2.00	ug/L	3/26/2018	16:47
Methyl tert-butyl Ether	< 2.00	ug/L	3/26/2018	16:47
Methylcyclohexane	< 2.00	ug/L	3/26/2018	16:47
Methylene chloride	< 5.00	ug/L	3/26/2018	16:47
o-Xylene	< 2.00	ug/L	3/26/2018	16:47
Styrene	< 5.00	ug/L	3/26/2018	16:47
Tetrachloroethene	< 2.00	ug/L	3/26/2018	16:47
Toluene	< 2.00	ug/L	3/26/2018	16:47
trans-1,2-Dichloroethene	< 2.00	ug/L	3/26/2018	16:47
trans-1,3-Dichloropropene	< 2.00	ug/L	3/26/2018	16:47
Trichloroethene	< 2.00	ug/L	3/26/2018	16:47
Trichlorofluoromethane	< 2.00	ug/L	3/26/2018	16:47
Vinyl chloride	< 2.00	ug/L	3/26/2018	16:47

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-27_032218
Lab Sample ID: 181072-06 **Date Sampled:** 3/22/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**102**	77.2 - 121		3/26/2018	16:47
4-Bromofluorobenzene	**93.6**	70 - 123		3/26/2018	16:47
Pentafluorobenzene	**99.8**	85.4 - 110		3/26/2018	16:47
Toluene-D8	**97.4**	83.8 - 112		3/26/2018	16:47

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x49415.D

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-28_032218		
Lab Sample ID:	181072-07	**Date Sampled:**	3/22/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		3/26/2018 10:00

Method Reference(s): EPA 7470A
Preparation Date: 3/23/2018
Data File: Hg180326A

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.

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-28_032218
Lab Sample ID: 181072-07 **Date Sampled:** 3/22/2018
Matrix: Groundwater **Date Received:** 3/22/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		3/28/2018 15:09
Barium	< 0.100	mg/L		3/28/2018 11:12
Cadmium	< 0.00500	mg/L		3/28/2018 11:12
Chromium	< 0.0100	mg/L		3/28/2018 11:12
Lead	< 0.0100	mg/L		3/28/2018 11:12
Selenium	< 0.0200	mg/L		3/28/2018 11:12
Silver	< 0.0100	mg/L		3/28/2018 11:12

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 3/23/2018
Data File: 180328B

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-28_032218		
Lab Sample ID:	181072-07	**Date Sampled:**	3/22/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/26/2018 17:11
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		3/26/2018 17:11
1,1,2-Trichloroethane	< 2.00	ug/L		3/26/2018 17:11
1,1-Dichloroethane	< 2.00	ug/L		3/26/2018 17:11
1,1-Dichloroethene	< 2.00	ug/L		3/26/2018 17:11
1,2,3-Trichlorobenzene	< 5.00	ug/L		3/26/2018 17:11
1,2,4-Trichlorobenzene	< 5.00	ug/L		3/26/2018 17:11
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		3/26/2018 17:11
1,2-Dibromoethane	< 2.00	ug/L		3/26/2018 17:11
1,2-Dichlorobenzene	< 2.00	ug/L		3/26/2018 17:11
1,2-Dichloroethane	< 2.00	ug/L		3/26/2018 17:11
1,2-Dichloropropane	< 2.00	ug/L		3/26/2018 17:11
1,3-Dichlorobenzene	< 2.00	ug/L		3/26/2018 17:11
1,4-Dichlorobenzene	< 2.00	ug/L		3/26/2018 17:11
1,4-dioxane	< 20.0	ug/L		3/26/2018 17:11
2-Butanone	< 10.0	ug/L		3/26/2018 17:11
2-Hexanone	< 5.00	ug/L		3/26/2018 17:11
4-Methyl-2-pentanone	< 5.00	ug/L		3/26/2018 17:11
Acetone	< 10.0	ug/L		3/26/2018 17:11
Benzene	< 1.00	ug/L		3/26/2018 17:11
Bromochloromethane	< 5.00	ug/L		3/26/2018 17:11
Bromodichloromethane	< 2.00	ug/L		3/26/2018 17:11
Bromoform	< 5.00	ug/L		3/26/2018 17:11
Bromomethane	< 2.00	ug/L		3/26/2018 17:11
Carbon disulfide	< 2.00	ug/L		3/26/2018 17:11
Carbon Tetrachloride	< 2.00	ug/L		3/26/2018 17:11
Chlorobenzene	< 2.00	ug/L		3/26/2018 17:11

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-28_032218		
Lab Sample ID:	181072-07	**Date Sampled:**	3/22/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Chloroethane	< 2.00	ug/L		3/26/2018	17:11
Chloroform	< 2.00	ug/L		3/26/2018	17:11
Chloromethane	< 2.00	ug/L		3/26/2018	17:11
cis-1,2-Dichloroethene	< 2.00	ug/L		3/26/2018	17:11
cis-1,3-Dichloropropene	< 2.00	ug/L		3/26/2018	17:11
Cyclohexane	< 10.0	ug/L		3/26/2018	17:11
Dibromochloromethane	< 2.00	ug/L		3/26/2018	17:11
Dichlorodifluoromethane	< 2.00	ug/L		3/26/2018	17:11
Ethylbenzene	< 2.00	ug/L		3/26/2018	17:11
Freon 113	< 2.00	ug/L		3/26/2018	17:11
Isopropylbenzene	< 2.00	ug/L		3/26/2018	17:11
m,p-Xylene	< 2.00	ug/L		3/26/2018	17:11
Methyl acetate	< 2.00	ug/L		3/26/2018	17:11
Methyl tert-butyl Ether	< 2.00	ug/L		3/26/2018	17:11
Methylcyclohexane	< 2.00	ug/L		3/26/2018	17:11
Methylene chloride	< 5.00	ug/L		3/26/2018	17:11
o-Xylene	< 2.00	ug/L		3/26/2018	17:11
Styrene	< 5.00	ug/L		3/26/2018	17:11
Tetrachloroethene	< 2.00	ug/L		3/26/2018	17:11
Toluene	< 2.00	ug/L		3/26/2018	17:11
trans-1,2-Dichloroethene	< 2.00	ug/L		3/26/2018	17:11
trans-1,3-Dichloropropene	< 2.00	ug/L		3/26/2018	17:11
Trichloroethene	**1.70**	ug/L	J	3/26/2018	17:11
Trichlorofluoromethane	< 2.00	ug/L		3/26/2018	17:11
Vinyl chloride	< 2.00	ug/L		3/26/2018	17:11

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-28_032218
Lab Sample ID: 181072-07 **Date Sampled:** 3/22/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**102**	77.2 - 121		3/26/2018	17:11
4-Bromofluorobenzene	**92.0**	70 - 123		3/26/2018	17:11
Pentafluorobenzene	**98.2**	85.4 - 110		3/26/2018	17:11
Toluene-D8	**97.2**	83.8 - 112		3/26/2018	17:11

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x49416.D

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-29_032218		
Lab Sample ID:	181072-08	**Date Sampled:**	3/22/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		3/26/2018 10:02

Method Reference(s): EPA 7470A
Preparation Date: 3/23/2018
Data File: Hg180326A

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-29_032218		
Lab Sample ID:	181072-08	**Date Sampled:**	3/22/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		3/28/2018 15:14
Barium	**0.0571**	mg/L	J	3/28/2018 11:16
Cadmium	**0.00386**	mg/L	J	3/28/2018 11:16
Chromium	< 0.0100	mg/L		3/28/2018 11:16
Lead	< 0.0100	mg/L		3/28/2018 11:16
Selenium	< 0.0200	mg/L		3/28/2018 11:16
Silver	< 0.0100	mg/L		3/28/2018 11:16

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 3/23/2018
Data File: 180328B

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-29_032218		
Lab Sample ID:	181072-08	**Date Sampled:**	3/22/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/26/2018 17:34
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		3/26/2018 17:34
1,1,2-Trichloroethane	< 2.00	ug/L		3/26/2018 17:34
1,1-Dichloroethane	< 2.00	ug/L		3/26/2018 17:34
1,1-Dichloroethene	< 2.00	ug/L		3/26/2018 17:34
1,2,3-Trichlorobenzene	< 5.00	ug/L		3/26/2018 17:34
1,2,4-Trichlorobenzene	< 5.00	ug/L		3/26/2018 17:34
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		3/26/2018 17:34
1,2-Dibromoethane	< 2.00	ug/L		3/26/2018 17:34
1,2-Dichlorobenzene	< 2.00	ug/L		3/26/2018 17:34
1,2-Dichloroethane	< 2.00	ug/L		3/26/2018 17:34
1,2-Dichloropropane	< 2.00	ug/L		3/26/2018 17:34
1,3-Dichlorobenzene	< 2.00	ug/L		3/26/2018 17:34
1,4-Dichlorobenzene	< 2.00	ug/L		3/26/2018 17:34
1,4-dioxane	< 20.0	ug/L		3/26/2018 17:34
2-Butanone	< 10.0	ug/L		3/26/2018 17:34
2-Hexanone	< 5.00	ug/L		3/26/2018 17:34
4-Methyl-2-pentanone	< 5.00	ug/L		3/26/2018 17:34
Acetone	< 10.0	ug/L		3/26/2018 17:34
Benzene	< 1.00	ug/L		3/26/2018 17:34
Bromochloromethane	< 5.00	ug/L		3/26/2018 17:34
Bromodichloromethane	< 2.00	ug/L		3/26/2018 17:34
Bromoform	< 5.00	ug/L		3/26/2018 17:34
Bromomethane	< 2.00	ug/L		3/26/2018 17:34
Carbon disulfide	< 2.00	ug/L		3/26/2018 17:34
Carbon Tetrachloride	< 2.00	ug/L		3/26/2018 17:34
Chlorobenzene	< 2.00	ug/L		3/26/2018 17:34

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-29_032218		
Lab Sample ID:	181072-08	**Date Sampled:**	3/22/2018
Matrix:	Groundwater	**Date Received:**	3/22/2018

Chloroethane	< 2.00	ug/L		3/26/2018	17:34
Chloroform	< 2.00	ug/L		3/26/2018	17:34
Chloromethane	< 2.00	ug/L		3/26/2018	17:34
cis-1,2-Dichloroethene	< 2.00	ug/L		3/26/2018	17:34
cis-1,3-Dichloropropene	< 2.00	ug/L		3/26/2018	17:34
Cyclohexane	< 10.0	ug/L		3/26/2018	17:34
Dibromochloromethane	< 2.00	ug/L		3/26/2018	17:34
Dichlorodifluoromethane	< 2.00	ug/L		3/26/2018	17:34
Ethylbenzene	< 2.00	ug/L		3/26/2018	17:34
Freon 113	< 2.00	ug/L		3/26/2018	17:34
Isopropylbenzene	< 2.00	ug/L		3/26/2018	17:34
m,p-Xylene	< 2.00	ug/L		3/26/2018	17:34
Methyl acetate	< 2.00	ug/L		3/26/2018	17:34
Methyl tert-butyl Ether	< 2.00	ug/L		3/26/2018	17:34
Methylcyclohexane	< 2.00	ug/L		3/26/2018	17:34
Methylene chloride	< 5.00	ug/L		3/26/2018	17:34
o-Xylene	< 2.00	ug/L		3/26/2018	17:34
Styrene	< 5.00	ug/L		3/26/2018	17:34
Tetrachloroethene	< 2.00	ug/L		3/26/2018	17:34
Toluene	< 2.00	ug/L		3/26/2018	17:34
trans-1,2-Dichloroethene	< 2.00	ug/L		3/26/2018	17:34
trans-1,3-Dichloropropene	< 2.00	ug/L		3/26/2018	17:34
Trichloroethene	**1.32**	ug/L	J	3/26/2018	17:34
Trichlorofluoromethane	< 2.00	ug/L		3/26/2018	17:34
Vinyl chloride	< 2.00	ug/L		3/26/2018	17:34

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-29_032218
Lab Sample ID: 181072-08 **Date Sampled:** 3/22/2018
Matrix: Groundwater **Date Received:** 3/22/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**103**	77.2 - 121		3/26/2018 17:34
4-Bromofluorobenzene	**91.9**	70 - 123		3/26/2018 17:34
Pentafluorobenzene	**97.9**	85.4 - 110		3/26/2018 17:34
Toluene-D8	**98.7**	83.8 - 112		3/26/2018 17:34

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x49417.D

Report Prepared Thursday, March 29, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: Trip Blank
Lab Sample ID: 181072-09 **Date Sampled:** 3/21/2018
Matrix: Water **Date Received:** 3/22/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		3/26/2018 14:25
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		3/26/2018 14:25
1,1,2-Trichloroethane	< 2.00	ug/L		3/26/2018 14:25
1,1-Dichloroethane	< 2.00	ug/L		3/26/2018 14:25
1,1-Dichloroethene	< 2.00	ug/L		3/26/2018 14:25
1,2,3-Trichlorobenzene	< 5.00	ug/L		3/26/2018 14:25
1,2,4-Trichlorobenzene	< 5.00	ug/L		3/26/2018 14:25
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		3/26/2018 14:25
1,2-Dibromoethane	< 2.00	ug/L		3/26/2018 14:25
1,2-Dichlorobenzene	< 2.00	ug/L		3/26/2018 14:25
1,2-Dichloroethane	< 2.00	ug/L		3/26/2018 14:25
1,2-Dichloropropane	< 2.00	ug/L		3/26/2018 14:25
1,3-Dichlorobenzene	< 2.00	ug/L		3/26/2018 14:25
1,4-Dichlorobenzene	< 2.00	ug/L		3/26/2018 14:25
1,4-dioxane	< 20.0	ug/L		3/26/2018 14:25
2-Butanone	< 10.0	ug/L		3/26/2018 14:25
2-Hexanone	< 5.00	ug/L		3/26/2018 14:25
4-Methyl-2-pentanone	< 5.00	ug/L		3/26/2018 14:25
Acetone	< 10.0	ug/L		3/26/2018 14:25
Benzene	< 1.00	ug/L		3/26/2018 14:25
Bromochloromethane	< 5.00	ug/L		3/26/2018 14:25
Bromodichloromethane	< 2.00	ug/L		3/26/2018 14:25
Bromoform	< 5.00	ug/L		3/26/2018 14:25
Bromomethane	< 2.00	ug/L		3/26/2018 14:25
Carbon disulfide	< 2.00	ug/L		3/26/2018 14:25
Carbon Tetrachloride	< 2.00	ug/L		3/26/2018 14:25
Chlorobenzene	< 2.00	ug/L		3/26/2018 14:25

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: Trip Blank
Lab Sample ID: 181072-09 **Date Sampled:** 3/21/2018
Matrix: Water **Date Received:** 3/22/2018

Chloroethane	< 2.00	ug/L	3/26/2018	14:25
Chloroform	< 2.00	ug/L	3/26/2018	14:25
Chloromethane	< 2.00	ug/L	3/26/2018	14:25
cis-1,2-Dichloroethene	< 2.00	ug/L	3/26/2018	14:25
cis-1,3-Dichloropropene	< 2.00	ug/L	3/26/2018	14:25
Cyclohexane	< 10.0	ug/L	3/26/2018	14:25
Dibromochloromethane	< 2.00	ug/L	3/26/2018	14:25
Dichlorodifluoromethane	< 2.00	ug/L	3/26/2018	14:25
Ethylbenzene	< 2.00	ug/L	3/26/2018	14:25
Freon 113	< 2.00	ug/L	3/26/2018	14:25
Isopropylbenzene	< 2.00	ug/L	3/26/2018	14:25
m,p-Xylene	< 2.00	ug/L	3/26/2018	14:25
Methyl acetate	< 2.00	ug/L	3/26/2018	14:25
Methyl tert-butyl Ether	< 2.00	ug/L	3/26/2018	14:25
Methylcyclohexane	< 2.00	ug/L	3/26/2018	14:25
Methylene chloride	< 5.00	ug/L	3/26/2018	14:25
o-Xylene	< 2.00	ug/L	3/26/2018	14:25
Styrene	< 5.00	ug/L	3/26/2018	14:25
Tetrachloroethene	< 2.00	ug/L	3/26/2018	14:25
Toluene	< 2.00	ug/L	3/26/2018	14:25
trans-1,2-Dichloroethene	< 2.00	ug/L	3/26/2018	14:25
trans-1,3-Dichloropropene	< 2.00	ug/L	3/26/2018	14:25
Trichloroethene	< 2.00	ug/L	3/26/2018	14:25
Trichlorofluoromethane	< 2.00	ug/L	3/26/2018	14:25
Vinyl chloride	< 2.00	ug/L	3/26/2018	14:25

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181072

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: Trip Blank
Lab Sample ID: 181072-09 **Date Sampled:** 3/21/2018
Matrix: Water **Date Received:** 3/22/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**100**	77.2 - 121		3/26/2018	14:25
4-Bromofluorobenzene	**92.7**	70 - 123		3/26/2018	14:25
Pentafluorobenzene	**101**	85.4 - 110		3/26/2018	14:25
Toluene-D8	**96.7**	83.8 - 112		3/26/2018	14:25

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x49409.D

Report Prepared Thursday, March 29, 2018

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, term, 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 will 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 the 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:	LaBella Engineers	CLIENT:		LAB PROJECT ID: 181072
ADDRESS:	339 East Avenue, Suite 200	ADDRESS:	SAME	
CITY:	Rochester STATE: NY ZIP 14604	CITY:	STATE: ZIP:	Quotation #:
PHONE:	585-385-7417	PHONE:		Email: gregandres@labellaengineers.com
ATTN:	Greg Andres	ATTN:		

PROJECT REFERENCE: Orchard-Whitney 4216-08

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	TCL VOCs 8260	RCRA Metals	REMARKS	PARADIGM LAB SAMPLE NUMBER
3/21/18	13:28		✓	OW-MW-22_032118	WG	3	✓	✓		01
3/21/18	9:35		✓	OW-MW-23_032118	WG	3	✓	✓		02
3/21/18	9:30		✓	OW-MW-23-MS_032118	WG	3	✓	✓		~~03~~ 02
3/21/18	9:40		✓	OW-MW-23-MSD_032118	WG	3	✓	✓		~~04~~ 03 3/22/18
3/21/18	12:35		✓	OW-MW-26_032118	WG	3	✓	✓		~~05~~ 03
3/21/18			✓	OW-MW-Field Duplicate	WG	3	✓	✓		04
3/21/18	10:45		✓	OW-MW-16_032118	WG	3	✓	✓		05
3/22/18	10:31		✓	OW-MW-27_032218	WG	3	✓	✓		06
3/22/18	11:40		✓	OW-MW-28_032218	WG	3	✓	✓		07
3/22/18	10:55		✓	OW-MW-29_032218	WG	3	✓	✓		08
				Trip Blank_T-813	WA	1				09

Turnaround Time		Report Supplements (per Sample label 03/23/18)			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	X	None Required		None Required	
10 day		Batch QC		Basic EDD	
Rush 3 day		Category A		NYSDEC EDD	X
Rush 2 day		Category B	X		
Rush 1 day					
Other		Other		Other EDD	
please indicate date needed:		please indicate package needed:		please indicate EDD needed :	

Sampled By: Laura K Hagen — Date/Time: 3/22/18 12:10

Relinquished By: Brian Sutton — Date/Time: 3/22/18 12:25

Received By: Deutsch Bros — Date/Time: 3/22/18 12:25

Received @ Lab By: [signature] — Date/Time: 3/22/18 16:17

Total Cost:

P.I.F.

S'Cired 3/22/18 13:30

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: 181072 **Date:** 3/22/18

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 VOA		X
Comments			
Preservation	X VOA		X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		X Metals
Comments	3°C iced 3/22/18 13:30		
Sufficient Sample Quantity	X		
Comments			

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-22_050418		
Lab Sample ID:	181872-01	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		5/10/2018 10:45

Method Reference(s): EPA 7470A
Preparation Date: 5/9/2018
Data File: Hg180510A

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.

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-22_050418		
Lab Sample ID:	181872-01	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		5/10/2018 16:37
Barium	**0.0645**	mg/L	J	5/10/2018 16:37
Cadmium	< 0.00500	mg/L		5/10/2018 16:37
Chromium	**0.0119**	mg/L		5/10/2018 16:37
Lead	< 0.0100	mg/L		5/10/2018 16:37
Selenium	< 0.0200	mg/L		5/10/2018 16:37
Silver	< 0.0100	mg/L		5/10/2018 16:37

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 5/7/2018
Data File: 180510C

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-22_050418		
Lab Sample ID:	181872-01	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		5/10/2018 19:08
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		5/10/2018 19:08
1,1,2-Trichloroethane	< 2.00	ug/L		5/10/2018 19:08
1,1-Dichloroethane	< 2.00	ug/L		5/10/2018 19:08
1,1-Dichloroethene	< 2.00	ug/L		5/10/2018 19:08
1,2,3-Trichlorobenzene	< 5.00	ug/L		5/10/2018 19:08
1,2,4-Trichlorobenzene	< 5.00	ug/L		5/10/2018 19:08
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		5/10/2018 19:08
1,2-Dibromoethane	< 2.00	ug/L		5/10/2018 19:08
1,2-Dichlorobenzene	< 2.00	ug/L		5/10/2018 19:08
1,2-Dichloroethane	< 2.00	ug/L		5/10/2018 19:08
1,2-Dichloropropane	< 2.00	ug/L		5/10/2018 19:08
1,3-Dichlorobenzene	< 2.00	ug/L		5/10/2018 19:08
1,4-Dichlorobenzene	< 2.00	ug/L		5/10/2018 19:08
1,4-dioxane	< 20.0	ug/L		5/10/2018 19:08
2-Butanone	< 10.0	ug/L		5/10/2018 19:08
2-Hexanone	< 5.00	ug/L		5/10/2018 19:08
4-Methyl-2-pentanone	< 5.00	ug/L		5/10/2018 19:08
Acetone	< 10.0	ug/L		5/10/2018 19:08
Benzene	< 1.00	ug/L		5/10/2018 19:08
Bromochloromethane	< 5.00	ug/L		5/10/2018 19:08
Bromodichloromethane	< 2.00	ug/L		5/10/2018 19:08
Bromoform	< 5.00	ug/L		5/10/2018 19:08
Bromomethane	< 2.00	ug/L		5/10/2018 19:08
Carbon disulfide	< 2.00	ug/L		5/10/2018 19:08
Carbon Tetrachloride	< 2.00	ug/L		5/10/2018 19:08
Chlorobenzene	< 2.00	ug/L		5/10/2018 19:08

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-22_050418
Lab Sample ID: 181872-01 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Chloroethane	< 2.00	ug/L	5/10/2018	19:08
Chloroform	< 2.00	ug/L	5/10/2018	19:08
Chloromethane	< 2.00	ug/L	5/10/2018	19:08
cis-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	19:08
cis-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	19:08
Cyclohexane	< 10.0	ug/L	5/10/2018	19:08
Dibromochloromethane	< 2.00	ug/L	5/10/2018	19:08
Dichlorodifluoromethane	< 2.00	ug/L	5/10/2018	19:08
Ethylbenzene	< 2.00	ug/L	5/10/2018	19:08
Freon 113	< 2.00	ug/L	5/10/2018	19:08
Isopropylbenzene	< 2.00	ug/L	5/10/2018	19:08
m,p-Xylene	< 2.00	ug/L	5/10/2018	19:08
Methyl acetate	< 2.00	ug/L	5/10/2018	19:08
Methyl tert-butyl Ether	< 2.00	ug/L	5/10/2018	19:08
Methylcyclohexane	< 2.00	ug/L	5/10/2018	19:08
Methylene chloride	< 5.00	ug/L	5/10/2018	19:08
o-Xylene	< 2.00	ug/L	5/10/2018	19:08
Styrene	< 5.00	ug/L	5/10/2018	19:08
Tetrachloroethene	< 2.00	ug/L	5/10/2018	19:08
Toluene	< 2.00	ug/L	5/10/2018	19:08
trans-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	19:08
trans-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	19:08
Trichloroethene	< 2.00	ug/L	5/10/2018	19:08
Trichlorofluoromethane	< 2.00	ug/L	5/10/2018	19:08
Vinyl chloride	< 2.00	ug/L	5/10/2018	19:08

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-22_050418
Lab Sample ID: 181872-01 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**105**	77.2 - 121		5/10/2018	19:08
4-Bromofluorobenzene	**93.7**	70 - 123		5/10/2018	19:08
Pentafluorobenzene	**97.3**	85.4 - 110		5/10/2018	19:08
Toluene-D8	**95.6**	83.8 - 112		5/10/2018	19:08

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x50574.D

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-23_050418		
Lab Sample ID:	181872-02	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		5/10/2018 10:48

Method Reference(s): EPA 7470A
Preparation Date: 5/9/2018
Data File: Hg180510A

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-23_050418		
Lab Sample ID:	181872-02	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		5/10/2018 16:41
Barium	**0.105**	mg/L		5/10/2018 16:41
Cadmium	< 0.00500	mg/L		5/10/2018 16:41
Chromium	< 0.0100	mg/L		5/10/2018 16:41
Lead	**0.00586**	mg/L	J	5/10/2018 16:41
Selenium	**0.0113**	mg/L	J	5/10/2018 16:41
Silver	< 0.0100	mg/L		5/10/2018 16:41

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 5/7/2018
Data File: 180510C

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-23_050418
Lab Sample ID: 181872-02 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		5/10/2018 19:32
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		5/10/2018 19:32
1,1,2-Trichloroethane	< 2.00	ug/L		5/10/2018 19:32
1,1-Dichloroethane	< 2.00	ug/L		5/10/2018 19:32
1,1-Dichloroethene	< 2.00	ug/L		5/10/2018 19:32
1,2,3-Trichlorobenzene	< 5.00	ug/L		5/10/2018 19:32
1,2,4-Trichlorobenzene	< 5.00	ug/L		5/10/2018 19:32
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		5/10/2018 19:32
1,2-Dibromoethane	< 2.00	ug/L		5/10/2018 19:32
1,2-Dichlorobenzene	< 2.00	ug/L		5/10/2018 19:32
1,2-Dichloroethane	< 2.00	ug/L		5/10/2018 19:32
1,2-Dichloropropane	< 2.00	ug/L		5/10/2018 19:32
1,3-Dichlorobenzene	< 2.00	ug/L		5/10/2018 19:32
1,4-Dichlorobenzene	< 2.00	ug/L		5/10/2018 19:32
1,4-dioxane	< 20.0	ug/L		5/10/2018 19:32
2-Butanone	< 10.0	ug/L		5/10/2018 19:32
2-Hexanone	< 5.00	ug/L		5/10/2018 19:32
4-Methyl-2-pentanone	< 5.00	ug/L		5/10/2018 19:32
Acetone	< 10.0	ug/L		5/10/2018 19:32
Benzene	< 1.00	ug/L		5/10/2018 19:32
Bromochloromethane	< 5.00	ug/L		5/10/2018 19:32
Bromodichloromethane	< 2.00	ug/L		5/10/2018 19:32
Bromoform	< 5.00	ug/L		5/10/2018 19:32
Bromomethane	< 2.00	ug/L		5/10/2018 19:32
Carbon disulfide	< 2.00	ug/L		5/10/2018 19:32
Carbon Tetrachloride	< 2.00	ug/L		5/10/2018 19:32
Chlorobenzene	< 2.00	ug/L		5/10/2018 19:32

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-23_050418
Lab Sample ID: 181872-02 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Chloroethane	< 2.00	ug/L	5/10/2018	19:32
Chloroform	< 2.00	ug/L	5/10/2018	19:32
Chloromethane	< 2.00	ug/L	5/10/2018	19:32
cis-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	19:32
cis-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	19:32
Cyclohexane	< 10.0	ug/L	5/10/2018	19:32
Dibromochloromethane	< 2.00	ug/L	5/10/2018	19:32
Dichlorodifluoromethane	< 2.00	ug/L	5/10/2018	19:32
Ethylbenzene	< 2.00	ug/L	5/10/2018	19:32
Freon 113	< 2.00	ug/L	5/10/2018	19:32
Isopropylbenzene	< 2.00	ug/L	5/10/2018	19:32
m,p-Xylene	< 2.00	ug/L	5/10/2018	19:32
Methyl acetate	< 2.00	ug/L	5/10/2018	19:32
Methyl tert-butyl Ether	< 2.00	ug/L	5/10/2018	19:32
Methylcyclohexane	< 2.00	ug/L	5/10/2018	19:32
Methylene chloride	< 5.00	ug/L	5/10/2018	19:32
o-Xylene	< 2.00	ug/L	5/10/2018	19:32
Styrene	< 5.00	ug/L	5/10/2018	19:32
Tetrachloroethene	< 2.00	ug/L	5/10/2018	19:32
Toluene	< 2.00	ug/L	5/10/2018	19:32
trans-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	19:32
trans-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	19:32
Trichloroethene	< 2.00	ug/L	5/10/2018	19:32
Trichlorofluoromethane	< 2.00	ug/L	5/10/2018	19:32
Vinyl chloride	< 2.00	ug/L	5/10/2018	19:32

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-23_050418
Lab Sample ID: 181872-02 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**106**	77.2 - 121		5/10/2018	19:32
4-Bromofluorobenzene	**95.4**	70 - 123		5/10/2018	19:32
Pentafluorobenzene	**97.4**	85.4 - 110		5/10/2018	19:32
Toluene-D8	**95.2**	83.8 - 112		5/10/2018	19:32

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x50575.D

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-16_050418		
Lab Sample ID:	181872-03	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		5/10/2018 10:51

Method Reference(s): EPA 7470A
Preparation Date: 5/9/2018
Data File: Hg180510A

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-16_050418		
Lab Sample ID:	181872-03	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	**0.0106**	mg/L		5/10/2018 16:45
Barium	< 0.100	mg/L		5/10/2018 16:45
Cadmium	< 0.00500	mg/L		5/10/2018 16:45
Chromium	**0.00654**	mg/L	J	5/10/2018 16:45
Lead	< 0.0100	mg/L		5/10/2018 16:45
Selenium	< 0.0200	mg/L		5/10/2018 16:45
Silver	< 0.0100	mg/L		5/10/2018 16:45

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 5/7/2018
Data File: 180510C

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-16_050418		
Lab Sample ID:	181872-03	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		5/10/2018 19:55
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		5/10/2018 19:55
1,1,2-Trichloroethane	< 2.00	ug/L		5/10/2018 19:55
1,1-Dichloroethane	< 2.00	ug/L		5/10/2018 19:55
1,1-Dichloroethene	< 2.00	ug/L		5/10/2018 19:55
1,2,3-Trichlorobenzene	< 5.00	ug/L		5/10/2018 19:55
1,2,4-Trichlorobenzene	< 5.00	ug/L		5/10/2018 19:55
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		5/10/2018 19:55
1,2-Dibromoethane	< 2.00	ug/L		5/10/2018 19:55
1,2-Dichlorobenzene	< 2.00	ug/L		5/10/2018 19:55
1,2-Dichloroethane	< 2.00	ug/L		5/10/2018 19:55
1,2-Dichloropropane	< 2.00	ug/L		5/10/2018 19:55
1,3-Dichlorobenzene	< 2.00	ug/L		5/10/2018 19:55
1,4-Dichlorobenzene	< 2.00	ug/L		5/10/2018 19:55
1,4-dioxane	< 20.0	ug/L		5/10/2018 19:55
2-Butanone	< 10.0	ug/L		5/10/2018 19:55
2-Hexanone	< 5.00	ug/L		5/10/2018 19:55
4-Methyl-2-pentanone	< 5.00	ug/L		5/10/2018 19:55
Acetone	**11.3**	ug/L		5/10/2018 19:55
Benzene	**0.991**	ug/L	J	5/10/2018 19:55
Bromochloromethane	< 5.00	ug/L		5/10/2018 19:55
Bromodichloromethane	< 2.00	ug/L		5/10/2018 19:55
Bromoform	< 5.00	ug/L		5/10/2018 19:55
Bromomethane	< 2.00	ug/L		5/10/2018 19:55
Carbon disulfide	< 2.00	ug/L		5/10/2018 19:55
Carbon Tetrachloride	< 2.00	ug/L		5/10/2018 19:55
Chlorobenzene	< 2.00	ug/L		5/10/2018 19:55

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-16_050418
Lab Sample ID: 181872-03 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Chloroethane	< 2.00	ug/L	5/10/2018	19:55
Chloroform	< 2.00	ug/L	5/10/2018	19:55
Chloromethane	< 2.00	ug/L	5/10/2018	19:55
cis-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	19:55
cis-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	19:55
Cyclohexane	< 10.0	ug/L	5/10/2018	19:55
Dibromochloromethane	< 2.00	ug/L	5/10/2018	19:55
Dichlorodifluoromethane	< 2.00	ug/L	5/10/2018	19:55
Ethylbenzene	< 2.00	ug/L	5/10/2018	19:55
Freon 113	< 2.00	ug/L	5/10/2018	19:55
Isopropylbenzene	< 2.00	ug/L	5/10/2018	19:55
m,p-Xylene	< 2.00	ug/L	5/10/2018	19:55
Methyl acetate	< 2.00	ug/L	5/10/2018	19:55
Methyl tert-butyl Ether	< 2.00	ug/L	5/10/2018	19:55
Methylcyclohexane	< 2.00	ug/L	5/10/2018	19:55
Methylene chloride	< 5.00	ug/L	5/10/2018	19:55
o-Xylene	< 2.00	ug/L	5/10/2018	19:55
Styrene	< 5.00	ug/L	5/10/2018	19:55
Tetrachloroethene	< 2.00	ug/L	5/10/2018	19:55
Toluene	< 2.00	ug/L	5/10/2018	19:55
trans-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	19:55
trans-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	19:55
Trichloroethene	< 2.00	ug/L	5/10/2018	19:55
Trichlorofluoromethane	< 2.00	ug/L	5/10/2018	19:55
Vinyl chloride	< 2.00	ug/L	5/10/2018	19:55

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-16_050418
Lab Sample ID: 181872-03 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**107**	77.2 - 121		5/10/2018	19:55
4-Bromofluorobenzene	**95.9**	70 - 123		5/10/2018	19:55
Pentafluorobenzene	**99.4**	85.4 - 110		5/10/2018	19:55
Toluene-D8	**94.7**	83.8 - 112		5/10/2018	19:55

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x50576.D

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-26_050418		
Lab Sample ID:	181872-04	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		5/10/2018 10:54

Method Reference(s): EPA 7470A
Preparation Date: 5/9/2018
Data File: Hg180510A

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.

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-26_050418		
Lab Sample ID:	181872-04	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		5/10/2018 16:50
Barium	**0.0576**	mg/L	J	5/10/2018 16:50
Cadmium	< 0.00500	mg/L		5/10/2018 16:50
Chromium	**0.00997**	mg/L	J	5/10/2018 16:50
Lead	< 0.0100	mg/L		5/10/2018 16:50
Selenium	**0.0158**	mg/L	J	5/10/2018 16:50
Silver	< 0.0100	mg/L		5/10/2018 16:50

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 5/7/2018
Data File: 180510C

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-26_050418		
Lab Sample ID:	181872-04	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		5/10/2018 20:18
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		5/10/2018 20:18
1,1,2-Trichloroethane	< 2.00	ug/L		5/10/2018 20:18
1,1-Dichloroethane	< 2.00	ug/L		5/10/2018 20:18
1,1-Dichloroethene	< 2.00	ug/L		5/10/2018 20:18
1,2,3-Trichlorobenzene	< 5.00	ug/L		5/10/2018 20:18
1,2,4-Trichlorobenzene	< 5.00	ug/L		5/10/2018 20:18
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		5/10/2018 20:18
1,2-Dibromoethane	< 2.00	ug/L		5/10/2018 20:18
1,2-Dichlorobenzene	< 2.00	ug/L		5/10/2018 20:18
1,2-Dichloroethane	< 2.00	ug/L		5/10/2018 20:18
1,2-Dichloropropane	< 2.00	ug/L		5/10/2018 20:18
1,3-Dichlorobenzene	< 2.00	ug/L		5/10/2018 20:18
1,4-Dichlorobenzene	< 2.00	ug/L		5/10/2018 20:18
1,4-dioxane	< 20.0	ug/L		5/10/2018 20:18
2-Butanone	< 10.0	ug/L		5/10/2018 20:18
2-Hexanone	< 5.00	ug/L		5/10/2018 20:18
4-Methyl-2-pentanone	< 5.00	ug/L		5/10/2018 20:18
Acetone	< 10.0	ug/L		5/10/2018 20:18
Benzene	< 1.00	ug/L		5/10/2018 20:18
Bromochloromethane	< 5.00	ug/L		5/10/2018 20:18
Bromodichloromethane	< 2.00	ug/L		5/10/2018 20:18
Bromoform	< 5.00	ug/L		5/10/2018 20:18
Bromomethane	< 2.00	ug/L		5/10/2018 20:18
Carbon disulfide	< 2.00	ug/L		5/10/2018 20:18
Carbon Tetrachloride	< 2.00	ug/L		5/10/2018 20:18
Chlorobenzene	< 2.00	ug/L		5/10/2018 20:18

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-26_050418
Lab Sample ID: 181872-04 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Chloroethane	< 2.00	ug/L	5/10/2018	20:18
Chloroform	< 2.00	ug/L	5/10/2018	20:18
Chloromethane	< 2.00	ug/L	5/10/2018	20:18
cis-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	20:18
cis-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	20:18
Cyclohexane	< 10.0	ug/L	5/10/2018	20:18
Dibromochloromethane	< 2.00	ug/L	5/10/2018	20:18
Dichlorodifluoromethane	< 2.00	ug/L	5/10/2018	20:18
Ethylbenzene	< 2.00	ug/L	5/10/2018	20:18
Freon 113	< 2.00	ug/L	5/10/2018	20:18
Isopropylbenzene	< 2.00	ug/L	5/10/2018	20:18
m,p-Xylene	< 2.00	ug/L	5/10/2018	20:18
Methyl acetate	< 2.00	ug/L	5/10/2018	20:18
Methyl tert-butyl Ether	< 2.00	ug/L	5/10/2018	20:18
Methylcyclohexane	< 2.00	ug/L	5/10/2018	20:18
Methylene chloride	< 5.00	ug/L	5/10/2018	20:18
o-Xylene	< 2.00	ug/L	5/10/2018	20:18
Styrene	< 5.00	ug/L	5/10/2018	20:18
Tetrachloroethene	< 2.00	ug/L	5/10/2018	20:18
Toluene	< 2.00	ug/L	5/10/2018	20:18
trans-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	20:18
trans-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	20:18
Trichloroethene	< 2.00	ug/L	5/10/2018	20:18
Trichlorofluoromethane	< 2.00	ug/L	5/10/2018	20:18
Vinyl chloride	< 2.00	ug/L	5/10/2018	20:18

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-26_050418
Lab Sample ID: 181872-04 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**107**	77.2 - 121		5/10/2018	20:18
4-Bromofluorobenzene	**93.8**	70 - 123		5/10/2018	20:18
Pentafluorobenzene	**93.6**	85.4 - 110		5/10/2018	20:18
Toluene-D8	**95.9**	83.8 - 112		5/10/2018	20:18

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x50577.D

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-27_050418		
Lab Sample ID:	181872-05	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		5/10/2018 10:57

Method Reference(s): EPA 7470A
Preparation Date: 5/9/2018
Data File: Hg180510A

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-27_050418		
Lab Sample ID:	181872-05	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		5/10/2018 16:54
Barium	< 0.100	mg/L		5/10/2018 16:54
Cadmium	< 0.00500	mg/L		5/10/2018 16:54
Chromium	< 0.0100	mg/L		5/10/2018 16:54
Lead	< 0.0100	mg/L		5/10/2018 16:54
Selenium	**0.0137**	mg/L	J	5/10/2018 16:54
Silver	< 0.0100	mg/L		5/10/2018 16:54

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 5/7/2018
Data File: 180510C

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-27_050418		
Lab Sample ID:	181872-05	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		5/10/2018 20:42
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		5/10/2018 20:42
1,1,2-Trichloroethane	< 2.00	ug/L		5/10/2018 20:42
1,1-Dichloroethane	< 2.00	ug/L		5/10/2018 20:42
1,1-Dichloroethene	< 2.00	ug/L		5/10/2018 20:42
1,2,3-Trichlorobenzene	< 5.00	ug/L		5/10/2018 20:42
1,2,4-Trichlorobenzene	< 5.00	ug/L		5/10/2018 20:42
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		5/10/2018 20:42
1,2-Dibromoethane	< 2.00	ug/L		5/10/2018 20:42
1,2-Dichlorobenzene	< 2.00	ug/L		5/10/2018 20:42
1,2-Dichloroethane	< 2.00	ug/L		5/10/2018 20:42
1,2-Dichloropropane	< 2.00	ug/L		5/10/2018 20:42
1,3-Dichlorobenzene	< 2.00	ug/L		5/10/2018 20:42
1,4-Dichlorobenzene	< 2.00	ug/L		5/10/2018 20:42
1,4-dioxane	< 20.0	ug/L		5/10/2018 20:42
2-Butanone	< 10.0	ug/L		5/10/2018 20:42
2-Hexanone	< 5.00	ug/L		5/10/2018 20:42
4-Methyl-2-pentanone	< 5.00	ug/L		5/10/2018 20:42
Acetone	< 10.0	ug/L		5/10/2018 20:42
Benzene	< 1.00	ug/L		5/10/2018 20:42
Bromochloromethane	< 5.00	ug/L		5/10/2018 20:42
Bromodichloromethane	< 2.00	ug/L		5/10/2018 20:42
Bromoform	< 5.00	ug/L		5/10/2018 20:42
Bromomethane	< 2.00	ug/L		5/10/2018 20:42
Carbon disulfide	< 2.00	ug/L		5/10/2018 20:42
Carbon Tetrachloride	< 2.00	ug/L		5/10/2018 20:42
Chlorobenzene	< 2.00	ug/L		5/10/2018 20:42

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-27_050418
Lab Sample ID: 181872-05 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Chloroethane	< 2.00	ug/L	5/10/2018	20:42
Chloroform	< 2.00	ug/L	5/10/2018	20:42
Chloromethane	< 2.00	ug/L	5/10/2018	20:42
cis-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	20:42
cis-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	20:42
Cyclohexane	< 10.0	ug/L	5/10/2018	20:42
Dibromochloromethane	< 2.00	ug/L	5/10/2018	20:42
Dichlorodifluoromethane	< 2.00	ug/L	5/10/2018	20:42
Ethylbenzene	< 2.00	ug/L	5/10/2018	20:42
Freon 113	< 2.00	ug/L	5/10/2018	20:42
Isopropylbenzene	< 2.00	ug/L	5/10/2018	20:42
m,p-Xylene	< 2.00	ug/L	5/10/2018	20:42
Methyl acetate	< 2.00	ug/L	5/10/2018	20:42
Methyl tert-butyl Ether	< 2.00	ug/L	5/10/2018	20:42
Methylcyclohexane	< 2.00	ug/L	5/10/2018	20:42
Methylene chloride	< 5.00	ug/L	5/10/2018	20:42
o-Xylene	< 2.00	ug/L	5/10/2018	20:42
Styrene	< 5.00	ug/L	5/10/2018	20:42
Tetrachloroethene	< 2.00	ug/L	5/10/2018	20:42
Toluene	< 2.00	ug/L	5/10/2018	20:42
trans-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	20:42
trans-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	20:42
Trichloroethene	< 2.00	ug/L	5/10/2018	20:42
Trichlorofluoromethane	< 2.00	ug/L	5/10/2018	20:42
Vinyl chloride	< 2.00	ug/L	5/10/2018	20:42

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-27_050418
Lab Sample ID: 181872-05 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**109**	77.2 - 121		5/10/2018	20:42
4-Bromofluorobenzene	**93.3**	70 - 123		5/10/2018	20:42
Pentafluorobenzene	**95.4**	85.4 - 110		5/10/2018	20:42
Toluene-D8	**95.0**	83.8 - 112		5/10/2018	20:42

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x50578.D

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-28_050418		
Lab Sample ID:	181872-06	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		5/10/2018 10:59

Method Reference(s): EPA 7470A
Preparation Date: 5/9/2018
Data File: Hg180510A

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-28_050418		
Lab Sample ID:	181872-06	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		5/10/2018 16:58
Barium	**0.0648**	mg/L	J	5/10/2018 16:58
Cadmium	< 0.00500	mg/L		5/10/2018 16:58
Chromium	< 0.0100	mg/L		5/10/2018 16:58
Lead	< 0.0100	mg/L		5/10/2018 16:58
Selenium	< 0.0200	mg/L		5/10/2018 16:58
Silver	< 0.0100	mg/L		5/10/2018 16:58

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 5/7/2018
Data File: 180510C

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-28_050418		
Lab Sample ID:	181872-06	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		5/10/2018 21:05
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		5/10/2018 21:05
1,1,2-Trichloroethane	< 2.00	ug/L		5/10/2018 21:05
1,1-Dichloroethane	< 2.00	ug/L		5/10/2018 21:05
1,1-Dichloroethene	< 2.00	ug/L		5/10/2018 21:05
1,2,3-Trichlorobenzene	< 5.00	ug/L		5/10/2018 21:05
1,2,4-Trichlorobenzene	< 5.00	ug/L		5/10/2018 21:05
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		5/10/2018 21:05
1,2-Dibromoethane	< 2.00	ug/L		5/10/2018 21:05
1,2-Dichlorobenzene	< 2.00	ug/L		5/10/2018 21:05
1,2-Dichloroethane	< 2.00	ug/L		5/10/2018 21:05
1,2-Dichloropropane	< 2.00	ug/L		5/10/2018 21:05
1,3-Dichlorobenzene	< 2.00	ug/L		5/10/2018 21:05
1,4-Dichlorobenzene	< 2.00	ug/L		5/10/2018 21:05
1,4-dioxane	< 20.0	ug/L		5/10/2018 21:05
2-Butanone	< 10.0	ug/L		5/10/2018 21:05
2-Hexanone	< 5.00	ug/L		5/10/2018 21:05
4-Methyl-2-pentanone	< 5.00	ug/L		5/10/2018 21:05
Acetone	< 10.0	ug/L		5/10/2018 21:05
Benzene	< 1.00	ug/L		5/10/2018 21:05
Bromochloromethane	< 5.00	ug/L		5/10/2018 21:05
Bromodichloromethane	< 2.00	ug/L		5/10/2018 21:05
Bromoform	< 5.00	ug/L		5/10/2018 21:05
Bromomethane	< 2.00	ug/L		5/10/2018 21:05
Carbon disulfide	< 2.00	ug/L		5/10/2018 21:05
Carbon Tetrachloride	< 2.00	ug/L		5/10/2018 21:05
Chlorobenzene	< 2.00	ug/L		5/10/2018 21:05

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-28_050418
Lab Sample ID: 181872-06 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Chloroethane	< 2.00	ug/L	5/10/2018	21:05
Chloroform	< 2.00	ug/L	5/10/2018	21:05
Chloromethane	< 2.00	ug/L	5/10/2018	21:05
cis-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	21:05
cis-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	21:05
Cyclohexane	< 10.0	ug/L	5/10/2018	21:05
Dibromochloromethane	< 2.00	ug/L	5/10/2018	21:05
Dichlorodifluoromethane	< 2.00	ug/L	5/10/2018	21:05
Ethylbenzene	< 2.00	ug/L	5/10/2018	21:05
Freon 113	< 2.00	ug/L	5/10/2018	21:05
Isopropylbenzene	< 2.00	ug/L	5/10/2018	21:05
m,p-Xylene	< 2.00	ug/L	5/10/2018	21:05
Methyl acetate	< 2.00	ug/L	5/10/2018	21:05
Methyl tert-butyl Ether	< 2.00	ug/L	5/10/2018	21:05
Methylcyclohexane	< 2.00	ug/L	5/10/2018	21:05
Methylene chloride	< 5.00	ug/L	5/10/2018	21:05
o-Xylene	< 2.00	ug/L	5/10/2018	21:05
Styrene	< 5.00	ug/L	5/10/2018	21:05
Tetrachloroethene	< 2.00	ug/L	5/10/2018	21:05
Toluene	< 2.00	ug/L	5/10/2018	21:05
trans-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	21:05
trans-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	21:05
Trichloroethene	< 2.00	ug/L	5/10/2018	21:05
Trichlorofluoromethane	< 2.00	ug/L	5/10/2018	21:05
Vinyl chloride	< 2.00	ug/L	5/10/2018	21:05

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-28_050418
Lab Sample ID: 181872-06 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**105**	77.2 - 121		5/10/2018	21:05
4-Bromofluorobenzene	**95.0**	70 - 123		5/10/2018	21:05
Pentafluorobenzene	**95.2**	85.4 - 110		5/10/2018	21:05
Toluene-D8	**96.1**	83.8 - 112		5/10/2018	21:05

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x50579.D

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-29_050418		
Lab Sample ID:	181872-07	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		5/10/2018 11:02

Method Reference(s): EPA 7470A
Preparation Date: 5/9/2018
Data File: Hg180510A

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier:	OW-MW-29_050418		
Lab Sample ID:	181872-07	**Date Sampled:**	5/4/2018
Matrix:	Groundwater	**Date Received:**	5/7/2018

RCRA Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	< 0.0100	mg/L		5/10/2018 17:11
Barium	< 0.100	mg/L		5/10/2018 17:11
Cadmium	< 0.00500	mg/L		5/10/2018 17:11
Chromium	< 0.0100	mg/L		5/10/2018 17:11
Lead	< 0.0100	mg/L		5/10/2018 17:11
Selenium	< 0.0200	mg/L		5/10/2018 17:11
Silver	< 0.0100	mg/L		5/10/2018 17:11

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 5/7/2018
Data File: 180510C

Report Prepared Monday, May 14, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-29_050418
Lab Sample ID: 181872-07 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		5/10/2018 21:29
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		5/10/2018 21:29
1,1,2-Trichloroethane	< 2.00	ug/L		5/10/2018 21:29
1,1-Dichloroethane	< 2.00	ug/L		5/10/2018 21:29
1,1-Dichloroethene	< 2.00	ug/L		5/10/2018 21:29
1,2,3-Trichlorobenzene	< 5.00	ug/L		5/10/2018 21:29
1,2,4-Trichlorobenzene	< 5.00	ug/L		5/10/2018 21:29
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		5/10/2018 21:29
1,2-Dibromoethane	< 2.00	ug/L		5/10/2018 21:29
1,2-Dichlorobenzene	< 2.00	ug/L		5/10/2018 21:29
1,2-Dichloroethane	< 2.00	ug/L		5/10/2018 21:29
1,2-Dichloropropane	< 2.00	ug/L		5/10/2018 21:29
1,3-Dichlorobenzene	< 2.00	ug/L		5/10/2018 21:29
1,4-Dichlorobenzene	< 2.00	ug/L		5/10/2018 21:29
1,4-dioxane	< 20.0	ug/L		5/10/2018 21:29
2-Butanone	< 10.0	ug/L		5/10/2018 21:29
2-Hexanone	< 5.00	ug/L		5/10/2018 21:29
4-Methyl-2-pentanone	< 5.00	ug/L		5/10/2018 21:29
Acetone	< 10.0	ug/L		5/10/2018 21:29
Benzene	< 1.00	ug/L		5/10/2018 21:29
Bromochloromethane	< 5.00	ug/L		5/10/2018 21:29
Bromodichloromethane	< 2.00	ug/L		5/10/2018 21:29
Bromoform	< 5.00	ug/L		5/10/2018 21:29
Bromomethane	< 2.00	ug/L		5/10/2018 21:29
Carbon disulfide	< 2.00	ug/L		5/10/2018 21:29
Carbon Tetrachloride	< 2.00	ug/L		5/10/2018 21:29
Chlorobenzene	< 2.00	ug/L		5/10/2018 21:29

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-29_050418
Lab Sample ID: 181872-07 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Chloroethane	< 2.00	ug/L	5/10/2018	21:29
Chloroform	< 2.00	ug/L	5/10/2018	21:29
Chloromethane	< 2.00	ug/L	5/10/2018	21:29
cis-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	21:29
cis-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	21:29
Cyclohexane	< 10.0	ug/L	5/10/2018	21:29
Dibromochloromethane	< 2.00	ug/L	5/10/2018	21:29
Dichlorodifluoromethane	< 2.00	ug/L	5/10/2018	21:29
Ethylbenzene	< 2.00	ug/L	5/10/2018	21:29
Freon 113	< 2.00	ug/L	5/10/2018	21:29
Isopropylbenzene	< 2.00	ug/L	5/10/2018	21:29
m,p-Xylene	< 2.00	ug/L	5/10/2018	21:29
Methyl acetate	< 2.00	ug/L	5/10/2018	21:29
Methyl tert-butyl Ether	< 2.00	ug/L	5/10/2018	21:29
Methylcyclohexane	< 2.00	ug/L	5/10/2018	21:29
Methylene chloride	< 5.00	ug/L	5/10/2018	21:29
o-Xylene	< 2.00	ug/L	5/10/2018	21:29
Styrene	< 5.00	ug/L	5/10/2018	21:29
Tetrachloroethene	< 2.00	ug/L	5/10/2018	21:29
Toluene	< 2.00	ug/L	5/10/2018	21:29
trans-1,2-Dichloroethene	< 2.00	ug/L	5/10/2018	21:29
trans-1,3-Dichloropropene	< 2.00	ug/L	5/10/2018	21:29
Trichloroethene	< 2.00	ug/L	5/10/2018	21:29
Trichlorofluoromethane	< 2.00	ug/L	5/10/2018	21:29
Vinyl chloride	< 2.00	ug/L	5/10/2018	21:29

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181872

Client: **Lu Engineers, Inc.**

Project Reference: Orchard Whitney 4216-08

Sample Identifier: OW-MW-29_050418
Lab Sample ID: 181872-07 **Date Sampled:** 5/4/2018
Matrix: Groundwater **Date Received:** 5/7/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**108**	77.2 - 121		5/10/2018	21:29
4-Bromofluorobenzene	**92.9**	70 - 123		5/10/2018	21:29
Pentafluorobenzene	**96.1**	85.4 - 110		5/10/2018	21:29
Toluene-D8	**96.7**	83.8 - 112		5/10/2018	21:29

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x50580.D

Report Prepared Monday, May 14, 2018

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, term, 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 will 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 the 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

CHAIN OF CUSTODY

REPORT TO:			INVOICE TO:			
CLIENT: LU Engineers			CLIENT:			LAB PROJECT ID: 181872
ADDRESS: 339 East Ave Suite 200			ADDRESS:			Quotation #:
CITY: Rochester	STATE: NY	ZIP: 14604	CITY: Same	STATE:	ZIP:	Email: gregandrus@lueng.rocrs.com
PHONE: 585-385-7417			PHONE:			
ATTN: Greg Andrus			ATTN:			

PROJECT REFERENCE: Orchard Whitney 4216-08

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	TCL VOCs 8260	RCRA Metals	REMARKS	PARADIGM LAB SAMPLE NUMBER
05/04/18	04:10		✓	OW-MW-22_050418	WG	3	✓	✓		01
05/04/18	03:20		✓	OW-MW-23-050418	WG	3	✓	✓		02
"	02:15		✓	OW-MW-16-050418	WG	3	✓	✓		03
"	04:10		✓	OW-MW-26-050418	WG	3	✓	✓		04
"	12:45		✓	OW-MW-27_050418	WG	3	✓	✓		05
"	02:50		✓	OW-MW-28_050418	WG	3	✓	✓		06
"	03:15		✓	OW-MW-29_050418	WG	3	✓	✓		
"	03:20		✓	OW-MW-29-MS-050418	WG	3	✓	✓		07
"	03:25		✓	OW-MW-29-MSD-050418	WG	3	✓	✓		
			✓		WG	3	✓	✓		

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:)	☐

5°C iced 5/4/18 1725 acceptable seals N/A client delivered mollyPaid

Sampled By: Ben Sefton	05/04/18 4:40	Total Cost: 5/4/18
Relinquished By: Ben Sefton	05/04/18	5/4/18
Received By: MollyPaid	5/4/18 1726	P.I.F.
Received @ Lab By: 2/2	5/7/18 09:33	

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: 181872 **Date:** 5/7/18

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 VOA		X
Comments			
Preservation	X		
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		X metals
Comments	5°C iced 5/4/18 17:25		
Sufficient Sample Quantity	X		
Comments			

Enclosure 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **E828123**

Site Name Orchard-Whitney Site

Site Address: 415 Orchard Street & 354 Whitney Street Zip Code: 14606
City/Town: Rochester
County: Monroe
Site Acreage: 4.1

Reporting Period: March 17, 2017 to May 31, 2018

	YES	NO
1. Is the information above correct?	X	
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?		X
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?		X
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?		X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?		X

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	X	
7. Are all ICs/ECs in place and functioning as designed?	X	

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. E828123 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
105.6-3-24	City of Rochester	Ground Water Use Restriction Landuse Restriction Site Management Plan

Environmental Easement;
Site use is restricted to commercial or industrial uses;
Restrict the use of groundwater as a potable source; and
Site Management Plan which includes an excavation plan.

105.66-3-23	City of Rochester	Ground Water Use Restriction Site Management Plan Landuse Restriction

Environmental Easement;
Site use is restricted to commercial or industrial uses;
Restrict the use of groundwater as a potable source; and
Site Management Plan which includes an excavation plan.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
105.6-3-24	Cover System Vapor Mitigation

A one foot soil cover that meets the restricted commercial SCOs or paved surfaces or buildings.
SVI evaluation for any future occupied structures.

105.66-3-23	Cover System Vapor Mitigation

A one foot soil cover that meets the restricted commercial SCOs or paved surfaces or buildings.
SVI evaluation for any future occupied structures.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. E828123

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Anne E. Spaulding (print name) at 30 Church St. Rm 300B, Rochester, NY 14614 (print business address)

am certifying as City of Rochester, Mgr. of Environmental Quality (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Anne E Spaulding
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

6/22/18
Date

IC/EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Susan Hilton (print name) at 339 East Ave, Suite 200, Rochester, NY, (print business address)

am certifying as a Qualified Environmental Professional for the Owner (Owner or Remedial Party)

Susan A. Hilton
Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification

6/22/2018
Date

(Stamp (Required for PE))