Transmittal

February 14, 2018

To:	Mr. Chue Yang Wisconsin Department of Natural Resources 2300 N. Martin Luther King Jr. Drive Milwaukee, WI 53212	Ref. No.:	11137347.02
		From:	Cathy Warner, Ron Frehner
		GHD Tel:	804-237-0290

Subject: 02-41-577350_Boiler Building Soil Characterization Investigation Report

No. of Copies	Description/Title	Drawing No./ Document Ref.	Issue
1	Previously Submitted Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request	Form 4400-237	June 19, 2017
1	Boiler Building Soil Characterization Investigation Report	11137347-02-1.2	February 12, 2018

Issued for: ☐ Your information ☐ As requested ☐ Construction ☐ Quotation
☒ Your approval/comments ☐ Returned to you ☐ For re-submission

Sent by: ☐ Overnight courier ☐ Same day courier ☒ Other: US Mail

Remarks:

We are requesting review of the attached Investigation Report. Technical assistance for this review was already paid by the previous submittal, a copy of which is attached.

Copy to: John Hnat – WDNR
Roger Ladewig - Solenis

Completed by: Ron Frehner
Catherine Warner
[Please Print]

Signed: Ron Frehner
Catherine C. Warner

Filing: Correspondence File

GHD
121 North 20th Street Suite A Richmond Virginia 23223 USA
T 804 237 0300 W www.ghd.com

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 9/15)

Notice: Use this form to request **a written response (on agency letterhead)** from the Department of Natural Resources (DNR) regarding technical assistance, a post-closure change to a site, a specialized agreement or liability clarification for Property with known or suspected environmental contamination. A fee will be required as is authorized by s. 292.55, Wis. Stats., and NR 749, Wis. Adm. Code., unless noted in the instructions below. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31 - 19.39, Wis. Stats.].

Definitions

"Property" refers to the subject Property that is perceived to have been or has been impacted by the discharge of hazardous substances.

"Liability Clarification" refers to a written determination by the Department provided in response to a request made on this form. The response clarifies whether a person is or may become liable for the environmental contamination of a Property, as provided in s. 292.55, Wis. Stats.

"Technical Assistance" refers to the Department's assistance or comments on the planning and implementation of an environmental investigation or environmental cleanup on a Property in response to a request made on this form as provided in s. 292.55, Wis. Stats.

"Post-closure modification" refers to changes to Property boundaries and/or continuing obligations for Properties or sites that received closure letters for which continuing obligations have been applied or where contamination remains. Many, but not all, of these sites are included on the GIS Registry layer of RR Sites Map to provide public notice of residual contamination and continuing obligations.

Select the Correct Form

This from should be used to request the following from the DNR:

- Technical Assistance
- Liability Clarification
- Post-Closure Modifications
- Specialized Agreements (tax cancellation, negotiated agreements, etc.)

Do not use this form if one of the following applies:

- Request for an **off-site liability exemption or clarification** for Property that has been or is perceived to be contaminated by one or more hazardous substances that originated on another Property containing the source of the contamination. Use DNR's Off-Site Liability Exemption and Liability Clarification Application Form 4400-201.
- Submittal of an Environmental Assessment for the **Lender Liability Exemption**, s 292.21, Wis. Stats., **if no response or review by DNR is requested**. Use the Lender Liability Exemption Environmental Assessment Tracking Form 4400-196.
- Request for an **exemption to develop on a historic fill site** or licensed landfill. Use DNR's Form 4400-226 or 4400-226A.
- **Request for closure** for Property where the investigation and cleanup actions are completed. Use DNR's Case Closure - GIS Registry Form 4400-202.

All forms, publications and additional information are available on the internet at: dnr.wi.gov/topic/Brownfields/Pubs.html.

Instructions

1. Complete sections 1, 2, 6 and 7 for all requests. Be sure to provide adequate and complete information.
2. Select the type of assistance requested: Section 3 for technical assistance or post-closure modifications, Section 4 for a written determination or clarification of environmental liabilities; or Section 5 for a specialized agreement.
3. Include the fee payment that is listed in Section 3, 4, or 5, unless you are a "Voluntary Party" enrolled in the Voluntary Party Liability Exemption Program **and** the questions in Section 2 direct otherwise. Information on to whom and where to send the fee is found in Section 8 of this form.
4. Send the completed request, supporting materials and the fee to the appropriate DNR regional office where the Property is located. See the map on the last page of this form. A paper copy of the signed form and all reports and supporting materials shall be sent with an electronic copy of the form and supporting materials on a compact disk. For electronic document submittal requirements see: http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf"

The time required for DNR's determination varies depending on the complexity of the site, and the clarity and completeness of the request and supporting documentation.

Section 1. Contact and Recipient Information

Requester Information

This is the person requesting technical assistance or a post-closure modification review, that his or her liability be clarified or a specialized agreement and is identified as the requester in Section 7. DNR will address its response letter to this person.

Last Name	First	MI	Organization/ Business Name		
Ladewig	Roger		Solenis, LLC		
Mailing Address			City	State	ZIP Code
5228 N. Hopkins Street			Milwaukee	WI	53209
Phone # (include area code)	Fax # (include area code)		Email		
(414) 535-6205	(414) 461-4671		RLADEWIG@SOLENIS.COM		

The requester listed above: (select all that apply)

- ☐ Is currently the owner
- ☐ Is considering selling the Property
- ☐ Is renting or leasing the Property
- ☐ Is considering acquiring the Property
- ☐ Is a lender with a mortgagee interest in the Property
- ☒ Other. Explain the status of the Property with respect to the applicant:

Site / Plant Manager

Contact Information (to be contacted with questions about this request) ☒ Select if same as requester

Contact Last Name	First	MI	Organization/ Business Name		
Ladewig	Roger		Solenis, LLC		
Mailing Address			City	State	ZIP Code
5228 N. Hopkins Street			Milwaukee	WI	53209
Phone # (include area code)	Fax # (include area code)		Email		
(414) 535-6205	(414) 461-4671		RLADEWIG@SOLENIS.COM		

Environmental Consultant (if applicable)

Contact Last Name	First	MI	Organization/ Business Name		
Wimmer	Timothy	E	The Sigma Group, Inc.		
Mailing Address			City	State	ZIP Code
1300 W. Canal Street			Milwaukee	WI	53233
Phone # (include area code)	Fax # (include area code)		Email		
(414) 643-4200	(414) 643-4210		twimmer@thesigmagroup.com		

Property Owner (if different from requester)

Contact Last Name	First	MI	Organization/ Business Name		
			Solenis, LLC		
Mailing Address			City	State	ZIP Code
5228 N. Hopkins Street			Milwaukee	WI	53209
Phone # (include area code)	Fax # (include area code)		Email		
(414) 535-6205	(414) 461-4671				

Section 2. Property Information

Property Name			FID No. (if known)	
Solenis LLC			241041900	
BRRTS No. (if known)		Parcel Identification Number		
02-41-577350		1929981111		
Street Address		City	State	ZIP Code
5228 N. Hopkins Stret		Milwaukee	WI	53209
County	Municipality where the Property is located	Property is composed of:	Property Size Acres	
Milwaukee	◉ City ○ Town ○ Village of Milwaukee	◉ Single tax parcel ○ Multiple tax parcels	4	

1. Is a response needed by a specific date? (e.g., Property closing date) Note: Most requests are completed within 60 days. Please plan accordingly.

○ No ◉ Yes

Date requested by: 07/06/2017

Reason: The prompt review of site investigation activities completed to date and conceptual approval of the proposed additional sampling and analysis plan are critical to future construction activities at the site, which are scheduled to commence in October, 2017.

2. Is the "Requester" enrolled as a Voluntary Party in the Voluntary Party Liability Exemption (VPLE) program?

◉ No. **Include the fee that is required for your request in Section 3, 4 or 5.**

○ Yes. **Do not include a separate fee.** This request will be billed separately through the VPLE Program.

Fill out the information in Section 3, 4 or 5 which corresponds with the type of request:
Section 3. Technical Assistance or Post-Closure Modifications;
Section 4. Liability Clarification; or Section 5. Specialized Agreement.

Section 3. Request for Technical Assistance or Post-Closure Modification

Select the type of technical assistance requested: **[Numbers in brackets are for WI DNR Use]**

☐ No Further Action Letter (NFA) (Immediate Actions) - NR 708.09, [183] - **Include a fee of $350.** Use for a written response to an immediate action after a discharge of a hazardous substance occurs. Generally, these are for a one-time spill event.

☐ Review of Site Investigation Work Plan - NR 716.09, [135] - **Include a fee of $700.**

☐ Review of Site Investigation Report - NR 716.15, [137] - **Include a fee of $1050.**

☐ Approval of a Site-Specific Soil Cleanup Standard - NR 720.10 or 12, [67] - **Include a fee of $1050.**

☐ Review of a Remedial Action Options Report - NR 722.13, [143] - **Include a fee of $1050.**

☐ Review of a Remedial Action Design Report - NR 724.09, [148] - **Include a fee of $1050.**

☐ Review of a Remedial Action Documentation Report - NR 724.15, [152] - **Include a fee of $350**

☐ Review of a Long-term Monitoring Plan - NR 724.17, [25] - **Include a fee of $425.**

☐ Review of an Operation and Maintenance Plan - NR 724.13, [192] - **Include a fee of $425.**

Other Technical Assistance - s. 292.55, Wis. Stats [97] (For request to build on an abandoned landfill use Form 4400-226)

☒ Schedule a Technical Assistance Meeting - **Include a fee of $700.**

☐ Hazardous Waste Determination - **Include a fee of $700.**

☐ Other Technical Assistance - **Include a fee of $700.** Explain your request in an attachment.

Post-Closure Modifications - NR 727, [181]

☐ Post-Closure Modifications: Modification to Property boundaries and/or continuing obligations of a closed site or Property; sites may be on the GIS Registry. This also includes removal of a site or Property from the GIS Registry. **Include a fee of $1050, and:**

☐ Include a fee of $300 for sites with residual soil contamination; and

☐ Include a fee of $350 for sites with residual groundwater contamination, monitoring wells or for vapor intrusion continuing obligations.

Attach a description of the changes you are proposing, and documentation as to why the changes are needed (if the change to a Property, site or continuing obligation will result in revised maps, maintenance plans or photographs, those documents may be submitted later in the approval process, on a case-by-case basis).

Skip Sections 4 and 5 if the technical assistance you are requesting is listed above and complete Sections 6 and 7 of this form.

Section 5. Request for a Specialized Agreement

Select the type of agreement needed. Include the appropriate draft agreements and supporting materials. Complete Sections 6 and 7 of this form. More information and model draft agreements are available at: dnr.wi.gov/topic/Brownfields/lgu.html#tabx4.

☐ Tax cancellation agreement - s. 75.105(2)(d), Wis. Stats. [654]

- ❖ **Include a fee of $700, and the information listed below:**

(1) Phase I and II Environmental Site Assessment Reports,
(2) a copy of the Property deed with the correct legal description; and,
(3) a draft 75.105 agreement based on the DNR's model (dnr.wi.gov/topic/brownfields/documents/mod75-105agrmt.pdf).

☐ Agreement for assignment of tax foreclosure judgement - s.75.106, Wis. Stats. [666]

- ❖ **Include a fee of $700, and the information listed below:**

(1) Phase I and II Environmental Site Assessment Reports,
(2) a copy of the Property deed with the correct legal description; and,
(3) a draft 75.105 agreement based on the DNR's model (dnr.wi.gov/topic/brownfields/documents/mod75-106agrmt.pdf).

☐ Negotiated agreement - Enforceable contract for non-emergency remediation - s. 292.11(7)(d) and (e), Wis. Stats. [630]

- ❖ **Include a fee of $1400, and the information listed below:**

(1) a draft schedule for remediation; and,
(2) the name, mailing address, phone and email for each party to the agreement.

Section 6. Other Information Submitted

Identify all materials that are included with this request.

Include one copy of any document from any state agency files that you want the Department to review as part of this request. The person submitting this request is responsible for contacting other state agencies to obtain appropriate reports or information.

☐ Phase I Environmental Site Assessment Report - Date: _____

☐ Phase II Environmental Site Assessment Report - Date: _____

☐ Legal Description of Property (required for all liability requests and specialized agreements)

☒ Map of the Property (required for all liability requests and specialized agreements)

Analytical results of the following sampled media: Select all that apply and include date of collection.

☒ Groundwater ☒ Soil ☐ Sediment ☐ Other medium - Describe: _____

Date of Collection: _____

☐ A copy of the closure letter and submittal materials

☐ Draft tax cancellation agreement

☐ Draft agreement for assignment of tax foreclosure judgment

☒ Other report(s) or information - Describe: attached - Site Investigation Status Report, Proposed Additional Sampling...

For Property with newly identified discharges of hazardous substances only: Has a notification of a discharge of a hazardous substance been sent to the DNR as required by s. NR 706.05(1)(b), Wis. Adm. Code?

◉ Yes - Date (if known): 06/17/2016

○ No

Note: The Notification for Hazardous Substance Discharge (non-emergency) form is available at: dnr.wi.gov/files/PDF/forms/4400/4400-225.pdf.

Section 7. Certification by the Person who completed this form

☐ I am the person submitting this request (requester)

☒ I prepared this request for: Roger Ladewig
Requester Name

I certify that I am familiar with the information submitted on this request, and that the information on and included with this request is true, accurate and complete to the best of my knowledge. I also certify I have the legal authority and the applicant's permission to make this request.

Signature

Date Signed 6/19/17

Title Sr. Project Manager

Telephone Number (include area code) (414) 643-4139

Section 8. DNR Contacts and Addresses for Request Submittals

Send or deliver one paper copy and one electronic copy on a compact disk of the completed request, supporting materials, and fee to the region where the property is located to the address below. Contact a DNR regional brownfields specialist with any questions about this form or a specific situation involving a contaminated property. For electronic document submittal requirements see: http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf.

DNR NORTHERN REGION
Attn: RR Program Assistant
Department of Natural Resources
223 E Steinfest Rd Antigo, WI 54409

DNR NORTHEAST REGION
Attn: RR Program Assistant
Department of Natural Resources
2984 Shawano Avenue
Green Bay WI 54313

DNR SOUTH CENTRAL REGION
Attn: RR Program Assistant
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

DNR SOUTHEAST REGION
Attn: RR Program Assistant
Department of Natural Resources
2300 North Martin Luther King Drive
Milwaukee WI 53212

DNR WEST CENTRAL REGION
Attn: RR Program Assistant
Department of Natural Resources
1300 Clairemont Ave
Eau Claire WI 54702

Note: These are the Remediation and Redevelopment Program's designated regions. Other DNR program regional boundaries may be different.

DNR Use Only			
Date Received	Date Assigned	BRRTS Activity Code	BRRTS No. (if used)
DNR Reviewer	Comments		
Fee Enclosed? ◯ Yes ◯ No	Fee Amount $	Date Additional Information Requested	Date Requested for DNR Response Letter
Date Approved	Final Determination		

Boiler Building Soil Characterization Investigation Report

Solenis LLC
5228 North Hopkins Street
Milwaukee, Wisconsin

WDNR BRRTS 02-41-577350
WDNR FID 241041900

GHD | 121 North 20th Street Richmond Virginia 23223 USA
11137347 | 02 | 1.2 | Report No 2 | February 12, 2018

Boiler Building Soil Characterization Investigation Report

Solenis LLC
5228 North Hopkins Street
Milwaukee, Wisconsin

WDNR BRRTS 02-41-577350
WDNR FID 241041900

I hereby certify that I am a licensed professional engineer in the State of Wisconsin in accordance with the requirements of Ch. A−E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in Ch. A−E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements of chapters NR 700 to 726 of the Wis. Adm. Code.

Ronald Frehner, P.E.

February 12, 2018
Date

License Number: 31708

My license renewal date is: July 31, 2018

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1. Introduction

1.1 Objectives

This document presents the results from the work conducted in accordance with the New Building Investigation Work Plan (Work Plan) at the Solenis, LLC (Solenis) facility located at 5228 North Hopkins Street in Milwaukee, Wisconsin (Site). The Work Plan was submitted to the Wisconsin Department of Natural Resources (WDNR) on November 17, 2017. The objective of this work was to delineate 1,2-dichloropropane (PDC) and trimethylamine (TEA) impacts to the soil in the area of the proposed new boiler house. Solenis is planning to construct a new boiler house southeast of the existing boiler with construction scheduled to commence in the Spring of 2018.

The proposed building is over the area of soil boring SB-10, which had concentrations of PDC and TEA in the soil above screening criteria during previous investigations. Other soil borings/test pits in the area of the proposed construction (i.e., SB-4, SB-11, and TP-4) did not have PDC or TEA concentrations above screening criteria. The Site location is presented in **Figure 1**. The previous and new soil data collected from the vicinity of the proposed building are presented in **Figure 2**.

The proposed depth of the footers for the building are 4-feet below ground surface (bgs) with an additional 1-foot of gravel below the footers for a total excavation depth of 5-feet bgs. The groundwater elevation at the Site is below 5-feet and is not anticipated to affect the footer excavation. Rainwater has the potential to accumulate within the excavation due to the tight clay soils found at the Site.

The proposed new boiler house construction will include the installation of a vapor mitigation system as presented in **Figure 3**. The vapor mitigation system will include a 40 mil HDPE geomembrane (or equivalent) and have a passive vapor collection and venting system. Per RR-800 – *Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin*, assessing potential vapor intrusion is performed via soil gas, sub-slab, and/or indoor air of a potentially impacted building, which cannot be performed prior to construction of the building. At this time, no further vapor intrusion investigation activities are warranted. Per RR-800 Section 7.5, a post-construction assessment of the building will be performed via sub-membrane and/or indoor air sampling to determine the necessity for and effectiveness of the vapor barrier and passive venting system.

1.2 Site Background

During demolition of a former Aquapel process area at the Site, a strong odor was detected in the footprint of the demolition. Two subsurface investigations have discovered PDC and TEA in the soil above screening standards and PDC in the groundwater above screening standards including an area with known dense non-aqueous phase liquid (DNAPL). The results of the most recent investigation were submitted to the WDNR in July 2017.

The Site was entered into the NR700 process with the WDNR in June 2016. The Sigma Group (Sigma) has previously conducted investigation and delineation in the source area, which was presented in the Site Investigation Status Report, Proposed Additional Sampling and Analysis Plan & WDNR Technical Assistance Request (Revised July 2017).

2. Soil Sampling Methodology

This section presents the methodology used during the implementation of the Work Plan. **Section 3.0** presents a comprehensive evaluation of the data collected.

On December 14, 2017, GHD accompanied Lucky Locators and Terra-Trace Environmental Services to the Site. Lucky Locators was contracted to identify and mark the presence of subsurface utilities in the vicinity of the sample locations and Terra-Trace provided drilling services via a Geoprobe® drill rig utilizing direct-push technology (DPT) to advance the soil boring to a depth of 5-feet bgs.

Soil samples BB-1 through BB-15 were collected from the macro-core liners from the DPT drill rig on December 14th, 2017 and analyzed for PDC and TEA via United States Environmental Protection Agency (EPA) Method 8260B and EPA Method 8015D, respectively. The sample locations are presented on **Figure 2** in the green (samples analyzed) and red (held analysis) dots.

The soil borings were installed to a maximum depth of 5-feet bgs based on the planned building construction footers being 4-feet deep with an additional 1-foot of gravel beneath the footers. The following soil boring intervals were screened with a Photoionization Detector (PID) and the interval with the highest PID reading was be submitted for analysis:

- 0 to 1 foot bgs
- 1 to 3 feet bgs;
- 3 to 5 feet bgs.

Approximately 6-12 inches of gravel and debris were encountered above the soils. The soils encountered from 1-3 feet bgs were typically sand and clay and transitioned to a dense grey/brown clay from 3-5 feet bgs. Soil boring PID readings ranged between 0.3 to 411 parts per million (ppm). The soil conditions were logged and recorded on WDNR Form 4400-122 for each boring. Soils generated during boring installation were placed back into the boring.

As per the Work Plan, the samples were collected and placed into laboratory-provided sample containers and maintained on ice for delivery under proper Chain of Custody (COC) to TestAmerica Laboratories in Nashville, Tennessee (TestAmerica) for PDC and TEA analysis. The tabulated sampling analytical results are presented on **Table 1**. The laboratory analytical reports are provided as **Appendix A**. The following quality assurance and quality control (QA/QC) samples were collected:

- One (1) temperature blank;
- One (1) blind duplicate sample.

Additionally, two composite waste characterization samples were collected and analyzed via the toxicity characteristic leaching procedure (TCLP) for Volatile Organic Compounds (VOCs) via EPA Method 8260B, Semi-Volatile Organic Compounds (SVOCs) via EPA Method 8270C, Metals via EPA Method 6010B and Mercury via EPA Method 7470A. The samples were composited from BB-3 and BB-4 (TCLP 1) and BB-8 and BB-9 (TCLP 2). The tabulated TCLP waste characterization

sample results are presented on **Table 2.** The laboratory analytical reports are provided as **Appendix A**.

As the objective of the Work Plan was to delineate the soil that is impacted above screening criteria and will need segregation for offsite disposal, samples were collected from each boring and then analyzed in a sequential manner. The existing analytical dataset proximal to the new building foundation includes impacted location (SB-10) and locations below the screening criteria (SB-4, SB-11 and TP-4). The samples adjacent to SB-10 (i.e., BB-1 through BB-4, BB-8, BB-9, BB-11 and BB-13) were analyzed first. Following receipt of the initial analytical results, the samples from adjacent step-out locations (i.e., BB-5, BB-7 and BB-10) were analyzed (green dots on **Figure 2**). Locations from which samples were collected but not analyzed due to delineation being complete are presented as red dots on **Figure 2**. The screening criteria used for this determination was the WDNR Ch. NR 720 Industrial Direct Contact Residual Contaminant Levels (RCLs) presented below.

	Screening Criteria
PDC	15 mg/kg
TEA	700 mg/kg

3. Soil Sampling Results

The tabulated PDC and TEA sampling analytical results are presented on **Table 1**. The tabulated TCLP waste characterization sample results are presented on **Table 2.** The laboratory analytical reports are provided as **Appendix A**.

3.1 PDC and TEA Analytical Results

A total of 13 samples were analyzed for PDC and TEA, presented as the green dots on **Figure 2** and on **Table 1**.

The only samples that exceeded the Industrial Direct Contact Residual Contaminant Level for PDC were BB-4 and BB-8. There were no exceedances of the Industrial Direct Contact Residual Contaminant Level for TEA.

3.2 Waste Characterization TCLP Analytical Results

Only one constituent, barium, was detected in the two TCLP waste characterization composite samples. The barium TCLP concentration in TCLP 1 and TCLP 2 was multiple orders of magnitude below the EPA Maximum Concentration of Contaminants for Toxicity Characteristics.

No other VOCs, SVOCs or metals were detected via the TCLP analysis. Consequently, the soil in the excavation area does not exhibit characteristics of hazardous waste in accordance with 40 CFR 261 Subpart C.

4. Health and Safety Requirements

Due to PDC concentrations exceeding the Industrial Direct Contact Residual Contaminant Level at sample locations SB-10, BB-4 and BB-8, a site safety and health plan will be created in accordance with 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response* prior beginning site work for building construction. The plan will include:

- A hazard analysis for each anticipated task/operation;
- Personnel protective equipment, including respiratory protection if deemed necessary;
- Training requirements for supervisors and technicians;
- Medical surveillance requirements;
- Monitoring and environmental sampling techniques to be used; and
- Site control/spill containment and decontamination measures.

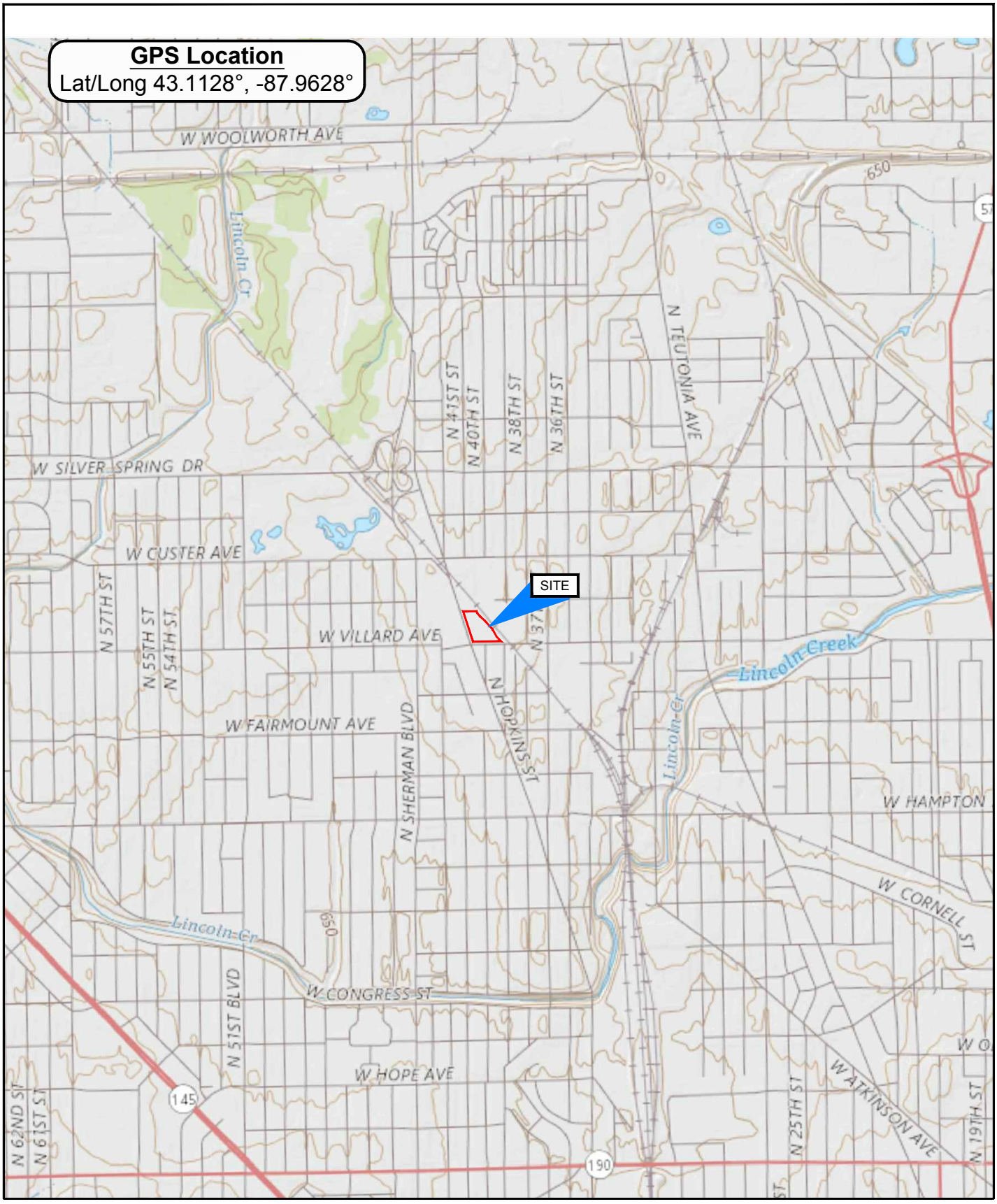
The specifics of these items will be dependent on the excavation and construction methodologies decided upon by the excavation contractor, site supervision, and on-site safety and health representatives.

5. Conclusions

The results of the boiler building soil sampling presented herein, coupled with the results of the previous soil sampling conducted in the boiler building footprint, provide delineation of PDC and TEA concentrations that exceeded the Industrial Direct Contact Residual Contaminant Levels.

Soils in the vicinity of samples SB-10, BB-4 and BB-8 will require excavation and offsite disposal prior to, or during, installation of the boiler building footer. During the excavation of soils in proximity to sample location SB-10, BB-4 and BB-8 the health and safety requirements for worker protection described in Section 4.0 shall be implemented.

Figures



Source: USGS 7.5 MINUTE QUAD "MILWAUKEE, WISCONSIN"

0 1000 2000ft

Coordinate System:
STATE PLANE -
WISCONSIN SOUTH

SOLENIS, LLC
5228 N. HOPKINS STREET
MILWAUKEE, WISCONSIN

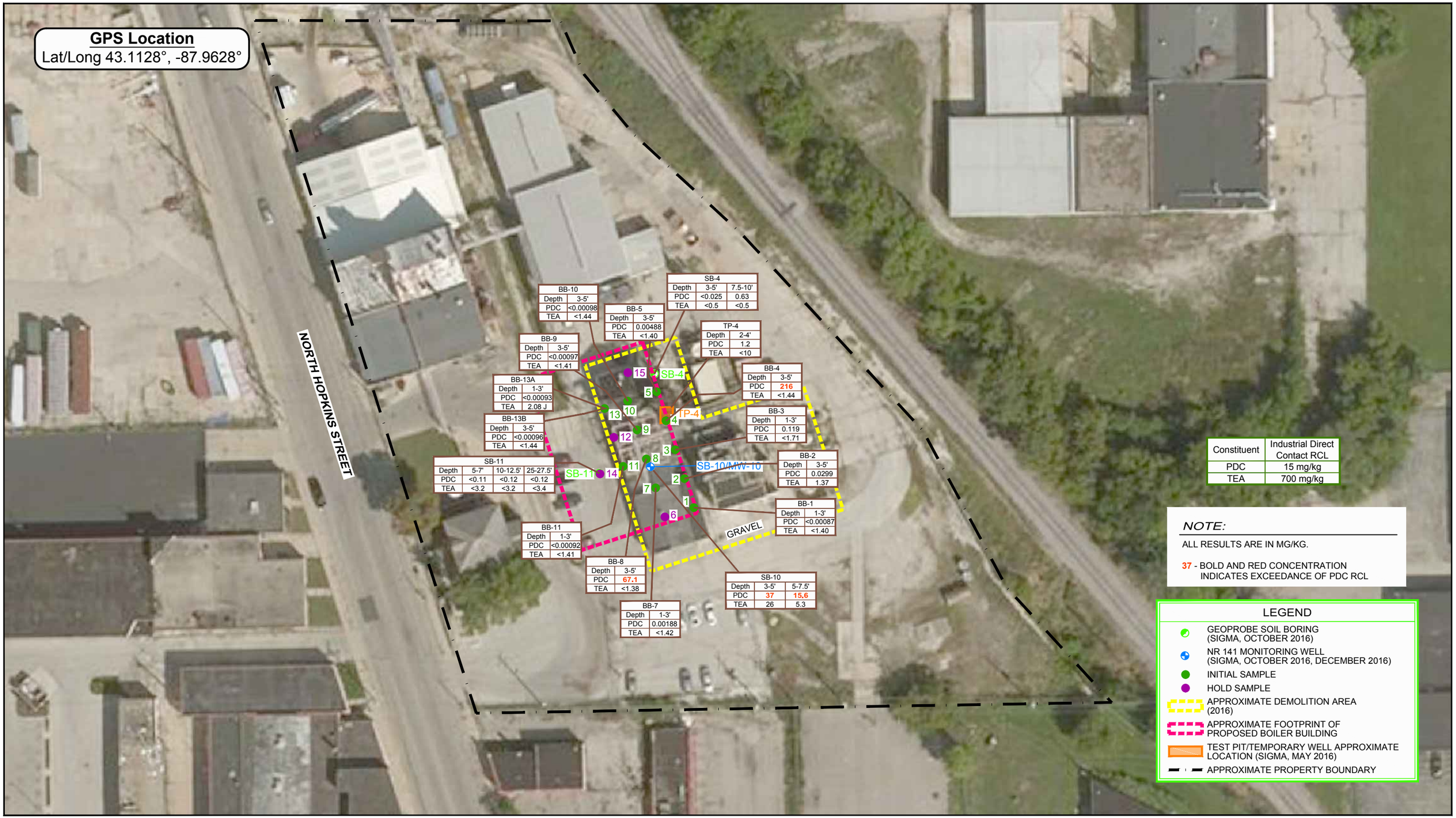
11137347-02

Oct 19, 2017

SITE LOCATION MAP

FIGURE 1

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11137347-Solenis_Milwaukee\11137347-02(000)GN-DL001.dwg



Source: MICROSOFT CORPORATION AND AFFILIATED DATA PROVIDERS DATED SEPTEMBER 2014

0 20 60ft

Coordinate System:
STATE PLANE -
WISCONSIN SOUTH

SOLENIS, LLC
5228 N. HOPKINS STREET
MILWAUKEE, WISCONSIN

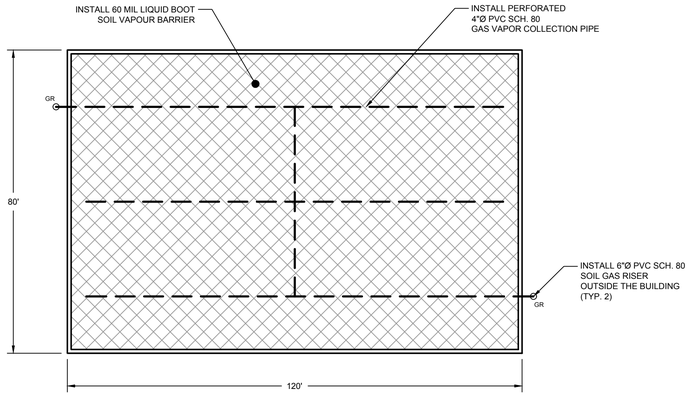
11137347-02

Feb 6, 2018

BOILER HOUSE INVESTIGATION SITE PLAN

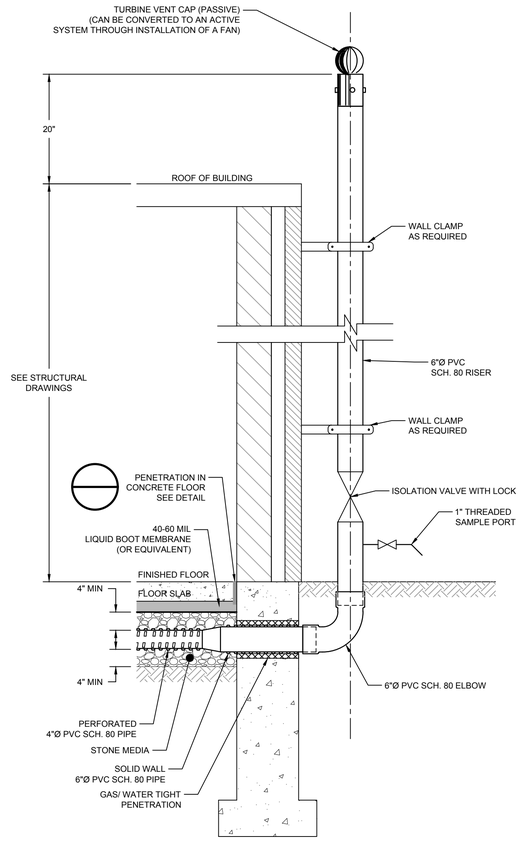
FIGURE 2

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11137347-Solenis_Milwaukee\11137347-02(000)GN-DL001.dwg



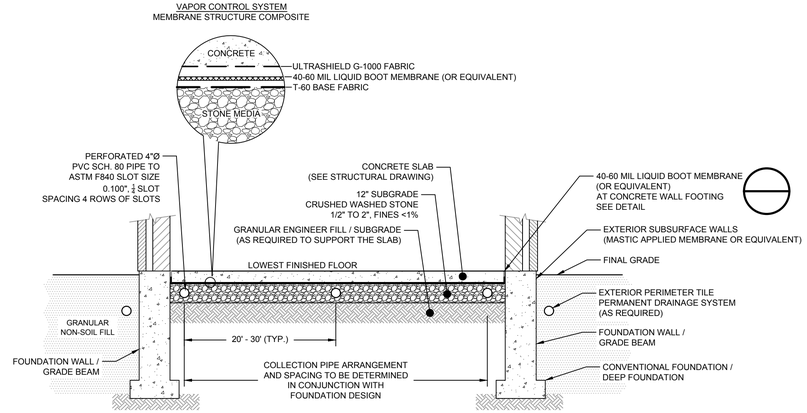
BELOW BUILDING SLAB VAPOR BARRIER PLAN

NTS



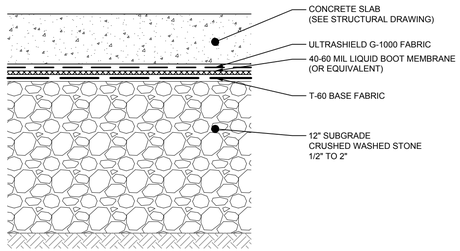
DETAIL 1 - NTS — CONCEPTUAL PASSIVE VENT RISER /PIPE / CONDUIT

VAPOR CONTROL SYSTEM
MEMBRANE STRUCTURE COMPOSITE

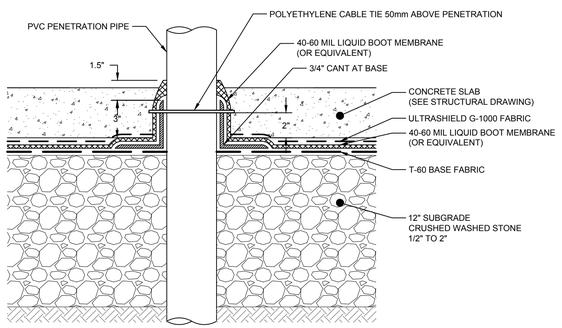


CONCEPTUAL CROSS SECTION OF SUBFLOOR VAPOR CONTROL SYSTEM

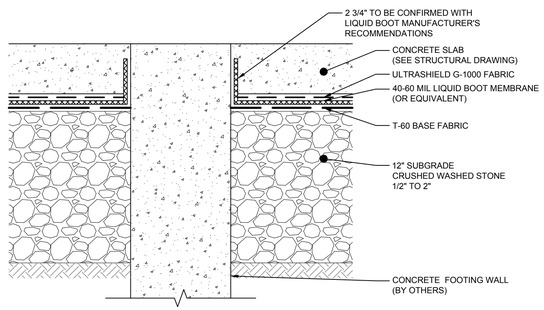
NTS



DETAIL 2 - NTS — MEMBRANE STRUCTURE



DETAIL 3 - NTS — TYPICAL FLOOR PIPE PENETRATION



DETAIL 4 - NTS — LIQUID BOOT VAPOR MEMBRANE AT CONCRETE WALL FOOTING

DRAFT - NOT FOR CONSTRUCTION

GHD
651 Colby Drive
Waterloo Ontario N2V 1C2 Canada
T 519 884 0510 **F** 519 884 0525 **W** www.ghd.com

NOTES:
1. DESIGN CONCEPTS ARE CONCEPTUAL. ONLY DESIGN ALTERNATIVES THAT MEET THE INTENT OF THE DESIGN AND ACHIEVE DESIGN OBJECTIVES, AS DETERMINED BY A QUALIFIED PERSON, CAN BE USED.
2. NOT TO BE USED FOR CONSTRUCTION PURPOSES.
3. FOR BUILDING SIZE 120' x 80' TWO RISERS RECOMMENDED.
4. ALL PIPE PENETRATION OR SLEEVES SHOULD BE PVC SCH. 80.

Client
SOLENIS LLC
MILWAUKEE, WSCONSIN

Project
SOIL VAPOR INTRUSION MITIGATION SYSTEM

No.	Issue	Drawn	Approved	Date
-	-	-	-	-

Drawn **MW**	Designer **AW**
Drafting Check **BP**	Design Check **RH**
Project Manager **CW**	Date **Feb 6, 2018**
This document shall not be used for construction unless signed and sealed for construction.	Scale **AS SHOWN**
Original Size **ANSI D**	Bar is one inch on original size drawing 0 — 1"

Project No. **11137347-00**

Title
CONCEPTUAL BOILER ROOM VAPOR MITIGATION SYSTEM

Sheet No.
M-01

Sheet **1** of **1**

Tables

Sample ID	Sample Date	Sample Depth (feet bgs)	Organic Vapor Monitor (ppm)	Analyte (Industrial Direct Contact RCL)	
				1,2-Dicloropropane (15)	Triethylamine (700)
Volitale Organic Compounds (mg/kg)					
SB-10	**10/4/2016**	3-5	4	**37**	**26**
		5-7.5	4	**15.6**	**5.3**
SB-11	**12/19/2016**	5-7	1.49	< 0.11	< 3.2
TP-4	**5/12/2016**	2-4	10	**1.2**	< 10
BB-1	**12/14/2017**	1-3	0.6	< 0.00087	< 1.40
BB-2		3-5	24	**0.0299**	< 1.37
BB-3		1-3	53.2	**0.119**	< 1.71
BB-4		3-5	258	**216**	< 1.44
BB-5		3-5	23.4	**0.00488 H**	<1.40
BB-6		3-5	0.7	NA	NA
BB-7		1-3	19.3	**.00188 JH**	<1.42
BB-8		3-5	183	**67.1**	< 1.38
BB-9		3-5	86.2	< 0.00097	< 1.41
BB-9D				< 0.00096	< 1.39
BB-10		3-5	2	< 0.00098	<1.44
BB-11		1-3	0.3	< 0.00092	< 1.41
BB-12		3-5	44.8	NA	NA
BB-13A		1-3	411	< 0.00093	**2.08 J**
BB-13B		3-5	377	< 0.00096	< 1.44
BB-14		1-3	3.1	NA	NA
BB-15		1-3	1.7	NA	NA

Notes:

feet bgs = feet below ground surface
mg/kg = milligrams per kilogram
NA = not analyzed
Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at an industrial property as presented on the WDNR's RCL Spreadsheet (dated December 2017) with default input parameters as referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014

Triethylamine analysis conducted via GC-FID (EPA 8015D).

Laboratory Flags:

J = Analyte detected between Limit of Detection and Limit of Quantitation
H = Sample was prepped or analyzed beyond the specified holding time

Exceedances:

Red = Concentration exceeds Industrial Direct Contact RCL (any depth)
BOLD = Detected compound

Table 2
Boiler Building TCLP Analytical Results

Analyte	CAS NUMBER	EPA Maximum Concentration of Contaminants for Toxicity Characteristics (mg/L)	Sample ID	
			TCLP 1	TCLP 2
			(BB-3 and BB-4)	(BB-8 and BB-9)
			12/14/2017	12/14/2017
Volatile Organic Compounds (mg/L)				
Benzene	71-43-2	0.5	ND	ND
2-Butanone (MEK)	78-93-3	200.0	ND	ND
Carbon tetrachloride	56-23-5	0.5	ND	ND
Chlorobenzene	108-90-7	100.0	ND	ND
Chloroform	67-66-3	6.0	ND	ND
1,2-Dichloroethane	107-06-2	0.5	ND	ND
1,1-Dichloroethene	75-35-4	0.7	ND	ND
Tetrachloroethene	127-18-4	0.7	ND	ND
Trichloroethene	79-01-6	0.5	ND	ND
Vinyl chloride	75-01-4	0.2	ND	ND
Semi-Volatile Organic Compounds (mg/L)				
Cresols[a]	~	200.0	ND	ND
1,4-Dichlorobenzene	106-46-7	7.5	ND	ND
2,4-Dinitrotoluene	121-14-2	0.13	ND	ND
Hexachlorobenzene	118-74-1	0.13	ND	ND
Hexachlorobutadiene	87-68-3	0.5	ND	ND
Hexachloroethane	67-72-1	3.0	ND	ND
Nitrobenzene	98-95-3	2.0	ND	ND
Pentachlorophenol	87-86-5	100.0	ND	ND
Pyridine	110-86-1	5.0	ND	ND
2,4,5-Trichlorophenol	95-95-4	400.0	ND	ND
2,4,6-Trichlorophenol	88-06-2	2.0	ND	ND
Metals (mg/L)				
Arsenic	7440-38-2	5.0	ND	ND
Barium	7440-39-3	100.0	**0.833 J**	**0.54 J**
Cadmium	7440-43-9	1.0	ND	ND
Chromium	7440-47-3	5.0	ND	ND
Lead	7439-92-1	5.0	ND	ND
Selenium	7782-49-2	1.0	ND	ND
Silver	7440-22-4	5.0	ND	ND
Inorganics (ug/kg)				
Mercury	7439-97-6	0.2	ND	ND

Notes:
mg/L = milligrams per liter
ND = not detected.
Informtaion obtained from *EPA Hazardous Waste Characteristics - A User-Friendly Reference Document* - October 2009
Triethylamine analysis conducted via GC-FID (EPA 8015D).
a = The regulatory level of total cresol (D026) is 200.0 mg/L.
BOLD = Detected compound

Laboratory Flags:
J = Analyte detected between Limit of Detection and Limit of Quantitation

Appendices

Appendix A
Laboratory Analytical Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-143202-1
TestAmerica Sample Delivery Group: 11137347-02
Client Project/Site: SOLENIS LLC Soil Sampling

For:
GHD Services Inc.
121 North 20th Street Ste A
Richmond, Virginia 23223

Attn: Dustin Zedaker

Roxanne Cisneros

Authorized for release by:
1/2/2018 3:09:22 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

Table of Contents

Sample Summary

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-143202-1	S-121417-JK-01	Solid	12/14/17 10:50	12/15/17 09:20
490-143202-2	S-121417-JK-02	Solid	12/14/17 11:00	12/15/17 09:20
490-143202-3	S-121417-JK-03	Solid	12/14/17 11:10	12/15/17 09:20
490-143202-4	S-121417-JK-04	Solid	12/14/17 11:20	12/15/17 09:20
490-143202-8	S-121417-JK-08	Solid	12/14/17 12:20	12/15/17 09:20
490-143202-9	S-121417-JK-09	Solid	12/14/17 12:40	12/15/17 09:20
490-143202-10	S-121417-JK-09D	Solid	12/14/17 12:45	12/15/17 09:20
490-143202-12	S-121417-JK-11	Solid	12/14/17 12:55	12/15/17 09:20
490-143202-14	S-121417-JK-13A	Solid	12/14/17 13:20	12/15/17 09:20
490-143202-15	S-121417-JK-13B	Solid	12/14/17 13:25	12/15/17 09:20
490-143202-18	S-121417-JK-TCLP 1	Solid	12/14/17 14:30	12/15/17 09:20
490-143202-19	S-121417-JK-TCLP 2	Solid	12/14/17 14:45	12/15/17 09:20

Job ID: 490-143202-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-143202-1

Comments
No additional comments.

Receipt
The samples were received on 12/15/2017 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.1º C, 1.2º C and 4.6º C.

GC/MS VOA
Method(s) 8260B: Internal standard responses were outside of acceptance limits for the following sample: S-121417-JK-03 (490-143202-3). The sample(s) shows evidence of matrix interference. No requested analytes are associated with the low internal standard; data is not impacted.

Method(s) 8260B: Surrogate recovery for the following sample was outside control limits: S-121417-JK-13B (490-143202-15). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 490-484478.

Method(s) 8260B: Internal standard responses were outside of acceptance limits for the following sample: S-121417-JK-02 (490-143202-2). The sample(s) shows evidence of matrix interference. Data not impacted due to compounds reported are not associated to the failing internal standard.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 490-484634.

Method(s) 8260B: The TCLP leachate blank for batch 490-486226 contained Chloroform above the reporting limit (RL). None of the samples associated with this leachate blank contained this target analyte; therefore, re-extraction of the samples was not performed.

Method(s) 8260B: The TCLP leachate blank for batch 490-486226 contained 2-Butanone (MEK) above the method detection limit (MDL). None of the samples associated with this leachate blank contained this target analyte; therefore, re-extraction of the samples was not performed.

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

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

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

Metals
Method(s) 6010B, 6010C, 6010D: Three out of four burns are good for the internal standard. (MB 490-485256/1-A)

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

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

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
*	ISTD response or retention time outside acceptable limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Client Sample ID: S-121417-JK-01

Date Collected: 12/14/17 10:50
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-1

Matrix: Solid
Percent Solids: 83.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		1.85	0.870	ug/Kg	☼	12/14/17 10:50	12/20/17 02:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 130*	*12/14/17 10:50*	*12/20/17 02:13*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*12/14/17 10:50*	*12/20/17 02:13*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*	*12/14/17 10:50*	*12/20/17 02:13*	*1*
Toluene-d8 (Surr)	*107*		*70 - 130*	*12/14/17 10:50*	*12/20/17 02:13*	*1*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND		6000	1400	ug/Kg	☼		12/20/17 10:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**16.6**		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	**83.4**		0.1	0.1	%			12/18/17 11:25	1

Client Sample ID: S-121417-JK-02
Date Collected: 12/14/17 11:00
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-2
Matrix: Solid
Percent Solids: 85.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	29.9		1.93	0.909	ug/Kg	☼	12/14/17 11:00	12/20/17 14:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*	*12/14/17 11:00*	*12/20/17 14:39*	*1*
4-Bromofluorobenzene (Surr)	*118*	*	*70 - 130*	*12/14/17 11:00*	*12/20/17 14:39*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 130*	*12/14/17 11:00*	*12/20/17 14:39*	*1*
Toluene-d8 (Surr)	*108*		*70 - 130*	*12/14/17 11:00*	*12/20/17 14:39*	*1*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND		5870	1370	ug/Kg	☼		12/20/17 10:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.8		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	85.2		0.1	0.1	%			12/18/17 11:25	1

Client Sample ID: S-121417-JK-03

Date Collected: 12/14/17 11:10
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-3

Matrix: Solid
Percent Solids: 68.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	119		2.09	0.981	ug/Kg	☼	12/14/17 11:10	12/20/17 02:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 130*	*12/14/17 11:10*	*12/20/17 02:41*	*1*
4-Bromofluorobenzene (Surr)	*115*	*	*70 - 130*	*12/14/17 11:10*	*12/20/17 02:41*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*	*12/14/17 11:10*	*12/20/17 02:41*	*1*
Toluene-d8 (Surr)	*116*		*70 - 130*	*12/14/17 11:10*	*12/20/17 02:41*	*1*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND		7310	1710	ug/Kg	☼		12/20/17 10:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	31.6		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	68.4		0.1	0.1	%			12/18/17 11:25	1

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Client Sample ID: S-121417-JK-04
Date Collected: 12/14/17 11:20
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-4
Matrix: Solid
Percent Solids: 81.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	216000		1430	673	ug/Kg	☼	12/19/17 11:29	12/20/17 19:48	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*70 - 130*	*12/19/17 11:29*	*12/20/17 19:48*	*10*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*12/19/17 11:29*	*12/20/17 19:48*	*10*
Dibromofluoromethane (Surr)	*120*		*70 - 130*	*12/19/17 11:29*	*12/20/17 19:48*	*10*
Toluene-d8 (Surr)	*92*		*70 - 130*	*12/19/17 11:29*	*12/20/17 19:48*	*10*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND		6150	1440	ug/Kg	☼		12/20/17 11:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.7		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	81.3		0.1	0.1	%			12/18/17 11:25	1

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Client Sample ID: S-121417-JK-08
Date Collected: 12/14/17 12:20
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-8
Matrix: Solid
Percent Solids: 84.9

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	67100		2090	981	ug/Kg	☼	12/19/17 11:29	12/20/17 19:18	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 130*	*12/19/17 11:29*	*12/20/17 19:18*	*20*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*12/19/17 11:29*	*12/20/17 19:18*	*20*
Dibromofluoromethane (Surr)	*119*		*70 - 130*	*12/19/17 11:29*	*12/20/17 19:18*	*20*
Toluene-d8 (Surr)	*92*		*70 - 130*	*12/19/17 11:29*	*12/20/17 19:18*	*20*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND		5890	1380	ug/Kg	☼		12/20/17 11:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.1		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	84.9		0.1	0.1	%			12/18/17 11:25	1

Client Sample ID: S-121417-JK-09

Date Collected: 12/14/17 12:40
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-9

Matrix: Solid
Percent Solids: 82.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		2.07	0.974	ug/Kg	☼	12/14/17 12:40	12/20/17 05:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*	*12/14/17 12:40*	*12/20/17 05:28*	*1*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*12/14/17 12:40*	*12/20/17 05:28*	*1*
Dibromofluoromethane (Surr)	*118*		*70 - 130*	*12/14/17 12:40*	*12/20/17 05:28*	*1*
Toluene-d8 (Surr)	*116*		*70 - 130*	*12/14/17 12:40*	*12/20/17 05:28*	*1*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND		6050	1410	ug/Kg	☼		12/20/17 11:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.4**		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	**82.6**		0.1	0.1	%			12/18/17 11:25	1

Client Sample ID: S-121417-JK-09D

Date Collected: 12/14/17 12:45
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-10

Matrix: Solid
Percent Solids: 83.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		2.04	0.959	ug/Kg	☼	12/14/17 12:45	12/20/17 05:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*	*12/14/17 12:45*	*12/20/17 05:56*	*1*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*12/14/17 12:45*	*12/20/17 05:56*	*1*
Dibromofluoromethane (Surr)	*120*		*70 - 130*	*12/14/17 12:45*	*12/20/17 05:56*	*1*
Toluene-d8 (Surr)	*120*		*70 - 130*	*12/14/17 12:45*	*12/20/17 05:56*	*1*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND		5970	1390	ug/Kg	☼		12/20/17 11:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**16.3**		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	**83.7**		0.1	0.1	%			12/18/17 11:25	1

Client Sample ID: S-121417-JK-11
Date Collected: 12/14/17 12:55
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-12
Matrix: Solid
Percent Solids: 82.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		1.96	0.923	ug/Kg	☼	12/14/17 12:55	12/20/17 09:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*	*12/14/17 12:55*	*12/20/17 09:10*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*12/14/17 12:55*	*12/20/17 09:10*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 130*	*12/14/17 12:55*	*12/20/17 09:10*	*1*
Toluene-d8 (Surr)	*104*		*70 - 130*	*12/14/17 12:55*	*12/20/17 09:10*	*1*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND		6050	1410	ug/Kg	☼		12/20/17 13:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.4**		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	**82.6**		0.1	0.1	%			12/18/17 11:25	1

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Client Sample ID: S-121417-JK-13A
Date Collected: 12/14/17 13:20
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-14
Matrix: Solid
Percent Solids: 94.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		1.97	0.926	ug/Kg	☼	12/14/17 13:20	12/20/17 07:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*	*12/14/17 13:20*	*12/20/17 07:19*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*12/14/17 13:20*	*12/20/17 07:19*	*1*
Dibromofluoromethane (Surr)	*105*		*70 - 130*	*12/14/17 13:20*	*12/20/17 07:19*	*1*
Toluene-d8 (Surr)	*105*		*70 - 130*	*12/14/17 13:20*	*12/20/17 07:19*	*1*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	**2080**	**J**	5290	1240	ug/Kg	☼		12/20/17 13:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**5.5**		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	**94.5**		0.1	0.1	%			12/18/17 11:25	1

Client Sample ID: S-121417-JK-13B

Date Collected: 12/14/17 13:25
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-15

Matrix: Solid
Percent Solids: 81.1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		2.04	0.959	ug/Kg	☼	12/14/17 13:25	12/20/17 07:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*44*	*X*	*70 - 130*	*12/14/17 13:25*	*12/20/17 07:47*	*1*
4-Bromofluorobenzene (Surr)	*233*	*X*	*70 - 130*	*12/14/17 13:25*	*12/20/17 07:47*	*1*
Dibromofluoromethane (Surr)	*57*	*X*	*70 - 130*	*12/14/17 13:25*	*12/20/17 07:47*	*1*
Toluene-d8 (Surr)	*500*	*X*	*70 - 130*	*12/14/17 13:25*	*12/20/17 07:47*	*1*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND		6170	1440	ug/Kg	☼		12/20/17 13:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**18.9**		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	**81.1**		0.1	0.1	%			12/18/17 11:25	1

Client Sample ID: S-121417-JK-TCLP 1

Date Collected: 12/14/17 14:30
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-18

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0100	0.00200	mg/L			12/28/17 18:02	10
2-Butanone (MEK)	ND		0.500	0.0260	mg/L			12/28/17 18:02	10
Carbon tetrachloride	ND		0.0100	0.00180	mg/L			12/28/17 18:02	10
Chlorobenzene	ND		0.0100	0.00180	mg/L			12/28/17 18:02	10
Chloroform	ND		0.0100	0.00230	mg/L			12/28/17 18:02	10
1,2-Dichloroethane	ND		0.0100	0.00200	mg/L			12/28/17 18:02	10
1,1-Dichloroethene	ND		0.0100	0.00250	mg/L			12/28/17 18:02	10
Tetrachloroethene	ND		0.0100	0.00250	mg/L			12/28/17 18:02	10
Trichloroethene	ND		0.0100	0.00200	mg/L			12/28/17 18:02	10
Vinyl chloride	ND		0.0100	0.00240	mg/L			12/28/17 18:02	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*12/28/17 18:02*	*10*
Dibromofluoromethane (Surr)	*106*		*70 - 130*		*12/28/17 18:02*	*10*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*		*12/28/17 18:02*	*10*
Toluene-d8 (Surr)	*97*		*70 - 130*		*12/28/17 18:02*	*10*

Method: 8270C - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cresols	ND		0.0400	0.0280	mg/L		12/22/17 09:39	12/31/17 03:33	2
1,4-Dichlorobenzene	ND		0.0200	0.00620	mg/L		12/22/17 09:39	12/31/17 03:33	2
2,4-Dinitrotoluene	ND		0.0200	0.00380	mg/L		12/22/17 09:39	12/31/17 03:33	2
Hexachlorobenzene	ND		0.0200	0.00360	mg/L		12/22/17 09:39	12/31/17 03:33	2
Hexachlorobutadiene	ND		0.0200	0.00600	mg/L		12/22/17 09:39	12/31/17 03:33	2
Hexachloroethane	ND		0.0200	0.00640	mg/L		12/22/17 09:39	12/31/17 03:33	2
Nitrobenzene	ND		0.0200	0.00380	mg/L		12/22/17 09:39	12/31/17 03:33	2
Pentachlorophenol	ND		0.0600	0.00700	mg/L		12/22/17 09:39	12/31/17 03:33	2
Pyridine	ND		0.0200	0.00360	mg/L		12/22/17 09:39	12/31/17 03:33	2
2,4,5-Trichlorophenol	ND		0.0600	0.00380	mg/L		12/22/17 09:39	12/31/17 03:33	2
2,4,6-Trichlorophenol	ND		0.0200	0.00320	mg/L		12/22/17 09:39	12/31/17 03:33	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*83*		*29 - 120*	*12/22/17 09:39*	*12/31/17 03:33*	*2*
2-Fluorophenol (Surr)	*68*		*10 - 120*	*12/22/17 09:39*	*12/31/17 03:33*	*2*
Nitrobenzene-d5 (Surr)	*81*		*27 - 120*	*12/22/17 09:39*	*12/31/17 03:33*	*2*
Phenol-d5 (Surr)	*61*		*10 - 120*	*12/22/17 09:39*	*12/31/17 03:33*	*2*
Terphenyl-d14 (Surr)	*95*		*13 - 120*	*12/22/17 09:39*	*12/31/17 03:33*	*2*
2,4,6-Tribromophenol (Surr)	*92*		*10 - 120*	*12/22/17 09:39*	*12/31/17 03:33*	*2*

Method: 6010B - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.500	0.0860	mg/L		12/21/17 23:23	12/30/17 19:16	1
Barium	**0.833**	**J**	10.0	0.0500	mg/L		12/21/17 23:23	12/30/17 19:16	1
Cadmium	ND		0.100	0.00500	mg/L		12/21/17 23:23	12/30/17 19:16	1
Chromium	ND		0.500	0.0300	mg/L		12/21/17 23:23	12/22/17 17:14	1
Lead	ND		0.500	0.0200	mg/L		12/21/17 23:23	12/30/17 19:16	1
Selenium	ND		0.100	0.0500	mg/L		12/21/17 23:23	12/30/17 19:16	1
Silver	ND		0.500	0.0300	mg/L		12/21/17 23:23	12/22/17 17:14	1

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Client Sample ID: S-121417-JK-TCLP 1
Date Collected: 12/14/17 14:30
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-18
Matrix: Solid

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00100	mg/L		12/22/17 10:10	12/22/17 17:02	1

Client Sample ID: S-121417-JK-TCLP 2

Date Collected: 12/14/17 14:45
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-19

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0100	0.00200	mg/L			12/28/17 18:31	10
2-Butanone (MEK)	ND		0.500	0.0260	mg/L			12/28/17 18:31	10
Carbon tetrachloride	ND		0.0100	0.00180	mg/L			12/28/17 18:31	10
Chlorobenzene	ND		0.0100	0.00180	mg/L			12/28/17 18:31	10
Chloroform	ND		0.0100	0.00230	mg/L			12/28/17 18:31	10
1,2-Dichloroethane	ND		0.0100	0.00200	mg/L			12/28/17 18:31	10
1,1-Dichloroethene	ND		0.0100	0.00250	mg/L			12/28/17 18:31	10
Tetrachloroethene	ND		0.0100	0.00250	mg/L			12/28/17 18:31	10
Trichloroethene	ND		0.0100	0.00200	mg/L			12/28/17 18:31	10
Vinyl chloride	ND		0.0100	0.00240	mg/L			12/28/17 18:31	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*12/28/17 18:31*	*10*
Dibromofluoromethane (Surr)	*107*		*70 - 130*		*12/28/17 18:31*	*10*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*12/28/17 18:31*	*10*
Toluene-d8 (Surr)	*95*		*70 - 130*		*12/28/17 18:31*	*10*

Method: 8270C - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cresols	ND		0.0400	0.0280	mg/L		12/22/17 09:39	12/31/17 03:53	2
1,4-Dichlorobenzene	ND		0.0200	0.00620	mg/L		12/22/17 09:39	12/31/17 03:53	2
2,4-Dinitrotoluene	ND		0.0200	0.00380	mg/L		12/22/17 09:39	12/31/17 03:53	2
Hexachlorobenzene	ND		0.0200	0.00360	mg/L		12/22/17 09:39	12/31/17 03:53	2
Hexachlorobutadiene	ND		0.0200	0.00600	mg/L		12/22/17 09:39	12/31/17 03:53	2
Hexachloroethane	ND		0.0200	0.00640	mg/L		12/22/17 09:39	12/31/17 03:53	2
Nitrobenzene	ND		0.0200	0.00380	mg/L		12/22/17 09:39	12/31/17 03:53	2
Pentachlorophenol	ND		0.0600	0.00700	mg/L		12/22/17 09:39	12/31/17 03:53	2
Pyridine	ND		0.0200	0.00360	mg/L		12/22/17 09:39	12/31/17 03:53	2
2,4,5-Trichlorophenol	ND		0.0600	0.00380	mg/L		12/22/17 09:39	12/31/17 03:53	2
2,4,6-Trichlorophenol	ND		0.0200	0.00320	mg/L		12/22/17 09:39	12/31/17 03:53	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*68*		*29 - 120*	*12/22/17 09:39*	*12/31/17 03:53*	*2*
2-Fluorophenol (Surr)	*62*		*10 - 120*	*12/22/17 09:39*	*12/31/17 03:53*	*2*
Nitrobenzene-d5 (Surr)	*69*		*27 - 120*	*12/22/17 09:39*	*12/31/17 03:53*	*2*
Phenol-d5 (Surr)	*59*		*10 - 120*	*12/22/17 09:39*	*12/31/17 03:53*	*2*
Terphenyl-d14 (Surr)	*88*		*13 - 120*	*12/22/17 09:39*	*12/31/17 03:53*	*2*
2,4,6-Tribromophenol (Surr)	*89*		*10 - 120*	*12/22/17 09:39*	*12/31/17 03:53*	*2*

Method: 6010B - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.500	0.0860	mg/L		12/21/17 23:23	12/30/17 19:22	1
Barium	**0.540**	**J**	10.0	0.0500	mg/L		12/21/17 23:23	12/30/17 19:22	1
Cadmium	ND		0.100	0.00500	mg/L		12/21/17 23:23	12/30/17 19:22	1
Chromium	ND		0.500	0.0300	mg/L		12/21/17 23:23	12/22/17 17:19	1
Lead	ND		0.500	0.0200	mg/L		12/21/17 23:23	12/30/17 19:22	1
Selenium	ND		0.100	0.0500	mg/L		12/21/17 23:23	12/30/17 19:22	1
Silver	ND		0.500	0.0300	mg/L		12/21/17 23:23	12/22/17 17:19	1

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Client Sample ID: S-121417-JK-TCLP 2
Date Collected: 12/14/17 14:45
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-19
Matrix: Solid

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00100	mg/L		12/22/17 10:10	12/22/17 17:05	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-484478/7
Matrix: Solid
Analysis Batch: 484478

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		2.00	0.940	ug/Kg			12/20/17 01:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*12/20/17 01:45*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 130*		*12/20/17 01:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*		*12/20/17 01:45*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*		*12/20/17 01:45*	*1*

Lab Sample ID: LCS 490-484478/3
Matrix: Solid
Analysis Batch: 484478

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dichloropropane			50.0	44.00		ug/Kg		88	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*

Lab Sample ID: LCSD 490-484478/4
Matrix: Solid
Analysis Batch: 484478

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloropropane			50.0	43.76		ug/Kg		88	70 - 130	1	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*
Dibromofluoromethane (Surr)	*101*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*

Lab Sample ID: MB 490-484634/8
Matrix: Solid
Analysis Batch: 484634

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		2.00	0.940	ug/Kg			12/20/17 13:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*12/20/17 13:38*	*1*
Dibromofluoromethane (Surr)	*120*		*70 - 130*		*12/20/17 13:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*12/20/17 13:38*	*1*
Toluene-d8 (Surr)	*93*		*70 - 130*		*12/20/17 13:38*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 490-484634/9
Matrix: Solid
Analysis Batch: 484634

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		100	47.0	ug/Kg			12/20/17 14:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*12/20/17 14:08*	*1*
Dibromofluoromethane (Surr)	*122*		*70 - 130*		*12/20/17 14:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*70 - 130*		*12/20/17 14:08*	*1*
Toluene-d8 (Surr)	*92*		*70 - 130*		*12/20/17 14:08*	*1*

Lab Sample ID: LCS 490-484634/3
Matrix: Solid
Analysis Batch: 484634

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloropropane	50.0	50.81		ug/Kg		102	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
Dibromofluoromethane (Surr)	*107*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: LCS 490-484634/5
Matrix: Solid
Analysis Batch: 484634

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloropropane	2500	2602		ug/Kg		104	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
Dibromofluoromethane (Surr)	*107*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*

Lab Sample ID: LCSD 490-484634/4
Matrix: Solid
Analysis Batch: 484634

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloropropane	50.0	51.92		ug/Kg		104	70 - 130	2	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
Dibromofluoromethane (Surr)	*107*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 490-484634/6
Matrix: Solid
Analysis Batch: 484634

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloropropane			2500	2638		ug/Kg		106	70 - 130	1	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
Dibromofluoromethane (Surr)	*108*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*

Lab Sample ID: MB 490-486292/6
Matrix: Solid
Analysis Batch: 486292

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00100	0.000200	mg/L			12/28/17 12:07	1
2-Butanone (MEK)	ND		0.0500	0.00260	mg/L			12/28/17 12:07	1
Carbon tetrachloride	ND		0.00100	0.000180	mg/L			12/28/17 12:07	1
Chlorobenzene	ND		0.00100	0.000180	mg/L			12/28/17 12:07	1
Chloroform	ND		0.00100	0.000230	mg/L			12/28/17 12:07	1
1,2-Dichloroethane	ND		0.00100	0.000200	mg/L			12/28/17 12:07	1
1,1-Dichloroethene	ND		0.00100	0.000250	mg/L			12/28/17 12:07	1
Tetrachloroethene	ND		0.00100	0.000250	mg/L			12/28/17 12:07	1
Trichloroethene	ND		0.00100	0.000200	mg/L			12/28/17 12:07	1
Vinyl chloride	ND		0.00100	0.000240	mg/L			12/28/17 12:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*12/28/17 12:07*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 130*		*12/28/17 12:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*		*12/28/17 12:07*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*12/28/17 12:07*	*1*

Lab Sample ID: LCS 490-486292/3
Matrix: Solid
Analysis Batch: 486292

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene			0.0200	0.02142		mg/L		107	70 - 130
2-Butanone (MEK)			0.100	0.1034		mg/L		103	55 - 143
Carbon tetrachloride			0.0200	0.02411		mg/L		121	70 - 147
Chlorobenzene			0.0200	0.02121		mg/L		106	70 - 130
Chloroform			0.0200	0.02213		mg/L		111	70 - 130
1,2-Dichloroethane			0.0200	0.02259		mg/L		113	70 - 130
1,1-Dichloroethene			0.0200	0.02247		mg/L		112	70 - 132
Tetrachloroethene			0.0200	0.02232		mg/L		112	70 - 130
Trichloroethene			0.0200	0.02337		mg/L		117	70 - 130
Vinyl chloride			0.0200	0.01949		mg/L		97	57 - 137

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 490-486292/3
Matrix: Solid
Analysis Batch: 486292

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*
Dibromofluoromethane (Surr)	*108*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*

Lab Sample ID: LCSD 490-486292/4
Matrix: Solid
Analysis Batch: 486292

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.0200	0.02063		mg/L		103	70 - 130	4	12
2-Butanone (MEK)			0.100	0.09909		mg/L		99	55 - 143	4	19
Carbon tetrachloride			0.0200	0.02404		mg/L		120	70 - 147	0	16
Chlorobenzene			0.0200	0.02111		mg/L		106	70 - 130	0	12
Chloroform			0.0200	0.02085		mg/L		104	70 - 130	6	14
1,2-Dichloroethane			0.0200	0.02219		mg/L		111	70 - 130	2	13
1,1-Dichloroethene			0.0200	0.02192		mg/L		110	70 - 132	3	20
Tetrachloroethene			0.0200	0.02276		mg/L		114	70 - 130	2	17
Trichloroethene			0.0200	0.02276		mg/L		114	70 - 130	3	14
Vinyl chloride			0.0200	0.01982		mg/L		99	57 - 137	2	15

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*
Dibromofluoromethane (Surr)	*105*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*

Lab Sample ID: LB 490-486226/1-A
Matrix: Solid
Analysis Batch: 486292

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00100	0.000200	mg/L			12/28/17 14:35	1
2-Butanone (MEK)	0.003463	J	0.0500	0.00260	mg/L			12/28/17 14:35	1
Carbon tetrachloride	ND		0.00100	0.000180	mg/L			12/28/17 14:35	1
Chlorobenzene	ND		0.00100	0.000180	mg/L			12/28/17 14:35	1
Chloroform	0.002510		0.00100	0.000230	mg/L			12/28/17 14:35	1
1,2-Dichloroethane	ND		0.00100	0.000200	mg/L			12/28/17 14:35	1
1,1-Dichloroethene	ND		0.00100	0.000250	mg/L			12/28/17 14:35	1
Tetrachloroethene	ND		0.00100	0.000250	mg/L			12/28/17 14:35	1
Trichloroethene	ND		0.00100	0.000200	mg/L			12/28/17 14:35	1
Vinyl chloride	ND		0.00100	0.000240	mg/L			12/28/17 14:35	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*12/28/17 14:35*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 130*		*12/28/17 14:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*		*12/28/17 14:35*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LB 490-486226/1-A
Matrix: Solid
Analysis Batch: 486292

Client Sample ID: Method Blank
Prep Type: TCLP

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		70 - 130		12/28/17 14:35	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: LCS 490-485340/15-A
Matrix: Solid
Analysis Batch: 486944

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 485340

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dichlorobenzene			0.200	0.1399		mg/L		70	24 - 120		
2,4-Dinitrotoluene			0.200	0.2193		mg/L		110	36 - 138		
Hexachlorobenzene			0.200	0.2200		mg/L		110	36 - 140		
Hexachlorobutadiene			0.200	0.1679		mg/L		84	18 - 136		
Hexachloroethane			0.200	0.1440		mg/L		72	23 - 120		
Nitrobenzene			0.200	0.1735		mg/L		87	10 - 150		
Pentachlorophenol			0.400	0.4250		mg/L		106	10 - 150		
Pyridine			0.200	0.09619		mg/L		48	10 - 110		
2,4,5-Trichlorophenol			0.200	0.2150		mg/L		108	10 - 150		
2,4,6-Trichlorophenol			0.200	0.2172		mg/L		109	10 - 150		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	87		29 - 120
2-Fluorophenol (Surr)	63		10 - 120
Nitrobenzene-d5 (Surr)	82		27 - 120
Phenol-d5 (Surr)	64		10 - 120
Terphenyl-d14 (Surr)	96		13 - 120
2,4,6-Tribromophenol (Surr)	90		10 - 120

Lab Sample ID: LCSD 490-485340/16-A
Matrix: Solid
Analysis Batch: 486944

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 485340

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dichlorobenzene			0.200	0.1522		mg/L		76	24 - 120	8	50
2,4-Dinitrotoluene			0.200	0.2213		mg/L		111	36 - 138	1	50
Hexachlorobenzene			0.200	0.2206		mg/L		110	36 - 140	0	50
Hexachlorobutadiene			0.200	0.1735		mg/L		87	18 - 136	3	50
Hexachloroethane			0.200	0.1520		mg/L		76	23 - 120	5	50
Nitrobenzene			0.200	0.1723		mg/L		86	10 - 150	1	50
Pentachlorophenol			0.400	0.4407		mg/L		110	10 - 150	4	50
Pyridine			0.200	0.1013		mg/L		51	10 - 110	5	50
2,4,5-Trichlorophenol			0.200	0.2164		mg/L		108	10 - 150	1	50
2,4,6-Trichlorophenol			0.200	0.2239		mg/L		112	10 - 150	3	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl (Surr)	89		29 - 120
2-Fluorophenol (Surr)	73		10 - 120

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 490-485340/16-A
Matrix: Solid
Analysis Batch: 486944

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 485340

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Nitrobenzene-d5 (Surr)	82		27 - 120
Phenol-d5 (Surr)	69		10 - 120
Terphenyl-d14 (Surr)	97		13 - 120
2,4,6-Tribromophenol (Surr)	93		10 - 120

Lab Sample ID: LB 490-484906/1-D
Matrix: Solid
Analysis Batch: 486944

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 485340

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cresols	ND		0.0400	0.0280	mg/L		12/22/17 09:39	12/31/17 00:19	2
1,4-Dichlorobenzene	ND		0.0200	0.00620	mg/L		12/22/17 09:39	12/31/17 00:19	2
2,4-Dinitrotoluene	ND		0.0200	0.00380	mg/L		12/22/17 09:39	12/31/17 00:19	2
Hexachlorobenzene	ND		0.0200	0.00360	mg/L		12/22/17 09:39	12/31/17 00:19	2
Hexachlorobutadiene	ND		0.0200	0.00600	mg/L		12/22/17 09:39	12/31/17 00:19	2
Hexachloroethane	ND		0.0200	0.00640	mg/L		12/22/17 09:39	12/31/17 00:19	2
Nitrobenzene	ND		0.0200	0.00380	mg/L		12/22/17 09:39	12/31/17 00:19	2
Pentachlorophenol	ND		0.0600	0.00700	mg/L		12/22/17 09:39	12/31/17 00:19	2
Pyridine	ND		0.0200	0.00360	mg/L		12/22/17 09:39	12/31/17 00:19	2
2,4,5-Trichlorophenol	ND		0.0600	0.00380	mg/L		12/22/17 09:39	12/31/17 00:19	2
2,4,6-Trichlorophenol	ND		0.0200	0.00320	mg/L		12/22/17 09:39	12/31/17 00:19	2

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	83		29 - 120	12/22/17 09:39	12/31/17 00:19	2
2-Fluorophenol (Surr)	67		10 - 120	12/22/17 09:39	12/31/17 00:19	2
Nitrobenzene-d5 (Surr)	78		27 - 120	12/22/17 09:39	12/31/17 00:19	2
Phenol-d5 (Surr)	55		10 - 120	12/22/17 09:39	12/31/17 00:19	2
Terphenyl-d14 (Surr)	88		13 - 120	12/22/17 09:39	12/31/17 00:19	2
2,4,6-Tribromophenol (Surr)	82		10 - 120	12/22/17 09:39	12/31/17 00:19	2

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Lab Sample ID: MB 600-228109/2
Matrix: Solid
Analysis Batch: 228109

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND		5000	1170	ug/Kg			12/20/17 09:36	1

Lab Sample ID: LCS 600-228109/3
Matrix: Solid
Analysis Batch: 228109

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
TEA			100000	122600		ug/Kg		123	70 - 130		

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) (Continued)

Lab Sample ID: LCSD 600-228109/16
Matrix: Solid
Analysis Batch: 228109

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
TEA	100000	123200		ug/Kg		123	70 - 130	0	30

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 490-485256/1-A
Matrix: Solid
Analysis Batch: 485818

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 485256

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.500	0.0860	mg/L		12/21/17 23:23	12/22/17 15:41	1
Barium	ND		10.0	0.0500	mg/L		12/21/17 23:23	12/22/17 15:41	1
Cadmium	ND		0.100	0.00500	mg/L		12/21/17 23:23	12/22/17 15:41	1
Chromium	ND		0.500	0.0300	mg/L		12/21/17 23:23	12/22/17 15:41	1
Lead	ND		0.500	0.0200	mg/L		12/21/17 23:23	12/22/17 15:41	1
Selenium	ND		0.100	0.0500	mg/L		12/21/17 23:23	12/22/17 15:41	1
Silver	ND		0.500	0.0300	mg/L		12/21/17 23:23	12/22/17 15:41	1

Lab Sample ID: LCS 490-485256/2-A
Matrix: Solid
Analysis Batch: 485987

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 485256

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.00	1.828		mg/L		91	80 - 120
Barium	20.0	19.43		mg/L		97	80 - 120
Cadmium	2.00	2.084		mg/L		104	80 - 120
Chromium	10.0	10.46		mg/L		105	80 - 120
Lead	10.0	10.07		mg/L		101	80 - 120
Selenium	2.00	2.127		mg/L		106	80 - 120
Silver	2.00	2.086		mg/L		104	80 - 120

Lab Sample ID: LB 490-484906/1-B
Matrix: Solid
Analysis Batch: 485818

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 485256

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.500	0.0860	mg/L		12/21/17 23:23	12/22/17 15:51	1
Barium	ND		10.0	0.0500	mg/L		12/21/17 23:23	12/22/17 15:51	1
Cadmium	ND		0.100	0.00500	mg/L		12/21/17 23:23	12/22/17 15:51	1
Chromium	ND		0.500	0.0300	mg/L		12/21/17 23:23	12/22/17 15:51	1
Lead	ND		0.500	0.0200	mg/L		12/21/17 23:23	12/22/17 15:51	1
Selenium	ND		0.100	0.0500	mg/L		12/21/17 23:23	12/22/17 15:51	1
Silver	ND		0.500	0.0300	mg/L		12/21/17 23:23	12/22/17 15:51	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-485365/1-A
Matrix: Solid
Analysis Batch: 485537

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 485365

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00100	mg/L		12/22/17 10:10	12/22/17 15:50	1

Lab Sample ID: LCS 490-485365/2-A
Matrix: Solid
Analysis Batch: 485537

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 485365

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.0200	0.01947		mg/L		97	80 - 120

Lab Sample ID: LB 490-484661/1-F
Matrix: Solid
Analysis Batch: 485537

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 485365

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00100	mg/L		12/22/17 10:10	12/22/17 15:56	1

Lab Sample ID: LB 490-484906/1-E
Matrix: Solid
Analysis Batch: 485537

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 485365

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00100	mg/L		12/22/17 10:10	12/22/17 16:45	1

Lab Sample ID: MB 490-484808/1-C
Matrix: Solid
Analysis Batch: 485537

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 485365

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00200	0.00100	mg/L		12/22/17 10:10	12/22/17 17:11	1

Method: Moisture - Percent Moisture

Lab Sample ID: 490-143202-3 DU
Matrix: Solid
Analysis Batch: 484082

Client Sample ID: S-121417-JK-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	31.6		31.3		%		0.7	20
Percent Solids	68.4		68.7		%		0.3	20

GC/MS VOA

Prep Batch: 484393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-4	S-121417-JK-04	Total/NA	Solid	5035	
490-143202-8	S-121417-JK-08	Total/NA	Solid	5035	

Prep Batch: 484409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-1	S-121417-JK-01	Total/NA	Solid	5035	
490-143202-2	S-121417-JK-02	Total/NA	Solid	5035	
490-143202-3	S-121417-JK-03	Total/NA	Solid	5035	
490-143202-9	S-121417-JK-09	Total/NA	Solid	5035	
490-143202-10	S-121417-JK-09D	Total/NA	Solid	5035	
490-143202-12	S-121417-JK-11	Total/NA	Solid	5035	
490-143202-14	S-121417-JK-13A	Total/NA	Solid	5035	
490-143202-15	S-121417-JK-13B	Total/NA	Solid	5035	

Analysis Batch: 484478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-1	S-121417-JK-01	Total/NA	Solid	8260B	484409
490-143202-3	S-121417-JK-03	Total/NA	Solid	8260B	484409
490-143202-9	S-121417-JK-09	Total/NA	Solid	8260B	484409
490-143202-10	S-121417-JK-09D	Total/NA	Solid	8260B	484409
490-143202-12	S-121417-JK-11	Total/NA	Solid	8260B	484409
490-143202-14	S-121417-JK-13A	Total/NA	Solid	8260B	484409
490-143202-15	S-121417-JK-13B	Total/NA	Solid	8260B	484409
MB 490-484478/7	Method Blank	Total/NA	Solid	8260B	
LCS 490-484478/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-484478/4	Lab Control Sample Dup	Total/NA	Solid	8260B	

Analysis Batch: 484634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-2	S-121417-JK-02	Total/NA	Solid	8260B	484409
490-143202-4	S-121417-JK-04	Total/NA	Solid	8260B	484393
490-143202-8	S-121417-JK-08	Total/NA	Solid	8260B	484393
MB 490-484634/8	Method Blank	Total/NA	Solid	8260B	
MB 490-484634/9	Method Blank	Total/NA	Solid	8260B	
LCS 490-484634/3	Lab Control Sample	Total/NA	Solid	8260B	
LCS 490-484634/5	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-484634/4	Lab Control Sample Dup	Total/NA	Solid	8260B	
LCSD 490-484634/6	Lab Control Sample Dup	Total/NA	Solid	8260B	

Leach Batch: 486226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-18	S-121417-JK-TCLP 1	TCLP	Solid	1311	
490-143202-19	S-121417-JK-TCLP 2	TCLP	Solid	1311	
LB 490-486226/1-A	Method Blank	TCLP	Solid	1311	

Analysis Batch: 486292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-18	S-121417-JK-TCLP 1	TCLP	Solid	8260B	486226
490-143202-19	S-121417-JK-TCLP 2	TCLP	Solid	8260B	486226
LB 490-486226/1-A	Method Blank	TCLP	Solid	8260B	486226
MB 490-486292/6	Method Blank	Total/NA	Solid	8260B	

GC/MS VOA (Continued)

Analysis Batch: 486292 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-486292/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-486292/4	Lab Control Sample Dup	Total/NA	Solid	8260B	

GC/MS Semi VOA

Leach Batch: 484906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-18	S-121417-JK-TCLP 1	TCLP	Solid	1311	
490-143202-19	S-121417-JK-TCLP 2	TCLP	Solid	1311	
LB 490-484906/1-D	Method Blank	TCLP	Solid	1311	

Prep Batch: 485340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-18	S-121417-JK-TCLP 1	TCLP	Solid	3510C	484906
490-143202-19	S-121417-JK-TCLP 2	TCLP	Solid	3510C	484906
LB 490-484906/1-D	Method Blank	TCLP	Solid	3510C	484906
LCS 490-485340/15-A	Lab Control Sample	Total/NA	Solid	3510C	
LCSD 490-485340/16-A	Lab Control Sample Dup	Total/NA	Solid	3510C	

Analysis Batch: 486944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-18	S-121417-JK-TCLP 1	TCLP	Solid	8270C	485340
490-143202-19	S-121417-JK-TCLP 2	TCLP	Solid	8270C	485340
LB 490-484906/1-D	Method Blank	TCLP	Solid	8270C	485340
LCS 490-485340/15-A	Lab Control Sample	Total/NA	Solid	8270C	485340
LCSD 490-485340/16-A	Lab Control Sample Dup	Total/NA	Solid	8270C	485340

GC VOA

Leach Batch: 228054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-1	S-121417-JK-01	Soluble	Solid	Acid DI leach	
490-143202-2	S-121417-JK-02	Soluble	Solid	Acid DI leach	
490-143202-3	S-121417-JK-03	Soluble	Solid	Acid DI leach	
490-143202-4	S-121417-JK-04	Soluble	Solid	Acid DI leach	
490-143202-8	S-121417-JK-08	Soluble	Solid	Acid DI leach	
490-143202-9	S-121417-JK-09	Soluble	Solid	Acid DI leach	
490-143202-10	S-121417-JK-09D	Soluble	Solid	Acid DI leach	
490-143202-12	S-121417-JK-11	Soluble	Solid	Acid DI leach	
490-143202-14	S-121417-JK-13A	Soluble	Solid	Acid DI leach	
490-143202-15	S-121417-JK-13B	Soluble	Solid	Acid DI leach	

Analysis Batch: 228109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-1	S-121417-JK-01	Soluble	Solid	8015D	228054
490-143202-2	S-121417-JK-02	Soluble	Solid	8015D	228054
490-143202-3	S-121417-JK-03	Soluble	Solid	8015D	228054
490-143202-4	S-121417-JK-04	Soluble	Solid	8015D	228054
490-143202-8	S-121417-JK-08	Soluble	Solid	8015D	228054
490-143202-9	S-121417-JK-09	Soluble	Solid	8015D	228054

GC VOA (Continued)

Analysis Batch: 228109 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-10	S-121417-JK-09D	Soluble	Solid	8015D	228054
490-143202-12	S-121417-JK-11	Soluble	Solid	8015D	228054
490-143202-14	S-121417-JK-13A	Soluble	Solid	8015D	228054
490-143202-15	S-121417-JK-13B	Soluble	Solid	8015D	228054
MB 600-228109/2	Method Blank	Total/NA	Solid	8015D	
LCS 600-228109/3	Lab Control Sample	Total/NA	Solid	8015D	
LCSD 600-228109/16	Lab Control Sample Dup	Total/NA	Solid	8015D	

Metals

Leach Batch: 484661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 490-484661/1-F	Method Blank	TCLP	Solid	1311	

Leach Batch: 484808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 490-484808/1-C	Method Blank	TCLP	Solid	1311	

Leach Batch: 484906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-18	S-121417-JK-TCLP 1	TCLP	Solid	1311	
490-143202-19	S-121417-JK-TCLP 2	TCLP	Solid	1311	
LB 490-484906/1-B	Method Blank	TCLP	Solid	1311	
LB 490-484906/1-E	Method Blank	TCLP	Solid	1311	

Prep Batch: 485256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-18	S-121417-JK-TCLP 1	TCLP	Solid	3010A	484906
490-143202-19	S-121417-JK-TCLP 2	TCLP	Solid	3010A	484906
LB 490-484906/1-B	Method Blank	TCLP	Solid	3010A	484906
MB 490-485256/1-A	Method Blank	Total/NA	Solid	3010A	
LCS 490-485256/2-A	Lab Control Sample	Total/NA	Solid	3010A	

Prep Batch: 485365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-18	S-121417-JK-TCLP 1	TCLP	Solid	7470A	484906
490-143202-19	S-121417-JK-TCLP 2	TCLP	Solid	7470A	484906
LB 490-484661/1-F	Method Blank	TCLP	Solid	7470A	484661
LB 490-484906/1-E	Method Blank	TCLP	Solid	7470A	484906
MB 490-484808/1-C	Method Blank	TCLP	Solid	7470A	484808
MB 490-485365/1-A	Method Blank	Total/NA	Solid	7470A	
LCS 490-485365/2-A	Lab Control Sample	Total/NA	Solid	7470A	

Analysis Batch: 485537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-18	S-121417-JK-TCLP 1	TCLP	Solid	7470A	485365
490-143202-19	S-121417-JK-TCLP 2	TCLP	Solid	7470A	485365
LB 490-484661/1-F	Method Blank	TCLP	Solid	7470A	485365
LB 490-484906/1-E	Method Blank	TCLP	Solid	7470A	485365
MB 490-484808/1-C	Method Blank	TCLP	Solid	7470A	485365

Metals (Continued)

Analysis Batch: 485537 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 490-485365/1-A	Method Blank	Total/NA	Solid	7470A	485365
LCS 490-485365/2-A	Lab Control Sample	Total/NA	Solid	7470A	485365

Analysis Batch: 485818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-18	S-121417-JK-TCLP 1	TCLP	Solid	6010B	485256
490-143202-19	S-121417-JK-TCLP 2	TCLP	Solid	6010B	485256
LB 490-484906/1-B	Method Blank	TCLP	Solid	6010B	485256
MB 490-485256/1-A	Method Blank	Total/NA	Solid	6010B	485256

Analysis Batch: 485987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-485256/2-A	Lab Control Sample	Total/NA	Solid	6010B	485256

Analysis Batch: 486972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-18	S-121417-JK-TCLP 1	TCLP	Solid	6010B	485256
490-143202-19	S-121417-JK-TCLP 2	TCLP	Solid	6010B	485256

General Chemistry

Analysis Batch: 484082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-1	S-121417-JK-01	Total/NA	Solid	Moisture	
490-143202-2	S-121417-JK-02	Total/NA	Solid	Moisture	
490-143202-3	S-121417-JK-03	Total/NA	Solid	Moisture	
490-143202-4	S-121417-JK-04	Total/NA	Solid	Moisture	
490-143202-8	S-121417-JK-08	Total/NA	Solid	Moisture	
490-143202-9	S-121417-JK-09	Total/NA	Solid	Moisture	
490-143202-10	S-121417-JK-09D	Total/NA	Solid	Moisture	
490-143202-12	S-121417-JK-11	Total/NA	Solid	Moisture	
490-143202-14	S-121417-JK-13A	Total/NA	Solid	Moisture	
490-143202-15	S-121417-JK-13B	Total/NA	Solid	Moisture	
490-143202-3 DU	S-121417-JK-03	Total/NA	Solid	Moisture	

Lab Chronicle

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Client Sample ID: S-121417-JK-01
Date Collected: 12/14/17 10:50
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-01
Date Collected: 12/14/17 10:50
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-1
Matrix: Solid
Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.48 g	5.0 mL	484409	12/14/17 10:50	CU	TAL NSH
Total/NA	Analysis	8260B		1	5 g	5 mL	484478	12/20/17 02:13	PN	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	228054	12/19/17 14:26	JPS	TAL HOU
Soluble	Analysis	8015D		1			228109	12/20/17 10:19	JPS	TAL HOU

Client Sample ID: S-121417-JK-02
Date Collected: 12/14/17 11:00
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-02
Date Collected: 12/14/17 11:00
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-2
Matrix: Solid
Percent Solids: 85.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.07 g	5.0 mL	484409	12/14/17 11:00	CU	TAL NSH
Total/NA	Analysis	8260B		1	5 g	5 mL	484634	12/20/17 14:39	RP	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	228054	12/19/17 14:26	JPS	TAL HOU
Soluble	Analysis	8015D		1			228109	12/20/17 10:34	JPS	TAL HOU

Client Sample ID: S-121417-JK-03
Date Collected: 12/14/17 11:10
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-03
Date Collected: 12/14/17 11:10
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-3
Matrix: Solid
Percent Solids: 68.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7 g	5.0 mL	484409	12/14/17 11:10	CU	TAL NSH

Lab Chronicle

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Client Sample ID: S-121417-JK-03
Date Collected: 12/14/17 11:10
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-3
Matrix: Solid
Percent Solids: 68.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 g	5 mL	484478	12/20/17 02:41	PN	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	228054	12/19/17 14:26	JPS	TAL HOU
Soluble	Analysis	8015D		1			228109	12/20/17 10:48	JPS	TAL HOU

Client Sample ID: S-121417-JK-04
Date Collected: 12/14/17 11:20
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-04
Date Collected: 12/14/17 11:20
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-4
Matrix: Solid
Percent Solids: 81.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.11 g	5.0 mL	484393	12/19/17 11:29	CU	TAL NSH
Total/NA	Analysis	8260B		10	0.1 mL	5 mL	484634	12/20/17 19:48	RP	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	228054	12/19/17 14:26	JPS	TAL HOU
Soluble	Analysis	8015D		1			228109	12/20/17 11:03	JPS	TAL HOU

Client Sample ID: S-121417-JK-08
Date Collected: 12/14/17 12:20
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-08
Date Collected: 12/14/17 12:20
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-8
Matrix: Solid
Percent Solids: 84.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.8 g	5.0 mL	484393	12/19/17 11:29	CU	TAL NSH
Total/NA	Analysis	8260B		20	0.1 mL	5 mL	484634	12/20/17 19:18	RP	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	228054	12/19/17 14:26	JPS	TAL HOU
Soluble	Analysis	8015D		1			228109	12/20/17 11:18	JPS	TAL HOU

Lab Chronicle

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Client Sample ID: S-121417-JK-09
Date Collected: 12/14/17 12:40
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-09
Date Collected: 12/14/17 12:40
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-9
Matrix: Solid
Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.84 g	5.0 mL	484409	12/14/17 12:40	CU	TAL NSH
Total/NA	Analysis	8260B		1	5 g	5 mL	484478	12/20/17 05:28	PN	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	228054	12/19/17 14:26	JPS	TAL HOU
Soluble	Analysis	8015D		1			228109	12/20/17 11:32	JPS	TAL HOU

Client Sample ID: S-121417-JK-09D
Date Collected: 12/14/17 12:45
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-09D
Date Collected: 12/14/17 12:45
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-10
Matrix: Solid
Percent Solids: 83.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.85 g	5.0 mL	484409	12/14/17 12:45	CU	TAL NSH
Total/NA	Analysis	8260B		1	5 g	5 mL	484478	12/20/17 05:56	PN	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	228054	12/19/17 14:26	JPS	TAL HOU
Soluble	Analysis	8015D		1			228109	12/20/17 11:47	JPS	TAL HOU

Client Sample ID: S-121417-JK-11
Date Collected: 12/14/17 12:55
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-11
Date Collected: 12/14/17 12:55
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-12
Matrix: Solid
Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.16 g	5.0 mL	484409	12/14/17 12:55	CU	TAL NSH

Client Sample ID: S-121417-JK-11

Lab Sample ID: 490-143202-12
Date Collected: 12/14/17 12:55
Matrix: Solid
Date Received: 12/15/17 09:20
Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 g	5 mL	484478	12/20/17 09:10	PN	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	228054	12/19/17 14:26	JPS	TAL HOU
Soluble	Analysis	8015D		1			228109	12/20/17 13:18	JPS	TAL HOU

Client Sample ID: S-121417-JK-13A

Lab Sample ID: 490-143202-14
Date Collected: 12/14/17 13:20
Matrix: Solid
Date Received: 12/15/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-13A

Lab Sample ID: 490-143202-14
Date Collected: 12/14/17 13:20
Matrix: Solid
Date Received: 12/15/17 09:20
Percent Solids: 94.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.37 g	5.0 mL	484409	12/14/17 13:20	CU	TAL NSH
Total/NA	Analysis	8260B		1	5 g	5 mL	484478	12/20/17 07:19	PN	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	228054	12/19/17 14:26	JPS	TAL HOU
Soluble	Analysis	8015D		1			228109	12/20/17 13:33	JPS	TAL HOU

Client Sample ID: S-121417-JK-13B

Lab Sample ID: 490-143202-15
Date Collected: 12/14/17 13:25
Matrix: Solid
Date Received: 12/15/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-13B

Lab Sample ID: 490-143202-15
Date Collected: 12/14/17 13:25
Matrix: Solid
Date Received: 12/15/17 09:20
Percent Solids: 81.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.04 g	5.0 mL	484409	12/14/17 13:25	CU	TAL NSH
Total/NA	Analysis	8260B		1	5 g	5 mL	484478	12/20/17 07:47	PN	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	228054	12/19/17 14:26	JPS	TAL HOU
Soluble	Analysis	8015D		1			228109	12/20/17 13:48	JPS	TAL HOU

Lab Chronicle

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Client Sample ID: S-121417-JK-TCLP 1

Lab Sample ID: 490-143202-18

Date Collected: 12/14/17 14:30
Matrix: Solid
Date Received: 12/15/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			24.96 g	500 mL	486226	12/27/17 20:07	JDG	TAL NSH
TCLP	Analysis	8260B		10	10 mL	10 mL	486292	12/28/17 18:02	MRM	TAL NSH
TCLP	Leach	1311			100.03 g	2001 mL	484906	12/20/17 20:28	MS	TAL NSH
TCLP	Prep	3510C			500 mL	1 mL	485340	12/22/17 09:39	KB	TAL NSH
TCLP	Analysis	8270C		2			486944	12/31/17 03:33	ZLN	TAL NSH
TCLP	Leach	1311			100.03 g	2001 mL	484906	12/20/17 20:28	MS	TAL NSH
TCLP	Prep	3010A			5.0 mL	50.0 mL	485256	12/21/17 23:23	BLG	TAL NSH
TCLP	Analysis	6010B		1			485818	12/22/17 17:14	LCS	TAL NSH
TCLP	Leach	1311			100.03 g	2001 mL	484906	12/20/17 20:28	MS	TAL NSH
TCLP	Prep	3010A			5.0 mL	50.0 mL	485256	12/21/17 23:23	BLG	TAL NSH
TCLP	Analysis	6010B		1			486972	12/30/17 19:16	LCS	TAL NSH
TCLP	Leach	1311			100.03 g	2001 mL	484906	12/20/17 20:28	MS	TAL NSH
TCLP	Prep	7470A			3 mL	30 mL	485365	12/22/17 10:10	RDH	TAL NSH
TCLP	Analysis	7470A		1			485537	12/22/17 17:02	RDH	TAL NSH

Client Sample ID: S-121417-JK-TCLP 2

Lab Sample ID: 490-143202-19

Date Collected: 12/14/17 14:45
Matrix: Solid
Date Received: 12/15/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			24.96 g	500 mL	486226	12/27/17 20:07	JDG	TAL NSH
TCLP	Analysis	8260B		10	10 mL	10 mL	486292	12/28/17 18:31	MRM	TAL NSH
TCLP	Leach	1311			100.00 g	2000 mL	484906	12/20/17 20:28	MS	TAL NSH
TCLP	Prep	3510C			500 mL	1 mL	485340	12/22/17 09:39	KB	TAL NSH
TCLP	Analysis	8270C		2			486944	12/31/17 03:53	ZLN	TAL NSH
TCLP	Leach	1311			100.00 g	2000 mL	484906	12/20/17 20:28	MS	TAL NSH
TCLP	Prep	3010A			5.0 mL	50.0 mL	485256	12/21/17 23:23	BLG	TAL NSH
TCLP	Analysis	6010B		1			485818	12/22/17 17:19	LCS	TAL NSH
TCLP	Leach	1311			100.00 g	2000 mL	484906	12/20/17 20:28	MS	TAL NSH
TCLP	Prep	3010A			5.0 mL	50.0 mL	485256	12/21/17 23:23	BLG	TAL NSH
TCLP	Analysis	6010B		1			486972	12/30/17 19:22	LCS	TAL NSH
TCLP	Leach	1311			100.00 g	2000 mL	484906	12/20/17 20:28	MS	TAL NSH
TCLP	Prep	7470A			3 mL	30 mL	485365	12/22/17 10:10	RDH	TAL NSH
TCLP	Analysis	7470A		1			485537	12/22/17 17:05	RDH	TAL NSH

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NSH
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL NSH
8015D	Nonhalogenated Organic Compounds - Direct Injection (GC)	SW846	TAL HOU
6010B	Metals (ICP)	SW846	TAL NSH
7470A	Mercury (CVAA)	SW846	TAL NSH
Moisture	Percent Moisture	EPA	TAL NSH

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-1
SDG: 11137347-02

Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	998020430	08-31-18

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	17-051-0	08-04-18
Louisiana	NELAP	6	01967	06-30-18
Oklahoma	State Program	6	2017-138	08-31-18
Texas	NELAP	6	T104704223-17-22	10-31-18
USDA	Federal		P330-17-00132	04-20-20

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-143202 Chain of Custody

Cooler Received/Opened On 12-15-17 0920

Time Samples Removed From Cooler 1750 Time Samples Placed In Storage 1816 (2 Hour Window)

1. Tracking # 7856 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID_17960358_ pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 1.2 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO..NA

4. Were custody seals on outside of cooler? YES..NO..NA

If yes, how many and where: None

5. Were the seals intact, signed, and dated correctly? YES...NO..NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) J.J

7. Were custody seals on containers: YES NO and Intact YES...NO..NA

Were these signed and dated correctly? YES...NO..NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA


Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO..NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
143202
#1
C

COOLER RECEIPT FORM

Cooler Received/Opened On 12/15/17 0920 ~~0944~~

Time Samples Removed From Cooler 1750 107 12/15/17 Time Samples Placed In Storage 1816 (2 Hour Window)

1. Tracking # 7834 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID_17960357_ pH Strip Lot NA Chlorine Strip Lot NA

2. Temperature of rep. sample or temp blank when opened: 4.4 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...(NA)

4. Were custody seals on outside of cooler? YES...(NO)...NA

If yes, how many and where:_____

5. Were the seals intact, signed, and dated correctly? YES...NO...(NA)

6. Were custody papers inside cooler? 107 12/15/17 (YES)...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) AOH

7. Were custody seals on containers: YES (NO) and Intact YES...NO...(NA)

Were these signed and dated correctly? YES...NO...(NA)

8. Packing mat'l used? (Bubblewrap) (Plastic bag) Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)...NO...NA

12. Did all container labels and tags agree with custody papers? (YES)...NO...NA

13a. Were VOA vials received? (YES)...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...(NA)

Larger than this.

14. Was there a Trip Blank in this cooler? YES...(NO)...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) [signature]

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...(NA)

b. Did the bottle labels indicate that the correct preservatives were used (YES)...NO...NA

16. Was residual chlorine present? YES...NO...(NA)

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) [signature]

17. Were custody papers properly filled out (ink, signed, etc)? (YES)...NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)...NO...NA

19. Were correct containers used for the analysis requested? (YES)...NO...NA

20. Was sufficient amount of sample sent in each container? (YES)...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) [signature]

I certify that I attached a label with the unique LIMS number to each container (intial) [signature]

21. Were there Non-Conformance issues at login? YES...(NO) Was a NCM generated? YES...NO...#_____ 12-15-17

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
143202
#2
B

Cooler Received/Opened On 12-15-17 @ 520

Time Samples Removed From Cooler 1750 Time Samples Placed In Storage 1816 (2 Hour Window)

1. Tracking # 7845 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID_31470366_ pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 1.1 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where:_____

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

GHD
6400 Shafer Court - Suite 400
Rosemont, Illinois, 60018
773 380 9933 phone
WWW.GHD.COM

SHIPPED TO (Laboratory Name): TEST AMERICA – NASHVILLE (2 COOLERS)

REFERENCE NUMBER: 11137347-02

PROJECT NAME: SOLENIS LLC

CHAIN-OF-CUSTODY RECORD

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: JEFF KOLODZIEJSKI

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: VOC/PDC	8015D DRO-TEA	TCLP VOC, SVOC	TCLP METALS	REMARKS
1	12/14/17	1050	S-121417-JK-01	SOIL	2	X	X	44	4	
2		1100	02		2	X	X			
3		1110	03		2	X	X			
4		1120	04		2	X	X			
5		1140	05		2	X	X			
6		1150	06		2	X	X			
7		1200	07		2	X	X			
8		1220	08		2	X	X			
9		1240	09		2	X	X			
10		1245	09 D		2	X	X			
11		1245	10		2	X	X			
12		1255	11		2	X	X			
13		1305	12		2	X	X			
14		1320	13 A		2	X	X			
15		1325	13 B		2	X	X			
TOTAL NUMBER OF CONTAINERS					30					

Loc: 490
143202

RELINQUISHED BY: (1) [signature]	DATE: 12/14/17 TIME: 1900	RECEIVED BY: (2) [signature]	DATE: 12-15-17 TIME: 0920
RELINQUISHED BY: (2)	DATE: TIME:	RECEIVED BY: (3)	DATE: TIME:
RELINQUISHED BY: (3)	DATE: TIME:	RECEIVED BY: (4)	DATE: TIME:

METHOD OF SHIPMENT: FED EX

TRACKING No. 8089 0600 8018

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: J. KOLODZIEJSKI, D. ZEDAKER

RECEIVED FOR LABORATORY BY: 1.1 4.a 1.2 9444

DATE: TIME:

11034001-00(PRES001)GN-CO001

GHD
6400 Shafer Court - Suite 400
Rosemont, Illinois, 60018
773 380 9933 phone
WWW.GHD.COM

SHIPPED TO (Laboratory Name): TEST AMERICA - NASHVILLE (2 COOLERS)

REFERENCE NUMBER: 11137347-02

PROJECT NAME: SOLENIS LLC

CHAIN-OF-CUSTODY RECORD

SAMPLER'S SIGNATURE: Jeff Kolodziejski PRINTED NAME: JEFF KOLODZIEJSKI

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: VOC/PDC	8260B DAI-TCA	TCLP VOC, SVOC	TCLP METALS	REMARKS
16	12/14/17	1350	S-121417-JK-14	Soil	2	X	X			
17	↓	1420	-15	↓	2	X	X			
18		1430	-TCLP 1		1			X	X	
19		1445	-TCLP 2		1			X	X	
										Loc: 490 143202

TOTAL NUMBER OF CONTAINERS: 6

RELINQUISHED BY: ① Jeff Kolodziejski	DATE: 12/14/17 TIME: 1400	RECEIVED BY: ② [signature]	DATE: 12-15-17 TIME: 0920
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: FED EX TRACKING No. 8089 0600 8018

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: J. KOLODZIEJSKI, D. ZEDAKER

RECEIVED FOR LABORATORY BY: 1.1 4.4 1.2 9445

DATE: TIME:

Bottle Order Information

Bottle Order: 11137347 -02
Bottle Order #: 20845
Request From Client: 12/8/2017
Date Order Posted: 12/11/2017 7:54:17AM
Order Status: Ready To Process
Prepared By: Denise Heckler
Deliver By Date: ***12/12/2017 11:59:00PM***
Lab Project Number: 24019430

Order Completion Information

Creator: Denise Heckler
Filled by:
Sent Date:
Sent Via:
Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
20	1	20	Soil jar 2oz - Plastic	None	8260B - VOCs	Solid	Normal		
20	2	40	Voa Vial 40ml - 5 mL DI Water/stir bar	DI Water	8260B - VOCs	Solid	Normal		
20	1	20	Voa Vial 40ml - 5mL MeOH	Methanol	8260B - VOCs	Solid	Normal		
20	1	20	Soil jar 8oz	None	8015D_DAI - TEA	Solid	Normal		
3	1	3	Soil jar 16oz	None	8260B - TCLP Volatiles, TCLP SVOC, TCLP Metals	Solid	Normal		

Notes to Field Staff:

Health and Safety Notes:

Preservative	Comment
Methanol	POISON! DANGER! CONTAINS METHANOL. Flammable. Harmful if inhaled. Use adequate ventilation. In case of fire: use alcohol foam, dry chemical, or CO2.

Loc: 490
143202
#1
B

Relinquished By	Company	Date	Time	Received By	Company	Seal #:
		12-11-17				Seal #:
						Seal #:
Relinquished By	Company	Date	Time	Received By	Company	Seal #:
						Seal #:
						Seal #:

Please notify us immediately if an error is found in shipment

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-67159.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Wisconsin	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Wisconsin		Job #: 490-143202-1
Address: 6310 Rothway Street,	Due Date Requested: 12/28/2017			
City: Houston	TAT Requested (days):			
State, Zip: TX, 77040				
Phone: 713-690-4444(Tel) 713-690-5646(Fax)	PO #:			
Email:	WO #:			
Project Name: WI Sites	Project #: 49013094			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015D_DA/Leach_P_Acid (MOD) TEA	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
S-121417-JK-01 (490-143202-1)	12/14/17	10:50 Central		Solid			X	1	
S-121417-JK-02 (490-143202-2)	12/14/17	11:00 Central		Solid			X	1	
S-121417-JK-03 (490-143202-3)	12/14/17	11:10 Central		Solid			X	1	
S-121417-JK-04 (490-143202-4)	12/14/17	11:20 Central		Solid			X	1	
S-121417-JK-08 (490-143202-8)	12/14/17	12:20 Central		Solid			X	1	
S-121417-JK-09 (490-143202-9)	12/14/17	12:40 Central		Solid			X	1	
S-121417-JK-09D (490-143202-10)	12/14/17	12:45 Central		Solid			X	1	
S-121417-JK-11 (490-143202-12)	12/14/17	12:55 Central		Solid			X	1	
S-121417-JK-13A (490-143202-14)	12/14/17	13:20 Central		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12-18-17	TAN		12/19/17 1053	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 09/20/2016

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-67159.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Wisconsin	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Wisconsin		Job #: 490-143202-1
Address: 6310 Rothway Street,	Due Date Requested: 12/28/2017			
City: Houston	TAT Requested (days):			
State, Zip: TX, 77040				
Phone: 713-690-4444(Tel) 713-690-5646(Fax)	PO #:			
Email:	WO #:			
Project Name: WI Sites	Project #: 49013094			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015D_DA/Leach_P_Acid (MOD) TEA	490-143202 Chain of Custody	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
S-121417-JK-13B (490-143202-15)	12/14/17	13:25 Central		Solid			X		1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/18/17	TAW		12-19-17 1053	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 09/20/2016

TestAmerica Houston

Loc: 490
143064

Sample Receipt Checklist

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

'17DEC19 10:05

Date/Time Received: _____

JOB NUMBER: _____ CLIENT: TA Woodlands

UNPACKED BY: _____ CARRIER/DRIVER: _____

Custody Seal Present: ☒ YES ☐ NO Number of Coolers Received: _____

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Them CF	Corrected Temp (°C)
RW	Y / N	Y / N	1.8	616	-.5	1.3
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				

CF = correction factor

Samples received on ice? ☒ YES ☐ NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☐ NO ☐ YES

Base samples are>pH 12: ☐ YES ☐ NO Acid preserved are<pH 2: ☐ YES ☐ NO

pH paper Lot #_____

VOA headspace acceptable (5-6mm): ☐ YES ☐ NO ☐ NA

	YES	NO
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		

COMMENTS:

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 490-143202-1
SDG Number: 11137347-02

Login Number: 143202
List Number: 2
Creator: Trenery, Michael J

List Source: TestAmerica Houston
List Creation: 12/19/17 10:24 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-143202-2
TestAmerica Sample Delivery Group: 11137347-02
Client Project/Site: SOLENIS LLC Soil Sampling

For:
GHD Services Inc.
121 North 20th Street Ste A
Richmond, Virginia 23223

Attn: Dustin Zedaker

Roxanne Cisneros

Authorized for release by:
1/8/2018 4:44:16 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

Table of Contents

Sample Summary

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-2
SDG: 11137347-02

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-143202-5	S-121417-JK-05	Solid	12/14/17 11:40	12/15/17 09:20
490-143202-7	S-121417-JK-07	Solid	12/14/17 12:00	12/15/17 09:20
490-143202-11	S-121417-JK-10	Solid	12/14/17 12:45	12/15/17 09:20

Job ID: 490-143202-2

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-143202-2

Comments
No additional comments.

Receipt
The samples were received on 12/15/2017 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.1º C, 1.2º C and 4.6º C.

GC/MS VOA
Method(s) 8260B: The following samples were analyzed outside of analytical holding time: S-121417-JK-05 (490-143202-5) and S-121417-JK-07 (490-143202-7). The test was requested past the holding time.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 490-487475.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 490-487230.

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

GC Semi VOA
Method(s) 8015D: The following samples were analyzed outside of analytical holding time:S-121417-JK-05 (490-143202-5), S-121417-JK-07 (490-143202-7) and S-121417-JK-10 (490-143202-11). The test was requested past the holding time.

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

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

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-2
SDG: 11137347-02

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

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

Client Sample ID: S-121417-JK-05

Date Collected: 12/14/17 11:40
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-5

Matrix: Solid
Percent Solids: 83.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	**4.88**	**H**	1.95	0.919	ug/Kg	☼	12/19/17 11:52	01/03/18 14:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*	*12/19/17 11:52*	*01/03/18 14:37*	*1*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*	*12/19/17 11:52*	*01/03/18 14:37*	*1*
Dibromofluoromethane (Surr)	*110*		*70 - 130*	*12/19/17 11:52*	*01/03/18 14:37*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*	*12/19/17 11:52*	*01/03/18 14:37*	*1*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND	H	6000	1400	ug/Kg	☼		01/08/18 12:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**16.7**		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	**83.3**		0.1	0.1	%			12/18/17 11:25	1

Client Sample ID: S-121417-JK-07
Date Collected: 12/14/17 12:00
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-7
Matrix: Solid
Percent Solids: 82.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	1.88	J H	2.44	1.14	ug/Kg	☼	12/19/17 11:52	01/04/18 18:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*	*12/19/17 11:52*	*01/04/18 18:12*	*1*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*12/19/17 11:52*	*01/04/18 18:12*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 130*	*12/19/17 11:52*	*01/04/18 18:12*	*1*
Toluene-d8 (Surr)	*104*		*70 - 130*	*12/19/17 11:52*	*01/04/18 18:12*	*1*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND	H	6080	1420	ug/Kg	☼		01/08/18 14:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.7		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	82.3		0.1	0.1	%			12/18/17 11:25	1

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-2
SDG: 11137347-02

Client Sample ID: S-121417-JK-10
Date Collected: 12/14/17 12:45
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-11
Matrix: Solid
Percent Solids: 80.9

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		2.09	0.983	ug/Kg	☼	12/19/17 11:52	12/20/17 06:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*	*12/19/17 11:52*	*12/20/17 06:23*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*12/19/17 11:52*	*12/20/17 06:23*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 130*	*12/19/17 11:52*	*12/20/17 06:23*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*	*12/19/17 11:52*	*12/20/17 06:23*	*1*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND	H	6180	1440	ug/Kg	☼		01/08/18 15:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**19.1**		0.1	0.1	%			12/18/17 11:25	1
Percent Solids	**80.9**		0.1	0.1	%			12/18/17 11:25	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-487230/8
Matrix: Solid
Analysis Batch: 487230

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		2.00	0.940	ug/Kg			01/03/18 13:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*		*01/03/18 13:30*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*01/03/18 13:30*	*1*
Dibromofluoromethane (Surr)	*118*		*70 - 130*		*01/03/18 13:30*	*1*
Toluene-d8 (Surr)	*94*		*70 - 130*		*01/03/18 13:30*	*1*

Lab Sample ID: LCS 490-487230/5
Matrix: Solid
Analysis Batch: 487230

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dichloropropane			50.0	59.62		ug/Kg		119	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
Dibromofluoromethane (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 490-487230/6
Matrix: Solid
Analysis Batch: 487230

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloropropane			50.0	61.46		ug/Kg		123	70 - 130	3	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
Dibromofluoromethane (Surr)	*101*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Lab Sample ID: MB 490-487475/8
Matrix: Solid
Analysis Batch: 487475

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		2.00	0.940	ug/Kg			01/04/18 13:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*70 - 130*		*01/04/18 13:33*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*01/04/18 13:33*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*01/04/18 13:33*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*01/04/18 13:33*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 490-487475/5
Matrix: Solid
Analysis Batch: 487475

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dichloropropane			50.0	54.74		ug/Kg		109	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*83*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
Dibromofluoromethane (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 490-487475/6
Matrix: Solid
Analysis Batch: 487475

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloropropane			50.0	54.38		ug/Kg		109	70 - 130	1	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*82*		*70 - 130*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
Dibromofluoromethane (Surr)	*94*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Lab Sample ID: MB 600-229123/2
Matrix: Solid
Analysis Batch: 229123

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TEA	ND		5000	1170	ug/Kg			01/08/18 11:27	1

Lab Sample ID: LCS 600-229123/3
Matrix: Solid
Analysis Batch: 229123

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
TEA			100000	122000		ug/Kg		122	70 - 130		

Lab Sample ID: LCSD 600-229123/4
Matrix: Solid
Analysis Batch: 229123

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
TEA			100000	121300		ug/Kg		121	70 - 130	1	30

QC Association Summary

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-2
SDG: 11137347-02

GC/MS VOA

Prep Batch: 484409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-5	S-121417-JK-05	Total/NA	Solid	5035	
490-143202-7	S-121417-JK-07	Total/NA	Solid	5035	
490-143202-11	S-121417-JK-10	Total/NA	Solid	5035	

Analysis Batch: 484478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-11	S-121417-JK-10	Total/NA	Solid	8260B	484409

Analysis Batch: 487230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-5	S-121417-JK-05	Total/NA	Solid	8260B	484409
MB 490-487230/8	Method Blank	Total/NA	Solid	8260B	
LCS 490-487230/5	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-487230/6	Lab Control Sample Dup	Total/NA	Solid	8260B	

Analysis Batch: 487475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-7	S-121417-JK-07	Total/NA	Solid	8260B	484409
MB 490-487475/8	Method Blank	Total/NA	Solid	8260B	
LCS 490-487475/5	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-487475/6	Lab Control Sample Dup	Total/NA	Solid	8260B	

GC VOA

Leach Batch: 229086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-5	S-121417-JK-05	Soluble	Solid	Acid DI leach	
490-143202-7	S-121417-JK-07	Soluble	Solid	Acid DI leach	
490-143202-11	S-121417-JK-10	Soluble	Solid	Acid DI leach	

Analysis Batch: 229123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-5	S-121417-JK-05	Soluble	Solid	8015D	229086
490-143202-7	S-121417-JK-07	Soluble	Solid	8015D	229086
490-143202-11	S-121417-JK-10	Soluble	Solid	8015D	229086
MB 600-229123/2	Method Blank	Total/NA	Solid	8015D	
LCS 600-229123/3	Lab Control Sample	Total/NA	Solid	8015D	
LCSD 600-229123/4	Lab Control Sample Dup	Total/NA	Solid	8015D	

General Chemistry

Analysis Batch: 484082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-143202-5	S-121417-JK-05	Total/NA	Solid	Moisture	
490-143202-7	S-121417-JK-07	Total/NA	Solid	Moisture	
490-143202-11	S-121417-JK-10	Total/NA	Solid	Moisture	

Lab Chronicle

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-2
SDG: 11137347-02

Client Sample ID: S-121417-JK-05
Date Collected: 12/14/17 11:40
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-05
Date Collected: 12/14/17 11:40
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-5
Matrix: Solid
Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.14 g	5.0 mL	484409	12/19/17 11:52	CU	TAL NSH
Total/NA	Analysis	8260B		1	5 g	5 mL	487230	01/03/18 14:37	PN	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	229086	01/08/18 06:49	MJT	TAL HOU
Soluble	Analysis	8015D		1			229123	01/08/18 12:48	JPS	TAL HOU

Client Sample ID: S-121417-JK-07
Date Collected: 12/14/17 12:00
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-07
Date Collected: 12/14/17 12:00
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-7
Matrix: Solid
Percent Solids: 82.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5.0 mL	484409	12/19/17 11:52	CU	TAL NSH
Total/NA	Analysis	8260B		1	5 g	5 mL	487475	01/04/18 18:12	EML	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	229086	01/08/18 06:49	MJT	TAL HOU
Soluble	Analysis	8015D		1			229123	01/08/18 14:51	JPS	TAL HOU

Client Sample ID: S-121417-JK-10
Date Collected: 12/14/17 12:45
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			484082	12/18/17 11:25	BAA	TAL NSH

Client Sample ID: S-121417-JK-10
Date Collected: 12/14/17 12:45
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-11
Matrix: Solid
Percent Solids: 80.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.91 g	5.0 mL	484409	12/19/17 11:52	CU	TAL NSH

Lab Chronicle

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-2
SDG: 11137347-02

Client Sample ID: S-121417-JK-10

Date Collected: 12/14/17 12:45
Date Received: 12/15/17 09:20

Lab Sample ID: 490-143202-11

Matrix: Solid
Percent Solids: 80.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 g	5 mL	484478	12/20/17 06:23	PN	TAL NSH
Soluble	Leach	Acid DI leach			10 g	10 mL	229086	01/08/18 06:49	MJT	TAL HOU
Soluble	Analysis	8015D		1			229123	01/08/18 15:06	JPS	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-2
SDG: 11137347-02

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NSH
8015D	Nonhalogenated Organic Compounds - Direct Injection (GC)	SW846	TAL HOU
Moisture	Percent Moisture	EPA	TAL NSH

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: SOLENIS LLC Soil Sampling

TestAmerica Job ID: 490-143202-2
SDG: 11137347-02

Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	998020430	08-31-18

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	17-051-0	08-04-18
Louisiana	NELAP	6	01967	06-30-18
Oklahoma	State Program	6	2017-138	08-31-18
Texas	NELAP	6	T104704223-17-22	10-31-18
USDA	Federal		P330-17-00132	04-20-20

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-143202 Chain of Custody

Cooler Received/Opened On 12-15-17 0920

Time Samples Removed From Cooler 1750 Time Samples Placed In Storage 1816 (2 Hour Window)

1. Tracking # 7856 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID_17960358_ pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 1.2 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...(NA)

4. Were custody seals on outside of cooler? YES...(NO)...NA

If yes, how many and where: None

5. Were the seals intact, signed, and dated correctly? YES...NO...(NA)

6. Were custody papers inside cooler? (YES)...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) J.J

7. Were custody seals on containers: YES (NO) and Intact YES...NO...(NA)

Were these signed and dated correctly? YES...NO...(NA)

8. Packing mat'l used? (Bubblewrap) (Plastic bag) Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)...NO...NA

12. Did all container labels and tags agree with custody papers? (YES)...NO...NA

13a. Were VOA vials received? (YES)...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...(NA)

Larger than this.

14. Was there a Trip Blank in this cooler? YES...(NO)...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) [signature]

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...(NA)

b. Did the bottle labels indicate that the correct preservatives were used (YES)...NO...NA

16. Was residual chlorine present? YES...NO...(NA)

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) [signature]

17. Were custody papers properly filled out (ink, signed, etc)? (YES)...NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)...NO...NA

19. Were correct containers used for the analysis requested? (YES)...NO...NA

20. Was sufficient amount of sample sent in each container? (YES)...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) [signature]

I certify that I attached a label with the unique LIMS number to each container (intial) [signature]

21. Were there Non-Conformance issues at login? (YES)...NO Was a NCM generated? (YES)...NO...#_____

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
143202
#1
C

COOLER RECEIPT FORM

Cooler Received/Opened On 12/15/17 0920 ~~0944~~ 12/15/17

Time Samples Removed From Cooler 1750 12/15/17 Time Samples Placed In Storage 1816 (2 Hour Window)

1. Tracking # 7834 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID_17960357_ pH Strip Lot NA Chlorine Strip Lot NA

2. Temperature of rep. sample or temp blank when opened: 4.4 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...(NA)

4. Were custody seals on outside of cooler? YES...(NO)...NA

If yes, how many and where:_____

5. Were the seals intact, signed, and dated correctly? YES...NO...(NA)

6. Were custody papers inside cooler? 12/15/17 (YES)...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) AOH

7. Were custody seals on containers: YES (NO) and Intact YES...NO...(NA)

Were these signed and dated correctly? YES...NO...(NA)

8. Packing mat'l used? (Bubblewrap) (Plastic bag) Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry Ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)...NO...NA

12. Did all container labels and tags agree with custody papers? (YES)...NO...NA

13a. Were VOA vials received? (YES)...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...(NA)

Larger than this.

14. Was there a Trip Blank in this cooler? YES...(NO)...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) [signature]

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...(NA)

b. Did the bottle labels indicate that the correct preservatives were used (YES)...NO...NA

16. Was residual chlorine present? YES...NO...(NA)

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) [signature]

17. Were custody papers properly filled out (ink, signed, etc)? (YES)...NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)...NO...NA

19. Were correct containers used for the analysis requested? (YES)...NO...NA

20. Was sufficient amount of sample sent in each container? (YES)...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) [signature]

I certify that I attached a label with the unique LIMS number to each container (intial) [signature]

21. Were there Non-Conformance issues at login? YES...(NO) Was a NCM generated? YES...NO...#_____ 12-15-17

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
143202
#2
B

Cooler Received/Opened On 12-15-17 @ 520

Time Samples Removed From Cooler 1750 Time Samples Placed In Storage 1816 (2 Hour Window)

1. Tracking # 7845 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID_31470366_ pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 1.1 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where:_____

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) GA

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

GHD
6400 Shafer Court - Suite 400
Rosemont, Illinois, 60018
773 380 9933 phone
WWW.GHD.COM

SHIPPED TO (Laboratory Name): TEST AMERICA – NASHVILLE (2 COOLERS)

REFERENCE NUMBER: 11137347-02

PROJECT NAME: SOLENIS LLC

CHAIN-OF-CUSTODY RECORD

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: JEFF KOLODZIEJSKI

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: VOC/PDC	8015D DRO-TEA	TCLP VOC, SVOC	TCLP METALS	REMARKS
1	12/14/17	1050	S-121417-JK-01	SOIL	2	X	X	44	4	
2		1100	02		2	X	X			
3		1110	03		2	X	X			
4		1120	04		2	X	X			
5		1140	05		2	X	X			
6		1150	06		2	X	X			
7		1200	07		2	X	X			
8		1220	08		2	X	X			
9		1240	09		2	X	X			
10		1245	09 D		2	X	X			
11		1245	10		2	X	X			
12		1255	11		2	X	X			
13		1305	12		2	X	X			
14		1320	13 A		2	X	X			
15		1325	13 B		2	X	X			
			TOTAL NUMBER OF CONTAINERS		30					

Loc: 490
143202

RELINQUISHED BY: (1) [signature]	DATE: 12/14/17 TIME: 1900	RECEIVED BY: (2) [signature]	DATE: 12-15-17 TIME: 0920
RELINQUISHED BY: (2)	DATE: TIME:	RECEIVED BY: (3)	DATE: TIME:
RELINQUISHED BY: (3)	DATE: TIME:	RECEIVED BY: (4)	DATE: TIME:

METHOD OF SHIPMENT: FED EX TRACKING No. 8089 0600 8018

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: J. KOLODZIEJSKI, D. ZEDAKER

RECEIVED FOR LABORATORY BY: 1.1 4.a 1.2 9444

DATE: TIME:

GHD 6400 Shafer Court - Suite 400
Rosemont, Illinois, 60018
773 380 9933 phone
WWW.GHD.COM

CHAIN-OF-CUSTODY RECORD

SHIPPED TO (Laboratory Name): TEST AMERICA - NASHVILLE (2 COOLERS)

REFERENCE NUMBER: 11137347-02

PROJECT NAME: SOLENIS LLC

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: JEFF KOLODZIEJSKI

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	VOC/PDC	8015D DAI-TEA	TCLP VOC, SVOC	TCLP METALS								REMARKS
16	12/14/17	1350	S-121417-JK-14	SOIL	2	X	X										
17	↓	1420	-15	↓	2	X	X										
18	↓	1430	-TCLP 1	↓	1			X	X								
19	↓	1445	-TCLP 2	↓	1			X	X								
																	Loc: 490 143202
			TOTAL NUMBER OF CONTAINERS		6												

RELINQUISHED BY: ① [signature]	DATE: 12/14/17 TIME: 1900	RECEIVED BY: ② [signature]	DATE: 12-15-17 TIME: 0920
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: FED EX TRACKING No. 8089 0600 8018

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: J. KOLODZIEJSKI, D. ZEDAKER

RECEIVED FOR LABORATORY BY:
DATE:____ TIME:____

1.1 4.4 1.2
9445

11034001-00(PRES001)GN-CO001

Bottle Order Information

Bottle Order: 11137347 -02
Bottle Order #: 20845
Request From Client: 12/8/2017
Date Order Posted: 12/11/2017 7:54:17AM
Order Status: Ready To Process
Prepared By: Denise Heckler
Deliver By Date: ***12/12/2017 11:59:00PM***
Lab Project Number: 24019430

Order Completion Information

Creator: Denise Heckler
Filled by:
Sent Date:
Sent Via:
Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
20	1	20	Soil jar 2oz - Plastic	None	8260B - VOCs	Solid	Normal		
20	2	40	Voa Vial 40ml - 5 mL DI Water/stir bar	DI Water	8260B - VOCs	Solid	Normal		
20	1	20	Voa Vial 40ml - 5mL MeOH	Methanol	8260B - VOCs	Solid	Normal		
20	1	20	Soil jar 8oz	None	8015D_DAI - TEA	Solid	Normal		
3	1	3	Soil jar 16oz	None	8260B - TCLP Volatiles, TCLP SVOC, TCLP Metals	Solid	Normal		

Notes to Field Staff:

Health and Safety Notes:

Preservative	Comment
Methanol	POISON! DANGER! CONTAINS METHANOL. Flammable. Harmful if inhaled. Use adequate ventilation. In case of fire: use alcohol foam, dry chemical, or CO2.

Loc: 490
143202
#1
B

Relinquished By	Company	Date	Time	Received By	Company	Seal #:
		12-11-17				Seal #:
						Seal #:
Relinquished By	Company	Date	Time	Received By	Company	Seal #:
						Seal #:
						Seal #:

Please notify us immediately if an error is found in shipment

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-67693.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Wisconsin	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Wisconsin		Job #: 490-143202-2
Address: 6310 Rothway Street,	Due Date Requested: 1/15/2018			
City: Houston	TAT Requested (days):			
State, Zip: TX, 77040				
Phone: 713-690-4444(Tel) 713-690-5646(Fax)	PO #:			
Email:	WO #:			
Project Name: WI Sites	Project #: 49013094			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015D_DAI/Leach_P_Acid (MOD) TEA	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
S-121417-JK-05 (490-143202-5)	12/14/17	11:40 Central		Solid			X	1	
S-121417-JK-10 (490-143202-11)	12/14/17	12:45 Central		Solid			X	1	

490-143202 Chain of Custody

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Billy Barnes	1-3-18 1042	TAN	Sherri Justus	1/4/18 0958	TAL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 09/20/2016

TestAmerica Houston

Loc: 490
143202

Sample Receip

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Date/Time Received: '18 JAN 4 9:58

JOB NUMBER: _____ CLIENT: TA Nashville

UNPACKED BY: MT CARRIER/DRIVER: Fed Ex

Custody Seal Present: ☒ YES ☐ NO Number of Coolers Received: 1

Cooler ID 1/4/18	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
S ~~DW~~ W SJ	Y / N	Y / N	3.4	677	-0.3	3.1
B W	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N	SJ		1/4/18	
	Y / N	Y / N				
	Y / N	Y / N				

CF = correction factor

Samples received on ice? ☒ YES ☐ NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☒ NO ☐ YES

Base samples are>pH 12: ☐ YES ☐ NO Acid preserved are<pH 2: ☐ YES ☐ NO

pH paper Lot #_____

VOA headspace acceptable (5-6mm): ☐ YES ☐ NO ☒ NA

	YES	NO
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	☒	☐

COMMENTS:

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-67730.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Wisconsin	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Wisconsin		Job #: 490-143202-2
Address: 6310 Rothway Street, ,	Due Date Requested: 1/15/2018			
City: Houston	TAT Requested (days):			
State, Zip: TX, 77040				
Phone: 713-690-4444(Tel) 713-690-5646(Fax)	PO #:			
Email:	WO #:			
Project Name: WI Sites	Project #: 49013094			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015D_DAI/Leach_P_Acid (MOD) TEA	Total Number of containers	Sp
			Preservation Code:						
S-121417-JK-07 (490-143202-7)	12/14/17	12:00 Central		Solid			X	1	

490-143202 Chain of Custody

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
	Relinquished by:	Date/Time: 2:40PM 1418	Company: TAN	Received by:	Date/Time: 1-5-18 954	Company:
	Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 09/20/2016

TestAmerica Houston

Loc: 490
143202eipt Ch

Loc: 490
144032

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

'18 JAN 5 9:54

Date/... Received: _____

JOB NUMBER: _____ CLIENT: TA Nashville

UNPACKED BY: _____ CARRIER/DRIVER: FB

Custody Seal Present: ☒ YES ☐ NO Number of Coolers Received: 1

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Them CF	Corrected Temp (°C)
BW	Y / N	Y / N	3.1	677	-.3	2.8
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				

CF = correction factor

Samples received on ice? ☐ YES ☐ NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☒ NO ☐ YES

Base samples are>pH 12: ☐ YES ☐ NO Acid preserved are<pH 2: ☐ YES ☐ NO

pH paper Lot #_____

VOA headspace acceptable (5-6mm): ☐ YES ☐ NO ☒ NA

	YES	NO
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		

COMMENTS:

TRK# 0201 4228 1731 2266

PRIORITY OV

XH LKSA

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 490-143202-2
SDG Number: 11137347-02

Login Number: 143202
List Number: 2
Creator: Trenery, Michael J

List Source: TestAmerica Houston
List Creation: 12/19/17 10:24 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 490-143202-2
SDG Number: 11137347-02

Login Number: 143202
List Number: 3
Creator: Crafton, Tommie S

List Source: TestAmerica Houston
List Creation: 01/04/18 10:41 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 490-143202-2
SDG Number: 11137347-02

Login Number: 143202
List Number: 4
Creator: Crafton, Tommie S

List Source: TestAmerica Houston
List Creation: 01/05/18 12:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.