Phase II Environmental Site Assessment

Stanley Assemblage Site
Perry, Houston County, Georgia

October 22, 2019

Prepared for:
City of Perry, Georgia
US EPA Cooperative Agreement: #BF-00D71518-0

Cardno®
Shaping the Future

Phase II Environmental Site Assessment

Prepared for: Ms. Robert Smith
Assistant City Manager - City of Perry
City of Perry, Georgia
1211 Washington Street
Perry, GA 31069

Project Name: **Phase II Environmental Site Assessment**
Stanley Assemblage Site
Perry, Houston County, Georgia

Cardno Project #: 0002420000
ACRES ID#: 238676

Date: October 22, 2019

Table of Contents

Executive Summary **1**
1 Introduction **3**
1.1 Purpose 3
1.2 Site History 3
1.3 Current Adjacent Land Uses 3
1.4 Previous Environmental Assessments 4
1.5 Limitations / Exceptions of Assessment 5
1.6 Special Terms and Conditions (User Reliance) 5
2 Phase II ESA Activities **7**
2.1 Sampling Objectives 7
2.1.1 Conceptual Site Model and Sampling Plan 7
2.1.2 Chemical Testing Plan/QAQC 7
2.2 Field Investigation and Methods 7
2.2.1 Soil Boring Installations 7
2.2.2 Groundwater Sampling Activities 9
2.2.3 Groundwater Elevation Data Collection 10
2.2.4 Quality Assurance and Quality Control Methods 10
2.2.5 Investigative-Derived Waste 10
3 Environmental Assessment Results **12**
3.1 Analytical Data Results 12
3.1.1 Soil 12
3.1.2 Shallow Groundwater 12
3.1.3 Vapor Intrusion 13
3.1.4 Laboratory Analyses Quality Control (QC) Observations and Interpretations 13
3.1.5 Shallow Groundwater Flow Direction 13
4 Discussion of Findings and Conclusions **14**
4.1 Recognized Environmental Conditions 14
4.2 Affected Media 14
4.2.1 Soil 14
4.2.2 Groundwater 14
4.3 Vapor Intrusion Screening Calculator Results 14
4.4 Evaluation of Data Quality 14
5 Recommendations **15**
6 Qualifications/Signatures of Environmental Professional(s) **16**

Figures

1 USGS/Site Vicinity Map
2 Site Boundary Map
3 REC Location Map
4a-b Soil Boring Location Map
5 Groundwater Monitoring Well Location Map
6 Potentiometric Surface Map

Tables

1 OVA Screening Summary
2 Soil Analytical Summary (Detections Only)
3 Groundwater Analytical Summary (Detections Only)
4 Groundwater Elevation Summary

Appendices

A Previous Environmental Reports:
Phase I ESA, March 2019, Cardno, Inc.
B Soil Boring Logs
C Monitoring Well Construction Diagrams
D Equipment Calibration
E Groundwater Sampling Logs
F Laboratory Analytical Reports
G AquaTerra Non-Hazardous Waste Manifest

Executive Summary

Cardno completed a Phase II Environmental Site Assessment of the assemblage of properties, noted as the Stanley Assemblage in Perry, Houston County, Georgia. The study property is herein referred to as "the Subject Site/Property" or "the Site" (as generally depicted in **Figures 1 and 2**). According to the Houston County Tax Assessor's website, the Subject Site includes eight contiguous parcels, encompassing approximately two acres and includes the following addresses:

- 1101 Macon St.
- 1107 - 1109 Macon St.
- 1102 - 1104 Meeting St.
- 1107 Meeting St.
- 1021 Commerce St.
- 1023 Commerce St.

This assessment was performed to satisfy the requirements of the Client (City of Perry) and their assign(s) with respect to potential environmental impairment and liabilities associated with the property due to contamination by hazardous substances, controlled substances or petroleum products on or near the site. This assessment was completed under guidelines set forth by Cardno's Phase II Proposal, dated March 26, 2019. Based on email verification, Ms. Olga Perry approved the EPA Site-Specific Quality Assurance Project Plan (QAPP) on April 26, 2019. Additionally, this assessment was performed under and was funded by the City of Perry Environmental Protection Agency (EPA) FY2018 Community-wide Brownfield Assessment Grant.

Furthermore, this report was prepared in general accordance with the American Society of Testing and Materials (ASTM) *Standard Practices for Environmental Site Assessments: Phase II ESA Process* (*ASTM Designation: E1903-11*). The purpose of this Phase II ESA was to further asses possible contamination originating from RECs outlined in Cardno's Phase I ESA and for the purpose of providing sufficient information regarding the complete nature and extent of contamination in the shallow subsurface and to assist in making informed business decisions about the property.

The property located at 1109 Macon Street is listed on the Georgia Environmental Protection Division (EPD) Hazardous Site Inventory (HSI) for a historic release of dry cleaning solvents to the shallow soil (HSI #10940). In order to further delineate the historic contamination and to address the additional issues identified during Cardno's prior Phase I investigation, the Phase II investigation included the following Scope items:

- Advancement of four borings for soil screening and sample collection for a variety of laboratory analysis.
- Advancement of 10 hand augered borings to horizontally delineate tetrachloroethene (PCE, a common dry cleaning solvent) contamination for soil screening and sample collection for laboratory analysis.
- Installation of three groundwater monitor wells for collection of shallow groundwater samples for a variety of laboratory analysis.
- Collection of on-site water table elevation data from the groundwater monitoring wells to determine relative potentiometric surface elevations and shallow groundwater flow direction.

In summary,

- **Soil:** Comparison of the laboratory analytical results to the Georgia EPD Notification Concentrations (NCs) for soil revealed:
  - **VOCs**: Multiple volatile organic compounds (VOCs) were identified in soil samples collected for analysis including acetone, 2-butanone, and 2-hexanone in B-1 at 35 feet below ground surface (fbgs) and ethylbenzene, isopropylbenzene, o-xylene, and m,p-xylene in B-3 at 14 to 16 fbgs.

    PCE was identified in the following borings between zero and two fbgs:

    - B-1
    - DB-1/DB-1b
    - DB-2/DB-2b
    - DB-3
    - DB-4
    - DB-5/DB-5b

    PCE in delineation borings DB-2, DB-2b, DB-5, and DB-5b were collected between zero and one fbgs and were all identified with concentrations above its NC.
  - **SVOCs:** Multiple semi-volatile organic compounds (SVOCs) were identified within the following soil borings:
    - B-1 at zero to two fbgs,
    - B-1 at 35 fbgs, B-3 at 14 to 16 fbgs,
    - B-4 10-12 fbgs, and
    - B-4 at 50 fbgs.

    However, the SVOCs identified were well below their respective NCs.
  - **RCRA Metals:** The following resource conservation and recovery act (RCRA) metals, arsenic, barium, chromium, and lead, were identified in the following soil borings:
    - B-1 at zero to two fbgs
    - B-4 at 10-12 fbgs

    Chromium and lead were identified in the following soil borings:
    - B-1 at 35 fbgs,
    - B-2 at 30 fbgs,
    - B-3 at 14 to 16 fbgs
    - B-4 at 50 fbgs.

    Soil samples selected for analysis containing these RCRA metals were identified below their respective NCs.
- **Shallow Groundwater:** Comparison of the laboratory analytical results to Georgia EPD Media Target Concentrations (MTCs) for shallow groundwater samples collected from the installed monitoring wells revealed:
  - **VOCs:** PCE was identified at levels above its respective MTC in groundwater samples collected in MW-1, MW-2, and MW-3.
  - **SVOCs:** No SVOCs were detected above laboratory reporting limits in groundwater samples collected for laboratory analysis.
  - **RCRA Metals:** Barium was detected in samples collected from MW-1, MW-2, and MW-3. However, the reported concentrations was not detected above its respective MTC.

- **Vapor:** Groundwater analytical results were run through the EPA Vapor Intrusion Screening Level (VISL) Calculator. Results of the EPA VISL Calculator indicated PCE concentrations in MW-1, MW-2, and MW-3 exceed their associated target risk suggesting that the potential for vapor intrusion exists.

Based on the results of the Phase II ESA, Cardno makes the following recommendations:

- The data generated by this investigation provide sufficient grounds for application to the Georgia EPD Brownfield Cleanup Program (BCP) by a prospective purchaser.
- The PCE concentrations reported in groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3 were all above the Georgia EPD's MTC for PCE. Based on these results the current owner is required to submit a release notification to the Georgia Environmental Protection Division's (EPD) Hazardous Sites Response and Remediation Program, within 30 days of discovery.
- This report should be provided to the Georgia EPD HSI case manager for the Subject Site.
- Based on the results of the VISL calculator, there is potential for vapor intrusion issues in the existing buildings and for any potential future building development around the locations of monitoring wells MW-1 through MW-3. Additional Vapor Encroachment Screening (VES) should be completed in accordance with ASMT-E2600 to further assess the presence of Vapor Encroachment Conditions (VEC) is recommended.

"The remainder of this page intentionally left blank."

1 Introduction

1.1 Purpose

Cardno was retained by the Client to conduct this Phase II ESA of the Stanley Assemblage Site, located in Perry, Houston County, Georgia (**Figure 1 and 2**). This investigation was conducted in general conformance with the scope and limitations outlined by *ASTM Standard E 1903-11*; however, the specific scope of work was negotiated between the Client and Cardno to meet the objectives of the Client. The primary objectives were to further evaluate the identified RECs (as defined in *ASTM Standard E1527-13*, further discussed in Section 1.4) and to provide sufficient information regarding the nature and extent of contamination to assist in making informed business decisions about the property; and, where applicable, providing the level of knowledge necessary to satisfy the Landowner Liability Protection provisions under CERCLA. RECs are defined by *ASTM Standard E1527-13* as: "*the presence or likely presence of any hazardous substances or petroleum products on property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substance or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property*."

This assessment was completed under recommendations set forth by the EPA approved Site-Specific Quality Assurance Project Plan (SSQAPP), dated April 26, 2019.

1.2 Site History

The Subject Site is located in a generally commercial and residential area at the center of downtown Perry, Georgia. Historically the Subject Site supported residences and offices, with commercial property consisting of a furniture store and the Star Cleaners dry cleaning facility at 1107-1109 Macon Street.

Historically, the surrounding area has been predominantly commercial/retail space with intermittent residential developments throughout the area. According to Sanborn maps produced in 1930, as well as well as an interview with the current building manager/owner of the Subject Property, Mr. Perry Stanley, the surrounding properties include residential structures, pharmacies, retail shops, local churches, and banks.

1.3 Current Adjacent Land Uses

A city park is located at the south adjacent parcel, a residence and commercial retail building is located to the west, a municipal water tower and community center is located at the north adjoining parcels, a gas station is located at the northeast adjacent property, and commercial retail (gym) is located at the east adjacent property. Nearby commercial properties include commercial and municipal establishments/facilities. The following table summarizes the current adjacent land uses.

Direction from Property	Occupant(s) Name	Current Use
South	City of Perry	Park
West	Ronald E Stanley	Residence
West	Perry Washington Street LLC	Residence
North	City of Perry	Municipal Water Tower
North	City of Perry	Community Center

Direction from Property	Occupant(s) Name	Current Use
East	Macon Road	Road
East	Peach Crossing 2014 LLC	Exxon Gasoline Station
East	Ronald E Stanley	Retail Shopping - Gym

1.4 Previous Environmental Assessments

Phase I Environmental Site Assessment, January 28, 2019, Cardno, Inc.

Cardno submitted a Phase I ESA on the Subject Site on January 28, 2019. Through the review of historical records, interviews and site reconnaissance, this assessment identified several RECs in connection with the Subject Property, including the following:

On-Site RECs

1. The site supported Star Cleaners dry cleaners on the northeast boundary of the Subject Property which was in operation from the mid-1960s to the mid-1980s. A Phase II environmental site assessment was conducted on the Star Cleaners facility in November 2011 by Environmental Consulting & Technology, Inc. (ECT). This assessment identified tetrachloroethylene (PCE, a common dry cleaning solvent) contamination in the shallow soil near the vicinity of the historical drycleaners above its respective Georgia Environmental Protection Division (EPD) notification concentration (NC) beneath the facility flooring, as well as the adjacent driveway. Although multiple attempts to adequately sample and remove the contaminated soils have been conducted between 2014 and 2015 by representatives of Geotechnical & Environmental Consultants, Inc. (GEC), these attempts to horizontally delineate the extent of the contaminant plume and subsequent remedial efforts were unsuccessful. This contamination was reported to the Georgia EPD Hazardous Site Response Act (HSRA), and based on the elevated concentrations and lack of access limitations, the site was listed on the Georgia EPD Hazardous Site Inventory (HSI). The presence of PCE above its NC in soils within the boundaries of the Subject Site poses an environmental risk to the Subject Property and was considered a REC.
2. ECTs 2011 Phase II ESA also evaluated impact from a historic gasoline filling station (Solomons Union 76), formerly located at 1101 Macon Street, near the southeastern corner of the Subject Property. During this assessment, ECT advanced one boring at the vicinity of the former dispenser island (GP-1) and an additional boring near the vicinity of the former underground storage tank (UST) area (GP-2). Soil samples collected for analysis were gathered between 18 and 20 feet bgs and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) at each boring, as well as polynuclear aromatic hydrocarbons (PAHs) in GP-1. The absence of lead (a common gasoline additive at that time) sampling data, absence of PAH sampling data at GP-2, and the lack of soil samples at shallower depths, represent a data gap with respect to the characterization of the Subject Property and was considered a REC.
3. The prior sampling conducted by ECT and GEC did not evaluate groundwater or vapor contamination for the historic gas station or Star Cleaners. The absence of groundwater and soil vapor sampling data were considered RECs as potential impacts associated with these parameters were not evaluated.

Additionally, based on this Phase I ESA, one (1) off-site REC was identified:

4. The Flash Foods #167 facility, located east of the Subject Property, across Macon Street at 1114 Macon Street is a gasoline filling station. This facility has been in operation since approximately 1989, with no reported hazardous spills. However, based on the length of operation, inferred upgradient position, and distance from the Subject Property, this facility was considered an off-site REC.

Based upon the above identified RECs, Cardno recommended soil and groundwater analysis be conducted throughout the Subject Site to determine the presence and/or extent of contamination. An excerpt of this Phase I ESA is include in **Appendix A.** The identified RECs are illustrated in **Figure 3.**

1.5 Limitations / Exceptions of Assessment

The conclusions and recommendations contained within this report are based on the data developed during this Phase II ESA investigation. This report was prepared for the Client and their assignee(s), and is intended solely for their use. This report is not intended for third-party use without the expressed written consent of the Client and Cardno. This assessment has been prepared in general accordance with accepted environmental methodologies referred to in *ASTM Standard 1903-11*, including limitations inherent in these methodologies.

No other warranty is expressed or implied.

1.6 Special Terms and Conditions (User Reliance)

No ESA can eliminate all uncertainty. Furthermore, any sample, either surface or subsurface, taken for chemical analysis may or may not be representative of a larger population. Professional judgment and interpretation are inherent in the process and uncertainty is inevitable. Additional assessment may be able to reduce the uncertainty. Even when Phase II ESA work is executed with an appropriate site-specific standard of care, certain conditions present especially difficult detection problems. Such conditions may include, but are not limited to, complex geological settings, the fate and transport characteristics of certain hazardous substances and petroleum products, the distribution of existing contamination, physical limitations imposed by the location of utilities and other man-made objects, and the limitations of assessment technologies.

Phase II ESAs do not generally require an exhaustive assessment of environmental conditions on a property. There is a point at which the cost of information obtained and the time required to obtain it outweigh the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. If hazardous substance or petroleum releases are confirmed on a parcel of property, the extent of further assessment is related to the degree of uncertainty that is acceptable to the user with respect to the real estate transaction. Measurements and sampling data only represent the site conditions at the time of data collection. Therefore, the usability of data collected as part of this Phase II ESA may have a finite lifetime depending on the application and use being made of the data. An environmental professional should evaluate whether the generated data are appropriate for any subsequent use beyond the original purpose for which it was collected.

This report is for the use and benefit of, and may be relied upon by the entity(s) identified in the Executive Summary of this report as the Client, as well as any of its affiliates and their respective successors and assigns, in connection with a commercial real estate transaction involving the property, and in accordance with the terms and conditions in place between Cardno and the Client for this project. Any third party agrees by accepting this report that any use or reliance on this report shall be limited by the exceptions and limitations in this report, and with the acknowledgment that actual site conditions may change with time, and that hidden conditions may exist at the property that were not

discovered within the authorized scope of the assessment. Any use by or distribution of this report to third parties, without the express written consent of Cardno is at the sole risk and expense of such third party.

Cardno makes no other representation to any third party except that it has used the degree of care and skill ordinarily exercised by environmental consultants in the preparation of the report and in the assembling of data and information related thereto. No other warranties are made to any third party, either expressed or implied.

“The remainder of this page intentionally left blank.”

2 Phase II ESA Activities

2.1 Sampling Objectives

2.1.1 Conceptual Site Model and Sampling Plan

The conceptual site model (CSM) takes into consideration the potential distribution(s) of contaminants with respect to the property and anticipated fate and transport characteristics of contaminants in the setting being assessed. The sampling plan was designed to provide for both the collection of environmental media samples at locations and depths where impacts are most likely to occur.

The sampling plan developed for this project was based upon information provided in Cardno's Phase I ESA and prior investigations. The borings and monitoring wells installed to address each identified REC are noted in parenthesis, and their locations are noted in **Figures 4a-b** and **Figure 5**.

- Possible soil and groundwater contamination from the former on-site Star Cleaners, lack of groundwater sampling near the vicinity of the Star Cleaners, and off-site gas station was addressed by collecting soil and groundwater samples B-1/MW-1(RECs #1, #3, and #4).
- Possible soil and groundwater contamination associated with the former on-site gas station at former dispenser island and lack of groundwater sampling near the vicinity of the historic on-site gas station by collecting soil sample B-2/MW-2 and B-3(RECs #2 and #3).
- Possible soil and groundwater contamination associated with the former on-site dry cleaners collecting soil and groundwater samples B-4/MW-3 (RECs #1 and #3) and verification of groundwater flow direction.
- Delineation of known PCE contamination originating from the Star Cleaners was addressed by collected soil samples DB-1 through DB-5 (REC #1). Soil samples to delineate the historic PCE contamination were collected between zero to one fbgs based on prior investigations which adequately delineated the plume vertically.

2.1.2 Chemical Testing Plan/QAQC

The chemical testing plan was designed to detect the contaminants suspected to be present in the samples collected. This testing plan included tests which provide quality assurance (QA) and techniques that provide quality control (QC) over the chemical analysis. A completed chain of custody record accompanied each sample shipment to the analytical laboratory. Chain of custody records provide written documentation regarding sample collection and handling, identify the persons involved in the chain of sample possession, and a written record of requested analytical parameters. In addition, trip blanks were included in all coolers containing samples for volatile organic compounds.

2.2 Field Investigation and Methods

2.2.1 Soil Boring Installations

Based on the results of the Phase I ESA, 14 soil borings (B-1 through B-4) and delineation borings (DB-1 through DB-5 and DB-1b through DB-5b) were installed as depicted on **Figure 4a-b**. In accordance to Cardno's CSM, a total of three of the 14 soil borings were to be converted into groundwater monitoring wells. All boring and monitoring wells were advanced in strategic locations based on the various on-site and off-site RECs and previously identified contamination in connection with the Subject Property.

During advancement of the soil borings, DPT soil cores were logged for lithology and screened in-field with an Organic Vapor Analyzer (OVA) equipped with a Photoionization Detector (PID). A soil screening summary with OVA readings is included as **Table 1**.

On April 24-25, 2019, Cardno and a sub-contracted drilling company, Betts Environmental (Betts), mobilized to the Subject Site to perform soil and groundwater sampling. The borings which were advanced into groundwater, did so by using a track-mounted Terra-Sonic TSi 150cc drill rig. The samples were collected by utilizing a Moyno pump. Delineation borings were advanced in asphalt on May 9, 2019 utilizing a Hilti DD 150-U Diamond Coring System followed by a hand auger to approximately 3' fbgs. Each delineation boring was backfilled with boring cuttings and sealed with asphalt patch. Completed soil boring logs are included in **Appendix B.** A summary of each soil boring is outlined below:

Boring B-1 was located near the northeast corner of the Subject Site. The purpose of this boring was to identify possible contamination originating from the former on-site Star Cleaners and the off-site gas station. Boring B-1 was advanced on April 24, 2019 to a total depth of fifty (50) feet below ground surface (fbgs). Elevated OVA readings were noted in the soil column with the highest at 43.4 parts per million (ppm). Odors were noted in the soil column from recovered materials at 30 to 37 fbgs. A soil sample was collected at zero to two fbgs and at 35 fbgs and analyzed for VOCs via EPA Method 8260B, SVOCs via EPA Method 8270D, and 8 RCRA metals via EPA Method 6010B/6010C.

Boring B-2 was located near the southeast portion of the Subject Site. The purpose of this boring was to identify possible contamination originating from the former on-site gas station. Boring B-2 was advanced on April 25, 2019 to a total depth of 50 fbgs. Elevated OVA readings were noted in the soil column with the highest at 28.8 ppm. Odors were noted in the soil column from recovered materials at 28 to 30 fbgs. A soil sample was collected at 30 fbgs and analyzed for VOCs via EPA Method 8260B, SVOCs via EPA Method 8270D, and 8 RCRA metals via EPA Method 6010B/6010C.

Boring B-3 was located near the southeast corner of the Subject Site and adjacent to soil boring B-2. The purpose of this boring was to identify possible contamination originating from the former on-site gas station. Boring B-3 was advanced on April 25, 2019 to a total depth of 20 fbgs. Elevated OVA readings were noted in the soil column with the highest at 1,891 ppm. Odors were noted in the soil column from recovered materials at 10 to 20 fbgs. A soil sample was collected at 14 to 16 fbgs and analyzed for VOCs via EPA Method 8260B, SVOCs via EPA Method 8270D, and 8 RCRA metals via EPA Method 6010B/6010C.

Boring B-4 was located on the western portion of the Subject Site. The purpose of this boring was to identify possible contamination originating from the former on-site Star Cleaners and verification of groundwater flow direction. Boring B-4 was advanced on April 24, 2019 to a total depth of 70 fbgs. Elevated OVA readings were noted in the soil column with the highest at 23.2 ppm. No odors or visual evidence of contamination were noted in any of the recovered materials. A soil sample was collected at 10 to 12 fbgs and 50 fbgs and analyzed for VOCs via EPA Method 8260B, SVOCs via EPA Method 8270D, and 8 RCRA metals via EPA Method 6010B/6010C.

Boring DB-1 through DB-5 were located near the northeast corner of the Subject Site adjacent to the former Star Cleaners. The purpose of these borings was to horizontally delineate known PCE contamination originating from the former on-site Star Cleaners facility. Borings DB-1 – DB-5 were advanced on May 9, 2019 using a hand auger hand tool to a total depth of three fbgs. No elevated OVA readings were noted to be associated with analyzed soils from the soil column. No odors or visual evidence of contamination were noted in any of the recovered materials. A soil sample was collected at zero to one fbgs and analyzed for VOCs via EPA Method 8260B.

Boring DB-1b through DB-5b was located near the northeast corner of the Subject Site and approximately five feet outwards from its parent boring. The purpose of these borings was to horizontally delineate known PCE contamination originating from the former on-site Star Cleaners facility. Boring DB-1b – DB-5b was advanced on May 9, 2019 using a hand auger hand tool to a total depth of three fbgs. No elevated OVA readings were noted to be associated with analyzed soils from the soil column. No odors or visual evidence of contamination were noted in any of the recovered materials. A soil sample was collected at zero to one fbgs and analyzed for VOCs via EPA Method 8260B. Soil analysis was placed on hold pending the analysis of DB-1 – DB-5. Based on analytical reports, DB-1b, DB-2b, and DB-5b were analyzed to determine the extent of PCE contamination.

A total of 14 soil samples were collected and submitted to Analytical Environmental Services Laboratories (AES) in Norcross, Georgia under Chain-of-Custody protocol. A soil analytical summary (detections only) is provided in **Table 2**.

2.2.2 Groundwater Sampling Activities

Three of the 14 soil borings were extended into the water table and converted into permanent groundwater monitoring wells (MW-1 through MW-3) on April 25, 2019, as depicted on **Figure 5.**

Drill cuttings were containerized within 55-gallon metal drums. A total of seven drums were stored on-site and AquaTerra Recycling & Treatment (AquaTerra) transported these drums to be disposed of at a subtitle D landfill. AquaTerra's non-hazardous waste manifest is included as **Appendix G**.

Permanent, 2-inch diameter, polyvinyl chloride (PVC) monitoring wells were installed in 10-foot sections after the boring was clear in-situ soil. The well screens were 0.010-inch manufactured slot PVC, and screen lengths for each well were 15 feet. Silica sand packs were installed to a depth of two feet above each well screen, followed by approximately two feet of bentonite. Above the bentonite, the wells were grouted with standard type I/II cement to the ground surface. Each monitoring well was finished using a traffic-rated, flush-mount vault within a two-foot by two-foot concrete pad. The wells were completed with padlocked expanding caps. Monitoring well construction details are provided in well construction diagrams in **Appendix C.**

After their installation, the monitoring wells were developed using a high flow submersible pump until at least five well volumes were removed, or until dry. Suspended fines and foreign materials from the initial soil borings were purged during development with the goal of encouraging formation groundwater to enter the well screen. Development water was disposed of on-site. It should be noted that no NAPL or free product was identified in the monitoring wells installed by Cardno personnel during the course of this investigation.

Prior to sampling, the wells were purged with either a Mega Monsoon low flow pump or submersible typhoon pump. Both methods were utilized until either a minimum of three well volumes were purged or until groundwater quality parameters were stabilized. Groundwater quality parameters measured include pH, temperature, conductivity, and dissolved oxygen, which were measured using an In-Situ smarTROLL. Turbidity was measured utilizing a LaMotte turbidity meter to verify that groundwater turbidity was less than 20 Neptholometric Turbidity Units (NTU). Equipment calibration documentation is included in **Appendix D.**

A summary of each installed groundwater well is as follows:

Monitoring Well MW-1 was installed at the location of B-1 and was purged over three well volumes and after groundwater parameters were stabilized, a groundwater sample was collected on May 9,

2019 and analyzed for VOCs via USEPA Method 8260B, SVOCs via USEPA Method 8270D, and RCRA Metals via USEPA Method 6010B/6010C.

Monitoring Well MW-2 was installed at the location of B-2 and was purged over three well volumes and after groundwater parameters were stabilized, a groundwater sample was collected on May 9, 2019 and analyzed for VOCs via USEPA Method 8260B, SVOCs via USEPA Method 8270D, and RCRA Metals via USEPA Method 6010B/6010C.

Monitoring Well MW-3 was installed at the location of B-3 and was purged over three well volumes and after groundwater parameters were stabilized, a groundwater sample was collected on May 9, 2019 and analyzed for VOCs via USEPA Method 8260B, SVOCs via USEPA Method 8270D, and RCRA Metals via USEPA Method 6010B/6010C.

A total of three groundwater samples were submitted to Analytical Environmental Services (AES) laboratories in Norcross, Georgia under chain-of-custody protocol. A groundwater analytical summary (detections only) is provided in **Table 3**. A summary of groundwater sampling logs can be found in **Appendix E.**

2.2.3 Groundwater Elevation Data Collection

To assist in determining the direction of groundwater flow within the boundaries of the Subject Site, elevation data was collected from the monitoring wells. Elevations were recorded relative to an arbitrary datum to assist in the evaluation of shallow groundwater flow direction. Depth-to-groundwater measurements were taken from top of casing. Upon completion of sampling activities, the monitoring wells were surveyed by Cardno environmental field technicians utilizing a CST/Berger tripod, Spectra Precision Optical AL 220 auto level and an AdirPro Philadelphia-style staff gauge. An inferred groundwater elevation summary is present in **Table 4.**

2.2.4 Quality Assurance and Quality Control Methods

Samples were labeled with a distinct sample identification number, the sampler's initials, and the date of the collection. Each sample container was properly sealed, labeled, and placed on ice in a cooler for deliver to AES within the sample hold times. A properly completed chain-of-custody form was initiated in the field and accompanied the samples when submitted to the laboratory for analyses. The QA/QC samples were collected and analyzed for the following:

- MW-3 matrix spike/matrix spike duplicate (MS/MSD): RCRA Metals;
- MW-1 Duplicate (DUP): SVOCs;
- B-2 MS/MSD: RCRA Metals; and
- DB-1 DUP: VOCs

Copies of the chain-of-custody forms are shown in the laboratory analytical reports included as **Appendix F.**

2.2.5 Investigative-Derived Waste

Investigative-derived waste (IDW) generated during this investigation included all recovered materials during boring and monitoring well installation and sampling activities. All soil clippings generated during the soil boring and monitoring well installation were contained in 55-gallon drums and were staged on the Subject Property. A total of seven 55-gallon drums were labeled as non-hazardous waste with waste generator information provided. The soil and purge water in these 55-gallon drums were characterized and properly disposed at a Subtitle D landfill in accordance with all appropriate

regulations. All purge water generated during development was containerized in 55-gallon drums. AquaTerra's non-hazardous waste manifest are attached as **Appendix G**.

"The remainder of this page intentionally left blank."

3 Environmental Assessment Results

3.1 Analytical Data Results

3.1.1 Soil

A comparison of the laboratory analytical results of the collected soil samples to the Georgia EPD NCs for samples that exhibited detections above the laboratory method detection limits is presented in **Table 2** with locations depicted in **Figure 4a-b**. In summary:

- **VOCs**: Multiple volatile organic compounds (VOCs) were identified in soil samples collected for analysis including acetone, 2-butanone, and 2-hexanone in B-1 at 35 feet below ground surface (fbgs) and ethylbenzene, isopropylbenzene, o-xylene, and m,p-xylene in B-3 at 14 to 16 fbgs.

  PCE was identified in the following borings between zero and two fbgs:

  - B-1
  - DB-1/DB-1b
  - DB-2/DB-2b
  - DB-3
  - DB-4
  - DB-5/DB-5b

  PCE in delineation borings DB-2, DB-2b, DB-5, and DB-5b were collected between zero and one fbgs and were all identified with concentrations above its NC.

- **SVOCs:** Multiple semi-volatile organic compounds (SVOCs) were identified within the following soil borings:

  - B-1 at zero to two fbgs,
  - B-1 at 35 fbgs, B-3 at 14 to 16 fbgs,
  - B-4 10-12 fbgs, and
  - B-4 at 50 fbgs.

  However, the SVOCs identified were well below their respective NCs.

- **RCRA Metals:** The following resource conservation and recovery act (RCRA) metals, arsenic, barium, chromium, and lead, were identified in the following soil borings:

  - B-1 at zero to two fbgs
  - B-4 at 10-12 fbgs

  Chromium and lead were identified in the following soil borings:

  - B-1 at 35 fbgs,
  - B-2 at 30 fbgs,
  - B-3 at 14 to 16 fbgs
  - B-4 at 50 fbgs.

  Soil samples selected for analysis containing these RCRA metals were identified below their respective NCs.

3.1.2 Shallow Groundwater

A comparison of the laboratory analytical results of the collected groundwater samples to the Georgia EPD MTC or samples that exhibited detections above the laboratory method detection limits is presented in **Table 3** with locations depicted on **Figure 5.** In summary:

- **VOCs:** PCE was identified at levels above its respective MTC in groundwater samples collected in MW-1, MW-2, and MW-3.
- **SVOCs:** No SVOCs were detected above laboratory reporting limits in groundwater samples collected for laboratory analysis.
- **RCRA Metals:** Barium was detected in samples collected from MW-1, MW-2, and MW-3. However, the reported concentrations was not detected above its respective MTC.

3.1.3 Vapor Intrusion

Groundwater analytical results were run through the EPA Vapor Intrusion Screen Level (VISL) Calculator. This site-specific calculator helps determine whether constituents found in groundwater samples pose a significant risk for vapor intrusion into the Subject Site and any future building development. The detected results were entered into the calculator under a commercial exposure scenario assuming an average groundwater temperature of 25 ºC. The vapor intrusion risk for the detected VOCs generated by the calculator were compared against their Georgia EPD approved target risk levels (1.00E-5 for carcinogens, 1 for non-carcinogens) and indicate PCE exceeded its associated target risks. As a result, the potential for vapor intrusion for buildings on-site exists.

3.1.4 Laboratory Analyses Quality Control (QC) Observations and Interpretations

No significant QA/QC issues were encountered by the laboratory. All samples were received in good condition, with all spikes and surrogates were recovered within established limits; and all method-specified holding times were met. A duplicate soil sample was collected from DB-1 and analyzed for VOCs. Analytical results derived from this sample were similar to analytical results from DB-1, with no abnormalities detected. A soil MS/MSD was collected from soil boring B-2 and analyzed for 8 RCRA Metals. Analytical results derived from this sample were similar to analytical results from DB-1, with no abnormalities detected.

Additionally, a duplicate groundwater sample was collected from MW-1 and analyzed for SVOCs. Analytical results derived from this sample were similar to analytical results from MW-1, with no abnormalities detected. A groundwater MS/MSD was collected from monitoring well MW-3 and analyzed for 8 RCRA Metals. Analytical results derived from this sample were similar to analytical results from MW-3, with no abnormalities detected. Laboratory Analytical Reports are included as **Appendix F**.

3.1.5 Shallow Groundwater Flow Direction

A comparison of shallow water table elevation data collected on April 9, 2019 (see **Table 4**) to an arbitrary benchmark indicated a shallow groundwater gradient flowing predominantly towards the southwest (as shown on **Figure 6**).

4 Discussion of Findings and Conclusions

4.1 Recognized Environmental Conditions

Based on the results of this assessment, the recognized environmental conditions and non-scope considerations discussed in the Phase I ESA appear to have been evaluated. No additional RECs were encountered during this investigation.

4.2 Affected Media

4.2.1 Soil

PCE identified in soil samples from borings DB-2, DB-2b, DB-5, and DB-5b was detected at concentrations that exceed its respective NC.

4.2.2 Groundwater

PCE identified in MW-1, MW-2, and MW-3 was detected at concentrations that exceed its respective MTC.

4.3 Vapor Intrusion Screening Calculator Results

Groundwater analytical results were run through the EPA VISL Calculator and indicated PCE exceeded its associated target risks suggesting that the potential for vapor intrusion exists. Results of the EPA VISL Calculator are summarized in **Table 5**.

4.4 Evaluation of Data Quality

The data gathered during this assessment has been deemed acceptable from a quality assurance perspective and is sufficient to determine whether hazardous substances or petroleum products related to the RECs identified in the Phase I ESA have impacted the Subject Site.

"The remainder of this page intentionally left blank."

5 Recommendations

Based on the results of this Phase II ESA, Cardno makes the following recommendation:

- The data generated by this investigation provide sufficient grounds for application to the Georgia EPD Brownfield Cleanup Program (BCP) by a prospective purchaser.
- The PCE concentrations reported in groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3 were all above the Georgia EPD's MTC for PCE. Based on these results the current owner is required to submit a release notification to the Georgia Environmental Protection Division's (EPD) Hazardous Sites Response and Remediation Program, within 30 days of discovery.
- This report should be provided to the Georgia EPD HSI case manager for the Subject Site.
- Based on the results of the VISL calculator, there is potential for vapor intrusion issues in the existing buildings and for any potential future building development around the locations of monitoring wells MW-1 through MW-3. Additional Vapor Encroachment Screening (VES) should be completed in accordance with ASMT-E2600 to further assess the presence of Vapor Encroachment Conditions (VEC) is recommended.

"The remainder of this page intentionally left blank."

6 Qualifications/Signatures of Environmental Professional(s)

Prepared by:

I declare that I meet the definition of Environmental Professional as defined in 40 CFR Part 312.10 and that I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. I further certify that in my professional judgment, this report meets the general requirements of *ASTM Method E 1903-11, Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process*.

for Cardno

Trey Young
Project Manager

Date: 10/22/2019

QA/QC by:

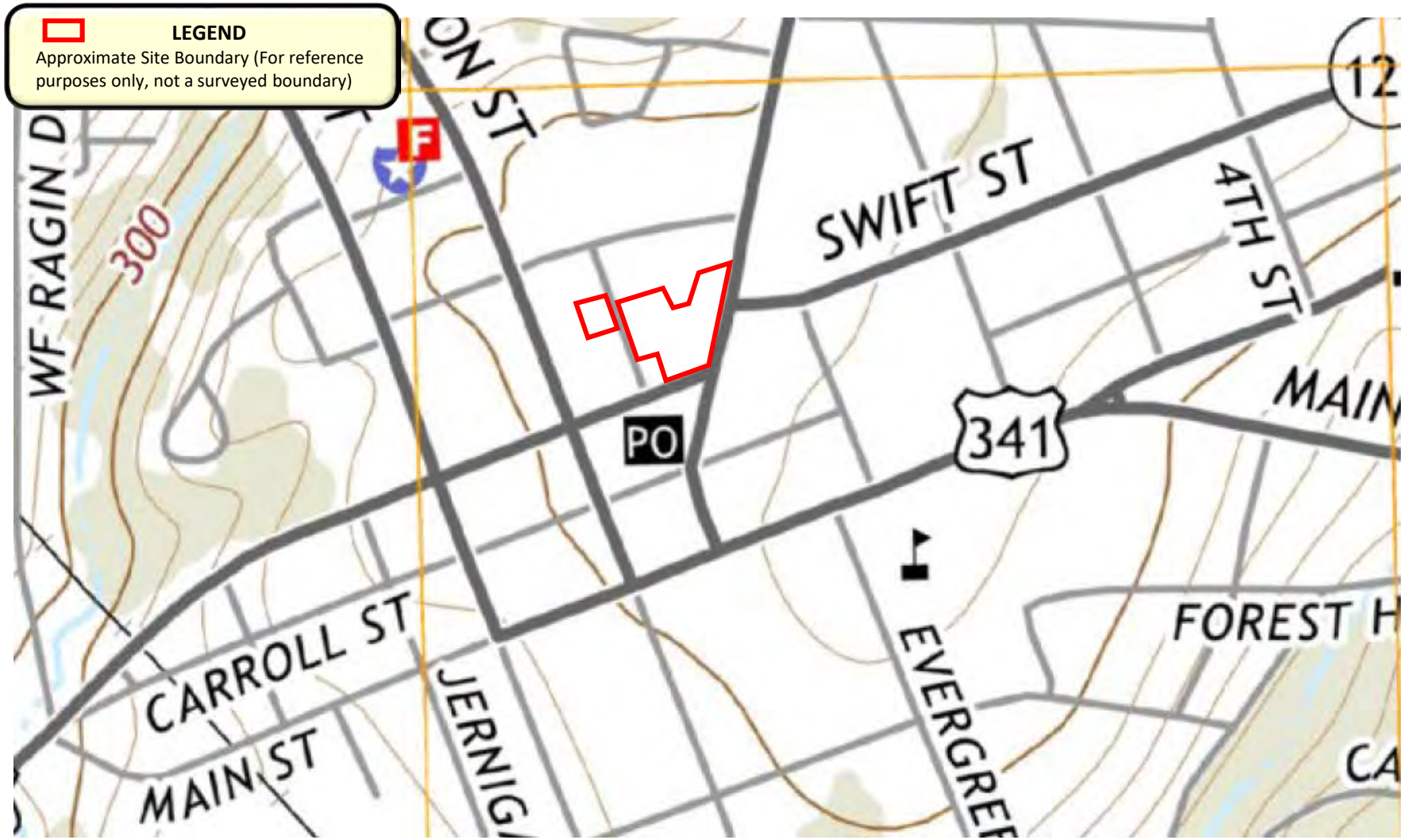
I declare that I meet the definition of Environmental Professional as defined in 40 CFR Part 312.10 and that I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. I further certify that in my professional judgment, this report meets the general requirements of *ASTM Method E 1903-11, Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process*.

for Cardno

Keith Ziobron, PE
Branch Manager

Date: 10/22/2019

Figures

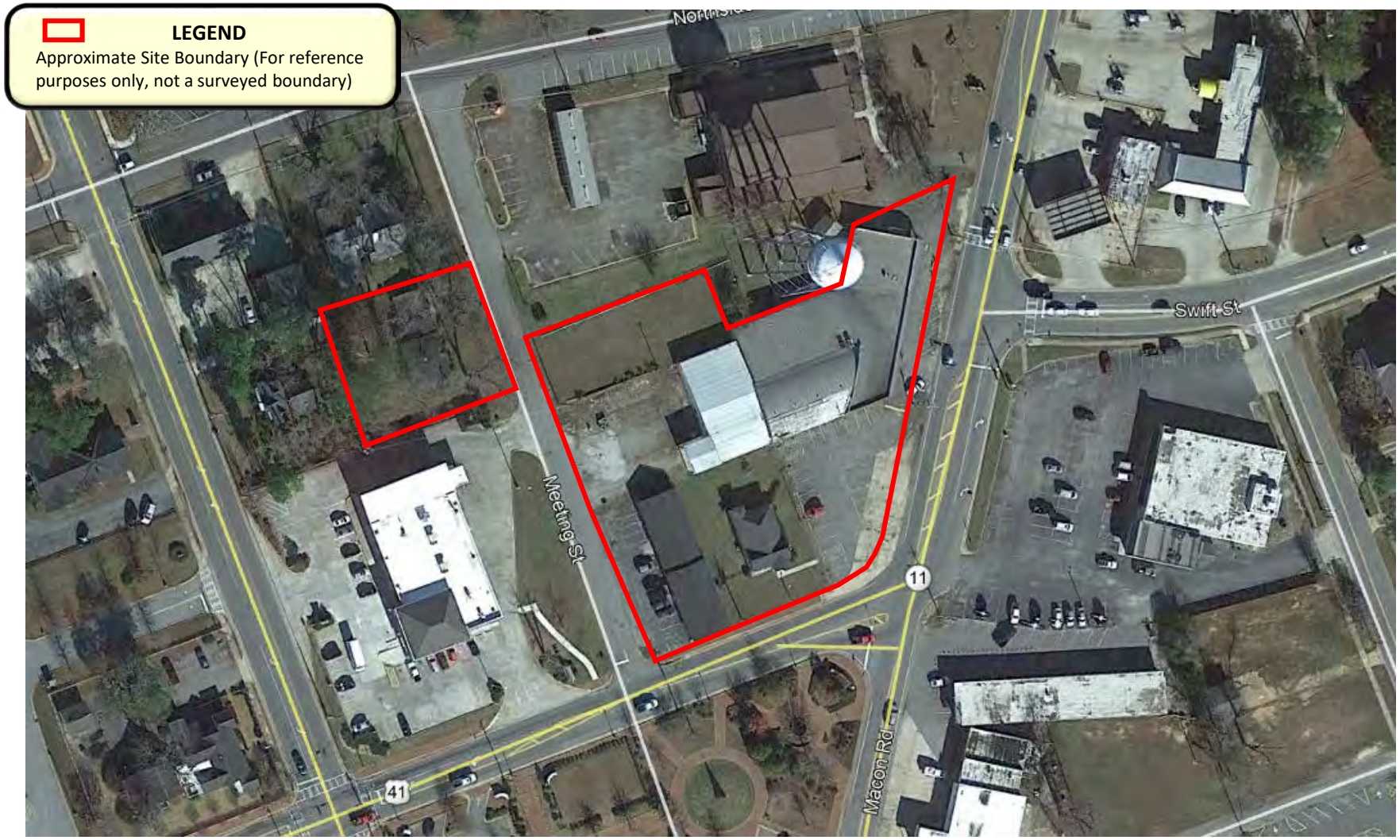


Cardno
Shaping the Future

420 0 420
Not to Scale

Phase II ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 1
USGS/Site Vicinity Map
Source: USGS 2014



Cardno
Shaping the Future

"This is not a map of survey."

120 0 120
Not to Scale

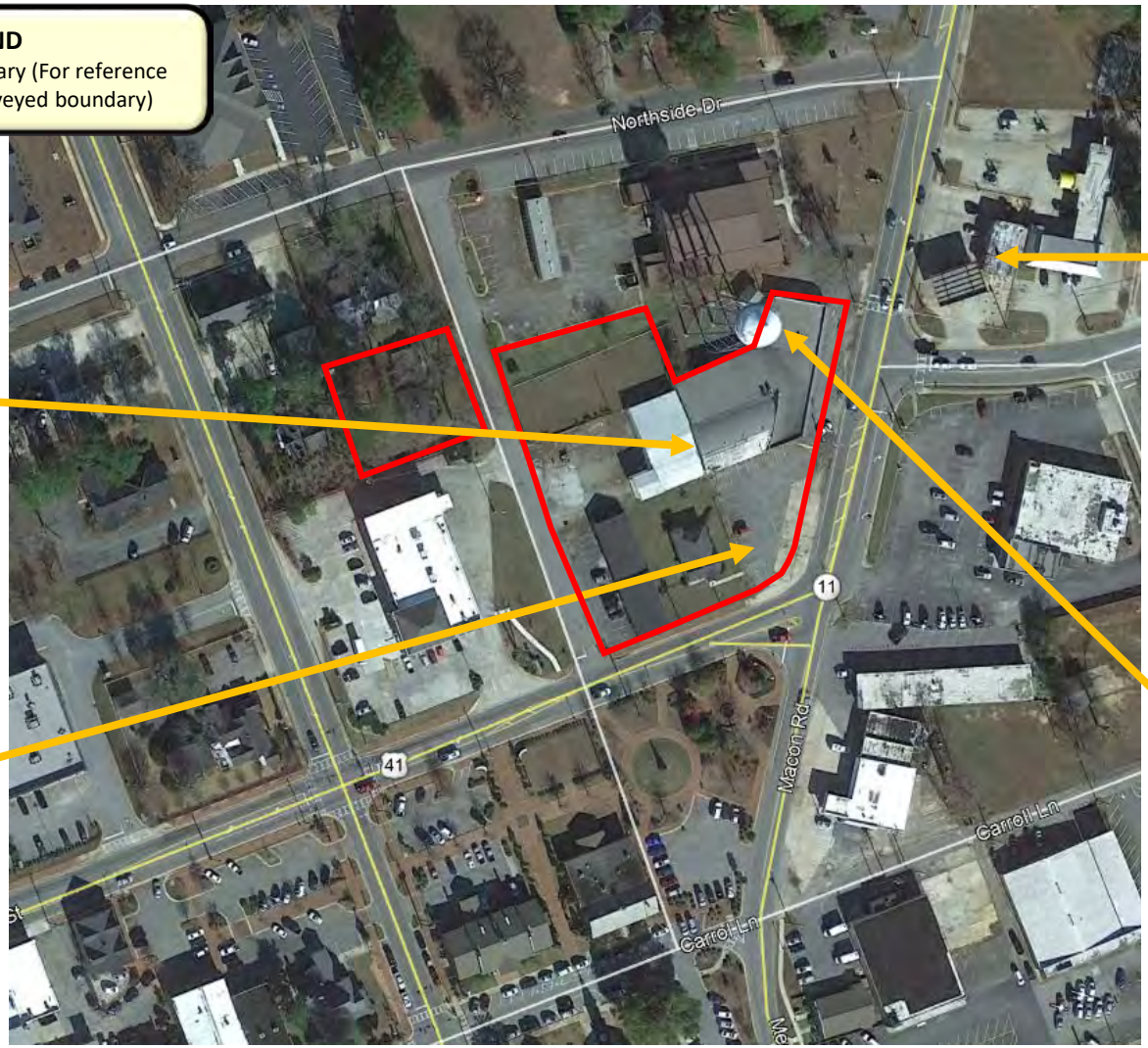
Phase II ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 2
Site Boundary Map

LEGEND
Approximate Site Boundary (For reference purposes only, not a surveyed boundary)

REC #3: Lack of groundwater sampling near the vicinity of the Star Cleaners and historic gasoline filling stations

REC #2: Inadequate sampling conducted in response to a historical gasoline servicing station located at 1101 Macon Street.



REC #4: Flash Foods #167 facility located at 1114 Macon Street is a gasoline filling station, adjacent the Subject Property

REC #1: identified PCE concentrations at the Star Cleaners Site located at 1109 Macon Street.

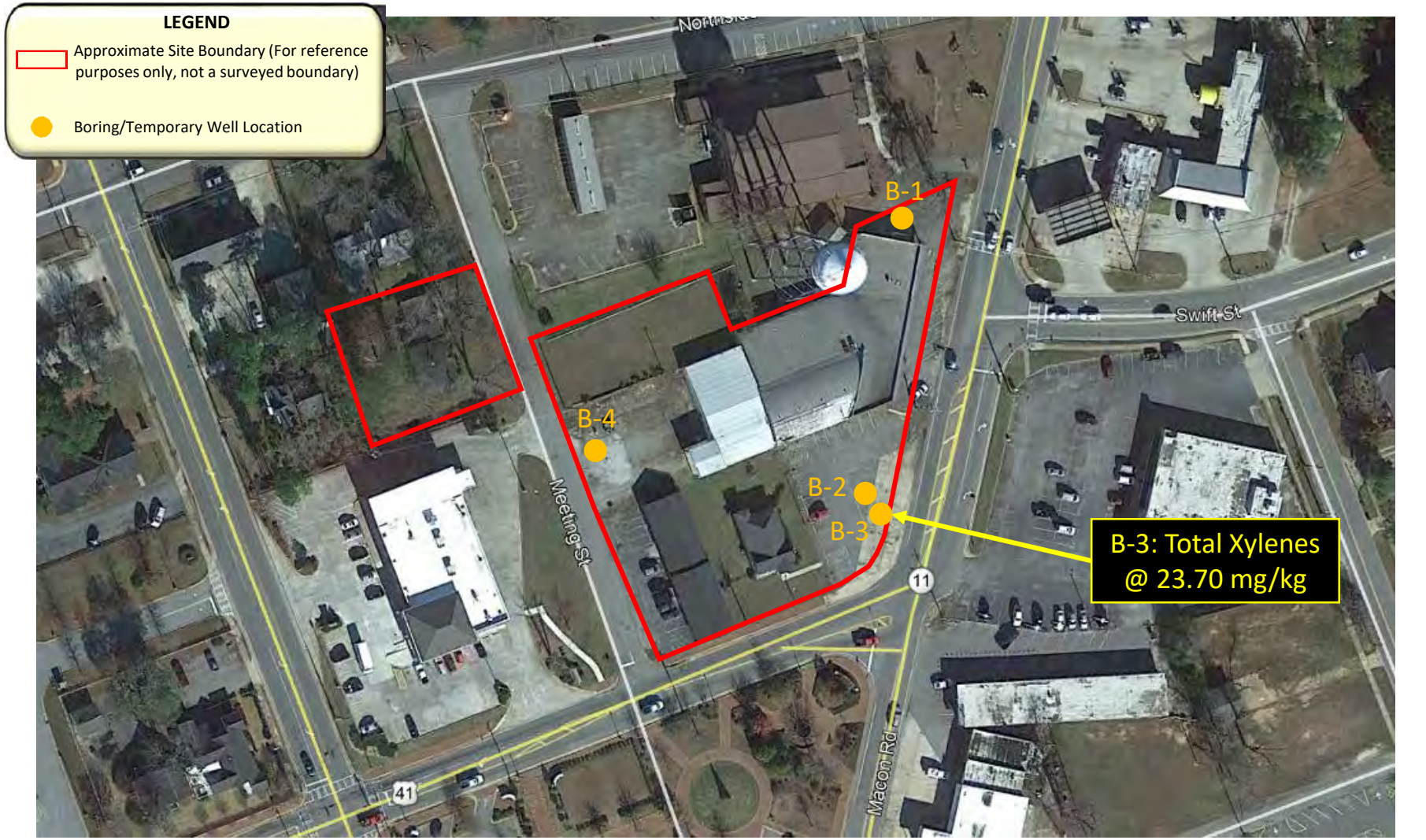
Cardno
Shaping the Future

Not a map of survey
Base Image Google 2017

120 0 120
Not to Scale

Phase II ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 3
REC Location Map
Source: GoogleEarth



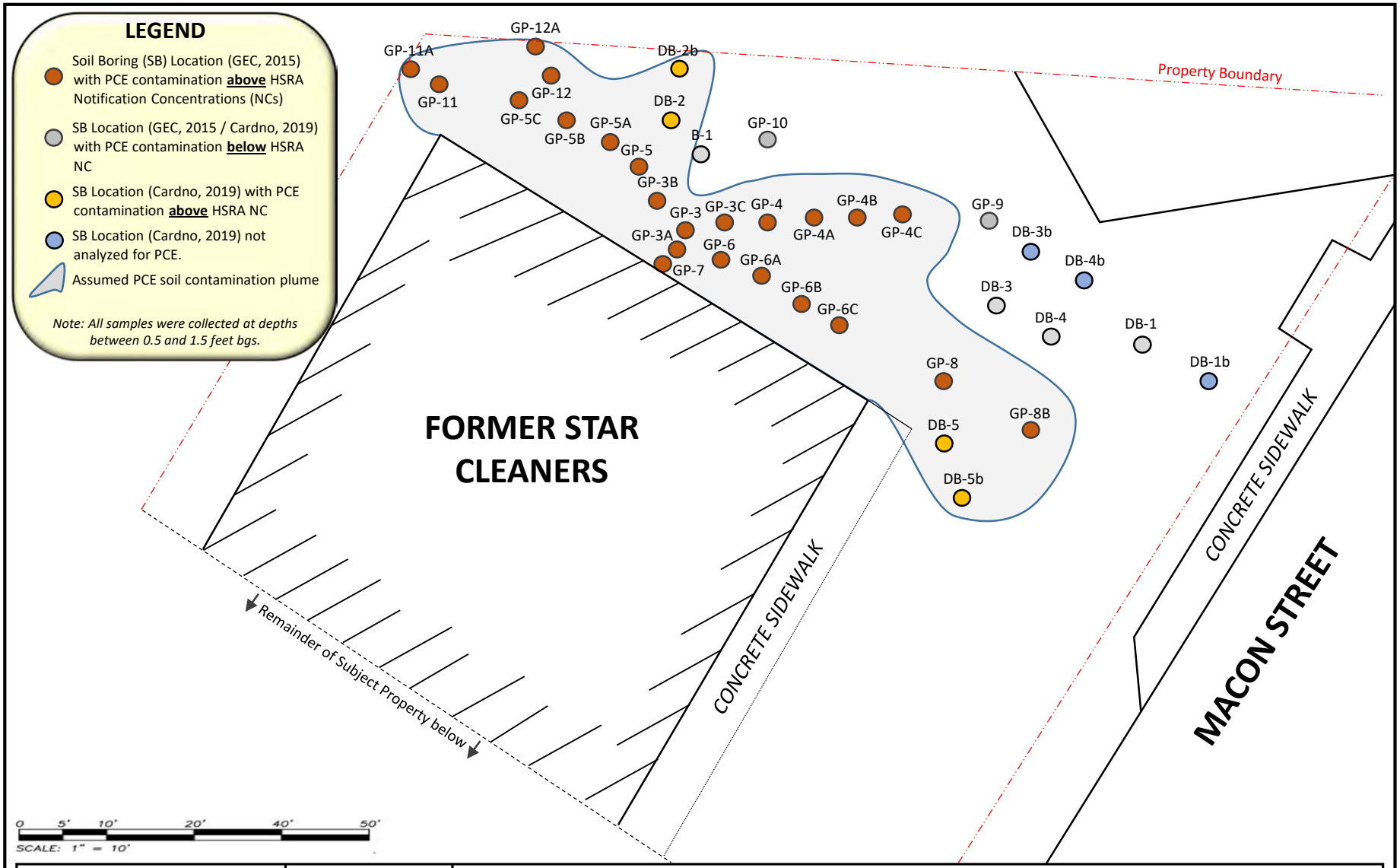
Cardno
Shaping the Future

"This is not a map of survey."

120 0 120
Not to Scale

Phase II ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4a
Soil Boring Location Map

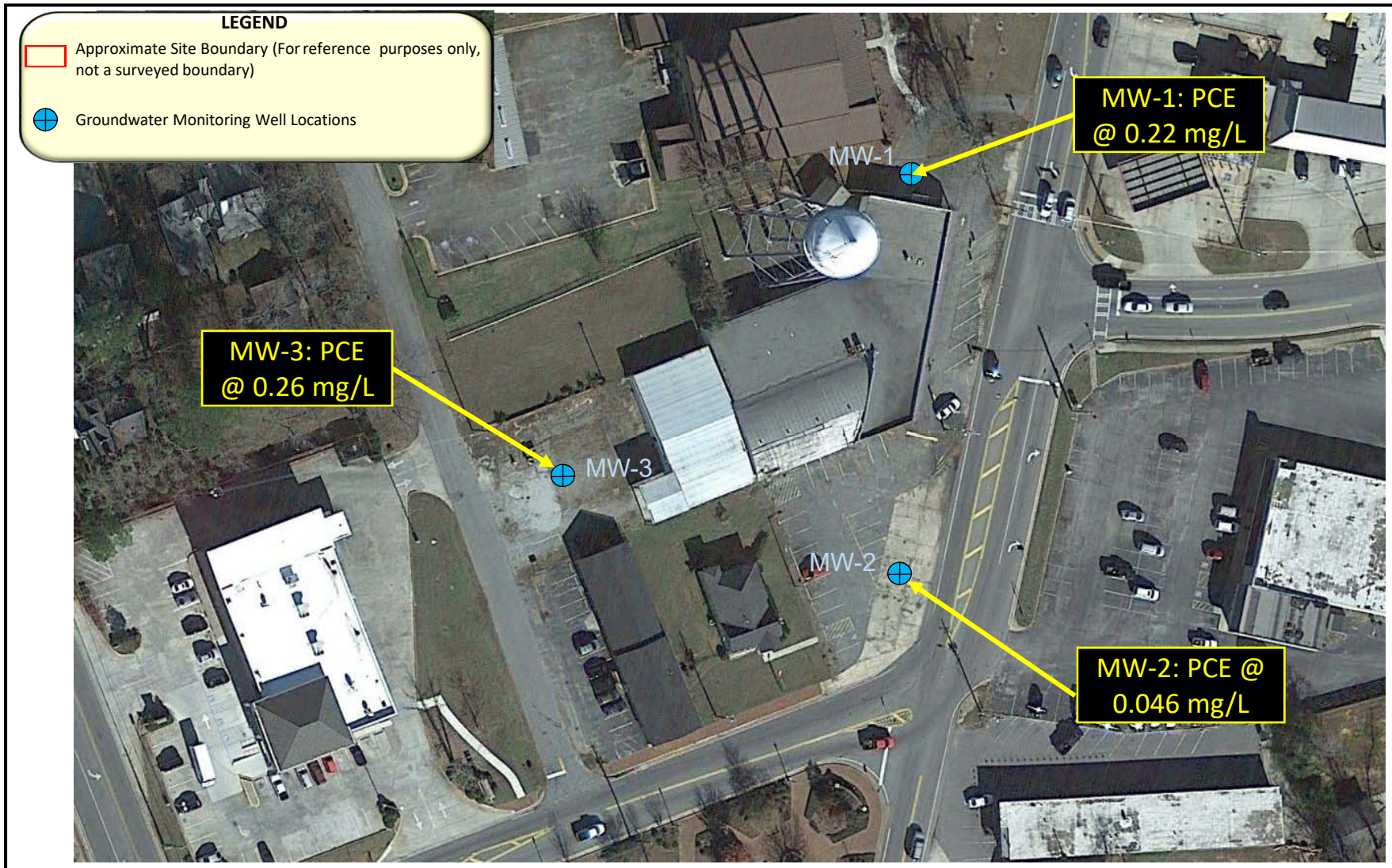


Cardno
Shaping the Future

"This is not a map of survey."

Phase II ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4b
PCE Delineation Location Map



Cardno
Shaping the Future

"This is not a map of survey."

50 0 50
Not to Scale

Phase II ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 5
Groundwater Monitoring Well Location Map

Cardno
Shaping the Future

"This is not a map of survey."

50 0 50
Not to Scale

Phase II ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 6
Potentiometric Surface Map

Tables

TABLE 1: OVA HEADSPACE SCREENING SUMMARY

SITE NAME: STANLEY ASSEMBLAGE

PERRY, GA

See Notes at end of Table

Sample				OVA/PID	Comments
Boring/ Well No.	Date Collected	Depth to Water (feet)	Sample Interval (fbls)	OVA/PID Reading (ppm)	
B-1/MW-01	04/25/2019	GW at 53.33'	0 - 2	0.7	Collected soil sample at 0'-2'
			2 - 4	0.0	
			4 - 6	0.0	
			6 - 8	0.0	
			8 - 10	0.0	
			10 - 12	0.0	
			12 - 14	0.0	
			14 - 16	0.0	
			16 - 18	0.0	
			18 - 20	0.0	
			25	0.0	
			30	0.1	
			35	43.4	Collected soil sample at 35'
			40	0.7	
			45	0.5	
			50	0.0	
B-2/MW-02	04/25/2019	GW at 54.56'	0 - 2	0.3	
			2 - 4	0.1	
			4 - 6	0.2	
			6 - 8	0.1	
			8 - 10	0.1	
			10 - 12	0.0	
			12 - 14	0.8	
			14 - 16	1.1	
			16 - 18	0.4	
			18 - 20	0.0	
			25	3.7	
			30	28.8	Collected soil sample at 30'
			35	6.6	
			40	3.2	
			45	6.1	
			50	0.0	
B-3	04/25/2019	GW not encountered	0 - 2	0.2	
			2 - 4	0.0	
			4 - 6	0.0	
			6 - 8	0.0	
			8 - 10	0.6	
			10 - 12	2.2	
			12 - 14	925.4	
			14 - 16	1,891	Collected soil sample at 14'-16'
			16 - 18	1,336	
			18 - 20	749.1	

TABLE 1: OVA HEADSPACE SCREENING SUMMARY

SITE NAME: STANLEY ASSEMBLAGE

PERRY, GA

See Notes at end of Table

Sample				OVA/PID	Comments
Boring/ Well No.	Date Collected	Depth to Water (feet)	Sample Interval (fbls)	OVA/PID Reading (ppm)	
B-04/MW-03	04/25/2019	GW at 53.64'	0 - 2	0.2	
			2 - 4	0.3	
			4 - 6	0.1	
			6 - 8	0.0	
			8 - 10	0.0	
			10 - 12	11.1	Collected soil sample at 10'-12'
			12 - 14	4.1	
			14 - 16	3.3	
			16 - 18	2.2	
			18 - 20	0.8	
			25	0.5	
			30	1.4	
			35	0.8	
			40	0.7	
			45	9.5	
			50	23.2	Collected soil sample at 50'
			55	0.0	
DB-1	05/09/2019	GW not encountered	0 - 1	0.0	Collected soil sample at 0'-1'
			1 - 3	0.0	
DB-1b	05/09/2019	GW not encountered	0 - 1	0.0	Collected soil sample at 0'-1'
			1 - 3	0.0	
DB-2	05/09/2019	GW not encountered	0 - 1	4.6	Collected soil sample at 0'-1'
			1 - 3	1.8	
DB-2b	05/09/2019	GW not encountered	0 - 1	0.6	Collected soil sample at 0'-1'
			1 - 3	2.5	
DB-3	05/09/2019	GW not encountered	0 - 1	0.0	Collected soil sample at 0'-1'
			1 - 3	0.0	
DB-3b	05/09/2019	GW not encountered	0 - 1	0.3	Collected soil sample at 0'-1'
			1 - 3	0.0	
DB-4	05/09/2019	GW not encountered	0 - 1	0.0	Collected soil sample at 0'-1'
			1 - 3	1.0	
DB-4b	05/09/2019	GW not encountered	0 - 1	0.0	Collected soil sample at 0'-1'
			1 - 3	6.0	
DB-5	05/09/2019	GW not encountered	0 - 1	5.4	Collected soil sample at 0'-1'
			1 - 3	0.5	
DB-5b	05/09/2019	GW not encountered	0 - 1	3.7	Collected soil sample at 0'-1'
			1 - 3	0.4	

Notes:
NR = not recorded
OVA/PID = Organic Vapor Analyzer/Photoionization Detector
ppm = parts per million
GW = groundwater

TABLE 2: SOIL ANALYTICAL SUMMARY (DETECTIONS ONLY)

SITE NAME: STANLEY ASSEMBLAGE
PERRY, GA

Sample			8 RCRA Metals				VOCs									PAHs															SVOCs
Boring/ Well No.	Date Collected	Sample depth (bgs)	Arsenic *(mg/kg)*	Barium *(mg/Kg)*	Chromium *(mg/Kg)*	Lead *(mg/Kg)*	Acetone *(mg/kg)*	2-Butanone *(mg/kg)*	2-Hexanone *(mg/kg)*	Ethylbenzene *(mg/kg)*	Isopropylbenzene *(mg/kg)*	o-Xylene *(mg/kg)*	m, p-Xylenes *(mg/kg)*	Total Xylene *(mg/kg)*	Tetrachloroethene *(mg/kg)*	2-Methylnaphthalene *(mg/kg)*	1-Methylnaphthalene *(mg/kg)*	Anthracene (mg/kg)	Benzo(a) anthracene *(mg/kg)*	Benzo(a)-pyrene *(mg/Kg)*	Benzo(b) flouranthene *(mg/Kg)*	Benzo(g,h,i)-perylene *(mg/kg)*	Benzo(k) fluoranthene *(mg/kg)*	Chrysene *(mg/kg)*	Flouranthene *(mg/kg)*	Indeno(1,2,3-cd) pyrene *(mg/kg)*	Naphthalene *(mg/kg)*	Phenanthrene *(mg/kg)*	Pyrene *(mg/kg)*	Fluorene *(mg/kg)*	2-Methylnaphthalene *(mg/kg)*
B-1	4/24/2019	0 to 2	3.85	33.70	7.58	7.74	/	/	/	/	/	/	/	/	0.11	/	/	/	/	/	/	/	/	0.0019	0.0058	/	/	0.0029	0.0041	/	/
B-1	4/24/2019	35	/	/	2.32	0.55	0.40	0.13	0.0120	/	/	/	/	/	/	/	/	0.0049	/	/	/	/	/	/	/	/	/	0.0170	0.0073	0.022	/
B-2	4/24/2019	30	/	/	1.84	1.47	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
B-3	4/24/2019	14-16	/	/	4.75	2.23	/	/	/	3.3	2.60	5.70	18.00	**23.70**	/	5.30	2.60	/	/	/	/	/	/	/	/	/	11.00	0.0052	0.0034	0.0081	4.1
B-4	4/24/2019	10-12	3.41	27.80	23.00	9.57	/	/	/	/	/	/	/	/	/	/	/	/	0.0029	0.0036	0.0078	0.0042	0.0034	0.0045	0.0067	0.0032	/	/	0.0060	/	/
B-4	4/24/2019	50	/	/	1.15	0.51	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.0030	0.0030	/	/	/	/	/	/	/
DB-1	5/9/19	0-1	NA	NA	NA	NA	/	/	/	/	/	/	/	/	0.023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DB-1b	5/9/19	0-1	NA	NA	NA	NA	0.081	/	/	/	/	/	/	/	0.034	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DB-2	5/9/19	0-1	NA	NA	NA	NA	/	/	/	/	/	/	/	/	**1.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DB-2b	5/9/19	0-1	NA	NA	NA	NA	/	/	/	/	/	/	/	/	**0.93**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DB-3	5/9/19	0-1	NA	NA	NA	NA	/	/	/	/	/	/	/	/	0.042	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DB-4	5/9/19	0-1	NA	NA	NA	NA	/	/	/	/	/	/	/	/	0.043	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DB-5	5/9/19	0+-1	NA	NA	NA	NA	/	/	/	/	/	/	/	/	**0.88**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DB-5b	5/9/19	0+-1	NA	NA	NA	NA	0.072	/	/	/	/	/	/	/	**0.67**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GA HSRA NC			**41**	**500**	**1,200**	**400**	**2.74**	**0.79**	**NL**	**20**	**21.88**	**20**	**20**	**20**	**0.18**	**NL**	**NL**	**500**	**5**	**1.64**	**5.0**	**500.0**	**5.0**	**5.0**	**NL**	**5.0**	**100.0**	**110.0**	**500.00**	0.29	**NL**

Notes:

GA HSRA NC = Georgia Hazardous Site Response Act Notification Concentrations

Concentrations in **bold** and highlighted (yellow) exceed GA HSRA NC

OVA = organic vapor analyzer

VOCs = Volatile Organic Compounds

RCRA = Resource Conservation Recovery Act

SVOCs = Semi-Volatile Organic Compounds

PAHs = Polynuclear Aromatic Hydrocarbons

/ = BRL (Below Reportable Limits)

mg/Kg = milligrams per kilogram

bgs = below ground surface

TABLE 3: GROUNDWATER ANALYTICAL SUMMARY (DETECTIONS ONLY)

FACILITY NAME: STANLEY ASSEMBLAGE PERRY, GA

Sample		Laboratory Analyses	
		VOCs	8 RCRA METALS
Monitoring Well No.	Date Collected	Tetrachloroethene (mg/L)	Barium (mg/L)
MW-1	5/9/19	**0.22**	0.0326
MW-2	5/9/19	**0.046**	0.0419
MW-3	5/9/19	**0.26**	0.0289
MTCs		0.005	2

Notes:

Concentrations in **bold** and highlighted (yellow) exceed GA MTCs

MTCs = Media Target Concentrations

VOC (Volative Organic Compound)

RCRA (Resource Conservation and Recovery Act)

mg/L = milligrams per liter

TABLE 4: GROUNDWATER ELEVATION SUMMARY

SITE NAME: STANLEY ASSEMBLAGE
PERRY, GA

Well Number	Casing Elevation	Depth of Well	Well Bottom Elevation	Depth to Water	Potentiometric Surface Elevation
MW-1	100.71	63.9	36.81	53.33	47.38
MW-2	100.90	60.62	40.28	54.56	46.34
MW-3	99.55	60.59	38.96	53.64	45.91

TABLE 5: EPA VISL CALCULATOR RESULTS
SITE NAME: STANLEY ASSEMBLAGE
PERRY, GA

Substance	Monitoring Well	Site Groundwater Concentration (µg/L)	Calculated Indoor Air Concentration (µg/m^3)	VI Carcinogenic Risk	VI Hazard
Tetrachloroethene	MW-1	220	1.59E+02	**1.47E-05**	**2.60E+00**
Tetrachloroethene	MW-2	46	3.33E+01	3.08E-06	**7.98E-01**
Tetrachloroethene	MW-3	260	1.88E+02	**1.74E-05**	**4.51E+00**

Notes:

EPA VISL - United States Environmental Protection Agency Vapor Instrusion Screening Level

Substances displayed are those with site groundwater analytical detections and which have inhalation toxicity data.

Site Groundwater Concentration values taken from the highest site groundwater analytical detections.

Calculated Indoor Air Concentration determined from the site groundwater concentration, using the EPA VISL Calculator with generic attenuation factor for indoor air from groundwater

VI Carcinogenic Risk - carcinogenic risk from the vapor intrusion pathaway for the substance, calculated using the EPA VISL Calculator with default exposure parameters for commerical exposure. Concentrations in **bold** exceed the GA EPD Target Risk for Carcinogens (1.00E-05).

VI Hazard - noncancer hazard from the vapor intrusion pathway for the chemical, calculated using the EPA VISL Calculator with default parameters for commerical exposure. Concentrations in **bold** exceed the Target Hazard Quotient for Non-Carcinogens (1).

IUR - Inhalation Unit Risk factor, from the EPA Regional Screening Levels (RSL) worksheet. This is the potential carcinogenic risk per unit concentration exposure associated with inhalation of the chemical.

Appendix A

Excerpts from Previous Environmental Assessments

Cardno
Shaping the Future

Phase I Environmental Site Assessment

Stanley Assemblage
Perry, Houston County, Georgia

January 28, 2019

Prepared for:
City of Perry
EPA Cooperative Agreement: BF 00D71518-0

Cardno
Shaping the Future

Phase I Environmental Site Assessment

Prepared for: Mr. Robert Smith
Assistant City Manager - City of Perry
1211 Washington Street
Perry, GA 31069

Project Name: **Phase I Environmental Site Assessment**
Stanley Assemblage
Perry, Houston County, Georgia 31069

Cardno Project #: 0002420000 Phase 2CA
ACRES ID: 238676

Date: January 28, 2019

Table of Contents

1 Executive Summary 1
1.1 Findings and Conclusions 1
2 Introduction 5
2.1 Purpose 5
2.2 Detailed Scope of Services 5
2.3 Significant Assumptions 5
2.4 Limitations, Exceptions, Deviations and/or Data Gaps 6
2.5 Special Terms and Conditions (User Reliance) 8
3 Site Description 9
3.1 Location and Legal Description 9
3.2 Surrounding Area General Characteristics 9
3.3 Current Use of the Property 10
3.4 Descriptions of Property Improvements 10
3.5 Current Uses of Adjoining Properties 11
4 User Provided Information 12
4.1 Title Records 12
4.2 Environmental Liens or Activity and Use Limitations (AULs) 12
4.3 Specialized Knowledge 12
4.4 Valuation Reduction for Environmental Issues 12
4.5 Owner, Property Manager, and Occupant Information 12
4.6 Reason for Performing Phase I 12
5 Records Review 13
5.1 Standard Environmental Record Sources 13
5.2 Physical Setting Sources 16
5.3 Historical Records Sources 16
5.3.1 Aerial Photographs, Topographic Maps and Sanborn Fire Insurance Maps 16
5.3.2 City Directories 19
5.3.3 Prior Reports 21
6 Site Reconnaissance 23
6.1 Methodology and Limiting Conditions 23
6.2 Hazardous Substance Use, Storage, and Disposal 23
6.3 Underground Storage Tanks (USTs) 23
6.4 Aboveground Storage Tanks (ASTs) 23
6.5 Other Petroleum Products 23
6.6 Polychlorinated Biphenyls (PCBs) 23
6.7 Unidentified Substance Containers 23

6.8 Nonhazardous Solid Waste 23
6.9 Waste Pits, Ponds, and Lagoons 24
6.10 Drains and Sumps 24
6.11 Septic Systems 24
6.12 Storm Water Management System 24
6.13 Wells/Borings 24
7 Subsurface Vapor Migration 25
8 Interviews 26
9 Non-Scope Considerations 27
9.1 Asbestos Containing Materials 27
9.1.1 Asbestos Containing Materials Analytical Results 29
9.2 Lead-Based Paint 30
9.2.1 Lead Based Paint Analytical Results 31
10 Findings and Opinions 32
10.1 Findings and Opinions 32
10.2 Recommendations 33
11 References 34
12 Qualifications/Signatures of Environmental Professional(s) 35

Figures

Figure 1 USGS/Site Vicinity Map
Figure 2a-b Site Boundary and Tax Maps
Figure 3 Surrounding Land Use
Figure 4a-q Historical Aerial Photos
Figure 5 Sanborn Maps
Figure 6 LBP/ACM Survey
Figure 7 REC Map

Appendices

Appendix A Photographic Log
Appendix B GeoSearch Radius Map Report
Appendix C GeoSearch Physical Setting Report
Appendix D GeoSearch Historical Aerials Package
Appendix E GeoSearch Historical Topo Map Report
Appendix F GeoSearch Sanborn Map Report
Appendix G GeoSearch City Directory Report
Appendix H Interview Questionnaire
Appendix I Previous Environmental Reports
Appendix J Professional Certifications

1 Executive Summary

Cardno has completed a Phase I Environmental Site Assessment (ESA) of the assemblage of parcels, noted as Stanley Assemblage in Perry, Houston County, Georgia. The study property is herein referred to as "the Subject Site/Property" or "the Site." According to information provided by Houston County Tax Assessor records, the Subject Property consists of eight contiguous parcels totaling approximately two acres in downtown Perry, GA. The property is predominantly developed with one single-family residence, a vacant former retail space and dry cleaner, and two office spaces as generally depicted in **Figures 1 and 2a.** Photos of the Subject Property and surrounding properties taken during the December 19, 2018 site visit are provided in **Appendix A.**

This assessment was performed to satisfy the requirements of the Client and their assign(s) with respect to potential environmental impairment and liabilities associated with the property due to contamination by hazardous substances, controlled substances or petroleum products on or near the site. **This Phase I Environmental Site Assessment generally follows the scope of ASTM Designation: E 1527-13 – Standard Practice for Environmental Site Assessments**. This report meets the general requirements for conducting all appropriate inquiry into the previous ownership, uses, and environmental conditions of a property, as specified in 40 CFR Part 312, Standards and Practices for All Appropriate Inquiries. Furthermore, this work was conducted by or under the responsible charge of an environmental professional as defined in 40 CFR §312.10.

ASTM Standard Practice E1527-13 defines a Recognized Environmental Condition (REC) as:

> "The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment, 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment. The term is not intended to include *de Minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."

ASTM Standard Practice E1527-13 defines a Controlled Recognized Environmental Condition (CREC) as:

> "A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)."

ASTM Standard Practice E1527-13 defines a Historical Recognized Environmental Condition (HREC) as:

> "A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the property to any required controls."

1.1 Findings and Conclusions

Cardno has performed this Phase I Environmental Site Assessment (ESA) of the property in conformance with the scope and limitations of ASTM Standard Practice E1527-13. Any exceptions to,

or deletions from, this practice are described in Section 2.0 of this report. This assessment has revealed two recognized environmental conditions (RECs) in connection with the Subject Property:

FINDINGS AND CONCLUSIONS SUMMARY						
Report Section		Further Action?	*De minimis* Condition	REC and/or CREC	Historical REC	Description
4.0	**User Provided Information**	No	No	No	No	
5.1	**Federal, State and Local Database Findings**	No	No	No	No	
5.2	**Additional Environmental Record Sources**	No	No	No	No	
5.3	**Local Environmental Record Sources**	Yes	No	Yes	No	Site is listed on the GA EPD HSI list for identified PCE soil contamination on the northeastern portion of the Subject Site in connection with historic cleaners. Soil contamination needs to be further characterized and properly addressed to EPD's satisfaction.
5.3	**Historical Records Sources**	Yes	No	Yes	No	Site operated as Star Cleaners dry cleaning facility from the early 1960s to the mid-1980s. PCE contamination has been identified in the soil of the northeast portion of the site. A portion of the site also operated a gas station up until the 1950s.
6.2	**Hazardous Substance Use, Storage, and Disposal**	No	No	No	No	
6.3	**Underground Storage Tanks**	No	No	No	No	
6.4	**Aboveground Storage Tanks**	No	No	No	No	
6.5	**Other Petroleum Products**	No	No	No	No	
6.6	**Polychlorinated Biphenyls (PCBs)**	No	No	No	No	
6.7	**Unidentified Substance Containers**	No	No	No	No	
6.8	**Nonhazardous Solid Waste**	No	No	No	No	
6.9	**Wastewater**	No	No	No	No	
6.10	**Waste Pits, Ponds and Lagoons**	No	No	No	No	
6.11	**Sumps**	No	No	No	No	
6.12	**Septic Systems**	No	No	No	No	
6.13	**Stormwater Management System**	No	No	No	No	
6.14	**Wells**	No	No	No	No	
7.0	**Subsurface Vapor Migration**	No	No	No	No	
8.0	**Interviews**	No	No	No	No	
9.1	**Asbestos**	Yes	No	No	No	Confirmed ACM in interior floor tile, HVAC vibration dampener, and linoleum flooring in Storage Rooms 2 and 3
9.2	**Lead-based paint**	Yes	No	No	No	Confirmed LBP in light blue and black paint on the Storage Room 2 electrical panel

Based on this Phase I ESA, four (4) on-site recognized environmental conditions (RECs) were identified:

1. The site supported Star Cleaners dry cleaners on the northeast boundary of the Subject Property which was in operation from the mid-1960s to the mid-1980s. A Phase II environmental site assessment was conducted on the Star Cleaners facility in November 2011 by Environmental Consulting & Technology, Inc. (ECT). This assessment identified tetrachloroethylene (PCE, a common dry cleaning solvent) contamination in the shallow soil near the vicinity of the historical drycleaners above its respective Georgia Environmental

Protection Division (EPD) notification concentration (NC) beneath the facility flooring, as well as the adjacent driveway. Although multiple attempts to adequately sample and remove the contaminated soils have been conducted between 2014 and 2015 by representatives of Geotechnical & Environmental Consultants, Inc. (GEC), these attempts to horizontally delineate the extent of the contaminant plume and subsequent remedial efforts were unsuccessful. This contamination was reported to the Georgia EPD Hazardous Site Response Act (HSRA), and based on the elevated concentrations and lack of access limitations, the site was listed on the Georgia EPD Hazardous Site Inventory (HSI). The presence of PCE above its NC in soils within the boundaries of the Subject Site poses an environmental risk to the Subject Property and is considered a REC.

2. ECTs 2011 Phase II ESA also assessed a gasoline filling station (Solomons Union 76), formerly located at 1101 Macon Street, near the southeastern corner of the Subject Property. During this assessment, ECT advanced one boring at the vicinity of the former dispenser island (GP-1) and an additional boring near the vicinity of the former underground storage tank (UST) area (GP-2). Soil samples collected for analysis were gathered between 18 and 20 feet bgs and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) at each boring, as well as polynuclear aromatic hydrocarbons (PAHs) in GP-1. The absence of lead (a common gasoline additive at that time) sampling data, absence of PAH sampling data at GP-2, and the lack of soil samples at shallower depths, represent a data gap with respect to the characterization of the Subject Property and is considered a REC.
3. The prior sampling conducted by ECT and GEC did not evaluate groundwater or vapor contamination for the historic gas station or Star Cleaners. The absence of groundwater and soil vapor sampling data are considered RECs as potential impacts associated with these parameters were not evaluated.

Additionally, based on this Phase I ESA, one (1) off-site REC was identified:

4. The Flash Foods #167 facility, located east of the Subject Property, across Macon Street at 1114 Macon Street is a gasoline filling station. This facility has been in operation since approximately 1989, with no reported hazardous spills. However, based on the length of operation, inferred upgradient position, and distance from the Subject Property, this facility is considered an off-site REC.

Additionally, Cardno completed an asbestos-containing materials (ACM) and lead-based paint (LBP) survey. During this survey, Cardno collected twenty-eight (28) building material samples to be analyzed for ACM and twelve (12) paint chip samples to be analyzed for LBP.

In summary:

- **Asbestos**: Comparison of the laboratory analytical results to the Occupational Safety and Health Administration's (OSHA) for building materials containing >1% asbestos revealed:
    - Tan 9"x9" floor tile and associated mastic, totaling approximately 600 square feet, located along hallways within Storage Room 2.
    - Vibration dampener, totaling less than 6 linear feet, located along the southern wall of Storage Room 1.
    - White 9"x9" floor tile and associated mastic, totaling approximately 4,000 square feet, located throughout Storage Room 3.

  - Backing of brick-patterned linoleum flooring, totaling approximately 225 square feet, located near the northwestern corner of Storage Room 3.

- **Lead-Based Paint:** Comparison of the laboratory analytical results to the Environmental Protection Agency (EPA) and Housing and Urban Development (HUD) for paint chips identified two (2) materials containing lead concentrations greater than 0.5% by weight. They included:
  - Light blue paint surrounding an electrical panel along the southern interior wall of Storage Room 2
  - Black paint observed on the backing of an electrical panel along the southern interior wall of Storage Room 2

Based on the findings of this report, Cardno recommends:

- Additional investigation should be conducted to assess the potential for soil and groundwater contamination associated with the historic gas station located at 1101 Macon Street.
- The PCE contamination at the former Star Cleaners should be further delineated horizontally and adequately addressed to the satisfaction of the GA EPD in order to remove it from the HSI.
- Groundwater and soil vapor sampling data should be obtained to assess the possibility of further contamination originating from the former Star Cleaners located at 1109 Macon Street, as well as the gasoline service station formerly located at 1101 Macon Street.
- Majority of the identified asbestos containing materials appeared to be in fair condition. Therefore, the identified ACM has a low probability of disturbance during ordinary use and due to the facility's vacancy. Prior to any renovation or demolition that may cause the ACM to become friable, these materials should be removed or abated by a qualified asbestos abatement contractor. If the ACMs are to be left in place, an Operation and Maintenance (O&M) plan regarding the handling of the identified ACMs should be implemented.
- Lead-paint identified by Cardno appeared to be intact and in fair condition. As the building is not considered a child-occupied facility, the identified LBP can be left intact unless disturbed during renovation or demolition. If the LBP is to be disturbed during renovation or demolition, depending on the extent of the disturbance, the LBP can be encapsulated, enclosed, or abated. All activity that disturbs LBP should be conducted by a licensed LBP renovation, repair, or paint (RRP) firm or a qualitied LBP abatement contractor.

  If the property is to be significantly renovated or demolished, due to the presence of lead on various painted surfaces, toxicity characteristics leachate procedure (TCLP) analysis for lead should be conducted to determine if any building debris should be characterized as a hazardous waste prior to disposal.
- If the site were to be transferred, the purchaser should consider applying for admission into the Georgia Brownfields Program.

Please note: This is a cursory summary of findings. The full report must be read in its entirety for a comprehensive understanding of the stated conclusions/recommendations

2 Introduction

2.1 Purpose

The purpose of this Phase I ESA was to identify recognized environmental conditions in connection with the property at the time of the site reconnaissance. The scope of work for this Phase I ESA may also include certain potential environmental conditions beyond the scope of *ASTM Standard Practice E1527-13*. This report documents our findings, opinions and conclusions.

2.2 Detailed Scope of Services

This Phase I ESA was conducted in general accordance with the *ASTM Standard Practice E1527-13*, consistent with a level of care and skill ordinarily practiced by the environmental consulting profession currently providing similar services under similar circumstances. Significant additions, deletions or exceptions to *ASTM Standard Practice E1527-13* are noted below or in the corresponding sections of this report. The scope of this assessment included an evaluation of the following:

- Physical setting characteristics of the property through a review of referenced sources such as available topographic maps and geologic, soils and hydrogeological reports.
- Usage of the property, adjoining properties and surrounding area through a review of referenced historical sources such as land title records, fire insurance maps, city directories, aerial photographs, prior reports and interviews.
- Observations and interviews regarding current property usage and conditions including: the use, treatment, storage, disposal or generation of hazardous substances, petroleum products, hazardous wastes, nonhazardous solid wastes and wastewater.
- Usage of adjoining and surrounding area properties and the likely impact of known or suspected releases of hazardous substances or petroleum products from those properties in, on or at the property.
- Information in referenced environmental agency databases and local environmental records, within the specified approximate minimum search distance from the property.
- Potential for subsurface vapor migration in, on or at the property.
- Asbestos and Lead-Based Paint (LBP) sampling to identify asbestos-containing building materials (ACM) or LBP.

No additional investigations or other quantitative/qualitative testing was performed as part of this assessment, and no other work was performed as part of this assessment that was not required by the *ASTM Standard Practices E1527-13*. These non-scope issues include, but are not limited to, the following: Radon, Lead in Drinking Water, Wetlands, Regulatory Compliance, Cultural and Historic Resources, Industrial Hygiene, Health and Safety, Geotechnical Evaluation, Sinkhole Evaluation, Ecological Resources, Endangered Species, Indoor Air Quality, Vapor Intrusion, Biological Agents, and Mold.

2.3 Significant Assumptions

While this report provides an overview of potential environmental concerns, both past and present, the environmental assessment is limited by the availability of information at the time of the assessment. It

is possible that unreported disposal of waste or illegal activities impairing the environmental status of the property may have occurred which could not be identified.

The conclusions and recommendations regarding environmental conditions that are presented in this report are based on a scope of work authorized by the Client. Please note however, that virtually no scope of work, no matter how exhaustive, can identify all contaminants or all conditions above and below ground. Cardno also assumes that the Client and other interested parties will read this report in its entirety.

2.4 Limitations, Exceptions, Deviations and/or Data Gaps

Cardno has prepared this Phase I ESA report using reasonable efforts to identify recognized environmental conditions associated with hazardous substances or petroleum products in, on or at the property. Findings contained within this report are based on information collected from observations made on the day (December 19, 2018) of the site reconnaissance and from reasonably ascertainable information obtained from certain public agencies and other referenced sources.

The *ASTM Standard Practice E1527-13* recognizes inherent limitations for Phase I ESAs, including, but not limited to:

- *Uncertainty Not Eliminated* – A Phase I ESA cannot completely eliminate uncertainty regarding the potential for recognized environmental conditions in connection with any property.
- *Not Exhaustive* – A Phase I ESA is not an exhaustive investigation of the property and environmental conditions on such property.
- *Past Uses of the Property* – Phase I requirements only require review of standard historical sources at five-year intervals. Therefore, past uses of property at less than five-year intervals may not be discovered.

Users of this report may refer to *ASTM Standard Practice E1527-13* for further information regarding these and other limitations. This report is not definitive and should not be assumed to be a complete and/or specific definition of all conditions above or below grade. Current subsurface conditions may differ from the conditions determined by surface observations, interviews, and reviews of historical sources. The most reliable method of evaluating subsurface conditions is through intrusive techniques, which are beyond the scope of this report. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation, or other property construction purposes. Any use of this report by any party, beyond the scope and intent of the original parties, shall be at the sole risk and expense of such user.

Cardno makes no representation or warranty that the past or current operations at the property are, or have been, in compliance with all applicable federal, state and local laws, regulations and codes. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated. Regardless of the findings stated in this report, Cardno is not responsible for consequences or conditions arising from facts not fully disclosed to Cardno during the assessment.

An independent data research company provided the government agency database referenced in this report. Information on surrounding area properties was requested for approximate minimum search distances and is assumed to be correct and complete unless obviously contradicted by Cardno's observations or other credible referenced sources reviewed during the assessment. Cardno shall not

be liable for any such database firm's failure to make relevant files or documents properly available, to properly index files, or otherwise to fail to maintain or produce accurate or complete records.

Cardno makes no warranty, guarantee or certification regarding the quality, accuracy, or reliability of any prior report provided to Cardno and discussed in this Phase I ESA report. Cardno expressly disclaims any and all liability for any errors or omissions contained in any prior reports provided to Cardno and discussed in this Phase I ESA report.

Cardno used reasonable efforts to identify evidence of aboveground and underground storage tanks and ancillary equipment on the property during the assessment. "Reasonable efforts" were limited to observation of accessible areas, review of referenced public records, and interviews. These reasonable efforts may not identify subsurface equipment or evidence hidden from view by things including, but not limited to, vegetation, paving, construction activities, stored materials, and landscaping.

Any estimates of costs or quantities in this report are approximations for commercial real estate transaction due diligence purposes and are based on the findings, opinions and conclusions of this assessment, which are limited by the scope of the assessment, schedule demands, cost constraints, accessibility limitations and other factors associated with performing the Phase I ESA. Subsequent determinations of costs or quantities may vary from the estimates in this report. The estimated costs or quantities in this report are not intended to be used for financial disclosure related to the *Financial Accounting Standards Board (FASB) Statement No. 143, FASB Interpretation No. 47, Sarbanes/Oxley Act* or any United States Securities and Exchange Commission reporting obligations, and may not be used for such purposes in any form without the express written permission of Cardno.

Cardno did not act as a professional title insurance or land surveyor firm as part of this investigation, and makes no guarantee, express or implied, that any land title records acquired or reviewed in this report, or any physical descriptions or depictions of the property in this report, represent a comprehensive definition or precise delineation of property ownership or boundaries.

The Environmental Professional Statement in Section 1.1 of this report does not "certify" the findings contained in this report and is not a legal opinion of such Environmental Professional. The statement is intended to document Cardno's opinion that an individual meeting the qualifications of an Environmental Professional was involved in the performance of the assessment and that the activities performed by, or under the supervision of, the Environmental Professional were performed in conformance with the standards and practices set forth in 40 CFR Part 312 per the methodology in *ASTM Standard Practice E1527-13* and the scope of work for this assessment.

Per *ASTM Standard Practice E1527-13, Section 6, User Responsibilities*, the User of this assessment has specific obligations for performing tasks during this assessment that will help identify the possibility of recognized environmental conditions in connection with the property. Failure by the User to fully comply with the requirements may impact their ability to use this report to help qualify for Landowner Liability Protections (LLPs) under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Cardno makes no representations or warranties regarding a User's qualification for protection under any federal, state or local laws, rules or regulations.

In accordance with the *ASTM Standard Practice E1527-13*, this report is presumed to be valid for a six-month period. If the report is older than six months, the following information must be updated in order for the report to be valid: (1) regulatory review, (2) site visit, (3) interviews, (4) specialized knowledge and (5) environmental liens search. Reports older than one year may not meet *the ASTM*

Standard Practice E1527-13 and therefore, the entire report must be updated to reflect current conditions and property-specific information.

An asbestos inspection and limited lead-based paint inspection was completed in concert with the Phase I ESA. Any suspect building materials not sampled and analyzed for asbestos during this investigation should be treated as presumed asbestos containing materials (PACM) until further sampling by a certified inspector indicates otherwise. Any suspect painted surfaces not sampled for lead-based paint during this investigation should be treated as LBP until further sampling by a certified inspector indicates otherwise.

Other limitations and exceptions that are specific to the scope of this report may be found in corresponding sections.

Cardno did not perform destructive sampling techniques or thoroughly inspected the roof during the asbestos and lead-sampling activities, per the request of the Client.

No other significant deviations or data gaps likely to affect the environmental professional's ability to identify RECs were observed or encountered during preparation of this report.

2.5 Special Terms and Conditions (User Reliance)

This report is for the use and benefit of, and may be relied upon by the City of Perry, as well as any of its affiliates, respective successors, and/or assigns, in connection with a commercial real estate transaction involving the property, and in accordance with the terms and conditions in place between Cardno and the Client for this project. Any third party agrees by accepting this report that any use or reliance on this report shall be limited by the exceptions and limitations in this report, and with the acknowledgment that actual site conditions may change with time, and that hidden conditions may exist at the property that were not discovered within the authorized scope of the assessment. Any use by or distribution of this report to third parties, without the express written consent of Cardno is at the sole risk and expense of such third party.

Cardno makes no other representation to any third party except that it has used the degree of care and skill ordinarily exercised by environmental consultants in the preparation of the report and in the assembling of data and information related thereto. No other warranties are made to any third party, either expressed or implied.

"The remainder of this page is intentionally left blank."

3 Site Description

3.1 Location and Legal Description

The Subject Site is located in the downtown vicinity of Perry, Houston County, GA, near its city-center. The Subject Site is comprised of seven contiguous parcels and one separate parcel, totaling approximately two acres, as generally depicted in **Figures 1 and 2,** and outlined below:

Parcel Designation	Address	Houston County Parcel ID:	Acreage	Historic use	Current use	Structures on-site
A	1109 Macon St.	0P0020 087000	0.17	Star Cleaners dry cleaning	Vacant retail space	One-story - 2,494 sq. ft. retail structure
B	1107 Macon Rd.	0P0020 011000	0.33	Stanley Furniture Store	Vacant retail space	One-story - 12,129 sq. ft. retail structure
C	1101 Macon Rd.	0P0020 010000	0.24	Former gas station	Paved parking lot	None
D	1023 Commerce St.	0P0020 017000	0.25	Residential structure	Office space	One-story - 1,480 sq. ft. office
E	1104 Meeting St.	0P0020 014000	0.22	Residential structure	Cleared, vacant land	None
F	1102 Meeting St.	0P0020 015000	0.32	Office structure	Parking lot / vacant storage structure	One-story - 4,224 sq. ft. storage structure
G	1107 Meeting St.	0P0020 13B000	0.26	Residential structure	Residential structure	One-story - 2,022 sq. ft. dwelling
H	1021 Commerce St.	0P0020 016000	0.21	Office building	Government office building	One-story - 8,970 sq. ft. structure

The Subject Property is located north of Commerce Street, west of Macon Road, and along Meeting Street as generally depicted in **Figures 2a** and **2b.**

3.2 Surrounding Area General Characteristics

The Subject Site is located in a generally commercial and residential area at the center of downtown Perry, Georgia.

Historically, the surrounding area has been predominantly commercial/retail space with intermittent residential developments throughout the area. According to Sanborn maps produced in 1930, as well as well as an interview with the current building manager/owner of the Subject Property, Mr. Perry Stanley, the surrounding properties include residential structures, pharmacies, retail shops, local churches, and banks.

Properties adjoining the Subject Property include a local park, water tower, gasoline station, pharmacy, local arts center, and a gym. Specific adjacent and abutting properties are summarized in Section 3.5. A surrounding land use map is included as **Figure 3**.

3.3 Current Use of the Property

At the time of this report, the Subject Site is predominantly vacant storage and office space, with the exception of offices located at 1021 and 1023 Commerce Street, and a residential development at 1107 Commerce Street. The remainder of the Subject Site is cleared land or paved parking.

3.4 Descriptions of Property Improvements

Approximate Size of Property	2 acres
General Topography of Property	The Subject Site gently slopes westward, towards an unnamed tributary of Berry Branch
Adjoining and/or Ingress/Egress Roads	Commerce Street along the southern boundary, Macon Road along the eastern boundary, and meeting Street divides the Subject Property.
Paved Areas	A paved parking lot is located along the southeastern and northeastern corner of the Subject Property, as well as along the central portion.
Unimproved Areas	None observed.
Landscaped Areas	The north-central portion of the Subject Property, in Parcel ID#: 0P0020 014000, as well as the area surrounding the structure observed on Parcel ID#: 0P0020 017000, is landscaped grass.
Surface Water	None.
Potable Water Source	City of Perry – in general area.
Sanitary Sewer Utility	Available in general area.
Electrical Utility	Available in general area.
Natural Gas Utility	Available in general area.
Current Occupancy Status	Central Computer Services - 1023 Commerce Street Rehabilitation Services Division - GA State Gov. Office - 1021 Commerce Street Residential property - 1107 Meeting Street
Unoccupied Buildings/Spaces/Structures	The warehouse / retail office space located at 1107 and 1109 Macon Road and 1102 Meeting Street.
Building Name or General Building Description	Stanley Furniture - retail and storage space - 1107 and 1109 Macon Road and 1102 Meeting Street Central Computer Services - 1023 Commerce Street
Number of Floors	One - in all observed structures
Approximate Total Square Footage of Structure(s)	1109 Macon St.: 2,494 sq.ft. - 1107 Macon St.: 12,129 sq.ft. - 1023 Commerce St.: 1,480 sq.ft. - 1102 Meeting St.: 4,224 sq.ft. - 1107 Meeting St.: 2,022 sq.ft. - 1021 Commerce St.: 8,970 sq.ft.

Construction Completion Year	1109 Macon St.: 1963 - 1107 Macon St.: 1963 - 1023 Commerce St.:1946 - 1021 Meeting St.:1963 - 1107 Meeting St.: 1949

3.5 Current Uses of Adjoining Properties

Direction from Property	Occupant(s) Name	Current Use	Potential REC(s)
North	City of Perry	Municipal water tower	None
North	City of Perry	Community Center	None
East	Macon Road	Road	None
East	Peach Crossing 2014 LLC	Exxon Gasoline Station	Historic gasoline filling station is considered a REC
East	Stanley Ronald E	Retail shopping - gym	None
South	City of Perry	Park	None
West	Stanley Ronald E	Residence	None
West	Perry Washington Street LLC	CVS Pharmacy	None

"The remainder of this page is intentionally left blank."

4 User Provided Information

4.1 Title Records

This service was not requested by the Client as part of this assessment, nor did the User (Client) provide title record information. The most recent title records available with the Houston County Tax Assessor were reviewed by Cardno during this assessment. According to the Tax Assessor's database, the retail space located at 1107 Macon Road was first constructed in 1920, and the west-abutting storage space, located at 1102 Meeting Street, was originally constructed in 1965. Both of these structures were transferred to Mr. Perry Stanley in 1960. The residential structure located at 1107 Meeting Street was originally constructed in 1949, and ownership was transferred to Mr. Perry Stanley in 2016 from a Mr. Larry Ellison, whom owned the property since its development. The commercial structure located at 1023 Commerce Street was originally developed in 1946 and purchased by Mr. Stanley in 1997.

4.2 Environmental Liens or Activity and Use Limitations (AULs)

The User provided no information regarding environmental liens or activity and use limitations for the Subject Property. However, any liens and AULs associated with the property (if any) are anticipated to be addressed by the End User/Current Site Owner as part of the land/title transaction process.

4.3 Specialized Knowledge

The User provided no specialized knowledge regarding recognized environmental conditions associated with the property.

4.4 Valuation Reduction for Environmental Issues

The User provided no information regarding a significant valuation reduction for environmental issues associated with the property**.**

4.5 Owner, Property Manager, and Occupant Information

The owner of the Subject Property is currently Mr. Perry Stanley.

4.6 Reason for Performing Phase I

This assessment was performed to satisfy the requirements of the Client and other interested parties with respect to potential environmental impairment associated with the property due to contamination by hazardous substances, controlled substances, and/or petroleum products on or near the site.

"*The remainder of this page is intentionally left blank.*"

5 Records Review

The purpose of the records review is to obtain and review records that will help identify RECs in connection with the property. Some records reviewed pertain not only to the property, but also to properties within an additional approximate minimum search distance in order to help assess the likelihood of problems from migrating hazardous substances or petroleum products. Unless stated otherwise the approximate minimum search distances used below were as specified in *ASTM Standard 1527-13*.

5.1 Standard Environmental Record Sources

The regulatory agency database radius report discussed in this section, provided by GeoSearch, Inc. (GeoSearch), was reviewed for information regarding reported use or release of hazardous substances and petroleum products on or near the property. Unless otherwise noted, the information provided by the regulatory agency database report and other sources referenced in this report, were considered sufficient for recognized environmental condition (REC), controlled recognized environmental condition (CREC), historical recognized environmental condition (HREC), or de minimis condition determinations without conducting supplemental agency file reviews.

Cardno also reviewed the "unmappable" (also referred to as "orphan") listings within the database report, cross-referencing available address information and facility names. Unmappable sites are listings that could not be plotted with confidence, but are potentially in the general area of the property, based on the partial street address, city, or zip code. Any unmappable site that was identified by Cardno as being within the approximate minimum search distance from the property, based on the site reconnaissance and/or cross-referencing to mapped listings is included in the discussion within this section. This report may be found in **Appendix B.** The following is a summary of the findings of the database review:

Regulatory Database	Minimum Search Distance	Subject Property Listed?	No. of Sites Listed
Alternative Fueling Stations	¼ mile	No	0
Biennial Reporting System	Property	Yes	1
Brownfield Projects	½ mile	No	0
Enforcement and Compliance History Information	Property	Yes	3
Facility Registry System	Property	Yes	4
Federal National Priority List (NPL)	1 mile	No	0
Federal Delisted NPL	1 mile	No	0
Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list	½ mile	No	0
Federal CERCLIS No Further Remedial Action Planned (NFRAP)	½ mile	No	0

Regulatory Database	Minimum Search Distance	Subject Property Listed?	No. of Sites Listed
Federal Facility Index System/Facility Registry System (FINDS)	Property	No	0
Hazardous Site Inventory	1 mile	Yes	1
Historical Non-Hazardous Site Inventory	1 mile	No	1
Inactive Hazardous Sites (IHS)	1 mile	No	0
Leaking Aboveground Storage Tanks (LAST)	½ mile	No	0
Leaking Underground Storage Tanks (LUST)	½ mile	No	8
Non-Hazardous Site Inventory	1 mile	Yes	3
RCRA Generator	1/8 mile	No	1
RCRA NonGen/NLR	¼ mile	No	3
State and Tribal NPL	N/A	No	0
State Trust Funds Database	½ mile	No	0
State Drycleaners	½ mile	No	0
Superfund Enterprise Management System	½ mile	No	2
Tier II Chemical Reporting Program Facilities	½ mile	No	1
Underground Storage Tanks	¼ mile	No	14

There are forty-two (42) sites located within the various minimum search distances of the target area, including the Subject Site. Some of the listed facilities represent a potential REC/CREC/HREC environmental concern due to distance, regulatory information, anticipated direction of groundwater flow, and/or anticipated risk of contamination. Three sites are listed below that were determined to be located within a 1/8 mile radius.

- **Stars Laundry Inc.**

  Location: 1109 Macon Road
  Northeastern corner of the Subject Property

  Summary: According to the GeoSearch report, the Stars Laundry facility Inc. (also referred to as Star Cleaners) is listed on the FRS database, the Hazardous Site Inventory (HSI), the Non-Hazardous Site Inventory (NONHSI), as well as the RCRANGR database. According to the GeoSearch report, the facility contained a known release of tetrachloroethene (PCE), a common chemical utilized in dry cleaning facilities, exceeding reportable quantities in soil. According to an interview with the current owner of the Subject Property, Mr. Perry Stanley, the previous property tenants historically dumped various dry cleaning chemicals

along the northeastern exterior of the Subject Property. Mr. Stanley noted this facility was in operation between approximately 1963 until the late 1980s. This facility is further discussed in Section 5.3.3.

- **Flash Foods #167**

  Location: 1114 Macon Street
  Located adjacent east of the Subject Property

  Summary: According to the GeoSearch records search, the Flash Foods #167 facility, located east of the Subject Property, across Macon Street at 1114 Macon Street was listed in the underground storage tank (UST) database, the Federal Registry System (FRS), the Resource Conservation and Recovery Act Non-Generator (RCRANGR), as well as the Tier II Chemical Reporting Program Facilities database during its operation as a gasoline servicing facility.

  According to the GeoSearch report, the facility utilizes three, 8,000-gallon capacity gasoline USTs, all of which are currently in-use. These USTs were installed in January, 1989. There are no reported release at this facility. However, based on its distance from the Subject Property, length of operation, and inferred groundwater flow direction to the west towards the Subject Property, the Flash Foods #167 facility is considered a REC in connection with the Subject Property.

- **Beckham Brothers #6**

  Location: 1025 Macon Road
  Adjacent south of the Subject Property, across Commerce Street

  Summary: According to the GeoSearch records search, the site was listed on the FRS, the Leaking Underground Storage Tanks (LUST) database, and the UST database. The report indicated this facility previously contained three 2,000-gallon capacity gasoline USTs, reportedly installed in 1957. These tanks were removed from the ground during tank closure activities between July and August 2004. A fourth, 550-gallon capacity used oil UST was also observed during closure activities. This tank was however closed in place. A No Further Action (NFA) letter was issued for the facility after the Georgia Environmental Protection Division (GAEPD) obtained analytical data confirming all soil samples collected for analysis were below laboratory detection limits for benzene/toluene/ethylbenzene/xylenes (BTEX), poly-aromatic hydrocarbons (PAH), and total-petroleum hydrocarbons-gasoline range organics (TPH-GRO). Based on the clean-closure, and NFA letter, this facility is not likely to pose an environmental risk to the Subject Property.

The remaining sites were identified between 0.125 and 0.5 mile in the GeoSearch database records search. However, based upon the inferred groundwater flow direction, distance, and intervening topographic gradient, and lack of documented hazards, these facilities likely do not pose an environmental threat to the Subject Property.

5.2 Physical Setting Sources

A GeoSearch Physical Setting Map report is included in **Appendix C.** According to this report, surficial sediments at the site are underlain by Eocene-era undifferentiated, highly-weathered sands and sandy clays of the Tallahatta formations.

The 2014 USGS 7.5-minute series topographic map of Perry West, Georgia quadrangle shows the Subject Property as relatively flat, with a minor slope towards the west, with a high point near the center of the Subject Property. Overall, the site and the greater area slopes to the southwest towards a tributary of Big Indian Creek. Topography is approximately 355 feet above mean sea level (MSL). Based on map topography contours, the inferred primary direction of groundwater flow for the vicinity of the subject site is determined to be generally west. A USGS Topographic Map is included in **Figure 1**.

According to the US Department of Agriculture Natural Resources Conservation Service inquiry, the site is situated in an area primarily comprised of the Orangeburg loamy fine sand. This soil type is primarily located along interfluves and is derived from historic marine deposits. Slopes of this soil type near the Subject Property can vary from 2 - 5 percent slopes and are considered prime farmland. The soil is well-drained, it does not flood and its depth to the underlying water table is greater than 80 inches.

5.3 Historical Records Sources

The objective of consulting historical sources is to determine the likelihood of past uses having led to recognized environmental conditions in connection with the property.

5.3.1 Aerial Photographs, Topographic Maps and Sanborn Fire Insurance Maps

A review was conducted of historical aerial photographs (**Appendix D**), Topographic Maps (**Appendix E**), and Sanborn Fire Insurance Maps (**Appendix F**) obtained from GeoSearch. For ease of review, **Figures 4a-4n** are also provided to show the approximate property boundary on a representative selection of these historical aerial photos. Additionally, Cardno conducted a review of obtainable Sanborn Fire Insurance Maps (FIM) near the vicinity of the Subject Property. These maps have been produced since the late 1800s to provide information relative to fire hazards on insurable property. These maps often indicate locations of underground and aboveground gasoline tanks, storage facilities for flammable chemicals, such as dry cleaners, paint shops, maintenance and garage facilities, as well as historical information on occupants of buildings, unavailable through other sources. For ease of review, **Figure 5** shows the approximate property boundary on the 1930 Sanborn Map. Below is a table summarizing the reviewed aerial photographs, topographic maps and Sanborn maps.

Period	Source(s)	Identified Historical Uses		Comments
		Subject Property	Surrounding Area	
1930	Sanborn Map (Figure 5)	Subject Property is observed as developed with a gasoline filling station along the southeastern corner, a retail office space along the northeastern corner, and a residential structure identified along the northwestern corner.	Predominantly residential developments observed throughout the vicinity of the Subject Site.	Historic filling station observed on Subject Property.
1937	Aerial Photograph (Figure 4a)	Blurry, developed with approximately 4 structures, one of which includes a filling station near the southeastern portion	Blurry. Observed a mostly residential with the exception of a filling station noted along the adjacent south parcel	Historic filling Stations observed on the Subject Site and an adjacent parcel
1942	Aerial Photograph (Figure 4b)	Similar to previous aerial photograph	Similar to previous aerial photograph	No RECs noted
1949	Aerial Photograph (Figure 4c)	Several additional structures observed throughout the central and northeastern portions of the Subject Site	Increased commercial development observed	No RECs noted
1951	Aerial Photograph (Figure 4d)	Similar to previous aerial photograph	Similar to previous aerial photograph	No RECs noted
1956	Topographic Map	Subject Site appears to be developed with approx. five structures	The vicinity of downtown Perry is observed as developed. Big Indian River is depicted to the west of the Subject Property	No RECs noted
1958	Aerial Photograph (Figure 4e)	Similar to previous aerial photograph	Similar to previous aerial photograph	No RECs noted
1966	Aerial Photograph (Figure 4f)	Blurry, but appears to be developed with the Stanley Furniture and adjoining drycleaning structures observed at the time of this report	Blurry, but similar to previous aerial photography	No RECs noted
1972	Topographic Map	Shaded pink, depicting development throughout	Similar to previous topographic map. A water tower is depicted along the northern boundary of the Subject Property	No RECs noted
1973	Aerial Photograph (Figure 4g)	The Subject Site is fully developed, including 3 seemingly residential structures, as well as a storage space, automotive filling station, and the Stanley furniture retail space	A water tower is observed along the northern boundaries of the Subject Site. A gasoline filling station is noted along Macon Road, northeast of the Subject Site. An additional gasoline filling station is observed to the south, across Commerce St.	No RECs noted

Period	Source(s)	Identified Historical Uses		Comments
		Subject Property	Surrounding Area	
1984	Aerial Photograph (Figure 4h)	Similar to the previous aerial photograph, with the exception of the filling station, previous observed along the southeastern portion of the Subject site as razed	Blurry, but similar to previous aerial photography	No RECs noted
1985	Topographic Map	Similar to previous topographic map	Similar to previous topographic map with additional development noted	No REC noted
1993	Aerial Photograph (Figure 4i)	Similar to previous aerial photograph with the exception of a historic structure, previous identified in aerial photography is no longer depicted near the center portion of the Subject Site	Similar to previous aerial photograph	No RECs noted
1999	Aerial Photograph (Figure 4j)	Similar to previous aerial photograph	Similar to previous aerial photograph	No RECs noted
2005	Aerial Photograph (Figure 4k)	Similar to previous aerial photograph	The gasoline filling station, noted adjacent south of the Subject Site is no longer depicted and now observed as a landscaped park.	No RECs noted
2006	Aerial Photograph (Figure 4i)	Similar to previous aerial photograph	Similar to previous aerial photograph	No RECs noted
2007	Aerial Photograph (Figure 4m)	Subject Site is depicted as observed at the time of this report with the structure, previously noted near the northwestern corner of the Subject site as razed.	Similar to previous aerial photograph	No RECs noted
2009	Aerial Photograph (Figure 4n)	Similar to previous aerial photograph	Similar to previous aerial photograph	No RECs noted
2010	Aerial Photograph (Figure 4o)	Similar to previous aerial photograph	Similar to previous aerial photograph	No RECs noted
2013	Aerial Photograph (Figure 4p)	Similar to previous aerial photograph	Similar to previous aerial photograph	No RECs noted
2014	Topographic Map	Similar to previous topographic map	Similar to previous topographic map	No RECs noted
2014	Aerial Photograph (Figure 4q)	Similar to previous aerial photograph	Similar to previous aerial photograph	No RECs noted

The historic on-site filling station, identified in the 1930 Sanborn map is further discussed in Sections 5.3.2, as well as Section 5.3.3. This facility is observed as the Solomons Union 76 Servicing Station in historical city directories in 1971.

Multiple gasoline filling stations are also observed surrounding the Subject Site on aerial photographs from 1931 through 2014. Only one of these facilities, located at 1114 Macon Road, is currently in use.

The other observed facilities are no longer in service. These remaining facilities are further discussed in Section 5.3.2 below.

5.3.2 City Directories

Historical City directories are referenced for study areas which help identify changes in land use based on the type of businesses that occupied the subject site and surrounding area. The type of business, such as automotive, dry cleaning, gasoline/service stations, etc. are indicative of the possible presence of hazardous substances or petroleum products.

The assemblage of properties comprising the Subject Property are listed on the City Directory report as 1107, 1109, and 1025 Macon Street, as well as 1104, 1105, and 1107 Meeting Street. City directories between 1966 and 2016 were reviewed for Macon Street and Meeting Street during this assessment. No records prior to 1966 were available for review for the Subject Site and surrounding areas.

No other address listing discrepancies were noted. The detailed GeoSearch City Directory report are included in **Appendix G.**

Period	City Directory Identified Historical Uses		Comments
	Subject Property	Surrounding Area	
1966	1104 Meeting St: Residential structure 1105 Meeting St: Residential structure 1107 Meeting St: Residential structure 1107 Macon St: Stanley Furniture and Appliance Co. **1109 Macon St: One Hour Martinizing**	1110 Meeting St: Stanley Furniture and Appliance Co. 1120 Meeting St: Jerles WM R Dentistry **1025 Macon St: Gulf Service Center** **1033 Macon St: Neighborhood Service Station / Wells Geo B. & Sons Inc.** **1114 McDaniels Standard Service Station**	Gulf Service Center identified at 1025 Macon St. / Neighborhood Service Station identified at 1033 Macon St. Drycleaning service noted at 1109 Macon St.
1971	1104 Meeting St: Residential structure 1105 Meeting St: Residential structure 1107 Meeting St: Residential structure **1101 Macon St: Solomon's Union 76 Service Station** 1107 Macon St: Stanley Furniture and Appliance Co. **1109 Macon St: One Hour Martinizing**	1110 Meeting St: Stanley Furniture and Appliance Co. 1120 Meeting St: Jerles WM R Dentistry **1033 Macon St: Neighborhood Service Station / Wells Geo B. & Sons Inc / Encos Service Station** **1114 McDaniels Standard Service Station** **1025 Macon St: Gulf Service Center**	Service stations observed at 1114 / 1033 / 1025 Macon St.
1977	1104 Meeting St: Residential structure 1105 Meeting St: Residential structure 1107 Meeting St: Stag Shoppe Clothing 1107 Macon St: Stanley Furniture and Appliance Co. **1109 Macon St: One Hour Martinizing**	1110 Meeting St: Stanley Sally Academy School of Dance 1120 Meeting St: Jerles WM R Dentistry	No additional RECs noted
1980	1104 Meeting St: Residential structure 1105 Meeting St: Residential structure 1107 Meeting St: Residential structure **1109 Macon St: One Hour Martinizing**	1110 Meeting St: Stanley Storage **1025 Macon St: Gulf Service Center** **1114 McDaniels Standard Service Station**	No additional RECs noted

Period	City Directory Identified Historical Uses		Comments
	Subject Property	Surrounding Area	
1985	1104 Meeting St: Residential structure 1105 Meeting St: Residential structure 1107 Macon St: Stanley Furniture and Appliance Co. **1109 Macon St: One Hour Martinizing**	1100 Meeting St: Sure-Kut Family Haircutter Supply **1025 Macon St: Harris Gulf Service Center**	No additional RECs noted
1991	1104 Meeting St: Residential structure 1105 Meeting St: Residential structure 1107 Macon St: Stanley Furniture and Appliance Co. **1109 Macon St: Star Cleaners**	1110 Meeting St: Stanley Storage **1025 Macon St: B P Service Center** **1033 Macon St: Wells Tire Service**	No additional RECs noted
1995	1107 Macon St: Stanley Furniture and Appliance Co. **1109 Macon St: Star Cleaners**	**1025 Macon St: Perry Brake & Muffler Service Station**	No additional RECs noted
2001	1104 Meeting St: Pregnancy Care Center of Perry 1107 Macon St: Stanley Furniture and Appliance Co. **1109 Macon St: One Hour Martinizing Cleaners**	**1025 Macon St: Perry Brake & Muffler Service Station** **1033 Macon St: Mike's Tire Service**	No additional RECs noted
2006	1107 Macon St: Stanley Furniture and Appliance Co. **1109 Macon St: Fabra Care (Drycleaners)**	1100 Meeting St: Peachbelt Area Risk Reduction **1026 Macon St: Perry Brake & Muffler Service Station**	No additional RECs noted
2011	1107 Meeting St: Residential Structure 1107 Macon St: Stanley Furniture and Appliance Co. **1109 Macon St: Fabra Care (Drycleaners)**	1100 Meeting St: Peachbelt Area Risk Reduction	No additional RECs noted
2016	1107 Macon St: Stanley Furniture and Appliance Co.	1100 Meeting St: Peachbelt Area Risk Reduction	No additional RECs noted

The Subject Site housed various residential structures, offices, retail shops, and drycleaners throughout the last century. Most notably, the northeastern portion of the Subject Property, located at 1109 Macon Street, was predominantly utilized as a drycleaners (One House Martinizing, Star Cleaners, Fabra Care - all referred collectively as Star Cleaners). According to city directories, this facility was a drycleaners from approximately 1966 to 2011. This facility is the subject of multiple environmental investigations, and subsequent environmental reports are further outlined in Section 5.3.3 below.

The Solomon's Union 76 gasoline service station, located near the southeastern portion of the Subject Property, is observed in the city directories in 1971 at 1101 Macon Street. According to Mr. Perry Stanley, this facility has been closed for decades. Subsequent environmental reports in reference to the on-site gasoline filling station is further outlined in Section 5.3.3 below.

Several other gasoline servicing stations were also observed adjacent and near the Subject Property at 1025 (Beckham Brothers) / 1026 / 1033 / 1114 (Flash Foods #167) Macon Street - discussed further in Section 5.3.1. Due to the lack of reported releases and/or hazardous spills, these facilities

are unlikely to pose an environmental threat to the soil, vapor, and/or groundwater of the Subject Property.

The Perry Brake and Muffler Service, located south-southeast of the Subject Property at 1025/1026 Macon Street is approximately 200 feet away. As inferred from local topography, the facility is also located hydro-geologically downgradient of the Subject Property. Give its position downgradient, and distance from the Subject Property, this facility is not considered a REC in connection with the Subject Property.

5.3.3 Prior Reports

Cardno reviewed obtainable documents in relation to the Subject Property via the Client, the Georgia EPD Underground Storage Tank Management Program (USTMP), as well as the Hazardous Site Response Act (HSRA) offices in Atlanta, GA. The below summarizes the pertinent environmental assessments / reports identified:

Phase II Environmental Site Assessment - Stanley Furniture - Environmental Consulting & Technology (ECT) Inc., November, 2011

In November, 2011, ECT completed a Phase II ESA of the historic on-site filling station, the Stanley Furniture store, and drycleaners located at 1101, 1107, and 1109 Macon Street, Perry GA, respectively. This assessment was primarily utilized to determine if a release to the subsurface environment had occurred from the historic operations of a dry-cleaning facility and gasoline service station. The report indicates ECT advanced two Geo-Probe borings (GP-1 and GP-2) around the vicinity of the former dispenser island of the historic service station. A third boring (GP-3) was placed along the northeastern exterior of the former dry-cleaning facility. Additionally, two hand-augured borings (HA-1 and HA-2) were also placed near the vicinity of the former drycleaners. Groundwater was not encountered during this investigation.

Samples collected near the former filling station (GP-1 and GP-2) were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), as well as poly-nuclear aromatic hydrocarbons (PAH) in GP-1. Analytical results from these borings indicated slightly elevated concentrations of ethylbenzene and xylenes in soil boring GP-1. These concentrations were below their respective soil thresholds as defined by the Georgia Environmental Protection Division (GAEPD) Underground Storage Tank Management Program (USTMP). Samples collected near the vicinity of the former dry-cleaners (GP-3, HA-1, and HA-2) were analyzed for volatile organic compounds (VOCs). Analytical results from these borings indicated elevated levels of a variety of contaminants, including tetrachloroethylene (PCE) and acetone from depths between 6 inches and five feet. The observed PCE contamination exceeded the applicable Georgia HSRA program Notification Concentration (NC) of 0.18 mg/kg. Acetone concentrations however did not exceed HSRA NC thresholds.

The report recommended the facility owner submit a release notification to the GA HSRA office for the identified PCE concentrations above regulatory thresholds. Additionally, the report recommended the facility owner also submit a release notification to the GA USTMP office for identified concentrations of ethylbenzene, and total xylenes respective laboratory reporting limits. It should be noted however, that the submittal to the USTMP office for a potential release below regulatory thresholds is not required.

Report of Excavation Activities - Former Star Cleaners / Stanley Furniture - Geotechnical & Environmental Consultants (GEC), Inc., January 12, 2014

On August 8, 2014, GEC performed soil removal and delineation activities near the vicinity of the former drycleaners facility. The primary purpose was to confirm the removal of contaminated soils

above the HSRA standards, as identified from the above Phase II ESA, from the use of the property as a former drycleaners. Five hand-augured borings were placed within the interior of the drycleaners structure (HA-1, HA-1A, HA-1B, HA-1C, HA-2), as well as four direct-push borings (GP-3 through GP-3C) along the adjacent parking area. Analytical results for samples selected for VOC analysis indicated shallow PCE concentrations in both the adjacent parking lot and the building interior, down to a maximum depth of six feet bgs.

GEC performed an excavation of an approximate 2'x2'x6' area of subsurface soils within the building interior, and an 8'x8'x3' area within the adjacent parking lot. Subsequent analytical results proceeding the excavation identified trace PCE within the interior, and no further contamination identified along the adjacent parking lot. GEC concluded that no further sampling was necessary and that all contaminated soils had been removed from the Subject Property.

Update of Soil Sampling Activities - Former Star Cleaners / Stanley Furniture - Geotechnical & Environmental Consultants (GEC), Inc., October 16, 2015

According to this letter, GEC performed three additional soil sampling events between March 3, and June 3, 2015, following the summarized August 2014 sampling event described above on the Subject Property. These assessments were conducted per request of the GA EPD to further delineate the identified PCE contamination, most notably throughout the adjacent parking area. Prior sampling events reportedly advanced a total of 30 borings at various depths (between 1 and four feet bgs) in an effort to vertically and horizontally delineate the contaminant plume. GEC's letter states soils contaminated with PCE were still identified above its respective NC along the adjacent parking area, to a maximum depth of approximately two feet bgs. Of these 30 borings, 19 have identified PCE concentrations above the GA EPD NC. GEC concluded that the contaminant plume had been thoroughly vertically delineated to the top 2 feet of the subsurface, and stated that the plume is contained to the northeastern portion of the parking lot. However, the northwestern and southeastern limits of the identified contamination had yet to be defined. It should be noted that all removed soils were characterized as non-hazardous waste and delivered to a subtitle D landfill.

HSI Site Determination - Star Cleaners (former) - Georgia Department of Natural Resources, January 31, 2017

According to this letter, the Georgia EPD reviewed an April 16, 2012 release notification of the Star Cleaners site, located at 1109 Macon Street, and determined the facility met the criteria to be listed on the Hazardous Site Inventory (HSI), as outlined in section 391-2-19-.05(1) of the Rules for Hazardous Site Response (HSRA). This determination was warranted by the calculated HSRA risk scores, totaling the groundwater pathway score and the on-site exposure pathway score of the identified contamination. According to the letter, the facility did not exceed the groundwater pathway threshold, given the lack of nearby public groundwater drinking wells. However, the facility did exceed the on-site exposure pathway threshold. This score was determined by the unlimited public access to the exterior driveway and/or the lack of a sufficient barrier to inhibit such access. The letter recommends the current owner of the facility, Mr. Perry Stanley, submit a Voluntary Remediation Program (VRP) Application and Plan pursuant to the Georgia VRP.

Cardno discussed this project with the current GA EPD Project Officer, Ms. Carolyn Daniels, P.G., on January 08, 2019. According to Ms. Daniels, the Subject Property owner, Mr. Perry Stanley, is required to complete a Compliance Status Report (CSR) which outlines a plan to address the on-site contamination.

6 Site Reconnaissance

The following is a summary of visual and/or physical observations of the property noted during Cardno's visits to the site on December 19, 2018. Representative photographs can be found in **Appendix A**.

6.1 Methodology and Limiting Conditions

Mr. Thomas Causey, GIT, a geologist with Cardno, conducted the site reconnaissance on November 30, 2018. Mr. Causey was accompanied by Mr. Ashton Smithwick, another geologist with Cardno. The reconnaissance consisted of visual and/or physical observations of the property and improvements; adjoining sites as viewed from the property; and, the surrounding area based on visual observations made during the trip to and from the property.

6.2 Hazardous Substance Use, Storage, and Disposal

Cardno did not observe any hazardous substances.

6.3 Underground Storage Tanks (USTs)

Cardno did not observe any underground storage tanks. According to an interview with the owner of the Subject Property, Mr. Perry Stanley, the tanks formerly utilized at the filling station located at 1101 Macon Street were removed at an unknown date. There is no further documented information for these tanks obtainable throughout the GAUSTMP database. Furthermore, soil borings advanced at the area of the former dispenser island of this filling station during ETCs Phase II ESA in November 2011 did not encounter any USTs or associated piping.

6.4 Aboveground Storage Tanks (ASTs)

Cardno did not observe any aboveground storage tanks.

6.5 Other Petroleum Products

Cardno did not observe any other petroleum products.

6.6 Polychlorinated Biphenyls (PCBs)

Cardno did not observe any pad-mounted transformers within the boundaries of the Subject Property. No other materials likely contain PCBs were observed on the Subject Site.

6.7 Unidentified Substance Containers

Cardno did not observe any unidentified substance containers.

6.8 Nonhazardous Solid Waste

The retail space, referred to as Stanley Furniture, located at 1107 Macon Road contained furniture, various building materials; including a fallen roofing materials and piles of ceiling and floor tiles throughout the interior. Additionally, a pile of cans and wood debris was observed along the western exterior of the residential structure located at 1107 Meeting Street. These examples of nonhazardous solid waste are considered de minimis and do not likely pose an environmental threat to the Subject Property.

6.9 Waste Pits, Ponds, and Lagoons

No waste pits, ponds, or lagoons were observed at the Subject Property.

6.10 Drains and Sumps

Cardno did not observe any evidence of any drains or sumps in, on, or at the Subject Property. However, according to the current owner of the Subject Site, a drain was formerly present along the interior of the former Star Cleaners facility. This drain was reportedly filled and no longer in-use. Previous environmental assessments performed at the Subject Site by GEC is further outlined in Section 5.3.3.

6.11 Septic Systems

Cardno did not observe evidence of septic tank usage.

6.12 Storm Water Management System

No storm water management system was observed. As inferred from local topography, rainwater runoff (hortonian overland) is expected to flow away from the center of the Subject Site, predominantly towards the southwest.

6.13 Wells/Borings

Numerous soil boring location were noted throughout the interior and exterior of the former Star Cleaners property, likely from the historic sampling events as discussed in Section 5.3.3. No groundwater monitoring wells were noted to be present at the Subject Site.

"The remainder of this page is intentionally left blank."

7 Subsurface Vapor Migration

Hazardous gases (vapor) from subsurface sources, such as contaminated soil or groundwater can migrate into residential, commercial, and industrial buildings with any foundation type, including basements, crawlspaces, or slabs. According to EPA guidance, three conditions must exist for hazardous vapors to reach the interior of buildings from the subsurface environment underneath or near a building. First, a source of hazardous vapors must be present in the soil or in groundwater underneath or near a building. Second, vapors must form and have a pathway along which to migrate toward the building. Third, entry routes must exist for the vapors to enter the building, and driving forces must exist to draw the vapors into the building.

Cardno considered the nature and extent of on-site and nearby sources of potential subsurface vapor migration by evaluating the current and historical usage of the property, the construction type and history, the physical setting, and the potential sources of subsurface vapor migration through the review of regulatory agency database information that was summarized in Section 5.0.

Based on the evaluation of the known or suspected releases of hazardous substances or petroleum products, their distance from the property, all potential pathways separated by roads with underground utilities, and soil type, the following facilities are considered a potential subsurface vapor migration source and represent a recognized environmental condition:.

- Star Cleaners with known PCE contamination in shallow soil;
- Historic on-site gas station; and
- Off-site Flash Foods gas station.

“The remainder of this page is intentionally left blank.”

8 Interviews

Cardno conducted interviews with the following people:

- Mr. Stanley Perry - Current owner of the Subject Property
- Mr. Michael Paull - Fire Marshall with the Perry Fire Department
- Ms. Carolyn Daniels, P.G. - Geologist and Project Officer with the Georgia Environmental Protection Division (GA EPD)

Cardno conducted an interview with the current owner of the Subject Property assemblage, Mr. Perry Stanley, during the site reconnaissance on December 19, 2018. Mr. Stanley stated he has owned the property for approximately 50 years (since the 1960's). Throughout his ownership, the Subject Property has been utilized as a furniture retail store, drycleaners, hair salon, residential property, and gasoline filling station. Mr. Stanley stated the heating source for all associated building is natural gas, supplied by the City of Perry, as well as water sources and sanitary sewer lines. There are no water wells, USTs, ASTs, septic tanks, slumps, grease-traps, transformers, hydraulic lifts or oil-water separators on the Subject Property. Mr. Stanley specified that a drain is located along the subsurface of the former drycleaners, leading to the exterior parking area where prior sub-surface investigations have been conducted. According to Mr. Stanley, the only chemicals utilized on the Subject Property, other than those non-hazardous chemicals utilized at the former hair salon, are typical chemicals used in association with the on-site drycleaners. Additionally, Mr. Stanley stated that sampling had been conducted near the vicinity of the former drycleaners, including both the interior and exterior, as well as near the dispenser island of the former gasoline servicing station.

A copy of the completed interview sheet is included as **Appendix H.**

Cardno contacted Mr. Michael Paull of the Perry Fire Department to request a records search for the subject site. Mr. Paull indicated there were no fires and/or hazardous spills reported in associated with the Subject Site.

Cardno contacted the current GA EPD project officer of the Star Cleaner's HSI listing, Ms. Carolyn Daniels, P.G. to further understand its current status. According to Ms. Daniels, the Star Cleaners facility is currently listed on the HSI database because of the identified PCE contamination identified within prior assessments conducted by GEC. The GA EPD submitted the HSI listing to the current property owner, Mr. Perry Stanley, in January, 2017. This condition is documented and further discussed in Section 5.3.3, outlined the necessary steps/options for delisting the Star Cleaners facility from the HSI database, including remediation via the VRP, or remediation via the state/federal Brownfields Program. Ms. Daniels stated that the site needs to submit a CSR outlying the cleanup plan and/or application into the VRP.

"The remainder of this page is intentionally left blank."

9 Non-Scope Considerations

Per request of the Client, Cardno completed an asbestos inspection and limited lead-based paint inspection for the Stanley Furniture structure, which includes the former on-site drycleaners located at 1107 and 1109 Macon Street, respectively. Cardno's asbestos and lead surveys were not conducted on the other parcels outlined in this Phase I ESA, per request of the client. No other sample collection or any other investigation for the purpose of determining the possible presence of radon, mold, and/or any other potential contaminants requiring specialized testing procedures or sampling were conducted during this investigation. No assessment was conducted for the possible presence or absence of wetlands and no determination is offered with regard to the suitability of the Subject Site for development or for any other specific use or purpose. Copies of professional certification and accreditations are included in **Appendix J**.

Notwithstanding these limitations, the applicability of certain environmental issues which are not covered by ASTM standards are still germane to a wide array of properties. The following is a summary of non-scope issues identified at the property on the day of the site visit.

9.1 Asbestos Containing Materials

An asbestos containing materials (ACM) survey was conducted on December 19, 2018.

The inspection was performed by Thomas Causey, a Georgia accredited asbestos inspector, in accordance with the Asbestos Hazardous Emergency Response Act (AHERA) and Asbestos School Hazard Abatement Reauthorization Act (ASHARA). During the inspection, Mr. Ashton Smithwick, an EPA licensed and accredited asbestos inspector, provided oversight and assistance.

In accordance with National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 61-Subpart M, paragraph 145, all asbestos containing materials (ACMs) must be identified and removed prior to disturbance, either during a renovation or demolition. ACM is defined by OSHA as materials that contain greater than 1% asbestos fibers.

The ACM inspection included a visual inspection of all accessible interior and exterior areas, including the roof, of the on-site building. Due to its poor condition, the entirety of the roof was not inspected. Destructive testing was not performed to verify the existence and extent of ACM in all building materials. This inspection was performed in accordance with AHERA and ASHARA protocols.

All suspect materials, or homogeneous areas (HAs) were visually identified. Each HA was visually assess for condition, friability, and quantity. All identified ACMs were classified by their category as denoted by EPA AHERA/ASHARA and OSHA. These categories include:

- Thermal System Insulation (TSI) – insulation typically over pipes, fittings, elbows, boilers, tanks, ducts, etc.
- Surfacing material – material that is sprayed, troweled-on, or otherwise applied to surfaces.
- Miscellaneous – All other ACMs
- Friable – ACM that can be crumbled pulverized or reduced to a powder by hand pressure when dry
- Category I Non-Friable – ACM consisting of packing material, gaskets, resilient floor covering, and asphalt roofing products

- Category II Non-Friable – All ACM that is not listed in Category I Non-Friable ACM
- Presumed Asbestos Containing Material (PACM) – all potential ACM not analytically analyzed

The ACM inspection included a visual inspection of all accessible interior and exterior areas, including the roof, of the on-site building. Destructive testing was performed to verify the existence and extent of ACM in all building materials. This inspection was performed in accordance with AHERA and ASHARA protocols. During the inspection, Cardno collected twenty-eight (28) samples. The following table summarized the samples collected:

Sample ID	HA Description	Location	Percent and Type of ACM	Estimate Quantity	Friability	Condition
01-01	**Tan 9x9 floor tile**	**Storage Room 2**	**2% Chrysotile**	**600 sq. ft.**	**NF**	**Fair**
01-01	**Tan 9x9 floor tile (black mastic)**	**Storage Room 2**	**5% Chrysotile**	**600 sq. ft.**	**NF**	**Fair**
02-01	White 9x9 floor tile	Storage Room 1	NAD	N/A	NF	Fair
03-01	Yellow mastic	Storage Room 1	NAD	N/A	NF	Fair
04-01	Yellow carpet glue	Storage Room 1	NAD	N/A	NF	Fair
05-01	HVAC Wrapping	Storage Room 1	NAD	N/A	NF	Good
06-01	**HVAC Vibration Dampener**	**Storage Room 1**	**60% Chrysotile**	**<6 linear feet**	**NF**	**Good**
07-01	Green linoleum flooring	Storage Room 3	NAD	N/A	NF	Poor
08-01	2'x2' ceiling tile	Dry-cleaning facility	NAD	N/A	F	Good
09-01	2'x2' ceiling tile	Storage Room 1	NAD	N/A	F	Good
10-01	**9x9 white floor tile**	**Storage Room 3**	**5% Chrysotile**	**4,000 sq. ft.**	**NF**	**Fair**
10-01A	**Black Mastic**	**Storage Room 3**	**3% Chrysotile**	**4,000 sq. ft.**	**NF**	**Fair**

Sample ID	HA Description	Location	Percent and Type of ACM	Estimate Quantity	Friability	Condition
11-01	Asphalt Saturated felt	Roof	NAD	N/A	F	Poor
12-01	**Linoleum with brick pattern backing**	**Storage Room 3**	**50% Chrysotile**	**225 sq. ft.**	**NF**	**Fair**
13-01	White Wall plaster	Dry-cleaning facility	NAD	N/A	NF	Good

NAD = No Asbestos Detected n/a = Not Applicable NF = Non-Friable F=Friable SF = Square Feet

All bulk samples were collected and stored in appropriate sample containers, labeled, and delivered to Analytical Environmental Services, Inc. (AES) in Atlanta, Georgia. AES analyzed all samples using Polarized Light Microscopy (PLM) via EPA Method 600/R-93/116. This laboratory is accredited by the National Institute of Standards of Technology (NIST), and is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP).

9.1.1 Asbestos Containing Materials Analytical Results

Based on the analytical results of suspect ACM samples conducted during this comprehensive inspection, the following materials were identified as asbestos-containing:

- Tan 9”x9” floor tile and associated mastic, totaling approximately 600 square feet, located along hallways within Storage Room 2.
- Vibration dampener, totaling less than 6 linear feet, located along the southern wall of Storage Room 1.
- White 9”x9” floor tile and associated mastic, totaling approximately 4,000 square feet, located throughout Storage Room 3.
- Backing of brick-patterned linoleum flooring, totaling approximately 225 square feet, located near the northwestern corner of Storage Room 3.

The tan 9”x9” floor tile was observed throughout Storage Room 2, creating a 5’ wide path between Storage Rooms 1 and 3. The floor tile was damaged in some areas, but remained mostly intact. The underlying black mastic was also identified as ACM. The tiles appeared to be in fair condition, and is considered a non-friable miscellaneous Category I material.

The vibration dampener as observed in Storage Room 1, along the southern wall. The dampener was in good condition with no significant damage observed and only observed in one location. The dampener is in good condition and is considered a non-friable category I material.

The white 9”x9” floor tile was observed throughout Storage Room 3. The floor tile was predominantly damaged and/or removed in some areas, but remained mostly intact. The underlying black mastic was also identified as ACM. The tiles appeared to be in fair condition, and is considered a non-friable miscellaneous Category I material.

The brick-patterned linoleum backing was observed along the northwestern corner of Storage Room 3. The flooring was observed as intact, with little damage. The linoleum backing was observed a good condition and is considered a non-friable category I material.

Photos of the confirmed ACM materials are included in **Appendix A.** A summary of the sampling locations is included in **Figure 6.**

9.2 Lead-Based Paint

A limited lead-based paint inspection was also conducted on December 19, 2018. The inspection was performed by Mr. Thomas causey, a Geologist with Cardno. All testing was completed in accordance with applicable HUD, state, and federal regulations regarding LBP inspections. Mr. Douglas Strait, an EPA licensed and accredited lead-based paint inspector, provided oversight.

The LBP testing was performed in accordance with the inspection protocol in Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing. Painted surfaces were tested by collecting paint chips of various painted surfaces throughout the interior and exterior of the building. LBP is defined by EPA as containing greater than 0.5% lead in painted materials.

During the inspection, Cardno collected twelve (12) paint chip samples from unique locations throughout the interior and exterior of the on-site building. The paint chip samples were collected into appropriate containers, labeled, and delivered to AES in Atlanta, Georgia. This laboratory is accredited by the NIST program, and is recognized under the NVLAP. The laboratory analyzed the samples using flame atomic absorption spectrometry (FAAS) via National Institute for Occupational Safety and Health (NIOSH) Method 7082. Analytical results reported by Analytical Environmental Services (AES) are included in **Appendix K**. The following table summarized the samples collected:

Sample ID	Description (color)	Location	Percent lead	Estimate Quantity	Condition
LBP-01	Olive green	Interior DC walls	BRL	n/a	Good
LBP-02	Brown	Interior DC walls	BRL	n/a	Good
LBP-03	Yellow	Interior DC bathroom wall	BRL	n/a	Good
LBP-04	Tan	DC concrete floor	BRL	n/a	Good
LBP-05	White	Wood trim in DC	BRL	n/a	Good
LBP-06	White	Posts in Storage Rm. 1	<0.5%	n/a	Good
LBP-07	Beige	Exterior Stucco column	BRL	n/a	Good
LBP-08	White	Exterior brick	<0.5%	n/a	Good
LBP-09	Peach	Concrete walls in Storage Rm. 2	<0.5%	n/a	Fair

Sample ID	Description (color)	Location	Percent lead	Estimate Quantity	Condition
LBP-10	**Light Blue**	**Concrete walls around electrical panel in Storage Rm. 2**	**1.69%**	**50 sq. ft.**	**Fair**
LBP-11	Light Green	Concrete walls in Storage Rm. 2	<0.5 %	n/a	Fair
LBP-12	**Black**	**Electrical panel backing in Storage Room 2**	**8.74%**	**6 sq. ft.**	**Fair**

NLD = No Lead Detected / n/a = Not Applicable / **BOLD**= Lead-based / SF = Square Feet / DC = Drycleaner

9.2.1 Lead Based Paint Analytical Results

Based on the analytical results of suspect LBP samples conducted during this comprehensive inspection, the following paints were observed as lead-based:

- Light blue paint surrounding an electrical panel along the southern interior wall of Storage Room 2
- Black paint observed on the backing of an electrical panel along the southern interior wall of Storage Room 2

Several paint chip samples contained less than 0.5% lead by weight, and per OSHA all applicable safety regulations should be considered when handling any concentration of lead-based paint. All identified paint appeared to be intact and overall in good condition. A summary of the sampling locations is included in **Figure 6.** Photos of the confirmed LBP materials are included in **Appendix A.**

"The remainder of this page is intentionally left blank."

10 Findings and Opinions

Cardno has completed a Phase I Environmental Site Assessment (ESA) of the Stanley Assemblage property located in Perry, Houston County, Georgia. This report has been prepared in general accordance with *40 CFR Part 312 Standards and Practices for All Appropriate Inquiries* and *ASTM Standard Practices E1527-13 for Environmental Site Assessments.*

10.1 Findings and Opinions

Phase I ESA investigations seek to identify known or suspect RECs, historical RECs, and de minimis conditions. *De minimis* conditions are those that are judged to not present a material risk of harm to health or the environment. The observed RECs are summarized in **Figure 7.**

Based on this Phase I ESA, four (4) on-site recognized environmental conditions (RECs) were identified:

1. The site supported Star Cleaners dry cleaners on the northeast boundary of the Subject Property which was in operation from the mid-1960s to the mid-1980s. A Phase II environmental site assessment conducted on the Star Cleaners facility November 2011 by Environmental Consulting & Technology, Inc. (ECT). This assessment identified tetrachloroethylene (PCE, a common dry cleaning solvent) contamination in the shallow soil near the vicinity of the historical drycleaners above its respective Georgia Environmental Protection Division (EPD) notification concentration (NC) beneath the facility flooring, as well as the adjacent driveway. Although multiple attempts to adequately sample and remove the contaminated soils have been conducted between 2014 and 2015 by representatives of Geotechnical & Environmental Consultants, Inc. (GEC), these attempts to horizontally delineate the extent of the contaminant plume and subsequent remedial efforts were unsuccessful. This contamination was reported to the Georgia EPD Hazardous Site Response Act (HSRA), and based on the elevated concentrations and lack of access limitations, the site was listed on the Georgia EPD Hazardous Site Inventory (HSI). The presence of PCE above its NC in soils within the boundaries of the Subject Site poses an environmental risk to the Subject Property and is considered a REC.
2. ECTs 2011 Phase II ESA also assessed a gasoline filling station (Solomons Union 76), formerly located at 1101 Macon Street, near the southeastern corner of the Subject Property. During this assessment, ECT advanced one boring at the vicinity of the former dispenser island (GP-1) and an additional boring near the vicinity of the former underground storage tank (UST) area (GP-2). Soil samples collected for analysis were gathered between 18 and 20 feet bgs and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) at each boring, as well as polynuclear aromatic hydrocarbons (PAHs) in GP-1. The absence of lead (a common gasoline additive at that time) sampling data, absence of PAH sampling data at GP-2, and the lack of soil samples at shallower depths, represents a data gap and is considered a REC.
3. The prior sampling conducted by ECT and GEC did not evaluate groundwater or vapor contamination for the historic gas station or Star Cleaners. The absence of groundwater and soil vapor sampling data are considered RECs as potential impacts associated with these parameters were not evaluated.

Additionally, based on this Phase I ESA, one (1) off-site REC was identified:

4. The Flash Foods #167 facility, located adjacent east to the Subject Property, across Macon Street at 1114 Macon Street is a gasoline filling station. This facility has been in operation since approximately 1989, with no reported hazardous spills. However, based on the length of operation, inferred upgradient position, and distance from the Subject Property, this facility is considered a REC.

This assessment has identified non-scope considerations in connection with the Subject Property. Cardno completed an asbestos and limited lead-based paint inspection and identified the following:

- Various asbestos containing materials were identified throughout the interior of the building, including floor tile, underlying mastics, and an HVAC vibration dampener.
- Two confirmed LBP materials were identified throughout the interior of the building including light blue and paint near an interior electrical panel.

10.2 Recommendations

Based on the findings of this report, Cardno recommends:

- Additional investigation should be conducted to assess the potential for soil and groundwater contamination associated with the historic gas station located at 1101 Macon Street.
- The PCE contamination at the former Star Cleaners should be further delineated horizontally and adequately addressed to the satisfaction of the GA EPD in order to remove it from the HSI.
- Groundwater and soil vapor sampling data should be obtained to assess the possibility that these media have been impacted by the former Star Cleaners located at 1109 Macon Street, as well as the gasoline service station formerly located at 1101 Macon Street.
- Majority of the identified asbestos containing materials appeared to be in fair condition. Therefore, the identified ACM has a low probability of disturbance during ordinary use and due to the facility's vacancy. Prior to any renovation or demolition that may cause the ACM to become friable, these materials should be removed or abated by a qualified asbestos abatement contractor. If the ACMs are to be left in place, an Operation and Maintenance (O&M) plan regarding the handling of the identified ACMs should be implemented.
- Lead-paint identified by Cardno appeared to be intact and in fair condition. As the building is not considered a child-occupied facility, the identified LBP can be left intact unless disturbed during renovation or demolition. If the LBP is to be disturbed during renovation or demolition, depending on the extent of the disturbance, the LBP can be encapsulated, enclosed, or abated. All activity that disturbs LBP should be conducted by a licensed LBP renovation, repair, or paint (RRP) firm or a qualitied LBP abatement contractor.

  If the property is to be significantly renovated or demolished, due to the presence of lead on various painted surfaces, toxicity characteristics leachate procedure (TCLP) analysis for lead should be conducted to determine if any building debris should be characterized as a hazardous waste prior to disposal.
- If the site were to be transferred, the purchaser should consider applying for admission into the Georgia Brownfields Program.

11 References

GeoSearch. *Radius Report*, Order *Number 1119297*

GeoSearch. *Physical Setting Report*, Order Number *1119297*

GeoSearch. *Aerial Photo Decade Package*, Order Number *1119297*

GeoSearch. *Historical Topographic Maps*, Order Number *1119297*

GeoSearch. Historical City Directories, Order Number *1119297*

United States Department of Agriculture (USDA), Natural Resources Conservation Service Custom Soil Resource Report

Phase II Environmental Site Assessment - Environmental Consulting & Technology, Inc., dated November, 2011

Report of Soil Excavation - Geotechnical & Environmental Consultants, Inc., dated January 12, 2014

Response to EPD Letter of May 1, 2014 - Geotechnical & Environmental Consultants, Inc., dated June 26, 2014.

Update of Soil Sampling Activities - Geotechnical & Environmental Consultants, Inc., dated October 16, 2015

HSI Site Determination (#10940) - Georgia Department of Natural Resources, dated January 31, 2017.

"The remainder of this page intentionally left blank."

12 Qualifications/Signatures of Environmental Professional(s)

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR Part 312.10. I certify that this report has been prepared in general accordance with 40 CFR Part 312 and ASTM E 1527-13 Standard Practice for Environmental Site Assessments.

I further certify that, in my professional judgment, this report meets the requirements of 40 CFR Part 312, Standards and Practices for All Appropriate Inquiries. I have the specific qualifications based on training, experience and registration to perform and/or assist in the assessment of a property of the nature, history and setting of the Subject Property.

for Cardno

Douglas Strait, PE
Project Manager

Date: January 28, 2019

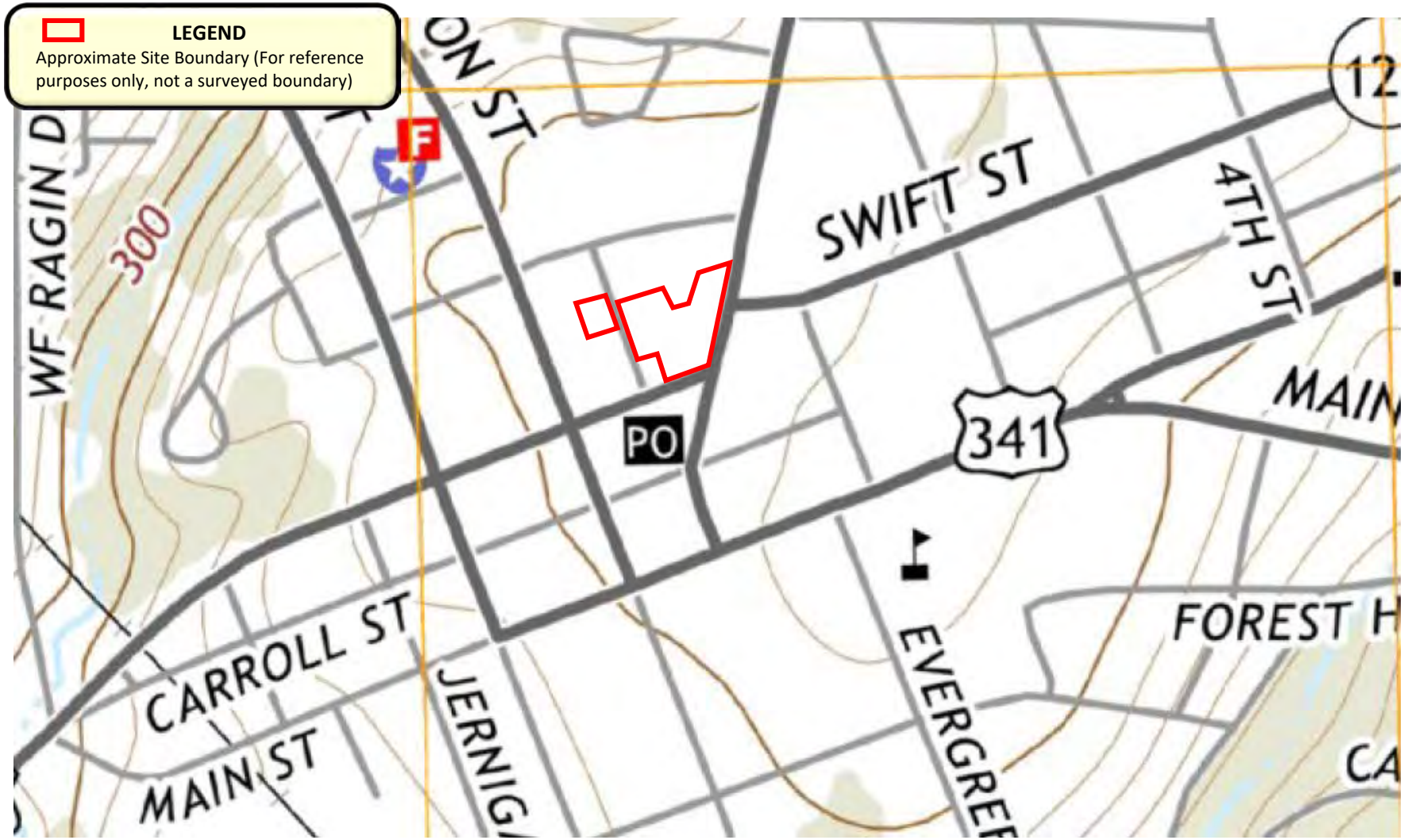
I declare this "*Phase I Environmental Site Assessment*" Report meets or exceeds Cardno's standards for editorial content, technical accuracy, and quality assurance verification. All data and calculations presented herein have been checked for accuracy and the basis for all conclusions and recommendations have been described.

for Cardno

Keith Ziobron
Branch Manager

Date: January 28, 2019

Figures

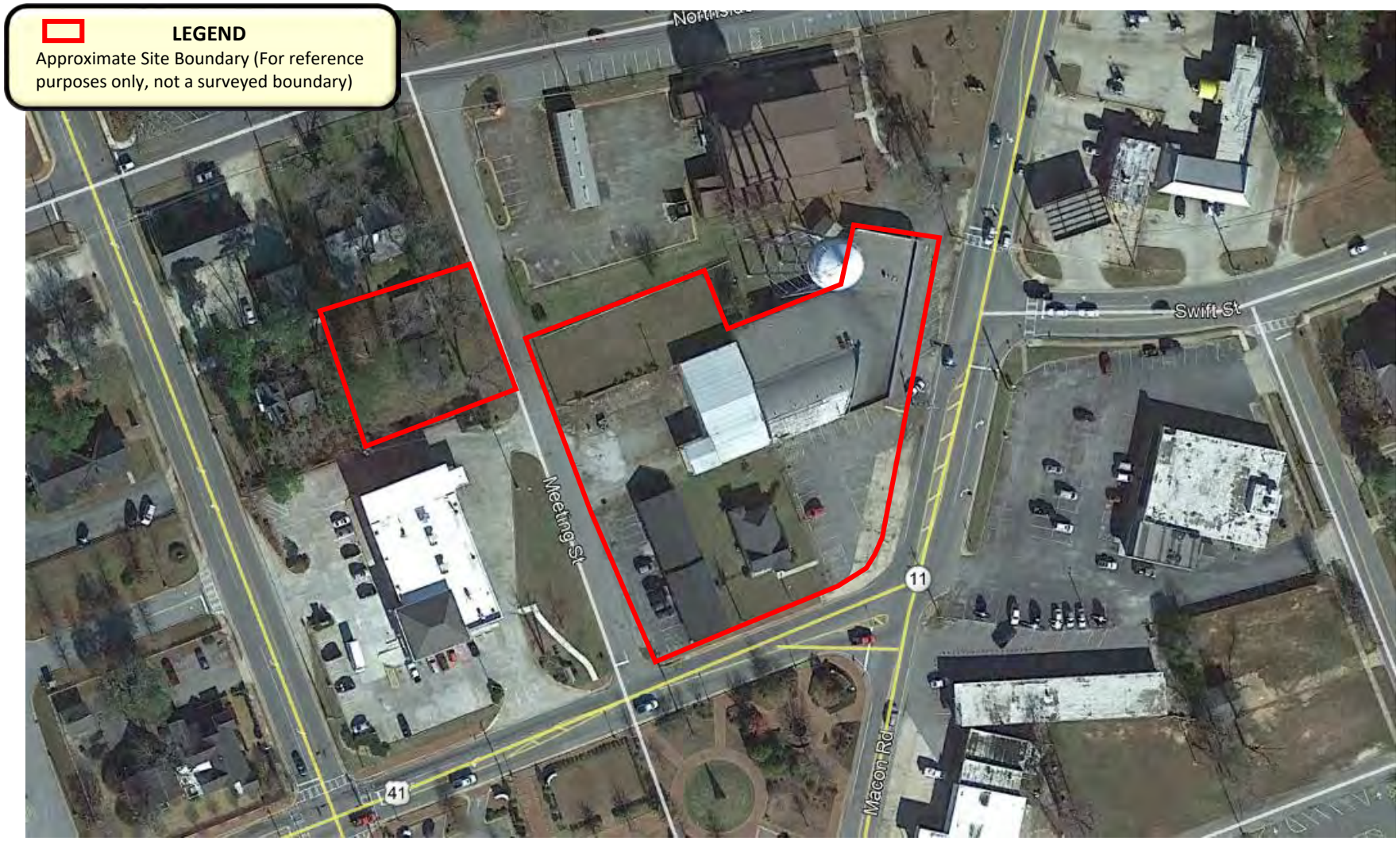


Cardno
Shaping the Future

420 0 420
Not to Scale

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 1
USGS/Site Vicinity Map
Source: USGS 2014



Cardno
Shaping the Future

"This is not a map of survey."

120 0 120
Not to Scale

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 2a
Site Boundary Map
Source: GoogleEarth

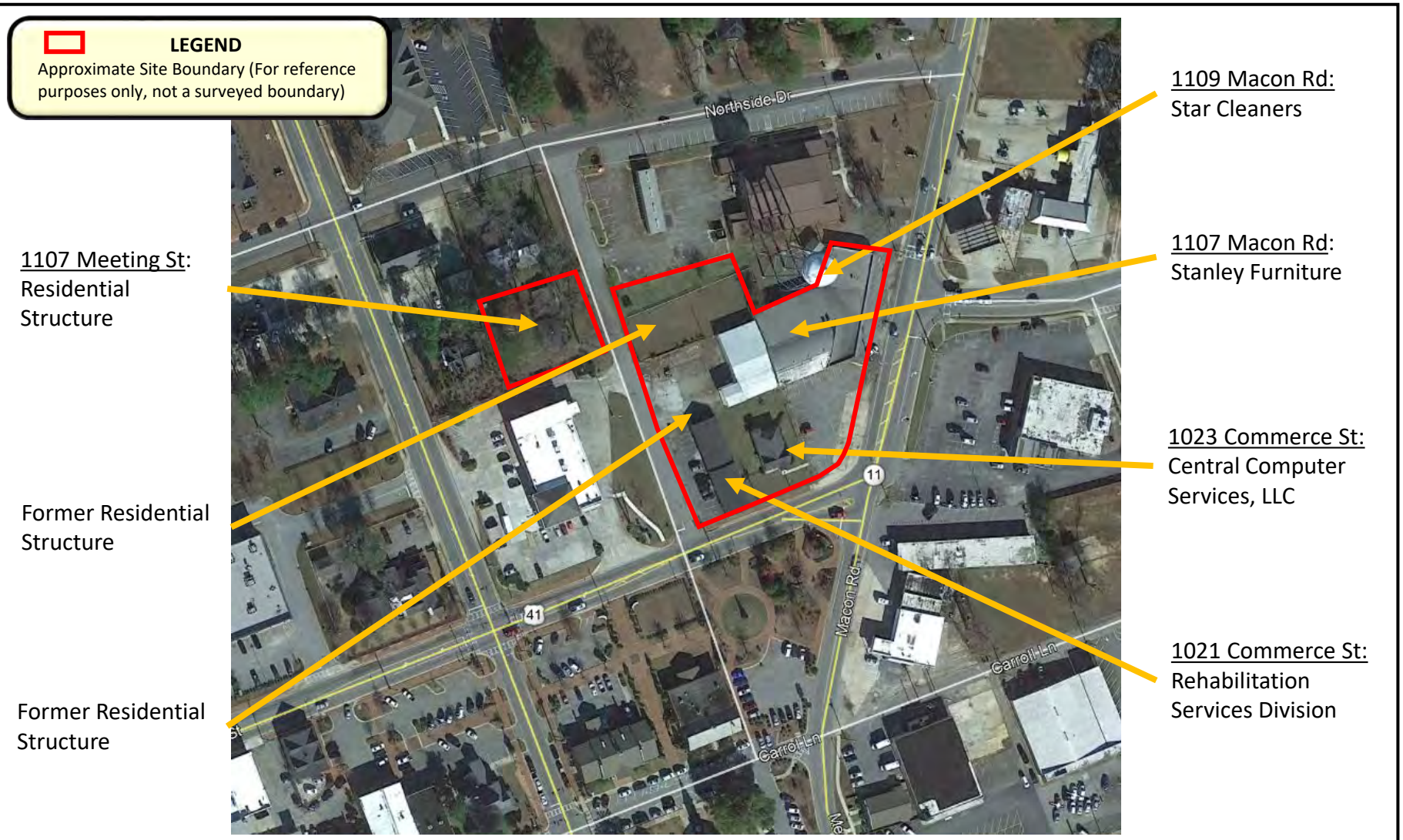
Cardno
Shaping the Future

"This is not a map of survey."

125 0 125
Not to Scale

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 2b
Tax Map
Source: Houston County Tax Assessor



Cardno
Shaping the Future

Not a map of survey
Base Image Google 2017

120 0 120
Not to Scale

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 3a
Site Land Use Map
Source: GoogleEarth

LEGEND
Approximate Site Boundary (For reference purposes only, not a surveyed boundary)

1119 Macon Rd: Water Tower

Residential structures

1100 Washington St: CVS Pharmacy

1114 Macon Rd: Exxon Gas Station

1040 Macon Rd: Fitness / Gym / Financial counseling

1036 Macon Rd: Pharmacy / former automotive servicing center

Park / Former gas station

Cardno
Shaping the Future

Not a map of survey
Base Image Google 2017

120 0 120
Not to Scale

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 3b
Surrounding Land Use Map
Source: GoogleEarth

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4a
1937 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4b
1942 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4c
1949 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4d
1951 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4e
1958 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4f
1966 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4g
1973 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4h
1981 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4i
1993 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4j
1999 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4k
2005 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4l
2006 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4m
2007 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4n
2009 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4o
2010 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

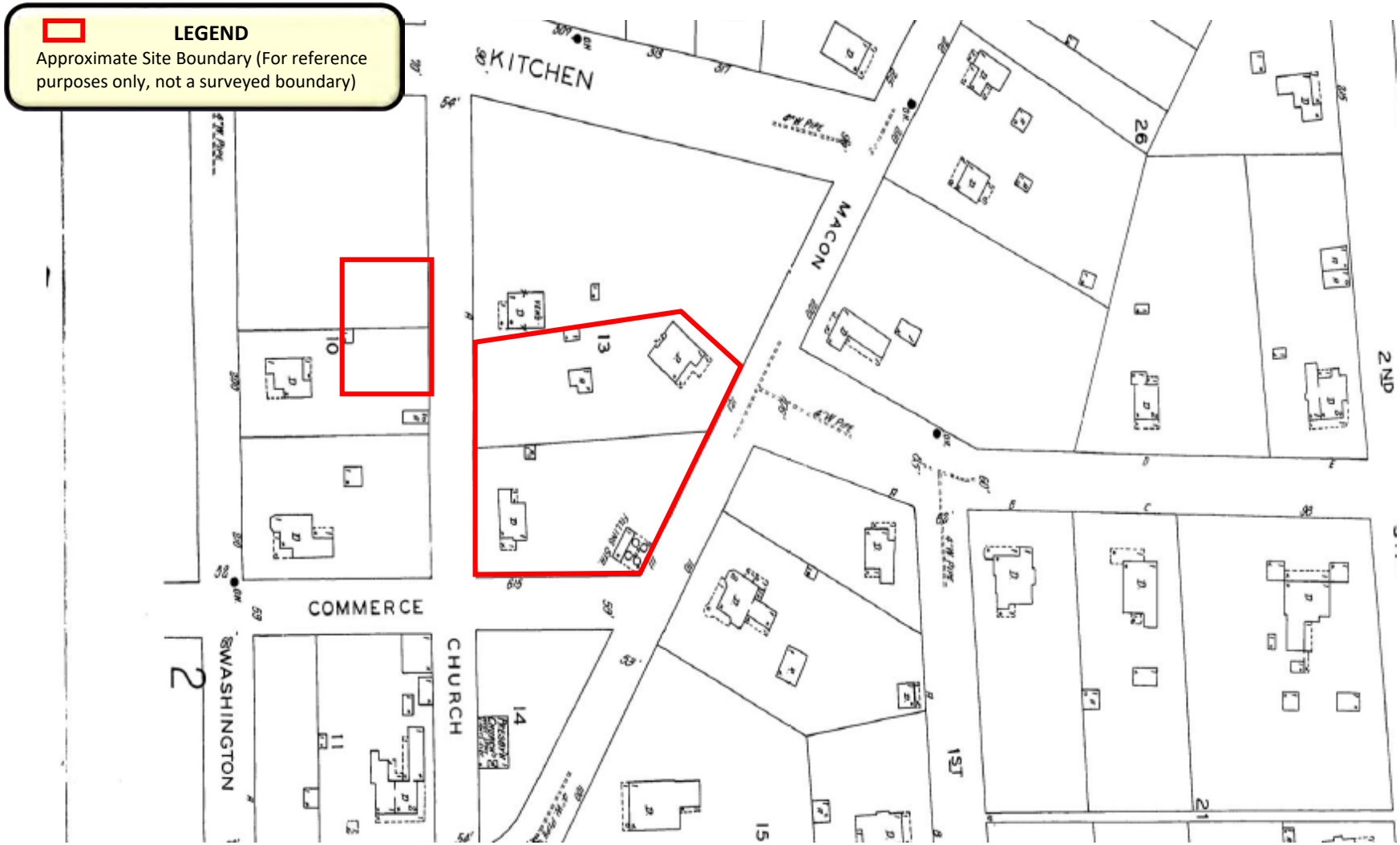
Figure 4p
2013 Aerial Photograph

Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 4q
2015 Aerial Photograph

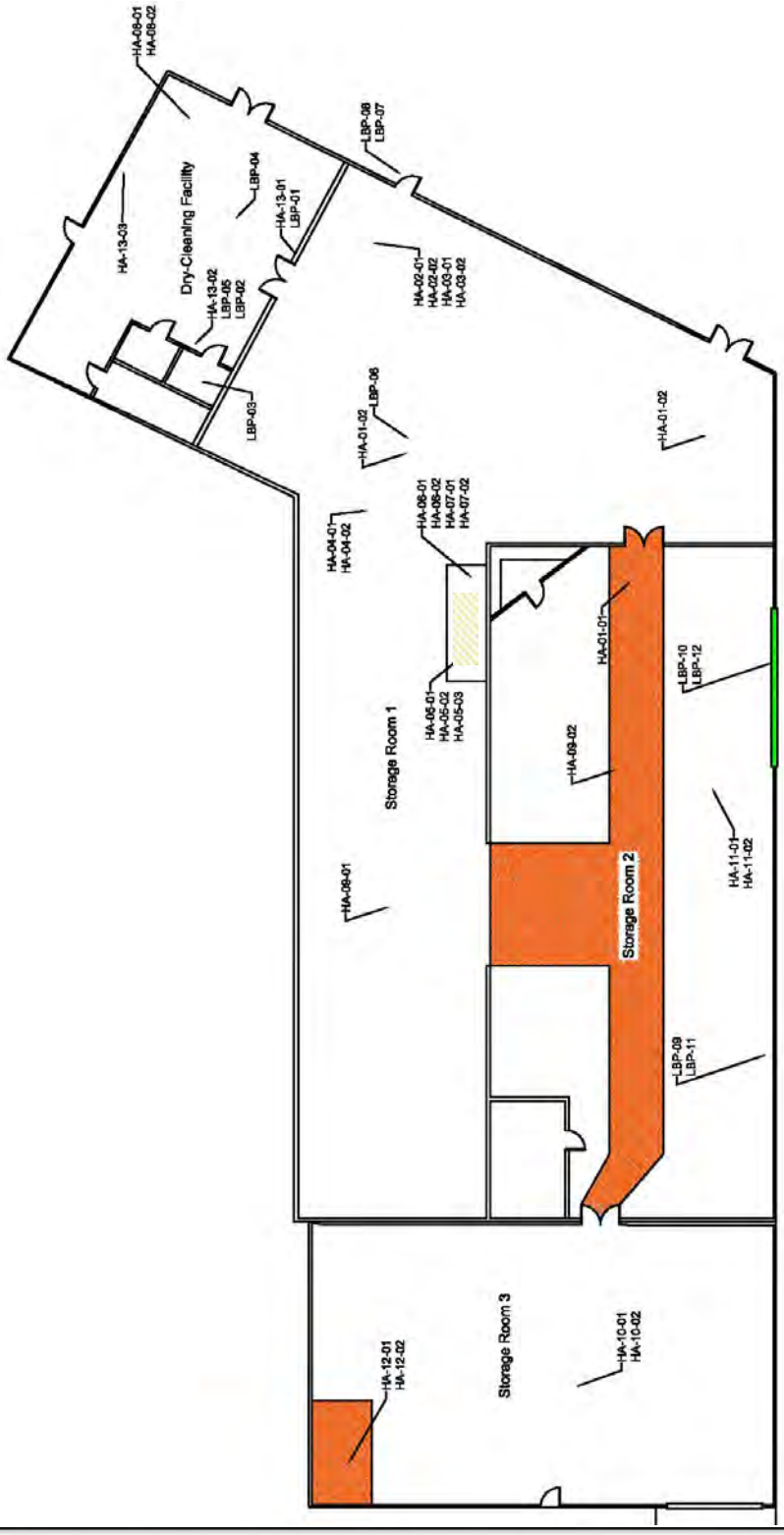


Cardno
Shaping the Future

"This is not a map of survey."

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 5
1930 Sanborn Map



-Confirmed LBP -Confirmed ACM – Flooring -Confirmed ACM – Vibration Dampener

Cardno
Shaping the Future

"This is not a map of survey."

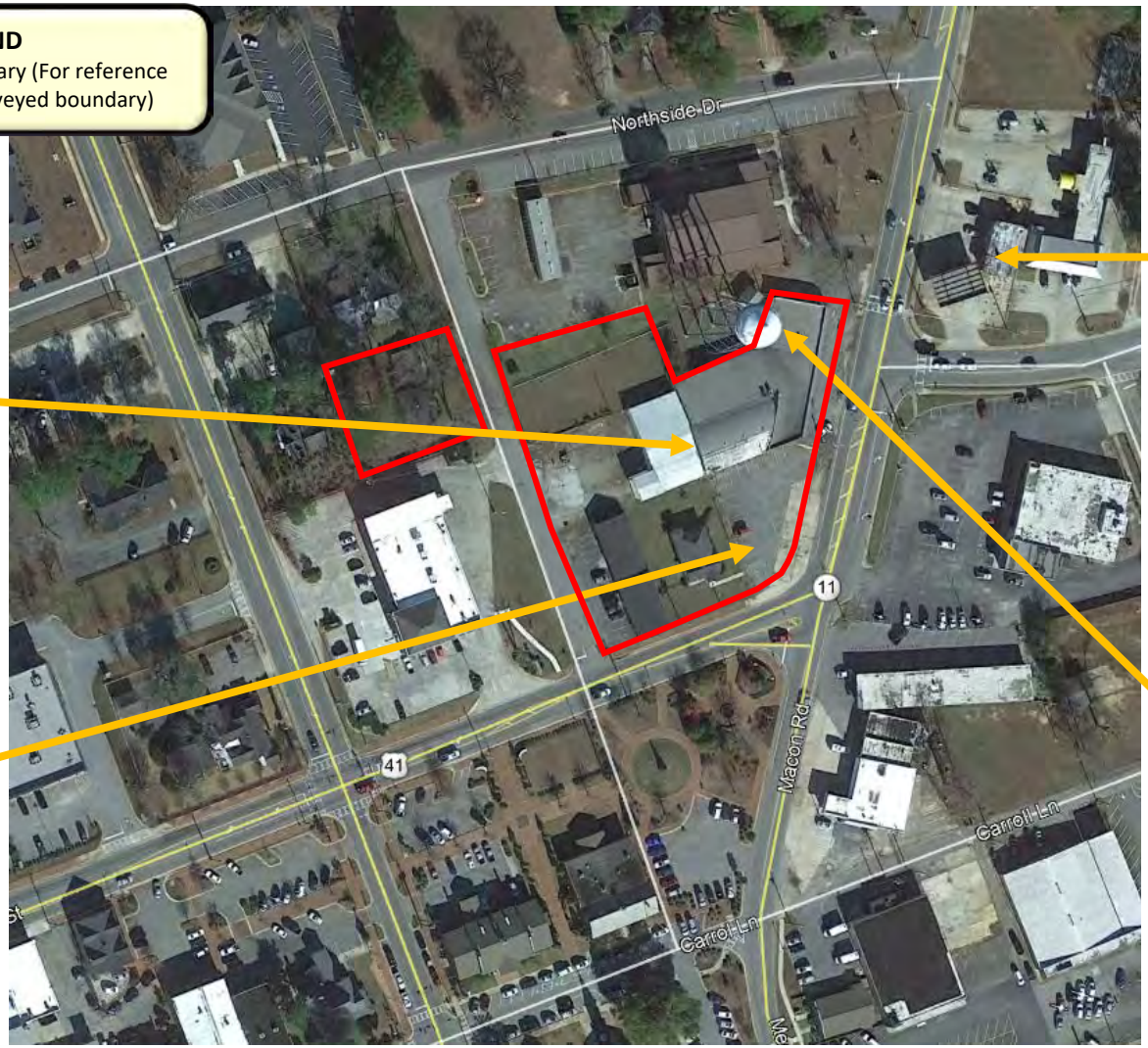
Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 6
Stanley Furniture Building LBP/ACM Survey

LEGEND
Approximate Site Boundary (For reference purposes only, not a surveyed boundary)

REC #3: Lack of groundwater sampling near the vicinity of the Star Cleaners and historic gasoline filling stations

REC #2: Inadequate sampling conducted in response to a historical gasoline servicing station located at 1101 Macon Street.



REC #4: Flash Foods #167 facility located at 1114 Macon Street is a gasoline filling station, adjacent the Subject Property

REC #1: identified PCE concentrations at the Star Cleaners Site located at 1109 Macon Street.

Cardno
Shaping the Future

Not a map of survey
Base Image Google 2017

120 0 120
Not to Scale

Phase I ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Figure 7
REC Map
Source: GoogleEarth

Appendix B

Soil Boring Logs

BORING LOG

Boring/Well Number: B-1	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 4/24/19 End Date:	Borehole Start Time: 1530 ☐ AM ☒ PM End Time: 1750 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: Betts	Pavement Thickness (inches): ~6"	Borehole Diameter (inches): 8" / Borehole Depth (feet): 50'
Drilling Method(s): Sonic	Apparent Borehole DTW (in feet from soil moisture content): ~50	Measured Well DTW (in feet after water recharges in well): 53.33 / OVA (list model and check type): ☐ FID ☑ PID

Disposition of Drill Cuttings [check method(s)]: ☑ Drum ☐ Spread Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☑ Well ☑ Grout ☑ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-2				0.7		1	Red sandy-clay loam; mod. stiff some fines	SC	D	B-1 0-2 1770
							2				
HA	2-4				0.0		3				
							4				
DP	4-6				0.0		5				
							6				
DP	6-8				0.0		7				
							8				
DP	8-10				0.0		9				
							10				
DP	10-12				0.0		11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

BORING LOG

Boring/Well Number:	Facility Identification Number:	Site Name:	Borehole Start Date:
B-1		Stanley Assemblage	4/24/19 End Date:

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							13	Red Clayey Sand Med Stiff. Some fines	SC	D	
DP	12-14				0.0						
							14				
							15				
DP	14-16				0.0		16	Red/brown Clayey-Sand Med. Stiff Some fines	SC		
							17				
DP	16-18				0.0		18				
							19				
DP	18-20				0.0		20	orange fine Sand Stiff/tight Sand fine grains	SP		
							21				
							22	Tan fine Sand Stiff to loose fine grain			
							23				
							24	White fine Sand Soft/loose			
DP	25				0.0		25				
							26	orange - pink fine grain Sand loose			
							27	" White clay bands 1/4" thick			
							28				
							29	Pink fine grain Sand loose white clay bands 1/4" thick			
DP	30				0.1		30				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: B-1 Continues	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 4/24/19 End Date: 4/24/19	Borehole Start Time: 1530 ☐ AM ☒ PM End Time: 1750 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: Betts	Pavement Thickness (inches): ~6"	Borehole Diameter (inches): 8"
Borehole Depth (feet): 50'		
Drilling Method(s): Sonic	Apparent Borehole DTW (in feet from soil moisture content): ~50	Measured Well DTW (in feet after water recharges in well): 53.33
OVA (list model and check type): ☐ FID ☑ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☑ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							31	Tan/white fine sand loose fine grained	SP	D	
							32				
							33				
							34	Tan fine grain sand white fine grain, clay bands 1/2" thick			
DP	35		ODOR		43.4		35				B-1 35' 1720
							36				
							37				
							38	Red coarse grain sand 1/2" clay band			
							39	white fine grain sand loose			
DP	40				0.7		40				
							41				
							42				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

BORING LOG

Boring/Well Number:	Facility Identification Number:	Site Name:	Borehole Start Date: / End Date:
B-1		Stanley Assemblage	4/24/19

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							43	white/tan loose fine-grained sand	SP	D	
							44				
DP	45'				0.5		45				
							46				
							47				
							48				
							49			M	
DP	50'				0.0		50			M	
							21	BT @ 50'			
							22				
							23				
							24				
							25				
							26				
							27				
							28				
							29				
							30				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: B-2	Permit Number:		Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 4/25/19 End Date:	Borehole Start Time: 1200 ☐ AM ☑ PM End Time: 1530 ☐ AM ☒ PM	
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick		Environmental Technician's Name:
Drilling Company: Betts	Pavement Thickness (inches): 8"	Borehole Diameter (inches): 8"	Borehole Depth (feet): 50'
Drilling Method(s): Sonic	Apparent Borehole DTW (in feet from soil moisture content): ~50'	Measured Well DTW (in feet after water recharges in well): 54.56'	OVA (list model and check type): ☐ FID ☑ PID

Disposition of Drill Cuttings [check method(s)]: ☑ Drum ☐ Spread Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☑ Well ☑ Grout ☑ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
	0-2				0.3		1	(Re) Sandy clay loam stiff to soft some fines	SC	D	
							2				
	2-4				0.1		3				
							4				
	4-6				0.2		5				
							6				
	6-8				0.1		7				
							8				
	8-10				0.1		9				
							10				
	10-12				0.0		11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

BORING LOG

Boring/Well Number:	Facility Identification Number:	Site Name:	Borehole Start Date: 4/25/19
B-2		Stanton Assemblage	End Date:

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							13	Red Sandy-clay loam stiff	SC	D	
DP	12-14				0.8		14				
							15				
DP	14-16				1.1		16	orange clayey-sand stiff			
DP	16-18				0.1		17	white silty-clay very stiff fine grained	CL		
							18				
DP	18-20				0.0		19				
							20				
							21				
							22				
							23	Tan/white fine grain sand loose	SP		
							24				
DP	25				3.7		25				
							26	white/pink fine grained sand loose			
							27				
							28	orange/pink fine grained sand loose			
							29	white fine grained sand loose			
DP	30		30		28.8		30				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: B-2 Continued	Permit Number:	Facility Identification Number:
Site Name: Stanley Assembly	Borehole Start Date: 4/25/19 End Date:	Borehole Start Time: 1200 ☐ AM ☒ PM End Time: 1530 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: Betts	Pavement Thickness (inches): 8"	Borehole Diameter (inches): 8" / Borehole Depth (feet): 50'
Drilling Method(s): Sonic	Apparent Borehole DTW (in feet from soil moisture content): 50'	Measured Well DTW (in feet after water recharges in well): 54.56 / OVA (list model and check type): ☐ FID ☑ PID

Disposition of Drill Cuttings [check method(s)]: ☑ Drum ☐ Spread Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☑ Well ☑ Grout ☑ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							31	white/tan loose fine grain sand	SP	D	
							32				
							33				
							34				
DP	35				6.6		35				
							36	white Rock flour	—		
							37	orange/brown/white loose fine grain sand	SP		
							38				
							39				
DP	40				3.2		40	white Rock flour	—		
							41	white/orange loose fine grain sand	SP		
							42				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

BORING LOG

Boring/Well Number:	Facility Identification Number:	Site Name:	Borehole Start Date:
B-2		Stanley Assemblage	End Date: 4/25/19

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							43	white/orange loose fine grained sand	SP	D	
							44				
	45				6.1		45				
							46				
							47				
							48				
							49				
	50				1.4		50			M	
							21	BTG 50'			
							22				
							23				
							24				
							25				
							26				
							27				
							28				
							29				
							30				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: B-3	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 4/25/19 End Date:	Borehole Start Time: 1045 ☑ AM ☐ PM End Time: 1100 ☑ AM ☐ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: Betts	Pavement Thickness (inches):	Borehole Diameter (inches): / Borehole Depth (feet):
Drilling Method(s): Sonic	Apparent Borehole DTW (in feet from soil moisture content): –	Measured Well DTW (in feet after water recharges in well): – / OVA (list model and check type): ☐ FID ☑ PID

Disposition of Drill Cuttings [check method(s)]: ☑ Drum ☐ Spread Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☑ Grout ☑ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-2				0.2		1	Red Sandy clay loam mod. plast. some fines	SC	D	
							2				
							3				
HA	2-4				0.0		4	Red/brown Sand-clay loam mod. plast some fines			
							5				
DP	4-6				0.0		6				
DP	6-8				0.0		7	Red Sandy-clay loam mod plast some fines			
							8				
							9				
DP	8-10				0.6		10	Red			
							11				
DP	10-12		Top		2.2		12	Red/brown/light brown Sandy-clay stiff to soft			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

BORING LOG

Boring/Well Number:	Facility Identification Number:	Site Name:	Borehole Start Date: 4/25/19
B-3		Stanley Assemblage	End Date:

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DP	12-14		Petro ODOR		925.4		13	Light brown Sandy clay soft	SC	D	
							14	Tan/white fine Sand loose fine grain	SP		
DP	14-16				1,891		15				B-3 14-16 1130
							16				
DP	16-18				1,336		17	white/red/gray silty-Clay very stiff fine grained			
							18				
DP	18-20				749.0		19				
							20				
							21	BT @ 20'			
							22				
							23				
							24				
							25				
							26				
							27				
							28				
							29				
							30				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: B-4	Permit Number:		Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 4/24/19 End Date:	Borehole Start Time: 0930 ☑ AM ☐ PM End Time: 1350 ☐ AM ☑ PM	
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick		Environmental Technician's Name:
Drilling Company: Betts	Pavement Thickness (inches): 0.3"	Borehole Diameter (inches): 8"	Borehole Depth (feet):
Drilling Method(s): Sonic	Apparent Borehole DTW (in feet from soil moisture content): ~6 ft	Measured Well DTW (in feet after water recharges in well): 53.64	OVA (list model and check type): ☐ FID ☑ PID

Disposition of Drill Cuttings [check method(s)]: ☑ Drum ☐ Spread Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☑ Well ☑ Grout ☑ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-2				0.2		1	Red/brown loose Sandy-Clay loam Some fines	SC	D	
							2				
HA	2-4				0.3		3				
							4				
DP	4-6				0.1		5	brown loose Sandy-Clay loam Some fines			
							6				
DP	6-8				0.0		7	Red med. stiff Sandy-Clay loam Some gravel Some fines			
							8				
DP	8-10				0.0		9				
							10				B-4 10-12 1050
DP	10-12				11.1		11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

SAT = Saturated

BORING LOG

Boring/Well Number:	Facility Identification Number:	Site Name:	Borehole Start Date: / End Date:
B-4		Stanley Assemblage	4/24/19

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DP	12-14				4.1		13	brown/red loose clayey sand some fines/sand grains	SC	D	
							14	↓			
DP	14-16				3.3		15	Tan/white tight sands ~~Fine~~ sand sorted grains	SP		
							16	↓			
DP	16-18				2.2		17				
							18	↓			
DP	18-20				0.8		19	Tan/pink/white tight sand fine sand fine grained			
							20	↓			
							21	Brown/orange loose fine sand fine grain			
							22	↓			
							23	~~Bro~~ Pink loose fine sand Bands of white fine grained clay			
							24	↓			
					0.5		25				
DP	25						26	↓			
							27	orange loose fine sand Bands of brown/white fine grained clay			
							28	↓			
							29	~~W~~ White/orange loose fine sand fine grained			
DP	30				1.4		30				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: B-4 Continued	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 4/21/19 End Date:	Borehole Start Time: 0930 ☒ AM ☐ PM End Time: 1350 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: Betts	Pavement Thickness (inches): 0"	Borehole Diameter (inches): 8" / Borehole Depth (feet): 70'
Drilling Method(s): Sonic	Apparent Borehole DTW (in feet from soil moisture content): ~60	Measured Well DTW (in feet after water recharges in well): 53.64 / OVA (list model and check type): ☐ FID ☑ PID

Disposition of Drill Cuttings [check method(s)]: ☑ Drum ☐ Spread Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☑ Well ☑ Grout ☑ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							31	orange/brown fine sand loose	SP	D	
							32				
							33				
							34				
							35				
08	35				0.8		36	light orange fine sand loose chunks (0.5") of fine grained clay (white)			
							37				
							38	Yellow fine sand loose fine grained			
							39	white fine sand loose fine grained			
							40	brown/orange fine sand loose fine grained			
09	40				0.7		41				
							42	Yellow/orange fine sand loose fine-grained			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

BORING LOG

Boring/Well Number:	Facility Identification Number:	Site Name:	Borehole Start Date:
B-4		Stanley Assemblage	End Date: 4/24/19

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							43	orange tan loose fine sand	SP	D	
							44				
DP	45				9.5		45				
							46				
							47	rock flour			
							48	orange/tan loose fine-grained fine-grained			
							49				
DP	50				23.2		50				B-4 50' 1340
							51			M	
							52			M	
							53	orange/tan/red loose coarse-grain sand		M	
							54				
DP	55				0.0		55				
							56	2" clay layer fine grained			
							57				
							58				
							59				
DP	60				1.4		60			M	

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: B-4	Permit Number:	Facility Identification Number:
Site Name: Stanly Assemblage	Borehole Start Date: 4/24/19 End Date:	Borehole Start Time: 0930 ☒ AM ☐ PM End Time: 1350 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: BeHS	Pavement Thickness (inches): 0"	Borehole Diameter (inches): 8" / Borehole Depth (feet): 70'
Drilling Method(s): Sonic	Apparent Borehole DTW (in feet from soil moisture content): ~60	Measured Well DTW (in feet after water recharges in well): 53.14 / OVA (list model and check type): ☐ FID ☑ PID

Disposition of Drill Cuttings [check method(s)]: ☑ Drum ☐ Spread Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☑ Well ☑ Grout ☑ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							1	Orange loose Coarse grain Sand	SP	W	
DP							2				
							3				
							4				
							5				
DP	65						6				
							7	Dark brown coarse grain sand coarse grain sand			
							8				
							9	Orange-red Clayey-Sand med, plast.	SC		
							10				
DP	70'						11	BT @ 70'			
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

BORING LOG

Boring/Well Number: DB-1	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 5/9/19 End Date:	Borehole Start Time: 1310 ☐ AM ☒ PM End Time: 1325 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: —	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 5"
Borehole Depth (feet): 3'		
Drilling Method(s): HA	Apparent Borehole DTW (in feet from soil moisture content): —	Measured Well DTW (in feet after water recharges in well): —
OVA (list model and check type): ☐ FID ☑ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☒ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
								4"-Asphalt 2"-Concrete			DB-1 0-1' 1330
HA	0-1				0.0		1	Red/brown Very Stiff Sandy-clay fine sands.	SC	D	
							2	Red/brown Stiff Sandy-clay fine sands			
HA	1-3				0.0		3				
							4	HA terminated @ 3'			
							5				
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DB-1B	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 5/9/19 End Date:	Borehole Start Time: 1240 ☐ AM ☒ PM End Time: 1255 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: —	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 5" / Borehole Depth (feet): 3'
Drilling Method(s): HA	Apparent Borehole DTW (in feet from soil moisture content): —	Measured Well DTW (in feet after water recharges in well): — / OVA (list model and check type): ☐ FID ☑ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☒ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
								4"-Asphalt 2"-Concrete			
HA	0-1				0.0		1	Red/brown Sandy-clay fine sands Very Stiff	SC	D	1:00 0-1
							2	Red/brown Sandy-clay fine sands Stiff			
HA	1-3				0.0		3				
							4	HA terminated @ 3'			
							5				
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DB-2	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 5/9/19 End Date:	Borehole Start Time: 1220 ☐ AM ☒ PM End Time: 1235 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: —	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 5"
Borehole Depth (feet): 3'		
Drilling Method(s): HA	Apparent Borehole DTW (in feet from soil moisture content): —	Measured Well DTW (in feet after water recharges in well): —
OVA (list model and check type): ☐ FID ☑ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☒ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
								4" - Asphalt 2" - Concrete			
HA	0-1				4.6		1	Red/brown Very Stiff Sandy clay fine sands	SC	D	12:40 0-1
							2	Red/brown Stiff Sandy clay fine sands			
HA	1-3				1.8		3				
							4	HA terminated @ 3'			
							5				
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DB-26	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 5/9/19 End Date:	Borehole Start Time: 1250 ☐ AM ☒ PM End Time: 1305 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: —	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 5" / Borehole Depth (feet): 3'
Drilling Method(s): HA	Apparent Borehole DTW (in feet from soil moisture content): —	Measured Well DTW (in feet after water recharges in well): — / OVA (list model and check type): ☐ FID ☒ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☒ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☒ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
								4" - Asphalt 2" - concrete			
HA	0-1				0.5		1	Red/brown sandy-clay very stiff fine sands	SC	D	1:10
							2	Red/brown sandy-clay stiff fine sands			
HA	1-3				2.5		3				
							4	HA terminated @ 3'			
							5				
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DB-3	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 5/9/19 End Date:	Borehole Start Time: 1310 ☐ AM ☒ PM End Time: 1320 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: —	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 5" Borehole Depth (feet): 3'
Drilling Method(s): HA	Apparent Borehole DTW (in feet from soil moisture content): —	Measured Well DTW (in feet after water recharges in well): — OVA (list model and check type): ☐ FID ☑ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☒ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks) 4"- Asphalt 2"- Concrete	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-1				0.0		1	Red/brown stiff ~~[illegible]~~ sandy-clay some fines	SC	D	1:23 0-1
HA	1-3				0.0		2				
							3				
							4	HA terminated @ 3'			
							5				
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DB-3b	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 5/9/19 End Date:	Borehole Start Time: 1318 ☐ AM ☒ PM End Time: 1328 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: —	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 5" Borehole Depth (feet): 3'
Drilling Method(s): HA	Apparent Borehole DTW (in feet from soil moisture content): —	Measured Well DTW (in feet after water recharges in well): — OVA (list model and check type): ☐ FID ☒ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☒ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☒ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks) 4"- Asphalt 2"- concrete	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-1				0.3		1	Red/brown very stiff sandy-clay fine sands	SC	D	13:32 0-1'
HA	1-3				0.0		2	Red/brown stiff sandy-clay fine sands			
							3				
							4	HA terminated @ 3'			
							5				
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DB-4	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: End Date: 5/9/19	Borehole Start Time: 1330 ☐ AM ☒ PM End Time: 1345 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: —	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 5"
Borehole Depth (feet): 3'		
Drilling Method(s): HA	Apparent Borehole DTW (in feet from soil moisture content): —	Measured Well DTW (in feet after water recharges in well): —
OVA (list model and check type): ☐ FID ☒ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☒ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☒ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
								4"-Asphalt 2"-Concrete			
HA	0-1				0.0		1	Red/brown sandy-clay very stiff some fines	SC	D	DB-4 0.1' 1350
HA	1-3				1.0		2	Red/brown sandy clay stiff some fines			
							3				
							4	HA terminated @ 3'			
							5				
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DB-46	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 5/9/19 End Date:	Borehole Start Time: 1320 ☐ AM ☒ PM End Time: 1335 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: —	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 5"
Borehole Depth (feet): 3'		
Drilling Method(s): HA	Apparent Borehole DTW (in feet from soil moisture content): —	Measured Well DTW (in feet after water recharges in well): —
OVA (list model and check type): ☐ FID ☑ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☒ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
								4"- Asphalt 2"- Concrete			
HA	0-1				0.0		1	Red/brown sandy-clay very stiff some fines	SC	D	13:40 0-1
HA	1-3				6.0		2	Red/brown sandy-clay very stiff some fines			
							3				
							4	HA terminated @ 3'			
							5				
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DB-~~3~~ 5	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 5/9/19 End Date:	Borehole Start Time: 1320 ☐ AM ☒ PM End Time: 1335 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: —	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 5" / Borehole Depth (feet): 3'
Drilling Method(s): HA	Apparent Borehole DTW (in feet from soil moisture content): —	Measured Well DTW (in feet after water recharges in well): — / OVA (list model and check type): ☐ FID ☑ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☒ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks) 4"- Asphalt 2"- Concrete	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-1				5.4		1	Red/brown Sandy-Clay very stiff fine Sands	SC	D	B5 0-1 1340
					0.5		2	Red/brown Sandy-Clay stiff Fine Sands			
HA	1-3						3				
							4	HA terminated @ 3'			
							5				
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DB-5b	Permit Number:	Facility Identification Number:
Site Name: Stanley Assemblage	Borehole Start Date: 5/9/19 End Date:	Borehole Start Time: 1330 ☐ AM ☒ PM End Time: 1340 ☐ AM ☒ PM
Environmental Contractor: Cardno, Inc.	Geologist's Name: A. Smithwick	Environmental Technician's Name:
Drilling Company: —	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 5"
Borehole Depth (feet): 3'		
Drilling Method(s): HA	Apparent Borehole DTW (in feet from soil moisture content): —	Measured Well DTW (in feet after water recharges in well): —
OVA (list model and check type): ☐ FID ☒ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☒ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☒ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

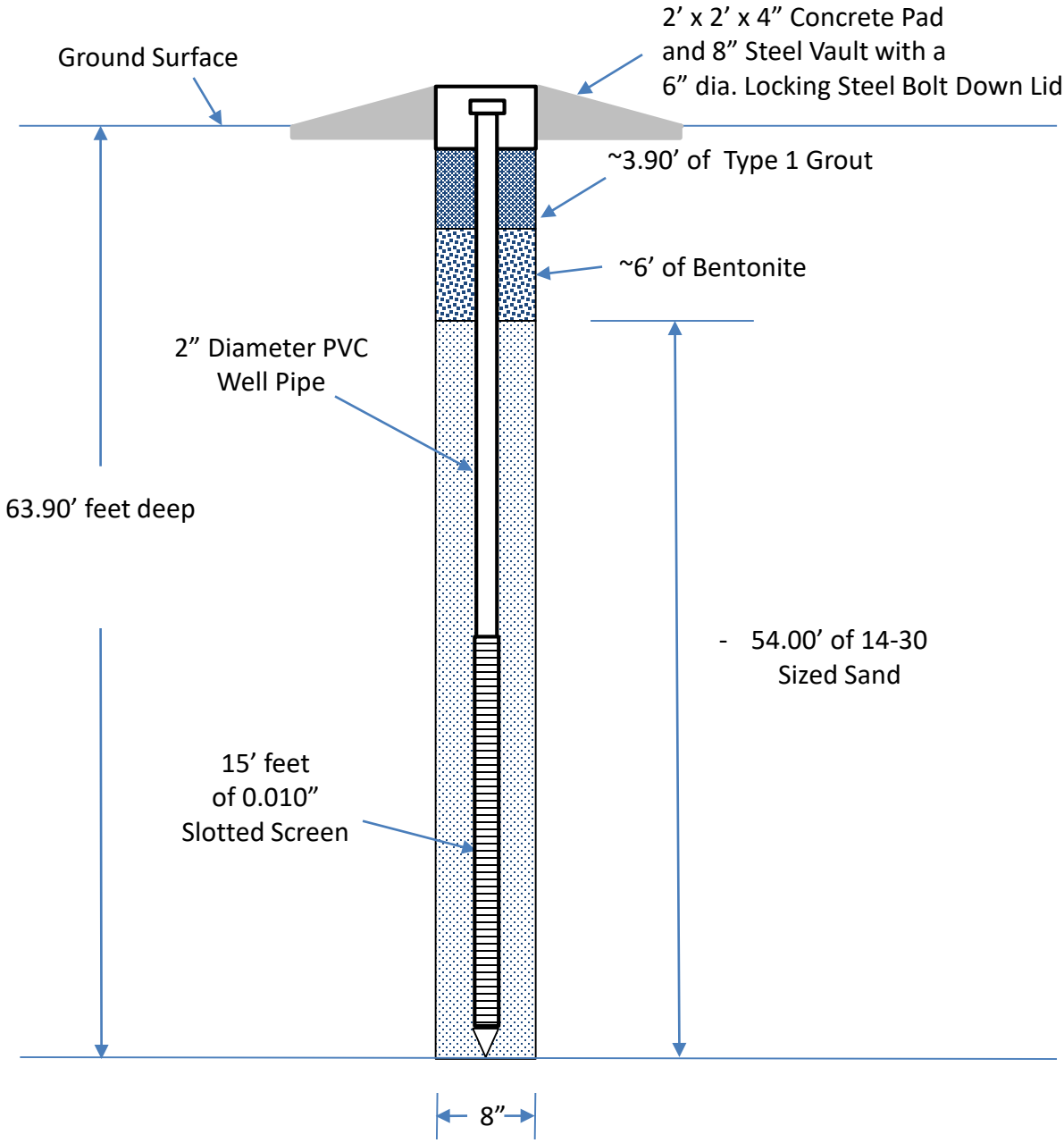
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
								4" - Asphalt 2" - Concrete			
HA	0-1				3.7		1	Red/brown very stiff sandy-clay fine sands	SC	D	B-5b 0-1 1345
HA	1-3				0.4		2	Red/brown stiff sandy-clay fine sands			
							3				
							4	HA terminated @ 3'			
							5				
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

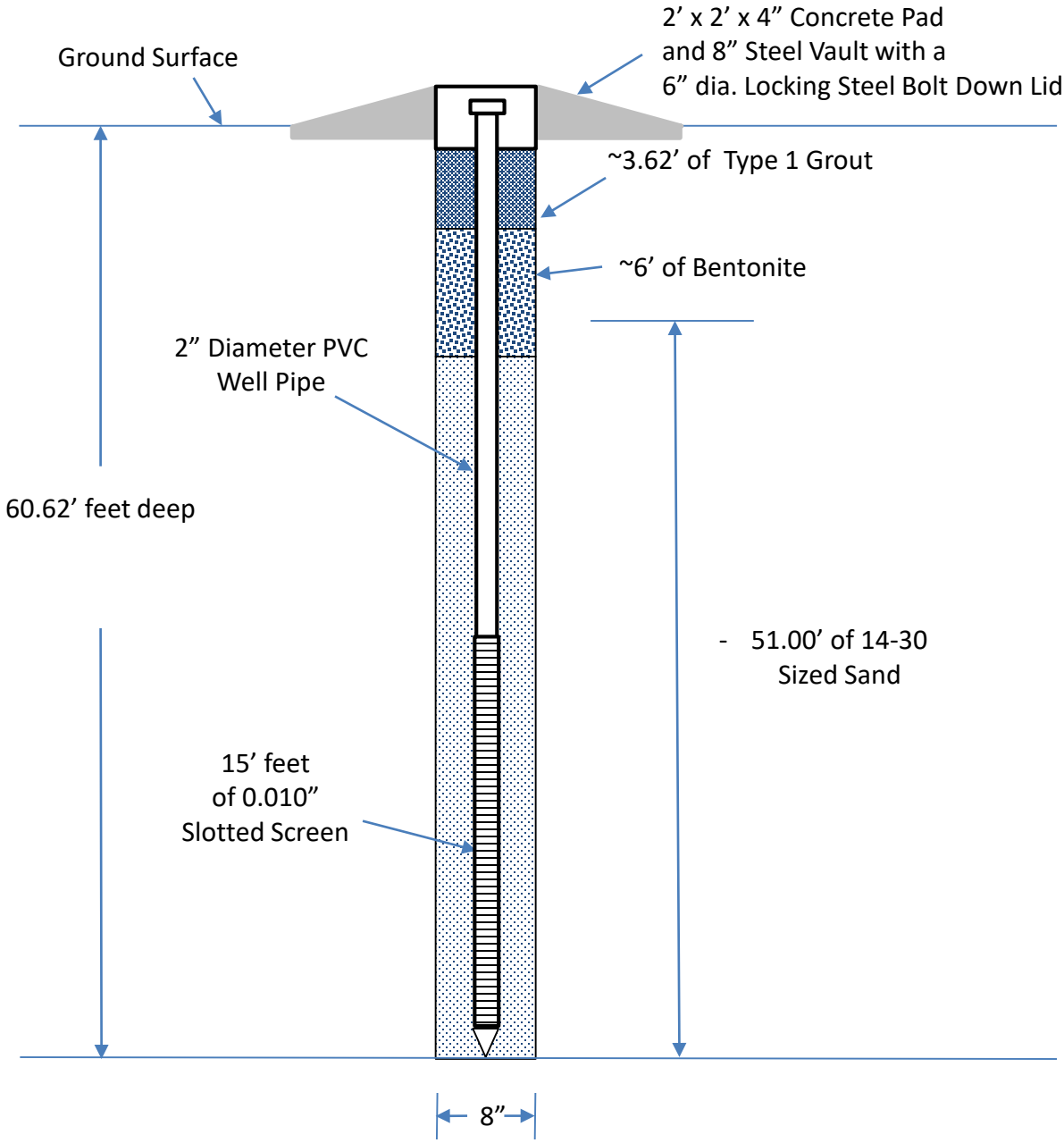
Appendix C

Monitoring Well Construction Diagrams



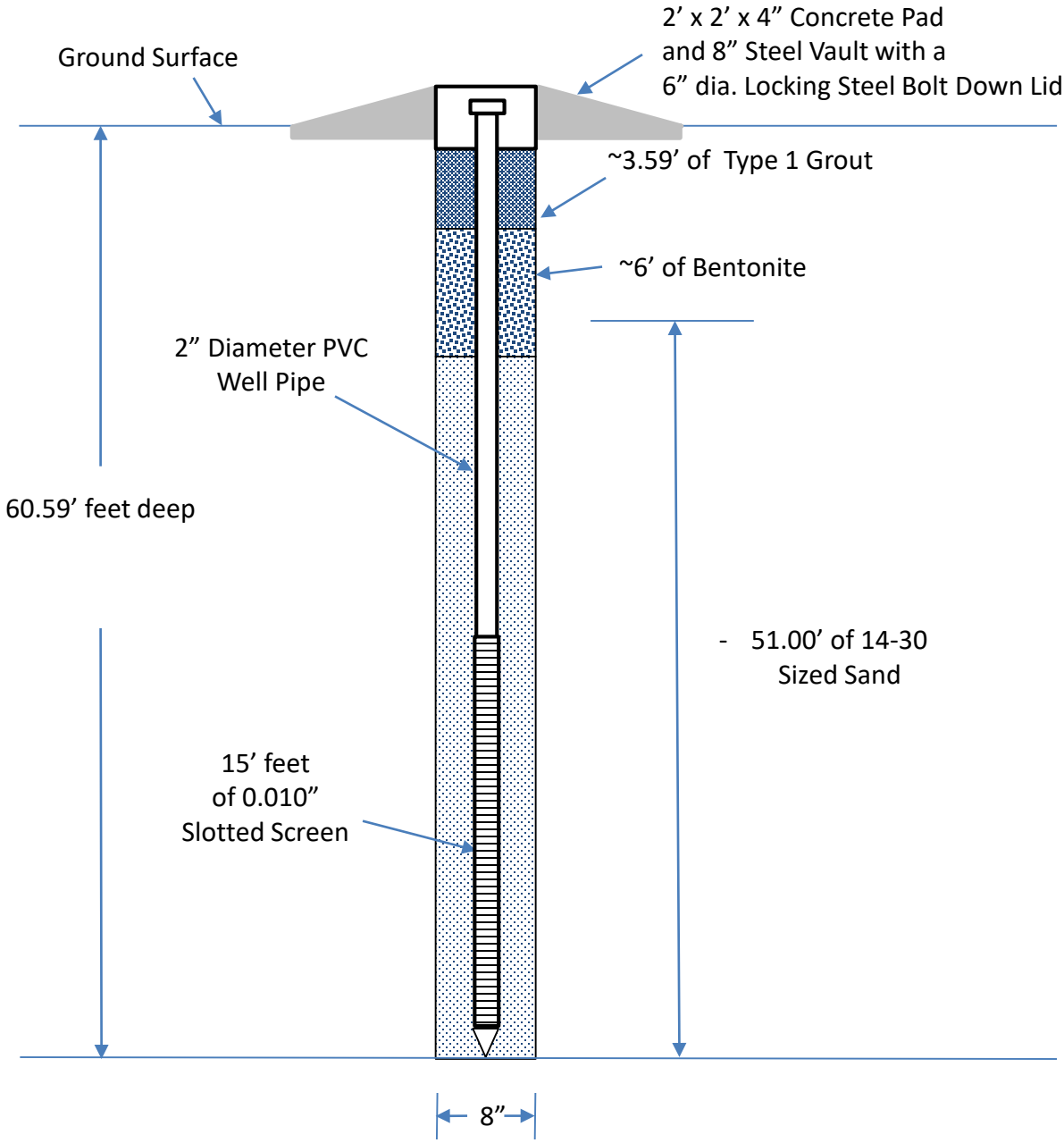
Phase II ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Appendix C
MW-1
Monitoring Well Detail



Phase II ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Appendix C
MW-2
Monitoring Well Detail



Phase II ESA
Stanley Assemblage
Perry, Houston County, Georgia
Cardno Project: 0002420000

Appendix C
MW-3
Monitoring Well Detail

Appendix D

Equipment Calibration

Certificate of Calibration

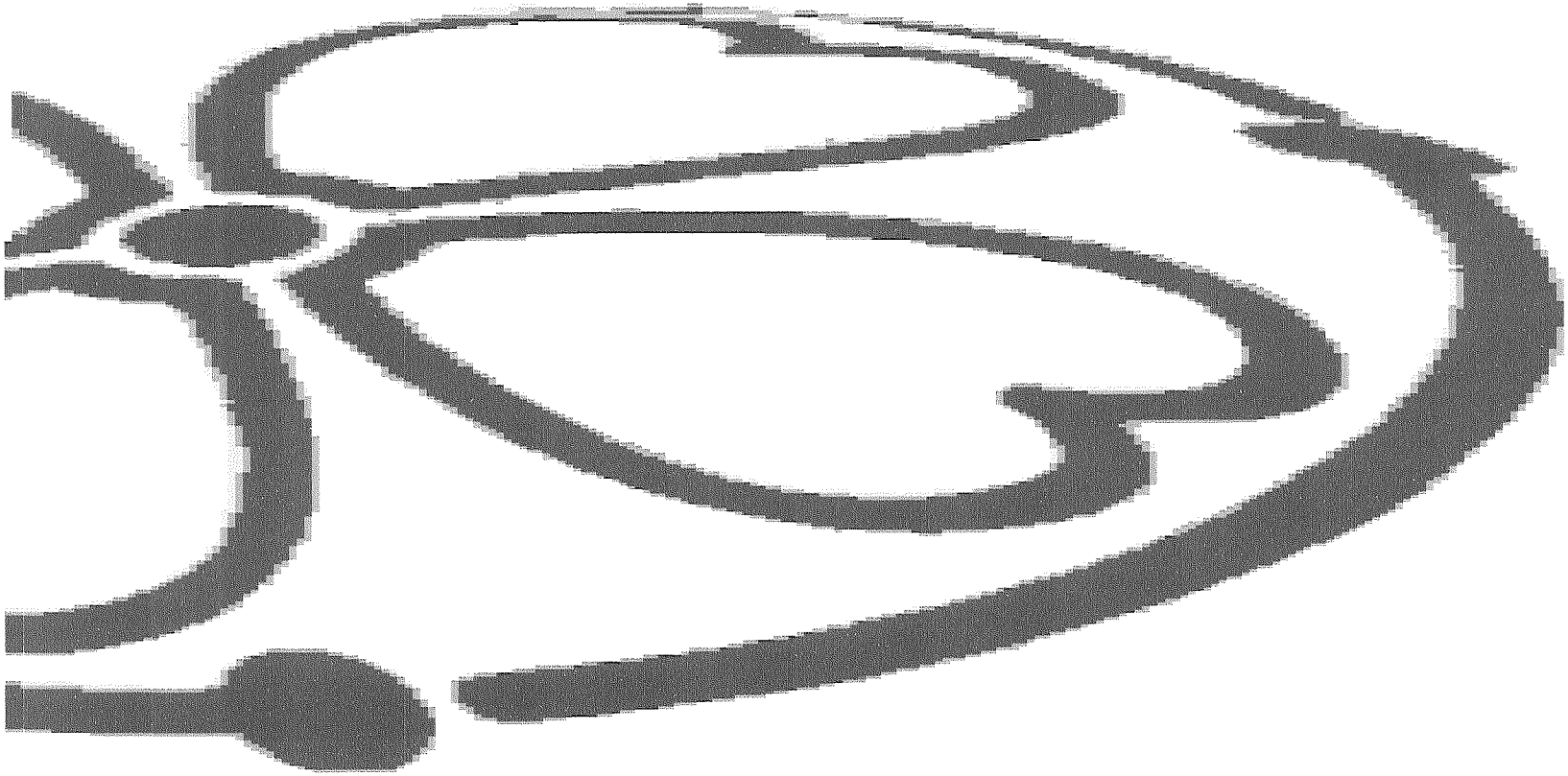
Instrument Type: **MINIRAE 3000** Serial Number: **914196**

Calibration Gas	Lot Number	Result
Isobutylene 100 ppm	**216742**	**100 ppm**

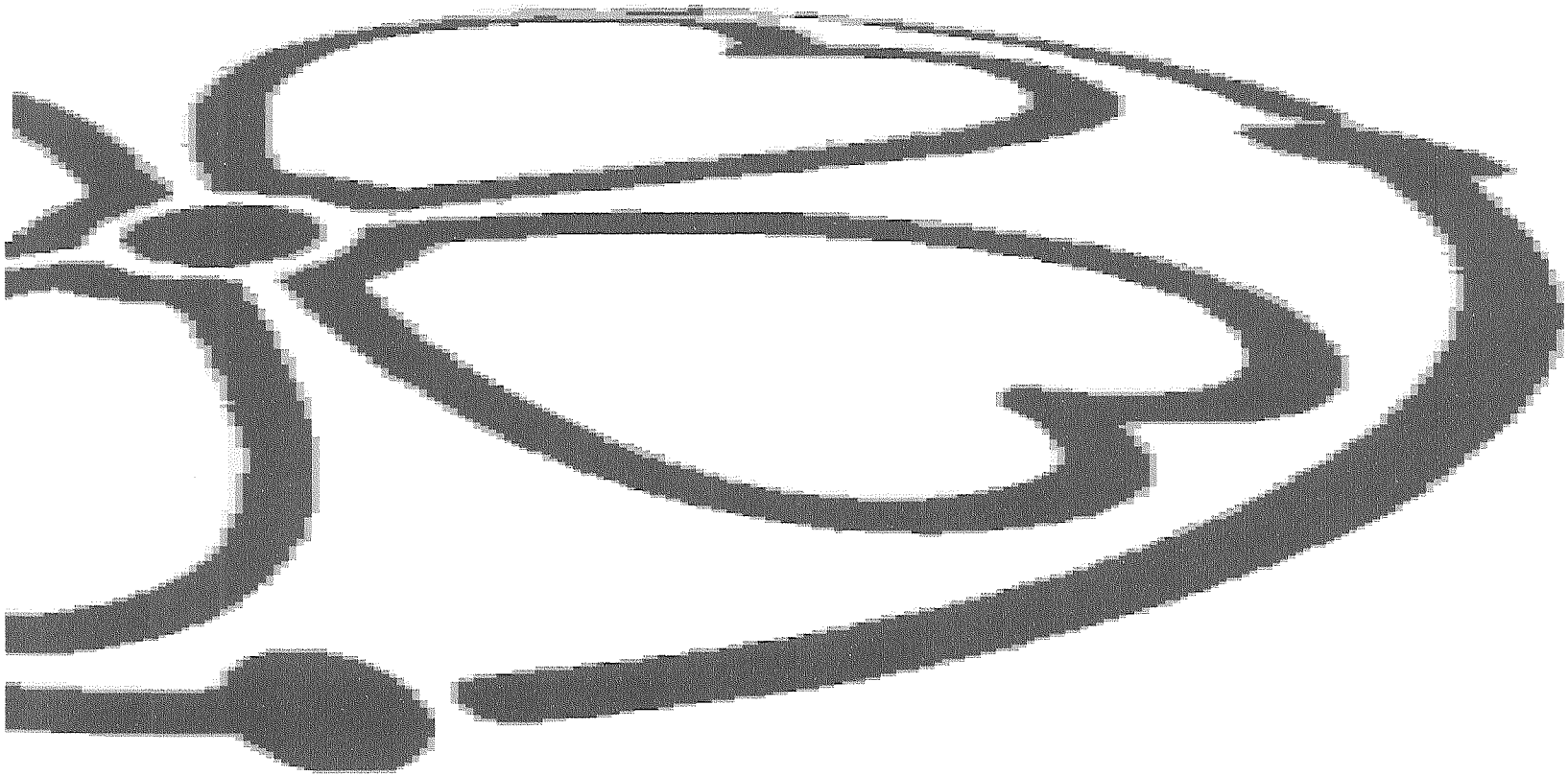
Calibrated by: _____ Calibration Date: 3/18/19

Calibration gas manufactured by Praxair, Inc.
Minor component certified +-2%.

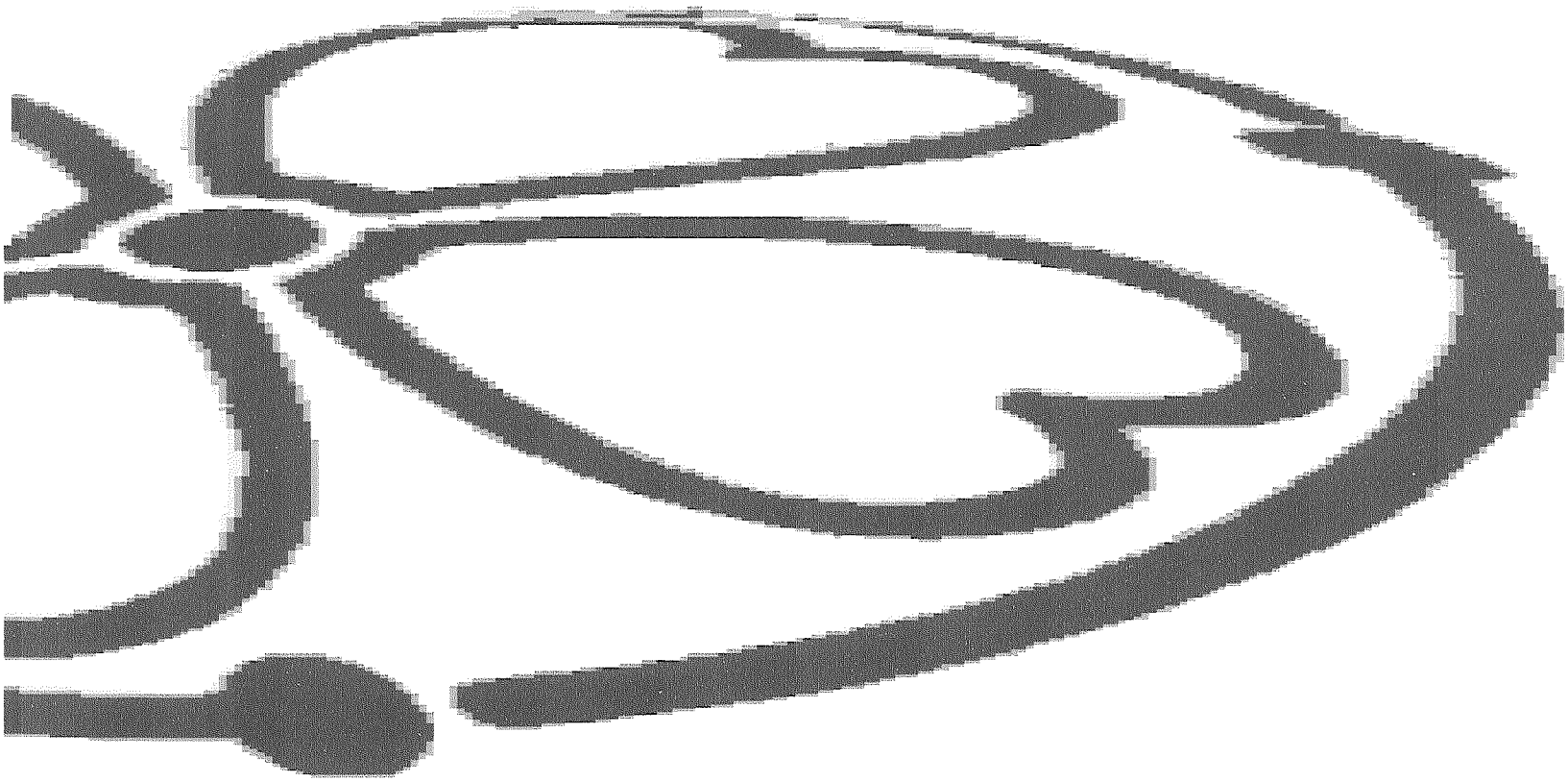
Calibration Report: pH Calibration Report
2019-05-08 08:50:22
Probe: 646777
4.00 to 7.00 pH
Slope: -55.84 mV/pH
Offset: 6.95 pH
7.00 to 10.00 pH
Slope: -50.09 mV/pH
Offset: 6.94 pH
Stability: Full



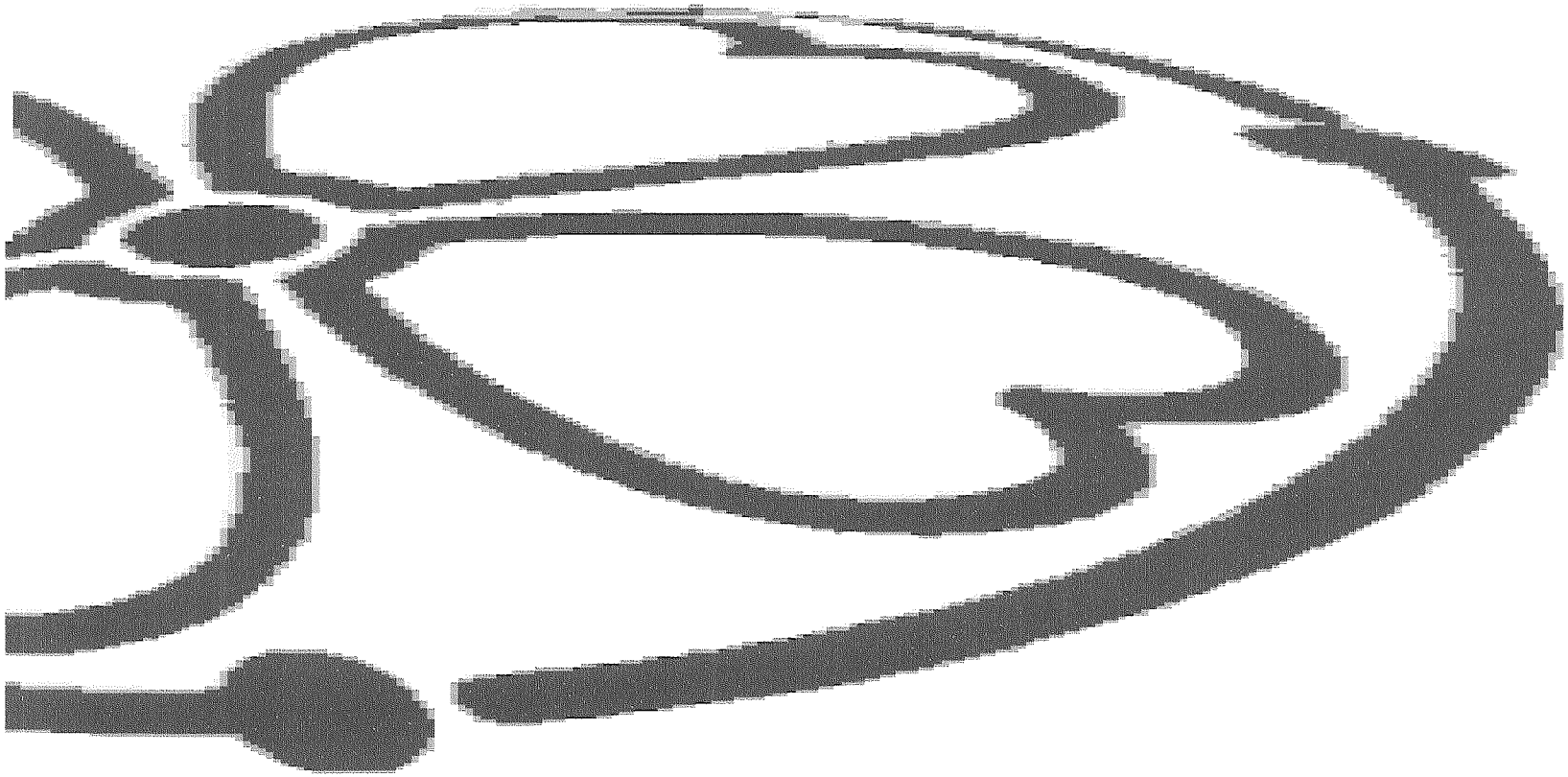
Calibration Report: Conductivity Calibration Report
2019-05-08 08:41:48
Probe: 646777
Cell Constant: 1.0709
Stability: Full



Calibration Report: ORP Calibration Report
2019-05-08 08:56:36
Probe: 646777
User Defined: 228.0 mV
Offset: 4.8 mV
Stability: Full



Calibration Report: RDO Calibration Report
2019-05-08 08:36:57
Probe: 646777
Slope: 1.0315
Offset: -0.0000
Stability: Full



Appendix E

Groundwater Sampling Logs

Cardno®
Shaping the Future
1812 Lincoln St., Suite 301, Columbia, SC 29201
Ph: 803-929-6060

GROUNDWATER SAMPLING - FIELD DATA SHEET

SITE INFORMATION

Facility Name: Stanley Assemblage
Project Number: 0002420000
Location: Perry, GA
Date Started: 5-9-19
Date Completed: 1
Sample ID #: MW-1

WELL INFORMATION

Well ID: MW-1
Casing Diameter: 2"
TOC Elev.:
Total Well Depth: 63.90
Depth to Water: 53.33
GW Elevation:

WEATHER CONDITIONS

Weather Conditions (Circle): Clear Rain Windy Cloudy Hot Cold
Air Temperature: 85°

VOLUME CALCULATIONS

Total Well Depth (TWD): 63.9 Ft.
Depth to Water (DTW): 53.3 Ft.
Water Column (WC): 10.6 Ft.
(Well Volume = WC x CF)
1 Well Volume: 1.72 Gal.
3 Well Volumes: 5.18 Gal.

Conversion Factors (WC to Gallons)
CF 2-inch = 0.163
CF 4-inch = 0.652
CF 6-inch = 1.468

FIELD MEASUREMENTS

Time:	1415	1420	1425				
Purge Volume (gallons):	1.8	1.8	1.80				
Total Volume (gallons):	1.8	3.60	5.40				
pH (s.u.):	5.60	5.54	5.52				
Conductivity (~~umhos~~ uS/cm):	67.90	64.00	61.61				
Temperature (°C):	23.41	22.71	22.36				
Turbidity (NTU):	–	64.6	12.3				
Dissolved Oxygen (mg/L):	5.15	5.50	5.61				
Depth to Water (Ft.):							

SAMPLE INFORMATION

Sampled By: MAS
Time: 14:30

Additional Comments: MW-1 DUP. 1430 SVOCs
VOCs, SVOCs, 8 RCRA metals (dissolved)

Product Name: Low-Flow System

Date: 2019-05-09 14:36:45

Project Information:		Pump Information:	
Operator Name		Pump Model/Type	
Company Name		Tubing Type	
Project Name	Stanley	Tubing Diameter	in
Site Name	Default Site	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646777		
Turbidity Make/Model		Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-1	Final Pumping Rate	0 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	63.9 ft	Calculated Sample Rate	300 sec
Screen Length	ft	Stabilization Drawdown	0 in
Depth to Water	53.3 ft	Total Volume Pumped	0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	14:14:26	300.09	23.41	5.60	67.94	--	--	5.15	106.92
Last 5	14:19:26	600.01	22.71	5.54	63.98	--	--	5.50	88.98
Last 5	14:24:26	900.00	22.36	5.52	61.61	--	--	5.61	81.37
Last 5	14:29:26	1199.99	22.27	5.50	61.06	--	--	5.68	78.66
Last 5	14:34:26	1499.99	22.31	5.50	60.71	--	--	5.78	76.86
Variance 0			-0.35	-0.02	-2.37			0.11	-7.60
Variance 1			-0.09	-0.02	-0.55			0.06	-2.71
Variance 2			0.04	-0.00	-0.35			0.10	-1.81

Notes

Grab Samples

Cardno®
Shaping the Future

1812 Lincoln St., Suite 301, Columbia, SC 29201
Ph: 803-929-6060

GROUNDWATER SAMPLING - FIELD DATA SHEET

SITE INFORMATION

Facility Name: Stanley Assemblage
Project Number: 0002420000
Location: Perry, GA
Date Started: 5-9-19
Date Completed: 1
Sample ID #: MW-2

WELL INFORMATION

Well ID: MW-2
Casing Diameter: 2"
TOC Elev.:
Total Well Depth: 60.62
Depth to Water: 54.56
GW Elevation:

WEATHER CONDITIONS

Weather Conditions (Circle): (Clear) Rain Windy Cloudy Hot Cold
Air Temperature: 90°

VOLUME CALCULATIONS

Total Well Depth (TWD): 60.62 Ft.
Depth to Water (DTW): 54.56 Ft.
Water Column (WC): 6.04 Ft.
(Well Volume = WC x CF)
1 Well Volume: 0.98 Gal.
3 Well Volumes: 2.95 Gal.

Conversion Factors (WC to Gallons)
CF 2-inch = 0.163
CF 4-inch = 0.652
CF 6-inch = 1.468

FIELD MEASUREMENTS

Time:	1510	1515	1520				
Purge Volume (gallons):	1.20	1.00	1.00				
Total Volume (gallons):	1.20	2.20	3.20				
pH (s.u.):	6.69	6.27	5.98				
Conductivity (~~umhos~~ uS/cm):	207.60	139.60	118.40				
Temperature (°C):	24.76	24.33	23.45				
Turbidity (NTU):	—	987	69	16.7			
Dissolved Oxygen (mg/L):	0.02	2.02	4.37				
Depth to Water (Ft.):							

SAMPLE INFORMATION

Sampled By: MAS
Time: 1525

Additional Comments: VOCs, SVOCs, 8 RCRA Metals (dissolved)

Product Name: Low-Flow System

Date: 2019-05-09 15:35:29

Project Information:		Pump Information:	
Operator Name		Pump Model/Type	
Company Name		Tubing Type	
Project Name	Stanley	Tubing Diameter	in
Site Name	Default Site	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646777		
Turbidity Make/Model		Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-2	Final Pumping Rate	0 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	60.62 ft	Calculated Sample Rate	300 sec
Screen Length	ft	Stabilization Drawdown	0 in
Depth to Water	54.56 ft	Total Volume Pumped	0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	15:12:43	600.01	24.33	6.27	139.64	--	--	2.02	-63.77
Last 5	15:17:43	900.00	23.45	5.98	118.44	--	--	4.37	8.11
Last 5	15:22:43	1200.00	23.21	5.76	103.98	--	--	5.20	31.75
Last 5	15:27:43	1499.99	23.11	5.70	101.17	--	--	5.39	56.34
Last 5	15:32:43	1799.98	24.19	5.57	0.46	--	--	8.70	49.23
Variance 0			-0.24	-0.22	-14.46			0.83	23.64
Variance 1			-0.10	-0.06	-2.81			0.19	24.59
Variance 2			1.07	-0.12	-100.70			3.31	-7.12

Notes

Grab Samples

Cardno®
Shaping the Future

1812 Lincoln St., Suite 301, Columbia, SC 29201
Ph: 803-929-6060

GROUNDWATER SAMPLING - FIELD DATA SHEET

SITE INFORMATION

Facility Name: Stanley Assemblage
Project Number: 0002420000
Location: Perry, GA
Date Started: 5-9-19
Date Completed: /
Sample ID #: MW-3

WELL INFORMATION

Well ID: MW-3
Casing Diameter: 2"
TOC Elev.:
Total Well Depth: 60.59
Depth to Water: 53.64
GW Elevation:

WEATHER CONDITIONS

Weather Conditions (Circle): Clear Rain Windy Cloudy Hot Cold
Air Temperature: 90°

VOLUME CALCULATIONS

Total Well Depth (TWD): 60.59 Ft.
Depth to Water (DTW): 53.64 Ft.
Water Column (WC): 6.95 Ft.
(Well Volume = WC x CF)
1 Well Volume: 1.13 Gal.
3 Well Volumes: 3.39 Gal.

Conversion Factors (WC to Gallons)
CF 2-inch = 0.163
CF 4-inch = 0.652
CF 6-inch = 1.468

FIELD MEASUREMENTS

Time:	1555	1600	1605				
Purge Volume (gallons):	1.50	1.50	1.50				
Total Volume (gallons):	1.50	3.00	4.50				
pH (s.u.):	6.16	5.99	5.91				
Conductivity (~~umhos~~ uS/cm):	84.90	69.90	63.30				
Temperature (°C):	23.34	22.72	22.42				
Turbidity (NTU):	52.3	32.90	14.6				
Dissolved Oxygen (mg/L):	2.48	3.49	3.87				
Depth to Water (Ft.):							

SAMPLE INFORMATION

Sampled By: WAS
Time: 1610

Additional Comments: (VOCs, SVOCs, 8 RCRA metals (dissolved))

Product Name: Low-Flow System

Date: 2019-05-09 16:10:00

Project Information:		Pump Information:	
Operator Name		Pump Model/Type	
Company Name		Tubing Type	
Project Name	Stanley	Tubing Diameter	in
Site Name	Default Site	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646777		
Turbidity Make/Model		Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-3	Final Pumping Rate	0 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	60.59 ft	Calculated Sample Rate	300 sec
Screen Length	ft	Stabilization Drawdown	0 in
Depth to Water	53.64 ft	Total Volume Pumped	0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	15:50:55	300.02	23.34	6.16	84.93	--	--	2.48	16.23
Last 5	15:55:55	600.01	22.72	5.99	69.94	--	--	3.49	17.99
Last 5	16:00:55	900.01	22.42	5.91	63.28	--	--	3.87	14.15
Last 5	16:05:55	1200.00	22.27	5.86	61.74	--	--	4.13	8.70
Last 5									
Variance 0			-0.62	-0.18	-15.00			1.01	1.76
Variance 1			-0.30	-0.08	-6.65			0.38	-3.83
Variance 2			-0.15	-0.04	-1.55			0.26	-5.46

Notes

Grab Samples

Appendix F

Laboratory Analytical Reports

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

AES

May 03, 2019

William Smithwick
Cardno

2000 First Drive Suite 220
Marietta GA 30062

RE: 0002420000 Stanley Assemblage

Dear William Smithwick: Order No: 1904S72

Analytical Environmental Services, Inc. received 6 samples on 4/26/2019 2:12:00 PM
for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/18-06/30/19.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/18-06/30/19 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Metals and PCM Asbestos), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/19.
These results relate only to the items tested as received. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Ioana Pacurar

Ioana Pacurar

Project Manager

3080 Presidential Drive • Atlanta, Georgia 30340 • Tel: 770.457.8177 • Fax: 770.457.8188 • Toll Free: 800.972.4889
www.aesatlanta.com

ANALYTICAL ENVIRONMENTAL SERVICES, INC.
3080 Presidential Drive Atlanta, GA 30340-3704
Phone: (770) 457-8177 / Toll-Free: (800) 972-4889 / Fax: (770) 457-8188

AES

CHAIN OF CUSTODY

Work Order: 1904522

Date: 4/26/19 Page 1 of 1

COMPANY: Cardno, Inc.

ADDRESS: 2000 First Dr. Suite 230 Marietta, GA 30062

PHONE: 229-224-0164

EMAIL: william.smithwick@cardno.com

SAMPLED BY: A. Smithwick

SIGNATURE: A. Smithwick

ANALYSIS REQUESTED: VOC, SVOC, 8 RCRA

PRESERVATION (see codes): S/M+I

Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.

#	SAMPLE ID	SAMPLED: DATE	SAMPLED: TIME	GRAB	COMPOSITE	MATRIX (see codes)	VOC	SVOC	8 RCRA	REMARKS	Number of Containers
1	B-1 0'-2'	4/24/19	1710	X		SO	X	X	X		6
2	B-1 35'	↓	1720	↓	↓	↓	↓	↓	↓		6
3	B-2 30'	4/25/19	1510	↓	↓	↓	↓	↓	↓		6
4	B-2 MS/MSD	↓	1520	↓	↓	↓			X		1
5	B-3 14'-16'	↓	1130	↓	↓	↓	X	X	X		6
6	B-4 10'-12'	4/24/19	1050	↓	↓	↓	↓	↓	↓		6
7	B-4 50'	↓	1340	↓	↓	↓	↓	↓	↓		6
8											
9											
10											
11											
12											
13											
14											

RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. A. Smithwick	4/26/19	1. [signature]	4-26 1250
2. [signature]	4-26 2:12	2. [signature]	4-26-19 1412
3.		3.	

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT: / / VIA:
IN: / / VIA:
client FedEx UPS US mail courier
other: _____

PROJECT INFORMATION
PROJECT NAME: 0002420000 Stanley Assemblage
PROJECT #: 0002420000
SITE ADDRESS: 1109 Macon Rd. Perry, GA
SEND REPORT TO: william.smithwick@cardno.com
INVOICE TO (IF DIFFERENT FROM ABOVE):
QUOTE #: _____ PO#: _____

RECEIPT
Total # of Containers: 37

Turnaround Time (TAT) Request
- [x] Standard
- [ ] 2 Business Day Rush
- [ ] Next Business Day Rush
- [ ] Same-Day Rush (auth req.)
- [ ] Other _____

STATE PROGRAM (if any): _____
E-mail? ☐ Fax? ☐
DATA PACKAGE: I ○ II ○ III ○ IV ○

Submission of samples to the laboratory constitutes acceptance of AES's Terms & Conditions. Client assumes sole responsibility for damage or loss of samples before we accept them. Samples received after 3PM or on Saturday are considered as received the following business day. If no TAT is marked on COC, AES will proceed with standard TAT. Samples are disposed of 30 days after completion of report unless other arrangements are made.

Matrix Codes: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water ST=Stormwater WW = Waste Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify)

Preservative Codes: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

7.11.18_CO

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc

Date: 3-May-19

Client: Cardno
Project: 0002420000 Stanley Assemblage
Lab ID: 1904S72

Case Narrative

Volatiles Organic Compounds Analysis by Method 8260D:

Acetone value for sample 1904S72-002A is "E" qualified indicating an estimated value over linear calibration range. Sample was diluted and reanalyzed using the supplied methanol preserved sample at the minimum dilution allowed resulting in analytes being below reporting limits.

Due to sample matrix, sample 1904S72-004A required dilution during preparation and/or analysis resulting in elevated reporting limits.

Percent recovery for the internal standard compound 1,4-Dichlorobenzene-d4 on sample 1904S72-005A was outside control limits biased low due to suspected matrix interference. All other internal standard recoveries were within control limits.

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-1 0'-2'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 5:10:00 PM
Lab ID:	1904S72-001	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TOTAL MERCURY SW7471B					**(SW7471B)**			
Mercury	BRL	0.110		mg/Kg-dry	278561	1	05/03/2019 13:39	CD
TCL-SEMIVOLATILE ORGANICS SW8270E					**(SW3550C)**			
1,1´-Biphenyl	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2,4,5-Trichlorophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2,4,6-Trichlorophenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2,4-Dichlorophenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2,4-Dimethylphenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2,4-Dinitrophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2,4-Dinitrotoluene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2,6-Dinitrotoluene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2-Chloronaphthalene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2-Chlorophenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2-Methylnaphthalene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2-Methylphenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2-Nitroaniline	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
2-Nitrophenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
3,3´-Dichlorobenzidine	BRL	0.76		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
3-Nitroaniline	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
4,6-Dinitro-2-methylphenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
4-Bromophenyl phenyl ether	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
4-Chloro-3-methylphenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
4-Chloroaniline	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
4-Chlorophenyl phenyl ether	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
4-Methylphenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
4-Nitroaniline	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
4-Nitrophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Acetophenone	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Atrazine	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Benzaldehyde	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Bis(2-chloroethoxy)methane	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Bis(2-chloroethyl)ether	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Bis(2-chloroisopropyl)ether	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Bis(2-ethylhexyl)phthalate	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Butyl benzyl phthalate	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Caprolactam	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Carbazole	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Di-n-butyl phthalate	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Di-n-octyl phthalate	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Dibenzofuran	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Diethyl phthalate	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-1 0'-2'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 5:10:00 PM
Lab ID:	1904S72-001	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3550C)**				
Dimethyl phthalate	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Hexachlorobenzene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Hexachlorobutadiene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Hexachlorocyclopentadiene	BRL	0.74		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Hexachloroethane	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Isophorone	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
N-Nitrosodi-n-propylamine	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
N-Nitrosodiphenylamine	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Nitrobenzene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Pentachlorophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Phenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 20:06	YH
Surr: 2,4,6-Tribromophenol	65.4	45.6-120		%REC	278286	1	04/30/2019 20:06	YH
Surr: 2-Fluorobiphenyl	64.8	51.4-120		%REC	278286	1	04/30/2019 20:06	YH
Surr: 2-Fluorophenol	50.6	40.9-120		%REC	278286	1	04/30/2019 20:06	YH
Surr: 4-Terphenyl-d14	70.8	52.2-129		%REC	278286	1	04/30/2019 20:06	YH
Surr: Nitrobenzene-d5	59.1	40-120		%REC	278286	1	04/30/2019 20:06	YH
Surr: Phenol-d5	56.9	45-120		%REC	278286	1	04/30/2019 20:06	YH
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
1,1,2,2-Tetrachloroethane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
1,1,2-Trichloroethane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
1,1-Dichloroethane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
1,1-Dichloroethene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
1,2,4-Trichlorobenzene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
1,2-Dibromo-3-chloropropane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
1,2-Dibromoethane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
1,2-Dichlorobenzene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
1,2-Dichloroethane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
1,2-Dichloropropane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
1,3-Dichlorobenzene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
1,4-Dichlorobenzene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
2-Butanone	BRL	0.036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
2-Hexanone	BRL	0.0072		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
4-Methyl-2-pentanone	BRL	0.0072		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Acetone	BRL	0.072		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Benzene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Bromodichloromethane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Bromoform	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Bromomethane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Carbon disulfide	BRL	0.0072		mg/Kg-dry	278386	1	04/29/2019 14:15	AR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-1 0'-2'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 5:10:00 PM
Lab ID:	1904S72-001	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Carbon tetrachloride	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Chlorobenzene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Chloroethane	BRL	0.0072		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Chloroform	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Chloromethane	BRL	0.0072		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
cis-1,2-Dichloroethene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
cis-1,3-Dichloropropene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Cyclohexane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Dibromochloromethane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Dichlorodifluoromethane	BRL	0.0072		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Ethylbenzene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Freon-113	BRL	0.0072		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Isopropylbenzene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
m,p-Xylene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Methyl acetate	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Methyl tert-butyl ether	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Methylcyclohexane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Methylene chloride	BRL	0.014		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
o-Xylene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Styrene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Tetrachloroethene	0.11	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Toluene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
trans-1,2-Dichloroethene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
trans-1,3-Dichloropropene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Trichloroethene	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Trichlorofluoromethane	BRL	0.0036		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Vinyl chloride	BRL	0.0072		mg/Kg-dry	278386	1	04/29/2019 14:15	AR
Surr: 4-Bromofluorobenzene	86.7	65.1-125		%REC	278386	1	04/29/2019 14:15	AR
Surr: Dibromofluoromethane	95.8	77.7-123		%REC	278386	1	04/29/2019 14:15	AR
Surr: Toluene-d8	96.5	83.2-120		%REC	278386	1	04/29/2019 14:15	AR
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**				
1-Methylnaphthalene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
2-Methylnaphthalene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Acenaphthene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Acenaphthylene	BRL	0.037		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Anthracene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Benz(a)anthracene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Benzo(a)pyrene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Benzo(b)fluoranthene	BRL	0.0037		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Benzo(g,h,i)perylene	BRL	0.0037		mg/Kg-dry	278411	1	05/01/2019 18:09	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-May-19

Client:	Cardno	**Client Sample ID:**	B-1 0'-2'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 5:10:00 PM
Lab ID:	1904S72-001	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**				
Benzo(k)fluoranthene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Chrysene	0.0019	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Dibenz(a,h)anthracene	BRL	0.0037		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Fluoranthene	0.0058	0.0037		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Fluorene	BRL	0.0037		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Indeno(1,2,3-cd)pyrene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Naphthalene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Phenanthrene	0.0029	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Pyrene	0.0041	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:09	YH
Surr: 4-Terphenyl-d14	68.9	57.3-136		%REC	278411	1	05/01/2019 18:09	YH
Metals by ICP/MS SW6020B				**(SW3050B)**				
Arsenic	3.85	0.45		mg/Kg-dry	278300	5	05/01/2019 02:39	KT
Barium	33.7	1.88		mg/Kg-dry	278300	5	05/01/2019 02:39	KT
Cadmium	BRL	0.38		mg/Kg-dry	278300	5	05/01/2019 02:39	KT
Chromium	7.58	0.75		mg/Kg-dry	278300	5	05/01/2019 02:39	KT
Lead	7.74	0.38		mg/Kg-dry	278300	5	05/01/2019 02:39	KT
Selenium	BRL	1.88		mg/Kg-dry	278300	5	05/01/2019 02:39	KT
Silver	BRL	0.19		mg/Kg-dry	278300	5	05/01/2019 02:39	KT
PERCENT MOISTURE D2216								
Percent Moisture	11.3	0		wt%	R397132	1	05/01/2019 13:45	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-1 35'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 5:20:00 PM
Lab ID:	1904S72-002	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TOTAL MERCURY SW7471B				**(SW7471B)**				
Mercury	BRL	0.102		mg/Kg-dry	278561	1	05/03/2019 13:42	CD
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3550C)**				
1,1´-Biphenyl	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2,4,5-Trichlorophenol	BRL	1.8		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2,4,6-Trichlorophenol	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2,4-Dichlorophenol	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2,4-Dimethylphenol	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2,4-Dinitrophenol	BRL	1.8		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2,4-Dinitrotoluene	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2,6-Dinitrotoluene	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2-Chloronaphthalene	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2-Chlorophenol	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2-Methylnaphthalene	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2-Methylphenol	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2-Nitroaniline	BRL	1.8		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
2-Nitrophenol	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
3,3´-Dichlorobenzidine	BRL	0.71		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
3-Nitroaniline	BRL	1.8		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
4,6-Dinitro-2-methylphenol	BRL	1.8		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
4-Bromophenyl phenyl ether	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
4-Chloro-3-methylphenol	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
4-Chloroaniline	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
4-Chlorophenyl phenyl ether	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
4-Methylphenol	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
4-Nitroaniline	BRL	1.8		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
4-Nitrophenol	BRL	1.8		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Acetophenone	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Atrazine	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Benzaldehyde	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Bis(2-chloroethoxy)methane	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Bis(2-chloroethyl)ether	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Bis(2-chloroisopropyl)ether	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Bis(2-ethylhexyl)phthalate	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Butyl benzyl phthalate	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Caprolactam	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Carbazole	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Di-n-butyl phthalate	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Di-n-octyl phthalate	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Dibenzofuran	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Diethyl phthalate	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-1 35'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 5:20:00 PM
Lab ID:	1904S72-002	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3550C)**				
Dimethyl phthalate	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Hexachlorobenzene	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Hexachlorobutadiene	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Hexachlorocyclopentadiene	BRL	0.70		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Hexachloroethane	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Isophorone	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
N-Nitrosodi-n-propylamine	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
N-Nitrosodiphenylamine	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Nitrobenzene	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Pentachlorophenol	BRL	1.8		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Phenol	BRL	0.35		mg/Kg-dry	278286	1	04/30/2019 20:34	YH
Surr: 2,4,6-Tribromophenol	52.4	45.6-120		%REC	278286	1	04/30/2019 20:34	YH
Surr: 2-Fluorobiphenyl	54.7	51.4-120		%REC	278286	1	04/30/2019 20:34	YH
Surr: 2-Fluorophenol	45.4	40.9-120		%REC	278286	1	04/30/2019 20:34	YH
Surr: 4-Terphenyl-d14	56.7	52.2-129		%REC	278286	1	04/30/2019 20:34	YH
Surr: Nitrobenzene-d5	52.8	40-120		%REC	278286	1	04/30/2019 20:34	YH
Surr: Phenol-d5	47.2	45-120		%REC	278286	1	04/30/2019 20:34	YH
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
1,1,2,2-Tetrachloroethane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
1,1,2-Trichloroethane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
1,1-Dichloroethane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
1,1-Dichloroethene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
1,2,4-Trichlorobenzene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
1,2-Dibromo-3-chloropropane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
1,2-Dibromoethane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
1,2-Dichlorobenzene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
1,2-Dichloroethane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
1,2-Dichloropropane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
1,3-Dichlorobenzene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
1,4-Dichlorobenzene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
2-Butanone	0.13	0.037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
2-Hexanone	0.012	0.0073		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
4-Methyl-2-pentanone	BRL	0.0073		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Acetone	0.40	0.073	E	mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Benzene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Bromodichloromethane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Bromoform	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Bromomethane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Carbon disulfide	BRL	0.0073		mg/Kg-dry	278386	1	04/29/2019 17:10	AR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-1 35'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 5:20:00 PM
Lab ID:	1904S72-002	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Carbon tetrachloride	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Chlorobenzene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Chloroethane	BRL	0.0073		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Chloroform	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Chloromethane	BRL	0.0073		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
cis-1,2-Dichloroethene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
cis-1,3-Dichloropropene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Cyclohexane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Dibromochloromethane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Dichlorodifluoromethane	BRL	0.0073		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Ethylbenzene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Freon-113	BRL	0.0073		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Isopropylbenzene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
m,p-Xylene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Methyl acetate	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Methyl tert-butyl ether	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Methylcyclohexane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Methylene chloride	BRL	0.015		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
o-Xylene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Styrene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Tetrachloroethene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Toluene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
trans-1,2-Dichloroethene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
trans-1,3-Dichloropropene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Trichloroethene	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Trichlorofluoromethane	BRL	0.0037		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Vinyl chloride	BRL	0.0073		mg/Kg-dry	278386	1	04/29/2019 17:10	AR
Surr: 4-Bromofluorobenzene	109	65.1-125		%REC	278386	1	04/29/2019 17:10	AR
Surr: Dibromofluoromethane	98	77.7-123		%REC	278386	1	04/29/2019 17:10	AR
Surr: Toluene-d8	97.5	83.2-120		%REC	278386	1	04/29/2019 17:10	AR
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**				
1-Methylnaphthalene	BRL	0.018		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
2-Methylnaphthalene	BRL	0.018		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Acenaphthene	BRL	0.018		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Acenaphthylene	BRL	0.035		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Anthracene	0.0049	0.0018		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Benz(a)anthracene	BRL	0.0018		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Benzo(a)pyrene	BRL	0.0018		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Benzo(b)fluoranthene	BRL	0.0035		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Benzo(g,h,i)perylene	BRL	0.0035		mg/Kg-dry	278411	1	05/01/2019 18:34	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-May-19

Client:	Cardno	**Client Sample ID:**	B-1 35'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 5:20:00 PM
Lab ID:	1904S72-002	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**				
Benzo(k)fluoranthene	BRL	0.0018		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Chrysene	BRL	0.0018		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Dibenz(a,h)anthracene	BRL	0.0035		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Fluoranthene	BRL	0.0035		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Fluorene	0.022	0.0035		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Indeno(1,2,3-cd)pyrene	BRL	0.0018		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Naphthalene	BRL	0.018		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Phenanthrene	0.017	0.0018		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Pyrene	0.0073	0.0018		mg/Kg-dry	278411	1	05/01/2019 18:34	YH
Surr: 4-Terphenyl-d14	80.2	57.3-136		%REC	278411	1	05/01/2019 18:34	YH
Metals by ICP/MS SW6020B				**(SW3050B)**				
Arsenic	BRL	0.54		mg/Kg-dry	278300	5	05/01/2019 02:43	KT
Barium	BRL	2.26		mg/Kg-dry	278300	5	05/01/2019 02:43	KT
Cadmium	BRL	0.45		mg/Kg-dry	278300	5	05/01/2019 02:43	KT
Chromium	2.32	0.90		mg/Kg-dry	278300	5	05/01/2019 02:43	KT
Lead	0.55	0.45		mg/Kg-dry	278300	5	05/01/2019 02:43	KT
Selenium	BRL	2.26		mg/Kg-dry	278300	5	05/01/2019 02:43	KT
Silver	BRL	0.23		mg/Kg-dry	278300	5	05/01/2019 02:43	KT
PERCENT MOISTURE D2216								
Percent Moisture	5.05	0		wt%	R397132	1	05/01/2019 13:45	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-2 30'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/25/2019 3:10:00 PM
Lab ID:	1904S72-003	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TOTAL MERCURY SW7471B					**(SW7471B)**			
Mercury	BRL	0.110		mg/Kg-dry	278561	1	05/03/2019 13:29	CD
TCL-SEMIVOLATILE ORGANICS SW8270E					**(SW3550C)**			
1,1´-Biphenyl	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2,4,5-Trichlorophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2,4,6-Trichlorophenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2,4-Dichlorophenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2,4-Dimethylphenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2,4-Dinitrophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2,4-Dinitrotoluene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2,6-Dinitrotoluene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2-Chloronaphthalene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2-Chlorophenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2-Methylnaphthalene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2-Methylphenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2-Nitroaniline	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
2-Nitrophenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
3,3´-Dichlorobenzidine	BRL	0.74		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
3-Nitroaniline	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
4,6-Dinitro-2-methylphenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
4-Bromophenyl phenyl ether	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
4-Chloro-3-methylphenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
4-Chloroaniline	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
4-Chlorophenyl phenyl ether	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
4-Methylphenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
4-Nitroaniline	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
4-Nitrophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Acetophenone	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Atrazine	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Benzaldehyde	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Bis(2-chloroethoxy)methane	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Bis(2-chloroethyl)ether	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Bis(2-chloroisopropyl)ether	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Bis(2-ethylhexyl)phthalate	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Butyl benzyl phthalate	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Caprolactam	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Carbazole	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Di-n-butyl phthalate	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Di-n-octyl phthalate	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Dibenzofuran	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Diethyl phthalate	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-2 30'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/25/2019 3:10:00 PM
Lab ID:	1904S72-003	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3550C)**				
Dimethyl phthalate	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Hexachlorobenzene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Hexachlorobutadiene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Hexachlorocyclopentadiene	BRL	0.73		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Hexachloroethane	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Isophorone	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
N-Nitrosodi-n-propylamine	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
N-Nitrosodiphenylamine	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Nitrobenzene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Pentachlorophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Phenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 21:04	YH
Surr: 2,4,6-Tribromophenol	61.8	45.6-120		%REC	278286	1	04/30/2019 21:04	YH
Surr: 2-Fluorobiphenyl	64.7	51.4-120		%REC	278286	1	04/30/2019 21:04	YH
Surr: 2-Fluorophenol	57.2	40.9-120		%REC	278286	1	04/30/2019 21:04	YH
Surr: 4-Terphenyl-d14	64.3	52.2-129		%REC	278286	1	04/30/2019 21:04	YH
Surr: Nitrobenzene-d5	60.7	40-120		%REC	278286	1	04/30/2019 21:04	YH
Surr: Phenol-d5	59	45-120		%REC	278286	1	04/30/2019 21:04	YH
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
1,1,2,2-Tetrachloroethane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
1,1,2-Trichloroethane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
1,1-Dichloroethane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
1,1-Dichloroethene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
1,2,4-Trichlorobenzene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
1,2-Dibromo-3-chloropropane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
1,2-Dibromoethane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
1,2-Dichlorobenzene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
1,2-Dichloroethane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
1,2-Dichloropropane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
1,3-Dichlorobenzene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
1,4-Dichlorobenzene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
2-Butanone	BRL	0.038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
2-Hexanone	BRL	0.0076		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
4-Methyl-2-pentanone	BRL	0.0076		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Acetone	BRL	0.076		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Benzene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Bromodichloromethane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Bromoform	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Bromomethane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Carbon disulfide	BRL	0.0076		mg/Kg-dry	278386	1	04/29/2019 14:42	AR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-2 30'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/25/2019 3:10:00 PM
Lab ID:	1904S72-003	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Carbon tetrachloride	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Chlorobenzene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Chloroethane	BRL	0.0076		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Chloroform	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Chloromethane	BRL	0.0076		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
cis-1,2-Dichloroethene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
cis-1,3-Dichloropropene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Cyclohexane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Dibromochloromethane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Dichlorodifluoromethane	BRL	0.0076		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Ethylbenzene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Freon-113	BRL	0.0076		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Isopropylbenzene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
m,p-Xylene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Methyl acetate	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Methyl tert-butyl ether	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Methylcyclohexane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Methylene chloride	BRL	0.015		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
o-Xylene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Styrene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Tetrachloroethene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Toluene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
trans-1,2-Dichloroethene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
trans-1,3-Dichloropropene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Trichloroethene	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Trichlorofluoromethane	BRL	0.0038		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Vinyl chloride	BRL	0.0076		mg/Kg-dry	278386	1	04/29/2019 14:42	AR
Surr: 4-Bromofluorobenzene	95.1	65.1-125		%REC	278386	1	04/29/2019 14:42	AR
Surr: Dibromofluoromethane	102	77.7-123		%REC	278386	1	04/29/2019 14:42	AR
Surr: Toluene-d8	98.5	83.2-120		%REC	278386	1	04/29/2019 14:42	AR
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**				
1-Methylnaphthalene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
2-Methylnaphthalene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Acenaphthene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Acenaphthylene	BRL	0.036		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Anthracene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Benz(a)anthracene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Benzo(a)pyrene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Benzo(b)fluoranthene	BRL	0.0036		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Benzo(g,h,i)perylene	BRL	0.0036		mg/Kg-dry	278411	1	05/01/2019 18:59	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-2 30'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/25/2019 3:10:00 PM
Lab ID:	1904S72-003	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**				
Benzo(k)fluoranthene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Chrysene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Dibenz(a,h)anthracene	BRL	0.0036		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Fluoranthene	BRL	0.0036		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Fluorene	BRL	0.0036		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Indeno(1,2,3-cd)pyrene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Naphthalene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Phenanthrene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Pyrene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 18:59	YH
Surr: 4-Terphenyl-d14	82.5	57.3-136		%REC	278411	1	05/01/2019 18:59	YH
Metals by ICP/MS SW6020B				**(SW3050B)**				
Arsenic	BRL	0.59		mg/Kg-dry	278300	5	05/01/2019 02:19	KT
Barium	BRL	2.47		mg/Kg-dry	278300	5	05/01/2019 02:19	KT
Cadmium	BRL	0.49		mg/Kg-dry	278300	5	05/01/2019 02:19	KT
Chromium	1.84	0.99		mg/Kg-dry	278300	5	05/01/2019 02:19	KT
Lead	1.47	0.49		mg/Kg-dry	278300	5	05/01/2019 02:19	KT
Selenium	BRL	2.47		mg/Kg-dry	278300	5	05/01/2019 02:19	KT
Silver	BRL	0.25		mg/Kg-dry	278300	5	05/01/2019 02:19	KT
PERCENT MOISTURE D2216								
Percent Moisture	8.98	0		wt%	R397132	1	05/01/2019 13:45	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-3 14'-16'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/25/2019 11:30:00 AM
Lab ID:	1904S72-004	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TOTAL MERCURY SW7471B					**(SW7471B)**			
Mercury	BRL	0.116		mg/Kg-dry	278561	1	05/03/2019 13:46	CD
TCL-SEMIVOLATILE ORGANICS SW8270E					**(SW3550C)**			
1,1´-Biphenyl	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2,4,5-Trichlorophenol	BRL	2.0		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2,4,6-Trichlorophenol	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2,4-Dichlorophenol	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2,4-Dimethylphenol	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2,4-Dinitrophenol	BRL	2.0		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2,4-Dinitrotoluene	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2,6-Dinitrotoluene	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2-Chloronaphthalene	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2-Chlorophenol	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2-Methylnaphthalene	4.1	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2-Methylphenol	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2-Nitroaniline	BRL	2.0		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
2-Nitrophenol	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
3,3´-Dichlorobenzidine	BRL	0.77		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
3-Nitroaniline	BRL	2.0		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
4,6-Dinitro-2-methylphenol	BRL	2.0		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
4-Bromophenyl phenyl ether	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
4-Chloro-3-methylphenol	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
4-Chloroaniline	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
4-Chlorophenyl phenyl ether	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
4-Methylphenol	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
4-Nitroaniline	BRL	2.0		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
4-Nitrophenol	BRL	2.0		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Acetophenone	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Atrazine	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Benzaldehyde	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Bis(2-chloroethoxy)methane	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Bis(2-chloroethyl)ether	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Bis(2-chloroisopropyl)ether	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Bis(2-ethylhexyl)phthalate	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Butyl benzyl phthalate	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Caprolactam	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Carbazole	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Di-n-butyl phthalate	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Di-n-octyl phthalate	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Dibenzofuran	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Diethyl phthalate	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-3 14'-16'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/25/2019 11:30:00 AM
Lab ID:	1904S72-004	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3550C)**				
Dimethyl phthalate	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Hexachlorobenzene	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Hexachlorobutadiene	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Hexachlorocyclopentadiene	BRL	0.76		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Hexachloroethane	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Isophorone	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
N-Nitrosodi-n-propylamine	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
N-Nitrosodiphenylamine	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Nitrobenzene	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Pentachlorophenol	BRL	2.0		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Phenol	BRL	0.38		mg/Kg-dry	278286	1	04/30/2019 21:35	YH
Surr: 2,4,6-Tribromophenol	76.6	45.6-120		%REC	278286	1	04/30/2019 21:35	YH
Surr: 2-Fluorobiphenyl	77.6	51.4-120		%REC	278286	1	04/30/2019 21:35	YH
Surr: 2-Fluorophenol	71.6	40.9-120		%REC	278286	1	04/30/2019 21:35	YH
Surr: 4-Terphenyl-d14	76.9	52.2-129		%REC	278286	1	04/30/2019 21:35	YH
Surr: Nitrobenzene-d5	98.6	40-120		%REC	278286	1	04/30/2019 21:35	YH
Surr: Phenol-d5	123	45-120	S	%REC	278286	1	04/30/2019 21:35	YH
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
1,1,2,2-Tetrachloroethane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
1,1,2-Trichloroethane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
1,1-Dichloroethane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
1,1-Dichloroethene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
1,2,4-Trichlorobenzene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
1,2-Dibromo-3-chloropropane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
1,2-Dibromoethane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
1,2-Dichlorobenzene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
1,2-Dichloroethane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
1,2-Dichloropropane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
1,3-Dichlorobenzene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
1,4-Dichlorobenzene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
2-Butanone	BRL	18		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
2-Hexanone	BRL	3.5		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
4-Methyl-2-pentanone	BRL	3.5		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Acetone	BRL	35		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Benzene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Bromodichloromethane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Bromoform	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Bromomethane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Carbon disulfide	BRL	3.5		mg/Kg-dry	278252	500	04/29/2019 19:36	JB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-3 14'-16'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/25/2019 11:30:00 AM
Lab ID:	1904S72-004	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Carbon tetrachloride	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Chlorobenzene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Chloroethane	BRL	3.5		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Chloroform	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Chloromethane	BRL	3.5		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
cis-1,2-Dichloroethene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
cis-1,3-Dichloropropene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Cyclohexane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Dibromochloromethane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Dichlorodifluoromethane	BRL	3.5		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Ethylbenzene	3.3	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Freon-113	BRL	3.5		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Isopropylbenzene	2.6	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
m,p-Xylene	18	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Methyl acetate	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Methyl tert-butyl ether	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Methylcyclohexane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Methylene chloride	BRL	7.0		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
o-Xylene	5.7	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Styrene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Tetrachloroethene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Toluene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
trans-1,2-Dichloroethene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
trans-1,3-Dichloropropene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Trichloroethene	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Trichlorofluoromethane	BRL	1.8		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Vinyl chloride	BRL	3.5		mg/Kg-dry	278252	500	04/29/2019 19:36	JB
Surr: 4-Bromofluorobenzene	116	65.1-125		%REC	278252	500	04/29/2019 19:36	JB
Surr: Dibromofluoromethane	75.7	77.7-123	S	%REC	278252	500	04/29/2019 19:36	JB
Surr: Toluene-d8	104	83.2-120		%REC	278252	500	04/29/2019 19:36	JB
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**				
1-Methylnaphthalene	2.6	0.20		mg/Kg-dry	278411	10	05/02/2019 12:02	YH
2-Methylnaphthalene	5.3	2.0		mg/Kg-dry	278411	100	05/02/2019 11:36	YH
Acenaphthene	BRL	0.020		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Acenaphthylene	BRL	0.038		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Anthracene	BRL	0.0020		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Benz(a)anthracene	BRL	0.0020		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Benzo(a)pyrene	BRL	0.0020		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Benzo(b)fluoranthene	BRL	0.0038		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Benzo(g,h,i)perylene	BRL	0.0038		mg/Kg-dry	278411	1	05/01/2019 19:25	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-May-19

Client:	Cardno	**Client Sample ID:**	B-3 14'-16'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/25/2019 11:30:00 AM
Lab ID:	1904S72-004	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**				
Benzo(k)fluoranthene	BRL	0.0020		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Chrysene	BRL	0.0020		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Dibenz(a,h)anthracene	BRL	0.0038		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Fluoranthene	BRL	0.0038		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Fluorene	0.0081	0.0038		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Indeno(1,2,3-cd)pyrene	BRL	0.0020		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Naphthalene	11	2.0		mg/Kg-dry	278411	100	05/02/2019 11:36	YH
Phenanthrene	0.0052	0.0020		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Pyrene	0.0034	0.0020		mg/Kg-dry	278411	1	05/01/2019 19:25	YH
Surr: 4-Terphenyl-d14	86.1	57.3-136		%REC	278411	1	05/01/2019 19:25	YH
Metals by ICP/MS SW6020B				**(SW3050B)**				
Arsenic	BRL	0.50		mg/Kg-dry	278300	5	05/01/2019 02:56	KT
Barium	BRL	2.08		mg/Kg-dry	278300	5	05/01/2019 02:56	KT
Cadmium	BRL	0.42		mg/Kg-dry	278300	5	05/01/2019 02:56	KT
Chromium	4.75	0.83		mg/Kg-dry	278300	5	05/01/2019 02:56	KT
Lead	2.23	0.42		mg/Kg-dry	278300	5	05/01/2019 02:56	KT
Selenium	BRL	2.08		mg/Kg-dry	278300	5	05/01/2019 02:56	KT
Silver	BRL	0.21		mg/Kg-dry	278300	5	05/01/2019 02:56	KT
PERCENT MOISTURE D2216								
Percent Moisture	13.3	0		wt%	R397132	1	05/01/2019 13:45	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-4 10'-12'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 10:50:00 AM
Lab ID:	1904S72-005	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TOTAL MERCURY SW7471B				**(SW7471B)**				
Mercury	BRL	0.108		mg/Kg-dry	278561	1	05/03/2019 13:49	CD
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3550C)**				
1,1´-Biphenyl	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2,4,5-Trichlorophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2,4,6-Trichlorophenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2,4-Dichlorophenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2,4-Dimethylphenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2,4-Dinitrophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2,4-Dinitrotoluene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2,6-Dinitrotoluene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2-Chloronaphthalene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2-Chlorophenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2-Methylnaphthalene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2-Methylphenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2-Nitroaniline	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
2-Nitrophenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
3,3´-Dichlorobenzidine	BRL	0.75		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
3-Nitroaniline	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
4,6-Dinitro-2-methylphenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
4-Bromophenyl phenyl ether	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
4-Chloro-3-methylphenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
4-Chloroaniline	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
4-Chlorophenyl phenyl ether	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
4-Methylphenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
4-Nitroaniline	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
4-Nitrophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Acetophenone	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Atrazine	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Benzaldehyde	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Bis(2-chloroethoxy)methane	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Bis(2-chloroethyl)ether	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Bis(2-chloroisopropyl)ether	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Bis(2-ethylhexyl)phthalate	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Butyl benzyl phthalate	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Caprolactam	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Carbazole	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Di-n-butyl phthalate	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Di-n-octyl phthalate	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Dibenzofuran	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Diethyl phthalate	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-4 10'-12'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 10:50:00 AM
Lab ID:	1904S72-005	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3550C)**				
Dimethyl phthalate	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Hexachlorobenzene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Hexachlorobutadiene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Hexachlorocyclopentadiene	BRL	0.74		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Hexachloroethane	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Isophorone	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
N-Nitrosodi-n-propylamine	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
N-Nitrosodiphenylamine	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Nitrobenzene	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Pentachlorophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Phenol	BRL	0.37		mg/Kg-dry	278286	1	04/30/2019 22:04	YH
Surr: 2,4,6-Tribromophenol	76.4	45.6-120		%REC	278286	1	04/30/2019 22:04	YH
Surr: 2-Fluorobiphenyl	75.6	51.4-120		%REC	278286	1	04/30/2019 22:04	YH
Surr: 2-Fluorophenol	61.3	40.9-120		%REC	278286	1	04/30/2019 22:04	YH
Surr: 4-Terphenyl-d14	80	52.2-129		%REC	278286	1	04/30/2019 22:04	YH
Surr: Nitrobenzene-d5	67.2	40-120		%REC	278286	1	04/30/2019 22:04	YH
Surr: Phenol-d5	65.8	45-120		%REC	278286	1	04/30/2019 22:04	YH
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
1,1,2,2-Tetrachloroethane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
1,1,2-Trichloroethane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
1,1-Dichloroethane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
1,1-Dichloroethene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
1,2,4-Trichlorobenzene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
1,2-Dibromo-3-chloropropane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
1,2-Dibromoethane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
1,2-Dichlorobenzene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
1,2-Dichloroethane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
1,2-Dichloropropane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
1,3-Dichlorobenzene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
1,4-Dichlorobenzene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
2-Butanone	BRL	0.032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
2-Hexanone	BRL	0.0064		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
4-Methyl-2-pentanone	BRL	0.0064		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Acetone	BRL	0.064		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Benzene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Bromodichloromethane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Bromoform	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Bromomethane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Carbon disulfide	BRL	0.0064		mg/Kg-dry	278386	1	04/29/2019 15:05	AR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-4 10'-12'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 10:50:00 AM
Lab ID:	1904S72-005	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Carbon tetrachloride	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Chlorobenzene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Chloroethane	BRL	0.0064		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Chloroform	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Chloromethane	BRL	0.0064		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
cis-1,2-Dichloroethene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
cis-1,3-Dichloropropene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Cyclohexane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Dibromochloromethane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Dichlorodifluoromethane	BRL	0.0064		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Ethylbenzene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Freon-113	BRL	0.0064		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Isopropylbenzene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
m,p-Xylene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Methyl acetate	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Methyl tert-butyl ether	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Methylcyclohexane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Methylene chloride	BRL	0.013		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
o-Xylene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Styrene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Tetrachloroethene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Toluene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
trans-1,2-Dichloroethene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
trans-1,3-Dichloropropene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Trichloroethene	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Trichlorofluoromethane	BRL	0.0032		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Vinyl chloride	BRL	0.0064		mg/Kg-dry	278386	1	04/29/2019 15:05	AR
Surr: 4-Bromofluorobenzene	73.9	65.1-125		%REC	278386	1	04/29/2019 15:05	AR
Surr: Dibromofluoromethane	102	77.7-123		%REC	278386	1	04/29/2019 15:05	AR
Surr: Toluene-d8	96.3	83.2-120		%REC	278386	1	04/29/2019 15:05	AR
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**				
1-Methylnaphthalene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
2-Methylnaphthalene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Acenaphthene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Acenaphthylene	BRL	0.037		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Anthracene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Benz(a)anthracene	0.0029	0.0019		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Benzo(a)pyrene	0.0036	0.0019		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Benzo(b)fluoranthene	0.0078	0.0037		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Benzo(g,h,i)perylene	0.0042	0.0037		mg/Kg-dry	278411	1	05/01/2019 19:51	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-May-19

Client:	Cardno	**Client Sample ID:**	B-4 10'-12'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 10:50:00 AM
Lab ID:	1904S72-005	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**				
Benzo(k)fluoranthene	0.0034	0.0019		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Chrysene	0.0045	0.0019		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Dibenz(a,h)anthracene	BRL	0.0037		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Fluoranthene	0.0067	0.0037		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Fluorene	BRL	0.0037		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Indeno(1,2,3-cd)pyrene	0.0032	0.0019		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Naphthalene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Phenanthrene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Pyrene	0.0060	0.0019		mg/Kg-dry	278411	1	05/01/2019 19:51	YH
Surr: 4-Terphenyl-d14	75.2	57.3-136		%REC	278411	1	05/01/2019 19:51	YH
Metals by ICP/MS SW6020B				**(SW3050B)**				
Arsenic	3.41	0.55		mg/Kg-dry	278300	5	05/01/2019 03:00	KT
Barium	27.8	2.27		mg/Kg-dry	278300	5	05/01/2019 03:00	KT
Cadmium	BRL	0.46		mg/Kg-dry	278300	5	05/01/2019 03:00	KT
Chromium	23.0	0.91		mg/Kg-dry	278300	5	05/01/2019 03:00	KT
Lead	9.57	0.46		mg/Kg-dry	278300	5	05/01/2019 03:00	KT
Selenium	BRL	2.27		mg/Kg-dry	278300	5	05/01/2019 03:00	KT
Silver	BRL	0.23		mg/Kg-dry	278300	5	05/01/2019 03:00	KT
PERCENT MOISTURE D2216								
Percent Moisture	10.3	0		wt%	R397132	1	05/01/2019 13:45	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-4 50'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 1:40:00 PM
Lab ID:	1904S72-006	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TOTAL MERCURY SW7471B					**(SW7471B)**			
Mercury	BRL	0.108		mg/Kg-dry	278561	1	05/03/2019 13:52	CD
TCL-SEMIVOLATILE ORGANICS SW8270E					**(SW3550C)**			
1,1´-Biphenyl	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2,4,5-Trichlorophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2,4,6-Trichlorophenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2,4-Dichlorophenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2,4-Dimethylphenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2,4-Dinitrophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2,4-Dinitrotoluene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2,6-Dinitrotoluene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2-Chloronaphthalene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2-Chlorophenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2-Methylnaphthalene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2-Methylphenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2-Nitroaniline	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
2-Nitrophenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
3,3´-Dichlorobenzidine	BRL	0.73		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
3-Nitroaniline	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
4,6-Dinitro-2-methylphenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
4-Bromophenyl phenyl ether	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
4-Chloro-3-methylphenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
4-Chloroaniline	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
4-Chlorophenyl phenyl ether	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
4-Methylphenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
4-Nitroaniline	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
4-Nitrophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Acetophenone	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Atrazine	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Benzaldehyde	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Bis(2-chloroethoxy)methane	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Bis(2-chloroethyl)ether	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Bis(2-chloroisopropyl)ether	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Bis(2-ethylhexyl)phthalate	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Butyl benzyl phthalate	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Caprolactam	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Carbazole	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Di-n-butyl phthalate	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Di-n-octyl phthalate	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Dibenzofuran	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Diethyl phthalate	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-4 50'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 1:40:00 PM
Lab ID:	1904S72-006	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3550C)**				
Dimethyl phthalate	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Hexachlorobenzene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Hexachlorobutadiene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Hexachlorocyclopentadiene	BRL	0.72		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Hexachloroethane	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Isophorone	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
N-Nitrosodi-n-propylamine	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
N-Nitrosodiphenylamine	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Nitrobenzene	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Pentachlorophenol	BRL	1.9		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Phenol	BRL	0.36		mg/Kg-dry	278286	1	04/30/2019 22:34	YH
Surr: 2,4,6-Tribromophenol	66.2	45.6-120		%REC	278286	1	04/30/2019 22:34	YH
Surr: 2-Fluorobiphenyl	71.5	51.4-120		%REC	278286	1	04/30/2019 22:34	YH
Surr: 2-Fluorophenol	62.7	40.9-120		%REC	278286	1	04/30/2019 22:34	YH
Surr: 4-Terphenyl-d14	70	52.2-129		%REC	278286	1	04/30/2019 22:34	YH
Surr: Nitrobenzene-d5	70.1	40-120		%REC	278286	1	04/30/2019 22:34	YH
Surr: Phenol-d5	65.3	45-120		%REC	278286	1	04/30/2019 22:34	YH
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
1,1,2,2-Tetrachloroethane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
1,1,2-Trichloroethane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
1,1-Dichloroethane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
1,1-Dichloroethene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
1,2,4-Trichlorobenzene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
1,2-Dibromo-3-chloropropane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
1,2-Dibromoethane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
1,2-Dichlorobenzene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
1,2-Dichloroethane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
1,2-Dichloropropane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
1,3-Dichlorobenzene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
1,4-Dichlorobenzene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
2-Butanone	BRL	0.040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
2-Hexanone	BRL	0.0081		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
4-Methyl-2-pentanone	BRL	0.0081		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Acetone	BRL	0.081		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Benzene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Bromodichloromethane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Bromoform	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Bromomethane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Carbon disulfide	BRL	0.0081		mg/Kg-dry	278386	1	04/29/2019 15:31	AR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-4 50'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 1:40:00 PM
Lab ID:	1904S72-006	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Carbon tetrachloride	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Chlorobenzene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Chloroethane	BRL	0.0081		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Chloroform	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Chloromethane	BRL	0.0081		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
cis-1,2-Dichloroethene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
cis-1,3-Dichloropropene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Cyclohexane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Dibromochloromethane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Dichlorodifluoromethane	BRL	0.0081		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Ethylbenzene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Freon-113	BRL	0.0081		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Isopropylbenzene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
m,p-Xylene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Methyl acetate	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Methyl tert-butyl ether	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Methylcyclohexane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Methylene chloride	BRL	0.016		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
o-Xylene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Styrene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Tetrachloroethene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Toluene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
trans-1,2-Dichloroethene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
trans-1,3-Dichloropropene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Trichloroethene	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Trichlorofluoromethane	BRL	0.0040		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Vinyl chloride	BRL	0.0081		mg/Kg-dry	278386	1	04/29/2019 15:31	AR
Surr: 4-Bromofluorobenzene	92.9	65.1-125		%REC	278386	1	04/29/2019 15:31	AR
Surr: Dibromofluoromethane	96.8	77.7-123		%REC	278386	1	04/29/2019 15:31	AR
Surr: Toluene-d8	98.9	83.2-120		%REC	278386	1	04/29/2019 15:31	AR
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**				
1-Methylnaphthalene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
2-Methylnaphthalene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Acenaphthene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Acenaphthylene	BRL	0.036		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Anthracene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Benz(a)anthracene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Benzo(a)pyrene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Benzo(b)fluoranthene	BRL	0.0036		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Benzo(g,h,i)perylene	BRL	0.0036		mg/Kg-dry	278411	1	05/01/2019 20:17	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 3-May-19

Client:	Cardno	**Client Sample ID:**	B-4 50'
Project Name	0002420000 Stanley Assemblage	**Collection Date:**	4/24/2019 1:40:00 PM
Lab ID:	1904S72-006	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**				
Benzo(k)fluoranthene	0.0030	0.0019		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Chrysene	0.0030	0.0019		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Dibenz(a,h)anthracene	BRL	0.0036		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Fluoranthene	BRL	0.0036		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Fluorene	BRL	0.0036		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Indeno(1,2,3-cd)pyrene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Naphthalene	BRL	0.019		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Phenanthrene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Pyrene	BRL	0.0019		mg/Kg-dry	278411	1	05/01/2019 20:17	YH
Surr: 4-Terphenyl-d14	76.8	57.3-136		%REC	278411	1	05/01/2019 20:17	YH
Metals by ICP/MS SW6020B				**(SW3050B)**				
Arsenic	BRL	0.58		mg/Kg-dry	278300	5	05/01/2019 03:03	KT
Barium	BRL	2.40		mg/Kg-dry	278300	5	05/01/2019 03:03	KT
Cadmium	BRL	0.48		mg/Kg-dry	278300	5	05/01/2019 03:03	KT
Chromium	1.15	0.96		mg/Kg-dry	278300	5	05/01/2019 03:03	KT
Lead	0.51	0.48		mg/Kg-dry	278300	5	05/01/2019 03:03	KT
Selenium	BRL	2.40		mg/Kg-dry	278300	5	05/01/2019 03:03	KT
Silver	BRL	0.24		mg/Kg-dry	278300	5	05/01/2019 03:03	KT
PERCENT MOISTURE D2216								
Percent Moisture	8.37	0		wt%	R397132	1	05/01/2019 13:45	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-May-19

SUMMARY OF ANALYTES DETECTED

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	Dilution
Client Sample ID: B-1 0'-2'				**Lab ID:** 1904S72-001			
Collection Date: 4/24/2019 5:10:00 PM				**Matrix:** Soil			
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
Tetrachloroethene	0.11		0.0011	0.0036	mg/Kg-dry	278386	1
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**			
Chrysene	0.0019		0.0017	0.0019	mg/Kg-dry	278411	1
Fluoranthene	0.0058		0.0012	0.0037	mg/Kg-dry	278411	1
Phenanthrene	0.0029		0.00066	0.0019	mg/Kg-dry	278411	1
Pyrene	0.0041		0.0015	0.0019	mg/Kg-dry	278411	1
Metals by ICP/MS SW6020B				**(SW3050B)**			
Arsenic	3.85		0.182	0.45	mg/Kg-dry	278300	5
Barium	33.7		0.0193	1.88	mg/Kg-dry	278300	5
Chromium	7.58		0.174	0.75	mg/Kg-dry	278300	5
Lead	7.74		0.0353	0.38	mg/Kg-dry	278300	5
PERCENT MOISTURE D2216							
Percent Moisture	11.3		0	0	wt%	R397132	1
Client Sample ID: B-1 35'				**Lab ID:** 1904S72-002			
Collection Date: 4/24/2019 5:20:00 PM				**Matrix:** Soil			
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
2-Butanone	0.13		0.0045	0.037	mg/Kg-dry	278386	1
2-Hexanone	0.012		0.0028	0.0073	mg/Kg-dry	278386	1
Acetone	0.40	E	0.0037	0.073	mg/Kg-dry	278386	1
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**			
Anthracene	0.0049		0.00039	0.0018	mg/Kg-dry	278411	1
Fluorene	0.022		0.00052	0.0035	mg/Kg-dry	278411	1
Phenanthrene	0.017		0.00061	0.0018	mg/Kg-dry	278411	1
Pyrene	0.0073		0.0014	0.0018	mg/Kg-dry	278411	1
Metals by ICP/MS SW6020B				**(SW3050B)**			
Chromium	2.32		0.209	0.90	mg/Kg-dry	278300	5
Lead	0.55		0.0424	0.45	mg/Kg-dry	278300	5
PERCENT MOISTURE D2216							
Percent Moisture	5.05		0	0	wt%	R397132	1
Client Sample ID: B-2 30'				**Lab ID:** 1904S72-003			
Collection Date: 4/25/2019 3:10:00 PM				**Matrix:** Soil			
Metals by ICP/MS SW6020B				**(SW3050B)**			
Chromium	1.84		0.228	0.99	mg/Kg-dry	278300	5
Lead	1.47		0.0463	0.49	mg/Kg-dry	278300	5
PERCENT MOISTURE D2216							
Percent Moisture	8.98		0	0	wt%	R397132	1
Client Sample ID: B-3 14'-16'				**Lab ID:** 1904S72-004			
Collection Date: 4/25/2019 11:30:00 AM				**Matrix:** Soil			
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3550C)**			
2-Methylnaphthalene	4.1		0.036	0.38	mg/Kg-dry	278286	1
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
Ethylbenzene	3.3		0.18	1.8	mg/Kg-dry	278252	500

Analytical Environmental Services, Inc

Date: 3-May-19

SUMMARY OF ANALYTES DETECTED

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	Dilution
Client Sample ID: B-3 14'-16'				**Lab ID:** 1904S72-004			
Collection Date: 4/25/2019 11:30:00 AM				**Matrix:** Soil			
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
Isopropylbenzene	2.6		0.49	1.8	mg/Kg-dry	278252	500
m,p-Xylene	18		0.33	1.8	mg/Kg-dry	278252	500
o-Xylene	5.7		0.18	1.8	mg/Kg-dry	278252	500
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**			
1-Methylnaphthalene	2.6		0.0060	0.20	mg/Kg-dry	278411	10
2-Methylnaphthalene	5.3		0.056	2.0	mg/Kg-dry	278411	100
Fluorene	0.0081		0.00057	0.0038	mg/Kg-dry	278411	1
Naphthalene	11		0.048	2.0	mg/Kg-dry	278411	100
Phenanthrene	0.0052		0.00067	0.0020	mg/Kg-dry	278411	1
Pyrene	0.0034		0.0015	0.0020	mg/Kg-dry	278411	1
Metals by ICP/MS SW6020B				**(SW3050B)**			
Chromium	4.75		0.192	0.83	mg/Kg-dry	278300	5
Lead	2.23		0.0391	0.42	mg/Kg-dry	278300	5
PERCENT MOISTURE D2216							
Percent Moisture	13.3		0	0	wt%	R397132	1
Client Sample ID: B-4 10'-12'				**Lab ID:** 1904S72-005			
Collection Date: 4/24/2019 10:50:00 AM				**Matrix:** Soil			
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**			
Benz(a)anthracene	0.0029		0.0012	0.0019	mg/Kg-dry	278411	1
Benzo(a)pyrene	0.0036		0.00042	0.0019	mg/Kg-dry	278411	1
Benzo(b)fluoranthene	0.0078		0.0011	0.0037	mg/Kg-dry	278411	1
Benzo(g,h,i)perylene	0.0042		0.0013	0.0037	mg/Kg-dry	278411	1
Benzo(k)fluoranthene	0.0034		0.0015	0.0019	mg/Kg-dry	278411	1
Chrysene	0.0045		0.0017	0.0019	mg/Kg-dry	278411	1
Fluoranthene	0.0067		0.0012	0.0037	mg/Kg-dry	278411	1
Indeno(1,2,3-cd)pyrene	0.0032		0.0012	0.0019	mg/Kg-dry	278411	1
Pyrene	0.0060		0.0014	0.0019	mg/Kg-dry	278411	1
Metals by ICP/MS SW6020B				**(SW3050B)**			
Arsenic	3.41		0.220	0.55	mg/Kg-dry	278300	5
Barium	27.8		0.0233	2.27	mg/Kg-dry	278300	5
Chromium	23.0		0.210	0.91	mg/Kg-dry	278300	5
Lead	9.57		0.0426	0.46	mg/Kg-dry	278300	5
PERCENT MOISTURE D2216							
Percent Moisture	10.3		0	0	wt%	R397132	1
Client Sample ID: B-4 50'				**Lab ID:** 1904S72-006			
Collection Date: 4/24/2019 1:40:00 PM				**Matrix:** Soil			
SIM Polynuclear Aromatic Hydrocarbons SW8270E				**(SW3550C)**			
Benzo(k)fluoranthene	0.0030		0.0015	0.0019	mg/Kg-dry	278411	1
Chrysene	0.0030		0.0017	0.0019	mg/Kg-dry	278411	1
Metals by ICP/MS SW6020B				**(SW3050B)**			
Chromium	1.15		0.222	0.96	mg/Kg-dry	278300	5
Lead	0.51		0.0450	0.48	mg/Kg-dry	278300	5
PERCENT MOISTURE D2216							

Analytical Environmental Services, Inc

Date: 3-May-19

SUMMARY OF ANALYTES DETECTED

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	Dilution
Client Sample ID: B-4 50'				**Lab ID:**	1904S72-006		
Collection Date: 4/24/2019 1:40:00 PM				**Matrix:**	Soil		
PERCENT MOISTURE D2216							
Percent Moisture	8.37		0	0	wt%	R397132	1

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Clear | Save as

AES ANALYTICAL ENVIRONMENTAL SERVICES, INC.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Cardno** AES Work Order Number: **1904S72**

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ☐ Courier ■ Other _____

		Yes	No	N/A	Details	Comments
3.	Shipping container/cooler received in good condition?	●	○	○	damaged ☐ leaking ☐ other ☐	
4.	Custody seals present on shipping container?	○	●	○		
5.	Custody seals intact on shipping container?	○	○	●		
6.	Temperature blanks present?	●	○	○		
7.	Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	●	○	○	Cooling initiated for recently collected samples / ice present ☐	
8.	Chain of Custody (COC) present?	●	○	○		
9.	Chain of Custody signed, dated, and timed when relinquished and received?	●	○	○		
10.	Sampler name and/or signature on COC?	●	○	○		
11.	Were all samples received within holding time?	●	○	○		
12.	TAT marked on the COC?	●	○	○	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. ☐	

13. Cooler 1 Temperature 0.5 °C Cooler 2 Temperature _____ °C Cooler 3 Temperature _____ °C Cooler 4 Temperature _____ °C

14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials). MJ 4/26/19

		Yes	No	N/A	Details	Comments
16.	Were sample containers intact upon receipt?	●	○	○		
17.	Custody seals present on sample containers?	○	●	○		
18.	Custody seals intact on sample containers?	○	○	●		
19.	Do sample container labels match the COC?	●	○	○	incomplete info ☐ illegible ☐ no label ☐ other ☐	
20.	Are analyses requested indicated on the COC?	●	○	○		
21.	Were all of the samples listed on the COC received?	●	○	○	samples received but not listed on COC ☐ samples listed on COC not received ☐	
22.	Was the sample collection date/time noted?	●	○	○		
23.	Did we receive sufficient sample volume for indicated analyses?	●	○	○		
24.	Were samples received in appropriate containers?	●	○	○		
25.	Were VOA samples received without headspace (< 1/4" bubble)?	○	○	●		
26.	Were trip blanks submitted?	○	●	○	listed on COC ☐ not listed on COC ■	

27. Comments: _____

I certify that I have completed sections 16-27 (dated initials). EW 4/26/19

This section only applies to samples where pH can be checked at Sample Receipt.

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	○	○	●		
29.	Containers meet preservation guidelines?	○	○	●		
30.	Was pH adjusted at Sample Receipt?	○	○	●		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH.

I certify that I have completed sections 28-30 (dated initials). EW 4/26/19

Checklist 6.9.17 Rev 2

Locked

Analytical Environmental Services, Inc

Date: 3-May-19

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278252

Sample ID: **MB-278252** Client ID: Units: **ug/Kg** Prep Date: **04/26/2019** Run No: **396823**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **278252** Analysis Date: **04/26/2019** Seq No: **8888801**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	250									
1,1,2,2-Tetrachloroethane	BRL	250									
1,1,2-Trichloroethane	BRL	250									
1,1-Dichloroethane	BRL	250									
1,1-Dichloroethene	BRL	250									
1,2,4-Trichlorobenzene	BRL	250									
1,2-Dibromo-3-chloropropane	BRL	250									
1,2-Dibromoethane	BRL	250									
1,2-Dichlorobenzene	BRL	250									
1,2-Dichloroethane	BRL	250									
1,2-Dichloropropane	BRL	250									
1,3-Dichlorobenzene	BRL	250									
1,4-Dichlorobenzene	BRL	250									
2-Butanone	BRL	2500									
2-Hexanone	BRL	500									
4-Methyl-2-pentanone	BRL	500									
Acetone	BRL	5000									
Benzene	BRL	250									
Bromodichloromethane	BRL	250									
Bromoform	BRL	250									
Bromomethane	BRL	250									
Carbon disulfide	BRL	500									
Carbon tetrachloride	BRL	250									
Chlorobenzene	BRL	250									
Chloroethane	BRL	500									
Chloroform	BRL	250									
Chloromethane	BRL	500									

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278252

Sample ID: **MB-278252** Client ID: Units: **ug/Kg** Prep Date: **04/26/2019** Run No: **396823**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **278252** Analysis Date: **04/26/2019** Seq No: **8888801**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	250									
cis-1,3-Dichloropropene	BRL	250									
Cyclohexane	BRL	250									
Dibromochloromethane	BRL	250									
Dichlorodifluoromethane	BRL	500									
Ethylbenzene	BRL	250									
Freon-113	BRL	500									
Isopropylbenzene	BRL	250									
m,p-Xylene	BRL	250									
Methyl acetate	BRL	250									
Methyl tert-butyl ether	BRL	250									
Methylcyclohexane	BRL	250									
Methylene chloride	BRL	1000									
o-Xylene	BRL	250									
Styrene	BRL	250									
Tetrachloroethene	BRL	250									
Toluene	BRL	250									
trans-1,2-Dichloroethene	BRL	250									
trans-1,3-Dichloropropene	BRL	250									
Trichloroethene	BRL	250									
Trichlorofluoromethane	BRL	250									
Vinyl chloride	BRL	500									
Surr: 4-Bromofluorobenzene	2322	0	2500		92.9	65.1	125				
Surr: Dibromofluoromethane	2056	0	2500		82.2	77.7	123				
Surr: Toluene-d8	2520	0	2500		101	83.2	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278252

Sample ID: **LCS-278252** Client ID: Units: **ug/Kg** Prep Date: **04/26/2019** Run No: **396823**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **278252** Analysis Date: **04/26/2019** Seq No: **8888802**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	2454	250	2500		98.2	67.6	140				
Benzene	3120	250	2500		125	71.3	130				
Chlorobenzene	2844	250	2500		114	70.6	135				
Toluene	3170	250	2500		127	70.4	127				
Trichloroethene	3199	250	2500		128	68.6	138				
Surr: 4-Bromofluorobenzene	2582	0	2500		103	65.1	125				
Surr: Dibromofluoromethane	2192	0	2500		87.7	77.7	123				
Surr: Toluene-d8	2623	0	2500		105	83.2	120				

Sample ID: **1904O90-002AMS** Client ID: Units: **mg/Kg-dry** Prep Date: **04/26/2019** Run No: **396888**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **278252** Analysis Date: **04/27/2019** Seq No: **8890083**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	1.761	0.20	2.000		88.1	61.8	140				
Benzene	2.540	0.20	2.000		127	69	131				
Chlorobenzene	2.288	0.20	2.000		114	69.5	133				
Toluene	2.518	0.20	2.000		126	65.9	133				
Trichloroethene	2.988	0.20	2.000	0.3673	131	65.9	135				
Surr: 4-Bromofluorobenzene	2.078	0	2.000		104	65.1	125				
Surr: Dibromofluoromethane	1.703	0	2.000		85.2	77.7	123				
Surr: Toluene-d8	2.006	0	2.000		100	83.2	120				

Sample ID: **1904O90-002AMSD** Client ID: Units: **mg/Kg-dry** Prep Date: **04/26/2019** Run No: **396888**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **278252** Analysis Date: **04/27/2019** Seq No: **8890084**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	2.074	0.20	2.000		104	61.8	140	1.761	16.3	18.5	
Benzene	2.478	0.20	2.000		124	69	131	2.540	2.49	20	

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278252

Sample ID: **1904O90-002AMSD** Client ID: Units: **mg/Kg-dry** Prep Date: **04/26/2019** Run No: **396888**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **278252** Analysis Date: **04/27/2019** Seq No: **8890084**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	2.300	0.20	2.000		115	69.5	133	2.288	0.488	20	
Toluene	2.516	0.20	2.000		126	65.9	133	2.518	0.080	20	
Trichloroethene	2.927	0.20	2.000	0.3673	128	65.9	135	2.988	2.06	20	
Surr: 4-Bromofluorobenzene	2.090	0	2.000		105	65.1	125	2.078	0	0	
Surr: Dibromofluoromethane	1.654	0	2.000		82.7	77.7	123	1.703	0	0	
Surr: Toluene-d8	2.036	0	2.000		102	83.2	120	2.006	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278286

Sample ID: **MB-278286** Client ID: Units: **ug/Kg** Prep Date: **04/29/2019** Run No: **396954**
SampleType: **MBLK** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278286** Analysis Date: **04/30/2019** Seq No: **8893345**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1´-Biphenyl	BRL	330									
2,4,5-Trichlorophenol	BRL	1700									
2,4,6-Trichlorophenol	BRL	330									
2,4-Dichlorophenol	BRL	330									
2,4-Dimethylphenol	BRL	330									
2,4-Dinitrophenol	BRL	1700									
2,4-Dinitrotoluene	BRL	330									
2,6-Dinitrotoluene	BRL	330									
2-Chloronaphthalene	BRL	330									
2-Chlorophenol	BRL	330									
2-Methylnaphthalene	BRL	330									
2-Methylphenol	BRL	330									
2-Nitroaniline	BRL	1700									
2-Nitrophenol	BRL	330									
3,3´-Dichlorobenzidine	BRL	670									
3-Nitroaniline	BRL	1700									
4,6-Dinitro-2-methylphenol	BRL	1700									
4-Bromophenyl phenyl ether	BRL	330									
4-Chloro-3-methylphenol	BRL	330									
4-Chloroaniline	BRL	330									
4-Chlorophenyl phenyl ether	BRL	330									
4-Methylphenol	BRL	330									
4-Nitroaniline	BRL	1700									
4-Nitrophenol	BRL	1700									
Acetophenone	BRL	330									
Atrazine	BRL	330									
Benzaldehyde	BRL	330									

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278286

Sample ID: **MB-278286** Client ID: Units: **ug/Kg** Prep Date: **04/29/2019** Run No: **396954**
SampleType: **MBLK** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278286** Analysis Date: **04/30/2019** Seq No: **8893345**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Bis(2-chloroethoxy)methane	BRL	330									
Bis(2-chloroethyl)ether	BRL	330									
Bis(2-chloroisopropyl)ether	BRL	330									
Bis(2-ethylhexyl)phthalate	BRL	330									
Butyl benzyl phthalate	BRL	330									
Caprolactam	BRL	330									
Carbazole	BRL	330									
Di-n-butyl phthalate	BRL	330									
Di-n-octyl phthalate	BRL	330									
Dibenzofuran	BRL	330									
Diethyl phthalate	BRL	330									
Dimethyl phthalate	BRL	330									
Hexachlorobenzene	BRL	330									
Hexachlorobutadiene	BRL	330									
Hexachlorocyclopentadiene	BRL	660									
Hexachloroethane	BRL	330									
Isophorone	BRL	330									
N-Nitrosodi-n-propylamine	BRL	330									
N-Nitrosodiphenylamine	BRL	330									
Nitrobenzene	BRL	330									
Pentachlorophenol	BRL	1700									
Phenol	BRL	330									
Surr: 2,4,6-Tribromophenol	2591	0	3333		77.7	45.6	120				
Surr: 2-Fluorobiphenyl	1524	0	1667		91.4	51.4	120				
Surr: 2-Fluorophenol	2681	0	3333		80.4	40.9	120				
Surr: 4-Terphenyl-d14	1537	0	1667		92.2	52.2	129				
Surr: Nitrobenzene-d5	1488	0	1667		89.3	40	120				

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278286

Sample ID: **MB-278286** Client ID: Units: **ug/Kg** Prep Date: **04/29/2019** Run No: **396954**
SampleType: **MBLK** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278286** Analysis Date: **04/30/2019** Seq No: **8893345**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: Phenol-d5	2766	0	3333		83.0	45	120				

Sample ID: **LCS-278286** Client ID: Units: **ug/Kg** Prep Date: **04/29/2019** Run No: **396954**
SampleType: **LCS** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278286** Analysis Date: **04/30/2019** Seq No: **8893346**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
2,4-Dinitrotoluene	2784	330	3333		83.5	53.9	120				
2-Chlorophenol	2758	330	3333		82.7	58.4	120				
4-Chloro-3-methylphenol	3067	330	3333		92.0	62.7	120				
4-Nitrophenol	2012	1700	3333		60.4	45.9	120				
N-Nitrosodi-n-propylamine	3134	330	3333		94.0	62.7	120				
Pentachlorophenol	BRL	1700	3333		44.4	43.1	120				
Phenol	2522	330	3333		75.7	52	120				
Surr: 2,4,6-Tribromophenol	2943	0	3333		88.3	45.6	120				
Surr: 2-Fluorobiphenyl	1547	0	1667		92.8	51.4	120				
Surr: 2-Fluorophenol	2395	0	3333		71.9	40.9	120				
Surr: 4-Terphenyl-d14	1601	0	1667		96.0	52.2	129				
Surr: Nitrobenzene-d5	1517	0	1667		91.0	40	120				
Surr: Phenol-d5	2837	0	3333		85.1	45	120				

Sample ID: **1904Q50-009BMS** Client ID: Units: **mg/Kg-dry** Prep Date: **04/29/2019** Run No: **396954**
SampleType: **MS** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278286** Analysis Date: **04/30/2019** Seq No: **8894593**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
2,4-Dinitrotoluene	2.904	0.43	4.326		67.1	40.4	120				
2-Chlorophenol	3.164	0.43	4.326		73.1	43.4	120				
4-Chloro-3-methylphenol	3.302	0.43	4.326		76.3	47.5	120				
4-Nitrophenol	2.607	2.2	4.326		60.3	30.1	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278286

Sample ID: **1904Q50-009BMS** Client ID: Units: **mg/Kg-dry** Prep Date: **04/29/2019** Run No: **396954**
SampleType: **MS** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278286** Analysis Date: **04/30/2019** Seq No: **8894593**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
N-Nitrosodi-n-propylamine	3.307	0.43	4.326		76.4	45.5	120				
Pentachlorophenol	BRL	2.2	4.326		38.0	40.6	120				S
Phenol	2.875	0.43	4.326		66.5	40.2	120				
Surr: 2,4,6-Tribromophenol	3.045	0	4.326		70.4	45.6	120				
Surr: 2-Fluorobiphenyl	1.598	0	2.163		73.9	51.4	120				
Surr: 2-Fluorophenol	2.644	0	4.326		61.1	40.9	120				
Surr: 4-Terphenyl-d14	1.574	0	2.163		72.7	52.2	129				
Surr: Nitrobenzene-d5	1.556	0	2.163		71.9	40	120				
Surr: Phenol-d5	3.069	0	4.326		70.9	45	120				

Sample ID: **1904Q50-009BMSD** Client ID: Units: **mg/Kg-dry** Prep Date: **04/29/2019** Run No: **396954**
SampleType: **MSD** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278286** Analysis Date: **04/30/2019** Seq No: **8894599**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
2,4-Dinitrotoluene	3.065	0.43	4.326		70.8	40.4	120	2.904	5.39	31.5	
2-Chlorophenol	3.249	0.43	4.326		75.1	43.4	120	3.164	2.66	29.9	
4-Chloro-3-methylphenol	3.371	0.43	4.326		77.9	47.5	120	3.302	2.07	27.7	
4-Nitrophenol	2.888	2.2	4.326		66.8	30.1	120	2.607	10.2	36.7	
N-Nitrosodi-n-propylamine	3.330	0.43	4.326		77.0	45.5	120	3.307	0.678	28.6	
Pentachlorophenol	BRL	2.2	4.326		41.7	40.6	120	1.644	0	30.9	
Phenol	2.902	0.43	4.326		67.1	40.2	120	2.875	0.929	29.2	
Surr: 2,4,6-Tribromophenol	3.127	0	4.326		72.3	45.6	120	3.045	0	0	
Surr: 2-Fluorobiphenyl	1.600	0	2.163		74.0	51.4	120	1.598	0	0	
Surr: 2-Fluorophenol	2.674	0	4.326		61.8	40.9	120	2.644	0	0	
Surr: 4-Terphenyl-d14	1.575	0	2.163		72.8	52.2	129	1.574	0	0	
Surr: Nitrobenzene-d5	1.574	0	2.163		72.8	40	120	1.556	0	0	
Surr: Phenol-d5	3.048	0	4.326		70.5	45	120	3.069	0	0	

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278300

Sample ID: **MB-278300** Client ID: Units: **ug/Kg** Prep Date: **04/30/2019** Run No: **397107**
SampleType: **MBLK** TestCode: **Metals by ICP/MS SW6020B** BatchID: **278300** Analysis Date: **05/01/2019** Seq No: **8894667**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	BRL	600									
Barium	BRL	2500									
Cadmium	BRL	500									
Chromium	BRL	1000									
Lead	BRL	500									
Selenium	BRL	2500									
Silver	BRL	250									

Sample ID: **LCS-278300** Client ID: Units: **ug/Kg** Prep Date: **04/30/2019** Run No: **397107**
SampleType: **LCS** TestCode: **Metals by ICP/MS SW6020B** BatchID: **278300** Analysis Date: **05/01/2019** Seq No: **8894668**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	9767	600	10000		97.7	80	120				
Barium	9539	2500	10000		95.4	80	120				
Cadmium	9651	500	10000		96.5	80	120				
Chromium	9846	1000	10000		98.5	80	120				
Lead	9848	500	10000		98.5	80	120				
Selenium	8866	2500	10000		88.7	80	120				
Silver	1001	250	1000		100	80	120				

Sample ID: **1904S72-003CMS** Client ID: **B-2 30'** Units: **mg/Kg-dry** Prep Date: **04/30/2019** Run No: **397107**
SampleType: **MS** TestCode: **Metals by ICP/MS SW6020B** BatchID: **278300** Analysis Date: **05/01/2019** Seq No: **8894672**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	9.526	0.59	9.858		96.6	75	125				
Barium	9.242	2.46	9.858	0.2813	90.9	75	125				
Cadmium	9.863	0.49	9.858		100	75	125				
Chromium	11.17	0.99	9.858	1.835	94.6	75	125				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278300

Sample ID: **1904S72-003CMS** Client ID: **B-2 30'** Units: **mg/Kg-dry** Prep Date: **04/30/2019** Run No: **397107**
SampleType: **MS** TestCode: **Metals by ICP/MS SW6020B** BatchID: **278300** Analysis Date: **05/01/2019** Seq No: **8894672**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	11.26	0.49	9.858	1.471	99.3	75	125				
Selenium	8.562	2.46	9.858	0.4211	82.6	75	125				
Silver	1.073	0.25	0.9858		109	75	125				

Sample ID: **1904S72-003CMSD** Client ID: **B-2 30'** Units: **mg/Kg-dry** Prep Date: **04/30/2019** Run No: **397107**
SampleType: **MSD** TestCode: **Metals by ICP/MS SW6020B** BatchID: **278300** Analysis Date: **05/01/2019** Seq No: **8894676**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	9.371	0.59	9.842		95.2	75	125	9.526	1.64	20	
Barium	8.932	2.46	9.842	0.2813	87.9	75	125	9.242	3.41	20	
Cadmium	9.467	0.49	9.842		96.2	75	125	9.863	4.10	20	
Chromium	11.03	0.98	9.842	1.835	93.4	75	125	11.17	1.21	20	
Lead	10.90	0.49	9.842	1.471	95.8	75	125	11.26	3.25	20	
Selenium	8.330	2.46	9.842	0.4211	80.4	75	125	8.562	2.74	20	
Silver	1.021	0.25	0.9842		104	75	125	1.073	4.91	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Analytical Environmental Services, Inc

Date: 3-May-19

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278386

Sample ID: **MB-278386** Client ID: Units: **ug/Kg** Prep Date: **04/29/2019** Run No: **396956**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **278386** Analysis Date: **04/29/2019** Seq No: **8891295**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,4-Trichlorobenzene	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,3-Dichlorobenzene	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	100									
Benzene	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	10									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									
Chloroform	BRL	5.0									
Chloromethane	BRL	10									

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278386

Sample ID: **MB-278386** Client ID: Units: **ug/Kg** Prep Date: **04/29/2019** Run No: **396956**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **278386** Analysis Date: **04/29/2019** Seq No: **8891295**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	20									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	10									
Surr: 4-Bromofluorobenzene	47.15	0	50.00		94.3	65.1	125				
Surr: Dibromofluoromethane	49.09	0	50.00		98.2	77.7	123				
Surr: Toluene-d8	49.42	0	50.00		98.8	83.2	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278386

Sample ID: **LCS-278386** Client ID: Units: **ug/Kg** Prep Date: **04/29/2019** Run No: **396956**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **278386** Analysis Date: **04/29/2019** Seq No: **8891198**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	39.92	5.0	50.00		79.8	67.6	140				
Benzene	46.43	5.0	50.00		92.9	71.3	130				
Chlorobenzene	47.44	5.0	50.00		94.9	70.6	135				
Toluene	48.16	5.0	50.00		96.3	70.4	127				
Trichloroethene	45.83	5.0	50.00		91.7	68.6	138				
Surr: 4-Bromofluorobenzene	52.66	0	50.00		105	65.1	125				
Surr: Dibromofluoromethane	48.80	0	50.00		97.6	77.7	123				
Surr: Toluene-d8	50.93	0	50.00		102	83.2	120				

Sample ID: **1904S72-006AMS** Client ID: **B-4 50'** Units: **mg/Kg-dry** Prep Date: **04/29/2019** Run No: **396956**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **278386** Analysis Date: **04/29/2019** Seq No: **8892601**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	0.04682	0.0054	0.0537		87.2	61.8	140				
Benzene	0.05207	0.0054	0.0537		97.0	69	131				
Chlorobenzene	0.05309	0.0054	0.0537		98.9	69.5	133				
Toluene	0.05303	0.0054	0.0537		98.7	65.9	133				
Trichloroethene	0.05145	0.0054	0.0537		95.8	65.9	135				
Surr: 4-Bromofluorobenzene	0.05366	0	0.0537		99.9	65.1	125				
Surr: Dibromofluoromethane	0.05092	0	0.0537		94.8	77.7	123				
Surr: Toluene-d8	0.05389	0	0.0537		100	83.2	120				

Sample ID: **1904S72-006AMSD** Client ID: **B-4 50'** Units: **mg/Kg-dry** Prep Date: **04/29/2019** Run No: **396956**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **278386** Analysis Date: **04/29/2019** Seq No: **8892602**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	0.04685	0.0053	0.0534		87.7	61.8	140	0.04682	0.052	18.5	
Benzene	0.05175	0.0053	0.0534		96.9	69	131	0.05207	0.630	20	

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278386

Sample ID: **1904S72-006AMSD** Client ID: **B-4 50'** Units: **mg/Kg-dry** Prep Date: **04/29/2019** Run No: **396956**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **278386** Analysis Date: **04/29/2019** Seq No: **8892602**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	0.05128	0.0053	0.0534		96.0	69.5	133	0.05309	3.48	20	
Toluene	0.05084	0.0053	0.0534		95.2	65.9	133	0.05303	4.22	20	
Trichloroethene	0.05006	0.0053	0.0534		93.8	65.9	135	0.05145	2.74	20	
Surr: 4-Bromofluorobenzene	0.05326	0	0.0534		99.8	65.1	125	0.05366	0	0	
Surr: Dibromofluoromethane	0.05104	0	0.0534		95.6	77.7	123	0.05092	0	0	
Surr: Toluene-d8	0.05213	0	0.0534		97.6	83.2	120	0.05389	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278411

Sample ID: **MB-278411** Client ID: Units: **ug/Kg** Prep Date: **05/01/2019** Run No: **397164**
SampleType: **MBLK** TestCode: **SIM Polynuclear Aromatic Hydrocarbons SW8270E** BatchID: **278411** Analysis Date: **05/01/2019** Seq No: **8896112**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1-Methylnaphthalene	BRL	17									
2-Methylnaphthalene	BRL	17									
Acenaphthene	BRL	17									
Acenaphthylene	BRL	33									
Anthracene	BRL	1.7									
Benz(a)anthracene	BRL	1.7									
Benzo(a)pyrene	BRL	1.7									
Benzo(b)fluoranthene	BRL	3.3									
Benzo(g,h,i)perylene	BRL	3.3									
Benzo(k)fluoranthene	BRL	1.7									
Chrysene	BRL	1.7									
Dibenz(a,h)anthracene	BRL	3.3									
Fluoranthene	BRL	3.3									
Fluorene	BRL	3.3									
Indeno(1,2,3-cd)pyrene	BRL	1.7									
Naphthalene	BRL	17									
Phenanthrene	BRL	1.7									
Pyrene	BRL	1.7									
Surr: 4-Terphenyl-d14	64.71	0	66.70		97.0	57.3	136				

Sample ID: **LCS-278411** Client ID: Units: **ug/Kg** Prep Date: **05/01/2019** Run No: **397164**
SampleType: **LCS** TestCode: **SIM Polynuclear Aromatic Hydrocarbons SW8270E** BatchID: **278411** Analysis Date: **05/01/2019** Seq No: **8896113**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1-Methylnaphthalene	59.03	17	66.70		88.5	68.7	120				
2-Methylnaphthalene	55.97	17	66.70		83.9	67.6	120				
Acenaphthene	57.65	17	66.70		86.4	67.6	120				
Acenaphthylene	57.90	33	66.70		86.8	67.4	120				

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278411

Sample ID: **LCS-278411** Client ID: Units: **ug/Kg** Prep Date: **05/01/2019** Run No: **397164**
SampleType: **LCS** TestCode: **SIM Polynuclear Aromatic Hydrocarbons SW8270E** BatchID: **278411** Analysis Date: **05/01/2019** Seq No: **8896113**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Anthracene	63.52	1.7	66.70		95.2	70.7	120				
Benz(a)anthracene	56.83	1.7	66.70		85.2	69.3	120				
Benzo(a)pyrene	59.02	1.7	66.70		88.5	71.6	120				
Benzo(b)fluoranthene	53.14	3.3	66.70		79.7	65.7	120				
Benzo(g,h,i)perylene	56.33	3.3	66.70		84.5	71.5	120				
Benzo(k)fluoranthene	63.54	1.7	66.70		95.3	70.3	120				
Chrysene	60.02	1.7	66.70		90.0	68.1	120				
Dibenz(a,h)anthracene	54.66	3.3	66.70		82.0	69.8	120				
Fluoranthene	62.42	3.3	66.70		93.6	73.7	120				
Fluorene	58.57	3.3	66.70		87.8	70	120				
Indeno(1,2,3-cd)pyrene	52.28	1.7	66.70		78.4	69.7	120				
Naphthalene	57.38	17	66.70		86.0	63.8	120				
Phenanthrene	60.08	1.7	66.70		90.1	70	120				
Pyrene	58.81	1.7	66.70		88.2	69.8	120				
Surr: 4-Terphenyl-d14	59.36	0	66.70		89.0	57.3	136				

Sample ID: **1904S72-003BMS** Client ID: **B-2 30'** Units: **mg/Kg-dry** Prep Date: **05/01/2019** Run No: **397164**
SampleType: **MS** TestCode: **SIM Polynuclear Aromatic Hydrocarbons SW8270E** BatchID: **278411** Analysis Date: **05/01/2019** Seq No: **8896631**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1-Methylnaphthalene	0.05885	0.019	0.0733		80.3	55.2	120				
2-Methylnaphthalene	0.05572	0.019	0.0733		76.0	53.8	120				
Acenaphthene	0.05955	0.019	0.0733		81.3	52.1	120				
Acenaphthylene	0.05740	0.036	0.0733		78.3	55.5	120				
Anthracene	0.06058	0.0019	0.0733		82.7	60.1	120				
Benz(a)anthracene	0.06204	0.0019	0.0733		84.7	55.6	124				
Benzo(a)pyrene	0.05996	0.0019	0.0733		81.8	60	120				
Benzo(b)fluoranthene	0.05557	0.0036	0.0733		75.8	49.9	122				

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278411

Sample ID: **1904S72-003BMS** Client ID: **B-2 30'** Units: **mg/Kg-dry** Prep Date: **05/01/2019** Run No: **397164**
SampleType: **MS** TestCode: **SIM Polynuclear Aromatic Hydrocarbons SW8270E** BatchID: **278411** Analysis Date: **05/01/2019** Seq No: **8896631**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzo(g,h,i)perylene	0.05724	0.0036	0.0733		78.1	47.6	120				
Benzo(k)fluoranthene	0.06101	0.0019	0.0733		83.3	56.2	120				
Chrysene	0.05993	0.0019	0.0733		81.8	56.7	120				
Dibenz(a,h)anthracene	0.05452	0.0036	0.0733		74.4	49.7	120				
Fluoranthene	0.06112	0.0036	0.0733	0.001539	81.3	56.4	120				
Fluorene	0.06064	0.0036	0.0733		82.8	56.5	120				
Indeno(1,2,3-cd)pyrene	0.05461	0.0019	0.0733		74.5	48.2	120				
Naphthalene	0.05584	0.019	0.0733		76.2	49.8	120				
Phenanthrene	0.05894	0.0019	0.0733		80.4	53	110				
Pyrene	0.05907	0.0019	0.0733	0.001489	78.6	53.3	119				
Surr: 4-Terphenyl-d14	0.05995	0	0.0733		81.8	57.3	136				

Sample ID: **1904S72-003BMSD** Client ID: **B-2 30'** Units: **mg/Kg-dry** Prep Date: **05/01/2019** Run No: **397164**
SampleType: **MSD** TestCode: **SIM Polynuclear Aromatic Hydrocarbons SW8270E** BatchID: **278411** Analysis Date: **05/01/2019** Seq No: **8896632**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1-Methylnaphthalene	0.05536	0.019	0.0733		75.5	55.2	120	0.05885	6.12	22.1	
2-Methylnaphthalene	0.05455	0.019	0.0733		74.4	53.8	120	0.05572	2.11	23.9	
Acenaphthene	0.05696	0.019	0.0733		77.7	52.1	120	0.05955	4.44	20.8	
Acenaphthylene	0.05642	0.036	0.0733		77.0	55.5	120	0.05740	1.73	20.5	
Anthracene	0.05864	0.0019	0.0733		80.0	60.1	120	0.06058	3.25	20.9	
Benz(a)anthracene	0.05855	0.0019	0.0733		79.9	55.6	124	0.06204	5.78	24.2	
Benzo(a)pyrene	0.05723	0.0019	0.0733		78.1	60	120	0.05996	4.67	21.7	
Benzo(b)fluoranthene	0.05361	0.0036	0.0733		73.2	49.9	122	0.05557	3.60	24.4	
Benzo(g,h,i)perylene	0.05445	0.0036	0.0733		74.3	47.6	120	0.05724	5.00	24.3	
Benzo(k)fluoranthene	0.06072	0.0019	0.0733		82.9	56.2	120	0.06101	0.474	23.9	
Chrysene	0.05878	0.0019	0.0733		80.2	56.7	120	0.05993	1.93	22	
Dibenz(a,h)anthracene	0.05377	0.0036	0.0733		73.4	49.7	120	0.05452	1.39	26	

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278411

Sample ID: **1904S72-003BMSD** Client ID: **B-2 30'** Units: **mg/Kg-dry** Prep Date: **05/01/2019** Run No: **397164**
SampleType: **MSD** TestCode: **SIM Polynuclear Aromatic Hydrocarbons SW8270E** BatchID: **278411** Analysis Date: **05/01/2019** Seq No: **8896632**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoranthene	0.05902	0.0036	0.0733	0.001539	78.4	56.4	120	0.06112	3.49	24.2	
Fluorene	0.05810	0.0036	0.0733		79.3	56.5	120	0.06064	4.28	20.8	
Indeno(1,2,3-cd)pyrene	0.05359	0.0019	0.0733		73.1	48.2	120	0.05461	1.87	24.1	
Naphthalene	0.05361	0.019	0.0733		73.2	49.8	120	0.05584	4.08	22	
Phenanthrene	0.05684	0.0019	0.0733		77.6	53	110	0.05894	3.63	19.8	
Pyrene	0.05673	0.0019	0.0733	0.001489	75.4	53.3	119	0.05907	4.05	23.3	
Surr: 4-Terphenyl-d14	0.05947	0	0.0733		81.1	57.3	136	0.05995	0	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name 0002420000 Stanley Assemblage
Workorder: 1904S72

ANALYTICAL QC SUMMARY REPORT

BatchID: 278561

Sample ID: **MB-278561** Client ID: Units: **mg/Kg** Prep Date: **05/03/2019** Run No: **397359**
SampleType: **MBLK** TestCode: **TOTAL MERCURY SW7471B** BatchID: **278561** Analysis Date: **05/03/2019** Seq No: **8900377**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	BRL	0.100									

Sample ID: **LCS-278561** Client ID: Units: **mg/Kg** Prep Date: **05/03/2019** Run No: **397359**
SampleType: **LCS** TestCode: **TOTAL MERCURY SW7471B** BatchID: **278561** Analysis Date: **05/03/2019** Seq No: **8900378**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.3862	0.100	0.4000		96.6	80	120				

Sample ID: **1904S72-003CMS** Client ID: **B-2 30'** Units: **mg/Kg-dry** Prep Date: **05/03/2019** Run No: **397359**
SampleType: **MS** TestCode: **TOTAL MERCURY SW7471B** BatchID: **278561** Analysis Date: **05/03/2019** Seq No: **8900380**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.4234	0.110	0.4401		96.2	80	120				

Sample ID: **1904S72-003CMSD** Client ID: **B-2 30'** Units: **mg/Kg-dry** Prep Date: **05/03/2019** Run No: **397359**
SampleType: **MSD** TestCode: **TOTAL MERCURY SW7471B** BatchID: **278561** Analysis Date: **05/03/2019** Seq No: **8900381**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.4323	0.110	0.4402		98.2	80	120	0.4234	2.07	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

AES

May 20, 2019

William Smithwick
Cardno

2000 First Drive Suite 220
Marietta GA 30062

RE: Stanley Assemblage

Dear William Smithwick: Order No: 1905B05

Analytical Environmental Services, Inc. received 5 samples on 5/10/2019 4:13:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/18-06/30/19.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/18-06/30/19 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Metals and PCM Asbestos), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/19.
These results relate only to the items tested as received. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Ioana Pacurar

Ioana Pacurar

Project Manager

3080 Presidential Drive • Atlanta, Georgia 30340 • Tel: 770.457.8177 • Fax: 770.457.8188 • Toll Free: 800.972.4889
www.aesatlanta.com

ANALYTICAL ENVIRONMENTAL SERVICES, INC.
3080 Presidential Drive Atlanta, GA 30340-3704
Phone: (770) 457-8177 / Toll-Free: (800) 972-4889 / Fax: (770) 457-8188

AES

CHAIN OF CUSTODY

Work Order: 1905B05

Date: 5-10-19 Page 1 of 1

COMPANY: Cardno

ADDRESS: 2000 First Dr. Suite 230 Marietta, GA

PHONE: 229-224-0164

EMAIL: william.smithwick@cardno.com

SAMPLED BY: A. Smithwick

SIGNATURE: A. Smithwick

ANALYSIS REQUESTED: VOC, SVOC, 8 RCRA (dissolved)

Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.

#	SAMPLE ID	SAMPLED: DATE	SAMPLED: TIME	GRAB	COMPOSITE	MATRIX (see codes)	VOC	SVOC	8 RCRA (dissolved)	REMARKS	Number of Containers
1	MW-3	5-9-19	1610	X		GW	X	X	X	Run dissolved metals	5
2	MW-2		1525				X	X	X		5
3	MW-1		1430				X	X	X		5
4	MW-1 DUP		1430					X			2
5	Trip Blank										2
6	Temp Blank										1
7	MW-3 MS/MSD		1610			GW			X	MS/MSD dissolved.	
8											
9											
10											
11											
12											
13											
14											

PRESERVATION (see codes)

RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. A. Smithwick	5-10-19 1250	1. [illegible]	5-10 1250
2. [illegible]	5-10 413	2. [illegible]	5.10.19 1615 JM
3.		3.	1613

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT: / / VIA:
IN: / / VIA:
client FedEx UPS US mail courier
other: _____

PROJECT INFORMATION
PROJECT NAME: Stanley Assemblage
PROJECT #: 00024200000
SITE ADDRESS: 1109 Macon Rd. Perry, GA
SEND REPORT TO: william.smithwick@cardno.com
INVOICE TO (IF DIFFERENT FROM ABOVE):
QUOTE #: _____ PO#: _____

RECEIPT
Total # of Containers 20

Turnaround Time (TAT) Request
☑ Standard
☐ 2 Business Day Rush
☐ Next Business Day Rush
☐ Same-Day Rush (auth req.)
☐ Other _____

STATE PROGRAM (if any): _____
E-mail? ☐ Fax? ☐
DATA PACKAGE: I ○ II ○ III ○ IV ○

Submission of samples to the laboratory constitutes acceptance of AES's Terms & Conditions. Client assumes sole responsibility for damage or loss of samples before we accept them. Samples received after 3PM or on Saturday are considered as received the following business day. If no TAT is marked on COC, AES will proceed with standard TAT. Samples are disposed of 30 days after completion of report unless other arrangements are made.

7.11.18_CO

Matrix Codes: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water ST=Stormwater WW = Waste Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify)

Preservative Codes: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc

Date: 20-May-19

Client: Cardno
Project: Stanley Assemblage
Lab ID: 1905B05

Case Narrative

Semi-Volatiles Organic Compounds Analysis by Method 8270:

Percent recovery for the surrogate spiking compounds 2,4,6-Tribromophenol & 2-Fluorobiphenyl on the LCS samples for Batch 278956 was outside control limits biased high. All target analytes, other LCS surrogate recoveries and 2-Fluorobiphenyl recoveries in associated samples were within control limits and data was not affected.

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-3
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 4:10:00 PM
Lab ID:	1905B05-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3510C)**				
1,1´-Biphenyl	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
2,4,5-Trichlorophenol	BRL	25		ug/L	278956	1	05/15/2019 16:20	YH
2,4,6-Trichlorophenol	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
2,4-Dichlorophenol	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
2,4-Dimethylphenol	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
2,4-Dinitrophenol	BRL	25		ug/L	278956	1	05/15/2019 16:20	YH
2,4-Dinitrotoluene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
2,6-Dinitrotoluene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
2-Chloronaphthalene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
2-Chlorophenol	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
2-Methylnaphthalene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
2-Methylphenol	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
2-Nitroaniline	BRL	25		ug/L	278956	1	05/15/2019 16:20	YH
2-Nitrophenol	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
3,3´-Dichlorobenzidine	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
3-Nitroaniline	BRL	25		ug/L	278956	1	05/15/2019 16:20	YH
4,6-Dinitro-2-methylphenol	BRL	25		ug/L	278956	1	05/15/2019 16:20	YH
4-Bromophenyl phenyl ether	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
4-Chloro-3-methylphenol	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
4-Chloroaniline	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
4-Chlorophenyl phenyl ether	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
4-Methylphenol	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
4-Nitroaniline	BRL	25		ug/L	278956	1	05/15/2019 16:20	YH
4-Nitrophenol	BRL	25		ug/L	278956	1	05/15/2019 16:20	YH
Acenaphthene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Acenaphthylene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Acetophenone	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Anthracene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Atrazine	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Benz(a)anthracene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Benzaldehyde	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Benzo(a)pyrene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Benzo(b)fluoranthene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Benzo(k)fluoranthene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Bis(2-chloroethoxy)methane	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Bis(2-chloroethyl)ether	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Bis(2-chloroisopropyl)ether	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Bis(2-ethylhexyl)phthalate	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Butyl benzyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Caprolactam	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-3
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 4:10:00 PM
Lab ID:	1905B05-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3510C)**				
Carbazole	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Chrysene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Di-n-butyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Di-n-octyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Dibenz(a,h)anthracene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Dibenzofuran	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Diethyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Dimethyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Fluoranthene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Fluorene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Hexachlorobenzene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Hexachlorobutadiene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Hexachlorocyclopentadiene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Hexachloroethane	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Indeno(1,2,3-cd)pyrene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Isophorone	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
N-Nitrosodi-n-propylamine	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
N-Nitrosodiphenylamine	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Naphthalene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Nitrobenzene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Pentachlorophenol	BRL	25		ug/L	278956	1	05/15/2019 16:20	YH
Phenanthrene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Phenol	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Pyrene	BRL	10		ug/L	278956	1	05/15/2019 16:20	YH
Surr: 2,4,6-Tribromophenol	94.1	47-127		%REC	278956	1	05/15/2019 16:20	YH
Surr: 2-Fluorobiphenyl	93.9	47.4-119		%REC	278956	1	05/15/2019 16:20	YH
Surr: 2-Fluorophenol	36.7	26.2-120		%REC	278956	1	05/15/2019 16:20	YH
Surr: 4-Terphenyl-d14	81.7	45-133		%REC	278956	1	05/15/2019 16:20	YH
Surr: Nitrobenzene-d5	84.2	41.9-121		%REC	278956	1	05/15/2019 16:20	YH
Surr: Phenol-d5	21.9	17.8-120		%REC	278956	1	05/15/2019 16:20	YH
TCL VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-3
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 4:10:00 PM
Lab ID:	1905B05-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,2-Dichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
1,3-Dichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
2-Butanone	BRL	50		ug/L	279124	1	05/15/2019 20:47	JB
2-Hexanone	BRL	10		ug/L	279124	1	05/15/2019 20:47	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279124	1	05/15/2019 20:47	JB
Acetone	BRL	50		ug/L	279124	1	05/15/2019 20:47	JB
Benzene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Bromodichloromethane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Bromoform	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Bromomethane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Carbon disulfide	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Carbon tetrachloride	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Chlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Chloroethane	BRL	10		ug/L	279124	1	05/15/2019 20:47	JB
Chloroform	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Chloromethane	BRL	10		ug/L	279124	1	05/15/2019 20:47	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Cyclohexane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Dibromochloromethane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Dichlorodifluoromethane	BRL	10		ug/L	279124	1	05/15/2019 20:47	JB
Ethylbenzene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Freon-113	BRL	10		ug/L	279124	1	05/15/2019 20:47	JB
Isopropylbenzene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
m,p-Xylene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Methyl acetate	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Methyl tert-butyl ether	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Methylcyclohexane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Methylene chloride	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
o-Xylene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Styrene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Tetrachloroethene	260	100		ug/L	279124	20	05/15/2019 05:43	JB
Toluene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Trichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279124	1	05/15/2019 20:47	JB
Vinyl chloride	BRL	2.0		ug/L	279124	1	05/15/2019 20:47	JB
Surr: 4-Bromofluorobenzene	95.9	64-125		%REC	279124	1	05/15/2019 20:47	JB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-3
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 4:10:00 PM
Lab ID:	1905B05-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5030B)**				
Surr: 4-Bromofluorobenzene	94.6	64-125		%REC	279124	20	05/15/2019 05:43	JB
Surr: Dibromofluoromethane	101	76.4-125		%REC	279124	1	05/15/2019 20:47	JB
Surr: Dibromofluoromethane	97.3	76.4-125		%REC	279124	20	05/15/2019 05:43	JB
Surr: Toluene-d8	101	78.3-116		%REC	279124	1	05/15/2019 20:47	JB
Surr: Toluene-d8	101	78.3-116		%REC	279124	20	05/15/2019 05:43	JB
METALS, DISSOLVED SW6010D				**(SW3005A)**				
Arsenic	BRL	0.0500		mg/L	279068	1	05/16/2019 10:10	AJ
Barium	0.0289	0.0200		mg/L	279068	1	05/16/2019 10:10	AJ
Cadmium	BRL	0.0050		mg/L	279068	1	05/16/2019 10:10	AJ
Chromium	BRL	0.0100		mg/L	279068	1	05/16/2019 10:10	AJ
Lead	BRL	0.0100		mg/L	279068	1	05/16/2019 10:10	AJ
Selenium	BRL	0.0200		mg/L	279068	1	05/16/2019 10:10	AJ
Silver	BRL	0.0100		mg/L	279068	1	05/16/2019 10:10	AJ
Mercury, Dissolved SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	279103	1	05/16/2019 15:57	EH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-2
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 3:25:00 PM
Lab ID:	1905B05-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3510C)**				
1,1´-Biphenyl	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
2,4,5-Trichlorophenol	BRL	25		ug/L	278956	1	05/15/2019 16:45	YH
2,4,6-Trichlorophenol	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
2,4-Dichlorophenol	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
2,4-Dimethylphenol	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
2,4-Dinitrophenol	BRL	25		ug/L	278956	1	05/15/2019 16:45	YH
2,4-Dinitrotoluene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
2,6-Dinitrotoluene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
2-Chloronaphthalene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
2-Chlorophenol	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
2-Methylnaphthalene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
2-Methylphenol	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
2-Nitroaniline	BRL	25		ug/L	278956	1	05/15/2019 16:45	YH
2-Nitrophenol	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
3,3´-Dichlorobenzidine	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
3-Nitroaniline	BRL	25		ug/L	278956	1	05/15/2019 16:45	YH
4,6-Dinitro-2-methylphenol	BRL	25		ug/L	278956	1	05/15/2019 16:45	YH
4-Bromophenyl phenyl ether	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
4-Chloro-3-methylphenol	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
4-Chloroaniline	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
4-Chlorophenyl phenyl ether	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
4-Methylphenol	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
4-Nitroaniline	BRL	25		ug/L	278956	1	05/15/2019 16:45	YH
4-Nitrophenol	BRL	25		ug/L	278956	1	05/15/2019 16:45	YH
Acenaphthene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Acenaphthylene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Acetophenone	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Anthracene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Atrazine	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Benz(a)anthracene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Benzaldehyde	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Benzo(a)pyrene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Benzo(b)fluoranthene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Benzo(k)fluoranthene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Bis(2-chloroethoxy)methane	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Bis(2-chloroethyl)ether	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Bis(2-chloroisopropyl)ether	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Bis(2-ethylhexyl)phthalate	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Butyl benzyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Caprolactam	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-2
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 3:25:00 PM
Lab ID:	1905B05-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3510C)**				
Carbazole	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Chrysene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Di-n-butyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Di-n-octyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Dibenz(a,h)anthracene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Dibenzofuran	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Diethyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Dimethyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Fluoranthene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Fluorene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Hexachlorobenzene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Hexachlorobutadiene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Hexachlorocyclopentadiene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Hexachloroethane	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Indeno(1,2,3-cd)pyrene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Isophorone	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
N-Nitrosodi-n-propylamine	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
N-Nitrosodiphenylamine	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Naphthalene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Nitrobenzene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Pentachlorophenol	BRL	25		ug/L	278956	1	05/15/2019 16:45	YH
Phenanthrene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Phenol	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Pyrene	BRL	10		ug/L	278956	1	05/15/2019 16:45	YH
Surr: 2,4,6-Tribromophenol	98.8	47-127		%REC	278956	1	05/15/2019 16:45	YH
Surr: 2-Fluorobiphenyl	100	47.4-119		%REC	278956	1	05/15/2019 16:45	YH
Surr: 2-Fluorophenol	32.4	26.2-120		%REC	278956	1	05/15/2019 16:45	YH
Surr: 4-Terphenyl-d14	71.7	45-133		%REC	278956	1	05/15/2019 16:45	YH
Surr: Nitrobenzene-d5	90.6	41.9-121		%REC	278956	1	05/15/2019 16:45	YH
Surr: Phenol-d5	21.6	17.8-120		%REC	278956	1	05/15/2019 16:45	YH
TCL VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-2
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 3:25:00 PM
Lab ID:	1905B05-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,2-Dichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
1,3-Dichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
2-Butanone	BRL	50		ug/L	279124	1	05/15/2019 21:12	JB
2-Hexanone	BRL	10		ug/L	279124	1	05/15/2019 21:12	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279124	1	05/15/2019 21:12	JB
Acetone	BRL	50		ug/L	279124	1	05/15/2019 21:12	JB
Benzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Bromodichloromethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Bromoform	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Bromomethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Carbon disulfide	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Carbon tetrachloride	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Chlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Chloroethane	BRL	10		ug/L	279124	1	05/15/2019 21:12	JB
Chloroform	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Chloromethane	BRL	10		ug/L	279124	1	05/15/2019 21:12	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Cyclohexane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Dibromochloromethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Dichlorodifluoromethane	BRL	10		ug/L	279124	1	05/15/2019 21:12	JB
Ethylbenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Freon-113	BRL	10		ug/L	279124	1	05/15/2019 21:12	JB
Isopropylbenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
m,p-Xylene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Methyl acetate	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Methyl tert-butyl ether	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Methylcyclohexane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Methylene chloride	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
o-Xylene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Styrene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Tetrachloroethene	46	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Toluene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Trichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:12	JB
Vinyl chloride	BRL	2.0		ug/L	279124	1	05/15/2019 21:12	JB
Surr: 4-Bromofluorobenzene	94.1	64-125		%REC	279124	1	05/15/2019 21:12	JB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-2
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 3:25:00 PM
Lab ID:	1905B05-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D					**(SW5030B)**			
Surr: Dibromofluoromethane	101	76.4-125		%REC	279124	1	05/15/2019 21:12	JB
Surr: Toluene-d8	102	78.3-116		%REC	279124	1	05/15/2019 21:12	JB
METALS, DISSOLVED SW6010D					**(SW3005A)**			
Arsenic	BRL	0.0500		mg/L	279068	1	05/16/2019 10:42	AJ
Barium	0.0419	0.0200		mg/L	279068	1	05/16/2019 10:42	AJ
Cadmium	BRL	0.0050		mg/L	279068	1	05/16/2019 10:42	AJ
Chromium	BRL	0.0100		mg/L	279068	1	05/16/2019 10:42	AJ
Lead	BRL	0.0100		mg/L	279068	1	05/16/2019 10:42	AJ
Selenium	BRL	0.0200		mg/L	279068	1	05/16/2019 10:42	AJ
Silver	BRL	0.0100		mg/L	279068	1	05/16/2019 10:42	AJ
Mercury, Dissolved SW7470A					**(SW7470A)**			
Mercury	BRL	0.00020		mg/L	279103	1	05/16/2019 16:21	EH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-1
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 2:30:00 PM
Lab ID:	1905B05-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3510C)**				
1,1´-Biphenyl	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
2,4,5-Trichlorophenol	BRL	25		ug/L	278956	1	05/15/2019 17:12	YH
2,4,6-Trichlorophenol	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
2,4-Dichlorophenol	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
2,4-Dimethylphenol	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
2,4-Dinitrophenol	BRL	25		ug/L	278956	1	05/15/2019 17:12	YH
2,4-Dinitrotoluene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
2,6-Dinitrotoluene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
2-Chloronaphthalene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
2-Chlorophenol	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
2-Methylnaphthalene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
2-Methylphenol	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
2-Nitroaniline	BRL	25		ug/L	278956	1	05/15/2019 17:12	YH
2-Nitrophenol	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
3,3´-Dichlorobenzidine	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
3-Nitroaniline	BRL	25		ug/L	278956	1	05/15/2019 17:12	YH
4,6-Dinitro-2-methylphenol	BRL	25		ug/L	278956	1	05/15/2019 17:12	YH
4-Bromophenyl phenyl ether	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
4-Chloro-3-methylphenol	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
4-Chloroaniline	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
4-Chlorophenyl phenyl ether	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
4-Methylphenol	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
4-Nitroaniline	BRL	25		ug/L	278956	1	05/15/2019 17:12	YH
4-Nitrophenol	BRL	25		ug/L	278956	1	05/15/2019 17:12	YH
Acenaphthene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Acenaphthylene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Acetophenone	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Anthracene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Atrazine	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Benz(a)anthracene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Benzaldehyde	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Benzo(a)pyrene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Benzo(b)fluoranthene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Benzo(k)fluoranthene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Bis(2-chloroethoxy)methane	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Bis(2-chloroethyl)ether	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Bis(2-chloroisopropyl)ether	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Bis(2-ethylhexyl)phthalate	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Butyl benzyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Caprolactam	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-1
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 2:30:00 PM
Lab ID:	1905B05-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3510C)**				
Carbazole	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Chrysene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Di-n-butyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Di-n-octyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Dibenz(a,h)anthracene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Dibenzofuran	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Diethyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Dimethyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Fluoranthene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Fluorene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Hexachlorobenzene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Hexachlorobutadiene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Hexachlorocyclopentadiene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Hexachloroethane	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Indeno(1,2,3-cd)pyrene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Isophorone	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
N-Nitrosodi-n-propylamine	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
N-Nitrosodiphenylamine	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Naphthalene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Nitrobenzene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Pentachlorophenol	BRL	25		ug/L	278956	1	05/15/2019 17:12	YH
Phenanthrene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Phenol	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Pyrene	BRL	10		ug/L	278956	1	05/15/2019 17:12	YH
Surr: 2,4,6-Tribromophenol	98.7	47-127		%REC	278956	1	05/15/2019 17:12	YH
Surr: 2-Fluorobiphenyl	101	47.4-119		%REC	278956	1	05/15/2019 17:12	YH
Surr: 2-Fluorophenol	38.1	26.2-120		%REC	278956	1	05/15/2019 17:12	YH
Surr: 4-Terphenyl-d14	78.5	45-133		%REC	278956	1	05/15/2019 17:12	YH
Surr: Nitrobenzene-d5	92	41.9-121		%REC	278956	1	05/15/2019 17:12	YH
Surr: Phenol-d5	25.3	17.8-120		%REC	278956	1	05/15/2019 17:12	YH
TCL VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-1
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 2:30:00 PM
Lab ID:	1905B05-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,2-Dichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
1,3-Dichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
2-Butanone	BRL	50		ug/L	279124	1	05/15/2019 21:37	JB
2-Hexanone	BRL	10		ug/L	279124	1	05/15/2019 21:37	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279124	1	05/15/2019 21:37	JB
Acetone	BRL	50		ug/L	279124	1	05/15/2019 21:37	JB
Benzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Bromodichloromethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Bromoform	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Bromomethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Carbon disulfide	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Carbon tetrachloride	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Chlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Chloroethane	BRL	10		ug/L	279124	1	05/15/2019 21:37	JB
Chloroform	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Chloromethane	BRL	10		ug/L	279124	1	05/15/2019 21:37	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Cyclohexane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Dibromochloromethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Dichlorodifluoromethane	BRL	10		ug/L	279124	1	05/15/2019 21:37	JB
Ethylbenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Freon-113	BRL	10		ug/L	279124	1	05/15/2019 21:37	JB
Isopropylbenzene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
m,p-Xylene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Methyl acetate	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Methyl tert-butyl ether	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Methylcyclohexane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Methylene chloride	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
o-Xylene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Styrene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Tetrachloroethene	220	100		ug/L	279124	20	05/15/2019 06:33	JB
Toluene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Trichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279124	1	05/15/2019 21:37	JB
Vinyl chloride	BRL	2.0		ug/L	279124	1	05/15/2019 21:37	JB
Surr: 4-Bromofluorobenzene	94.6	64-125		%REC	279124	1	05/15/2019 21:37	JB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-1
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 2:30:00 PM
Lab ID:	1905B05-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5030B)**				
Surr: 4-Bromofluorobenzene	95.2	64-125		%REC	279124	20	05/15/2019 06:33	JB
Surr: Dibromofluoromethane	102	76.4-125		%REC	279124	1	05/15/2019 21:37	JB
Surr: Dibromofluoromethane	99.4	76.4-125		%REC	279124	20	05/15/2019 06:33	JB
Surr: Toluene-d8	101	78.3-116		%REC	279124	20	05/15/2019 06:33	JB
Surr: Toluene-d8	102	78.3-116		%REC	279124	1	05/15/2019 21:37	JB
METALS, DISSOLVED SW6010D				**(SW3005A)**				
Arsenic	BRL	0.0500		mg/L	279068	1	05/16/2019 10:44	AJ
Barium	0.0326	0.0200		mg/L	279068	1	05/16/2019 10:44	AJ
Cadmium	BRL	0.0050		mg/L	279068	1	05/16/2019 10:44	AJ
Chromium	BRL	0.0100		mg/L	279068	1	05/16/2019 10:44	AJ
Lead	BRL	0.0100		mg/L	279068	1	05/16/2019 10:44	AJ
Selenium	BRL	0.0200		mg/L	279068	1	05/16/2019 10:44	AJ
Silver	BRL	0.0100		mg/L	279068	1	05/16/2019 10:44	AJ
Mercury, Dissolved SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	279103	1	05/16/2019 16:25	EH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-1 DUP
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 2:30:00 PM
Lab ID:	1905B05-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3510C)**				
1,1´-Biphenyl	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
2,4,5-Trichlorophenol	BRL	25		ug/L	278956	1	05/15/2019 17:37	YH
2,4,6-Trichlorophenol	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
2,4-Dichlorophenol	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
2,4-Dimethylphenol	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
2,4-Dinitrophenol	BRL	25		ug/L	278956	1	05/15/2019 17:37	YH
2,4-Dinitrotoluene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
2,6-Dinitrotoluene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
2-Chloronaphthalene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
2-Chlorophenol	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
2-Methylnaphthalene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
2-Methylphenol	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
2-Nitroaniline	BRL	25		ug/L	278956	1	05/15/2019 17:37	YH
2-Nitrophenol	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
3,3´-Dichlorobenzidine	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
3-Nitroaniline	BRL	25		ug/L	278956	1	05/15/2019 17:37	YH
4,6-Dinitro-2-methylphenol	BRL	25		ug/L	278956	1	05/15/2019 17:37	YH
4-Bromophenyl phenyl ether	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
4-Chloro-3-methylphenol	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
4-Chloroaniline	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
4-Chlorophenyl phenyl ether	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
4-Methylphenol	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
4-Nitroaniline	BRL	25		ug/L	278956	1	05/15/2019 17:37	YH
4-Nitrophenol	BRL	25		ug/L	278956	1	05/15/2019 17:37	YH
Acenaphthene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Acenaphthylene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Acetophenone	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Anthracene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Atrazine	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Benz(a)anthracene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Benzaldehyde	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Benzo(a)pyrene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Benzo(b)fluoranthene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Benzo(k)fluoranthene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Bis(2-chloroethoxy)methane	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Bis(2-chloroethyl)ether	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Bis(2-chloroisopropyl)ether	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Bis(2-ethylhexyl)phthalate	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Butyl benzyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Caprolactam	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	MW-1 DUP
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019 2:30:00 PM
Lab ID:	1905B05-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL-SEMIVOLATILE ORGANICS SW8270E				**(SW3510C)**				
Carbazole	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Chrysene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Di-n-butyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Di-n-octyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Dibenz(a,h)anthracene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Dibenzofuran	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Diethyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Dimethyl phthalate	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Fluoranthene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Fluorene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Hexachlorobenzene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Hexachlorobutadiene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Hexachlorocyclopentadiene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Hexachloroethane	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Indeno(1,2,3-cd)pyrene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Isophorone	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
N-Nitrosodi-n-propylamine	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
N-Nitrosodiphenylamine	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Naphthalene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Nitrobenzene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Pentachlorophenol	BRL	25		ug/L	278956	1	05/15/2019 17:37	YH
Phenanthrene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Phenol	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Pyrene	BRL	10		ug/L	278956	1	05/15/2019 17:37	YH
Surr: 2,4,6-Tribromophenol	106	47-127		%REC	278956	1	05/15/2019 17:37	YH
Surr: 2-Fluorobiphenyl	106	47.4-119		%REC	278956	1	05/15/2019 17:37	YH
Surr: 2-Fluorophenol	40.2	26.2-120		%REC	278956	1	05/15/2019 17:37	YH
Surr: 4-Terphenyl-d14	79.6	45-133		%REC	278956	1	05/15/2019 17:37	YH
Surr: Nitrobenzene-d5	93.2	41.9-121		%REC	278956	1	05/15/2019 17:37	YH
Surr: Phenol-d5	25.3	17.8-120		%REC	278956	1	05/15/2019 17:37	YH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	TRIP BLANK
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019
Lab ID:	1905B05-005	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
1,2-Dichloroethane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
1,3-Dichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
2-Butanone	BRL	50		ug/L	279124	1	05/15/2019 02:22	JB
2-Hexanone	BRL	10		ug/L	279124	1	05/15/2019 02:22	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279124	1	05/15/2019 02:22	JB
Acetone	BRL	50		ug/L	279124	1	05/15/2019 02:22	JB
Benzene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Bromodichloromethane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Bromoform	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Bromomethane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Carbon disulfide	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Carbon tetrachloride	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Chlorobenzene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Chloroethane	BRL	10		ug/L	279124	1	05/15/2019 02:22	JB
Chloroform	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Chloromethane	BRL	10		ug/L	279124	1	05/15/2019 02:22	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Cyclohexane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Dibromochloromethane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Dichlorodifluoromethane	BRL	10		ug/L	279124	1	05/15/2019 02:22	JB
Ethylbenzene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Freon-113	BRL	10		ug/L	279124	1	05/15/2019 02:22	JB
Isopropylbenzene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
m,p-Xylene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Methyl acetate	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Methyl tert-butyl ether	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Methylcyclohexane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Methylene chloride	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
o-Xylene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 20-May-19

Client:	Cardno	**Client Sample ID:**	TRIP BLANK
Project Name	Stanley Assemblage	**Collection Date:**	5/9/2019
Lab ID:	1905B05-005	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Tetrachloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Toluene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Trichloroethene	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279124	1	05/15/2019 02:22	JB
Vinyl chloride	BRL	2.0		ug/L	279124	1	05/15/2019 02:22	JB
Surr: 4-Bromofluorobenzene	97.3	64-125		%REC	279124	1	05/15/2019 02:22	JB
Surr: Dibromofluoromethane	102	76.4-125		%REC	279124	1	05/15/2019 02:22	JB
Surr: Toluene-d8	101	78.3-116		%REC	279124	1	05/15/2019 02:22	JB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Clear | Save as

AES ANALYTICAL ENVIRONMENTAL SERVICES, INC.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Cardno** AES Work Order Number: **1904S72**

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ☐ Courier ☒ Other _____

		Yes	No	N/A	Details	Comments
3.	Shipping container/cooler received in good condition?	○	○	○	damaged ☐ leaking ☐ other ☐	
4.	Custody seals present on shipping container?	○	○	○		
5.	Custody seals intact on shipping container?	○	○	○		
6.	Temperature blanks present?	○	○	○		
7.	Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	○	○	○	Cooling initiated for recently collected samples / ice present ☐	
8.	Chain of Custody (COC) present?	○	○	○		
9.	Chain of Custody signed, dated, and timed when relinquished and received?	○	○	○		
10.	Sampler name and/or signature on COC?	○	○	○		
11.	Were all samples received within holding time?	○	○	○		
12.	TAT marked on the COC?	○	○	○	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. ☐	

13. Cooler 1 Temperature 0.5 °C Cooler 2 Temperature _____ °C Cooler 3 Temperature _____ °C Cooler 4 Temperature _____ °C

14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials). MJ 4/26/19

		Yes	No	N/A	Details	Comments
16.	Were sample containers intact upon receipt?	○	○	○		
17.	Custody seals present on sample containers?	○	○	○		
18.	Custody seals intact on sample containers?	○	○	○		
19.	Do sample container labels match the COC?	○	○	○	incomplete info ☐ illegible ☐ no label ☐ other ☐	
20.	Are analyses requested indicated on the COC?	○	○	○		
21.	Were all of the samples listed on the COC received?	○	○	○	samples received but not listed on COC ☐ samples listed on COC not received ☐	
22.	Was the sample collection date/time noted?	○	○	○		
23.	Did we receive sufficient sample volume for indicated analyses?	○	○	○		
24.	Were samples received in appropriate containers?	○	○	○		
25.	Were VOA samples received without headspace (< 1/4" bubble)?	○	○	○		
26.	Were trip blanks submitted?	○	○	○	listed on COC ☐ not listed on COC ☒	

27. Comments: _____

I certify that I have completed sections 16-27 (dated initials). EW 4/26/19

This section only applies to samples where pH can be checked at Sample Receipt.

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	○	○	○		
29.	Containers meet preservation guidelines?	○	○	○		
30.	Was pH adjusted at Sample Receipt?	○	○	○		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH.

I certify that I have completed sections 28-30 (dated initials). EW 4/26/19

Checklist 6.9.17 Rev 2

Locked

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 278956

Sample ID: **MB-278956** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398084**
SampleType: **MBLK** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278956** Analysis Date: **05/14/2019** Seq No: **8920881**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1´-Biphenyl	BRL	10									
2,4,5-Trichlorophenol	BRL	25									
2,4,6-Trichlorophenol	BRL	10									
2,4-Dichlorophenol	BRL	10									
2,4-Dimethylphenol	BRL	10									
2,4-Dinitrophenol	BRL	25									
2,4-Dinitrotoluene	BRL	10									
2,6-Dinitrotoluene	BRL	10									
2-Chloronaphthalene	BRL	10									
2-Chlorophenol	BRL	10									
2-Methylnaphthalene	BRL	10									
2-Methylphenol	BRL	10									
2-Nitroaniline	BRL	25									
2-Nitrophenol	BRL	10									
3,3´-Dichlorobenzidine	BRL	10									
3-Nitroaniline	BRL	25									
4,6-Dinitro-2-methylphenol	BRL	25									
4-Bromophenyl phenyl ether	BRL	10									
4-Chloro-3-methylphenol	BRL	10									
4-Chloroaniline	BRL	10									
4-Chlorophenyl phenyl ether	BRL	10									
4-Methylphenol	BRL	10									
4-Nitroaniline	BRL	25									
4-Nitrophenol	BRL	25									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Acetophenone	BRL	10									

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 278956

Sample ID: **MB-278956** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398084**
SampleType: **MBLK** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278956** Analysis Date: **05/14/2019** Seq No: **8920881**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Anthracene	BRL	10									
Atrazine	BRL	10									
Benz(a)anthracene	BRL	10									
Benzaldehyde	BRL	10									
Benzo(a)pyrene	BRL	10									
Benzo(b)fluoranthene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Bis(2-chloroethoxy)methane	BRL	10									
Bis(2-chloroethyl)ether	BRL	10									
Bis(2-chloroisopropyl)ether	BRL	10									
Bis(2-ethylhexyl)phthalate	BRL	10									
Butyl benzyl phthalate	BRL	10									
Caprolactam	BRL	10									
Carbazole	BRL	10									
Chrysene	BRL	10									
Di-n-butyl phthalate	BRL	10									
Di-n-octyl phthalate	BRL	10									
Dibenz(a,h)anthracene	BRL	10									
Dibenzofuran	BRL	10									
Diethyl phthalate	BRL	10									
Dimethyl phthalate	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Hexachlorobenzene	BRL	10									
Hexachlorobutadiene	BRL	10									
Hexachlorocyclopentadiene	BRL	10									

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 278956

Sample ID: **MB-278956** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398084**
SampleType: **MBLK** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278956** Analysis Date: **05/14/2019** Seq No: **8920881**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Hexachloroethane	BRL	10									
Indeno(1,2,3-cd)pyrene	BRL	10									
Isophorone	BRL	10									
N-Nitrosodi-n-propylamine	BRL	10									
N-Nitrosodiphenylamine	BRL	10									
Naphthalene	BRL	10									
Nitrobenzene	BRL	10									
Pentachlorophenol	BRL	25									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	134.2	0	100.0		134	47	127				S
Surr: 2-Fluorobiphenyl	58.86	0	50.00		118	47.4	119				
Surr: 2-Fluorophenol	53.62	0	100.0		53.6	26.2	120				
Surr: 4-Terphenyl-d14	42.23	0	50.00		84.5	45	133				
Surr: Nitrobenzene-d5	52.80	0	50.00		106	41.9	121				
Surr: Phenol-d5	27.55	0	100.0		27.6	17.8	120				

Sample ID: **LCS-278956** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398084**
SampleType: **LCS** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278956** Analysis Date: **05/14/2019** Seq No: **8920882**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
2,4-Dinitrotoluene	105.9	10	100.0		106	60.1	123				
2-Chlorophenol	87.53	10	100.0		87.5	50.6	120				
4-Chloro-3-methylphenol	106.9	10	100.0		107	59.5	122				
4-Nitrophenol	42.97	25	100.0		43.0	20	120				
Acenaphthene	111.0	10	100.0		111	60.5	119				
N-Nitrosodi-n-propylamine	106.7	10	100.0		107	62.3	127				

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 278956

Sample ID: **LCS-278956** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398084**
SampleType: **LCS** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278956** Analysis Date: **05/14/2019** Seq No: **8920882**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Pentachlorophenol	100.6	25	100.0		101	50.9	120				
Phenol	38.44	10	100.0		38.4	20.1	120				
Pyrene	110.4	10	100.0		110	68.8	139				
Surr: 2,4,6-Tribromophenol	138.6	0	100.0		139	47	127				S
Surr: 2-Fluorobiphenyl	63.76	0	50.00		128	47.4	119				S
Surr: 2-Fluorophenol	56.93	0	100.0		56.9	26.2	120				
Surr: 4-Terphenyl-d14	46.21	0	50.00		92.4	45	133				
Surr: Nitrobenzene-d5	51.79	0	50.00		104	41.9	121				
Surr: Phenol-d5	36.42	0	100.0		36.4	17.8	120				

Sample ID: **1905948-007CMS** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398201**
SampleType: **MS** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278956** Analysis Date: **05/15/2019** Seq No: **8924662**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
2,4-Dinitrotoluene	83.47	10	100.0		83.5	50.3	123				
2-Chlorophenol	86.96	10	100.0		87.0	50.8	120				
4-Chloro-3-methylphenol	91.36	10	100.0		91.4	47.1	124				
4-Nitrophenol	33.25	25	100.0		33.2	21.8	120				
Acenaphthene	84.64	10	100.0		84.6	44.7	119				
N-Nitrosodi-n-propylamine	88.46	10	100.0		88.5	52.1	120				
Pentachlorophenol	43.26	25	100.0		43.3	40	120				
Phenol	45.10	10	100.0		45.1	31.5	120				
Pyrene	95.76	10	100.0		95.8	51	129				
Surr: 2,4,6-Tribromophenol	90.71	0	100.0		90.7	47	127				
Surr: 2-Fluorobiphenyl	44.05	0	50.00		88.1	47.4	119				
Surr: 2-Fluorophenol	58.10	0	100.0		58.1	26.2	120				
Surr: 4-Terphenyl-d14	43.56	0	50.00		87.1	45	133				
Surr: Nitrobenzene-d5	44.77	0	50.00		89.5	41.9	121				

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 278956

Sample ID: **1905948-007CMS** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398201**
SampleType: **MS** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278956** Analysis Date: **05/15/2019** Seq No: **8924662**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: Phenol-d5	48.30	0	100.0		48.3	17.8	120				

Sample ID: **1905948-007CMSD** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398201**
SampleType: **MSD** TestCode: **TCL-SEMIVOLATILE ORGANICS SW8270E** BatchID: **278956** Analysis Date: **05/15/2019** Seq No: **8924663**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
2,4-Dinitrotoluene	82.48	10	100.0		82.5	50.3	123	83.47	1.19	21.7	
2-Chlorophenol	91.00	10	100.0		91.0	50.8	120	86.96	4.54	24.8	
4-Chloro-3-methylphenol	93.21	10	100.0		93.2	47.1	124	91.36	2.00	20.7	
4-Nitrophenol	39.02	25	100.0		39.0	21.8	120	33.25	16.0	38.3	
Acenaphthene	85.11	10	100.0		85.1	44.7	119	84.64	0.554	20.5	
N-Nitrosodi-n-propylamine	91.53	10	100.0		91.5	52.1	120	88.46	3.41	29.2	
Pentachlorophenol	46.05	25	100.0		46.0	40	120	43.26	6.25	30.7	
Phenol	46.65	10	100.0		46.6	31.5	120	45.10	3.38	28.5	
Pyrene	94.70	10	100.0		94.7	51	129	95.76	1.11	24.8	
Surr: 2,4,6-Tribromophenol	93.22	0	100.0		93.2	47	127	90.71	0	0	
Surr: 2-Fluorobiphenyl	43.87	0	50.00		87.7	47.4	119	44.05	0	0	
Surr: 2-Fluorophenol	62.19	0	100.0		62.2	26.2	120	58.10	0	0	
Surr: 4-Terphenyl-d14	43.79	0	50.00		87.6	45	133	43.56	0	0	
Surr: Nitrobenzene-d5	43.94	0	50.00		87.9	41.9	121	44.77	0	0	
Surr: Phenol-d5	52.35	0	100.0		52.4	17.8	120	48.30	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 279068

Sample ID: **MB-279068** Client ID: Units: **mg/L** Prep Date: **05/15/2019** Run No: **398269**
SampleType: **MBLK** TestCode: **METALS, DISSOLVED** **SW6010D** BatchID: **279068** Analysis Date: **05/16/2019** Seq No: **8924930**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	BRL	0.0100									
Barium	BRL	0.0200									
Cadmium	BRL	0.0050									
Chromium	BRL	0.0100									
Lead	BRL	0.0100									
Selenium	BRL	0.0200									
Silver	BRL	0.0100									

Sample ID: **LCS-279068** Client ID: Units: **mg/L** Prep Date: **05/15/2019** Run No: **398269**
SampleType: **LCS** TestCode: **METALS, DISSOLVED** **SW6010D** BatchID: **279068** Analysis Date: **05/16/2019** Seq No: **8924931**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	1.055	0.0500	1.000		105	80	120				
Barium	1.071	0.0200	1.000		107	80	120				
Cadmium	1.044	0.0050	1.000		104	80	120				
Chromium	1.032	0.0100	1.000		103	80	120				
Lead	1.040	0.0100	1.000		104	80	120				
Selenium	1.158	0.0200	1.000		116	80	120				
Silver	0.1050	0.0100	0.1000		105	80	120				

Sample ID: **1905B05-001CMS** Client ID: **MW-3** Units: **mg/L** Prep Date: **05/15/2019** Run No: **398269**
SampleType: **MS** TestCode: **METALS, DISSOLVED** **SW6010D** BatchID: **279068** Analysis Date: **05/16/2019** Seq No: **8924935**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	1.009	0.0500	1.000		101	75	125				
Barium	1.046	0.0200	1.000	0.02892	102	75	125				
Cadmium	0.9934	0.0050	1.000		99.3	75	125				
Chromium	0.9880	0.0100	1.000		98.8	75	125				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 279068

Sample ID: **1905B05-001CMS** Client ID: **MW-3** Units: **mg/L** Prep Date: **05/15/2019** Run No: **398269**
SampleType: **MS** TestCode: **METALS, DISSOLVED** **SW6010D** BatchID: **279068** Analysis Date: **05/16/2019** Seq No: **8924935**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	0.9883	0.0100	1.000		98.8	75	125				
Selenium	1.119	0.0200	1.000	0.009000	111	75	125				
Silver	0.09955	0.0100	0.1000		99.6	75	125				

Sample ID: **1905B05-001CMSD** Client ID: **MW-3** Units: **mg/L** Prep Date: **05/15/2019** Run No: **398269**
SampleType: **MSD** TestCode: **METALS, DISSOLVED** **SW6010D** BatchID: **279068** Analysis Date: **05/16/2019** Seq No: **8924936**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	0.9974	0.0500	1.000		99.7	75	125	1.009	1.11	20	
Barium	1.044	0.0200	1.000	0.02892	101	75	125	1.046	0.209	20	
Cadmium	0.9905	0.0050	1.000		99.1	75	125	0.9934	0.293	20	
Chromium	0.9845	0.0100	1.000		98.4	75	125	0.9880	0.355	20	
Lead	0.9862	0.0100	1.000		98.6	75	125	0.9883	0.212	20	
Selenium	1.119	0.0200	1.000	0.009000	111	75	125	1.119	0.036	20	
Silver	0.09936	0.0100	0.1000		99.4	75	125	0.09955	0.191	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 279103

Sample ID: **MB-279103** Client ID: Units: **mg/L** Prep Date: **05/16/2019** Run No: **398312**
SampleType: **MBLK** TestCode: **Mercury, Dissolved SW7470A** BatchID: **279103** Analysis Date: **05/16/2019** Seq No: **8925833**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	BRL	0.00020									

Sample ID: **LCS-279103** Client ID: Units: **mg/L** Prep Date: **05/16/2019** Run No: **398312**
SampleType: **LCS** TestCode: **Mercury, Dissolved SW7470A** BatchID: **279103** Analysis Date: **05/16/2019** Seq No: **8925834**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.003854	0.00020	0.0040		96.4	80	120				

Sample ID: **1905B05-001CMS** Client ID: **MW-3** Units: **mg/L** Prep Date: **05/16/2019** Run No: **398312**
SampleType: **MS** TestCode: **Mercury, Dissolved SW7470A** BatchID: **279103** Analysis Date: **05/16/2019** Seq No: **8925836**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.003963	0.00020	0.0040		99.1	75	125				

Sample ID: **1905B05-001CMSD** Client ID: **MW-3** Units: **mg/L** Prep Date: **05/16/2019** Run No: **398312**
SampleType: **MSD** TestCode: **Mercury, Dissolved SW7470A** BatchID: **279103** Analysis Date: **05/16/2019** Seq No: **8925837**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.003857	0.00020	0.0040		96.4	7	125	0.003963	2.71	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 279124

Sample ID: **MB-279124** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398134**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279124** Analysis Date: **05/15/2019** Seq No: **8921572**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,4-Trichlorobenzene	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,3-Dichlorobenzene	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	50									
Benzene	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	5.0									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									
Chloroform	BRL	5.0									
Chloromethane	BRL	10									

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 279124

Sample ID: **MB-279124** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398134**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279124** Analysis Date: **05/15/2019** Seq No: **8921572**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	5.0									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	48.01	0	50.00		96.0	64	125				
Surr: Dibromofluoromethane	49.65	0	50.00		99.3	76.4	125				
Surr: Toluene-d8	50.29	0	50.00		101	78.3	116				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 279124

Sample ID: **LCS-279124** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398134**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279124** Analysis Date: **05/15/2019** Seq No: **8921663**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	22.24	5.0	20.00		111	69	136				
Benzene	21.99	5.0	20.00		110	73.7	126				
Chlorobenzene	19.87	5.0	20.00		99.4	73.5	124				
Toluene	21.45	5.0	20.00		107	76.8	125				
Trichloroethene	20.72	5.0	20.00		104	70.9	124				
Surr: 4-Bromofluorobenzene	51.41	0	50.00		103	64	125				
Surr: Dibromofluoromethane	51.87	0	50.00		104	76.4	125				
Surr: Toluene-d8	53.23	0	50.00		106	78.3	116				

Sample ID: **1905948-009AMS** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398226**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279124** Analysis Date: **05/15/2019** Seq No: **8923836**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	27.73	5.0	20.00		139	63.8	146				
Benzene	25.98	5.0	20.00		130	70.2	137				
Chlorobenzene	22.82	5.0	20.00		114	72.7	141				
Toluene	24.83	5.0	20.00		124	67	141				
Trichloroethene	24.88	5.0	20.00		124	69.3	141				
Surr: 4-Bromofluorobenzene	51.07	0	50.00		102	64	125				
Surr: Dibromofluoromethane	52.46	0	50.00		105	76.4	125				
Surr: Toluene-d8	53.40	0	50.00		107	78.3	116				

Sample ID: **1905948-008ADUP** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398226**
SampleType: **DUP** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279124** Analysis Date: **05/15/2019** Seq No: **8923488**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0						0	0	20	
1,1,2,2-Tetrachloroethane	BRL	5.0						0	0	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 279124

Sample ID: **1905948-008ADUP** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398226**
SampleType: **DUP** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279124** Analysis Date: **05/15/2019** Seq No: **8923488**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	BRL	5.0						0	0	20	
1,1-Dichloroethane	BRL	5.0						0	0	20	
1,1-Dichloroethene	BRL	5.0						124.2	0	20	
1,2,4-Trichlorobenzene	BRL	5.0						0	0	20	
1,2-Dibromo-3-chloropropane	BRL	5.0						0	0	20	
1,2-Dibromoethane	BRL	5.0						0	0	20	
1,2-Dichlorobenzene	BRL	5.0						0	0	20	
1,2-Dichloroethane	BRL	5.0						0	0	20	
1,2-Dichloropropane	BRL	5.0						0	0	20	
1,3-Dichlorobenzene	BRL	5.0						0	0	20	
1,4-Dichlorobenzene	BRL	5.0						0	0	20	
2-Butanone	BRL	50						0	0	20	
2-Hexanone	BRL	10						0	0	20	
4-Methyl-2-pentanone	BRL	10						0	0	20	
Acetone	BRL	50						0	0	20	
Benzene	BRL	5.0						62.23	0	20	
Bromodichloromethane	BRL	5.0						0	0	20	
Bromoform	BRL	5.0						0	0	20	
Bromomethane	BRL	5.0						0	0	20	
Carbon disulfide	BRL	5.0						0	0	20	
Carbon tetrachloride	BRL	5.0						0	0	20	
Chlorobenzene	BRL	5.0						56.28	0	20	
Chloroethane	BRL	10						0	0	20	
Chloroform	BRL	5.0						0	0	20	
Chloromethane	BRL	10						0	0	20	
cis-1,2-Dichloroethene	BRL	5.0						0	0	20	
cis-1,3-Dichloropropene	BRL	5.0						0	0	20	

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name Stanley Assemblage
Workorder: 1905B05

ANALYTICAL QC SUMMARY REPORT

BatchID: 279124

Sample ID: **1905948-008ADUP** Client ID: Units: **ug/L** Prep Date: **05/14/2019** Run No: **398226**
SampleType: **DUP** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279124** Analysis Date: **05/15/2019** Seq No: **8923488**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyclohexane	BRL	5.0						1.120	0	20	
Dibromochloromethane	BRL	5.0						0	0	20	
Dichlorodifluoromethane	BRL	10						0	0	20	
Ethylbenzene	BRL	5.0						0	0	20	
Freon-113	BRL	10						0	0	20	
Isopropylbenzene	BRL	5.0						0	0	20	
m,p-Xylene	BRL	5.0						0	0	20	
Methyl acetate	BRL	5.0						0	0	20	
Methyl tert-butyl ether	BRL	5.0						0	0	20	
Methylcyclohexane	BRL	5.0						0	0	20	
Methylene chloride	BRL	5.0						0	0	20	
o-Xylene	BRL	5.0						0	0	20	
Styrene	BRL	5.0						0	0	20	
Tetrachloroethene	BRL	5.0						0	0	20	
Toluene	BRL	5.0						53.17	0	20	
trans-1,2-Dichloroethene	BRL	5.0						0	0	20	
trans-1,3-Dichloropropene	BRL	5.0						0	0	20	
Trichloroethene	BRL	5.0						57.03	0	20	
Trichlorofluoromethane	BRL	5.0						0	0	20	
Vinyl chloride	BRL	2.0						0	0	20	
Surr: 4-Bromofluorobenzene	47.82	0				64	125	40.30	0	0	
Surr: Dibromofluoromethane	50.97	0				76.4	125	57.28	0	0	
Surr: Toluene-d8	50.69	0				78.3	116	43.71	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

May 24, 2019

William Smithwick
Cardno
2000 First Drive Suite 220
Marietta GA 30062

RE: Stanley Assemblage

Dear William Smithwick: Order No: 1905A90

Analytical Environmental Services, Inc. received 10 samples on 5/10/2019 4:13:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/18-06/30/19.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/18-06/30/19 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Metals and PCM Asbestos), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/19.
These results relate only to the items tested as received. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Ioana Pacurar

Ioana Pacurar
Project Manager

Revision 5/24/2019

3080 Presidential Drive • Atlanta, Georgia 30340 • Tel: 770.457.8177 • Fax: 770.457.8188 • Toll Free: 800.972.4889
www.aesatlanta.com

ANALYTICAL ENVIRONMENTAL SERVICES, INC.
3080 Presidential Drive Atlanta, GA 30340-3704
Phone: (770) 457-8177 / Toll-Free: (800) 972-4889 / Fax: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1905A90

Date: 5-10-19 Page 1 of 1

COMPANY: Cardno, Inc.

ADDRESS: 2000 First Dr. Suite 230 Marietta, GA 30062

PHONE: 229-224-0164

EMAIL: william.smithwick@cardno.com

SAMPLED BY: A. Smithwick

SIGNATURE: [signature]

ANALYSIS REQUESTED: VOC

PRESERVATION (see codes): SMI

Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	GRAB	COMPOSITE	MATRIX (see codes)	VOC	REMARKS	Number of Containers
1	B-1 0'-1'	5-9-19	1330	X	SO		X		3
2	B-1b 0'-1'		1300					hold	3
3	B-2 0'-1'		1240						3
4	B-2b 0'-1'		1310					hold	3
5	B-3 0'-1'		1323						3
6	B-3b 0'-1'		1332					hold	3
7	B-4 0'-1'		1350						3
8	B-4b 0'-1'		1340					hold	3
9	B-5 0'-1'		1340						3
10	B-5b 0'-1'		1345					hold	3
11	B-1 0'-1' DVP		1300						3
12	Trip Blank				W				2
13	Temp. Blank				W				1
14									

RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. [signature]	5-10-19 1250	1. [signature]	5-10 1250
2. [signature]	5-10 413	2. [signature]	5-10-19 ~~1615~~ 1613
3.		3.	

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT: / / VIA:
IN: / / VIA:
client FedEx UPS US mail courier
other: _____

PROJECT INFORMATION
PROJECT NAME: Stanley Assemblage
PROJECT #: 0002420000
SITE ADDRESS: ~~2000 First Dr. Suite 230 Marietta, GA 3~~
SEND REPORT TO: william.smithwick@cardno.com
INVOICE TO (IF DIFFERENT FROM ABOVE):
QUOTE #: _____ PO#: _____

RECEIPT
Total # of Containers: 35

Turnaround Time (TAT) Request
☑ Standard
☐ 2 Business Day Rush
☐ Next Business Day Rush
☐ Same-Day Rush (auth req.)
☐ Other _____

STATE PROGRAM (if any): _____
E-mail? ☐ Fax? ☐
DATA PACKAGE: I ○ II ○ III ○ IV ○

Submission of samples to the laboratory constitutes acceptance of AES's Terms & Conditions. Client assumes sole responsibility for damage or loss of samples before we accept them. Samples received after 3PM or on Saturday are considered as received the following business day. If no TAT is marked on COC, AES will proceed with standard TAT. Samples are disposed of 30 days after completion of report unless other arrangements are made.

Matrix Codes: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water ST=Stormwater WW = Waste Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify)

Preservative Codes: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc

Date: 24-May-19

Client: Cardno
Project: Stanley Assemblage
Lab ID: 1905A90

Case Narrative

Volatile Organic Compounds Analysis by Method 8260D:

Percent recovery for the internal standard compound 1,4-Dichlorobenzene-d4 on sample 1905A57-001A, -004A, -007A, -009A, -017A was outside control limits biased low due to suspected matrix interference. All other internal standard recoveries were within control limits.

Percent recovery for the internal standard compound 1,4-Dichlorobenzene-d4 and Chlorobenzene-d5 on sample 1905A57-003 A was outside control limits biased low due to suspected matrix interference. All other internal standard recoveries were within control limits.

Tetrachloroethane value for the QC samples 1905A90-003AMS are "E" qualified indicating estimated values over linear calibration range due to the level of target analyte present in the unspiked sample.

Revision 5/24/19 - Off Hold Analysis:

At the request of W. Ashton Smithwick with Cardno via e-mail on 5/20/19, all samples listed below were taken off hold and analyzed for Total VOCs 8260 as a 5 day TAT:

B-1B 0'-1'
B-2B 0'-1'
B-5B 0'-1'

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-1 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:30:00 PM
Lab ID:	1905A90-001	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
1,1,2,2-Tetrachloroethane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
1,1,2-Trichloroethane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
1,1-Dichloroethane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
1,1-Dichloroethene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
1,2,4-Trichlorobenzene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
1,2-Dibromo-3-chloropropane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
1,2-Dibromoethane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
1,2-Dichlorobenzene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
1,2-Dichloroethane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
1,2-Dichloropropane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
1,3-Dichlorobenzene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
1,4-Dichlorobenzene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
2-Butanone	BRL	0.034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
2-Hexanone	BRL	0.0068		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
4-Methyl-2-pentanone	BRL	0.0068		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Acetone	BRL	0.068		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Benzene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Bromodichloromethane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Bromoform	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Bromomethane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Carbon disulfide	BRL	0.0068		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Carbon tetrachloride	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Chlorobenzene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Chloroethane	BRL	0.0068		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Chloroform	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Chloromethane	BRL	0.0068		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
cis-1,2-Dichloroethene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
cis-1,3-Dichloropropene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Cyclohexane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Dibromochloromethane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Dichlorodifluoromethane	BRL	0.0068		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Ethylbenzene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Freon-113	BRL	0.0068		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Isopropylbenzene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
m,p-Xylene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Methyl acetate	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Methyl tert-butyl ether	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Methylcyclohexane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Methylene chloride	BRL	0.014		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
o-Xylene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-1 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:30:00 PM
Lab ID:	1905A90-001	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Styrene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Tetrachloroethene	0.023	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Toluene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
trans-1,2-Dichloroethene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
trans-1,3-Dichloropropene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Trichloroethene	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Trichlorofluoromethane	BRL	0.0034		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Vinyl chloride	BRL	0.0068		mg/Kg-dry	279178	1	05/15/2019 13:43	CC
Surr: 4-Bromofluorobenzene	87.5	65.1-125		%REC	279178	1	05/15/2019 13:43	CC
Surr: Dibromofluoromethane	102	77.7-123		%REC	279178	1	05/15/2019 13:43	CC
Surr: Toluene-d8	96	83.2-120		%REC	279178	1	05/15/2019 13:43	CC
PERCENT MOISTURE D2216								
Percent Moisture	7.94	0		wt%	R397937	1	05/13/2019 13:30	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-1B 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:00:00 PM
Lab ID:	1905A90-002	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
1,1,2,2-Tetrachloroethane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
1,1,2-Trichloroethane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
1,1-Dichloroethane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
1,1-Dichloroethene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
1,2,4-Trichlorobenzene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
1,2-Dibromo-3-chloropropane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
1,2-Dibromoethane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
1,2-Dichlorobenzene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
1,2-Dichloroethane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
1,2-Dichloropropane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
1,3-Dichlorobenzene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
1,4-Dichlorobenzene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
2-Butanone	BRL	0.038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
2-Hexanone	BRL	0.0076		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
4-Methyl-2-pentanone	BRL	0.0076		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Acetone	0.081	0.076		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Benzene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Bromodichloromethane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Bromoform	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Bromomethane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Carbon disulfide	BRL	0.0076		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Carbon tetrachloride	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Chlorobenzene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Chloroethane	BRL	0.0076		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Chloroform	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Chloromethane	BRL	0.0076		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
cis-1,2-Dichloroethene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
cis-1,3-Dichloropropene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Cyclohexane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Dibromochloromethane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Dichlorodifluoromethane	BRL	0.0076		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Ethylbenzene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Freon-113	BRL	0.0076		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Isopropylbenzene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
m,p-Xylene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Methyl acetate	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Methyl tert-butyl ether	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Methylcyclohexane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Methylene chloride	BRL	0.015		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
o-Xylene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-1B 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:00:00 PM
Lab ID:	1905A90-002	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Styrene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Tetrachloroethene	0.034	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Toluene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
trans-1,2-Dichloroethene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
trans-1,3-Dichloropropene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Trichloroethene	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Trichlorofluoromethane	BRL	0.0038		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Vinyl chloride	BRL	0.0076		mg/Kg-dry	279404	1	05/21/2019 15:32	AR
Surr: 4-Bromofluorobenzene	94.6	65.1-125		%REC	279404	1	05/21/2019 15:32	AR
Surr: Dibromofluoromethane	103	77.7-123		%REC	279404	1	05/21/2019 15:32	AR
Surr: Toluene-d8	100	83.2-120		%REC	279404	1	05/21/2019 15:32	AR
PERCENT MOISTURE D2216								
Percent Moisture	19.3	0		wt%	R398840	1	05/23/2019 14:00	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-2 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 12:40:00 PM
Lab ID:	1905A90-003	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
1,1,2,2-Tetrachloroethane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
1,1,2-Trichloroethane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
1,1-Dichloroethane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
1,1-Dichloroethene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
1,2,4-Trichlorobenzene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
1,2-Dibromo-3-chloropropane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
1,2-Dibromoethane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
1,2-Dichlorobenzene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
1,2-Dichloroethane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
1,2-Dichloropropane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
1,3-Dichlorobenzene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
1,4-Dichlorobenzene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
2-Butanone	BRL	0.036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
2-Hexanone	BRL	0.0073		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
4-Methyl-2-pentanone	BRL	0.0073		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Acetone	BRL	0.073		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Benzene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Bromodichloromethane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Bromoform	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Bromomethane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Carbon disulfide	BRL	0.0073		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Carbon tetrachloride	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Chlorobenzene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Chloroethane	BRL	0.0073		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Chloroform	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Chloromethane	BRL	0.0073		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
cis-1,2-Dichloroethene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
cis-1,3-Dichloropropene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Cyclohexane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Dibromochloromethane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Dichlorodifluoromethane	BRL	0.0073		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Ethylbenzene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Freon-113	BRL	0.0073		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Isopropylbenzene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
m,p-Xylene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Methyl acetate	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Methyl tert-butyl ether	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Methylcyclohexane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Methylene chloride	BRL	0.015		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
o-Xylene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-2 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 12:40:00 PM
Lab ID:	1905A90-003	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Styrene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Tetrachloroethene	1.9	0.17		mg/Kg-dry	279108	50	05/16/2019 12:15	JB
Toluene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
trans-1,2-Dichloroethene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
trans-1,3-Dichloropropene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Trichloroethene	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Trichlorofluoromethane	BRL	0.0036		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Vinyl chloride	BRL	0.0073		mg/Kg-dry	279178	1	05/15/2019 14:10	CC
Surr: 4-Bromofluorobenzene	91.4	65.1-125		%REC	279178	1	05/15/2019 14:10	CC
Surr: 4-Bromofluorobenzene	96.7	65.1-125		%REC	279108	50	05/16/2019 12:15	JB
Surr: Dibromofluoromethane	112	77.7-123		%REC	279178	1	05/15/2019 14:10	CC
Surr: Dibromofluoromethane	93.6	77.7-123		%REC	279108	50	05/16/2019 12:15	JB
Surr: Toluene-d8	97.5	83.2-120		%REC	279178	1	05/15/2019 14:10	CC
Surr: Toluene-d8	99.1	83.2-120		%REC	279108	50	05/16/2019 12:15	JB
PERCENT MOISTURE D2216								
Percent Moisture	7.97	0		wt%	R397937	1	05/13/2019 13:30	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-2B 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:10:00 PM
Lab ID:	1905A90-004	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
1,1,2,2-Tetrachloroethane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
1,1,2-Trichloroethane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
1,1-Dichloroethane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
1,1-Dichloroethene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
1,2,4-Trichlorobenzene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
1,2-Dibromo-3-chloropropane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
1,2-Dibromoethane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
1,2-Dichlorobenzene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
1,2-Dichloroethane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
1,2-Dichloropropane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
1,3-Dichlorobenzene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
1,4-Dichlorobenzene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
2-Butanone	BRL	0.035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
2-Hexanone	BRL	0.0071		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
4-Methyl-2-pentanone	BRL	0.0071		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Acetone	BRL	0.071		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Benzene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Bromodichloromethane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Bromoform	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Bromomethane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Carbon disulfide	BRL	0.0071		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Carbon tetrachloride	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Chlorobenzene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Chloroethane	BRL	0.0071		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Chloroform	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Chloromethane	BRL	0.0071		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
cis-1,2-Dichloroethene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
cis-1,3-Dichloropropene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Cyclohexane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Dibromochloromethane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Dichlorodifluoromethane	BRL	0.0071		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Ethylbenzene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Freon-113	BRL	0.0071		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Isopropylbenzene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
m,p-Xylene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Methyl acetate	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Methyl tert-butyl ether	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Methylcyclohexane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Methylene chloride	BRL	0.014		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
o-Xylene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-2B 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:10:00 PM
Lab ID:	1905A90-004	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Styrene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Tetrachloroethene	0.93	0.18		mg/Kg-dry	279284	50	05/22/2019 18:03	JB
Toluene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
trans-1,2-Dichloroethene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
trans-1,3-Dichloropropene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Trichloroethene	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Trichlorofluoromethane	BRL	0.0035		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Vinyl chloride	BRL	0.0071		mg/Kg-dry	279404	1	05/21/2019 15:56	AR
Surr: 4-Bromofluorobenzene	80.9	65.1-125		%REC	279404	1	05/21/2019 15:56	AR
Surr: 4-Bromofluorobenzene	85.2	65.1-125		%REC	279284	50	05/22/2019 18:03	JB
Surr: Dibromofluoromethane	104	77.7-123		%REC	279404	1	05/21/2019 15:56	AR
Surr: Dibromofluoromethane	93.2	77.7-123		%REC	279284	50	05/22/2019 18:03	JB
Surr: Toluene-d8	97.3	83.2-120		%REC	279404	1	05/21/2019 15:56	AR
Surr: Toluene-d8	92.2	83.2-120		%REC	279284	50	05/22/2019 18:03	JB
PERCENT MOISTURE D2216								
Percent Moisture	13.8	0		wt%	R398840	1	05/23/2019 14:00	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-3 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:23:00 PM
Lab ID:	1905A90-005	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
1,1,2,2-Tetrachloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
1,1,2-Trichloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
1,1-Dichloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
1,1-Dichloroethene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
1,2,4-Trichlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
1,2-Dibromo-3-chloropropane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
1,2-Dibromoethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
1,2-Dichlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
1,2-Dichloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
1,2-Dichloropropane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
1,3-Dichlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
1,4-Dichlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
2-Butanone	BRL	0.035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
2-Hexanone	BRL	0.0069		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
4-Methyl-2-pentanone	BRL	0.0069		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Acetone	BRL	0.069		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Benzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Bromodichloromethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Bromoform	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Bromomethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Carbon disulfide	BRL	0.0069		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Carbon tetrachloride	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Chlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Chloroethane	BRL	0.0069		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Chloroform	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Chloromethane	BRL	0.0069		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
cis-1,2-Dichloroethene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
cis-1,3-Dichloropropene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Cyclohexane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Dibromochloromethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Dichlorodifluoromethane	BRL	0.0069		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Ethylbenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Freon-113	BRL	0.0069		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Isopropylbenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
m,p-Xylene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Methyl acetate	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Methyl tert-butyl ether	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Methylcyclohexane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Methylene chloride	BRL	0.014		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
o-Xylene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-3 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:23:00 PM
Lab ID:	1905A90-005	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Styrene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Tetrachloroethene	0.042	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Toluene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
trans-1,2-Dichloroethene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
trans-1,3-Dichloropropene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Trichloroethene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Trichlorofluoromethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Vinyl chloride	BRL	0.0069		mg/Kg-dry	279178	1	05/15/2019 17:46	CC
Surr: 4-Bromofluorobenzene	98.2	65.1-125		%REC	279178	1	05/15/2019 17:46	CC
Surr: Dibromofluoromethane	112	77.7-123		%REC	279178	1	05/15/2019 17:46	CC
Surr: Toluene-d8	95.6	83.2-120		%REC	279178	1	05/15/2019 17:46	CC
PERCENT MOISTURE D2216								
Percent Moisture	14.1	0		wt%	R397937	1	05/13/2019 13:30	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-4 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:50:00 PM
Lab ID:	1905A90-007	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
1,1,2,2-Tetrachloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
1,1,2-Trichloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
1,1-Dichloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
1,1-Dichloroethene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
1,2,4-Trichlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
1,2-Dibromo-3-chloropropane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
1,2-Dibromoethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
1,2-Dichlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
1,2-Dichloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
1,2-Dichloropropane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
1,3-Dichlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
1,4-Dichlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
2-Butanone	BRL	0.035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
2-Hexanone	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
4-Methyl-2-pentanone	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Acetone	BRL	0.071		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Benzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Bromodichloromethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Bromoform	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Bromomethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Carbon disulfide	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Carbon tetrachloride	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Chlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Chloroethane	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Chloroform	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Chloromethane	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
cis-1,2-Dichloroethene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
cis-1,3-Dichloropropene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Cyclohexane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Dibromochloromethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Dichlorodifluoromethane	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Ethylbenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Freon-113	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Isopropylbenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
m,p-Xylene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Methyl acetate	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Methyl tert-butyl ether	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Methylcyclohexane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Methylene chloride	BRL	0.014		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
o-Xylene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-4 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:50:00 PM
Lab ID:	1905A90-007	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Styrene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Tetrachloroethene	0.043	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Toluene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
trans-1,2-Dichloroethene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
trans-1,3-Dichloropropene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Trichloroethene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Trichlorofluoromethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Vinyl chloride	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 15:09	CC
Surr: 4-Bromofluorobenzene	90.6	65.1-125		%REC	279178	1	05/15/2019 15:09	CC
Surr: Dibromofluoromethane	115	77.7-123		%REC	279178	1	05/15/2019 15:09	CC
Surr: Toluene-d8	97.6	83.2-120		%REC	279178	1	05/15/2019 15:09	CC
PERCENT MOISTURE D2216								
Percent Moisture	9.11	0		wt%	R397937	1	05/13/2019 13:30	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-5 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:40:00 PM
Lab ID:	1905A90-009	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
1,1,2,2-Tetrachloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
1,1,2-Trichloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
1,1-Dichloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
1,1-Dichloroethene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
1,2,4-Trichlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
1,2-Dibromo-3-chloropropane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
1,2-Dibromoethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
1,2-Dichlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
1,2-Dichloroethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
1,2-Dichloropropane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
1,3-Dichlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
1,4-Dichlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
2-Butanone	BRL	0.035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
2-Hexanone	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
4-Methyl-2-pentanone	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Acetone	BRL	0.071		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Benzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Bromodichloromethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Bromoform	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Bromomethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Carbon disulfide	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Carbon tetrachloride	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Chlorobenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Chloroethane	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Chloroform	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Chloromethane	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
cis-1,2-Dichloroethene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
cis-1,3-Dichloropropene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Cyclohexane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Dibromochloromethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Dichlorodifluoromethane	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Ethylbenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Freon-113	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Isopropylbenzene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
m,p-Xylene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Methyl acetate	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Methyl tert-butyl ether	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Methylcyclohexane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Methylene chloride	BRL	0.014		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
o-Xylene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-5 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:40:00 PM
Lab ID:	1905A90-009	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Styrene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Tetrachloroethene	0.88	0.18		mg/Kg-dry	279284	50	05/17/2019 15:04	JB
Toluene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
trans-1,2-Dichloroethene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
trans-1,3-Dichloropropene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Trichloroethene	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Trichlorofluoromethane	BRL	0.0035		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Vinyl chloride	BRL	0.0071		mg/Kg-dry	279178	1	05/15/2019 18:12	CC
Surr: 4-Bromofluorobenzene	85.1	65.1-125		%REC	279178	1	05/15/2019 18:12	CC
Surr: 4-Bromofluorobenzene	99.7	65.1-125		%REC	279284	50	05/17/2019 15:04	JB
Surr: Dibromofluoromethane	106	77.7-123		%REC	279178	1	05/15/2019 18:12	CC
Surr: Dibromofluoromethane	92.4	77.7-123		%REC	279284	50	05/17/2019 15:04	JB
Surr: Toluene-d8	93.5	83.2-120		%REC	279178	1	05/15/2019 18:12	CC
Surr: Toluene-d8	99.3	83.2-120		%REC	279284	50	05/17/2019 15:04	JB
PERCENT MOISTURE D2216								
Percent Moisture	10.2	0		wt%	R397937	1	05/13/2019 13:30	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-5B 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:45:00 PM
Lab ID:	1905A90-010	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
1,1,2,2-Tetrachloroethane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
1,1,2-Trichloroethane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
1,1-Dichloroethane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
1,1-Dichloroethene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
1,2,4-Trichlorobenzene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
1,2-Dibromo-3-chloropropane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
1,2-Dibromoethane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
1,2-Dichlorobenzene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
1,2-Dichloroethane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
1,2-Dichloropropane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
1,3-Dichlorobenzene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
1,4-Dichlorobenzene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
2-Butanone	BRL	0.031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
2-Hexanone	BRL	0.0061		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
4-Methyl-2-pentanone	BRL	0.0061		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Acetone	0.072	0.061		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Benzene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Bromodichloromethane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Bromoform	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Bromomethane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Carbon disulfide	BRL	0.0061		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Carbon tetrachloride	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Chlorobenzene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Chloroethane	BRL	0.0061		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Chloroform	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Chloromethane	BRL	0.0061		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
cis-1,2-Dichloroethene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
cis-1,3-Dichloropropene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Cyclohexane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Dibromochloromethane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Dichlorodifluoromethane	BRL	0.0061		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Ethylbenzene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Freon-113	BRL	0.0061		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Isopropylbenzene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
m,p-Xylene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Methyl acetate	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Methyl tert-butyl ether	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Methylcyclohexane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Methylene chloride	BRL	0.012		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
o-Xylene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-5B 0'-1'
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:45:00 PM
Lab ID:	1905A90-010	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Styrene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Tetrachloroethene	0.67	0.20		mg/Kg-dry	279284	50	05/22/2019 18:28	JB
Toluene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
trans-1,2-Dichloroethene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
trans-1,3-Dichloropropene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Trichloroethene	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Trichlorofluoromethane	BRL	0.0031		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Vinyl chloride	BRL	0.0061		mg/Kg-dry	279404	1	05/21/2019 16:21	AR
Surr: 4-Bromofluorobenzene	85	65.1-125		%REC	279404	1	05/21/2019 16:21	AR
Surr: 4-Bromofluorobenzene	84.8	65.1-125		%REC	279284	50	05/22/2019 18:28	JB
Surr: Dibromofluoromethane	101	77.7-123		%REC	279404	1	05/21/2019 16:21	AR
Surr: Dibromofluoromethane	92.2	77.7-123		%REC	279284	50	05/22/2019 18:28	JB
Surr: Toluene-d8	97.9	83.2-120		%REC	279404	1	05/21/2019 16:21	AR
Surr: Toluene-d8	91.8	83.2-120		%REC	279284	50	05/22/2019 18:28	JB
PERCENT MOISTURE D2216								
Percent Moisture	11.8	0		wt%	R398840	1	05/23/2019 14:00	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-1 0'1' DUP
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:00:00 PM
Lab ID:	1905A90-011	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
1,1,1-Trichloroethane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
1,1,2,2-Tetrachloroethane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
1,1,2-Trichloroethane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
1,1-Dichloroethane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
1,1-Dichloroethene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
1,2,4-Trichlorobenzene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
1,2-Dibromo-3-chloropropane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
1,2-Dibromoethane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
1,2-Dichlorobenzene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
1,2-Dichloroethane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
1,2-Dichloropropane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
1,3-Dichlorobenzene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
1,4-Dichlorobenzene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
2-Butanone	BRL	0.067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
2-Hexanone	BRL	0.013		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
4-Methyl-2-pentanone	BRL	0.013		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Acetone	BRL	0.13		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Benzene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Bromodichloromethane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Bromoform	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Bromomethane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Carbon disulfide	BRL	0.013		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Carbon tetrachloride	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Chlorobenzene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Chloroethane	BRL	0.013		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Chloroform	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Chloromethane	BRL	0.013		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
cis-1,2-Dichloroethene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
cis-1,3-Dichloropropene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Cyclohexane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Dibromochloromethane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Dichlorodifluoromethane	BRL	0.013		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Ethylbenzene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Freon-113	BRL	0.013		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Isopropylbenzene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
m,p-Xylene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Methyl acetate	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Methyl tert-butyl ether	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Methylcyclohexane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Methylene chloride	BRL	0.027		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
o-Xylene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	B-1 0'1' DUP
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019 1:00:00 PM
Lab ID:	1905A90-011	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**				
Styrene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Tetrachloroethene	0.049	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Toluene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
trans-1,2-Dichloroethene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
trans-1,3-Dichloropropene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Trichloroethene	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Trichlorofluoromethane	BRL	0.0067		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Vinyl chloride	BRL	0.013		mg/Kg-dry	279178	1	05/15/2019 16:03	CC
Surr: 4-Bromofluorobenzene	92.2	65.1-125		%REC	279178	1	05/15/2019 16:03	CC
Surr: Dibromofluoromethane	110	77.7-123		%REC	279178	1	05/15/2019 16:03	CC
Surr: Toluene-d8	98.3	83.2-120		%REC	279178	1	05/15/2019 16:03	CC
PERCENT MOISTURE D2216								
Percent Moisture	20.7	0		wt%	R397937	1	05/13/2019 13:30	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	TRIP BLANK
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019
Lab ID:	1905A90-012	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
1,2-Dichloroethane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
1,3-Dichlorobenzene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
2-Butanone	BRL	50		ug/L	279269	1	05/20/2019 12:15	JB
2-Hexanone	BRL	10		ug/L	279269	1	05/20/2019 12:15	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279269	1	05/20/2019 12:15	JB
Acetone	BRL	50		ug/L	279269	1	05/20/2019 12:15	JB
Benzene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Bromodichloromethane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Bromoform	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Bromomethane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Carbon disulfide	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Carbon tetrachloride	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Chlorobenzene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Chloroethane	BRL	10		ug/L	279269	1	05/20/2019 12:15	JB
Chloroform	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Chloromethane	BRL	10		ug/L	279269	1	05/20/2019 12:15	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Cyclohexane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Dibromochloromethane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Dichlorodifluoromethane	BRL	10		ug/L	279269	1	05/20/2019 12:15	JB
Ethylbenzene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Freon-113	BRL	10		ug/L	279269	1	05/20/2019 12:15	JB
Isopropylbenzene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
m,p-Xylene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Methyl acetate	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Methyl tert-butyl ether	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Methylcyclohexane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Methylene chloride	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
o-Xylene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 24-May-19

Client:	Cardno	**Client Sample ID:**	TRIP BLANK
Project Name:	Stanley Assemblage	**Collection Date:**	5/9/2019
Lab ID:	1905A90-012	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260D				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Tetrachloroethene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Toluene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Trichloroethene	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279269	1	05/20/2019 12:15	JB
Vinyl chloride	BRL	2.0		ug/L	279269	1	05/20/2019 12:15	JB
Surr: 4-Bromofluorobenzene	86.4	64-125		%REC	279269	1	05/20/2019 12:15	JB
Surr: Dibromofluoromethane	94.3	76.4-125		%REC	279269	1	05/20/2019 12:15	JB
Surr: Toluene-d8	93.8	78.3-116		%REC	279269	1	05/20/2019 12:15	JB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 24-May-19

SUMMARY OF ANALYTES DETECTED

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	Dilution Factor
Client Sample ID: B-1 0'-1'				**Lab ID:** 1905A90-001			
Collection Date: 5/9/2019 1:30:00 PM				**Matrix:** Soil			
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
Tetrachloroethene	0.023		0.0010	0.0034	mg/Kg-dry	279178	1
PERCENT MOISTURE D2216							
Percent Moisture	7.94		0	0	wt%	R397937	1
Client Sample ID: B-1B 0'-1'				**Lab ID:** 1905A90-002			
Collection Date: 5/9/2019 1:00:00 PM				**Matrix:** Soil			
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
Acetone	0.081		0.0039	0.076	mg/Kg-dry	279404	1
Tetrachloroethene	0.034		0.0011	0.0038	mg/Kg-dry	279404	1
PERCENT MOISTURE D2216							
Percent Moisture	19.3		0	0	wt%	R398840	1
Client Sample ID: B-2 0'-1'				**Lab ID:** 1905A90-003			
Collection Date: 5/9/2019 12:40:00 PM				**Matrix:** Soil			
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
Tetrachloroethene	1.9		0.052	0.17	mg/Kg-dry	279108	50
PERCENT MOISTURE D2216							
Percent Moisture	7.97		0	0	wt%	R397937	1
Client Sample ID: B-2B 0'-1'				**Lab ID:** 1905A90-004			
Collection Date: 5/9/2019 1:10:00 PM				**Matrix:** Soil			
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
Tetrachloroethene	0.93		0.053	0.18	mg/Kg-dry	279284	50
PERCENT MOISTURE D2216							
Percent Moisture	13.8		0	0	wt%	R398840	1
Client Sample ID: B-3 0'-1'				**Lab ID:** 1905A90-005			
Collection Date: 5/9/2019 1:23:00 PM				**Matrix:** Soil			
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
Tetrachloroethene	0.042		0.0010	0.0035	mg/Kg-dry	279178	1
PERCENT MOISTURE D2216							
Percent Moisture	14.1		0	0	wt%	R397937	1
Client Sample ID: B-4 0'-1'				**Lab ID:** 1905A90-007			
Collection Date: 5/9/2019 1:50:00 PM				**Matrix:** Soil			
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
Tetrachloroethene	0.043		0.0011	0.0035	mg/Kg-dry	279178	1
PERCENT MOISTURE D2216							
Percent Moisture	9.11		0	0	wt%	R397937	1
Client Sample ID: B-5 0'-1'				**Lab ID:** 1905A90-009			
Collection Date: 5/9/2019 1:40:00 PM				**Matrix:** Soil			
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
Tetrachloroethene	0.88		0.053	0.18	mg/Kg-dry	279284	50
PERCENT MOISTURE D2216							
Percent Moisture	10.2		0	0	wt%	R397937	1
Client Sample ID: B-5B 0'-1'				**Lab ID:** 1905A90-010			

Analytical Environmental Services, Inc

Date: 24-May-19

SUMMARY OF ANALYTES DETECTED

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	Dilution Factor
Collection Date: 5/9/2019 1:45:00 PM				**Matrix:** Soil			
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
Acetone	0.072		0.0031	0.061	mg/Kg-dry	279404	1
Tetrachloroethene	0.67		0.062	0.20	mg/Kg-dry	279284	50
PERCENT MOISTURE D2216							
Percent Moisture	11.8		0	0	wt%	R398840	1
Client Sample ID: B-1 0'1' DUP				**Lab ID:** 1905A90-011			
Collection Date: 5/9/2019 1:00:00 PM				**Matrix:** Soil			
TCL VOLATILE ORGANICS SW8260D				**(SW5035)**			
Tetrachloroethene	0.049		0.0020	0.0067	mg/Kg-dry	279178	1
PERCENT MOISTURE D2216							
Percent Moisture	20.7		0	0	wt%	R397937	1

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Clear | Save as

AES ANALYTICAL ENVIRONMENTAL SERVICES, INC.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Cardno** AES Work Order Number: **1905A90**

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ☐ Courier ■ Other _____

		Yes	No	N/A	Details	Comments
3.	Shipping container/cooler received in good condition?	●	○	○	damaged ☐ leaking ☐ other ☐	
4.	Custody seals present on shipping container?	○	●	○		
5.	Custody seals intact on shipping container?	○	○	●		
6.	Temperature blanks present?	●	○	○		
7.	Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	●	○	○	Cooling initiated for recently collected samples / ice present ☐	
8.	Chain of Custody (COC) present?	●	○	○		
9.	Chain of Custody signed, dated, and timed when relinquished and received?	●	○	○		
10.	Sampler name and/or signature on COC?	●	○	○		
11.	Were all samples received within holding time?	●	○	○		
12.	TAT marked on the COC?	●	○	○	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. ☐	

13. Cooler 1 Temperature 2.6 °C Cooler 2 Temperature _____ °C Cooler 3 Temperature _____ °C Cooler 4 Temperature _____ °C

14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials). MH 5/10/19

		Yes	No	N/A	Details	Comments
16.	Were sample containers intact upon receipt?	●	○	○		
17.	Custody seals present on sample containers?	○	●	○		
18.	Custody seals intact on sample containers?	○	○	●		
19.	Do sample container labels match the COC?	●	○	○	incomplete info ☐ illegible ☐ no label ☐ other ☐	
20.	Are analyses requested indicated on the COC?	●	○	○		
21.	Were all of the samples listed on the COC received?	●	○	○	samples received but not listed on COC ☐ samples listed on COC not received ☐	
22.	Was the sample collection date/time noted?	●	○	○		
23.	Did we receive sufficient sample volume for indicated analyses?	●	○	○		
24.	Were samples received in appropriate containers?	●	○	○		
25.	Were VOA samples received without headspace (< 1/4" bubble)?	○	○	●		
26.	Were trip blanks submitted?	●	○	○	listed on COC ■ not listed on COC ☐	

27. Comments: _____

I certify that I have completed sections 16-27 (dated initials). CD 5/10/19

This section only applies to samples where pH can be checked at Sample Receipt.

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	○	○	●		
29.	Containers meet preservation guidelines?	○	○	●		
30.	Was pH adjusted at Sample Receipt?	○	○	●		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH.

I certify that I have completed sections 28-30 (dated initials). CD 5/10/19

Checklist 6.9.17 Rev 2

Locked

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: 279178

Sample ID: **MB-279178** Client ID: Units: **ug/Kg** Prep Date: **05/15/2019** Run No: **398125**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279178** Analysis Date: **05/15/2019** Seq No: **8923413**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,4-Trichlorobenzene	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,3-Dichlorobenzene	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	100									
Benzene	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	10									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									
Chloroform	BRL	5.0									
Chloromethane	BRL	10									

Qualifiers:
> Greater than Result value
BRL Below reporting limit
J Estimated value detected below Reporting Limit
Rpt Lim Reporting Limit
< Less than Result value
E Estimated (value above quantitation range)
N Analyte not NELAC certified
S Spike Recovery outside limits due to matrix
B Analyte detected in the associated method blank
H Holding times for preparation or analysis exceeded
R RPD outside limits due to matrix

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: 279178

Sample ID: **MB-279178** Client ID: Units: **ug/Kg** Prep Date: **05/15/2019** Run No: **398125**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279178** Analysis Date: **05/15/2019** Seq No: **8923413**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	20									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	10									
Surr: 4-Bromofluorobenzene	41.95	0	50.00		83.9	65.1	125				
Surr: Dibromofluoromethane	51.76	0	50.00		104	77.7	123				
Surr: Toluene-d8	49.98	0	50.00		100.0	83.2	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: 279178

Sample ID: **LCS-279178** Client ID: Units: **ug/Kg** Prep Date: **05/15/2019** Run No: **398125**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279178** Analysis Date: **05/15/2019** Seq No: **8923414**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	52.49	5.0	50.00		105	67.6	140				
Benzene	50.72	5.0	50.00		101	71.3	130				
Chlorobenzene	50.56	5.0	50.00		101	70.6	135				
Toluene	52.13	5.0	50.00		104	70.4	127				
Trichloroethene	52.93	5.0	50.00		106	68.6	138				
Surr: 4-Bromofluorobenzene	54.11	0	50.00		108	65.1	125				
Surr: Dibromofluoromethane	52.30	0	50.00		105	77.7	123				
Surr: Toluene-d8	51.84	0	50.00		104	83.2	120				

Sample ID: **1905A90-003AMS** Client ID: **B-2 0'-1'** Units: **mg/Kg-dry** Prep Date: **05/15/2019** Run No: **398163**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279178** Analysis Date: **05/15/2019** Seq No: **8923401**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	0.03409	0.0037	0.0366		93.1	61.8	140				
Benzene	0.03575	0.0037	0.0366		97.7	69	131				
Chlorobenzene	0.03594	0.0037	0.0366		98.2	69.5	133				
Toluene	0.03517	0.0037	0.0366		96.1	65.9	133				
Trichloroethene	0.03549	0.0037	0.0366		96.9	65.9	135				
Surr: 4-Bromofluorobenzene	0.03748	0	0.0366		102	65.1	125				
Surr: Dibromofluoromethane	0.03993	0	0.0366		109	77.7	123				
Surr: Toluene-d8	0.03682	0	0.0366		101	83.2	120				

Sample ID: **1905A90-001ADUP** Client ID: **B-1 0'-1'** Units: **mg/Kg-dry** Prep Date: **05/15/2019** Run No: **398163**
SampleType: **DUP** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279178** Analysis Date: **05/15/2019** Seq No: **8923407**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	0.0031						0	0	20	
1,1,2,2-Tetrachloroethane	BRL	0.0031						0	0	20	

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: 279178

Sample ID: **1905A90-001ADUP** Client ID: **B-1 0'-1'** Units: **mg/Kg-dry** Prep Date: **05/15/2019** Run No: **398163**
SampleType: **DUP** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279178** Analysis Date: **05/15/2019** Seq No: **8923407**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	BRL	0.0031						0	0	20	
1,1-Dichloroethane	BRL	0.0031						0	0	20	
1,1-Dichloroethene	BRL	0.0031						0	0	20	
1,2,4-Trichlorobenzene	BRL	0.0031						0	0	20	
1,2-Dibromo-3-chloropropane	BRL	0.0031						0	0	20	
1,2-Dibromoethane	BRL	0.0031						0	0	20	
1,2-Dichlorobenzene	BRL	0.0031						0	0	20	
1,2-Dichloroethane	BRL	0.0031						0	0	20	
1,2-Dichloropropane	BRL	0.0031						0	0	20	
1,3-Dichlorobenzene	BRL	0.0031						0	0	20	
1,4-Dichlorobenzene	BRL	0.0031						0	0	20	
2-Butanone	BRL	0.031						0	0	20	
2-Hexanone	BRL	0.0063						0	0	20	
4-Methyl-2-pentanone	BRL	0.0063						0	0	20	
Acetone	BRL	0.063						0	0	20	
Benzene	BRL	0.0031						0	0	20	
Bromodichloromethane	BRL	0.0031						0	0	20	
Bromoform	BRL	0.0031						0	0	20	
Bromomethane	BRL	0.0031						0	0	20	
Carbon disulfide	BRL	0.0063						0	0	20	
Carbon tetrachloride	BRL	0.0031						0	0	20	
Chlorobenzene	BRL	0.0031						0	0	20	
Chloroethane	BRL	0.0063						0	0	20	
Chloroform	BRL	0.0031						0	0	20	
Chloromethane	BRL	0.0063						0	0	20	
cis-1,2-Dichloroethene	BRL	0.0031						0	0	20	
cis-1,3-Dichloropropene	BRL	0.0031						0	0	20	

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: 279178

Sample ID: **1905A90-001ADUP** Client ID: **B-1 0'-1'** Units: **mg/Kg-dry** Prep Date: **05/15/2019** Run No: **398163**
SampleType: **DUP** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279178** Analysis Date: **05/15/2019** Seq No: **8923407**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyclohexane	BRL	0.0031						0	0	20	
Dibromochloromethane	BRL	0.0031						0	0	20	
Dichlorodifluoromethane	BRL	0.0063						0	0	20	
Ethylbenzene	BRL	0.0031						0	0	20	
Freon-113	BRL	0.0063						0	0	20	
Isopropylbenzene	BRL	0.0031						0	0	20	
m,p-Xylene	BRL	0.0031						0	0	20	
Methyl acetate	BRL	0.0031						0	0	20	
Methyl tert-butyl ether	BRL	0.0031						0	0	20	
Methylcyclohexane	BRL	0.0031						0	0	20	
Methylene chloride	BRL	0.013						0	0	20	
o-Xylene	BRL	0.0031						0	0	20	
Styrene	BRL	0.0031						0	0	20	
Tetrachloroethene	0.02435	0.0031						0	0	20	
Toluene	BRL	0.0031						0	0	20	
trans-1,2-Dichloroethene	BRL	0.0031						0	0	20	
trans-1,3-Dichloropropene	BRL	0.0031						0	0	20	
Trichloroethene	BRL	0.0031						0	0	20	
Trichlorofluoromethane	BRL	0.0031						0	0	20	
Vinyl chloride	BRL	0.0063						0	0	20	
Surr: 4-Bromofluorobenzene	0.02848	0						0	0	0	
Surr: Dibromofluoromethane	0.03321	0						0	0	0	
Surr: Toluene-d8	0.03044	0						0	0	0	

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: 279269

Sample ID: **MB-279269** Client ID: Units: **ug/L** Prep Date: **05/16/2019** Run No: **398353**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279269** Analysis Date: **05/16/2019** Seq No: **8926709**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,4-Trichlorobenzene	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,3-Dichlorobenzene	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	50									
Benzene	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	5.0									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									
Chloroform	BRL	5.0									
Chloromethane	BRL	10									

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: 279269

Sample ID: **MB-279269** Client ID: Units: **ug/L** Prep Date: **05/16/2019** Run No: **398353**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279269** Analysis Date: **05/16/2019** Seq No: **8926709**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	5.0									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	49.09	0	50.00		98.2	64	125				
Surr: Dibromofluoromethane	46.82	0	50.00		93.6	76.4	125				
Surr: Toluene-d8	48.47	0	50.00		96.9	78.3	116				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: 279269

Sample ID: **LCS-279269** Client ID: Units: **ug/L** Prep Date: **05/16/2019** Run No: **398353**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279269** Analysis Date: **05/16/2019** Seq No: **8926711**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	19.50	5.0	20.00		97.5	69	136				
Benzene	20.18	5.0	20.00		101	73.7	126				
Chlorobenzene	18.82	5.0	20.00		94.1	73.5	124				
Toluene	20.21	5.0	20.00		101	76.8	125				
Trichloroethene	20.33	5.0	20.00		102	70.9	124				
Surr: 4-Bromofluorobenzene	50.61	0	50.00		101	64	125				
Surr: Dibromofluoromethane	48.22	0	50.00		96.4	76.4	125				
Surr: Toluene-d8	50.41	0	50.00		101	78.3	116				

Sample ID: **1905B86-001AMS** Client ID: Units: **ug/L** Prep Date: **05/16/2019** Run No: **398353**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279269** Analysis Date: **05/17/2019** Seq No: **8926747**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	23.10	5.0	20.00		116	63.8	146				
Benzene	22.05	5.0	20.00		110	70.2	137				
Chlorobenzene	19.37	5.0	20.00		96.8	72.7	141				
Toluene	21.52	5.0	20.00		108	67	141				
Trichloroethene	22.26	5.0	20.00		111	69.3	141				
Surr: 4-Bromofluorobenzene	51.40	0	50.00		103	64	125				
Surr: Dibromofluoromethane	50.04	0	50.00		100	76.4	125				
Surr: Toluene-d8	50.90	0	50.00		102	78.3	116				

Sample ID: **1905B86-001AMSD** Client ID: Units: **ug/L** Prep Date: **05/16/2019** Run No: **398353**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279269** Analysis Date: **05/17/2019** Seq No: **8926748**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	22.07	5.0	20.00		110	63.8	146	23.10	4.56	20.8	
Benzene	21.30	5.0	20.00		106	70.2	137	22.05	3.46	20	

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: **279269**

Sample ID: **1905B86-001AMSD** Client ID: Units: **ug/L** Prep Date: **05/16/2019** Run No: **398353**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279269** Analysis Date: **05/17/2019** Seq No: **8926748**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	19.06	5.0	20.00		95.3	72.7	141	19.37	1.61	20	
Toluene	20.95	5.0	20.00		105	67	141	21.52	2.68	20	
Trichloroethene	20.68	5.0	20.00		103	69.3	141	22.26	7.36	17.9	
Surr: 4-Bromofluorobenzene	51.61	0	50.00		103	64	125	51.40	0	0	
Surr: Dibromofluoromethane	49.75	0	50.00		99.5	76.4	125	50.04	0	0	
Surr: Toluene-d8	50.85	0	50.00		102	78.3	116	50.90	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: **279284**

Sample ID: **MB-279284** Client ID: Units: **ug/Kg** Prep Date: **05/17/2019** Run No: **398342**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279284** Analysis Date: **05/17/2019** Seq No: **8926752**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	250									
1,1,2,2-Tetrachloroethane	BRL	250									
1,1,2-Trichloroethane	BRL	250									
1,1-Dichloroethane	BRL	250									
1,1-Dichloroethene	BRL	250									
1,2,4-Trichlorobenzene	BRL	250									
1,2-Dibromo-3-chloropropane	BRL	250									
1,2-Dibromoethane	BRL	250									
1,2-Dichlorobenzene	BRL	250									
1,2-Dichloroethane	BRL	250									
1,2-Dichloropropane	BRL	250									
1,3-Dichlorobenzene	BRL	250									
1,4-Dichlorobenzene	BRL	250									
2-Butanone	BRL	2500									
2-Hexanone	BRL	500									
4-Methyl-2-pentanone	BRL	500									
Acetone	BRL	5000									
Benzene	BRL	250									
Bromodichloromethane	BRL	250									
Bromoform	BRL	250									
Bromomethane	BRL	250									
Carbon disulfide	BRL	500									
Carbon tetrachloride	BRL	250									
Chlorobenzene	BRL	250									
Chloroethane	BRL	500									
Chloroform	BRL	250									
Chloromethane	BRL	500									

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: **279284**

Sample ID: **MB-279284** Client ID: Units: **ug/Kg** Prep Date: **05/17/2019** Run No: **398342**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279284** Analysis Date: **05/17/2019** Seq No: **8926752**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	250									
cis-1,3-Dichloropropene	BRL	250									
Cyclohexane	BRL	250									
Dibromochloromethane	BRL	250									
Dichlorodifluoromethane	BRL	500									
Ethylbenzene	BRL	250									
Freon-113	BRL	500									
Isopropylbenzene	BRL	250									
m,p-Xylene	BRL	250									
Methyl acetate	BRL	250									
Methyl tert-butyl ether	BRL	250									
Methylcyclohexane	BRL	250									
Methylene chloride	BRL	1000									
o-Xylene	BRL	250									
Styrene	BRL	250									
Tetrachloroethene	BRL	250									
Toluene	BRL	250									
trans-1,2-Dichloroethene	BRL	250									
trans-1,3-Dichloropropene	BRL	250									
Trichloroethene	BRL	250									
Trichlorofluoromethane	BRL	250									
Vinyl chloride	BRL	500									
Surr: 4-Bromofluorobenzene	1996	0	2500		79.8	65.1	125				
Surr: Dibromofluoromethane	2218	0	2500		88.7	77.7	123				
Surr: Toluene-d8	2182	0	2500		87.3	83.2	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: **279284**

Sample ID: **LCS-279284** Client ID: Units: **ug/Kg** Prep Date: **05/17/2019** Run No: **398342**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279284** Analysis Date: **05/17/2019** Seq No: **8926750**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	2424	250	2500		97.0	67.6	140				
Benzene	2525	250	2500		101	71.3	130				
Chlorobenzene	2604	250	2500		104	70.6	135				
Toluene	2474	250	2500		99.0	70.4	127				
Trichloroethene	2562	250	2500		102	68.6	138				
Surr: 4-Bromofluorobenzene	2044	0	2500		81.8	65.1	125				
Surr: Dibromofluoromethane	2247	0	2500		89.9	77.7	123				
Surr: Toluene-d8	2212	0	2500		88.5	83.2	120				

Sample ID: **1905B96-003AMS** Client ID: Units: **mg/Kg-dry** Prep Date: **05/17/2019** Run No: **398342**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279284** Analysis Date: **05/17/2019** Seq No: **8929415**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	6.944	0.67	6.721		103	61.8	140				
Benzene	7.410	0.67	6.721		110	69	131				
Chlorobenzene	7.331	0.67	6.721		109	69.5	133				
Toluene	7.030	0.67	6.721		105	65.9	133				
Trichloroethene	7.530	0.67	6.721		112	65.9	135				
Surr: 4-Bromofluorobenzene	5.756	0	6.721		85.6	65.1	125				
Surr: Dibromofluoromethane	6.068	0	6.721		90.3	77.7	123				
Surr: Toluene-d8	5.999	0	6.721		89.3	83.2	120				

Sample ID: **1905B96-003AMSD** Client ID: Units: **mg/Kg-dry** Prep Date: **05/17/2019** Run No: **398342**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279284** Analysis Date: **05/17/2019** Seq No: **8929416**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	7.530	0.67	6.721		112	61.8	140	6.944	8.10	18.5	
Benzene	7.367	0.67	6.721		110	69	131	7.410	0.582	20	

Qualifiers:
> Greater than Result value
< Less than Result value
B Analyte detected in the associated method blank
BRL Below reporting limit
E Estimated (value above quantitation range)
H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit
N Analyte not NELAC certified
R RPD outside limits due to matrix
Rpt Lim Reporting Limit
S Spike Recovery outside limits due to matrix

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: **279284**

Sample ID: **1905B96-003AMSD** Client ID: Units: **mg/Kg-dry** Prep Date: **05/17/2019** Run No: **398342**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279284** Analysis Date: **05/17/2019** Seq No: **8929416**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	7.518	0.67	6.721		112	69.5	133	7.331	2.52	20	
Toluene	7.031	0.67	6.721		105	65.9	133	7.030	0.019	20	
Trichloroethene	7.468	0.67	6.721		111	65.9	135	7.530	0.825	20	
Surr: 4-Bromofluorobenzene	5.672	0	6.721		84.4	65.1	125	5.756	0	0	
Surr: Dibromofluoromethane	5.971	0	6.721		88.8	77.7	123	6.068	0	0	
Surr: Toluene-d8	5.861	0	6.721		87.2	83.2	120	5.999	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: **279404**

Sample ID: **MB-279404** Client ID: Units: **ug/Kg** Prep Date: **05/20/2019** Run No: **398554**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279404** Analysis Date: **05/20/2019** Seq No: **8934034**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,4-Trichlorobenzene	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,3-Dichlorobenzene	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	100									
Benzene	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	10									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									
Chloroform	BRL	5.0									
Chloromethane	BRL	10									

Qualifiers:
> Greater than Result value
BRL Below reporting limit
J Estimated value detected below Reporting Limit
Rpt Lim Reporting Limit
< Less than Result value
E Estimated (value above quantitation range)
N Analyte not NELAC certified
S Spike Recovery outside limits due to matrix
B Analyte detected in the associated method blank
H Holding times for preparation or analysis exceeded
R RPD outside limits due to matrix

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: **279404**

Sample ID: **MB-279404** Client ID: Units: **ug/Kg** Prep Date: **05/20/2019** Run No: **398554**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279404** Analysis Date: **05/20/2019** Seq No: **8934034**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	20									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	10									
Surr: 4-Bromofluorobenzene	48.28	0	50.00		96.6	65.1	125				
Surr: Dibromofluoromethane	48.34	0	50.00		96.7	77.7	123				
Surr: Toluene-d8	49.25	0	50.00		98.5	83.2	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: 279404

Sample ID: **LCS-279404** Client ID: Units: **ug/Kg** Prep Date: **05/20/2019** Run No: **398554**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279404** Analysis Date: **05/20/2019** Seq No: **8934036**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	42.11	5.0	50.00		84.2	67.6	140				
Benzene	44.81	5.0	50.00		89.6	71.3	130				
Chlorobenzene	43.77	5.0	50.00		87.5	70.6	135				
Toluene	44.56	5.0	50.00		89.1	70.4	127				
Trichloroethene	43.93	5.0	50.00		87.9	68.6	138				
Surr: 4-Bromofluorobenzene	50.45	0	50.00		101	65.1	125				
Surr: Dibromofluoromethane	49.15	0	50.00		98.3	77.7	123				
Surr: Toluene-d8	49.89	0	50.00		99.8	83.2	120				

Sample ID: **1905J63-009AMS** Client ID: Units: **mg/Kg-dry** Prep Date: **05/20/2019** Run No: **398554**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279404** Analysis Date: **05/20/2019** Seq No: **8934037**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	0.05710	0.0060	0.0596		95.7	61.8	140				
Benzene	0.05850	0.0060	0.0596		98.1	69	131				
Chlorobenzene	0.05710	0.0060	0.0596		95.7	69.5	133				
Toluene	0.05768	0.0060	0.0596	0.001078	94.9	65.9	133				
Trichloroethene	0.05822	0.0060	0.0596		97.6	65.9	135				
Surr: 4-Bromofluorobenzene	0.05959	0	0.0596		99.9	65.1	125				
Surr: Dibromofluoromethane	0.05930	0	0.0596		99.4	77.7	123				
Surr: Toluene-d8	0.05891	0	0.0596		98.8	83.2	120				

Sample ID: **1905J63-009AMSD** Client ID: Units: **mg/Kg-dry** Prep Date: **05/20/2019** Run No: **398554**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260D** BatchID: **279404** Analysis Date: **05/20/2019** Seq No: **8934038**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	0.05820	0.0060	0.0596		97.6	61.8	140	0.05710	1.90	18.5	
Benzene	0.06166	0.0060	0.0596		103	69	131	0.05850	5.26	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Cardno
Project Name: Stanley Assemblage
Workorder: 1905A90

ANALYTICAL QC SUMMARY REPORT

BatchID: **279404**

Sample ID: **1905J63-009AMSD** Client ID:
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260D**
Units: **mg/Kg-dry** Prep Date: **05/20/2019** Run No: **398554**
BatchID: **279404** Analysis Date: **05/20/2019** Seq No: **8934038**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	0.06052	0.0060	0.0596		101	69.5	133	0.05710	5.82	20	
Toluene	0.06207	0.0060	0.0596	0.001078	102	65.9	133	0.05768	7.33	20	
Trichloroethene	0.06176	0.0060	0.0596		104	65.9	135	0.05822	5.91	20	
Surr: 4-Bromofluorobenzene	0.05749	0	0.0596		96.4	65.1	125	0.05959	0	0	
Surr: Dibromofluoromethane	0.05931	0	0.0596		99.4	77.7	123	0.05930	0	0	
Surr: Toluene-d8	0.05882	0	0.0596		98.6	83.2	120	0.05891	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Appendix G

AquaTerra Non-Hazardous Waste Manifest

AquaTerra
Recycling & Treatment

710 Moore Street • P.O. Box 98
Oxford, Georgia 30054
Phone: (678) 625-4025 • Fax: (678) 625-4944

NON-HAZARDOUS WASTE MANIFEST

№ 13041

Section I — GENERATOR (Generator completes all of Section 1)

a. Generator Name:
b. Address: 1102 Meeting Street
Perry, GA
c. Phone No.:
If owner generating facility differs from the generator, provide:
d. Owner's Name:
e. Description of Waste: Soil Cutting

g. Generating Location:
h. Address:
i. Phone No.:
j. Owner's Phone No.:

Quantity	Gallons	Type
7		DM

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
T - TRUCK

I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name | Signature | Shipping Date: 05/14/19

Section II — TRANSPORTER (Generator completes a-d: Transporter I completes e-g: Transporter II completes h-n)

a. Name: **Aqua-Terra**
b. Address: **710 Moore Street**
Oxford, Georgia 30054
c. Drive Name/Title: Brandon Stokes
d. Phone No.: (678) 625-4025 e: Truck No.: TK-2
f. Vehicle License No/State: PJ 3307 / GA
Acknowledgment of Receipt of Materials.
g. Driver Signature | Shipping Date: 05/14/19

h. Name:
i. Address:
j. Drive Name/Title:
k. Phone No.: l: Truck No.:
m. Vehicle License No/State:
Acknowledgment of Receipt of Materials.
n. Driver Signature | Shipping Date

Section III — DESTINATION (Destination site completes e-f)

a. Site Name: **Aqua-Terra**
b. Physical Address: **710 Moore Street**
Oxford, Georgia 30054
e. Discrepancy Indication Space:

c. Phone No.: (678) 625-4025
d. Mailing Address:. **P.O. Box 98**
Oxford, Georgia 30054

I hereby certify that the above material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Misty Lefebvre | Signature | Shipping Date: 05/14/19
Name of Authorized Agent

WHITE - DESTINATION **YELLOW - TRANSPORTERS**