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October 31, 2022

Mr. Paul Chamberlain
NMED GWQB
1190 Saint Francis Drive
Post Office Box 5469
Santa Fe, NM 87502

Transmitted Via E-Mail

Re: Stage 1 Abatement Plan
Former ACME Hometown Cleaners, 901 East 10th Street, Alamogordo, NM

Dear Mr. Chamberlain:

EA Engineering, Science, and Technology, Inc. (EA) submits this Stage 1 Abatement Plan (S1AP) on behalf of Former ACME Hometown Cleaners. This proposal has been prepared in response to the *Settlement Agreement and Stipulated Final Order* dated September 13, 2020 (*Settlement Agreement*) between New Mexico Environment Department and Mr. Sandy Ochoa. The scope of work proposed herein is designed to satisfy Stage 1 AP Proposal requirements cited in 20.6.2.4106 New Mexico Administrative Code (NMAC).

Sincerely,

David L Werth
Project Manager

Jay Snyder
Senior Hydrogeologist

Enclosure

Cc: Sandy Ochoa, Former ACME Hometown Cleaners
Peter V. Domenici, Jr., Esquire, Domenici Law Firm
File

STAGE 1 ABATEMENT PLAN

FORMER ACME HOMETOWN CLEANERS
ALAMOGORDO, NEW MEXICO

Prepared for:

Mr. Sandy Ochoa
3231 North Scenic Drive
Alamogordo, New Mexico 88310

and

New Mexico Environment Department
Ground Water Quality Bureau
Remediation Oversight Section
5500 San Antonio Dr. NE
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Prepared by:

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October 2022
Revision: 00
EA Project No.: 1560702 01

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/m^3	micrograms per cubic meter
µg/L	micrograms per liter
ASTM	American Society for Testing and Materials
bgs	feet below ground surface
COC	chain of custody
DAF20	dilution attenuation factor 20
DCE	dichloroethane
DOT	Department of Transportation
DQOs	data quality objectives
EA	EA Engineering, Science, and Technology, Inc., PBC
EPA	Environmental Protection Agency
GWQB	Ground Water Quality Bureau
HASP	Health and Safety Plan
ID	identification number
LSA	Limited Site Assessment
mg/kg	micrograms per kilogram
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMOSE	New Mexico Office of State Engineer
NMWQCC	New Mexico Water Quality Control Commission
O&M	operation and maintenance
OSHA	Occupational Safety and Health Administration
PCE	perchloroethene
PPE	personal protective equipment
QAPP	Quality Assurance Project Plan
S1AP	Stage 1 Abatement Plan
SCH 40 PVC	schedule 40 polyvinyl chloride
site	Former ACME Hometown Cleaners
SOS	Superfund Oversight Section
SSLs	soil screening levels

SVE	soil vapor extraction
TCE	trichloroethene
TO	task order
VOC	volatile organic compounds
VISLs	Vapor Intrusion Screening Levels

1.0 INTRODUCTION

EA Engineering, Science, and Technology, Inc., PBC (EA) submits this Stage 1 Abatement Plan (S1AP) on behalf of Former ACME Hometown Cleaners. This proposal has been prepared in response to the *Settlement Agreement and Stipulated Final Order* dated September 13, 2020 (*Settlement Agreement*) between New Mexico Environment Department and Mr. Sandy Ochoa. The scope of work proposed herein is designed to satisfy Stage 1 AP Proposal requirements cited in 20.6.2.4106 New Mexico Administrative Code (NMAC).

The purpose for this investigation is to satisfy the requirements set forth in 20.6.2.4106(c) NMAC, Stage 1 Abatement Plan. This will assist in providing the data necessary to select and design an effective abatement option.

This S1AP is organized as follows: Section 1 consists of this introduction, including site location, history, hydrogeology, nature of discharge, and previous investigations. Section 2 presents the known nature and extent of contamination and data gaps to be addressed under this plan. A scope of work for executing this plan and completing site characterization is included in Section 3. Long-term groundwater monitoring is discussed in Section 4. Section 5 provides a quality assurance project plan (QAPP) to ensure usable data is generated, and Section 6 covers long-term monitoring. Section 8 covers reporting and Section 9 references.

Existing borehole logs are included in Appendix A. A health and safety plan (HASP) to execute this S1AP is included in this report as Appendix B. Field forms are provided in Appendix C.

1.1 SITE LOCATION

The Former ACME Hometown Cleaners is located at 901 10th Street, Alamogordo, Otero County, New Mexico (Figure 1). The site is an approximately 1/3-acre tract that is developed with a 6,300 square-foot building. The site building was formerly occupied by a dry cleaner facility and has been unoccupied since 2016. The site slopes gently at 1 percent to the west southwest into the Tularosa Basin. Surrounding properties are commercial along 10th Street. Residential properties are located 500 feet northeast of the site, and south of 9th Street about 550 feet.

1.2 SITE HISTORY

On January 22, 2016, New Mexico Environment Department (NMED) Superfund Oversight Section (SOS) directed Former ACME Hometown Cleaners (hereafter “facility”) to conduct site assessments consisting of (1) soil vapor and indoor air sampling and (2) assess concentrations in groundwater. These requests were based on soil gas samples collected by SOS in the vicinity, and by detection of the dry cleaner solvent tetrachloroethene (aka perchloroethene [PCE] or “perc”) in a nearby monitoring well suspected of being downgradient of the facility.

1.3 SITE HYDROGEOLOGY

The site is located on distal alluvial fan deposits that slope gently west southwest into the Tularosa Basin. Two bore holes were advanced on site to the water table: MW-1 and MW-2 (Figure 2). Each of these boreholes encountered groundwater around 90 feet below ground surface (bgs). The surficial soil is sandy clay to around 3 feet. Thereafter, the soil consists of intercalated clay, silt, and sand to the water table. The water table occurs in sandy silty clay and sand. Boring logs are included in Appendix A.

1.4 NATURE OF DISCHARGE

The discharge is related to spent PCE disposal in a former wastewater sump (Figure 2). Near this location, PCE was detected in soil matrix in soil boring B-1 at 4.2 mg/kg and in soil gas at SV-3 at 2,400,000 µg/m^3. The NMED Soil Screening Levels (SSLs) for PCE for industrial exposure is 1,650 mg/kg carcinogenic and 629 mg/kg non-carcinogenic, and for soil leaching to groundwater at dilution attenuation factor 20 (DAF 20) is 0.321 mg/kg. The Vapor Intrusion Screening Level for industrial soil gas is 6,550 µg/m^3. So, the sample results near the former wastewater sump indicated significant concentrations in soil and soil gas relative to protection of groundwater and vapor intrusion. It is assumed that wastewater containing some spent PCE was directly discharged to the former sump.

1.5 PREVIOUS INVESTIGATIONS AND INTERIM ACTIONS

Terracon Phase II

The first assessment activity regarding shallow soil vapor and indoor air was completed by Terracon and reported in *Limited Site Assessment, Former ACME Hometown Cleaners, 901 East 10th Street, Alamogordo, Otero County, New Mexico, April 6, 2017*. The Limited Site Assessment (LSA) included indoor air sampling, sub-floor-slab sampling with the building, and installation of soil borings and collection of soil samples for analysis adjacent to the building (see attached Figures, Exhibit 1 prepared by Terracon). The vapor sampling indicated significant concentrations of sub-slab vapors, and significant concentration of indoor air vapors. The soil samples did not indicate any solvent concentrations above NMED screening levels provide in *Risk Assessment Guidance for Site Investigations and Remediation, July 2015*.

The sub-slab samples indicate the point of release of dry cleaner solvent was the "wastewater sump" located in the northeast corner of the building (Terracon Exhibit 1). Here, the sub-slab concentration SV-3 of 2,400,000 µg/m^3 was more than an order of magnitude higher than the results at SV-1 (160,000 µg/m^3) and SV-2 (260,000 µg/m^3). Trichloroethene (TCE) and dichloroethene (DCE), degradation products of the PCE, were present albeit at concentrations more the 3 orders of magnitude less, indicating very little transformation of PCE has occurred at the point of release. The magnitude of these vapor sample concentrations of PCE indicates the building needs a vapor abatement system prior to continuous commercial occupation. At present, the building is unoccupied.

EA Corrective Action Investigations

Corrective actions implemented by EA since 2018 are summarized below:

- In March 2018, EA submitted the Corrective Action Report, Former ACME Hometown Cleaners, *901 East 10th Street, Alamogordo, NM, March 9, 2018*, which included the installation of a nested well with screens completed throughout the vadose zone and into the water table, and the collection of soil gas samples and groundwater sample.

- In February 2022, EA installed a down-gradient monitoring well, MW-2, and conducted a groundwater monitoring event consisting of gauging and sampling wells MW-1 and MW-2.

- Compared new and existing analytical results to Soil Screening Levels (SSLs) and Vapor Intrusion Screening Levels (VISLs) provided in New Mexico Environment Department Risk Assessment Guidelines for Site Investigation and Remediation November 2021.

- Compared new and existing groundwater analytical results to the applicable New Mexico Water Quality Control Commission (NMWQCC) standards.

EA Vapor Intrusion Mitigation

EA implemented a soil vapor extraction (SVE) system for sub-slab depressurization and mass removal to prevent vapor intrusion into indoor air space and to initiate subsurface cleanup. Following is a summary of activities related thereto:

- In June and July 2021, EA installed two SVE ports through the building's slab (SVE-1 and SVE-2).

- In June and July 2021, EA installed an SVE system at the site with a blower plumbed to the newly installed SVE ports, SVE-1 and SVE-2, and the three well screens of the previously installed nested well, MW-1.

- Performed monthly operation and maintenance (O&M) of the SVE system through February 2022 including the collection of influent soil gas samples analyzed for volatile organic compounds (VOCs) by EPA Method 8260B.

- In November 2021, EA collected an indoor air sample utilizing a Summa® canister and analyzed the sample for chlorinated solvents by EPA Method TO-15 SIM.

2.0 KNOWN NATURE AND EXTENT OF CONTAMINATION

The following subsections provide a summary of known impacts to soil, soil gas, and groundwater to date.

2.1 SOIL CONTAMINATION

Soil contamination was assessed during the limited site assessment conducted by Terracon (2017) and during corrective actions conducted by EA. A summary of soil analytical data for samples collected from soil borings is provided in Table 1. Sample results indicate that protection of groundwater SSLs are exceeded: no exceedances for industrial worker exposure pathways related to soil were exceeded.

2.2 SOIL VAPOR CONTAMINATION

Soil vapor concentrations for samples collected to date are provided in Table 2. Subsurface soil gas concentrations significantly exceed VISLs for soil gas. Mitigation or cleanup of soil vapors is therefore necessary to render the building occupiable for workers.

2.3 GROUNDWATER CONTAMINATION

Groundwater occurs at a depth of 88 to 90 feet below ground surface (Table 3). PCE contamination occurs in both MW-1 and MW-2. In February 2022, PCE concentrations 110 and <1.0 µg/L in MW-1 and MW-2, respectively. In accordance with the Settlement Agreement, the wells were resampled on August 10, 2022 and the results were 57 and 16 µg/L, respectively. Sample results are provided in Table 4. Based on the August results, both wells exceed the 20.6.2.3103 NMAC PCE standard of 5 µg/L. Neither trichloroethene nor dichloroethene was detected, indicating little or no degradation of the PCE.

2.4 DATA GAPS

The stipulated data gap based on MW-1 sampling is installation and sampling of proposed downgradient monitoring well MW-3. MW-3 will be constructed as described in Section 3.2. Once MW-3 is installed, all monitoring wells will be surveyed by a New Mexico Professional Licensed Surveyor to common datum to facilitate reduction of well gauging data to water levels and preparation of a groundwater gradient map. MW-3 will be sampled in accordance with protocols in Section Sampling of MW-3 will reveal presence or absence of PCE due south of the former sump.

In accordance with the Settlement Agreement, quarterly groundwater monitoring of MW-1, MW-2, and MW-3 will be initiated in accordance with schedule discussed in Section 4.1. Samples will be collected as described in Section 4.2. Samples will be containerized, managed, and analyzed in accordance with Table 5.

3.0 SCOPE OF WORK TO COMPLETE SITE CHARACTERIZATION

The following sections provide the scope of necessary to complete the S1AP requirements stipulated in the Settlement Agreement.

3.1 WELL INVENTORY

EA will perform a well inventory of public and private water supply wells located within a 1-mile radius of the site. The inventory will be accomplished through use of New Mexico Office of State Engineer (NMOSE) Point of Diversion Locations https://gis.ose.state.nm.us/gisapps/ose_pod_locations/.

3.2 MONITORING WELL INSTALLATION

MW-3 will be constructed as described below.

Proposed Well Location

MW-3 will be located south of the former dry cleaner building in the location shown on Figure 2. This position is presumed downgradient of the point of discharge (wastewater sump) and will facilitate reconciliation of groundwater gradient by three-point analysis.

Monitoring well Construction

The proposed monitoring well will be constructed according to the following specification and in accordance with NMED guidelines and NMOSE rules (19 NMAC 27.4.29 and 19 NMAC 27.4.30) as follows:

1. Well bore will be drilled by hollow-stem auger; the borehole will be approximately 8-inches in diameter.

2. Well materials shall consist of 2-inch diameter schedule 40 polyvinyl chloride (SCH 40 PVC) flush-thread jointed (ASTM F480) well screen and casing.

3. Screen shall consist of 15 feet of 0.010-inch machine slotted screen. The screen will be submerged approximately 10 feet and extend 5 feet above water table.

4. Filter pack shall consist of 10-20 mesh silica sand placed from total depth to 1 to 2 feet above the screen.

5. A four-foot-thick hydrated bentonite seal shall be placed above the filter pack.

6. The remainder of the annulus between blank casing and surface shall be grouted with a cement bentonite grout containing 90 percent cement and 10 percent bentonite.

7. Surface completion shall consist of 8-inch traffic rated vaults set ½-inch above existing grade. Vaults shall be set in two-foot diameter by 4-inch-thick concrete well pads, sloped 0.5" per foot to drain. Well pads shall contain a mat of #3 rebar on 8-inch centers.

Monitoring well construction information will be documented on the Boring/Monitoring Construction Log, included in Appendix C (Field Forms) of this plan.

Monitoring Well Development

After the monitoring well is constructed, it will be developed. Development will be initiated by the surge-and-bail method to clean the filter pack of any fines. The well will be surged and bailed to the extent practicable until the well yields clear water. A minimum of 10 casing volumes will be removed during development. Development shall be under the direct supervision of the site geologist.

Well Recording with NMOSE

All information regarding the well installation will be filed with NMOSE by the licensed driller, as required by 19 NMAC 27.4.29(N).

Surveying

The new monitoring well will be surveyed by a licensed surveyor. The survey will be done in New Mexico State Plane Coordinates, Central Zone, North American Datum 83 and will include northing and easting to a tenth of a foot accuracy. Elevations of top of casing and ground elevations for wells will be surveyed to the nearest hundredth of a foot.

Investigation-Derived Waste Management

The implementation of the activities outlined in this S1AP will generate drill cuttings from drilling of boreholes, water from well purging for development and prior to sampling, and personal protective equipment (PPE) used by field personnel. The drill cuttings will be contained in DOT-rated 55-gallon drums. Purge water from well development and sampling will be placed on the cuttings thereby drummed.

PPE generated during this investigation includes protective gloves, paper towels, and general solid waste. None of this waste will require special handling and will be disposed in trash bins as any other solid waste.

Soil Sampling and Physical Properties Testing

Soil samples will be collected from the borehole for nature and extent of chlorinated solvents and to support fate and transport analysis. One soil sample from below the water table will be collected for analysis of VOCs by EPA Method 8260 as specified in Tables 5 and 6. Soil physical properties will be determined in accordance with Table 6 to support partitioning and retardation analysis.

3.3 WELL CAPACITY TESTING

Immediately following development, MW-3 will be step-tested by pumping at two or three pumping rates. Quasi-steady drawdown will be measured at each step, and the data used to determine well capacity. From well capacity, transmissivity and hydraulic conductivity will be estimated to facilitate estimation of seepage velocity.

3.4 INITIAL MONITORING WELL SAMPLING

Following construction and development, MW-3 along with MW-1 and MW-2, will be sampled as described in Section 4.

4.0 LONG-TERM GROUNDWATER MONITORING

The following sections discuss the monitoring regimen, sampling protocols, and schedule for long-term monitoring.

4.1 SAMPLING REGIMEN AND SCHEDULE

The S1AP monitoring well installed under this plan will be sampled on a quarterly basis. If for any reason sample analyses indicate that any well sampling should cease, a formal request documenting the reason for the change should be submitted to NMED. The abatement plan wells will be sampled in accordance with procedures outlined in this S1AP. Sampling results and gauging data will be provided to NMED on a quarterly basis.

4.2 SAMPLING PROTOCOLS

Groundwater sampling will be performed as described below. All monitoring well sampling information shall be logged on a monitoring well sampling form (Appendix C). The following monitoring well sampling procedure will be followed:

1. Gauge Water Level. Measure the depth to water (0.01-foot precision) in the well from the northern side of the PVC well casing (same point from where the well casing was surveyed). Decontaminate the electronic tape after each well gauging in Alconox™ solution followed by potable water rinse.

2. Calculate the Purge Volume. Determine the volume per foot of well depending on well diameter. Multiply this volume by the length of water column in the well. The water column in the well is calculated by subtracting the depth to water measurement from the well depth. Multiply this casing volume by 3 to determine the volume that will have to be purged prior to sampling. Record purge volume on field sampling form.

3. Purge/Development of the Well. The sampler will utilize the instrumentation available to track the purged volume.

4. Water Quality Parameters Measurement. Temperature, pH, electrical conductivity, and oxidation-reduction potential will be field measured during initial well construction and field sampling.

Sample Well. After three casing volumes have been purged/developed, the well will be ready to sample. Sample containers will be filled according to Table 6. The analysis, time of collection, date, and monitoring well number shall be recorded on sample bottle label. The sample containers will be placed in a cooler on ice as soon as they are filled and labeled

4.3 SAMPLING SCHEDULE

The schedule for the implementation of this S1AP, including eight quarters of groundwater monitoring, is presented below.

Date	Activity
October 28, 2022	Draft S1AP Submitted
November 28, 2022	NMED Comments on Draft S1AP
December 23, 2022	S1AP Comments Cured
January 13, 2023	NMED Approval of Stage 1 AP
January 23, 2023	Drill and Install MW-3
January 25, 2023	Sample MW-1, -2, and -3. First Quarterly Monitoring Event
March 15, 2023	Submit S1AP Site Investigation Report
April 30, 2023	Second Quarterly Monitoring Event
July 30, 2023	Third Quarterly Monitoring Event
October 30, 2023	Fourth Quarterly Monitoring Event
January 30, 2024	Fifth Quarterly Monitoring Event
April 30, 2024	Sixth Quarterly Monitoring Event
July 30, 2024	Seventh Quarterly Monitoring Event
October 30, 2024	Eighth Quarterly Monitoring Event

5.0 QUALITY ASSURANCE PROJECT PLAN

This section of the Sampling and Analysis (SAP) includes the QAPP for executing the sampling described in Section 4.0. This QAPP includes elements of the Guidance for Quality Assurance Project Plans (QA/G-5) (EPA 2002) and

Guidance on Systematic Planning using the Data Quality Objectives Process (QA/G-4) (EPA 2006b).

5.1 GOALS OF S1AP

In summary, the overall data quality objectives (DQOs) for this project are shown in Table 5 and include: (1) defining the PCSs, and (2) performing the hydrogeologic characterization of the area according to the requirements of 20 NMAC 6.2.4106.C and gain knowledge about the onsite groundwater quality conditions, including plume delineation. The data decisions defined herein are applicable to the Stage 1 Abatement Plan.

5.2 TRAINING

Personnel who work on-site are required to meet the Occupational Safety and Health Administration (OSHA) training requirements defined in Title 29 of the Code of Federal Regulations Part 1910.120(e). These requirements include: (1) 40 hours of formal off-site instruction; (2) a minimum of 3 days of actual on-site field experience under the supervision of a trained and experienced field supervisor; and (3) 8 hours of annual OSHA refresher training. Field personnel who directly supervise employees engaged in hazardous waste operations must also have at least 8 additional hours of specialized supervisor training. The supervisor training covers health and safety program requirements, training requirements, PPE requirements, spill containment program, and health-hazard monitoring procedures and techniques. Before work begins at a specific hazardous waste project site, personnel will be required to undergo site-specific training that thoroughly covers the following areas:

- Names of personnel and alternates responsible for health and safety at the site;
- Health and safety hazards present on site;
- Selection of the appropriate personal protection levels;
- Correct use of PPE;
- Work practices to minimize risks from hazards;
- Safe use of engineering controls and equipment on site; and
- Contents of the site-specific health and safety plan.

5.3 DOCUMENTATION AND RECORDS

Documentation is critical for evaluating the success of any environmental data collection activity. The following sections discuss the requirements for documenting field activities and for preparing laboratory data packages. This section also describes reports that will be generated as a result of this project.

Field Documentation

Field personnel will use field boring logs and field monitoring well sampling forms to document field activities.

Reports Generated

Reporting for this S1AP is addressed in Section 6.0.

5.4 SAMPLE MANAGEMENT

This section describes the requirements for the following:

The following subsections describe sample handling procedures, including sample identification and labeling, documentation, chain of custody (COC), and shipping.

Sample Identification

Each sample collected during site assessment activities will be identified using a unique sample identification (ID) number. The description of the sample type and the monitoring well name, as well as depth of the sample collection point, will be recorded on the COC forms, as well as in the field forms.

Sample IDs will be listed on the sample labels and the COC forms submitted to the laboratory and will be cross-referenced to the point name in field data forms.

Sample Labels

A sample label will be affixed to each sample container. The label will be completed with the following information written in indelible ink:

- Project name and location
- Sample identification number
- Date and time of sample collection
- Preservative used
- Sample collector's initials
- Analysis required
- Each sample will be refrigerated or placed in a cooler containing ice.

Sample Documentation

Documentation during sampling is essential to promote proper sample identification. Field personnel will adhere to the following general guidelines for maintaining field documentation:

- Documentation will be completed in permanent black or blue ink.
- All entries will be legible.

- Errors will be corrected by crossing out the entry with a single line and then dating and initialing the lineout.

Chain of Custody

Field personnel will use standard sample custody procedures to maintain and document sample integrity during collection, transportation, storage, and analysis. A sample will be considered to be in custody if one of the following statements applies:

- It is in a person's physical possession or view.
- It is in a secure area with restricted access.
- It is placed in a container and secured with an official seal in such a way that the sample cannot be reached without breaking the seal.

COC procedures provide an accurate written record that traces the possession of individual samples from the time of collection in the field to the time of acceptance at the laboratory. The COC form will be used to document all samples collected and the analyses requested. Information that the field personnel will record on the COC form includes:

- Project name and number
- Sampling location
- Name and signature of sampler
- Destination of sample (laboratory name)
- Sample ID
- Date and time of collection
- Number and type of containers filled
- Analyses requested
- Preservatives used (if applicable)
- Filtering (if applicable)
- Signatures of individuals involved in custody transfer, including the date and time of transfer
- Airbill number (if applicable) or courier information
- Project contact and phone number

It is expected that samples will be hand-carried to a local analytical laboratory for analysis. In the eventuality that samples will be shipped by courier or air carrier, the COC form will be placed in a waterproof plastic bag and taped to the inside of the shipping container used to transport the samples. Shipment tracking information will serve as evidence of custody transfer between field personnel and the courier, and between the courier and the laboratory. Copies of the COC form and the airbill will be retained and filed by field personnel before the containers are shipped.

The laboratory sample custodian will receive all incoming samples, sign the accompanying COC forms, and retain copies of the forms as permanent records. The laboratory sample custodian will record all pertinent information concerning the samples, including the persons delivering the samples, the date and time received, sample condition at the time of receipt (sealed, unsealed, or

broken container; temperature; or other relevant remarks), the sample IDs, and any unique laboratory identification numbers for the samples. When the sample transfer process is complete, the custodian is responsible for maintaining internal logbooks, tracking reports, and other records necessary to maintain custody throughout sample preparation and analysis.

The laboratory will provide a secure storage area for all samples. Access to this area will be restricted to authorized personnel. The custodian will ensure that samples requiring special handling, including samples that are heat- or light-sensitive, radioactive, or have other unusual physical characteristics, will be properly stored and maintained prior to analysis.

5.5 ANALYTICAL METHODS

Analytical methods for the project are specified in Table 6. This table also specifies the sample quantities, holding times, and preservatives.

Standards described in *Specifications and Guidance for Obtaining Contaminant-Free Sampling Containers* (EPA, 1992).

5.6 MANAGEMENT OF STAGE 1 AP DEVIATIONS

Minor deviations, including field instrument malfunction (pH meter, etc.) will be addressed by field crew and the project manager and professional judgment will be utilized. Any deviation from the SAP will be detailed on field forms and included in the final report to NMED. Any deviation considered significant will be addressed by the field crew, project manager and NMED Ground Water Quality Bureau (GWQB) Project Managers. A consensus on correcting the deviation will be achieved prior to executing any work plan changes, if possible. It is expected that the NMED-GWQB Project Manager or other agency representative will be available for communication during fieldwork. If a situation arises that requires work plan deviation, every attempt will be made to reach an NMED-GWQB representative. If attempts are unsuccessful and a deviation from the work plan must be made in a timely manner, the project manager will use professional judgment to adjust work plan specifications as needed.

5.7 DATA VERIFICATION AND USABILITY

This section describes the procedures that are planned to review and evaluate field and laboratory data. This section also discusses procedures for verifying that the data are sufficient to meet DQOs for the project.

For this project EA will perform data review on 100 percent of the laboratory results. No validation will be performed. Data will be reviewed for holding times, handling and preservation procedures, chain of custody, acceptance within control limits, and to ensure data meet method control limits for project goals.

Laboratory personnel will verify analytical data at the time of analysis and reporting and through subsequent reviews of the raw data for any non-conformances to the requirements of the analytical method. Laboratory personnel will make a systematic effort to identify any outliers or errors before they report the data. Outliers that result from errors found during data verification

will be identified and corrected; outliers that cannot be attributed to errors in analysis, transcription, or calculation will be clearly identified in the case narrative section of the analytical data package.

All laboratory data will be reviewed to ensure usability. The data evaluation strategy will not be a full data validation process but will determine if the analytical results are within the QC limits set for the project. In this process, the data usability will be assessed. Specifically, sample handling requirements, holding times, duplicate results, and QC control limits will be reviewed.
Data Management

Field data will be recorded on field forms and will be appended to the Site Investigation Report. Analytical data will be received in electronic form and will be reviewed, summarized, tabulated, analyzed, and provided in the body of the report. The original laboratory data will also be provided in the appendices. As appropriate, some data may be presented graphically. EA will oversee collection of environmental data using the appropriate assessment and audit activities. Any problems encountered during an assessment of field investigation or laboratory activities will require appropriate corrective action to ensure that the problems are resolved.

6.0 REPORTING

The outcome of this S1AP will be documented in a S1AP Site Investigation Report (§4106.C.6.). This report will include a description of field operations, any deviations from the S1AP, the raw and processed analytical data, as well as graphical representations of all spatial data. Supporting information such as evaluation of analytical data from other facilities operating under discharge permits will be included. The report will include a section on data gaps, if any are identified, and recommendations for subsequent data collection. report submittal schedule.

Upon completion of the tasks described above, a Final Site Investigation report will be prepared. The report will document all field activities, results and will include the following:

- A cross-section down the centerline of the plume
- Contaminant plume maps and potentiometric surface maps
- Passive soil gas results
- Laboratory data tables
- Boring/monitor well logs
- Field data collection forms
- Laboratory reports

7.0 REFERENCES

New Mexico Administrative Code. Various revisions. Title 20, Environmental Protection, Chapter 6, Water Quality.

EA Engineering, Science, and Technology, Inc.,PBC, 2022. Addendum to the Corrective Action Report, Former Hometown Cleaners, 901 East 10th Street, Alamogordo, NM. Prepared for Mr. Sandy Ochoa and New Mexico Environment Department Ground Water Quality Bureau (NMED GWQB), April 18.

EA Engineering, Science, and Technology, Inc., 2018. Corrective Action Report, Former Hometown Cleaners, 901 East 10th Street, Alamogordo, NM. Prepared for Mr. Sandy Ochoa and NMED GWQB, March 19.

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U.S. Environmental Protection Agency (EPA). 1992. *Specifications and Guidance for Obtaining Contaminant-Free Sampling Containers*. OSWER Directive No. 9240.0-05A. April.

EPA. 2002. Guidance for Quality Assurance Project Plans. Office of Environmental Information. Washington, DC. EPA QA/G-5 EPA/240/R-02/009. December.

EPA. 2006a. Data Quality Assessment: A Reviewer's Guide. EPA QA/G-9R, EPA/240/B-06/002, February.

EPA 2006b. Guidance on Systematic Planning Using the Data Quality Objectives Process EPA QA/G-4, EPA/240/B-06/001. February.

TABLES

TABLE 1. SUMMARY OF SOIL ANALYTICAL RESULTS
FORMER ACME HOMETOWN CLEANERS
ALAMOGORDO, NEW MEXICO

Location	Sample Identification	Sample Depth (ft bgs)	Sample Date	Soil Concentration (mg/Kg)[2]			
				PCE	TCE	cis-1,2-DCE	Chloroform
B-1	B-1 1-2	1-2	3/16/2017	4.2	<0.0025	<0.0025	<0.0025
B-2	B-2 2.5-3	2.5-3.0	3/16/2017	0.072	<0.0024	<0.0024	<0.0024
B-3	B-3 0'-2'	0-2	3/16/2017	0.021	<0.0024	<0.0024	<0.0024
B-3	B-3 7'-9'	7-9	3/16/2017	<0.0024	<0.0024	<0.0024	<0.0024
B-4	B-4 15'-17'	15-17	3/16/2017	0.0022J	<0.0023	<0.0023	<0.0023
MW-1/B-5	B-5 (0-1')	0-1	1/16/2018	1.2	<0.026	<0.026	<0.026
	B-5 (8-10')	8-10	1/16/2018	0.34	<0.025	<0.025	<0.025
	B-5 (20-22')	20-22	1/16/2018	0.12	<0.025	<0.025	<0.025
	B-5 (50-52')	50-52	1/16/2018	0.041	<0.025	<0.025	<0.025
	B-5 (75-77')	75-77	1/16/2018	<0.024	<0.024	<0.024	<0.024
Residential SSLs, non-cancer[1]				111	6.77	156	306
Industrial/Ocupational SSLs, non-cancer[1]				629	36.5	2,600	2,000

Notes:

[1]NMED Risk Assessment Guidance for Site Investigations and Remediation, Appendix A Table A-1, June 2022.

[2]PCE, cis-1,2-DCE, and Chloroform detected in soil vapor samples.

J - Estimated concentration above adjusted method detection limit and below adjusted reporting limit.

< = Less than the practical quantitative limit

ft bgs = feet below ground surface

SSLs = Soil Screening Levels

PCE = tetrachloroethene

TCE = trichloroethene

DCE = dichloroethene

mg/Kg = milligrams per kilogram

TABLE 2. SUMMARY OF SOIL VAPOR ANALYTICAL RESULTS
FORMER ACME HOMETOWN CLEANERS
ALAMOGORDO, NEW MEXICO

Sample Identification[1]	Sample Depth (ft bgs)	Sample Date	Soil Gas Concentration (µg/m^3)					
			PCE	TCE	cis-1,2-DCE	Chloroform	Freon 12	Vinyl Chloride
SV-1	Sub slab	3/22/2017	**260,000**	**310**	<0.59	NA	NA	<0.38
SV-2	Sub slab	3/22/2017	**160,000**	**310**	0.55J	NA	NA	<0.38
SV-3	Sub slab	3/22/2017	**2,400,000**	**1,800**	22	NA	NA	<0.38
Screen 1 (70-100')	70-100	1/19/2018	**60,000**	**760**	430	**84**	140	<29
Screen 2 (40-60')	40-60	1/19/2018	**410,000**	**3,100**	710	**530**	<300	<160
Screen 3 (5-35')	5-35	1/19/2018	**480,000**	**3,000**	580	**410**	<380	<190
NMED Residential VISL for Soil Gas[2]			1390	69.5	None	40.7	None	55.9
NMED Industrial VISL for Soil Gas[2]			6550	328	None	199	None	1040

NOTES:

[1] Samples collected in 1-Liter Summa canisters and analyzed by TO-15.

[2] NMED Risk Assessment Guidance for Site Investigations and Remediation, Appendix A Table A-4, June 2022.

Bold value indicates exceedance of Residential and/or Industrial VISL.

J - Analyte detected below quantitation limit.

< = Less than the limit of detection

µg/m^3= micrograms per cubic meter

ft bgs = feet below ground surface

NA = not analyzed

NMED = New Mexico Environment Department

VISL = Vapor Intrusion Screening Level

cis-1,2-DCE = cis-1,2-Dichloroethene

PCE = Tetrachloroethene

TCE = Trichloroethene

TABLE 3. SUMMARY OF FLUID GAUGING DATA
FORMER ACME HOMETOWN CLEANERS, ALAMOGORDO, NEW MEXICO

Monitor Well	Date Measured	Northing[1]	Easting[1]	Casing Elevation[2]	Depth to Water[3]	Groundwater Elevation[2]
MW-1	14-Feb-2022	691388.840	1732190.280	4364.02	90.57	4273.45
	18-Jan-2018				88.68	4275.34
MW-2	16-Feb-2022	691370.630	1732118.720	4363.27	90.00	4273.27

NOTES:

[1] Horizontal control to NM State Plane Coordinates Central NAD83 Grid Coordinates (in feet)

[2] Vertical Control to NAVD88 Datum in feet above mean sea level

[3] Measured in feet below the top of casing at survey point on north side of well

[4] Measured in feet.

TABLE 4. SUMMARY OF GROUNDWATER SAMPLE RESULTS
SELECT VOLATILE ORGANIC COMPOUNDS
FORMER ACME HOMETOWN CLEANERS, ALAMOGORDO, NEW MEXICO

Monitor Well	Date Sampled	PCE	TCE	Cis-1,2-DCE	Trans-1,2-DCE	Vinyl Chloride
MW-1	10-Aug-22	57	<1.0	<1.0	<1.0	<1.0
	14-Feb-22	110	<1.0	<1.0	<1.0	<1.0
	18-Jan-18	4.6	<1.0	<1.0	<1.0	<1.0
MW-2	10-Aug-22	16	<1.0	<1.0	<1.0	<1.0
	16-Feb-22	<1.0	<1.0	<1.0	<1.0	<1.0
NMWQCC Standards		5	5	70	100	2

NOTES:

All concentrations in micrograms per liter (ug/L).

DCE = Dichloroethene

PCE = Tetrachloroethene

TCE = Trichloroethene

NMWQCC = New Mexico Water Quality Control Commision

TABLE 5. SUMMARY SCOPE OF WORK,
FORMER HOMETOWN CLEANERS, ALAMOGORDO, NEW MEXICO

		Soil Matrix				Groundwater Matrix		
Boring/Well Type	Description	Number Borings	VOC	Field Screening	Drilling Footage (feet)	VOC	Parameters	Well Gauging
MW-3	One 2-inch water table well completed to approximately 110 feet bgs south and downgradient of former washwater sump. ten feet of screen below water table and five feet above.	1	1	Field Headspace	110	1	1	1
Waste Disposal Characterization	Drill cuttings	0	1	NA	0	NA	NA	1
Totals		**1**	**2**	**NA**	**110**	**1**	**1**	**1**

NOTES:

bgs = below ground surface
NA = Not applicable
VOC = Volatile Organic Compounds by EPA Method 8260.

TABLE 6. SAMPLE ANALYTICAL AND QUALITY CONTROL REQUIREMENTS
FORMER ACME HOMETOWN CLEANERS, ALAMOGORDO, NEW MEXICO

Target Analytes	Matrix	Analytical Method	Sample Container	Preservative	Hold Time
VOCs	Soil	EPA 8260B	20-ml Glass Vials	Methanol, Cool to <6°C	14 days
VOCs	Water	EPA 8260B	3 x 40- mL glass vials	Mercuric Chloride; Cool to <6°C	14 days
Soil Physical Properties[1]	Water	MOSA	2 x 6-inch brass sleeves	Store dry and cool	NA

NOTES:
[1] Bulk Density, Initial Moisture Content, Porosity, Fraction Organic Carbon (Walkley-Black)
VOC = Volatile Organic Compounds by EPA Method 8260B
EPA = U.S. Environmental Protection Agency
MOSA = Methods of Soil Analysis, Part 4 Physical Methods
°C = degrees Celcius
< = less than
mL = milliliter

TABLE 7. GROUNDWATER MONITORING REGIMEN
FORMER ACME HOMETOWN CLEANERS, ALAMOGORDO, NEW MEXICO

Well Number	Monitoring Regimen		Analytical Regimen	
	Quarterly Monitoring	Gauge	VOCs[1]	Field Parameters[2]
MW-1	X	X	X	X
MW-2	X	X	X	X
MW-3	X	X	X	X

NOTES:

[1] VOC = Volatile orgainc compounds by EPA method 8260B

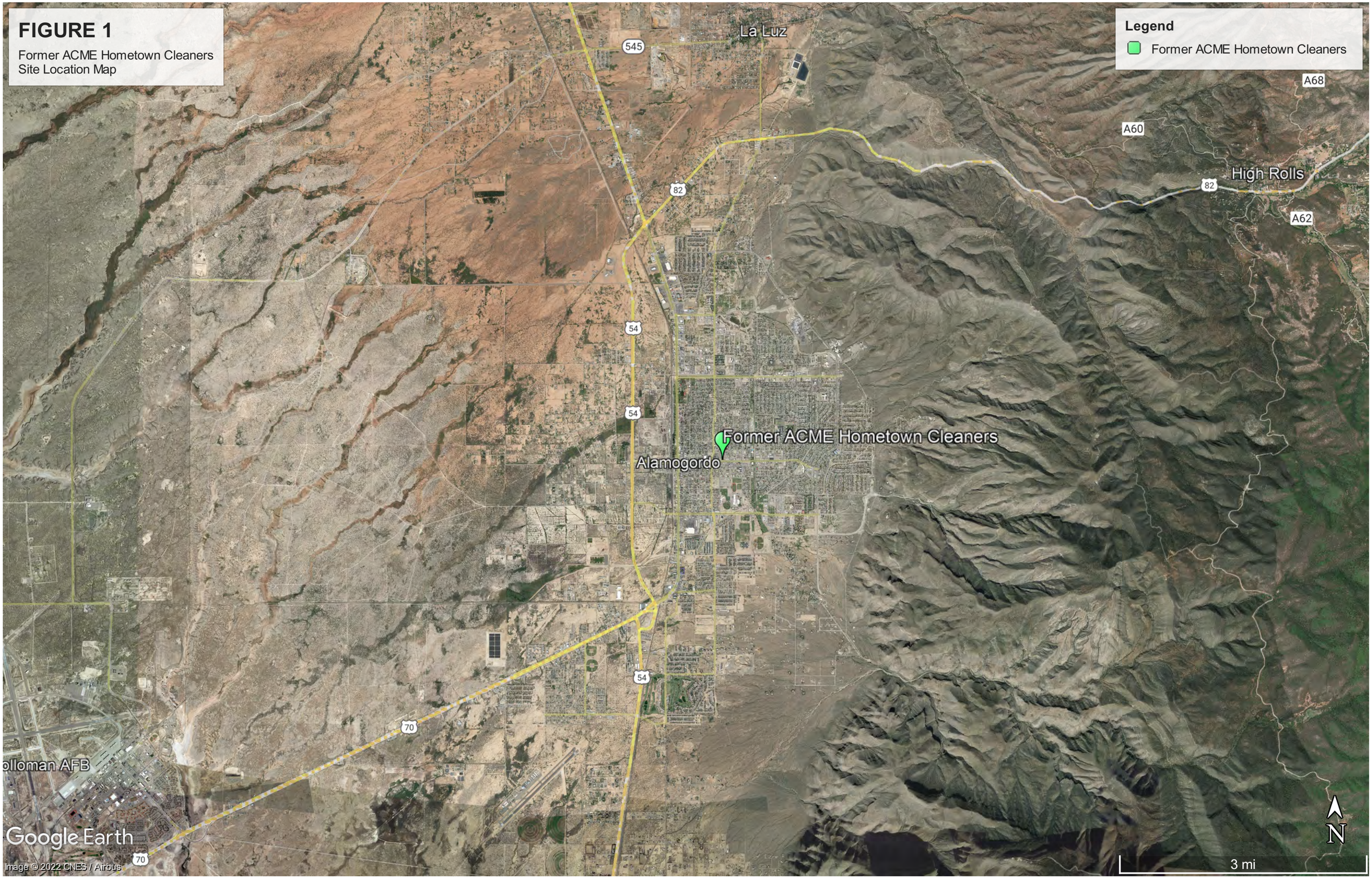
[2] Field Parameters = pH, temperature, dissolved oxygen and specific conductance

X = Scheduled to be sampled and gauged

FIGURES

FIGURE 1

Former ACME Hometown Cleaners
Site Location Map



Explanation

- Soil Boring
- Soil Boring / Monitoring Well
- Soil Vapor Implant

Note: PCE results are from August 2022

- Sub-Slab Vent Well
- Emission Point
- SVE Pump
- SVE Line
- Proposed Monitoring Well

SITE LAYOUT MAP

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC

DATE
2/5/2021

SOURCE
TERRACON 2017

FIGURE
2

Path: P:\gis\Projects\Former ACME Hometown Cleaners\MXDs\Fig1 - Soil Borings and MW Locs.mxd

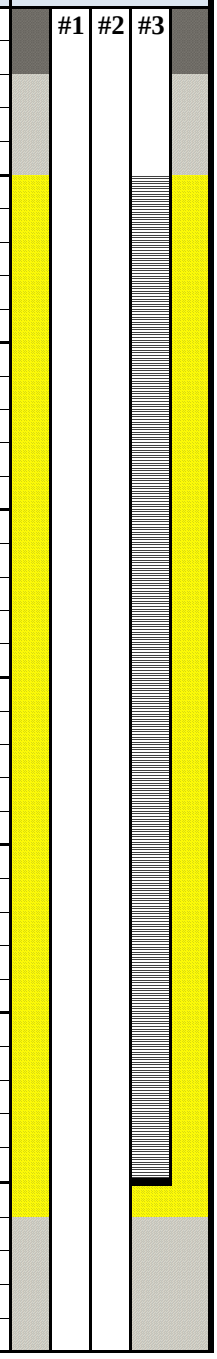
APPENDIX A

EXISTING BORING LOGS

BORING/WELL CONSTRUCTION LOG

Project:	Former ACME Hometown Cleaners	Project Number:	1560701
Drilling Company:	Terracon Inc.	Start Time/Date:	1100 / January 16, 2018
Drilling Rig/Bit:	CME-75 / 10" OD HAS	Completion Time/Date:	1000 / January 18, 2018
Driller:	Manny Duenez	Final Depth:	101.0 ft
Boring/Well ID:	B-5 / MW-1	Logged By:	Bob Marley

Sample Type	Recovery (inches)	Sample Interval	PID Reading (ppmv)	USCS Soil Type	Linear Feet	Soil Description (soil type, color, density/consistency, plasticity, moisture, grain size, angularity/mineralogy, other)
SS	6		5.3	CL	0	Ground surface; Lean clay, brown (7.5YR 4/3), very soft, medium
					1	plasticity, moist.
SS	4		1.7	SC	2	Clayey sand, brown (7.5YR 4/3), medium dense, very fine-grained.
					3	
SS	24		5.8	CL	4	Lean clay, brown (7.5YR 5/3), low plasticity, moist.
					5	~20% very fine-grained sand.
SS	24		7.9	CL	6	Same as above.
					7	
SS	24		9.5	CL	8	Same as above, except brown (7.5YR 5/4), medium plasticity.
					9	
SS	18		-	CL	10	Clay, brown (7.5YR 5/4), soft, medium plasticity, moist.
					11	
					12	
					13	
					14	
SS	8		4.5	SC	15	Clayey sand, brown (7.5YR 4/4), medium dense, moist, very fine-
					16	to fine-grained sand.
					17	
					18	
					19	
SS	18		5.2	SP	20	Sand, brown (7.5YR 5/4), moist, loose, very fine- to fine- grained;
					21	thin gravel lenses 0.2 to 0.5" diameter, subangular based on cutting
					22	returns and drilling difficulty from 20-22'.
					23	
					24	
SS	12		3.2	SC	25	Clayey sand, brown (7.5YR 5/4), loose, very fine- to fine grained.
					26	
					27	
					28	
					29	
SS	8		2.7	SC/SP	30	Clayey sand to sand, light brown (7.5YR 6/4), loose, moist to
					31	dry, very fine-grained sand, hard zone at 32'.
					32	
					33	
					34	
SS	12		0.6	SP	35	Sand, brown (7.5YR 5/4), very loose, dry, fine- to medium- grained;
					36	~2% fine gravel 0.2 to 0.8 " diameter.
					37	
					38	
					39	



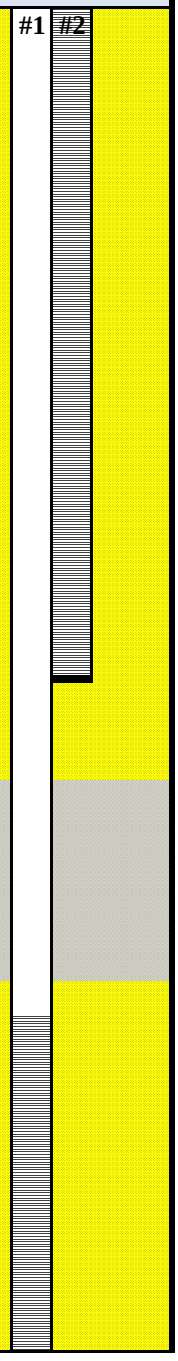
SS = Split Spoon

BORING/WELL CONSTRUCTION LOG

Project:	Former ACME Hometown Cleaners	Project Number:	1560701
Drilling Company:	Terracon Inc.	Start Time/Date:	1100 / January 16, 2018
Drilling Rig/Bit:	CME-75 / 10" OD HAS	Completion Time/Date:	1000 / January 18, 2018
Driller:	Manny Duenez	Final Depth:	101.0 ft
Boring/Well ID:	B-5 / MW-1	Logged By:	Bob Marley

Sample Type	Recovery (inches)	Sample Interval	PID Reading (ppmv)	USCS Soil Type	Linear Feet	Soil Description (soil type, color, density/consistency, plasticity, moisture, grain size, angularity/mineralogy, other)
SS	-		3.5	-	40	No recovery; limestone rock stuck in drive shoe, 1.2" diameter.
					41	
					42	
					43	
					44	
SS	24		0.6	CH	45	Clay, brown (7.5YR 5/4), medium stiff, high plasticity, moist.
					46	
					47	
					48	
					49	
SS	18		9.9	SP	50	Sand, brown (7.5YR 5/4), loose, dry, fine grained.
					51	
					52	
					53	
					54	
SS	24		1.0	CL	55	Clay, light brown (7.5YR 6/4), medium stiffness and plasticity,
					56	moist.
					57	
					58	
					59	
SS	24		4.0	CL	60	Same as above.
					61	
					62	
					63	
					64	
SS	24		3.0	SC	65	Clayey sand, brown (7.5YR 5/4), medium dense, dry, very
					66	fine- to fine-grained sand.
					67	
					68	
					69	
SS	24		1.9	CL	70	Sandy clay, brown (7.5YR 5/4), soft, medium plasticity, moist,
					71	very fine-grained sand.
					72	
					73	
					74	
SS	18		8.0	CH	75	Clay, brown (7.5YR 5/4), soft, high plasticity, moist.
					76	
					77	
					78	
					79	

Boring and/or Well Details



SS = Split Spoon CUT = Drill Cuttings

BORING/WELL CONSTRUCTION LOG

Project:	Former ACME Hometown Cleaners	Project Number:	1560701
Drilling Company:	Terracon Inc.	Start Time/Date:	1100 / January 16, 2018
Drilling Rig/Bit:	CME-75 / 10" OD HAS	Completion Time/Date:	1000 / January 18, 2018
Driller:	Manny Duenez	Final Depth:	101.0 ft
Boring/Well ID:	B-5 / MW-1	Logged By:	Bob Marley Page 3 of 3

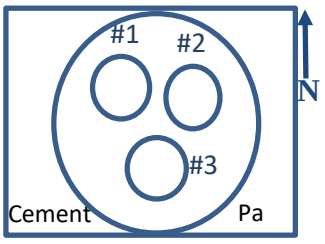
Sample Type	Recovery (inches)	Sample Interval	PID Reading (ppmv)	USCS Soil Type	Linear Feet	Soil Description (soil type, color, density/consistency, plasticity, moisture, grain size, angularity/mineralogy, other)
SS	15		1.2	SC	80	Clayey sand, brown (7.5YR 5/4), loose, moist, very fine- to
					81	fine-grained sand; ~2% subangular gravel 0.25 to 0.5" diameter.
					82	
					83	
					84	
SS	12		1.9	SP	85	Sand, brown (7.5YR 5/3), very loose, dry, fine- to medium
					86	grained.
					87	
					88	
					89	
SS	18		1.4	CH	90	Clay, light brown (7.5YR 6/4), very soft, high plasticity,
					91	very moist.
					92	
					93	
					94	
SS	24		0.5	SP	95	Sand, brown (7.5YR 5/4), very loose, wet, fine grained.
					96	Transition at 96' from clayey sand to sand.
					97	
					98	
					99	
					100	Total drilled depth 101'

Boring and/or Well Details

Well Construction Summary:

2" dia. Sch 40 PVC Screen, 10 Slot: Screen 1 (70.0'-100.0'); Screen 2 (40.0'-60.0'); Screen 3 (5.0'-35.0')
2" dia. Sch 40 PVC blank casing: Blank 1 (0'-70.0'); Blank 2 (0.0'-40.0'); and Blank 3 (0.0'-5.0')
12-20 Silica Sand: Interval 1 (67.8'-101.0); Interval 2 (39.5'-63.5'); and Interval 3 (4.5'-36.2')
Bentonite Chips: Interval 1 (63.5'-67.8); Interval 2 (36.2'-39.5'); and Interval 3 (2.0'-4.5')
Cement Grout: 0.0'-2.0'
Flush mount traffic rated well vault
10" borehole

Plan View of Well Head



SS = Split Spoon CUT = Drill Cuttings

BORING/WELL CONSTRUCTION LOG

Project:	ACME Hometown Cleaners	Project Number:	1560702
Drilling Company:	Atkins Engineering Associates	Start Time/Date:	1220 2-14-2022
Drilling Rig/Bit:	Foremost Mobile HSA 8.5" OD	Completion Time/Date:	1600 2-15-2022
Driller:	Shane Eldridge	Final Depth:	100.75 ft bgs
Boring/Well ID:	MW-2	Logged By:	A. Andelman Page __1__ of __3__

Sample Type	Recovery (inches)	Sample Interval	PID Reading (ppmv)	USCS Soil Type	Linear Feet	Soil Description (soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
CUTTINGS				CL	1	0-5', clay	
					2		
					3		
					4		
					5		
SS	22		0		6	5'-7', silty clay, brown (10YR 5/3), medium dense, dry, low plasticity	
					7		
					8		
					9		
					10		
SS	20		1.8		11	10'-12', silty clay, brown (10YR 5/3), medium dense, dry, low plasticity	
					12		
					13		
					14		
					15		
SS	20		4	ML	16	15'-17, clayey silt, light yellowish brown (10YR 6/4), medium dense,	
					17	dry, low plasticity	
					18		
					19		
					20		
SS	20		3.2		21	20'-22', sandy silt, yellowish brown (10YR 5/4), medium dense, dry,	
					22	low plasticity	
					23		
					24		
					25		
SS	20		1.1	SM	26	25'-27', silty sand, yellowish brown (10YR 5/4), loose, dry, fine	
					27	grained with 1-2" lenses of medium grained sand	
					28		
					29		
					30		
SS	24		0.5	ML	31	30'-32', clayey silt, yellowish brown (10yr 5/4), medium dense to	
					32	dense, plastic, dry	
					33		
					34		
					35		
SS	10		NM	SP	36	35'-37', sand, yellowish brown (10YR 5/4), loose, dry, fine grained	
					37	with trace medium grained sand	
					38		
					39		
					40		
SS	22		0.1	CH	41	40'-42', clay, light yellowish brown (10YR 6/4), medium dense, high	
					42	plasticity, moist	
					43		
					44		
					45		

SS = Split Spoon CUT = Drill Cuttings

BORING/WELL CONSTRUCTION LOG

Project:	ACME Hometown Cleaners	Project Number:	1560702
Drilling Company:	Atkins Engineering Associates	Start Time/Date:	1220 2-14-2022
Drilling Rig/Bit:	Foremost Mobile HSA 8.5" OD	Completion Time/Date:	1600 2-15-2022
Driller:	Shane Eldridge	Final Depth:	100.75 ft bgs
Boring/Well ID:	MW-2	Logged By:	A. Andelman Page __2__ of __3__

Sample Type	Recovery (inches)	Sample Interval	PID Reading (ppmv)	USCS Soil Type	Linear Feet	Soil Description (soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)
SS	12		NM	CH	46	45'-47', clay, light yellowish brown (10YR 6/4), medium dense, high
					47	plasticity, moist
					48	
					49	
					50	
SS	24		NM	CL	51	50'-52', silty sandy clay, brown (7.5YR 5/4), medium dense, low
					52	plasticity, dry, fine grained sand, odor
					53	
					54	
					55	
SS	24		NM		56	55'-57', silty clay, brown (7.5YR 5/4), medium dense, low
					57	plasticity, dry, strong odor
					58	
					59	
					60	
SS	24		NM		61	60'-62', silty clay, brown (7.5YR 5/4), medium dense, low
					62	plasticity, dry to slightly moist, odor
					63	
					64	
					65	
SS	20		NM	SM	66	65'-67', silty sand with clay, brown (7.5YR 5/4), medium dense/stiff,
					67	fine sand, slight odor
					68	
					69	
					70	
SS	20		NM	ML	71	70'-72', sandy silt, light brown (7.5YR 6/4), medium dense, dry, fine
					72	sand
					73	
					74	
					75	
SS	24		NM	CL	76	75'-77', silty clay, brown (7.5 YR 5/4), medium stiff to stiff, plastic,
					77	trace fine sand
					78	
					79	
					80	
SS	22		NM	ML	81	80'-82', clayey sandy silt, yellowish brown (10YR 5/4), medium dense,
					82	nonplastic, dry
					83	
					84	
					85	
SS	4		NM	GW	86	85'-87', gravel with silt, brown (10YR 5/4), loose, dry, subangular to
					87	subround, up to 1" diameter gravel, fine grained sand
					88	
					89	
					90	

SS = Split Spoon CUT = Drill Cuttings

BORING/WELL CONSTRUCTION LOG

Project:	ACME Hometown Cleaners	Project Number:	1560702
Drilling Company:	Atkins Engineering Associates	Start Time/Date:	1220 2-14-2022
Drilling Rig/Bit:	Foremost Mobile HSA 8.5" OD	Completion Time/Date:	1600 2-15-2022
Driller:	Shane Eldridge	Final Depth:	100.75 ft bgs
Boring/Well ID:	MW-2	Logged By:	A. Andelman Page __3__ of __3__

Sample Type	Recovery (inches)	Sample Interval	PID Reading (ppmv)	USCS Soil Type	Linear Feet	Soil Description (soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
SS	10		NM	CL	91	90'-92', silty clay, brown (10YR 5/4), medium stiff, wet, plastic	
					92		
					93		
					94		
					95		
SS	5		NM		96	95'-97', silty clay, brown (10YR 5/4), medium stiff, wet, plastic, trace	
					97	fine grained sand	
					98		
					99		
SS	4				100	99'-101', silty clay, brown (10YR 5/4), medium stiff, wet, plastic, trace	
			NM		101	fine grained sand	
					102		
					103		
					104		
					105		
					106	2-inch PVC Schedule 40 0.010" slot screen 85'-100'	
					107	12-20 silica sand 83'100.75'	
					108	1/4" bentonite pellets 79'-83'	
					109	Grout <1'-79'	
					110		
					111		
					112		
					113		
					114		
					115		
					116		
					117		
					118		
					119		
					120		
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					129		
					130		
					131		
					132		
					133		
					134		
					135		

SS = Split Spoon CUT = Drill Cuttings

BORING/WELL CONSTRUCTION LOG

Project:	ACME Hometown Cleaners	Project Number:	1560702
Drilling Company:	EA Eng.	Start Time/Date:	0900 6-30-21
Drilling Rig/Bit:	Hand Auger	Completion Time/Date:	1300 6-30-21
Driller:	A. Kupper	Final Depth:	15 ft bgs
Boring/Well ID:	SVE-1	Logged By:	A. Kupper Page _1__ of _1__

Sample Type	Recovery (inches)	Sample Interval	PID Reading (ppmv)	USCS Soil Type	Depth, ft bgs	Soil Description (soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
CUTTINGS			0.6	SC	1	0-8', clayey sand, red (7.5YR 5/6), dense, plastic, moist, fine sand	
			0.7		2		
			0.6		3		
			0.8		4		
			0.7		5		
			0.6		6		
			0.6		7		
			0.7		8		
			0.8		9	8'-15', clayey sand, red (7.5YR 5/6), medium dense, slightly plastic, moist, fine sand	
			1.1		10		
			1.3		11		
			1.1		12		
			0.5		13		
			0.5		14		
			0.9		15		
					16		
					17	1-inch PVC 0.010" slot screen 5'-15'	
					18	10-20 silica sand 4'-15'	
					19	3/8" bentonite pellets <1'-4'	
					20		
					21		
					22		
					23		
					24		
					25		

SS = Split Spoon CUT = Drill Cuttings

BORING/WELL CONSTRUCTION LOG

Project:	ACME Hometown Cleaners	Project Number:	1560702
Drilling Company:	EA Eng.	Start Time/Date:	0930 6-31-21
Drilling Rig/Bit:	Hand Auger	Completion Time/Date:	1430 6-31-21
Driller:	A. Kupper	Final Depth:	15 ft bgs
Boring/Well ID:	SVE-2	Logged By:	A. Kupper Page _1__ of _1__

Sample Type	Recovery (inches)	Sample Interval	PID Reading (ppmv)	USCS Soil Type	Depth, ft bgs	Soil Description (soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
CUTTINGS			0.2	GW	1	0-1', gravel, light reddish grey (2.5 7/1), loose, trace cobbles	
			0.6	SC	2	2'-6', clayey sand, red (7.5YR 5/6), dense, plastic, moist, fine sand	
			0.9		3		
			0.7		4		
			0.6		5		
			0.9		6		
			0.1		7	6'-15', clayey sand, red (7.5YR 5/6), medium dense, slightly plastic, moist, fine sand	
			0.4		8		
			0.3		9		
			0.6		10		
			0.4		11		
			0.5		12		
			0.9		13		
			0.7		14		
			0.9		15		
					16		
					17	1-inch PVC 0.010" slot screen 5'-15'	
					18	10-20 silica sand 4'-15'	
					19	3/8" bentonite pellets <1'-4'	
					20		
					21		
					22		
					23		
					24		
					25		

SS = Split Spoon CUT = Drill Cuttings

BORING LOG NO. B-1

PROJECT: Acme Hometown Cleaners

CLIENT: Mr. Sandy Ochoa
Alamogordo, New Mexico

SITE: 901 East 1st Street
Alamogordo, New Mexico

LOCATION See Exhibit A-2

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB
	0.5	**ASPHALT**					
	1.0	**AGGREGATE BASE COURSE**				8.9	
	2.0	**POORLY GRADED SAND WITH CLAY (SP-SC)**, dark brown, no odor, moist, medium dense				17.0	X
		Boring Terminated at 2 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:

Abandonment Method:

See Appendices for description of field procedures.
See Appendices for description of laboratory procedures and additional data (if any).
See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
4450 Bataan Memorial E
Las Cruces, NM

Boring Started: 3/16/2017 | Boring Completed: 3/16/2017

Drill Rig: Hand Auger | Driller:

Project No.: 68177010 | Exhibit: B-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG ENV LOGS.GPJ TERRACON_DATATEMPLATE.GDT 4/5/17

BORING LOG NO. B-2

PROJECT: Acme Hometown Cleaners

CLIENT: Mr. Sandy Ochoa
Alamogordo, New Mexico

SITE: 901 East 1st Street
Alamogordo, New Mexico

LOCATION See Exhibit A-2

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB
0.3	**ASPHALT**				6.4	
1.0	**AGGREGATE BASE COURSE**				6.2	
	POORLY GRADED SAND WITH CLAY (SP-SC), dark brown, no odor, moist, medium dense				3.8	
3.0	***Boring Terminated at 3 Feet***				11.3	X

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:

Abandonment Method:

See Appendices for description of field procedures.
See Appendices for description of laboratory procedures and additional data (if any).
See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
4450 Bataan Memorial E
Las Cruces, NM

Boring Started: 3/16/2017 | Boring Completed: 3/16/2017

Drill Rig: Hand Auger | Driller:

Project No.: 68177010 | Exhibit: B-5

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BORING LOG NO. B-3

PROJECT: Acme Hometown Cleaners

CLIENT: Mr. Sandy Ochoa
Alamogordo, New Mexico

SITE: 901 East 1st Street
Alamogordo, New Mexico

LOCATION See Exhibit A-2

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB
0.3	**ASPHALT**					
1.8	**AGGREGATE BASE COURSE**				8.7	X
	POORLY GRADED SAND WITH CLAY (SP-SC), light brown, no odor, moist, medium dense				7.6	
		5			4.7	
					10.0	X
		10			3.	
					8.5	
		15			4.3	
					3.9	
		20			2.3	
22.0	**LEAN CLAY (CL)**, dark brown, no odor, moist, stiff				4.7	
		25			5.7	
					5.0	
30.0	***Boring Terminated at 30 Feet***	30				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Hammer Type: Automatic

Advancement Method:

Abandonment Method:
Borings backfilled with cement-bentonite grout upon completion.

See Appendices for description of field procedures.
See Appendices for description of laboratory procedures and additional data (if any).
See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
4450 Bataan Memorial E
Las Cruces, NM

Boring Started: 3/17/2017 | Boring Completed: 3/17/2017
Drill Rig: CME-75 | Driller: TIERRA
Project No.: 68177010 | Exhibit: B-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG ENV LOGS.GPJ TERRACON_DATATEMPLATE.GDT 4/5/17

BORING LOG NO. B-4

PROJECT: Acme Hometown Cleaners

CLIENT: Mr. Sandy Ochoa
Alamogordo, New Mexico

SITE: 901 East 1st Street
Alamogordo, New Mexico

LOCATION See Exhibit A-2

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB
0.3	**ASPHALT**					
1.8	**AGGREGATE BASE COURSE**					
	POORLY GRADED SAND WITH CLAY (SP-SC), light brown, no odor, moist, medium dense				8.7	
					7.6	
		5			4.7	
					10.0	X
		10			3.5	
					8.5	
		15			4.3	
					3.9	
20.0		20				
	CLAYEY SAND (SC), brown, no odor, moist, medium dense				2.3	
					4.7	
		25			5.7	
27.0						
	LEAN CLAY (CL), dark brown, no odor, moist, stiff				5.0	
30.0		30				
	Boring Terminated at 30 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Hammer Type: Automatic

Advancement Method:

Abandonment Method:
Borings backfilled with cement-bentonite grout upon completion.

See Appendices for description of field procedures.
See Appendices for description of laboratory procedures and additional data (if any).
See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
4450 Bataan Memorial E
Las Cruces, NM

Boring Started: 3/17/2017 | Boring Completed: 3/17/2017
Drill Rig: CME-75 | Driller: TIERRA
Project No.: 68177010 | Exhibit: B-7

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG ENV LOGS.GPJ TERRACON_DATATEMPLATE.GDT 4/5/17

APPENDIX B

HEALTH AND SAFETY PLAN

Site Name: Former ACME Hometown Cleaners	**Site Contact:** Sandy Ochoa	**Telephone:** 505-269-0810
Location: 901 10th Street, Alamogordo, NM	**Client Contact:** Sandy Ochoa	**Telephone:** 505-269-0810
EPA I.D. No.: N/A	**Prepared By:** David Werth	**Date:** October 27, 2022
Project No. 1560702	**Date of Proposed Activities:** October 2022 through October 2024	

Objectives:

All personnel working on this site are trained in accordance with 29 CFR 1910.120 and are currently active in a medical monitoring program to perform work on a hazardous waste site. The objective of this health and safety plan (HASP) is to list the site-specific hazards and the hazards controls to be used to ensure worker safety for the following activities:

- Groundwater Monitoring
- SVE Operation
- Well Installation

Site Type: *Check as many as applicable.*

- ☒ Active
- ☐ Inactive
- ☐ Secure
- ☒ Unsecure
- ☐ Industrial Waste
- ☐ Landfill
- ☐ Confined space **(must use long form)**
- ☐ Uncontrolled Waste **(must use long form)**
- ☐ Well field
- ☐ Underground storage tank
- ☐ Unknown **(must use long form)**
- ☐ Other *(Egg Farm)*

Site Description/History and Site Activities:

Former ACME Hometown Cleaners is a former dry cleaner and is now vacant. A release occurred of PCE at the facility. Soil and groundwater contamination is present. Ongoing investigations at the site include groundwater monitoring soil vapor extraction, and well installations.

Note: A site map, definitions, and additional information about this form are provided on the last three pages of this form.

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Waste Management Practices:

IDW will be containerized in drums and disposed of at a permitted facility.

Waste Types:	☒ Liquid	☒ Solid	☐ Sludge	☐ Gas
Waste / Chemical Characteristics:	☐ Corrosive	☐ Oxidizer	☐ Flammable	
☒ Toxic	☐ Explosive	☒ Volatile	☐ Radioactive	
☐ Reactive	☐ Inert		☐ Other *(specify)* _____	

Chemical / Health Hazards of Concern:

☐ Explosion or fire hazard – monitor with combustible gas meter	☐ Inorganic chemicals (nitrate and chloride)
☐ Oxygen deficiency – monitor with oxygen meter	☐ Organic chemicals (PCP)
☐ Landfill gases – monitor with methane and hydrogen sulfide meter	☐ Petroleum Hydrocarbons (as TPH DRO)
☐ Surface tanks	☐ Underground storage tanks
☐ Potential inhalation or skin absorption hazard that is immediately dangerous to life and health (IDLH) – **must use long form**	☒ Other *(specify)* ___PCE_____

Explosion or Fire Potential:	☐ High	☐ Medium	☒ Low	☐ Unknown

Radiological Hazards of Concern:

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☐ Ionizing radiation (Radioactive materials, X-ray) **(must use long form)**
☐ Non-ionizing radiation (ultraviolet, lasers)

Safety Hazards of Concern: (Based on anticipated clean-up operations)

☒ Heavy Equipment
☐ Pinch points
☒ Energized and rotating equipment (drill rig)
☐ Steam cleaning equipment
☐ Excavations
☐ Welding or torch cutting (Hot work)
☐ Sharp Objects
☐ Hazardous energy sources (electrical, hydraulic)
☒ Vehicle Traffic (use cones or barriers)
☒ Buried utilities
☒ Overhead utilities
☐ Suspended loads
☐ Buried drums
☐ Work over or near water
☐ Work from elevated platforms
☐ Manual Lifting
☒ Other *(specify)*
Heavy traffic

Physical Hazards of Concern:

☒ Heat stress
☐ Cold stress
☒ Slips, trips, falls
☐ Illumination
☐ Vibration
☒ Noise
☒ Solar (sunburn)
☐ Unstable or steep terrain
☒ Other *(specify) Traffic*_____

Biological Hazards of Concern:

☐ Poisonous plants (poison ivy, poison oak)
☐ Spiders (black widow or brown recluse spiders)
☐ Medical waste
☐ Snakes (rattlesnakes)
☒ Stinging insects (bees, wasps)
☐ Animals (feral dogs, mountain lions, etc.)
☐ Blood or other body fluids

Unexploded Ordnance:

☐ Unexploded Ordnance (UXO) **(must use long form)**
☐ Chemical Warfare Materials (CWM) **(must use long form)**
☐ Explosive ordnance waste (OEW) **(must use long form)**

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Chemical Products EA Engineering Will Use or Store On Site: (Attach a Material Safety Data Sheet [MSDS] for each item.)

- ☒ Alconox® or Liquinox®
- ☐ Hydrochloric acid (HCl)
- ☐ Nitric Acid (HNO_3)
- ☐ Sodium hydroxide (NaOH)
- ☐ Sulfuric Acid (H_2SO_4)
- ☐ Other *(specify)* _____
- ☐ Other *(specify)* _____
- ☐ Other *(specify)* _____
- ☐ Other *(specify)* _____
- ☐ Other *(specify)* _____
- ☐ Other *(specify)* _____

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Chemicals Present at Site	PEL/TLV (specify ppm or mg/m^3)	IDLH Level (specify ppm or mg/m^3)	Route of Exposure and Symptoms	Photoionization Potential (eV)
TCE	100 ppm (PEL)	1,000 ppm	Inhalation, skin absorption, ingestion, skin and/or eye contact Irritation eyes, skin; headache, visual disturbance, lassitude (weakness, exhaustion), dizziness, tremor, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias, paresthesia; liver injury; [potential occupational carcinogen]	9.45 eV
Chloroform	50 ppm (PEL)	500 ppm	Inhalation, skin absorption, ingestion, skin and/or eye contact Irritation eyes, skin; dizziness, mental dullness, nausea, confusion; headache, lassitude; anesthesia; enlarged liver; [potential occupational carcinogen]	11.42 eV
Cis-1,2-DCE	200 ppm	1000 ppm	Inhalation, Ingestion, Skin/Eye Contact Irritation eyes, respiratory system; central nervous system depression	9.65 eV
Tetrachloroethene (PCE)	100 ppm (PEL – TWA)	500 ppm	Inhalation, skin absorption, ingestion, skin and/or eye contact Irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]	9.32 eV

Notes: Source: "NIOSH Pocket Guide to Chemical Hazards" (September 2021)

A = Air	GW = Ground water	mg/L = Milligram per liter	PEL = Permissible exposure limit	SW = Surface water
CARC = Carcinogenic	IDLH = Immediately dangerous to life or health	NA = Not available	ppm = Part per million	TLV = Threshold limit value
eV = Electron volt	mg/m^3 = Milligram per cubic meter	NE = Not established	S = Soil	U = Unknown

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Field Activities Covered Under This Plan:

Task Description	Type	Level of Protection		Date of Activities
		Primary	Contingency	
1 Groundwater monitoring and well installation	☒ Intrusive ☐ Nonintrusive	☐ C ☒ D	☐ C ☐ D	2022-2024
2 Soil vapor extraction	☒ Intrusive ☐ Nonintrusive	☐ C ☒ D	☐ C ☐ D	2022-2024

Site Personnel and Responsibilities (include subcontractors):

Employee Name and Office Code	Task	Responsibilities
David Werth	1	Project Manager or Designated Leader: Directs project activities, makes site safety coordinator (SSC) aware of pertinent project developments and plans, and maintains communications with client as necessary.
Elliott Andelman	1	Site Safety Coordinator (SSC): Ensures that appropriate personal protective equipment (PPE) is available, enforces proper utilization of PPE by on-site personnel, suspends investigative work if he or she believes that site personnel are or may be exposed to an immediate health hazard, implements the health and safety plan, and reports any observed deviations from anticipated conditions described in the health and safety plan to the health and safety representative.
Elliott Andelman	1	Field Personnel: Complete tasks as directed by the program manager, field team leader, and SSC and follow all procedures and guidelines established in the EA Engineering Health and Safety Manual.

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Protective Equipment: (Indicate type or material as necessary for each task; attach additional sheets as necessary)

Task: ☒ 1 ☒ 2	Task: ☐ 1 ☐ 2
Level: ☐ C ☒ D	Level: ☐ C ☐ D
☒ Primary ☐ Contingency	☐ Primary ☐ Contingency
RESPIRATORY	**RESPIRATORY**
☒ Not needed	☐ Not needed
☐ APR: _____	☐ APR: _____
☐ Cartridge: _____	☐ Cartridge: _____
☐ Escape mask: _____	☐ Escape mask: _____
☐ Other: _____	☐ Other: _____
PROTECTIVE CLOTHING	**PROTECTIVE CLOTHING**
☒ Not needed	☐ Not needed
☐ Tyvek® coveralls: _____	☐ Tyvek® coveralls: _____
☐ Saranex® coveralls: _____	☐ Saranex® coveralls: _____
☐ Coveralls: _____	☐ Coveralls: _____
☐ Other: _____	☐ Other: _____
HEAD AND EYE	**HEAD AND EYE**
☐ Not needed	☐ Not needed
☒ Safety glasses: _____	☐ Safety glasses: _____
☐ Face shield: _____	☐ Face shield: _____
☐ Goggles: _____	☐ Goggles: _____
☒ Hard hat: _____	☐ Hard hat: If overhead hazard
☐ Other: _____	☐ Other: _____
GLOVES	**GLOVES**
☐ Not needed	☐ Not needed
☐ Undergloves: _____	☐ Undergloves: _____
☒ Gloves: Nitrile _____	☐ Gloves: Nitrile _____
☐ Overgloves: _____	☐ Overgloves: _____
FIRST AID EQUIPMENT	**FIRST AID EQUIPMENT**
☐ Not needed	☐ Not needed
☒ Standard First Aid kit	☐ Standard First Aid kit
☐ Portable eyewash	☐ Portable eyewash
BOOTS	**BOOTS**
☐ Not needed	☐ Not needed
☒ Work boots: Steel Toed	☐ Work boots:
☐ Overboots: _____	☐ Overboots: _____
OTHER	**OTHER**
☐ (specify): _____	☐ (specify): _____

Note: APR = Air purifying respirator

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Monitoring Equipment: (Specify instruments needed for each task; attach additional sheets as necessary)				
Instrument	Task	Instrument Reading	Action Guideline	Comments
Combustible gas indicator model:	☐ 1	0 to 10% LEL	No explosion hazard	☒ Not needed
	☐ 2	10 to 25% LEL	Potential explosion hazard; notify SSC	
		> 25% LEL	Explosion hazard; interrupt task; evacuate site, notify SSC	
O2 meter model:	☐ 1	> 23.5% O2	Potential fire hazard; evacuate site	☒ Not needed
	☐ 2	23.5 to 19.5% O2	Oxygen level normal	
		< 19.5% O2	Oxygen deficiency; interrupt task; evacuate site; notify SSC	
Photoionization detector model: ☐ 11.7 eV ☒ 10.6 eV ☐ 9.8 eV ☐ ____eV	☒ 1	>0 to 5 ppm above background	Level D	☐ Not needed
	☐ 2	>5 to 50 ppm above background	Level C	
		>50 ppm above background	Evacuate site; notify SSC	
Flame ionization detector model:	☐ 1	>0 to 5 ppm above background	Level D	☒ Not needed
	☐ 2	>5 to 50 ppm above background	Level C	
		>50 ppm above background	Evacuate site; notify SSC	
Detector tubes models:	☐ 1 ☐ 2	Specify:	Specify:	Note: This action level for upgrading the level of protection is one-half of the contaminant's PEL. If the PEL is reached, evacuate the site and notify the SSC. ☒ Not needed
Respirable dust monitor model:	☐ 1 ☐ 2	Specify:	Specify:	☒ Not needed
Other: (specify):	☐ 1 ☐ 2	Specify:	Specify:	☒ Not needed

Notes: eV = Electron volt PEL = Permissible exposure limit LEL = Lower explosive limit ppm = Part per million O_2 = Oxygen

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Site Map (if available):

See Attachment

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Additional Comments:	**Emergency Contacts:**	**Telephone**
EA Engineering site workers will contain and absorb any chemicals used or transferred on site.	U.S. Coast Guard National Response Center	800/424-8802
	InfoTrac	800/535-5053
	Fire department	911
	Police department	911
	EA Engineering Personnel:	
	Corporate Human Resource Manager: Michele Bailey	410/584-7000
	Corporate Health & Safety Manager: Rob Marcase	410/527-2412
	Office Health & Safety Coordinator: Teri McMillan	505/259-6779
	Program Manager: Elliott Andelman	210/827-1221
	Site Safety Coordinator: Elliott Andelman	410/236-9628
Personnel Decontamination and Disposal Method:	**Medical Emergency:**	
Personnel will follow the U.S. Environmental Protection Agency's "Standard Operating Safety Guides" for decontamination procedures for Level D personal protection. The following decontamination stations should be set up in each decontamination zone: • All equipment will be decontaminated in a designated area All disposable equipment and gloves will be double-bagged or containerized in an acceptable manner and disposed of in accordance with local regulations.	Hospital Name: Gerald Champion Regional Medical Center Hospital Address: 2669 N Scenic Dr, Alamogordo, NM 88310. Hospital Telephone: Emergency – 911 General – (575) 439-6100 Ambulance Telephone: 911 <u>Route to Hospital:</u> (see next page for route map) See attached directions next page Approximate drive time on this route is 10 minutes.	

Note: This page must be posted on site.

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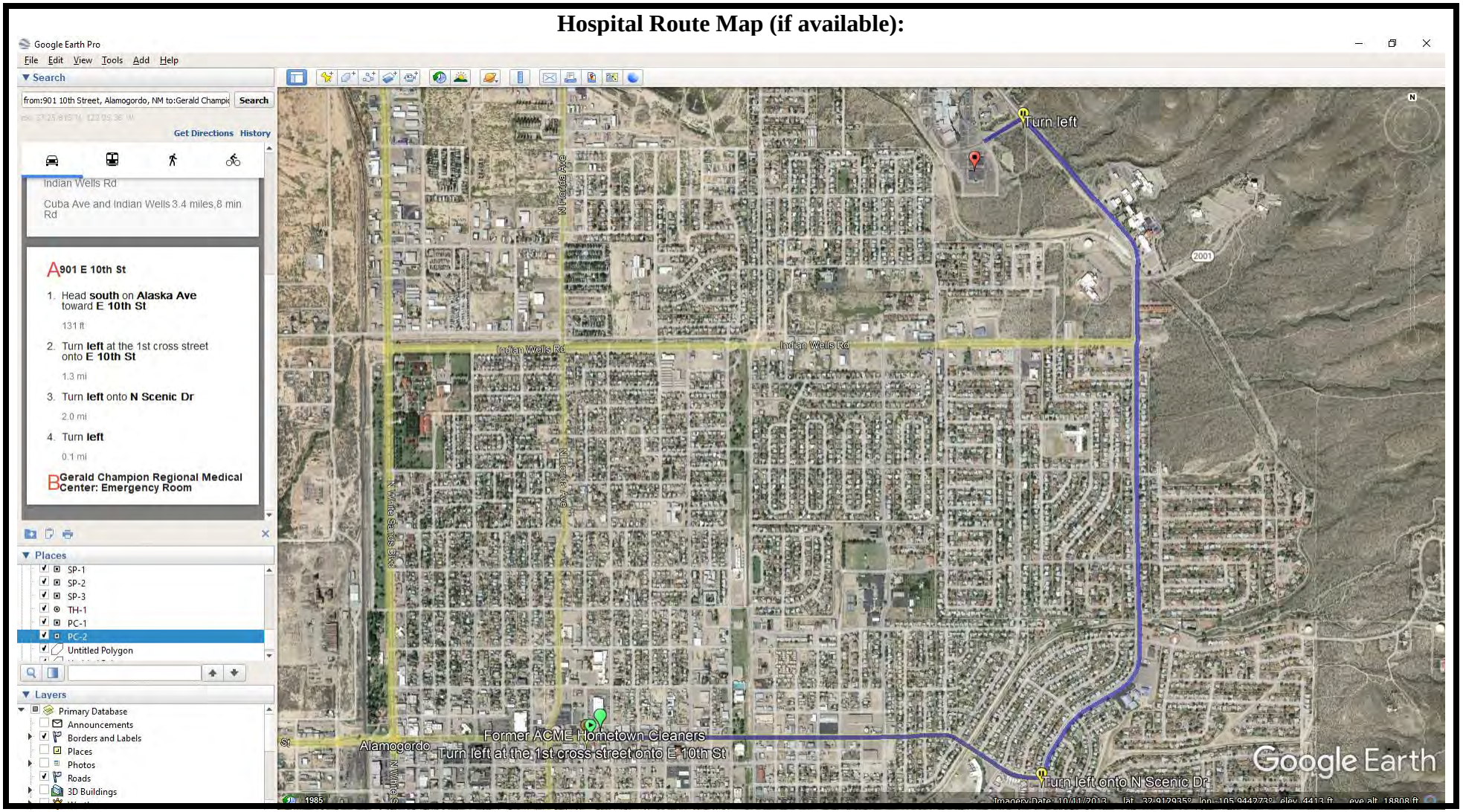
Hospital Route Map (if available):



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APPROVAL AND SIGN-OFF FORM

Project No. 1560702

I have read, understood, and agree with the information set forth in this Health and Safety Plan and will follow the direction of the Site Safety Coordinator as well as procedures and guidelines established in the EA Engineering Health and Safety Manual. I understand the training and medical requirements for conducting field work and have met these requirements.

Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date

APPROVALS: (Two Signatures Required)

Site Safety Coordinator	Date
Health and Safety Coordinator	Date

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DEFINITIONS

Intrusive - Work involving excavation to any depth, drilling, opening of monitoring wells, most sampling, and Geoprobe® work

Nonintrusive - Generally refers to site walk-throughs or field reconnaissance

Levels of Protection

Level D - Hard hat, safety boots, and glasses, may include protective clothing such as gloves, boot covers, and Tyvek® or Saranex® coveralls

Level C - Hard hat, safety boots, glasses, and air purifying respirators with appropriate cartridges, **PLUS** protective clothing such as gloves, boot covers, and Tyvek® or Saranex® coveralls

Emergency Contacts

InfoTrac - For issues related to incidents involving the transportation of hazardous chemicals; this hotline provides accident assistance 24 hours per day, 7 days per week

U.S. Coast Guard National Response Center - For issues related to spill containment, cleanup, and damage assessment; this hotline will direct spill information to the appropriate state or region

Health and Safety Plan Short Form

- Used for field projects of limited duration and with relatively limited activities; may be filled in with handwritten text
- Limitations:
  - No Level B or A work
  - Limited number of tasks
  - No confined space entry
  - No unexploded ordnance work or radiation hazard

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APPENDIX C

FIELD FORMS

BORING/WELL CONSTRUCTION LOG

Project:	Project Number:
Drilling Company:	Start Time/Date:
Drilling Rig/Bit:	Completion Time/Date:
Driller:	Final Depth:
Boring/Well ID:	Logged By: Page ____ of ____

Sample Type	Recovery (inches)	Sample Interval	PID Reading (ppmv)	USCS Soil Type	Linear Feet	Soil Description (soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
					1		
					2		
					3		
					4		
					5		
					6		
					7		
					8		
					9		
					10		
					11		
					12		
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					14		
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					32		
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					37		
					38		
					39		
					40		
					41		
					42		
					43		
					44		
					45		

SS = Split Spoon CUT = Drill Cuttings

BORING/WELL CONSTRUCTION LOG

Project:	Project Number:
Drilling Company:	Start Time/Date:
Drilling Rig/Bit:	Completion Time/Date:
Driller:	Final Depth:
Boring/Well ID:	Logged By: Page ____ of ____

Sample Type	Recovery (inches)	Sample Interval	PID Reading (ppmv)	USCS Soil Type	Linear Feet	Soil Description (soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
					46		
					47		
					48		
					49		
					50		
					51		
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					54		
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					83		
					84		
					85		
					86		
					87		
					88		
					89		
					90		

SS = Split Spoon CUT = Drill Cuttings

BORING/WELL CONSTRUCTION LOG

Project:	Project Number:
Drilling Company:	Start Time/Date:
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Boring/Well ID:	Logged By: Page ____ of ____

Sample Type	Recovery (inches)	Sample Interval	PID Reading (ppmv)	USCS Soil Type	Linear Feet	**Soil Description** (soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
					91		
					92		
					93		
					94		
					95		
					96		
					97		
					98		
					99		
					100		
					101		
					102		
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					104		
					105		
					106		
					107		
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					131		
					132		
					133		
					134		
					135		

SS = Split Spoon CUT = Drill Cuttings

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320 Gold Avenue SW, Suite 1300
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Phone: (505) 224-9013

MONITORING WELL SAMPLING FIELD FORM

FLUID LEVEL DATA

Well ID _____ Date gauged _____

Site _____ Time gauged _____

Depth to PSH _____ Feet Well diameter _____ Inches

Depth to water _____ Feet Height of fluid column _____ Feet

Total depth _____ Feet Volume in well _____ Gallons

NAPL thickness _____ Feet

(3 well volumes = _____ gallons)

After Bailing NAPL

Depth to PSH _____ Feet

Depth to water _____ Feet

NAPL thickness _____ Feet

NAPL Recovered _____ Gallons

GROUNDWATER SAMPLING DATA

Time/date purged _____ Purge Method _____

Time	Purge Volume (gal)	Temp (˚C)	SpC (µs/cm)	pH	ORP (mV)	DO (mg/L)

Actual purge volume _____ gal. Field measurements stabilized within ± 10%? _____

Time/date sampled _____ Purged/sampled by _____

Sample method _____

Requested analyses _____

Comments/observations _____

Well Casing Volumes

2" diameter = 0.17 gal/ft 4" diameter = 0.66 gal/ft 6" diameter = 1.50 gal/ft

SVE O&M FIELD DATA COLLECTION FORM

Date: **Personnel:**

SVE Chemical & Physical Data:

Sample ID	Time:	PID:	Flowrate (scfm):	Well Head Pressure (IWC):	Lab Sample Collected (Y/N):	Notes:
SVE-1						
SVE-2						
MW-1S						
MW-1I						
MW-1D						
SVE Influent						

Knock Out Water Level: E 1/4 1/2 3/4 F Knock Out Drained (Y/N):

Notes: