

October 17, 2013

Project Work Plan

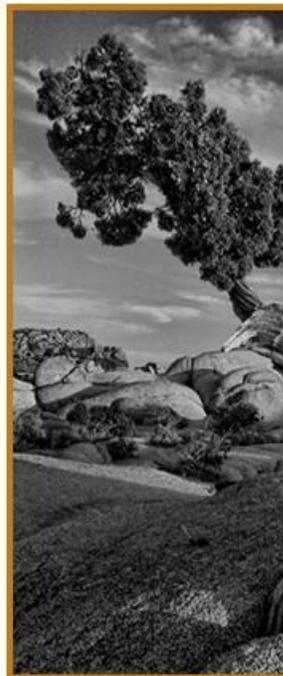
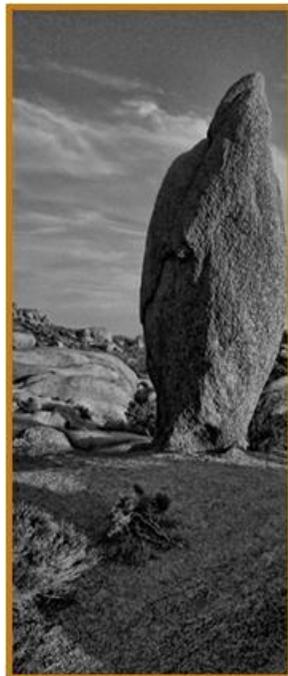
I-25, Ilex Bridge to 1st Street Replacement Project Pueblo, Colorado

Prepared For:

Colorado Department of Transportation, Region 2
1480 Quail Lake Loop, Suite A
Colorado Springs, Colorado 80906

Pinyon Project No.:

I/13-750-03.2100



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Prepared by:

Brian Partington
Manager – Water Resources Group

Reviewed by:

Lauren Evans, P.E.
President

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I. Introduction

This Project Work Plan has been prepared to support the Colorado Department of Transportation (CDOT) Region 2 I-25 Ilex Bridge Project located in Pueblo, Colorado. CDOT intends to replace the structurally deficient bridges on I-25 in the vicinity of Ilex Street, and has determined that a Design-Build (DB) strategy provides the best process for completing the project.

The goals for the project are:

- Build new structures to ultimate width, consistent with the New Pueblo Freeway Environmental Impact Statement (EIS) and aesthetic guidelines. The EIS has been published and the information for this portion of the project is expected to remain similar to that identified in the EIS.
- Maintain two lanes of traffic each direction during construction.
- Develop aesthetically pleasing Regional Project Features.
- Minimize inconvenience to the travel public.
- Maximize safety of workers and traveling public.
- Facilitate a collaborative partnership with the project team and the stakeholders.

CDOT previously completed regulated hazardous material (RHM) investigations for the southern portion of the Ilex project up to the northern edge of the Rockwool property and railroad tracks (Pinyon, 2011; Walsh, 2013). This Project Work Plan has been prepared to address areas north of the Rockwool facility/railroad tracks, and north to approximately East 1st Street.

The Project Work Plan has been prepared to identify procedures for adequately identifying potential RHM concerns that could negatively affect the project. In order to adequately identify RHMs, this Project Work Plan has been prepared into two distinct phases:

- 1) **Identify the Problem:** Complete historic research of the study area to identify potential RHMs based on historic land uses and other publically available information. This information is presented in this Project Work Plan in Section 2; and
- 2) **Process Design:** Utilize the information identified during historic research to focus a subsurface investigation designed to assess the presence of RHMs that may have impacted soil and/or groundwater to levels that would affect the project. Affects could be related to impacts to worker health and safety, costs related to remediation of acquired properties that are contaminated, or risk of scheduling conflicts related to the management of contaminated media.

For this project, the *study area* is bound by East 2nd Street to the north, North and South Santa Fe Avenue to the west, North Chester Avenue to the east, and the Denver and Rio Grande Rail Road to the south (Figure 1).

2. Historic Review

Existing conditions have been evaluated as part of the New Pueblo Freeway EIS; however, more detailed site-specific information is needed to assess RHM concerns. In order to adequately assess the hazards, additional information is necessary, including details on historic site uses, review of regulatory files, and understanding site logistics and field constraints. In order to facilitate an understanding of RHM concerns, Pinyon completed a review of historic information, utilizing the following information sources: Agency Database (GeoSearch, 2013), applicable agency files, previous environmental reports, historic Sanborn Fire Insurance Maps, and reverse city directories. The following sections present the methodology utilized to gather information used to identify the problem.

2.1 Methodology

2.1.1 Agency Database

CDOT has already acquired an agency database for the study area (GeoSearch, 2013; Appendix A). The GeoSearch database is designed to meet the requirements for ASTM Standard E1527 for Phase I Environmental Site Assessments, and to identify, in a given buffered search distance from the project study boundary, facilities that are regulated by local, state, and/or federal databases. Depending on the nature of the listing identified, and its hydrogeologic relationship to the study area, these listings could provide a line of evidence to identify facilities that could impact the study. Databases searched as part of the GeoSearch evaluation include, but are not limited to: underground storage tanks (USTs), leaking USTs (LUSTs), National Priority List sites (NPL, or Superfund), Resource Conservation and Recovery Act (RCRA)-regulated sites, Colorado Voluntary Cleanup and Recovery Act (VCRA) sites, and Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) sites. In general, the information presented in the GeoSearch report may reflect RHM conditions, particularly for sites regulated in modern times (e.g., after 1980). This information, and information regarding the potential direction of groundwater flow (which could transfer contaminants from a source into the study area), was used to identify facilities that could impact the study area.

2.1.2 Agency File Reviews

Utilizing the information gathered during review of the GeoSearch database, Pinyon submitted Freedom of Information Requests for facilities that could be of concern to state agencies. Regulatory file reviews were completed at the Colorado Department of Labor and Employment, Division of Oil and Public Safety (OPS), and the Colorado Department of Public Health and Environment (CDPHE).

2.1.3 Previous Environmental Reports

Pinyon previously completed a Phase I Environmental Site Assessment (ESA) for the southern portion of the Ilex project, south of the Denver and Rio Grande Railroad to approximately the intersection of South Santa Fe Avenue and Locust Street. Utilizing the information from the Phase I ESA, Walsh Environmental Scientists and Engineers, LLC (Walsh), completed a Phase II ESA for select parcels within the Phase I ESA study area. This information was reviewed in the development of this Project Work Plan.

2.1.4 Historic Sanborn Fire Insurance Maps

Historic Sanborn Fire Insurance maps are important information sources for identifying potential RHMs based on land uses that are noted on the maps. These maps are useful for identifying potential RHMs such as gasoline stations, refineries, mills, or other industrial uses. Pinyon reviewed Sanborn maps from the following

years: 1883, 1886, 1889, 1893, 1905, 1951, and 1952. These maps were accessed online from the Denver Public Library.

2.1.5 Reverse City Directories

Similar to historic Sanborn Fire Insurance Maps, reverse city directories are important information sources for identifying potential RHM sites, based on the listings at specific addresses within the study area. Pinyon reviewed the following Polk-Coles City Directories: 1919, 1929, 1939, 1950, 1960, 1970, 1980, 1991, 2000, and 2010. The limits of the city directory search was South Bradford Avenue on the east, North and South Santa Fe Avenue on the west, West 2nd Avenue on the North, and River Street on the south (note: River Street is the furthest south east-west road located in this study area). City directories for roads that once occurred within the study area (e.g., before the construction of I-25) were also reviewed. These streets include East River Street and Summit Street (also previously named Albany Street).

2.2 Discussion

Based on the review of the above-noted resources, Pinyon has summarized the facilities that may impact the study area (Table 2-1, Figure 1). In collaboration with CDOT, a recommendation as to whether additional investigation for each site was also developed.

Table 2-1 Summary of Potential RHM Source Facilities

Facility Address	Information Source	Discussion	Additional Investigation?
Chevron USA 302 East 1 st Street	Agency Database; Agency File Review	Listed UST and LUST facility. LUST closed on August 11, 1994. Likely located hydrogeologically east (down-gradient) of proposed project elements; however, this facility is located in very close proximity to new project elements.	Yes
Enterprise/Big Top Kwik Stop #1 301 East 1 st Street; 102 North Bradford	Agency Database	Listed UST facility; four USTs reported as closed (date not provided); no release reported. Likely located hydrogeologically east (down-gradient) of proposed project elements; however, this facility is located in very close proximity to new project elements.	Yes
Filling Station Approx. 126 North Santa Fe Avenue; Junk Yard Approx. 116 North Santa Fe Avenue	Sanborn Maps; City Directories	A filling station and junk yard were located at these adjoining locations until at least the 1950s. No environmental information regarding compliance or releases was identified. It is possible that these facilities have released RHMs.	Yes

Facility Address	Information Source	Discussion	Additional Investigation?
Loaf N Jug 120 South Santa Fe Avenue	Agency Database; Agency File Review	A Suspected Release Notification was submitted to the OPS on February 3, 2007, by Altus Environmental (Altus, 2007). A disgruntled customer intentionally rammed his vehicle into a dispenser at the facility on January 28, 2006, causing a fire and suspected release. Soil sampling was performed beneath the damaged dispenser; the results met OPS Risk-Based Screening Levels (RBSLs). As a result, the OPS issued a No Further Action letter on February 20, 2007. However, this facility is still operating, and any potential past or recent releases could impact the study area.	Yes
The Pueblo Flour Mill Approx. 108 South Santa Fe Avenue	Sanborn maps, City Directories	A large flour mill was located between River Street and East 1 st Street until at least the 1950, and encompasses the Loaf N Jug property noted above. No information on environmental compliance was identified. These facilities often utilized pesticides in their operations.	Yes
Glacier Park 164 South Santa Fe Avenue	Agency Database; Agency File Review; City Directories	Petroleum Industry Consultants, Inc., removed one 1,000-gallon UST on September 25, 1991 (PSI, 1991). Soil sampling was conducted, which did not indicate the presence of petroleum hydrocarbons. Based on the results, the OPS issued a No Further Action letter on August 27, 1992. This property may have been utilized as a coal yard in the early 20 th Century (city directories). Other industrial uses have also occurred on this property (see below).	Yes
Burnstein Bros. Pipe & Machinery Co.; Burch W. HO Transfer Co. Inc.; and Bowman Biscuit Co. Approx. 190 to 200 South Santa Fe Avenue	Sanborn Maps	Several industrial facilities were located in this vicinity, and included numerous industrial buildings, generally on, and in the vicinity of, the Glacier Park facility noted above. No other information regarding environmental compliance, or potential releases, was identified. These operations typically utilized RHMs, and releases are possible.	Yes
Pueblo Goodwill 250 South Santa Fe Avenue	Agency Database; Agency File Review	BCR Industries, Inc. (BCR), completed a UST Closure Report for this project in 1990 (BCR, 1990). A total of four USTs were removed from this facility, ranging in capacity from 3,000 gallons to 8,000 gallons. Soil samples were collected, and the laboratory results did not indicate concentrations exceeding regulatory standards. A No Further Action letter was issued by the OPS on July 31, 1997.	No

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Facility Address	Information Source	Discussion	Additional Investigation?
George Lannon & Co. Foundry & Machine Shop Approx. 262 South Santa Fe Avenue	Sanborn Maps; City Directories	A large industrial foundry and machine shop was identified at this location (and likely the same location as the Pueblo Goodwill noted above), beginning in 1883 and continuing through at least the 1980s. No other information regarding environmental compliance, or releases, was identified. These operations typically utilized RHM's, and releases are possible.	Yes
River Street Property 121-170 River Street	Agency Database; Agency File Review; City Directories; Sanborn Maps	<p>Historic uses at this property have included coal yard uses, the Pueblo Hide and Wool Co., possible gasoline service stations, and manufacturing. Trillium Corporation submitted a petition for a No Action Determination from the CDPHE under the VCRA in 1997 (Spectrum, 1997). The property in question is currently occupied by the Spring Hill Suites Pueblo Downtown motel at 150 South Santa Fe Avenue. Historic information indicates that the property was used for industrial/commercial purposes since the late 1800s, and continuing through the 1960s.</p> <p>Environmental investigations indicated that shallow soils had been impacted on this property, and that groundwater may have been impacted from up-gradient sources. Soils were remediated by excavation and disposal at a local solid waste landfill; groundwater investigations were completed and determined that, in general, all chemicals of concern concentrations met the Colorado Ground Water Standards in 1996. One chemical, Bis (2-Ethylhexyl) Phthalate was detected in three monitoring wells at the site; however, an on-site source of this contaminant was not identified. It should be noted that this compound is a common laboratory contaminant. Based on the results of the remedial efforts completed, the CDPHE issued a No Action Determination on July 31, 1997. Due to the nature of the industrial uses at this site, and others proximate to this facility, additional investigation is recommended.</p>	Yes

Facility Address	Information Source	Discussion	Additional Investigation?
<p>Rockwool (e.g., Pueblo Smelting and Refining Co.) 600 Old Smelter Road</p>	<p>Agency Database; Sanborn Maps; Agency File Review</p>	<p>The Rockwool Industries property is located south/southeast of the current study area; however, historic uses at this location have the potential to affect the study area. Initially, this property was the location of a large metal smelter, including lead and other metals. According to the New Pueblo Freeway EIS, after smelting activities ceased, the industrial plant site was used for mineral fiber insulation produced from a blended composite of smelter slag (CDOT/FHWA, 2013). This process was initiated in the 1950s, and continued until 1982. The result of this activity was a large pile of solid waste, including shot, waste slag, and mineral fiber insulation. Re-grading of the shot pile and covering with a layer of fill and compacted clay was selected as the remedial remedy, which has been completed.</p> <p>Walsh completed subsurface investigation adjacent to the Rockwool property along I-25, both east and west of the Interstate (Walsh, 2013). The results indicated significantly elevated concentrations of lead in soil.</p> <p>The CDPHE recently collected groundwater samples from a system of six monitoring wells located along the boundaries of the buried waste pile. The wells were sampled for metals, including arsenic, lead, and selenium. No detections were reported in the most recent sampling event, as reported in the July 17, 2013, Site Inspection report (CDPHE, 2013).</p> <p>Although groundwater impacts may not be a large concern for this facility, historic lead smelting has the potential to cause a wide distribution of heavy metals throughout the project area, particularly in shallow soils.</p>	<p>Yes</p>

Facility Address	Information Source	Discussion	Additional Investigation?
Farmers Lumber and Supply and National Broom Manufacturing Co Approx. 230 to 240 South Santa Fe Avenue	Sanborn Maps; City Directories	A large, possibly coordinated industrial facility, was located at along South Santa Fe Avenue until at least the 1950s. These facilities were connected to the railroad system by several railroad tracks. Sanborn maps indicate that operations included: lumber and supply, broom manufacturing, finishing, drying, and painting. No other information regarding environmental compliance, or potential releases, was identified. These operations typically utilized RHMs, and releases are possible.	Yes

2.3 Hydrogeologic Conditions

Two important surface water features occur in the project vicinity, the remnant Arkansas River, and Fountain Creek. The remnant location of the Arkansas River is located approximately 750 feet south of the study area, adjacent and south of the Rockwool facility (note: This is the historic channel for the Arkansas River, which changed course to its current location during a flood in 1921). Fountain Creek is located approximately 1,000 feet east of the study area. The locations of these features are expected to influence the depth and flow of groundwater within the study area; therefore, the groundwater flow direction is expected to be toward the east/southeast.

Walsh previously measured groundwater south of the study area at depths ranging from five to 18 feet below the ground surface. The CDPHE measured groundwater along the northern boundaries of the Rockwool site between 22 and 27 feet below the ground surface (CDPHE, 2013).

3. Description of Work

Upon approval of this Project Work Plan, field work will commence within approximately one to two weeks. Prior to field services, Pinyon will arrange for an independent company to mark the locations of underground public utilities in the survey area. Additionally, Pinyon will acquire a CDOT Special Use Permit through CDOT for the work to be completed. The objective of the investigation will be to evaluate the presence of RHMs in the project subsurface.

Field work will consist of drilling 10 soil borings, and field screening soil samples with a photoionization detector (PID). Field screening will be used to select samples for laboratory analysis, as outlined in Section 3.5. Regardless of field screening, one shallow soil sample from each boring (between one and two feet), will be collected for analysis of the RCRA 8 metals. Boring logs and field notes will be recorded throughout the duration of the field work. Each boring will be converted into a temporary groundwater well, and sampled according to Section 3.5.

Established sample collection and custody, sample labeling, analysis requests, and shipping and tracking procedures will be adhered to.

3.1 Data Quality Objectives

Data Quality Objectives (DQOs) for this investigation are as follows:

State the Problem

Identify whether historic or present activities in the project vicinity have resulted in impacts to soil or groundwater through identified RHMs. Soil borings will be advanced in the study area and converted into groundwater monitoring wells to evaluate possible contamination in soil and or groundwater above state and/or federal standards or guidance.

Identify the Decision

Limited information is available to evaluate the magnitude of RHM impacts in soil and groundwater within the study area. If impacts are identified, assess whether additional environmental data are required to address any identified impacts, and evaluate how the impacts can be mitigated to allow the planned construction activities to proceed.

Data Needs

Soil and groundwater analytical data will be collected to evaluate whether any soil or groundwater impacts may have resulted from activities associated with heavy industrial uses in the project vicinity. These data will be compared to state and federal promulgated standards as part of this evaluation. Groundwater wells will be installed to obtain groundwater elevations; and relative well elevations (where possible) will be obtained to discern the actual groundwater flow direction and potential contamination source impacts.

Contaminants of Concern

The potential chemicals of concern were identified based on historic operations as previously described, which included a variety of heavy industrial uses. Potential contaminants of concern and laboratory analytical methods have been identified, including:

- VOCs – Volatile Organic Compounds (U.S. EPA Method 8260)

- TPH – Total Petroleum Hydrocarbons (U.S. EPA Method 8015)
- PAHS – Polycyclic Aromatic Hydrocarbons (EPA Method 8270SIM)
- PCBs - Polychlorinated Biphenyl's (U.S. EPA Method 8082)
- RCRA 8 Metals – Resource Conservation and Recovery Act Eight Metals (U.S. EPA Method 6010/7471)
- Pesticides (U.S. EPA Method 8081)

Origins Laboratory, Inc., in Denver, Colorado, will be contracted to perform these analyses.

Define the Study Boundaries

All borings will be completed within existing ROW in the immediate vicinity of I-25 between the railroad tracks on the south, and East 1st Street on the north. The borings will be located based on potential RHM sources, hydrogeologic conditions (assumed), and logistical considerations (e.g., access, topography, buried utilities). The borings will be completed at least five feet below the soil/groundwater interface for a total anticipated depth of 30 feet below the ground surface.

Develop a Decision Rule

Soil samples for VOCs and TPH analysis will be collected where photoionization detector (PID) field headspace screening results are greatest, and/or olfactory or visual evidence of contamination is observed. If field screening does not indicate the presence of contamination, the sample from immediately above the soil/groundwater interface will be submitted for laboratory analysis. In the event TPH concentrations are detected above the OPS threshold of 500 milligram per kilogram (mg/kg), then the sample with the highest PAH concentration will be analyzed for PAHs by EPA method 8270SIM.

Due to the presence of a nearby historic lead smelter, near-surface contamination of heavy metals is a real possibility. Therefore, one sample from each boring will be collected from the near surface (one to two feet below the ground surface), and analyzed for the RCRA 8 metals. In addition, samples will be collected from the interval between three and four feet below ground surface in all borings, and submitted to the laboratory. However, these deeper samples will only be analyzed if metals concentrations exceed EPA industrial limits in the near-surface samples in order to evaluate if metals impacts occur at those depths.

Specify Limits on Uncertainty

Some limits on uncertainty may exist for various components of the project including the environmental sampling analysis, the number of samples collected given the study area size, and groundwater elevations measurements. To reduce the limits of uncertainty and maintain a high level of accurate data, all equipment used during this project will be calibrated and operated in accordance with the proper SOPs and/or equipment manufacturer recommendations.

Optimize the Design for Obtaining Data

Based on the information obtained from Historic Review (Section 2), sampling locations and analyses have been selected to better understand the vertical and horizontal extent of potential contaminants in soil and groundwater so construction of the project may be facilitated, and to help minimize the uncertainty of the data collected. Sample locations and depths may be modified based on field observations, underground utilities, or other site constraints.

Figure 1 presents the recommended locations of soil borings and temporary groundwater monitoring wells, based on potential RHM sources, and hydrogeologic conditions. The wells were strategically placed in locations that are either adjacent to a potential RHM facility, or hydrogeologically down-gradient of potential RHM facilities.

The following table presents information regarding the recommended boring name, rationale, and analytical requirements.

Table 3-1 Sample Collection Rationale and Analytes

Boring Designation (Figure 1)	Rationale	Analytical Requirements					
		VOCs	TPH	PAHs*	PCBs	RCRA 8**	Pesticides
Ilex-1	Adjacent to the former Big Top Kwik Stop UST facility	S, G	S, G			S, G	
Ilex-2	Adjacent to the former Chevron USA UST facility	S, G	S, G			S, G	
Ilex-3	Down-gradient of former filling station and junk yard; cross-gradient of the Pueblo Flour Mill and Loaf N Jug UST facility	S, G	S, G			S, G	S, G
Ilex-4	Cross-gradient of the Pueblo Flour Mill and Loaf N Jug UST facility	S, G	S, G			S, G	S, G
Ilex-5	Down-gradient of River Street VCRA facility	S, G	S, G	S,G		S, G	S, G
Ilex-6	Down-gradient of Burnstein Bros Pip & Machinery; Burch W. HO Transfer Co., Bowman Biscuit Co; Adjacent to Farmers Lumber and Supply	S, G	S, G		S, G	S, G	
Ilex-7	Adjacent to, and down-gradient from, Farmers Lumber and Supply	S, G	S, G		S, G	S, G	
Ilex-8	Adjacent to, and down-gradient from, Farmers Lumber and Supply and George Lannon Co. Foundry and Machine Shop	S, G	S, G		S, G	S, G	
Ilex-9	Adjacent to, and down-gradient from, Farmers Lumber and Supply and George Lannon Co. Foundry and Machine Shop	S, G	S, G		S, G	S, G	
Ilex-10	Adjacent to, and down-gradient from, Farmers Lumber and Supply and George Lannon Co. Foundry and Machine Shop	S, G	S, G		S, G	S, G	
Total Soil Samples		10	10	1	5	10	3
Total Groundwater Samples		10	10	1	5	10	3
Notes: S – Soil							

Boring Designation (Figure 1)	Rational	Analytical Requirements				
		VOCs	TPH	PAHs*	PCBs	RCRA 8**
<i>G – Groundwater</i> VOCs – Volatile Organic Compounds (U.S. EPA Method 8260) TPH – Total Petroleum Hydrocarbons (U.S. EPA Method 8015) PCBs – Polychlorinated Biphenyl's (U.S. EPA Method 8082) RCRA 8 – Resource Conservation and Recovery Act Eight Metals (U.S. EPA Method 6010/7471) Pesticides (U.S. EPA Method 8081) *To be analyzed where highest concentration of TPH results exceed 500 mg/kg **Shallow soil samples (one to two feet) to be collected for all for analysis of RCRA 8 metals; Deeper samples will be collected for potential analysis (three to four feet)						

Project Action Limits and Laboratory Detection Limits

Reconstruction of I-25 is proposed in this location. The analytical data for in soil will be evaluated against the EPA Regional Screening Levels (RSLs), industrial worker exposure scenarios, as well as waste-disposal criteria. The analytical data for groundwater will be evaluated against the Colorado Basic Standards for Groundwater. For total petroleum hydrocarbon (TPH) data in soil, the OPS Tier I Screening Level of 500 mg/kg will be used to determine whether to conduct PAH analysis. Analytical levels exceeding the above-referenced criteria will be indicative of impacts. Screening levels for key potential contaminants of concern are summarized in Table 3-2.

Table 3-2 Project Action Limits and Laboratory Detection Limits

Parameter	Matrix	EPA Method	Laboratory Detection Limit*
VOCs	Soil	8260B	0.5 mg/kg
	Water	8260B	1.0 µg/L
RCRA 8 Metals	Soil	6010/7471	1.0 mg/kg
	Water	6010/7471	0.01 mg/L
TPH	Soil	8015	50.0 mg/kg
	Water	8015	5.0 mg/L
PCBs	Soil	8082	0.03 mg/kg
	Water	8082	0.005 mg/L
PAHs	Soil	8270SIM	0.03 mg/kg
	Water	8270SIM	0.005 mg/L

Parameter	Matrix	EPA Method	Laboratory Detection Limit*
Pesticides	Soil	8081	0.005 mg/kg
	Groundwater	8081	0.10 µg/L

*Laboratory detection limits are based on laboratory equipment used by Origins Laboratory, Inc., of Denver, Colorado.
 mg/kg – Milligram per kilogram
 µg/L – Microgram per liter
 mg/L – Milligram per liter

Specialized Training

All Pinyon field personnel have Occupational Safety and Health Administration (OSHA) 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. All appropriate training certifications are kept on file at the Pinyon office in Lakewood, Colorado. The Pinyon Project Manager is responsible for ensuring that field personnel have the appropriate training.

3.2 Concept of Operations

- Schedule – Field work will commence within one to two weeks upon approval of this Project Work Plan and is anticipated to be concluded after two days of drilling, followed by another day for groundwater sampling and well abandonment. Soil and groundwater samples will be delivered to Origins Laboratory for analysis within two days of sampling activities. Delivery of final laboratory analytical data is anticipated to be received within 10 days after delivery of samples.
- Procedures to ensure adherence to the Health and Safety Plan (HASP) – A Site-specific HASP will be created to address the contaminants and their real or potential threat during all phases of sampling at the project. The HASP will be developed in accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120, entitled “Hazardous Waste Operations and Emergency Response”.
- Site access and logistics – Access to the project is open; however, coordination with CDOT will be required. Pinyon will facilitate access to the project prior to field activities.

3.3 Sample Process Design

Sampling will be conducted as previously described in Section 3.2, and summarized on Table 3-1. Figure 1 presents the sampling locations, as previously discussed.

Samples will be labeled with “Ilex”, followed by a number indicating the order in which the boring has been designate on Table 3-1 (e.g. Ilex-01), followed by the sample matrix (i.e., “S” for soil, or “GW” for groundwater), followed by the depth below the ground surface in feet where the sample was collected (e.g. Ilex-01-S-6).

The PID screening methods and the use of screening data are appropriate for deciding where to sample within the vertical soil profile, especially considering the past and current uses of area. Should the PID

malfunction while conducting the soil sampling, Pinyon will contact Geotech Environment Equipment, Inc., of Denver, Colorado, and replace the unit with a calibrated PID prior to continuing work.

3.4 Sampling Methods and Chemical Analysis

The quality of data collected in an environmental study depends on the quality and thoroughness of field sampling activities as well as the applicability of the task to the objectives. Due to the sensitivity of analytical methods and the extremely low levels of detection specified for sample analysis, the sampling process becomes integral to the integrity of data generated. As a result, general field operations and practices and specific sample collection and inventory must be well planned and carefully implemented.

The Project Work Plan provides detailed descriptions of the sampling program and sampling procedures. The sampling-related topics described in the Project Work Plan include the following:

- Objectives of the investigation include evaluation of the potential presence of contaminants in soil and/or groundwater which may have originated from heavy industrial sources. It is not the objective of this investigation to collect information suitable to develop a remediation plan, but rather to evaluate construction constraints and the potential for environmental conditions resulting from contamination of soil and/or groundwater in the project vicinity.

Standard EPA analytical methods defined in EPA's publication SW-846 (*Test Methods for Evaluation Solid Waste, Physical/Chemical Methods*) will be used to analyze soil and groundwater samples. Analytical methods are presented in Table 3-2. In the event TPH is detected above the OPS threshold of 500 mg/kg, the sample with the highest TPH concentration will be analyzed for PAHs by EPA method 8270SIM. Origins Laboratory, Inc., of Denver, Colorado, will be used to perform these analyses.

For this investigation, the following procedures will be used:

- All work will be completed in accordance with Pinyon's Standard Operating Procedures (Appendix B).
- Ten soil borings/temporary groundwater monitoring wells will be drilled across the study area.
- The borings will be drilled using a direct-push system. Soil samples will be collected on a continuous basis in disposable plastic sleeves, and visually described according to the Unified Soil Classification System. Information regarding subsurface conditions will be recorded on a field boring log. The borings will be advanced to a depth of five feet below ground water. It is assumed that the total depth of the borings will be 30 feet below the ground surface or less.
- Soil samples collected during drilling will be field screened for non-specific VOCs using a PID and the headspace technique. Pinyon will use a PID equipped with a 10.6 eV lamp to ensure the soil contaminants of concern are identifiable by the instrument. In the headspace technique, a portion of the soil sample is placed in a "zip-lock" bag, which is sealed and placed in a warm area to promote volatilization. After a period of time, the PID is inserted into the headspace of the bag, and a reading is obtained. This reading will be recorded on the boring log.
- A split of the soil sample, when collected, will be placed in appropriate pre-cleaned containers provided by the laboratory, and stored in coolers on ice immediately after sampling. Proper chain-of-custody procedures will be followed during the sampling process in accordance with the Standard Operating Procedures attached to this Project Work Plan (Appendix B).

- Before and after each boring is complete, all reusable equipment that has come into contact with potentially contaminated soil will be decontaminated. Decontamination procedures will consist of scrubbing equipment with a brush and soapy (Liquinox[®]) water in a first bucket, followed by rinsing equipment with clean tap water in a second bucket, and a final distilled water rinse.
- A temporary groundwater monitoring well will be constructed in each soil boring. Ten feet of factory slotted screen will be placed in the bottom of the boring, and blank casing will be threaded onto the screen and extended to the ground surface. A groundwater sample will be obtained from each of the temporary wells using low-flow sampling techniques, or by using disposable bailers. Proper chain-of-custody procedures will be followed during the sampling process.
- Because of the temporary nature of the wells, no sand pack or bentonite seal will be placed in the annulus between the boring wall and the well casing. Prior to sampling, and after water levels have stabilized, the depth to water will be measured with an electric water level indicator. After purging the well of three well volumes, the sample will be collected using a disposable bailer, and will be containerized in bottles provided by the analytical laboratory, labeled, and placed on ice in a cooler.
- The soil and groundwater samples will be submitted to Origins for analysis, as described in Table 3-1. From all borings, a shallow soil sample (one to two feet below the ground surface) will be collected for laboratory analysis. Additionally, a second sample from a deeper interval (three to four feet below the ground surface), will be collected for potential analysis, depending on the results of the shallow soil samples. All groundwater samples for RCRA 8 metals analysis will be filtered in the field according to SW846 methodology. In the event TPH is detected above 500 mg/kg in soil, Pinyon will instruct the laboratory to analyze the soil sample with the highest TPH concentration for PAHs.
- All well casings will be surveyed to a relative benchmark. This data, along with the depth to groundwater data, will be utilized to evaluate groundwater-flow direction.
- Immediately following groundwater sampling, all well casings will be removed, and the borings will be backfilled with hydrated bentonite, and the surfaces will be returned to original condition. The locations of the soil borings will be surveyed using a hand-held global positioning system (GPS) unit with sub-meter accuracy.
- Investigation derived waste (IDW) consisting of soil, groundwater and decontamination water will be stored on-site in drums pending analytical results of the samples submitted to the laboratory. If the results are below regulatory action limits, the corresponding material will be thin spread at the Site. If the results exceed regulatory limits, the material will be removed from the site and properly treated/discharged in accordance with local, state and federal regulations.
- Table 3-1 presents a summary of the sampling rationale and analytical requirements.

3.5 Standard Operating Procedures

SOPs have been developed for use on sampling and related data-gathering activities. The purpose of these procedures is to obtain samples that represent the environment and contamination under investigation. These SOPs provide consistency in data collection activities. The SOPs applicable to this investigation are appended to this Project Work Plan in Appendix B.

For non-standard operations, unusual sample matrices or unusual sampling conditions, validation of procedures may be required to confirm that project quality criteria can be met. These validations must be

developed before project sampling begins and must be documented in the project reports. No such operations are anticipated.

3.6 Sample Volumes, Container Types, and Preservation

Sample volumes, container types, and preservation are addressed in Table 3-3 below.

Table 3-3 Sample Volumes, Container Types, and Preservation

Parameter	Analytical Method/Sample Medium	Number – Sample Volume and Container Type	Preservation	Holding Time*
Soil				
VOCs	8260B	Two - 4 ounce glass jars	≤6°C	14 days
RCRA 8 Metals	6010/7471	One - 4 ounce glass jar	≤6°C	6 months
TPH	8015	One - 4 ounce glass jar	≤6°C	14 days
PCBs	8015	One - 4 ounce glass jar	≤6°C	14 days
PAHs	8270SIM	One - 4 ounce glass jar	≤6°C	14 days
Pesticides	8081	One – 4 ounce glass jar	≤6°C	14 days
Groundwater				
VOCs	8260B	Three – 40-mL vials	pH<2 HCL, ≤6°C	14 days
TPH	8015	Three – 40-mL vials	pH<2 HCL, ≤6°C	14 days
PCBs	8015	One – 1-L amber bottle	≤6°C	7 days
PAHs	8270SIM	Two – 1-L amber bottles	≤6°C	7 days
Pesticides	8081	Two – 1-L amber	≤6°C	7 days

Parameter	Analytical Method/Sample Medium	Number – Sample Volume and Container Type	Preservation	Holding Time*
		bottles		
<p>* Holding times begin from the time of sample collection in the field. ** Sample volume determined by laboratory standards. L – Liter mL – milliliter</p>				

3.7 Sample Collection, Handling, and Custody

Written documentation of sample custody from the time of sample collection through the generation of data by analysis of that sample is recognized as a vital aspect of an environmental study. The chain of custody of the physical sample and its corresponding documentation are maintained throughout the handling of the sample. All samples will be identified, labeled, logged onto a chain-of-custody form, and recorded in a sample tracking log and field log book as a part of the procedure to ensure the integrity of the resulting data. The record of the physical sample (location and time of sampling) is joined with the analytical results through accurate accounting of the sample custody. Sample custody applies to both field and laboratory operations.

SOPs and data collection have been developed for sample custody, sample labeling, analysis requests, and shipping and tracking procedures. The SOPs are included as Appendix B. Analytical laboratory sample custody procedures, which identifies the roles of both the sample custodian and the laboratory coordinator, are available upon request.

4. Reporting and Data Validation

In the final report, all data generated for the project will be reconciled with the DQOs presented in this Project Work Plan to determine whether the Data Quality Objectives were attained. The final report will describe how issues were resolved and limitations on the use of the data. The report will also summarize procedures used to define data usability (i.e., data reviews), and the results of these procedures. All analytical data will be reviewed by the project leader.

4.1 Report

Pinyon will provide a detailed report summarizing all field activities and results to CDOT. The report will include: introduction, background, methodology, results, discussion and conclusions. All laboratory reports will be included, and will follow the standard laboratory reporting format.

4.2 File Maintenance

Pinyon will scan and archive all field notes, laboratory reports, QA/QC procedures and checklists, reports, and all other relevant information electronically for a duration of at least three years. Files will be stored electronically on a company server. Files are backed up once a week on recordable tapes in the event of a company server disruption or crash. Files will be immediately available upon request.

5. References

- Altus, 2007. *Suspected Release Notification, Loaf N Jug #28, OBL ID #206, 120 S. Santa Fe Avenue, Pueblo, Colorado*. Prepared by Altus Environmental, February 13, 2007.
- BCR, 1990. *UST Closure Report, Pueblo Goodwill Industries, Inc., 250 South Santa Fe, Pueblo, Colorado*. BCR Industries, Inc., January 22, 1990.
- CDOT/FHWA, 2013. *Final Environmental Impact Statement and Section 4(f) Evaluation for Interstate I-25 Improvements through Pueblo, Pueblo County, Colorado*. Prepared by the Colorado Department of Transportation and the Federal Highway Administration, August 15, 2013.
- CDPHE, 2013. *June 20, 2013 Site Inspection with Sampling, Former Rockwool Industries Site, 600 Old Smelter Road, Pueblo, Co EPA ID# COD 073405961*. Prepared by the Colorado Department of Public Health and Environment, July 17, 2013.
- GeoSearch, 2013. *Quick Report, New Pueblo Freeway, Pueblo, Pueblo County, Colorado 81003*. Prepared by GeoSearch, July 09, 2013.
- Pinyon, 2011. *Phase I Environmental Site Assessment, Ilex Bridge Replacement, Various Parcels, Pueblo, Colorado*. Prepared by Pinyon, July 25, 2011.
- PSI, 1991 *Tank Removal/Geologic Report for Glacier Park Company, 164 South Santa Fe, Pueblo, Colorado*. Prepared by Petroleum Industry Consultants, Inc., October 11, 1991.
- R.L. Polk Directory Company City Directories, Years: 1919, 1929, 1939, 1950, 1960, 1970, 1980, 1991, 2000, and 2010.
- Sanborn Fire Insurance Rate Maps: Years 1883, 1886, 1889, 1893, 1905, 1951, and 1952.
- Spectrum, 1997. *Petition for No Action Determination, 121 River Street, Pueblo, Colorado*. Prepared by Spetrum Services, June 12, 1997.
- Walsh, 2013. *Phase II Environmental Site Assessment with Additional Site Characterization: Ilex Bridge Reconstruction Project, Pueblo, Colorado*. Prepared by Walsh Environmental Scientists and Engineers, LLC, May 2013.

Figures

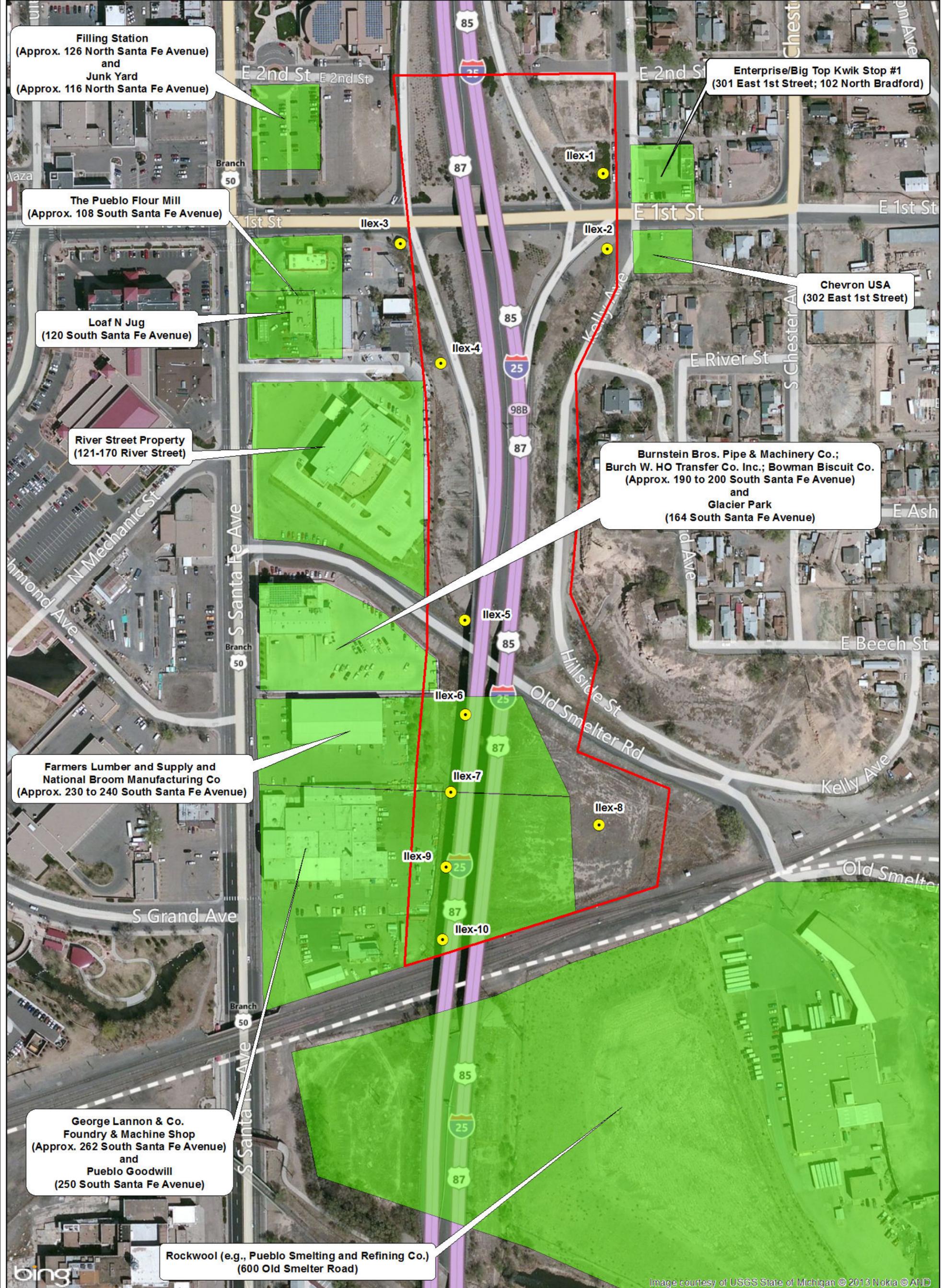


Image courtesy of USGS State of Michigan © 2013 Norka © AND

	<h3>Legend</h3>				<h3>RHM LOCATIONS AND PROPOSED BORING LOCATION</h3> <p>I-25, Ilex Bridge to 1st Street Replacement Project Pueblo, Colorado</p>	
	Study Area	Potential Recognized Hazardous Material Site			Boring Location	Drawn By: MJS
Site Location: Pueblo, Colorado Pinyon Project Number: 1/13-750-03			Reviewed By: BRP		Date: 10/17/2013	

Appendices

Appendix A GeoSearch Agency Database



Quick Report

<http://www.geo-search.net/QuickMap/index.htm?DataID=Standard0000060547>

Click on link above to access the map and satellite view of current property

Target Property:

New Pueblo Freeway

PUEBLO, Pueblo County, Colorado 81003

Prepared For:

Colorado Department of Transportation

Order #: 26893

Job #: 60547

Project #: 12831

Date: 07/09/2013

TARGET PROPERTY SUMMARY

New Pueblo Freeway

PUEBLO, Pueblo County, Colorado 81003

USGS Quadrangle: Northeast Pueblo, CO

Target Property Geometry: Area

Target Property Longitude(s)/Latitude(s):

(-104.605879, 38.268243), (-104.605948, 38.262615), (-104.604002, 38.262802), (-104.603695, 38.268377), (-104.605879, 38.268243), (-104.605879, 38.268243)

County/Parish Covered:

Pueblo (CO)

Zipcode(s) Covered:

Pueblo CO: 81001, 81003, 81004, 81006

State(s) Covered:

CO

****Target property is located in Radon Zone 1.***

Zone 1 areas have a predicted average indoor radon screening level greater than 4 pCi/L (picocuries per liter).

This report was designed by GeoSearch to meet or exceed the records search requirements of the All Appropriate Inquires Rule (40 CFR §312.26) and the current version of the ASTM International E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process or, if applicable, the custom requirements requested by the entity that ordered this report. The records and databases of records used to compile this report were collected from various federal, state and local governmental entities. It is the goal of GeoSearch to meet or exceed the 40 CFR §312.26 and E1527 requirements for updating records by using the best available technology. GeoSearch contacts the appropriate governmental entities on a recurring basis. Depending on the frequency with which a record source or database of records is updated by the governmental entity, the data used to prepare this report may be updated monthly, quarterly, semi-annually, or annually.

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DATABASE FINDINGS SUMMARY

DATABASE	ACRONYM	LOCA- TABLE	UNLOCA- TABLE	SEARCH RADIUS (miles)
<u>FEDERAL</u>				
AEROMETRIC INFORMATION RETRIEVAL SYSTEM / AIR FACILITY SUBSYSTEM	AIRSAFS	0	0	Target Property
BIENNIAL REPORTING SYSTEM	BRS	0	0	Target Property
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	Target Property
EPA DOCKET DATA	DOCKETS	0	0	Target Property
FEDERAL ENGINEERING INSTITUTIONAL CONTROL SITES	EC	0	0	Target Property
EMERGENCY RESPONSE NOTIFICATION SYSTEM	ERNSCO	0	0	Target Property
FACILITY REGISTRY SYSTEM	FRSCO	1	0	Target Property
HAZARDOUS MATERIALS INCIDENT REPORTING SYSTEM	HMIRSR08	0	0	Target Property
INTEGRATED COMPLIANCE INFORMATION SYSTEM (FORMERLY DOCKETS)	ICIS	0	0	Target Property
INTEGRATED COMPLIANCE INFORMATION SYSTEM NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	ICISNPDES	0	0	Target Property
MATERIAL LICENSING TRACKING SYSTEM	MLTS	0	0	Target Property
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	NPDES08	0	0	Target Property
PCB ACTIVITY DATABASE SYSTEM	PADS	0	0	Target Property
PERMIT COMPLIANCE SYSTEM	PCSR08	0	0	Target Property
RCRA SITES WITH CONTROLS	RCRASC	0	0	Target Property
CERCLIS LIENS	SFLIENS	0	0	Target Property
SECTION SEVEN TRACKING SYSTEM	SSTS	0	0	Target Property
TOXICS RELEASE INVENTORY	TRI	0	0	Target Property
TOXIC SUBSTANCE CONTROL ACT INVENTORY	TSCA	0	0	Target Property
NO LONGER REGULATED RCRA GENERATOR FACILITIES	NLRRCRAG	0	0	Target Property and Adjoining
RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR FACILITIES	RCRAGR08	0	0	Target Property and Adjoining
HISTORICAL GAS STATIONS	HISTPST	0	0	0.2500
BROWNFIELDS MANAGEMENT SYSTEM	BF	0	0	0.5000
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION & LIABILITY INFORMATION SYSTEM	CERCLIS	4	0	0.5000



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DATABASE FINDINGS SUMMARY

DATABASE	ACRONYM	LOCA- TABLE	UNLOCA- TABLE	SEARCH RADIUS (miles)
LAND USE CONTROL INFORMATION SYSTEM	LUCIS	0	0	0.5000
NO FURTHER REMEDIAL ACTION PLANNED SITES	NFRAP	3	0	0.5000
NO LONGER REGULATED RCRA NON-CORRACTS TSD FACILITIES	NLRRCRAT	0	0	0.5000
OPEN DUMP INVENTORY	ODI	0	0	0.5000
RESOURCE CONSERVATION & RECOVERY ACT - TREATMENT, STORAGE & DISPOSAL FACILITIES	RCRAT	0	0	0.5000
DELISTED NATIONAL PRIORITIES LIST	DNPL	0	0	1.0000
DEPARTMENT OF DEFENSE SITES	DOD	0	0	1.0000
FORMERLY USED DEFENSE SITES	FUDS	0	0	1.0000
NO LONGER REGULATED RCRA CORRECTIVE ACTION FACILITIES	NLRRCRAC	1	0	1.0000
NATIONAL PRIORITIES LIST	NPL	0	0	1.0000
PROPOSED NATIONAL PRIORITIES LIST	PNPL	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION FACILITIES	RCRAC	1	0	1.0000
RECORD OF DECISION SYSTEM	RODS	0	0	1.0000
SUB-TOTAL		10	0	

STATE (CO)

AIR POLLUTION CONTROL DIVISION PERMITTED FACILITIES	APCDP	0	0	Target Property
ASBESTOS ABATEMENT AND DEMOLITION PROJECTS	ASBESTOS	0	0	Target Property
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	Target Property
COLORADO DISCHARGE PERMIT SYSTEM FACILITIES	CDPS	0	0	Target Property
ENVIRONMENTAL REAL COVENANTS LIST	COVENANTS	0	0	Target Property
SPILLS LISTING	SPILLS	1	0	Target Property
HAZARDOUS WASTE SITES- GENERATOR	HWSG	0	0	Target Property and Adjoining
ABOVEGROUND STORAGE TANK FACILITIES	AST	11	0	0.2500
DRY CLEANING FACILITIES	CLEANERS	0	0	0.2500
UNDERGROUND STORAGE TANK FACILITIES	UST	15	0	0.2500



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DATABASE FINDINGS SUMMARY

DATABASE	ACRONYM	LOCA- TABLE	UNLOCA- TABLE	SEARCH RADIUS (miles)
HISTORICAL SOLID WASTE LANDFILLS	HISTSWLF	0	0	0.5000
HAZARDOUS WASTE SITES- TREATMENT, STORAGE & DISPOSAL	HWSTSD	1	0	0.5000
LEAKING STORAGE TANK FACILITIES	LST	50	0	0.5000
LEAKING UNDERGROUND STORAGE TANKS TRUST FUND SITES	LUSTTRUST	1	0	0.5000
METHANE GAS STUDY SITES	METHANESITES	0	0	0.5000
SOLID WASTE FACILITIES	SWF	3	0	0.5000
URANIUM MILL TAILINGS SITES	UMTS	0	0	0.5000
VOLUNTARY CLEANUP AND REDEVELOPMENT PROGRAM SITES	VCRA	6	0	0.5000
HAZARDOUS WASTE SITES- CORRECTIVE ACTION	HWSCA	4	0	1.0000
SUPERFUND SITES	SF	0	0	1.0000
SUB-TOTAL		92	0	

TRIBAL

UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	USTR08	0	0	0.2500
LEAKING UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	LUSTR08	0	0	0.5000
OPEN DUMP INVENTORY ON TRIBAL LANDS	ODINDIAN	0	0	0.5000
INDIAN RESERVATIONS	INDIANRES	0	0	1.0000
SUB-TOTAL		0	0	

TOTAL		102	0	
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LOCATABLE DATABASE FINDINGS

ACRONYM	SEARCH RADIUS (miles)	Target Property	1/8 Mile (> TP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
<u>FEDERAL</u>								
AIRSAFS	.0200	0	NS	NS	NS	NS	NS	0
BRS	.0200	0	NS	NS	NS	NS	NS	0
CDL	.0200	0	NS	NS	NS	NS	NS	0
DOCKETS	.0200	0	NS	NS	NS	NS	NS	0
EC	.0200	0	NS	NS	NS	NS	NS	0
ERNSCO	.0200	0	NS	NS	NS	NS	NS	0
FRSCO	.0200	1	NS	NS	NS	NS	NS	1
HMIRSR08	.0200	0	NS	NS	NS	NS	NS	0
ICIS	.0200	0	NS	NS	NS	NS	NS	0
ICISNPDES	.0200	0	NS	NS	NS	NS	NS	0
MLTS	.0200	0	NS	NS	NS	NS	NS	0
NPDES08	.0200	0	NS	NS	NS	NS	NS	0
PADS	.0200	0	NS	NS	NS	NS	NS	0
PCSR08	.0200	0	NS	NS	NS	NS	NS	0
RCRASC	.0200	0	NS	NS	NS	NS	NS	0
SFLIENS	.0200	0	NS	NS	NS	NS	NS	0
SSTS	.0200	0	NS	NS	NS	NS	NS	0
TRI	.0200	0	NS	NS	NS	NS	NS	0
TSCA	.0200	0	NS	NS	NS	NS	NS	0
NLRRCRAG	.1250	0	0	NS	NS	NS	NS	0
RCRAGR08	.1250	0	0	NS	NS	NS	NS	0
HISTPST	.2500	0	0	0	NS	NS	NS	0
BF	.5000	0	0	0	0	NS	NS	0
CERCLIS	.5000	0	0	1	3	NS	NS	4
LUCIS	.5000	0	0	0	0	NS	NS	0
NFRAP	.5000	0	0	1	2	NS	NS	3
NLRRCRAT	.5000	0	0	0	0	NS	NS	0



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LOCATABLE DATABASE FINDINGS

ACRONYM	SEARCH RADIUS (miles)	Target Property	1/8 Mile (> TP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
ODI	.5000	0	0	0	0	NS	NS	0
RCRAT	.5000	0	0	0	0	NS	NS	0
DNPL	1.000	0	0	0	0	0	NS	0
DOD	1.000	0	0	0	0	0	NS	0
FUDS	1.000	0	0	0	0	0	NS	0
NLRRCRAC	1.000	0	0	0	0	1	NS	1
NPL	1.000	0	0	0	0	0	NS	0
PNPL	1.000	0	0	0	0	0	NS	0
RCRAC	1.000	0	0	1	0	0	NS	1
RODS	1.000	0	0	0	0	0	NS	0
SUB-TOTAL		1	0	3	5	1	0	10

STATE (CO)

APCDP	.0200	0	NS	NS	NS	NS	NS	0
ASBESTOS	.0200	0	NS	NS	NS	NS	NS	0
CDL	.0200	0	NS	NS	NS	NS	NS	0
CDPS	.0200	0	NS	NS	NS	NS	NS	0
COVENANTS	.0200	0	NS	NS	NS	NS	NS	0
SPILLS	.0200	1	NS	NS	NS	NS	NS	1
HWSG	.1250	0	0	NS	NS	NS	NS	0
AST	.2500	2	2	7	NS	NS	NS	11
CLEANERS	.2500	0	0	0	NS	NS	NS	0
UST	.2500	1	3	11	NS	NS	NS	15
HISTSWLF	.5000	0	0	0	0	NS	NS	0
HWSTSD	.5000	0	0	1	0	NS	NS	1
LST	.5000	1	4	11	33	NS	NS	50
LUSTTRUST	.5000	0	0	0	1	NS	NS	1
METHANESITES	.5000	0	0	0	0	NS	NS	0



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LOCATABLE DATABASE FINDINGS

ACRONYM	SEARCH RADIUS (miles)	Target Property	1/8 Mile (> TP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
SWF	.5000	0	0	0	3	NS	NS	3
UMTS	.5000	0	0	0	0	NS	NS	0
VCRA	.5000	0	1	4	1	NS	NS	6
HWSCA	1.000	0	0	1	1	2	NS	4
SF	1.000	0	0	0	0	0	NS	0
SUB-TOTAL		5	10	35	39	3	0	92

TRIBAL

USTR08	.2500	0	0	0	NS	NS	NS	0
LUSTR08	.5000	0	0	0	0	NS	NS	0
ODINDIAN	.5000	0	0	0	0	NS	NS	0
INDIANRES	1.000	0	0	0	0	0	NS	0
SUB-TOTAL		0						

TOTAL	6	10	38	44	4	0	102
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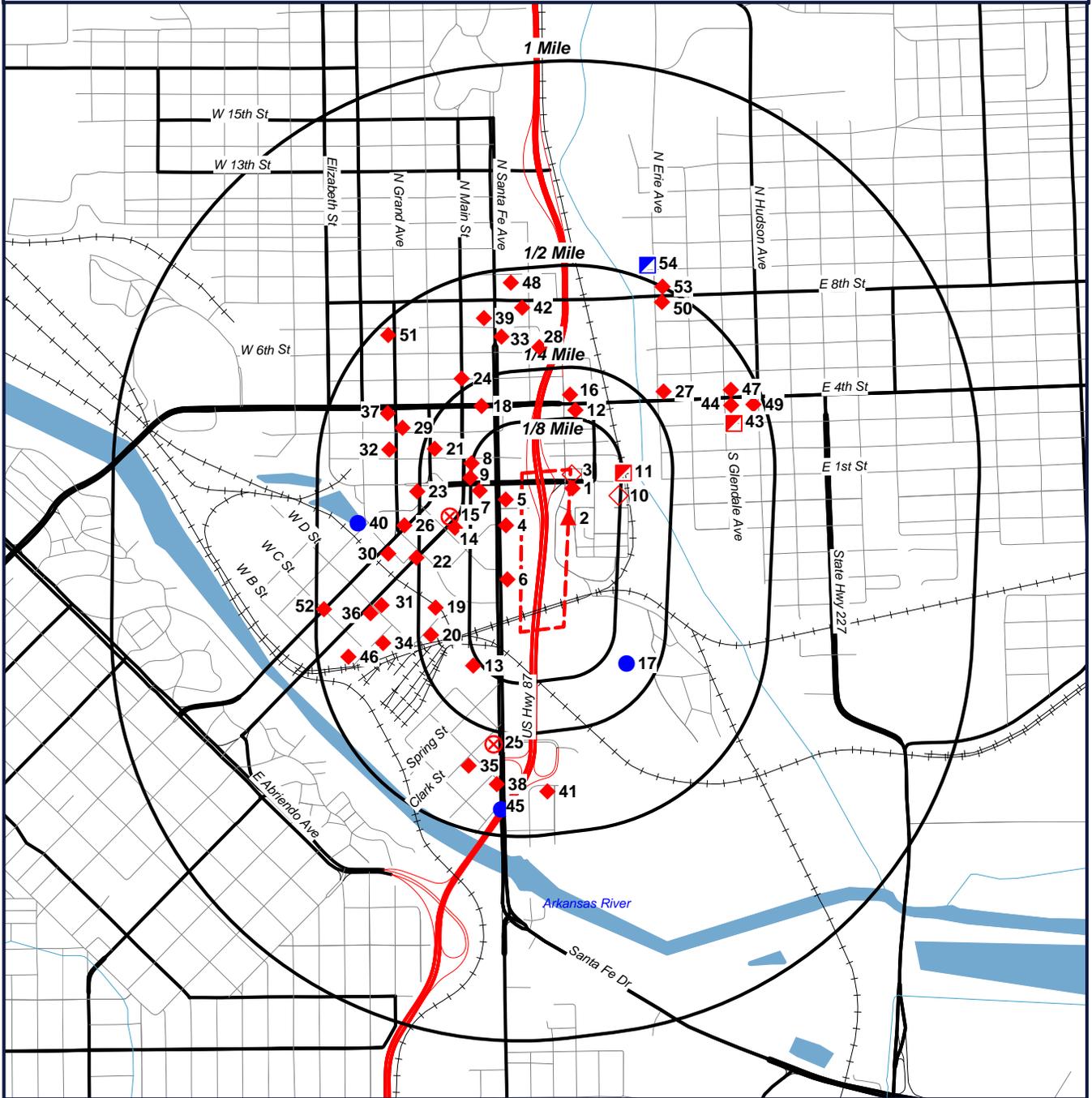
NOTES:

NS = NOT SEARCHED



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RADIUS MAP

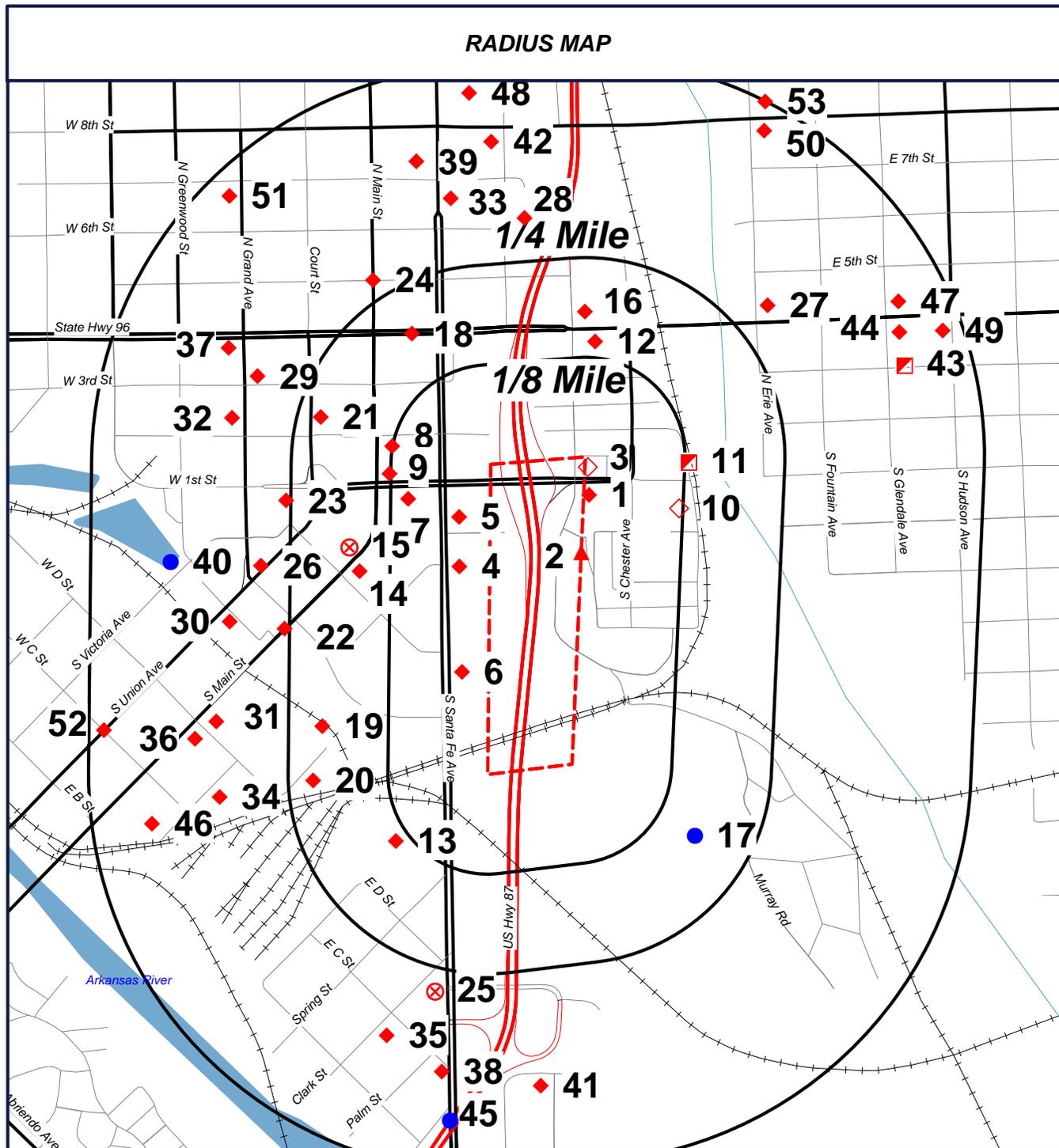


- Target Property (TP)
- LST
- SPILLS
- UST
- HWSCA
- VCRA
- CERCLIS
- NLRRCRAC

**New Pueblo Freeway
PUEBLO, Colorado
81003**



RADIUS MAP



**New Pueblo Freeway
PUEBLO, Colorado
81003**

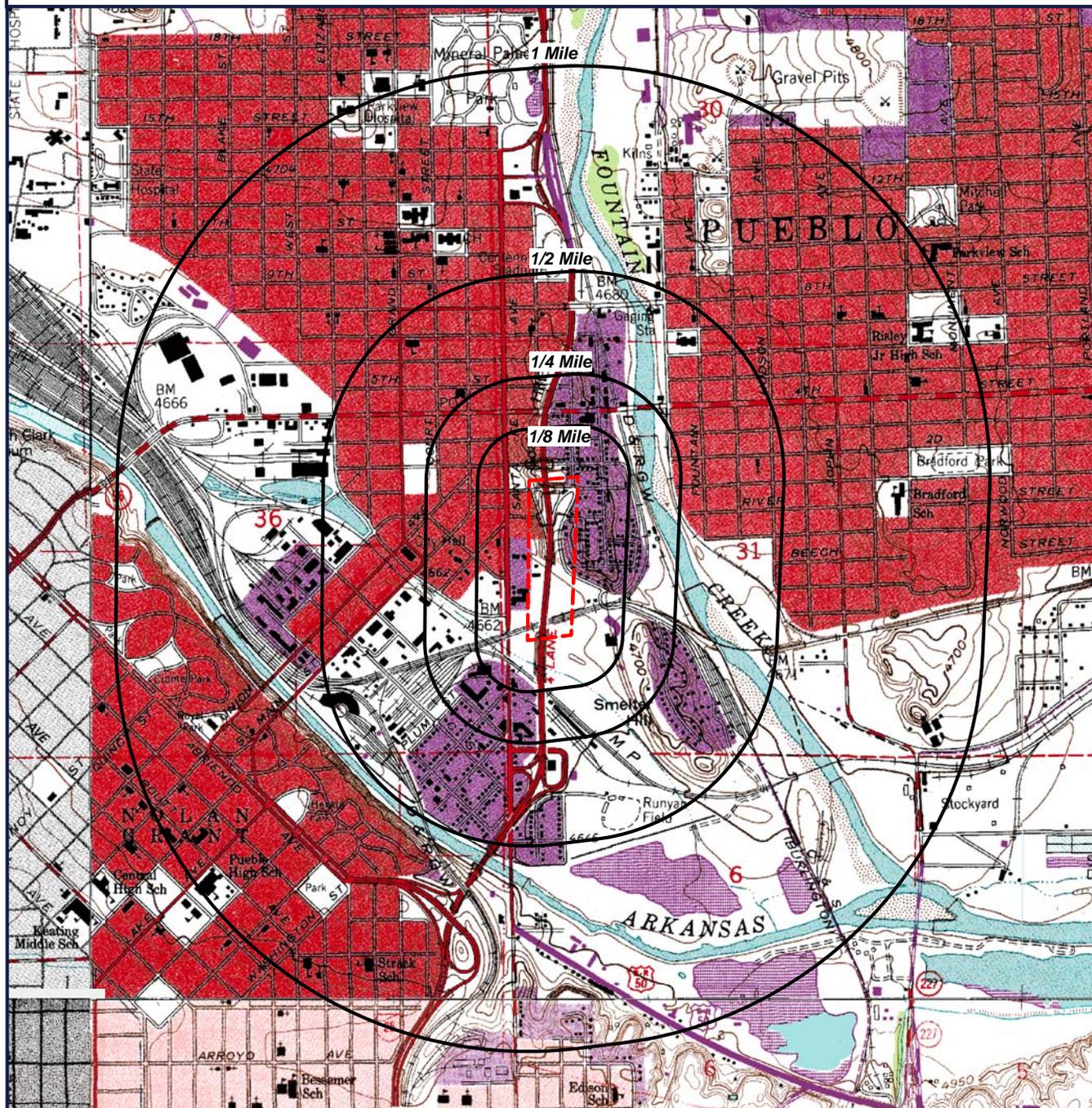
- Target Property (TP)
- LST
- SPILLS
- UST
- HWSCA
- VCRA
- CERCLIS
- NLRRCRAC



GeoSearch

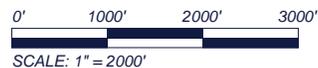
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TOPOGRAPHIC MAP



 Target Property (TP)

Quadrangle(s): Northeast
Pueblo
Source: USGS, 1994
New Pueblo Freeway
PUEBLO, Colorado
81003



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REPORT SUMMARY OF LOCATABLE SITES

MAP ID#	DATABASE NAME	SITE ID#	DISTANCE FROM SITE	SITE NAME	ADDRESS	CITY, ZIP CODE	PAGE #
1	AST	12264	0.010 E	CHEVRON USA INC #70492	302 E FIRST ST	PUEBLO, 81003	1
1	LST	12264	0.010 E	CHEVRON USA INC #70492	302 E FIRST ST	PUEBLO, 81003	2
1	AST	5956	0.010 E	ABANDON CHEVRON STA	302 E 1ST ST	PUEBLO, 81004	3
2	FRSCO	110022513154	0.020 SE	RIVER ST PROPERTY	121-170 RIVER ST	PUEBLO, 81003-4211	4
2	SPIILLS	2011-0041	0.010 SE		219 S. BRADFORD AVE.	PUEBLO, 81003	5
3	UST	2954	0.010 E	BIG TOP KWIK STOP #1	102 N BRADFORD	PUEBLO, 81003	6
4	LST	12560	0.040 S	GLACIER PARK	164 SANTA FE	PUEBLO, 81003	7
4	UST	4165	0.040 S	GLACIER PARK CO	164 S SANTA FE	PUEBLO, 81003	8
4	AST	12560	0.040 S	GLACIER PARK	164 SANTA FE	PUEBLO, 81003	9
5	UST	4087	0.040 SW	LOAF N JUG #28	120 S SANTA FE DR	PUEBLO, 81003	10
5	VCRA	90	0.040 SW	RIVER ST PROPERTY	121-170 RIVER ST	PUEBLO, 81003	11
5	LST	4087	0.040 SW	LOAF N JUG #28	120 S SANTA FE DR	PUEBLO, 81003	12
6	LST	12063	0.040 S	PUEBLO GOODWILL	250 S SANTA FE	PUEBLO, 81003	13
6	AST	12063	0.040 S	PUEBLO GOODWILL	250 S SANTA FE	PUEBLO, 81003	14
7	UST	14517	0.110 SW	PUEBLO CONVENTION CENTER	110 W 1ST ST	PUEBLO, 81008	15
7	LST	14517	0.110 SW	PUEBLO CONVENTION CENTER HOTEL	110 W 1ST ST	PUEBLO, 81008	16
8	UST	4538	0.130 W	TRAILWAYS INC	116 N MAIN ST	PUEBLO, 81003	17
8	LST	4538	0.130 W	TRAILWAYS INC	116 N MAIN ST	PUEBLO, 81003	18
9	LST	13218	0.130 W	PUEBLO CITY PROPERTY	190 CENTRAL MAIN ST	PUEBLO, 81003	19
9	UST	11161	0.150 W	VACANT LAND	W 1ST ST & MAIN	PUEBLO, 81003	20
9	VCRA	16	0.130 W	PUEBLO CONV. CTR: TCE	190 CENTRAL MAIN ST.	PUEBLO, 81003	21
9	VCRA	7	0.130 W	PUEBLO CONV. CTR: PAINT	190 CENTRAL MAIN ST.	PUEBLO, 81003	22
9	AST	13218	0.130 W	PUEBLO CITY PROPERTY	190 CENTRAL MAIN ST	PUEBLO, 81003	23
10	UST	8184	0.130 E	BASSETT CONSTRUCTION CO	120 DAYTON	PUEBLO, 81002	24
11	HWSTSD	COD073405961	0.140 E	ROCKWOOL PLANT - PUEBLO	600 OLD SMELTER RD	PUEBLO, 80217	25
11	HWSCA	COD073405961	0.140 E	ROCKWOOL PLANT - PUEBLO	600 OLD SMELTER RD	PUEBLO, 80217	26
12	LST	2046	0.150 NE	EARTHGRAINS CO	330 E 4TH	PUEBLO, 81003	27
12	UST	6606	0.150 NE	EARTHGRAINS CO	330 E 4TH	PUEBLO, 81003	28
12	VCRA	753	0.150 NE	RAMPART SUPPLY, INC	320/330 EAST 4TH STREET	PUEBLO, 81003	29
12	LST	6606	0.150 NE	EARTHGRAINS CO	330 E FOURTH ST	PUEBLO, 81003	30



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REPORT SUMMARY OF LOCATABLE SITES

MAP ID#	DATABASE NAME	SITE ID#	DISTANCE FROM SITE	SITE NAME	ADDRESS	CITY, ZIP CODE	PAGE #
13	LST	18437	0.150 S	303 S SANTA FE	303 S SANTA FE	PUEBLO, 81003	31
13	AST	18437	0.150 S	303 S SANTA FE	303 S SANTA FE	PUEBLO, 81003	32
14	UST	2541	0.170 SW	CITY OF PUEBLO POLICE DEPARTMENT	130 CENTRAL MAIN ST	PUEBLO, 81003	33
14	LST	2541	0.170 SW	CITY OF PUEBLO POLICE DEPARTMENT	130 CENTRAL MAIN ST	PUEBLO, 81003	34
15	VCRA	867	0.180 SW	RIVERWALK RESIDENCES	151 CENTRAL MAIN STREET	PUEBLO, 81003	35
16	LST	12151	0.190 NE	RAINBOW MOTORS	301 E 4TH ST	PUEBLO, 81003	36
16	UST	8663	0.190 NE	RAINBOW METERS	301 E 4TH ST	PUEBLO, 81003	37
16	AST	12151	0.190 NE	RAINBOW MOTORS	301 E 4TH ST	PUEBLO, 81003	38
17	CERCLIS	COD073405961	0.190 SE	ROCK WOOL INDUSTRIES	600 OLD SMELTER RD	PUEBLO, 81002	39
17	NFRAP	COD073405961	0.190 SE	ROCK WOOL INDUSTRIES	600 OLD SMELTER RD	PUEBLO, 81002	41
17	RCRAC	COD073405961	0.190 SE	ROCKWOOL PLANT - PUEBLO	600 OLD SMELTER RD	PUEBLO, 810033341	42
17	UST	2830	0.190 SE	ROCKWOOL - PUEBLO PLANT	600 OLD SMELTER RD	PUEBLO, 81008	45
18	LST	940	0.200 NW	WEST 4TH ST RAILYARD	WEST 4TH ST	PUEBLO, 81003	46
18	UST	940	0.200 NW	PUEBLO YARD	W 4TH ST YARD	PUEBLO, 81004	47
18	AST	2296	0.200 NW	SOUTHERN PACIFIC LINES	W 4TH ST	PUEBLO, 81003	48
19	LST	2941	0.210 SW	ANDREWS PRODUCE INC	100 S MAIN ST	PUEBLO, 81003	49
19	UST	2941	0.210 SW	AT&T ZX061H	100 S MAIN ST	PUEBLO, 81003	50
19	AST	2941	0.210 SW	AT&T ZX061H	100 S MAIN ST	PUEBLO, 81003	51
20	LST	16220	0.220 SW	ONEIDA STREET PROPERTY	126 S ONEIDA ST	PUEBLO, 81003	52
20	AST	16220	0.220 SW	ONEIDA STREET PROPERTY	126 S ONEIDA ST	PUEBLO, 81003	53
21	LST	7054	0.230 W	SEMES BODY SHOP	225 W 2ND ST	PUEBLO, 81003	54
21	UST	7054	0.230 W	SEME'S BODY SHOP	225 W 2ND ST	PUEBLO, 81003	55
21	AST	13705	0.230 W	SEMES BODY SHOP	225 W 2ND ST	PUEBLO, 81003	56
22	UST	1804	0.250 SW	HUGHES BROTHERS	118 CENTRAL MAIN ST	PUEBLO, 81003	57
22	LST	14375	0.260 SW	HARP	ELIZABETH & MAIN	PUEBLO, 81003	58
23	LST	15523	0.260 W	PUEBLO MUSEUM	324 W 1ST ST	PUEBLO, 80210	59
24	LST	5094	0.280 NW	COLORADO NATIONAL BANK OF PUEBLO	5TH & MAIN	PUEBLO, 81003	60
25	VCRA	794	0.290 S	SONIC DRIVE IN - PUEBLO	401 SOUTH SANTA FE AVENUE	PUEBLO, 81003	61
26	LST	2546	0.290 SW	PUEBLO TRANSPORATION	350 S GRAND ST	PUEBLO, 81003	62



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REPORT SUMMARY OF LOCATABLE SITES

MAP ID#	DATABASE NAME	SITE ID#	DISTANCE FROM SITE	SITE NAME	ADDRESS	CITY, ZIP CODE	PAGE #
CO							
27	LST	3465	0.300 NE	EAST FOURTH STREET STANDARD	601 E 4TH ST	PUEBLO, 81001	63
28	SWF	73	0.310 N	VIDMAR MOTOR CO.	600 ALBANY AVE	PUEBLO, 81003	64
28	LST	8161	0.310 N	VIDMAR MOTOR CO	600 ALBANY	PUEBLO, 81003	65
29	LUSTTRUST	00023-0000251	0.330 W	3RD & GRAND	3RD & GRAND	PUEBLO, 80000	66
29	LST	13176	0.320 W	RITAS MEXICAN FOOD RESTAURANT	302 N GRAND AVE	PUEBLO, 81003	67
30	LST	13828	0.330 SW	HARP	100 UNION	PUEBLO, 81003	68
31	LST	11742	0.340 SW	WEICKER STORAGE BUILDING	128 S MAIN	PUEBLO, 81003	69
31	LST	15504	0.350 SW	CITY OF PUEBLO PUBLIC WORKS	211 E D ST	PUEBLO, 81003	70
32	LST	7896	0.340 W	GRAND RENTAL CENTER INC	219 N GRAND	PUEBLO, 81003	71
33	LST	2385	0.340 N	GTECH CORP	620 N SANTA FE	PUEBLO, 81003	72
33	LST	14837	0.350 N	WENDY'S	602 N SANTA FE	PUEBLO, 81003	73
34	LST	1705	0.350 SW	CITY OF PUEBLO FLEET MAINTENANCE	210 S MECHANIC ST	PUEBLO, 81003	74
35	LST	16333	0.360 S	LASATER AUTO PARTS	314 CLARK ST PUEBLO	PUEBLO, 81001	75
36	LST	1781	0.370 SW	GIANNETTO OIL	202 S MAIN	PUEBLO, 81003	76
37	SWF	95	0.370 NW	RETIRE INCORPORATED	331 NORTH GRAND AVENUE	PUEBLO, 81003	77
37	LST	15926	0.370 NW	MIDAS INC	331 N GRAND AVE	PUEBLO, 81003	78
38	LST	12068	0.390 S	LANDCO GROUP	501 S SANTA FE	PUEBLO, 81003	79
39	LST	13745	0.400 N	TACO BELL	703 N SANTA FE AVE	PUEBLO, 81003	80
40	LST	211	0.400 W	CENTEL SOUTHERN COLORADO POWER	105 S VICTORIA SERVICE CENTER	PUEBLO, 81003	81
40	CERCLIS	COT090010729	0.400 W	S.COLORADO POWER PLANT & SERVICE AREA	105 S VICTORIA AVE	PUEBLO, 81002	82
40	CERCLIS	COSFN0801686	0.400 W	PUEBLO COPPER ARSENATE	105 S VICTORIA ST	PUEBLO, 81002	83
40	NFRAP	COSFN0801686	0.400 W	PUEBLO COPPER ARSENATE	105 S VICTORIA ST	PUEBLO, 81002	84
40	NFRAP	COT090010729	0.400 W	S.COLORADO POWER PLANT & SERVICE AREA	105 S VICTORIA AVE	PUEBLO, 81002	85
40	LST	12362	0.400 W	PUEBLO SERVICE CENTER	105 S VICTORIA ST	PUEBLO, 81003	86



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REPORT SUMMARY OF LOCATABLE SITES

MAP ID#	DATABASE NAME	SITE ID#	DISTANCE FROM SITE	SITE NAME	ADDRESS	CITY, ZIP CODE	PAGE #
41	LST	5823	0.400 S	CLIFF BRICE STATIONS	300 MOFFAT AVE	PUEBLO, 81003	87
41	LST	5896	0.400 S	CLIFF BRICE STATIONS	300 MOFFAT AVE	PUEBLO, 81003	88
42	LST	10737	0.410 N	DANIEL D CONNOR PROPERTY	124 E 8TH ST	PUEBLO, 81003	89
43	HWSCA	COD983778150	0.420 E	CASIAS RADIATOR	306 NORTH GLENDALE AVE	PUEBLO, 81001	90
44	LST	9062	0.430 E	7-ELEVEN #20638	804 E 4TH ST	PUEBLO, 81004	91
45	CERCLIS	CON000802700	0.450 S	COLORADO SMELTER	INTERSTATE 25 AND SANTA FE AVENUE	PUEBLO, 81006	92
45	LST	12012	0.440 S	ROSS TRUCKING	521 S SANTA FE AVE	PUEBLO, 81003	93
46	LST	14065	0.440 SW	ATHEY BEAMAN CO INC	305 S MECHANIC	PUEBLO, 81002	94
47	LST	2989	0.450 E	HILL SERVICE	801 E 4TH ST	PUEBLO, 81001	95
48	SWF	1032	0.500 N	WILCOXSON BUICK-CADILLAC-GMC TR	902 N. SANTA FE AVEN	PUEBLO, 81003	96
48	LST	14571	0.470 N	UNITED RENTALS BRANCH F20	814 N SANTA FE AVE	PUEBLO, 81003	97
49	LST	11047	0.480 E	SMILING SUN SPEEDY STOP #2	828 E 4TH ST	PUEBLO, 81001	98
50	LST	4644	0.480 NE	LINCOLN DEVORE	602 E 8TH ST	PUEBLO, 81001	99
51	LST	5856	0.480 NW	1ST STOP #3103	623 GRAND AVE	PUEBLO, 81003	100
52	LST	5696	0.490 SW	JOHNNYS BOILER SHOP INC	20 W C ST	PUEBLO, 81003	101
53	LST	5235	0.510 NE	BOBS GENERATOR SERVICE	601 E 8TH ST	PUEBLO, 81001	102
54	HWSCA	COD980284293	0.550 NE	COLORADO DEPT OF TRANS - PUEBLO	905 ERIE AVE	PUEBLO, 81102	103
54	NLRRCRAC	COD980284293	0.550 NE	COLORADO DEPT OF TRANS - PUEBLO	905 ERIE AVE	PUEBLO, 81002	104
54	HWSCA	COD983772203	0.560 NE	CO STATE HIGHWAY PATROL	902 N ERIE AVE	PUEBLO, 81002	106



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ABOVEGROUND STORAGE TANK FACILITIES (AST)

MAP ID# 1

Distance from Property: 0.01 mi. E

FACILITY INFORMATION

FACILITY ID: 12264

NAME: CHEVRON USA INC #70492

ADDRESS: 302 E FIRST ST
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=12264

OWNER INFORMATION

NAME: CHEVRON USA ENVIRONMENTAL

ADDRESS: PO BOX 4054
RICHMOND, CA 94804

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
NR	NOT REPORTED	NOT REPORTED	NOT	NOT REPORTED	NOT REPORTED



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 1

Distance from Property: 0.01 mi. E

FACILITY INFORMATION

FACILITY ID: 12264

NAME: CHEVRON USA INC #70492

ADDRESS: 302 E FIRST ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

431 CLOSED 18-Dec-91

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=431



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ABOVEGROUND STORAGE TANK FACILITIES (AST)

MAP ID# 1

Distance from Property: 0.01 mi. E

FACILITY INFORMATION

FACILITY ID: 5956

NAME: ABANDON CHEVRON STA

ADDRESS: 302 E 1ST ST
PUEBLO, CO 81004

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=5956

OWNER INFORMATION

NAME: UNKNOWN

ADDRESS: UNKNOWN

ZIPCODE UNKNOWN, XX 99999

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
NR	NOT REPORTED	NOT REPORTED	NOT	NOT REPORTED	NOT REPORTED



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FACILITY REGISTRY SYSTEM (FRSCO)

MAP ID# 2

Distance from Property: 0.02 mi. SE

FACILITY INFORMATION

REGISTRY ID: 110022513154

NAME: RIVER ST PROPERTY

LOCATION ADDRESS: 121-170 RIVER ST
PUEBLO , CO 81003-4211

COUNTY: PUEBLO

EPA REGION: 8

FEDERAL FACILITY: NO DATA PROVIDED

TRIBAL LAND: NO DATA PROVIDED

ALTERNATIVE NAME/S:

RIVER ST PROPERTY

PROGRAM/S LISTED FOR THIS FACILITY

ECOMAP - *DEFINITION NOT PROVIDED BY REPORTING AGENCY

STANDARD INDUSTRIAL CLASSIFICATION/S (SIC)

NO SIC DATA REPORTED

NORTH AMERICAN INDUSTRY CLASSIFICATION/S (NAICS)

NO NAICS DATA REPORTED



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SPILLS LISTING (SPILLS)

MAP ID# 2

Distance from Property: 0.01 mi. SE

INCIDENT INFORMATION

CASE NUMBER: **2011-0041** NRC NUMBER: **NOT REPORTED**
SPILL DATE: **1/25/2011**
SPILL LOCATION: **219 S. BRADFORD AVE.**
SPILL CITY/STATE/ZIP: **PUEBLO, CO 81003**
SPILL COUNTY: **PUEBLO**

RESPONSIBLE PARTY

NAME: **NOT REPORTED**
ADDRESS: **STREET NOT REPORTED**
COUNTY: **NOT REPORTED**
CONTACT: **NOT REPORTED**
PHONE: **NOT REPORTED**

INCIDENT DETAILS

SOURCE: **SANITARY SEWER**
SOURCE TYPE: **SANITARY SEWER/LIFT STATION**
MEDIUM: **LAND**
WATERWAY: **NOT REPORTED**
CAUSE: **FAILURE EQUIPMENT**
MATERIAL TYPE: **SANITARY SEWER OVERFLOW**
MATERIAL DESCRIPTION: MATERIAL QUANTITY: WATER QUANTITY:
WASTEWATER **40 G** **0**
CAUSE INFORMATION:

AN EJECTOR PUMP AT A PRIVATE RESIDENCE FAILED WHICH LEAD TO A BACK UP ALLOWING WASTEWATER FROM THE RESIDENCE TO BE RELEASED INTO ITS BACKYARD.

ACTION:

CITY OF PUEBLO RESPONDED AND APPLIED ABSORBENT BOOMS TO NEARBY STORM SEWERS TO PREVENT IMPACT. PUEBLO CITY-COUNTY HEALTH DEPARTMENT (CHAD WOLGRAM (719-583-4307) WAS CONTACTED TO FOLLOW UP WITH THE HOME OWNER.

RESPONSE COMMENTS:

NOT REPORTED

COMMENTS:

NOT REPORTED

UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 3

Distance from Property: 0.01 mi. E

FACILITY INFORMATION

FACILITY ID: 2954

NAME: BIG TOP KWIK STOP #1

ADDRESS: 102 N BRADFORD
PUEBLO, CO 81003

TOTAL TANK: 4

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=2954

OWNER INFORMATION

NAME: MARGARET M TRAPP

ADDRESS: 1212 ROCKY DELL LN
SIGNAL MOUNTAIN, TN 37377

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
2954-1	UST	GASOLINE	UNKNOWN	PERMANENTLY CLOSED	NOT REPORTED
2954-2	UST	GASOLINE	UNKNOWN	PERMANENTLY CLOSED	NOT REPORTED
2954-3	UST	GASOLINE	UNKNOWN	PERMANENTLY CLOSED	NOT REPORTED
2954-4	UST	DIESEL	UNKNOWN	PERMANENTLY CLOSED	NOT REPORTED



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 4

Distance from Property: 0.04 mi. S

FACILITY INFORMATION

FACILITY ID: 12560
NAME: GLACIER PARK
ADDRESS: 164 SANTA FE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
5611	CLOSED	26-Nov-91

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=5611



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 4

Distance from Property: 0.04 mi. S

FACILITY INFORMATION

FACILITY ID: 4165

NAME: GLACIER PARK CO

ADDRESS: 164 S SANTA FE
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=4165

OWNER INFORMATION

NAME: GLACIER PARK CO

ADDRESS: 1011 WESTERN AVE STE 700
SEATTLE, WA 98104

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
4165-1	UST	GASOLINE	1000	PERMANENTLY CLOSED	NOT REPORTED



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ABOVEGROUND STORAGE TANK FACILITIES (AST)

MAP ID# 4

Distance from Property: 0.04 mi. S

FACILITY INFORMATION

FACILITY ID: 12560
NAME: **GLACIER PARK**
ADDRESS: **164 SANTA FE**
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=12560

OWNER INFORMATION

NAME: **GLACIER PARK CO**
ADDRESS: **164 SANTA FE**
PUEBLO, CO 81003

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
NR	NOT REPORTED	NOT REPORTED	NOT	NOT REPORTED	NOT REPORTED



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 5

Distance from Property: 0.04 mi. SW

FACILITY INFORMATION

FACILITY ID: 4087
NAME: LOAF N JUG #28
ADDRESS: 120 S SANTA FE DR
PUEBLO, CO 81003

TOTAL TANK: 3

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=4087

OWNER INFORMATION

NAME: MINI MART INC
ADDRESS: 442 KEELER PKWY
PUEBLO, CO 81001

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
4087-1	UST	GASOLINE -	10152	CURRENTLY IN USE	03-DEC-80
4087-2	UST	DIESEL	10152	CURRENTLY IN USE	03-DEC-80
4087-3	UST	GASOLINE -	7890	CURRENTLY IN USE	03-DEC-80



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VOLUNTARY CLEANUP AND REDEVELOPMENT PROGRAM SITES (VCRA)

MAP ID# 5

Distance from Property: 0.04 mi. SW

SITE INFORMATION

UNIQUE ID: **90**

NAME: **RIVER ST PROPERTY**

ADDRESS: **121-170 RIVER ST
PUEBLO, CO 81003**

COUNTY: **PUEBLO**

SITE DETAILS

APPLICATION TYPE: **NO ACTION DETERMINATION**

FILE NUMBER: **970616-1**

REVIEW DATE DUE: **7/31/1997**

DECISION: **APPROVAL**

REMEDY START DATE: **NOT REPORTED**

REMEDY END DATE: **NOT REPORTED**

ACTUAL COST: **1,008.18**

CLEANUP ACRES: **3.1**

OTHER ISSUES: **UP GRADIENT SOURCE;#10**

LAND USE RESTRICTIONS: **NOT REPORTED**

PROJECT MANAGER: **WALKER**

INDOOR AIR: **NOT REPORTED**

MEDIA SEDIMENT: **NOT REPORTED**

MEDIA GROUND WATER: **NOT REPORTED**

MEDIA SURFACE WATER: **NOT REPORTED**

MEDIA SOIL: **NOT REPORTED**



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 5

Distance from Property: 0.04 mi. SW

FACILITY INFORMATION

FACILITY ID: 4087

NAME: LOAF N JUG #28

ADDRESS: 120 S SANTA FE DR
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

10301 CLOSED 29-Jan-07

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=10301



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 6

Distance from Property: 0.04 mi. S

FACILITY INFORMATION

FACILITY ID: 12063
NAME: PUEBLO GOODWILL
ADDRESS: 250 S SANTA FE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
1470	CLOSED	13-Feb-91

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=1470



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ABOVEGROUND STORAGE TANK FACILITIES (AST)

MAP ID# 6

Distance from Property: 0.04 mi. S

FACILITY INFORMATION

FACILITY ID: 12063
NAME: PUEBLO GOODWILL
ADDRESS: 250 S SANTA FE
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=12063

OWNER INFORMATION

NAME: PUEBLO GOODWILL
ADDRESS: 250 S SANTA FE
PUEBLO, CO 81003

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
NR	NOT REPORTED	NOT REPORTED	NOT	NOT REPORTED	NOT REPORTED



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 7

Distance from Property: 0.11 mi. SW

FACILITY INFORMATION

FACILITY ID: 14517

NAME: PUEBLO CONVENTION CENTER

ADDRESS: 110 W 1ST ST
PUEBLO, CO 81008

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=14517

OWNER INFORMATION

NAME: UNKNOWN

ADDRESS: UNKNOWN

ZIPCODE UNKNOWN, XX 99999

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
14517-1	UST	NOT LISTED	UNKNOWN	PERMANENTLY CLOSED	NOT REPORTED



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 7

Distance from Property: 0.11 mi. SW

FACILITY INFORMATION

FACILITY ID: 14517

NAME: PUEBLO CONVENTION CENTER HOTEL

ADDRESS: 110 W 1ST ST
PUEBLO, CO 81008

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

6686 CLOSED 7/9/98

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=6686



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 8

Distance from Property: 0.13 mi. W

FACILITY INFORMATION

FACILITY ID: 4538
NAME: TRAILWAYS INC
ADDRESS: 116 N MAIN ST
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=4538

OWNER INFORMATION

NAME: CAP FINANCIAL CV2 LLC
ADDRESS: 13760 NOEL RD STE 1125
DALLAS, TX 75240

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
4538-1	UST	DIESEL	10000	PERMANENTLY CLOSED	02-MAY-83



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 8

Distance from Property: 0.13 mi. W

FACILITY INFORMATION

FACILITY ID: 4538
NAME: TRAILWAYS INC
ADDRESS: 116 N MAIN ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
1688	CLOSED	4/8/93

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=1688



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 9

Distance from Property: 0.13 mi. W

FACILITY INFORMATION

FACILITY ID: 13218

NAME: PUEBLO CITY PROPERTY

ADDRESS: 190 CENTRAL MAIN ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

1326 CLOSED 07-Jun-95

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=1326



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 9

Distance from Property: 0.15 mi. W

FACILITY INFORMATION

FACILITY ID: 11161
NAME: VACANT LAND
ADDRESS: W 1ST ST & MAIN
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=11161

OWNER INFORMATION

NAME: CYRUS HACKSTAFF
ADDRESS: 707 17TH ST STE 2100
DENVER, CO 80202

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
11161-1	UST	DIESEL	400	PERMANENTLY CLOSED	28-SEP-23



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VOLUNTARY CLEANUP AND REDEVELOPMENT PROGRAM SITES (VCRA)

MAP ID# 9

Distance from Property: 0.13 mi. W

SITE INFORMATION

UNIQUE ID: 16

NAME: PUEBLO CONV. CTR: TCE

ADDRESS: 190 CENTRAL MAIN ST.

PUEBLO, CO 81003

COUNTY: PUEBLO

SITE DETAILS

APPLICATION TYPE: VOLUNTARY CLEANUP PROGRAM

FILE NUMBER: 950525-1

REVIEW DATE DUE: 7/9/1995

DECISION: APPROVAL

REMEDY START DATE: 8/18/1996

REMEDY END DATE: 8/18/1997

ACTUAL COST: 2,875.18

CLEANUP ACRES: 10.0

OTHER ISSUES: NOT REPORTED

LAND USE RESTRICTIONS: NOT REPORTED

PROJECT MANAGER: WALKER

INDOOR AIR: NOT REPORTED

MEDIA SEDIMENT: NOT REPORTED

MEDIA GROUND WATER: NOT REPORTED

MEDIA SURFACE WATER: NOT REPORTED

MEDIA SOIL: NOT REPORTED



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VOLUNTARY CLEANUP AND REDEVELOPMENT PROGRAM SITES (VCRA)

MAP ID# 9

Distance from Property: 0.13 mi. W

SITE INFORMATION

UNIQUE ID: 7

NAME: PUEBLO CONV. CTR: PAINT

ADDRESS: 190 CENTRAL MAIN ST.

PUEBLO, CO 81003

COUNTY: PUEBLO

SITE DETAILS

APPLICATION TYPE: VOLUNTARY CLEANUP PROGRAM

FILE NUMBER: 941212-1

REVIEW DATE DUE: 1/26/1995

DECISION: APPROVAL

REMEDY START DATE: 3/15/1996

REMEDY END DATE: 3/15/1997

ACTUAL COST: 1,941.68

CLEANUP ACRES: NOT REPORTED

OTHER ISSUES: NOT REPORTED

LAND USE RESTRICTIONS: NOT REPORTED

PROJECT MANAGER: WALKER

INDOOR AIR: NOT REPORTED

MEDIA SEDIMENT: NOT REPORTED

MEDIA GROUND WATER: NOT REPORTED

MEDIA SURFACE WATER: NOT REPORTED

MEDIA SOIL: NOT REPORTED



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ABOVEGROUND STORAGE TANK FACILITIES (AST)

MAP ID# 9

Distance from Property: 0.13 mi. W

FACILITY INFORMATION

FACILITY ID: 13218

NAME: PUEBLO CITY PROPERTY

ADDRESS: 190 CENTRAL MAIN ST
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=13218

OWNER INFORMATION

NAME: PUEBLO URBAN RENEWAL AUTHORITY

ADDRESS: 211 E D ST
PUEBLO, CO 81003

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
NR	NOT REPORTED	NOT REPORTED	NOT	NOT REPORTED	NOT REPORTED



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 10

Distance from Property: 0.13 mi. E

FACILITY INFORMATION

FACILITY ID: 8184

NAME: BASSETT CONSTRUCTION CO

ADDRESS: 120 DAYTON
PUEBLO, CO 81002

TOTAL TANK: 2

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=8184

OWNER INFORMATION

NAME: BASSETT CONSTRUCTION CO

ADDRESS: 120 DAYTON BOX 173
PUEBLO, CO 81002

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
8184-1	UST	DIESEL	10000	PERMANENTLY CLOSED	01-APR-75
8184-2	UST	GASOLINE	10000	PERMANENTLY CLOSED	31-MAR-80



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HAZARDOUS WASTE SITES- TREATMENT, STORAGE & DISPOSAL (HWSTSD)

MAP ID# 11

Distance from Property: 0.14 mi. E

SITE INFORMATION

EPA ID: **COD073405961**

SITE NAME: **ROCKWOOL PLANT - PUEBLO**

SITE ADDRESS: **600 OLD SMELTER RD
PUEBLO, CO 80217**

SITE COUNTY: **PUEBLO**

FACILITY TYPE: **TSD**

STATUS: **ACTIVE**

LINKS: http://oaspub.epa.gov/enviro/brs_web.report?pgm_sys_id=COD073405961



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HAZARDOUS WASTE SITES- CORRECTIVE ACTION (HWSA)

MAP ID# 11

Distance from Property: 0.14 mi. E

SITE INFORMATION

EPA ID: **COD073405961**

SITE NAME: **ROCKWOOL PLANT - PUEBLO**

SITE ADDRESS: **600 OLD SMELTER RD
PUEBLO, CO 80217**

SITE COUNTY: **PUEBLO**

FACILITY TYPE: **CA**

STATUS: **ACTIVE**

LINKS: <http://www.epa.gov/cgi-bin/get1cReport.cgi?tool=echo&IDNumber=COD073405961>



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 12

Distance from Property: 0.15 mi. NE

FACILITY INFORMATION

FACILITY ID: 2046
NAME: EARTHGRAINS CO
ADDRESS: 330 E 4TH
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: 11112 STATUS: CLOSED RELEASE DATE: 3/30/2010 1:40:51 PM

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=11112



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 12

Distance from Property: 0.15 mi. NE

FACILITY INFORMATION

FACILITY ID: 6606

NAME: EARTHGRAINS CO

ADDRESS: 330 E 4TH
PUEBLO, CO 81003

TOTAL TANK: 2

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=6606

OWNER INFORMATION

NAME: SARA LEE

ADDRESS: 7300 BRIGHTON BLVD
COMMERCE CITY, CO 80022

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
6606-1	UST	GASOLINE	10000	PERMANENTLY CLOSED	10-MAY-48
6606-2	UST	DIESEL	10000	PERMANENTLY CLOSED	NOT REPORTED



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VOLUNTARY CLEANUP AND REDEVELOPMENT PROGRAM SITES (VCRA)

MAP ID# 12 Distance from Property: 0.15 mi. NE

SITE INFORMATION

UNIQUE ID: 753
NAME: RAMPART SUPPLY, INC
ADDRESS: 320/330 EAST 4TH STREET
PUEBLO, CO 81003
COUNTY: PUEBLO

SITE DETAILS

APPLICATION TYPE: NO ACTION DETERMINATION
FILE NUMBER: 100908-1
REVIEW DATE DUE: 10/23/2010
DECISION: APPROVAL
REMEDY START DATE: NOT REPORTED REMEDY END DATE: NOT REPORTED
ACTUAL COST: 807.50 CLEANUP ACRES: 1.0
OTHER ISSUES: NOT REPORTED
LAND USE RESTRICTIONS: INDUSTRIAL
PROJECT MANAGER: APOSTOLOPOULOS
INDOOR AIR: NOT REPORTED
MEDIA SEDIMENT: NOT REPORTED
MEDIA GROUND WATER: BTEX;#6
MEDIA SURFACE WATER: NOT REPORTED
MEDIA SOIL: NOT REPORTED



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 12 Distance from Property: 0.15 mi. NE

FACILITY INFORMATION

FACILITY ID: 6606
NAME: EARTHGRAINS CO
ADDRESS: 330 E FOURTH ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:
7747 CLOSED 9/15/99

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=7747



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 13

Distance from Property: 0.15 mi. S

FACILITY INFORMATION

FACILITY ID: 18437
NAME: 303 S SANTA FE
ADDRESS: 303 S SANTA FE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
10544	CLOSED	10-Dec-07

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=10544



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ABOVEGROUND STORAGE TANK FACILITIES (AST)

MAP ID# 13

Distance from Property: 0.15 mi. S

FACILITY INFORMATION

FACILITY ID: 18437
NAME: 303 S SANTA FE
ADDRESS: 303 S SANTA FE
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=18437

OWNER INFORMATION

NAME: PUEBLO ICE HOUSE
ADDRESS: 303 S SANTA FE
PUEBLO, CO 81003

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
NR	NOT REPORTED	NOT REPORTED	NOT	NOT REPORTED	NOT REPORTED



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 14

Distance from Property: 0.17 mi. SW

FACILITY INFORMATION

FACILITY ID: 2541
NAME: CITY OF PUEBLO POLICE DEPARTMENT
ADDRESS: 130 CENTRAL MAIN ST
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=2541

OWNER INFORMATION

NAME: PUEBLO POLICE DEPT
ADDRESS: 130 CENTRAL MAIN
PUEBLO, CO 81003

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
2541-1	UST	DIESEL	550	PERMANENTLY CLOSED	28-APR-76



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 14 Distance from Property: 0.17 mi. SW

FACILITY INFORMATION

FACILITY ID: 2541
NAME: CITY OF PUEBLO POLICE DEPARTMENT
ADDRESS: 130 CENTRAL MAIN ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:
6512 CLOSED 5/1/98

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=6512



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VOLUNTARY CLEANUP AND REDEVELOPMENT PROGRAM SITES (VCRA)

MAP ID# 15 Distance from Property: 0.18 mi. SW

SITE INFORMATION

UNIQUE ID: 867
NAME: RIVERWALK RESIDENCES
ADDRESS: 151 CENTRAL MAIN STREET
PUEBLO, CO 81003
COUNTY: PUEBLO

SITE DETAILS

APPLICATION TYPE: NO ACTION DETERMINATION
FILE NUMBER: 121030-1
REVIEW DATE DUE: 12/14/2012
DECISION: NOT REPORTED
REMEDY START DATE: NOT REPORTED REMEDY END DATE: NOT REPORTED
ACTUAL COST: 765.00 CLEANUP ACRES: 1.0
OTHER ISSUES: NOT REPORTED
LAND USE RESTRICTIONS: MIXED - COM+RES
PROJECT MANAGER: APOSTOLOPOULOS
INDOOR AIR: NOT REPORTED
MEDIA SEDIMENT: NOT REPORTED
MEDIA GROUND WATER: NOT REPORTED
MEDIA SURFACE WATER: NOT REPORTED
MEDIA SOIL: COAL FILL;#23



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 16 Distance from Property: 0.19 mi. NE

FACILITY INFORMATION

FACILITY ID: 12151
NAME: RAINBOW MOTORS
ADDRESS: 301 E 4TH ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
2660	CLOSED	15-Apr-91

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=2660



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 16

Distance from Property: 0.19 mi. NE

FACILITY INFORMATION

FACILITY ID: 8663
NAME: RAINBOW METERS
ADDRESS: 301 E 4TH ST
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=8663

OWNER INFORMATION

NAME: RAINBOW METERS INC
ADDRESS: 301 E 4TH ST
PUEBLO, CO 81003

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
8663-1	UST	GASOLINE	900	PERMANENTLY CLOSED	09-APR-76



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ABOVEGROUND STORAGE TANK FACILITIES (AST)

MAP ID# 16

Distance from Property: 0.19 mi. NE

FACILITY INFORMATION

FACILITY ID: 12151
NAME: RAINBOW MOTORS
ADDRESS: 301 E 4TH ST
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=12151

OWNER INFORMATION

NAME: RAINBOW MOTORS
ADDRESS: 301 E 4TH ST
PUEBLO, CO 81003

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
NR	NOT REPORTED	NOT REPORTED	NOT	NOT REPORTED	NOT REPORTED



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COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION & LIABILITY INFORMATION SYSTEM
(CERCLIS)

MAP ID# 17

Distance from Property: 0.19 mi. SE

FACILITY INFORMATION

EPA ID#: COD073405961

SITE ID#: 0801093

NAME: ROCK WOOL INDUSTRIES

ADDRESS: 600 OLD SMELTER RD
PUEBLO, CO 81002

COUNTY: PUEBLO

NATIONAL PRIORITY LISTING: N - NOT ON THE NPL

FEDERAL FACILITY CLASSIFICATION: N - NOT A FEDERAL FACILITY

NON-NPL STATUS: NF - NFRAP

PHYSICAL CLASSIFICATION OF SITE / INCIDENT: NO INFORMATION AVAILABLE

SITE DESCRIPTION - NO SITE DESCRIPTION INFORMATION AVAILABLE -

SITE HISTORY - NO SITE HISTORY INFORMATION AVAILABLE -

ACTIONS

TYPE: RP - NON-NATIONAL PRIORITIES LIST POTENTIALLY RESPONSIBLE PARTY SEARCH

START DATE: 05/08/2000

COMPLETION DATE: 08/09/2000

ACTION TYPE DEFINITION:

THE NON-NPL POTENTIALLY RESPONSIBLE PARTY (PRP) SEARCH IS TO IDENTIFY PRPS AT NON-NPL OR REMOVAL ACTION SITES.

TYPE: RV - REMOVAL TIME CRITICAL

START DATE: 12/09/1996

COMPLETION DATE: 08/17/1997

ACTION TYPE DEFINITION:

RESPONSE ACTION THAT REQUIRES EXPEDITIOUS ATTENTION TO REDUCE IMMINENT AND SUBSTANTIAL DANGERS TO HUMAN HEALTH, WELFARE, OR THE ENVIRONMENT OR AN EMERGENCY RESPONSE REQUIRED WITHIN HOURS OR DAYS TO ADDRESS ACUTE SITUATIONS INVOLVING ACTUAL OR POTENTIAL THREAT TO HUMAN HEALTH, THE ENVIRONMENT, OR REAL OR PERSONAL PROPERTY DUE TO THE RELEASE OF A HAZARDOUS SUBSTANCE. CHARACTERIZATION OF A REMOVAL ACTION AS REMOVAL, NOT IMMEDIATE REMOVAL OR PLANNED REMOVAL, STARTED AT THE BEGINNING OF FY 1987. THIS CODE NOW TAKES THE PLACE OF IMMEDIATE REMOVAL (IR) AND PLANNED REMOVAL (PR).

TYPE: DS - DISCOVERY

START DATE: NR

COMPLETION DATE: 01/28/1991

ACTION TYPE DEFINITION:

THE PROCESS BY WHICH A POTENTIAL HAZARDOUS WASTE SITE IS BROUGHT TO THE ATTENTION OF THE EPA. THE PROCESS CAN OCCUR THROUGH THE USE OF SEVERAL MECHANISMS SUCH AS A PHONE CALL OR REFERRAL BY ANOTHER GOVERNMENT AGENCY.

TYPE: IC - ISSUE REQUEST LETTERS (104E)

START DATE: NR

COMPLETION DATE: 07/26/2000

ACTION TYPE DEFINITION:

EPA ISSUES LETTERS UNDER THE AUTHORITY OF SECTION 104(E) TO GATHER INFORMATION RELATED TO (1) THE IDENTIFICATION, NATURE, AND QUANTITY OF MATERIALS; (2) THE NATURE OR EXTENT OF A RELEASE OR THREATENED RELEASE OF A HAZARDOUS SUBSTANCE, POLLUTANT, OR CONTAMINANT; OR (3) THE ABILITY OF A PERSON TO PAY FOR OR



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**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION & LIABILITY INFORMATION SYSTEM
(CERCLIS)**

TO PERFORM A CLEANUP.

TYPE: **PA - PRELIMINARY ASSESSMENT**

START DATE: **NR**

COMPLETION DATE: **03/26/1992**

ACTION TYPE DEFINITION:

COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

TYPE: **PA - PRELIMINARY ASSESSMENT**

START DATE: **NR**

COMPLETION DATE: **02/13/1997**

ACTION TYPE DEFINITION:

COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

TYPE: **VS - ARCHIVE SITE**

START DATE: **NR**

COMPLETION DATE: **08/17/2000**

ACTION TYPE DEFINITION:

THE DECISION IS MADE THAT NO FURTHER ACTIVITY IS PLANNED AT THE SITE.

CONTAMINANTS - **NO CONTAMINATION INFORMATION AVAILABLE -**

LISTING OF PUBLISHED INSTITUTIONAL CONTROL SITE REPORT - **NOT AN INSTITUTIONAL CONTROL SITE -**

NO FURTHER REMEDIAL ACTION PLANNED SITES (NFRAP)

MAP ID# 17

Distance from Property: 0.19 mi. SE

FACILITY INFORMATION

EPA ID#: COD073405961

SITE ID#: 0801093

NAME: ROCK WOOL INDUSTRIES

ADDRESS: 600 OLD SMELTER RD
PUEBLO, CO 81002

COUNTY: PUEBLO

<u>ACTION</u>	<u>START DATE</u>	<u>COMPLETION DATE</u>	<u>RESPONSIBILITY</u>
DS - DISCOVERY	NOT REPORTED	1/28/1991 00:00:00	EPA FUND
RV - REMOVAL	12/9/1996 00:00:00	8/17/1997 00:00:00	EPA FUND
PA - PRELIMINARY ASSESSMENT	NOT REPORTED	3/26/1992 00:00:00	EPA FUND
PA - PRELIMINARY ASSESSMENT	NOT REPORTED	2/13/1997 00:00:00	EPA FUND
VS - ARCHIVE SITE	NOT REPORTED	8/17/2000 00:00:00	EPA IN-HOUSE

ACTION DESCRIPTIONS

DS - (DISCOVERY) - THE PROCESS BY WHICH A POTENTIAL HAZARDOUS WASTE SITE IS BROUGHT TO THE ATTENTION OF THE EPA. THE PROCESS CAN OCCUR THROUGH THE USE OF SEVERAL MECHANISMS SUCH AS A PHONE CALL OR REFERRAL BY ANOTHER GOVERNMENT AGENCY.

RV - (REMOVAL) - RESPONSE ACTION THAT REQUIRES EXPEDITIOUS ATTENTION TO REDUCE IMMINENT AND SUBSTANTIAL DANGERS TO HUMAN HEALTH, WELFARE, OR THE ENVIRONMENT OR AN EMERGENCY RESPONSE REQUIRED WITHIN HOURS OR DAYS TO ADDRESS ACUTE SITUATIONS INVOLVING ACTUAL OR POTENTIAL THREAT TO HUMAN HEALTH, THE ENVIRONMENT, OR REAL OR PERSONAL PROPERTY DUE TO THE RELEASE OF A HAZARDOUS SUBSTANCE. CHARACTERIZATION OF A REMOVAL ACTION AS REMOVAL, NOT IMMEDIATE REMOVAL OR PLANNED REMOVAL, STARTED AT THE BEGINNING OF FY 1987. THIS CODE NOW TAKES THE PLACE OF IMMEDIATE REMOVAL (IR) AND PLANNED REMOVAL (PR).

PA - (PRELIMINARY ASSESSMENT) - COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

PA - (PRELIMINARY ASSESSMENT) - COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

VS - (ARCHIVE SITE) - THE DECISION IS MADE THAT NO FURTHER ACTIVITY IS PLANNED AT THE SITE.



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RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION FACILITIES (RCRAC)

MAP ID# 17

Distance from Property: 0.19 mi. SE

FACILITY INFORMATION

EPA ID#: **COD073405961**

NAME: **ROCKWOOL PLANT - PUEBLO**

ADDRESS: **600 OLD SMELTER RD
PUEBLO, CO 810033341**

CONTACT NAME: **EUGENE THORDAHL**

CONTACT ADDRESS: **1727-8A SARDIS RD N. STE 168
CHARLOTTE, NC 28270**

CONTACT PHONE: **7043668895**

NON-NOTIFIER: **NOT A NON-NOTIFIER**

DATE RECEIVED BY AGENCY: **02/15/1995**

INDUSTRY CLASSIFICATION (NAICS)

327993 - MINERAL WOOL MANUFACTURING

SITE HISTORY (INCLUDES GENERATORS AND NON-GENERATORS)

DATE RECEIVED BY AGENCY: **02/15/95**

NAME: **ROCKWOOL PLANT - PUEBLO**

GENERATOR CLASSIFICATION: **NOT A GENERATOR**

DATE RECEIVED BY AGENCY: **02/25/94**

NAME: **ROCKWOOL PLANT - PUEBLO**

GENERATOR CLASSIFICATION: **CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR**

DATE RECEIVED BY AGENCY: **04/26/90**

NAME: **ROCKWOOL PLANT - PUEBLO**

GENERATOR CLASSIFICATION: **CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR**

ACTIVITY INFORMATION

GENERATOR STATUS: **NOT A GENERATOR**

SUBJECT TO CORRECTIVE ACTION UNIVERSE: **YES**

TDSFs POTENTIALLY SUBJECT TO CORRECTIVE ACTION UNDER 3004 (u)/(v) UNIVERSE: **NO**

TDSFs ONLY SUBJECT TO CORRECTIVE ACTION UNDER DISCRETIONARY AUTHORITIES UNIVERSE: **YES**

NON TDSFs WHERE RCRA CORRECTIVE ACTION HAS BEEN IMPOSED UNIVERSE: **NO**

CORRECTIVE ACTION WORKLOAD UNIVERSE: **YES**

IMPORTER: **NO**

UNDERGROUND INJECTION: **NO**

MIXED WASTE GENERATOR: **NO**

UNIVERSAL WASTE DESTINATION FACILITY: **NO**

RECYCLER: **NO**

TRANSFER FACILITY: **NO**

TRANSPORTER: **NO**

USED OIL FUEL BURNER: **NO**

ONSITE BURNER EXEMPTION: **NO**

USED OIL PROCESSOR: **NO**

FURNACE EXEMPTION: **NO**

USED OIL FUEL MARKETER TO BURNER: **NO**

USED OIL REFINER: **NO**

SPECIFICATION USED OIL MARKETER: **NO**

USED OIL TRANSFER FACILITY: **NO**

USED OIL TRANSPORTER: **NO**

COMPLIANCE, MONITORING AND ENFORCEMENT INFORMATION

EVALUATIONS

1990/01/16 NRR NON-FINANCIAL RECORD REVIEW

1990/02/20 CEI COMPLIANCE EVALUATION INSPECTION ON-SITE

1991/07/18 CEI COMPLIANCE EVALUATION INSPECTION ON-SITE



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RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION FACILITIES (RCRAC)

1992/05/27 GME GROUNDWATER MONITORING EVALUATION
 1993/06/07 CEI COMPLIANCE EVALUATION INSPECTION ON-SITE
 1994/05/10 CEI COMPLIANCE EVALUATION INSPECTION ON-SITE
 1994/09/06 FCI FOCUSED COMPLIANCE INSPECTION
 1994/09/15 FCI FOCUSED COMPLIANCE INSPECTION
 1994/10/05 CEI COMPLIANCE EVALUATION INSPECTION ON-SITE
 1995/08/04 FCI FOCUSED COMPLIANCE INSPECTION
 1996/06/25 CEI COMPLIANCE EVALUATION INSPECTION ON-SITE
 1996/06/25 FCI FOCUSED COMPLIANCE INSPECTION
 1997/09/04 FCI FOCUSED COMPLIANCE INSPECTION
 1998/08/28 FCI FOCUSED COMPLIANCE INSPECTION
 1999/08/26 FCI FOCUSED COMPLIANCE INSPECTION
 2001/09/24 CEI COMPLIANCE EVALUATION INSPECTION ON-SITE
 2005/05/24 FCI FOCUSED COMPLIANCE INSPECTION
 2007/05/18 CAC CORRECTIVE ACTION COMPLIANCE EVALUATION
 2007/05/18 GME GROUNDWATER MONITORING EVALUATION
 2009/05/27 CAC CORRECTIVE ACTION COMPLIANCE EVALUATION
 2009/05/27 CEI COMPLIANCE EVALUATION INSPECTION ON-SITE
 2009/05/27 GME GROUNDWATER MONITORING EVALUATION
 2011/04/29 CEI COMPLIANCE EVALUATION INSPECTION ON-SITE
 2011/04/29 OAM OPERATION AND MAINTENANCE INSPECTION

VIOLATIONS

1994/09/16 262.A GENERATORS - GENERAL
 1994/10/17 262.A GENERATORS - GENERAL

ENFORCEMENTS

1994/09/16 120 WRITTEN INFORMAL
 1994/11/09 125 NOTICE OF VIOLATION

HAZARDOUS WASTE

D000

UNIVERSAL WASTE - NO UNIVERSAL WASTE REPORTED -

CORRECTIVE ACTION AREA

ENTIRE FACILITY	----	YES	YES	----
SHOT PILE CLOSURE AREA	----	YES	YES	----

CORRECTIVE ACTION EVENT

CA006RU	19950525	TYPE OF UNIT - REGULATED UNIT
CA050	19920318	RFA COMPLETED
CA070YE	19950525	DETERMINATION OF NEED FOR AN INVESTIGATION-INVESTIGATION IS NECESSARY
CA075HI	19970901	CA PRIORITIZATION-HIGH CA PRIORITY
CA077H	19950417	OVERALL CA RANK
CA100	19950525	INVESTIGATION IMPOSITION
CA225NR	19930930	STABILIZATION MEASURES EVALUATION-FACILITY NOT AMENABLE TO STABILIZATION
CA225NR	19930930	STABILIZATION MEASURES EVALUATION-FACILITY NOT AMENABLE TO STABILIZATION
CA225NR	19980923	STABILIZATION MEASURES EVALUATION-FACILITY NOT AMENABLE TO STABILIZATION



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RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION FACILITIES (RCRAC)

CA225NR	19980923	STABILIZATION MEASURES EVALUATION-FACILITY NOT AMENABLE TO STABILIZATION
CA225YE	19960917	STABILIZATION MEASURES EVALUATION-FACILITY IS AMENABLE TO STABILIZATION
CA400	19930219	REMEDY DECISION
CA400	20021216	REMEDY DECISION
CA500	19930219	CMI WORKPLAN APPROVED-IMPLEMENTED FOLLOWING AN RFI
CA550	19970902	REMEDY CONSTRUCTION
CA550	20021216	REMEDY CONSTRUCTION
CA725NO	19960917	HUMAN EXPOSURES CONTROLLED DETERMINATION-FACILITY DOES NOT MEET DEFINITION
CA725YE	19980923	HUMAN EXPOSURES CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE
CA725YE	19980923	HUMAN EXPOSURES CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE
CA725YE	19991027	HUMAN EXPOSURES CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE
CA750YE	19960917	RELEASE TO GW CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE
CA750YE	19980923	RELEASE TO GW CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE
CA750YE	19980923	RELEASE TO GW CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE
CA750YE	19991027	RELEASE TO GW CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE
CA834OM	20021216	OTHER REPORT APPROVED
CAGPR	19991231	GPRA - CORRECTIVE ACTION

UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 17

Distance from Property: 0.19 mi. SE

FACILITY INFORMATION

FACILITY ID: 2830
NAME: ROCKWOOL - PUEBLO PLANT
ADDRESS: 600 OLD SMELTER RD
PUEBLO, CO 81008

TOTAL TANK: 4

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=2830

OWNER INFORMATION

NAME: ROCKWOOL INDUSTRIES
ADDRESS: PO BOX 5170
DENVER, CO 80217

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
2830-1	UST	DIESEL	1000	PERMANENTLY CLOSED	29-DEC-62
2830-2	UST	GASOLINE	1000	PERMANENTLY CLOSED	29-DEC-62
2830-3	UST	DIESEL	4000	PERMANENTLY CLOSED	01-APR-65
2830-4	UST	GASOLINE	4000	PERMANENTLY CLOSED	01-APR-62



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 18

Distance from Property: 0.20 mi. NW

FACILITY INFORMATION

FACILITY ID: 940

NAME: WEST 4TH ST RAILYARD

ADDRESS: WEST 4TH ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

6176 CLOSED 13-Jan-98

6842 CLOSED 28-Jul-98

6176 CLOSED 1/7/98

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=6176

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=6842

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=6176



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 18

Distance from Property: 0.20 mi. NW

FACILITY INFORMATION

FACILITY ID: 940
NAME: PUEBLO YARD
ADDRESS: W 4TH ST YARD
PUEBLO, CO 81004

TOTAL TANK: 5

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=940

OWNER INFORMATION

NAME: UNION PACIFIC RAILROAD
ADDRESS: 280 SOUTH 400 WEST
SALT LAKE CITY, UT 84101

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
940-1	UST	GASOLINE	550	PERMANENTLY CLOSED	08-MAY-82
940-2	UST	GASOLINE	1500	PERMANENTLY CLOSED	08-MAY-81
940-3	UST	GASOLINE	10000	PERMANENTLY CLOSED	08-MAY-66
940-4	UST	GASOLINE	120	PERMANENTLY CLOSED	09-MAY-51
940-5	UST	WASTE OIL	120	PERMANENTLY CLOSED	09-MAY-51



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ABOVEGROUND STORAGE TANK FACILITIES (AST)

MAP ID# 18

Distance from Property: 0.20 mi. NW

FACILITY INFORMATION

FACILITY ID: 2296
NAME: SOUTHERN PACIFIC LINES
ADDRESS: W 4TH ST
PUEBLO, CO 81003

TOTAL TANK: 3

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=2296

OWNER INFORMATION

NAME: UNION PACIFIC RAILROAD
ADDRESS: 280 SOUTH 400 WEST
SALT LAKE CITY, UT 84101

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
2296-1	AST	WASTE OIL	8000	PERMANENTLY CLOSED	01-JAN-73
2296-2	AST	DIESEL	3000	PERMANENTLY CLOSED	01-JAN-75
2296-3	AST	UNKNOWN	23000	PERMANENTLY CLOSED	01-JAN-73



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 19

Distance from Property: 0.21 mi. SW

FACILITY INFORMATION

FACILITY ID: 2941

NAME: ANDREWS PRODUCE INC

ADDRESS: 100 S MAIN ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

3301 CLOSED 18-Jul-97

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=3301



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 19

Distance from Property: 0.21 mi. SW

FACILITY INFORMATION

FACILITY ID: 2941
NAME: AT&T ZX061H
ADDRESS: 100 S MAIN ST
PUEBLO, CO 81003

TOTAL TANK: 3

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=2941

OWNER INFORMATION

NAME: NEW CINGULAR WIRELESS PCS LLC
ADDRESS: 308 S AKARD ST RM 1700
DALLAS, TX 75202

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
2941-1	UST	GASOLINE	2000	PERMANENTLY CLOSED	06-MAY-81
2941-2	UST	GASOLINE	2000	PERMANENTLY CLOSED	06-MAY-81

MAP ID# 19

Distance from Property: 0.21 mi. SW

FACILITY INFORMATION

FACILITY ID: 2941
NAME: AT&T ZX061H
ADDRESS: 100 S MAIN ST
PUEBLO, CO 81003

TOTAL TANK: 3

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=2941

OWNER INFORMATION

NAME: NEW CINGULAR WIRELESS PCS LLC
ADDRESS: 308 S AKARD ST RM 1700
DALLAS, TX 75202

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
2941-1	UST	GASOLINE	2000	PERMANENTLY CLOSED	06-MAY-81
2941-2	UST	GASOLINE	2000	PERMANENTLY CLOSED	06-MAY-81



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ABOVEGROUND STORAGE TANK FACILITIES (AST)

MAP ID# 19

Distance from Property: 0.21 mi. SW

FACILITY INFORMATION

FACILITY ID: 2941
NAME: AT&T ZX061H
ADDRESS: 100 S MAIN ST
PUEBLO, CO 81003

TOTAL TANK: 3

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=2941

OWNER INFORMATION

NAME: NEW CINGULAR WIRELESS PCS LLC
ADDRESS: 308 S AKARD ST RM 1700
DALLAS, TX 75202

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
2941-3	AST	DIESEL - #2	1500	CURRENTLY IN USE	15-JAN-07

MAP ID# 19

Distance from Property: 0.21 mi. SW

FACILITY INFORMATION

FACILITY ID: 2941
NAME: AT&T ZX061H
ADDRESS: 100 S MAIN ST
PUEBLO, CO 81003

TOTAL TANK: 3

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=2941

OWNER INFORMATION

NAME: NEW CINGULAR WIRELESS PCS LLC
ADDRESS: 308 S AKARD ST RM 1700
DALLAS, TX 75202

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
2941-3	AST	DIESEL - #2	1500	CURRENTLY IN USE	15-JAN-07

LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 20

Distance from Property: 0.22 mi. SW

FACILITY INFORMATION

FACILITY ID: 16220

NAME: ONEIDA STREET PROPERTY

ADDRESS: 126 S ONEIDA ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

9480 CLOSED 19-Apr-04

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=9480



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ABOVEGROUND STORAGE TANK FACILITIES (AST)

MAP ID# 20

Distance from Property: 0.22 mi. SW

FACILITY INFORMATION

FACILITY ID: 16220

NAME: ONEIDA STREET PROPERTY

ADDRESS: 126 S ONEIDA ST
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=16220

OWNER INFORMATION

NAME: MUSSO & CARDINALE PARTNERSHIP

ADDRESS: 2641 I-25 NORTH EXIT 104
PUEBLO, CO 81008

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
NR	NOT REPORTED	NOT REPORTED	NOT	NOT REPORTED	NOT REPORTED



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 21

Distance from Property: 0.23 mi. W

FACILITY INFORMATION

FACILITY ID: 7054
NAME: SEMES BODY SHOP
ADDRESS: 225 W 2ND ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
5231	CLOSED	5/3/95

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=5231



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 21

Distance from Property: 0.23 mi. W

FACILITY INFORMATION

FACILITY ID: 7054
NAME: SEME'S BODY SHOP
ADDRESS: 225 W 2ND ST
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=7054

OWNER INFORMATION

NAME: LUDWIG L SEME
ADDRESS: 225 W 2ND ST
PUEBLO, CO 81003

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
7054-1	UST	UNKNOWN	UNKNOWN	PERMANENTLY CLOSED	NOT REPORTED



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ABOVEGROUND STORAGE TANK FACILITIES (AST)

MAP ID# 21

Distance from Property: 0.23 mi. W

FACILITY INFORMATION

FACILITY ID: 13705
NAME: SEMES BODY SHOP
ADDRESS: 225 W 2ND ST
PUEBLO, CO 81003

TOTAL TANK: 1

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=13705

OWNER INFORMATION

NAME: SEME
ADDRESS: 225 W 2ND ST
PUEBLO, CO 81003

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
NR	NOT REPORTED	NOT REPORTED	NOT	NOT REPORTED	NOT REPORTED



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UNDERGROUND STORAGE TANK FACILITIES (UST)

MAP ID# 22

Distance from Property: 0.25 mi. SW

FACILITY INFORMATION

FACILITY ID: 1804
NAME: HUGHES BROTHERS
ADDRESS: 118 CENTRAL MAIN ST
PUEBLO, CO 81003

TOTAL TANK: 6

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=1804

OWNER INFORMATION

NAME: MARGARET M TRAPP
ADDRESS: 1212 ROCKY DELL LN
SIGNAL MOUNTAIN, TN 37377

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
1804-1	UST	GASOLINE	UNKNOWN	PERMANENTLY CLOSED	05-MAY-86
1804-2	UST	GASOLINE	UNKNOWN	PERMANENTLY CLOSED	05-MAY-86
1804-3	UST	GASOLINE	UNKNOWN	PERMANENTLY CLOSED	05-MAY-86
1804-4	UST	DIESEL	UNKNOWN	PERMANENTLY CLOSED	05-MAY-86
1804-5	UST	GASOLINE	UNKNOWN	PERMANENTLY CLOSED	05-MAY-86
1804-6	UST	GASOLINE	UNKNOWN	PERMANENTLY CLOSED	05-MAY-86



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 22

Distance from Property: 0.26 mi. SW

FACILITY INFORMATION

FACILITY ID: 14375
NAME: HARP
ADDRESS: ELIZABETH & MAIN
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
6258	CLOSED	2/4/98

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=6258



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 23

Distance from Property: 0.26 mi. W

FACILITY INFORMATION

FACILITY ID: 15523
NAME: PUEBLO MUSEUM
ADDRESS: 324 W 1ST ST
PUEBLO, CO 80210

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
8762	CLOSED	10/15/01

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=8762



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 24 Distance from Property: 0.28 mi. NW

FACILITY INFORMATION

FACILITY ID: 5094
NAME: COLORADO NATIONAL BANK OF PUEBLO
ADDRESS: 5TH & MAIN
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
1960	CLOSED	4/26/91

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=1960



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VOLUNTARY CLEANUP AND REDEVELOPMENT PROGRAM SITES (VCRA)

MAP ID# 25 Distance from Property: 0.29 mi. S

SITE INFORMATION

UNIQUE ID: 794
NAME: SONIC DRIVE IN - PUEBLO
ADDRESS: 401 SOUTH SANTA FE AVENUE
PUEBLO, CO 81003
COUNTY: PUEBLO

SITE DETAILS

APPLICATION TYPE: NO ACTION DETERMINATION
FILE NUMBER: 110617-1
REVIEW DATE DUE: 8/1/2011
DECISION: NOT REPORTED
REMEDY START DATE: NOT REPORTED REMEDY END DATE: NOT REPORTED
ACTUAL COST: NOT REPORTED CLEANUP ACRES: 1.0
OTHER ISSUES: UP GRADIENT SOURCE;#10
LAND USE RESTRICTIONS: COMMERCIAL
PROJECT MANAGER: RUDOLPH
INDOOR AIR: NOT REPORTED
MEDIA SEDIMENT: NOT REPORTED
MEDIA GROUND WATER: NOT REPORTED
MEDIA SURFACE WATER: NOT REPORTED
MEDIA SOIL: NOT REPORTED

LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 26

Distance from Property: 0.29 mi. SW

FACILITY INFORMATION

FACILITY ID: 2546

NAME: PUEBLO TRANSPORATION CO

ADDRESS: 350 S GRAND ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

5635 CLOSED 29-Jun-98

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=5635



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 27

Distance from Property: 0.30 mi. NE

FACILITY INFORMATION

FACILITY ID: 3465

NAME: EAST FOURTH STREET STANDARD

ADDRESS: 601 E 4TH ST
PUEBLO, CO 81001

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

7834 CLOSED 12-Oct-99

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=7834



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SOLID WASTE FACILITIES (SWF)

MAP ID# 28

Distance from Property: 0.31 mi. N

SITE INFORMATION

GS ID: 73*WTR

NAME: VIDMAR MOTOR CO.

ADDRESS: 600 ALBANY AVE
PUEBLO, CO 81003

COUNTY: NOT REPORTED

CERTIFICATION ID: 73

FACILITY TYPE: REGISTERED TIRE HAULER

TIRE RETAILER/WHOLESALE: YES

HAULER: NO

END USER: NO

COLLECTION: NO

PROCESSOR: NO

MONOFILL: NO



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 28

Distance from Property: 0.31 mi. N

FACILITY INFORMATION

FACILITY ID: 8161
NAME: VIDMAR MOTOR CO
ADDRESS: 600 ALBANY
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:
255 CLOSED 21-Apr-93

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=255



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LEAKING UNDERGROUND STORAGE TANKS TRUST FUND SITES (LUSTTRUST)

Distance from Property: 0.33 mi. W

FACILITY INFORMATION

UNIQUE ID: 00023-0000251

AGENCY ID: NO AGENCY ID

NAME: 3RD & GRAND

ADDRESS: 3RD & GRAND
PUEBLO, CO 80000

COUNTY: PUEBLO

COMMENTS:

FROM AN OLD CDPHE LIST OF LOCATIONS WHERE TANK LEAKS WERE SUSPECTED AND LUST TRUST FUNDS WERE USED IN AN EFFORT TO IDENTIFY THE SOURCE. OFTEN, THE SOURCE WAS FOUND NEARBY AND WAS ENTERED IN THE LUST DATABASE (NOW COSTIS).

THIS LISTING NOT ENTERED INTO COSTIS BACK WHEN CDPHE TRANSFERRED RESPONSIBILITY FOR TANK LEAKS TO OPS. FEW PEOPLE AT OPS KNOW OF THIS OLD CDPHE LIST, AND ANY ASSOCIATED FILES ARE THOUGHT TO HAVE BEEN DISPOSED OF OR MISPLACED.

COSTIS LINK

NO LINK REPORTED

LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 29

Distance from Property: 0.32 mi. W

FACILITY INFORMATION

FACILITY ID: 13176

NAME: RITAS MEXICAN FOOD RESTAURANT

ADDRESS: 302 N GRAND AVE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

3126 CLOSED 28-Jun-94

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=3126



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 30

Distance from Property: 0.33 mi. SW

FACILITY INFORMATION

FACILITY ID: 13828
NAME: HARP
ADDRESS: 100 UNION
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
4443	CLOSED	11/25/96

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=4443



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 31

Distance from Property: 0.34 mi. SW

FACILITY INFORMATION

FACILITY ID: 11742

NAME: WEICKER STORAGE BUILDING

ADDRESS: 128 S MAIN
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

3243 CLOSED 2/21/90

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=3243



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 31

Distance from Property: 0.35 mi. SW

FACILITY INFORMATION

FACILITY ID: 15504

NAME: CITY OF PUEBLO PUBLIC WORKS

ADDRESS: 211 E D ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

8572 CLOSED 15-Jun-01

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=8572



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 32

Distance from Property: 0.34 mi. W

FACILITY INFORMATION

FACILITY ID: 7896

NAME: GRAND RENTAL CENTER INC

ADDRESS: 219 N GRAND
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

544 CLOSED 20-Feb-93

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=544



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 33

Distance from Property: 0.34 mi. N

FACILITY INFORMATION

FACILITY ID: 2385
NAME: GTECH CORP
ADDRESS: 620 N SANTA FE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
9961	CLOSED	25-Nov-05

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=9961



www.geo-search.com · phone: 888-396-0042 · fax: 512-472-9967

LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 33

Distance from Property: 0.35 mi. N

FACILITY INFORMATION

FACILITY ID: 14837
NAME: WENDY'S
ADDRESS: 602 N SANTA FE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
7347	CLOSED	3/22/99

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=7347



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 34

Distance from Property: 0.35 mi. SW

FACILITY INFORMATION

FACILITY ID: 1705

NAME: CITY OF PUEBLO FLEET MAINTENANCE

ADDRESS: 210 S MECHANIC ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

6097 CLOSED 05-Dec-97

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=6097



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 35 Distance from Property: 0.36 mi. S

FACILITY INFORMATION

FACILITY ID: 16333
NAME: LASATER AUTO PARTS
ADDRESS: 314 CLARK ST PUEBLO
PUEBLO, CO 81001

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
8182	CLOSED	5/1/00

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=8182



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 36

Distance from Property: 0.37 mi. SW

FACILITY INFORMATION

FACILITY ID: 1781

NAME: GIANNETTO OIL

ADDRESS: 202 S MAIN
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

7546 CLOSED 07-Jul-99

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=7546



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SOLID WASTE FACILITIES (SWF)

MAP ID# 37 Distance from Property: 0.37 mi. NW

SITE INFORMATION

GS ID: 95*WTR
NAME: RETIRE INCORPORATED
ADDRESS: 331 NORTH GRAND AVENUE
PUEBLO, CO 81003
COUNTY: NOT REPORTED
CERTIFICATION ID: 95
FACILITY TYPE: REGISTERED TIRE HAULER
TIRE RETAILER/WHOLESALE: YES
HAULER: NO
END USER: NO
COLLECTION: NO
PROCESSOR: NO
MONOFILL: NO

LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 37

Distance from Property: 0.37 mi. NW

FACILITY INFORMATION

FACILITY ID: 15926
NAME: MIDAS INC
ADDRESS: 331 N GRAND AVE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
9084	CLOSED	15-Nov-02

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=9084



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 38 Distance from Property: 0.39 mi. S

FACILITY INFORMATION

FACILITY ID: 12068
NAME: LANDCO GROUP
ADDRESS: 501 S SANTA FE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:
3407 CLOSED 9/15/92

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=3407



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 39

Distance from Property: 0.40 mi. N

FACILITY INFORMATION

FACILITY ID: 13745

NAME: TACO BELL

ADDRESS: 703 N SANTA FE AVE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

693 CLOSED 7/23/96

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=693



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 40

Distance from Property: 0.40 mi. W

FACILITY INFORMATION

FACILITY ID: 211

NAME: CENTEL SOUTHERN COLORADO POWER

ADDRESS: 105 S VICTORIA SERVICE CENTER
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

5406 CLOSED 2/12/91

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=5406



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**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION & LIABILITY INFORMATION SYSTEM
(CERCLIS)**

MAP ID# 40

Distance from Property: 0.40 mi. W

FACILITY INFORMATION

EPA ID#: COT090010729

SITE ID#: 0800342

NAME: S.COLORADO POWER PLANT & SERVICE AREA

ADDRESS: 105 S VICTORIA AVE
PUEBLO, CO 81002

COUNTY: PUEBLO

NATIONAL PRIORITY LISTING: N - NOT ON THE NPL

FEDERAL FACILITY CLASSIFICATION: N - NOT A FEDERAL FACILITY

NON-NPL STATUS: NF - NFRAP

PHYSICAL CLASSIFICATION OF SITE / INCIDENT: NO INFORMATION AVAILABLE

SITE DESCRIPTION - NO SITE DESCRIPTION INFORMATION AVAILABLE -

SITE HISTORY - NO SITE HISTORY INFORMATION AVAILABLE -

ACTIONS

TYPE: DS - DISCOVERY

START DATE: NR

COMPLETION DATE: 06/01/1981

ACTION TYPE DEFINITION:

THE PROCESS BY WHICH A POTENTIAL HAZARDOUS WASTE SITE IS BROUGHT TO THE ATTENTION OF THE EPA. THE PROCESS CAN OCCUR THROUGH THE USE OF SEVERAL MECHANISMS SUCH AS A PHONE CALL OR REFERRAL BY ANOTHER GOVERNMENT AGENCY.

TYPE: PA - PRELIMINARY ASSESSMENT

START DATE: NR

COMPLETION DATE: 03/01/1983

ACTION TYPE DEFINITION:

COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

TYPE: SI - SITE INSPECTION

START DATE: NR

COMPLETION DATE: 04/01/1983

ACTION TYPE DEFINITION:

THE PROCESS OF COLLECTING SITE DATA AND SAMPLES TO CHARACTERIZE THE SEVERITY OF THE HAZARD FOR THE HAZARD RANKING SCORE AND/OR ENFORCEMENT SUPPORT.

TYPE: VS - ARCHIVE SITE

START DATE: NR

COMPLETION DATE: 04/01/1983

ACTION TYPE DEFINITION:

THE DECISION IS MADE THAT NO FURTHER ACTIVITY IS PLANNED AT THE SITE.

CONTAMINANTS - NO CONTAMINATION INFORMATION AVAILABLE -

LISTING OF PUBLISHED INSTITUTIONAL CONTROL SITE REPORT - NOT AN INSTITUTIONAL CONTROL SITE -



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**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION & LIABILITY INFORMATION SYSTEM
(CERCLIS)**

MAP ID# 40

Distance from Property: 0.40 mi. W

FACILITY INFORMATION

EPA ID#: **COSFN0801686**

SITE ID#: **0801686**

NAME: **PUEBLO COPPER ARSENATE**

ADDRESS: **105 S VICTORIA ST
PUEBLO, CO 81002**

COUNTY: **PUEBLO**

NATIONAL PRIORITY LISTING: **N - NOT ON THE NPL**

FEDERAL FACILITY CLASSIFICATION: **N - NOT A FEDERAL FACILITY**

NON-NPL STATUS: **NF - NFRAP**

PHYSICAL CLASSIFICATION OF SITE / INCIDENT: **NO INFORMATION AVAILABLE**

SITE DESCRIPTION - **NO SITE DESCRIPTION INFORMATION AVAILABLE -**

SITE HISTORY - **NO SITE HISTORY INFORMATION AVAILABLE -**

ACTIONS

TYPE: **DS - DISCOVERY**

START DATE: **NR**

COMPLETION DATE: **11/07/1997**

ACTION TYPE DEFINITION:

THE PROCESS BY WHICH A POTENTIAL HAZARDOUS WASTE SITE IS BROUGHT TO THE ATTENTION OF THE EPA. THE PROCESS CAN OCCUR THROUGH THE USE OF SEVERAL MECHANISMS SUCH AS A PHONE CALL OR REFERRAL BY ANOTHER GOVERNMENT AGENCY.

TYPE: **PA - PRELIMINARY ASSESSMENT**

START DATE: **NR**

COMPLETION DATE: **11/04/1998**

ACTION TYPE DEFINITION:

COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

TYPE: **VS - ARCHIVE SITE**

START DATE: **NR**

COMPLETION DATE: **11/04/1998**

ACTION TYPE DEFINITION:

THE DECISION IS MADE THAT NO FURTHER ACTIVITY IS PLANNED AT THE SITE.

CONTAMINANTS - **NO CONTAMINATION INFORMATION AVAILABLE -**

LISTING OF PUBLISHED INSTITUTIONAL CONTROL SITE REPORT - **NOT AN INSTITUTIONAL CONTROL SITE -**



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NO FURTHER REMEDIAL ACTION PLANNED SITES (NFRAP)

MAP ID# 40

Distance from Property: 0.40 mi. W

FACILITY INFORMATION

EPA ID#: COSFN0801686

SITE ID#: 0801686

NAME: PUEBLO COPPER ARSENATE

ADDRESS: 105 S VICTORIA ST
PUEBLO, CO 81002

COUNTY: PUEBLO

<u>ACTION</u>	<u>START DATE</u>	<u>COMPLETION DATE</u>	<u>RESPONSIBILITY</u>
DS - DISCOVERY	NOT REPORTED	11/7/1997 00:00:00	EPA FUND
PA - PRELIMINARY ASSESSMENT	NOT REPORTED	11/4/1998 00:00:00	STATE (FUND)
VS - ARCHIVE SITE	NOT REPORTED	11/4/1998 00:00:00	EPA IN-HOUSE

ACTION DESCRIPTIONS

DS - (DISCOVERY) - THE PROCESS BY WHICH A POTENTIAL HAZARDOUS WASTE SITE IS BROUGHT TO THE ATTENTION OF THE EPA. THE PROCESS CAN OCCUR THROUGH THE USE OF SEVERAL MECHANISMS SUCH AS A PHONE CALL OR REFERRAL BY ANOTHER GOVERNMENT AGENCY.

PA - (PRELIMINARY ASSESSMENT) - COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

VS - (ARCHIVE SITE) - THE DECISION IS MADE THAT NO FURTHER ACTIVITY IS PLANNED AT THE SITE.



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NO FURTHER REMEDIAL ACTION PLANNED SITES (NFRAP)

MAP ID# 40

Distance from Property: 0.40 mi. W

FACILITY INFORMATION

EPA ID#: COT090010729

SITE ID#: 0800342

NAME: S.COLORADO POWER PLANT & SERVICE

ADDRESS: 105 S VICTORIA AVE

PUEBLO, CO 81002

COUNTY: PUEBLO

<u>ACTION</u>	<u>START DATE</u>	<u>COMPLETION DATE</u>	<u>RESPONSIBILITY</u>
DS - DISCOVERY	NOT REPORTED	6/1/1981 00:00:00	EPA FUND
PA - PRELIMINARY ASSESSMENT	NOT REPORTED	3/1/1983 00:00:00	EPA FUND
SI - SITE INSPECTION	NOT REPORTED	4/1/1983 00:00:00	EPA FUND
VS - ARCHIVE SITE	NOT REPORTED	4/1/1983 00:00:00	EPA IN-HOUSE

ACTION DESCRIPTIONS

DS - (DISCOVERY) - THE PROCESS BY WHICH A POTENTIAL HAZARDOUS WASTE SITE IS BROUGHT TO THE ATTENTION OF THE EPA. THE PROCESS CAN OCCUR THROUGH THE USE OF SEVERAL MECHANISMS SUCH AS A PHONE CALL OR REFERRAL BY ANOTHER GOVERNMENT AGENCY.

PA - (PRELIMINARY ASSESSMENT) - COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

SI - (SITE INSPECTION) - THE PROCESS OF COLLECTING SITE DATA AND SAMPLES TO CHARACTERIZE THE SEVERITY OF THE HAZARD FOR THE HAZARD RANKING SCORE AND/OR ENFORCEMENT SUPPORT.

VS - (ARCHIVE SITE) - THE DECISION IS MADE THAT NO FURTHER ACTIVITY IS PLANNED AT THE SITE.



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 40

Distance from Property: 0.40 mi. W

FACILITY INFORMATION

FACILITY ID: 12362

NAME: PUEBLO SERVICE CENTER

ADDRESS: 105 S VICTORIA ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

3309 CLOSED 1/11/93

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=3309



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 41

Distance from Property: 0.40 mi. S

FACILITY INFORMATION

FACILITY ID: 5823

NAME: CLIFF BRICE STATIONS

ADDRESS: 300 MOFFAT AVE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

11766 OPEN 11/30/2012 2:26:51 P

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=11766



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 41

Distance from Property: 0.40 mi. S

FACILITY INFORMATION

FACILITY ID: 5896

NAME: CLIFF BRICE STATIONS

ADDRESS: 300 MOFFAT AVE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

11143 CLOSED 30-Apr-10

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=11143



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 42

Distance from Property: 0.41 mi. N

FACILITY INFORMATION

FACILITY ID: 10737

NAME: DANIEL D CONNOR PROPERTY

ADDRESS: 124 E 8TH ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

5420 CLOSED 20-Feb-91

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=5420



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HAZARDOUS WASTE SITES- CORRECTIVE ACTION (HWSA)

MAP ID# 43

Distance from Property: 0.42 mi. E

SITE INFORMATION

EPA ID: **COD983778150**

SITE NAME: **CASIAS RADIATOR**

SITE ADDRESS: **306 NORTH GLENDALE AVE
PUEBLO, CO 81001**

SITE COUNTY: **PUEBLO**

FACILITY TYPE: **CA**

STATUS: **HISTORIC**

LINKS: <http://www.epa.gov/cgi-bin/get1cReport.cgi?tool=echo&IDNumber=COD983778150>



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 44 Distance from Property: 0.43 mi. E

FACILITY INFORMATION

FACILITY ID: 9062
NAME: 7-ELEVEN #20638
ADDRESS: 804 E 4TH ST
PUEBLO, CO 81004

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:
11743 CLOSED 16-Oct-12
COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=11743



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**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION & LIABILITY INFORMATION SYSTEM
(CERCLIS)**

MAP ID# 45

Distance from Property: 0.45 mi. S

FACILITY INFORMATION

EPA ID#: **CON000802700**

SITE ID#: **0802700**

NAME: **COLORADO SMELTER**

ADDRESS: **INTERSTATE 25 AND SANTA FE AVENUE
PUEBLO, CO 81006**

COUNTY: **PUEBLO**

NATIONAL PRIORITY LISTING: **N - NOT ON THE NPL**

FEDERAL FACILITY CLASSIFICATION: **N - NOT A FEDERAL FACILITY**

NON-NPL STATUS: **HO - HRS ONGOING**

NON-NPL STATUS DATE: **09/17/12**

PHYSICAL CLASSIFICATION OF SITE / INCIDENT: **NO INFORMATION AVAILABLE**

SITE DESCRIPTION

FORMER SMELTER SITE WITH RESIDUAL SLAG PILE.

ORIGINALLY IDENTIFIED VIA 1989 CITIZEN COMPLAINT, WHICH RESULTED IN THE SANTA FE BRIDGE CULVERT INVESTIGATION (PARENT SITE IN CERCLIS). COLORADO SMELTER IS ALSO KNOWN AS THE BOSTON SMELTER.

SITE HISTORY - NO SITE HISTORY INFORMATION AVAILABLE -

ACTIONS

TYPE: **SI - SITE INSPECTION**

START DATE: **05/27/2010**

COMPLETION DATE: **10/11/2011**

ACTION TYPE DEFINITION:

THE PROCESS OF COLLECTING SITE DATA AND SAMPLES TO CHARACTERIZE THE SEVERITY OF THE HAZARD FOR THE HAZARD RANKING SCORE AND/OR ENFORCEMENT SUPPORT.

TYPE: **PA - PRELIMINARY ASSESSMENT**

START DATE: **06/11/2007**

COMPLETION DATE: **06/26/2008**

ACTION TYPE DEFINITION:

COLLECTION OF DIVERSE EXISTING INFORMATION ABOUT THE SOURCE AND NATURE OF THE SITE HAZARD. IT IS EPA POLICY TO COMPLETE THE PRELIMINARY ASSESSMENT WITHIN ONE YEAR OF SITE DISCOVERY.

TYPE: **DS - DISCOVERY**

START DATE: **NR**

COMPLETION DATE: **01/01/1989**

ACTION TYPE DEFINITION:

THE PROCESS BY WHICH A POTENTIAL HAZARDOUS WASTE SITE IS BROUGHT TO THE ATTENTION OF THE EPA. THE PROCESS CAN OCCUR THROUGH THE USE OF SEVERAL MECHANISMS SUCH AS A PHONE CALL OR REFERRAL BY ANOTHER GOVERNMENT AGENCY.

CONTAMINANTS - NO CONTAMINATION INFORMATION AVAILABLE -

LISTING OF PUBLISHED INSTITUTIONAL CONTROL SITE REPORT - NOT AN INSTITUTIONAL CONTROL SITE -



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 45 Distance from Property: 0.44 mi. S

FACILITY INFORMATION

FACILITY ID: 12012
NAME: ROSS TRUCKING
ADDRESS: 521 S SANTA FE AVE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
1398	CLOSED	14-Feb-91

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=1398



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 46 Distance from Property: 0.44 mi. SW

FACILITY INFORMATION

FACILITY ID: 14065
NAME: ATHEY BEAMAN CO INC
ADDRESS: 305 S MECHANIC
PUEBLO, CO 81002

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:
2741 CLOSED 12-Sep-90

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=2741



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 47 Distance from Property: 0.45 mi. E

FACILITY INFORMATION

FACILITY ID: 2989
NAME: HILL SERVICE
ADDRESS: 801 E 4TH ST
PUEBLO, CO 81001

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
4349	CLOSED	01-Feb-90
4533	CLOSED	7/15/97

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=4349

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=4533



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SOLID WASTE FACILITIES (SWF)

MAP ID# 48

Distance from Property: 0.50 mi. N

SITE INFORMATION

GS ID: 1032*WTR

NAME: WILCOXSON BUICK-CADILLAC-GMC TR

ADDRESS: 902 N. SANTA FE AVEN
PUEBLO, CO 81003

COUNTY: NOT REPORTED

CERTIFICATION ID: 1032

FACILITY TYPE: REGISTERED TIRE HAULER

TIRE RETAILER/WHOLESALE: YES

HAULER: NO

END USER: NO

COLLECTION: NO

PROCESSOR: NO

MONOFILL: NO



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 48

Distance from Property: 0.47 mi. N

FACILITY INFORMATION

FACILITY ID: 14571

NAME: UNITED RENTALS BRANCH F20

ADDRESS: 814 N SANTA FE AVE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

11773 OPEN 14-Dec-12

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=11773



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 49

Distance from Property: 0.48 mi. E

FACILITY INFORMATION

FACILITY ID: 11047

NAME: SMILING SUN SPEEDY STOP #2

ADDRESS: 828 E 4TH ST
PUEBLO, CO 81001

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

10538 IMPLEMENTING CAP 06-Dec-07

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=10538



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 50

Distance from Property: 0.48 mi. NE

FACILITY INFORMATION

FACILITY ID: 4644
NAME: LINCOLN DEVORE
ADDRESS: 602 E 8TH ST
PUEBLO, CO 81001

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
371	CLOSED	3/1/91

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=371



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 51

Distance from Property: 0.48 mi. NW

FACILITY INFORMATION

FACILITY ID: 5856
NAME: 1ST STOP #3103
ADDRESS: 623 GRAND AVE
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
11582	CLOSED	09-Jan-12
11798	OPEN	2/19/2013 2:34:50 PM

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=11582

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=11798



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 52 Distance from Property: 0.49 mi. SW

FACILITY INFORMATION

FACILITY ID: 5696
NAME: JOHNNYS BOILER SHOP INC
ADDRESS: 20 W C ST
PUEBLO, CO 81003

LEAKING INFORMATION

EVENT ID:	STATUS:	RELEASE DATE:
5052	CLOSED	4/18/90

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=5052



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LEAKING STORAGE TANK FACILITIES (LST)

MAP ID# 53

Distance from Property: 0.51 mi. NE

FACILITY INFORMATION

FACILITY ID: 5235

NAME: BOBS GENERATOR SERVICE

ADDRESS: 601 E 8TH ST
PUEBLO, CO 81001

LEAKING INFORMATION

EVENT ID: STATUS: RELEASE DATE:

2330 CLOSED 17-May-96

COSTIS LINK: http://costis.cdle.state.co.us/event.asp?h_id=2330



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HAZARDOUS WASTE SITES- CORRECTIVE ACTION (HWSA)

MAP ID# 54

Distance from Property: 0.55 mi. NE

SITE INFORMATION

EPA ID: **COD980284293**

SITE NAME: **COLORADO DEPT OF TRANS - PUEBLO**

SITE ADDRESS: **905 ERIE AVE**

PUEBLO, CO 81102

SITE COUNTY: **PUEBLO**

FACILITY TYPE: **CA**

STATUS: **HISTORIC**

LINKS: <http://www.epa.gov/cgi-bin/get1cReport.cgi?tool=echo&IDNumber=COD980284293>



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NO LONGER REGULATED RCRA CORRECTIVE ACTION FACILITIES (NLRRCRAC)

MAP ID# 54

Distance from Property: 0.55 mi. NE

FACILITY INFORMATION

EPA ID#: **COD980284293**

NAME: **COLORADO DEPT OF TRANS - PUEBLO**

ADDRESS: **905 ERIE AVE**

PUEBLO, CO 81002

CONTACT NAME: **GERALD WATSON**

CONTACT ADDRESS: **P O BOX 536**

PUEBLO, CO 81001

CONTACT PHONE: **7195465416**

NON-NOTIFIER: **NOT A NON-NOTIFIER**

DATE RECEIVED BY AGENCY: **09/23/2008**

OWNER TYPE: **STATE**

OWNER NAME: **COLORADO DEPARTMENT OF HIGHWAY**

OPERATOR TYPE: **PRIVATE**

OPERATOR NAME: **COLO DEPT OF TRANS-PUEBLO**

CERTIFICATION

CERTIFICATION NAME: **GERALD WATSON**

CERTIFICATION TITLE: **MGR**

CERTIFICATION SIGNED DATE:

GERALD WATSON

MGR

20080912

INDUSTRY CLASSIFICATION (NAICS)

81111 - AUTOMOTIVE MECHANICAL AND ELECTRICAL REPAIR AND M

SITE HISTORY (INCLUDES GENERATORS AND NON-GENERATORS)

DATE RECEIVED BY AGENCY: **05/20/93**

NAME: **COLORADO DEPT OF TRANS - PUEBLO**

GENERATOR CLASSIFICATION: **SMALL QUANTITY GENERATOR**

DATE RECEIVED BY AGENCY: **09/23/08**

NAME: **COLORADO DEPT OF TRANS - PUEBLO**

GENERATOR CLASSIFICATION: **NOT A GENERATOR**

ACTIVITY INFORMATION

GENERATOR STATUS: **NOT A GENERATOR**

SUBJECT TO CORRECTIVE ACTION UNIVERSE: **YES**

TDSFs POTENTIALLY SUBJECT TO CORRECTIVE ACTION UNDER 3004 (u)/(v) UNIVERSE: **NO**

TDSFs ONLY SUBJECT TO CORRECTIVE ACTION UNDER DISCRETIONARY AUTHORITIES UNIVERSE: **NO**

NON TDSFs WHERE RCRA CORRECTIVE ACTION HAS BEEN IMPOSED UNIVERSE: **YES**

CORRECTIVE ACTION WORKLOAD UNIVERSE: **YES**

IMPORTER: **NO**

UNDERGROUND INJECTION: **NO**

MIXED WASTE GENERATOR: **NO**

UNIVERSAL WASTE DESTINATION FACILITY: **NO**

RECYCLER: **NO**

TRANSFER FACILITY: **NO**

TRANSPORTER: **YES**

USED OIL FUEL BURNER: **NO**

ONSITE BURNER EXEMPTION: **NO**

USED OIL PROCESSOR: **NO**

FURNACE EXEMPTION: **NO**

USED OIL FUEL MARKETER TO BURNER: **NO**

USED OIL REFINER: **NO**

SPECIFICATION USED OIL MARKETER: **NO**

USED OIL TRANSFER FACILITY: **NO**

USED OIL TRANSPORTER: **NO**

COMPLIANCE, MONITORING AND ENFORCEMENT INFORMATION

EVALUATIONS

1988/08/22 CEI COMPLIANCE EVALUATION INSPECTION ON-SITE

1988/10/26 CEI COMPLIANCE EVALUATION INSPECTION ON-SITE

1992/01/27 CAC CORRECTIVE ACTION COMPLIANCE EVALUATION



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NO LONGER REGULATED RCRA CORRECTIVE ACTION FACILITIES (NLRRCRAC)

1992/05/14 CEI COMPLIANCE EVALUATION INSPECTION ON-SITE
1992/06/05 CAC CORRECTIVE ACTION COMPLIANCE EVALUATION
1993/02/16 CAC CORRECTIVE ACTION COMPLIANCE EVALUATION
1993/07/15 CAC CORRECTIVE ACTION COMPLIANCE EVALUATION
1993/09/17 CAC CORRECTIVE ACTION COMPLIANCE EVALUATION
1994/01/12 CAC CORRECTIVE ACTION COMPLIANCE EVALUATION
1994/02/23 FCI FOCUSED COMPLIANCE INSPECTION
1994/04/13 FCI FOCUSED COMPLIANCE INSPECTION
1994/05/03 FCI FOCUSED COMPLIANCE INSPECTION
1994/06/22 FCI FOCUSED COMPLIANCE INSPECTION
1994/08/09 FCI FOCUSED COMPLIANCE INSPECTION
1994/11/18 FCI FOCUSED COMPLIANCE INSPECTION
1995/01/25 FCI FOCUSED COMPLIANCE INSPECTION
1995/05/18 FCI FOCUSED COMPLIANCE INSPECTION
1995/12/21 FCI FOCUSED COMPLIANCE INSPECTION
1996/09/16 FCI FOCUSED COMPLIANCE INSPECTION
1997/10/03 FCI FOCUSED COMPLIANCE INSPECTION
1997/10/06 FCI FOCUSED COMPLIANCE INSPECTION
1997/10/07 FCI FOCUSED COMPLIANCE INSPECTION
1997/10/08 FCI FOCUSED COMPLIANCE INSPECTION
1997/10/09 FCI FOCUSED COMPLIANCE INSPECTION
1998/10/19 NRR NON-FINANCIAL RECORD REVIEW
1998/10/28 FUI FOLLOW-UP INSPECTION
1999/03/29 FCI FOCUSED COMPLIANCE INSPECTION
2002/03/27 FCI FOCUSED COMPLIANCE INSPECTION

VIOLATIONS

1998/10/19 262.A GENERATORS - GENERAL
1998/10/19 262.B GENERATORS - MANIFEST

ENFORCEMENTS

1998/10/19 127 V3 CONVERSION COMPLIANCE ADVISORY

— HAZARDOUS WASTE — NO HAZARDOUS WASTE INFORMATION REPORTED

UNIVERSAL WASTE - NO UNIVERSAL WASTE REPORTED -

HAZARDOUS WASTE SITES- CORRECTIVE ACTION (HWSA)

MAP ID# 54

Distance from Property: 0.56 mi. NE

SITE INFORMATION

EPA ID: **COD983772203**

SITE NAME: **CO STATE HIGHWAY PATROL**

SITE ADDRESS: **902 N ERIE AVE
PUEBLO, CO 81002**

SITE COUNTY: **PUEBLO**

FACILITY TYPE: **CA**

STATUS: **ACTIVE**

LINKS: <http://www.epa.gov/cgi-bin/get1cReport.cgi?tool=echo&IDNumber=COD983772203>



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ENVIRONMENTAL RECORDS DEFINITIONS - FEDERAL

AIRSAFS Aerometric Information Retrieval System / Air Facility Subsystem

VERSION DATE: 8/2012

The United States Environmental Protection Agency (EPA) modified the Aerometric Information Retrieval System (AIRS) to a database that exclusively tracks the compliance of stationary sources of air pollution with EPA regulations: the Air Facility Subsystem (AFS). Since this change in 2001, the management of the AIRS/AFS database was assigned to EPA's Office of Enforcement and Compliance Assurance.

BF Brownfields Management System

VERSION DATE: 4/2013

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. The United States Environmental Protection Agency maintains this database to track activities in the various brown field grant programs including grantee assessment, site cleanup and site redevelopment.

BRS Biennial Reporting System

VERSION DATE: 12/2009

The United States Environmental Protection Agency (EPA), in cooperation with the States, biennially collects information regarding the generation, management, and final disposition of hazardous wastes regulated under the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. The Biennial Report captures detailed data on the generation of hazardous waste from large quantity generators and data on waste management practices from treatment, storage and disposal facilities. Currently, the EPA states that data collected between 1991 and 1997 was originally a part of the defunct Biennial Reporting System and is now incorporated into the RCRAInfo data system.

CDL Clandestine Drug Laboratory Locations

VERSION DATE: 3/2013

The U.S. Department of Justice ("the Department") provides this information as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments. The Department does not establish, implement, enforce, or certify compliance with clean-up or remediation standards for contaminated sites; the public should contact a state or local health department or environmental protection agency for that information.



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ENVIRONMENTAL RECORDS DEFINITIONS - FEDERAL

CERCLIS Comprehensive Environmental Response, Compensation & Liability Information System

VERSION DATE: 4/2013

CERCLIS is the repository for site and non-site specific Superfund information in support of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This United States Environmental Protection Agency database contains an extract of sites that have been investigated or are in the process of being investigated for potential environmental risk.

DNPL Delisted National Priorities List

VERSION DATE: 4/2013

This database includes sites from the United States Environmental Protection Agency's Final National Priorities List (NPL) where remedies have proven to be satisfactory or sites where the original analyses were inaccurate, and the site is no longer appropriate for inclusion on the NPL, and final publication in the Federal Register has occurred.

DOCKETS EPA Docket Data

VERSION DATE: 12/2005

The United States Environmental Protection Agency Docket data lists Civil Case Defendants, filing dates as far back as 1971, laws broken including section, violations that occurred, pollutants involved, penalties assessed and superfund awards by facility and location. Please refer to ICIS database as source of current data.

DOD Department of Defense Sites

VERSION DATE: 12/2005

This information originates from the National Atlas of the United States Federal Lands data, which includes lands owned or administered by the Federal government. Army DOD, Army Corps of Engineers DOD, Air Force DOD, Navy DOD and Marine DOD areas of 640 acres or more are included.

EC Federal Engineering Institutional Control Sites

VERSION DATE: 4/2013

This database includes site locations where Engineering and/or Institutional Controls have been identified as part of a selected remedy for the site as defined by United States Environmental Protection Agency official remedy decision documents. A site listing does not indicate that the institutional and engineering controls are currently in place nor will be in place once the remedy is complete; it only indicates that the decision to include either of them in the remedy is documented as of the completed date of the document. Institutional controls are actions, such as legal controls, that help minimize the potential for human exposure to contamination by ensuring appropriate land or resource use. Engineering controls include caps, barriers, or other device engineering to prevent access, exposure, or continued migration of contamination.



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ERNSCO Emergency Response Notification System

VERSION DATE: 12/2012

This National Response Center database contains data on reported releases of oil, chemical, radiological, biological, and/or etiological discharges into the environment anywhere in the United States and its territories. The data comes from spill reports made to the U.S. Environmental Protection Agency, U.S. Coast Guard, the National Response Center and/or the U.S. Department of Transportation.

FRSCO Facility Registry System

VERSION DATE: 3/2013

The United States Environmental Protection Agency's Office of Environmental Information (OEI) developed the Facility Registry System (FRS) as the centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. The Facility Registry System replaced the Facility Index System or FINDS database.

FUDS Formerly Used Defense Sites

VERSION DATE: 2/2013

The 2011 FUDS inventory includes properties previously owned by or leased to the United States and under Secretary of Defense jurisdiction. The remediation of these properties is the responsibility of the Department of Defense.

HISTPST Historical Gas Stations

VERSION DATE: 7/1930

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

HMIRSR08 Hazardous Materials Incident Reporting System

VERSION DATE: 1/2013

The HMIRS database contains unintentional hazardous materials release information reported to the U.S. Department of Transportation located in EPA Region 8. This region includes the following states: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.

ICIS Integrated Compliance Information System (formerly DOCKETs)

VERSION DATE: 8/2012

ICIS is a case activity tracking and management system for civil, judicial, and administrative federal Environmental Protection Agency enforcement cases. ICIS contains information on federal administrative and federal judicial cases under the following environmental statutes: the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Emergency Planning



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ENVIRONMENTAL RECORDS DEFINITIONS - FEDERAL

and Community Right-to-Know Act - Section 313, the Toxic Substances Control Act, the Federal Insecticide, Fungicide, and Rodenticide Act, the Comprehensive Environmental Response, Compensation, and Liability Act, the Safe Drinking Water Act, and the Marine Protection, Research, and Sanctuaries Act.

ICISNPDES Integrated Compliance Information System National Pollutant Discharge Elimination System
VERSION DATE: 8/2012

In 2006, the Integrated Compliance Information System (ICIS) - National Pollutant Discharge Elimination System (NPDES) became the NPDES national system of record for select states, tribes and territories. ICIS-NPDES is an information management system maintained by the United States Environmental Protection Agency's Office of Compliance to track permit compliance and enforcement status of facilities regulated by the NPDES under the Clean Water Act. ICIS-NPDES is designed to support the NPDES program at the state, regional, and national levels.

LUCIS Land Use Control Information System
VERSION DATE: 9/2006

The LUCIS database is maintained by the U.S. Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

MLTS Material Licensing Tracking System
VERSION DATE: 1/2013

MLTS is a list of approximately 8,100 sites which have or use radioactive materials subject to the United States Nuclear Regulatory Commission (NRC) licensing requirements.

NFRAP No Further Remedial Action Planned Sites
VERSION DATE: 4/2013

This database includes sites which have been determined by the United States Environmental Protection Agency, following preliminary assessment, to no longer pose a significant risk or require further activity under CERCLA. After initial investigation, no contamination was found, contamination was quickly removed or contamination was not serious enough to require Federal Superfund action or NPL consideration.

NLRRCRAC No Longer Regulated RCRA Corrective Action Facilities
VERSION DATE: 3/2013

This database includes RCRA Corrective Action facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements.



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ENVIRONMENTAL RECORDS DEFINITIONS - FEDERAL

NLRRCRAG No Longer Regulated RCRA Generator Facilities

VERSION DATE: 3/2013

This database includes RCRA Generator facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements. This listing includes facilities that formerly generated hazardous waste.

Large Quantity Generators: Generate 1,000 kg or more of hazardous waste during any calendar month; or Generate more than 1 kg of acutely hazardous waste during any calendar month; or Generate more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month; or Generate 1 kg or less of acutely hazardous waste during any calendar month, and accumulate more than 1kg of acutely hazardous waste at any time; or Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulated more than 100 kg of that material at any time.

Small Quantity Generators: Generate more than 100 and less than 1000 kilograms of hazardous waste during any calendar month and accumulate less than 6000 kg of hazardous waste at any time; or Generate 100 kg or less of hazardous waste during any calendar month, and accumulate more than 1000 kg of hazardous waste at any time.

Conditionally Exempt Small Quantity Generators: Generate 100 kilograms or less of hazardous waste per calendar month, and accumulate 1000 kg or less of hazardous waste at any time; or Generate one kilogram or less of acutely hazardous waste per calendar month, and accumulate at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste; or Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month, and accumulate at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste.

NLRRCRAT No Longer Regulated RCRA Non-CORRACTS TSD Facilities

VERSION DATE: 3/2013

This database includes RCRA Non-Corrective Action TSD facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements. This listing includes facilities that formerly treated, stored or disposed of hazardous waste.

NPDES08 National Pollutant Discharge Elimination System

VERSION DATE: 4/2007

Information in this database is extracted from the Water Permit Compliance System (PCS) database which is used by United States Environmental Protection Agency to track surface water permits issued under the Clean Water Act. This database includes permitted facilities located in



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EPA Region 8. This region includes the following states: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming. The NPDES database was collected from December 2002 until April 2007. Refer to the PCS and/or ICIS-NPDES database as source of current data.

NPL National Priorities List

VERSION DATE: 4/2013

This database includes United States Environmental Protection Agency (EPA) National Priorities List sites that fall under the EPA's Superfund program, established to fund the cleanup of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action.

ODI Open Dump Inventory

VERSION DATE: 6/1985

The open dump inventory was published by the United States Environmental Protection Agency. An "open dump" is defined as a facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944) and which is not a facility for disposal of hazardous waste. This inventory has not been updated since June 1985.

PADS PCB Activity Database System

VERSION DATE: 11/2012

The PCB Activity Database System (PADS) is used by the United States Environmental Protection Agency to monitor the activities of polychlorinated biphenyls (PCB) handlers.

PCSR08 Permit Compliance System

VERSION DATE: 8/2012

The Permit Compliance System is used in tracking enforcement status and permit compliance of facilities controlled by the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act and is maintained by the United States Environmental Protection Agency's Office of Compliance. PCS is designed to support the NPDES program at the state, regional, and national levels. This database includes permitted facilities located in EPA Region 8. This region includes the following states: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.

PNPL Proposed National Priorities List

VERSION DATE: 4/2013

This database contains sites proposed to be included on the National Priorities List (NPL) in the Federal Register. The United States Environmental Protection Agency investigates these sites to determine if they may present long-term threats to public health or the environment.



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ENVIRONMENTAL RECORDS DEFINITIONS - FEDERAL

RCRAC Resource Conservation & Recovery Act - Corrective Action Facilities

VERSION DATE: 3/2013

This database includes hazardous waste sites listed with corrective action activity in the RCRAInfo system. The Corrective Action Program requires owners or operators of RCRA facilities (or treatment, storage, and disposal facilities) to investigate and cleanup contamination in order to protect human health and the environment. The United States Environmental Protection Agency defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS).

RCRAGR08 Resource Conservation & Recovery Act - Generator Facilities

VERSION DATE: 3/2013

This database includes sites listed as generators of hazardous waste (large, small, and exempt) in the RCRAInfo system. The United States Environmental Protection Agency defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). This database includes sites located in EPA Region 8. This region includes the following states: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.

Large Quantity Generators: Generate 1,000 kg or more of hazardous waste during any calendar month; or Generate more than 1 kg of acutely hazardous waste during any calendar month; or Generate more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month; or Generate 1 kg or less of acutely hazardous waste during any calendar month, and accumulate more than 1kg of acutely hazardous waste at any time; or Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulated more than 100 kg of that material at any time.

Small Quantity Generators: Generate more than 100 and less than 1000 kilograms of hazardous waste during any calendar month and accumulate less than 6000 kg of hazardous waste at any time; or Generate 100 kg or less of hazardous waste during any calendar month, and accumulate more than 1000 kg of hazardous waste at any time.

Conditionally Exempt Small Quantity Generators: Generate 100 kilograms or less of hazardous waste per calendar month, and accumulate 1000 kg or less of hazardous waste at any time; or Generate one kilogram or less of acutely hazardous waste per calendar month, and accumulate at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste; or Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous



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waste during any calendar month, and accumulate at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste.

RCRASC RCRA Sites with Controls

VERSION DATE: 6/2012

This list of Resource Conservation and Recovery Act sites with institutional controls in place is provided by the U.S. Environmental Protection Agency.

RCRAT Resource Conservation & Recovery Act - Treatment, Storage & Disposal Facilities

VERSION DATE: 3/2013

This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste in the RCRAInfo system. The United States Environmental Protection Agency defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS).

RODS Record of Decision System

VERSION DATE: 1/2013

These decision documents maintained by the United States Environmental Protection Agency describe the chosen remedy for NPL (Superfund) site remediation. They also include site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, and scope and role of response action.

SFLIENS CERCLIS Liens

VERSION DATE: 6/2012

A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which United States Environmental Protection Agency has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties. This database contains those CERCLIS sites where the Lien on Property action is complete.

SSTS Section Seven Tracking System

VERSION DATE: 12/2009

The United States Environmental Protection Agency tracks information on pesticide establishments through the Section Seven Tracking System (SSTS). SSTS records the registration of new



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establishments and records pesticide production at each establishment. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires that production of pesticides or devices be conducted in a registered pesticide-producing or device-producing establishment. ("Production" includes formulation, packaging, repackaging, and relabeling.)

TRI Toxics Release Inventory

VERSION DATE: 12/2011

The Toxics Release Inventory, provided by the United States Environmental Protection Agency, includes data on toxic chemical releases and waste management activities from certain industries as well as federal facilities. This inventory contains information about the types and amounts of toxic chemicals that are released each year to the air, water, and land as well as information on the quantities of toxic chemicals sent to other facilities for further waste management.

TSCA Toxic Substance Control Act Inventory

VERSION DATE: 12/2006

The Toxic Substances Control Act (TSCA) was enacted in 1976 to ensure that chemicals manufactured, imported, processed, or distributed in commerce, or used or disposed of in the United States do not pose any unreasonable risks to human health or the environment. TSCA section 8(b) provides the United States Environmental Protection Agency authority to "compile, keep current, and publish a list of each chemical substance that is manufactured or processed in the United States." This TSCA Chemical Substance Inventory contains non-confidential information on the production amount of toxic chemicals from each manufacturer and importer site.

ENVIRONMENTAL RECORDS DEFINITIONS - STATE (CO)

APCDP Air Pollution Control Division Permitted Facilities

VERSION DATE: 3/2013

The Stationary Sources Program, located within the Air Pollution Control Division of the Colorado Department of Public Health and Environment, evaluates and develops air permits for stationary sources in Colorado. The program inspects sources to determine compliance with air regulations and permit conditions, and maintains a computerized inventory of air pollution emissions throughout the state.

ASBESTOS Asbestos Abatement and Demolition Projects

VERSION DATE: 3/2012

The Colorado Department of Public Health and Environment's Air Pollution Control Division assists schools and businesses to comply with air pollution laws regulating asbestos and asbestos containing materials. The regulation that governs asbestos in Colorado is the Colorado Air Quality Control Commission's Regulation No. 8, Part B, "Emission Standards for Asbestos." Notification is required for all demolitions of all facilities and all asbestos abatement projects that exceed the trigger levels, whatever is the lesser quantity. The notification requirements apply to both friable and non-friable asbestos materials. This database contains those related projects since January 2008.

AST Aboveground Storage Tank Facilities

VERSION DATE: 3/2013

The Oil and Public Safety Division of the Colorado Department of Labor and Employment maintains this list of aboveground storage tank facilities.

CDL Clandestine Drug Laboratory Locations

VERSION DATE: 12/2010

The North Metro Task Force provides this list of Methamphetamine labs seized between 2001 and 2010. The North Metro area includes the following Cities and Counties of Colorado: Adams County, Broomfield, Brighton, Commerce City, Federal Heights, Northglenn, Thornton, and Westminster. According to Section 2 of Colorado Revised Statutes: "25-18.5-103. Discovery of an illegal drug laboratory - property owner - clean-up - liability. (1) (a) Upon notification from a peace officer that chemicals, equipment, or supplies indicative of an illegal drug laboratory are located on a property, or when an illegal drug laboratory used to manufacture methamphetamine is otherwise discovered and the property owner has received notice, the owner of any contaminated property shall meet the cleanup standards for property established by the board in section 25-18.5-102".

CDPS Colorado Discharge Permit System Facilities

VERSION DATE: 2/2013

The Colorado Department of Public Health & Environment's Water Quality Control Division



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ENVIRONMENTAL RECORDS DEFINITIONS - STATE (CO)

regulates the Colorado Discharge Permit System. This system controls stormwater discharges from construction activities by requiring a Stormwater Construction Permit to reduce pollutants from entering streams, river, lakes and wetlands as a result of runoff from residential, commercial and industrial areas. This database also includes facilities with active Industrial Stormwater Permits.

CLEANERS Dry Cleaning Facilities

VERSION DATE: 3/2013

This database contains dry cleaners which have obtained an air permit through the Air Pollution Control Division at the Colorado Department of Public Health and Environment.

COVENANTS Environmental Real Covenants List

VERSION DATE: 7/2012

Senate Bill 01-145 gave authority to the Colorado Department of Public Health and Environment to approve requests to restrict the future use of a property using an enforceable agreement called an environmental covenant. These covenants, which are recorded with the deed and run with the land, provide a mechanism to ensure that institutional controls that are part of environmental remediation projects are properly implemented and that engineered structures are protected and maintained, so that implemented remedies continue to be protective of human health and the environment for as long as any residual contamination remains a risk.

HISTSWLF Historical Solid Waste Landfills

VERSION DATE: NR

This historical solid waste landfills database contains data from the Hazardous Materials Waste Management Division (HMWMD) of the Colorado Department of Public Health and other various state and local agencies. In the early 1980s, the HMWMD conducted a survey of staff members and local agencies to compile this listing of sites that were known or thought to have waste issues. This Solid Waste Historical Data is not considered complete or verifiable and has not been maintained since the late 1980s. The HMWMD is not responsible and shall not be liable to the used for damages of any kind arising out of the use of this data or information.

HWSCA Hazardous Waste Sites- Corrective Action

VERSION DATE: 6/2003

The Resource Conservation and Recovery Act (RCRA) was enacted by congress in 1976, followed by the promulgation of implementing regulations in 1980. In 1984, the Hazardous and Solid Waste Amendments (HSWA) were added to RCRA providing for corrective action at facilities subject to RCRA. That same year, the State was authorized by EPA to implement the RCRA program in Colorado on their behalf. Corrective action may be implemented as part of a RCRA Hazardous Waste Permit, an Order, or a Corrective Action Plan pursuant to the Colorado Hazardous Waste Regulations. Corrective action is the process by which regulated facilities investigate and remediate, as necessary, all contamination (soil, ground water, surface water, air) associated with



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their releases into the environment. Historic Corrective Action Sites are facilities that have completed the RCRA Subtitle C corrective Action process. This database was provided by the Colorado Department of Public Health and Environment.

HWSG Hazardous Waste Sites- Generator

VERSION DATE: 6/2003

The Resource Conservation and Recovery Act (RCRA) was enacted by congress in 1976, followed by the promulgation of implementing regulations in 1980. In 1984, the State was authorized by EPA to implement the RCRA program in Colorado on their behalf. This facility listing includes RCRA sites listed as generators of hazardous waste (Small Quantity Generators and Large Quantity Generators) and was provided by the Colorado Department of Public Health and Environment.

Small Quantity Generators (SQG) generate, in any calendar month, more than 100 kg (220 lbs.) but less than 1,000 kg (2,200 lbs.) of RCRA hazardous waste; and generate, in any calendar month, or accumulate at any time, no more than 1 kg (2.2 lbs.) of acute hazardous waste and no more than 100 kg (220 lbs.) of material from the cleanup of a spill of acute hazardous waste; and accumulate on-site no more than 6000 kg (13,200 lbs) of hazardous waste at any one time; or, the site is a Small Quantity Generator if the site met all other criteria for a Conditionally Exempt Small Quantity Generator, but accumulated, at any time, more than 1,000 kg (2,200 lbs.) of RCRA hazardous waste.

Large Quantity Generators (LQG) generate, in any calendar month, 1,000 kg (2,200 lbs.) or more of RCRA hazardous waste; or generate, in any calendar month, or accumulated at any time, more than 1 kg (2.2 lbs.) of RCRA acute hazardous waste; or generate, in any calendar month, or accumulated at any time, more than 100 kg (220 lbs.) of spill cleanup material contaminated with RCRA acute hazardous waste.

HWSTSD Hazardous Waste Sites- Treatment, Storage & Disposal

VERSION DATE: 6/2003

The Resource Conservation and Recovery Act (RCRA) was enacted by congress in 1976, followed by the promulgation of implementing regulations in 1980. In 1984, the State was authorized by EPA to implement the RCRA program in Colorado on their behalf. TSD facilities treat, store, dispose, or recycle hazardous waste on site in units and therefore are subject to RCRA permitting requirements. Historic TSDs are facilities that have completed closure and/or post-closure of the RCRA Subtitle C Regulated Unit(s) or the Treatment/Storage/Disposal Unit is no longer regulated. This database was provided by the Colorado Department of Public Health and Environment.

LST Leaking Storage Tank Facilities

VERSION DATE: 3/2013

The Oil and Public Safety Division of the Colorado Department of Labor and Employment maintains this list of leaking aboveground and underground storage tank facilities.



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ENVIRONMENTAL RECORDS DEFINITIONS - STATE (CO)

LUSTTRUST Leaking Underground Storage Tanks Trust Fund Sites

VERSION DATE: 1/2000

Suspected tank leaks have been discovered at the sites included in this database, but the facility responsible for the leak has not been identified. The state's investigation and search for responsible parties is paid for out of the state's Leaking Underground Storage Tank (LUST) Trust Fund. This database was provided by the Colorado Department of Labor & Employment, Division of Oil and Public Safety, State Fund Section and is no longer updated.

METHANESITES Methane Gas Study Sites

VERSION DATE: 1/1981

This Investigation of Methane Gas Hazards report was prepared by the Denver Office of Emergency Preparedness in 1981. The purpose of this study was to assess the actual and potential generation, migration, explosive and related problems associated with specified landfills, and to identify existing and potential problems, suggested strategies to prevent, abate, and control such problems and recommend investigative and monitoring functions as may be deemed necessary. The Colorado Department of Health selected eight landfills as priorities due to population density and potential hazards to population and property.

SF Superfund Sites

VERSION DATE: 6/2003

This listing contains active, deleted and proposed "Superfund" hazardous waste sites, as well as those sites identified through the Natural Resource Damages section of Superfund legislation and one Private Non-Superfund Cleanup site. A site qualifies for the National Priorities List (NPL or Superfund list) when the U.S. Environmental Protection Agency (EPA) determines there is a release or threatened release of hazardous substances that may endanger public health, welfare or the environment. In Colorado, the lead agency for Superfund remediation may be either the EPA or the Colorado Department of Public Health and Environment.

SPILLS Spills Listing

VERSION DATE: 5/2012

The Colorado Department of Public Health and Environment's Division of Emergency Preparedness and Response maintains this listing of chemical spills and/or releases.

SWF Solid Waste Facilities

VERSION DATE: 12/2012

The Colorado Department of Public Health and Environment maintains this database of active solid waste disposal facilities, transfer stations, recyclers, waste tire registrants, and waste grease registrants.



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ENVIRONMENTAL RECORDS DEFINITIONS - STATE (CO)

UMTS Uranium Mill Tailings Sites

VERSION DATE: 8/2002

There were nine uranium mill tailings sites in Colorado designated for cleanup under the federal Uranium Mill Tailings Radiation Control Act. These nine sites, know commonly as UMTRA sites, were remediated jointly by the State of Colorado and the U.S. Department of Energy during the late 1980's and early 1990's. Mill tailings were removed from 8 of the mill sites and relocated in engineered disposal cells. A disposal cell is designed to encapsulate the material, reduce radon emanation, and prevent the movement of water through the material. At one site, Maybell, CO, the tailings were stabilized in-place at the mill site. After remediation of the tailings was completed, the State and DOE began to investigate the residual impacts to groundwater at the mill sites. The groundwater phase of the UMTRA program is on-going. This database was provided by the Colorado Department of Public Health and Environment.

UST Underground Storage Tank Facilities

VERSION DATE: 3/2013

The Oil and Public Safety Division of the Colorado Department of Labor and Employment maintains this list of underground storage tank facilities.

VCRA Voluntary Cleanup and Redevelopment Program Sites

VERSION DATE: 1/2013

This site listing is provided by the Colorado Department of Public Health and Environment (CDPHE) and includes both voluntary cleanup and brownfield properties. The Voluntary Cleanup and Redevelopment program was created in 1994. The objective of the program is to facilitate the redevelopment and transfer of contaminated properties. Properties that sit untouched because of their real or perceived contamination can be rehabilitated using the CDPHE's Brownfields Program in conjunction with the Voluntary Cleanup Program. Cleanup decisions are based on existing standards and the proposed use of the property. The actual cleanup and verification is the owner's responsibility.



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ENVIRONMENTAL RECORDS DEFINITIONS - TRIBAL

INDIANRES Indian Reservations

VERSION DATE: 1/2000

The Department of Interior and Bureau of Indian Affairs maintains this database that includes American Indian Reservations, off-reservation trust lands, public domain allotments, Alaska Native Regional Corporations and Recognized State Reservations.

LUSTR08 Leaking Underground Storage Tanks On Tribal Lands

VERSION DATE: 2/2013

This database, provided by the United States Environmental Protection Agency (EPA), contains leaking underground storage tanks on Tribal lands located in EPA Region 8. This region includes the following states: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.

ODINDIAN Open Dump Inventory on Tribal Lands

VERSION DATE: 11/2006

This Indian Health Service database contains information about facilities and sites on tribal lands where solid waste is disposed of, which are not sanitary landfills or hazardous waste disposal facilities, and which meet the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944).

USTR08 Underground Storage Tanks On Tribal Lands

VERSION DATE: 2/2013

This database, provided by the United States Environmental Protection Agency (EPA), contains underground storage tanks on Tribal lands located in EPA Region 8. This region includes the following states: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.



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Appendix B Pinyon Standard Operating Procedures



PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

STANDARD OPERATING PROCEDURE PROJECT

Title: Field Notebooks
Revision Number: 2.2
Date Issued: September 20, 2000
Author: Lauren Evans
Review Date: August 24, 2010
Reviewer:
File Name: Z:\PEER\SOPS\Project SOPs\SOP 1 Field Notebooks_082010.wpd

1.0 Purpose

Field notes are the basis of all reports and a permanent record of the field work performed. A field notebook is admissible in court as a legal document. Remember that people outside of Pinyon may one day see this book. It is important that notes be concise, readable, unambiguous, complete and objective. Note: Pinyon has developed specific field books for the completion of Phase I Environmental Site Assessments (Phase Is), and some procedures are different for those projects, because of the pre-printed nature of the field book. However, the paragraphs and sentences noted with a (P1) at the end also apply to completion of those field notes.)

2.0 Procedure

The following considerations and procedures should be used when recording information:

- Each project will have at least one dedicated field book (P1). Additional field books may be used, as needed. The project manager will choose the size of the field book, depending on the anticipated amount of field work. Field books will be permanently bound books (not loose-leaf or spiral bound). Preferably the pages will be pre-numbered in order to prevent loss or removal of pages, which will preserve the legal credibility of the field notebook (P1).
- Note the project name, project number, book volume number, and dates of activity on the front outside cover with waterproof marker. The project number should also be written on the spine of hard-bound books.
- Field notebooks in current use should be in the possession of the project manager and should be filed in the project file when not in use. Completed field books and those used on a quarterly basis or longer should be stored in the project file. Once a project is completed, the field book should be permanently filed in the project file. (P1)

- Write with waterproof ink only (P1).
- Consider using the first few pages of the notebook as an index for the rest of the book on larger and more complex jobs (Note: index pre-printed in the Phase I field book). Consider an index of data that will be referenced often in other tasks or in reports, and which needs to be retrieved efficiently.
- Note the address and phone number of Pinyon so that the book can be returned if lost (the stapling of a business card to the inside front cover can also be utilized). Any special project requirements can also be written on one or more of these pages to remind field personnel of unique tasks, equipment or protocols.
- Consecutively number all pages in the upper left or right corner, if not pre-printed.
- Field notes are a stand-alone document of field work. A complete description of all activities should be made. If other forms are used in the field to record data, such as a boring log or well sampling record, reference its use in the field book. Additionally, for all SOPs used in the field, a proper reference of each SOP should be recorded in the field book, noting the SOP #. (For example, if you are logging soil samples, note that the samples descriptions were recorded on Pinyon's standard boring logging, following SOP #4.)
- Record events that pertain to the field work. Each day note the following observations (as appropriate):
 - Date, time of arrival and departure.
 - Weather (approx. temp., clouds, rain, snow, wind, etc.)
 - Site conditions (abandoned, urban, rural, muddy, etc.)
 - Time of day that specific events occurred.
 - Other personnel on site (whether Pinyon, subcontractors, utility locators, clients or regulators) and their time of arrival and departure.
 - Serial numbers of equipment used, calibration settings.
 - Materials and equipment used at the site.
 - Site contact person and phone number.
 - Tasks which need to be completed during the next site visit.
- Record everything that you observe or do as it happens. Write down facts. Do not write opinions or unflattering remarks which may be embarrassing if made public. Be professional. Do not use the field book as scrap paper to record voice mail messages, or other unrelated information.
- Record every visit to the field, regardless of purpose.
- Complete sentences are usually not necessary. Abbreviations should be defined somewhere in the notebook. Units of measured parameters should appear in the field notes. Any field calibration of equipment should be described, and note the SOP followed.
- When a mistake is made, draw a single line through the mistake, initial the mistake, and write in the correct number or word. Do not cross out anything so completely that it cannot be read.

- At the end of the field visit, sign and date the bottom of the entry, and draw a line through any remaining blank space on the page.
- Upon returning from the field, the field book should be given to the project manager for review. It is the project manager's responsibility to properly file old or current field books.



PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

STANDARD OPERATING PROCEDURE PROJECT

Title: SOP 2.2 - Photoionization Detector - minirae 3000
Revision Number: 1.2
Date Issued: November 16, 1998
Author: S. Scott Schankweiler
Review Date: October 5, 2010
Reviewer: JPM
File Name: Z:\PEER\SOPS\Project SOPs\SOP 2.2 Photoionization Detector_minirae 3000.wpd

Model: MiniRae 3000

Manufacturer: RAE Systems

Technical Information: 1-888-723-4800

Additional Information: If lost, User's guide and Pocket Reference are available for download at www.raesystems.com/products/minirae-3000.

Frequency of Calibration: Daily (while in use)

Battery Charging: Always fully recharge the battery upon return from field activities, regardless of duration of use.

Calibration Procedures:

- Insert the regulator into the top of the canister of calibration gas (typically 100 ppm isobutylene), and introduce gas into a tedlar bag. Alternatively, use a 500 cc/min flow limiting regulator.
- Follow the calibration instructions provided by RAE Systems beginning on page 25 of the Pocket Guide. In most cases, ambient air may be used instead of zero gas during the first phase of calibration. In cases where background VOCs are expected in the air, zero gas or an activated carbon filter is necessary.

Proper Operation:

Turn the unit on. The unit will run continuously and display the current and maximum concentrations detected.

Potential Problems:

If the unit will not power on, the rechargeable battery may not have been charged prior to use. The MiniRae 3000 will not operate while charging, therefore, it is critical that the charge on the battery be checked before leaving for field activities. A 12-volt charge adapter is included with the field kit, so that the battery can be charged while in transit. As noted above, the battery should be fully recharged upon return from field activities, regardless of duration of use.

If the unit will not power on, and has a full charge, see the Trouble Shooting Section in the Users Guide, beginning on page 96, or page 38 of the Pocket Reference.

Routine Maintenance:

The surface of the bulb should be cleaned approximately once a month, except in very dusty conditions, in which case more frequent cleaning may be necessary. The date of cleaning should be indicated on the sheet included with the directions, which is kept in the case. Except in very unusual conditions, the bulb should only be removed and cleaned in the office. Follow the instructions for PID Sensor and Lamp Cleaning, beginning on page 91 of the User's Guide..

The unit should be sent for factory service every two years. The date of factory service should be indicated on the inside of the battery compartment.

Decontamination:

The PID and case should be cleaned prior to returning the unit to the equipment room (SOP #3).

Whenever the unit is returned to the office, or at the end of the field day when not returning to the office, the battery should be recharged. The battery is configured to avoid overcharging.



PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

STANDARD OPERATING PROCEDURE PROJECT

Title: Soil Description
Revision Number: 2.0
Date Issued: August 30, 2010
Author: Chuck Cubbison (original)
Review Date: August 30, 2010
Reviewer: LEE
File Name: Z:\PEER\SOPS\Project SOPs\SOP 4 Soil Description_08312010.wpd

1.0 Purpose

Accurate description of soil and rock physical characteristics is essential to understanding the hydrogeological attributes of a site. Lithologic properties can affect the fate of contaminants, and an understanding of the geology of a site will assist in evaluating the results of an environmental investigation.

2.0 Procedure

The following should be recorded in the corresponding columns on the standard log form, regardless of the type of material (an example is also illustrated on the attached boring log). All of this information should be completed in the field, with the exception of Column O.

- A. Boring/Well Number
- B. Date of drilling
- C. Pinyon project number
- D. Location Using GPS coordinates, or other descriptor to locate boring/well in future
- E. Drilling Method (including diameter of augers) (i.e., 4"ID HSA)
 - HSA = hollow stem auger
 - SSA = solid stem auger
- F. Sampling method (e.g., split-spoon, shelby tube, continuous sampler, etc.)
- G. Length of drive (ft) Total length of sampler used to collect samples
- H. To Lab (Y/N) Note whether the sample will be submitted for analyses.
- I. Headspace Performed Note whether or not headspace testing was completed on samples. If so, note whether a PID (photoionization detector) or FID (flame ionization detector) was used).

- J. Background PID? Note whether or not background PID readings were obtained during drilling. Record readings in the field book. These readings should be obtained in the airspace near the borehole, or near where soil logging is occurring
- K. Depth (ft) Depth of sampling interval (top to bottom, in feet), being described in row
- L. Blow Counts Each separate blow count measurement while driving a split-spoon sampler.
- M. Recovery Length of soil column in sampler (feet)
- N. HS The results of headspace screening, if performed (SOP #10).
- O. USC Final USC code - **NOTE** - this can be completed in the office
- P - T See information below
- U. Sample Info. If a sample is to be submitted to a laboratory, record the specified information (this information should correspond to the sample number and data used on the sample label and on the chain of custody record).
- V. Comments Note anything that might be useful at a later date
- W. Weather Note the weather conditions (temperature, moisture, wind, etc.) during drilling
- X. Field Engineer Name of person responsible for soil logging
- Y. Driller Name of company providing drilling services
- Z. Depth to Water (ft.) Record the depth to water at the time of drilling, and at other times measurements might be taken
- AA. Final Depths (ft) Record the final depth of the boring (DOB) and of the well (DOW). If no well constructed, record "NA"
- AB. Well Details (ft) FM = flush mount cover; SU = stick-up cover. Note the depths to the top of screen, top of sand and top of seal. If no well constructed, cross out section and initial.
- AC. Diameters (in.) Record the diameter of the noted features. If no well constructed, note "NA" for diameters of well and surface casing.
- AD. Materials Note the type of sand (10/20, etc.), grout, seal and surface grout used. If no well constructed, cross out section and initial.
- AE. Number of drums Record number of drums used to containerize soil cuttings from this well. Refer to SOP #6 for additional requirements.
- AF. Water containerized? Note if purge water from well containerized in a drum. Again, refer to SOP #6 for more information.
- AG. Other Notes Any other useful observations.
- L. Name of person recording information.
- N. Weather at time of drilling (i.e., sunny, breezy).
- R. Driller. Name of drilling company.

UNCONSOLIDATED MATERIAL. The Unified Soil Classification System (USCS) (attached) will be utilized when visually describing unconsolidated material. The information will be recorded on the boring log. The boring log has been designed such that if used properly, the USCS code and a full description can be completed in the office. In addition to the information described above, the following should be recorded for unconsolidated material:

- P. Plasticity. Place check mark in the column that most accurately describes the plasticity of the material.
- Q. % Fines. Estimate the percentage of material that would pass the -200 screen. Enter that number in this column.
- R. Grain Size. Of the remaining material (100% - [% fines]), estimate the percentages of each grain size. Record each number in the appropriate column.
- S. Moisture. Place a check mark in the column that most accurately describes the moisture of the material.
- T. On the lower line, record other pertinent information, such as:
 - color
 - odor or evidence of staining
 - Non-geologic components (trash, brick, etc.)

CONSOLIDATED MATERIAL. Columns P and Q should be left blank. The following information should be recorded for consolidated materials:

- R. Range of grain sizes, note primary grain size, and approximate percent by volume.
- S. Moisture. Place a check mark in the column that most accurately describes the moisture of the material.
- T. On the lower line, record other information, such as:
 - The type of rock (i.e. claystone, sandstone, granite, etc.)
 - Color
 - Degree of weathering
 - Degree of sorting.
 - Shape and constituents of grains.
 - Note any fracturing observed.
 - Nature and amount of cement and matrix.
 - Nature and amount of porosity.
 - Odor and Staining.

SEE ALSO: For monitoring well construction, see SOP #11. Also see SOP #19 for proper format of lithologic descriptions and other information on the boring log prepared for inclusion in reports.

Boring Log Field Form

Boring/Well No: A	Date: B
Project No: C	Location: D
Drilling Method: <input type="checkbox"/> HSA <input type="checkbox"/> Direct Push <input type="checkbox"/> SSA <input type="checkbox"/> Other: E	
Sampling Method: <input type="checkbox"/> Split Spoon <input type="checkbox"/> Continuous <input type="checkbox"/> Other: F	Length of drive (ft): G

Samples Collected for Lab? Yes No **H** Headspace Performed? Yes No If Yes, PID FID **I** **J** Background PID Measured? Yes No

Depth (ft) K	Blow Counts L			Recovery (ft) M	HS N	USC O	Plasticity P			% Fines Q	Grain Size (sand/gravel) (by %) R				Moisture S			Sample Info U				
							Low	Med	High		Fine	Med	Crse	Grvl	Dry	Moist	Wet	Interval	To Lab (y/n)	Composite? (y/n)	Split/Dup? (y/n)	Time
T																						

Comments: **V**

Weather: W	Field Engineer: X	Pinyon Environmental Engineering Resources, Inc. 9600 W. Jewell, #1, Lakewood, CO 80232 303-980-5200 1-888-641-7337 www.pinyon-env.com
	Driller: Y	

Number of drums of cuttings:

AE

Water containerized? Yes No

AF

Other notes:

AG



PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

STANDARD OPERATING PROCEDURE PROJECT

Title: Well Sampling Procedure - Disposable Bailer
Revision Number: 1.1
Date Issued: July 1, 1997
Author: Staff
Review Date: September 2010
Reviewer: JPM
File Name: Z:\PEER\SOPS\Project SOPs\SOP 5 Well Sampling_070197.wpd

1.0 Purpose

Accurate description of the procedures and measurements made during well sampling is important to verify the accuracy of the analytical data.

2.0 Equipment

The following equipment is required for this activity:

- Disposable bailers (one for each well to be sampled, plus one or two extra)
- String
- pH/temperature/conductivity meter (calibrated per instrument instructions)
- Tool kit with ratchet wrenches, screw driver, cutting knife, wrench for drum, etc.
- Field forms and field book
- Fish hooks (to retrieve a bailer that falls down the hole)
- Site map showing well location
- bucket
- 55-gallon drum, if required by site plan
- cooler with ice
- sample jars/containers
- labels for sample jars/containers
- chain of custody record
- permanent ink marker
- watch/stopwatch
- Decontamination supplies

3.0 Procedure

When known, wells should be sampled in order from least contaminated to most contaminated. Measure the initial depth to water (Item M, below), prior to measuring the

depth to the bottom of the well. Decontaminate the water level indicator or the interface probe at the start of the day, between each well and at the end of the day (SOP #3).

The following should be recorded in the corresponding columns on the attached well sampling record:

- | | | |
|----|--|---|
| A. | Project No. | Pinyon project number. |
| B. | Project | Project name. |
| C. | Date/Time | Date and starting time of sampling event. |
| D. | Recorded By | Name of field sampler. |
| E. | Air Temperature | Approximate temperature at time of sampling. |
| F. | Weather | Description of weather conditions (i.e., sunny, breezy). |
| G. | The method of purging (disposable bailer; pump type; etc.) | |
| H. | Comments | Any other observations, including damage to well, missing well lock, etc. |
| I. | Well No. | Well designation (corresponding to site maps or boring logs). |
| J. | Sample No. | Sample number as recorded on chain of custody. |
| K. | Well ID | Inner diameter of casing (inches). |
| L. | D_{well} | Depth to bottom of well, measured using a water level indicator or interface probe (SOPs 18 and 2.4). Measure upon well installation and as specified in the work plan. |
| M. | D_{water_0} | Initial depth to water (measured with water level indicator or interface probe). |
| N. | L_{wc} | Length of the water column in well ($D_{\text{well}} - D_{\text{water}_0}$). |
| O. | V_{casing} | Corresponding volume of water in casing (use tables on back of the form to calculate). |
| P. | T_{fp} | Thickness of any floating free product, if any (either measured with a oil-water interface probe (preferred), or estimated by inserting a bailer into the well until it contacts the water surface, and then withdrawing it immediately). |
| Q. | D_{water_f} | Final depth to water (following completion of sampling activities). If well is bailed dry during sampling, indicate DRY; if not measured, indicate NM (not measured). |

All of these items are to be completed prior to removing water from the well, except for Item Q. All of these items must be completed before moving to the next well.

A minimum of three well volumes of water (three times the volume calculated in N, above), should be withdrawn from the well prior to sampling. Prior to sampling, the measured values of temperature, conductivity and pH should not change more than 5% between two subsequent measurements. Water should continue to be withdrawn until these parameters stabilize. If the well is bailed dry, removal of additional water prior to sampling is generally not necessary, unless specified in the project protocol.

During withdrawal, the following should be recorded:

- AA. The starting time for withdrawing that well volume.
- BB. The completion time for withdrawing that well volume
- CC. Cumulative volume of water removed from the well.
- DD. Temperature of water (measured at completion of withdrawing **that** volume).
- EE. pH of water (measured at completion of withdrawing **that** volume).
- FF. Specific conductivity (measured at completion of withdrawing **that** volume).
- GG. Color of ground water (e.g., "gray").
- HH. Other. Any sheen or odor, or presence of excess sediment.

NOTE: Other field parameters may also be required, as specified in the project-specific work plan.

At the time of sample collection, the following should be recorded:

- II. Time sample was collected.
- JJ. Odor noticed at time sample was collected.
- KK. Container (e.g., glass 40-ml VOA vial).
- LL. Preservation of sample (e.g., HCl, ice).
- MM. Analyses to be conducted.
- NN. Comments. Any other observations (including well condition, unusual odors and their likely source, dusty conditions, etc.)

All of the above items should be completed as the well is purged.



PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

STANDARD OPERATING PROCEDURE PROJECT

Title: Purge Water
Revision Number: 2.0
Date Issued: October 10, 2000
Author: Staff - original; Conrad Steller - 2000 revisions
Review Date: January 16, 2004
Reviewer: GNL
File Name: Z:\PEER\SOPS\Project SOPs\SOP 7 Purge Water_010604.wpd

1.0 Purpose

Depending on the concentrations and types of contaminants, purge water generated during drilling and sampling activities can be classified as solid or hazardous wastes. Therefore, the water must be handled in an appropriate manner.

2.0 Procedure

The handling of purge water during drilling and sampling activities must be decided prior to field activities. The options are dependent on the anticipated contaminants at the site, previous analytical results, and the nature of the site itself.

Evaluation

1. Purge water generated from new wells will always be containerized.
2. Options at previously sampled sites should be evaluated with the appropriate regulatory agency.

Containerization of Purge Water

- Use 55-gallon drums or equivalent, equipped with lids.

Field Procedures

The following procedures and considerations will be used in the field:

1. Always place drums in an area that will not impact the use of the property. Always notify the owner that drums have been stored on the site, and explain the process and schedule for evaluating disposal options. If the owner or occupant of the site is available, question them on the best place to store the drums.
2. The lids of the drums should be secured prior to leaving the site.
3. The drums should be labeled, using a permanent paint marker, with the following information:
 - "Pinyon Environmental - 303-980-5200"
 - Contact Name
 - "Investigation Derived Purge Water"
 - Include the date of sampling activities
 - Include the well numbers, specific to that drum

Follow-Up

The project manager will be responsible for the following activities:

1. Upon receipt of analytical results, disposal options should be considered. Disposal options include:
 - If contaminants are not detected in the water, and the site is suitable, the water can be released to paved areas of the site.
 - Off-site disposal, according to all applicable regulations.
2. Recommendations for purge water disposal should be included in the report. In addition, a cost for handling the material should be provided to the client.
3. Prior to submittal of the final invoice for the task, the project manager should call the client to discuss final disposition of the materials. This information should be included in the project file.



PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

STANDARD OPERATING PROCEDURE PROJECT

Title: Field QA/QC
Revision Number: 1.0
Date Issued: July 1, 1997
Author: Staff
Review Date:
Reviewer:
File Name: Z:\PEER\SOPS\Project SOPs\SOP 8 Field QAQC_070197.wpd

1.0 Purpose

To evaluate whether field protocols were responsible for the detection of contamination in samples.

2.0 Applicability

Field QA/QC is generally applicable when a new field procedure is being used, a new piece of equipment is being used, or if there is the possibility of litigation in the future that will involve the site. If one of these issues arise, check the proposal to ensure that field QA/QC was accounted for in the budget.

At sites that do not fall into the above mentioned categories, field QA/QC should not be performed unless requested and/or approved by the client.

3.0 Procedure

There are two procedures with which field QA/QC can be evaluated: field blanks and equipment blanks. Regardless of the reasoning behind doing field QA/QC, always refer to the proposal and/or obtain permission from the client. Samples submitted to a laboratory for QA/QC purposes are billed as if they were regular samples.

Field Blanks. Field blanks are commonly used when it is suspected that samples are becoming contaminated during field work or during transportation to the laboratory (ie., from car exhaust). The field blank should be prepared at the site, immediately prior to commencing sampling, by placing deionized water in a 40-milliliter (ml) vial containing the same preservative as the other sample vials. The blank should remain in the immediate vicinity and under the same conditions as the actual samples during the performance of field work. Upon submitting the samples to the laboratory, include the field blank on the chain of custody to instruct the laboratory to analyze the blank. The field blank should be analyzed for the same constituents as the rest of the samples in the lab pack.

Equipment Blanks. Equipment blanks are used to evaluate whether field equipment decontamination procedures are adequate. All equipment needed during sampling that is reused for more than one sample (i.e., stainless steel bailer, electronic water level meter, oil/water interface probe, split spoon sampler) should be decontaminated in accordance with the work plan or with Pinyon SOP #3. In order to determine if the decontamination procedures used are adequate, equipment blanks can be prepared. While decontaminating a piece of equipment, the final rinse water should be containerized in a 40-ml vial containing the same preservative as that in the other sample vials. The equipment blank should remain with the other samples and should be stored under identical conditions as the other samples. Upon submittal to the laboratory, the equipment blank should be noted on the chain of custody to instruct the laboratory to analyze the blank. The equipment blank should be analyzed for the same constituents as the sample obtained prior to decontamination of the piece of equipment.

The analytical results of the field blank should be evaluated for the presence of contaminants, and compared to the analytical results of the samples.



PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

STANDARD OPERATING PROCEDURE PROJECT

Title: Laboratory QA/QC
Revision Number: 1.0
Date Issued: July 1, 1997
Author: Staff
Review Date:
Reviewer:
File Name: Z:\PEER\SOPS\Project SOPs\SOP 9 Laboratory QAQC_070197.wpd

1.0 Purpose

Accurate laboratory analysis is essential in evaluating the contaminant chemistry at a site. Laboratory quality control can sometimes explain anomalies in analytical results from an environmental investigation.

2.0 Applicability

All analytical laboratories should perform internal quality assurance/quality control (QA/QC). It is Pinyon's policy to only use laboratories that conduct testing in accordance with EPA protocol. In some instances, however, it is necessary to implement additional controls. Additional QA/QC (other than standard internal laboratory procedures) should be included in the proposal and implemented at a site when there is the real possibility of litigation in the future that will involve the site, or when investigating a site at which the contaminants include common laboratory contaminants (ie., methylene chloride and acetone). Additional QA/QC may also be necessary when laboratories are changed in the middle of a project, or if results from a specific laboratory are suspected to be substandard.

At sites that do not fall into the above mentioned categories, additional QA/QC should not be performed unless requested and/or approved by the client.

3.0 Procedure

There are three external procedures with which laboratory QA/QC can be evaluated; lab blanks, duplicate samples and split samples. (Laboratories also run internal method blanks.) Regardless of the reasoning behind doing additional QA/QC, always refer to the proposal and/or obtain permission from the client. Samples submitted to a laboratory for QA/QC purposes are billed as if they were regular samples.

Lab Blanks/Trip Blanks. Lab blanks are commonly used when working at a site where litigation is a concern or if common laboratory contaminants may be encountered in the contamination at the site. When a lab blank is ordered, the laboratory will fill one 40-milliliter vial with deionized water and ship the blank with the lab pack. The lab blank should remain in the immediate vicinity and under the same conditions as the actual samples during the performance of field work. Upon submitting the samples to the laboratory, include the lab blank on the chain of custody to instruct the laboratory to analyze the blank. The lab blank should be analyzed for the same constituents as the rest of the samples in the lab pack.

Duplicate Samples. Duplicate samples are commonly submitted when there has been a suspected problem with the quality or consistency of the data generated by a laboratory. When taking a duplicate sample, two identical samples are obtained from the same location at the same time (if sampling from a well, the samples should be obtained from the same bailer of water, if possible). The samples should be stored under identical conditions (ie., containers, preservatives, temperature and light exposure) until they arrive at the laboratory. The samples should be labelled such that the laboratory is unaware that the samples are duplicates. The same analyses should be performed on both of the duplicated samples.

Split Samples. Split samples are commonly submitted when there is a change in laboratories in the middle of a project. When taking a split sample, two identical samples are obtained from the same location at the same time (as with the duplicate samples). In order to determine consistency between laboratories, one sample should be sent to the old laboratory and one to the new laboratory. The samples should be stored under as similar conditions as

possible (ie., containers, preservatives, temperature and light exposure). The same analyses should be performed on each sample at each laboratory. Before sending split samples, make sure that both labs use the same method for each type of analysis to be performed, or it will not be a good comparison.

The analytical results from the lab blank should be evaluated for contaminants and compared to the analytical results of the samples. The analytical results from duplicate and split samples should be compared to the analytical results of the samples. Anomalies must be discussed in the report.

Laboratory Analytical Report QC Form

Project #

Site Name

Lab Report date and #

Date Sampled

Date Received by Lab

Holding Time Exceeded?

Temp >= 4 C?

Sample	Analyte(s) in Method Blank YES/NO	Concentrations identified, but below MDLs (J) YES/ NO	Surrogate Recovery Acceptable (50%-150%) YES/NO

Comments:

Z:\PEER\SOPS\Project SOPs\SOP 9 Laboratory QAQC_070197.wpd



**STANDARD OPERATING PROCEDURE
PROJECT**

Title: Headspace Screening of Soil Samples
Revision Number: 1.1
Date Issued: July 1, 1997
Author: Staff
Review Date: October 5, 2010
Reviewer: JPM
File Name: Z:\PEER\SOPS\Project SOPS\SOP 10 Headspace Screening of Soil Samples_100510.wpd

1.0 Purpose

To evaluate the potential presence of volatile organic compounds in soil samples. Where soil volume is limited (poor split spoon or direct push recovery), headspace screening and sample collection for laboratory analysis may not be possible. Samples for laboratory analysis should have priority over screening samples. In such cases, split spoon or direct push liner should be screened directly.

2.0 Equipment

- Photoionization or flame ionization detector (PID or FID), with in-line particulate filters, correctly calibrated (SOP #2A for in-house equipment). Selection of PID or FID should be detailed in work plan.
- Quart size "Zip-lock" bags
- Permanent marker
- Sampler (e.g., trowel or spoon)
- Fieldbook or boring log

3.0 Procedure

- The headspace technique is conducted by placing soil in a "zip-lock" bag and sealing the bag. Break the soil apart if in clumps.

- The bag should be approximately $\frac{1}{3}$ to $\frac{1}{2}$ full, and should be sealed in a manner that air is trapped above the soil (do not evacuate air from the bag while sealing).
- The sample is then placed in a warm place to promote volatilization of the organic compounds. (In the winter, you may need to place the bag on the heat vent of a running vehicle.)
- After a period of time (15 to 20 minutes), the PID or FID is inserted into the bag and a measurement obtained. (The period of time should be consistent between samples, and should be adjusted for weather conditions. In the summer, avoid condensation. In the winter, allow sufficient time for volatilization to occur.)
- This measurement is recorded in the field book or on the boring log.
- Also note degree of moisture inside the bag, as high moisture can impact the PID readings (false positive), and can interfere with PID lamp performance.

If the split spoon or direct push liner has insufficient soil volume for both analytical sample collection and PID headspace screening, the sampler can be screened directly by placing the PID tip in close proximity to the sampler. Direct push sample liners can be screened by inserting the PID tip into the liner through a slit cut the full length of the tube, or through holes drilled into the liner. Record these readings on the boring log.



PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

STANDARD OPERATING PROCEDURE PROJECT

Title: Soil Sample Collection
Revision Number: 1.0
Date Issued: July 1, 1997
Author: Staff
Review Date: September 24, 2008
Reviewer: JPM
File Name: Z:\PEER\SOPS\Project SOPs\SOP 14 Soil Sample Collection_070197.wpd

1.0 Purpose

Proper sample collection procedures are necessary to obtain complete, reliable data.

2.0 Equipment

For sample collection, the following equipment may be necessary, depending on the media to be sampled and the procedures to be used:

- Boring log form and Site map (reference SOP #4)
- Fieldbook (SOP #1)
- Latex or nitrile gloves
- Sample jars, vials, or bottles, with or without preservative
- Cooler with ice or ice-pack, cooled to 4 degrees Celsius
- Zip-lock bags
- Markers
- Labels (SOP #17)
- Chain-of-custody forms (SOP #17)
- Other sampling tools (i.e., trowels, hand auger, etc.)

3.0 Procedure

During collection of a soil sample, the following procedures should be used:

- Upon describing the soil on the boring log, the soil should be immediately transferred to the sampling jar. To prevent volatilization, care should be taken to minimize soil exposure to air and heat and to minimize disturbance of the soil. The soil should completely fill the sampling jar with no headspace room, especially if analyzing for volatile organic compounds.
- The sample container should be labeled, logged onto the chain-of custody (SOP #17), and immediately placed in the cooler.
- The sample identification and time of collection (and any other pertinent information) should be recorded on the boring log or in the field book (SOP #1). The required analyses should be recorded on the chain-of-custody form.



PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

STANDARD OPERATING PROCEDURE PROJECT

Title: Chain of Custody Forms/Sample Labeling
Revision Number: 1.0
Date Issued: July 1, 1997
Author: Staff
Review Date: September 24, 2008
Reviewer: JPM
File Name: Z:\PEER\SOPS\Project SOPs\SOP 17 Chain of Custody Forms and Sampling Labelling_070197.wpd

1.0 Purpose

Chain of custody procedures are used to document sample possession from the time of collection to the time of receipt by the laboratory, and to provide pertinent information for the laboratory (i.e., required analyses). Proper labeling and documentation of samples for laboratory analysis is required under RCRA-defined protocols. A chain-of-custody seals and form demonstrates that samples collected in the field are not subject to tampering or storage under improper conditions. The chain of custody is a record of who had custody of the samples from the time they were collected until they reach the laboratory.

A copy of a sample chain-of-custody form, sample label and custody seal are attached. The chain of custody form is filled out and shipped with the samples. Each sample should have a label. Custody seals are used on individual samples or on a cooler containing samples to show evidence of sample tampering. Labels, chain-of-custody records and custody seals can be provided by the laboratory. Each laboratory will have their own unique form. At a minimum, the information below should be recorded on the form (the following explanation is keyed to the attached sample form):

- A) Eight digit Pinyon project number and four digit task number
- B) Project name and location.
- C) Sampler's signature.
- D) State in which site is located to ensure that laboratory uses state-approved analytical methods.
- E) The Pinyon project manager.
- F) Pinyon sample identification number (a unique number for each sample).
- G) Date (mm/dd/yy) and time sample collected.
- H) Sample matrix: Solid, Liquid or Air.
- I) Location or other unique identification of sample (keep short).
- J) Type of container (i.e. 4-oz. glass jar).
- K) Preservation (i.e., HCl, ice, etc.)
- L) Number of sample containers.
- M) Required analyses including method number.
- N) Check box for each sample to be analyzed using the corresponding method.
- O) Remarks about the sample, such as color, viscosity, temperature, clarity, etc.
- P) Required turn-around time for analyses.
- Q) Signature, date and time samples are relinquished to the front desk or a courier. The recipient must sign the adjacent box. SOMEONE must be responsible for the samples at all times. Do not leave the samples out of sight in an unsecured (unlocked) area. This violates the custody chain.
- R) The laboratory acknowledges receipt of the samples here, with date and time.
- T) Any other pertinent information should be recorded on the chain of custody (results to be faxed, etc.)



PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

STANDARD OPERATING PROCEDURE PROJECT

Title: Report QC Process
Revision Number: 1.2
Date Issued: July 1, 1997
Author: Staff
Review Date: September 30, 2009
Reviewer: LEE
File Name: W:\SOPS\Project SOPs\SOP 25 QAQCreports-updated30Sept2009.wpd

1.0 Purpose

Pinyon has instituted a rigid QC process to ensure that documents prepared by the company are accurate, meet the purpose of the project, are technically sound, and of high quality. The QC program is also necessary to limit Pinyon's potential liability.

2.0 Reports

Policy:

- All reports which transmit data, including letter reports and e-mails, will be reviewed for data accuracy. Any technical staff member can perform a data review.
- All reports, including letter reports, and any memorandums, fax cover sheets or e-mails that include conclusions or recommendations, will be reviewed by a senior level staff member for technical accuracy and completeness. The reviewer will be assigned at the time of project initiation. Reviewers will be selected based on their level of expertise with respect to the specific project scope of work.
- No documents will be sent to a client until both a data review and a senior level review have been completed and all corrections made.

Procedures:

Data Review

- A data review will be performed to check the accuracy and completeness of tables and figures within the text. The author may select any technical staff member to complete the data review. The data review will be completed prior to the senior level review. The author will be responsible for allowing sufficient time to perform the data review without jeopardizing the project schedule.

- The Author will provide the data reviewer with a draft document (with all tables, figures and appendices) and all appropriate project information, including but not limited to the proposal, laboratory reports and field notes. The document should be complete and in a format suitable for submittal to the client. The text can be provided electronically, but tables, figures, appendices and the Table of Contents should be provided in hard copy.
- Upon review of the data, the data reviewer will complete the appropriate form (attached), and return the form with the report to the author. In addition, the data reviewer will initial the appropriate box on the cover page of the report (see attached) to indicate that the data review has been completed.
- Tables. When checking tables, the data reviewer should pay attention to the following issues:
 - Numerical data presented in tables agrees with the original source of the information (i.e., field notes or laboratory reports).
 - Numerical data should not be represented on a table with a higher degree of accuracy than that of the original data. For example, if a laboratory reports a concentration as “4.3,” do not represent the concentration on a table, figure, or in the text as “4.30.”
 - Names are spelled correctly.
 - The Title of the table agrees with the content, and with standard Pinyon protocol.
 - The table number agrees with the table of contents.
 - Units (i.e., m/L) are correct and included.
 - Abbreviations are described in a notes section.
 - Multiple page tables - there should be statements of “Page_ of _” and “See notes page -” on the table.
 - Calculations should be checked (i.e., ground-water elevation).
 - Referenced laboratory method numbers should be checked (both on the table and in the text).
 - All of the data collected should be included.
- Figures. When checking figures, the data reviewer should pay attention to the following issues:
 - North arrow
 - Scale is referenced and correct (take care that photocopies weren’t reduced)
 - Title block - complete and accurate
 - Correct job number
 - Correct figure number
 - The title of the figure should agree with the content, and with standard Pinyon protocol.
 - The correct file name should be displayed on the lower left-hand corner of the figure.
 - Text should be legible (i.e., the font should be large enough to be easily read, which is generally 10 pt or higher)
 - The legend should include an explanation of all symbols, specialty lines. etc.
 - The source of the base map should be referenced, if applicable (i.e., topographic maps)
 - Check spelling
 - Data on the figures matches data on corresponding tables.
 - Correct file name should be referenced on figure.

Senior Review

- A senior review of all reports and letters, and any memorandums, fax cover sheets and e-mails which convey conclusions and recommendations, will be conducted to evaluate completeness, technical accuracy, readability, and grammar.
- All documents produced by Pinyon will undergo a senior review. The reviewer will be assigned at project initiation. The selection will be based on technical expertise and project requirements.
- The author will provide the senior reviewer with sufficient time to review a document, have corrections made, and maintain the project deadline.
- The author will provide the senior reviewer with a draft document (complete with tables, figures, and appendices) and all appropriate project information, including but not limited to the proposal, laboratory reports and field notes. The document should be complete and in a format suitable for submittal to a client. The document can be provided either electronically or in hard copy, depending on the preference of the reviewer. If completed electronically, both the reviewer and the author must be familiar with the comment and text change features of the word processing software.
- Upon completion of the review, the senior reviewer will complete the appropriate form (attached), and return the form with the report to the author. In addition, the reviewer will initial the appropriate box on the report. The box will not be initialed until the reviewer is satisfied that additional review is not necessary.
- The senior reviewer should pay attention to the following issues:
 - Figures and tables agree with text and with table of contents.
 - Labeling of appendices agree with the text and table of contents. All appendices should be referenced in the text.
 - Tables, figures, and appendices should be referenced in order.
 - The report is complete and satisfies the scope of work as outlined in the proposal.
 - All sections and subsections are referenced in the table of contents.
 - Information is presented logically, and corresponds to the section. For example, conclusions should not be drawn in the data sections, and no new data should be presented in a conclusions section
 - All references are included in a Reference section; reference format agrees with Pinyon protocol.
 - A limitations section is included.
 - The text is easily understandable; abbreviations are defined in the text.
 - The report meets the requirements of the applicable agency guidelines.
 - The author has avoided the use of “high liability” words.
 - Report format is consistent with Pinyon protocol.

Corrections

The author is responsible for checking that all changes to the text are made prior to the report becoming final. The appropriate box on the report cover page should be initialed.

All comments and corrections by the data and senior reviewers should be addressed. Should the author disagree with a change, or not understand a comment, it is important that the author discuss the item with the appropriate reviewer.

Once the corrections have been made and a final spell check performed, the document can be printed as final (remove the review box and “Draft” watermark from the final version). Final copies will not be printed and bound unless the draft cover page, complete with all initials, is given to the office administrator.

**Pinyon Environmental Engineering Resources, Inc.
INTERNAL REPORT REVIEW FORM**

Job #: _____
 Title: _____

 Date: _____
 Author: _____

	Initials
Reviewer	
Data Check	
Corrections	
Final Spell Check	

QC REVIEW:

- Comments provided in hard copy
- Comments provided electronically

- Field book checked

DATA CHECK:

Tables

Table #	Title Matches TOC	Title Matches Table Contents	Data Matches Source	Calculations Correct	Abbreviations Defined	Data Complete	Table to Standard Format	Units Correct	Date of Date, if Applicable	Significant Figures Correct	Notes

Notes:

Data matches source - check data against lab reports and/or field notes

Data complete - all data in lab reports is shown in tables

N/A - Not applicable

Significant figures correct - make sure that the number of decimal places shown on table matches the original data source. For example, if the lab reports a result as 10, do not show in table as 10.0. Conversely, if elevations are measured to a hundredth of a foot, report to that (i.e., 98.80 versus 98.8).

Complete page 2 for Figures

Figures

Figure #	Title Matches Content	Title Matches TOC	Data Matches Source and Table	North Arrow	Legend Complete	Scale	Standard Format Used	Units Correct	Title Block Complete	Name of File Included	Date of Data, if Applicable	Job/Task Numbers Correct	Notes

Notes:

N/A - not applicable

Legend data on each figure should match (i.e. address/site name, etc.)

Make sure data on figures matches data on tables



PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

STANDARD OPERATING PROCEDURE PROJECT

Title: Well Development
Revision Number: 1.1
Date Issued: January 31, 1999
Author: BSA
Revised By: JPM
Date of Revision: September 2010
File Name: Z:\PEER\SOPS\Project SOPs\SOP 31 Well Development_013199 dup.wpd

1.0 Purpose

Wells are developed to "repair damage done to the formation by the drilling operation so that the natural hydraulic properties are restored" and to enhance the filtering capabilities of the sand pack. Both monitoring and recovery wells must be developed. Well development is especially important if drilling fluids were used. Some basic methods of well development are: overpumping, surging, jetting and bailing.

2.0 EQUIPMENT

Well development with specialized equipment can often be provided by the well driller. Overpumping, surging and bailing may easily be accomplished by Pinyon personnel with inexpensive or readily available equipment. For development by bailing, the following equipment is needed:

- interface probe or water level indicator (decontaminated as outlined in SOP #3)
- fieldbook
- keys to wells or buildings, if any
- site map to locate wells
- 9/16-inch socket wrench to open limited-access street box; wrench to open drums for removed water, if necessary
- decontamination supplies (see SOP 4)
- turkey baster, ziplock bag, clean jar, etc., to remove standing water from street box
- latex or nitrile gloves
- clean bailer or surge block
- string/rope
- knife

- buckets
- drums to containerize removed water, if necessary

3.0 Methods

There are several ways to develop a well. Typically, development of monitoring wells will be done by bailing. The other methods are presented for cases where additional equipment and procedures may be necessary. The methods are summarized below, in order of preference.

1. Bailing

- bailers are used in the manner of surge blocks to move water into and out of the formation. However, their effectiveness is less because they are not as close fitting as a surge block. They may also be used to "overpump" a low yielding aquifer.
- a sand pump bailer is a pipe fitted with a plunger so that when the bailer is pulled up, the plunger rises, creating a vacuum that opens the bottom check valve and sucks the sand slurry into the bailer.
- bailing is the most common method employed to develop monitoring wells.

The bailer can be used to both surge water back and forth in the well, and to remove water and sediment. A combination of these actions should be used. A minimum of five well volumes of water should be removed during development. The amount of sediment in the water should noticeably decrease during development activities.

2. Mechanical Surging

- surging action is produced by moving a plunger (surge block, swab) a few feet up and down inside the well resulting in water flow both into and out of the well screen.
- the surge block is constructed of solid disks approximately 1 inch smaller than the inner diameter of the screen. In between the disks are flexible rubber flaps. The outer diameter of the rubber flaps equals the inner diameter of the screen. A heavy bailer may be used as a surge block but it is not as effective as a close—fitting surge block.
- before surging, the well should be bailed to make sure water will enter the well.
- in order to prevent the surge block from becoming lodged, development should begin at water level and move downward in increments.

- material brought into the well should be removed periodically by a pump or bailer to reduce the amount of material that may be forced back into the formation and minimize the chance of lodging the surge block.
 - surging should not be attempted if free product is present. Emulsification of product and water may result.
3. Jetting with Air or Water
- jetting utilizes nozzles inserted alongside the well screen and directed toward the formation. High velocity air or water is forced through the screen slots to wash out loose material.
 - the jetting tool is placed at the bottom of the well and slowly rotated while being raised at a rate of 5 to 15 minute per foot of screen.
 - jetting is one of the most efficient development methods, but should not be used when free product is present due to emulsification.
 - equipment
 - a) a hose or rod with equally spaced nozzles directed horizontally toward the well screen.
 - b) a high pressure pump or compressor.
 - c) fresh water or a recirculating system from the well.
 - d) a pump or bailer to remove dislodged material.
 - the effectiveness of jetting is limited by the slot size and configuration of the screen, and the time allowed for development. Beware of damage to the well screen from high pressures or scouring.
4. Overpumping
- removes fine particulates from the formation by pumping at a higher rate than the well will be pumped when it is put into service.
 - a pump capable of handling sand without excessive wear must be used. Care must be taken not to sand—lock the pump in the well.
 - this method produces a lot of liquid which must be treated and disposed.
 - water only flows toward the screen, which may result in sediment bridging or wedging of particles into the screen slots. Later pumping may dislodge these arrangements, allowing sediment to enter the well.
 - well development is concentrated near the top of or in the most permeable zones of the aquifer.

- this method seldom produces the most efficient well or stabilization of the aquifer.

The introduction of acid, polyphosphate or other chemicals is usually discouraged. Their chemical interaction with the contaminant or aquifer cannot be easily monitored, and their introduction tends to push contaminants away from the well.

4.0 Procedures (Using Bailer)

It is impossible address all possible scenarios that could be encountered during well development, therefore, this procedure is meant to be a guideline.

- Remove cover and well cap from the well to be developed. If well appears to be under pressure when cap is removed, allow well to recover and stabilize before obtaining measurements.
- Using a clean, decontaminated water level probe, measure the depth to groundwater (D_{water_0}) and depth to bottom of well (D_{well}) in feet. Record on well sampling form. Determine length of column of water $\{(L_{wc}) = (D_{well} - D_{water_0})\}$.
- Determine the volume of water in the well (V_{casing}) by taking L_{wc} and multiplying by a factor 0.163 for a 2" diameter well or 0.653 for a 4" diameter well. A table is provided to convert volume from length on the back of well sampling sheets. Record on well sampling form.
- Using a bailer, remove water from the well until the water "clears up" (free of silt) or five (5) well volumes (V_{casing}) which ever is greater. The well may bail dry before five well volumes are removed. If this is the case, record in the field notebook that the well was bailed dry and how much water was removed.
- After the well has been sufficiently developed, use the water level probe to measure the final depth to water (D_{water_f}) and record in the field notebook.
- Reinstall and tighten the well cap and cover plate.
- Decontaminate all equipment after developing each well (SOP #3).
- Wait at least 24 hours after the well has been developed prior to sampling.

Report any difficulties or irregularities on the well sampling form and to the project manager

REFERENCE:

Driscoll, Fletcher G., 1986, "Groundwater and Wells", Second Edition, Johnson Division, St. Paul, Minnesota



PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

STANDARD OPERATING PROCEDURE PROJECT

Title: Low-Flow Sampling
Revision Number: 2.0
Date Issued: September 27, 2010
Author: Jeremy Musson
Review Date:
Reviewer:
File Name: Z:\PEER\SOPS\Project SOPs\SOP 37 Low Flow Purging and Sampling Using Peristaltic Pump.wpd

1.0 Purpose

Low-Flow sampling can be used to reduce the stress typically placed on a well during ground-water sampling using a disposable bailer or other rapid purge methods. By reducing aquifer stress, sample turbidity is generally reduced and the ground-water sample is more representative of the aquifer conditions.

2.0 Equipment

- Peristaltic pump
- Multi-parameter water quality meter (HACH MS5)
- Laptop computer (netbook) with appropriate logging software (HydrasLT)
- Serial to USB adapter or computer with serial port
- 3/8-inch ID Polyethylene tubing (acceptable for most sampling conditions; however, teflon tubing may be required for sampling of some VOCs)
- Silicone tubing
- Graduated cylinder and stopwatch or watch with second hand to measure flow rates
- Water-level meter
- Bucket for purge water
- The “Loo”
- Decontamination supplies
- Logbook
- Sample containers and labels
- Well construction data
- Disposable bailers as back-up in case depth to water is greater than 25 feet

3.0 Procedure

1. The water quality meter (WQM) should be calibrated in the office, prior to initiating field activities. Generally, full in-office calibration should be conducted after the meter has not been used for more than three days or on a weekly basis during regular use. See *SOP 2.6 - Water Quality Meter Calibration, Operation, and Maintenance*.
2. Upon arrival at site, fill out the log book according to *SOP 1 - Field Notebooks*.
3. If site conditions allow it, open all of the monitoring wells and either remove or loosen the expanding well plug to allow the water level to equilibrate.
4. Following *SOP - 18 Well Gauging*, collect water level data for all site monitoring wells. Note any damage or irregularities to the well head or casing. Unless directed otherwise, it is preferable to perform sampling activities in order of least contaminated well to most contaminated well. This will reduce the potential for cross contamination and false positive results. If the depth to water in any of the wells exceeds 25 feet, that well will need to be sampled with a disposable bailer, or an alternate pumping method (bladder pump, grundfos pump, etc).
5. Connect the WQM to the computer, start-up the computer, and open the applicable low-flow software. Check the operating parameters of the WQM against pH, conductivity, and ORP standards according to the manufacturer's instructions, included in the carrying case.
6. Starting with the least impacted well, insert polyethylene tubing down the well to the approximate mid-point of the water column (for wells constructed with partially submerged well screens) or the mid-point of the screened interval (for fully submerged well screens). At dry cleaner sites, sampling from the bottom of the well screen may be required, confirm with project manager during preparation.
7. Using a one-foot length of silicone tubing, connect the polyethylene tubing to the peristaltic pump, and connect approximately five-feet of polyethylene tubing to the discharge of the pump.
8. Start the pump and set the pump rate control to approximately 50%, allow the purge water to fill the tubing and allow to run until any initial sediment load has partially cleared.
9. Gauge the depth to water following *SOP 18* and set the pumping rate to minimize well draw-down. Ideally the pumping rate will be greater than 100 milliliters per minute (mL/min), but must be set so that draw-down of the well is prevented.

During start-up most wells will draw-down a certain amount and then begin to recover or equilibrate. Measure the stabilized pumping rate using the graduated cylinder and stopwatch. Note the stabilized depth to water and pumping rate in the field notebook

10. **HACH MS5 Specifics:** HACH MS5 WQMs are the primary instruments for Pinyon sampling events. The following specifics relate to the use of the MS5 software. During the initial purge and draw-down stabilization, initialize “on-line” monitoring function in HydrasLT. Confirm the proper units of measurement:

- Dissolve Oxygen (DO): milligrams per liter (mg/L)
 - Oxidation-reduction potential (ORP): millivolts (mV)
 - Temperature (T): degrees celsius (°C)
 - Specific Conductance (SC/Cond): microsemens per centimeter (µs/cm)
 - pH: standard units (SU)
 - Turbidity (Turb): nephelometric turbidity units (NTU)
- Set the sample interval time to 30 seconds.
 - HydrasLT does not have a function to set stabilization parameters or include site information. This data can be entered into the XL spreadsheet once the data is exported before the lab sample is collected.

In-Situ Troll Specifics: In general, an MS5 should be used for low-flow sampling (Rental units are available from HACH); however, if necessary an In-Situ Troll WQM can be rented and are generally more available in rental fleets. The following information is specific to use of Troll WQMs.

During the initial purge and draw-down stabilization, initialize “on-line” monitoring . Confirm the proper units of measurement:

- Dissolve Oxygen (DO): milligrams per liter (mg/L)
 - Oxidation-reduction potential (ORP): millivolts (mV)
 - Temperature (T): degrees celsius (°C)
 - Specific Conductance (SC/Cond): microsemens per centimeter (µs/cm)
 - pH: standard units (SU)
 - Turbidity (Turb): nephelometric turbidity units (NTU)
- Enter site information, sampler name, well information, depth to water, total well depth, tubing length, and pump placement. Win-Situ 4 will calculate the

purge time based on the volume of the tubing and flow-through cell based on a selected pumping rate. Typically, to get more measurements during purging activities, the measurement interval can be manually set to 30 seconds.

- Confirm or enter the following stabilization values:
 - DO: 10%
 - ORP: +/- 10mV
 - T: 3%
 - SC: 3%
 - pH: +/-0.1 SU
 - Turb: 10%
- 10. Connect the pump discharge to the bottom port (inlet) of the WQM flow-through cell. Another section of polyethylene tubing should be used to connect the outlet of the flow-through cell to a five-gallon bucket or car boy.
- 11. When the flow-through cell has filled up, initiate digital recording of data. After the first reading is recorded in HydrasLT, click the “New Table” button. This will begin recording measurements for export to XL.
- 12. Periodically confirm that water level is not drawing down, if it is, adjust the pumping rate and note it in the field book.
- 13. After a minimum of 15 minutes or when the parameters have stabilized to the values noted above, whichever is greater, click the “Export to Excel” button in HydrasLT, which will open a new window in XL, and create a spreadsheet of low-flow data. Save the XL table using the following nomenclature: MW-##-MMDDYY, where MW-## represents the well ID, and MMDDYY represents the date. You can enter any notes that may be important in the spreadsheet as well. Close the XL table, and click “Stop” in HydrasLT.
- 14. Disconnect the pump discharge tubing from the flow-through cell and fill properly labeled (*SOP 17 - Chain of Custody Forms and Sampling Labeling*) laboratory supplied containers.
- 15. Dispose of the purge water according to the site specific sampling plan and/or *SOP 7 - Purge Water*. The polyethylene and silicon tubing should be disposed, and new tubing used for each well, unless using teflon tubing. Teflon tubing should be dedicated for each well, decontaminated prior to and after each sampling event following *SOP 3 - Sampling Equipment Decon*, placed in a “zip-loc” bag, labeled,

and stored for the next sampling event. Damaged teflon tubing should be replaced prior to the next sampling event.

16. Replace the expanding plug and well cover.

Note: Some sites, depending on oversight authority, sampling and analysis plan, and/or regulatory agency, may require that samples collected for VOC analysis be collected using a disposable bailer following low-flow sampling, or that the VOC samples be filled with water that has not passed through the pump head. This can be accomplished by stopping the pump, removing the tubing from the well, and then reversing the pump. Alternatively, a down-hole pump (bladder, grundfos, etc) could be used for purging and sampling.

**Standard Operating Procedure
For
SURFACE GEOPHYSICAL SURVEYS
BURIED METALLIC OBJECT DETECTION**

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1.0 PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) provides technical guidance and methods that will be used for conducting surface geophysical investigations involving electromagnetic (EM) surveys using the Geonics EM-31 or EM-34, EM surveys using the Geonics EM-61, GPS surveys in conjunction with the geophysical surveys, magnetic-field measurements and GPR surveys for detection of subsurface metallic objects. This SOP describes equipment, field procedures, and data reduction necessary to perform surface geophysical surveys. The locations and objectives of surface geophysical surveying will be specified in the work plan or proposal for any specific job.

2.0 PERSONNEL QUALIFICATIONS

A senior level geophysicist with knowledge and experience in the proposed geophysical surveying methods will oversee and/or execute the geophysical surveys.

3.0 MATERIALS AND EQUIPMENT

The following materials and equipment may be needed for geophysical surveying:

- Geonics EM-31 or EM 34 (depending on required depth of penetration and survey objectives) terrain conductivity system(s) or equivalent
- Geonics EM-61
- Geometrics Model G858 Cesium Magnetometer (or equivalent)
- Geometrics Model G856 Magnetometer (or equivalent) for use as a magnetic base station if required
- GSSI SIR 2000 or SIR3000 GPR console with appropriate frequency antenna or equivalent radar system
- Wood stakes or lath and pin flags (plastic pin flags if conducting magnetics or EM-61)
- Survey flagging
- Field logbook
- Marking pens
- Tape measure (200 feet minimum) with numbers on both sides (A measuring wheel may be substituted if appropriate)
- Extra batteries and other instrument supplies as appropriate.
- GPS base station and rover or GIS grade receiver

4.0 PROCEDURES

Surface geophysical techniques may be employed for several purposes:

EM using the Geonics EM-31 or EM-34:

- Delineation of waste disposal areas
- Detection of buried metallic objects (including landfill debris or buried drums)
- Delineation of previously excavated areas related to waste disposal activities

EM using the Geonics EM-61:

- Detection of buried metallic objects (including buried drums)
- Detection of irregularly-shaped metallic landfill debris or refuse
- Estimation of the lateral extent of landfill or trench materials that have metallic constituents,
- Ordnance detection and

- Location of underground utilities (i.e., pipes, tanks utility lines)

Magnetics:

- Detection of buried metallic (ferrous) objects and debris (including drums or scrap metal)
- Delineate lateral extent of trenches or landfills that have ferrous metal constituents
- Location of underground utilities (i.e., pipes, tanks, utility lines), and
- Ordnance detection

Ground Penetrating Radar

- Delineation of waste disposal activities
- Detection of buried metallic or nonmetallic objects (borehole clearing, landfill or trench mapping)
- Mapping of near surface stratigraphy
- Delineation of previously excavated areas related to waste disposal activities

4.1 GEONICS EM-31 OR EM-34

EM methods involving the use of the Geonics EM-31 or EM-34 provide a rapid means of measuring the electrical conductivity of subsurface soil, rock, and groundwater. These methods involve the induction of electrical current into the earth. A small alternating current is generated by a transmitter coil that transmits a primary, time-varying magnetic field into the ground. Through inductive coupling, the primary magnetic field produces small eddy currents in the subsurface, which in turn create their own secondary magnetic field. A receiver coil measures both the primary and secondary fields. The instrument measures variations in magnitude and phase of the individual currents and voltage changes, which are related to the subsurface or terrain electrical conductivity. The conductivity values are recorded in a data logger, and subsequently downloaded to a computer and plotted on a map so that their variation over the site can be analyzed.

4.1.1 Preparation

Certain minimum preparations will be made prior to initiation of any data collection:

1. Existing and appropriate site, area, and regional subsurface geologic and hydrogeologic information including soil characteristics will be reviewed.
2. Known hazards that pose a threat to the safety of field personnel will be defined.
3. The purpose and expectations of the subsurface investigation will be defined and mitigated.
4. Appropriate field parameters will be defined, given the purpose of the survey (whether EM-31 or EM 34-3 is used, coil spacing, station spacing, depth of penetration, etc.)
5. The locations of line endpoints along each line will be determined and denoted in the field with wooden lath, wooden stakes or paint.
6. Site utility plans will be reviewed and utilities will be located.

Design of appropriate field or data acquisition parameters must consider the following:

1. The coil spacing must be 1 to 1.25 times the required depth of penetration. If required depths are in excess of approximately 15 feet, an EM 34-3 is used. If depths are less than approximately 15 feet, the EM-31 can be used. For some applications the use of both instruments may be appropriate.
2. Station spacing affects survey resolution. A station spacing of ½ to 1/3 of the coil spacing is commonly used. Actual spacing must consider instruments that will be used and take required resolution into account.

3. Accurate definition of an EM profile anomaly requires several anomalous readings, a fact that should be taken into account for line spacing design.
4. Background conductivity noise including surface metallic clutter must be evaluated and/or determined to assess the potential usefulness of an EM survey. High noise levels can make interpretation difficult and can cause significant anomalies to be overlooked.

4.1.2 EM-31 or EM-34 Surveying Procedures

A standard field procedure for conducting an EM survey using the EM-31 or EM-34 is described below:

1. A visual survey along the proposed lines will be conducted. The visual survey will include notation of overhead wires, manhole covers, and indications of buried cables or gas lines.
2. Excessive amounts or large pieces of metal on the ground surface will be noted in the field Notebook or removed if practical.
3. Large nearby variations in topography (within 50 feet) will be noted in the field notebook.
4. The instrument battery will be checked for sufficient charge and the instrument tested using manufacturer's procedures for proper operation.
5. The site survey traverse will be initiated with the EM instrument. When using the EM 34-3, beginning at the EM line endpoint with transmitter, the receiver will be moved to the appropriate coil spacing, as indicated by the instrument meter. If the EM-31 is being used, coil spacing is fixed. (Note: The obtained reading is valid at the midpoint between the two coils).
6. The obtained conductivity value will be recorded in a data logger or field notebook.
7. The above procedure will be continued for each station along the line. For two or more coil spacings or orientations at each station, multiple passes along each line will be made, ensuring that occupied stations are repeated with each coil orientation.
8. Data will be downloaded from the data logger or field notebook to the computer for further analysis.

4.1.3 Data Processing and Interpretation

The standard procedure for processing and interpreting the EM data obtained using the EM -31 or EM-34 is described below.

1. Conductivity values over the surveyed site for each coil spacing will be plotted.
2. By comparing the results of all plots, the data will be contoured to determine what lateral variations in conductivity are present.

4.2 GEONICS EM-61

The EM-61 is a time domain EM instrument that is specifically designed to discriminate between earth materials and highly conductive metallic targets that are buried within the earth. It is capable of detecting both ferrous and non-ferrous metallic objects. The instrument generates rapid EM pulses through a transmitter coil. These pulses induce secondary EM fields in the near subsurface materials. The secondary EM fields induced from moderately conductive subsurface materials (i.e., soil and rock) are of relatively short duration. However, the secondary EM fields induced from metallic objects such as drums are of relatively long duration. The EM-61 measures this prolonged response from metallic objects after the EM response from conductive earth materials dissipates, allowing resolution of buried metallic targets. Depth of investigation of the instrument is relatively unaffected by site specific subsurface conditions, and is reportedly capable of detecting a single 55 gallon drum to a depth of 10 feet. Using a data logger, the

instrument records the EM response in units of millivolts. The EM response values are subsequently plotted on a map so that their variation over the site can be analyzed.

4.2.1 Preparation

Steps 1 through 6 in Section 4.1.1 will be performed prior to initiation of any data collection. Design of appropriate field or data acquisition parameters must consider the following:

- Station spacing affects survey resolution. A station spacing of 0.5 to 1.5 feet is commonly used. Actual spacing must take required resolution into account.
- Accurate definition of an EM profile anomaly requires three or more anomalous readings.
- Background conductivity noise including surface metallic clutter must be evaluated and/or determined to assess the potential usefulness of an EM survey. High noise levels can make interpretation difficult and can cause significant anomalies to be overlooked.

4.2.2 EM-61 Surveying Procedures

A standard field procedure for conducting an EM survey using the Geonics EM-61 is described below:

1. Steps 1 through 4 of Section 4.1.2 will be performed.
2. If the survey is to be conducted using the measuring integrated trailer or wheel trigger mode, the instrument will be calibrated by conducting a test line of set length. Several passes will be conducted along the test line to calibrate the wheel trigger distance to the site specific ground conditions. No other calibration of the EM-61 is generally required.
3. The instrument battery will be checked for sufficient charge and instrument tested using manufacturer's procedures for proper operation.
4. The site survey traverse will be initiated with the EM-61 instrument.
5. The obtained EM response values will be recorded in a data logger.
6. The above procedure will be continued for each station along the traverse line.
7. Data will be downloaded from the data logger to the computer for further analysis.

4.2.3 Data Processing and Interpretation

The standard procedure for processing and interpreting the EM data obtained using the EM-61 is described below.

1. If data were collected using the wheel mode trigger, the data stationing will be corrected using the actual start and end station values.
2. EM response values over the surveyed site will be plotted.
3. By comparing the results of all plots, the data will be contoured to determine the lateral and vertical variations of the EM response over the site.

4.3 MAGNETICS

A magnetics survey involves the measurement of the earth's magnetic field at various points on the ground surface and delineation of the local variation of the magnetic field. Variations in magnetic susceptibility of subsurface materials will produce anomalies within the magnetic field that can be measured using a magnetometer. Both the total magnetic field data and the magnetic vertical gradient data can be measured with the magnetometer. The total field intensity is simply the magnitude of the earth's magnetic field vector and the magnetic vertical gradient is the difference in the total field measured at different heights above the ground surface. The magnetic total field and vertical gradient values can be plotted on a map so that their variation over the site can be analyzed. Note that non-ferrous metals, such as aluminum or brass will not create a response that the magnetometer can measure and must therefore be detected by other methods.

4.3.1 Preparation

Steps 1 through 6 in Section 4.1.1 will be performed prior to initiation of any data collection.

Design of appropriate field or data acquisition parameters must consider the following:

1. Station spacing affects survey resolution. A station spacing of 2 to 5 feet is commonly used. Actual spacing must take required resolution into account.
2. A magnetic anomaly is defined by three or more contiguous anomalous readings.
3. Background magnetic noise including surface metallic clutter must be evaluated and/or determined to assess the potential usefulness of a magnetic survey. High noise levels can make interpretation difficult and can cause significant anomalies to be overlooked.
4. High resolution magnetic surveys require the use of an extra magnetometer as a magnetic base station to allow removal of drift and diurnal variations. On occasion, this requirement may be relaxed if only large objects are to be detected and depending on survey objectives. If an additional magnetics base instrument is not used, repeated ties to a field "base station" must occur approximately every few hours to allow for drift corrections.
5. Survey and stake line endpoints used in the field should be with a wooden stake or plastic pin flag. Stations should be identified with a coordinate designation based on a coordinate system that is consistent with the requirements of the interpretive software to be used in data processing.

4.3.2 Magnetics Surveying Procedures

A standard field procedure for conducting a magnetics survey is described below:

1. A visual survey along the proposed lines will be conducted. The visual survey will include a review of site utility plans; notation of overhead wires, notation of manhole covers, buried cables, or indications of buried gas lines. Utility locator services may identify telephone and utility features, if present.
2. Excessive amounts or large pieces of metal on the ground surface will be noted in the field Notebook or removed if possible.
3. Large nearby variations in topography (within 50 feet) will be noted in the notebook.
4. The instrument battery will be checked for sufficient charge and the instrument tested using manufacturer's procedures for proper operation.
5. Prior to commencing of data collection activities, the operator will remove ferromagnetic objects from his/her body and clothing including but not limited to jewelry, steel toe boots, belt buckles, keys, coins and watches. These objects can cause interference resulting in erroneous data.
6. The base station magnetometer (if used) will be placed in an area away from interference from ferromagnetic objects, including but not limited to buried waste, fences, passing automobiles and buildings. Base station readings can be obtained using a continuously recording base station magnetometer or by reoccupying a field base station using the mobile magnetometer. Regardless of the method used, base station data will be collected at intervals of 30 minutes to 2 hours depending on the project objectives.
7. The base station magnetometer and the mobile magnetometer will be time synchronized and will be tuned to the value appropriate for the latitude and longitude of the area (if necessary). Tuning of the instruments (if required) will be done in accordance with the manufacturer's procedures as described in the operation manual.
8. The site survey traverse will be initiated using the mobile magnetometer. Depending on the exact make and model of the magnetometer, the sensor may have to be aligned with magnetic north.
9. The obtained magnetics values will be recorded in the magnetometer memory, in a data logger, or field notebook. If the instrument indicates a high noise level, a visual scan of the area

will be made to try to identify the source of the noise. Then the reading should be repeated and an appropriate note made in the field book.

10. The above procedures will be continued for each station along the line.

11. Upon completion of each day of data collection, the data will be downloaded from the magnetometer(s) or from the field notebook to a computer for further analysis.

4.3.3 Data Processing and Interpretation

The standard procedure for processing and interpreting magnetics data is described below:

1. Magnetics values must be corrected for magnetic drift according to standard geophysical practices. If a mobile magnetometer was used in conjunction with a base station magnetometer, correction of diurnal effects can be accomplished using the data reduction software provided with the instruments. If a single magnetometer was used, the total field data will be corrected (if necessary) using the reoccupied base station data.

2. Plot the corrected values at each station location, producing a series of profiles or a grid, and contour the data to determine variations of the magnetic field.

3. Using available information (borehole, geophysical, site conditions), interpret the magnetic anomalies with respect to possible sources.

4.4 GROUND PENETRATING RADAR

GPR involves a system that transmits electromagnetic pulses into the ground from an antenna near the surface. These pulses are reflected from a variety of subsurface interfaces back to the receiver. As the antenna is towed along a survey line, the GPR signals are processed and displayed on a graphic recorder. Data are displayed as two-dimensional continuous profiles along the surveyed line, depicting time versus distance. The display is similar to a geologic section, except that the record is a time section rather than a depth section. GPR can achieve excellent resolution of subsurface features when favorable conditions exist. However, actual depth penetration is highly site-specific and depends on the near-surface soil conductivity. Highly conductive soils, such as clays, can reduce penetration to less than three feet. Less conductive soils, such as clean, well-sorted sandstone, will allow larger depths of penetration.

4.4.1 Preparation

Prior to GPR data collection, two preliminary procedures must be conducted. These procedures are:

1. Design the appropriate field parameters, given the purpose of the survey (e.g., orientation of lines or grid, grid spacing, frequency of antenna, necessity of antenna shielding, etc.)

2. Survey line end points and mark these locations in the field with lath, wooden stakes or paint. Transfer line locations to the correct position on the base map. Design of appropriate field or data acquisition parameters must consider the following:

1. The antenna and associated transmitter frequency used must optimize the penetration depth and required resolution given the survey purpose. Typical antenna frequencies range from 50 Mhz up to 1000 Mhz. The actual antennas used must consider depth of penetration required and resolution desired. Higher frequency antennas allow greater subsurface resolution, but penetration is reduced compared to that allowed by lower frequency antennas. Two antennas should be mobilized and available for testing for a given GPR application.

2. For surveys utilizing grids, the spacing of the survey lines affects the survey resolution. A line spacing of 3 to 50 feet is commonly used. Actual spacing must take required resolution into account.

3. The method of antenna towing must be evaluated given the site conditions. For smooth

surfaces or terrain, the antenna can be towed directly on the surface. For areas with a significant cover of vegetation or with stones and rocks at the surface, the antenna may need to be suspended 6 to 18 inches above the ground or carried in a plastic, non-conductive wagon to prevent antenna damage and reduce or eliminate potentially dubious GPR data collection due to antenna bounce.

4. Antenna shielding should be considered and designed to handle the field conditions. Surface features such as fences, powerlines, and trees can appear as prominent reflections on the GPR record.

4.4.2 GPR Surveying Procedures

A standard procedure for conducting a GPR survey is described below:

1. A visual survey along the proposed lines will be conducted. The visual survey will include notation of overhead wires, manhole covers, monitoring wells, and indications of buried cables or gas lines.

2. Excessive amounts or large pieces of metal on the ground surface will be noted in the field Notebook and removed if practical.

3. Nearby buildings (within 50 feet) or significant variations in topography will be noted in the field notebook.

4. The moisture content of the soil, alluvium, or investigated media, as well as relative clay content, may significantly affect the penetration depths, and should be noted.

5. Conduct a test line using the instrument manufacturer's procedures. Instrument settings must be optimized to obtain appropriate data give project goals. Specific recording parameters that must be optimized include, but are not limited to, the following:

- Radar scan speed
- Signal range gain
- High low pass filter settings
- Transmitter pulse rate
- Time range for recording
- Recording printer speed
- Antenna towing speed

Instrument settings should be varied during the surveying of the test line to determine the optimum recording parameters. When possible, the test line should be conducted over a known buried feature in the survey areas to help instrument setting optimization and to calibrate penetration depths. A culvert coming out of a hill side is an excellent test target as profiles with different target depths can be compared.

6. Initiate a site survey traverse. Beginning at the GPR line endpoint, tow the antenna along the appropriate line at a rate, and using the optimum instrument settings, determined from the test line.

7. If hard copies of each line of data are printed or available, label all notations on the record to correspond to the notes made in the field book, including recording parameters.

8. Permanent copies of GPR data must be retained digitally on tape or disk, or on hard copy plots.

4.4.3 Data Processing and Interpretation

Data reduction of GPR data is limited. Most GPR data processing occurs in real-time (during data collection) through manipulation of the instrument settings. Interpretation requires the interpreter to consider all potential sources of a GPR anomaly, including interfering reflections from both surface and subsurface cultural features. For most GPR systems, additional

processing techniques can be implemented if desired to reduce or eliminate noise effects from the data and enhance the results. Using site data, available borehole information (should it exist), or any other existing geophysical data, develop a subsurface model that is consistent with the available data.

4.5 GPS Procedures

The Global Positioning System (GPS) can be used for survey location. Reception of satellite signals allows calculation of the position of the GPS instrument. Many modern geophysical instruments integrate the positioning into the data stream and record the location of the instrument in real time. Various GPS systems are available which give various accuracies and precisions for the output locations. At this date, these systems can be grouped (along with the approximate precision of each system) as: handheld (+/- 8-12 feet), GIS grade (+/- 3-4 feet) and survey grade (+/- less than 2 inches). Note two facts about these numbers 1. They are precisions- the accuracy (the correspondence of the measured point to the 'true' position) has to be addressed in a different manner and 2) the vertical precision is often twice the advertised horizontal precision.

4.5.1 Preparation

Steps 1 through 6 in Section 4.1.1 will be performed as appropriate prior to initiation of any GPS data collection.

Design of appropriate field or data acquisition parameters must consider the following:

1. Satellite radio reception is the basis of the GPS system. Nearby buildings, heavy tree canopy or other overhead obstructions may make GPS location of the survey impractical.
2. If high precision methods are used a base and a rover are necessary (the stationary base station broadcasts corrections to the instrument-connected rover) radio communication between the base and the rover is necessary. Thus a base location must be established that commands the entire area to be surveyed.

4.5.2 GPS Surveying Procedures

A standard field procedure for conducting a GPS survey is described below:

1. A visual survey of the area will be conducted. An appropriate base station location will be established. To improve the accuracy, the base station location must record for a length of time before the data can be post-processed for a location that is as accurate as possible.
2. Several GPS instrument-specific parameters must be reviewed and selected. Repetition rates, horizon masks, and recording frequency are some of the adjustable inputs for the GPS system.
3. Proper survey procedures for the accurate location (if required) of the base station must be followed (Opus, etc.)
4. Communication with the rovers must be established via the radio link. Short data files from the rover should be reviewed to be sure that the GPS data is included with the magnetics or electromagnetics data.
5. The base should be visited once or twice a day to be sure that the battery supply is sufficient. If the EM, GPR or mag instrument does not give an indication of GPS reception, short field records (1-2 hours) should be taken and then reviewed for GPS reception.
6. Cultural locations and permanent fudicials must be recorded using the same GPS system as is used for the data.

7. Upon completion of each day of data collection, the data will be downloaded from the geophysical instruments to a computer for further analysis.

4.5.3 Data Processing and Interpretation

The standard procedure for processing and interpreting GPS data is described below:

1. GPS data may require post processing, especially if a base station is not used.
2. Areas of incomplete reception or inaccurate locations should be identified and cured by interpolation, deleted, or deleted and resurveyed depending on the project's objectives.