

**REMEDIAL ACTION PLAN
FORMER SOMMERS AUTO WRECKING
647 WEST 3300 SOUTH
SOUTH SALT LAKE, UTAH
VOLUNTARY CLEANUP PROGRAM SITE NO. C122**

Project No. 2469-002G

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1. INTRODUCTION

On behalf of Mountain Crest Wasatch, LLC, the current property owner of the former Sommers Auto Wrecking property (Site) and the Volunteer, Wasatch Environmental, Inc., (Wasatch) has prepared this Remedial Action Plan (RAP) for addressing heavy metals and petroleum hydrocarbon impacts to soil and groundwater that have been identified at the Site. This RAP is intended to be used in conjunction with the Quality Assurance Project Plan (QAPP), the Sampling and Analysis Plan (SAP), and individual work plans prepared for the Site.

1.1 Site Description

The Site is located on the southeast corner of the 3300 South and 700 West intersection in South Salt Lake, Utah (as shown on Figure 1). The Site totals 5.15 acres and is comprised of two parcels. The Site includes the following Salt Lake County Assessor's Office tax parcel numbers: 15-25-351-034 and 15-26-477-006 (see Figure 2).

The majority of the Site lies behind a vinyl and metal fence. The northern portion of the Site, outside of this fence, consists of a small asphalt-paved parking area, and a gravel-covered storage yard. The northeast portion of the Site is developed with an office building; two garage buildings; and a three-sided, metal, former dismantling building. On the western portion of the Site is a three-sided, metal, former oil storage building with a canopy-covered concrete secondary containment area. In the southwest corner of the Site, there is a metal canopy. The remainder of the Site consists of storage yard areas with concrete pads, pavement, and the majority of the area consisting of gravel.

Property use at the Site and surrounding properties is a mix of commercial and light industrial as shown on Figure 3.

1.2 Site Background

The Site was formerly an auto wrecking yard previously occupied by Sommers Auto Wrecking. Currently, the Site is occupied by a landscaping company but will be occupied by a metals recycling facility in the near future.

Our research indicates that the Site was residential and agricultural until 1956 when the former Sommer Auto Wrecking business started on the eastern portion of the Site. The wrecking yard expanded to the west between the 1960s and 1990s. In 2019, Sommers Auto Wrecking vacated the Site.

Wasatch prepared an August 19, 2021, Phase I Environmental Site Assessment for the Site. During the completion of the Phase I Environmental Site Assessment, Wasatch identified the following recognized environmental conditions in connection with the Site:

- In 2012, the Utah Division of Solid and Hazardous Waste (DSHW) recommended the removal of oil-impacted soil in the area of the dismantling building by the Site owner. Approximately 840 tons of impacted soil was removed and disposed off-Site. The excavation reportedly stopped at a clay layer approximately 4 feet below ground surface (bgs) and confirmation soil samples were not collected. No formal closeout documentation was created. Given that no confirmation soil samples were collected, there is a potential for residual impacts in this area.

- Total petroleum hydrocarbons as gasoline-range organics (TPH-GRO) and oil and grease (O&G) impacts to soil and groundwater exceeding Utah Initial Screening Levels (ISLs) and/or Utah Risk-Based Corrective Action (RBCA) Tier 1 Screening Levels were identified by DSHW in 2012.
- Low concentrations of tetrachloroethene (PCE) were detected in soil and water samples in two areas in 2012 indicating that PCE was either brought onto, or used at, the Site; therefore, there is a potential for elevated concentrations of PCE to be present in soil and groundwater in other areas of the Site.
- Soil samples collected in 2012 were analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals, which is an analysis that measures leaching potential when evaluating soil disposal options. While the TCLP metals concentrations were below United States Environmental Protection Agency (U.S. EPA) landfill regulations, this analysis does not measure the concentration of contaminant of concern in a sample. Later in 2012, lead was detected in a waste characterization soil sample that was collected during excavation activities at concentrations that exceeded U.S. EPA Residential and Commercial Regional Screening Levels (RSLs), indicating that elevated metals concentrations are likely present at the Site.
- There was previously a drainage system and sump in the former oil storage building that was reportedly not working and has since been filled with concrete. There is a potential for impacts to the subsurface from this former drainage system.
- Given the long-term use of the Site for auto wrecking and evidence of long-term poor housekeeping practices, there is a potential for impacts to the Site in areas that were not investigated in 2012.
- There is a potential for impacts to the Site from releases associated with the long-term use of the east adjoining Pick-n-Pull property for auto wrecking.

In September 2021, Wasatch completed 18 soil borings that facilitated the collection and analysis of soil and groundwater samples at the Site to evaluate the identified recognized environmental conditions.

Lead and/or arsenic impacts to soil were detected at concentrations exceeding applicable U.S. EPA RSLs for Industrial Soil in soil borings GP-9, GP-11, and GP-13. However, the arsenic concentration in soil detected in the GP-13 soil sample is below the 100 milligrams per kilogram (mg/kg) cleanup level that has been used by Wasatch at past remediation sites to determine if active remediation is required.

Arsenic was detected at concentrations exceeding the applicable Utah Groundwater Quality Standard in 12 of the groundwater samples from the Site.

PCE was not detected in soil or groundwater at concentrations that exceeded applicable regulatory screening levels.

One or more of the following were detected in soil samples GP-14 and GP-15 at concentrations exceeding their applicable U.S. EPA RSL for Industrial Soil: benzene, ethylbenzene, and naphthalene.

One or more of the following were detected in groundwater samples GP-14, GP-15, and GP-16 at concentrations exceeding their applicable U.S. EPA Maximum Contaminant Level (MCL) or Utah ISL: benzene, ethylbenzene, m,p-xylenes, TPH-GRO, and total petroleum hydrocarbons and diesel-range organics (TPH-DRO).

Groundwater sample GP-14 exhibited a benzo(a)pyrene concentration that exceeded the applicable U.S. EPA MCL; however, it is highly likely this sample was biased high by the high turbidity caused by the sample collection method.

Given the soil and groundwater data, Wasatch recommended additional subsurface investigations be completed at the Site.

In December 2021, Wasatch completed nine additional soil borings that facilitated the collection and analysis of soil and groundwater samples at, and nearby, the Site to further evaluate the identified impacts at the Site. Based on those data, Wasatch concluded the following:

- The analytical results indicate that arsenic-impacted groundwater is migrating off-Site at concentrations that exceed both the U.S. EPA MCL and the Utah Groundwater Quality Standard.
- Based on the groundwater analytical data, petroleum hydrocarbons are not migrating off-Site at concentrations that exceed the Utah ISLs in the locations sampled.
- One or more petroleum hydrocarbon analytes were detected at concentrations that exceed the Utah ISLs, but are below the Utah RBCA Tier 1 Screening Levels in the following borings: GP-11, GP-15, GP-26, and GP-27. One or more petroleum hydrocarbon analytes were detected at concentrations that exceed the Utah RBCA Tier 1 Screening Levels in the following borings: GP-14, GP-16, GP-22, GP-23, and GP-24. The lateral extent of the petroleum impacts to soil have not been defined to the Utah ISLs, but it generally appears that the petroleum hydrocarbon concentrations diminish as the distance from borings GP-14 and GP-22 increases. The vertical extent of petroleum impacts to soil appears to vary from 4 to 10 feet bgs across the area of impact.
- Given the totality of the data collected, and given the proposed industrial use of the Site, Wasatch recommended the lead impacts to soil be excavated and properly disposed off-Site. Additionally, remediation of the petroleum-impacted soil and groundwater is also recommended. It has been Wasatch's experience that active remediation of arsenic-impacted groundwater may not be required by the Utah Department of Environmental Quality (DEQ) within the Salt Lake Valley; however, the installation of groundwater monitoring wells and long-term groundwater monitoring may be requested by the Utah DEQ.

Wasatch recommended that these impacts be reported to the Utah DEQ. Wasatch recommended additional investigation activities be conducted in order to fully delineate the extent of impacts at the Site.

The owner/operator of the Site has reported the release to the Utah DEQ. As of July 22, 2022, the Site has been entered into Utah Voluntary Cleanup Program (VCP) for regulatory oversight and has been assigned VCP Site #C122. The Utah VCP requested that additional site characterization activities be completed at the Site to facilitate the development of a RAP.

In March 2023, Wasatch completed site characterization investigation activities that consisted of collecting five initial decision unit (DU) surface soil composite samples; collecting 10 follow-up DU surface soil composite samples; installing, developing, and sampling five groundwater monitoring wells; and advancing six soil borings that facilitated the collection and analysis of soil and groundwater samples from the Site to further evaluate the identified impacts at the Site. Based on that data Wasatch concluded the following:

- Based on the totality of the polychlorinated biphenyl (PCB) in soil data, it is Wasatch's opinion that no active remediation is required for these impacts as no PCBs were detected in any of the sub-divided DUs where PCBs were sampled.
- Based on the totality of the arsenic in soil data, all detected arsenic concentrations in soil exceed the U.S. EPA RSL for Residential and Industrial Soil. As a site-specific background level for arsenic is not available, for an initial cleanup goal for arsenic in soil, a value of 45 mg/kg was requested. If this cleanup goal concentration is acceptable, Wasatch has determined that additional soil sampling for evaluating arsenic is not required as the average arsenic concentration in surface soil is 22.83 mg/kg and the average arsenic concentration in soil for the

discrete soil samples is 23.20 mg/kg. Even though the average arsenic in soil concentrations are below the proposed cleanup goal, the elevated arsenic in soil hot spots detected in samples GP-9 (2-3') and GP-11 (3-4') are expected to be remediated or we would evaluate the exposure risks to facilitate appropriate institutional and/or engineering controls to mitigate these impacts.

- Based on the surface soil data, only initial DU DU-2 and sub-divided DU DU-2E exhibited lead concentrations in soil that exceeded the U.S. EPA RSL for Industrial Soil. The subsurface soil samples collected within the DU-2E area exhibited lead concentrations below the U.S. EPA RSL for Residential Soil. Therefore, it is our opinion that deep lead impacts are likely not present within this area.
- Based on the totality of the lead in soil data, the elevated lead and arsenic concentrations in the soil hot spots detected in samples DU-2E, GP-9 (2-3'), and GP-11 (3-4') are expected to be remediated or we would evaluate the exposure risks to facilitate appropriate institutional and/or engineering controls to mitigate these impacts.
- Based on the totality of the metals in soil data, no other metals exhibited concentrations that would require further investigation or mitigation.
- Based on the totality of the arsenic in groundwater data, it appears that the concentration range of arsenic-impacted groundwater entering the Site (highest concentration entering the Site is located at the southeast corner) is approximately equal to the arsenic impacted groundwater hydraulically downgradient of the Site. Only one arsenic hot spot in groundwater was identified within the petroleum release area located on the southwestern corner of the Site. It is our opinion that the release of petroleum hydrocarbons in this area has likely increased the leachability of arsenic for this area resulting in elevated arsenic concentrations in groundwater. This area is planned for active remediation which should result in the reduction of arsenic in groundwater to concentration ranges entering the Site.
- Based on the totality of the metals in groundwater data, no other metals exhibited concentrations that would require further investigation or mitigation.
- No VOCs were detected in any of the surface or subsurface soil samples collected. Additionally, no petroleum hydrocarbons were detected at concentrations that exceed their applicable Utah RBCA Tier 1 Screening Level.
- All VOC and petroleum hydrocarbon groundwater samples were non-detect except for one trace detection of methyl tertiary-butyl ether (MTBE) and three low detections of O&G all below their applicable Utah ISLs.
- Given the totality of the VOC and petroleum hydrocarbon data, impacts to the southwest corner of the Site are recommended for active remediation. Additionally, it does not appear that these impacts are migrating off-Site. This is likely due to the clay lithology of the Site.
- Given the totality of the data collected and given the continued and planned industrial use of the Site, it is Wasatch's opinion that impacts at the Site have been sufficiently defined to facilitate the development of an appropriate RAP for the Site.

Based on the totality of the analytical data collected from the Site, it is Wasatch's opinion that impacts at the Site have been sufficiently defined to develop an effective RAP.

See Figure 4 for the historical sample locations and Site features, Figure 5 for a piezometric surface map, Figure 6 for select soil exceedances source areas, Figure 7 for select groundwater exceedances, and Figure 8 for arsenic in soil and groundwater concentrations.

1.3 Conceptual Site Model

The Site is located within the discharge area for the principal basin-fill aquifer system. The discharge area of the basin-fill aquifer system is characterized by a shallow unconfined aquifer overlying a deep confined aquifer, with a confining layer (aquitard) separating the shallow unconfined aquifer from the deep confined aquifer. The discharge area typically exhibits an upward vertical hydraulic gradient.

Soils at the Site generally consist of gravelly sand (SW/SP), gravel (GP), and clay (CL) fill materials ranging in thickness from 1 to 5 feet bgs. The fill is underlain primarily by clay (CL) and clayey sand (SC) with some silt (ML) and sand (SP). The dominant lithology for the Site is clay (CL). Based on previous borings and monitoring wells, depth to groundwater at the Site ranges from approximately 5 to 9 feet bgs. The hydraulic gradient is generally to the northwest. Soils consisting primarily of silts and clays are potential contaminant storage zones. The majority of the metals impacts to soil appear to be located within the surface soils or the upper 3 to 4 feet of soil at the Site, and the petroleum hydrocarbon impacts are typically located within the upper 6 feet of soil but extend potentially down to 10 feet in localized areas.

The southwest portion of the Site exhibits evidence of significant petroleum hydrocarbon contamination (exceeding U.S. EPA RSLs for Residential Soil and Industrial Soil) in shallow and deep soil indicative of a surface release(s) in this area. The distribution of these impacts appears to be localized in the southwestern portion of the Site.

Based on the groundwater samples collected by Wasatch, groundwater samples GP-14, GP-15, GP-16, GP-22, GP-23, and GP-23 exhibited petroleum hydrocarbon impacts (including benzene, ethylbenzene, and xylenes) concentrations that exceed the applicable U.S. EPA MCL or Utah ISLs.

All soil samples collected by Wasatch for metals analysis exhibited arsenic concentrations in soil that exceed the U.S. EPA RSL for Residential and Industrial Soil. It is Wasatch's opinion that the detected arsenic in soil concentrations has been properly characterized should not require active remediation except as discussed below and in Section 2.2.

Wasatch soil samples GP-9 (2'-3') and GP-11 (3'-4') exhibited lead (1,270 mg/kg and 5,390 mg/kg) and arsenic (109 mg/kg and 141 mg/kg) concentrations in soil that exceed the U.S. EPA RSLs for both Residential and Industrial Soil. No soil samples were collected below these samples; however, these impacts are located in an area of former battery storage as part of the former automotive wrecking activities at the Site. It has been Wasatch's experience that heavy metal impacts from battery storage typically do not extend below 5 feet bgs and typically do not significantly spread laterally from the footprint of the battery storage area. No other metals were detected at concentrations exceeding applicable U.S. EPA RSLs for Industrial Soil in these samples.

Wasatch soil sample DU-2E exhibited a lead (1,270 mg/kg) concentration that exceeds the U.S. EPA RSLs for both Residential and Industrial Soil. No other surface soil samples exhibited heavy metals concentrations that exceed the U.S. EPA RSLs for Industrial Soil (except for arsenic, see Section 2.2 for further details)

No other heavy metals impacts were detected in soil samples collected by Wasatch at concentrations that exceeded their applicable U.S. EPA RSLs for Industrial Soil.

Based on the totality of the arsenic in groundwater data, it appears that the concentration range of arsenic-impacted groundwater entering the Site (highest concentration entering the Site is located at the southeast corner) is approximately equal to the arsenic impacted groundwater hydraulically downgradient of the Site. Only one arsenic hot spot in groundwater was identified within the petroleum release area located on the southwestern corner of the Site. It is our opinion that the release of petroleum hydrocarbons in this area has likely increased the leachability of arsenic for this area resulting in elevated arsenic concentrations in groundwater. This area is planned for active remediation which should result in the reduction of arsenic in groundwater to concentration ranges entering the Site.

Based on the groundwater samples collected by Wasatch, no other metals were detected at concentrations that exceeded their applicable U.S. EPA MCL. Given the Site will be using a municipal water supply and not the shallow groundwater, this exposure pathway for metals is considered to be incomplete. Therefore, Wasatch plans to mitigate these impacts and potential exposure risks through the use of institutional controls to be placed at the Site.

The source areas have been identified at the Site. See Figure 6 for source area locations. Figure 9 is a graphical depiction of the CSM envisioned as an exposure model showing pathways from the contaminants and contaminant sources to the exposure media, exposure routes, and receptors.

1.4 Objectives

Mountain Crest Wasatch, LLC, plans to redevelop the Site mainly for use as an industrial metal recycling facility. Therefore, the objective of this remedial action is to remediate soil and groundwater at the Site to meet the U.S. EPA RSLs for Industrial Soil (not including arsenic) and U.S. EPA MCLs for groundwater or to site-specific fractionation risk thresholds. Given that the Site will be using a municipal water supply and not the shallow groundwater, this exposure pathway is considered to be incomplete and exposure risks to the arsenic in groundwater impacts will be mitigated using institutional controls described below.

2. REMEDIAL ACTION SELECTION

Site characteristics, historical and proposed future land use of the Site, current land use of properties surrounding the Site, and the nature and distribution of contamination at the Site are discussed in Sections 1.1 Site Description, 1.2 Site Background, and 1.3 Conceptual Site Model of this RAP. The information presented in these sections of the RAP serve as the basis for the selection of appropriate remedial action measures, engineering controls, and institutional controls as discussed in the following sections.

2.1 Contaminants of Concern

Contaminants of concern at the Site are arsenic, lead, benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), TPH-GRO, TPH-DRO, and TRPH/O&G.

2.2 Proposed Cleanup Goals

Based on the totality of the arsenic soil data, all detected arsenic concentrations in soil exceed the U.S. EPA RSLs for Residential and Industrial Soil. As a site-specific background level for arsenic is not available, for the initial proposed cleanup goal for arsenic, a value of 45 mg/kg is requested. If this cleanup goal concentration is acceptable, Wasatch has determined that additional soil sampling for evaluating arsenic is not required as the average arsenic concentration in surface soil is 22.83 mg/kg and the average arsenic concentration in soil for the discrete subsurface soil samples is 23.20 mg/kg. The elevated arsenic in soil hot spots detected in samples GP-9 (2-3') and GP-11 (3-4') are planned to be remediated as discussed in Section 3.

Soil at the Site would be remediated to meet the U.S. EPA RSLs for Industrial Soil (except for arsenic as discussed above) or for TPH-GRO, TRPH, O&G, and TPH-DRO site-specific fractionation risk cleanup goals (calculated using the DERR-approved DERR RBCA Site-Specific Cleanup Level [SSCL] calculator, see Appendix D) will apply for the following exposure pathways: surface soil ingestion and subsurface soil ambient air vapor inhalation. The site-specific fractionation risk for subsurface soil indoor air vapor inhalation will also be evaluated, but would not be considered a remediation goal, as if this threshold is exceeded this exposure would be mitigated using engineering controls. Remediation of soil to this standard is protective of composite workers and construction workers with respect to the soil ingestion and inhalation exposure pathways.

Based on the totality of the arsenic in groundwater data, it appears that the concentration range of arsenic-impacted groundwater entering the Site (highest concentration entering the Site is located at the southeast corner) is approximately equal to the arsenic impacted groundwater hydraulically downgradient of the Site. Only one arsenic hot spot in groundwater was identified within the petroleum release area located on the southwestern corner of the Site. It is our opinion that the release of petroleum hydrocarbons in this area has likely increased the leachability of arsenic for this area resulting in elevated arsenic concentrations in groundwater. This area is planned for active remediation which should result in the reduction of arsenic in groundwater to the concentration ranges entering the Site.

Groundwater at the Site would be remediated to meet the U.S. EPA MCLs (except for arsenic as discussed above) or site-specific fractionation risk goals for the groundwater outdoor air vapor inhalation pathway. The site-specific fractionation risk for groundwater indoor air vapor inhalation pathway would be evaluated, but would not be considered a remediation goal, as if this threshold is exceeded this exposure would be mitigated using engineering controls. Groundwater is not used at the Site; therefore, the ingestion of groundwater exposure is not complete and this exposure would be mitigated using engineering or institutional controls.

If residual petroleum contamination at concentrations above the U.S. EPA RSLs for Residential Soil but below the U.S. EPA RSLs for Industrial Soil or TPH-GRO, TPH-DRO, TRPH, and O&G concentrations above Utah ISLs remains on-Site, that for whatever reason could not be adequately addressed during the remedial action, Wasatch would collect additional samples to be fractionated to determine potential risks if left in place. If fractionation results indicate applicable risks are acceptable, Wasatch would request regulatory closure be issued for the release.

No active remediation is proposed for the arsenic impacts to groundwater; however, it is Wasatch's opinion that the active remediation proposed for the petroleum hydrocarbons will likely reduce the arsenic in groundwater concentrations within that area to concentrations ranges entering the Site.

Following active Site remediation, residual risk to on-Site receptors would be managed through the use of engineering and institutional controls (discussed in Section 2.4 below), if required.

2.3 Proposed Remedial Action Measures

Given the Site characteristics, nature and distribution of contaminants, and proposed future land use; Wasatch proposes over-excavation and off-Site disposal of the impacted soil within the source areas. Additionally, petroleum-impacted groundwater would be extracted from the petroleum soil excavation, then treated on-Site and properly discharged under permit to the stormwater sewer. Details regarding the remedial action measures are provided in Section 3 of this RAP.

2.4 Proposed Engineering and Institutional Controls

The following engineering and institutional controls are proposed in the event that the remedial action fails to fully achieve the proposed cleanup levels and to manage residual exposure risks following remedial action.

2.4.1 Environmental Covenant (EC) and Site Management Plan (SMP)

If residual contamination at concentrations above the Utah ISLs/U.S. EPA RSLs for Residential Soil but is below U.S. EPA RSLs for Industrial Soil, or exceeds acceptable fractionation risk cleanup goals, remains on-Site that for whatever reason and could not be adequately addressed during the remedial action; institutional controls (i.e., an EC and/or SMP, etc.) and engineering controls may be implemented to reduce the probability of exposure to the contaminated soil and/or groundwater by restricting how the Site may be used (e.g., forbidding the extraction and use of shallow groundwater, providing directions for managing impacted groundwater in the future [groundwater monitoring, obtaining groundwater dewatering permits if needed], etc.). This would be protective of Site occupants and could facilitate regulatory closure of the release site with

residual soil and/or groundwater contamination left in place on-Site. The EC and SMP would be subject to review and approval by the Utah Division of Environmental Response and Remediation (DERR).

3. REMEDIAL ACTION DESIGN AND CONSTRUCTION

Details of the remedial design (i.e., excavation boundaries and depths) may be subject to revision based on unforeseen Site conditions and the results of any additional site characterization work (if required) or confirmation sampling results that may be performed. Any substantive revisions to the approved RAP would be submitted in writing to the VCP prior to implementation of the revision, and would be subject to VCP review and approval. Critical aspects of the remedial design are illustrated in Figure 6.

3.1 VCP Requested Sampling

Given that the TRPH and O&G concentrations for shallow soil sample DU-1 exceeded the Utah ISLs, the VCP has requested that another sample be collected using the same process as the DU-1 sample. This sample would be analyzed for TPH fractionation using U.S. EPA Method 8270E to further evaluate the risks associated with these impacts. Given the low concentrations detected, it is likely the fractionation results will be below fractionation risk cleanup goals. Wasatch will only apply the following site-specific cleanup level exposure pathways to determine if impacts require remediation: surface soil ingestion and subsurface soil ambient air vapor inhalation. The site-specific fractionation risk for subsurface soil indoor air vapor inhalation will also be evaluated, but would not be considered a remediation goal, as if this threshold is exceeded this exposure would be mitigated using engineering controls. Wasatch anticipates that active remediation will not be required for this area. See Figure 6 for the sample location area.

Given that the TPH-DRO concentration for shallow soil sample DU-2 exceeded the Utah ISLs, but was below the Utah RBCA Tier I Screening Level, the VCP has requested that another sample be collected using the same process as the DU-2 sample was collected. This sample would be analyzed for TPH-DRO fractionation using U.S. EPA Method 8270E to further evaluate the risks associated with these impacts. Given the low concentration detected, it is likely the fractionation results will be below fractionation risk cleanup goals. Wasatch will only apply the following site-specific cleanup level exposure pathways to determine if impacts require remediation: surface soil ingestion and subsurface soil ambient air vapor inhalation. The site-specific fractionation risk for subsurface soil indoor air vapor inhalation will also be evaluated, but would not be considered a remediation goal, as if this threshold is exceeded this exposure would be mitigated using engineering controls. Wasatch anticipates that active remediation will not be required for this area. See Figure 6 for the sample location area.

If contamination is discovered in the surface soil DUs at concentrations above the site-specific fractionation risk thresholds, each impacted DU will be subdivided into 5 smaller DUs and resampled per the process of the original DU sample; however, the subdivided DUs would also be sampled for TRPH and O&G (for the DU-1 area only) and TPH-DRO (for the DU-2 area only). If the subdivide DUs exceed the applicable Utah ISL and the site-specific fractionation risk thresholds described above, the DU impacts will be remediated in the same manner as excavation EXC-1 described in Sections 3.2.1 and 6.3.1.

3.2 Impacted Soil Excavation and Off-Site Disposal

3.2.1 Shallow Impacted Soil Area

DU-2E has been identified as being contaminated with lead in shallow soils. These impacts are primarily located along a portion of the northeastern boundary just east of the former dismantling building located at the Site. See Figure 6 for a depiction of the impacted shallow soil area. Wasatch proposes excavation (EXC-1) and off-Site disposal of these lead impacts to shallow soil. Soil under the on-Site buildings would not be excavated as the buildings are not planned for demolition. A large area of this DU is covered with concrete pavement. The concrete pavement

will be excavated and the soil beneath the concrete will be screened with an XRF to determine if this soil will also require excavation and off-Site disposal. If unexpected contamination is found under the concrete planned for removal, an environmental professional will notify the DERR and the Client to determine the appropriate sampling to be conducted to characterize the impacts. Wasatch assumes the impacted soil would be excavated using an excavator and directly loaded into dump trucks and transported to the Salt Lake County Landfill for disposal. Each load would be documented with a non-hazardous waste manifest. If soils cannot be directly loaded into a dump truck, soils may be stockpiled at the Site only on impacted areas that have not been remediated. If the stockpile is to be left overnight, the stockpiled soil will be covered with plastic sheeting and secured to prevent dust migration. However, the characterization of the waste will determine the final disposition of the waste at an appropriate facility.

3.2.2 Deep Impacted Soil Areas

Deep lead and arsenic hot spot impacts to soil were identified at borings GP-9 (proposed excavation EXC-2) and GP-11 (proposed excavation EXC-3). See Figure 6 for the estimated areal extent of the deep lead and arsenic soil impacts. Deep petroleum hydrocarbon impacts to soil were identified on the southwest corner of the Site (proposed excavation EXC-4). Wasatch proposes over excavation and off-Site disposal of these source areas. Wasatch assumes the lead and arsenic impacted soil areas would be excavated using an excavator and directly loaded into dump trucks and transported to Salt Lake County Landfill for disposal. Wasatch assumes the petroleum hydrocarbon impacted soil areas would be excavated using an excavator and directly loaded into dump trucks and transported to ET Technologies. Each load would be documented with a non-hazardous waste manifest. If soils cannot be directly loaded into a dump truck, soils may be stockpiled at the Site only on impacted areas that have not been remediated. If the stockpile is to be left overnight, the stockpiled soil will be covered in plastic sheeting and secured to prevent dust migration. However, the characterization of the waste will determine the final disposition of the waste at an appropriate facility.

The anticipated depth of EXC-2 is approximately 4 feet bgs. The anticipated depth of EXC-3 is approximately 5 feet bgs. The areal extent of EXC-2 and EXC-3 will be guided using an XRF-analyzer and soil confirmation samples.

The anticipated depth of EXC-4 is likely to range from 3 to 10 feet bgs. The areal extent of EXC-4 will be guided by past data, the use of a PID, and the results of soil test pit and soil confirmation sampling data. Additionally, in areas of EXC-4 where BTEXN, if below U.S. EPA RSLs for Industrial Soil but TPH-DRO or TPH-GRO exceed the Utah ISLs, test pits will be completed to facilitate the collection of TPH-GRO fractionation and TPH-DRO fractionation samples to evaluate if soil excavation will be required for these areas. Wasatch would coordinate these sample results with the VCP to coordinate a final proposed excavation boundary for EXC-4. See Figure 6 for a map of soil exceedances and initial EXC-4 extent.

3.3 Extraction, Treatment, and Disposal of Petroleum Impacted Groundwater

Groundwater collecting in excavation EXC-4 will be pumped into a Baker tank, aerated to remove volatile organic compounds (VOCs), and discharged through a bag filter and granular activated carbon vessel to the storm sewer. Groundwater discharge to the storm sewer will require a Utah Pollutant Discharge Elimination System (UPDES) permit and the water will be tested to verify that the discharged water meets the permitted discharge requirements. Appropriate permits for discharge will be obtained prior to commencement of work.

3.4 General Demolition and Construction Issues

The following best management practices would be employed during implementation of the remedies specified in this RAP:

- The VCP would be notified and provided with an opportunity to be present on-Site to observe the remedial activities.
- Storm drain openings would be covered, and runoff would be controlled during drilling (if required) and excavation activities to prevent mud and contaminants from entering the storm sewer system.
- The soil excavation subcontractor would be required to decontaminate their equipment prior to arrival at the Site, and prior to demobilization from the Site.
- A track-out area would be constructed by the excavation subcontractor (DPS) and utilized for any heavy equipment leaving the Site to prevent tracking mud and/or contaminants on to public roadways.
- Site access would be limited by erecting temporary chain-link fencing or other appropriate barriers around any excavation that extends beyond 1.5 feet in depth. The fencing would remain in place until the excavations deeper than 1.5 feet bgs are backfilled to 1 foot bgs or less.

3.5 Installation of Vapor Barriers

If cleanup goals or acceptable fractionation risk cleanup goals cannot be met, Wasatch would propose the installation of vapor barriers consisting of 15-mil Stego® Wrap (or equivalent) beneath all the new occupied structures constructed on the Site within 50 feet of the remaining petroleum hydrocarbon impacts of concern. The vapor barriers would be installed by a qualified contractor. All seams, edges, and penetrations would be sealed in accordance with the manufacturer's recommendations. Specifications and installation instructions for the vapor barrier are provided in Appendix C.

4. PERMITTING REQUIREMENTS

4.1 Blue Stakes Utility Clearance Request

A utility clearance request would be submitted to Blue Stakes at least two full business days prior to the commencement of the remediation work. The Blue Stakes utility clearance would be renewed every 12 calendar days for the duration of the project.

4.2 Storm Water Pollution Prevention Plan (SWPPP)

Given that the total area of soil disturbance is below the South Salt Lake area threshold, a SWPPP will not be required for the work described in this RAP. However, subcontractors will be required to use best management practices (i.e., cover exposed storm drains and manage runoff, etc.) to prevent adverse impacts to the storm sewer system.

4.3 Utah Division of Air Quality (DAQ) Requirements

Per Utah DAQ requirements, a Fugitive Dust Control Plan (FDCP) has been completed and approved by the Utah DAQ and included in the Fugitive Emissions Monitoring Plan (FEMP) in Appendix B. See Appendix B for the full copy of the FEMP that applies to the proposed remedial activities.

Dust control is a top priority for the successful completion of this remediation. Because of the potential of lead and PAHs in the soils being disturbed during the project, dust control is essential to prevent potential exposure of dust containing lead and/or petroleum hydrocarbons to adjoining properties and on-Site workers. The remediation contractor and Wasatch will be responsible for controlling fugitive dust emissions during the project and for implementing a Utah DAQ-approved FEMP for the project.

Fugitive dust will be controlled using standard construction practices. Wetting the soils will be the primary control technology for fugitive dust emissions. If wetting the soils cannot control the fugitive emissions, additional dust-control measures will be implemented, which may include the following:

- Reducing on-Site vehicle speeds,
- Limited drop heights when loading soil,
- Reducing work activities,
- Halting work if fugitive dust emissions cannot be controlled,
- Wetting soil stockpiles, and
- Tarping all loads exiting the Site.

The plan's objective is to limit potential exposures to fugitive dust emissions to commercial/industrial workers at adjacent properties to the Site, nearby commercial workers, and workers involved with soil removal activities. Fugitive dust levels will be assessed using U.S. EPA Method 9 (Visual Determination of Opacity of Emissions from Stationary Sources). If the Method 9 results do not meet the air monitoring objectives, implementation of the best management practices documented in the FEMP will be immediately employed.

4.4 Salt Lake County Health Department

The Salt Lake County Health Department would be notified at least 72 hours prior to commencement of field work related to the remediation activities at the Site.

4.5 UPDES – Groundwater Discharge Permit

A UPDES General Permit will be obtained from the Utah Division of Water Quality to facilitate the disposal of impacted groundwater that has been treated on-Site related to the remedial action.

4.6 South Salt Lake Non-Right of Way Permit

A South Salt Lake No- Right of Way permit will be obtained. This permit is required for excavations that will be completed within private property areas.

5. PUBLIC NOTIFICATION AND PARTICIPATION

The Volunteer, and Wasatch acting as an agent of the Volunteer, would clearly convey to stakeholders a commitment to open an honest communication, a commitment to partnering with the Utah Department of Environmental Quality (UDEQ) in matters of public involvement, and a commitment to being sensitive and responsive to the concerns of stakeholders. Stakeholders include not only the Volunteer, Volunteer's environmental attorney, Volunteer's consultant, UDEQ, and affected and nearby property owners/lessees/occupants; but may also include public utilities, the Salt Lake County Health Department, and South Salt Lake government.

In stakeholder communications, Wasatch would explain the iterative nature of environmental investigations and complexities related to actual exposure risk. Wasatch would explain that contamination present in soil or groundwater does not necessarily result in exposure risk. Wasatch would further explain that the data we are gathering would allow us to identify and then reduce or eliminate exposure pathways and associated risks during Site remediation and mitigation efforts.

Communication with stakeholders may be necessary in order to obtain access agreements. All access agreements would be obtained in writing, prior to the commencement of field work. When requesting access to perform investigation, remediation, or mitigation activities on-Site Wasatch would:

- Explain why the work needs to be performed.
- Explain what is known about the release(s) at the time of the request for access that is driving the need for access (without engaging in speculation).
- Clearly describe the nature of the work to be performed.
- Meetings with the Wasatch project manager and VCP project manager would be offered if stakeholders have questions or concerns that cannot be otherwise immediately addressed.
- Allow stakeholders to provide input on sampling locations, dates, and times (when work would be conducted on-Site).
- Provide the stakeholders with contact information for the Wasatch project manager and VCP project manager.

Communication with stakeholders would also be necessary as the results from various phases of investigation and confirmation sampling become available. Wasatch, with assistance from the UDEQ (if required), would communicate with stakeholders to inform stakeholders of the results of the remediation and confirmation sampling as it proceeds, and provide stakeholders with updated information as it is warranted and in a timely manner. If requested by stakeholders, Wasatch would provide stakeholders with data related to their specific business (i.e., confirmation soil data) and Site-wide groundwater data maps. Stakeholders would be provided information on how they may obtain copies of complete project-related documents through the UDEQ website or by submitting a Government Records Access and Management Act (GRAMA) request. Wasatch would also offer to facilitate meetings between concerned stakeholders, the UDEQ, Volunteer, and Volunteer's environmental attorney, as necessary.

Wasatch would submit drafts of any written public outreach materials to the VCP project manager for review and provide final copies for the VCP project file. Depending on the number of stakeholders that ultimately become affected by the investigation and remediation activities, Wasatch (in cooperation with the Volunteer, Volunteer's environmental attorney, and UDEQ) may need to conduct public meetings to facilitate effective communication with multiple stakeholders.

A public notice informing the general public and adjacent industrial/commercial properties of the proposed remediation activities and how to obtain additional details of the proposed project has been prepared. A copy of the notice (presented as Appendix A) will be hand delivered to the adjoining property owners and will be published in The Salt Lake Tribune.

For community questions or concerns during remediation activities, a sign at the construction entrance will direct questions and/or comments to Mr. Blake Downey, Wasatch Environmental (801) 972-8400. The Volunteer, and Wasatch acting as an agent of the Volunteer, would adhere to the VCP requirements regarding the public comment period required prior to implementing any remediation strategy. Prior to implementation of any remediation strategy, written notification would be provided to adjacent landowners and a notice would be placed in a local newspaper. Notification would be followed by a public comment period on the RAP of no less than 30 days. Any substantive public comments that are received would be responded to per VCP procedures prior to implementation of the RAP.

6. SAMPLING AND ANALYSIS

6.1 Test Pit Sampling

Test pit soil samples would also be collected from the locations depicted on Figure 6 to reduce the area of active remediation for EXC-4 where deep petroleum hydrocarbon contamination has been identified through site characterization activities. One soil confirmation sample would be collected per test pit at the depth interval exhibiting the highest degree of impacts based on field observations (i.e., soil staining, petroleum odors, and elevated PID readings). However, soil samples collected from test pit locations that coincide with previous sample locations will be collected at that same depth interval.

The soil samples would be collected using gloved hands and dispensed into appropriate laboratory supplied/prepared containers and immediately placed in iced coolers. Each sample would be labeled with date of collection, sample time, sample identification, and requested analysis. The soil samples would be submitted under chain-of-custody protocol (in accordance with the Utah VCP-approved SAP and QAPP) to Chemtech-Ford Laboratories (CF) for analysis. The soil samples would be analyzed for TPH-GRO fractionation using U.S. EPA Method 8260D and TPH-DRO fractionation using U.S. EPA Method 8270E. See Figure 6 for a map of the anticipated excavation extents.

All samples will be documented and handled in accordance with the Utah VCP-approved SAP and QAPP. The resulting laboratory data will be subject to third-party data validation. Soil samples would be analyzed at standard laboratory turnaround time unless Wasatch is directed by Mountain Crest Wasatch, LLC to expedite the analyses.

All soil confirmation samples will be mapped and documented.

6.2 Waste Characterization Sampling

Waste soil will be generated in conjunction with the excavation activities. Wasatch would perform waste characterization sampling prior to commencing with the proposed excavation activities in accordance with the SAP and complete the appropriate waste profiles to be approved by the facility receiving the waste (Salt Lake County Landfill [metals-impacted waste] or ET Technologies [petroleum impacted soil]) based on the waste characterization sampling results. If required, Wasatch would submit a work plan to the Utah Division of Waste Management and Radiation Control (DWMRC) to provide sufficient waste characterization data to obtain a "not contained-in" determination from the Utah DWRMC. This will be completed to verify the produced soil waste is considered not characteristically hazardous. The soil waste will be transported by DPS to Salt Lake County Landfill or ET Technologies. All waste materials generated for off-Site disposal will be taken to permitted facilities capable of handling the specific waste stream.

6.3 Soil Confirmation Sampling

Soil confirmation samples will be collected to verify that the cleanup levels have been met.

6.3.1 Shallow Soil Source Area

For the shallow soil impacts at the Site (impacts located with DU-2E [EXC-1]), one soil confirmation sample would be collected for every 2,000 square feet of excavation floor area with a minimum of one floor sample. One soil confirmation sample would be collected per 50 feet of excavation sidewall not allowing more than 100 feet of sidewall to go unsampled with a minimum of four sidewall samples.

The soil confirmation samples would be collected using gloved hands and dispensed into appropriate laboratory supplied/prepared containers and immediately placed in iced coolers. Each sample would be labeled with date of collection, sample time, sample identification, and requested analysis. The soil samples would be submitted under chain-of-custody protocol (in

accordance with the Utah VCP-approved SAP and QAPP) to CF, a Utah-certified analytical laboratory, for analysis. Each soil confirmation sample would be analyzed for lead using U.S. EPA Method 6020B.

All samples will be documented and handled in accordance with the Utah VCP-approved SAP and QAPP. The resulting laboratory data will be subject to third-party data validation. Soil samples would be analyzed on standard laboratory turnaround time unless Wasatch is directed by Mountain Crest Wasatch, LLC, to expedite the analyses.

All soil confirmation samples will be mapped and documented.

6.3.2 Deep Soil Source Areas

Soil confirmation samples would also be collected from the floor and sidewalls of excavations EXC-2, EXC-3, and EXC-4 where deep contamination has been identified through site characterization activities. One soil confirmation sample would be collected per 50 feet of excavation sidewall not allowing more than 50 feet of sidewall to go unsampled with a minimum of four sidewall samples per excavation. One soil confirmation sample would be collected for every 2,000 square feet of excavation floor area with a minimum of one floor sample per excavation.

The soil confirmation samples would be collected using gloved hands and dispensed into appropriate laboratory supplied/prepared containers and immediately placed in iced coolers. Each sample would be labeled with date of collection, sample time, sample identification, and requested analysis. The soil samples would be submitted under chain-of-custody protocol (in accordance with the Utah VCP-approved SAP and QAPP) to CF for analysis. The confirmation soil samples collected from excavations EXC-2 and EXC-3 would be analyzed for lead and arsenic using U.S. EPA Method 6020B. The soil confirmation samples collected from excavation EXC-4 would be analyzed for MBTEXN and TPH-GRO (and TPH-GRO fractionation if necessary to support evaluations) using U.S. EPA Method 8260D, and TPH-DRO using U.S. EPA Method 8015D with silica gel treatment (SGT). Additionally, analysis of TPH-DRO fractionation would be completed using U.S. EPA Method 8270E if necessary to support evaluations. See Figure 6 for a map of the anticipated excavation extents.

All samples will be documented and handled in accordance with the Utah VCP-approved SAP and QAPP. The resulting laboratory data will be subject to third-party data validation. Soil samples would be analyzed at standard laboratory turnaround time unless Wasatch is directed by Mountain Crest Wasatch, LLC to expedite the analyses.

All soil confirmation samples will be mapped and documented.

6.4 Groundwater Confirmation Sampling

Groundwater confirmation samples will be collected to verify that the cleanup levels have been met. Wasatch anticipates encountering groundwater within the EXC-4 excavation. If groundwater is encountered, Wasatch will collect at least two groundwater confirmation samples from the open excavation after the dewatering activities, one from the upgradient portion and one from the downgradient portion of the excavation, using a Teflon dipper. If the detected concentrations in the groundwater confirmation samples exceed any of the Utah ISLs and the site-specific fractionation risk cleanup goals following the dewatering activities, additional dewatering activities will be completed and at least two additional groundwater confirmation samples will be collected. The groundwater confirmation samples will be collected with a extendable dipper sampling device with gloved hands and dispensed into the appropriate laboratory supplied/preserved jars for the required analysis. The samples will be immediately placed on ice and delivered to CF, under chain-of-custody protocol, for analysis of MBTEXN and TPH-GRO (and TPH-GRO fractionation if necessary to support evaluations) using U.S. EPA Method 8260D and TPH-DRO using U.S. EPA Method 8015D with SGT. Additionally, analysis of TPH-DRO fractionation

would be completed using U.S. EPA 8270E if necessary to support evaluations. All samples will be analyzed on a laboratory 24-hour turn-around time.

7. CONTINGENCY PLANNING

The Utah VCP has requested that additional groundwater monitoring activities be completed for the petroleum hydrocarbon impacts, Wasatch will coordinate with the VCP to install one source area monitoring well (within the impacted area) and one or two monitoring wells downgradient of the source area to be remediated. Wasatch would also coordinate with the VCP to determine an appropriate monitoring well locations and sampling regime. This would be done through a future work plan to be approved by the VCP.

Although no building demolition is planned at this time, if demolition of on-Site buildings occurred soil samples would be collected from beneath any unidentified subsurface features of concern where there may be indications of a release. Sampling would be conducted in accordance with the Utah VCP-approved QAPP and SAP. If contamination above industrial screening levels is confirmed through this sampling; the soil would be excavated, Wasatch would perform waste characterization sampling in accordance with the SAP, and Wasatch would complete the appropriate waste profiles to be approved by the facility receiving the waste. All waste would be left in place or properly contained in labeled 55-gallon drums or roll-off containers pending laboratory analysis and proper transport and disposal.

If contamination is discovered in unexpected locations, at unexpected concentrations, or if new contaminants are discovered that were not expected based on Site history and previous data; Wasatch would immediately communicate relevant findings to Mountain Crest Wasatch, LLC, and the DERR and work to develop an appropriate remedial alternative.

If the data resulting from confirmation sampling indicate that the remedial strategy, after implementation, has not been effective at remediating the contamination (either in localized areas or Site-wide) Wasatch would immediately communicate relevant findings to Mountain Crest Wasatch, LLC, and the DERR and work to develop an appropriate remedial alternative.

It is impossible for Wasatch to develop specific contingencies and speculate as to what specific responses would be appropriate, without knowing the specific conditions and circumstances to which the contingencies are responding. Contingency responses would always be developed in a manner consistent with the intended land use, applicable laws and regulations, and with the objectives expressed by Mountain Crest Wasatch, LLC.

If the waste characterization sampling to be completed result in identifying the waste as characteristically hazardous, Wasatch will notify the VCP and work with the VCP to determine an appropriate disposal facility. Wasatch would complete all waste profiling that may be required by the receiving facility prior to disposal of any impacted material.

8. REMEDIAL ACTION IMPLEMENTATION REPORT

Following completion of the remedial action, Wasatch would produce a remedial action implementation report documenting the results of the remedial action. The report would include:

- narrative text explaining objectives, methods, results, and presenting conclusions and recommendations;
- comprehensive data tables;
- figure(s) depicting the location of excavations, confirmation samples, and other relevant Site features;

- photographs;
- laboratory analytical reports;
- waste manifests;
- data validation reports.; and
- copies of permits and approvals.

9. HEALTH AND SAFETY

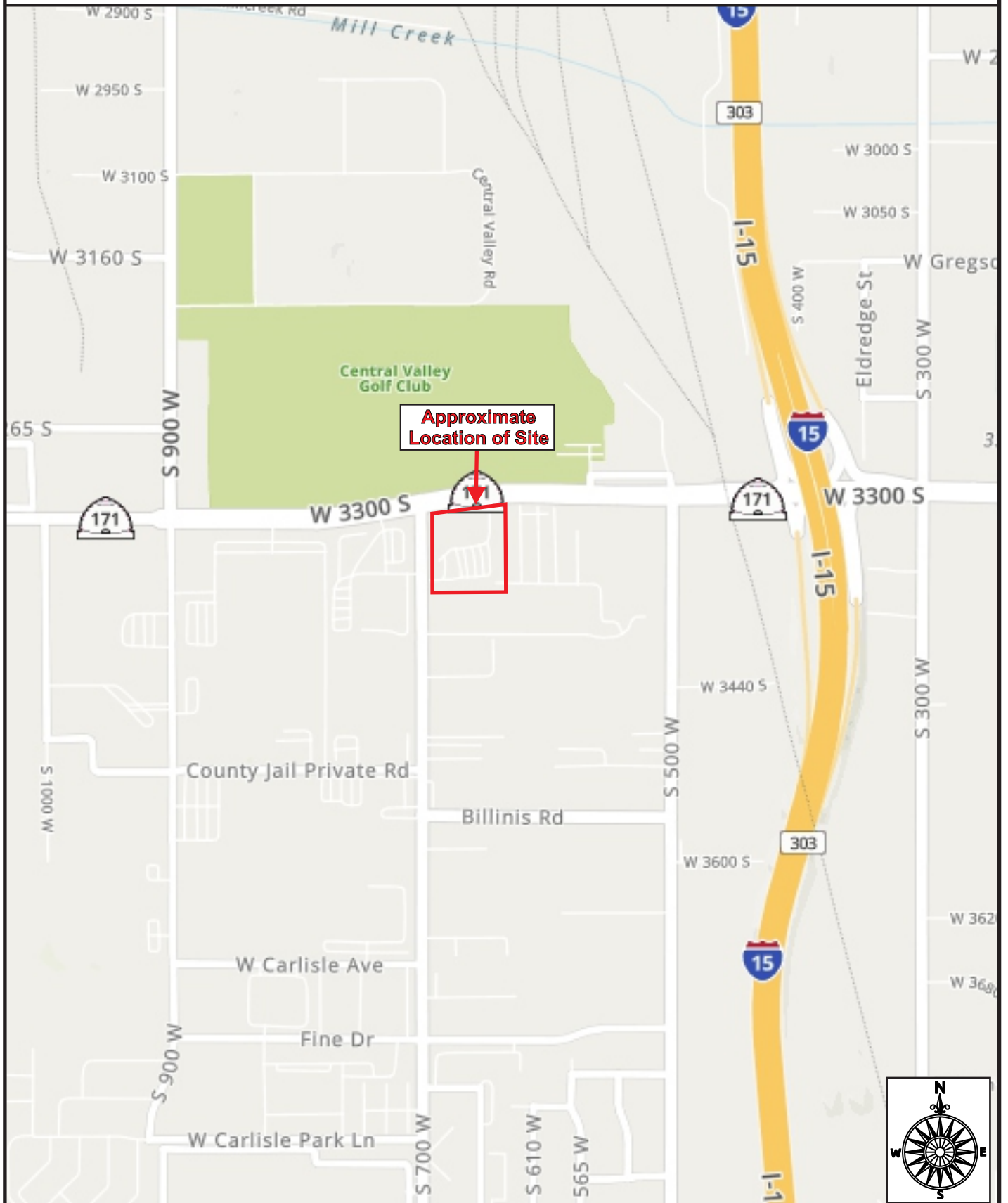
All remedial action activities at the Site would be performed by Wasatch and our subcontractors in accordance with Wasatch's general health and safety policy. A site-specific health and safety plan would also be prepared to address specific health and safety concerns and establish protocols for conducting work related activities in a safe manner.

10. PROJECT SCHEDULE

The timing of the remediation work described is anticipated to begin within 30 days of receiving VCP approval of the RAP. Wasatch anticipates completing the Site remediation work during the fall or winter of 2023, but may extend into early 2024. Wasatch would communicate scheduling details with the Utah DERR as the schedule develops.

Figures

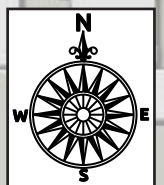
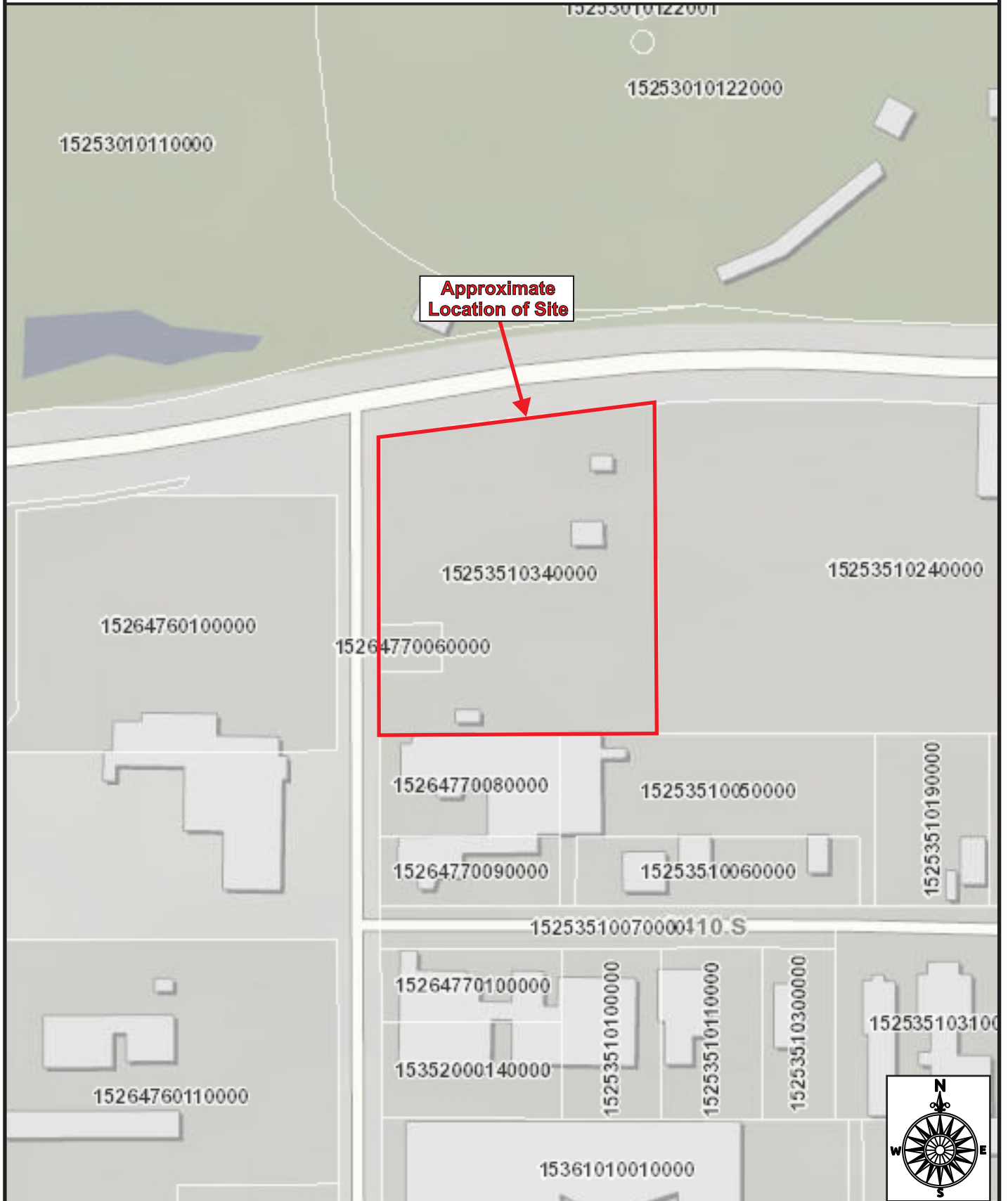
FORMER SOMMERS AUTO WRECKING WEI 2469-002G



Site Location Map

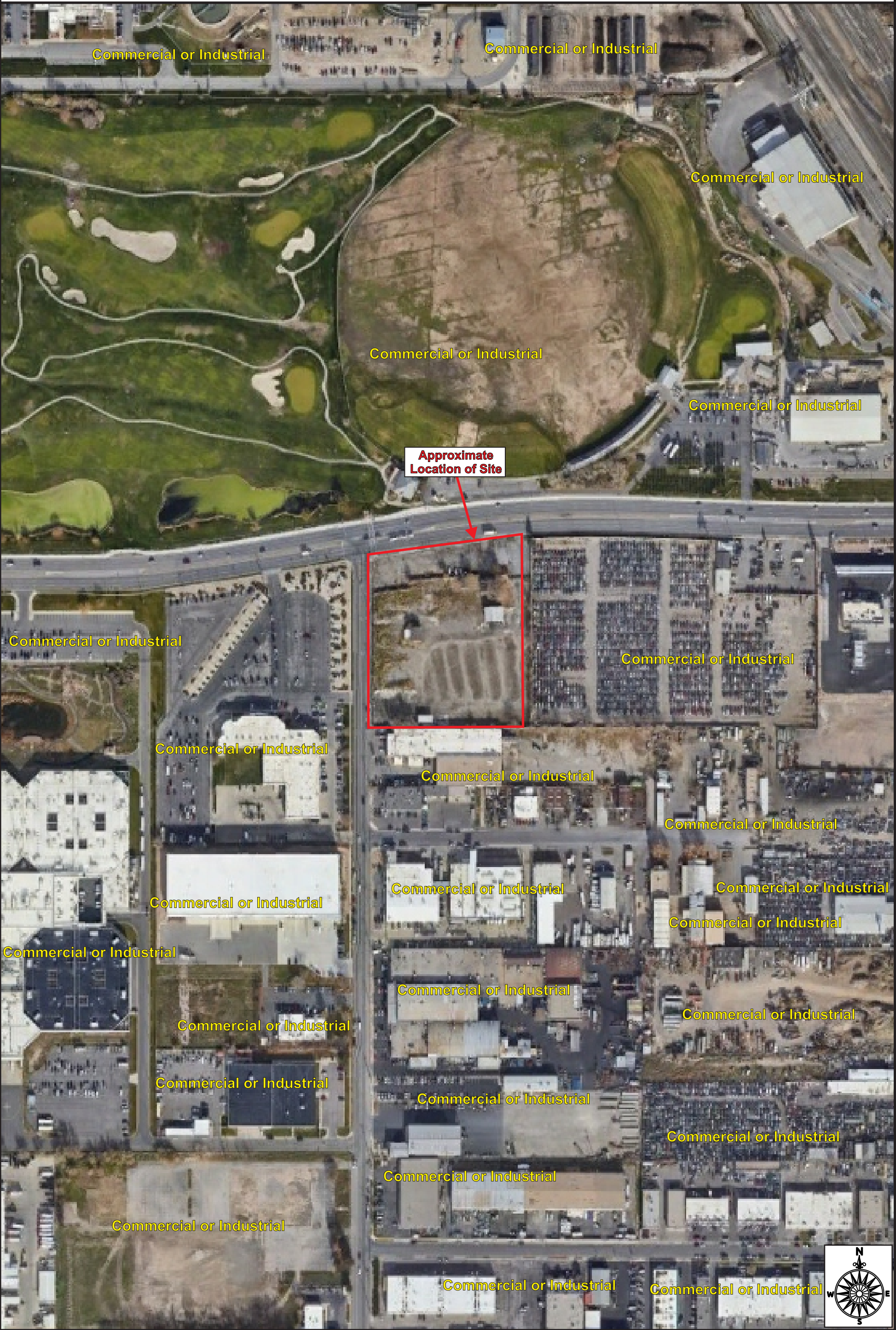
Figure 1

FORMER SOMMERS AUTO WRECKING WEI 2469-002G



Parcel Map

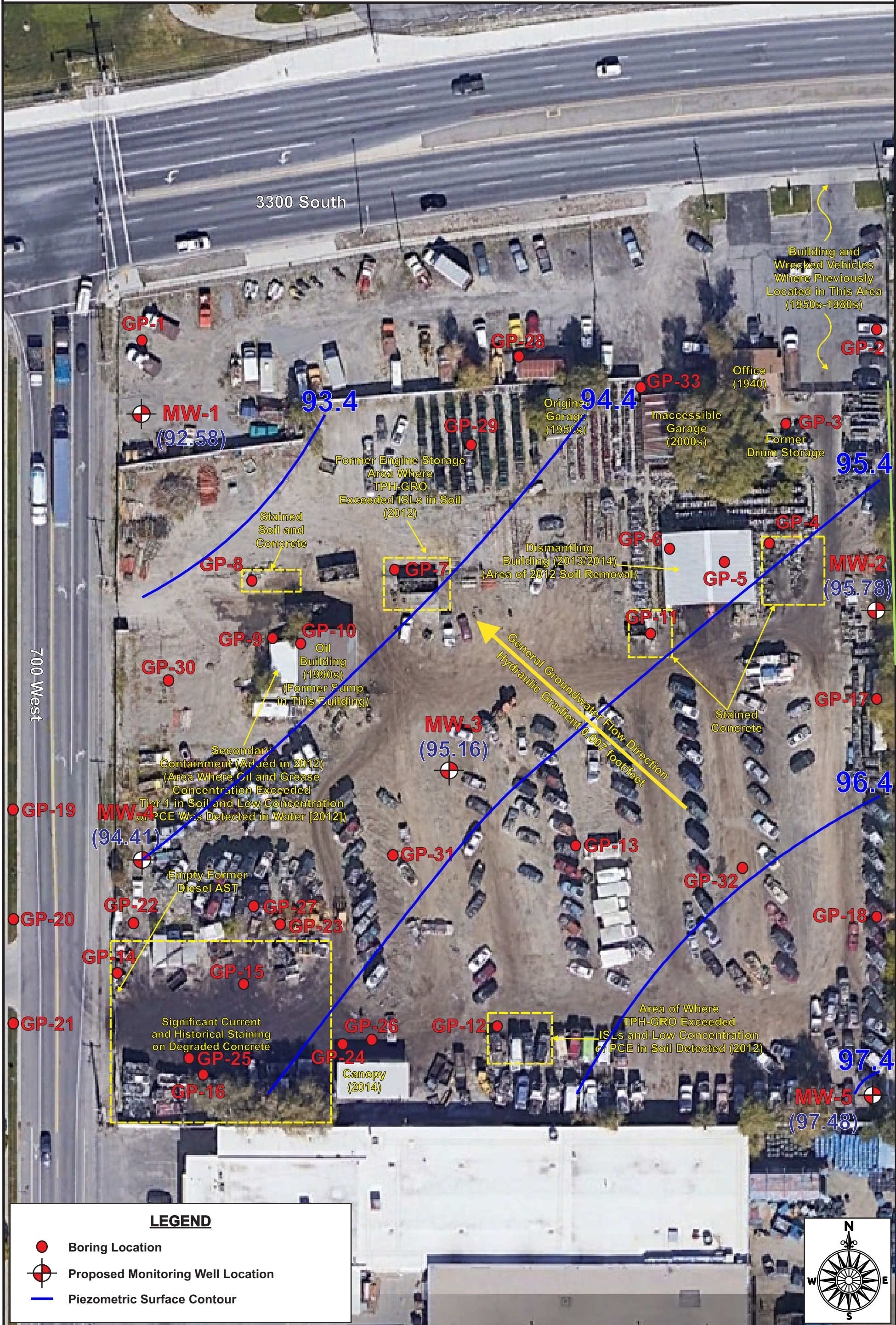
Figure 2



Vicinity Property Use Map

Figure 3



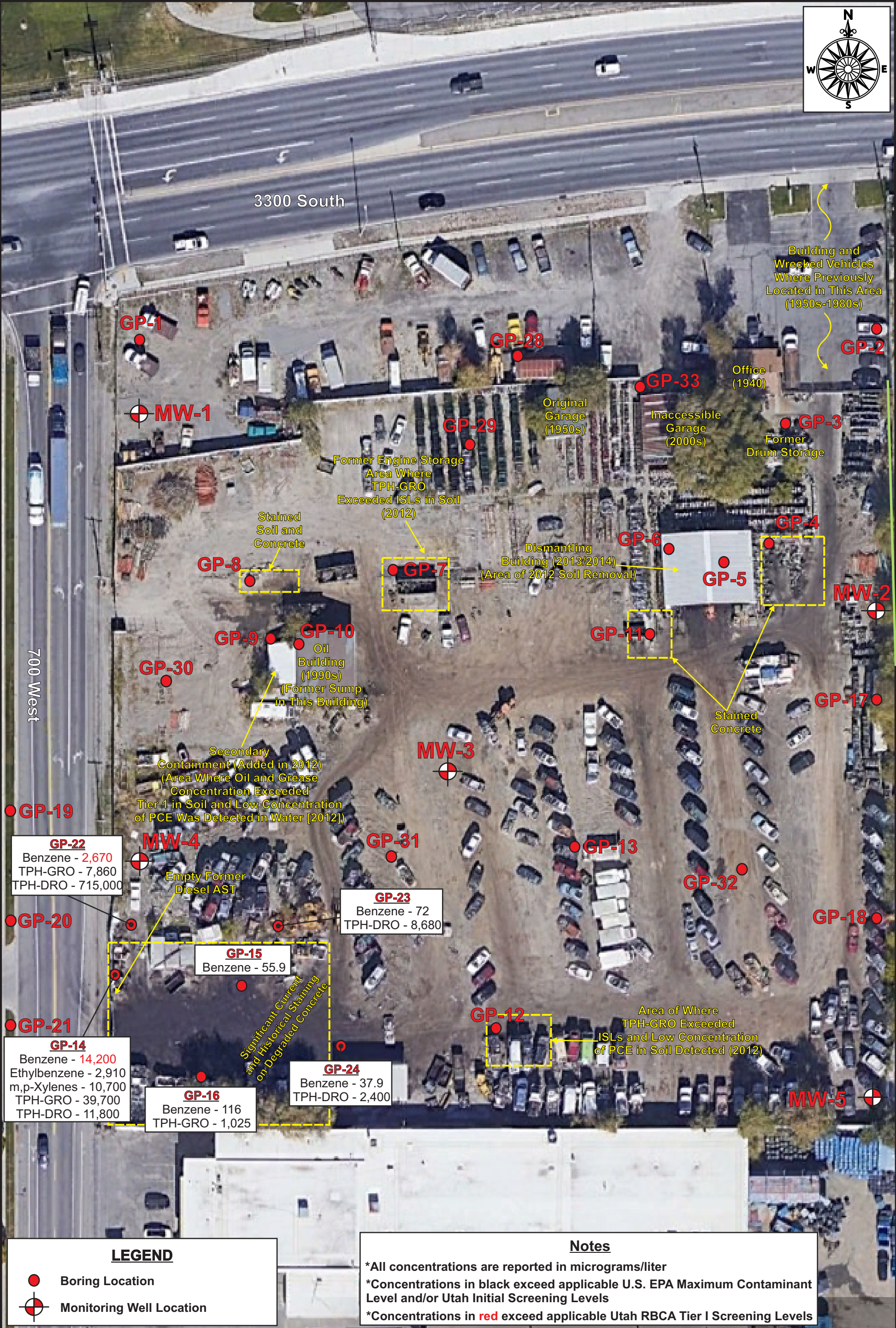


March 20, 2023, Piezometric Surface Map

Figure 5



Proposed Excavation Map Figure 6



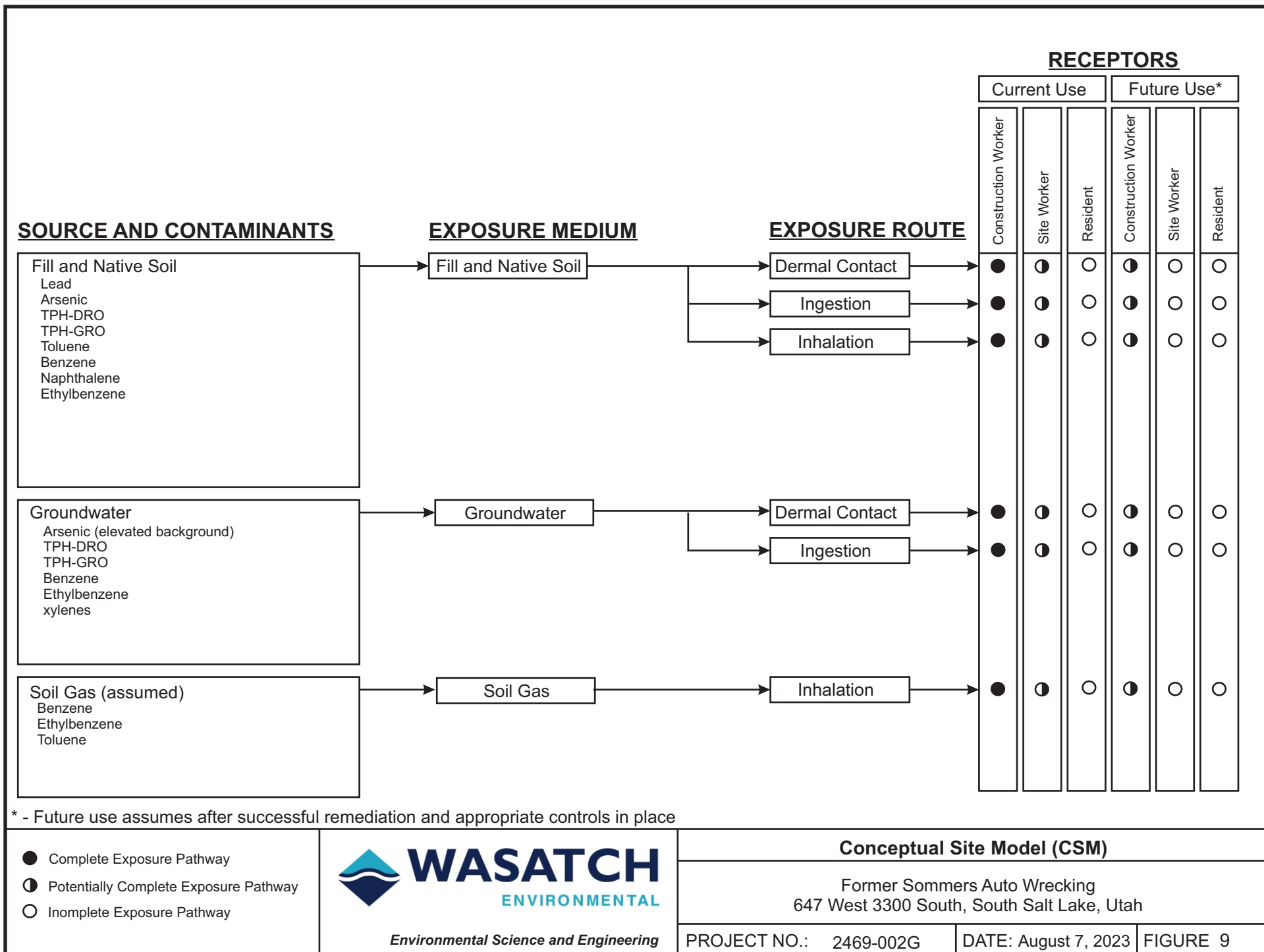
Groundwater VOC and Petroleum Hydrocarbon Exceedance Map

Figure 7



Arsenic Concentrations in Soil and Groundwater Map

Figure 8



Appendix A

Public Notice

Public Notice
30-Day Comment Period

Former Sommers Auto Wrecking Project

Mountain Crest Wasatch, LLC, has prepared a Remedial Action Plan (RAP) to address heavy metal and petroleum hydrocarbon impacts to soil and groundwater at the former Sommers Auto Wrecking property located at approximately 647 West 3300 South in South Salt Lake, Utah. The current property owner has entered into an agreement with the Utah Department of Environmental Quality (UDEQ), Division of Environmental Response and Remediation's (DERR's) Voluntary Cleanup Program (VCP) to remediate the impacted soil and groundwater to agreed upon cleanup levels to allow industrial use of the property. During excavation work associated with the impacted soils and groundwater, access to the site will be controlled and fugitive dust mitigated to ensure the safety of workers and the community. It is anticipated that work will start in early 2024. Site remedial activities that disturb impacted soils and groundwater are anticipated to take approximately four weeks to complete. The RAP will describe procedures to manage impacted soil and groundwater that will be disturbed during the remedial activities. All VCP documents including the RAP may be viewed online at <http://eqedocs.utah.gov>, and at the Utah DEQ/DERR offices at the address below. The Public Comment period will commence on December 1, 2023, and comments will be received through January 1, 2024. Please send written comments, either by mail or email to:

Mr. Lincoln Grevengoed, Project Manager
Voluntary Cleanup/Brownfields Section
Division of Environmental Response and Remediation
Utah Department of Environmental Quality
P. O. Box 144840
195 North 1950 West, 1st Floor
Salt Lake City, Utah 84114-4840
lgrevengoed@utah.gov
(385) 391-8132

Appendix B

Fugitive Emissions Monitoring Plan

**FUGITIVE EMISSIONS MONITORING PLAN
FORMER SOMMERS AUTO WRECKING
647 WEST 3300 SOUTH
SOUTH SALT LAKE, UTAH**

1. INTRODUCTION

This Fugitive Emissions Monitoring Plan (Plan) has been prepared for soil remediation activities at the former Sommers Auto Wrecking property, an industrial property, consisting of 5.15 acres, located at 647 West 3300 South in South Salt Lake, Utah (Site). Heavy metal and petroleum hydrocarbon impacted soil is located at the Site. These impacted soil will be excavated and disposed off-Site.

This Plan will be followed by the general contractor and all subcontractors during excavation, stockpiling, on-Site relocation, and backfilling activities on the Site.

2. OBJECTIVES

The purpose of this Plan is to describe the fugitive dust control measures and Best Management Practices (BMPs) that will be followed during soil excavation and backfilling activities to minimize the generation of fugitive dust. Also described is the monitoring approach to evaluate effectiveness of the dust control BMPs and to document those adjoining residents and workers involved with on-Site activities are not exposed to fugitive dust, and that the State of Utah opacity limits are met.

Potential exposures to fugitive dust emissions by commercial/industrial properties in areas adjacent to the Site and workers involved with impacted soil removal activities will be assessed using U.S. EPA Method 9 (Visual Determination of Opacity of Emissions from Stationary Sources) at the Site.

The equipment expected to be used during on-Site activities with the potential to generate fugitive dust includes haul trucks, skidsters, front end loaders, water trucks, and excavators. A majority of this equipment is not used on public roads so track-out is not expected to be an issue although it will be monitored and prevented to the extent feasible. A temporary, stabilized gravel track-out pad will be in place and steps will be taken to minimize track-out from equipment onto public roads.

By complying with the State of Utah Opacity limits, the National Ambient Air Quality Standards for particulate matter, both particle sizes below 10 microns in diameter (PM_{10}) and 2.5 microns in diameter ($PM_{2.5}$) will also be met. The daily limit for PM_{10} is 150 micrograms per cubic meter (ug/m^3) and the daily limit for $PM_{2.5}$ is 35 ug/m^3 .

3. DUST CONTROL MEASURES/BEST MANAGEMENT PRACTICE

Attached to this Plan (as Appendix 1) is the Utah Division of Air Quality (DAQ) approved Fugitive Dust Control Plan for the former Sommers Auto Wrecking project, which describes the construction BMPs to minimize the generation of fugitive dust. These practices include the use of water to wet soils and haul roads, and to form a crust on open soils. The Plan also discusses wetting stockpiles, maintaining low drop heights when loading material, using gravel in lay-down areas, limiting vehicle speeds, and the proper application of track-out controls. This Plan will be presented to the contractor and any subcontractors during initial Site training activities. The Plan requires that all construction activities meet opacity requirements in R307-309-5. It is Wasatch's experience that wetting of soil greatly decreases any dust generation.

Also attached to this Plan (as Appendix 2) is a wind rose diagram of frequency of wind direction and speed during November 2022. The diagram shows that the prevailing winds are generally expected to be out of the south to southeast, or from the northwest. The month of November is representative of the winds from late summer through the late fall.

It is Wasatch's experience that heavy watering of stockpiles (if used) and exposed soil prior to ending work before the weekend is effective in forming a "crust" on the soil which should reduce fugitive dust generation. However, if strong winds are predicted during overnight hours or weekends, arrangement will be made to provide additional watering.

4. DAILY MONITORING

Wasatch personnel will be on-Site during all soil removal and backfilling activities to screen soils using a hand-held photoionization detector, collect confirmation soil samples for laboratory analysis, direct Health and Safety meetings and training, and implement the fugitive dust control and monitoring procedures described in this Plan.

Compliance with the Utah opacity limits (20% opacity at the generation source and 10% opacity at the perimeter) will be assessed using U.S. EPA Method 9, modified to account for non-stationary sources. For non-stationary sources, which would apply to vehicles on-Site, opacity readings are directed to a point not less than one-half the vehicle length behind the vehicle and not less than one half the vehicle height.

During soil remediation activities, Wasatch personnel trained as Visible Emission Observers will make opacity observations at the point of generation and the down-wind property line, as well as at non-stationary sources such as moving vehicles and/or equipment. These readings will be recorded on a Visible Emissions Observation Form (Appendix 2), which includes weather conditions, wind speed and direction, type of activity occurring on-Site, and position of observer relative to dust source. Opacity readings will be made at least once daily, or as needed during peak work activities, or as weather conditions require.

5. ACTION LIMITS

Utah opacity action limits will be used as action limits (20% opacity at the generation source and 10% opacity at the perimeter) for this project.

Any concerns or indications that opacity action limits are being approached or exceeded will be immediately addressed by aggressively applying additional BMPs, including, as warranted; pre-watering, shifting the work area, curtailing certain types of work, or shutting down work activities.

When the wind speeds exceed 25 miles per hour, Rule 307-309-5 (3) exempts the opacity limits as long as the operator continues to implement the approved fugitive dust control plan and administers at least one of the following control methods: pre-event watering, hourly watering, shifting work areas, or ceases or reduces dust producing operations.

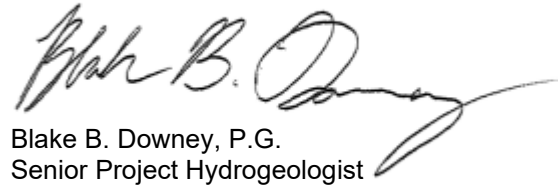
6. REPORTING

Wasatch will consult frequently (at least weekly) with Utah VCP to discuss, address, and work to remedy any fugitive dust control issues, including responding to resident complaints, re-evaluating, and modifying dust control procedures, and other related problems that may arise.

A summary of the dust control measures, copies of the completed daily Air Quality Data Forms and any corrective actions will be included in the Remediation Action Implementation Report.

Sincerely,

WASATCH ENVIRONMENTAL, INC.



Blake B. Downey, P.G.
Senior Project Hydrogeologist

APPENDICES

Appendix 1 – DEQ Fugitive Dust Control Plan

Appendix 2 – Daily Air Monitoring Form and Wind Rose Diagram

Fugitive Dust

8/14/2023 2:30:47 PM

Introduction

Please complete the following information in order to create a Fugitive Dust Application for your project. You will have a chance to review the plan prior to final submission.

Introduction

A Fugitive Dust Control Plan is required if your project is 1/4 acre or larger and located in Cache, Box Elder, Weber, Davis, Salt Lake, Tooele or Utah County. Other areas and conditions are optional. Please complete the form to assess your project.

Project Location

Project Location

A Fugitive Dust Control Plan is required if your project is 1/4 acre or larger and located in Cache, Box Elder, Weber, Davis, Salt Lake, Tooele or Utah County. Other areas and conditions are optional.

Select the County where your project will be located : Salt Lake

Utah Administrative Code (UAC) [307-309-6](#) requires that any person owning or operating a source of fugitive dust within PM10 and PM2.5 non-attainment and maintenance plan areas on cleared land greater than 1/4 acre in size must submit a completed Fugitive Dust Control Plan. The DAQ Temporary Relocation Form requires the submission of a Fugitive Dust Control Plan Permit Number for all temporary relocation projects.

Is this project a temporary relocation project?:

☐ Yes

☒ No

Non-Attainment Dust Tutorial

What is Fugitive Dust?

Fugitive dust is dust that is stirred up, creating an air quality problem. It is made up of fine particles called particulate matter. It is a health concern because it irritates eyes and nasal tissue and seriously impacts the respiratory system.

Fugitive dust may come from gravel operations, construction or demolition activities, land clearing and exposed surfaces, roadways, and mining activities. Trackout from muddy work areas also create fugitive dust when the mud dries.



How We Measure Compliance-Opacity

Opacity is the amount of light that is blocked by something else such as smoke or a tinted window.



The percentage of opacity can provide a measure of the particulate matter in the air.

Opacity is measured as a percentage - 0% means that all light passes through; 100% means that no light can pass through. The more particles present, the higher the opacity percentage.



Utah Fugitive Dust Rule R307-309-5

[Non-attainment Dust Rule](#)

Acknowledgements::

- ☒ I acknowledge that Utah regulation R307-309-5(1)(a) prohibits fugitive dust to exceed 10% opacity at the property boundary;
- ☒ I acknowledge that Utah regulation R307-309-5(1)(b) prohibits fugitive dust to exceed 20% opacity on site;
- ☒ I acknowledge that Utah regulation R307-309-5(3) exempts the opacity requirements above, ONLY when wind speed exceeds 25 miles per hour AND fugitive dust controls are maintained. The online fugitive dust control plan requires selection of appropriate control measures that must be implemented for this exemption to apply; and
- ☒ I acknowledge that failure to comply with fugitive dust rules may result in compliance action and penalties up to \$10,000 per violation/day.

Applicant Information

Applicant Type:: Prime Contractor

Plan Certificate Number: 5056048D87

Name: blake downey

Mailing Address

Mailing Address - Address Line 1: 2410 west California Ave.

Mailing Address - Address Line 2:

Mailing Address - City: salt lake city

Mailing Address - State: Utah

Mailing Address - Zip: 84104

Email: bd@wasatch-environmental.com

Phone: (435) 760-8269

Project Information

Project Name: Former Sommers Auto Wrecking

Project End Date: 12/31/23

Project Location

Address Line 1: 647 West 3300 South

Address Line 2:

City: South Salt Lake

State: Utah

Zip: 84119

Site Directions: The Site is located on the southeast corner of the 3300 South and 700 West intersection.

County: Salt Lake

Acreage: 5.2

Calculated Acreage: 5.2

Latitude/Longitude Verification

For Manual Latitude and Longitude input:

Make sure to include at least 6 digits after the decimal and it must fall within the state of Utah.

Example 40.404976 or 40.404976232

Latitude (Decimals Only) : 40.698397

Longitude (Decimals Only) : -111.910764

Map Verification

Copy the following URL into your browser so you can verify on a map that the project latitude and longitude you provided are correct.

Map Calculation: <https://www.google.com/maps/place/40.698397,-111.910764>

Latitude/Longitude verification:

☒ The above Latitude and Longitude have been verified.

Point of Contact

Point of Contact for dust control matters and to whom a COMPLIANCE ACTION should be sent if necessary.

Name: blake downey

Company: Wasatch Environmental

Address

Address Line 1: 2410 west California Ave.

Address Line 2:

City: salt lake city

State: Utah

Zip: 84104

Phone number: (435) 760-8269

Cell number:

Dust Suppressants

Do you plan on using chemical dust suppressing or stabilizing agents?:

☐ Yes

☒ No

Best Management Practices (BMP) Checklist

Best Management Practices (BMP) Checklist Instructions

Place a check mark next to every activity that will be conducted on this site.

For each checked activity, complete the corresponding control measures/best management practices (BMP) selection page. When completed, we will email the entire plan to you.

Select all that apply:

- ☐ 01. Backfilling area previously excavated or trenched.
- ☐ 02. Blasting soil and rock - drilling and blasting.
- ☐ 03. Clearing for site preparation and vacant land cleanup.
- ☐ 04. Clearing forms, foundations, slab clearing and cleaning of forms, foundations and slabs prior to pouring concrete.
- ☐ 05. Crushing of construction and demolition debris, rock and soil.
- ☐ 06. Cut and fill soils for site grade preparation.
- ☐ 07. Demolition - Implosive demolition of a structure, using explosives.
- ☐ 08. Demolition - mechanical/manual demolition of walls, stucco, concrete, freestanding structures, buildings and other structures.
- ☒ 09. Disturbed soil throughout project including between structures. THIS ACTIVITY MUST BE SELECTED FOR ALL PROJECTS.
- ☐ 10. Disturbed land - long term stabilization and erosion control of large tracts of disturbed land that will not have continuing activity for more than 30 days.
- ☒ 11. Hauling materials.
- ☐ 12. Paving/subgrade preparation for paving streets, parking lots, etc.
- ☐ 13. Sawing/cutting material, concrete, asphalt, block or pipe.
- ☐ 14. Screening of rock, soil or construction debris.
- ☒ 15. Staging areas, equipment storage, vehicle parking lots, and material storage areas.
- ☒ 16. Stockpiles materials (storage), other soils, rock or debris, for future use or export.
- ☐ 17. Tailings piles, ponds and erosion control.
- ☒ 18. Trackout, Prevention and cleanup of mud, silt and soil tracked out onto paved roads. (THIS ACTIVITY MUST BE SELECTED FOR ALL PROJECTS.)
- ☐ 19. Traffic - unpaved routes and parking, construction related traffic on unpaved interior and/or access roads and unpaved employee/worker parking areas.
- ☒ 20. Trenching with track or wheel mounted excavator, shovel, backhoe or trencher.
- ☒ 21. Truck loading with materials including construction and demolition debris, rock and soil.

BMP - 09 Disturbed soil throughout project including between structures.

GENERAL REQUIREMENT: ALL ACTIVITIES MUST MEET OPACITY REQUIREMENTS IN R307-309-5

MAKE AT LEAST ONE SELECTION FROM EACH SECTION.

Limit disturbance of soils where possible.:

☐ 09-01. Limit disturbance of soils with the use of fencing, barriers, barricades, and/or wind barriers.

☒ 09-02. Limit vehicle mileage and reduce speed.

Stabilize and maintain stability of all disturbed soil throughout construction site.:

☒ 09-03. Apply water to stabilize disturbed soils. Soil moisture must be maintained such that soils can be worked without generating fugitive dust.

☐ 09-04. Apply and maintain a chemical stabilizer.

☐ 09-05. Use wind breaks.

☐ 09-06. Apply cover (natural or synthetic).

BMP - 11 Hauling materials.

GENERAL REQUIREMENT: ALL ACTIVITIES MUST MEET OPACITY REQUIREMENTS IN R307-309-5

MAKE AT LEAST ONE SELECTION FROM EACH SECTION.

Limit visible dust opacity from vehicular operations.:

☐ 11-01. Apply and maintain water/chemical suppressant to operational areas and haul routes.

☒ 11-02. Limit vehicle mileage and speed.

Stabilize materials during transport on site.:

☒ 11-03. Use tarps or other suitable enclosures on haul trucks.

☒ 11-04. Apply water prior to transport.

Clean wheels and undercarriage of haul trucks prior to leaving construction site.:

☒ 11-05. Clean wheels.

☐ 11-06. Sweep or water haul road.

BMP - 15 Staging areas, equipment storage, vehicle parking lots, and material storage areas.

GENERAL REQUIREMENT: ALL ACTIVITIES MUST MEET OPACITY REQUIREMENTS IN R307-309-5

MAKE AT LEAST ONE SELECTION FROM EACH SECTION.

Limit visible dust opacity from vehicular operations.:

- ☒ 15-01. Limit vehicle mileage and speed limit.
- ☐ 15-02. Apply water on all vehicle traffic areas in the staging areas and unpaved access routes.

Stabilize staging area soils during use.:

- ☒ 15-03. Pre-water and maintain surface soils in a stabilized condition.
- ☐ 15-04. Apply and maintain a chemical stabilizer to surface soils.

Stabilize staging area soils at project completion.:

- ☐ 15-05. Apply a chemical stabilizer.
- ☐ 15-06. Apply screened or washed aggregate.
- ☐ 15-07. Use wind breaks.
- ☐ 15-08. Pave.
- ☐ 15-09. Completed project will cover staging area with buildings, paving, and/or landscaping.
- ☒ 15-10. Apply water to form adequate crust and prevent access.

BMP - 16 Stockpiles materials (storage), other soils, rock or debris, for future use or export.

GENERAL REQUIREMENT: ALL ACTIVITIES MUST MEET OPACITY REQUIREMENTS IN R307-309-5

MAKE AT LEAST ONE SELECTION FROM EACH SECTION.

Stabilize surface soils where support equipment and vehicles will operate.:

- ☒ 16-01. Pre-water and maintain surface soils in a stabilized condition.
- ☐ 16-02. Apply and maintain a chemical stabilizer on surface soils.
- ☐ 16-03. Pave area.

Stabilize stockpile materials during handling.:

- ☐ 16-04. Remove material from the downwind side of the stockpile, when safe to do so.
- ☒ 16-05. Reduce height.
- ☐ 16-06. Create wind screen

Stabilize stockpiles after handling.:

- ☒ 16-07. Water stockpiles to form a crust immediately.
- ☐ 16-08. Apply and maintain a chemical stabilizer to all outer surfaces of the stockpiles.
- ☐ 16-09. Provide and maintain wind barriers on 3 sides of the pile.
- ☒ 16-10. Apply a cover (natural or synthetic)
- ☐ 16-11. Wind screen.
- ☐ 16-12. Avoid steep sides to prevent material sloughing.
- ☒ 16-13. Reduce height.

BMP - 18 Trackout, Prevention and cleanup of mud, silt and soil tracked out onto paved roads.

GENERAL REQUIREMENT: ALL ACTIVITIES MUST MEET OPACITY REQUIREMENTS IN R307-309-5

MAKE AT LEAST ONE SELECTION FROM EACH SECTION.

Prevent dust from trackout.:

- ☒ 18-01. Clean trackout at the end of the work shift from paved surfaces to maintain dust control
- ☐ 18-02. Maintain dust control during working hours and clean trackout from paved surfaces at the end of the work shift/day.
- ☐ 18-03. Install gravel pad(s), clean, well-graded gravel or crushed rock. Minimum dimensions must be 30 feet wide by 3 inches deep, and, at minimum, 50' or the length of the longest haul truck, whichever is greater. Re-screen, wash or apply additional rock in gravel pad to maintain effectiveness.
- ☐ 18-04. Install wheel shakers. Clean wheel shakers on a regular basis to maintain effectiveness.
- ☐ 18-05. Install wheel washers. Maintain wheel washers on a regular basis to maintain effectiveness.
- ☐ 18-06. Motorized vehicles will only operate on paved surfaces.
- ☐ 18-07. Install cattle guard before paved road entrance.

All exiting traffic must be routed over selected trackout control device(s).:

- ☒ 18-08. Clearly establish and enforce traffic patterns to route traffic over selected trackout control device(s).
- ☐ 18-09. Limit site accessibility to routes with trackout control devices in place by installing effective barriers on unprotected routes.

BMP - 20 Trenching with track or wheel mounted excavator, shovel, backhoe or trencher.

GENERAL REQUIREMENT: ALL ACTIVITIES MUST MEET OPACITY REQUIREMENTS IN R307-309-5

MAKE AT LEAST ONE SELECTION FROM EACH SECTION.

Presoak soils prior to trenching activities.:

☒ 20-01. Pre-water surface.

Stabilize surface soils where trenching equipment, support equipment and vehicles will operate.:

☐ 20-02. Pre-water and maintain surface soils in a stabilized condition.

☐ 20-03. Apply and maintain a chemical stabilizer to surface soils.

☒ 20-04. Limit mileage and speed.

Stabilize soils after trenching.:

☒ 20-05. Apply and maintain water on excavated soil.

☐ 20-06. Apply and maintain chemical stabilizer on excavated soil.

BMP - 21 Truck loading with materials including construction and demolition debris, rock and soil.

GENERAL REQUIREMENT: ALL ACTIVITIES MUST MEET OPACITY REQUIREMENTS IN R307-309-5

MAKE AT LEAST ONE SELECTION FROM EACH SECTION.

Apply and maintain a chemical stabilizer on surface soils where loaders, support equipment and vehicles will operate. :

☐ 21-01. Pre-water and maintain surface soils in a stabilized condition where loaders, support equipment and vehicles will operate.

☐ 21-02. Apply and maintain a chemical stabilizer on surface soils where loaders, support equipment and vehicles will operate.

☒ 21-03. Empty loader bucket slowly and keep loader bucket close to the truck to minimize the drop height while dumping.

Reviewing Your Plan

Please carefully review your plan before submitting it. Once the plan has been submitted, it CANNOT be edited.

BEFORE you submit your plan, if you need to make changes, navigate back to those sections via the left navigation or the Previous button to complete those changes.

When you are satisfied, submit your plan.

The plan will be available to download in the [My Forms section](#), under the [Done tab](#).

By submitting this plan I agree to the following terms:

- A. I am authorized, on behalf of the individual or company listed in Section 1, as Applicant, to apply for a Fugitive Dust Control Plan and to commit to all of the terms and conditions of the requested plan.
- B. Construction activities will be limited to lands that the applicant either owns or is authorized to use for construction activities.
- C. The applicant accepts responsibility for assuring that all contractors, subcontractors, and all other persons on the construction site covered by this plan, comply with the terms and conditions of the Fugitive Dust Control Plan.
- D. I understand that any false material statement, representation or certification made in this application may invalidate the plan or cause me to be subject to enforcement action pursuant to Utah Code Ann. 19-2-115.
- E. Failure to comply with fugitive dust rules may result in compliance action and penalties up to \$10,000 per violation/day.

Confirmation of terms:

☒ My plan is ready to be submitted.

[Frequently Asked Questions](#)

[Division of Air Quality](#)

[Utah Department of Environmental Quality](#)

[Feedback](#)

Division of Air Quality

Address: 195 North 1950 West

P.O. Box 144820

Salt Lake City, UT 84114-482

Contact Phone: 801-536-4000

Contact Fax: 801-536-4099

Frequently Asked Questions

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Former Sommers Auto Wrecking

Dust Control Form

VISIBLE EMISSION OBSERVATION FORM

Site Name		
Address		
City	State	Zip
Process Equipment		Operating Mode
Control Equipment		Operating Mode
Describe Emission Point		
Height of Emission Point	Height Relative to Observer Start End	
Distance to Emission Point Start End	Direction to Emission Point Start End	
Vertical Angle to Observation Pt. Start End	Direction to Observation Point Start End	
Describe Emissions		
Start End		
Emission Color	If Water Droplet Plume (Circle) Attached Detached N/A	
Point In The Plume At Which Opacity Was Determined		
Start End		
Describe Plume Background		
Start End		
Background Color	Sky Condition	
Start End	Start End	
Wind Speed	Wind Direction	
Start End	Start End	
Ambient Temp		Relative Humidity %
Start End		

SOURCE LAYOUT SKETCH

The diagram illustrates the source layout sketch. It features a central point labeled 'OBSERVER'S POSITION'. A vertical line extends upwards from this point to an 'X' labeled 'EMISSION OBSERVATION POINT'. A dashed line extends downwards from the observer's position, labeled 'SUN LOCATION LINE'. A horizontal line extends to the right from the observer's position, labeled 'DRAW NORTH ARROW'. To the left of the observer's position, there is a box containing three symbols: a 'STACK WITH PLUME' (a vertical line with a curved plume), a 'SUN' (a circle with a cross), and a 'WIND' (a horizontal line with an arrow). A curved line with an arrow indicates a 140° angle between the sun location line and the line connecting the observer's position to the emission point.

Additional Information		

Observation Date				Start Time		End Time	
Sec Min	0	15	30	45	Comments		
1							
2							
3							
4							
5							
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30							
Observer's Name (Print)							
Observer's Signature					Date		
Organization							
Certified by					Date		
Continue on reverse side							

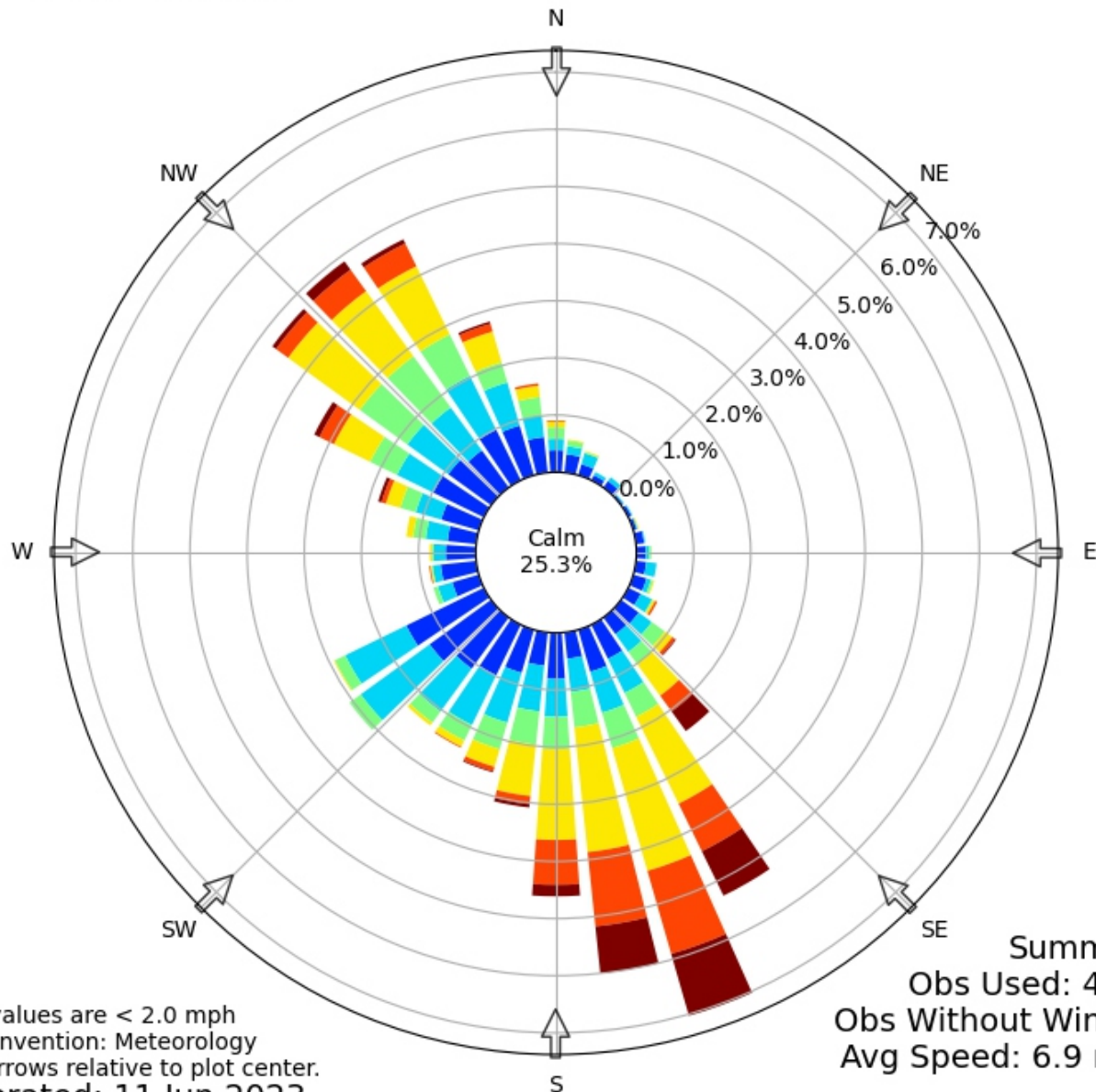
Visible Emission Observation Location Map



Additional Information

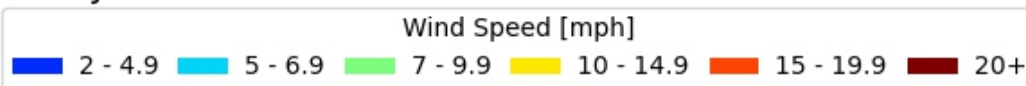


Windrose Plot for [U42] Salt Lake City Muni No2
Obs Between: 01 Nov 2016 12:55 AM - 30 Nov 2022 11:55 PM America/Denver
↳ constraints: Nov



Calm values are < 2.0 mph
Bar Convention: Meteorology
Flow arrows relative to plot center.
Generated: 11 Jun 2023

Summary
Obs Used: 4967
Obs Without Wind: 1
Avg Speed: 6.9 mph



Environmental Science and Engineering

November 2022 Wind Rose Diagram

Former Sommers Auto Wrecking
South Salt Lake, Utah

Project No.: 2469-002G

Date: 8/14/23

Figure 1

Appendix C

Vapor Barrier Information

UNDER-SLAB VAPOR BARRIER

PART 1 – GENERAL

1.1 SUMMARY

- A. Products supplied under this section:
 - 1. Vapor barrier, seam tape, and mastic for installation under concrete slabs.
- B. Related sections:
 - 1. Section 03 30 00 Cast-in-Place Concrete
 - 2. Section 07 26 00 Vapor Retarders

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM E 1745-09 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.
 - 2. ASTM E 154-99 (2005) Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.
 - 3. ASTM E 96-05 Standard Test Methods for Water Vapor Transmission of Materials.
 - 4. ASTM F 1249-06 Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor.
 - 5. ASTM E 1643-09 Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.
- B. American Concrete Institute (ACI):
 - 1. ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.

1.3 SUBMITTALS

- A. Quality control/assurance:
 - 1. Summary of test results as per paragraph 8.3 of ASTM E 1745.
 - 2. Manufacturer's samples, literature.
 - 3. Manufacturer's installation instructions for placement, seaming and penetration repair instructions.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Vapor barrier must have all of the following qualities:
 - 1. Permeance of less than 0.01 perms [grains/(ft² · hr · inHg)] as tested in accordance with ASTM E 1745 Section 7.
 - 2. Other performance criteria:
 - a. Strength: ASTM E 1745 Class A.
- B. Vapor barrier products:
 - 1. Basis of Design: Stego Wrap Vapor Barrier (15-mil) by Stego Industries LLC, (877) 464-7834 www.stegoindustries.com.

2.2 ACCESSORIES

- A. Seam tape:
 - 1. Stego Tape by Stego Industries LLC, (877) 464-7834 www.stegoindustries.com.
- B. Vapor-proofing mastic:
 - 1. Stego Mastic by Stego Industries LLC, (877) 464-7834 www.stegoindustries.com.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Ensure that base material is approved by Architect or Geotechnical Engineer.
 - 1. Level and compact base material.

3.2 INSTALLATION

- A. Install vapor barrier in accordance with manufacturer's instructions and ASTM E 1643.
 - 1. Unroll vapor barrier with the longest dimension parallel with the direction of the concrete placement.
 - 2. Lap vapor barrier over footings and/or seal to foundation walls.
 - 3. Overlap joints 6 inches and seal with manufacturer's tape.
 - 4. Seal all penetrations (including pipes) per manufacturer's instructions.
 - 5. No penetration of the vapor barrier is allowed except for reinforcing steel and permanent utilities.
 - 6. Repair damaged areas by cutting patches of vapor barrier, overlapping damaged area 6 inches and taping all sides with tape.

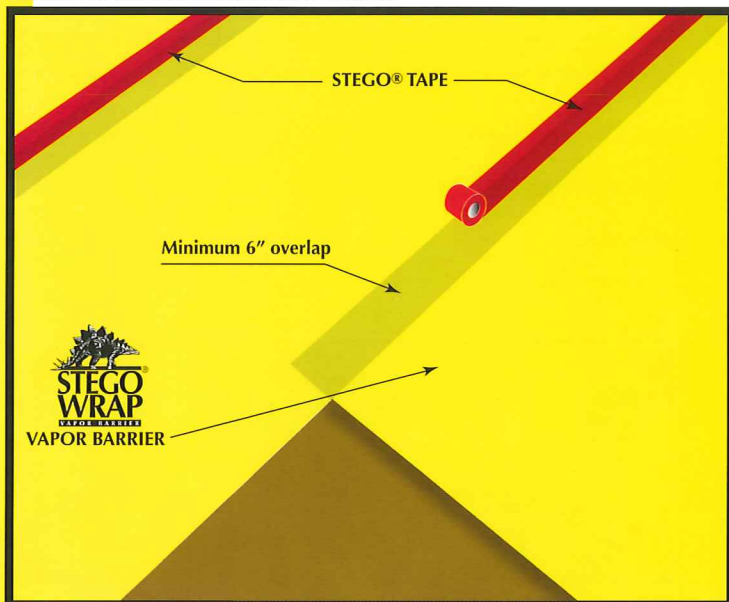
PART 1

STEGO WRAP VAPOR BARRIER/RETARDER INSTALLATION INSTRUCTIONS



IMPORTANT: Please read these installation instructions completely, prior to beginning any Stego Wrap installation to ensure suitable use of the product. The following installation instructions are based on ASTM E 1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.

FIGURE 1: UNDER-SLAB INSTALLATION



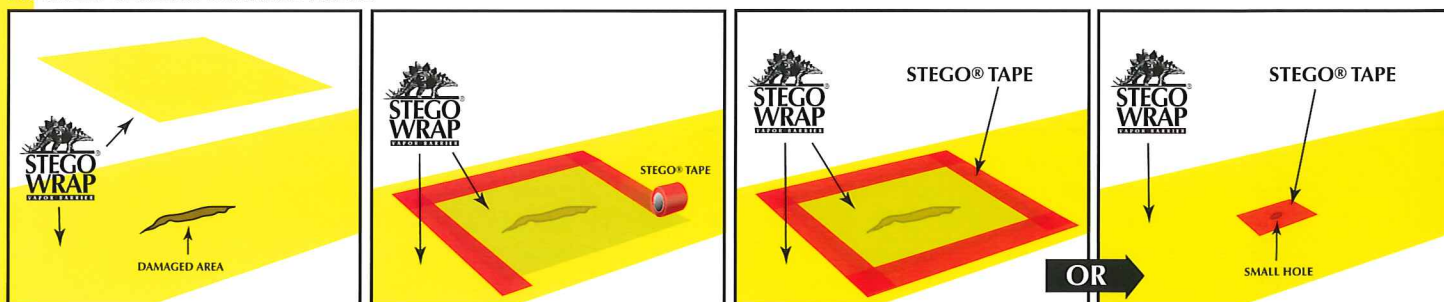
UNDER-SLAB INSTRUCTIONS:

1. Stego Wrap can be installed over an aggregate, sand, or tamped earth base. It is not necessary to have a cushion layer or sand base, as Stego Wrap is tough enough to withstand rugged construction environments.
2. Unroll Stego Wrap over the area where the slab is to be placed. Stego Wrap should completely cover the concrete placement area. All joints/seams both lateral and butt should be overlapped six inches and taped using Stego Tape.

NOTE: The area of adhesion should be free from dust, dirt and moisture to allow maximum adhesion of the pressure sensitive tape.

3. The most effective installation method includes positioning Stego Wrap on top of the footing and against the vertical wall. Stego Wrap will then be sandwiched between the footing, vertical wall and placed concrete floor (see part 2, figure 6a, Basement/Below Grade Wall Installation). This method will help protect the concrete slab from external moisture sources after the slab has been placed.
4. In the event that Stego Wrap is damaged during or after installation, repairs must be made. Stego Tape can be used to repair small holes in the material. For larger holes, cut a piece of Stego Wrap to a size and shape that covers any damage by a minimum overlap of six inches in all directions. Clean all adhesion areas of dust, dirt and moisture. Tape down all edges using Stego Tape (see figure 2, Sealing Damaged Areas).

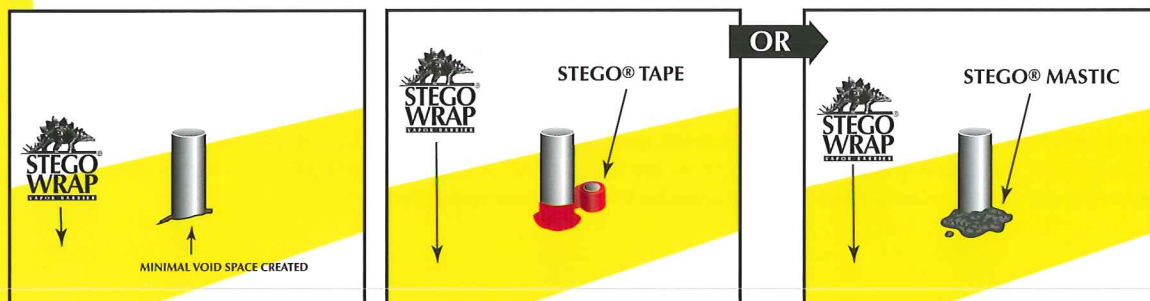
FIGURE 2: SEALING DAMAGED AREAS



NOTE: These installation instructions are based on practices outlined in ASTM E 1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs. These instructions are meant to be used as a guide, and do not take into account specific job site situations. Consult local building codes and regulations along with the building owner or owner's representative before proceeding. If you have any questions regarding the above mentioned installation instructions, Stego products, or a specific job site situation, please call us at 877-464-7834 for technical assistance.

5. **IMPORTANT: ALL PENETRATIONS MUST BE SEALED.** All pipe, ducting, rebar, wire penetrations and block outs should be sealed using Stego Wrap, Stego Tape and/or Stego Mastic (see figure 3a, Pipe Penetration Sealing).

FIGURE 3a: PIPE PENETRATION SEALING



STEGO WRAP PIPE PENETRATION REPAIR DETAIL:

- 1: Install Stego Wrap around pipe penetration by slitting/cutting material as needed. Try to minimize the void space created.
- 2: If Stego Wrap is close to pipe and void space is minimized then seal around pipe penetration with Stego Tape and/or Stego Mastic.
(See Figure 3a)
- 3: If detail patch is needed to minimize void space around penetration, then cut a detail patch to a size and shape that creates a six inch overlap on all edges around the void space at the base of the pipe.
- 4: Cut an "X" the size of the pipe diameter in the center of the detail patch and slide tightly over pipe.
- 5: Tape down all sides of detail patch with Stego Tape.
- 6: Seal around the base of the pipe using Stego Tape and/or Stego Mastic.
(See Figure 3b)

FIGURE 3b: DETAIL PATCH FOR PIPE PENETRATION SEALING

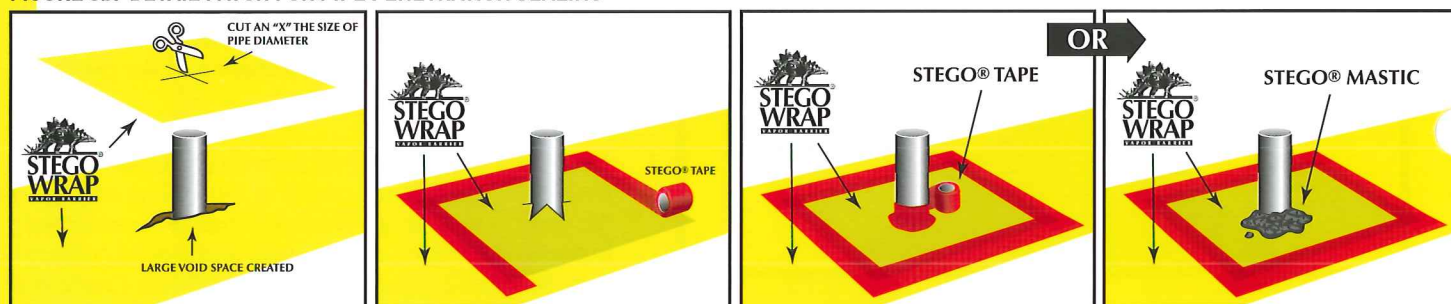


FIGURE 4: MULTIPLE PIPE PENETRATION SEALING



MULTIPLE PIPE PENETRATION SEALING:

Multiple pipe penetrations in close proximity and very small pipes may be sealed using Stego Wrap and Stego Mastic for ease of installation (see figure 4, Multiple Pipe Penetration Sealing).

6. Many vapor retarder manufacturers recommend a cushion layer (fine washed gravel or sand) on top of the retarder before the concrete placement to guard against the possibility of damage due to construction traffic. **This is permissible, but not a necessity with Stego Wrap.** Stego Wrap is strong enough to withstand normal construction traffic without a protective layer. In fact, ACI guidelines and many flooring companies recommend placement of the concrete slab directly on the vapor barrier/retarder. This eliminates the potential for water to be trapped in the blotter layer and ultimately resurfacing through the slab adversely affecting the flooring system.

NOTE: These instructions are meant to be used as a guide, and do not take into account specific job site situations. Consult local building codes and regulations along with the building owner or owner's representative before proceeding.

REMEMBER: If damaged, Stego Wrap must be repaired using the techniques outlined above.

PART 2

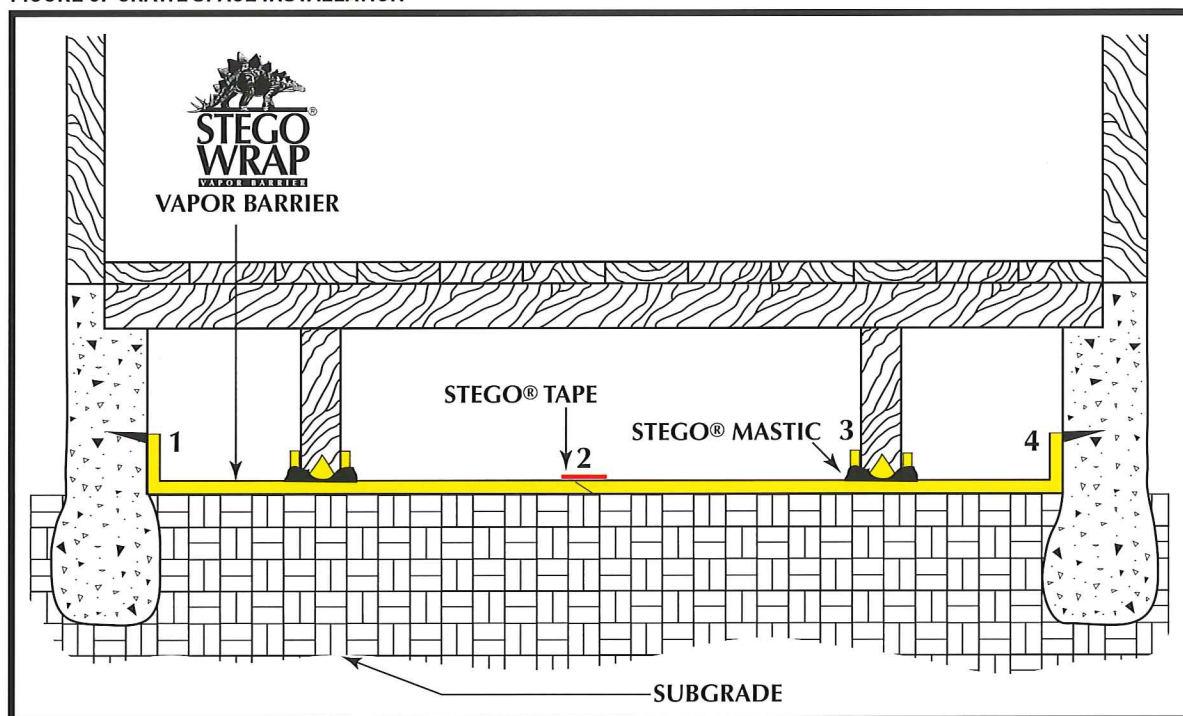
STEGO WRAP VAPOR BARRIER/RETARDER INSTALLATION INSTRUCTIONS



CRAWL SPACE INSTALLATION INSTRUCTIONS:

1. Place Stego Wrap directly over the crawl space floor. If rigid insulation is to be used, install Stego Wrap prior to insulation (under insulation and between the foundation wall and insulation).
2. Overlap seams a minimum of six inches and seal with Stego Tape.
3. Seal Stego Wrap around all penetrations and columns using Stego Tape and/or Stego Mastic.
4. Turn Stego Wrap up the foundation wall to a minimum height of six inches above the outside/exterior grade or in compliance with local building codes and terminate with pressure treated nail strip/termination bar or construction adhesive. If using a nail strip/termination bar, extend Stego Wrap above termination bar and fold back over nail strip/termination bar and tape with Stego Tape to seal nail holes.

FIGURE 5: CRAWL SPACE INSTALLATION



INSTALLATION TIPS:

1. For a cleaner look and to prevent against tenting of Stego Wrap at the foundation wall/foundation floor intersection, consider mechanically fastening Stego Wrap to base of foundation wall in addition to the above mentioned wall termination.
2. To provide additional protection against moisture migration through nail holes, consider applying a layer of Stego Mastic to the foundation wall prior to installing nail strip/termination bar. Allow one hour for Stego Mastic to cure prior to installing nail strip/termination bar.

NOTE: There are well-publicized pros and cons regarding different approaches to vapor barrier placement. Consult local building codes, regulations and ACI guidelines along with the design or architectural firm's recommendations before proceeding.

FIGURE 6a: BASEMENT/BELOW GRADE WALL INSTALLATION

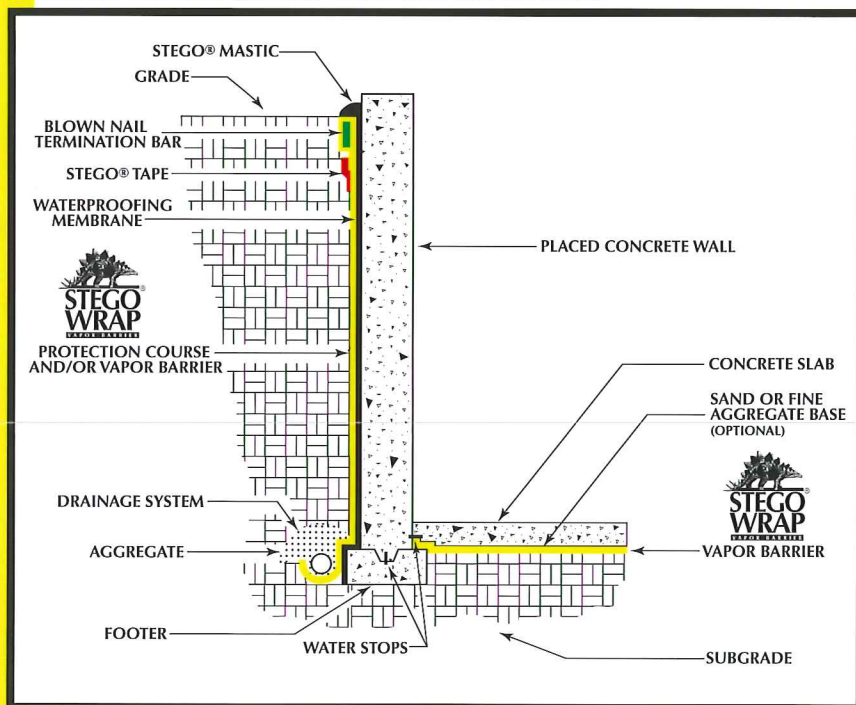
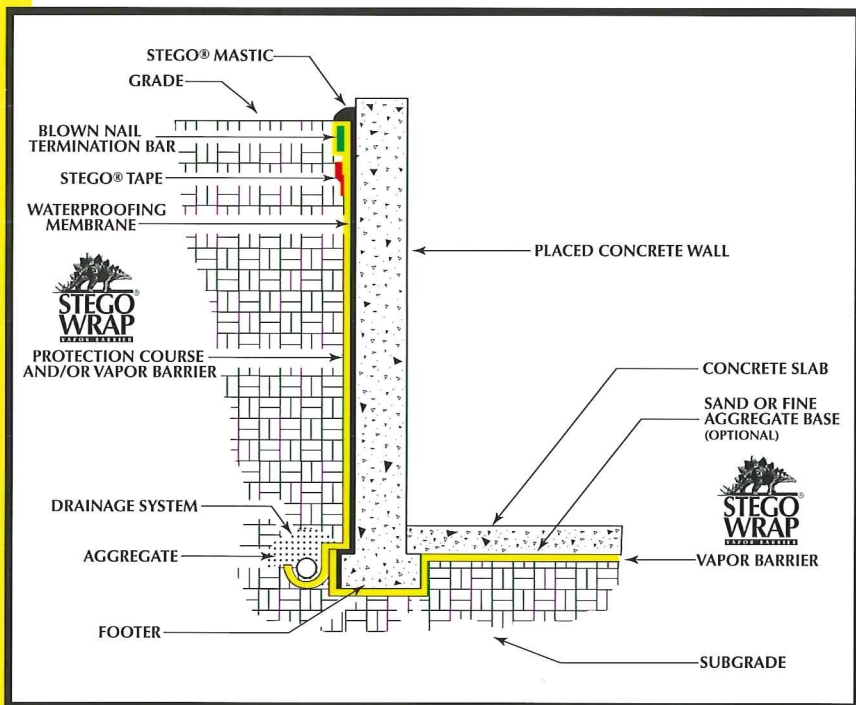


FIGURE 6b: OPTIONAL INSTALLATION FOR FOOTING ENCAPSULATION AND WATERPROOFING TIE-IN



NOTE: These installation instructions are based on practices outlined in ASTM E 1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs. These instructions are meant to be used as a guide, and do not take into account specific job site situations. Consult local building codes and regulations along with the building owner or owner's representative before proceeding. If you have any questions regarding the above mentioned installation instructions, Stego products, or a specific job site situation, please call us at 877-464-7834 for technical assistance.

BASEMENT/BELOW GRADE WALL INSTALLATION:

1. Install an approved waterproofing membrane according to the manufacturer's installation instructions. This may include sheet goods, or liquid applied membranes be they roll, brush or spray.
2. While the membrane is still tacky, install Stego Wrap as a protective course/vapor barrier over the applied waterproofing membrane. Using a termination bar with concrete nails at the termination of the waterproofing membrane is advisable in some applications (see figure 6a, Basement/ Below Grade Wall Installation).
3. Supervised care must be taken during back filling against the material so that it is not damaged or punctured. If damage occurs, patch using the techniques outlined in part 1.

WARNING: Any untreated punctures, tears or damage during back filling will greatly reduce the effectiveness of Stego Wrap as a protection course/vapor barrier.

OPTIONAL INSTALLATION FOR FOOTING ENCAPSULATION AND WATER PROOFING TIE-IN:

1. Install Stego Wrap into footing depression prior to concrete placement.
2. Leave outside edge of footing exposed to allow for primary waterproofing application and tie-in (see figure 6b, Optional Installation For Footing Encapsulation and Waterproofing Tie-In).

NOTE: Consult Structural Engineer prior to footing encapsulation.



Appendix D

DERR Site-Specific Cleanup Levels Document

SSCL Calculator Prepared for:

Site name:	Former Sommers Auto Wreclomg
Site address:	South Salt Lake, Utah
Facility ID:	NA
Release ID:	NA
Contact name:	
Contact phone:	
Contact e-mail:	

SSCL Calculator Prepared by:

Name:	Blake Downey
UST Consultant Cert. #:	C-0268
Company, Agency, other:	Wasatch Environmental
Phone:	435-760-8269
E-mail:	BD@wasatch-environmental.com
Date prepared:	8/14/2023

Site-Specific Cleanup Levels* for Commercial/ Industrial Receptors															
Chemical Name (CAS #)		Air			Groundwater					Soil					
		SSCL _{air}	Highest Air Concentrations Remaining at the Site	Air Comments (e.g. Sample ID, Sample Date, etc.)	SSCL _{wing}	SSCL _{wesp}	SSCL _{wamb}	Highest Groundwater Concentrations Remaining at the Site	Groundwater Comments (e.g. Sample ID, Sample Date, etc.)	SSCL _{s-leach}	SSCL _{seesp}	SSCL _{samb}	SSCL _{ss}	Highest Soil Concentrations Remaining at the Site	Soil Comments (e.g. Sample ID, Sample Depth, Sample Date, etc.)
		(See Eq. D.1)			(See Eq. D.2)	(See Eq. D.3)	(See Eq. D.4)			(See Eq. D.5)	(See Eq. D.6)	(See Eq. D.7)	(See Eq. D.8)		
		Air			Groundwater	Groundwater	Groundwater			Subsurface soil	Subsurface soil	Subsurface soil	Surface Soil		
		Inhalation			Ingestion	Indoor air (enclosed space) vapor inhalation	Outdoor air (ambient) vapor inhalation			Leaching to groundwater (groundwater ingestion)	Indoor air (enclosed space) vapor inhalation	Outdoor air (ambient) vapor inhalation	Ingestion of soil, inhalation of vapors and particles, and dermal contact		
		µg/m ³ air	µg/m ³ air		mg/L water	mg/L water	mg/L water	mg/L water		mg/kg soil	mg/kg soil	mg/kg soil	mg/kg soil	mg/kg soil	
Primary Chemicals of Concern	Benzene (71-43-2)	c	4.93E-01			9.87E-03	3.69E+00	2.70E+02			4.10E-03	6.94E-01	3.51E+00	4.98E+00	
	Toluene (108-88-3)	nc	7.31E+03			8.18E+00	5.48E+04	4.47E+06			6.93E+00	1.78E+04	9.03E+04	5.35E+03	
	Ethylbenzene (100-41-4)	nc	1.48E+03			1.02E+01	1.12E+04	9.88E+05			1.74E+01	6.40E+03	3.24E+04	6.13E+03	
	Xylenes (1330-20-7)	nc	1.48E+02			2.04E+01	1.17E+03	8.88E+04			3.75E+01	9.24E+02	4.68E+03	4.24E+03	
	Naphthalene (91-20-3)	nc	4.39E+00			2.04E+00	2.21E+02	5.27E+03			5.21E+00	4.76E+02	2.41E+03	7.02E+02	
	MTBE (1634-04-04)	nc	4.38E+03			5.11E-01	3.56E+04	6.35E+05			1.08E-01	6.75E+03	3.42E+04	3.40E+02	
Total Petroleum Hydrocarbon Fractions	Alkyl benzenes (C ₉ -C ₁₀) [average values]	nc	3.07E+02			4.09E+00	2.44E+03	2.12E+05			1.53E+01	3.09E+03	1.57E+04	2.33E+03	
	Alkyl naphthalenes (C ₁₁ -C ₁₃) [average values]	nc	3.07E+02			4.09E+00	1.46E+04	3.55E+05			8.18E+01	2.47E+05	1.25E+06	1.83E+04	
	Total PAHs (C ₁₂ -C ₂₂) [average values]	nc	1.53E+02			3.07E+00	1.13E+03	5.49E+04			5.42E+02	1.29E+05	6.53E+05	1.29E+04	
	Aliphatics (C ₅ -C ₆) [Hexane (110-54-3)]	nc	3.07E+02			6.13E+00	1.41E+03	1.82E+05			2.38E+01	2.36E+01	1.20E+02	3.09E+03	
	Aliphatics (C ₇ -C ₈) [Heptane (142-82-5)]	nc	3.07E+02			6.13E+00	1.70E+03	2.20E+05			7.78E+01	5.26E+01	2.66E+02	3.09E+03	
	Aliphatics (C ₉ -C ₁₀) [Nonane (111-84-2)]	nc	1.48E+03			1.02E+01	9.59E+03	1.24E+06			9.86E+02	9.67E+02	4.90E+03	6.13E+03	
	Aliphatics (C ₁₁ -C ₁₂) [Undecane (1120-21-4)]	nc	1.48E+03			1.02E+01	1.09E+04	1.41E+06			9.15E+03	1.26E+04	6.36E+04	6.22E+03	
	Aliphatics (C ₁₃ -C ₁₆) [Hexadecane (544-76-3)]	nc	1.48E+03			1.02E+01	1.26E+04	1.63E+06			1.44E+05	2.30E+05	1.16E+06	6.66E+03	
	Aliphatics (C ₁₇ -C ₂₁) [Heptadecane (629-78-7)]	nc	1.02E+04			2.04E+02	1.04E+05	1.34E+07			2.30E+08	2.22E+08	1.12E+09	1.36E+05	
	Aliphatics (C ₂₂ -C ₃₅) [Heptadecane (629-78-7)]	nc	1.02E+04			2.04E+02	1.04E+05	1.34E+07			2.30E+08	2.22E+08	1.12E+09	1.36E+05	

Site-Specific Cleanup Levels* for Commercial/ Industrial Receptors																
Chemical Name (CAS #)			Air			Groundwater					Soil					
			SSCL _{air}	Highest Air Concentrations Remaining at the Site	Air Comments (e.g. Sample ID, Sample Date, etc.)	SSCL _{wing}	SSCL _{wesp}	SSCL _{wamb}	Highest Groundwater Concentrations Remaining at the Site	Groundwater Comments (e.g. Sample ID, Sample Date, etc.)	SSCL _{s-leach}	SSCL _{seep}	SSCL _{samb}	SSCL _{ss}	Highest Soil Concentrations Remaining at the Site	Soil Comments (e.g. Sample ID, Sample Depth, Sample Date, etc.)
			(See Eq. D.1)			(See Eq. D.2)	(See Eq. D.3)	(See Eq. D.4)			(See Eq. D.5)	(See Eq. D.6)	(See Eq. D.7)	(See Eq. D.8)		
			Air			Groundwater	Groundwater	Groundwater			Subsurface soil	Subsurface soil	Subsurface soil	Surface Soil		
			Inhalation			Ingestion	Indoor air (enclosed space) vapor inhalation	Outdoor air (ambient) vapor inhalation			Leaching to groundwater (groundwater ingestion)	Indoor air (enclosed space) vapor inhalation	Outdoor air (ambient) vapor inhalation	Ingestion of soil, inhalation of vapors and particles, and dermal contact		
			µg/m³ air	µg/m³ air	mg/L water	mg/L water	mg/L water	mg/L water	mg/kg soil	mg/kg soil	mg/kg soil	mg/kg soil	mg/kg soil			
Individual Polynuclear Aromatic Hydrocarbons (PAHs)	Acenaphthylene (208-96-8)	nc	1.53E+02			3.07E+00	1.56E+04	2.78E+05			2.44E+01	1.11E+05	5.64E+05	1.28E+04		
	Acenaphthene (83-32-9)	nc	8.69E+01			6.13E+00	8.14E+03	1.48E+05			4.21E+01	4.98E+04	2.52E+05	1.64E+04		
	Fluorene (86-73-7)	nc	5.62E+01			4.09E+00	5.76E+03	1.01E+05			4.55E+01	5.76E+04	2.91E+05	1.23E+04		
	Phenanthrene (85-01-8)	nc	1.53E+02			3.07E+00	1.82E+04	3.09E+05			7.07E+01	3.77E+05	1.91E+06	1.40E+04		
	Anthracene (120-12-7)	nc	4.38E+02			3.07E+01	4.96E+04	8.47E+05			6.68E+02	9.73E+05	4.93E+06	1.07E+05		
	Fluoranthene (206-44-0)	nc	5.83E+01			4.09E+00	8.48E+03	1.43E+05			3.20E+02	5.99E+05	3.03E+06	1.72E+04		
	Pyrene (129-00-0)	nc	4.38E+01			3.07E+00	5.63E+03	9.45E+04			2.22E+02	3.68E+05	1.86E+06	1.27E+04		
	Benz(a)Anthracene (56-55-3)	c	1.96E-01			3.92E-04	2.03E+01	3.40E+02			1.12E-01	5.25E+03	2.66E+04	2.00E+00		
	Chrysene (218-01-09)	c	1.96E+00			3.92E-02	2.96E+02	4.96E+03			8.97E+00	6.12E+04	3.10E+05	1.94E+02		
	Benzo(b)Fluoranthene (205-99-2)	c	1.96E-02			3.92E-04	3.20E+00	5.42E+01			9.15E-02	6.75E+02	3.42E+03	1.94E+00		
	Benzo(k)-Fluoranthene (207-08-09)	c	1.96E-01			3.92E-03	3.33E+01	5.57E+02			1.33E+00	1.02E+04	5.19E+04	1.96E+01		
	Benzo(a)-Pyrene (50-32-8)	c	2.35E-03			3.92E-05	2.46E-01	4.11E+00			1.44E-02	8.19E+01	4.15E+02	1.96E-01		
	Indeno(1, 2, 3-Cd)Pyrene (193-39-5)	c	2.35E-02			3.92E-04	1.14E+03	1.22E+03			8.88E-03	2.57E+04	2.61E+04	1.86E+00		
	Dibenzo-(a, h)Anthracene (53-70-3)	c	2.35E-02			3.92E-04	4.23E+00	7.07E+01			8.16E-01	7.96E+03	4.03E+04	1.99E+00		
	Benzo (g, h, i)-Perylene (191-24-2)	nc	1.53E+02			3.07E+00	2.60E+04	4.35E+05			2.68E+03	2.05E+07	1.04E+08	1.55E+04		
Additional Chemicals of Concern (carcinogens)	Not used	c	Not used			Not used	Not used	Not used			Not used	Not used	Not used	Not used		
	Not used	c	Not used			Not used	Not used	Not used			Not used	Not used	Not used	Not used		
	Not used	c	Not used			Not used	Not used	Not used			Not used	Not used	Not used	Not used		
	Not used	c	Not used			Not used	Not used	Not used			Not used	Not used	Not used	Not used		
	Not used	c	Not used			Not used	Not used	Not used			Not used	Not used	Not used	Not used		
	Not used	c	Not used			Not used	Not used	Not used			Not used	Not used	Not used	Not used		

Site-Specific Cleanup Levels* for Commercial/ Industrial Receptors															
Chemical Name (CAS #)		Air			Groundwater					Soil					
		SSCL _{air}	Highest Air Concentrations Remaining at the Site	Air Comments (e.g. Sample ID, Sample Date, etc.)	SSCL _{wing}	SSCL _{wesp}	SSCL _{wamb}	Highest Groundwater Concentrations Remaining at the Site	Groundwater Comments (e.g. Sample ID, Sample Date, etc.)	SSCL _{s-leach}	SSCL _{seep}	SSCL _{samb}	SSCL _{ss}	Highest Soil Concentrations Remaining at the Site	Soil Comments (e.g. Sample ID, Sample Depth, Sample Date, etc.)
		(See Eq. D.1)			(See Eq. D.2)	(See Eq. D.3)	(See Eq. D.4)			(See Eq. D.5)	(See Eq. D.6)	(See Eq. D.7)	(See Eq. D.8)		
		Air			Groundwater	Groundwater	Groundwater			Subsurface soil	Subsurface soil	Subsurface soil	Surface Soil		
		Inhalation			Ingestion	Indoor air (enclosed space) vapor inhalation	Outdoor air (ambient) vapor inhalation			Leaching to groundwater (groundwater ingestion)	Indoor air (enclosed space) vapor inhalation	Outdoor air (ambient) vapor inhalation	Ingestion of soil, inhalation of vapors and particles, and dermal contact		
		µg/m ³ air	µg/m ³ air		mg/L water	mg/L water	mg/L water	mg/L water		mg/kg soil	mg/kg soil	mg/kg soil	mg/kg soil	mg/kg soil	
Additional Chemicals of Concern (non-carcinogens)	Not used	nc	Not used			Not used	Not used	Not used			Not used	Not used	Not used	Not used	
	Not used	nc	Not used			Not used	Not used	Not used			Not used	Not used	Not used	Not used	
	Not used	nc	Not used			Not used	Not used	Not used			Not used	Not used	Not used	Not used	
	Not used	nc	Not used			Not used	Not used	Not used			Not used	Not used	Not used	Not used	
	Not used	nc	Not used			Not used	Not used	Not used			Not used	Not used	Not used	Not used	
	Not used	nc	Not used			Not used	Not used	Not used			Not used	Not used	Not used	Not used	

* - Site-Specific Cleanup Levels assume a Natural Attenuation Factor of 1 (i.e. no natural attenuation). c - carcinogen; nc - non-carcinogen

Site-specific Parameters used in Calculations					
Parameter	Description	Value		Units	Comments
Soil	Soil type representative of site	Clay		Not applicable	
Receptor	Select the most sensitive Receptor that is present at the site	Commercial/ Industrial		Not applicable	
i	Hydraulic gradient	0.007		ft-vertical/ft-lateral	
L _{gw}	Depth to groundwater	10		ft	
L _s	Depth to contaminated soil	2		ft	
Pavement	Is contamination beneath pavement or bare soils?	UNPAVED: contamination beneath bare soils		Not applicable	
Precip.	Annual precipitation	21		inches/year	
Soil Zone	Is contamination present in the saturated zone?	Yes		Not applicable	
W	Width of contaminated source area parallel to groundwater flow or wind direction	165		ft	