REMEDIAL ACTION PLAN
TRILLIUM FLOW TECHNOLOGIES
SALT LAKE CITY, UTAH
VOLUNTARY CLEANUP PROGRAM SITE #C109

Project No. 2439-004K

Prepared for:

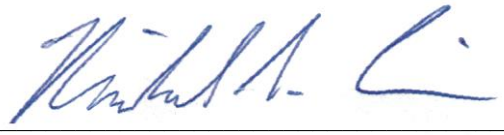
BCG Granary Partners, LLC
c/o BCG Holdings, LLC
650 South 500 West, Suite 229
Salt Lake City, Utah 84101

and

Utah Department of Environmental Quality
Division of Environmental Response and Remediation
Mr. Bill Rees
and
Mr. Chris Howell
P.O. Box 144840
Salt Lake City, UT 84114-4840

Prepared by:

Wasatch Environmental, Inc.
2410 West California Avenue
Salt Lake City, UT 84104



Michael S. Cronin, P.G.
Senior Project Manager and Senior Project Geologist

September 19, 2023

TABLE OF CONTENTS

FIGURES

APPENDICES

REMEDIAL ACTION PLAN
TRILLIUM FLOW TECHNOLOGIES
SALT LAKE CITY, UTAH
VOLUNTARY CLEANUP PROGRAM SITE #C109

1. INTRODUCTION

On behalf of BCG Granary Partners, LLC, (BCG), the owner of the former Trillium Flow Technologies property (Site) and Applicant, Wasatch Environmental, Inc. (Wasatch), has prepared this Remedial Action Plan (RAP) for addressing contaminated environmental media at the Site and impacted off-Site properties which include, but are not limited to, chlorinated solvent impacts to soil and groundwater. 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 under the Voluntary Cleanup Program (VCP).

The Applicant plans to redevelop the Site (location is shown on Figure 1) as part of a larger redevelopment project that includes the Site as well as property adjoining the Site to the northwest as shown on Figure 3. For the purposes of this RAP, the term "Site" is used to refer to the properties that are formally enrolled in the VCP. The Site includes both the former Trillium Flow Technologies (Trillium) property as well as the former OJ Industries (OJ) property. The term "Applicant-controlled off-Site properties" is used to refer to off-Site properties that are owned and controlled by the Applicant and are part of the Applicant's redevelopment project. The Applicant-controlled off-site properties are located adjoining the northwest portion of the Site (on the southeast corner of the intersection of 500 West and 700 South). The term "non-Applicant-controlled off-Site properties" refers to off-Site properties that are neither owned nor controlled by the Applicant. Defining and understanding these terms is critical for discussions related to the remedial strategy. The Site and Applicant-Controlled off-Site properties are clearly illustrated on Figure 3.

1.1 Site Description

The Site is located between 400 West and Woodbine Street (approximately 550 West), and 700 South and 800 South, in Salt Lake City, Utah (as shown on Figure 1). The Site totals 7.43 acres and is comprised of eight parcels. The Site includes the following Salt Lake County Assessor's Office parcel numbers:

- 15-12-108-003,
- 15-12-129-002,
- 15-12-129-003,
- 15-12-129-004,
- 15-12-129-006,
- 15-12-129-009,
- 15-12-129-011, and
- 15-12-129-012.

Property use at the Site and surrounding properties is a mix of commercial and light industrial (as shown on Figure 3). This includes current use of portions of the Site outside of the proposed areas of active remediation. These uses include a temporary concert venue on the parcel west of 500 West, business use of the office building on the southern portion of the Site, and use of part of one of the Trillium buildings which is used by the USA Climbing Team as a training area (as shown on Figure 3).

As shown on Figure 2, the portion of the Site previously occupied by Trillium, a pump manufacturer, consists of two areas separated by 500 West Street. The parcel west of 500 West (western portion) is developed with an approximately 960-square-foot, single-story, slab-on-grade building, constructed in 1945, and previously used as a scale house and for file storage. The remainder of this parcel is used as

a storage yard. The parcels east of 500 West (eastern portion) are developed with an approximately 23,312-square-foot, two-story office building constructed in 1968 on the south side of the property; an approximately 57,764-square-foot, single-story, slab-on-grade machine shop/cutting, welding, and testing building located on the east side of the property; and an approximately 51,132-square-foot, single-story, slab-on-grade paint booth, parts, and storage building constructed between 1974 and 1990 on the north and central areas of the property. The remainder of the property consists of concrete and asphalt-paved parking, storage, and driveway areas.

Also as shown on Figure 2, the northern portion of the Site previously occupied by OJ, a metal fabrication company, is developed with an approximately 13,041-square-foot, shop/office building on the southern portion, and an approximately 2,560-square-foot shed/storage structure located on the northern portion of the Site. According to the Salt Lake County Assessor's website, the shop/office building was constructed in 1910. However, our research indicates that it was initially constructed in the 1920s and added to in 1938. The shed/storage structure was constructed in 1956.

1.2 Site Background

The eastern portion of the Site previously occupied by Trillium was residential and vacant land until it was developed with a stone-cutting operation in 1899. In 1914, the stone-cutting building burned. Between 1914 and the 1940s, the eastern portion of the Site was vacant land and residential until Monsey Iron and Metal (Monsey) took occupancy; however, the residences remained. Monsey constructed a large machine shop/store on the eastern portion of the Site and added storage sheds over time. Monsey collected used metal, including pipes, and stored it on the remainder of the property. In the 1960s, the Galigher Company, a pump manufacturer for the mining industry, purchased the eastern portion of the Site, began construction of the current buildings, and added to the original machine shop/store building. The eastern portion of the Site has been occupied by various other pump manufacturers since that time. The Site has been identified on numerous regulatory databases including, but not limited to, the underground storage tank (UST), Resource Conservation and Recovery Act (RCRA) hazardous waste and Superfund Enterprise Management System (SEMS) databases. Numerous chemicals including chlorinated solvents and petroleum-based products have been used at the Site since it has been occupied by a pump manufacturer.

The western portion of the Site previously occupied by Trillium was vacant land until 1911 when several residences were present. In 1946, American Barrell and Cooperage Company moved to the Site from a nearby site and a rail line was routed to the yard. By 1952, the Utah Junk Company had taken over the yard; and by the 1960s, the Galigher Company had taken occupancy. Since that time, the western portion of the Site has been primarily used for storage. The file storage building (previously used as a scale house) on the western portion of the Site was constructed in the 1940s. There was previously a long rectangular storage building along the northern boundary of this western parcel. In 1996, during remediation work on the western portion of the Site, an abandoned 500-gallon, heating oil UST was discovered near the south side of the scale house building. The UST was removed and disposed off-Site in 1996. The UST was not regulated; therefore, the UST removal was not conducted under regulatory oversight. This area was subsequently sampled by Wasatch to verify that there were no impacts to soil and groundwater remaining at the Site that may be related to the UST.

Wasatch reviewed a 2019 Phase I Environmental Site Assessment report and a Limited Site Investigation report for the portion of the Site previously occupied by Trillium prepared by Terracon on behalf of the Trillium property owner at that time. Numerous recognized environmental conditions were identified in the Phase I report associated with past uses of the Site and adjoining properties. During the completion of the 2019 Terracon investigation, elevated concentrations of heavy metals were identified in fill material on the Site and trichloroethylene (TCE) impacts to groundwater were identified on the eastern portion of the Site. Terracon suggested that the TCE impacts were coming onto the Site from the north, citing that groundwater flow direction on the Site was to the south.

Wasatch has performed additional subsurface investigation on the Site. Based on our investigations, we have confirmed that groundwater flow direction is to the northwest, and we identified what appear to be

two sources for the TCE impacts on the Site: one from the Trillium portion of the Site, and one that may have originated from an exhaust fan on the north-adjoining building (on the OJ portion of the Site). Additionally, we have determined that the TCE impacts are extending off-Site to the northwest. The southern and western portions of the Site do not exhibit chlorinated solvent contamination; however, lead, arsenic, and polycyclic aromatic hydrocarbons (PAHs) have been detected at elevated concentrations in some samples collected from the imported fill material that covers the upper few feet of the Site.

The portion of the Site occupied by OJ (the northern portion of the Site) was residential between at least 1898 and the early 1920s. Historical newspaper articles document that the original portion of the office/shop building was occupied by B&G Brass Foundry in 1921, Foundry & Machine Company in 1923, and General Boiler and Sheet Iron Works in 1928. City Boiler and Iron Works occupied the Site in 1934. In 1938, the southern portion of the shop/office building was constructed. By 1938, the building was occupied by Utah Welders and Utah Sprocket, which welded vehicles and parts and pieces for various types of equipment. The 1949 and 1950 fire insurance maps depict the OJ property with the original portion of the shop/office building, which is labeled as welding with some paint spraying. The labeling also indicates that the original shop/office building had dirt and concrete floors. The northern portion of the Site is depicted with a residence. The northern structure was added to the Site in 1956. Utah Sprocket was present until 1976, when OJ purchased that portion of the Site.

The portion of the Site occupied by OJ exhibits ubiquitous trace-level concentrations of total petroleum hydrocarbons as gasoline-range organics (TPH-GRO) in soil. Low concentrations of TPH-GRO were also detected in groundwater grab samples collected from two soil borings. There is also a localized area of total petroleum hydrocarbons as diesel-range organics (TPH-DRO) contamination in both soil and groundwater. TCE was detected at low concentrations in soil in the southwestern portion of the Site occupied by OJ. TCE was also detected in groundwater at concentrations that exceeded the United States Environmental Protection Agency Maximum Contaminant Level (U.S. EPA MCL) in the southwestern portion of the Site occupied by OJ. Arsenic and lead were ubiquitous in samples collected from the portion of the Site occupied by OJ. Finally, there is also a localized area of polychlorinated biphenyl (PCB) contamination in soil on the portion of the Site formerly occupied by OJ.

The Trillium portion of the Site was entered into the Voluntary Cleanup Program (VCP) in May 2021 and assigned VCP Site #C109. The OJ Industries portion of the Site was amended to the Trillium VCP Site in September 2021.

1.3 Conceptual Site Model (CSM)

The Site is located within the discharge area for the basin-fill aquifer system, near the eastern boundary with the secondary recharge area. 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 exhibits an upward vertical hydraulic gradient.

The shallow unconfined aquifer, where it is present, extends to a maximum depth of approximately 50 feet and is composed primarily of clays, silts, and fine-grained sands. Throughout the central portion of Salt Lake Valley, the shallow unconfined aquifer has an upward vertical hydraulic gradient. Recharge to the shallow unconfined aquifer generally occurs through infiltration of precipitation falling on the valley floor, infiltration of unconsumed irrigation water, and upward migration of groundwater through the confining layer from the deep confined aquifer. Discharge from the shallow unconfined aquifer is generally to the Jordan River, streams, canals, springs, the Great Salt Lake, and loss through evapotranspiration. The shallow unconfined aquifer is only slightly more permeable than the confining layer which underlies the shallow unconfined aquifer, yields little water, the water is of poor quality, and; therefore, is rarely used as a source of potable water.

The confining layer, where it is present, ranges from 40 to 100 feet thick and is composed of Quaternary deposits of clay, silt, and fine-grained sands. The confining layer exhibits an estimated average upward vertical hydraulic conductivity of 0.025 feet per day.

The deep confined aquifer ranges from 0 feet (at the edges of the valley where it becomes unconfined and in the recharge area) to over 2,000 feet in thickness and is composed of layered Quaternary deposits of clay, silt, sand, and gravel which are hydraulically interconnected. The deep confined aquifer has an upward vertical hydraulic gradient. Recharge to the deep confined aquifer generally occurs through inflow from consolidated rock and coarse-grained unconsolidated sediments in the primary and secondary recharge zones (along the margins of the valley); and infiltration from streams, rivers, canals, ponds, and lakes where the water level elevation is higher than the water table (i.e., losing streams, etc.). Groundwater flow originates in the recharge areas to the northern and central portions of Salt Lake Valley. Discharge from the deep confined aquifer is through groundwater withdrawal from wells, and upward movement through the confining layer to the shallow aquifer. In the central portion of the Salt Lake Valley (including the area in which the Site is located), the deep confined aquifer is classified as a Class II aquifer, suitable for use as drinking water. The deep confined aquifer is the principal aquifer from which most of the groundwater from the Salt Lake Valley is discharged (i.e., for irrigation, stock watering, potable water, etc.).

Soils at the Site consist of a surficial layer of imported fill material consisting of primarily sand (SW) and gravel (GW) ranging from approximately 2 to 5 feet in thickness. The fill overlies interlayered units of silty clays (CL), sands (SW and SP), and silty sands (SM) each ranging from approximately 1 to 5 feet in thickness. Depth to groundwater is approximately 7.5 to 10.5 feet below ground surface (bgs). Groundwater and contaminant transport are likely to occur primarily within the sandy soils which typically occur at depths of approximately 7 to 12 feet at the Site. Soils consisting of primarily silts and clays are likely to serve as contaminant storage zones. If not sufficiently remediated, these contaminant storage zones are likely to result in back-diffusion of contaminants into groundwater.

Based on the groundwater elevation data collected on November 21, 2022, the shallow groundwater hydraulic gradient is 0.013 feet/foot to the northwest, and the intermediate groundwater hydraulic gradient is 0.004 feet/foot to the northwest. See Figures 6 and 7 for the shallow and intermediate piezometric surface maps.

Based on the groundwater elevation data collected on November 21, 2022, an upward vertical hydraulic gradient is present from the intermediate wells to the shallow wells. The MW-4S/MW-4M well cluster exhibited an upward vertical gradient of 0.01866 feet/foot. The MW-5S/MW-5M well cluster exhibited an upward vertical gradient of 0.02350 feet/foot. The MW-6S/MW-6M well cluster exhibited an upward vertical gradient of 0.006020 feet/foot. The MW-7S/MW-7M well cluster exhibited an upward vertical gradient of 0.03416 feet/foot. The average upward vertical gradient for all four well clusters is 0.020585 feet/foot.

As shown on Figure 5, a dissolved phase chlorinated solvent plume extends from the northwest portion of the Site, off-Site to the northwest, and under the Applicant-controlled off-Site property adjoining the northwest portion of the Site. The chlorinated solvent plume emanating from the Site terminates before reaching monitoring well MW-1S (located on the northwest corner of the intersection of 500 West and 700 South) which did not exhibit detectable concentrations of any VOCs. The chlorinated solvent plume consists of TCE, *trans*-1,2-dichhloroethene (*trans*-1,2-DCE), *cis*-1,2-dichloroethene (*cis*-1,2-DCE), and vinyl chloride (VC). Tetrachloroethene (PCE) was conspicuously absent from the chlorinated solvent plume that emanates from the Site, suggesting that the original source of the plume was likely TCE, and not PCE.

The source areas of the chlorinated solvent contamination at the Site are associated with a surface release(s) that occurred in the vicinity of boring locations GP-4, GP-8, GP-9, GP-10, GP-11, and GP-36; and a subsurface release(s) in the vicinity of boring locations GP-5, GP-8, GP-10, GP-11, GP-13, and B-6. Subsurface releases likely originated from multiple on-Site sources such as sewer lines and separators.

A complete range of TCE degradation products (including 1,1-dichloroethene [1,1-DCE], *cis*-1,2-DCE, *trans*-1,2-DCE, and VC) have been detected in groundwater at the Site. The presence of these

compounds indicates that the TCE is naturally degrading in the environment due to reductive dechlorination.

The TPH-GRO and petroleum-range VOC impacts to soil and groundwater in the portion of the Site occupied by OJ are at concentrations below residential use criteria (e.g., Utah Initial Screening Levels and U.S. EPA Regional Screening Levels [RSLs] for Residential Soil) and, therefore, are not considered to be constituents of concern related to the Site.

The localized area of TPH-DRO contamination in soil and groundwater in the portion of the Site occupied by OJ (near boring location B-5) exceeds the Utah ISLs for soil and groundwater and is possibly related to a former petroleum storage tank in that area.

TCE was detected at low concentrations in soil in the southwestern portion of the Site occupied by OJ. TCE was also detected in groundwater at concentrations that exceeded the U.S. EPA MCL in the southwestern portion of the Site occupied by OJ.

Chlorinated solvent impacts, as well as isolated petroleum hydrocarbon impacts, to soil gas and indoor air appear to be relatively minor and limited to the northwest portion of the Site and Applicant-controlled off-Site properties adjoining the northwest portion of the Site (areas of the Site where the chlorinated solvent source areas and groundwater plume are present).

Arsenic impacts to the imported fill are ubiquitous throughout the Site at concentrations exceeding the U.S EPA RSL for Industrial Soil. Native soil at the Site also exceeds the U.S. EPA RSL for Industrial Soil for arsenic and is believed to be a background condition. Lead was also detected in several of the samples collected from the imported fill at concentrations exceeding the U.S. EPA RSL for Industrial Soil. PAHs were detected in several of the soil samples collected from the imported fill at concentrations exceeding the U.S. EPA RSL for Industrial Soil.

The localized area of PCB contamination in soil at sampling location Comp-1, located in the north-central portion of the Site occupied by OJ, appears to be confined to soils sitting atop a concrete slab, upon which an overhead pole-mounted transformer had leaked. The PCB concentrations in soil exceed the U.S. EPA RSL for Residential Soil.

Soil exceedances are shown on Figure 4. Soil gas and indoor air exceedances are shown on Figure 8.

Figure 10 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 Objective

The Applicant plans to redevelop the Site as part of a larger redevelopment project that also includes the Applicant-controlled off-Site properties adjoining the northwest portion of the Site as shown on Figure 3. This provides the Applicant with the opportunity to manage off-Site impacts to the northwest of the Site and eliminate potential routes of exposure through the implementation of engineering and institutional controls. Based on the available data, there appear to be no non-Applicant-controlled off-Site properties having structures in areas where there may be a risk of vapor intrusion attributable to releases from the Site. If any are identified in the future, and with the permission of the impacted property owner(s), the Applicant would screen these properties and structures against residential standards and implement appropriate vapor mitigation measures as required.

The Applicant intends to demolish and remove the existing structures located on the Site and on the Applicant-controlled off-Site properties in phases and redevelop the Site and Applicant-controlled off-Site properties with parking and commercial use on the ground floor and multi-family residential above the ground floor in areas with chlorinated solvent impacts to soil, groundwater, or soil gas that indicate a risk of vapor intrusion. In on-Site areas without chlorinated solvent impacts, where vapor intrusion risk is acceptable, redevelopment may potentially include ground-level multi-family residential use (with land use

and engineering controls to mitigate residual exposure risks assumed). Therefore, the objective of this remedial action is to achieve conditions suitable for mixed-use redevelopment relative to environmental media (soil, groundwater, and soil gas) at the Site, based on an assessment of post-remediation cumulative human health risk, through a combination of active remediation and appropriate post-remediation mitigation measures (land use controls and engineering controls).

If necessary, and based on post-remediation data, the Applicant intends to mitigate residual vapor intrusion risk that may remain at the Site, and at Applicant-controlled off-Site properties, following active remediation. The Applicant anticipates that land use and engineering controls (which would require an Environmental Covenant [EC] and Site Management Plan [SMP]) would be a required component for achieving regulatory closure of the Site. The land use and engineering controls may be necessary for both the Site and Applicant-controlled off-Site properties. Institutional controls may include requirements for additional groundwater and/or indoor air monitoring, restrictions on the use of groundwater, restrictions on land use and development, etc. Engineering controls may include requirements for vapor barriers and/or sub-slab depressurization systems, marker layers, and barriers (e.g., hardscaping, pavement, clean soil cover), etc. The controls would be intended to ensure that chlorinated solvent and other VOC concentrations in indoor air are maintained at acceptable levels for the continued use of the Site and Applicant-controlled off-Site properties following active remediation and redevelopment. Land use and engineering controls would also likely be used to manage residual risk related to the arsenic, lead, and PAHs in the fill material at the Site.

2. REMEDIAL ACTION SELECTION

Site characteristics, historical and proposed future (following redevelopment) land use of the Site and Applicant-controlled off-Site properties, current land use of properties surrounding the Site and Applicant-controlled off-Site properties, and the nature and distribution of contamination, 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. The applicable references are listed in Section 11 of this RAP.

2.1 Contaminants of Concern

Contaminants of concern relative to releases at the Site include the chlorinated solvent TCE in soil and groundwater; and TCE degradation products including: 1,1-DCE, *cis*-1,2-DCE, *trans*-1,2-DCE, and VC in groundwater only. PAHs including: benzo(a)pyrene, benz(a)anthracene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene; and metals including arsenic and lead are contaminants of concern with respect to the soil (specifically the imported fill) at the Site. TPH-DRO is a contaminant of concern with respect to soil and groundwater at the Site in the vicinity of boring location B-5. Naphthalene is a contaminant of concern with respect to soil only in the vicinity of boring location B-5. PCB Aroclor 1254 and Aroclor 1260 are contaminants of concern with respect to soil only in the vicinity of sample location Comp-1. TCE and benzene are considered contaminants of concern with respect to subsurface and sub-slab soil gas, as well as indoor air.

2.2 Proposed Action Levels and Site-Specific Cleanup Levels (SSCLs)

Proposed action levels are preliminary target concentrations only. Failure to meet the action levels does not necessarily imply the need for additional active remediation. The referenced concentrations are not based on cumulative risk and do not account for risk mitigation measures such as the implementation of land use controls or engineering controls. The site-specific cleanup levels (SSCLs) would be calculated following completion of active remediation and would be based on an assessment of cumulative risk (cumulative risk with respect to the impacts that remain following active remediation, and the concentrations and distribution of those contaminants). Thus, the action levels are preliminary remediation targets; and the SSCLs are the formal cleanup levels (that will be calculated based on post-

remediation assessment of cumulative human health risk) that establish when the Site may be suitable for regulatory closure and issuance of a Certificate of Completion (COC).

Soil and fill at the Site would be remediated to meet the action levels equivalent to the U.S. EPA RSLs for Industrial Soil. Remediation of soil to the U.S. EPA Industrial RSLs is protective of composite workers and construction workers with respect to the soil ingestion and inhalation exposure pathways. This standard for soil is not, however, protective with respect to contaminants partitioning out of soil into groundwater and into soil gas. This standard, in the absence of engineering and/or institutional controls, would also not be protective of residents. Some of the contaminants of concern at the Site have MCL-based Soil Screening Levels (SSLs) which are much lower than the U.S. EPA RSLs for Industrial Soil and Residential Soil. Therefore, continued partitioning of some contaminants out of soil and into groundwater and into soil gas is expected even after remediation has been performed.

Based on the arsenic soil data collected from the Site, all detected arsenic concentrations in soil exceed the U.S. EPA RSLs for Residential and Industrial Soil. However, arsenic was evaluated to assess if the detected concentrations are representative of Site background. As a site-specific background level for arsenic is not available, various sources for background were evaluated, to include other sites within the Salt Lake Valley and USGS databases (USGS Data Series 801: Geochemical and Mineralogical Data for Soils of the Conterminous United States and USGS Scientific Investigations Report 2017-5118: Geochemical and Mineralogical Maps, with Interpretation, for Soils of the Conterminous United States). The average arsenic concentration in soil at the Site is 13.2 mg/kg. Wasatch is proposing an SSCL of 27 mg/kg for arsenic (approximately twice the average arsenic concentration at the Site. The elevated arsenic detected in sample locations B-1, B-9, and GP-43 will be excavated and transported off-Site for proper disposal as discussed in section 3.6. Exposure to residual arsenic, as with residual concentrations of other contaminants at the Site, will be managed through the use of land use and engineering controls as discussed in section 3.4.

Groundwater occurring both on-Site and off-Site would be remediated to meet action levels equivalent to the U.S. EPA MCLs for groundwater to be protective relative to the groundwater ingestion exposure pathway. Because the U.S. EPA Vapor Intrusion Screening Level (VISL) Commercial Target Groundwater Concentrations for the contaminants present in groundwater are higher than their respective U.S. EPA MCLs; the U.S. EPA MCLs are also protective with respect to contaminants partitioning out of groundwater into soil gas (protective with respect to the vapor intrusion exposure pathway).

Indoor air in both on-Site and Applicant-controlled off-Site human-occupied structures in which vapor intrusion attributable to the Site is occurring would be screened against an action level equivalent to the U.S. EPA RSLs for Residential Indoor Air, and then mitigated to meet the U.S. EPA RSLs for Residential Indoor Air or Industrial Indoor Air, as appropriate for the land use and building occupancy. Any residual vapor intrusion risk that may remain at the Site following active remediation would be mitigated to meet U.S. EPA RSLs for Industrial Indoor Air on the ground floor (where building occupancy is for commercial use on the ground floor) and U.S. EPA RSLs for Residential Indoor Air above the ground floor (where building occupancy is for residential use above the ground floor).

The Applicant cannot impose land use controls on non-Applicant-controlled off-Site properties. Where a vapor intrusion risk to structures located on non-Applicant-controlled properties is identified, and that vapor intrusion risk is attributable to releases from the Site; these properties, and the structures located on these properties, would be screened against residential standards for the evaluation of vapor intrusion risk (U.S. EPA VISL Residential Target Groundwater Concentrations, U.S. EPA VISL Target Sub-slab and Near-source Soil Gas Concentrations, U.S. EPA RSLs for Residential Indoor Air). With the permission of the property owner(s), the Applicant would implement appropriate vapor mitigation measures to achieve residential indoor air quality standards with respect to contaminants attributable to releases from the Site as required.

Following active remediation, any residual risk to receptors on both the Site and Applicant-controlled off-Site properties would be managed through the use of engineering and institutional controls (discussed in Section 2.4 below).

2.3 Proposed Remedial Action Measures

Given the Site characteristics, nature and distribution of contaminants, and proposed future land use; Wasatch proposes, for the areas where environmental media have been impacted by chlorinated solvents, *in situ* chemical reduction (ISCR) of the contaminants in the saturated zone within the two source areas by injection of a zero valent iron (ZVI) slurry into the two source areas. Vadose zone soils within the two source areas would be remediated by *in situ* mixing of ZVI slurry with the vadose zone soils. ZVI would be injected into the saturated zone throughout the footprint of the chlorinated solvent groundwater plume. This approach to groundwater treatment is aggressive and is expected to rapidly reduce the concentrations of dissolved phase contaminants in groundwater to the SSCLs. This approach would significantly reduce the contaminant mass remaining in the two source areas (in both the vadose zone and saturated zone), thereby significantly reducing the contaminant mass that is available to partition into groundwater and soil gas. This approach also treats contaminated groundwater as it migrates off-Site, significantly reducing the risks associated with off-Site groundwater contamination and associated vapor intrusion concerns. The exact placement of the treatments (injection boring locations and excavation boundaries) as well as ZVI treatment volumes may be adjusted in the field based on unforeseen field conditions and variables.

The limited area of TPH-DRO contamination in soil located in the vicinity of boring location B-5 would be excavated, characterized, and transported off-Site for disposal at an approved facility (e.g., the Salt Lake County Landfill or E.T. Technologies Soil Regeneration Site).

The limited area of PCB contamination in soil located in the vicinity of boring location Comp-1 would be excavated, characterized, and transported off-Site for disposal at an approved facility (based on the concentrations, the Salt Lake County Landfill should be able to accept the waste).

The imported fill that comprises the upper 2 to 5 feet of soil at the Site would be evaluated using human health risk assessment (HHRA) as a primary means of supporting regulatory closure related to the imported fill material. Spot excavations (with proper characterization, off-Site disposal, and confirmation sampling) for arsenic, lead, and PAHs may be conducted as required, and land use and engineering controls would be employed (as discussed in Section 2.4), to achieve acceptable risk levels for regulatory closure related to the contaminants in the imported fill.

The remedial action measures described above would also be used as contingency remedial action measures (see Section 7 of this RAP) in the event that previously unknown contamination is discovered during Site remediation and redevelopment (such as under floor slabs and in utility trenches when they are exposed).

Details regarding these remedial action measures are provided in Section 3 of this RAP.

2.4 Proposed Engineering and Institutional Controls

In locations where residual soil contamination remains on-Site at concentrations exceeding unrestricted land use criteria, engineering and land use controls will be required to restrict access to these soils and prevent the removal of the soils from the Site without oversight by an environmental professional to ensure proper handling and disposal. The following engineering and institutional controls are proposed in the event that the remedial action fails to fully achieve the SSCLs and to manage residual exposure risks following remedial action. Additional details regarding engineering controls are provided in Section 3 of this RAP.

2.4.1 Vapor Barriers and Vapor Mitigation Systems

Wasatch proposes that vapor barriers and/or vapor mitigation systems (VMSs) be installed in any new on-Site structures, and in the new Applicant-controlled off-Site structures, where these

structures fall within areas where, following remediation, residual chlorinated solvent impacts to soil and/or groundwater exist at concentrations that may represent a vapor intrusion risk.

2.4.2 Surface Barriers

Wasatch proposes that surface barriers be employed, where necessary, to prevent human exposure to imported fill and soil at the Site that may exhibit residual contamination. Surface barriers may include features such as two feet of clean soil, asphalt or concrete pavement, building floor slabs, hardscaping, geotextiles, etc.

2.4.3 Groundwater Use Restrictions

Given the probability that some residual contamination would remain at the Site, as well as the urban location of the Site, it is probable that the use of shallow groundwater would be restricted to environmental sampling purposes only.

2.4.4 Vegetable Garden and Fruit Tree Restrictions

Given the probability that some residual contamination would remain at the Site, as well as the urban location of the Site, it is probable that vegetable gardens and fruit trees for human consumption would be restricted. This is intended to prevent human exposure to contaminants that may be present at residual concentrations in soil or groundwater and may then bioaccumulate in plant tissues.

2.4.5 Land Use Restrictions

Wasatch proposes that land use restrictions be employed, where necessary and as appropriate, following remediation to ensure that sensitive populations are not subjected to elevated exposure risks. Ground-level residential construction may be restricted in areas of the Site where residual chlorinated solvent impacts remain.

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

As discussed above, Wasatch anticipates that groundwater may not meet the SSCLs for a brief time following active remediation at the Site, and that residual chlorinated solvent concentrations in groundwater and soil may be sufficient to result in elevated chlorinated solvent concentrations in soil gas and an ongoing risk of vapor intrusion. Furthermore, some residual contamination (arsenic, lead, PAHs) is expected to remain in the imported fill and native soils at the Site following remediation. An EC and a SMP would be implemented to formalize the engineering controls, institutional controls, and site management requirements. These measures would be protective of occupants of the Site and Applicant-controlled off-Site properties and could facilitate regulatory closure of the Site with some residual soil and/or groundwater impacts left in place. The EC and SMP would be subject to review and approval by the DERR.

2.4.7 Future Removal of Buildings, Floor Slabs, and Foundations

To manage the uncertainty related to the potential for previously unidentified contamination to be located under the on-Site buildings, foundations, and floor slabs; the SMP will require that an environmental professional be on-Site to observe conditions when these features are removed in the future. The environmental professional will be required to evaluate and characterize any areas of concern that may be identified.

3. REMEDIAL ACTION DESIGN AND CONSTRUCTION

Details of the remedial design (i.e., excavation boundaries and depths, boring locations, injection depth, ZVI dosing, etc.) may be subject to revision based on unforeseen Site conditions. Any substantive revisions to the approved RAP would be submitted in writing to the DERR prior to implementation of the revision and would be subject to DERR review and approval. Critical aspects of the remedial design are illustrated on Figure 9.

Prior to commencement of the remediation work at the Site, in the areas where ZVI injections and soil mixing are to be performed, the above ground portions of some of the on-Site buildings would be demolished and removed from the Site, leaving behind the concrete floor slabs and asphalt pavement. Leaving the floor slabs and pavement in place during the injections and soil mixing would help maintain a cleaner work area and help to form a surface seal during the ZVI injections. Where injections are performed within the footprint of the existing structure and asphalt-paved areas, holes would be cored through the concrete and asphalt to facilitate drilling and injection. The holes would not need to be patched with cement following completion of the injections at each boring location. Because the drill rig and excavator would be tracking over paved surfaces, there should be no need for track-out pads or decontamination of heavy equipment except for the drill rods, excavator arm, and excavator bucket.

The ZVI product specified for this project is Micro Blend ZVI which would be supplied by CERES Corporation (CERES). The ZVI specifications and material safety data sheet are presented in Appendix A. The ZVI product would be emplaced for the treatment of the saturated zone throughout the footprint of the groundwater plume (including within the two source areas) using specialized hydraulic fracturing and injection tooling by Geo Tactical Remediation, Inc., (GeoTactical), using direct-push drilling equipment operated by Direct Push Services (DPS), and with oversight by Wasatch. Critical procedures and other detailed information pertaining to the injection equipment and processes are presented in Appendix B. The ZVI powder would be mixed with water (as specified by the ZVI supplier), and extremely low concentrations fracture fluid chemicals (see Appendix B), to form a slurry and then injected into the subsurface at specified injection intervals. Down-hole injection tooling is a proprietary, ported, fixed-tip injection tool which isolates a 3 to 5-inch portion of the borehole during the injections. Fluids are pumped through the drill rods to the injection tool. A disposal-tip injection tool would be used if there are problems with the fixed-tip tool plugging. Injection pressures at each injection interval are expected to momentarily (less than one second) be as high as 650 pounds per square inch (psi) and then drop to the range of 50 to 200 psi. Damage to existing utilities would be prevented by maintaining a minimum horizontal offset from utilities of 3 feet, and increasing the offset to a minimum of 6 feet when injecting in locations adjacent to sensitive utilities such as fiber optic lines. If surfacing of the injection fluid occurs, pumping would immediately be stopped, and additional boreholes would be advanced to complete the injection dosage at the specified injection interval. While there are no cost-effective or practical means of verifying the radius of distribution (ROD) of the injection fluids in the field, the assumed RODs are conservative and should be more than adequate to achieve the specified remedial objectives.

3.1 Groundwater Plume Footprint *In Situ* Chemical Reduction (ISCR) - Injection of ZVI (Saturated Zone)

Wasatch has fully delineated the groundwater plume and two source areas encompassed by the footprint of the groundwater plume. The source areas are the primary source of dissolved phase chlorinated solvent contamination in groundwater. There is a shallow source area located adjacent to the south-central aspect of the former OJ building, and a deep source area located adjacent to the paint booths on the west side of the former Trillium warehouse building. The shallow source area measures approximately 57 feet east to west, and 35 feet north to south, with the highest chlorinated solvent concentrations occurring in the uppermost 4 feet of soil. The deep source area measures approximately 86 feet east to west, and 153 feet north to south, with the highest chlorinated solvent concentrations occurring in soils at depths of 13 to 15 feet bgs. The groundwater plume is shown on Figure 5 and source areas are shown on Figure 9.

Wasatch proposes ISCR of the contaminants in the saturated zone within the footprint of the groundwater plume (including the two source areas) by injection of a ZVI slurry into the saturated zone, through a total of approximately 214 borings set on a 15-foot staggered grid pattern throughout the footprint of the groundwater plume (as shown on Figure 9). The injection borings would be completed as shallow borings treating depths of 12 to 18 feet bgs, injecting at 2-foot injection depth intervals. The spacing of borehole locations is based on a ZVI slurry load of 66 gallons per injection interval which is expected to result in a ROD of 6.5 to 8 feet (calculated by GeoTactical based on assumed fracture thickness and the volume of ZVI slurry injected). CERES based the ZVI dosing on the contaminant concentrations present and a target *in situ* soil mass dose of 1% ZVI. According to CERES, the 1% *in situ* soil mass dose is an aggressive dosing suitable for sites where dense non-aqueous phase liquids (DNAPL) may be present. Each injection boring would have four injection intervals. Each injection interval would involve the injection of approximately 66 gallons of slurry, containing 4 pounds of ZVI per gallon, or a total of 264 pounds of ZVI per injection interval. Actual boring locations would be determined in the field and may be adjusted based on the location of utilities and structures.

Information about the ZVI product is presented in Appendix A. Boring locations for ZVI injections are shown on Figure 9.

3.2 Source Area ISCR – *In Situ* Mixing of ZVI (Vadose Zone)

After injections into the saturated zone have been completed (as described in Section 3.1 above), *in situ* soil mixing of ZVI would be performed in each of the two source areas to treat the vadose zone soils at depths of 0 to 4 feet bgs in the shallow source area and 0 to 8 feet bgs in the deep source area. Soil mixing would be performed by DPS with oversight by a geologist from Wasatch. Areas of Contamination (AOCs) would be established around each of the source areas (the north AOC around the shallow source area, and the south AOC around the deep source area. The AOCs would each extend outward approximately 15 feet from their respective excavation boundary but would not extend beyond the property boundary or overlap each other. The ZVI and soil mixing would be performed within the footprint of the excavation within each of the AOCs. Soil would not be removed from the AOCs, nor would soil be moved between the AOCs. Soil would not be removed from the AOCs until such time as the soil has been sampled to verify that it meets the cleanup standard and a "not-contained-in" determination for the soil has been issued by the Utah Department of Environmental Quality (UDEQ) Division of Waste Management and Radiation Control (DWMRC).

The concrete floor slabs and asphalt pavement would be saw-cut and removed from each of the two source areas where the concrete floor slabs overly the footprint of the source areas (not from the full footprint of the AOCs). Soil mixing would be performed using a long-reach excavator. The soil mixing would be performed working in sections in each of the two source areas. A total of approximately 9,550 pounds of ZVI would be added to the soil in the shallow source area, and a total of approximately 157,475 pounds of ZVI would be added to the soil in the deep source area. CERES based the ZVI dosing on the contaminant concentrations present and a target *in situ* soil mass dose of 1% ZVI, an aggressive dosing suitable for sites where DNAPL may be present. When working each section, the soil would be mixed to a depth of 4 to 8 feet (depending on the source area) while gradually adding the prescribed mass of ZVI and gradually bringing the moisture content up to 30% to 40%. The soil mixing contractor would monitor soil moisture using a moisture probe. As the soil in each section is mixed, and after the specified mass of ZVI has been added and moisture content is in the specified range, the soil mixing would continue until, based on visual observations by the Wasatch geologist, the soil and ZVI mixture has been sufficiently homogenized. Soil mixing would then commence on the next section. This process would be repeated in each section until the vadose zone soils in both source areas have been completely treated with the ZVI. Wasatch anticipates that the soil mixing process should require approximately 17 days to complete.

After the soil mixing has been completed, the soil would be left in place to react with the ZVI and for the moisture content to stabilize for a period of about 30 days. After 30 days, the soil would be sampled (as described in Section 6.2) to verify that the soil meets the action levels for the Site. Once the soil meets the action levels for the Site, Wasatch would request a "not-contained-in" determination for the soil from the UDEQ DWMRC. Upon issuance of the "not-contained-in" determination, the soil would be removed

from each of the excavations and temporarily placed on the concrete floor slabs and/or asphalt pavement. If the moisture content is still too high to achieve compaction, the soil may be left on the concrete and/or asphalt for a period of one to two weeks to dry out. Straw wattles would be placed around the stockpiles of soil to prevent runoff if the moisture content of the soil is high enough that the soil is free draining. The Applicant's geotechnical contractor would then be permitted to collect soil samples for Proctor tests to determine the optimum moisture content and maximum dry density of the soil. The data resulting from the Proctor tests would serve as a basis of comparison for the compaction testing. Once the moisture content of the stockpiled soil is in the correct range to achieve compaction, the soil would be placed back in excavations lifts, compacted, and tested for adequate compaction (according to specifications from the geotechnical engineering consultant retained by the Applicant).

Because the concrete floor slabs and asphalt pavement would be left in place surrounding the excavations where the soil mixing is performed, the excavator would be tracking over paved surfaces, and only the excavator arm and bucket should require decontamination. The soil mixing contractor would be permitted to decontaminate the excavator arm and bucket over the source area excavations using a pressure washer, potable water, and scrub brushes. Decontamination of the excavator arm and bucket would be required when moving the excavator between AOCs and following the completion of the soil mixing.

3.3 TPH-DRO Excavation

The limited area of TPH-DRO contamination in soil located in the vicinity of boring location B-5 would be excavated, placed in roll-off containers, labeled as "pending analysis", and characterized. Confirmation soil samples would be collected from the floor and sidewalls of the excavation, in accordance with the SAP, to verify that action levels have been achieved. Waste characterization sampling and analysis would be performed in accordance with the SAP. Following receipt of the waste characterization sample results and approval from the receiving facility the roll-offs would be transported off-Site for disposal at the approved facility. Based on the concentrations present in samples collected from boring B-5, Wasatch anticipates that the Salt Lake County Landfill or E.T. Technologies soil regeneration site should be able to accept the waste. Wasatch anticipates that the excavation would measure approximately 20 feet, by 20 feet, by 10 feet deep. The approximate location of the excavation is shown on Figure 9.

3.4 PCB Excavation

PCB contamination in a thin layer of soil covering a concrete slab located in the vicinity of sampling location Comp-1 would be excavated along with the contaminated portions of concrete slab, placed into 55-gallon drums, labeled as "pending analysis", and characterized. Confirmation soil samples would be collected from the floor and sidewalls of the excavation, in accordance with the SAP, to verify that action levels have been achieved. Waste characterization sampling and analysis would be performed in accordance with the SAP. Following receipt of the waste characterization sample results and approval from the receiving facility the drums would be transported off-Site for disposal at the approved facility. Based on the concentrations present in sample Comp-1, Wasatch anticipates that the Salt Lake County Landfill should be able to accept the waste. Wasatch anticipates that the excavation would measure approximately 5 feet by 8 feet, by less than 1 foot deep. The approximate location of the excavation is shown on Figure 9.

3.5 Human Health and Ecological Risk Assessment

Wasatch issued a report titled Additional Limited Subsurface Investigation and Risk Assessment Report, dated February 19, 2021, which evaluated exposure risks related to the upper 10 feet of soil and fill residing in redevelopment Area 1 (western portion of the Site) and Area 2 (the southern portion of the Site east of 500 West). Based on the human exposure risks (for construction workers, industrial workers, and residents) relative to the 95% Upper Confidence Limit (UCL); Wasatch requested that no further action be required for these redevelopment areas. Ecological waivers were also deemed appropriate by Wasatch for these areas. The DERR accepted the data but did not entirely concur with our conclusions. Wasatch

has since collected additional data from these areas, but additional HHRA work would be required to achieve regulatory closure of the Site.

Additional HHRA would be performed to evaluate exposure risk, the need for "hot spot" excavations to achieve acceptable risk levels, and the appropriate controls related to the imported fill at the Site. The imported fill that comprises the upper 2 to 5 feet of soil at the Site would be further evaluated using HHRA as a primary means of supporting regulatory closure related to the imported fill material. "Hot spot" excavations (with proper characterization, off-Site disposal, and confirmation sampling) for arsenic, lead, and PAHs may be conducted as required, and land use and engineering controls would be employed (as discussed in Section 2.4), to achieve acceptable risk levels for regulatory closure related to the contaminants in the imported fill. The imported fill appears to be present throughout the Site. The areas where the only exposure concern is with potential exposure to the imported fill are shown on Figure 9.

Following completion of active remediation and the collection of confirmation data, HHRA would be used to develop SSLCs based on the cumulative risk associated with the residual impacts that may remain at the Site at concentrations above the action levels. The SSCLs would serve as the cleanup levels upon which regulatory closure would be based (as discussed in Section 2.2). Post-remediation HHRA would also be used to evaluate any remaining exposure risk related to any residual chlorinated solvent impacts that may remain, and the appropriate controls to mitigate those risks (as discussed in Section 2.4). The HHRA and proposed SSCLs will be submitted to the VCP in an addendum to the RAP.

An ecological risk waiver would be formally requested for the entire VCP Site.

3.6 "Hot Spot" and Contingency Excavations for Metals, PAHs, and Other Contaminants

Metals (except for arsenic as discussed in section 2.2), PAHs, and other previously unidentified contaminants (should they be encountered) will be remediated by excavation and off-Site disposal to meet Industrial RSLs as a minimum cleanup level. Excavated soil will not be moved to other locations on the Site. Any residual exposure risk (above unrestricted use criteria) would be managed using land use and engineering controls in accordance with the EC and SMP (as discussed in section 2.4) appropriate for the proposed land use and occupancy. Wasatch anticipates that small "hot spot" excavations may be required in some locations on the Site to achieve acceptable risk levels for regulatory closure of the Site. Locations that may require "hot spot" excavations include locations of elevated lead, arsenic, and/or PAHs in the fill; areas of localized contamination hidden beneath structures; and areas of localized contamination along utilities such as sewer lines. When areas where "hot spot" excavations may be required are identified in the field, they would be marked off (using pin flags, cones, caution tape, and/or barricades as appropriate), so that they are not disturbed, field screened and sampled (in accordance with the SAP) for the purpose of characterization, and then excavated and placed in drums or roll-offs for proper transport and disposal.

3.7 General Demolition, Construction, and Decontamination Issues

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

- The Applicant would have a pre-demolition inspection performed, have universal wastes and asbestos-containing building materials removed and properly disposed, and obtain a demolition permit prior to demolition of the existing structure.
- The DERR would be notified and provided with an opportunity to be present on-Site to observe the removal of the floor slabs and subsurface features.
- Storm drain openings would be covered and runoff would be controlled during building demolition, drilling, and excavation activities to prevent mud and contaminants from entering the storm sewer system.
- Site access would be limited by erecting temporary chain-link fencing around the Site prior to commencement of the remediation field work. The fencing would remain in place for the duration of the fieldwork.

- The drilling/soil mixing and injection subcontractors would be required to decontaminate their equipment prior to arrival at the Site, and prior to demobilization from the Site.
- Decontamination of the excavator arm and bucket would be performed over the source area excavations using a pressure washer, potable water, and scrub brushes (as described in Section 3.2).
- Decontamination of drill rods would be performed over a small decontamination pad constructed with an impermeable liner (such as a heavy-duty tarp) draped over sidewalls that would contain the fluids (such as timers or railroad ties) using a pressure washer, potable water, Alconox® (or similar non-phosphate detergent), and scrub brushes. Sediment and fluids generated during decontamination would be collected and drummed for off-Site disposal.
- Decontamination of field sampling equipment is described in SOP 22 of the SAP.
- Decontamination of field personnel boots would be performed in a small plastic kiddie pool using potable water, Alconox® (or similar non-phosphate detergent), and scrub brushes. Sediment and fluids generated during decontamination would be collected and drummed for off-Site disposal.
- The removal of on-Site buildings, foundations, and floor slabs will require that an environmental professional be on-Site to observe conditions when these features are removed. The environmental professional will be required to evaluate and characterize any areas of concern that may be identified. A sampling strategy will be developed, in cooperation with the VCP, and will include sampling and analysis for metals and other potential constituents of concern as appropriate. Minimum sampling requirements would be no fewer than one sample per ¼-acre of area.

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. Wasatch would also have DPS perform a private utility locate prior to the commencement of work.

4.2 Underground Injection Control Permit

Wasatch would submit an application for an Underground Injection Control (UIC) permit to the Division of Water Quality (DWQ) for Class 5B6 beneficial use injection well(s) [subsurface environmental remediation injection well(s)] prior to the commencement of fieldwork. Injections would not be performed until the UIC permit has been approved. Wasatch would notify the DWQ when the work has been completed and the permit can be discontinued.

4.3 Storm Water Pollution Prevention Plan (SWPPP)

As the Site occupies more than one acre, a SWPPP is required for the work described in this RAP. A SWPPP would be prepared prior to commencement of fieldwork and would be posted on Site for the duration of the fieldwork. Subcontractors would be required to read and adhere to the SWPPP and use best management practices (i.e., cover exposed storm drains and manage runoff, etc.) to prevent adverse impacts to the storm sewer system.

4.4 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. See Appendix D for the full copy of the FDCP 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 PAHs to adjoining properties, residents, and on-Site workers. The remediation contractor and Wasatch would be responsible for controlling fugitive dust emissions during the project and for implementing a Utah DAQ-approved FDCP for the project.

Fugitive dust would be controlled using standard construction practices. Wetting the soils would be the primary control technology for fugitive dust emissions. If wetting the soils cannot control the fugitive emissions, additional dust-control measures would 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 residents living in areas adjacent to the Site, nearby commercial workers, and workers involved with soil removal activities. Fugitive dust levels would 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 FDCP would be immediately employed.

4.5 Salt Lake County Health Department

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

5. PUBLIC NOTIFICATION AND PARTICIPATION

The Applicant, and Wasatch acting as an agent of the Applicant, would clearly convey to stakeholders a commitment to open and honest communication, a commitment to partnering with the UDEQ in matters of public involvement, and a commitment to being sensitive and responsive to the concerns of stakeholders. Stakeholders include not only the Applicant, Applicant's environmental attorney, Applicant's consultant, UDEQ, and affected property owners/lessees/occupants; but may also include public utilities, the Salt Lake County Health Department, and Salt Lake City government. This list of stakeholders is not intended to be exclusive. Public comments having technical merit would be considered, regardless of the source of the comment.

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, and that often the most common route of exposure is through vapor intrusion into occupied structures. 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 fieldwork. When requesting access to perform investigation, remediation, or mitigation activities on off-Site properties 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 property they own, lease, or otherwise legally occupy); and
- 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, particularly phases of investigation and confirmation sampling involving off-Site sampling, become available. Wasatch, with assistance from the UDEQ, would communicate with stakeholders to inform stakeholders of the results of the investigation 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 or residence (i.e., indoor air data and sub-slab soil gas data, etc.) and Site-wide groundwater plume maps; but would not provide data related specifically to neighboring residents or businesses. 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, Applicant, and Applicant'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 Applicant, Applicant's environmental attorney, and UDEQ) may need to conduct public meetings in order to facilitate effective communication with multiple stakeholders.

The Applicant, and Wasatch acting as an agent of the Applicant, 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

The sampling methods and laboratory analytical methods vary by contaminant and by environmental media. Details regarding the sampling methods and the anticipated laboratory analytical methods are provided in the SAP dated March 18, 2022. Quality control requirements related to sampling and analysis are presented in the QAPP dated March 18, 2022.

6.1 Waste Characterization Sampling

Relatively small quantities of soil and groundwater waste would be generated during sampling conducted in conjunction with soil confirmation sampling, injections, soil mixing, and groundwater monitoring activities. Waste soil would be generated in conjunction with the TPH-DRO and PCB excavations. Waste soil may also be generated in conjunction with the removal of floor slabs, pavement, and subsurface features such as sewer lines. If contamination is discovered during the removal of the floor slabs, pavement, or subsurface features; Wasatch would perform waste characterization sampling in accordance with the SAP and complete the appropriate waste profiles to be approved by the facility receiving the waste based on the waste characterization sampling results. All waste would be properly contained in labeled 55-gallon drums or roll-off containers pending laboratory analysis and proper transport and disposal.

Wasatch would arrange for proper transport and disposal of the waste soil and groundwater through Clean Harbors or other appropriate transport, storage, and disposal facilities depending on the nature of the waste.

6.2 Soil Confirmation Sampling

Soil confirmation samples would be collected from the floors and side walls of all excavations (including the TPH-DRO excavation, PCB excavation, and all "hot spot" and contingency excavations) and soil mixing areas. Soil confirmation samples would also be collected from the treated soil in the soil mixing areas prior to removing and recompacting the treated soil (as discussed in Section 3.2). Soil samples of the treated soil shall be collected in such a way as to be representative of the full depth of treatment and representative of the full areal extent of the treatment areas. Soil confirmation samples would be collected to verify that contaminant mass reductions in soil are occurring, and that the action levels have been, or would be, met. Soil samples from the soil mixing areas would be collected no sooner than 30 days following the completion of the ISCR injections and soil mixing.

Confirmation soil samples of excavation floors and sidewalls would be collected in accordance with the SAP and may be sampled manually (using gloved hands) or using a backhoe bucket.

Confirmation samples of the soil mixing areas would be collected using a direct-push drill rig following SOP 4 of the SAP. Wasatch anticipates that approximately 18 soil borings would be required to facilitate confirmation sampling of the floors, sidewalls, and treated soil in the soil mixing areas. The locations and depths of the borings would be based on the final depth and extent of the soil mixing areas. The boring locations would be evenly distributed throughout the soil mixing areas. Wasatch anticipates that the shallow soil mixing area would be sampled from 0 to 5 feet bgs, and the deep soil mixing area would be sampled from 0 to 10 feet bgs.

The soil borings would be advanced in 5-foot increments using a direct-push drill rig (in accordance with SOP 4 of the SAP). Soil cores would be collected from 5-foot long by 1.5-inch diameter discrete interval push samplers equipped with disposable polybutyrate liners. Soil cores would be field screened with a MiniRae 3000 photoionization detector (PID) equipped with an 11.7-electronvolt lamp. The soil cores would be field logged by an experienced geologist (in accordance with SOP 10 of the SAP). The field logging would include a description of color, moisture content, consistency, odor, staining, and soil type based on the Unified Soil Classification System. Soil samples would be collected from the locations and depth intervals specified above and submitted for laboratory analysis. Soil samples for VOC analysis would be collected using a laboratory-supplied sampling device, sample preservation methods, and sample containers consistent with U.S. EPA Method 5035A. Soil samples would be collected from each sample interval for both low-range (0.5 to 250 micrograms per kilogram [µg/kg]) and high-range (>250 µg/kg) laboratory analysis for VOCs. Low-range soil samples would be collected as 5-gram (g) aliquots and placed in laboratory-supplied, unpreserved volatile organic analysis (VOA) bottles, and immediately placed in a cooler with dry ice. High-range samples would be collected as 10-g aliquots and placed in laboratory-supplied VOA bottles preserved with methanol and immediately placed in a cooler with ice. All soil samples would be delivered under chain-of-custody protocol to Chemtech-Ford Laboratories (CTF), a Utah-Certified analytical laboratory, for analysis. Soil samples would be analyzed on standard laboratory turnaround time unless Wasatch is directed by the Applicant to expedite the analyses.

6.3 Groundwater Sampling

Wasatch anticipates that a few of the existing monitoring wells located at the Site would be destroyed or damaged during remediation. Additional wells may be destroyed, damaged, or abandoned during redevelopment of the Site. The Applicant would replace any key wells that are destroyed or damaged so as to maintain a viable monitoring well network. Any changes to the monitoring well network, including the location and screened intervals for new monitoring wells, would be subject to DERR review and approval.

Wasatch is currently working under a work plan (dated May 19, 2023) for quarterly groundwater monitoring which was approved by the VCP. The first quarterly groundwater monitoring event was conducted on June 29, 2023. The report documenting this sampling event was being prepared concurrently with this RAP.

Wasatch is completing the groundwater monitoring activities on a quarterly basis over the next year using low-flow sampling techniques that would allow for the collection of some geochemical parameters. Wasatch is collecting four quarterly rounds of groundwater samples and depth to groundwater measurements from shallow groundwater monitoring wells (MW-1S, MW-3S, MW-4S, MW-5S, MW-6S, and MW-7S), intermediate groundwater monitoring wells (MW-4M, MW-5M, MW-6M, MW-7M, MW-8M, and MW-9M), and from piezometers (P-1 through P-4). Monitoring well and piezometer locations are shown on Figure 2, and Figures 4 through 9. Monitoring well MW-2S is an off-Site well that Wasatch no longer has legal access to gauge or sample. This groundwater monitoring network and frequency of groundwater monitoring may be modified over time, with VCP approval, as data requirements change. Groundwater monitoring at the Site will be conducted until the approved cleanup levels have been met and sufficient data have been collected to establish that rebound is not occurring.

Prior to conducting the groundwater monitoring activities, Wasatch would acquire any necessary access agreements and/or permits in accordance with SOP 1. Equipment would be calibrated as required in accordance with SOP 11. Groundwater samples would be collected using a low-flow sampling procedure following U.S. EPA guidelines (and in accordance with SOP 14). The sampling procedure involves inserting ¼-inch outside diameter, low-density polyethylene tubing into each monitoring well. The tubing would be run through a peristaltic pump, then to a flow cell to which a multi-parameter AquaTroll 500 meter would be attached, and finally to a 5-gallon bucket to collect the purge water. Initial water levels would be measured (in accordance with SOP 15) and recorded (in accordance with SOP 27) prior to the initiation of pumping. Once pumping is initiated, water levels, pumping rate, cumulative volume purged, water temperature, specific conductivity, pH, oxidation-reduction potential, dissolved oxygen (DO), and turbidity would be recorded at five-minute intervals until either stabilization was achieved or the well pumps dry. Pumping rates would be maintained at a rate of 50 to 200 milliliters per minute to minimize drawdown. Stabilization is defined as three consecutive measurement intervals where temperature and specific conductivity is +/- 3%, pH is +/- 0.1, DO is +/-10% (or less than 0.5 mg/L), and turbidity is +/- 10% (or less than five nephelometric turbidity units). If monitoring wells pump dry, they would be allowed to recharge to a minimum of at least 90% of their static water level prior to sampling. After stabilization is achieved, the tubing would be disconnected from the flow cell and the groundwater samples would be dispensed into 40-milliliter capacity, glass vials with Teflon® septa caps. The vials, which would be supplied by the analytical laboratory, would contain several drops of hydrochloric acid as a preservative. The vials would be filled slowly until a meniscus forms at the top of each vial, then each vial would be sealed with a septa cap. This procedure eliminates headspace within the vials and minimizes the loss of volatiles. The sample vials would each be labeled with the analysis required, sampler's name, sample identification number, sample location, date, and time of sample collection. Samples would be handled, and field notes and sample documentation would be maintained, in accordance with SOP 27. The samples would be placed in a cooler with ice and transported under chain-of-custody protocol (in accordance with SOP 28) to CTF for analysis of VOCs using U.S. EPA Method 8260D (Level III laboratory QC package). Groundwater samples would be analyzed on standard laboratory turnaround time unless Wasatch is directed by the Client to expedite the analyses.

During the initial round of groundwater monitoring, an extra VOA was to be collected from each monitoring well for analysis of 1,4-dioxane by U.S. EPA Method 8260D Selected-Ion Mode (SIM), also with a Level III laboratory QC package. This requirement was omitted during the first groundwater monitoring event due to an oversight, but would be performed during the second groundwater monitoring event scheduled for late September. The need for further 1,4-dioxane analysis, following the second round of sampling, would depend on whether or not 1,4-dioxane is detected during the second round of sampling, and if detected, whether or not the concentrations are of concern.

Blind field duplicates, matrix spike/matrix spike duplicates, equipment blanks, and trip blanks would be collected per Table 2 of the QAPP and submitted for laboratory analysis for each quarterly groundwater monitoring event. The resulting laboratory data would be subject to third-party data validation.

Groundwater samples would be analyzed on standard laboratory turnaround time unless Wasatch is directed by the Applicant to expedite the analyses. Purge water would be contained in a sealed, properly

labeled, 55-gallon drum; and stored in a secure on-Site location while awaiting characterization and proper disposal.

Groundwater monitoring reports would be submitted to the Applicant and DERR within 90 days of the completion of each groundwater monitoring event. Groundwater monitoring reports would include:

- narrative text explaining objectives, methods, results, and presenting conclusions and recommendations;
- comprehensive groundwater data tables;
- a map depicting the sample locations;
- maps depicting analyte concentrations;
- a map depicting the groundwater elevations and hydraulic gradient;
- laboratory analytical reports;
- chain-of-custody documentation; and
- data validation reports.

6.4 Indoor Air Sampling

Wasatch proposes collecting one round of indoor air samples prior to occupancy of the new structures constructed on-Site and on the Applicant-controlled off-Site properties where post-remediation analytical data indicate a potential vapor intrusion risk. Indoor air sampling would be conducted in accordance with SOP 19 of the SAP. In conjunction with any indoor air samples collected, an outdoor air sample would be collected to establish ambient background concentrations. Prior to collecting indoor air samples, the occupants (if any) would be interviewed to ascertain whether or not dry cleaned clothing has been brought into the structure, or carpets have been professionally cleaned, within the preceding two weeks. Additionally, the occupants would be interviewed to ascertain what recent activities have been conducted within the structure, and if any products known to contain chlorinated solvents are present. Next, a chemical inventory would be performed by Wasatch to identify and remove any products containing chemicals of concern (any chlorinated solvents). This procedure would be followed to reduce the potential for false positive results in the indoor air samples (i.e., the detection of chlorinated solvents in the indoor air samples resulting from sources inside the structure rather than from beneath the floor slabs). Products discovered during the chemical inventory that contain chlorinated solvents would be removed from the structure for a minimum of two weeks prior to sampling activities. All products , whether present during sampling or removed prior to sampling, would be documented in a field notebook.

Chain-of-custody documentation would be completed, and the samples would be delivered to ALS Environmental in Simi Valley, California, for the analysis of VOCs in accordance with the SAP. All samples would be analyzed on a standard laboratory turn-around time unless expedited analysis is requested by the Applicant.

7. CONTINGENCY PLANNING

Sampling associated with any “hot spot” contingency excavations (as discussed in Section 3.6), or sampling conducted in association with previously undiscovered contamination, would be conducted in accordance with the SAP and QAPP. If contamination above action levels is confirmed through this sampling; it would be treated *in situ* with ZVI (if appropriate) or the soil would be excavated. If 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 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 discovered that were not expected based on Site history and previous data; Wasatch would

immediately communicate relevant findings to the Applicant and the DERR and work to develop an appropriate remedial alternative.

If the data resulting from confirmation sampling, groundwater monitoring, or indoor air sampling indicate that the remedial strategy, after implementation, has not been effective at remediating the contamination (either in localized areas or throughout the areas impacted by releases from the Site) Wasatch would immediately communicate relevant findings to the Applicant 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 the Applicant.

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, and documenting any deviations from the approved RAP;
- SSCLs and their basis (assessment of cumulative risk);
- comprehensive data tables and comparison to action levels and SSCLs;
- figure(s) depicting the location of injections, source areas, confirmation samples, monitoring wells, and other relevant Site features;
- photographs;
- laboratory analytical reports;
- data validation reports;
- chain-of-custody documentation,
- waste manifests; 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. All on-Site workers with a potential for exposure to contamination must have a current OSHA Hazardous Waste Operations (HAZWOPER) certification. The Site will be secured restricting unauthorized public access using fencing with locked gates and by securing buildings using locked doors.

10. PROJECT SCHEDULE

Wasatch anticipates completing the Site remediation work in phases beginning in the Fall of 2023 and completing the active remediation work by Winter of 2023. Wasatch would communicate scheduling details with the DERR as the schedule develops.

11. REFERENCES

Terracon Consultants, Inc.; 2019a. Phase I Environmental Site Assessment, Trillium Flow Technologies, 742 & 745 South 500 West, 750 South 400 West, 440 West 800 South, and 451 West 700 South, Salt Lake City, Salt Lake County, Utah.

Terracon Consultants, Inc.; 2019b. Limited Site Investigation, Trillium Flow Technologies, 440 West 800 South, Salt Lake City, Salt Lake County, Utah.

Utah Geological Survey; 2009. Open File Report 560, Ground-Water Quality Classification for the Principal Basin-Fill Aquifer, Salt Lake Valley, Salt Lake County, Utah

Wasatch Environmental, Inc.; 2020a. Phase II Limited Subsurface Investigation Report, Trillium Flow Technologies, 742 and 745 South 500 West, 440 West 800 South, and 451 West 700 South, Salt Lake City, Utah 84101.

Wasatch Environmental, Inc.; 2020b. Phase II Limited Subsurface Investigation Report, Trillium Flow Technologies, 742 and 745 South 500 West, 440 West 800 South, and 451 West 700 South, Salt Lake City, Utah 84101.

Wasatch Environmental, Inc.; 2020c. Phase I Environmental Site Assessment, Trillium, 742 & 745 South 500 West and 440 West 800 South, Salt Lake City, Utah 84101.

Wasatch Environmental, Inc.; 2021a. Utah Department of Environmental Quality Voluntary Cleanup Program Application, Trillium Flow Technologies, 742 and 745 South 500 West, 440 West 800 South, 441 West 700 South, Salt Lake City, Utah 84101.

Wasatch Environmental, Inc.; 2021b. Additional Limited Subsurface Investigation and Risk Assessment Report, Trillium Flow Technologies, 742 and 745 South 500 West, 440 West 800 South, and 451 West 700 South, Salt Lake City, Utah 84101.

Wasatch Environmental, Inc.; 2021c. Phase II Limited Subsurface Investigation Report, Trillium Flow Technologies, 742 and 745 South 500 West, 440 West 800 South, and 451 West 700 South, Salt Lake City, Utah 84101.

Wasatch Environmental, Inc.; 2021d. Phase I Environmental Site Assessment, OJ Industries, 717 South 500 West, Salt Lake City, Utah 84101.

Wasatch Environmental, Inc.; 2021e. Phase II Limited Subsurface Investigation Report, OJ Industries, 717 South 500 West, Salt Lake City, Utah 84101.

Wasatch Environmental, Inc.; 2021f. Revision to Voluntary Cleanup Agreement, Trillium Flow Technologies, 742 and 745 S. 500 W. / 440 W. 800 S. / 451 W. 700 S. / 750 S. 400 W., Salt Lake City, Utah 84101.

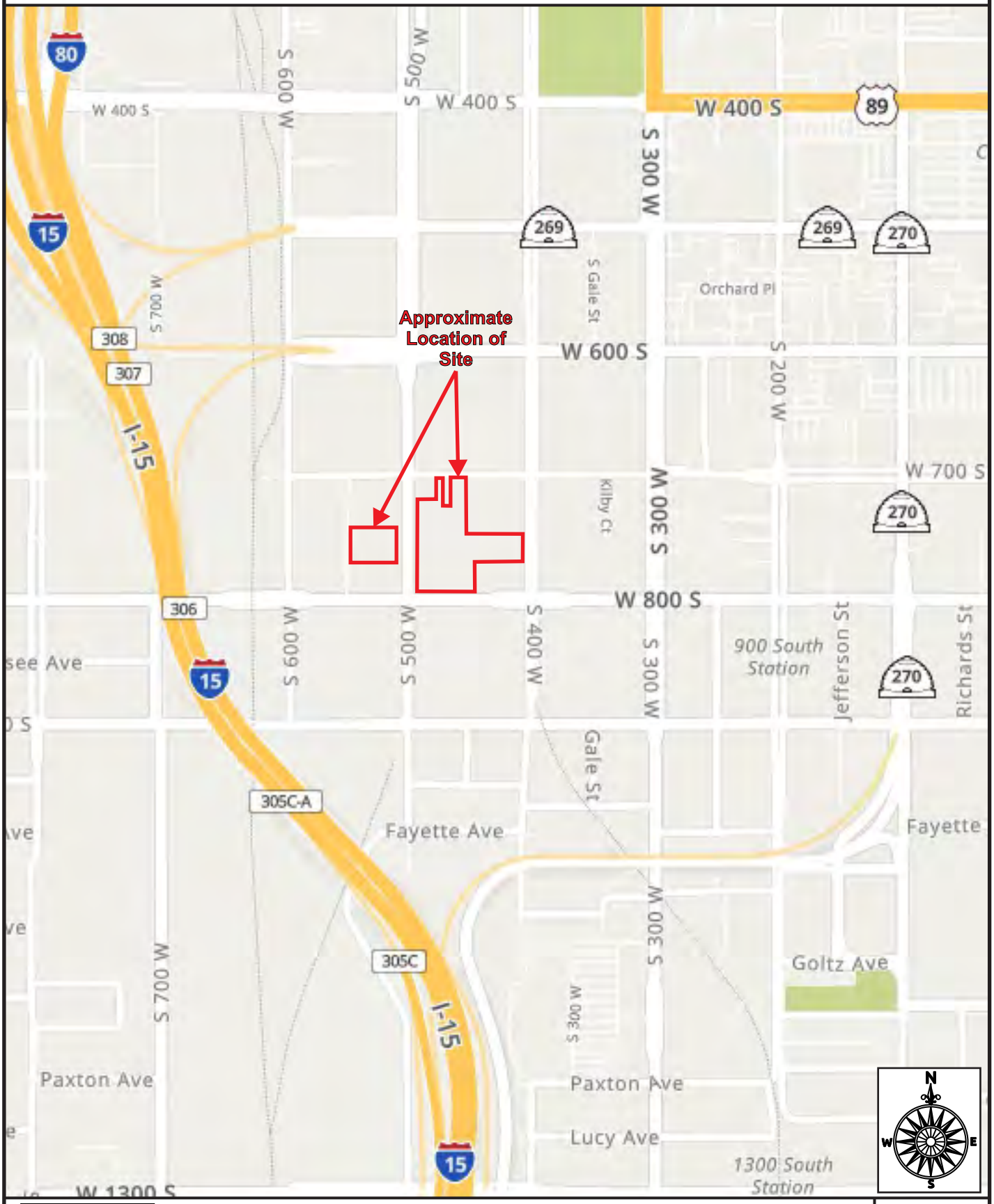
Wasatch Environmental, Inc.; 2022a. Sampling and Analysis Plan, Trillium Flow Technologies, Salt Lake City, Utah, Voluntary Cleanup Program Site #C109.

Wasatch Environmental, Inc.; 2022b. Quality Assurance Project Plan, Trillium Flow Technologies, Salt Lake City, Utah, Voluntary Cleanup Program Site #C109.

Wasatch Environmental, Inc.; 2023. Site Characterization Report, Trillium Flow Technologies, Salt Lake City, Utah 84101, Voluntary Cleanup Program Site #C109.

Figures

TRILLIUM FLOW TECHNOLOGIES WEI 2439-004K

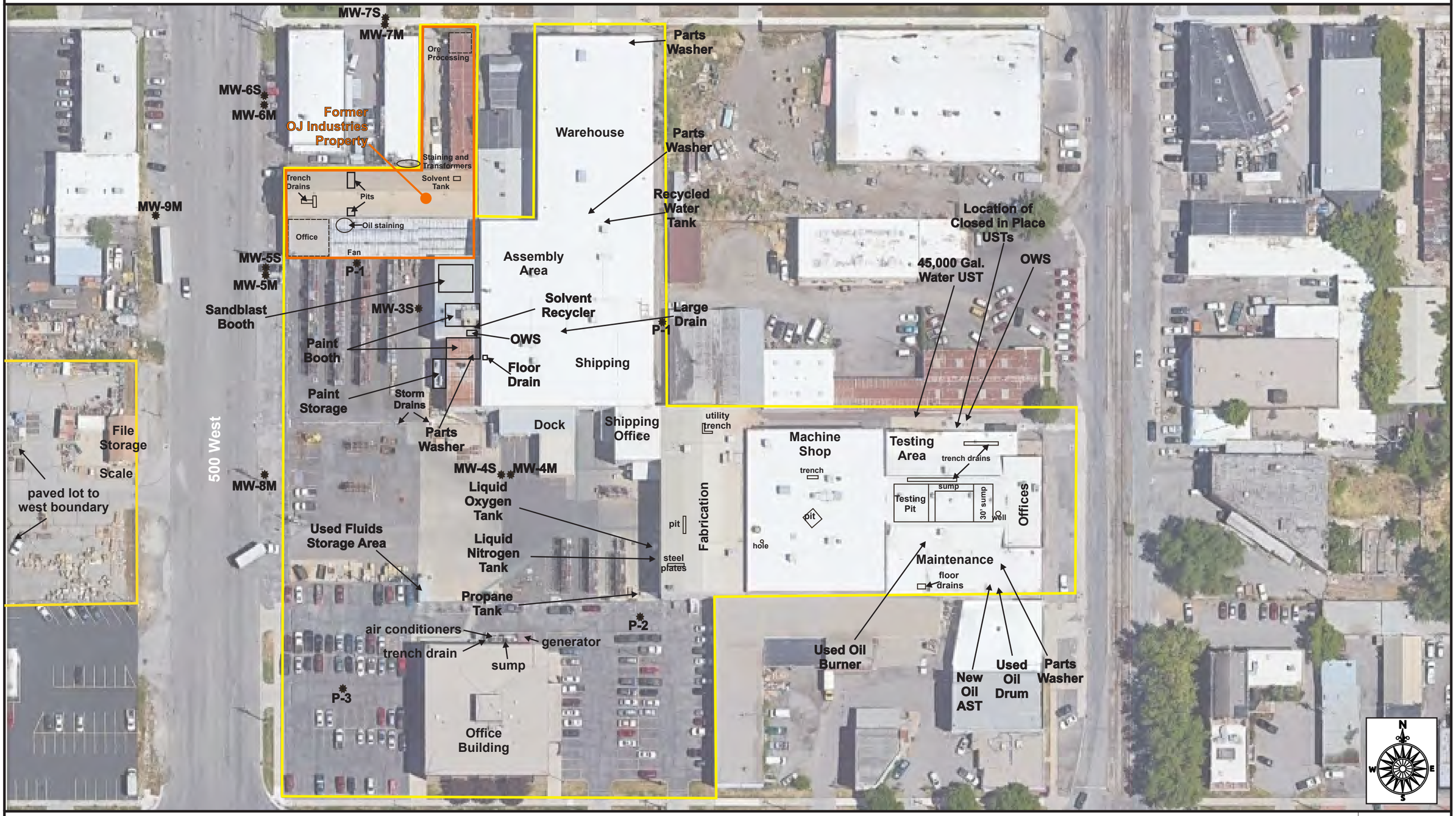


Scale: 1-inch equals approximately 268 feet

Site Location Map | Figure 1

WASATCH ENVIRONMENTAL

TRILLIUM FLOW TECHNOLOGIES WEI 2439-004K



Note: West edge of the Site is not fully pictured, no structures are present

Scale: 1-inch equals approximately 81 feet

✸ Sample Location

Site Feature Map | **Figure 2**

WASATCH ENVIRONMENTAL

LEGEND

- Wasatch Piezometer (August 2020)
- Wasatch RA Soil Boring (January 2021)
- Intermediate Monitoring Well Location
- Shallow Monitoring Well Location
- Wasatch Soil Boring Location (2022)

N
W E
S

Scale: 1-inch equals approximately 166 feet

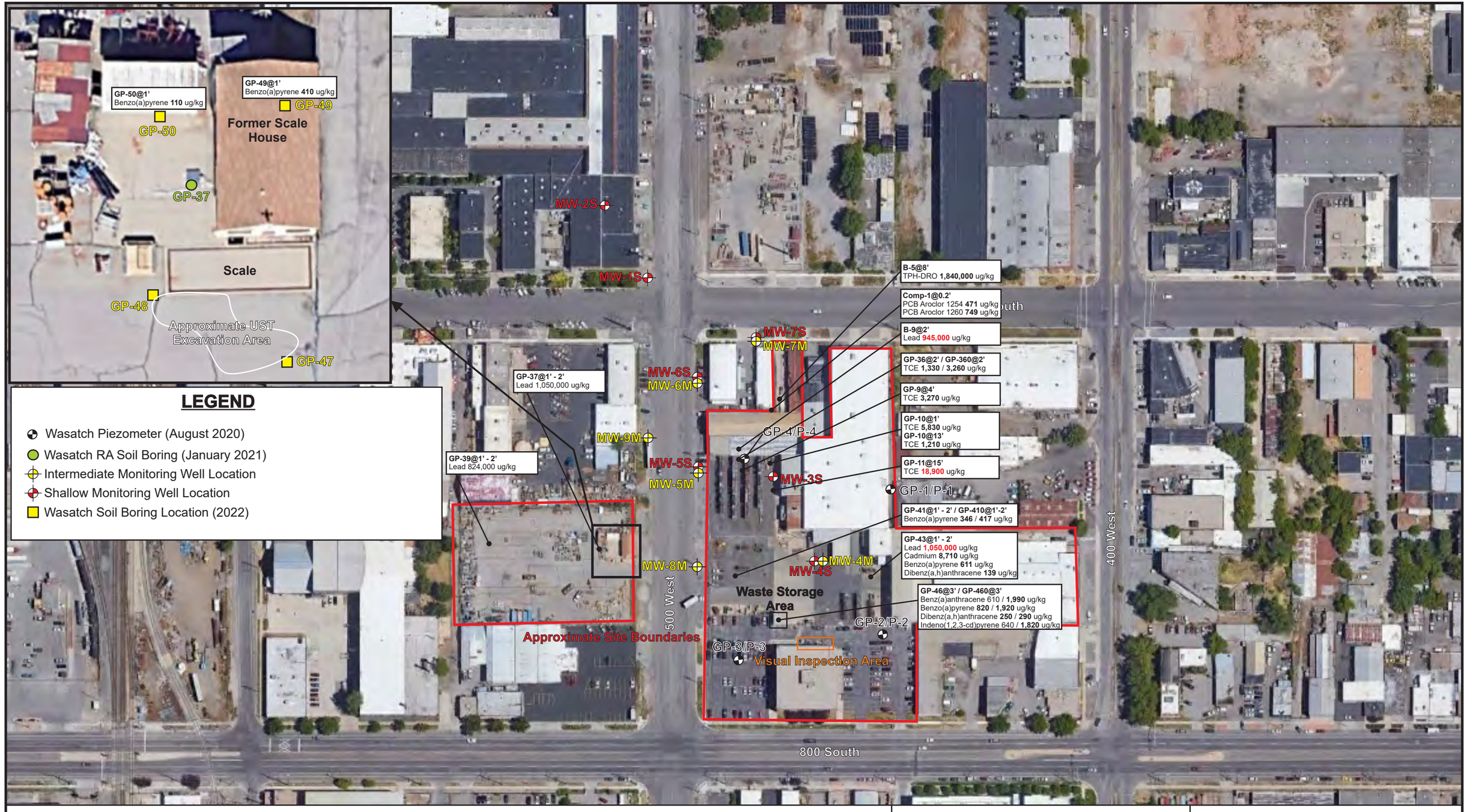
WASATCH ENVIRONMENTAL

Environmental Science and Engineering

Current Property Use Map

Trillium Flow Technologies
440 West 800 South, Salt Lake City, Utah

PROJECT NO.	DRAWING DATE	FIGURE
2439-004K	August 7, 2023	3



LEGEND

- Wasatch Piezometer (August 2020)
- Wasatch RA Soil Boring (January 2021)
- Intermediate Monitoring Well Location
- Shallow Monitoring Well Location
- Wasatch Soil Boring Location (2022)

N W E S

Scale: 1-inch equals approximately 166 feet

Note: Arsenic was detected at concentrations exceeding the U.S. EPA RSLs (in most cases exceeding the RSL for Industrial soil) in all locations sampled. Detected arsenic concentrations ranged from 2,350 to 86,700 ug/kg.

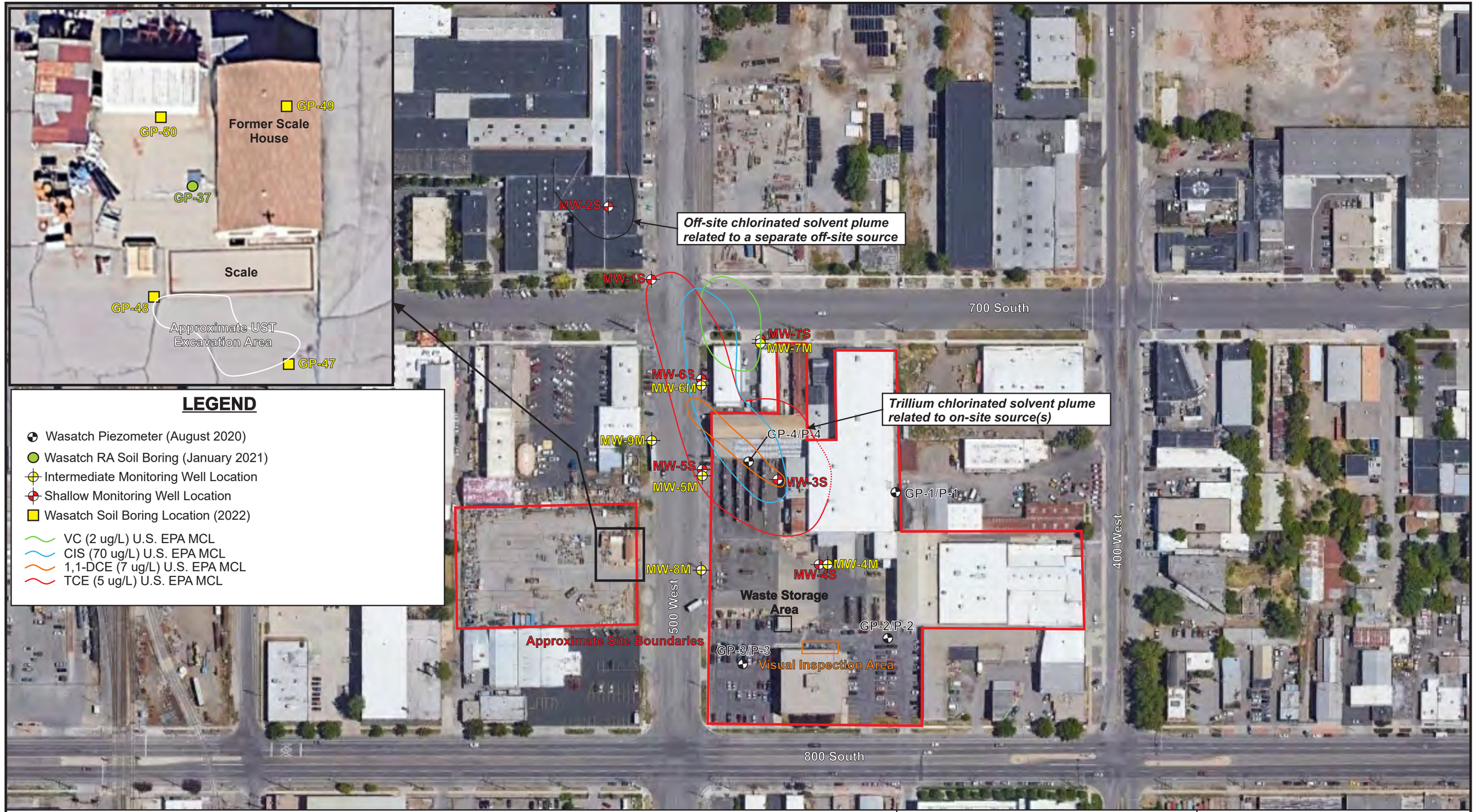
*All **Bold** concentrations exceed the applicable U.S. EPA RSL for Residential Soil
All **Bold red concentrations exceed the applicable U.S. EPA RSL for Industrial Soil

WASATCH ENVIRONMENTAL
Environmental Science and Engineering

Soil Exceedance Map

Trillium Flow Technologies
440 West 800 South, Salt Lake City, Utah

PROJECT NO.	DRAWING DATE	FIGURE
2439-004K	August 7, 2023	4



LEGEND

- Wasatch Piezometer (August 2020)
- Wasatch RA Soil Boring (January 2021)
- Intermediate Monitoring Well Location
- Shallow Monitoring Well Location
- Wasatch Soil Boring Location (2022)
- VC (2 ug/L) U.S. EPA MCL
- CIS (70 ug/L) U.S. EPA MCL
- 1,1-DCE (7 ug/L) U.S. EPA MCL
- TCE (5 ug/L) U.S. EPA MCL

N W E S

Scale: 1-inch equals approximately 166 feet

WASATCH ENVIRONMENTAL

Environmental Science and Engineering

Chlorinated Solvents in Groundwater Isoconcentration Map

Trillium Flow Technologies
440 West 800 South, Salt Lake City, Utah

PROJECT NO.	DRAWING DATE	FIGURE
2439-004K	August 7, 2023	5

LEGEND

- Wasatch Piezometer (August 2020)
- Wasatch RA Soil Boring (January 2021)
- Intermediate Monitoring Well Location
- Shallow Monitoring Well Location
- Wasatch Soil Boring Location (2022)

N W E S

Scale: 1-inch equals approximately 166 feet

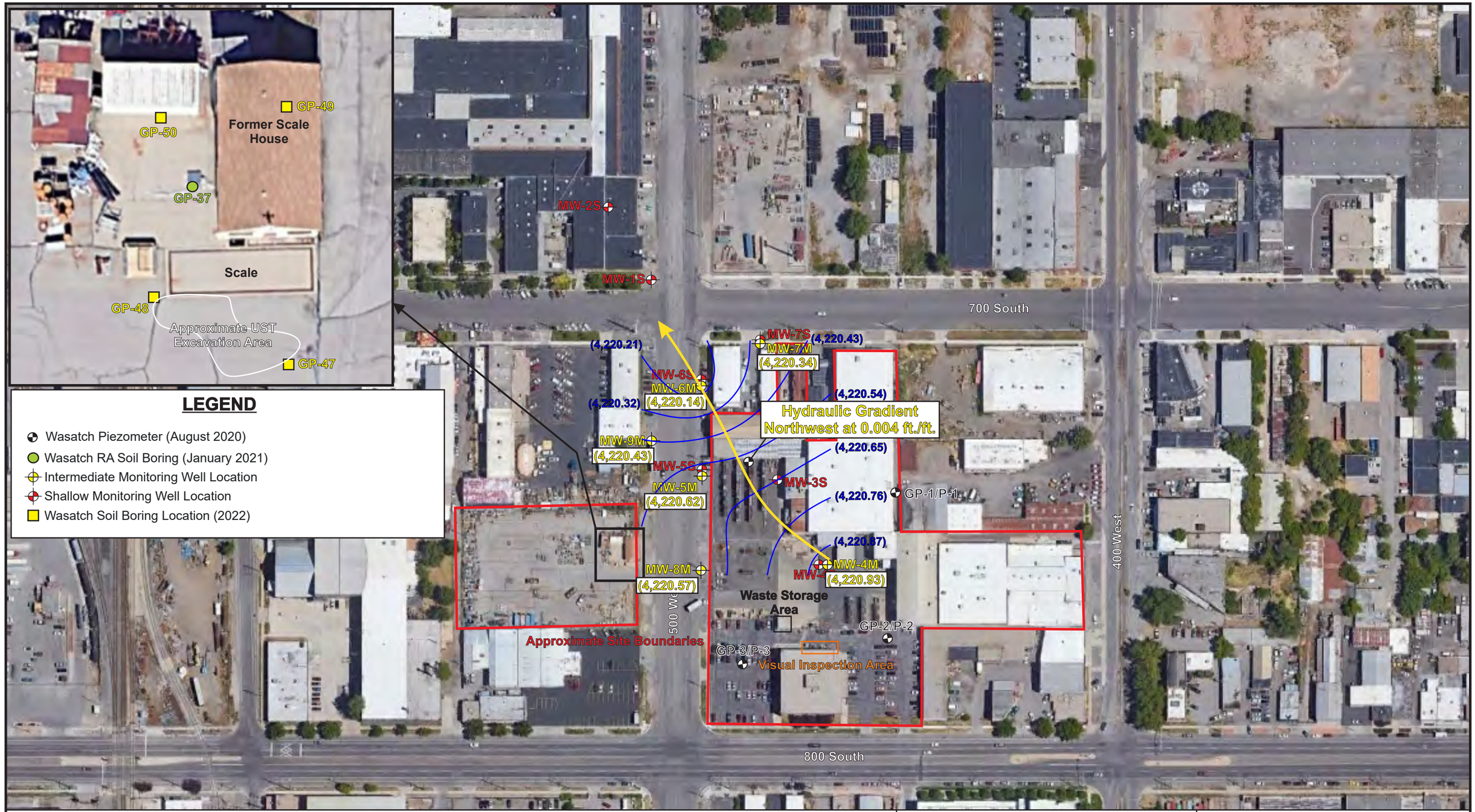
WASATCH ENVIRONMENTAL

Environmental Science and Engineering

Shallow Piezometric Surface Map, November 21, 2022

Trillium Flow Technologies
440 West 800 South, Salt Lake City, Utah

PROJECT NO.	DRAWING DATE	FIGURE
2439-004K	August 7, 2023	6



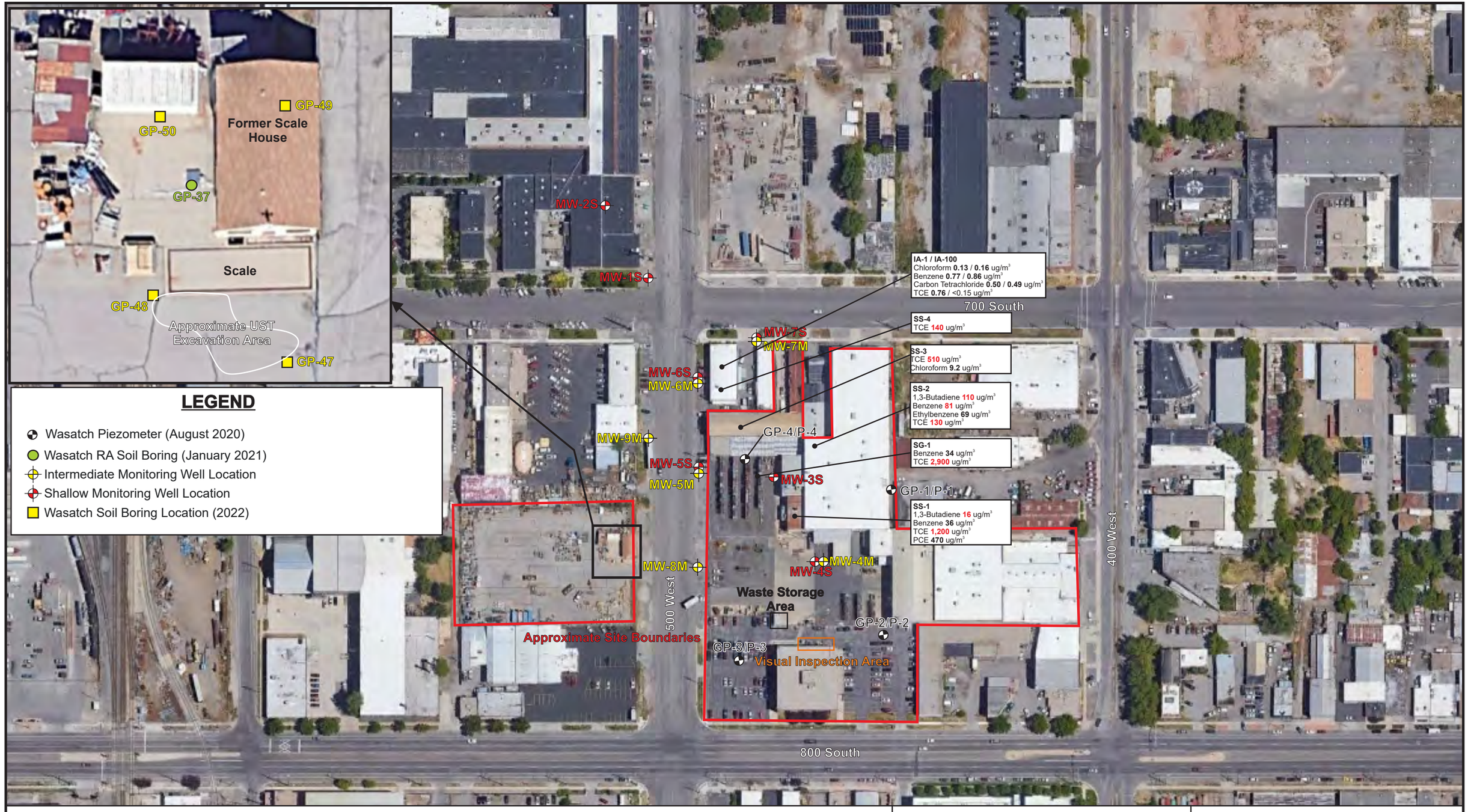
WASATCH ENVIRONMENTAL

Environmental Science and Engineering

Intermediate Piezometric Surface Map, November 21, 2022

Trillium Flow Technologies
440 West 800 South, Salt Lake City, Utah

PROJECT NO.	DRAWING DATE	FIGURE
2439-004K	August 7, 2023	7



LEGEND

- Wasatch Piezometer (August 2020)
- Wasatch RA Soil Boring (January 2021)
- Intermediate Monitoring Well Location
- Shallow Monitoring Well Location
- Wasatch Soil Boring Location (2022)

N W E S

Scale: 1-inch equals approximately 166 feet

*All **Bold** concentrations exceed the applicable U.S. EPA VISL Residential TSSGCs or U.S. EPA RSL for Residential Air
All **Bold red concentrations exceed the applicable U.S. EPA VISL Commercial TSSGCs

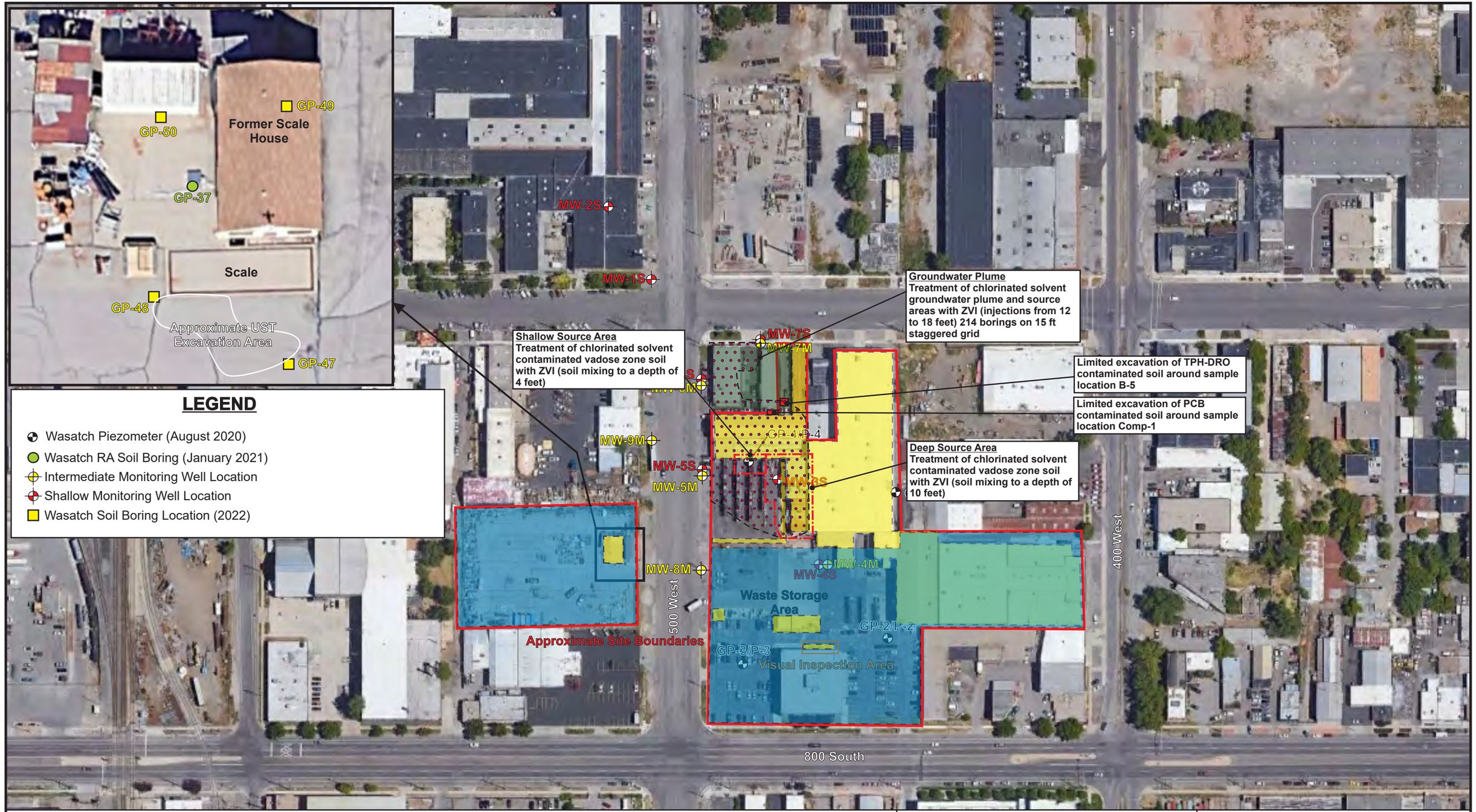
WASATCH ENVIRONMENTAL

Environmental Science and Engineering

Soil Gas and Indoor Air Exceedance Map

Trillium Flow Technologies
440 West 800 South, Salt Lake City, Utah

PROJECT NO.	DRAWING DATE	FIGURE
2439-004K	August 7, 2023	8



LEGEND

- Wasatch Piezometer (August 2020)
- Wasatch RA Soil Boring (January 2021)
- Intermediate Monitoring Well Location
- Shallow Monitoring Well Location
- Wasatch Soil Boring Location (2022)

N W E S

Scale: 1-inch equals approximately 166 feet

- Inspection by environmental professional required when concrete slabs, asphalt pavement, pipes, and pipe bedding are removed or disturbed
- Primarily risk assessment for regulatory closure except for potentially some contingency excavations
- Off-site vapor mitigation required, vapor barrier and passive sub-slab depressurization
- Source area treatment of chlorinated solvent contaminated vadose zone soil with zero valent iron (ZVI) by soil mixing to a depth of 8 feet and treatment of groundwater with ZVI by injections from 12 to 18 feet
- Limited excavation of TPH-DRO and PCB contaminated soil
- Area of groundwater treatment
- Injection borings for injections of ZVI from 12 to 18 feet

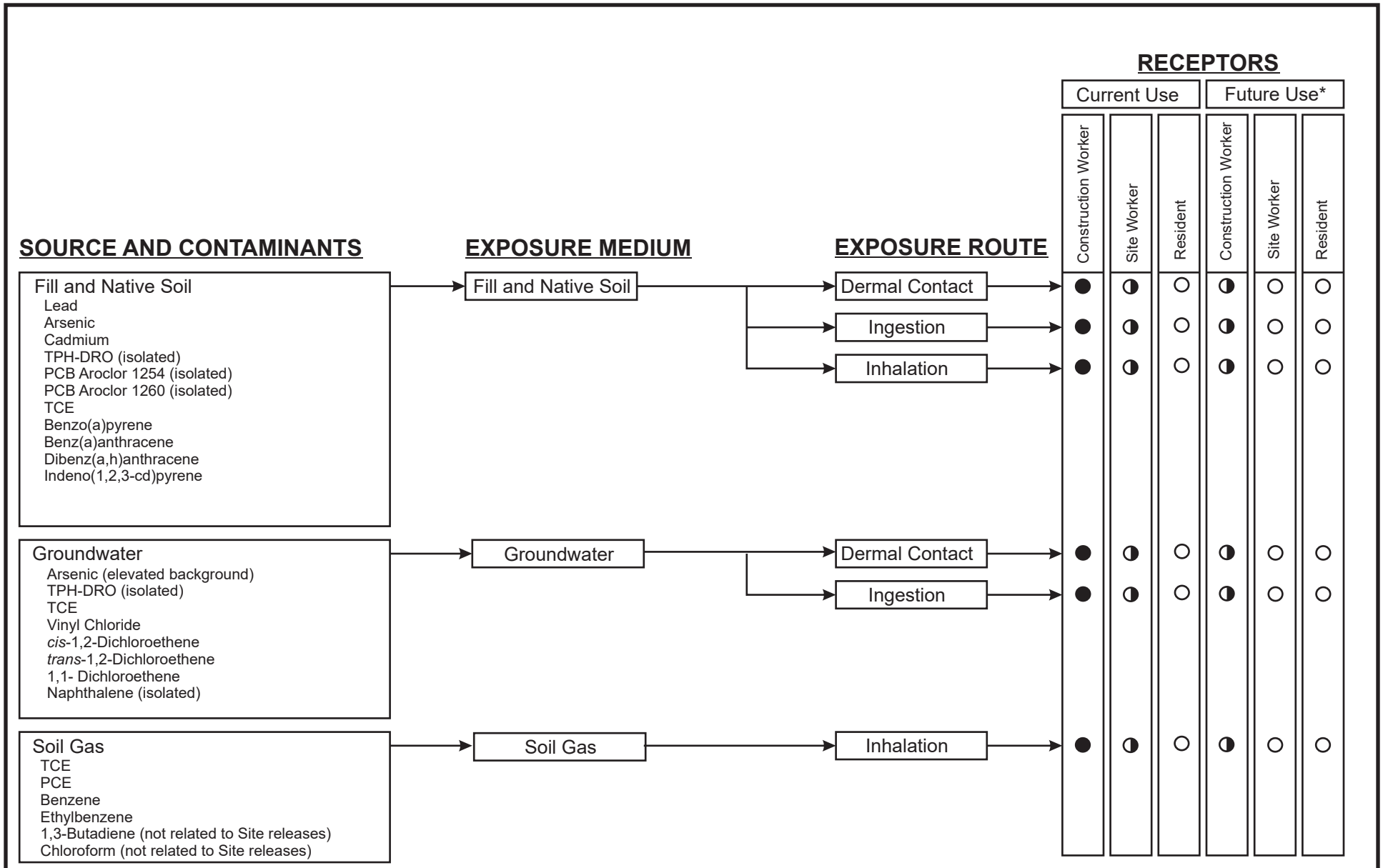
WASATCH ENVIRONMENTAL

Environmental Science and Engineering

Proposed Remediation Plan Map

Trillium Flow Technologies
440 West 800 South, Salt Lake City, Utah

PROJECT NO.	DRAWING DATE	FIGURE
2439-004K	August 7, 2023	9



* - Future use assumes after successful remediation and appropriate controls in place

● Complete Exposure Pathway
◑ Potentially Complete Exposure Pathway
○ Inomplete Exposure Pathway

WASATCH ENVIRONMENTAL
Environmental Science and Engineering

Conceptual Site Model (CSM)

Trillium Flow Technologies
440 West 800 South, Salt Lake City, Utah

PROJECT NO.: 2439-004K | DATE: August 7, 2023 | FIGURE 10

Appendix A

Zero Valent Iron Information

ZVI
ZERO VALENT IRON

Zero Valent Iron – High quality and purity iron powder and granules for water treatment or conditioning, permeable reactive barriers, and other soil remediation applications.

Benefits Include

Proven remediation technology since 1970's

Applicable in soil piles and insitu applications for groundwater treatment

Economical solution compared to other available products

Can combine with MTS for mixed contaminant plumes with metals and organics

Proven Field Applications

Permeable reactive barriers (PRBs) and Funnel and Gate

Direct Push Injection of micron scale particles into groundwater zone

Trenching and aggregate scale particles PRB design

Deep Soil Mixing

Hydraulic Fracturing

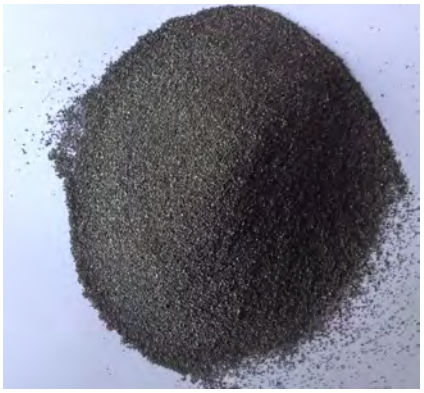
Applicable to Treatment of many contaminants including:

Chlorinated Solvents
PCE, TCE, DCE
And degradation products
Other chlorinated compounds

Heavy Metals
Arsenic
Selenium
Hexavalent Chromium (CrVI)
Other heavy metals

Other COCs
Cyanide
Nitrate
Uranium
Technetium
Pesticides (DDT, DDD, and DDE)

Our Zero valent iron powder is manufactured from 100% recycled virgin iron residual material from trusted OEM manufacturers with iron content up to 99% depending on specification requirements. We use high quality raw materials and proprietary grinding and pulverizing technology to produce ZVI powder with no appreciable surface oxides.



Material	% Composition
Iron	up to 99%
Carbon	minimal %
Silicon	minimal %
Water	less than 1%

Physical Properties

Form: Fine Powder to aggregate

Density: 2.2-3.6 g/cm3

Odor: Odorless

Color: Gray

ZVI Size and Associated Application

ULTRA-FINE ZVI POWDER

MICRO 20 (625 Mesh)

>25 micron	<7%
20-25 micron	**>90%**
<20 micron	<7%

MICRO 40 (400 Mesh)

>44 micron	<5%
37-44 micron	**>90%**
<37 micron	<7%

STANDARD ZVI BLEND

MICRO BLEND (+/- 10%)

88-177 micron	30-35%
88 micron	30-35%
44-74 micron	30-35%
<44micron	<5%

Other options available to meet specific design criteria.

We love made to order opportunities. Let us help you!

Technical support and reliable customer service available to all customers.

MATERIAL SAFETY DATA SHEET

POWDER AND GRANULAR IRON

SECTION 1 – MATERIAL IDENTIFICATION AND INFORMATION

Product Name: Cast Iron Aggregate
Formula: Fe
Date: 1 September, 2015
Chemical Family: Metals
CAS No. 7439-89-6
Appearance: Gray color

SECTION 2 – INGREDIENTS AND RECOMMENDED OCCUPATIONAL EXPOSURE LIMITS

Material	CAS No.	Weight %	ACGIH TLV Mg/cu m
Iron	7439-89-6	94-98%	5
Carbon	7440-44-0	<3%	3.5
Silicon	7440-21-3	<2.5%	10
Manganese	7439-96-5	<0.80%	5

SECTION 3 – HAZARDS IDENTIFICATION

Irritant to the skin, eyes and respiratory system.

Inhalation will cause irritation to lungs and mucus membrane. Irritation to eyes will cause watering and redness. Skin irritation may result in redness, itching or inflammation.

SECTION 4 – FIRST AID MEASURES

If inhaled: Keep patient calm, remove to fresh air. Assist in breathing if necessary.
Consult a physician.
If on skin: Wash thoroughly with soap and water. If irritation develops, seek medical attention.
If in eyes: Wash affected eyes for at least 15 minutes under running water with eyelids held open. If irritation develops, seek medical attention.
If swallowed: Rinse mouth and then drink plenty of water. Seek medical attention.

SECTION 5 – FIRE FIGHTING MEASURES

Flash point: Not applicable
Flammability: Non-flammable

Suitable extinguishing media: waterspray
Unsuitable extinguishing media for safety reasons: carbon dioxide
Additional information:
Avoid whirling up the material/product because of the danger of dust explosion.
Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.
Additional information:
The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid dust formation. Use personal protective clothing.
Environmental precautions: This product is not regulated by RCRA. This product is not regulated by CERCLA ('Superfund').
Cleanup: Do not vacuum up powder. For large amounts: Dampen, pick up mechanically and dispose of. For residues: Dampen, pick up mechanically and dispose.

SECTION 7 - HANDLING AND STORAGE

Handling: Handle in accordance with good industrial hygiene and safety practice. Wear suitable personal protective clothing and equipment.
Storage temperature: Ambient temperature
Protection against fire and explosion: Fine dust of the product is capable of dust explosion. Avoid all sources of ignition: heat, sparks, open flame. Electrostatic discharge may cause ignition. Ground all transfer equipment properly to prevent electrostatic discharge.
Storage incompatibility: Segregate from acids and from oxidants.
Storage stability: Protect against moisture.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Personal protective equipment respiratory protection: Wear a NIOSH-certified (or equivalent) particulate respirator. Do not exceed the maximum use concentration for the respirator face piece/cartridge combination.
Hand protection: Chemical resistant protective gloves
Eye protection: Tightly fitting safety goggles (chemical goggles).
General safety and hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Form: Fine Powder to Aggregate
Odor: Odorless
Color: Gray
Vapor Pressure: N/A
Density: 2.4-3.8 g/cm3
Solubility in water: Insoluble
Molar Mass: 55.85 g/mol

SECTION 10 – TOXICOLOGICAL INFORMATION

Acute toxicity	Information on: Carbonyl iron powder Assessment of acute toxicity: Virtually nontoxic after a single ingestion.
Oral	Information on: Carbonyl iron powder Type of value: LD50 Species: rat (male) Value: 9,860 mg/kg (OECD Guideline 401)
Repeated dose toxicity	Information on: Iron Information on: Iron Oxide
Carcinogenicity	Information on: Carbonyl iron powder. No data available concerning carcinogenic effects.

SECTION 11 - ECOLOGICAL INFORMATION

Aquatic toxicity: Iron powder Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

SECTION 12 - DISPOSAL CONSIDERATIONS

Waste disposal of substance: Dispose of in a licensed facility. Dispose of in accordance with national, state and local regulations.
Container disposal: Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 13 - TRANSPORTATION INFORMATION

Land transport
USDOT- Not classified as a dangerous good under transport regulations
Sea transport
IMDG- Not classified as a dangerous good under transport regulations
Air transport
IATA/ICAO- Not classified as a dangerous good under transport regulations

SECTION 14 – OTHER INFORMATION

We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to safety is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products.

Disclaimer/ Additional information:

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE

INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY OUR COMPANY HEREUNDER ARE GIVEN GRATIS AND WE ASSUME NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.

END OF DATA SHEET

Appendix B

Critical Procedures for Zero Valent Iron Injections

JANUARY, 2017
V1.R2

CRITICAL PROCEDURES – LOADING MIXING TANKS WITH A FORKLIFT

A forklift (or lift truck) may be required to load the EF9300 when frac sand or amendments come in containers that are too heavy to be lifted by hand. Anyone operating the forklift or lift truck must have a valid forklift operator certificate from an accredited organization and must be competent with the machine they are operating. A seatbelt must be worn at all times when operating any forklift or lift truck. Due to the increased likelihood of exposure to the treatment amendment particulate matter being loaded, the operator must wear the appropriate personal protective equipment (i.e. eye and respiratory protection) as per the MSDS and manufacturer's specifications.

The EF9300 has been outfitted with a railing and catch-bar system that was designed to prevent crushing hazard during EF9300 tank loading. The railing system increases the lift height required by approximately 50 cm (20 inches). The minimum lift height required for forklifts on fracturing projects is 4.1 m (160 inches). The minimum load rating for forklifts on fracturing projects is 2,270 kg (5,000 lbs). The drive system, tire type and load rating should be considered for sites that may require extra heavy lifting, rough terrain or sites that are sensitive to surface disturbance.

TOOLS
Retractable knife
Wheel chocks

Additional PPE required beyond standard oilfield PPE[1]
None, although the nature of the reagents being blended may warrant additional PPE

INSTRUCTIONS

1. Perform a forklift inspection prior to operation at the start of the work day.
2. Clear obstructions pathway between amendment staging area and frac unit.
3. Erect and secure the tank loading guards.
4. Load the amendment onto the forklift via the lifting points or on the pallet. Secure super sacs with a bar and straps if there is an internal plastic membrane.

[1] Standard Oilfield PPE comprises the following:
Fire Retardant Coveralls with high visibility striping
Hardhat
Safety Glasses
Work gloves
Steel-toed boots

5. Bring the amendment to the mixing tank, raise the load as close to the frac unit as possible. Have the frac unit operator guide the container to the desired location. Use wheel chocks to prevent the forklift from contacting the frac unit.
6. Lift and open sand/amendment according to container and manufacturer's instructions.
7. Once the amendment has been loaded, return to the staging area, discard of used container and repeat steps 3 to 5.

TASK DETAILS

Generally two people can load the frac unit under most circumstances however in multiple tank fracturing events and continuous pumping; three or more people are required to expedite loading and staging of amendments. Only the frac unit operator should give directions to the forklift operator when near the frac unit.

SEE NEXT PAGE FOR RISK ASSESSMENT MATRIX

JANUARY, 2017
V1.R2

CRITICAL PROCEDURE – LOADING AND BLENDING SLURRIES

The EF9300 is outfitted with hopper style mixing tanks which are used to batch mix treatment and sand slurries. Treatment amendment and frac sand can come in a variety of containers (i.e. buckets, bags, super sacs etc.) and an appropriate loading process must be used to minimized heavy lifting, fatigue and crush or pinch point hazards. It is important to note that crystalline silica and other solid phase amendments have respirable dust particles that are known to have carcinogenic effects so properly fitted respiratory protective equipment are required when handling and loading any amendment that poses a risk for respiratory exposure. Before loading or handling any treatment amendment, the MSDS must be read and personal protective equipment must meet the manufacturer's specifications. When blending fracturing slurries with particulate or granular treatment reagents refer to Manufacturer's blending instructions, in addition to ***Geo Tactical's RPE Code of Practice and Fit Testing Standards (2016)***. When blending silica sand fracturing slurries refer to ***Geo Tactical's Silica Dust Code of Practice (2016)***, in addition to ***Geo Tactical's RPE Code of Practice and Fit Testing Standards (2016)***.

SUPPLIES
pH strips
Plastic beakers

TOOLS
Retractable knife

Additional PPE required beyond standard oilfield PPE[1]
Nitrile gloves
Splash goggles
Fit-Tested Respiratory Protective Equipment (RPE)[2] with P100 particulate filter cartridges

[1] Standard Oilfield PPE comprises the following:
Fire Retardant Coveralls with high visibility striping
Hardhat
Safety Glasses
Work gloves
Steel-toed boots

[2] Fit Testing Standards can be found in Geo Tactical's Code of Practice Library – *GEO TACTICAL RPE CODE OF PRACTICE & FIT TESTING STANDARDS 2016 V1R2*

INSTRUCTIONS

1. Prior to loading any sand[3]/amendment ensure nitrile gloves, fit-tested RPE and splash goggles (at a minimum) are on.
2. Erect and secure the tank loading guards.
3. Ensure proper base fluid volume and consistency are in tanks, augers are engaged and that the grate is securely fastened down. (No objects should be on top of the grate!)
4. Make certain other workers in the dust area[4] are wearing appropriate PPE (i.e. respiratory protection).
5. Lift and open sand/amendment according to container and manufacturer's instructions.
6. If loading from super sacs be aware of overhead hazards, do not keep arms and hands underneath loads except to open the container (use a retractable blade knife if required).
7. Dispose of empty containers appropriately (wear the same PPE as loading).

TASK DETAILS

Generally done with two people operating the EF9300. At least one certified person is required to operate the lifting equipment, in some instances two people are necessary (i.e. super sacs requiring preparation). Watch wind direction for dusting hazard, workers not in the immediate working zone may be exposed to particulate matter. Industrial hygiene monitoring has shown that operators and on site personnel of the EF9300 may be exposed to dust particulate within 12 m of the fracturing unit. Extended unprotected occupancy of the 12 m perimeter, particularly downwind of the tanks should be avoided.

SEE NEXT PAGE FOR RISK ASSESSMENT MATRIX

[3] If fracturing with silica sand standards outlined in Geo Tactical's Silica Dust Code of Practice must be adhered to - *SILICA DUST CODE OF PRACTICE 2016 V1R2*

[4] The dusting area will be subject to site specific conditions – use Certified Industrial Hygiene Consulting Ltd. report as reference - *FracRiteExposureJune2011ReportFINAL*

MAY, 2018
V1.R3

CRITICAL PROCEDURE – ENVIRONMENTAL FRACTURING WITH THE EF9300

Hydraulic fracturing involves downhole emplacement of slurry phase treatment amendments and proppants for in situ remediation. Geo Tactical's EF9300 hydraulic fracturing unit is a skid mounted piece of equipment containing two hydraulically driven triplex pumps. The main triplex pump used for initiating and propagating fractures can create hydraulic pressure up to a maximum of 1,350 psi. All plumbing fittings and frac hoses are rated for greater pressure than the triplex pump can generate. The EF9300 has protective shrouding and shields around all moving and rotating components used for mixing and pumping. An operator will be supervised and trained on the unit by an experienced Geo Tactical employee for multiple hours before being deemed competent enough to operate on their own.

Additional PPE required beyond standard oilfield PPE[1]
Nitrile gloves
Splash goggles
Some injection reagents may require additional PPE; for handling, consult Manufacturer's requirements

INSTRUCTIONS

1. Review critical operating procedure 011 "Starting the EF9300" and start accordingly.
2. Inspect the triplex pump, and hydraulic fittings for leaks.
3. Inspect all gauges on the control panel and ensure the "Data Acquisition" (DA), "Horn", "Lights", and "Deck & Triplex Lights" switches work.
4. Turn on the DA unit.
5. Visually inspect all fittings prior to connecting the frac hose.
6. Connect the discharge assembly to the discharge fitting on the front side of the unit.
7. Connect the remote pressure transducer to the discharge assembly.
8. Connect the 1" hose via railroad union to the discharge assembly.
9. Attach frac hose to the wellhead assembly at the borehole.
10. Review the horn signaling procedure: one horn blast means that pumping will start; two horn blasts mean pumping has ceased but all equipment is still pressurized; three horn blasts mean pressure has subsided and the lines and EF9300 are safe to approach.

[1] Standard Oilfield PPE comprises the following:
Fire Retardant Coveralls with high visibility striping
Hardhat
Safety Glasses
Work gloves
Steel-toed boots

11. Refer to the critical operating procedures regarding the amendment being used and mix accordingly.
12. Review critical operating procedure(s) based upon the type of drilling used (034 and 035 - Direct Push Fracturing (Disposable Head)" and "Direct Push Fracturing (Fixed Head)").
13. Open the downhole valve.
14. Ensure that the recirculation valves are closed.
15. Move auger lever(s) pertaining to tank(s) containing the slurry to "Feed".
16. Before starting to pump, blast the horn once.
17. Slowly start pushing the triplex pump lever forward while carefully monitoring the pressure on the gauge as well as the flow rate on the DA unit.
18. Continue increasing pump rate to a maximum of 420 L/min. Shut down immediately if reaching 1,350 psi (9,300 kPa)
19. When finished with the fracture, switch to gel or water to flush remaining amendment or proppant out of the pump and lines.
20. After the pumping is completed, blast the horn twice.
21. Monitor the pressure on the gauge and the DA unit.
22. When pressure subsides, open one of the recirculation valves to release any residual pressure.
23. Blast the horn three times after the pressure has subsided.
24. At the end of the day, download the data recorded on the DA unit onto a floppy disk.
25. Ensure that the data has been recorded by downloading it onto a field laptop.

TASK DETAILS

The pre-work inspection and start up should be completed by the EF9300 unit operator. In cold weather conditions, run heaters on plumbing fitting and engine compartment prior to engaging the engine (if and when possible). Boosting of the battery from a vehicle or forklift may be required in cold weather conditions. When fracturing, always use hoses rated for a minimum of 1,500 psi.

SEE NEXT PAGE FOR RISK ASSESSMENT MATRIX

DECEMBER, 2018
V1.R3

CRITICAL PROCEDURE – DIRECT PUSH DRILLING/FRACTURING (DISPOSABLE HEAD)

Direct push drilling is used to collect soil samples, create well borings and advance fracturing tools into the subsurface. Anyone working in the vicinity of the drill rig should know the rigs basic features and emergency shutoff locations. Only a trained certified operator shall operate the drill. When drilling or fracturing there must be an exclusion zone in place, only approved personnel are to be allowed in the exclusion zone.

TOOLS
Pipe wrenches
Wire brush
Hammer

Additional PPE required beyond standard oilfield PPE[1]
Nitrile gloves
Splash goggles
Some injection reagents or contaminants may require additional PPE for handling, consult Manufacturer or NIOSH[2] for PPE recommendations

INSTRUCTIONS

1. Ensure that the site has been cleared for both private and public underground utilities.
2. Prior to drilling, set up an exclusion zone around the immediate work area.
3. Tighten rods by hand, then snug with backed up pipe wrenches.
4. Tighten rods constantly to prevent thread fatigue.
5. Once at depth pull back the rods approximately three inches to disengage the head.
6. Once tool is disengaged, put on the direct push fracturing wellhead and secure whip check to drill rods and frac hose. Remember to connect the wellhead assembly with backed up pipe wrenches.
7. Connect frac hose and SHUT the wellhead pressure relief valve.
8. Lower the mast of the drill rig so that it sits atop the wellhead assembly or slightly above, this is to prevent the rods from sliding up in the event of a high pressure frac or injection.

[1] Standard Oilfield PPE comprises the following:
Fire Retardant Coveralls with high visibility striping
Hardhat
Safety Glasses
Work gloves
Steel-toed boots

[2] NIOSH – National Institute for Occupational Safety and Health. *NIOSH POCKET GUIDE TO CHEMICAL HAZARDS*

9. Once pumping event has stopped and operator has given the all clear signal (three blasts or verbal notice), have the driller push the wellhead assembly back down to engage the tip (approximately three inches).
10. Relieve pressure from the line using the wellhead pressure relief valve.
11. Disconnect the frac hose from wellhead assembly with the valve OPEN.
12. Use a bail head to pull out rods, secure pipe in an open borehole with a pipe vise or shoe.
13. NEVER hold, pull or push pipe by hand in an open borehole.

TASK DETAILS

Generally two to three people for drilling or fracturing. Set up an exclusion zone where only trained and competent personnel are permitted.

SEE NEXT PAGE FOR RISK ASSESSMENT MATRIX

DECEMBER, 2018
V1.R3

CRITICAL PROCEDURE – DIRECT PUSH DRILLING/FRACTURING (FIXED HEAD)

Direct push drilling is used to collect soil samples, create well borings and advance fracturing tools into the subsurface. Anyone working in the vicinity of the drill rig should know the rigs basic features and emergency shutoff locations. Only a trained certified operator shall operate the drill. When drilling or fracturing there must be an exclusion zone in place, only approved personnel are to be allowed in the exclusion zone.

TOOLS
Pipe wrenches
Wire brush
Hammer

Additional PPE required beyond standard oilfield PPE[1]
Nitrile gloves
Splash goggles
Some injection reagents or contaminants may require additional PPE for handling, consult Manufacturer or NIOSH[2] for PPE recommendations

INSTRUCTIONS
1. Ensure that the site has been cleared for both private and public underground utilities.
2. Prior to drilling, set up an exclusion zone around the immediate work area.
3. Tighten rods by hand, then snug with backed up pipe wrenches.
4. Tighten rods constantly to prevent thread fatigue.
5. Push rods and tool to the first fracture depth.
6. Once at depth flush tool with water (see Critical Procedures – Flushing Down-hole Tool) if necessary.
7. Once tool is cleaned, secure whip check to drill rods and frac hose and connect the wellhead assembly with backed up pipe wrenches.
8. Connect frac hose and SHUT the wellhead pressure relief valve.
9. Lower the mast of the drill rig so that it sits atop the wellhead assembly or slightly above, this is to prevent the rods from sliding up in the event of a high pressure frac or injection.
10. Pump the fracture.

---

[1] Standard Oilfield PPE comprises the following:
Fire Retardant Coveralls with high visibility striping
Hardhat
Safety Glasses
Work gloves
Steel-toed boots

[2] NIOSH – National Institute for Occupational Safety and Health. *NIOSH POCKET GUIDE TO CHEMICAL HAZARDS*

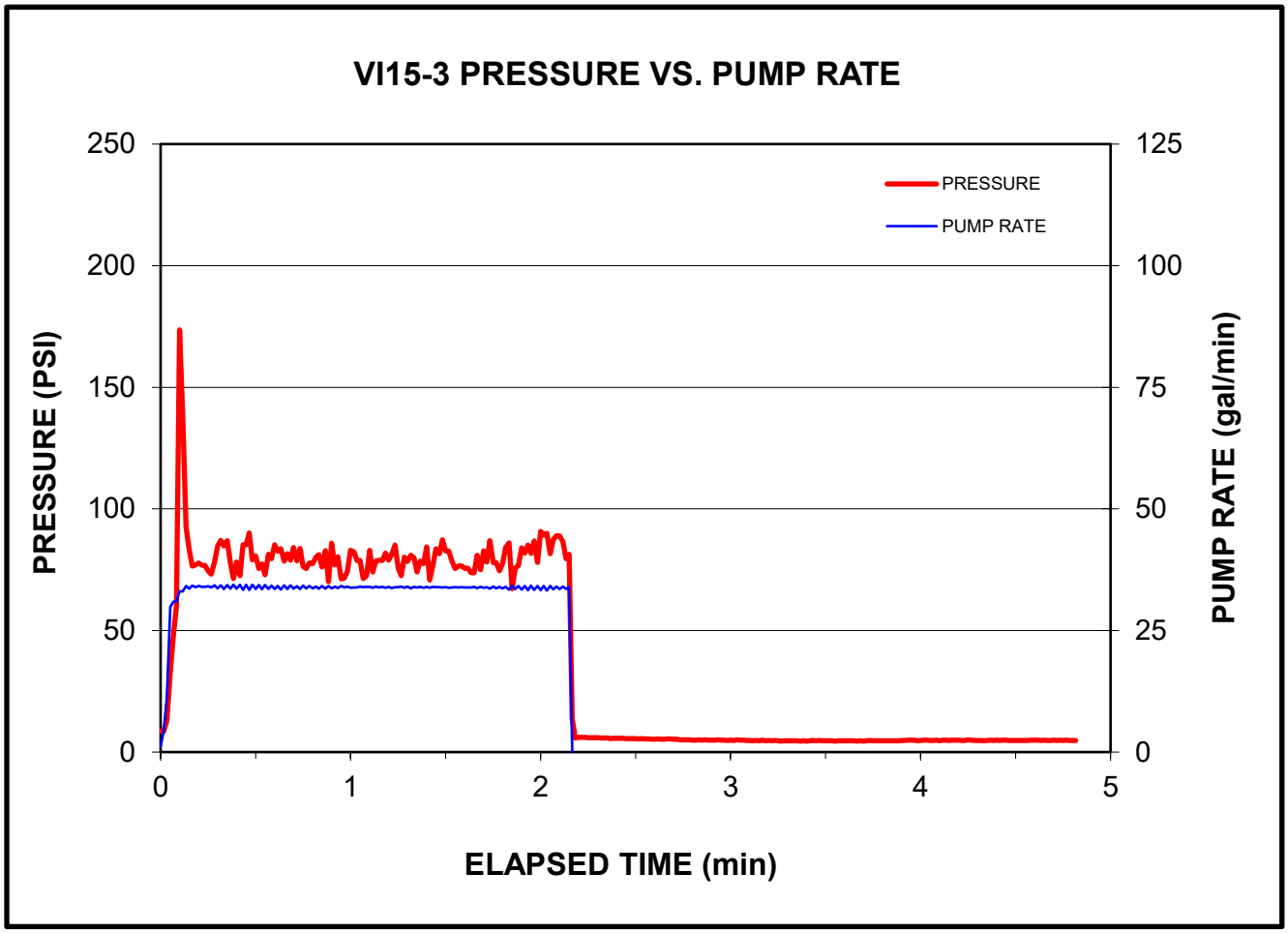
11. Once pumping event has stopped and operator has given the all clear signal (three blasts or verbal notice) relieve pressure from the line using the pressure relief valve.
12. Disconnect the frac hose from wellhead assembly with the valve OPEN.
13. Push rods and tooling to the next depth.
14. Repeat steps 5 to 10 until all fracture depths have been completed.
15. Use a bail head to pull out rods, secure pipe in an open borehole with a pipe vice or shoe.
16. NEVER hold, pull or push pipe by hand in an open borehole.

TASK DETAILS

Generally, two to three people for drilling or fracturing. Set up an exclusion zone where only trained and competent personnel are permitted.

SEE NEXT PAGE FOR RISK ASSESSMENT MATRIX

FRACTURE DATA



PROJECT NUMBER:	J1804		DATE:	13 September 2018	
FRACTURE NO.:	VI15-3		FRACTURE BOREHOLE:	VI15	
FRACTURE DEPTH:	6.0	(ft.)	SOIL TYPE:	Unknown	
SLURRY VOL PUMPED:	42	(gal)	PLACEMENT EFFICIENCY:	100	(%)
AMENDMENT TYPE:	ZVI		AMENDMENT MASS PUMPED:	227	(lbs)
BREAK PRESSURE:	174	(PSI)	AVERAGE PUMP RATE:	34	(gal/min)

Appendix C

Public Notice

Public Notice

30-Day Comment Period
Former Trillium Flow Technologies

This Public Notice is in reference to a planned remedial action at the former Trillium Flow Technologies and OJ Industries properties (collectively the "Site") located between 400 West and Woodbine Street (approximately 550 West), and 700 South and 800 South in Salt Lake City, Utah. The Site is under regulatory oversight by the Utah Department of Environmental Quality (UDEQ), Division of Environmental Response and Remediation (DERR), Voluntary Cleanup Program (VCP), and is tracked as VCP Site #C109. Soil and Groundwater impacted by chlorinated solvents from historical industrial activities have been identified at the Site. Additional impacts at the Site include: a small area of total petroleum hydrocarbons as diesel-range organics (TPH-DRO) impacts to soil, a small area of polychlorinated biphenyl (PCB) impacts to soil, and some metals and polycyclic aromatic hydrocarbons (PAHs) impacts to imported fill material. The purchaser of the Site, BCG Granary Partners, LLC, has enrolled the Site in the VCP in order to address the environmental impacts prior to redevelopment of the Site for mixed (commercial and residential) use.

The purchaser has worked with the UDEQ to develop a Remedial Action Plan (RAP) that outlines measures that will be taken in order to address the soil and groundwater impacts. As outlined in the RAP, *in situ* chemical reduction of the contaminants in the saturated zone throughout the footprint of the chlorinated solvent groundwater plume by injection of a zero valent iron (ZVI) slurry will be conducted. Soil mixing of ZVI will also be conducted in the vadose zone in the chlorinated solvent source areas. The small areas of TPH-DRO and PCB impacts to soil will be excavated and transported for off-Site disposal at an approved landfill. Metals and PAH impacts to the fill at the Site will be managed through a combination of risk assessment and small excavations (with off-Site disposal at an approved landfill) as necessary. Impacts to Soil and fill at the site will be assigned action levels equivalent to the United States Environmental Protection Agency (U.S. EPA) Regional Screening Levels for Industrial Soil. Groundwater at the site will be remediated to meet action levels equivalent to the U.S. EPA federal Maximum Contaminant Levels (MCLs). The final cleanup levels for the Site (that must be achieved for regulatory closure) will be calculated based upon an assessment of the cumulative risk associated with the residual impacts remaining at the Site following active remediation. Mitigation of indoor air impacted by releases from the Site will be conducted at the Site and any affected off-site properties, as necessary.

In the event that remedial action fails to fully achieve the cleanup levels, and to manage residual exposure risks, engineering and institutional controls will be implemented at the Site. An Environmental Covenant (EC) and Site Management Plan (SMP) will be implemented to reduce the probability of exposure to the contaminants by specifying how the Site may and may not be used (e.g. forbidding the extraction and use of shallow groundwater and requiring vapor barriers for new structures). These controls will be protective of Site occupants.

The remediation work described in the RAP is expected to be conducted (weather permitting) during the Fall and early Winter of 2023, following the purchaser responding to comments on the RAP.

The RAP may be viewed, and comments on the plan received, at the Utah DEQ/DERR office at the address below. The RAP document may also be viewed at: https://deq.utah.gov/environmental-

response-and-remediation/public-notices-utah-division-of-environmental-response-and-remediation. The Public Comment period will commence on September 24, 2023, and comments will be received through October 23, 2023.

Please send comments to:
Mr. Chris Howell, 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
cjhowell@utah.gov
(385) 391-8140

Appendix D

Fugitive Emissions Monitoring Plan (FEMP)

FUGITIVE EMMISIONS MONITORING PLAN
TRILLIUM FLOW TECHNOLOGIES
SALT LAKE CITY, UTAH

1. INTRODUCTION

This Fugitive Emissions Monitoring Plan (Plan) has been prepared for remediation activities to be conducted at the former Trillium Flow Technologies property, a former industrial property, consisting of 7.43 acres, located at 742 and 745 South 500 West and 440 West 800 South in South Salt Lake, Utah (Site). The Site has been impacted with chlorinated solvents and Resource Conservation and Recovery Act (RCRA) metals, as well as localized impacts by polychlorinated biphenols (PCBs) and petroleum hydrocarbons. Impacted soils will be treated on-Site by mixing with zero valent iron and water, for the chlorinated solvents, and excavation and off-Site disposal for the PCBs, petroleum hydrocarbons, and metals.

This Plan will be followed by the general contractor and all subcontractors during soil mixing, excavation, stockpiling, backfilling, and compaction activities conducted at the Site.

2. OBJECTIVES

The purpose of this Plan is to describe the fugitive emissions monitoring measures (in this case dust control) and Best Management Practices (BMPs) that will be followed during soil mixing, excavation, backfilling and compaction activities to minimize fugitive emissions (dust). BMPs will also be applied, as appropriate, during drilling activities related to injections and well installation. Also described is the monitoring approach to evaluate effectiveness of the dust control BMPs and to document that those in adjoining businesses 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, skid steers, front end loaders, water trucks, small drill rigs, and excavators. The 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 Trillium Flow Technologies 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, arrangements will be made to provide additional watering.

4. DAILY MONITORING

Wasatch personnel will be on-Site during all soil mixing, 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 during fieldwork 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.

Michael S. Cronin, P.G.
Senior Project Geologist

APPEDNDICES

Appendix 1 – DAQ Fugitive Dust Control Plan
Appendix 2 – Daily Air Monitoring Form and Wind Rose Diagram

Appendix 1

DAQ Fugitive Dust Control Plan

Fugitive Dust

8/22/2023 3:21:10 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
- [X] 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::

X I acknowledge that Utah regulation R307-309-5(1)(a) prohibits fugitive dust to exceed 10% opacity at the property boundary;

X I acknowledge that Utah regulation R307-309-5(1)(b) prohibits fugitive dust to exceed 20% opacity on site;

X 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

X 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: 93F2F271B0

Name: Michael Cronin

Mailing Address

Mailing Address - Address Line 1: 2410 West California Avenue

Mailing Address - Address Line 2:

Mailing Address - City: Salt Lake City

Mailing Address - State: Utah

Mailing Address - Zip: 84123

Email: mc@wasatch-environmental.com

Phone: (801) 972-8400

Project Information

Project Name: Trillium Flow Technologies Remediation

Project End Date: 12/31/23

Project Location

Address Line 1: 742 & 745 South 500 West and 440 West 800 South

Address Line 2:

City: Salt Lake City

State: Utah

Zip: 84101

Site Directions: Northeast corner of 800 South and 500 West, and one lot on the west side of 500 West slightly north of the northwest corner of the intersection of 800 South and 500 West

County: Salt Lake

Acreage: 7.43

Calculated Acreage: 7.4

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) : 40.752892

Longitude (Decimals Only) : -111.904578

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/40.752892,-111.904578

Latitude/Longitude verification:

[X] 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: Michael Cronin

Company: Wasatch Environmental

Address

Address Line 1: 2410 West California Avenue

Address Line 2:

City: Salt Lake City

State: Utah

Zip: 84123

Phone number: (801) 972-8400

Cell number: (801) 209-5211

Dust Suppressants

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

[ ] Yes

[X] 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.

Fugitive Dust Plan Number: 43F3454761

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.
- [X] 08. Demolition - mechanical/manual demolition of walls, stucco, concrete, freestanding structures, buildings and other structures.
- [X] 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.
- [X] 11. Hauling materials.
- [ ] 12. Paving/subgrade preparation for paving streets, parking lots, etc.
- [X] 13. Sawing/cutting material, concrete, asphalt, block or pipe.
- [ ] 14. Screening of rock, soil or construction debris.
- [X] 15. Staging areas, equipment storage, vehicle parking lots, and material storage areas.
- [X] 16. Stockpiles materials (storage), other soils, rock or debris, for future use or export.
- [ ] 17. Tailings piles, ponds and erosion control.
- [X] 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.
- [X] 20. Trenching with track or wheel mounted excavator, shovel, backhoe or trencher.
- [X] 21. Truck loading with materials including construction and demolition debris, rock and soil.

BMP - 08 Demolition - mechanical/manual demolition..... of structures

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

MAKE AT LEAST ONE SELECTION FROM EACH SECTION.

Note: An asbestos survey may be necessary subject to NESHAP. All asbestos containing material must be removed prior to demolition.

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

X 08-01. Pre-water and maintain surface soils in a stabilized condition.

08-02. Apply and maintain a chemical stabilizer to surface soils.

08-03. Pave operational areas.

Stabilize demolition debris during handling.:

X 08-04. Apply water.

Stabilize debris following demolition.:

X 08-05. Apply water.

08-06. Apply a chemical stabilizer.

Stabilize surrounding area following demolition.:

X 08-07. Apply water.

08-08. Apply and maintain a chemical stabilizer to stabilize.

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.:

X 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.:

X 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.

X 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.:

- [X] 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.:

- [X] 11-03. Use tarps or other suitable enclosures on haul trucks.
- [X] 11-04. Apply water prior to transport.

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

- [X] 11-05. Clean wheels.
- [ ] 11-06. Sweep or water haul road.

BMP - 13 Sawing/cutting material, concrete, asphalt, block or pipe.

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

MAKE AT LEAST ONE SELECTION FROM EACH SECTION.

Limit visible emissions.:

- [X] 13-01. Use water control to dust.
- [ ] 13-02. Use a vacuum to collect dust.

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.:

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

Stabilize staging area soils during use.:

- [X] 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.
- [X] 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.:

- [X] 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.:

- [X] 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.:

- [X] 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.
- [X] 16-10. Apply a cover (natural or synthetic)
- [ ] 16-11. Wind screen.
- [X] 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

[X] 18-02. Maintain dust control during working hours and clean trackout from paved surfaces at the end of the work shift/day.

[X] 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).:

[X] 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.:

[X] 20-01. Pre-water surface.

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

[X] 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.:

[X] 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. :

[X] 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.

[X] 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:

X 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

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

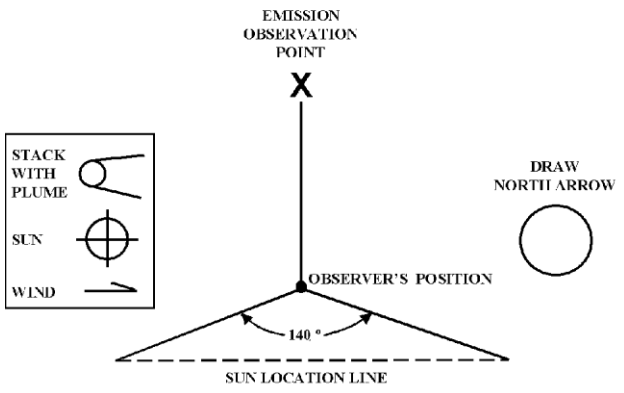
Appendix 2

Daily Air Monitoring Form and Wind Rose Diagram

Trillium Flow Technologies
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 Start End	**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 Start End	**Sky Condition** Start End	
Wind Speed Start End	**Wind Direction** Start End	
Ambient Temp Start End		**Relative Humidity %**

SOURCE LAYOUT SKETCH



Observation Date	Start Time	End Time

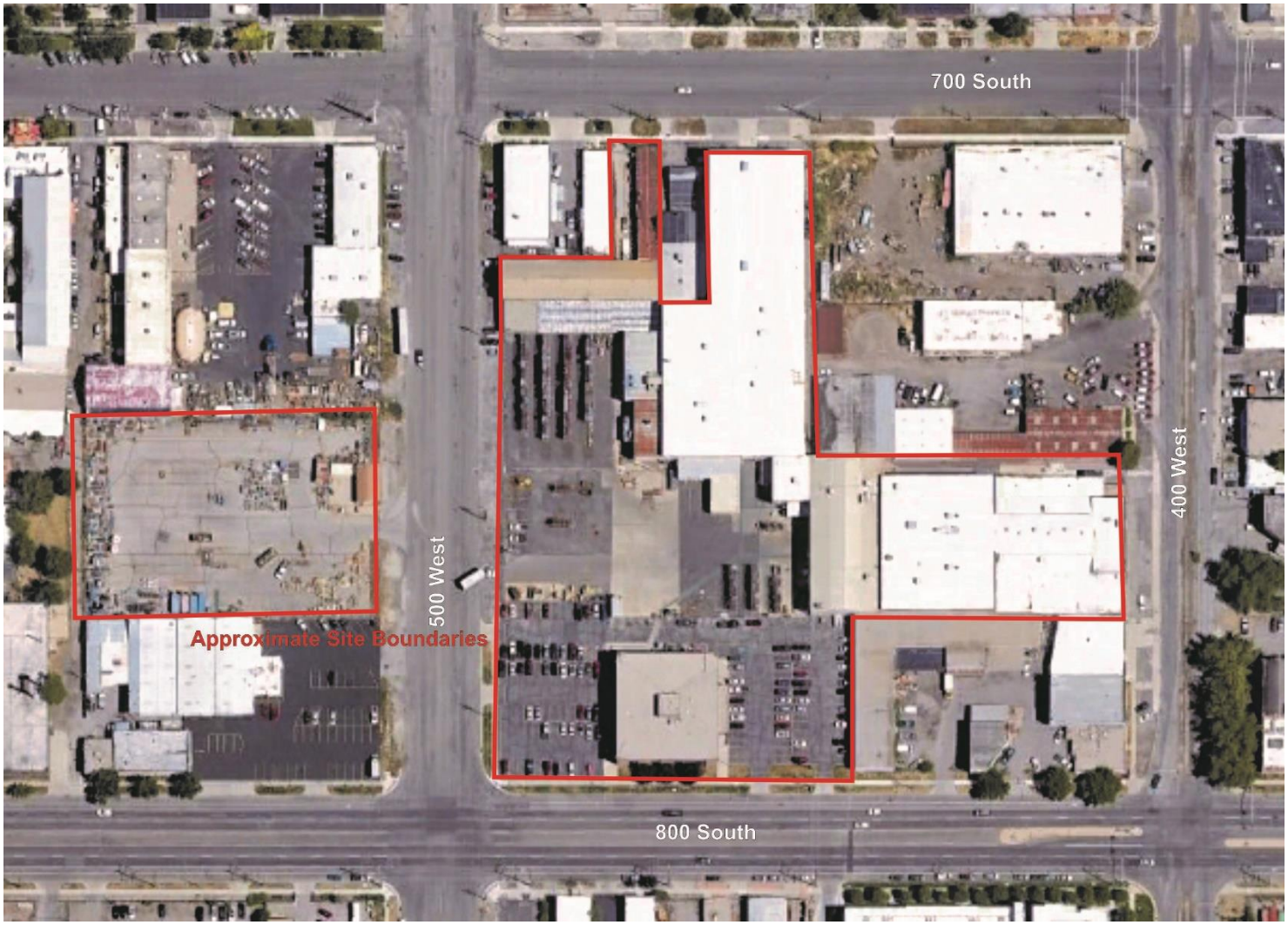
Min \ Sec	0	15	30	45	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Observer's Name (Print)	
Observer's Signature	**Date**
Organization	
Certified by	**Date**

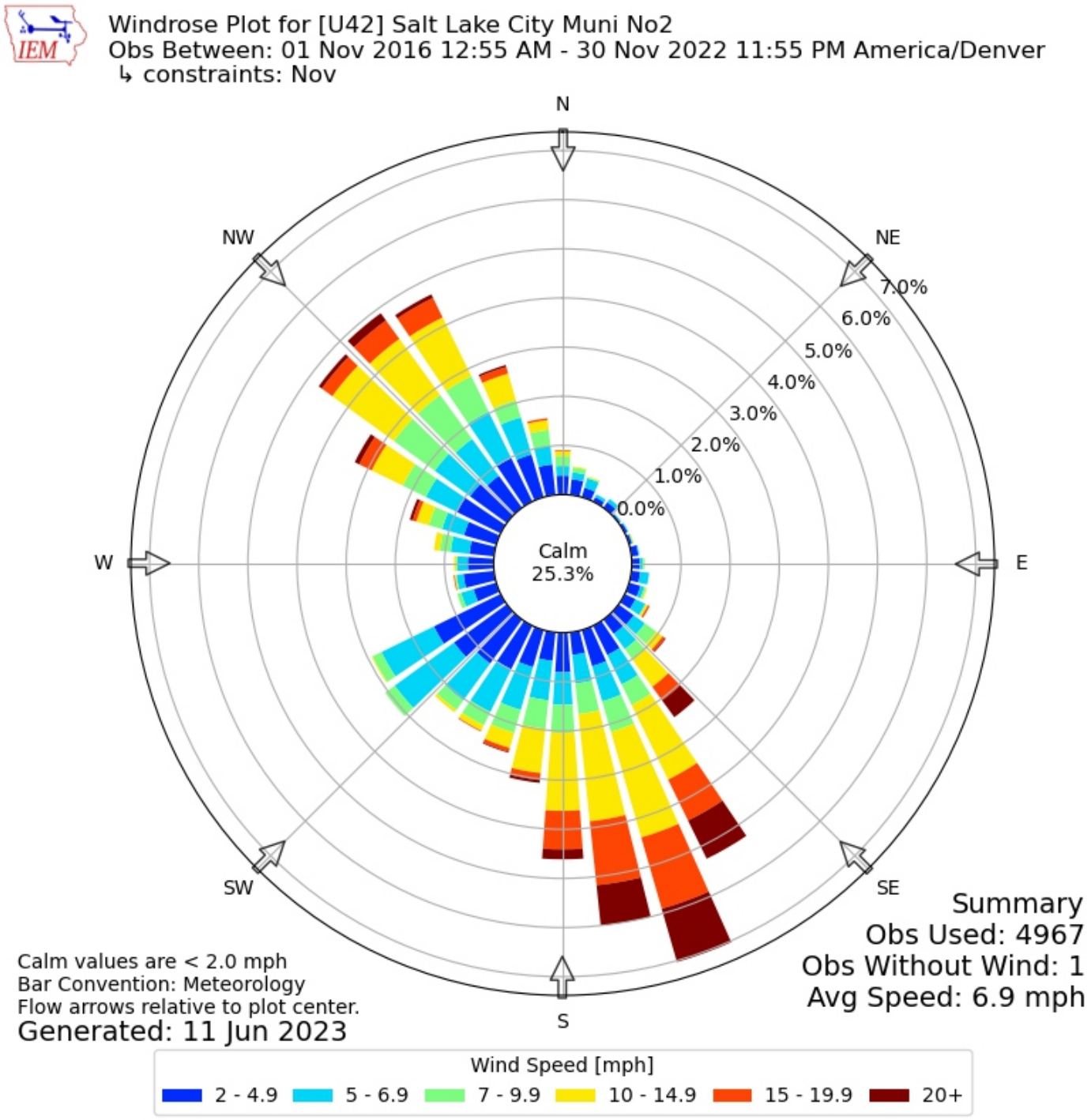
Additional Information

Continue on reverse side

Visible Emission Observation Location Map



Additional Information



WASATCH ENVIRONMENTAL

Environmental Science and Engineering

November 2022 Wind Rose Diagram

Trillium Flow Terchnologies
Salt Lake City, Utah

Project No.: 2439-004K	Date: August 22, 2023	Figure 1