
WASATCH ENVIRONMENTAL, INC.
ENVIRONMENTAL SCIENCE AND ENGINEERING

DSHW-2020-009567

SITE MANAGEMENT PLAN

FORMER MILO'S CLEANERS

Div of Waste Management
and Radiation Control

CANYON CENTER

2093 EAST 9400 SOUTH

SANDY, UTAH

MAY 19 2020

Compliance Order UT0000069757

Project No. 1771-005H

To:

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Utah Department of Environmental Quality
Division of Waste Management and Radiation Control
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and

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Canyon Center Shops Investors, LLC
Canyon Center LLC
(Tenants in Common)

Prepared by:

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May 18, 2020

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**SITE MANAGEMENT PLAN
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CANYON CENTER
2093 EAST 9400 SOUTH
SANDY, UTAH**

1. INTRODUCTION

Wasatch Environmental, Inc., (Wasatch) has prepared this Site Management Plan (SMP) to present the planned long-term approach for managing residual chlorinated solvent impacts to soil and indoor air at the former Milo's Cleaners "Release Site" and area immediately surrounding the Release Site, which exhibit residual chlorinated solvent impacts; (herein collectively referred to as the "Restricted Property") located at 2093 East 9400 South, Sandy, Utah, within the Canyon Center retail development (herein referred to as the "Facility").

This SMP has been prepared in accordance with the requirements of R315-101 "Cleanup Action and Risk-Based Closure Standards" that establish information requirements to support risk-based cleanup and closure standards at facilities for which remediation or removal of hazardous constituents to background levels is not expected to be achieved. The "Owner" (as defined in the Environmental Covenant (EC)) shall comply with the SMP, including provisions relating to the Activity and Use Limitations pertaining to land use limitations, groundwater limitations, construction limitations, and disturbance limitations.

1.1 Site Description

The Restricted Property is an approximately 0.8796-acre tract of real property, which comprises a portion of a 4.38-acre parcel (Tax Parcel Number: 28-03-351-037-0000) occupied by the Canyon Center retail development ("Canyon Center"), located at the northeast corner of the intersection of Highland Drive and 9400 South, in Sandy, Salt Lake County, Utah (as shown in Exhibit A). The legal description of the Restricted Property is:

SOUTHWEST QUARTER of SECTION 3, T3S, R1E, SLB&M.

RESTRICTED PROPERTY

Beginning at a point N0°21'23"E 514.97 feet along the Section Line (Basis of Bearing) and S89°38'32"E 552.72 feet from the Southwest Corner of Section 3, Township 3 South, Range 1 East, Salt Lake Base and Meridian;

thence N0°10'10"W 104.89 feet;
thence N89°49'50"E 365.31 feet;
thence S0°10'10"E 104.89 feet;
thence S89°49'50"W 365.31 feet to the point of beginning. Contains 0.2120 acre.

1.2 Site Background

1.2.1 Initial Research

In May 2011, as part of due diligence related to a potential sale of the Facility, Wasatch personnel conducted historical and agency file reviews for the Milo's Cleaners site located at the Canyon Center Facility. Information in the agency files indicated that Henrie's Dry Cleaning (more recently the location of Milo's Cleaners) filed for a Notification for Hazardous Waste Activity in 1993. Documentation in the regulatory agency files indicated that in 2003 the Utah Division of Solid and Hazardous Waste (DSHW) identified improper hazardous waste management practices including improper containment of tetrachloroethene (PCE) sludge, improper disposal of spent filters, and improper disposal of water from the water separator. These documents in the agency files raised Wasatch's concern that historical releases may have occurred at the dry cleaning site, so further investigation was conducted. An on-going release was eventually discovered during abatement activities on February 21, 2012, and reported to the DSHW on March 26, 2012.

1.2.2 Investigation Activities

Between June 1, 2011, and December 10, 2013, Wasatch conducted extensive investigation activities on behalf of Dee's, Inc., (Dee's) to evaluate the nature and extent of impacts at the Facility. Investigation activities included sub-slab soil gas sampling with samples collected from under the floor slab of the strip mall building and from under the paved areas around the strip mall, soil sampling including shallow borings in the interior of the dry cleaner tenant space and along the sewer lateral and one deep boring to 200 feet below ground surface (bgs), deep soil vapor sampling, cone penetrometer borings to define site stratigraphy to a depth of 100 feet bgs, and indoor air sampling of all of the tenant spaces in the impacted area of the strip mall.

As groundwater under the site occurs at a depth of approximately 475 feet bgs, and the deepest impacts to soil extended to 182 feet bgs, groundwater has not been impacted by the release; therefore, groundwater monitoring wells were not installed, and groundwater was not sampled.

The results of the investigation revealed that elevated concentrations of PCE in shallow soil vapor were highest directly under the north end of the former dry cleaner tenant space. The PCE vapor plume extended to the west as far as the tenant space occupied by Fantastic Sam's (2055 East 9400 South) but did not extend off-site under Smith's Food & Drug. The PCE vapor plume extended to the east only as far as the former Gelato Café (2101 East 9400 South). The PCE vapor plume did not extend far to the north or south of the building footprint.

The results of the investigation indicated that PCE impacts to soil, especially those impacts in excess of the U.S. Environmental Protection Agency (U.S. EPA) Regional Screening Level (RSL) for Industrial Soil, were limited to the area under the north end of the former dry cleaner tenant space and immediately north of the former dry cleaner tenant space.

The only tenant spaces to exhibit PCE concentrations in indoor air in excess of the U.S. EPA RSL for Indoor Industrial Air of 47 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) were the former Gelato Café, Chef Ming, and the former Milo's Dry Cleaner. These three tenant spaces are immediately adjacent to each other and share a common foundation wall with the former dry cleaner.

The observed distribution of contaminants was consistent with the conceptual site model wherein, the PCE release at the dry cleaner site appears to have occurred in the immediate vicinity of the dry cleaning machine, waste PCE storage drum, crack in the floor slab, and a disconnected floor drain; all located near the northwest portion of the dry cleaner tenant space. Significant surface and near surface soil impacts appear to have been limited in terms of their lateral extent and were evident only under the northernmost portion of the dry cleaner tenant space and immediately north of the dry cleaner tenant space. Therefore, it appears that rather than spreading laterally through high permeability pathways (i.e., pipe bedding, sewer laterals, etc.), the dense non-aqueous phase liquid (DNAPL) migrated downward with minimal lateral spreading. As the Facility is located within the primary recharge zone (deep unconfined aquifer) for the deep artesian aquifer which underlies the Salt Lake Valley, the vadose zone sediments are primarily coarse-grained sediments and there is no significant confining layer present to arrest the downward migration of the DNAPL. There are, however, silty layers and thin clay layers that helped to retard the downward migration of contaminants. In this geologic setting, it was expected that DNAPL would migrate downward forming a column of residual soil contamination extending from the release point at the surface to a significant depth in the subsurface. Much of the contaminant mass would be expected to adsorb to the finer grained sediments and accumulate in the sedimentary layers containing a significant fraction of silts and clays. The coarser grained sediments, such as the gravel and sands beneath the concrete floor slabs and the sands and gravelly sands, which predominate the vadose zone at depth, are likely to function as high permeability pathways for the downward transport of DNAPL, dissolved-phase PCE, and vapor-phase PCE.

1.2.3 Abatement Activities

In an effort to abate the vapors that were accumulating beneath the floor slabs of the Canyon Center strip mall building, five sub-slab ventilation systems were installed between February 13 and 23, 2012; and were started on February 24, 2012. One sub-slab ventilation system was installed to abate the vapors under each building area encompassed by a foundation wall and that exhibited elevated PCE concentrations in the sub-slab soil gas samples that were previously collected and analyzed. Emissions samples were collected from each of the sub-slab ventilation systems and reported as required by the Utah Division of Air Quality (DAQ) beginning in February 2012 and ending in February 2013. The emissions collected from the vent stacks of two of the five sub-slab ventilation systems, SSV-1 (dry cleaner location) and SSV-5 (the vacant tenant space farthest west of the dry cleaner), consistently exceeded the Toxic Screening Levels (TSLs) prescribed by the Utah DAQ. On March 15, 2013, the Utah DAQ ordered that the systems be turned off until either the effluent was treated to reduce the emissions to acceptable levels, or an Approval Order was issued by the Utah DAQ.

On July 18, 2013, the DSHW issued Compliance Order UT0000069757 to Dee's to address the indoor PCE vapors and the source of PCE subsurface contamination. Dee's responded in writing on August 9, 2013, indicating their intent to comply with the order. Simultaneously, Dee's also submitted a request that the SSV system be temporarily granted approval to operate under the small source exemption provision. The Utah DAQ rejected the request in a letter dated March 14, 2014.

A Notice of Intent (NOI) was submitted to the DAQ on behalf of Dee's on September 10, 2013. An Approval Order was issued by the DAQ on December 11, 2013. The Approval Order allowed Dee's to operate a soil vapor extraction (SVE) system and the sub-slab ventilation systems under a permit and discharge, within the constraints of the permit, the effluent from these systems to the atmosphere without additional treatment.

1.2.4 Corrective Action

From November 18 through December 5, 2013, Wasatch removed the floor slab from the dry cleaner tenant space and excavated the shallow residual source soils from under the dry cleaner tenant space. Shallow soils throughout the tenant space were removed to a depth of 1 foot to accommodate the installation of a vapor barrier and upgraded sub-slab ventilation system collection pipes. Soil at the northern end of the tenant space, in the source area, was removed to a depth of 5.5 feet to remove residual source soils. The waste soil was transported by MPE, under hazardous waste manifests, to the U.S. Ecology hazardous waste treatment and disposal facility in Grand View, Idaho. A total of 129.13 tons of waste soil was removed during the excavation activities.

Prior to the placement of backfill, soil samples were collected from each wall of the excavation and the floor of the excavation. All of the PCE concentrations were well below the U.S. EPA RSL for Industrial Soil for PCE of 110 mg/kg.

Prior to placing the last 2 feet of backfill and pouring the new concrete floor, two SVE wells were installed in the building interior (in the source area), and new sub-slab ventilation system collection piping was installed to improve the area covered by the sub-slab ventilation system. After backfilling was completed, a vapor barrier (40-mil high density polyethylene) was installed.

Wasatch installed the SVE system between November 2013 and January 2014. The two interior SVE wells were installed using a small hollow-stem auger drill rig on November 25, 2013, during backfilling of the interior excavation. The three exterior SVE wells were installed using ODEX drilling technology from December 16 to 20, 2013. Construction of the SVE system shed and installation of the SVE system equipment commenced on December 23, 2013. SVE system construction was completed, and the system was started, on January 24, 2014.

The SVE system was designed to remove contaminant mass in vapor phase from the column of residual source soil extending from the ground surface to a depth of approximately 185 feet bgs, while the sub-slab ventilation systems were designed to remove fugitive vapors from beneath the floor slabs of the Canyon Center strip mall building before the vapors intrude into the building interior through cracks and penetrations.

The SVE system collected the emissions from the five sub-slab ventilation systems as well as five SVE wells and discharged the emissions through a single 40-foot tall vent stack.

The five sub-slab ventilation systems were installed in February 2012 as an abatement measure and operated until March 2013. The sub-slab ventilation systems were modified and are now operated in conjunction with the SVE system.

Sub-slab ventilation system SSV-1 was modified by installing new piping for the sub-slab ventilation system at a depth of approximately 6 inches below grade within the pea gravel and beneath the vapor barrier. The new sub-slab ventilation piping consists of 2-inch diameter schedule 40 PVC pipe with eight 1-foot long sections of 0.010-inch slotted well screen installed at intervals throughout the tenant space. The new sub-slab system piping was attached to the existing 4-inch PVC piping at the north wall of the tenant space. This modification was implemented to improve vapor recovery beneath the former dry cleaner tenant space.

Upon startup of the remediation system, all tenant spaces were well below the U.S. EPA RSL for Indoor Industrial Air for PCE. Within three months after startup of the remediation systems, the former Gelato Café, Chef Ming, and the former Milo's Dry Cleaner were all non-detect for PCE in indoor air.

1.2.5 System Operation and Closure Verification Monitoring

During operation of the SVE and sub-slab ventilation systems, the indoor air and subsurface soil gas concentrations were monitored as specified in the approved CAP. The indoor air cleanup levels were met for all locations by February 27, 2014; and were non-detectable (for PCE and trichloroethylene) in all locations by April 29, 2014. Cleanup levels for subsurface soil vapors were met by August 25, 2014. Wasatch continued to operate the remediation systems until December 5, 2014, when the systems were shut down for the first attempt at conducting closure verification monitoring.

Two closure verification monitoring events were conducted subsequent to the December 2014 shutdown of the remediation systems. The first closure monitoring event was conducted on March 5, 2015; the second closure verification monitoring event was conducted on June 4, 2015. The laboratory analytical results from the first two closure verification monitoring events indicated that PCE concentrations in sub-slab soil vapor, subsurface soil vapor, and indoor air were all increasing.

Although none of the Site-Specific Risk-Based Cleanup Levels were exceeded during closure verification monitoring conducted in 2015, a clear trend of increasing PCE concentrations began to emerge upon evaluation of the second round of closure verification monitoring data, indicating that rebound was occurring. Therefore, in accordance with the procedures presented in the CAP Implementation Report and approved by the DSHW, the remediation systems were restarted on June 22, 2015. Closure verification monitoring was discontinued and routine remediation system operation, emissions monitoring and reporting, and monitoring of subsurface soil vapor were resumed.

The systems were operated through April 24, 2018, when based on the data, the systems were once again shut down and closure verification monitoring was resumed. Closure verification monitoring events following the April 2018 shutdown were conducted on July 23 and October 23, 2018; and January 23 and May 3, 2019. The first three rounds of closure verification monitoring samples were collected with all systems off (and having been off since April 24, 2018). At the

request of the Utah Division of Waste Management and Radiation Control (DWMRC) [formerly DSHW], the last round of closure verification monitoring samples was collected with the SVE and sub-slab ventilation systems running (and having been running for a minimum of two full days).

1.2.6 Results of Closure Verification Monitoring and Regulatory Closure

Wasatch issued a Closure Verification Monitoring Report and Request for Regulatory Closure on May 24, 2019. The results of the closure verification monitoring indicated that the cleanup levels relevant to the Facility have been met since 2014 at all of the specified sampling locations; and the Mann-Kendall trend analyses for the closure verification monitoring sampling locations indicate either "statistically significant evidence of a decreasing trend at the specified level of significance" or "insufficient statistical evidence of a significant trend at the specified level of significance" accompanied by negative Mann-Kendall Test Values and negative slopes for both the Ordinary Least Squares (OLS) regression lines and the Theil-Sen trend lines for all sampling locations (i.e., no statistically significant evidence of increasing PCE concentrations). Wasatch, on behalf of Dee's, formally requested regulatory closure of the Facility with a status of "Corrective Action Complete with Controls" pending completion of a Site Management Plan (SMP) and Environmental Covenant (EC). DWMRC concurred with the findings and issued a regulatory closure letter dated September 9, 2019.

2. RISK ASSESSMENT

A Human Health Risk Assessment (HHRA) was performed as part of the investigation and remediation of the Canyon Center Facility. The Baseline Risk Assessment Report, Canyon Center, Sandy, Utah was published on April 24, 2014. The HHRA was performed under Utah Administrative Code Rule 315-101 (UAC R315-101). Under this rule, a Facility may choose to perform a risk assessment assuming current and likely future land use conditions.

As groundwater was impacted and was not monitored, and soil sampling is impractical due to the installation of a vapor barrier in the building interior, site-specific risk-based cleanup levels (SSRBCLs) developed in the HHRA are based on indoor air concentrations, sub-slab soil gas concentrations, and subsurface soil gas concentrations. An indoor air SSRBCL was developed for Chef Ming based on their typical occupancy time per week (12 hours per day, six days per week). The SSRBCLs were established as follows:

- PCE Indoor Air Concentration for Protection of Current Workers: 47 µg/m³,
- PCE Indoor Air Concentration for Protection of Chef Ming Workers: 25 µg/m³,
- PCE Subslab Soil Gas Concentration (1.5 feet bgs) for Protection of Future Workers: 55,000 µg/m³, and
- PCE Soil Gas Concentration, Any Depth, for Protection of Groundwater: 72,400 µg/m³.

UAC R315-101 normally requires the performance of an ecological risk assessment (ERA). Based on the absence of habitat, the risk assessment document contained an application for a waiver from the ERA requirement.

3. SITE MANAGEMENT

3.1 Activity and Use Limitations

The EC to be recorded against the Restricted Property imposes the following activity and use limitations on the Restricted Property:

3.1.1 Site Management Plan

The Owner shall comply with this SMP.

3.1.2 Land Use Limitations

The Restricted Property is suitable for residential, commercial, and industrial use consistent with applicable local zoning laws; provided that both residential land use and commercial land uses with comparable exposure risks to residential land uses (such as schools, day care facilities, managed care facilities, hospitals and any other type of business that would require a person or caretaker to reside on the Property) are restricted to above the ground floor (with a parking structure, commercial, or industrial use on the ground floor). Planting crops or fruit trees for consumption by humans or livestock is prohibited. The operation of health care facilities, such as an urgent care facility or a doctor or dental office, are allowed if the facility does not have an exposure risk comparable to a residential exposure risk. No Director approval is necessary for any land use consistent with this paragraph.

3.1.3 Disturbance Limitations

Appropriate care shall be exercised during subsurface construction, remodeling, and maintenance activities related to human-occupied structures on the Restricted Property so as to prevent damage to any vapor mitigation measures which have been installed, and to ensure appropriate repairs are promptly made in the event damage does occur. Repairs shall be made within a reasonable period of time from the discovery of the damage.

3.1.4 Vapor Intrusion Limitations

For future non-residential enclosed structures intended for human occupancy on the ground floor, appropriate vapor intrusion mitigation measures are required to mitigate exposure risks from the vapor intrusion pathway. Appropriate vapor mitigation measures may include, but are not limited to: installation of a suitable vapor barrier, installation of a passive or active sub-slab or sub-membrane depressurization system, or construction of occupied structures utilizing positive-pressure ventilation systems. Vapor mitigation measures for future structures shall be subject to review and approval by the Director prior to implementation. If future data demonstrate an acceptable level of risk relative to the vapor intrusion pathway, future residential land use and commercial land uses with comparable exposures to residential use (such as schools, day care facilities, youth activity programs, managed care facilities, hospitals and any other type of business that would require a person or caretaker to reside on the Property) may be permissible on the ground floor subject to prior notification to, and approval by, the Director; and the recording of an amendment to the EC.

3.2 Maintenance, Access, and Inspections

Under the EC, the Owner of any portion of the Restricted Property, shall be responsible for compliance with the SMP and EC.

The Holder under the EC and the Director and their respective authorized agents, employees, and contractors shall have rights of reasonable access to the Restricted Property at any time after the effective date of the EC for inspections and monitoring of the compliance with the EC, and for complying with the terms and conditions of the EC and this SMP. Nothing in this SMP shall be construed as expanding or limiting any access and inspection authorities of the Holder or Director under the law.

3.2.1 Notice

Any party or person desiring to access the Restricted Property under authority of the EC shall provide notice to the then current Owner of the affected portion of the Restricted Property not less

than 48 hours in advance of accessing the Restricted Property, except in the event of an emergency condition which reasonably requires immediate access. In the event of any such emergency condition, the party exercising this access right will provide notice to the then current owner of the affected portion of the Restricted Property requiring access as soon thereafter as is reasonably possible.

3.2.2 Disruption

To the extent that the Holder, the Director or their authorized representatives, conduct any activities on or within any portion of the Restricted Property, they will use reasonable efforts to comply with the then current Owner's business operation and security needs and requirements, and will conduct such activities so as to cause the least amount of disruption to the use of the affected portion of the Restricted Property as may be reasonably possible. Any person who conducts any activities shall repair or replace any improvements or landscaping damaged on the affected portion of the Restricted Property by such activities. The Director will determine what needs, requirements, and activities are reasonable. Should the Director's activities cause damage to the affected portion of the Restricted Property improvements or landscaping that are not repaired or replaced, the injured party may present a claim against the State of Utah in accordance with Utah law.

3.3 Environmental Covenant

An EC containing the above referenced activity and use limitations will be recorded with the Office of the County Recorder of Salt Lake County, Utah.

3.4 Monitoring Requirements

The Owner shall comply with Utah Division of Air Quality requirements for monitoring emissions, if any, resulting from future vapor mitigation measures installed at the Restricted Property.

3.5 Site Management Contacts

Inquiries concerning the SMP should be directed to the following:

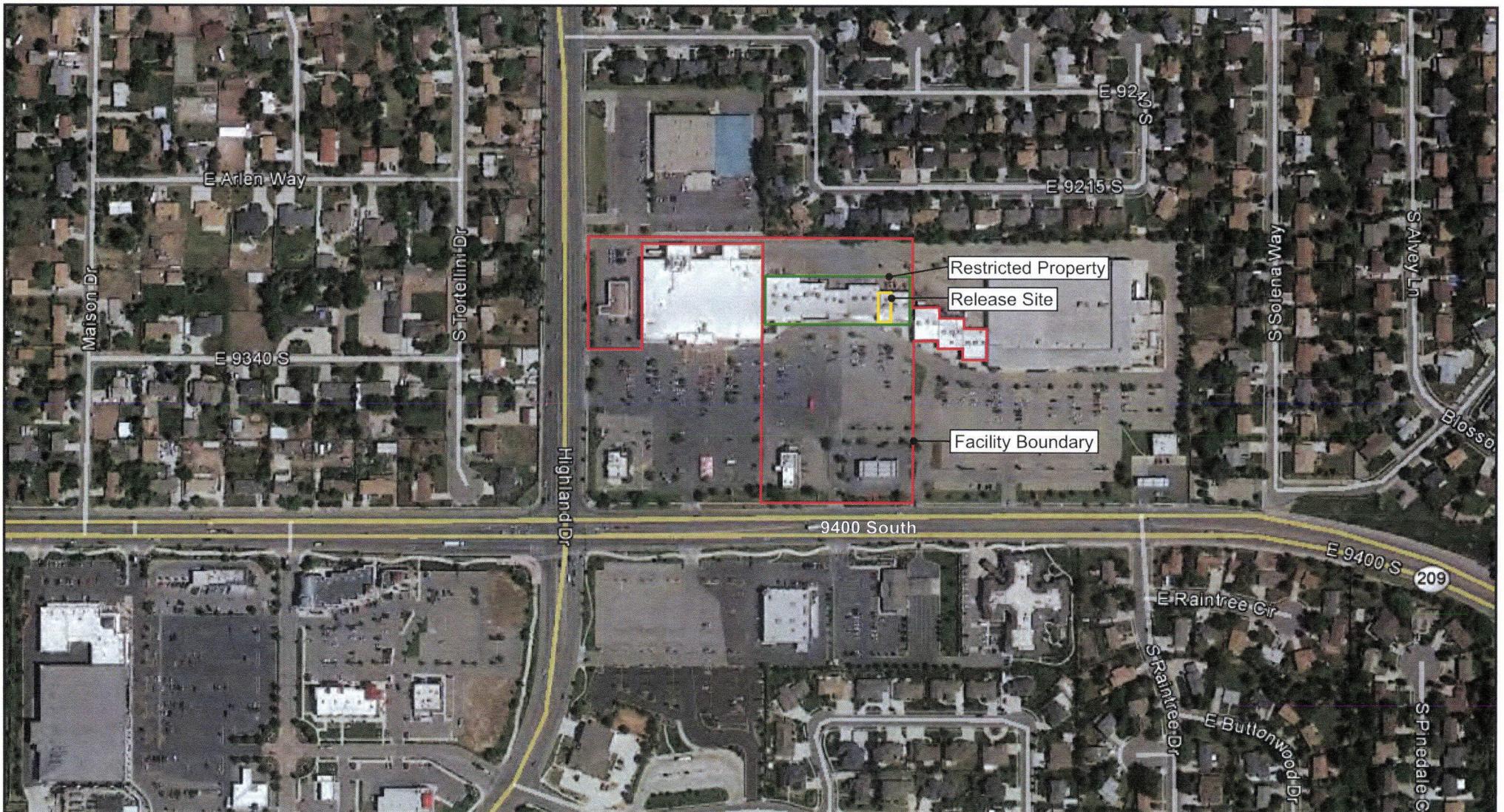
JPK Canyon Center Owner LLC

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EXHIBIT A

**Facility Location Map
Facility Feature Map
(2 pages)**



Scale: 1" equals
approximately 230'

- Approximate release site boundary
- Approximate facility boundary
- Approximate restricted property boundary

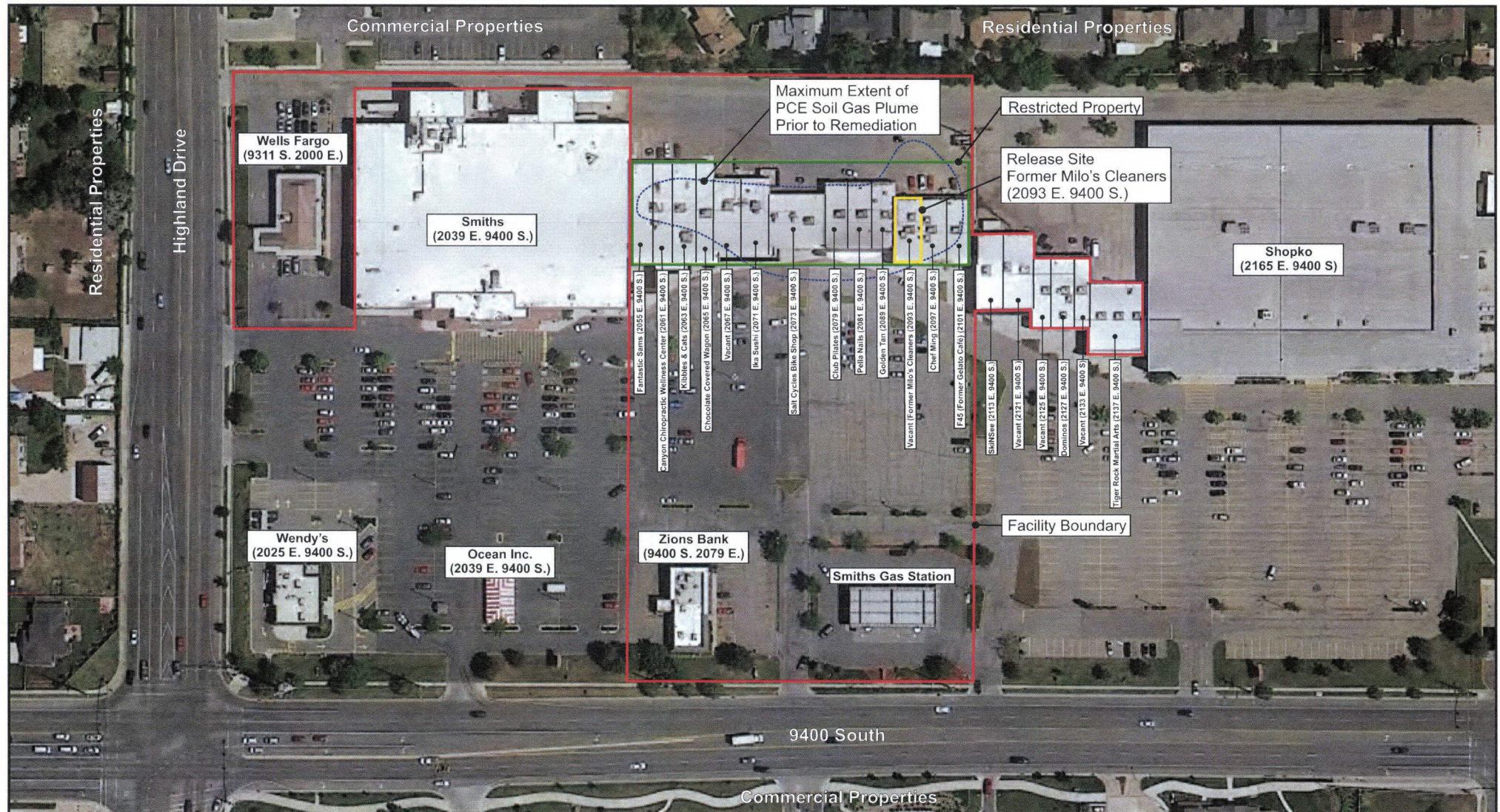


Environmental Science and Engineering

Facility Location Map

Former Milo's Cleaners, Canyon Center
2093 East 9400 South
Sandy, Utah

PROJECT NO.	DRAWING DATE	FIGURE
1771-005H	September 13, 2019	1



Scale: 1" equals approximately 105'

- Approximate release site boundary
- Approximate facility boundary
- Approximate restricted property boundary
- Approximate maximum extent of PCE soil gas plume prior to remediation

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Facility Feature Map
Former Milo's Cleaners, Canyon Center
2093 East 9400 South
Sandy, Utah

PROJECT NO.	DRAWING DATE	FIGURE
1771-005H	September 13, 2019	2