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By Division of Waste Management and Radiation Control at 4:58 pm, Nov 22, 2022

Terracon

November 22, 2022

Utah Department of Environmental Quality Division of Waste Management and Radiation Control
195 North 1950 West
Salt Lake City, Utah 84116

Attn: Brad Lauchnor P.E., P.G.
P: 801-536-0254
E: blauchnor@utah.gov

Re: Draft Risk Evaluation and Site Management Plan
Former Ace Auto
47 East 700 South
Salt Lake City, Utah
Terracon Project No. 61227303

Dear Mr. Lauchnor:

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed Risk Evaluation and Site Management Report for the above-referenced site. These reports were produced to satisfy the requirements of the Utah Department of Environmental Quality (DEQ) Division of Waste Management and Radiation Control's (DWMRC) Environmental Cleanup Program in order to satisfy the Remedial Action Complete with Controls determination for the site and for site redevelopment as impacts exceeding unrestricted land use screening levels remain on the site post remedial action.

Please review these reports and let me know if you have any immediate questions or concerns. We appreciate the opportunity to be of service to you on this project.

Sincerely,
Terracon Consultants, Inc.

Andrew S. Turner
Project Manager

Attachments

Risk Evaluation

Former Ace Auto
47 East 700 South
Salt Lake City, Utah

September 16, 2022, Revised November 3, 2022

Terracon Project No. 61227303

Prepared for:
700 Flatirons, LLC

Prepared by:
Terracon Consultants, Inc.
Midvale, Utah

Terracon

September 16, 2022 Revised November 3, 2022

700 Flatirons, LLC
c/o Mr. Alexander F. Paul and Mr. Gary Poole
5025 Pearl Parkway
Boulder, Colorado 80301

Re: Post Remedial Action Risk Evaluation
Former Ace Auto
47 East 700 South
Salt Lake City, Utah
Terracon Project No. 61227303

Dear Mr. Paul and Mr. Poole:

Terracon is pleased to provide this Risk Evaluation performed for the above-referenced site to satisfy the requirements of the Utah Department of Environmental Quality (DEQ) Division of Waste Management and Radiation Control's (DWMRC) Environmental Cleanup Program. The Risk Evaluation is required as impacts exceeding unrestricted land use screening levels remain on the site post remedial action.

We appreciate the opportunity to have performed these services for you. Please contact our office at (801) 545-8500 if you have questions regarding this information.

Sincerely,

Terracon Consultants, Inc.

Andrew S. Turner
Project Manager

Michael D. Johnson
Michael Johnson
Authorized Project Reviewer

Attachments

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

The former Ace Auto Site (site) consists of 0.48 acres of land at 47 East 700 South in Salt Lake City (**Appendix A**, **Exhibits 1** and **2**). The building is approximately 13,000 square feet in size, constructed of masonry block walls and slab on grade concrete floors. The building extends to the property boundary lines on the north, south, and east side of the lot. Asphalt pavement bounds the building on the west side to the property lines. Adjacent properties consist of commercial properties on the east and west sides that have structures, 700 South Street to the south, and a paved parking lot to the north.

1.1 Background Information

The former Ace Auto facility performed chrome plating activities. A release originating from the operation was identified and reported to the UDEQ Division of Environmental Response and Remediation (DERR) after an initial investigation in 2011. As impacts in the form of hexavalent chromium were identified at the site, the site was subsequently enrolled in the *Environmental Cleanup Program* under the DWMRC by the Owner.

Multiple investigations have been conducted at the site beginning in 2011. The investigations identified impacts to soil and groundwater related to the chrome plating operation in the form of metals and volatile organic compounds (VOCs) at concentrations that exceeded the EPA Maximum Contaminant Levels (MCLs) and Regional Screening Levels (RSLs). Chromium impacted soils were encountered at depths ranging from immediately below the floor slab to more than 9 feet below ground surface (bgs) in the northeastern portion of the site and extending to the south property line. Elevated concentrations of lead, mercury, methylene chloride, 1,2-dichlorobenzene, and 1,4-dichlorobenzene were also detected in soils and groundwater adjacent to a sump inside the building.

A Remedial Action Plan (RAP) for the site was developed by Terracon in August 2018 and revised in December 2018. An amendment to the RAP was submitted on May 4, 2020 and was approved by DWMRC on May 13, 2020.

The objectives of the RAP were to remove/stabilize the main contaminant of concern, hexavalent chromium, by:

(i) Controlling the source of chromium impacts to groundwater via polysulfide addition to convert hexavalent chromium to less toxic and less mobile trivalent chromium,
(ii) Controlling exposure pathways for soil with elevated chromium levels,
(iii) Facilitating site redevelopment through a combination of engineering and institutional controls coordinated under a Site Management Plan,
(iv) Facilitating eventual conditional closure of the site after chromium levels are verified to be stable.

In accordance with the approved RAP, removal of chromium impacted soils was conducted in two source areas inside the building, as access allowed, due the presence of an interior bearing wall located between the plating room and a sump (**Appendix A**, **Exhibit 2**).

The excavations were terminated generally at the depth of groundwater, with the exception of the sump area, where excavation was advanced to approximately 12 feet bgs in order to remove the sump. A general layout showing the extents of excavation is presented in **Exhibit 3**. Confirmation soil sampling locations are presented in **Exhibit 4** and results are presented in **Appendix B, Tables 1** and **2**.

Prior to backfill of the excavations, infiltration galleries were installed in the excavation areas as well as one on the exterior of the building in the downgradient direction to allow for injection of calcium polysulfide to treat groundwater.

Four groundwater monitoring wells (MW-5R, MW-6, MW-7, and MW-8, **Appendix A, Exhibit 2**) were installed at the site, one within the building (MW-5R) and the other three outside along the property boundary for the collection of groundwater samples to document the effectiveness of the injections.

The March 2022 groundwater monitoring event was the fourth round of groundwater sampling conducted after the most recent injection event. Per the approved RAP, the goals stated in the RAP were a 95% reduction in field-filtered concentrations of total chromium and hexavalent chromium or concentration decreases for four consecutive sampling events with the three downgradient wells showing that other contaminants of concern were at or below EPA MCLs. Groundwater sampling results are provided in **Appendix B, Tables 4 and 5**.

The RAP goal of a 95% reduction in chromium and hexavalent chromium in groundwater was achieved during March 2022 with the reduction of hexavalent chromium and total chromium of over 99% from pre-injection concentrations. Concentrations of metals were reported above regulatory screening levels in the groundwater events due to the change in reduction oxidation potential at the site from the injection events. Reductions of hexavalent and total chromium concentrations of at least two orders of magnitude were assumed achievable in the RAP and have been met. Other liberated metals are expected to attenuate as downgradient oxidative environments are encountered.

A Remedial Action Implementation Report was submitted to DWMRC on November 4, 2021 documenting the implementation of the RAP. It was approved by DWMRC on April 1, 2022.

Based on the most recent groundwater sampling event, it appears that the main objectives of the RAP to remove source material and stabilize the main contaminant of concern, hexavalent chromium, have been achieved. Both chromium and hexavalent chromium concentrations in groundwater have decreased by over 99% and are now at apparent stable levels. Based on the

basic objectives of the RAP being achieved, DWMRC issued a Corrective Action Complete with Controls Designation on July 14, 2022 (**Appendix D**).

The corrective action response actions were based on excavation limitations and the proposed reduction of hexavalent groundwater concentrations. As stated in the RAP, residual impacts not removed from the site will be managed in place, with risk managed through the engineering control of the on-site building and paved parking supported by institutional controls. The management plan for the risk posed by the impacts remaining in-place will be the Site Management Plan (SMP) and Environmental Covenant (EC).

1.2 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report.

1.3 Additional Scope Limitations

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during the scopes of work completed to date. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

1.4 Reliance

This report has been prepared for the exclusive use of 700 Flatirons, LLC. Use or reliance by any other party other than 700 Flatirons, LLC and DWMRC is prohibited without the written authorization of 700 Flatirons, LLC, and Terracon. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal and Terracon's Terms and Conditions. The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to the client and all relying parties unless otherwise agreed in writing.

2.0 CONCEPTUAL SITE MODEL

Terracon prepared this Risk Evaluation using the U.S. Environmental Protection Agency's (EPA's) online Regional Screening Level (RSL) calculator (https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search) to evaluate the cumulative risk posed by chemicals remaining at the site in soil and groundwater. The first step was to develop a Conceptual Site Model (CSM), which is used to document the potential for exposure to chemicals at the site based on the source(s) of contamination, the release mechanism(s), potential routes of exposure (ROE), representative concentrations of chemicals of interest (COI), and receptors (i.e., property occupants) in order to evaluate site-specific risks associated with the COIs remaining. A graphical representation of the CSM is presented as **Exhibit 5**.

Concentrations of hexavalent chromium, arsenic, and mercury were reported to exceed an RSL in extent of excavation soil samples. Confirmation samples collected from the extent of excavation showing remaining impacts to soil are presented in **Table 1** (Metals) and **Table 2** (VOCs).

Concentrations of dissolved cadmium, lead, mercury, and hexavalent chromium were reported above an MCL in monitoring wells after the final injection event, and concentrations of chloroform, 1,4-dichlorobenzene, and 1,2-dichloroethane exceeded a VISL. A summary of groundwater sample analytical results collected from the monitoring well network is presented in **Table 4** (Metals) and **Table 5** (VOCs).

The objective of the Risk Evaluation was to evaluate whether remaining on-site impacted soil and groundwater is contaminated to the extent it poses a human health risk at levels above target maximum risk levels and hazard indices. To evaluate the risk posed by the remaining contaminants, the highest concentrations of the remaining COIs were evaluated. Concentrations of the COIs identified in soils were first compared to the EPA's RSL Generic Tables and Dilution Attenuation Factor x 20 (DAF 20) screening level concentrations. EPA guidance indicates the DAF 20 is appropriate for source sizes up to 0.5 acres (EPA 1996). COI concentrations in groundwater were compared to EPA's Maximum Contamination Levels (MCLs) for drinking water and Target Groundwater Concentration Vapor Intrusion Screening Levels (VISLs). **Tables 3** and **6** show the concentrations of COIs in soil and groundwater, respectively.

The following subsections describe the key elements and aspects of the Risk Evaluation.

2.1 Sources, Release Mechanisms, and Affected Media

The site is located at 47 East 700 South, Salt Lake City, Utah, and is currently vacant. Based on investigations conducted at the site, previous use of the site performed chrome plating operations, which resulted in releases of metals and VOCs to surrounding soils that ultimately migrated vertically into deeper soils and groundwater.

Source soils were excavated and disposed of at a permitted offsite location. Confirmation soil samples reported five VOCs above their respective laboratory reporting detection limits. The concentrations did not exceed DAF 20 screening levels. Confirmation soil samples reported seven metals respective laboratory reporting detection limits. Hexavalent chromium, arsenic, cadmium, and mercury reported concentrations above DAF 20 screening levels. The COIs for soil for this Risk Evaluation are listed in **Table 3**.

Following the soil excavation, groundwater was treated with calcium polysulfide in two separate events with groundwater monitoring conducted for five quarters. The results of the final round of groundwater monitoring reported eight VOCs above their respective laboratory reporting detection limits and two were reported at estimated (J-flag values). No VOCs were reported above an MCL. Two compounds exceeded a VISL. Six dissolved metals were above their respective laboratory reporting detection limits. Dissolved hexavalent chromium, cadmium, chromium, and lead were reported above MCLs (using MCL for total chromium for hexavalent chromium). The COIs for groundwater for this Risk Evaluation are listed in **Table 6.**

2.2 Receptors and Routes of Exposure

The current and future use of the site is commercial with no significant renovations to the current building. In order to be conservative, this Risk Evaluation uses residential land use to represent the potential residential receptors. The following routes of exposure were evaluated in this Risk Assessment.

Soil Routes of Exposure: Ingestion of soil, inhalation of vapor emissions and particulates, dermal contact with soil, and leaching to groundwater are the routes of potential exposure considered for the Risk Evaluation. As the proposed future use is unchanged from its past usage and the site is completely covered with concrete and/or asphalt where residents/workers will not have direct access to soil, these routes of exposure are not anticipated to be complete pathways for future residents/workers; however, to provide a conservative evaluation, they were included in the Risk Evaluation.

Groundwater Routes of Exposure: Inhalation from groundwater emissions, ingestion, and dermal contact are the routes of potential exposure considered for the Risk Evaluation for future residents or workers. As the proposed future use still has the site completely covered with concrete and/or asphalt where residents will not have direct access to groundwater, these routes of exposure are not anticipated to be complete pathways for future residents; however, to provide a conservative evaluation, they were included in the Risk Evaluation.

Soil Vapor Routes of Exposure: Media-specific soil vapor data is not available for the site. However, the 2002 Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites includes an evaluation of soil vapor intrusion based on soil and groundwater concentrations (EPA, 2002). Because direct inhalation of vapors from soil or groundwater is generally more

conservative than future vapor intrusion and subsequent indoor vapor inhalation, those more conservative values were used for this study.

2.3 Chemicals of Interest (COI)

2.3.1 Soils

Chemicals of Interest (COI) were identified as those compounds detected above laboratory detection limits in extent of excavation confirmation samples. Hexavalent chromium exceeded the DAF 20 of 0.0134 mg/kg and exceeded industrial and/or residential RSLs in all samples (**Table 2**). Mercury exceeded the residential RSL in two samples, both the residential and industrial RSLs in two samples, and the DAF-20 value in eight samples. Arsenic was reported at concentrations above both the commercial RSL of 3 mg/kg and the DAF-20 of 5.8 mg/kg.

The RAP Implementation report determined that arsenic was not above the DAF-20 nor was it measured in groundwater and is not considered a site COC (e.g., background). However, in order to fully determine whether detected arsenic concentrations in soil can be considered to be typical of background concentrations expected in the surrounding area, Terracon evaluated four specific sites within a one-mile radius of this site. In order to eliminate potential bias, these sites met the following criteria:

1. Terracon conducted the soil sampling, and the soil sampling was conducted using the same basic approved environmental techniques and laboratory supplied and approved containers. Two of the sites were Salt Lake County Brownfields Assessments Phase II Environmental Assessment sites (Richmond Community Gardens, Acres ID 242322, October 23, 2020 and Lelis Transmissions, Acres ID 237101, September 30, 2019). Both of these sites also had an approved Quality Assurance Project Plan detailing the sampling and associated quality controlled procedures.
2. Based on both historical research and Phase I Site Assessments conducted for these sites, there are no indications that heavy metals were a concern on the site.
3. There were no significant or widespread exceedances of other metals over regulatory screening levels other than arsenic.

The results of this comparative investigation are as follows:

1. The four sites had a range of arsenic concentrations from 3.04 to 41.1 mg/kg. The range of confirmation arsenic concentrations at the former Ace Auto facility is 3.71 to 18.6 mg/kg.
2. Average arsenic concentration from the four sites is 10.6 mg/kg. Average arsenic concentration at the former Ace Auto facility is 11.9 mg/kg.
3. Median arsenic concentration from the four sites is 9.69 mg/kg. Median arsenic concentration from the former Ace Auto facility is 12.3 mg/kg.
4. Standard deviation from the four sites is 5.5.

Based on these results, the range of arsenic concentrations at the former Ace Auto facility is well within the range of four surrounding, non-metal contamination sites sampled by Terracon. Both the average and median values are well within one standard deviation calculated from these results. Terracon also did a wide review of numerous other sites within the Salt Lake Valley region and consulted known literature regarding background arsenic concentration in soil. This evaluation also indicated that soil samples collected from this site are well within expected background. As a result, the arsenic concentrations in soil at the former Ace Auto facility can be statistically considered to be in-line with normal background concentrations. As the concentrations of arsenic appears to be typical of naturally occurring soils in the area, it was not considered a COI at the site.

Five VOCs were reported above laboratory reporting limits in soil. All the compounds analyzed were present at concentrations below the RSLs (**Table 2**) and DAF 20 (**Table 3**) screening levels. The list of COIs for soil and the maximum concentrations detected at the site post-corrective action (excavation samples) are presented in **Table 3.**

2.3.2 Groundwater

The final groundwater sampling results (March 2022) showed that VOCs in groundwater had decreased to below MCLs in all wells. Chloroform, 1,4-dichlorobenzene and 1,2-dichlorothane were reported to exceed a VISL, although chloroform was an estimated value (J flagged). Ten VOCs were reported above laboratory reporting limits. Dissolved chromium, cadmium, lead, hexavalent chromium, and mercury in at least one well exceeded MCLs. Additionally, barium and cadmium were reported above laboratory reporting limits. The highest concentration of each compound is assumed to be representative of site conditions. **Table 6** lists the COIs for groundwater and the maximum concentrations reported in the final round of groundwater sampling.

3.0 RSL CALCULATOR

3.1 RSL Calculator Data Inputs

Parameter	Input
Screening Level Type	Regional Screening Levels (RSLs).
Hazard Quotient	1.0 – was selected at the direction of Utah DEQ to evaluate the non-cancer risk posed by COIs at the site.
Target Risk	10^{-6} (i.e., one in one million) – was selected .

Parameter	Input
Scenario	Resident – the proposed future use of the site is commercial. However, the Resident was selected as the receptor (see Section 2.2) in order to be conservative and to evaluate this land use, should any changes occur on the site in the future. Other scenarios are also presented below.
Media	The calculator was run for both the soil and tap water media.
Screening Level Choice	Site Specific inputs was selected, as required by the next choice, "Risk Output." Within this parameter the option "Database Hierarchy Defaults" was selected.
Risk Output	Risk Output was affirmative as this directs the RSL Calculator to present site-specific risk posed by each individual COI and the cumulative risk.
RfD/RdC Choice	Chronic
Chemicals	**Soils** – the COIs identified for soil at the site were entered in this section, as discussed in Section 2.3.1 and listed in **Table 3 (Appendix B)**. **Tap Water** - the COIs identified for groundwater at the site were entered in this section, as discussed in Section 2.3.2 and listed in **Table 6 (Appendix B)**.
Particulate Emission Factor Wind Driven	The calculator allows for the selection of selected site-specific parameters, based on guidance from the updated Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (EPA, 2002). For the City - Salt Lake City was selected as the Climatic Zone. A regional generic particulate emission factor (PEF) was provided as needed (construction worker).
Volatilization Factor and Soil Saturation	The calculator allows for the selection of selected site-specific parameters, based on guidance from the updated Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (EPA, 2002). For the City - Salt Lake City was selected as the Climatic Zone. Groundwater temperature (T_W) – this was changed to 21 degrees Celsius, the highest approximate temperature measured during tall of the groundwater sampling events.
Volatilization Factor – Mass Limit	As noted above, based on EPA guidance, site-specific parameters selected in this section (EPA 2002): Average source depth (d_S)– 0.3 meters (1.0 feet), the shallowest approximate depth of impacts remaining at the site (just below the concrete); and City – Salt Lake City was selected as the Climatic Zone.

Terracon input the concentrations of all COIs. All other parameters were default parameters associated with the options described above, except where indicated.

3.2 Results of the Onsite Risk Evaluation

The following table summarizes the results from the EPA's software for the Residential Scenario.

Carcinogenic Risk	Non-Carcinogenic Hazard Index	
Soil = 0.0107	Soil (Adult) = 4.64	Soil (Child) = 21.8
Tap water = 0.0136	Tap water (Adult) = 22.7	Tap water (Child) = 26.9
Sum of Soil and Tap water = 0.0243	Sum of Soil and Tap water (Adult) = 27.3	Sum of Soil and Tap water (Child) = 48.7

The scenario was run for the Indoor Worker. However, a cumulative carcinogenic risk and hazard index were not calculated by the by the EPA for this scenario. Inputs and results are presented in **Appendix C**.

The following table summarizes the results from the EPA's software for the Outdoor Worker Scenario.

Carcinogenic Risk	Non-Carcinogenic Hazard Index
Soil = 0.000461	Soil (Adult) = 1.77

The following table summarizes the results from the EPA's software for the Construction Worker Scenario.

Carcinogenic Risk	Non-Carcinogenic Hazard Index
Soil = 0.0000671	Soil (Adult) = 22.1

Appendix C contains the input and output information from the EPA software.

As summarized above, the cumulative carcinogenic risk posed by the remaining chemicals at the site is 0.0243, above the target excess cancer risk identified for the site of 1×10^{-6}.

The cumulative non-carcinogenic hazard posed by the remaining chemicals at the site for an adult is 27.3 and 48.7 for a child. These calculated hazard indices are above the target hazard index of 1.

The scenarios listed above are for comparison and worst-case scenario purposes assuming no controls are in place. It was planned and approved by DWMRC that impacted soils above a Risk threshold would remain in-place after corrective action was completed. The plan to control the risk posed by the impacts remaining in-place in the RAP was a SMP imposing Activity and Land Use restrictions with an Environmental Covenant (EC) to be recorded on the title enforce the land use restrictions detailed in the SMP.

4.0 ECOLOGICAL RISK ASSESSMENT

The site was developed for commercial use since at least the 1940s and is in a commercial/industrial area in downtown Salt Lake City. No surface water bodies are located on the site or adjoining properties. Future use of the site is intended to be commercial with no additional excavation or demolition planned. Because of the long-term development of the site and the surrounding area and the proposed future development of the site, ecological receptors were deemed unlikely to exist at the site. As such, an ecological risk assessment was not performed.

5.0 CONCLUSION

This Risk Evaluation for the Former Ace Auto property evaluated the cumulative risk posed by chemicals remaining at the site in soil and groundwater post remedial action. Based on the results, the remaining chemicals present a risk to future residential or commercial receptors at the site if exposure is not managed properly. The impacts remaining in the soil appear to be isolated and confined to small, inaccessible areas in one location under the current walls and building and impacts to groundwater are anticipated to continue to degrade.

Institutional controls in the form of a Site Management Plan and Environmental Covenant that outline continuing obligations and land use limitations associated with the site will ensure the exposure pathways remain incomplete will protect future occupants of the site from impacts remaining at the site.

As part of the Site Management Plan, the current on-site groundwater monitoring wells will be properly abandoned, groundwater will not be accessed, and there is no exposure to soils through maintenance of the building footprint and asphalt pavement, these risks can be properly mitigated and managed.

6.0 REFERENCES

Shacklette, H.T., and J.G. Boerngen, USGS, 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States*. United States Geologic Survey publication Professional Paper 1270.

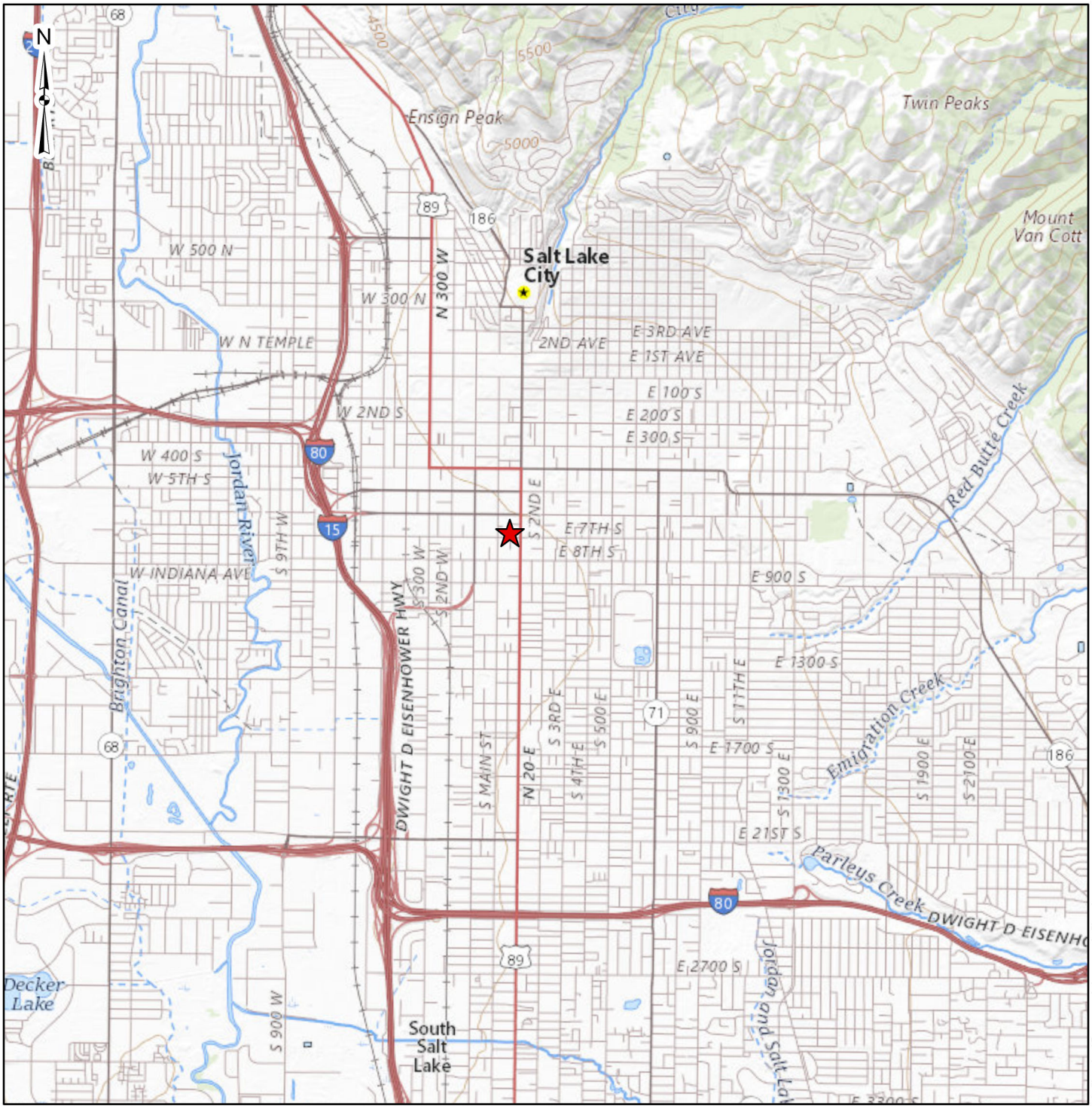
United States Environmental Protection Agency, Soil Screening Guidance: Technical Background Document, 1996.

United States Environmental Protection Agency, Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, 2002.

United States Environmental Protection Agency, Regional Screening Levels for Chemical Contaminants at Superfund Sites; https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

Utah Department of Environmental Quality, Division of Waste Management and Radiation Control, 1950 West North Temple, Salt Lake City, Utah; (801) 536-4100; https://deq.utah.gov/division-waste-management-radiation-control

APPENDIX A
EXHIBITS



★ Approximate Site Location

0 0.5 1 2 Miles

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:	61207235
Date:	Aug 2021
Drawn By:	NOW
Reviewed By:	JRG

Terracon
6949 S High Tech Dr, Ste 100 Midvale, UT 84047
PH. (801) 545-8500 terracon.com

Topographic Map

Former Ace Auto
47 East 700 South
Salt Lake City, Utah

Exhibit

1

N:\GIS\61177600_Blanchard-FormerAceAuto\maps\Proposed_Layout_Infiltration\Proposed_Layout_Infiltration.aprx

Excavation Area
Trench/Infiltration Gallery
Bearing Wall
Monitoring Wells
Injection Vault
Site Boundary

0 10 20 40 Feet

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:	61207235
Date:	Aug 2021
Drawn By:	AST
Reviewed By:	BBB

Terracon
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Site Diagram

Former Ace Auto
47 East 700 South
Salt Lake City, Utah

Exhibit

2

N:\GIS\61177600_Blanchard-FormerAceAuto\maps\Proposed_Layout_Infiltration\Proposed_Layout_Infiltration.aprx

Monitoring Wells
Excavation Area
Bearing Wall
Trench/Infiltration Gallery
Injection Vault
Former Sump
Unexcavated Area
Site Boundary

Feet
0 5 10 20

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:	61207093
Date:	Aug 2021
Drawn By:	AST
Reviewed By:	BBB

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Excavation Limits

Former Ace Auto
47 East 700 South
Salt Lake City, Utah

Exhibit

3

N:\GIS\61177600_Blanchard-FormerAceAuto\maps\Proposed_Layout_Infiltration\Proposed_Layout_Infiltration.aprx

Soil Sample
Monitoring Wells
Excavation Area
Bearing Wall
Trench/Infiltration Gallery
Injection Vault
Former Sump
Unexcavated Area
Site Boundary

Feet
0 5 10 20

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:	61207093
Date:	Aug 2021
Drawn By:	AST
Reviewed By:	BBB

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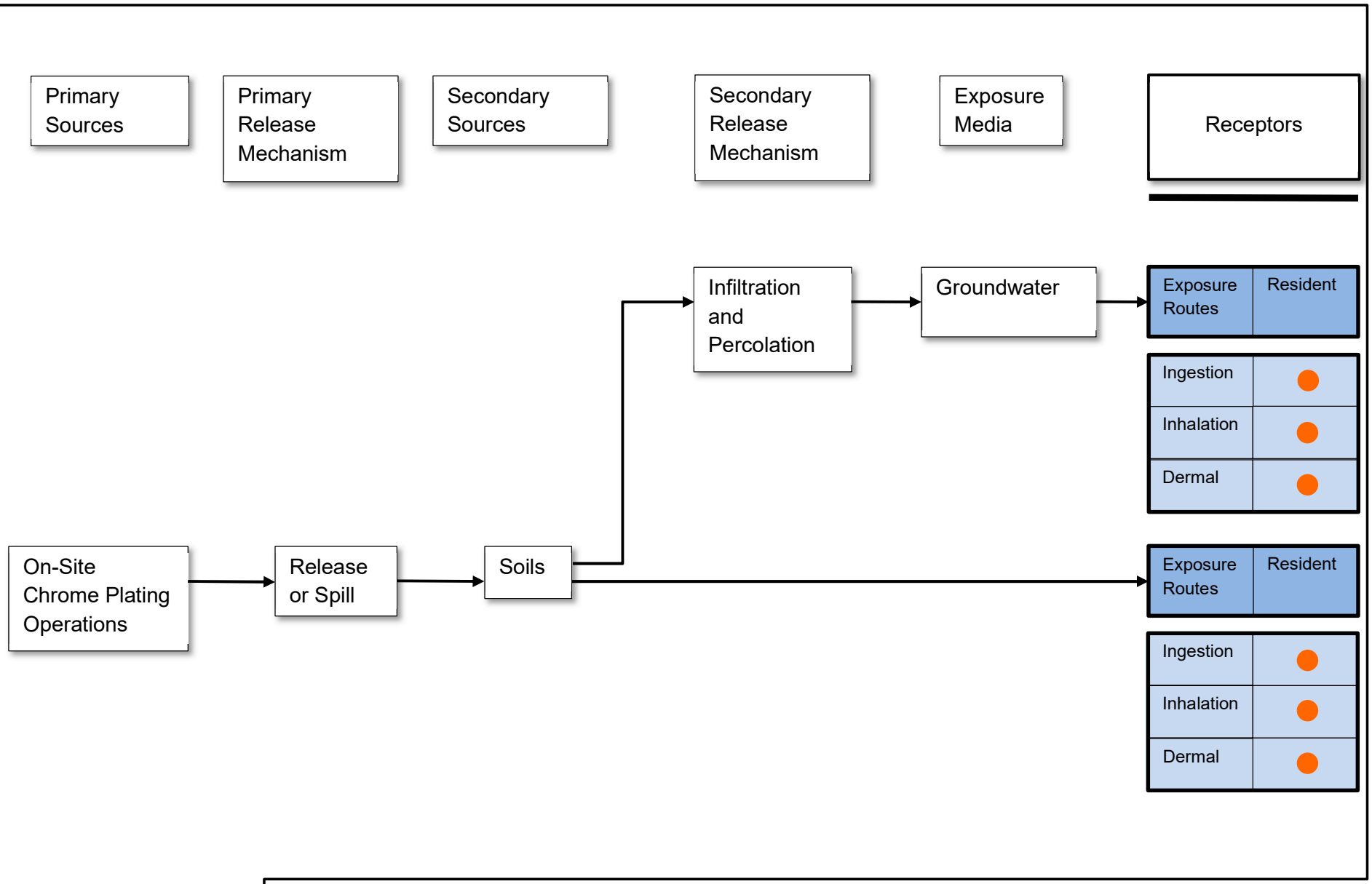
Excavation Soil Sample Locations

Former Ace Auto
47 East 700 South
Salt Lake City, Utah

Exhibit

4

N:\GIS\61177600_Blanchard-FormerAceAuto\maps\Proposed_Layout_Infiltration\Proposed_Layout_Infiltration.aprx



Project Manager: AST	Project No. 61207235	Terracon 6949 S High Tech Drive Midvale, Utah 84047	CONCEPTUAL SITE MODEL Former Ace Auto 47 East 700 South Salt Lake City, Utah
Drawn by: AST	Scale: AS SHOWN		
Checked by: AA	File Name: Exhibit		
Approved by: AA	Date: 7/9/2022		

Exhibit 5

APPENDIX B
TABLES

TABLE 1 – METALS: SOIL CONFIRMATION ANALYTICAL RESULTS
700 Flatirons, LLC - Ace Auto
47 East 700 South, Salt Lake City, Utah
Terracon Project No. 61227303

Method			3060A/7196A		6010B		6010B		6010B		6010B		6010B		6010B		6010B		7471A	
Analyte			HEX. CHROMIUM		ARSENIC		BARIUM		CADMIUM		CHROMIUM		LEAD		SELENIUM		SILVER		MERCURY	
Units			mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
RSL Residential			0.3		0.68		15000		7.14		NE		400		390		390		11	
RSL Industrial			6.3		3		220000		100		NE		800		5800		5800		46	
Background			NA		<0.10 - 97 *		70 - 5,000		NE		3 - 2,000		<10 - 700		<0.1 - 4.3		NE		< 0.01 - 4.6	
Lab Sample ID	Client Sample ID	Date Collected	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
L1251221-01	#1 F @ 8.5'	08/12/2020	**46.1**		**4.78**		**80.3**		**0.868**		**220**		**22.4**		**1**	J	<1.28		**8.83**	
L1251221-02	#2 SW @ 7'	08/12/2020	**60.5**		**10.1**		**91.8**		**1.39**		**544**		**31.8**		**1.36**	J	<1.22		**5.54**	
L1251221-03	#3 SW @ 8.5'	08/13/2020	**2830**		**11.1**		**84.2**		**1.83**		**3040**		**19.3**		**1.61**	J	<1.24		**13.3**	
L1251221-04	#4 SW @ 7'	08/13/2020	**393**		**7.3**		**196**		**0.863**		**1210**		**18.3**		**1.05**	J	<1.23		**13.8**	
L1251221-05	#5 F	08/14/2020	**3290**		**12.2**		**96.4**		**7.66**		**4420**		**30.1**		**1.29**	J	<1.24		**103**	
L1251221-06	#6 F [A]	08/14/2020	**16.3**		**15.7**		**122**		**11**		**2390**		**36.3**		**1.84**	J	<1.25		**130**	
L1253401-01	#7F @ 9'	08/19/2020	**479**		**13.4**		**124**		**1.45**		**718**		**26.4**		<2.48		<1.24		**2.31**	
L1253401-02	#8 SW @ 8.5'	08/19/2020	**333**		**12.6**		**471**		**1.26**		**584**		**28.4**		<2.48		<1.24		**1.03**	
L1253708-01	#9 F @ 9'	08/20/2020	**738**		**17.6**		**140**		**1.33**		**1570**		**27.1**		**1.87**	J	<1.24		**1.75**	
L1253708-02	#10 SW @ 8'	08/20/2020	**80.5**		**11.4**		**65.7**		**0.297**	J	**137**		**15.3**		<2.44		<1.22		**0.658**	
L1253708-03	#11 SW @ 7'	08/20/2020	**597**		**16.3**		**56.6**		**0.452**	J	**696**		**13.5**		<2.44		<1.22		**0.456**	
L1254956-01	#12 SW @ 9'	08/25/2020	**64.8**		**11.7**		**110**	O1	**1.05**		**187**	O1	**28.2**		**1.04**	J	<1.23		**0.456**	
L1254956-02	#13 SW @ 8'	08/25/2020	**8.99**		**18.6**		**76**		**0.429**	J	**67.7**		**18.9**		**1.14**	J	<1.23		**0.0755**	
L1254956-03	#14 SW @ 8'	08/25/2020	**3.41**		**12.7**		**111**		**0.568**	J	**43.1**		**33.4**		**0.979**	J	<1.23		**0.0855**	
L1254956-04	#15 SW @ 9'	08/25/2020	**285**		**3.71**		**170**		**6.35**		**793**		**60.3**		**1.56**	J	<1.29		**5.95**	
L1254956-05	#16 F @ 11'	08/25/2020	**31.4**		**15.5**		**200**		**1.06**		**277**		**30.5**		**2.44**	J	<1.24		**0.446**	
L1254956-06	#17 F @12'	08/25/2020	<2.62		**7.52**		**186**		**31.1**		**851**		**28.5**		**1.47**	J	<1.31		**1.62**	
L1254956-07	#115 SW,E [B]	08/25/2020	**313**		**12.4**		**129**		**10.2**		**319**		**19.6**		**1.38**	J	<1.25		**1.55**	
2008254-001	Concrete #1 [1]	8/11/2020	**17900**		NA		NA		NA		NA		NA		NA		NA		NA	

Qualifiers (Q)

J: The identification of the analyte is acceptable; the reported value is an estimate.

O1: The analyte failed the method required serial dilution test and/or subsequent post-spike criteria.

Notes:

EPA RSL: Environmental Protection Agency Regional Screening Levels for soil at residential (Res.) and industrial (Ind.) properties (November 2021; TR=1E-06; THQ=1.0).

NE: Not Established. **<:** Less than Reported Detection Limit (RDL). **NA**: Not applicable. mg/kg: Milligrams per kilogram. Bold value exceeds Method Detection Limit (MDL).

Color shaded value exceeds screening level.

Background - range of background concentrations published by the United States Geological Survey (USGS) in the Elemental Concentrations in Soils and Other Surficial Materials of the Conterminous United States – Western United States (USGS Professional Paper 1270, 1984).

Sample Notes

A: #6 F is a duplicate sample of #15 SW @ 9'

B: Sample #115 SE,E is a blind duplicate for #15 SW @ 9'

1: Concrete #1 sample was characterization of excavated concrete

Table 2 -- VOCs Soil Confirmation Analytical Results
700 Flatirons, LLC- Ace Auto
47 East 700 South, Salt Lake City, Utah
Terracon Project No. 61227303

Lab Sample ID					L1251221-01		L1251221-02		L1251221-03		L1251221-04		L1251221-05		L1251221-06		L1253401-01		L1253401-02	
Client Sample ID					#1 F @ 8.5'		#2 SW @ 7'		#3 SW @ 8.5'		#4 SW @ 7'		#5 F		#6 F		#7F @ 9'		#8 SW @ 8.5'	
Date Collected					08/12/2020		08/12/2020		08/13/2020		08/13/2020		08/14/2020		08/14/2020		08/19/2020		08/19/2020	
Method	**Analyte**	**Units**	**RSL Residential**	**RSL Industrial**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
8260B	ACETONE	mg/kg	**61000**	**670000**	<0.0778		<0.0723		<0.0737	J3	<0.0730		**0.509**		**0.324**		<0.0741	J4	<0.0743	J3 J4
8260B	ACRYLONITRILE	mg/kg	**0.25**	**1.1**	<0.0194		<0.0181		<0.0184	J3	<0.0182		<0.0185		<0.0187		<0.0185		<0.0186	J3
8260B	BENZENE	mg/kg	**1.2**	**5.1**	<0.00156		<0.00145		<0.00147		<0.00146		<0.00148		<0.00149		<0.00148		<0.00149	
8260B	BROMOBENZENE	mg/kg	**290**	**1800**	<0.0194		<0.0181		<0.0184		<0.0182		<0.0185		<0.0187		<0.0185		<0.0186	J3
8260B	BROMODICHLOROMETHANE	mg/kg	**0.29**	**1.3**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	BROMOFORM	mg/kg	**19**	**86**	<0.0389		<0.0361		<0.0369		<0.0365		<0.0370		<0.0373		<0.0371		<0.0372	
8260B	BROMOMETHANE	mg/kg	**6.8**	**30**	<0.0194		<0.0181		<0.0184		<0.0182		<0.0185		<0.0187		<0.0185		<0.0186	
8260B	N-BUTYLBENZENE	mg/kg	**3900**	**58000**	<0.0194		<0.0181		<0.0184	J3	<0.0182		<0.0185		<0.0187		<0.0185		<0.0186	
8260B	SEC-BUTYLBENZENE	mg/kg	**7800**	**120000**	<0.0194		<0.0181		<0.0184		<0.0182		<0.0185		<0.0187		<0.0185		<0.0186	J3
8260B	TERT-BUTYLBENZENE	mg/kg	**7800**	**120000**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	J3
8260B	CARBON TETRACHLORIDE	mg/kg	**0.65**	**2.9**	<0.00778		<0.00723		<0.00737	J3	<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	CHLOROBENZENE	mg/kg	**280**	**1300**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	CHLORODIBROMOMETHANE	mg/kg	**8.3**	**39**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	CHLOROETHANE	mg/kg	**14000**	**57000**	<0.00778		<0.00723		<0.00737	J3	<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	CHLOROFORM	mg/kg	**0.32**	**1.4**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	CHLOROMETHANE	mg/kg	**110**	**460**	<0.0194		<0.0181		<0.0184		<0.0182		<0.0185		<0.0187		<0.0185		<0.0186	
8260B	2-CHLOROTOLUENE	mg/kg	**1600**	**23000**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	4-CHLOROTOLUENE	mg/kg	**1600**	**23000**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	1,2-DIBROMO-3-CHLOROPROPAN	mg/kg	**0.0053**	**0.064**	<0.0389		<0.0361		<0.0369		<0.0365		<0.0370		<0.0373		<0.0371		<0.0372	
8260B	1,2-DIBROMOETHANE	mg/kg	**0.036**	**0.16**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	DIBROMOMETHANE	mg/kg	**24**	**99**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	1,2-DICHLOROBENZENE	mg/kg	**1800**	**9300**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	1,3-DICHLOROBENZENE	mg/kg	**NE**	**NE**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	1,4-DICHLOROBENZENE	mg/kg	**2.6**	**11**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	DICHLORODIFLUOROMETHANE	mg/kg	**87**	**370**	<0.00389		<0.00361		<0.00369	J3	<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	1,1-DICHLOROETHANE	mg/kg	**3.6**	**16**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	1,2-DICHLOROETHANE	mg/kg	**0.46**	**2**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	1,1-DICHLOROETHENE	mg/kg	**230**	**1000**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	CIS-1,2-DICHLOROETHENE	mg/kg	**160**	**2300**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	TRANS-1,2-DICHLOROETHENE	mg/kg	**70**	**300**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	1,2-DICHLOROPROPANE	mg/kg	**2.5**	**11**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	1,1-DICHLOROPROPENE	mg/kg	**NE**	**NE**	<0.00389		<0.00361		<0.00369	J3	<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	1,3-DICHLOROPROPANE	mg/kg	**1600**	**23000**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	CIS-1,3-DICHLOROPROPENE	mg/kg	**NE**	**NE**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	TRANS-1,3-DICHLOROPROPENE	mg/kg	**NE**	**NE**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	2,2-DICHLOROPROPANE	mg/kg	**NE**	**NE**	<0.00389		<0.00361		<0.00369				<0.00370		<0.00373		<0.00371		<0.00372	
8260B	DI-ISOPROPYL ETHER	mg/kg	**2200**	**9400**	<0.00156		<0.00145		<0.00147		<0.00146		<0.00148		<0.00149		<0.00148		<0.00149	

Table 2 -- VOCs Soil Confirmation Analytical Results
700 Flatirons, LLC- Ace Auto
47 East 700 South, Salt Lake City, Utah
Terracon Project No. 61227303

Lab Sample ID					L1251221-01		L1251221-02		L1251221-03		L1251221-04		L1251221-05		L1251221-06		L1253401-01		L1253401-02	
Client Sample ID					#1 F @ 8.5'		#2 SW @ 7'		#3 SW @ 8.5'		#4 SW @ 7'		#5 F		#6 F		#7F @ 9'		#8 SW @ 8.5'	
Date Collected					08/12/2020		08/12/2020		08/13/2020		08/13/2020		08/14/2020		08/14/2020		08/19/2020		08/19/2020	
Method	**Analyte**	**Units**	**RSL Residential**	**RSL Industrial**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
8260B	ETHYLBENZENE	mg/kg	**5.8**	**25**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	HEXACHLORO-1,3-BUTADIENE	mg/kg	**1.2**	**5.3**	<0.0389		<0.0361		<0.0369	J3	<0.0365		<0.0370		<0.0373		<0.0371		<0.0372	
8260B	ISOPROPYLBENZENE	mg/kg	**1900**	**9900**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	P-ISOPROPYLTOLUENE	mg/kg	**NE**	**NE**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	2-BUTANONE (MEK)	mg/kg	**27000**	**190000**	<0.156		<0.145		<0.147		<0.146		**0.172**		**0.161**		<0.148	J3	<0.149	
8260B	METHYLENE CHLORIDE	mg/kg	**57**	**1000**	<0.0389		<0.0361		<0.0369		<0.0365		<0.0370		<0.0373		<0.0371		<0.0372	
8260B	4-METHYL-2-PENTANONE (MIBK)	mg/kg	**33000**	**140000**	<0.0389		<0.0361		<0.0369		<0.0365		<0.0370		<0.0373		<0.0371		<0.0372	
8260B	METHYL TERT-BUTYL ETHER	mg/kg	**47**	**210**	<0.00156		<0.00145		<0.00147		<0.00146		<0.00148		<0.00149		<0.00148		<0.00149	
8260B	NAPHTHALENE	mg/kg	**2**	**8.6**	<0.0194	J4	<0.0181	J4	<0.0184	3 J4	<0.0182		<0.0185		<0.0187		<0.0185		<0.0186	
8260B	N-PROPYLBENZENE	mg/kg	**3800**	**24000**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	J3
8260B	STYRENE	mg/kg	**6000**	**35000**	<0.0194		<0.0181		<0.0184		<0.0182		<0.0185		<0.0187		<0.0185		<0.0186	
8260B	1,1,1,2-TETRACHLOROETHANE	mg/kg	**2**	**8.8**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	1,1,2,2-TETRACHLOROETHANE	mg/kg	**0.6**	**2.7**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	J3
8260B	1,1,2-TRICHLOROTRIFLUOROETH	mg/kg	**6700**	**28000**	<0.00389		<0.00361		<0.00369	J3	<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	TETRACHLOROETHENE	mg/kg	**24**	**100**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	TOLUENE	mg/kg	**4900**	**47000**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	1,2,3-TRICHLOROBENZENE	mg/kg	**63**	**930**	<0.0194	J4	<0.0181	J4	<0.0184	J4	<0.0182		<0.0185		<0.0187		<0.0185		<0.0186	
8260B	1,2,4-TRICHLOROBENZENE	mg/kg	**24**	**110**	<0.0194	J4	<0.0181	J4	<0.0184	J4	<0.0182		<0.0185		<0.0187		<0.0185		<0.0186	
8260B	1,1,1-TRICHLOROETHANE	mg/kg	**8100**	**36000**	<0.00389		<0.00361		<0.00369	J3	<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	1,1,2-TRICHLOROETHANE	mg/kg	**1.1**	**5**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	TRICHLOROETHENE	mg/kg	**0.94**	**6**	<0.00156		<0.00145		<0.00147	J3	<0.00146		<0.00148		<0.00149		<0.00148		<0.00149	
8260B	TRICHLOROFLUOROMETHANE	mg/kg	**23000**	**350000**	<0.00389		<0.00361		<0.00369	J3	<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	1,2,3-TRICHLOROPROPANE	mg/kg	**0.0051**	**0.11**	*<0.0194*		*<0.0181*		*<0.0184*		*<0.0182*		*<0.0185*		*<0.0187*		*<0.0185*		*<0.0186*	J3
8260B	1,2,4-TRIMETHYLBENZENE	mg/kg	**300**	**1800**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	1,2,3-TRIMETHYLBENZENE	mg/kg	**340**	**2000**	<0.00778	J4	<0.00723	J4	<0.00737	J4	<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	1,3,5-TRIMETHYLBENZENE	mg/kg	**270**	**1500**	<0.00778		<0.00723		<0.00737		<0.00730		<0.00740		<0.00746		<0.00741		<0.00743	
8260B	VINYL CHLORIDE	mg/kg	**0.059**	**1.7**	<0.00389		<0.00361		<0.00369		<0.00365		<0.00370		<0.00373		<0.00371		<0.00372	
8260B	XYLENES, TOTAL	mg/kg	**580**	**2500**	<0.0101		<0.00940		<0.00958		<0.00949		<0.00961		<0.00970		<0.00964		<0.00966	

Qualifiers (Q)

J: The identification of the analyte is acceptable; the reported value is an estimate.

J3: The associated batch QC was outside the established quality control range for precision.

J4: The associated batch QC was outside the established quality control range for accuracy.

B: Analyte found in sample and associated blank

EPA RSL: Environmental Protection Agency Regional Screening Levels for soil at residential (Res.) and industrial (Ind.) properties (May 2021; TR=1E-06; THQ=1.0).

NE: Not Established. **<:** Less than Reported Detection Limit (RDL). mg/kg: Milligrams per kilogram.

Bold value exceeds Method Detection Limit (MDL). Color shaded value exceeds

Blue italicized RDLs (e.g., *<0.0100*) exceed one or more of the screening levels.

Table 2 -- VOCs Soil Confirmation Analytical Results
700 Flatirons, LLC- Ace Auto
47 East 700 South, Salt Lake City, Utah
Terracon Project No. 61227303

Lab Sample ID					L1253708-01		L1253708-02		L1253708-03		L1254956-01		L1254956-02		L1254956-03		L1254956-04		L1254956-05		L1254956-06		L1254956-07	
Client Sample ID					#9 F @ 9'		#10 SW @ 8'		#11 SW @ 7'		#12 SW @ 9'		#13 SW @ 8'		#14 SW @ 8'		#15 SW @ 9'		#16 F @ 11'		#17 F @12'		#115 SW,E	
Date Collected					08/20/2020		08/20/2020		08/20/2020		08/25/2020		08/25/2020		08/25/2020		08/25/2020		08/25/2020		08/25/2020		08/25/2020	
Method	**Analyte**	**Units**	**RSL Residential**	**RSL Industrial**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
8260B	ACETONE	mg/kg	**61000**	**670000**	<0.0743		<0.0718		<0.0718		<0.0734	J4	<0.0730	J4	<0.0726	J4	<0.0795	J4	<0.0737	J4	<0.0807	J4	<0.0752	J4
8260B	ACRYLONITRILE	mg/kg	**0.25**	**1.1**	<0.0186		<0.0180		<0.0180		<0.0183		<0.0182		<0.0181		<0.0199		<0.0184		<0.0202		<0.0188	
8260B	BENZENE	mg/kg	**1.2**	**5.1**	<0.00149		<0.00144		<0.00144		<0.00147		<0.00146		<0.00145		<0.00159		<0.00147		<0.00161		<0.00150	
8260B	BROMOBENZENE	mg/kg	**290**	**1800**	<0.0186		<0.0180		<0.0180		<0.0183		<0.0182		<0.0181		<0.0199		<0.0184		<0.0202		<0.0188	
8260B	BROMODICHLOROMETHANE	mg/kg	**0.29**	**1.3**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	BROMOFORM	mg/kg	**19**	**86**	<0.0372		<0.0359		<0.0359		<0.0367		<0.0365		<0.0363		<0.0397		<0.0368		<0.0404		<0.0376	
8260B	BROMOMETHANE	mg/kg	**6.8**	**30**	<0.0186		<0.0180		<0.0180		<0.0183		<0.0182		<0.0181		<0.0199		<0.0184		<0.0202		<0.0188	
8260B	N-BUTYLBENZENE	mg/kg	**3900**	**58000**	<0.0186		<0.0180		<0.0180		<0.0183		<0.0182		<0.0181		<0.0199		<0.0184		<0.0202		<0.0188	
8260B	SEC-BUTYLBENZENE	mg/kg	**7800**	**120000**	<0.0186		<0.0180		<0.0180		<0.0183		<0.0182		<0.0181		<0.0199		<0.0184		<0.0202		<0.0188	
8260B	TERT-BUTYLBENZENE	mg/kg	**7800**	**120000**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	CARBON TETRACHLORIDE	mg/kg	**0.65**	**2.9**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	CHLOROBENZENE	mg/kg	**280**	**1300**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	CHLORODIBROMOMETHANE	mg/kg	**8.3**	**39**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	CHLOROETHANE	mg/kg	**14000**	**57000**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	CHLOROFORM	mg/kg	**0.32**	**1.4**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	CHLOROMETHANE	mg/kg	**110**	**460**	<0.0186		<0.0180		<0.0180		<0.0183		<0.0182		<0.0181		<0.0199		<0.0184		<0.0202		<0.0188	
8260B	2-CHLOROTOLUENE	mg/kg	**1600**	**23000**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	4-CHLOROTOLUENE	mg/kg	**1600**	**23000**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	1,2-DIBROMO-3-CHLOROPROPAN	mg/kg	**0.0053**	**0.064**	<0.0372		<0.0359		<0.0359		<0.0367		<0.0365		<0.0363		<0.0397		<0.0368		<0.0404		<0.0376	
8260B	1,2-DIBROMOETHANE	mg/kg	**0.036**	**0.16**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	DIBROMOMETHANE	mg/kg	**24**	**99**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	1,2-DICHLOROBENZENE	mg/kg	**1800**	**9300**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		**0.644**		<0.00737		**0.0415**		**0.462**	
8260B	1,3-DICHLOROBENZENE	mg/kg	**NE**	**NE**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	1,4-DICHLOROBENZENE	mg/kg	**2.6**	**11**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		**0.121**		<0.00737		**0.00743**	J	**0.0792**	
8260B	DICHLORODIFLUOROMETHANE	mg/kg	**87**	**370**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	1,1-DICHLOROETHANE	mg/kg	**3.6**	**16**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	1,2-DICHLOROETHANE	mg/kg	**0.46**	**2**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	1,1-DICHLOROETHENE	mg/kg	**230**	**1000**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	CIS-1,2-DICHLOROETHENE	mg/kg	**160**	**2300**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	TRANS-1,2-DICHLOROETHENE	mg/kg	**70**	**300**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	1,2-DICHLOROPROPANE	mg/kg	**2.5**	**11**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	1,1-DICHLOROPROPENE	mg/kg	**NE**	**NE**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	1,3-DICHLOROPROPANE	mg/kg	**1600**	**23000**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	CIS-1,3-DICHLOROPROPENE	mg/kg	**NE**	**NE**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	TRANS-1,3-DICHLOROPROPENE	mg/kg	**NE**	**NE**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	2,2-DICHLOROPROPANE	mg/kg	**NE**	**NE**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	DI-ISOPROPYL ETHER	mg/kg	**2200**	**9400**	<0.00149		<0.00144		<0.00144		<0.00147		<0.00146		<0.00145		<0.00159		<0.00147		<0.00161		<0.00150	

Table 2 -- VOCs Soil Confirmation Analytical Results
700 Flatirons, LLC- Ace Auto
47 East 700 South, Salt Lake City, Utah
Terracon Project No. 61227303

Lab Sample ID					L1253708-01		L1253708-02		L1253708-03		L1254956-01		L1254956-02		L1254956-03		L1254956-04		L1254956-05		L1254956-06		L1254956-07	
Client Sample ID					#9 F @ 9'		#10 SW @ 8'		#11 SW @ 7'		#12 SW @ 9'		#13 SW @ 8'		#14 SW @ 8'		#15 SW @ 9'		#16 F @ 11'		#17 F @12'		#115 SW,E	
Date Collected					08/20/2020		08/20/2020		08/20/2020		08/25/2020		08/25/2020		08/25/2020		08/25/2020		08/25/2020		08/25/2020		08/25/2020	
Method	**Analyte**	**Units**	**RSL Residential**	**RSL Industrial**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
8260B	ETHYLBENZENE	mg/kg	**5.8**	**25**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	HEXACHLORO-1,3-BUTADIENE	mg/kg	**1.2**	**5.3**	<0.0372		<0.0359		<0.0359		<0.0367		<0.0365		<0.0363		<0.0397		<0.0368		<0.0404		<0.0376	
8260B	ISOPROPYLBENZENE	mg/kg	**1900**	**9900**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	P-ISOPROPYLTOLUENE	mg/kg	**NE**	**NE**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	2-BUTANONE (MEK)	mg/kg	**27000**	**190000**	**0.177**	B	**0.125**	B J	**0.177**	B	<0.147		<0.146		<0.145		<0.159		<0.147		<0.161		<0.150	
8260B	METHYLENE CHLORIDE	mg/kg	**57**	**1000**	<0.0372		<0.0359		<0.0359		<0.0367		<0.0365		<0.0363		<0.0397		<0.0368		<0.0404		<0.0376	
8260B	4-METHYL-2-PENTANONE (MIBK)	mg/kg	**33000**	**140000**	<0.0372		<0.0359		<0.0359		<0.0367		<0.0365		<0.0363		<0.0397		<0.0368		<0.0404		<0.0376	
8260B	METHYL TERT-BUTYL ETHER	mg/kg	**47**	**210**	<0.00149		<0.00144		<0.00144		<0.00147		<0.00146		<0.00145		<0.00159		<0.00147		<0.00161		<0.00150	
8260B	NAPHTHALENE	mg/kg	**2**	**8.6**	<0.0186		<0.0180		<0.0180		<0.0183		<0.0182		<0.0181		<0.0199		<0.0184		<0.0202		<0.0188	
8260B	N-PROPYLBENZENE	mg/kg	**3800**	**24000**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	STYRENE	mg/kg	**6000**	**35000**	<0.0186		<0.0180		<0.0180		<0.0183		<0.0182		<0.0181		<0.0199		<0.0184		<0.0202		<0.0188	
8260B	1,1,1,2-TETRACHLOROETHANE	mg/kg	**2**	**8.8**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	1,1,2,2-TETRACHLOROETHANE	mg/kg	**0.6**	**2.7**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	1,1,2-TRICHLOROTRIFLUOROETH	mg/kg	**6700**	**28000**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	TETRACHLOROETHENE	mg/kg	**24**	**100**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	TOLUENE	mg/kg	**4900**	**47000**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	1,2,3-TRICHLOROBENZENE	mg/kg	**63**	**930**	<0.0186		<0.0180		<0.0180		<0.0183		<0.0182		<0.0181		<0.0199		<0.0184		<0.0202		<0.0188	
8260B	1,2,4-TRICHLOROBENZENE	mg/kg	**24**	**110**	<0.0186		<0.0180		<0.0180		<0.0183		<0.0182		<0.0181		**0.0103**	J	<0.0184		<0.0202		**0.00794**	J
8260B	1,1,1-TRICHLOROETHANE	mg/kg	**8100**	**36000**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	1,1,2-TRICHLOROETHANE	mg/kg	**1.1**	**5**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	TRICHLOROETHENE	mg/kg	**0.94**	**6**	<0.00149		<0.00144		<0.00144		<0.00147		<0.00146		<0.00145		<0.00159		<0.00147		<0.00161		<0.00150	
8260B	TRICHLOROFLUOROMETHANE	mg/kg	**23000**	**350000**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	1,2,3-TRICHLOROPROPANE	mg/kg	**0.0051**	**0.11**	*<0.0186*		*<0.0180*		*<0.0180*		*<0.0183*		*<0.0182*		*<0.0181*		*<0.0199*		*<0.0184*		*<0.0202*		*<0.0188*	
8260B	1,2,4-TRIMETHYLBENZENE	mg/kg	**300**	**1800**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	1,2,3-TRIMETHYLBENZENE	mg/kg	**340**	**2000**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	1,3,5-TRIMETHYLBENZENE	mg/kg	**270**	**1500**	<0.00743		<0.00718		<0.00718		<0.00734		<0.00730		<0.00726		<0.00795		<0.00737		<0.00807		<0.00752	
8260B	VINYL CHLORIDE	mg/kg	**0.059**	**1.7**	<0.00372		<0.00359		<0.00359		<0.00367		<0.00365		<0.00363		<0.00397		<0.00368		<0.00404		<0.00376	
8260B	XYLENES, TOTAL	mg/kg	**580**	**2500**	<0.00966		<0.00933		<0.00934		<0.00954		<0.00949		<0.00944		<0.0103		<0.00958		<0.0105		<0.00977	

Qualifiers (Q)

J: The identification of the analyte is acceptable; the reported value is an estimate.

J3: The associated batch QC was outside the established quality control range for pre

J4: The associated batch QC was outside the established quality control range for ac

B: Analyte found in sample and associated blank

EPA RSL: Environmental Protection Agency Regional Screening Levels for soil at residential (Res.) and industrial (Ind.) properties (May 2021; TR=1E-06; THQ=1.0).

NE: Not Established. **<:** Less than Reported Detection Limit (RDL). mg/kg: Milligrams

Bold value exceeds Method Detection Limit (MDL). Color shaded value exceeds

Blue italicized RDLs (e.g., *<0.0100*) exceed one or more of the screening levels.

TABLE 3 - MAXIMUM CONCENTRATIONS OF COIs - Soils
Former Ace Auto Site
47 East 700 South, Salt Lake City, Utah
Terracon Project No. 61227303

Compound of Interest (COI)	Maximum Concentration (mg/kg)	Risk-Based SSL	MCL-Based SSL	DAF 20
Volatile Organic Compounds (VOCs)				
Acetone	**0.509**	3.7	NE	74
1,2-Dichlorobenzene	**0.644**	0.3	0.58	11.6
1,4-Dichlorobenzene	**0.121**	0.0046	0.072	1.44
2-Butanone (MEK)	**0.177**	1.2	NE	24
1,2,4-Trichlorobenzene	**0.0103**	0.081	NE	1.62
Metals				
Hexavalent Chromium	**3290**	0.00067	NE	0.0134
Arsenic	**18.6**	0.0015	0.29	5.8
Barium	**471**	160	82	1640
Cadmium	**31.1**	0.14	0.38	7.6
Chromium	**4420**	40000000	NE	800000000
Lead	**60.3**		14	280
Mercury	**130**	0.033	0.1	2

EPA MCL: Environmental Protection Agency Maximum Contaminant Level for drinking water (November 2021).

mg/kg: Milligrams per kilogram

DAF 20: Dilution Attentuation Factor x 20

SSL: Soil Screning Level

NE: Not Established

Shaded values exceed DAF 20 levels.

Table 4 - Groundwater Analytical Results - Metals
700 Flatirons, LLC - Ace Auto
47 East 700 South, Salt Lake City, Utah
Terracon Project 61227303

Method		6010B		6010B		6010B		6010B		6010B		6010B		7199		7470A	
Analyte		BARIUM, DISSOLVED		CADMIUM, DISSOLVED		CHROMIUM, DISSOLVED		LEAD, DISSOLVED		SELENIUM, DISSOLVED		SILVER, DISSOLVED		HEXAVALENT CHROMIUM		MERCURY, DISSOLVED	
Units		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l	
EPA MCL		**2**		**0.005**		**0.1**		**0.015**		**0.05**		**NE**		**0.1***		**0.002**	
Sample ID	Date Collected	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
MW-5R	09/10/2020	**0.218**		**0.0205**		**69.1**		<0.00600		**0.0304**		<0.00500		**76**		**0.00176**	
	12/15/2020	**2.24**		**0.105**		**0.00477**	J	<0.0300		**0.00905**	J	**0.00501**		<0.0500		**0.0674**	
	06/02/2021	**3.32**		**0.0591**		<0.0900		**0.059**		<0.0900		<0.0450		<0.0500		**0.0821**	
	9/9/2021	**2.34**		<0.0180		<0.0900		<0.0540		**0.118**		<0.0450		**0.0542**		**0.000118**	J
	12/29/2021	**2.15**		**0.0263**		<0.0100		**0.00877**		<0.0100		<0.00500		<0.0250		**0.0366**	
	3/24/2022	**1.67**		**0.027**		**0.0302**	J	**0.0322**	J	<0.0900		<0.0450		<0.0500		**0.00886**	
MW-6	09/10/2020	**0.17**		<0.00200		**3.88**		<0.00600		<0.0100		<0.00500		**3.64**		<0.000200	
	12/15/2020	**0.256**		**0.000485**	J	**0.00343**	J	<0.00600		<0.0100		<0.00500		<0.000500		<0.000200	
	06/02/2021	**0.0848**		<0.00200		**0.00174**	J	<0.00600		<0.0100		<0.00500		**0.000167**	J	<0.000200	
	9/9/2021	**0.0705**		**0.000607**	J	**0.00358**	J	**0.00312**	J	<0.0100		<0.00500		<0.000500		<0.000200	
	12/29/2021	**0.051**		**0.00126**	J	<0.0100		<0.00600		**0.00837**	B J	<0.00500		<0.000500		<0.000200	
	3/24/2022	**0.0428**		<0.00200		**0.00225**	J	<0.00600		**0.0115**		<0.00500		<0.000500		<0.000200	
MW-7	09/10/2020	**0.0692**		**0.000571**	J	**125**		<0.00600		<0.0100		**0.00212**	J	**130**		<0.000200	
	12/15/2020	**0.0843**		<0.00200		**3.14**		<0.00600		<0.0100		<0.00500		**2.9**		<0.000200	
	06/02/2021	**0.0216**		<0.00200		**0.906**		<0.00600		<0.0100		<0.00500		**0.894**		<0.000200	
	9/9/2021	**0.0753**		<0.00200		**0.653**		<0.00600		<0.0100		<0.00500		**0.0139**		<0.000200	
	12/29/2021	**0.0593**		**0.00151**	J	**0.0693**		<0.00600		<0.0100		<0.00500		<0.000500		<0.000200	
	3/24/2022	**0.0478**		**0.000549**	J	**0.811**		<0.00600		<0.0100		<0.00500		**0.476**		<0.000200	

Table 4 - Groundwater Analytical Results - Metals
700 Flatirons, LLC - Ace Auto
47 East 700 South, Salt Lake City, Utah
Terracon Project 61227303

Method		6010B		6010B		6010B		6010B		6010B		6010B		7199		7470A	
Analyte		BARIUM, DISSOLVED		CADMIUM, DISSOLVED		CHROMIUM, DISSOLVED		LEAD, DISSOLVED		SELENIUM, DISSOLVED		SILVER, DISSOLVED		HEXAVALENT CHROMIUM		MERCURY, DISSOLVED	
Units		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l	
EPA MCL		**2**		**0.005**		**0.1**		**0.015**		**0.05**		**NE**		**0.1***		**0.002**	
Sample ID	Date Collected	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
MW-8	09/10/2020	**0.0752**		<0.00200		**178**		<0.00600		<0.0100		**0.00285**	J	**197**		**0.000249**	
	12/15/2020	**0.133**		<0.00200		**44.5**		<0.0300		**0.00953**	J	<0.00500		**35.8**		**0.00114**	
	06/02/2021	**0.0655**		<0.00200		**2.04**		<0.00600		<0.0100		<0.00500		**1.88**		**0.000281**	
	9/9/2021	**0.0796**		<0.00200		**0.123**		<0.00600		<0.0100		<0.00500		**0.00184**		<0.000200	
	12/29/2021	**0.0614**		**0.00116**	J	**0.0517**		<0.00600		**0.00933**	B J	<0.00500		**0.000587**		<0.000200	
	3/24/2022	**0.0544**		**0.000815**	J	**0.0248**		<0.00600		<0.0100		<0.00500		**0.000312**	J	<0.000200	

Qualifiers (Q):

J: The identification of the analyte is acceptable; the reported value is an estimate.

Notes:

EPA MCL: Environmental Protection Agency Maximum Contaminant Level for drinking water (November 2021).

NE: Not Established. **NA**: Not Applicable **<:** Less than Reported Detection Limit (RDL). mg/kg: Milligrams per kilogram.

Bold value exceeds Method Detection Limit (MDL). Color shaded

***:** MCL for Chromium

All metals samples field filtered using a 0.45 µm filter

Table 5 -- Groundwater Analytical Results -- VOCs
700 Flatirons, LLC- Ace Auto
47 East 700 South, Salt Lake City, Utah
Terracon Project 61227303

Lab Sample ID						L1260445-04		L1297609-01		L1360794-04		L1402375-01		L1447040-01		L1475780-01	
Client Sample ID						MW-5R											
Date Collected						09/10/2020		12/15/2020		06/02/2021		9/9/2021		12/29/2021		3/24/2022	
Method	Analyte	Units	**VISL Residential**	**VISL Commercial**	**MCL**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
8260B	ACETONE	mg/l	**22500**	**94,500**	**NE**	<0.0500		**0.0348**	J J4	<1.25		**0.0349**	J	**0.0565**		**0.138**	
8260B	BENZENE	mg/l	**0.00159**	**0.00693**	**0.005**	<0.00100		**0.000354**	J	*<0.0250*		**0.00103**		**0.00212**		**0.00156**	
8260B	CHLOROBENZENE	mg/l	**0.41**	**1.72**	**0.1**	**0.0179**		**0.0151**		**0.0225**	J	**0.0588**		**0.103**		**0.0754**	
8260B	CHLOROFORM	mg/l	**0.000814**	**0.00355**	**0.08**	**0.000121**	J	**0.00111**	J	*<0.125*		**0.00131**	J	**0.00117**	J	**0.000943**	J
8260B	1,2-DICHLOROBENZENE	mg/l	**2.66**	**11.2**	**0.6**	**0.0297**		**0.0386**		**0.0524**		**0.0792**		**0.122**		**0.108**	
8260B	1,3-DICHLOROBENZENE	mg/l	**NE**	**NE**	**NE**	<0.00100		<0.00100		<0.0250		<0.00100		**0.000159**	J	<0.00100	
8260B	1,4-DICHLOROBENZENE	mg/l	**0.00259**	**0.0113**	**0.075**	**0.0113**		**0.011**		**0.0147**	J	**0.0261**		**0.04**		**0.0334**	
8260B	1,2-DICHLOROETHANE	mg/l	**0.00224**	**0.00978**	**0.005**	**0.000457**	J	<0.00100		<0.0250		<0.00100		<0.00100		<0.00100	
8260B	CIS-1,2-DICHLOROETHENE	mg/l	**NE**	**NE**	**0.07**	<0.00100		<0.00100		<0.0250		<0.00100		**0.000127**	J	<0.00100	
8260B	2-BUTANONE (MEK)	mg/l	**2240**	**9,410**	**NE**	<0.0100		**0.00359**	J	<0.250		**0.00414**	J	**0.00819**	J	**0.0088**	J
8260B	4-METHYL-2-PENTANONE (MIBK	mg/l	**555**	**2,330**	**NE**	<0.0100		<0.0100		<0.250		<0.0100		**0.000747**	J	**0.000621**	J
8260B	METHYLENE CHLORIDE	mg/l	**0.763**	**9.23**	**0.005**	**0.0059**		<0.00500		<0.125		<0.00500		<0.00500		<0.00500	
8260B	TETRACHLOROETHENE	mg/l	**0.0149**	**0.0652**	**0.005**	<0.00100		<0.00100		*<0.0250*		<0.00100		<0.00100		<0.00100	
8260B	TOLUENE	mg/l	**19.2**	**80.7**	**1**	**0.000282**	J	**0.000727**	J	<0.0250		**0.00183**		**0.00294**		**0.00325**	

Qualifiers (Q): J: The identification of the analyte is acceptable; the reported value is an estimate. J4: The associated batch QC was outside the established quality control range for accuracy.

EPA MCL: Environmental Protection Agency Maximum Contaminant Level for drinking water (November 2021).

EPA VISL: Environmental Protection Agency Vapor Intrusion Screening Level target groundwater concentrations at residential (**Res.**) and industrial (**Ind.**) properties (Nov. 2021; TR=1E-06; THQ=1.0).

NE: Not Established.

<: Less than Reported Detection Limit (RDL). **mg/l:** Milligrams per liter.

Bold value exceeds Method Detection Limit (MDL). Color shaded value exceeds screening level.

Blue italicized RDLs (e.g., *<0.0660*) exceed one or more of the screening levels.

Only VOCs detected are shown in table. All other VOCs were below RDL.

Table 5 -- Groundwater Analytical Results -- VOCs
700 Flatirons, LLC- Ace Auto
47 East 700 South, Salt Lake City, Utah
Terracon Project 61227303

Lab Sample ID						L1260445-03		L1297609-02		L1360794-03		L1402375-02		L1447040-02		L1475780-02	
Client Sample ID						MW-6											
Date Collected						09/10/2020		12/15/2020		06/02/2021		9/9/2021		12/29/2021		3/24/2022	
Method	Analyte	Units	**VISL Residential**	**VISL Commercial**	**MCL**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
8260B	ACETONE	mg/l	**22500**	**94,500**	**NE**	**0.0115**	J	<0.0500	J4	<0.0500		<0.0500		<0.0500		**0.0455**	J
8260B	BENZENE	mg/l	**0.00159**	**0.00693**	**0.005**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	
8260B	CHLOROBENZENE	mg/l	**0.41**	**1.72**	**0.1**	**0.000263**	J	**0.000189**	J	<0.00100		<0.00100		<0.00100		<0.00100	
8260B	CHLOROFORM	mg/l	**0.000814**	**0.00355**	**0.08**	*<0.00500*		*<0.00500*		**0.000319**	J	**0.000111**	J	*<0.00500*		*<0.0500*	
8260B	1,2-DICHLOROBENZENE	mg/l	**2.66**	**11.2**	**0.6**	**0.00416**		**0.00204**		**0.000823**	J	**0.00107**		**0.00127**		**0.000535**	J
8260B	1,3-DICHLOROBENZENE	mg/l	**NE**	**NE**	**NE**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	
8260B	1,4-DICHLOROBENZENE	mg/l	**0.00259**	**0.0113**	**0.075**	<0.00100		**0.000451**	J	**0.000178**	J	**0.000264**	J	**0.000371**	J	<0.00100	
8260B	1,2-DICHLOROETHANE	mg/l	**0.00224**	**0.00978**	**0.005**	**0.00208**		**0.000561**	J	**0.000339**	J	**0.000367**	J	<0.00100		**0.000344**	J
8260B	CIS-1,2-DICHLOROETHENE	mg/l	**NE**	**NE**	**0.07**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	
8260B	2-BUTANONE (MEK)	mg/l	**2240**	**9,410**	**NE**	<0.0100		<0.0100		<0.0100		<0.0100		<0.0100		<0.00100	
8260B	4-METHYL-2-PENTANONE (MIBK	mg/l	**555**	**2,330**	**NE**	<0.0100		<0.0100		<0.0100		<0.0100		<0.0100		<0.00100	
8260B	METHYLENE CHLORIDE	mg/l	**0.763**	**9.23**	**0.005**	<0.00500		<0.00500		<0.00500		<0.00500		<0.00500		<0.00500	
8260B	TETRACHLOROETHENE	mg/l	**0.0149**	**0.0652**	**0.005**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	
8260B	TOLUENE	mg/l	**19.2**	**80.7**	**1**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	

Qualifiers (Q): J: The identification of the analyte is acceptable; the reported value is an estimate. J4: The associated batch QC was outside the established quality control range for accuracy.

EPA MCL: Environmental Protection Agency Maximum Contaminant Level for drinking water (November 2021).

EPA VISL: Environmental Protection Agency Vapor Intrusion Screening Level target groundwater concentrations at residential (**Res.**) and industrial (**Ind.**) properties (Nov. 2021; TR=1E-06; THQ=1.0).

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<: Less than Reported Detection Limit (RDL). **mg/l:** Milligrams per liter.

Bold value exceeds Method Detection Limit (MDL). Color shaded value exceeds screening le

Blue italicized RDLs (e.g., *<0.0660*) exceed one or more of the screening levels.

Only VOCs detected are shown in table. All other VOCs were below RDL.

Table 5 -- Groundwater Analytical Results -- VOCs
700 Flatirons, LLC- Ace Auto
47 East 700 South, Salt Lake City, Utah
Terracon Project 61227303

Lab Sample ID						L1260445-02		L1297609-03		L1360794-02		L1402375-03		L1447040-03		L1475780-03	
Client Sample ID						MW-7											
Date Collected						09/10/2020		12/15/2020		06/02/2021		9/9/2021		12/29/2021		3/24/2022	
Method	Analyte	Units	**VISL Residential**	**VISL Commercial**	**MCL**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	Result	Q	**Result**	**Q**
8260B	ACETONE	mg/l	**22500**	**94,500**	**NE**	<0.0500		<0.0500	J4	<0.0500		<0.0500		<0.0500	J4	<0.0500	
8260B	BENZENE	mg/l	**0.00159**	**0.00693**	**0.005**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	
8260B	CHLOROBENZENE	mg/l	**0.41**	**1.72**	**0.1**	**0.00169**		<0.00100		<0.00100		**0.000121**	J	<0.00100		**0.000116**	J
8260B	CHLOROFORM	mg/l	**0.000814**	**0.00355**	**0.08**	**0.000132**	J	*<0.00500*		**0.00028**	J	**0.000298**	J	*<0.00500*		*<0.0500*	
8260B	1,2-DICHLOROBENZENE	mg/l	**2.66**	**11.2**	**0.6**	**0.069**		**0.00122**		**0.00672**		**0.00807**		**0.00417**		**0.00643**	
8260B	1,3-DICHLOROBENZENE	mg/l	**NE**	**NE**	**NE**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	
8260B	1,4-DICHLOROBENZENE	mg/l	**0.00259**	**0.0113**	**0.075**	**0.0115**		**0.000276**	J	**0.00104**		**0.00119**		**0.000502**	J	**0.000845**	J
8260B	1,2-DICHLOROETHANE	mg/l	**0.00224**	**0.00978**	**0.005**	**0.0168**		**0.00103**		**0.00273**		**0.00296**		**0.00234**		**0.00247**	
8260B	CIS-1,2-DICHLOROETHENE	mg/l	**NE**	**NE**	**0.07**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	
8260B	2-BUTANONE (MEK)	mg/l	**2240**	**9,410**	**NE**	<0.0100		<0.0100		<0.0100		<0.0100		<0.0100		<0.00100	
8260B	4-METHYL-2-PENTANONE (MIBK	mg/l	**555**	**2,330**	**NE**	<0.0100		<0.0100		<0.0100		<0.0100		<0.0100		<0.00100	
8260B	METHYLENE CHLORIDE	mg/l	**0.763**	**9.23**	**0.005**	**0.000521**	J	<0.00500		<0.00500		<0.00500		<0.00500		<0.00500	
8260B	TETRACHLOROETHENE	mg/l	**0.0149**	**0.0652**	**0.005**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	
8260B	TOLUENE	mg/l	**19.2**	**80.7**	**1**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	

Qualifiers (Q): J: The identification of the analyte is acceptable; the reported value is an estimate. J4: The associated batch QC was outside the established quality control range for accuracy.

EPA MCL: Environmental Protection Agency Maximum Contaminant Level for drinking water (November 2021).

EPA VISL: Environmental Protection Agency Vapor Intrusion Screening Level target groundwater concentrations at residential (**Res.**) and industrial (**Ind.**) properties (Nov. 2021; TR=1E-06; THQ=1.0).

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<: Less than Reported Detection Limit (RDL). **mg/l:** Milligrams per liter.

Bold value exceeds Method Detection Limit (MDL). Color shaded value exceeds screening le

Blue italicized RDLs (e.g., *<0.0660*) exceed one or more of the screening levels.

Only VOCs detected are shown in table. All other VOCs were below RDL.

Table 5 -- Groundwater Analytical Results -- VOCs
700 Flatirons, LLC- Ace Auto
47 East 700 South, Salt Lake City, Utah
Terracon Project 61227303

Lab Sample ID						L1260445-01		L1297609-04		L1360794-01		L1402375-04		L1447040-04		L1475780-04	
Client Sample ID						MW-8											
Date Collected						09/10/2020		12/15/2020		06/02/2021		9/9/2021		12/29/2021		3/24/2022	
Method	Analyte	Units	**VISL Residential**	**VISL Commercial**	**MCL**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
8260B	ACETONE	mg/l	**22500**	**94,500**	**NE**	<0.0500		<0.0500	J4	<0.0500		<0.0500		<0.0500	J4	<0.0500	
8260B	BENZENE	mg/l	**0.00159**	**0.00693**	**0.005**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	
8260B	CHLOROBENZENE	mg/l	**0.41**	**1.72**	**0.1**	**0.000732**	J	**0.000415**	J	**0.000125**	J	**0.000257**	J	**0.000235**	J	**0.000223**	J
8260B	CHLOROFORM	mg/l	**0.000814**	**0.00355**	**0.08**	**0.000614**	J	*<0.00500*		**0.000744**	J	**0.00047**	J	*<0.00500*		*<0.0500*	
8260B	1,2-DICHLOROBENZENE	mg/l	**2.66**	**11.2**	**0.6**	**0.00957**		**0.00937**		**0.00418**		**0.00606**		**0.006**		**0.00566**	
8260B	1,3-DICHLOROBENZENE	mg/l	**NE**	**NE**	**NE**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	
8260B	1,4-DICHLOROBENZENE	mg/l	**0.00259**	**0.0113**	**0.075**	**0.00216**		**0.00159**		**0.000707**	J	**0.000995**	J	**0.000921**	J	**0.000775**	J
8260B	1,2-DICHLOROETHANE	mg/l	**0.00224**	**0.00978**	**0.005**	**0.00206**		**0.00181**		**0.00083**	J	**0.00104**		**0.001**	J	**0.000874**	J
8260B	CIS-1,2-DICHLOROETHENE	mg/l	**NE**	**NE**	**0.07**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	
8260B	2-BUTANONE (MEK)	mg/l	**2240**	**9,410**	**NE**	<0.0100		<0.0100		<0.0100		<0.0100		<0.0100		<0.00100	
8260B	4-METHYL-2-PENTANONE (MIBK	mg/l	**555**	**2,330**	**NE**	<0.0100		<0.0100		<0.0100		<0.0100		<0.0100		<0.00100	
8260B	METHYLENE CHLORIDE	mg/l	**0.763**	**9.23**	**0.005**	**0.000903**	J	**0.00111**	J	**0.000669**	J	**0.000914**	J	<0.00500		<0.00500	
8260B	TETRACHLOROETHENE	mg/l	**0.0149**	**0.0652**	**0.005**	<0.00100		<0.00100		<0.00100		**0.00118**		<0.00100		<0.00100	
8260B	TOLUENE	mg/l	**19.2**	**80.7**	**1**	<0.00100		<0.00100		<0.00100		<0.00100		<0.00100		<0.00100	

Qualifiers (Q): J: The identification of the analyte is acceptable; the reported value is an estimate. J4: The associated batch QC was outside the established quality control range for accuracy.

EPA MCL: Environmental Protection Agency Maximum Contaminant Level for drinking water (November 2021).

EPA VISL: Environmental Protection Agency Vapor Intrusion Screening Level target groundwater concentrations at residential (**Res.**) and industrial (**Ind.**) properties (Nov. 2021; TR=1E-06; THQ=1.0).

NE: Not Established.

<: Less than Reported Detection Limit (RDL). **mg/l:** Milligrams per liter.

Bold value exceeds Method Detection Limit (MDL). Color shaded value exceeds screening le

Blue italicized RDLs (e.g., *<0.0660*) exceed one or more of the screening levels.

Only VOCs detected are shown in table. All other VOCs were below RDL.

TABLE 6 - MAXIMUM CONCENTRATIONS OF COIs - Groundwater
Former Ace Auto Site
47 East 700 South, Salt Lake City, Utah
Terracon Project No. 61227303

Compound of Interest (COI)	Maximum Concentration (mg/l)	EPA MCL (mg/l)	VISL Residential	VISL Commercial
Volatile Organic Compounds (VOCS)				
Acetone	**0.138**	NE	22500	94,500
Benzene	**0.00156**	0.005	0.00159	0.00693
Chlorobenzene	**0.0754**	0.1	0.41	1.72
Chloroform	**0.000943 J**	0.08	0.000814	0.00355
1,2-Dichlorobenzene	**0.108**	0.6	2.66	11.2
1,4-Dichlorobenzene	**0.0334 J**	0.075	0.00259	0.0113
1,2-Dichloroethane	**0.000874**	0.005	0.00224	0.00978
2-Butanone (MEK)	**0.0088 J**	NE	2240	9,410
4-Methyl-2-Pentanone (MIBK)	**0.000621 J**	NE	555	2,330
Toluene	**0.00325**	1	19.2	80.7
Metals				
Hexavalent Chromium	**0.476**	0.1*	NE	NE
Barium	**1.67**	2	NE	NE
Cadmium	**0.027**	0.005	NE	NE
Chromium	**0.811**	0.1	NE	NE
Lead	**0.0322 J**	0.015	NE	NE
Mercury	**0.00886**	0.002	NE	NE

EPA MCL: Environmental Protection Agency Maximum Contaminant Level for drinking water (November 2021).

J: Estimated value

EPA VISL: Environmental Protection Agency Vapor Intrusion Screening Level target groundwater concentrations at residential (**Res.**) and industrial (**Ind.**) properties (Nov. 2021; TR=1E-06; THQ=1.0).
mg/l: Milligrams per liter

NE: Not Established

* MCL for chromium

Shaded values exceed regulatory screening levels.

APPENDIX C
RISK EVALUATION INPUT AND OUTPUT SHEETS

Site-specific
Resident Soil Inputs

Variable	Resident Soil Default Value	Site-Specific Value
A (PEF Dispersion Constant)	16.2302	13.2559
A (VF Dispersion Constant)	11.911	13.2559
A (VF Dispersion Constant - mass limit)	11.911	13.2559
B (PEF Dispersion Constant)	18.7762	19.2978
B (VF Dispersion Constant)	18.4385	19.2978
B (VF Dispersion Constant - mass limit)	18.4385	19.2978
City (PEF Climate Zone) Selection	Default	Salt Lake City,
City (VF Climate Zone) Selection	Default	Salt Lake City,
C (PEF Dispersion Constant)	216.108	221.3379
C (VF Dispersion Constant)	209.7845	221.3379
C (VF Dispersion Constant - mass limit)	209.7845	221.3379
d_s (depth of source) m	.	0.3
foc (fraction organic carbon in soil) g/g	0.006	0.006
F(x) (function dependent on U_m/U_t) unitless	0.194	0.0441
n (total soil porosity) L_{pore}/L_{soil}	0.43396	0.43396
p_h (dry soil bulk density) g/cm ^{3}	1.5	1.5
p_h (dry soil bulk density - mass limit) g/cm ^{3}	1.5	1.5
PEF (particulate emission factor) m ^{3}/kg	1359344438	8739875661.3597
p_s (soil particle density) g/cm ^{3}	2.65	2.65
Q/C_{wind} (g/m^2-s per kg/m^3)	93.77	80.640315549731
Q/C_{vol} (g/m^2-s per kg/m^3)	68.18	80.640315549731
Q/C_{vol} (g/m^2-s per kg/m^3 - mass limit)	68.18	80.640315549731
A_s (PEF acres)	0.5	0.5
A_s (VF acres)	0.5	0.5
A_s (VF mass-limit acres)	0.5	0.5
AF_{0-2} (mutagenic skin adherence factor) mg/cm ^{2}	0.2	0.2
AF_{2-6} (mutagenic skin adherence factor) mg/cm ^{2}	0.2	0.2
AF_{6-16} (mutagenic skin adherence factor) mg/cm ^{2}	0.07	0.07
AF_{16-26} (mutagenic skin adherence factor) mg/cm ^{2}	0.07	0.07
AF_{res-a} (skin adherence factor - adult) mg/cm ^{2}	0.07	0.07
AF_{res-c} (skin adherence factor - child) mg/cm ^{2}	0.2	0.2

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Site-specific
Resident Soil Inputs

Variable	Resident Soil Default Value	Site-Specific Value
AT_{res} (averaging time - resident carcinogenic)	365	365
BW_{0-2} (mutagenic body weight) kg	15	15
BW_{2-6} (mutagenic body weight) kg	15	15
BW_{6-16} (mutagenic body weight) kg	80	80
BW_{16-26} (mutagenic body weight) kg	80	80
BW_{res-a} (body weight - adult) kg	80	80
BW_{res-c} (body weight - child) kg	15	15
$DFS_{res-adj}$ (age-adjusted soil dermal factor) mg/kg	103390	103390
$DFSM_{res-adj}$ (mutagenic age-adjusted soil dermal factor) mg/kg	428260	428260
ED_{res} (exposure duration) years	26	26
ED_{0-2} (mutagenic exposure duration) years	2	2
ED_{2-6} (mutagenic exposure duration) years	4	4
ED_{6-16} (mutagenic exposure duration) years	10	10
ED_{16-26} (mutagenic exposure duration) years	10	10
ED_{res-a} (exposure duration - adult) years	20	20
ED_{res-c} (exposure duration - child) years	6	6
EF_{res} (exposure frequency) days/year	350	350
EF_{0-2} (mutagenic exposure frequency) days/year	350	350
EF_{2-6} (mutagenic exposure frequency) days/year	350	350
EF_{6-16} (mutagenic exposure frequency) days/year	350	350
EF_{16-26} (mutagenic exposure frequency) days/year	350	350
EF_{res-a} (exposure frequency - adult) days/year	350	350
EF_{res-c} (exposure frequency - child) days/year	350	350
ET_{res} (exposure time) hours/day	24	24
ET_{0-2} (mutagenic exposure time) hours/day	24	24
ET_{2-6} (mutagenic exposure time) hours/day	24	24
ET_{6-16} (mutagenic exposure time) hours/day	24	24
ET_{16-26} (mutagenic exposure time) hours/day	24	24
ET_{res-a} (adult exposure time) hours/day	24	24
ET_{res-c} (child exposure time) hours/day	24	24
THQ (target hazard quotient) unitless	0.1	1

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Site-specific Resident Soil Inputs

Variable	Resident Soil Default Value	Site-Specific Value
$IFS_{res\text{-}adj}$ (age-adjusted soil ingestion factor) mg/kg	36750	36750
$IFSM_{res\text{-}adj}$ (mutagenic age-adjusted soil ingestion factor) mg/kg	166833.3	166833.3
$IRS_{0\text{-}2}$ (mutagenic soil intake rate) mg/day	200	200
$IRS_{2\text{-}6}$ (mutagenic soil intake rate) mg/day	200	200
$IRS_{6\text{-}16}$ (mutagenic soil intake rate) mg/day	100	100
$IRS_{16\text{-}26}$ (mutagenic soil intake rate) mg/day	100	100
$IRS_{res\text{-}a}$ (soil intake rate - adult) mg/day	100	100
$IRS_{res\text{-}c}$ (soil intake rate - child) mg/day	200	200
LT (lifetime) years	70	70
$SA_{0\text{-}2}$ (mutagenic skin surface area) cm^2/day	2373	2373
$SA_{2\text{-}6}$ (mutagenic skin surface area) cm^2/day	2373	2373
$SA_{6\text{-}16}$ (mutagenic skin surface area) cm^2/day	6032	6032
$SA_{16\text{-}26}$ (mutagenic skin surface area) cm^2/day	6032	6032
$SA_{res\text{-}a}$ (skin surface area - adult) cm^2/day	6032	6032
$SA_{res\text{-}c}$ (skin surface area - child) cm^2/day	2373	2373
TR (target risk) unitless	1.0E-06	1.0E-06
T_w (groundwater temperature) Celsius	25	21
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15	0.15
T (exposure interval) s	819936000	819936000
T (exposure interval) yr	26	26
U_m (mean annual wind speed) m/s	4.69	3.93
U_t (equivalent threshold value)	11.32	11.32
V (fraction of vegetative cover) unitless	0.5	0.5
VF_{ml} (volitization factor - mass limit) m^3/kg	.	146933.10615685

Site-specific

Resident Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o (mg/kg-day)$^{-1}$	SF_o Ref	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	ABS	RBA	Soil Saturation Concentration (mg/kg)
Acetone	67-64-1	No	Yes	Organics	-		-		9.00E-01	U	-		1	-	1	1.14E+05
Arsenic, Inorganic	7440-38	No	No	Inorgani	1.50E+00	U	4.30E-03	U	3.00E-04	U	1.50E-05	U	1	0.03	0.6	-
Barium	7440-39	No	No	Inorgani	-		-		2.00E-01	U	5.00E-04	U	0.07	-	1	-
Benzene	71-43-2	No	Yes	Organics	5.50E-02	U	7.80E-06	U	4.00E-03	U	3.00E-02	U	1	-	1	1.81E+03
Cadmium (Diet)	7440-43	No	No	Inorgani	-		1.80E-03	U	1.00E-04	U	1.00E-05	U	0.025	0.001	1	-
Chlorobenzene	108-90-	No	Yes	Organics	-		-		2.00E-02	U	5.00E-02	U	1	-	1	7.59E+02
Chloroform	67-66-3	No	Yes	Organics	3.10E-02	U	2.30E-05	U	1.00E-02	U	9.77E-02	U	1	-	1	2.50E+03
Chromium(III), Insoluble Salts	16065-8	No	No	Inorgani	-		-		1.50E+00	U	-		0.013	-	1	-
Chromium(VI)	18540-2	Yes	No	Inorgani	5.00E-01	U	8.40E-02	U	3.00E-03	U	1.00E-04	U	0.025	-	1	-
Dichlorobenzene, 1,2-	95-50-1	No	Yes	Organics	-		-		9.00E-02	U	2.00E-01	U	1	-	1	3.76E+02
Dichlorobenzene, 1,4-	106-46-	No	Yes	Organics	5.40E-03	U	1.10E-05	U	7.00E-02	U	8.00E-01	U	1	-	1	-
Dichloroethane, 1,2-	107-06-	No	Yes	Organics	9.10E-02	U	2.60E-05	U	6.00E-03	U	7.00E-03	U	1	-	1	2.97E+03
Lead and Compounds	7439-92	No	No	Inorgani	-		-		-		-		1	-	1	-
Mercury (elemental)	7439-97	No	Yes	Inorgani	-		-		-		3.00E-04	U	1	-	1	3.13E+00

Site-specific

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If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

S (mg/L)	K_{oc} \ (cm^3/g)	K_d \ (cm^3/g)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	Henry's Law Constant (21 ℃) (unitless)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Enthalpy of vaporization @ groundwater temperature $\Delta H_{v,gw}$ \ (cal/mol)	Exponent for $\Delta H_{v,gw}$	Vapor Pressure VP (mm Hg)	Vapor Pressure VP (21 ℃)\ (mm Hg)	Normal Boiling Point BP (K)	BP Ref	Critical Temperature T_C \ (K)	T_C \ Ref
1.00E+06	2.36E+00	1.42E-02	3.50E-05	1.43E-03	1.22E-03	1.22E-03	U	7.43E+03	0.36	2.32E+02	1.96E+02	329.15	U	508	U
-	-	2.90E+01	-	-	-	-		9.04E+03	0.30	-	-	888.15	U	1670	U
-	-	4.10E+01	-	-	-	-		4.08E+04	0.30	-	-	1873.15	U	3570	U
1.79E+03	1.46E+02	8.76E-01	5.55E-03	2.27E-01	1.91E-01	1.91E-01	U	8.01E+03	0.35	9.48E+01	7.89E+01	353.15	U	562	U
-	-	7.50E+01	-	-	-	-		2.75E+04	0.30	-	-	1038.15	U	2290	U
4.98E+02	2.34E+02	1.40E+00	3.11E-03	1.27E-01	1.03E-01	1.03E-01	U	9.70E+03	0.36	1.20E+01	9.60E+00	405.15	U	632	U
7.95E+03	3.18E+01	1.91E-01	3.67E-03	1.50E-01	1.28E-01	1.28E-01	U	7.44E+03	0.35	1.97E+02	1.66E+02	334.25	U	536	U
-	-	1.80E+06	-	-	-	-		-	0.30	-	-	-		-	
1.69E+06	-	1.90E+01	-	-	-	-		-	0.30	-	-	-		-	
1.56E+02	3.83E+02	2.30E+00	1.92E-03	7.85E-02	6.14E-02	6.14E-02	U	1.13E+04	0.36	1.36E+00	1.05E+00	453.15	U	705	U
8.13E+01	3.75E+02	2.25E+00	2.41E-03	9.85E-02	7.70E-02	7.70E-02	U	1.13E+04	0.38	1.74E+00	1.34E+00	447.15	U	669	U
8.60E+03	3.96E+01	2.38E-01	1.18E-03	4.82E-02	4.03E-02	4.03E-02	U	8.39E+03	0.35	7.89E+01	6.51E+01	356.65	U	562	U
-	-	9.00E+02	-	-	-	-		4.86E+04	0.30	-	-	2023.15	U	5400	U
6.00E-02	-	5.20E+01	8.62E-03	3.52E-01	2.52E-01	2.52E-01	U	1.52E+04	0.30	1.96E-03	1.38E-03	630.15	U	1760	U

Site-specific

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If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Enthalpy of vaporization at the normal boiling point $\Delta H_{v,b}$ (cal/mol)	$\Delta H_{v,b}$ Ref	Chemical Type	D_{ia} (cm^2/s)	D_{ia} (21 °C) (cm^2/s)	D_{ia} Used in Calcs (cm^2/s)	D_{iw} (cm^2/s)	D_{iw} (21 °C) (cm^2/s)	D_{iw} Used in Calcs (cm^2/s)	D_A (cm^2/s)	Particulate Emission Factor (m^3/kg)	Volatilization Factor Unlimited Reservoir (m^3/kg)	Volatilization Factor Mass Limit (m^3/kg)	Volatilization Factor Selected (m^3/kg)
6.96E+03	U	VOC	1.04E-01	1.04E-01	1.04E-01	1.13E-05	1.13E-05	1.13E-05	5.97E-05	8.74E+09	1.76E+04	1.47E+05	1.47E+05
7.63E+03	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-	-
3.35E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-	-
7.34E+03	U	VOC	8.77E-02	8.77E-02	8.77E-02	1.01E-05	1.01E-05	1.01E-05	8.83E-04	8.74E+09	4.59E+03	1.47E+05	1.47E+05
2.39E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-	-
8.41E+03	U	VOC	7.08E-02	7.08E-02	7.08E-02	9.37E-06	9.37E-06	9.37E-06	2.55E-04	8.74E+09	8.53E+03	1.47E+05	1.47E+05
6.99E+03	U	VOC	7.54E-02	7.54E-02	7.54E-02	1.07E-05	1.07E-05	1.07E-05	1.63E-03	8.74E+09	3.37E+03	1.47E+05	1.47E+05
-		INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-	-
-		INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-	-
9.48E+03	U	VOC	5.51E-02	5.51E-02	5.51E-02	8.82E-06	8.82E-06	8.82E-06	7.48E-05	8.74E+09	1.58E+04	1.47E+05	1.47E+05
9.27E+03	U	VOC	5.40E-02	5.40E-02	5.40E-02	8.57E-06	8.57E-06	8.57E-06	9.37E-05	8.74E+09	1.41E+04	1.47E+05	1.47E+05
7.64E+03	U	VOC	8.41E-02	8.41E-02	8.41E-02	1.09E-05	1.09E-05	1.09E-05	5.24E-04	8.74E+09	5.96E+03	1.47E+05	1.47E+05
4.29E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-	-
1.41E+04	U	INORGANIC	3.07E-02	-	3.07E-02	6.30E-06	-	6.30E-06	7.90E-06	8.74E+09	4.85E+04	1.47E+05	1.47E+05

Site-specific

Resident Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Ingestion SL TR=1E-06 (mg/kg)	Dermal SL TR=1E-06 (mg/kg)	Inhalation SL TR=1E-06 (mg/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Ingestion SL Child THQ=1 (mg/kg)	Dermal SL Child THQ=1 (mg/kg)	Inhalation SL Child THQ=1 (mg/kg)	Noncarcinogenic SL Child THI=1 (mg/kg)	Ingestion SL Adult THQ=1 (mg/kg)	Dermal SL Adult THQ=1 (mg/kg)	Inhalation SL Adult THQ=1 (mg/kg)	Noncarcinogenic SL Adult THI=1 (mg/kg)	Screening Level (mg/kg)
-	-	-	-	7.04E+04	-	-	7.04E+04	7.51E+05	-	-	7.51E+05	7.04E+04 nc
7.72E-01	5.49E+00	5.71E+03	6.77E-01	3.91E+01	3.30E+02	1.37E+05	3.50E+01	4.17E+02	1.98E+03	1.37E+05	3.44E+02	6.77E-01 ca
-	-	-	-	1.56E+04	-	4.56E+06	1.56E+04	1.67E+05	-	4.56E+06	1.61E+05	1.56E+04 nc
1.26E+01	-	5.29E+01	1.02E+01	3.13E+02	-	4.60E+03	2.93E+02	3.34E+03	-	4.60E+03	1.93E+03	1.02E+01 ca
-	-	1.36E+04	1.36E+04	7.82E+00	8.24E+01	9.11E+04	7.14E+00	8.34E+01	4.94E+02	9.11E+04	7.13E+01	7.14E+00 nc
-	-	-	-	1.56E+03	-	7.66E+03	1.30E+03	1.67E+04	-	7.66E+03	5.25E+03	1.30E+03 nc sat
2.24E+01	-	1.79E+01	9.97E+00	7.82E+02	-	1.50E+04	7.43E+02	8.34E+03	-	1.50E+04	5.36E+03	9.97E+00 ca
-	-	-	-	1.17E+05	-	-	1.17E+05	1.25E+06	-	-	1.25E+06	1.17E+05 nc max
3.06E-01	-	1.05E+02	3.05E-01	2.35E+02	-	9.11E+05	2.35E+02	2.50E+03	-	9.11E+05	2.50E+03	3.05E-01 ca
-	-	-	-	7.04E+03	-	3.06E+04	5.72E+03	7.51E+04	-	3.06E+04	2.18E+04	5.72E+03 nc sat
1.29E+02	-	3.75E+01	2.90E+01	5.48E+03	-	1.23E+05	5.24E+03	5.84E+04	-	1.23E+05	3.96E+04	2.90E+01 ca
7.64E+00	-	1.59E+01	5.16E+00	4.69E+02	-	1.07E+03	3.26E+02	5.01E+03	-	1.07E+03	8.83E+02	5.16E+00 ca
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	4.60E+01	4.60E+01	-	-	4.60E+01	4.60E+01	4.60E+01 nc sat

Site-specific

Resident Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o (mg/kg-day)$^{-1}$	SF_o Ref	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	ABS	RBA	Soil Saturation Concentration (mg/kg)
Methyl Ethyl Ketone (2-Butanone)	78-93-3	No	Yes	Organics	-		-		6.00E-01	U	5.00E+00	U	1	-	1	2.84E+04
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-	No	Yes	Organics	-		-		-		3.00E+00	U	1	-	1	3.35E+03
Toluene	108-88-	No	Yes	Organics	-		-		8.00E-02	U	5.00E+00	U	1	-	1	8.13E+02
Trichlorobenzene, 1,2,4-	120-82-	No	Yes	Organics	2.90E-02	U	-		1.00E-02	U	2.00E-03	U	1	-	1	4.05E+02

Site-specific

Resident Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

S (mg/L)	K_{oc}\ (cm^3/g)	K_d\ (cm^3/g)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	Henry's Law Constant (21 ℃) (unitless)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Enthalpy of vaporization @ groundwater temperature $\Delta H_{v,gw}$\ (cal/mol)	Exponent for $\Delta H_{v,gw}$	Vapor Pressure VP (mm Hg)	Vapor Pressure VP (21 ℃)\ (mm Hg)	Normal Boiling Point BP (K)	BP Ref	Critical Temperature T_C\ (K)	T_C\ Ref
2.23E+05	4.51E+00	2.71E-02	5.69E-05	2.33E-03	1.95E-03	1.95E-03	U	8.28E+03	0.37	9.06E+01	7.49E+01	352.65	U	537	U
1.90E+04	1.26E+01	7.56E-02	1.38E-04	5.64E-03	4.58E-03	4.58E-03	U	9.66E+03	0.38	1.99E+01	1.59E+01	389.15	U	575	U
5.26E+02	2.34E+02	1.40E+00	6.64E-03	2.71E-01	2.24E-01	2.24E-01	U	9.04E+03	0.36	2.84E+01	2.31E+01	384.15	U	592	U
4.90E+01	1.36E+03	8.16E+00	1.42E-03	5.81E-02	4.35E-02	4.35E-02	U	1.32E+04	0.38	4.60E-01	3.40E-01	487.15	U	725	U

Site-specific

Resident Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Enthalpy of vaporization at the normal boiling point $\Delta H_{v,b}$ \ (cal/mol)	$\Delta H_{v,b}$ \ Ref	Chemical Type	D_{ia} \ (cm^2/s)	D_{ia} \ (21 °C)\ (cm^2/s)	D_{ia} \ Used in Calcs (cm^2/s)	D_{iw} \ (cm^2/s)	D_{iw} \ (21 °C)\ (cm^2/s)	D_{iw} \ Used in Calcs (cm^2/s)	D_A \ (cm^2/s)	Particulate Emission Factor (m^3/kg)	Volatilization Factor Unlimited Reservoir (m^3/kg)	Volatilization Factor Mass Limit (m^3/kg)	Volatilization Factor Selected (m^3/kg)
7.48E+03	U	VOC	8.96E-02	8.96E-02	8.96E-02	1.01E-05	1.01E-05	1.01E-05	7.35E-05	8.74E+09	1.59E+04	1.47E+05	1.47E+05
8.24E+03	U	VOC	6.84E-02	6.84E-02	6.84E-02	8.23E-06	8.23E-06	8.23E-06	9.48E-05	8.74E+09	1.40E+04	1.47E+05	1.47E+05
7.93E+03	U	VOC	7.62E-02	7.62E-02	7.62E-02	9.08E-06	9.08E-06	9.08E-06	5.87E-04	8.74E+09	5.63E+03	1.47E+05	1.47E+05
1.05E+04	U	VOC	3.88E-02	3.88E-02	3.88E-02	8.29E-06	8.29E-06	8.29E-06	1.09E-05	8.74E+09	4.13E+04	1.47E+05	1.47E+05

Site-specific

Resident Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Ingestion SL TR=1E-06 (mg/kg)	Dermal SL TR=1E-06 (mg/kg)	Inhalation SL TR=1E-06 (mg/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Ingestion SL Child THQ=1 (mg/kg)	Dermal SL Child THQ=1 (mg/kg)	Inhalation SL Child THQ=1 (mg/kg)	Noncarcinogenic SL Child THI=1 (mg/kg)	Ingestion SL Adult THQ=1 (mg/kg)	Dermal SL Adult THQ=1 (mg/kg)	Inhalation SL Adult THQ=1 (mg/kg)	Noncarcinogenic SL Adult THI=1 (mg/kg)	Screening Level (mg/kg)
-	-	-	-	4.69E+04	-	7.66E+05	4.42E+04	5.01E+05	-	7.66E+05	3.03E+05	4.42E+04 nc sat
-	-	-	-	-	-	4.60E+05	4.60E+05	-	-	4.60E+05	4.60E+05	4.60E+05 nc sat max
-	-	-	-	6.26E+03	-	7.66E+05	6.21E+03	6.67E+04	-	7.66E+05	6.14E+04	6.21E+03 nc sat
2.40E+01	-	-	2.40E+01	7.82E+02	-	3.06E+02	2.20E+02	8.34E+03	-	3.06E+02	2.96E+02	2.40E+01 ca

Site-specific
Resident Risk for Soil

Chemical	SF_o (mg/kg-day)$^{-1}$	SF_o Ref	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	ABS	RBA	Soil Saturation Concentration (mg/kg)	S (mg/L)	K_{oc}\ (cm^3/g)	K_d\ (cm^3/g)
Acetone	-		-		9.00E-01	U	-		1	-	1	1.14E+05	1.00E+06	2.36E+00	1.42E-02
Arsenic, Inorganic	1.50E+00	U	4.30E-03	U	3.00E-04	U	1.50E-05	U	1	0.03	0.6	-	-	-	2.90E+01
Barium	-		-		2.00E-01	U	5.00E-04	U	0.07	-	1	-	-	-	4.10E+01
Benzene	5.50E-02	U	7.80E-06	U	4.00E-03	U	3.00E-02	U	1	-	1	1.81E+03	1.79E+03	1.46E+02	8.76E-01
Cadmium (Diet)	-		1.80E-03	U	1.00E-04	U	1.00E-05	U	0.025	0.001	1	-	-	-	7.50E+01
Chlorobenzene	-		-		2.00E-02	U	5.00E-02	U	1	-	1	7.59E+02	4.98E+02	2.34E+02	1.40E+00
Chloroform	3.10E-02	U	2.30E-05	U	1.00E-02	U	9.77E-02	U	1	-	1	2.50E+03	7.95E+03	3.18E+01	1.91E-01
Chromium(III), Insoluble Salts	-		-		1.50E+00	U	-		0.013	-	1	-	-	-	1.80E+06
Chromium(VI)	5.00E-01	U	8.40E-02	U	3.00E-03	U	1.00E-04	U	0.025	-	1	-	1.69E+06	-	1.90E+01
Dichlorobenzene, 1,2-	-		-		9.00E-02	U	2.00E-01	U	1	-	1	3.76E+02	1.56E+02	3.83E+02	2.30E+00
Dichlorobenzene, 1,4-	5.40E-03	U	1.10E-05	U	7.00E-02	U	8.00E-01	U	1	-	1	-	8.13E+01	3.75E+02	2.25E+00
Dichloroethane, 1,2-	9.10E-02	U	2.60E-05	U	6.00E-03	U	7.00E-03	U	1	-	1	2.97E+03	8.60E+03	3.96E+01	2.38E-01
Lead and Compounds	-		-		-		-		1	-	1	-	-	-	9.00E+02
Mercury (elemental)	-		-		-		3.00E-04	U	1	-	1	3.13E+00	6.00E-02	-	5.20E+01
Methyl Ethyl Ketone (2-Butanone)	-		-		6.00E-01	U	5.00E+00	U	1	-	1	2.84E+04	2.23E+05	4.51E+00	2.71E-02
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	-		-		-		3.00E+00	U	1	-	1	3.35E+03	1.90E+04	1.26E+01	7.56E-02
Toluene	-		-		8.00E-02	U	5.00E+00	U	1	-	1	8.13E+02	5.26E+02	2.34E+02	1.40E+00
Trichlorobenzene, 1,2,4-	2.90E-02	U	-		1.00E-02	U	2.00E-03	U	1	-	1	4.05E+02	4.90E+01	1.36E+03	8.16E+00
*Total Risk/HI	-		-		-		-		-	-	-	-	-	-	-

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Site-specific
Resident Risk for Soil

HLC (atm-m³/mole)	Henry's Law Constant (unitless)	Henry's Law Constant (21 ℃) (unitless)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Enthalpy of vaporization @ groundwater temperature $\Delta H_{v,gw}$ \ (cal/mol)	Exponent for $\Delta H_{v,gw}$	Vapor Pressure VP (mm Hg)	Vapor Pressure VP (21 ℃)\ (mm Hg)	Normal Boiling Point BP (K)	BP Ref	Critical Temperature T_c \ (K)	T_c \ Ref	Enthalpy of vaporization at the normal boiling point $\Delta H_{v,b}$ \ (cal/mol)	$\Delta H_{v,b}$ \ Ref
3.50E-05	1.43E-03	1.22E-03	1.22E-03	U	7.43E+03	0.36	2.32E+02	1.96E+02	329.15	U	508	U	6.96E+03	U
-	-	-	-		9.04E+03	0.30	-	-	888.15	U	1670	U	7.63E+03	U
-	-	-	-		4.08E+04	0.30	-	-	1873.15	U	3570	U	3.35E+04	U
5.55E-03	2.27E-01	1.91E-01	1.91E-01	U	8.01E+03	0.35	9.48E+01	7.89E+01	353.15	U	562	U	7.34E+03	U
-	-	-	-		2.75E+04	0.30	-	-	1038.15	U	2290	U	2.39E+04	U
3.11E-03	1.27E-01	1.03E-01	1.03E-01	U	9.70E+03	0.36	1.20E+01	9.60E+00	405.15	U	632	U	8.41E+03	U
3.67E-03	1.50E-01	1.28E-01	1.28E-01	U	7.44E+03	0.35	1.97E+02	1.66E+02	334.25	U	536	U	6.99E+03	U
-	-	-	-		-	0.30	-	-	-		-		-	
-	-	-	-		-	0.30	-	-	-		-		-	
1.92E-03	7.85E-02	6.14E-02	6.14E-02	U	1.13E+04	0.36	1.36E+00	1.05E+00	453.15	U	705	U	9.48E+03	U
2.41E-03	9.85E-02	7.70E-02	7.70E-02	U	1.13E+04	0.38	1.74E+00	1.34E+00	447.15	U	669	U	9.27E+03	U
1.18E-03	4.82E-02	4.03E-02	4.03E-02	U	8.39E+03	0.35	7.89E+01	6.51E+01	356.65	U	562	U	7.64E+03	U
-	-	-	-		4.86E+04	0.30	-	-	2023.15	U	5400	U	4.29E+04	U
8.62E-03	3.52E-01	2.52E-01	2.52E-01	U	1.52E+04	0.30	1.96E-03	1.38E-03	630.15	U	1760	U	1.41E+04	U
5.69E-05	2.33E-03	1.95E-03	1.95E-03	U	8.28E+03	0.37	9.06E+01	7.49E+01	352.65	U	537	U	7.48E+03	U
1.38E-04	5.64E-03	4.58E-03	4.58E-03	U	9.66E+03	0.38	1.99E+01	1.59E+01	389.15	U	575	U	8.24E+03	U
6.64E-03	2.71E-01	2.24E-01	2.24E-01	U	9.04E+03	0.36	2.84E+01	2.31E+01	384.15	U	592	U	7.93E+03	U
1.42E-03	5.81E-02	4.35E-02	4.35E-02	U	1.32E+04	0.38	4.60E-01	3.40E-01	487.15	U	725	U	1.05E+04	U
-	-	-	-		-	-	-	-	-		-		-	

Site-specific
Resident Risk for Soil

Chemical Type	D_{ia} \ (cm^2/s)	D_{ia} \ (21 °C)\ (cm^2/s)	D_{ia} \ Used in Calcs (cm^2/s)	D_{iw} \ (cm^2/s)	D_{iw} \ (21 °C)\ (cm^2/s)	D_{iw} \ Used in Calcs (cm^2/s)	D_A \ (cm^2/s)	Particulate Emission Factor (m^3/kg)	Volatilization Factor Unlimited Reservoir (m^3/kg)	Volatilization Factor Mass Limit (m^3/kg)	Volatilization Factor Selected (m^3/kg)	Concentration (mg/kg)
VOC	1.04E-01	1.04E-01	1.04E-01	1.13E-05	1.13E-05	1.13E-05	5.97E-05	8.74E+09	1.76E+04	1.47E+05	1.47E+05	5.09E-01
INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-	-	1.86E+01
INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-	-	4.71E+02
VOC	8.77E-02	8.77E-02	8.77E-02	1.01E-05	1.01E-05	1.01E-05	8.83E-04	8.74E+09	4.59E+03	1.47E+05	1.47E+05	-
INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-	-	3.11E+01
VOC	7.08E-02	7.08E-02	7.08E-02	9.37E-06	9.37E-06	9.37E-06	2.55E-04	8.74E+09	8.53E+03	1.47E+05	1.47E+05	-
VOC	7.54E-02	7.54E-02	7.54E-02	1.07E-05	1.07E-05	1.07E-05	1.63E-03	8.74E+09	3.37E+03	1.47E+05	1.47E+05	-
INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-	-	4.42E+03
INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-	-	3.29E+03
VOC	5.51E-02	5.51E-02	5.51E-02	8.82E-06	8.82E-06	8.82E-06	7.48E-05	8.74E+09	1.58E+04	1.47E+05	1.47E+05	6.44E-01
VOC	5.40E-02	5.40E-02	5.40E-02	8.57E-06	8.57E-06	8.57E-06	9.37E-05	8.74E+09	1.41E+04	1.47E+05	1.47E+05	1.21E-01
VOC	8.41E-02	8.41E-02	8.41E-02	1.09E-05	1.09E-05	1.09E-05	5.24E-04	8.74E+09	5.96E+03	1.47E+05	1.47E+05	-
INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-	-	6.03E+01
INORGANIC	3.07E-02	-	3.07E-02	6.30E-06	-	6.30E-06	7.90E-06	8.74E+09	4.85E+04	1.47E+05	1.47E+05	1.30E+02
VOC	8.96E-02	8.96E-02	8.96E-02	1.01E-05	1.01E-05	1.01E-05	7.35E-05	8.74E+09	1.59E+04	1.47E+05	1.47E+05	1.77E-01
VOC	6.84E-02	6.84E-02	6.84E-02	8.23E-06	8.23E-06	8.23E-06	9.48E-05	8.74E+09	1.40E+04	1.47E+05	1.47E+05	-
VOC	7.62E-02	7.62E-02	7.62E-02	9.08E-06	9.08E-06	9.08E-06	5.87E-04	8.74E+09	5.63E+03	1.47E+05	1.47E+05	-
VOC	3.88E-02	3.88E-02	3.88E-02	8.29E-06	8.29E-06	8.29E-06	1.09E-05	8.74E+09	4.13E+04	1.47E+05	1.47E+05	1.03E-02
	-	-	-	-	-	-	-	-	-	-	-	-

Site-specific
Resident Risk for Soil

Ingestion Risk	Dermal Risk	Inhalation Risk	Carcinogenic Risk	Ingestion Child HQ	Dermal Child HQ	Inhalation Child HQ	Noncarcinogenic Child HI	Ingestion Adult HQ	Dermal Adult HQ	Inhalation Adult HQ	Noncarcinogenic Adult HI
-	-	-	-	7.23E-06	-	-	7.23E-06	6.78E-07	-	-	6.78E-07
2.41E-05	3.39E-06	3.26E-09	2.75E-05	4.76E-01	5.64E-02	1.36E-04	5.32E-01	4.46E-02	9.41E-03	1.36E-04	5.41E-02
-	-	-	-	3.01E-02	-	1.03E-04	3.02E-02	2.82E-03	-	1.03E-04	2.93E-03
-	-	-	-	-	-	-	-	-	-	-	-
-	-	2.28E-09	2.28E-09	3.98E+00	3.77E-01	3.41E-04	4.35E+00	3.73E-01	6.30E-02	3.41E-04	4.36E-01
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	3.77E-02	-	-	3.77E-02	3.53E-03	-	-	3.53E-03
1.07E-02	-	3.12E-05	1.07E-02	1.40E+01	-	3.61E-03	1.40E+01	1.31E+00	-	3.61E-03	1.32E+00
-	-	-	-	9.15E-05	-	2.10E-05	1.13E-04	8.58E-06	-	2.10E-05	2.96E-05
9.40E-10	-	3.23E-09	4.17E-09	2.21E-05	-	9.87E-07	2.31E-05	2.07E-06	-	9.87E-07	3.06E-06
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	2.83E+00	2.83E+00	-	-	2.83E+00	2.83E+00
-	-	-	-	3.77E-06	-	2.31E-07	4.00E-06	3.54E-07	-	2.31E-07	5.85E-07
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
4.30E-10	-	-	4.30E-10	1.32E-05	-	3.36E-05	4.68E-05	1.23E-06	-	3.36E-05	3.48E-05
1.07E-02	*3.39E-06*	*3.12E-05*	*1.07E-02*	*1.85E+01*	*4.34E-01*	*2.83E+00*	*2.18E+01*	*1.74E+00*	*7.24E-02*	*2.83E+00*	*4.64E+00*

Site-specific
Resident Tap Water Inputs

Variable	Resident Tap Water Default Value	Site-Specific Value
BW_{0-2} (mutagenic body weight) kg	15	15
BW_{2-6} (mutagenic body weight) kg	15	15
BW_{6-16} (mutagenic body weight) kg	80	80
BW_{16-26} (mutagenic body weight) kg	80	80
BW_{res-a} (body weight - adult) kg	80	80
BW_{res-c} (body weight - child) kg	15	15
$DFW_{res-adj}$ (age-adjusted dermal factor) cm^2-event/kg	2610650	2610650
$DFWM_{res-adj}$ (mutagenic age-adjusted dermal factor) cm^2-event/kg	8191633	8191633
ED_{res} (exposure duration - resident) years	26	26
ED_{0-2} (mutagenic exposure duration first phase) years	2	2
ED_{2-6} (mutagenic exposure duration second phase) years	4	4
ED_{6-16} (mutagenic exposure duration third phase) years	10	10
ED_{16-26} (mutagenic exposure duration fourth phase) years	10	10
ED_{res-a} (exposure duration - adult) years	20	20
ED_{res-c} (exposure duration - child) years	6	6
EF_{res} (exposure frequency) days/year	350	350
EF_{0-2} (mutagenic exposure frequency first phase) days/year	350	350
EF_{2-6} (mutagenic exposure frequency second phase) days/year	350	350
EF_{6-16} (mutagenic exposure frequency third phase) days/year	350	350
EF_{16-26} (mutagenic exposure frequency fourth phase) days/year	350	350
EF_{res-a} (exposure frequency - adult) days/year	350	350
EF_{res-c} (exposure frequency - child) days/year	350	350
ET_{res} (exposure time) hours/day	24	24
$ET_{event-res-adj}$ (age-adjusted exposure time) hours/event	0.67077	0.67077
$ET_{event-res-madj}$ (mutagenic age-adjusted exposure time) hours/event	0.67077	0.67077
ET_{0-2} (mutagenic dermal exposure time first phase) hours/event	0.54	0.54
ET_{2-6} (mutagenic dermal exposure time second phase) hours/event	0.54	0.54
ET_{6-16} (mutagenic dermal exposure time third phase) hours/event	0.71	0.71
ET_{16-26} (mutagenic dermal exposure time fourth phase) hours/event	0.71	0.71
ET_{res-a} (dermal exposure time - adult) hours/event	0.71	0.71

Site-specific
Resident Tap Water Inputs

Variable	Resident Tap Water Default Value	Site-Specific Value
ET_{res-c} (dermal exposure time - child) hours/event	0.54	0.54
ET_{0-2} (mutagenic inhalation exposure time first phase) hours/day	24	24
ET_{2-6} (mutagenic inhalation exposure time second phase) hours/day	24	24
ET_{6-16} (mutagenic inhalation exposure time third phase) hours/day	24	24
ET_{16-26} (mutagenic inhalation exposure time fourth phase) hours/day	24	24
ET_{res-a} (inhalation exposure time - adult) hours/day	24	24
ET_{res-c} (inhalation exposure time - child) hours/day	24	24
EV_{0-2} (mutagenic events) per day	1	1
EV_{2-6} (mutagenic events) per day	1	1
EV_{6-16} (mutagenic events) per day	1	1
EV_{16-26} (mutagenic events) per day	1	1
EV_{res-a} (events - adult) per day	1	1
EV_{res-c} (events - child) per day	1	1
THQ (target hazard quotient) unitless	0.1	1
$IFW_{res-adj}$ (adjusted intake factor) L/kg	327.95	327.95
$IFWM_{res-adj}$ (mutagenic adjusted intake factor) L/kg	1019.9	1019.9
IRW_{0-2} (mutagenic water intake rate) L/day	0.78	0.78
IRW_{2-6} (mutagenic water intake rate) L/day	0.78	0.78
IRW_{6-16} (mutagenic water intake rate) L/day	2.5	2.5
IRW_{16-26} (mutagenic water intake rate) L/day	2.5	2.5
IRW_{res-a} (water intake rate - adult) L/day	2.5	2.5
IRW_{res-c} (water intake rate - child) L/day	0.78	0.78
K (volatilization factor of Andelman) L/m^3	0.5	0.5
LT (lifetime) years	70	70
SA_{0-2} (mutagenic skin surface area) cm^2	6365	6365
SA_{2-6} (mutagenic skin surface area) cm^2	6365	6365
SA_{6-16} (mutagenic skin surface area) cm^2	19652	19652
SA_{16-26} (mutagenic skin surface area) cm^2	19652	19652
SA_{res-a} (skin surface area - adult) cm^2	19652	19652
SA_{res-c} (skin surface area - child) cm^2	6365	6365

Site-specific
Resident Tap Water Inputs

Variable	Resident Tap Water Default Value	Site-Specific Value
l_{sc} (apparent thickness of stratum corneum) cm	0.001	0.001
TR (target risk) unitless	1.0E-06	1.0E-06

Site-specific

Resident Regional Screening Levels (RSL) for Tap Water

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o (mg/kg-day)$^{-1}$	SF_o Ref	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS
Acetone	67-64-1	No	Yes	Organics	-		-		9.00E-01	U	-		1
Arsenic, Inorganic	7440-38	No	No	Inorgani	1.50E+00	U	4.30E-03	U	3.00E-04	U	1.50E-05	U	1
Barium	7440-39	No	No	Inorgani	-		-		2.00E-01	U	5.00E-04	U	0.07
Benzene	71-43-2	No	Yes	Organics	5.50E-02	U	7.80E-06	U	4.00E-03	U	3.00E-02	U	1
Chlorobenzene	108-90-	No	Yes	Organics	-		-		2.00E-02	U	5.00E-02	U	1
Chloroform	67-66-3	No	Yes	Organics	3.10E-02	U	2.30E-05	U	1.00E-02	U	9.77E-02	U	1
Chromium(III), Insoluble Salts	16065-8	No	No	Inorgani	-		-		1.50E+00	U	-		0.013
Chromium(VI)	18540-2	Yes	No	Inorgani	5.00E-01	U	8.40E-02	U	3.00E-03	U	1.00E-04	U	0.025
Dichlorobenzene, 1,2-	95-50-1	No	Yes	Organics	-		-		9.00E-02	U	2.00E-01	U	1
Dichlorobenzene, 1,4-	106-46-	No	Yes	Organics	5.40E-03	U	1.10E-05	U	7.00E-02	U	8.00E-01	U	1
Dichloroethane, 1,2-	107-06-	No	Yes	Organics	9.10E-02	U	2.60E-05	U	6.00E-03	U	7.00E-03	U	1
Lead and Compounds	7439-92	No	No	Inorgani	-		-		-		-		1
Mercury (elemental)	7439-97	No	Yes	Inorgani	-		-		-		3.00E-04	U	1
Methyl Ethyl Ketone (2-Butanone)	78-93-3	No	Yes	Organics	-		-		6.00E-01	U	5.00E+00	U	1
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-	No	Yes	Organics	-		-		-		3.00E+00	U	1
Toluene	108-88-	No	Yes	Organics	-		-		8.00E-02	U	5.00E+00	U	1
Trichlorobenzene, 1,2,4-	120-82-	No	Yes	Organics	2.90E-02	U	-		1.00E-02	U	2.00E-03	U	1

Site-specific

Resident Regional Screening Levels (RSL) for Tap Water

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

K_p \ (cm/hr)	MW	B (unitless)	t^* (hr)	τ_{event} (hr/event)	FA (unitless)	In EPD?	$DA_{event\ (ca)}$	DA_{event} (nc child)	DA_{event} (nc adult)	MCL (ug/L)	Ingestion SL TR=1E-06 (ug/L)	Dermal SL TR=1E-06 (ug/L)	Inhalation SL TR=1E-06 (ug/L)
5.12E-04	58.081	1.50E-03	5.34E-01	2.22E-01	1	Yes	-	2.21E+00	3.82E+00	-	-	-	-
1.00E-03	74.922	3.33E-03	6.63E-01	2.76E-01	1	Yes	6.52E-06	7.37E-04	1.27E-03	1.00E+01	5.19E-02	9.73E+00	-
1.00E-03	137.33	4.51E-03	1.48E+00	6.18E-01	1	Yes	-	3.44E-02	5.94E-02	2.00E+03	-	-	-
1.49E-02	78.115	5.07E-02	6.91E-01	2.88E-01	1	Yes	1.78E-04	9.83E-03	1.70E-02	5.00E+00	1.42E+00	9.83E+00	7.20E-01
2.82E-02	112.56	1.15E-01	1.08E+00	4.49E-01	1	Yes	-	4.92E-02	8.49E-02	1.00E+02	-	-	-
6.83E-03	119.38	2.87E-02	1.18E+00	4.90E-01	1	Yes	3.16E-04	2.46E-02	4.25E-02	8.00E+01	2.51E+00	2.92E+01	2.44E-01
1.00E-03	52	2.77E-03	4.93E-01	2.06E-01	1	Yes	-	4.79E-02	8.28E-02	-	-	-	-
2.00E-03	52	5.55E-03	4.93E-01	2.06E-01	1	Yes	1.56E-07	1.84E-04	3.18E-04	-	5.01E-02	1.16E-01	-
4.46E-02	147	2.08E-01	1.68E+00	7.00E-01	1	Yes	-	2.21E-01	3.82E-01	6.00E+02	-	-	-
4.53E-02	147	2.11E-01	1.68E+00	7.00E-01	1	Yes	1.81E-03	1.72E-01	2.97E-01	7.50E+01	1.44E+01	2.11E+01	5.10E-01
4.20E-03	98.96	1.61E-02	9.04E-01	3.77E-01	1	Yes	1.08E-04	1.47E-02	2.55E-02	5.00E+00	8.56E-01	1.84E+01	2.16E-01
1.00E-04	207.2	5.54E-04	3.65E+00	1.52E+00	1	Yes	-	-	-	1.50E+01	-	-	-
1.00E-03	200.59	5.45E-03	3.35E+00	1.40E+00	1	Yes	-	-	-	2.00E+00	-	-	-
9.62E-04	72.108	3.14E-03	6.40E-01	2.66E-01	1	Yes	-	1.47E+00	2.55E+00	-	-	-	-
3.19E-03	100.16	1.23E-02	9.18E-01	3.83E-01	1	Yes	-	-	-	-	-	-	-
3.11E-02	92.142	1.15E-01	8.28E-01	3.45E-01	1	Yes	-	1.97E-01	3.40E-01	1.00E+03	-	-	-
7.05E-02	181.45	3.65E-01	2.62E+00	1.09E+00	1	Yes	3.37E-04	2.46E-02	4.25E-02	7.00E+01	2.69E+00	2.02E+00	-

Site-specific

Resident Regional Screening Levels (RSL) for Tap Water

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Carcinogenic SL TR=1E-06 (ug/L)	Ingestion SL Child THQ=1 (ug/L)	Dermal SL Child THQ=1 (ug/L)	Inhalation SL Child THQ=1 (ug/L)	Noncarcinogenic SL Child THI=1 (ug/L)	Ingestion SL Adult THQ=1 (ug/L)	Dermal SL Adult THQ=1 (ug/L)	Inhalation SL Adult THQ=1 (ug/L)	Noncarcinogenic SL Adult THI=1 (ug/L)	Screening Level (ug/L)
-	1.80E+04	4.39E+06	-	1.80E+04	3.00E+04	6.46E+06	-	2.99E+04	1.80E+04 nc
5.17E-02	6.02E+00	1.37E+03	-	5.99E+00	1.00E+01	1.79E+03	-	9.96E+00	5.17E-02 ca
-	4.01E+03	6.37E+04	-	3.77E+03	6.67E+03	8.37E+04	-	6.18E+03	3.77E+03 nc
4.55E-01	8.02E+01	6.05E+02	6.26E+01	3.32E+01	1.33E+02	8.90E+02	6.26E+01	4.07E+01	4.55E-01 ca
-	4.01E+02	1.28E+03	1.04E+02	7.77E+01	6.67E+02	1.93E+03	1.04E+02	8.62E+01	7.77E+01 nc
2.21E-01	2.01E+02	2.53E+03	2.04E+02	9.72E+01	3.34E+02	3.81E+03	2.04E+02	1.22E+02	2.21E-01 ca
-	3.01E+04	8.87E+04	-	2.25E+04	5.01E+04	1.17E+05	-	3.50E+04	2.25E+04 nc
3.50E-02	6.02E+01	1.71E+02	-	4.45E+01	1.00E+02	2.24E+02	-	6.92E+01	3.50E-02 ca
-	1.80E+03	2.92E+03	4.17E+02	3.04E+02	3.00E+03	4.40E+03	4.17E+02	3.38E+02	3.04E+02 nc
4.82E-01	1.40E+03	2.23E+03	1.67E+03	5.68E+02	2.34E+03	3.37E+03	1.67E+03	7.55E+02	4.82E-01 ca
1.71E-01	1.20E+02	2.82E+03	1.46E+01	1.30E+01	2.00E+02	4.24E+03	1.46E+01	1.36E+01	1.71E-01 ca
-	-	-	-	-	-	-	-	-	
-	-	-	6.26E-01	6.26E-01	-	-	6.26E-01	6.26E-01	6.26E-01 nc
-	1.20E+04	1.46E+06	1.04E+04	5.57E+03	2.00E+04	2.13E+06	1.04E+04	6.84E+03	5.57E+03 nc
-	-	-	6.26E+03	6.26E+03	-	-	6.26E+03	6.26E+03	6.26E+03 nc
-	1.60E+03	5.30E+03	1.04E+04	1.10E+03	2.67E+03	7.98E+03	1.04E+04	1.68E+03	1.10E+03 nc
1.15E+00	2.01E+02	1.64E+02	4.17E+00	3.99E+00	3.34E+02	2.47E+02	4.17E+00	4.05E+00	1.15E+00 ca

Site-specific
Resident Risk for Tap Water

Chemical	SF_o $(mg/kg\text{-}day)^{-1}$	SF_o Ref	IUR $(ug/m^3)^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	K_p (cm/hr)	MW	B (unitless)
Acetone	-		-		9.00E-01	U	-		1	5.12E-04	58.081	1.50E-03
Arsenic, Inorganic	1.50E+00	U	4.30E-03	U	3.00E-04	U	1.50E-05	U	1	1.00E-03	74.922	3.33E-03
Barium	-		-		2.00E-01	U	5.00E-04	U	0.07	1.00E-03	137.33	4.51E-03
Benzene	5.50E-02	U	7.80E-06	U	4.00E-03	U	3.00E-02	U	1	1.49E-02	78.115	5.07E-02
Chlorobenzene	-		-		2.00E-02	U	5.00E-02	U	1	2.82E-02	112.56	1.15E-01
Chloroform	3.10E-02	U	2.30E-05	U	1.00E-02	U	9.77E-02	U	1	6.83E-03	119.38	2.87E-02
Chromium(III), Insoluble Salts	-		-		1.50E+00	U	-		0.013	1.00E-03	52	2.77E-03
Chromium(VI)	5.00E-01	U	8.40E-02	U	3.00E-03	U	1.00E-04	U	0.025	2.00E-03	52	5.55E-03
Dichlorobenzene, 1,2-	-		-		9.00E-02	U	2.00E-01	U	1	4.46E-02	147	2.08E-01
Dichlorobenzene, 1,4-	5.40E-03	U	1.10E-05	U	7.00E-02	U	8.00E-01	U	1	4.53E-02	147	2.11E-01
Dichloroethane, 1,2-	9.10E-02	U	2.60E-05	U	6.00E-03	U	7.00E-03	U	1	4.20E-03	98.96	1.61E-02
Lead and Compounds	-		-		-		-		1	1.00E-04	207.2	5.54E-04
Mercury (elemental)	-		-		-		3.00E-04	U	1	1.00E-03	200.59	5.45E-03
Methyl Ethyl Ketone (2-Butanone)	-		-		6.00E-01	U	5.00E+00	U	1	9.62E-04	72.108	3.14E-03
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	-		-		-		3.00E+00	U	1	3.19E-03	100.16	1.23E-02
Toluene	-		-		8.00E-02	U	5.00E+00	U	1	3.11E-02	92.142	1.15E-01
Trichlorobenzene, 1,2,4-	2.90E-02	U	-		1.00E-02	U	2.00E-03	U	1	7.05E-02	181.45	3.65E-01
**Total Risk/HI*	-		-		-		-		-	-	-	-

Site-specific
Resident Risk for Tap Water

t^* (hr)	τ_{event} (hr/event)	FA (unitless)	In EPD?	$DA_{event\ (ca)}$	DA_{event} (nc child)	DA_{event} (nc adult)	MCL (ug/L)	Concentration (ug/L)	Ingestion Risk	Dermal Risk	Inhalation Risk
5.34E-01	2.22E-01	1	Yes	-	2.21E+00	3.82E+00	-	1.38E+02	-	-	-
6.63E-01	2.76E-01	1	Yes	6.52E-06	7.37E-04	1.27E-03	1.00E+01	-	-	-	-
1.48E+00	6.18E-01	1	Yes	-	3.44E-02	5.94E-02	2.00E+03	1.67E+03	-	-	-
6.91E-01	2.88E-01	1	Yes	1.78E-04	9.83E-03	1.70E-02	5.00E+00	1.56E+00	1.10E-06	1.59E-07	2.17E-06
1.08E+00	4.49E-01	1	Yes	-	4.92E-02	8.49E-02	1.00E+02	7.54E+01	-	-	-
1.18E+00	4.90E-01	1	Yes	3.16E-04	2.46E-02	4.25E-02	8.00E+01	9.43E-01	3.75E-07	3.23E-08	3.86E-06
4.93E-01	2.06E-01	1	Yes	-	4.79E-02	8.28E-02	-	8.11E+02	-	-	-
4.93E-01	2.06E-01	1	Yes	1.56E-07	1.84E-04	3.18E-04	-	4.76E+02	9.50E-03	4.09E-03	-
1.68E+00	7.00E-01	1	Yes	-	2.21E-01	3.82E-01	6.00E+02	1.08E+02	-	-	-
1.68E+00	7.00E-01	1	Yes	1.81E-03	1.72E-01	2.97E-01	7.50E+01	3.34E+01	2.32E-06	1.58E-06	6.54E-05
9.04E-01	3.77E-01	1	Yes	1.08E-04	1.47E-02	2.55E-02	5.00E+00	8.74E-01	1.02E-06	4.74E-08	4.05E-06
3.65E+00	1.52E+00	1	Yes	-	-	-	1.50E+01	3.22E+01	-	-	-
3.35E+00	1.40E+00	1	Yes	-	-	-	2.00E+00	8.86E+00	-	-	-
6.40E-01	2.66E-01	1	Yes	-	1.47E+00	2.55E+00	-	8.80E+00	-	-	-
9.18E-01	3.83E-01	1	Yes	-	-	-	-	6.21E-01	-	-	-
8.28E-01	3.45E-01	1	Yes	-	1.97E-01	3.40E-01	1.00E+03	3.25E+00	-	-	-
2.62E+00	1.09E+00	1	Yes	3.37E-04	2.46E-02	4.25E-02	7.00E+01	-	-	-	-
-	-	-		-	-	-	-	-	*9.51E-03*	*4.10E-03*	*7.55E-05*

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Site-specific
Resident Risk for Tap Water

Carcinogenic Risk	Ingestion Child HQ	Dermal Child HQ	Inhalation Child HQ	Noncarcinogenic Child HI	Ingestion Adult HQ	Dermal Adult HQ	Inhalation Adult HQ	Noncarcinogenic Adult HI
-	7.65E-03	3.15E-05	-	7.68E-03	4.59E-03	2.13E-05	-	4.62E-03
-	-	-	-	-	-	-	-	-
-	4.16E-01	2.62E-02	-	4.43E-01	2.50E-01	1.99E-02	-	2.70E-01
3.43E-06	1.94E-02	2.58E-03	2.49E-02	4.70E-02	1.17E-02	1.75E-03	2.49E-02	3.84E-02
-	1.88E-01	5.89E-02	7.23E-01	9.70E-01	1.13E-01	3.91E-02	7.23E-01	8.75E-01
4.27E-06	4.70E-03	3.73E-04	4.63E-03	9.70E-03	2.83E-03	2.47E-04	4.63E-03	7.70E-03
-	2.70E-02	9.14E-03	-	3.61E-02	1.62E-02	6.96E-03	-	2.32E-02
1.35E-02	7.91E+00	2.79E+00	-	1.07E+01	4.75E+00	2.12E+00	-	6.88E+00
-	5.98E-02	3.70E-02	2.59E-01	3.56E-01	3.60E-02	2.46E-02	2.59E-01	3.19E-01
6.93E-05	2.38E-02	1.49E-02	2.00E-02	5.88E-02	1.43E-02	9.92E-03	2.00E-02	4.42E-02
5.12E-06	7.26E-03	3.10E-04	5.99E-02	6.74E-02	4.37E-03	2.06E-04	5.99E-02	6.44E-02
-	-	-	-	-	-	-	-	-
-	-	-	1.42E+01	1.42E+01	-	-	1.42E+01	1.42E+01
-	7.31E-04	6.02E-06	8.44E-04	1.58E-03	4.39E-04	4.13E-06	8.44E-04	1.29E-03
-	-	-	9.92E-05	9.92E-05	-	-	9.92E-05	9.92E-05
-	2.03E-03	6.13E-04	3.12E-04	2.95E-03	1.22E-03	4.07E-04	3.12E-04	1.94E-03
-	-	-	-	-	-	-	-	-
1.36E-02	*8.67E+00*	*2.94E+00*	*1.53E+01*	*2.69E+01*	*5.21E+00*	*2.23E+00*	*1.53E+01*	*2.27E+01*

Site-specific
Indoor Worker Soil Inputs

Variable	Indoor Worker Soil Default Value	Site-Specific Value
A (PEF Dispersion Constant)	16.2302	13.2559
A (VF Dispersion Constant)	11.911	13.2559
A (VF Dispersion Constant - mass limit)	11.911	13.2559
B (PEF Dispersion Constant)	18.7762	19.2978
B (VF Dispersion Constant)	18.4385	19.2978
B (VF Dispersion Constant - mass limit)	18.4385	19.2978
City (PEF Climate Zone) Selection	Default	Salt Lake City,
City (VF Climate Zone) Selection	Default	Salt Lake City,
C (PEF Dispersion Constant)	216.108	221.3379
C (VF Dispersion Constant)	209.7845	221.3379
C (VF Dispersion Constant - mass limit)	209.7845	221.3379
d_e (depth of source) m	.	0.3
foc (fraction organic carbon in soil) g/g	0.006	0.006
F(x) (function dependent on U_m/U_t) unitless	0.194	0.0441
n (total soil porosity) L_{pore}/L_{soil}	0.43396	0.43396
p_h (dry soil bulk density) g/cm ^{3}	1.5	1.5
p_h (dry soil bulk density - mass limit) g/cm ^{3}	1.5	1.5
PEF (particulate emission factor) m ^{3}/kg	1359344438	8739875661.3597
p_s (soil particle density) g/cm ^{3}	2.65	2.65
Q/C_{wind} (g/m^2-s per kg/m^3)	93.77	80.640315549731
Q/C_{vol} (g/m^2-s per kg/m^3)	68.18	80.640315549731
Q/C_{vol} (g/m^2-s per kg/m^3 - mass limit)	68.18	80.640315549731
A_s (PEF acres)	0.5	0.5
A_s (VF acres)	0.5	0.5
A_s (VF mass-limit acres)	0.5	0.5
AT_{ind} (averaging time - indoor worker)	365	365
BW_{ind} (body weight - indoor worker)	80	80
ED_{ind} (exposure duration - indoor worker) year	25	25
EF_{ind} (exposure frequency - indoor worker) day/year	250	250
ET_{ind} (exposure time - indoor worker) hour	8	8

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Site-specific
Indoor Worker Soil Inputs

Variable	Indoor Worker Soil Default Value	Site-Specific Value
THQ (target hazard quotient) unitless	0.1	1
IRS_{ind} (soil ingestion rate - indoor worker) mg/day	50	50
LT (lifetime) year	70	70
TR (target cancer risk) unitless	1.0E-06	1.0E-06
T_w (groundwater temperature) Celsius	25	21
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15	0.15
T (exposure interval) s	819936000	819936000
T (exposure interval) yr	26	26
U_m (mean annual wind speed) m/s	4.69	3.93
U_t (equivalent threshold value)	11.32	11.32
V (fraction of vegetative cover) unitless	0.5	0.5
VF_{ml} (volitization factor - mass limit) m^3/kg	.	146933.10615685

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Site-specific

Indoor Worker Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o (mg/kg-day)$^{-1}$	SF_o Ref	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	RBA
Acetone	67-64-1	No	Yes	Organics	-		-		9.00E-01	U	-		1
Arsenic, Inorganic	7440-38	No	No	Inorgani	1.50E+00	U	4.30E-03	U	3.00E-04	U	1.50E-05	U	0.6
Barium	7440-39	No	No	Inorgani	-		-		2.00E-01	U	5.00E-04	U	1
Cadmium (Diet)	7440-43	No	No	Inorgani	-		1.80E-03	U	1.00E-04	U	1.00E-05	U	1
Chromium(III), Insoluble Salts	16065-8	No	No	Inorgani	-		-		1.50E+00	U	-		1
Chromium(VI)	18540-2	Yes	No	Inorgani	5.00E-01	U	8.40E-02	U	3.00E-03	U	1.00E-04	U	1
Dichlorobenzene, 1,2-	95-50-1	No	Yes	Organics	-		-		9.00E-02	U	2.00E-01	U	1
Dichlorobenzene, 1,4-	106-46-	No	Yes	Organics	5.40E-03	U	1.10E-05	U	7.00E-02	U	8.00E-01	U	1
Lead and Compounds	7439-92	No	No	Inorgani	-		-		-		-		1
Mercury (elemental)	7439-97	No	Yes	Inorgani	-		-		-		3.00E-04	U	1
Methyl Ethyl Ketone (2-Butanone)	78-93-3	No	Yes	Organics	-		-		6.00E-01	U	5.00E+00	U	1
Trichlorobenzene, 1,2,4-	120-82-	No	Yes	Organics	2.90E-02	U	-		1.00E-02	U	2.00E-03	U	1

Site-specific

Indoor Worker Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Soil Saturation Concentration (mg/kg)	S (mg/L)	K_{oc}\ (cm^3/g)	K_d\ (cm^3/g)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	Henry's Law Constant (21 ℃) (unitless)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Enthalpy of vaporization @ groundwater temperature $\Delta H_{v,gw}$\ (cal/mol)	Exponent for $\Delta H_{v,gw}$	Vapor Pressure VP (mm Hg)	Vapor Pressure VP (21 ℃)\ (mm Hg)
1.14E+05	1.00E+06	2.36E+00	1.42E-02	3.50E-05	1.43E-03	1.22E-03	1.22E-03	U	7.43E+03	0.36	2.32E+02	1.96E+02
-	-	-	2.90E+01	-	-	-	-		9.04E+03	0.30	-	-
-	-	-	4.10E+01	-	-	-	-		4.08E+04	0.30	-	-
-	-	-	7.50E+01	-	-	-	-		2.75E+04	0.30	-	-
-	-	-	1.80E+06	-	-	-	-		-	0.30	-	-
-	1.69E+06	-	1.90E+01	-	-	-	-		-	0.30	-	-
3.76E+02	1.56E+02	3.83E+02	2.30E+00	1.92E-03	7.85E-02	6.14E-02	6.14E-02	U	1.13E+04	0.36	1.36E+00	1.05E+00
-	8.13E+01	3.75E+02	2.25E+00	2.41E-03	9.85E-02	7.70E-02	7.70E-02	U	1.13E+04	0.38	1.74E+00	1.34E+00
-	-	-	9.00E+02	-	-	-	-		4.86E+04	0.30	-	-
3.13E+00	6.00E-02	-	5.20E+01	8.62E-03	3.52E-01	2.52E-01	2.52E-01	U	1.52E+04	0.30	1.96E-03	1.38E-03
2.84E+04	2.23E+05	4.51E+00	2.71E-02	5.69E-05	2.33E-03	1.95E-03	1.95E-03	U	8.28E+03	0.37	9.06E+01	7.49E+01
4.05E+02	4.90E+01	1.36E+03	8.16E+00	1.42E-03	5.81E-02	4.35E-02	4.35E-02	U	1.32E+04	0.38	4.60E-01	3.40E-01

Site-specific

Indoor Worker Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Normal Boiling Point BP (K)	BP Ref	Critical Temperature T_C (K)	T_C Ref	Enthalpy of vaporization at the normal boiling point $\Delta H_{v,b}$ (cal/mol)	$\Delta H_{v,b}$ Ref	Chemical Type	D_{ia} (cm²/s)	D_{ia} (21 °C) (cm²/s)	D_{ia} Used in Calcs (cm²/s)	D_{iw} (cm²/s)	D_{iw} (21 °C) (cm²/s)	D_{iw} Used in Calcs (cm²/s)	D_A (cm²/s)
329.15	U	508	U	6.96E+03	U	VOC	1.04E-01	1.04E-01	1.04E-01	1.13E-05	1.13E-05	1.13E-05	5.97E-05
888.15	U	1670	U	7.63E+03	U	INORGANIC	-	-	-	-	-	-	-
1873.15	U	3570	U	3.35E+04	U	INORGANIC	-	-	-	-	-	-	-
1038.15	U	2290	U	2.39E+04	U	INORGANIC	-	-	-	-	-	-	-
-		-		-		INORGANIC	-	-	-	-	-	-	-
-		-		-		INORGANIC	-	-	-	-	-	-	-
453.15	U	705	U	9.48E+03	U	VOC	5.51E-02	5.51E-02	5.51E-02	8.82E-06	8.82E-06	8.82E-06	7.48E-05
447.15	U	669	U	9.27E+03	U	VOC	5.40E-02	5.40E-02	5.40E-02	8.57E-06	8.57E-06	8.57E-06	9.37E-05
2023.15	U	5400	U	4.29E+04	U	INORGANIC	-	-	-	-	-	-	-
630.15	U	1760	U	1.41E+04	U	INORGANIC	3.07E-02	-	3.07E-02	6.30E-06	-	6.30E-06	7.90E-06
352.65	U	537	U	7.48E+03	U	VOC	8.96E-02	8.96E-02	8.96E-02	1.01E-05	1.01E-05	1.01E-05	7.35E-05
487.15	U	725	U	1.05E+04	U	VOC	3.88E-02	3.88E-02	3.88E-02	8.29E-06	8.29E-06	8.29E-06	1.09E-05

Site-specific

Indoor Worker Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Particulate Emission Factor (m^3/kg)	Volatilization Factor Unlimited Reservoir (m^3/kg)	Volatilization Factor Mass Limit (m^3/kg)	Volatilization Factor Selected (m^3/kg)	Ingestion SL TR=1E-06 (mg/kg)	Inhalation SL TR=1E-06 (mg/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)	Screening Level (mg/kg)
8.74E+09	1.76E+04	1.47E+05	1.47E+05	-	-	-	2.10E+06	-	2.10E+06	2.10E+06 nc sat max
8.74E+09	-	-	-	7.27E+00	2.49E+04	7.27E+00	1.17E+03	5.74E+05	1.17E+03	7.27E+00 ca
8.74E+09	-	-	-	-	-	-	4.67E+05	1.91E+07	4.56E+05	4.56E+05 nc max
8.74E+09	-	-	-	-	5.95E+04	5.95E+04	2.34E+02	3.83E+05	2.33E+02	2.33E+02 nc
8.74E+09	-	-	-	-	-	-	3.50E+06	-	3.50E+06	3.50E+06 nc max
8.74E+09	-	-	-	1.31E+01	1.28E+03	1.29E+01	7.01E+03	3.83E+06	7.00E+03	1.29E+01 ca
8.74E+09	1.58E+04	1.47E+05	1.47E+05	-	-	-	2.10E+05	1.29E+05	7.98E+04	7.98E+04 nc sat
8.74E+09	1.41E+04	1.47E+05	1.47E+05	1.21E+03	1.64E+02	1.44E+02	1.64E+05	5.15E+05	1.24E+05	1.44E+02 ca
8.74E+09	-	-	-	-	-	-	-	-	-	
8.74E+09	4.85E+04	1.47E+05	1.47E+05	-	-	-	-	1.93E+02	1.93E+02	1.93E+02 nc sat
8.74E+09	1.59E+04	1.47E+05	1.47E+05	-	-	-	1.40E+06	3.22E+06	9.76E+05	9.76E+05 nc sat max
8.74E+09	4.13E+04	1.47E+05	1.47E+05	2.26E+02	-	2.26E+02	2.34E+04	1.29E+03	1.22E+03	2.26E+02 ca**

Site-specific
Outdoor Worker Soil Inputs

Variable	Outdoor Worker Soil Default Value	Site-Specific Value
A (PEF Dispersion Constant)	16.2302	13.2559
A (VF Dispersion Constant)	11.911	13.2559
A (VF Dispersion Constant - mass limit)	11.911	13.2559
B (PEF Dispersion Constant)	18.7762	19.2978
B (VF Dispersion Constant)	18.4385	19.2978
B (VF Dispersion Constant - mass limit)	18.4385	19.2978
City (PEF Climate Zone) Selection	Default	Salt Lake City,
City (VF Climate Zone) Selection	Default	Salt Lake City,
C (PEF Dispersion Constant)	216.108	221.3379
C (VF Dispersion Constant)	209.7845	221.3379
C (VF Dispersion Constant - mass limit)	209.7845	221.3379
d_e (depth of source) m	.	0.3
foc (fraction organic carbon in soil) g/g	0.006	0.006
F(x) (function dependent on U_m/U_t) unitless	0.194	0.0441
n (total soil porosity) L_{pore}/L_{soil}	0.43396	0.43396
p_h (dry soil bulk density) g/cm ^{3}	1.5	1.5
p_h (dry soil bulk density - mass limit) g/cm ^{3}	1.5	1.5
PEF (particulate emission factor) m ^{3}/kg	1359344438	8739875661.3597
p_s (soil particle density) g/cm ^{3}	2.65	2.65
Q/C_{wind} (g/m^2-s per kg/m^3)	93.77	80.640315549731
Q/C_{vol} (g/m^2-s per kg/m^3)	68.18	80.640315549731
Q/C_{vol} (g/m^2-s per kg/m^3 - mass limit)	68.18	80.640315549731
A_s (PEF acres)	0.5	0.5
A_s (VF acres)	0.5	0.5
A_s (VF mass-limit acres)	0.5	0.5
AF_{out} (skin adherence factor - outdoor worker) mg/cm ^{2}	0.12	0.12
AT_{out} (averaging time - outdoor worker)	365	365
BW_{out} (body weight - outdoor worker)	80	80
ED_{out} (exposure duration - outdoor worker) yr	25	25
EF_{out} (exposure frequency - outdoor worker) day/yr	225	225

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Site-specific
Outdoor Worker Soil Inputs

Variable	Outdoor Worker Soil Default Value	Site-Specific Value
ET_{out} (exposure time - outdoor worker) hr	8	8
THQ (target hazard quotient) unitless	0.1	1
IRS_{out} (soil ingestion rate - outdoor worker) mg/day	100	100
LT (lifetime) yr	70	70
SA_{out} (surface area - outdoor worker) cm^2/day	3527	3527
TR (target cancer risk) unitless	1.0E-06	1.0E-06
T_w (groundwater temperature) Celsius	25	21
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15	0.15
T (exposure interval) s	819936000	819936000
T (exposure interval) yr	26	26
U_m (mean annual wind speed) m/s	4.69	3.93
U_t (equivalent threshold value)	11.32	11.32
V (fraction of vegetative cover) unitless	0.5	0.5
VF_{ml} (volitization factor - mass limit) m^3/kg	.	146933.10615685

Site-specific

Outdoor Worker Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o (mg/kg-day)$^{-1}$	SF_o Ref	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	ABS	RBA
Acetone	67-64-1	No	Yes	Organics	-		-		9.00E-01	U	-		1	-	1
Arsenic, Inorganic	7440-38	No	No	Inorgani	1.50E+00	U	4.30E-03	U	3.00E-04	U	1.50E-05	U	1	0.03	0.6
Barium	7440-39	No	No	Inorgani	-		-		2.00E-01	U	5.00E-04	U	0.07	-	1
Cadmium (Diet)	7440-43	No	No	Inorgani	-		1.80E-03	U	1.00E-04	U	1.00E-05	U	0.025	0.001	1
Chromium(III), Insoluble Salts	16065-8	No	No	Inorgani	-		-		1.50E+00	U	-		0.013	-	1
Chromium(VI)	18540-2	Yes	No	Inorgani	5.00E-01	U	8.40E-02	U	3.00E-03	U	1.00E-04	U	0.025	-	1
Dichlorobenzene, 1,2-	95-50-1	No	Yes	Organics	-		-		9.00E-02	U	2.00E-01	U	1	-	1
Dichlorobenzene, 1,4-	106-46-	No	Yes	Organics	5.40E-03	U	1.10E-05	U	7.00E-02	U	8.00E-01	U	1	-	1
Lead and Compounds	7439-92	No	No	Inorgani	-		-		-		-		1	-	1
Mercury (elemental)	7439-97	No	Yes	Inorgani	-		-		-		3.00E-04	U	1	-	1
Methyl Ethyl Ketone (2-Butanone)	78-93-3	No	Yes	Organics	-		-		6.00E-01	U	5.00E+00	U	1	-	1
Trichlorobenzene, 1,2,4-	120-82-	No	Yes	Organics	2.90E-02	U	-		1.00E-02	U	2.00E-03	U	1	-	1

Site-specific

Outdoor Worker Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Soil Saturation Concentration (mg/kg)	S (mg/L)	K_{oc}\ (cm^3/g)	K_d\ (cm^3/g)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	Henry's Law Constant (21 ℃) (unitless)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Enthalpy of vaporization @ groundwater temperature $\Delta H_{v,gw}$\ (cal/mol)	Exponent for $\Delta H_{v,gw}$	Vapor Pressure VP (mm Hg)	Vapor Pressure VP (21 ℃)\ (mm Hg)	Normal Boiling Point BP (K)
1.14E+05	1.00E+06	2.36E+00	1.42E-02	3.50E-05	1.43E-03	1.22E-03	1.22E-03	U	7.43E+03	0.36	2.32E+02	1.96E+02	329.15
-	-	-	2.90E+01	-	-	-	-		9.04E+03	0.30	-	-	888.15
-	-	-	4.10E+01	-	-	-	-		4.08E+04	0.30	-	-	1873.15
-	-	-	7.50E+01	-	-	-	-		2.75E+04	0.30	-	-	1038.15
-	-	-	1.80E+06	-	-	-	-		-	0.30	-	-	-
-	1.69E+06	-	1.90E+01	-	-	-	-		-	0.30	-	-	-
3.76E+02	1.56E+02	3.83E+02	2.30E+00	1.92E-03	7.85E-02	6.14E-02	6.14E-02	U	1.13E+04	0.36	1.36E+00	1.05E+00	453.15
-	8.13E+01	3.75E+02	2.25E+00	2.41E-03	9.85E-02	7.70E-02	7.70E-02	U	1.13E+04	0.38	1.74E+00	1.34E+00	447.15
-	-	-	9.00E+02	-	-	-	-		4.86E+04	0.30	-	-	2023.15
3.13E+00	6.00E-02	-	5.20E+01	8.62E-03	3.52E-01	2.52E-01	2.52E-01	U	1.52E+04	0.30	1.96E-03	1.38E-03	630.15
2.84E+04	2.23E+05	4.51E+00	2.71E-02	5.69E-05	2.33E-03	1.95E-03	1.95E-03	U	8.28E+03	0.37	9.06E+01	7.49E+01	352.65
4.05E+02	4.90E+01	1.36E+03	8.16E+00	1.42E-03	5.81E-02	4.35E-02	4.35E-02	U	1.32E+04	0.38	4.60E-01	3.40E-01	487.15

Site-specific

Outdoor Worker Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

BP Ref	Critical Temperature T_C \ (K)	T_C \ Ref	Enthalpy of vaporization at the normal boiling point $\Delta H_{v,b}$ \ (cal/mol)	$\Delta H_{v,b}$ \ Ref	Chemical Type	D_{ia} \ (cm^2/s)	D_{ia} \ (21 °C)\ (cm^2/s)	D_{ia} \ Used in Calcs (cm^2/s)	D_{iw} \ (cm^2/s)	D_{iw} \ (21 °C)\ (cm^2/s)	D_{iw} \ Used in Calcs (cm^2/s)	D_A \ (cm^2/s)	Particulate Emission Factor (m^3/kg)	Volatilization Factor Unlimited Reservoir (m^3/kg)
U	508	U	6.96E+03	U	VOC	1.04E-01	1.04E-01	1.04E-01	1.13E-05	1.13E-05	1.13E-05	5.97E-05	8.74E+09	1.76E+04
U	1670	U	7.63E+03	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-
U	3570	U	3.35E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-
U	2290	U	2.39E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-
	-		-		INORGANIC	-	-	-	-	-	-	-	8.74E+09	-
	-		-		INORGANIC	-	-	-	-	-	-	-	8.74E+09	-
U	705	U	9.48E+03	U	VOC	5.51E-02	5.51E-02	5.51E-02	8.82E-06	8.82E-06	8.82E-06	7.48E-05	8.74E+09	1.58E+04
U	669	U	9.27E+03	U	VOC	5.40E-02	5.40E-02	5.40E-02	8.57E-06	8.57E-06	8.57E-06	9.37E-05	8.74E+09	1.41E+04
U	5400	U	4.29E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-
U	1760	U	1.41E+04	U	INORGANIC	3.07E-02	-	3.07E-02	6.30E-06	-	6.30E-06	7.90E-06	8.74E+09	4.85E+04
U	537	U	7.48E+03	U	VOC	8.96E-02	8.96E-02	8.96E-02	1.01E-05	1.01E-05	1.01E-05	7.35E-05	8.74E+09	1.59E+04
U	725	U	1.05E+04	U	VOC	3.88E-02	3.88E-02	3.88E-02	8.29E-06	8.29E-06	8.29E-06	1.09E-05	8.74E+09	4.13E+04

Site-specific

Outdoor Worker Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Volatilization Factor Mass Limit (m^3/kg)	Volatilization Factor Selected (m^3/kg)	Ingestion SL TR=1E-06 (mg/kg)	Dermal SL TR=1E-06 (mg/kg)	Inhalation SL TR=1E-06 (mg/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)	Screening Level (mg/kg)
1.47E+05	1.47E+05	-	-	-	-	1.17E+06	-	-	1.17E+06	1.17E+06 nc sat max
-	-	4.04E+00	1.91E+01	2.77E+04	3.33E+00	6.49E+02	3.07E+03	6.38E+05	5.35E+02	3.33E+00 ca
-	-	-	-	-	-	2.60E+05	-	2.13E+07	2.56E+05	2.56E+05 nc max
-	-	-	-	6.62E+04	6.62E+04	1.30E+02	7.67E+02	4.25E+05	1.11E+02	1.11E+02 nc
-	-	-	-	-	-	1.95E+06	-	-	1.95E+06	1.95E+06 nc max
-	-	7.27E+00	-	1.42E+03	7.23E+00	3.89E+03	-	4.25E+06	3.89E+03	7.23E+00 ca
1.47E+05	1.47E+05	-	-	-	-	1.17E+05	-	1.43E+05	6.43E+04	6.43E+04 nc sat
1.47E+05	1.47E+05	6.73E+02	-	1.82E+02	1.43E+02	9.08E+04	-	5.72E+05	7.84E+04	1.43E+02 ca
-	-	-	-	-	-	-	-	-	-	
1.47E+05	1.47E+05	-	-	-	-	-	-	2.15E+02	2.15E+02	2.15E+02 nc sat
1.47E+05	1.47E+05	-	-	-	-	7.79E+05	-	3.58E+06	6.39E+05	6.39E+05 nc sat max
1.47E+05	1.47E+05	1.25E+02	-	-	1.25E+02	1.30E+04	-	1.43E+03	1.29E+03	1.25E+02 ca*

Site-specific
Outdoor Worker Risk for Soil

Chemical	SF_o (mg/kg-day)$^{-1}$	SF_o Ref	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	ABS	RBA	Soil Saturation Concentration (mg/kg)	S (mg/L)	K_{oc} \ (cm^3/g)
Acetone	-		-		9.00E-01	U	-		1	-	1	1.14E+05	1.00E+06	2.36E+00
Arsenic, Inorganic	1.50E+00	U	4.30E-03	U	3.00E-04	U	1.50E-05	U	1	0.03	0.6	-	-	-
Barium	-		-		2.00E-01	U	5.00E-04	U	0.07	-	1	-	-	-
Cadmium (Diet)	-		1.80E-03	U	1.00E-04	U	1.00E-05	U	0.025	0.001	1	-	-	-
Chromium(III), Insoluble Salts	-		-		1.50E+00	U	-		0.013	-	1	-	-	-
Chromium(VI)	5.00E-01	U	8.40E-02	U	3.00E-03	U	1.00E-04	U	0.025	-	1	-	1.69E+06	-
Dichlorobenzene, 1,2-	-		-		9.00E-02	U	2.00E-01	U	1	-	1	3.76E+02	1.56E+02	3.83E+02
Dichlorobenzene, 1,4-	5.40E-03	U	1.10E-05	U	7.00E-02	U	8.00E-01	U	1	-	1	-	8.13E+01	3.75E+02
Lead and Compounds	-		-		-		-		1	-	1	-	-	-
Mercury (elemental)	-		-		-		3.00E-04	U	1	-	1	3.13E+00	6.00E-02	-
Methyl Ethyl Ketone (2-Butanone)	-		-		6.00E-01	U	5.00E+00	U	1	-	1	2.84E+04	2.23E+05	4.51E+00
Trichlorobenzene, 1,2,4-	2.90E-02	U	-		1.00E-02	U	2.00E-03	U	1	-	1	4.05E+02	4.90E+01	1.36E+03
*Total Risk/HI	-		-		-		-		-	-	-	-	-	-

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Site-specific
Outdoor Worker Risk for Soil

K_d \ (cm^3/g)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	Henry's Law Constant (21 ℃) (unitless)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Enthalpy of vaporization @ groundwater temperature $\Delta H_{v,gw}$ \ (cal/mol)	Exponent for $\Delta H_{v,gw}$	Vapor Pressure VP (mm Hg)	Vapor Pressure VP (21 ℃)\ (mm Hg)	Normal Boiling Point BP (K)	BP Ref	Critical Temperature T_c \ (K)	T_c \ Ref
1.42E-02	3.50E-05	1.43E-03	1.22E-03	1.22E-03	U	7.43E+03	0.36	2.32E+02	1.96E+02	329.15	U	508	U
2.90E+01	-	-	-	-		9.04E+03	0.30	-	-	888.15	U	1670	U
4.10E+01	-	-	-	-		4.08E+04	0.30	-	-	1873.15	U	3570	U
7.50E+01	-	-	-	-		2.75E+04	0.30	-	-	1038.15	U	2290	U
1.80E+06	-	-	-	-		-	0.30	-	-	-		-	
1.90E+01	-	-	-	-		-	0.30	-	-	-		-	
2.30E+00	1.92E-03	7.85E-02	6.14E-02	6.14E-02	U	1.13E+04	0.36	1.36E+00	1.05E+00	453.15	U	705	U
2.25E+00	2.41E-03	9.85E-02	7.70E-02	7.70E-02	U	1.13E+04	0.38	1.74E+00	1.34E+00	447.15	U	669	U
9.00E+02	-	-	-	-		4.86E+04	0.30	-	-	2023.15	U	5400	U
5.20E+01	8.62E-03	3.52E-01	2.52E-01	2.52E-01	U	1.52E+04	0.30	1.96E-03	1.38E-03	630.15	U	1760	U
2.71E-02	5.69E-05	2.33E-03	1.95E-03	1.95E-03	U	8.28E+03	0.37	9.06E+01	7.49E+01	352.65	U	537	U
8.16E+00	1.42E-03	5.81E-02	4.35E-02	4.35E-02	U	1.32E+04	0.38	4.60E-01	3.40E-01	487.15	U	725	U
-	-	-	-	-		-	-	-	-	-		-	

Site-specific
Outdoor Worker Risk for Soil

Enthalpy of vaporization at the normal boiling point $\Delta H_{v,b}$ \ (cal/mol)	$\Delta H_{v,b}$ \ Ref	Chemical Type	D_{ia} \ (cm^2/s)	D_{ia} \ (21 °C)\ (cm^2/s)	D_{ia} \ Used in Calcs (cm^2/s)	D_{iw} \ (cm^2/s)	D_{iw} \ (21 °C)\ (cm^2/s)	D_{iw} \ Used in Calcs (cm^2/s)	D_A \ (cm^2/s)	Particulate Emission Factor (m^3/kg)	Volatilization Factor Unlimited Reservoir (m^3/kg)	Volatilization Factor Mass Limit (m^3/kg)
6.96E+03	U	VOC	1.04E-01	1.04E-01	1.04E-01	1.13E-05	1.13E-05	1.13E-05	5.97E-05	8.74E+09	1.76E+04	1.47E+05
7.63E+03	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-
3.35E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-
2.39E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-
-		INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-
-		INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-
9.48E+03	U	VOC	5.51E-02	5.51E-02	5.51E-02	8.82E-06	8.82E-06	8.82E-06	7.48E-05	8.74E+09	1.58E+04	1.47E+05
9.27E+03	U	VOC	5.40E-02	5.40E-02	5.40E-02	8.57E-06	8.57E-06	8.57E-06	9.37E-05	8.74E+09	1.41E+04	1.47E+05
4.29E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-
1.41E+04	U	INORGANIC	3.07E-02	-	3.07E-02	6.30E-06	-	6.30E-06	7.90E-06	8.74E+09	4.85E+04	1.47E+05
7.48E+03	U	VOC	8.96E-02	8.96E-02	8.96E-02	1.01E-05	1.01E-05	1.01E-05	7.35E-05	8.74E+09	1.59E+04	1.47E+05
1.05E+04	U	VOC	3.88E-02	3.88E-02	3.88E-02	8.29E-06	8.29E-06	8.29E-06	1.09E-05	8.74E+09	4.13E+04	1.47E+05
-			-	-	-	-	-	-	-	-	-	-

Site-specific
Outdoor Worker Risk for Soil

Volatilization Factor Selected (m^3/kg)	Concentration (mg/kg)	Ingestion Risk	Dermal Risk	Inhalation Risk	Carcinogenic Risk	Ingestion HQ	Dermal HQ	Inhalation HQ	Noncarcinogenic HI
1.47E+05	5.09E-01	-	-	-	-	4.36E-07	-	-	4.36E-07
-	1.86E+01	4.61E-06	9.75E-07	6.72E-10	5.58E-06	2.87E-02	6.07E-03	2.92E-05	3.48E-02
-	4.71E+02	-	-	-	-	1.81E-03	-	2.21E-05	1.84E-03
-	3.11E+01	-	-	4.70E-10	4.70E-10	2.40E-01	4.06E-02	7.31E-05	2.80E-01
-	4.42E+03	-	-	-	-	2.27E-03	-	-	2.27E-03
-	3.29E+03	4.53E-04	-	2.32E-06	4.55E-04	8.45E-01	-	7.73E-04	8.46E-01
1.47E+05	6.44E-01	-	-	-	-	5.51E-06	-	4.50E-06	1.00E-05
1.47E+05	1.21E-01	1.80E-10	-	6.65E-10	8.45E-10	1.33E-06	-	2.12E-07	1.54E-06
-	6.03E+01	-	-	-	-	-	-	-	-
1.47E+05	1.30E+02	-	-	-	-	-	-	6.06E-01	6.06E-01
1.47E+05	1.77E-01	-	-	-	-	2.27E-07	-	4.95E-08	2.77E-07
1.47E+05	1.03E-02	8.22E-11	-	-	8.22E-11	7.94E-07	-	7.20E-06	8.00E-06
-	-	*4.57E-04*	*9.75E-07*	*2.32E-06*	*4.61E-04*	*1.12E+00*	*4.66E-02*	*6.07E-01*	*1.77E+00*

Site-specific
Construction Worker Inputs

Variable	Construction Worker Soil - Other Default Value	Site-Specific Value
A (PEF Dispersion Constant)	2.4538	2.4538
A (VF Dispersion Constant)	2.4538	2.4538
B (PEF Dispersion Constant)	17.5660	17.5660
B (VF Dispersion Constant)	17.5660	17.5660
C (PEF Dispersion Constant)	189.0426	189.0426
C (VF Dispersion Constant)	189.0426	189.0426
d_s (average source depth) m	.	0.3
F_D Unitless Dispersion Correction Factor	0.185837208	0.185837208
foc (fraction organic carbon in soil) g/g	0.006	0.006
F(x) (function dependant on U_m/U_t derived using Cowherd et al. (1985))	0.194	0.194
n (total soil porosity) L_{pore}/L_{soil}	0.43396	0.43396
p_h (dry soil bulk density) g/cm ^{3}	1.5	1.5
p_h (dry soil bulk density) g/cm ^{3}	1.5	1.5
p_s (soil particle density) g/cm ^{3}	2.65	2.65
Q/C_{sa} (g/m^2-s per kg/m^3)	14.31407	14.31407
Q/C_{vol} (g/m^2-s per kg/m^3)	14.31407	14.31407
Q/C_{sa} (g/m^2-s per kg/m^3)	14.31407	14.31407
A_s ($VF_{mlim\text{-}sc}$ acres)	0.5	0.5
A_s ($VF_{ulim\text{-}sc}$ acres)	0.5	0.5
AF_{con} (skin adherence factor - construction worker) mg/cm ^{2}	0.3	0.3
AT_{con} (averaging time - construction worker) days	365	365
$AT_{con\text{-}a}$ (averaging time - construction worker) days	350	350
BW_{con} (body weight - construction worker) kg	80	80
ED_{con} (exposure duration - construction worker) yr	1	1
EF_{con} (exposure frequency - construction worker) day/yr	250	250
ET_{con} (exposure time - construction worker) hr/day	8	8
THQ (target hazard quotient) unitless	0.1	1
IRS_{con} (soil ingestion rate - construction worker) mg/day	330	330
LT (lifetime) yr	70	70
SA_{con} (surface area - construction worker) cm ^{2}/day	3527	3527

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Site-specific
Construction Worker Inputs

Variable	Construction Worker Soil - Other Default Value	Site-Specific Value
TR (target cancer risk) unitless	1.0E-06	1.0E-06
t_c (overall duration of construction) hours	8400	8400
T_c (overall duration of construction) s	30240000	30240000
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15	0.15
T (time over which traffic occurs) s	7200000	7200000
T_t (overall duration of traffic) s	7200000	7200000
U_m (mean annual wind speed) m/s	4.69	4.69
U_t (equivalent threshold value) m/s	11.32	11.32
$VF_{mlim,sc}$ (volitization factor) m^3_{air}/kg_{soil}	.	5176.0651935752
V (fraction of vegetative cover)	0	0

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Site-specific

Construction Worker Regional Screening Levels (RSL) for Soil - Other Construction Activities

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o (mg/kg-day)$^{-1}$	SF_o Ref	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	ABS	RBA
Acetone	67-64-1	No	Yes	Organics	-		-		6.00E-01	U	-		1	-	1
Arsenic, Inorganic	7440-38	No	No	Inorgani	1.50E+00	U	4.30E-03	U	-		-		1	0.03	0.6
Barium	7440-39	No	No	Inorgani	-		-		2.00E-01	U	5.00E-03	U	0.07	-	1
Cadmium (Diet)	7440-43	No	No	Inorgani	-		1.80E-03	U	5.00E-04	U	-		0.025	0.001	1
Chromium(III), Insoluble Salts	16065-8	No	No	Inorgani	-		-		1.50E+00	U	5.00E-03	U	0.013	-	1
Chromium(VI)	18540-2	Yes	No	Inorgani	5.00E-01	U	8.40E-02	U	5.00E-03	U	3.00E-04	U	0.025	-	1
Dichlorobenzene, 1,2-	95-50-1	No	Yes	Organics	-		-		6.00E-01	U	2.00E+00	U	1	-	1
Dichlorobenzene, 1,4-	106-46-	No	Yes	Organics	5.40E-03	U	1.10E-05	U	7.00E-02	U	1.20E+00	U	1	-	1
Lead and Compounds	7439-92	No	No	Inorgani	-		-		-		-		1	-	1
Mercury (elemental)	7439-97	No	Yes	Inorgani	-		-		-		3.00E-04	U	1	-	1
Methyl Ethyl Ketone (2-Butanone)	78-93-3	No	Yes	Organics	-		-		2.00E+00	U	1.00E+00	U	1	-	1
Trichlorobenzene, 1,2,4-	120-82-	No	Yes	Organics	2.90E-02	U	-		9.00E-02	U	2.00E-02	U	1	-	1

Site-specific

Construction Worker Regional Screening Levels (RSL) for Soil - Other Construction Activities

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Soil Saturation Concentration (mg/kg)	S (mg/L)	K_{oc}\ (cm^3/g)	K_d\ (cm^3/g)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	Henry's Law Constant (21 ℃) (unitless)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Enthalpy of vaporization @ groundwater temperature $\Delta H_{v,gw}$\ (cal/mol)	Exponent for $\Delta H_{v,gw}$	Vapor Pressure VP (mm Hg)	Vapor Pressure VP (21 ℃)\ (mm Hg)	Normal Boiling Point BP (K)
1.14E+05	1.00E+06	2.36E+00	1.42E-02	3.50E-05	1.43E-03	1.22E-03	1.22E-03	U	7.43E+03	0.36	2.32E+02	1.96E+02	329.15
-	-	-	2.90E+01	-	-	-	-		9.04E+03	0.30	-	-	888.15
-	-	-	4.10E+01	-	-	-	-		4.08E+04	0.30	-	-	1873.15
-	-	-	7.50E+01	-	-	-	-		2.75E+04	0.30	-	-	1038.15
-	-	-	1.80E+06	-	-	-	-		-	0.30	-	-	-
-	1.69E+06	-	1.90E+01	-	-	-	-		-	0.30	-	-	-
3.76E+02	1.56E+02	3.83E+02	2.30E+00	1.92E-03	7.85E-02	6.14E-02	6.14E-02	U	1.13E+04	0.36	1.36E+00	1.05E+00	453.15
-	8.13E+01	3.75E+02	2.25E+00	2.41E-03	9.85E-02	7.70E-02	7.70E-02	U	1.13E+04	0.38	1.74E+00	1.34E+00	447.15
-	-	-	9.00E+02	-	-	-	-		4.86E+04	0.30	-	-	2023.15
3.13E+00	6.00E-02	-	5.20E+01	8.62E-03	3.52E-01	2.52E-01	2.52E-01	U	1.52E+04	0.30	1.96E-03	1.38E-03	630.15
2.84E+04	2.23E+05	4.51E+00	2.71E-02	5.69E-05	2.33E-03	1.95E-03	1.95E-03	U	8.28E+03	0.37	9.06E+01	7.49E+01	352.65
4.05E+02	4.90E+01	1.36E+03	8.16E+00	1.42E-03	5.81E-02	4.35E-02	4.35E-02	U	1.32E+04	0.38	4.60E-01	3.40E-01	487.15

Site-specific

Construction Worker Regional Screening Levels (RSL) for Soil - Other Construction Activities

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

BP Ref	Critical Temperature T_C \ (K)	T_C \ Ref	Enthalpy of vaporization at the normal boiling point $\Delta H_{v,b}$ \ (cal/mol)	$\Delta H_{v,b}$ \ Ref	Chemical Type	D_{ia} \ (cm^2/s)	D_{ia} \ (21 °C)\ (cm^2/s)	D_{ia} \ Used in Calcs (cm^2/s)	D_{iw} \ (cm^2/s)	D_{iw} \ (21 °C)\ (cm^2/s)	D_{iw} \ Used in Calcs (cm^2/s)	D_A \ (cm^2/s)	Particulate Emission Factor (m^3/kg)	Volatilization Factor Unlimited Reservoir (m^3/kg)
U	508	U	6.96E+03	U	VOC	1.04E-01	1.04E-01	1.04E-01	1.13E-05	1.13E-05	1.13E-05	5.97E-05	8.74E+09	-
U	1670	U	7.63E+03	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-
U	3570	U	3.35E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-
U	2290	U	2.39E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-
	-		-		INORGANIC	-	-	-	-	-	-	-	8.74E+09	-
	-		-		INORGANIC	-	-	-	-	-	-	-	8.74E+09	-
U	705	U	9.48E+03	U	VOC	5.51E-02	5.51E-02	5.51E-02	8.82E-06	8.82E-06	8.82E-06	7.48E-05	8.74E+09	-
U	669	U	9.27E+03	U	VOC	5.40E-02	5.40E-02	5.40E-02	8.57E-06	8.57E-06	8.57E-06	9.37E-05	8.74E+09	-
U	5400	U	4.29E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-
U	1760	U	1.41E+04	U	INORGANIC	3.07E-02	-	3.07E-02	6.30E-06	-	6.30E-06	7.90E-06	8.74E+09	-
U	537	U	7.48E+03	U	VOC	8.96E-02	8.96E-02	8.96E-02	1.01E-05	1.01E-05	1.01E-05	7.35E-05	8.74E+09	-
U	725	U	1.05E+04	U	VOC	3.88E-02	3.88E-02	3.88E-02	8.29E-06	8.29E-06	8.29E-06	1.09E-05	8.74E+09	-

Site-specific

Construction Worker Regional Screening Levels (RSL) for Soil - Other Construction Activities

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

If the enthalpy of vaporization is missing, the default H' is used to estimate VF.

Volatilization Factor Mass Limit (m^3/kg)	Volatilization Factor Selected (m^3/kg)	Ingestion SL TR=1E-06 (mg/kg)	Dermal SL TR=1E-06 (mg/kg)	Inhalation SL TR=1E-06 (mg/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)	Screening Level (mg/kg)
-	5.18E+03	-	-	-	-	2.04E+05	-	-	2.04E+05	2.04E+05 nc sat max
-	-	2.75E+01	1.72E+02	6.23E+05	2.37E+01	-	-	-	-	2.37E+01 ca
-	-	-	-	-	-	6.79E+04	-	1.84E+08	6.79E+04	6.79E+04 nc
-	-	-	-	1.49E+06	1.49E+06	1.70E+02	1.32E+03	-	1.50E+02	1.50E+02 nc
-	-	-	-	-	-	5.09E+05	-	1.84E+08	5.08E+05	5.08E+05 nc max
-	-	4.96E+01	-	3.19E+04	4.95E+01	1.70E+03	-	1.10E+07	1.70E+03	4.95E+01 ca*
-	5.18E+03	-	-	-	-	2.04E+05	-	4.35E+04	3.58E+04	3.58E+04 nc sat
-	5.18E+03	4.59E+03	-	1.44E+02	1.40E+02	2.38E+04	-	2.61E+04	1.24E+04	1.40E+02 ca*
-	-	-	-	-	-	-	-	-	-	
-	5.18E+03	-	-	-	-	-	-	6.52E+00	6.52E+00	6.52E+00 nc sat
-	5.18E+03	-	-	-	-	6.79E+05	-	2.17E+04	2.11E+04	2.11E+04 nc
-	5.18E+03	8.54E+02	-	-	8.54E+02	3.05E+04	-	4.35E+02	4.29E+02	4.29E+02 nc sat

Site-specific
Construction Worker Risk for Soil - Other Construction Activities

Chemical	SF_o (mg/kg-day) $^{-1}$	SF_o Ref	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	ABS	RBA	Soil Saturation Concentration (mg/kg)	S (mg/L)	K_{oc} \ (cm^3/g)
Acetone	-		-		6.00E-01	U	-		1	-	1	1.14E+05	1.00E+06	2.36E+00
Arsenic, Inorganic	1.50E+00	U	4.30E-03	U	-		-		1	0.03	0.6	-	-	-
Barium	-		-		2.00E-01	U	5.00E-03	U	0.07	-	1	-	-	-
Cadmium (Diet)	-		1.80E-03	U	5.00E-04	U	-		0.025	0.001	1	-	-	-
Chromium(III), Insoluble Salts	-		-		1.50E+00	U	5.00E-03	U	0.013	-	1	-	-	-
Chromium(VI)	5.00E-01	U	8.40E-02	U	5.00E-03	U	3.00E-04	U	0.025	-	1	-	1.69E+06	-
Dichlorobenzene, 1,2-	-		-		6.00E-01	U	2.00E+00	U	1	-	1	3.76E+02	1.56E+02	3.83E+02
Dichlorobenzene, 1,4-	5.40E-03	U	1.10E-05	U	7.00E-02	U	1.20E+00	U	1	-	1	-	8.13E+01	3.75E+02
Lead and Compounds	-		-		-		-		1	-	1	-	-	-
Mercury (elemental)	-		-		-		3.00E-04	U	1	-	1	3.13E+00	6.00E-02	-
Methyl Ethyl Ketone (2-Butanone)	-		-		2.00E+00	U	1.00E+00	U	1	-	1	2.84E+04	2.23E+05	4.51E+00
Trichlorobenzene, 1,2,4-	2.90E-02	U	-		9.00E-02	U	2.00E-02	U	1	-	1	4.05E+02	4.90E+01	1.36E+03
**Total Risk/HI*	-		-		-		-		-	-	-	-	-	-

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Site-specific
Construction Worker Risk for Soil - Other Construction Activities

K_d \ (cm^3/g)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	Henry's Law Constant (21 ℃) (unitless)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Enthalpy of vaporization @ groundwater temperature $\Delta H_{v,gw}$ \ (cal/mol)	Exponent for $\Delta H_{v,gw}$	Vapor Pressure VP (mm Hg)	Vapor Pressure VP (21 ℃)\ (mm Hg)	Normal Boiling Point BP (K)	BP Ref	Critical Temperature T_C \ (K)	T_C \ Ref
1.42E-02	3.50E-05	1.43E-03	1.22E-03	1.22E-03	U	7.43E+03	0.36	2.32E+02	1.96E+02	329.15	U	508	U
2.90E+01	-	-	-	-		9.04E+03	0.30	-	-	888.15	U	1670	U
4.10E+01	-	-	-	-		4.08E+04	0.30	-	-	1873.15	U	3570	U
7.50E+01	-	-	-	-		2.75E+04	0.30	-	-	1038.15	U	2290	U
1.80E+06	-	-	-	-		-	0.30	-	-	-		-	
1.90E+01	-	-	-	-		-	0.30	-	-	-		-	
2.30E+00	1.92E-03	7.85E-02	6.14E-02	6.14E-02	U	1.13E+04	0.36	1.36E+00	1.05E+00	453.15	U	705	U
2.25E+00	2.41E-03	9.85E-02	7.70E-02	7.70E-02	U	1.13E+04	0.38	1.74E+00	1.34E+00	447.15	U	669	U
9.00E+02	-	-	-	-		4.86E+04	0.30	-	-	2023.15	U	5400	U
5.20E+01	8.62E-03	3.52E-01	2.52E-01	2.52E-01	U	1.52E+04	0.30	1.96E-03	1.38E-03	630.15	U	1760	U
2.71E-02	5.69E-05	2.33E-03	1.95E-03	1.95E-03	U	8.28E+03	0.37	9.06E+01	7.49E+01	352.65	U	537	U
8.16E+00	1.42E-03	5.81E-02	4.35E-02	4.35E-02	U	1.32E+04	0.38	4.60E-01	3.40E-01	487.15	U	725	U
-	-	-	-	-		-	-	-	-	-		-	

Site-specific
Construction Worker Risk for Soil - Other Construction Activities

Enthalpy of vaporization at the normal boiling point $\Delta H_{v,b}$ \ (cal/mol)	$\Delta H_{v,b}$ \ Ref	Chemical Type	D_{ia} \ (cm^2/s)	D_{ia} \ (21 °C)\ (cm^2/s)	D_{ia} \ Used in Calcs (cm^2/s)	D_{iw} \ (cm^2/s)	D_{iw} \ (21 °C)\ (cm^2/s)	D_{iw} \ Used in Calcs (cm^2/s)	D_A \ (cm^2/s)	Particulate Emission Factor (m^3/kg)	Volatilization Factor Unlimited Reservoir (m^3/kg)	Volatilization Factor Mass Limit (m^3/kg)
6.96E+03	U	VOC	1.04E-01	1.04E-01	1.04E-01	1.13E-05	1.13E-05	1.13E-05	5.97E-05	8.74E+09	-	-
7.63E+03	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-
3.35E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-
2.39E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-
-		INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-
-		INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-
9.48E+03	U	VOC	5.51E-02	5.51E-02	5.51E-02	8.82E-06	8.82E-06	8.82E-06	7.48E-05	8.74E+09	-	-
9.27E+03	U	VOC	5.40E-02	5.40E-02	5.40E-02	8.57E-06	8.57E-06	8.57E-06	9.37E-05	8.74E+09	-	-
4.29E+04	U	INORGANIC	-	-	-	-	-	-	-	8.74E+09	-	-
1.41E+04	U	INORGANIC	3.07E-02	-	3.07E-02	6.30E-06	-	6.30E-06	7.90E-06	8.74E+09	-	-
7.48E+03	U	VOC	8.96E-02	8.96E-02	8.96E-02	1.01E-05	1.01E-05	1.01E-05	7.35E-05	8.74E+09	-	-
1.05E+04	U	VOC	3.88E-02	3.88E-02	3.88E-02	8.29E-06	8.29E-06	8.29E-06	1.09E-05	8.74E+09	-	-
-			-	-	-	-	-	-	-	-	-	-

Site-specific
Construction Worker Risk for Soil - Other Construction Activities

Volatilization Factor Selected (m^3/kg)	Concentration (mg/kg)	Ingestion Risk	Dermal Risk	Inhalation Risk	Carcinogenic Risk	Ingestion HQ	Dermal HQ	Inhalation HQ	Noncarcinogenic HI
5.18E+03	5.09E-01	-	-	-	-	2.50E-06	-	-	2.50E-06
-	1.86E+01	6.76E-07	1.08E-07	2.98E-11	7.84E-07	-	-	-	-
-	4.71E+02	-	-	-	-	6.94E-03	-	2.57E-06	6.94E-03
-	3.11E+01	-	-	2.09E-11	2.09E-11	1.83E-01	2.35E-02	-	2.07E-01
-	4.42E+03	-	-	-	-	8.68E-03	-	2.41E-05	8.71E-03
-	3.29E+03	6.64E-05	-	1.03E-07	6.65E-05	1.94E+00	-	2.99E-04	1.94E+00
5.18E+03	6.44E-01	-	-	-	-	3.16E-06	-	1.48E-05	1.80E-05
5.18E+03	1.21E-01	2.64E-11	-	8.39E-10	8.65E-10	5.09E-06	-	4.64E-06	9.73E-06
-	6.03E+01	-	-	-	-	-	-	-	-
5.18E+03	1.30E+02	-	-	-	-	-	-	1.99E+01	1.99E+01
5.18E+03	1.77E-01	-	-	-	-	2.61E-07	-	8.14E-06	8.40E-06
5.18E+03	1.03E-02	1.21E-11	-	-	1.21E-11	3.37E-07	-	2.37E-05	2.40E-05
-	-	*6.71E-05*	*1.08E-07*	*1.04E-07*	*6.73E-05*	*2.14E+00*	*2.35E-02*	*1.99E+01*	*2.21E+01*

APPENDIX D
CORRECTIVE ACTION COMPLETE WITH CONTROLS DETERMINATION

State of Utah

SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL

Douglas J. Hansen
Director

July 14, 2022

Third River Real Estate
c/o Mr. Michael Brenny
4701 North Stonehaven Loop
Lehi, UT 84043

RE: Corrective Action Complete with Controls Designation
Former Ace Automotive, 47 East 700 South, Salt Lake City, Utah.
UTCA0027

Dear Mr. Brenny:

The Division of Waste Management and Radiation Control (Division) has completed its review of your June 16, 2022, submittal of the Proposed Land Use for the Former Ace Automotive property located at the address listed above.

The Division has determined the facility now meets the Corrective Action Complete with Controls designation for the proposed commercial/industrial use at the property. Please prepare and submit to the Division for review a draft Site Management Plan and Environmental Covenant for the site.

If you have any questions, please call Brad Lauchnor at (801) 536-0254.

Sincerely,

Douglas J. Hansen, Director
Division of Waste Management and Radiation Control

DJH/BML/kd

c: Angela C. Dunn, MD, MPH, Health Officer, Salt Lake County Health Dept.
Dorothy Adams, Deputy Director, Salt Lake County Health Dept.
Ron Lund, Environmental Health Director, Salt Lake County Health Dept.
Michael Brenny, Third River Real Estate (Email)
Andrew Turner, Terracon (Email)

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144880 • Salt Lake City, UT 84114-4880
Telephone (801) 536-0200 • Fax (801) 536-0222 • T.D.D. (801) 536-4284
www.deq.utah.gov

Site Management Plan

Former Ace Auto
47 East 700 South
Salt Lake City, Utah

September 15, 2022 Revised November 22, 2022
Terracon Project No. 61227303

Prepared for:
700 Flatirons, LLC

Prepared by:
Terracon Consultants, Inc.
Midvale, Utah

September 15, 2022 Revised November 22, 2022

700 Flatirons, LLC
c/o Mr. Alexander F. Paul and Mr. Gary Poole
5025 Pearl Parkway
Boulder, Colorado 80301

Re: **Site Management Plan**
Former Ace Auto
47 East 700 South
Terracon Project No. 61227303

Dear Mr. Paul and Mr. Poole:

Terracon has prepared this Site Management Plan for the Former Ace Auto site located in Salt Lake City, Utah. A Site Management Plan is required in order to meet the requirements of the Environmental Cleanup Program under the Utah Department of Environmental Quality (UDEQ) Division of Waste Management and Radiation Control (DWMRC) as impacts exceeding unrestricted land use screening levels remain on the site post remedial action.

Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,

Terracon Consultants, Inc.

Andrew Turner
Project Manager

Amy Austin
Authorized Project Reviewer

Table of Contents

Appendices

1.0 INTRODUCTION

A remedial action was completed for the Ace Auto Site, located in Salt Lake City, Utah, through the Environmental Cleanup Program under the Utah Department of Environmental Quality (UDEQ) Division of Waste Management and Radiation Control (DWMRC). The purpose of this Site Management Plan (SMP) is to maintain the protectiveness of the remedial action as impacted soil and groundwater remain at the site above unrestricted land use action levels. An Environmental Covenant (EC) will also be prepared and will be recorded on the Title to the Property and implemented by the Property Owner (Owner).

1.1 Site History

The former Ace Auto Site (site) consists of 0.48 acres of land at 47 East 700 South in Salt Lake City (**Appendix A, Exhibits 1** and **2**). The building is approximately 13,000 square feet in size, constructed of masonry block walls and slab on grade concrete floors. The building extends to the property boundary lines on the north, south, and east side of the lot. Pavement bounds the building on the west side to the property lines. Adjacent properties consist of commercial properties on the east and west sides that have structures, 700 South Street to the south and a paved parking lot to the north.

The former Ace Auto facility performed chrome plating activities. A release originating from the operation was identified and reported to the UDEQ Division of Environmental Response and Remediation (DERR) after an initial investigation in 2011. As impacts in the form of hexavalent chromium were identified at the site, the site was subsequently enrolled in the Environmental Cleanup Program under the DWMRC by the Owner.

A Remedial Action Plan (RAP) for the site was developed by Terracon and approved by DWMRC on May 13, 2020. The objectives of the RAP were to remove/stabilize the main contaminant of concern, hexavalent chromium, by:

(i) Controlling the source of chromium impacts to groundwater via polysulfide addition to convert hexavalent chromium to less toxic and less mobile trivalent chromium;
(ii) Controlling exposure pathways for soil with elevated chromium levels;
(iii) Facilitating site redevelopment through a combination of engineering and institutional controls coordinated under a Site Management Plan;
(iv) Facilitating conditional closure of the site after chromium levels are verified to be stable.

1.2 Remedial Action

A Remedial Action Implementation Report (dated November 4, 2021) was prepared by Terracon to document the completion of the RAP activities and achievement of the goal of controlling the source of hexavalent chromium impacts to groundwater.

Source soils in the former plating operation areas inside the facility were removed as part of the scope of work. The Remedial Action Implementation Report documented that the extent of practicable excavation left impacted soils exceeding regulatory screening levels in-place; soil samples collected at the extent of excavations reported elevated concentrations of mercury and hexavalent chromium remain in soils beneath the building. Impacted soil likely remains below the building to the east and between the excavation of the sump area and the plating room area under the interior bearing wall, where excavation could not be performed (**Appendix A, Exhibit 3**). Groundwater monitoring post corrective action reported elevated concentrations of dissolved metals to remain in groundwater beneath the site and VOCs present above vapor intrusion screening levels.

As impacted soils and groundwater remain on the site after remedial actions, a Risk Assessment (Terracon; *September 16, 2022 Revised November 1, 2022*) was performed to evaluate the risks associated with the concentrations of chemicals of interest (COI) left in-place. The Risk Assessment determined that concentrations of COIs remain in soils and groundwater at the site above EPA risk screening levels and present a risk to future residential or commercial receptors at the site. However, exposure pathways are incomplete. As long as the site is covered by concrete and/or asphalt, the current on-site groundwater monitoring wells are properly abandoned, groundwater is not accessed, and there is no exposure pathway, these risks can be properly mitigated. The impacts remaining in the soil appear to be isolated and confined to small, inaccessible areas in one location under the current walls and building. Therefore, a Site Management Plan and Environmental Covenant are required to ensure the exposure pathways remain incomplete.

2.0 SITE MANAGEMENT

The following sections discuss specific details and procedures related to the Activity and Use Limitations and Engineering and Institutional Controls imposed upon the Property through the recorded EC. The SMP will be implemented by the Owner. The SMP may be amended with approval of the DWMRC.

2.1 Environmental Covenant

Terracon will work with DWMRC to prepare an Environmental Covenant that outlines the continuing obligations and limitations associated with impacts remaining at the site. The Environmental Covenant will be recorded on the Property's title.

2.2 Activity and Use Limitations

The following land use limitations are imposed upon the site:

1. Land use will remain commercial. Residential land use is currently prohibited at the site unless and until owners request a change in land use with DWMRC.

2. Groundwater will not be accessed for drinking water, irrigation, or bathing purposes.

3. No excavation or demolition (only improvements) is allowed on the site. Such prohibited work includes building demolition, trenching, removal of internal or external walls, new construction that requires soil disturbance, and significant and permanent asphalt/concrete cover removal. In the event additional occupied buildings are constructed on the site and/or the current building is demolished (i.e., during redevelopment), the requirements for mitigation will need to be re-evaluated and discussed with and approved by DWMRC. The Risk Evaluation discussed the possible risks associated with different scenarios including indoor and outdoor worker and construction worker. These scenarios will need to be addressed prior to any demolition or excavation conducted at the site.

4. The Owner will contact DWMRC if construction activities and/or other unforeseen events or disturbances may result in disturbances to impacted soil. This may require the Owner to submit a work plan for approval by the DWMRC (per discussion with the agency) to assess risks to human health and the environment and to properly manage the excavated materials. The mitigation plan shall include construction worker notification and safety measures and appropriate soil waste characterization and disposal requirements, if required.

2.3 Engineering Controls

The remedy to prevent exposure to impacted soils will be to maintain a hardscape surface over the site to prevent contact with the soils. Such hardscape surfaces include the current building footprint and concrete or asphalt surface covering the entire site.

As COIs remain in soils at the site above unrestricted land use regulatory screening levels, any excavation of soils, building demolition or redesign, or change in land use anywhere on the site may require that a work plan be submitted to DWMRC for review and approval prior to implementing work at the site. Risks presented in the Risk Evaluation will need to be addressed and mitigated.

2.4 Worker Health and Safety Requirements

The Owner shall inform any workers conducting construction, excavation, and/or subslab or subgrade work on the Site of the presence potential soil impacts that could be encountered at the property boundary. As appropriate, contractors that could come into contact with soil impacts should prepare their own Health and Safety Plan that specifically addresses potential contaminants that could be encountered and personal protective equipment (PPE) that is required. It will be the contractor's responsibility to ensure worker protection meets the Occupational Safety and Health Administration's (OSHA's) requirements.

2.5 Contingency Plan

If unforeseen events or unexpected contamination are encountered at the site during any work, DWMRC will be notified and a contingency plan will be developed in consultation with DWMRC to address the situation.

2.6 Notification

The Owner shall notify DWMRC either by phone at (801) 536-0200 or in writing at the address noted below of any excavation or demolition activities being planned for the site. In addition to the SMP requirements, site activities must comply with appropriate permitting authorities.

Brad Lauchnor P.E, P.G.
Division of Waste Management and Radiation Control
Utah Department of Environmental Quality
P.O. Box 144840
Salt Lake City, Utah 84114-4840
(801) 536-0200

3.0 REFERENCES

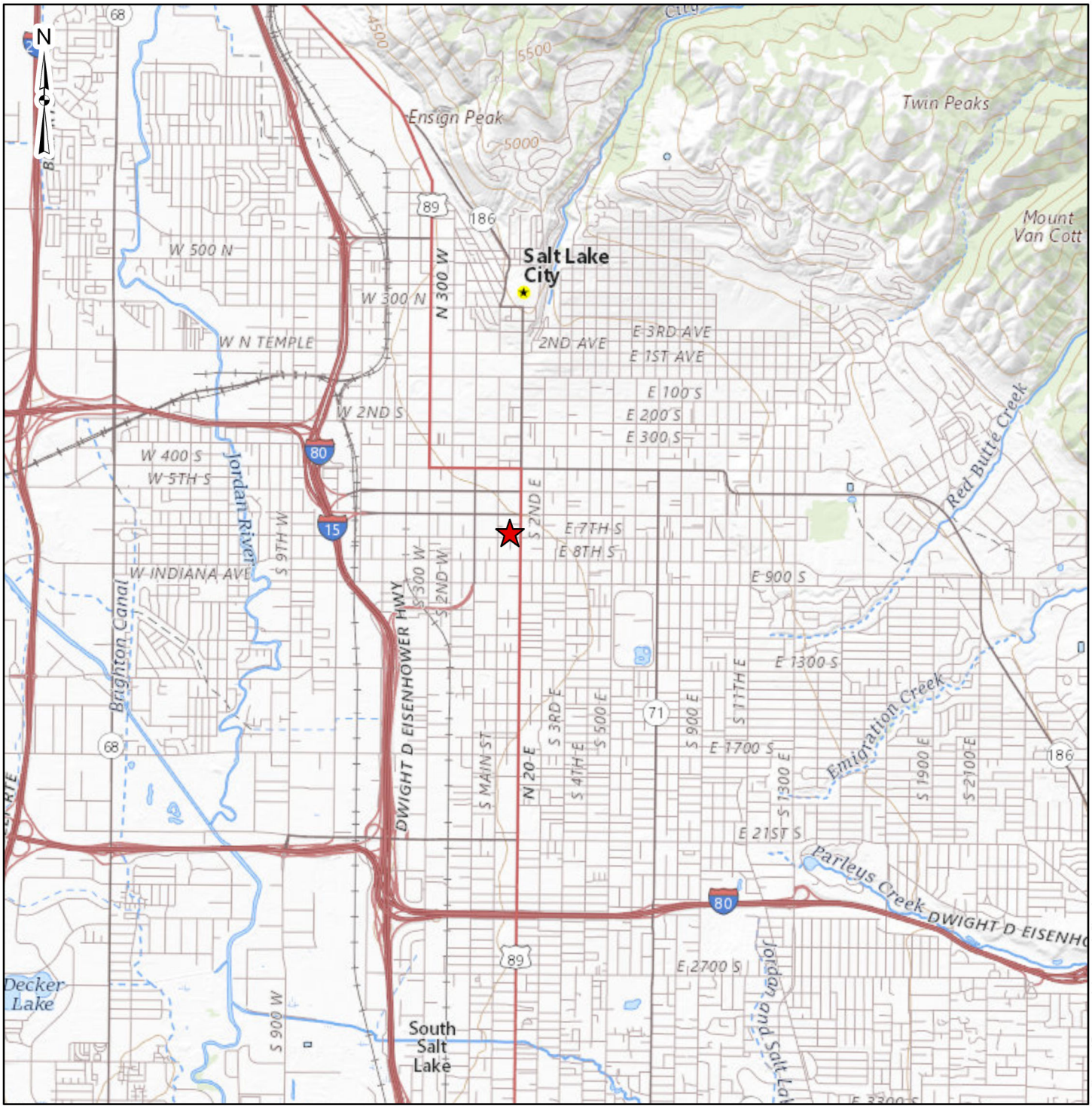
Limited Site Investigation / Amended Remedial Action Plan, Ace Automotive, 47 East 700 South, Salt Lake City, Utah, Terracon Project Number 61207093, May 4, 2020.

Remedial Action Plan Amendment, Ace Automotive, 47 East 700 South, Salt Lake City, Utah, Terracon Project Number 61207093, April 15, 2020.

Terracon Consultants, Inc. *Remedial Action Implementation Report, Former Ace Auto, 47 East 700 South, Salt Lake City, Utah*, November 4,2021.

Appendix A

Exhibits



★ Approximate Site Location

0 0.5 1 2 Miles

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:	61207235
Date:	Aug 2021
Drawn By:	NOW
Reviewed By:	JRG

Terracon
6949 S High Tech Dr, Ste 100 Midvale, UT 84047
PH. (801) 545-8500 terracon.com

Topographic Map

Former Ace Auto
47 East 700 South
Salt Lake City, Utah

Exhibit

1

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Excavation Area
Trench/Infiltration Gallery
Bearing Wall
Monitoring Wells
Injection Vault
Site Boundary

0 10 20 40 Feet

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:	61207235
Date:	Aug 2021
Drawn By:	AST
Reviewed By:	BBB

Terracon
6949 S High Tech Dr, Ste 100 Midvale, UT 84047
PH. (801) 545-8500 terracon.com

Site Diagram

Former Ace Auto
47 East 700 South
Salt Lake City, Utah

Exhibit

2

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Monitoring Wells
Excavation Area
Bearing Wall
Trench/Infiltration Gallery
Injection Vault
Former Sump
Unexcavated Area
Site Boundary

Feet
0 5 10 20

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:	61207093
Date:	Aug 2021
Drawn By:	AST
Reviewed By:	BBB

Terracon
6949 S High Tech Dr, Ste 100 Midvale, UT 84047
PH. (801) 545-8500 terracon.com

Excavation Limits

Former Ace Auto
47 East 700 South
Salt Lake City, Utah

Exhibit

3

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Appendix B

Corrective Action Complete with Controls Determination

State of Utah

SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL

Douglas J. Hansen
Director

July 14, 2022

Third River Real Estate
c/o Mr. Michael Brenny
4701 North Stonehaven Loop
Lehi, UT 84043

RE: Corrective Action Complete with Controls Designation
Former Ace Automotive, 47 East 700 South, Salt Lake City, Utah.
UTCA0027

Dear Mr. Brenny:

The Division of Waste Management and Radiation Control (Division) has completed its review of your June 16, 2022, submittal of the Proposed Land Use for the Former Ace Automotive property located at the address listed above.

The Division has determined the facility now meets the Corrective Action Complete with Controls designation for the proposed commercial/industrial use at the property. Please prepare and submit to the Division for review a draft Site Management Plan and Environmental Covenant for the site.

If you have any questions, please call Brad Lauchnor at (801) 536-0254.

Sincerely,

Douglas J. Hansen, Director
Division of Waste Management and Radiation Control

DJH/BML/kd

c: Angela C. Dunn, MD, MPH, Health Officer, Salt Lake County Health Dept.
Dorothy Adams, Deputy Director, Salt Lake County Health Dept.
Ron Lund, Environmental Health Director, Salt Lake County Health Dept.
Michael Brenny, Third River Real Estate (Email)
Andrew Turner, Terracon (Email)

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144880 • Salt Lake City, UT 84114-4880
Telephone (801) 536-0200 • Fax (801) 536-0222 • T.D.D. (801) 536-4284
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