TABLES

TABLE ES-1. Summary of Detected VOCs in Soil Gas and Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical [1]	Soil Gas			Shallow Groundwater [2]		
	5 ft bgs	10 - 15 ft bgs	All Depth Intervals	< 20 ft bgs	≥ 20 ft bgs and < 60 ft bgs	All Shallow Groundwater
Acetone	X	X	X			
Acrolein		X	X			
Acrylonitrile	X	X	X			
Benzene	X	X	X	X	X	X
Benzyl chloride	X		X			
Bromodichloromethane	X	X	X	X	X	X
Bromoform	X		X		X	X
Bromomethane	X		X			
2-Butanone	X	X	X			
tert-Butyl alcohol	X		X			
n-Butylbenzene	X		X			
sec-Butylbenzene	X		X			
tert-Butylbenzene	X		X	X		X
Carbon disulfide	X	X	X			
Carbon tetrachloride	X	X	X	X	X	X
3-Chloro-1-propene	X		X			
Chlorobenzene	X	X	X	X	X	X
Chloroethane	X	X	X			
Chloroform	X	X	X	X	X	X
Chloromethane	X	X	X			
Cumene	X		X			
Cyclohexane	X	X	X			
p-Cymene	X		X			
1,2-Dibromo-3-chloropropane		X	X			
Dibromochloromethane	X	X	X		X	X
1,2-Dibromoethane	X	X	X			
1,2-Dichlorobenzene	X		X	X	X	X
1,3-Dichlorobenzene	X	X	X	X	X	X
1,4-Dichlorobenzene	X	X	X	X	X	X
Dichlorodifluoromethane	X	X	X			
1,1-Dichloroethane	X	X	X	X	X	X
1,2-Dichloroethane	X	X	X	X	X	X
1,1-Dichloroethene	X	X	X	X	X	X
cis-1,2-Dichloroethene	X	X	X			
trans-1,2-Dichloroethene	X	X	X			
1,2-Dichloropropane	X	X	X			
1,4-Dioxane	X		X	X	X	X
Ethanol	X	X	X			
Ethyl acetate		X	X			
Ethyl benzene	X	X	X			
4-Ethyltoluene	X	X	X			
Freon 114	X		X			
n-Heptane	X	X	X			
Hexachlorobutadiene	X	X	X		X	X

TABLE ES-1. Summary of Detected VOCs in Soil Gas and Shallow Groundwater
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Chemical [1]	Soil Gas			Shallow Groundwater [2]		
	5 ft bgs	10 - 15 ft bgs	All Depth Intervals	< 20 ft bgs	≥ 20 ft bgs and < 60 ft bgs	All Shallow Groundwater
n-Hexane	X	X	X			
2-Hexanone	X	X	X			
alpha-Methyl styrene	X		X			
Methyl tert-butyl ether	X		X			
4-Methyl-2-pentanone	X	X	X			
Methylene Chloride	X	X	X	X	X	X
Methylmethacrylate		X	X			
Naphthalene	X	X	X			
n-Octane	X		X			
n-Propylbenzene	X		X			
Styrene	X	X	X			
1,1,1,2-Tetrachloroethane	X	X	X			
1,1,2,2-Tetrachloroethane	X		X			
Tetrachloroethene	X	X	X	X	X	X
Tetrahydrofuran	X	X	X			
Toluene	X	X	X	X	X	X
1,2,3-Trichlorobenzene				X	X	X
1,2,4-Trichlorobenzene	X	X	X	X	X	X
1,1,1-Trichloroethane	X		X			
1,1,2-Trichloroethane	X	X	X			
Trichloroethene	X	X	X	X	X	X
Trichlorofluoromethane	X	X	X			
1,2,3-Trichloropropane				X	X	X
1,1,2-Trichloro-1,2,2-trifluoroethane	X	X	X			
1,2,4-Trimethylbenzene	X	X	X			
1,3,5-Trimethylbenzene	X	X	X			
Vinyl acetate	X		X			
Vinyl chloride	X	X	X			
Xylenes (total)	X	X	X			

Notes:

bgs = below ground surface

ft = feet

BHRA = Baseline Health Risk Assessment

OU = Operable Unit

VOC = volatile organic compound

[1] VOCs detected in the soil gas or shallow groundwater samples included in the BHRA.

[2] Based on VOC results from the shallow monitoring wells (with top of well screens less than 60 ft bgs) collected between 2015-2020 in the OU-2 BHRA Area.

TABLE ES-2. Summary of Estimated Soil Gas Cancer Risks and Noncancer Hazard Indices for the OU-2 BHRA Area

Nevada Environmental Response Trust Site
Henderson, Nevada

Scenario	Depth Interval (ft bgs)	Cancer Risk	Chronic HI
Residents (Slab-on-Grade Scenario) [1]	5	6E-08 - 2E-05	0.0004 - 0.03
	10 - 15	2E-07 - 2E-05	0.0008 - 0.03
Residents (Trailer Scenario) [1]	5	5E-07 - 1E-05	0.003 - 0.03
	10 - 15	3E-07 - 7E-06	0.002 - 0.01
Indoor Commercial/Industrial Worker [1]	5	5E-09 - 3E-06	0.00002 - 0.007
	10 - 15	4E-09 - 2E-06	0.00003 - 0.01
Outdoor Commercial/Industrial Worker [2]	5	2E-10	0.000001
	10 - 15	2E-10	0.00006
Construction Worker[1]	5	1E-14 - 1E-11	0.000000003 - 0.0000002
	10 - 15	5E-14 - 2E-11	0.000000007 - 0.00001

Notes:

bgs = below ground surface

ft = feet

HI = hazard index

OU = Operable Unit

VOC = volatile organic compound

UCL = upper confidence level

[1] The cancer risk and non-cancer chronic HI estimates for the residents, indoor commercial/industrial workers and construction workers were based on the maximum by sample risk/HI results for each scenario.

[2] The cancer risk and non-cancer chronic HI for the outdoor commercial/industrial workers were estimated based on the 95% UCLs calculated using the soil gas VOC data collected in the commercial/industrial area in the OU-2 BHRA Area.

TABLE 4-1. Data Usability Evaluation – Soil Gas
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Data Usability Criterion *(description of criterion)*	**Evaluation Result**
I. Reports to the Risk Assessor *List all reports and dates and confirm that report(s) relied upon are complete and appropriate for use in the BHRA*	**Historical Investigations** The work plans and DVSRs[1] for historical investigations completed within the OU-2 BHRA Area are reported in the following documents. *Phase B Investigation (between May 17 and May 20, 2008)* • *Phase B Source Area Investigation Soil Gas Survey Work Plan* (ENSR 2008a, approved by NDEP on March 26, 2008); • (A Phase B soil gas investigation results report was not identified); and • *DVSR, Phase B Source Area Investigation Soil Gas Survey, Tronox LLC Facility* (ENSR 2008b, approved by NDEP on October 20, 2008). **Remedial Investigation** *Phase 1 RI (between March 6 and March 19, 2015), Phase 2 RI Modification No. 11 (between March 8 and March 22, 2019), and Phase 3 RI Modification No. 9 (between November 8, 2019 and January 22, 2020)* • *Remedial Investigation and Feasibility Study Work Plan* (ENVIRON 2014a, approved by NDEP on July 2, 2014); • *Phase 2 RI Modification No. 11, Recommended Soil Gas Sampling Locations* (Ramboll 2018b, approved by NDEP on June 21, 2018); • *Phase 3 RI Modification No. 9, Proposed Soil Gas Sampling in OU-1 and OU-2* (Ramboll 2019a, approved by NDEP on October 14, 2019); • *Remedial Investigation Data Evaluation Technical Memorandum* (Ramboll Environ 2016a, approved by NDEP on August 23, 2016);

[1] DVSRs are provided in Appendix B.

TABLE 4-1. Data Usability Evaluation – Soil Gas
Nevada Environmental Response Trust Site
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	• *Technical Memorandum, Soil Gas Sampling Results for OU-1 and OU-2* (Ramboll 2020a, with comments provided by NDEP on January 28, 2021); • *OU-1 and OU-2 Remedial Investigation Report* (Ramboll 2021a, under NDEP review); • *DVSR, Phase 1 Remedial Investigation, Soil Gas Remediation Sampling, March 2015* (Ramboll 2017b, approved by NDEP on January 25, 2018); • *DVSR, Phase 2 Remedial Investigation, March 2018 through March 2019* (Ramboll 2020b, approved by NDEP on April 9, 2020); and • *DVSR, Phase 3 Remedial Investigation, February 2019 through January 2020* (Ramboll 2021b, approved by NDEP on January 27, 2021) Overall, the available reports, and the accompanying laboratory reports and DVSRs, are considered complete for BHRA purposes.
II. Documentation *Confirm that each analytical result is associated with a specific sample location and that the appropriate sampling procedure is documented.*	For this step, Ramboll reviewed the soil gas samples collected and reported in the documents listed under Criterion I and/or in the NERT project database. The following steps were then completed (presented in chronological order): • Confirmation of sampling procedures: As discussed in the work plans listed under Criterion I, all sample collection and handling procedures were consistent with the NDEP-approved QAPP (ENSR 2008c, ENVIRON 2014c, Ramboll Environ 2017c, and Ramboll 2019f). Ramboll reviewed the chain-of-custody forms prepared in the field and compared them with the analytical data results provided by the laboratories to ensure completeness of the data set. The available information is adequate to relate each analytical result retained in the BHRA soil gas data set to a geographic location, depth interval, and sampling procedure.

TABLE 4-1. Data Usability Evaluation – Soil Gas
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III. Data Sources *Confirmation that source areas are adequately sampled and that analytical methods are appropriate to identify COPCs and estimate EPCs.*	**Historical Investigations** Soil gas samples from historical investigations were: 1) located near or within LOUs where VOCs may have been used in past operations; 2) located in areas overlying trespassing groundwater plumes (in the eastern portion of the OU-2 BHRA Study Area); 3) co-located with existing groundwater monitoring wells; and (4) located randomly throughout the OU-2 BHRA Area to obtain spatial coverage. The specific analysis conducted for VOCs was identified based on the review of the historical sampling results; analysis with standard USEPA analytical method (listed under Criterion IV) was conducted by NDEP-certified laboratories. **Remedial Investigation** As part of the ongoing RI/FS (ENVIRON 2014a; Ramboll 2018b, 2019a, and 2021a), soil gas samples were collected within the OU-2 BHRA Area during the Phase 1 RI, Phase 2 RI, and Phase 3 RI to address data gaps in the Phase B soil gas investigation identified through the further evaluation of VOC data in shallow groundwater, i.e., to obtain VOC data at a deeper depth (15 feet bgs) and in areas where high chloroform concentrations were detected in the previous soil gas and/or groundwater sampling. As part of the QAPP, the use of standard USEPA analytical methods (listed under Criterion IV) was approved by NDEP. Analyses were conducted at NDEP-certified laboratories for VOCs in soil gas samples collected in the OU-2 BHRA Area. As shown in Figure 4-1, the ten 2008 Phase B investigation soil gas sampling locations and the 40 RI soil gas sample locations (2015-2020) are located throughout the OU-2 BHRA Area and adjacent to shallow groundwater monitoring wells. In summary, the review of sampling coverage from the BHRA data set is based on the distribution of sample locations from both historical and recent investigations. Sample coverage is considered adequate for purposes of the BHRA, assuming groundwater conditions remain stable. The USEPA analytical methods are adequate for characterizing potential contaminants in soil gas and provide quantitative analytical results that are of adequate quality for deriving EPCs.

TABLE 4-1. Data Usability Evaluation – Soil Gas
Nevada Environmental Response Trust Site
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IV. Analytical Methods and Detection Limits *Confirm that analytical methods appropriately identify the chemical form or species and that the SQL is at or below a concentration appropriate for the BHRA.*	Standard analytical methods were used for all analyses as listed below. **Historical Investigations and Remedial Investigation** • USEPA Method TO-15 (VOCs) The above method is adequate to characterize a broad spectrum of VOCs in soil gas. The SQLs were evaluated to confirm that they were sufficiently low for risk characterization (i.e., below 0.1xRBTC, as derived in Section 5.4.1). As shown in Table 4-5 (for soil gas data at 5 feet bgs) and Table 4-6 (for soil gas data at 10-15 feet bgs), maximum SQLs were less than 0.1xRBTC, with the following exceptions: *For soil gas data at 5 feet bgs:* • Six analytes, benzyl chloride, bromodichloromethane, 1,2-dichloroethane, 1,2-dichloropropane, hexachlorobutadiene, and 1,1,2,2-tetrachloroethane, were detected in a range of one to 40 samples out of a total of 78 analyzed samples; the SQLs exceeded 0.1xRBTC in one of the samples reported as nondetect for each of these analytes, with no SQLs exceeding the RBTCs. • Acrolein was reported as less than detection limits in all samples; the SQLs exceeded 0.1xRBTC in 36% of the nondetects (four out of 11 samples), with no SQLs exceeding the RBTC. • Acrylonitrile was detected in five out of 63 samples; the SQLs exceeded 0.1xRBTC in 36% of the nondetects (21 out of 58 samples), with no SQLs exceeding the RBTC. • 1,2-Dibromo-3-chloropropane was reported as less than detection limits in all samples; the SQLs exceeded 0.1xRBTC in 81% of the nondetects (51 out of 63 samples) and exceeded the RBTC in 78% of the nondetects (49 out of 63 samples). • 1,2-Dibromoethane was detected in six out of 78 samples; the SQLs exceeded 0.1xRBTC in 32% of the nondetects (23 out of 72 samples); the SQL of one sample exceeded the RBTC. *For soil gas data at 10 to 15 feet bgs:* • Acrolein was detected in one out of nine samples; the SQLs exceeded 0.1xRBTC in 38% of the nondetects (three out of eight samples), with no SQLs exceeding the RBTC.

TABLE 4-1. Data Usability Evaluation – Soil Gas
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	• Acrylonitrile was detected in one out of 46 samples; the SQLs exceeded 0.1xRBTC in 24% of the nondetects (11 out of 45 samples), with no SQLs exceeding the RBTC. • Benzyl chloride was not detected in any of the 10-15 feet bgs soil gas samples; the SQLs exceeded 0.1xRBTC in 3.5% of the nondetects (two out of 58 samples), with no SQLs exceeding the RBTC. • 1,2-Dibromo-3-chloropropane was detected in one out of 46 samples; the SQLs exceeded 0.1xRBTC in 93% of the nondetects (42 out of 45 samples) and exceeded the RBTC in 91% of the nondetected samples (41 out of 45 samples). • 1,2-Dibromoethane was detected in six out of 58 samples; the SQLs exceeded 0.1xRBTC in 31% of the nondects (16 out of 52 samples), with no SQLs exceeding the RBTC. • Hexachlorobutadiene was detected in three out of 58 samples; the SQLs exceeded 0.1xRBTC in 3.6% of the nondetects (two out of 55 samples), with no SQLs exceeding the RBTC. Overall, the SQLs were sufficiently low for risk characterization. The impacts of the few exceptions with elevated SQLs on the overall risk evaluation are further discussed in Section 6.1.2. Of the analytes mentioned above, only bromodichloromethane was retained as an OU-2 groundwater chemical of potential concern (COPC) in the RI Report for OU-1 and OU-2.
V. Data Review *Confirm that the quality of the analytical data is assessed by professionals knowledgeable in field collection procedures and analytical chemistry and that data quality is adequate to estimate EPCs.*	The laboratory results from historical investigations and the RI were subjected to formal data validation consistent with USEPA guidelines (USEPA 1999, 2001, 2004a, 2005a, 2005b, 2008, and 2009a), *the BMI Plant Site Specific Supplemental Guidance on Data Validation* (NDEP 2009d), and *BRC Standard Operating Procedure (SOP) 40 and Data Review/Validation* (BRC 2009). The USEPA guidelines, which were prepared for Contract Laboratory Program data, were adapted to reflect the analytical methods and measurement quality objectives established for the individual sampling events and NDEP guidance. The NDEP-approved DVSRs listed in Criterion I for soil gas data included in the BHRA data set are provided in Appendix B, in which the names and qualifications of the reviewers, the specific data validation procedures, and the qualification findings are presented. Each DVSR includes the following tabular summaries of the data qualifications: • Summary of data qualified due to holding time exceedances

TABLE 4-1. Data Usability Evaluation – Soil Gas
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	• Summary of data qualified due to detection below quantitation limit • Summary of data qualified due to laboratory blank contamination • Summary of data qualified due to field blank contamination • Summary of data qualified due to matrix spike (MS)/matrix spike duplicate (MSD) recovery exceedances • Summary of data qualified due to laboratory control spike (LCS) recovery exceedances • Summary of data qualified due to field/laboratory duplicate • Summary of data qualified due to surrogate recovery exceedances • Summary of data qualified due to calibration violations • Summary of data qualified due to calibration range exceedances • Summary of data qualified due to internal standard recovery exceedances • Summary of data qualified due to serial dilutions • Summary of qualified data results • Summary of rejected data results These data qualifications are further discussed below as a component of Criterion VI.
VI. Data Quality Indicators *Document that sampling and analysis DQIs are evaluated using criteria specific to the risk assessment.*	<u>Completeness</u> Completeness is defined as the percentage of acceptable sample results compared to the total number of sample results, which is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. The completeness goal stated in the QAPPs is 90% or greater. Completeness was reviewed as reported in the DVSR prepared for each individual investigation contributing to the soil gas BHRA data set, and no data were rejected. Therefore, completeness for the soil gas BHRA data set for OU-2 BHRA Area (Appendix D) was 100%, which meets the completeness goals of 90% established in the QAPPs.

RAMBOLL

TABLE 4-1. Data Usability Evaluation – Soil Gas
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	<u>Comparability</u> Comparability is a qualitative characteristic expressing the confidence with which one data set can be combined with another for purposes of estimating exposure. More specifically, comparability is a qualitative expression of the measure of confidence that two or more data sets may contribute to a common analysis. In general, comparability of data is maximized by using standard methods for sampling and analysis, reporting data, and data validation. Soil gas samples identified for this BHRA were collected by different entities and analyzed by different analytical laboratories over a span of approximately 12 years in the following four investigations. • In 2008, as part of the Phase B soil gas investigation, eleven soil gas samples were collected at 5 feet bgs at ten locations in the former Parcel B area near the southwestern boundary of the Study Area. • In 2015, as part of the Phase 1 RI investigation, six soil gas samples were collected at 5 feet bgs and 10-15 feet bgs at the three locations (RISG-1, 2, and 3) with the highest chloroform concentrations identified in groundwater in the southern, central, and northern portions of the chloroform groundwater plume extending into the OU-2 BHRA Area. • In March 2019, as part of the Phase 2 RI Modification No. 11 soil gas investigation, 27 soil gas samples were collected at both 5 feet bgs and 10-15 feet bgs at 13 locations (including RISG-1, 2, and 3) where high chloroform concentrations were detected in the previous soil gas and/or groundwater sampling in the OU-2 BHRA Area in the portion of the chloroform groundwater plume with relatively higher chloroform concentrations, or at locations that help delineate lateral extent of VOCs in soil gas to the west where chloroform concentrations are relatively lower. • In November 2019 - January 2020, as part of the Phase 3 RI Modification No. 9 soil gas investigation, 91 soil gas samples were collected at both 5 feet bgs and 10-15 feet bgs at 40 locations (including the 13 locations sampled in Phase 2 RI Modification No. 11 throughout the OU-2 BHRA Area to collect additional data that is necessary to delineate the horizontal and vertical extent of VOCs in soil gas to complete the RI and to evaluate human health risks as part of the BHRA. In the Phase B Soil Gas Investigation in 2008, the Phase 2 RI Modification No. 11 in 2019, and the Phase 3 RI Modification No. 9 in 2019-2020, helium was used as the tracer gas for leak checking during sample collection; helium was analyzed in the soil gas samples collected in the 2008 Phase B Investigation, the 2015 Phase 1 RI soil gas sampling, and the 2019-2020 Phase 3 RI Modification No. 9. USEPA Method TO-15 was used as the analytical method for samples collected from all three investigations, and the sampling

TABLE 4-1. Data Usability Evaluation – Soil Gas
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	results were all reported in µg/m^3. Additionally, all four investigations used the same sample preservation, extraction, and preparation techniques. Different reporting limits for the same analyte may also impact the comparability of the data sets. The ranges of the SQLs for each analyte where the detection frequency was less than 100% are presented in Tables 4-5 and 4-6. For most of the analytes, the SQLs are well below 0.1xRBTC; therefore, different reporting limits for the same analyte would not affect the overall risk evaluation. There are a few analytes with SQLs exceeding 0.1xRBTC, and their impacts on the overall risk evaluation are further discussed in the uncertainty analysis in Section 6.1.2. Temporal factors were also considered in the comparability evaluation. Soil gas concentrations would be expected to follow trends of groundwater concentrations, in cases where groundwater is the source of VOCs. The temporal trends of VOCs in soil gas and groundwater are further discussed in Section 4.2.3. <u>Representativeness</u> Representativeness is the degree to which data accurately and precisely represent a characteristic of the population at a sampling point or an environmental condition. There is no standard method or formula for evaluating representativeness, which is a qualitative term. Spatial representativeness is achieved through selection of sampling locations that are appropriate relative to the objective of the specific investigation, and by collection of an adequate number of samples from locations identified in relation to the investigation objectives. Concentration representativeness is achieved by obtaining analytical results of sufficient quality, as specified in the QAPPs. Spatial representativeness was discussed previously under Criterion III. The 2008 Phase B investigation soil gas sampling locations and the RI soil gas sample locations are located near where high chloroform concentrations were detected in previous groundwater or soil gas sampling, or at locations that help delineate lateral extent of VOCs in soil gas in the OU-2 BHRA Area. The sample coverage is considered adequate for purposes of the BHRA; the data provide a conservative representation of current conditions within the OU-2 BHRA Area in the context of the CSM. The objectives of the sampling programs were met, considering the phased approach used to delineate contaminated areas.

TABLE 4-1. Data Usability Evaluation – Soil Gas
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	As presented in the DVSRs listed under Criterion I, standard methods for sampling and analysis were used for all the investigations, which confirmed that the analytical data are representative of the soil gas concentrations at the locations sampled. Entrainment of contaminants and dilution with surface air can impact the representativeness of soil gas analytical results. Helium gas was used in all four investigations as a leak check compound during purging and sampling. Therefore, the concentration representativeness is further evaluated below by reviewing the helium leak check data from the Phase B soil gas investigation in 2008 and the three RI soil gas investigations between 2015 and 2020 as discussed below: • For the 2008 Phase B soil gas investigation, all sample results with helium concentrations between 1% and 10% of the shroud average were qualified as estimated (J) based on possible contamination and dilution by surface air. This rule was based on a conservative interpretation of the ITRC document Vapor Intrusion Pathway: A Practical Guideline (ITRC 2007) and Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (New York State Department of Health 2006). Helium was not detected in any of the 11 Phase B soil gas samples collected within the OU-2 BHRA Area. None of the analytical results from these samples were J-qualified due to this criterion and did not need to be corrected. • For the 2015 Phase 1 RI soil gas sampling, helium concentrations in shrouds were monitored for leak check purposes during sampling and helium concentrations in the soil gas samples were also analyzed by the laboratory. Helium was not detected in any of the soil gas samples. Therefore, the analytical results from this investigation were not corrected. • For the 2019 Phase 2 RI Modification No. 11 soil gas sampling, helium concentrations in shrouds were monitored for leak check purposes during sampling and no helium leak was noted. Helium concentrations in the soil gas samples were not analyzed by the laboratory and helium leak percentages were not calculated for the soil gas samples collected from this investigation. The analytical results from this soil gas investigation were not corrected. • For the 2019-2020 Phase 3 RI Modification No. 9 soil gas sampling, helium concentrations in shrouds were monitored for leak check purposes during sampling and helium concentrations in the soil gas samples were also analyzed by the laboratory. Helium was detected in 15-foot samples collected at RISG-57, with leak percentages at 3.3% (see Ramboll 2021b). The leak percentage for this sample was

TABLE 4-1. Data Usability Evaluation – Soil Gas
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	less than the QAPP criterion of 5%. Therefore, the analytical results for the soil gas samples from this investigation were not corrected. Precision Precision is a measure of the degree of agreement between replicate measurements of the same source (field precision) or sample (analytical precision). Field precision is evaluated by calculating the relative percent difference (RPD) between the primary field sample and its field duplicate. Laboratory precision is quantitated for each laboratory data batch by calculating the RPD using data for the LCS/laboratory control spike duplicate (LCSD) and/or data for the MS/MSD. The field precision goal established in the QAPPs is a RPD of less than or equal to 50%, except for the case in which one (or both) of the primary or duplicate results is less than five times the practical quantitation limit (PQL). For the latter case, the acceptance criterion is the PQL (i.e., the absolute value of the difference between the primary and duplicate result is less than or equal to the PQL). Laboratory precision goals are defined for specific analytical methods, as indicated in the QAPPs. Field precision for the soil gas samples collected in the OU-2 BHRA Area was assessed by evaluating the field duplicate results in accordance with the *Statistical Analysis Recommendations for Field Duplicates and Field Splits* (NDEP 2008a), where the primary sample and field duplicate are independent samples. A total of 16 pairs of primary and field duplicate results were qualified due to PQL criterion exceedance, and no primary and field duplicate results were qualified due to RPD criterion exceedance (see Appendix B, Table B-1). For laboratory duplicates, there were no data points qualified due to RPD or PQL criterion exceedance (see Appendix D). All data with precision exceedances were qualified as "J/Estimated" or "UJ/Estimated non-detected" and are determined to be usable for purposes of the BHRA, and the effects of these qualified data on the overall risk evaluation are further discussed in Sections 6.1.5 and 6.1.6. Accuracy Accuracy measures the level of bias that an analytical method or measurement exhibits. Both field accuracy and laboratory accuracy are evaluated under this DQI. Accuracy in the field is assessed through the use of trip and equipment blanks and through adherence to all sample handling, preservation, and holding time requirements. As specified in the QAPPs, the objective for trip and equipment blanks is for no analyte to be present at levels greater than the PQL. Accuracy in the laboratory analytical data is a measure of the

TABLE 4-1. Data Usability Evaluation – Soil Gas
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	overestimation or underestimation of reported concentrations. Several QC parameters are used to evaluate the accuracy of reported analytical results, including: • Holding times; • Field and laboratory blanks; • MS/MSD percent recovery; • Surrogate spike recovery; and • LCS percent recovery. All qualified results (i.e., U, J, J-, and J+ qualified data) for the soil gas analytes are presented in Appendix D along with the reason codes for these qualified results, and a summary of qualified results is included in Appendix B, Table B-3. Although laboratory limits were exceeded for certain compounds or analyses, as identified by the laboratory (and confirmed during data validation), there does not appear to be a systematic or widespread impact on the quality of the analytical results. Furthermore, based on a review of the laboratory narratives (provided in the laboratory reports in each DVSR), the laboratory does not believe that the observed exceedances of laboratory criteria are cause for concern. Therefore, the qualified data are determined to be usable and valid for purposes of the BHRA and are included in the BHRA data set. The impacts of qualified data on the overall risk evaluation are further discussed in Section 6.1.6. Data collected from the 2008 Phase B Soil Gas Investigation and associated with field and laboratory blank contamination were originally qualified as nondetects based on the NDEP guidance at that time. As requested by NDEP and in accordance with the most recent guidance (NDEP 2012) for evaluating data associated with blank contamination, if there were detections between the SQL and PQL for samples with blank contamination, these data were changed from nondetected values (U qualified) to detected values (J qualified) at reported concentrations. The revisions of censored data for blank contamination are summarized in Appendix B, Table B-2, and the impacts on the overall risk evaluation are further discussed in Section 6.1.6. In summary, all data are acceptable through the DQI evaluation and deemed to be usable for risk assessment purposes.

TABLE 4-2. Data Usability Evaluation – Shallow Groundwater
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Data Usability Criterion *(description of criterion)*	**Evaluation Result**
I. Reports to the Risk Assessor *List all reports and dates and confirm that report(s) relied upon are complete and appropriate for use in the BHRA*	The work plans, reports, and DVSRs[1] for shallow groundwater investigations completed within the OU-2 BHRA Area are reported in the following documents. **Remedial Investigation** *Phase 1 RI (between January 12 and January 26, 2015), Phase 2 RI (between August 24, 2017 and November 14, 2018), and Phase 3 RI (April 25, 2018)* • *Remedial Investigation and Feasibility Study Work Plan* (ENVIRON 2014a, approved by NDEP on July 2, 2014) • *Remedial Investigation Data Evaluation Technical Memorandum* (Ramboll Environ 2016a, approved by NDEP on August 23, 2016) • *OU-1 and OU-2 Remedial Investigation Report* (Ramboll 2021a, under NDEP review) • *DVSR, Phase 1 Remedial Investigation, Groundwater Remedial Investigation Sampling, January through March and May 2015* (Ramboll 2018c, approved by NDEP on August 14, 2018) • *DVSR, Phase 2 Remedial Investigation, February through June 2017* (Ramboll 2019b, approved by NDEP on June 3, 2019) • *DVSR, Phase 2 Remedial Investigation, July through November 2017* (Ramboll 2019c, approved by NDEP on June 3, 2019) • *DVSR, Phase 2 Remedial Investigation, March 2018 through March 2019* (Ramboll 2020b, approved by NDEP on April 9, 2020) • *DVSR, Phase 3 Remedial Investigation, December 2017 through November 2018* (Ramboll 2019d, approved by NDEP on October 28, 2019)

[1] DVSRs are provided in Appendix C.

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	Annual Groundwater Monitoring *2016 (between February 10 and September 14, 2016), 2017 (between May 3 and June 16, 2017), 2018 (May 9 and May 11, 2018), 2019 (between May 7 and May 16, 2019), and 2020 (between May 5 and May 12, 2020)* • *2016 Groundwater Monitoring Optimization Plan* (Ramboll Environ 2016b, approved by NDEP on June 24, 2016) • *2016 Annual Remedial Performance Report for Chromium and Perchlorate* (Ramboll Environ 2016c, approved by NDEP on December 6, 2016) • *DVSR, 2016 Annual Remedial Performance Sampling* (Ramboll 2018e, approved by NDEP on July 10, 2018) • *DVSR, 2016 Semi-Annual Remedial Performance Sampling* (Ramboll 2017e, approved by NDEP on August 17, 2017) • *2017 Annual Remedial Performance Report for Chromium and Perchlorate* (Ramboll Environ 2017d, approved by NDEP on February 6, 2018) • *DVSR, 2017 Annual Remedial Performance Report* (Ramboll 2018f, approved by NDEP on March 5, 2018) • *2018 Annual Remedial Performance Report for Chromium and Perchlorate* (Ramboll 2018e, approved by NDEP on January 18, 2019) • *DVSR, 2018 Annual Remedial Performance Report* (Ramboll 2018g, approved by NDEP on May 14, 2019) • *2019 Annual Remedial Performance Report for Chromium and Perchlorate* (Ramboll 2020e, approved by NDEP on April 30, 2020) • *DVSR, 2019 Annual Remedial Performance Sampling, January through June 2019* (Ramboll 2019e, approved by NDEP on January 13, 2020) • *2020 Annual Groundwater Monitoring and GWETS Performance Report* (Ramboll 2021c, approved by NDEP on May 6, 2021)

TABLE 4-2. Data Usability Evaluation – Shallow Groundwater
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	• *DVSR, 2020 Annual Groundwater Monitoring and GWETS Performance Report* (Ramboll 2021e, under NDEP review) Overall, the available reports, and the accompanying laboratory reports and DVSRs, are considered complete for BHRA purposes.
II. Documentation *Confirm that each analytical result is associated with a specific sample location and that the appropriate sampling procedure is documented.*	For this step, Ramboll reviewed the shallow groundwater samples collected and reported in the documents listed under Criterion I and/or in the NERT project database. The following steps were then completed (presented in chronological order): • Confirmation of sample locations: Samples with missing geographic location information (i.e., x, y coordinates and/or depth) were removed from the BHRA data set. The geographic location of each sample was confirmed relative to the current boundaries of the OUs and parcels. As noted in the OU-2 BHRA Report, Parcels A and the western portion of Parcel B have previously received no further action determinations for vapor intrusion and are not included in this evaluation. Parcel A data was not included in the BHRA data set; Parcel B data were included in this BHRA for better spatial coverage in the evaluation of the health risks for neighboring Parcels I and J. • Confirmation of well types and depths: Only samples collected from shallow monitoring wells (with top of well screens less than 60 feet bgs) are included in the BHRA data set. Grab groundwater samples or samples collected from injection wells, extraction wells, or monitoring wells equal to or deeper than 60 feet bgs were removed from the BHRA data set. • Confirmation of volatile compounds: Only data for volatile compounds are included in the BHRA data set. Volatile compounds are identified using the following criteria consistent with USEPA (2020a): 1) vapor pressure greater than 1 mm Hg or 2) Henry's Law constant greater than 0.00001 atm-m^3/mol. Data for non-volatile compounds were removed from the BHRA data set. • Confirmation of sampling procedures: As discussed in the work plans listed under Criterion I, all sample collection and handling procedures were consistent with the NDEP-approved QAPPs (ENSR 2008c, AECOM and Northgate 2009, ENVIRON 2014b, Ramboll Environ 2017c, Ramboll Environ 2017f, Ramboll 2019f, Ramboll 2019g, Ramboll 2020d, and Ramboll 2020e). Ramboll reviewed the chain-of-custody forms prepared in the field and compared them with the analytical data results provided by the laboratories to confirm completeness of the data set.

TABLE 4-2. Data Usability Evaluation – Shallow Groundwater
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	The available information is adequate to relate each analytical result retained in the risk assessment dataset to a geographic location, depth interval, and sampling procedure.
III. Data Sources *Confirmation that source areas are adequately sampled and that analytical methods are appropriate to identify COPCs and estimate EPCs.*	**Remedial Investigation** As part of the ongoing RI/FS (ENVIRON 2014a; Ramboll Environ 2016b; Ramboll 202), shallow groundwater samples were collected in the OU-2 BHRA Area during the Phase 1 RI, Phase 2 RI, and Phase 3 RI to address spatial data gaps identified through the review of available historical groundwater data. Review of the analytical results indicates that these spatial data gaps have been addressed. The specific analyses conducted for VOCs were identified based on the review of the sampling results; Analyses with standard USEPA analytical methods (listed under Criterion IV) were conducted by NDEP-certified laboratories. **Annual Groundwater Monitoring** As directed by NDEP, VOCs were first added to the groundwater monitoring program as part of the 2016 *Groundwater Monitoring Optimization Plan* (Ramboll Environ 2016c) after initial evaluations of Phase 1 RI data suggested that these chemicals were present at detectable levels throughout the NERT Site (Ramboll Environ 2016a). Comprehensive groundwater sampling for volatile compounds throughout the Site has been conducted on an annual basis (usually in May every year) as part of the annual groundwater sampling event since 2017. The specific analysis conducted for VOCs was identified based on the review of the Phase 1 RI sampling results; analyses with standard USEPA analytical methods (listed under Criterion IV) were conducted by NDEP-certified laboratories. In summary, the review of sampling coverage from the BHRA data set is based on the distribution of sample locations from recent shallow groundwater investigations. Sample coverage is considered adequate for purposes of the BHRA. The USEPA analytical methods are adequate for characterizing potential contaminants in shallow groundwater and provide quantitative analytical results that are of adequate quality for deriving EPCs.

TABLE 4-2. Data Usability Evaluation – Shallow Groundwater
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IV. Analytical Methods and Detection Limits *Confirm that analytical methods appropriately identify the chemical form or species and that the SQL is at or below a concentration appropriate for the BHRA.*	Standard analytical methods were used for all analyses as listed below. **Remedial Investigation** • USEPA Method 8260 and 8260 selective ion monitoring (SIM) (VOCs) **Annual Groundwater Monitoring** • USEPA Method 8260 and 8260B SIM (VOCs) The above methods are adequate to characterize the corresponding chemical groups in shallow groundwater. The SQLs were evaluated to confirm that they were sufficiently low for risk characterization (i.e., below 0.1xRBTC, as derived in Section 5.4.2). As shown in Table 4-7, maximum SQLs were less than 0.1xRBTC, with the following exceptions: • For 7 analytes (bromodichloromethane, carbon tetrachloride, 1,2-dibromoethane, 1,2-dichloroethane, hexachlorobutadiene, trichloroethene, and vinyl chloride), the SQLs exceeded 0.1xRBTC in 3.1 to 10% of the samples reported as nondetected. • 1,2-Dibromo-3-chloropropane was reported as less than detection limits in all samples; the SQLs exceeded 0.1xRBTC in all 278 nondetected samples, including the SQLs of 20 samples exceeding the RBTC. Overall, the SQLs were sufficiently low for risk characterization. The impacts of the few exceptions with elevated SQLs on the overall risk evaluation are further discussed in Section 6.1.2. Of the analytes mentioned above, bromodichloromethane and carbon tetrachloride were the only ones retained as OU-2 groundwater chemicals of potential concern (COPCs) in the RI Report for OU-1 and OU-2.

TABLE 4-2. Data Usability Evaluation – Shallow Groundwater
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V. Data Review *Confirm that the quality of the analytical data is assessed by professionals knowledgeable in field collection procedures and analytical chemistry and that data quality is adequate to estimate EPCs.*	The laboratory results from the RI and annual groundwater monitoring were subjected to formal data validation consistent with USEPA guidelines (USEPA 1999, 2001, 2004b, 2005a,b, 2008, 2009b), the *BMI Plant Site Specific Supplemental Guidance on Data Validation* (NDEP 2009d), and *BRC Standard Operating Procedure (SOP) 40 and Data Review/Validation* (BRC 2009). The USEPA guidelines, which were prepared for Contract Laboratory Program data, were adapted to reflect the analytical methods and measurement quality objectives established for the individual sampling events and NDEP guidance. The NDEP-approved DVSRs listed in Criterion I for shallow groundwater data included in the BHRA data set are provided in Appendix C, in which the names and qualifications of the reviewers, the specific data validation procedures, and the qualification findings are presented. Each DVSR includes the following tabular summaries of the data qualifications: • Summary of data qualified due to holding time exceedances • Summary of data qualified due to detection below quantitation limit • Summary of data qualified due to laboratory blank contamination • Summary of data qualified due to field blank contamination • Summary of data qualified due to matrix spike (MS)/matrix spike duplicate (MSD) recovery exceedances • Summary of data qualified due to laboratory control spike (LCS) recovery exceedances • Summary of data qualified due to field/laboratory duplicate • Summary of data qualified due to surrogate recovery exceedances • Summary of data qualified due to calibration violations • Summary of data qualified due to calibration range exceedances • Summary of data qualified due to internal standard recovery exceedances • Summary of data qualified due to serial dilutions • Summary of qualified data results • Summary of rejected data results These data qualifications are further discussed below as a component of Criterion VI.

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VI. Data Quality Indicators *Document that sampling and analysis DQIs are evaluated using criteria specific to the risk assessment.*	<u>Completeness</u> Completeness is defined as the percentage of acceptable sample results compared to the total number of sample results, which is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. The completeness goal stated in the QAPPs is 90% or greater. First, completeness was reviewed as reported in the DVSR prepared for each individual investigation contributing to the shallow groundwater BHRA data set. Depending on the specific DVSR, 98.8% to 100% completeness was archived based on validated data, with 0% to 1.2% of the data qualified as rejected ("R" qualified). Rejected ("R" qualified) shallow groundwater data associated with shallow groundwater samples in the OU-2 BHRA Area are summarized in Appendix C, Table C-2. Completeness for the shallow groundwater BHRA data set for the OU-2 BHRA Area (Appendix E) was calculated as 99.98%. In summary, the completeness for the BHRA shallow groundwater data meet the completeness goals of 90% established in the QAPPs. Rejected data are excluded from the shallow groundwater BHRA data set, and a discussion of how these rejected data occurrences potentially affect the overall risk evaluation are further discussed in Section 6.1.3. <u>Comparability</u> Comparability is a qualitative characteristic expressing the confidence with which one data set can be combined with another for purposes of estimating exposure. More specifically, comparability is a qualitative expression of the measure of confidence that two or more data sets may contribute to a common analysis. In general, comparability of data is maximized by using standard methods for sampling and analysis, reporting data, and data validation. Shallow groundwater samples identified for the BHRA were collected by different entities and analyzed by different analytical laboratories (and in some cases, different analytical methods were used for the same analyte); overall, the investigations from which data are being used span a period of approximately five years. The same analytical methods were used across most investigations; specifically, USEPA Method 8260 for VOCs. In some investigations, the more sensitive USEPA Method 8260 SIM was used for VOCs. All groundwater sampling results were reported in µg/L.

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	Different reporting limits for the same analyte may also impact the comparability of the data sets. The ranges of the SQLs for each analyte where the detection frequency was less than 100% are presented in Table 4-7. For most of the analytes, the SQLs are well below 0.1xRBTC; therefore, different reporting limits for the same analyte would not affect the overall risk evaluation. There are a few analytes with SQLs exceeding 0.1xRBTC, and their impacts on the overall risk evaluation are further discussed in Section 6.1.2. Temporal factors were also considered in the comparability evaluation. The temporal trends of VOCs in groundwater are further discussed in Section 4.2.3. <u>Representativeness</u> Representativeness is the degree to which data accurately and precisely represent a characteristic of the population at a sampling point or an environmental condition. There is no standard method or formula for evaluating representativeness, which is a qualitative term. Spatial representativeness is achieved through selection of sampling locations that are appropriate relative to the objective of the specific investigation, and by collection of an adequate number of samples from locations identified in relation to the investigation objectives. Concentration representativeness is achieved by obtaining analytical results of sufficient quality, as specified in the QAPPs. Spatial representativeness was discussed previously under Criterion III. As noted, shallow groundwater sample locations were identified based on the review of available historical groundwater data to characterize the vertical and horizontal extent of impacted groundwater, ensuring that the data provide a conservative representation of current conditions within the OU-2 BHRA Area in the context of the CSM. The objectives of the sampling programs were met, considering the phased approach used to delineate contaminated areas. As presented in the DVSRs listed under Criterion I, standard methods for sampling and analysis were used for all the investigations, which confirmed that the analytical data are representative of the shallow groundwater concentrations at the locations sampled. <u>Precision</u> Precision is a measure of the degree of agreement between replicate measurements of the same source (field precision) or sample (analytical precision). Field precision is evaluated by calculating the RPD between the primary field sample and its field duplicate. Laboratory precision is quantitated for each laboratory data batch by calculating the RPD using data for the LCS/LCSD and/or data for the MS/MSD. The field precision

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	goal established in the QAPPs is a RPD of less than or equal to 30%, except for the case in which one (or both) of the primary or duplicate result is less than five times the PQL. For the latter case, the acceptance criteria is the PQL (i.e., the absolute value of the difference between the primary and duplicate result is less than or equal to the PQL). Laboratory precision goals are defined for specific analytical methods, as indicated in the QAPPs. Field precision for the shallow groundwater samples from the OU-2 BHRA Area was assessed by evaluating the field duplicate results in accordance with the *Statistical Analysis Recommendations for Field Duplicates and Field Splits* (NDEP 2008b), where the primary sample and field duplicate are independent samples. A total of two pairs of primary and field duplicate results were qualified due to PQL criterion exceedance, and no primary and field duplicate results were qualified due to RPD criterion exceedance (see Appendix C, Table C-3). For laboratory duplicates, there were no data points qualified due to RPD or PQL criterion exceedance (see Appendix E). All data with precision exceedances were qualified as "J/Estimated" or "UJ/Estimated non-detected" and are determined to be usable for purposes of the BHRA, and the effects of these qualified data on the overall risk evaluation are further discussed in Sections 6.1.5 and 6.1.6. <u>Accuracy</u> Accuracy measures the level of bias that an analytical method or measurement exhibits. Both field accuracy and laboratory accuracy are evaluated under this DQI. Accuracy in the field is assessed through the use of trip and equipment blanks and through adherence to all sample handling, preservation, and holding time requirements. As specified in the QAPPs, the objective for trip and equipment blanks is for no analyte to be present at levels greater than the PQL. Accuracy in the laboratory analytical data is a measure of the overestimation or underestimation of reported concentrations. Several QC parameters are used to evaluate the accuracy of reported analytical results, including: • Holding times; • Field and laboratory blanks; • MS/MSD percent recovery; • Surrogate spike recovery; and • LCS percent recovery.

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	All qualified results (i.e., U, J, J-, and J+ qualified data) for the shallow groundwater analytes are presented in Appendix E along with the reason codes for these qualified results, and a summary of qualified results is included in Appendix C, Table C-4. Although laboratory limits were exceeded for certain compounds or analyses, as identified by the laboratory (and confirmed during data validation), there does not appear to be a systematic or widespread impact on the quality of the analytical results. Furthermore, based on a review of the laboratory narratives (provided in the laboratory reports in each DVSR), the laboratory does not believe that the observed exceedances of laboratory criteria are cause for concern. Therefore, the qualified data are determined to be usable and valid for purposes of the BHRA and are included in the BHRA data set. The impacts of qualified data on the overall risk evaluation are further discussed in Section 6.1.6. In summary, with the exception of the rejected data discussed in Appendix C, Table C-2, all data are acceptable through the DQI evaluation and deemed to be usable for risk assessment purposes.

TABLE 4-3. Soil Gas Samples with VOC Sampling Data Evaluated in the BHRA
Nevada Environmental Response Trust Site
Henderson, Nevada

Sample Location ID	Start Depth (ft bgs)	Depth Category	Well Owner	Land Use	Investigations for VOC Sampling
RISG-1	5	5 ft	NERT	Residential	Phase 1 RI, Phase 2 RI, Phase 3 RI
	13	10-15 ft	NERT		
	15	10-15 ft	NERT		
RISG-2	5	5 ft	NERT	Commercial	Phase 1 RI, Phase 2 RI, Phase 3 RI
	15	10-15 ft	NERT		
RISG-3	5	5 ft	NERT	Commercial	Phase 1 RI, Phase 2 RI, Phase 3 RI
	15	10-15 ft	NERT		
RISG-4	5	5 ft	NERT	Residential	Phase 2 RI, Phase 3 RI
	15	10-15 ft	NERT		
RISG-5	5	5 ft	NERT	Residential	Phase 2 RI, Phase 3 RI
	15	10-15 ft	NERT		
RISG-6	5	5 ft	NERT	Commercial	Phase 2 RI, Phase 3 RI
	15	10-15 ft	NERT		
RISG-7	5	5 ft	NERT	Residential	Phase 2 RI, Phase 3 RI
	10	10-15 ft	NERT		
RISG-8	5	5 ft	NERT	Residential	Phase 2 RI, Phase 3 RI
RISG-9	5	5 ft	NERT	Residential	Phase 2 RI, Phase 3 RI
RISG-27	5	5 ft	NERT	Commercial	Phase 2 RI, Phase 3 RI
	15	10-15 ft	NERT		
RISG-28	5	5 ft	NERT	Commercial	Phase 2 RI, Phase 3 RI
	15	10-15 ft	NERT		
RISG-29	5	5 ft	NERT	Residential	Phase 2 RI, Phase 3 RI
	15	10-15 ft	NERT		
RISG-30	5	5 ft	NERT	Commercial	Phase 2 RI, Phase 3 RI
	10	10-15 ft	NERT		
RISG-52	5	5 ft	NERT	Commercial	Phase 3 RI
	15	10-15 ft	NERT		
RISG-53	5	5 ft	NERT	Commercial	Phase 3 RI
	15	10-15 ft	NERT		
RISG-54	5	5 ft	NERT	Commercial	Phase 3 RI
	15	10-15 ft	NERT		
RISG-55	5	5 ft	NERT	Commercial	Phase 3 RI
	15	10-15 ft	NERT		
RISG-56	5	5 ft	NERT	Commercial	Phase 3 RI
	15	10-15 ft	NERT		
RISG-57	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-58	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-59	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-60	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		

TABLE 4-3. Soil Gas Samples with VOC Sampling Data Evaluated in the BHRA
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Sample Location ID	Start Depth (ft bgs)	Depth Category	Well Owner	Land Use	Investigations for VOC Sampling
RISG-61	5	5 ft	NERT	Residential	Phase 3 RI
	10	10-15 ft	NERT		
RISG-62	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-63	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-64	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-65	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-66	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-67	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-68	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-69	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-70	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-71	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-72	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-73	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-74	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-75	5	5 ft	NERT	Residential	Phase 3 RI
	15	10-15 ft	NERT		
RISG-76	5	5 ft	NERT	Commercial	Phase 3 RI
	15	10-15 ft	NERT		
RISG-77	5	5 ft	NERT	Trailer	Phase 3 RI
	15	10-15 ft	NERT		
RISG-78	5	5 ft	NERT	Trailer	Phase 3 RI
	15	10-15 ft	NERT		
SG06	5	5 ft	NERT	Commercial	Phase B
SG07	5	5 ft	NERT	Commercial	Phase B
SG08	5	5 ft	NERT	Commercial	Phase B
SG09	5	5 ft	NERT	Commercial	Phase B
SG10	5	5 ft	NERT	Commercial	Phase B
SG11	5	5 ft	NERT	Commercial	Phase B
SG12	5	5 ft	NERT	Commercial	Phase B

TABLE 4-3. Soil Gas Samples with VOC Sampling Data Evaluated in the BHRA
Nevada Environmental Response Trust Site
Henderson, Nevada

Sample Location ID	Start Depth (ft bgs)	Depth Category	Well Owner	Land Use	Investigations for VOC Sampling
SG13	5	5 ft	NERT	Commercial	Phase B
SG14	5	5 ft	NERT	Commercial	Phase B
SG15	5	5 ft	NERT	Commercial	Phase B

Notes:

-- = not applicable
bgs = below ground surface
ft = feet
BHRA = Baseline Health Risk Assessment
NERT = Nevada Environmental Response Trust
RI = Remedial Investigation
VOC = volatile organic compound

TABLE 4-4. Shallow Groundwater Wells with VOC Sampling Data Evaluated in the BHRA
Nevada Environmental Response Trust Site
Henderson, Nevada

Well ID	Screen Top Depth (ft bgs)	Screen Bottom Depth (ft bgs)	Minimum Depth to Groundwater (ft bgs)	Maximum Depth to Groundwater (ft bgs)	Water Bearing Zone	Well Type	Well Owner	Land Use	Depth Category [1]	Sampling Events for VOCs	Note
ARP-1	14	44	21.4	30.5	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
ARP-2A	23.7	53.7	23.3	32.0	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
ARP-3A	20.7	40.7	13.9	32.6	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	
ARP-4A	17.7	32.7	28	33.3	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2017 Annual Groundwater Monitoring	
ARP-5A	12.7	37.7	31.2	33.6	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	
ARP-6B	27.7	42.7	29.9	33.3	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	
ARP-7	14	39	29.0	31.4	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	
ART-6	17.9	37.9	26.8	35.4	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring	
BHE1-10	10	30	12.4	12.4	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	Phase 1 RI	saturated screen thickness > 10 ft
M-44	5	35	15.7	26.2	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring, Phase 2 RI	
M-48A	19.7	39.7	29	31	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	
MW-K4	9.5	50	26.5	32.9	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-101R	20	50	25.0	37.2	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-122	23	38	30.2	33.7	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	
PC-123	20	35	22.6	24.2	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-124	20.3	35.3	25	25.9	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	
PC-125	18.7	33.7	23.0	25.8	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	
PC-126	19.5	34.5	18	23	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-127	15	35	18.3	19.6	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-128	14.8	34.8	18.4	19.4	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-129	12.8	37.8	18.2	19.9	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-130	14.8	49.8	14.7	21.2	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-131	9.8	39.8	11.2	12.3	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-132	9.8	39.8	9.9	10.4	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-134A	59.7	69.7	28.3	36.4	Middle	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	top screen depth - water table > 5 ft
PC-135A	30.7	50.7	28.0	36.9	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-136	21.7	41.7	32.0	34.4	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	
PC-142	21.7	31.7	26.9	31.8	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	

TABLE 4-4. Shallow Groundwater Wells with VOC Sampling Data Evaluated in the BHRA
Nevada Environmental Response Trust Site
Henderson, Nevada

Well ID	Screen Top Depth (ft bgs)	Screen Bottom Depth (ft bgs)	Minimum Depth to Groundwater (ft bgs)	Maximum Depth to Groundwater (ft bgs)	Water Bearing Zone	Well Type	Well Owner	Land Use	Depth Category [1]	Sampling Events for VOCs	Note
PC-143	29.7	64.7	28.9	36.8	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-144	29.7	39.7	28.2	36.6	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	
PC-145	24.7	44.7	32.7	34	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-148	24.5	44.5	27.3	33	Middle	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-149	24.5	44.5	28.4	34	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-153	10	30	9.8	10.0	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2016 Annual Groundwater Monitoring Q1, 2016 Annual Groundwater Monitoring Q2, 2016 Annual Groundwater Monitoring Q3, Phase 1 RI	saturated screen thickness > 10 ft
PC-153R	10	30	9.5	10.0	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, Phase 2 RI	saturated screen thickness > 10 ft
PC-160	9	24	13	14.2	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring, 2016 Annual Groundwater Monitoring Q1, 2016 Annual Groundwater Monitoring Q2, 2016 Annual Groundwater Monitoring Q3, Phase 1 RI	
PC-161	9	34	7.0	7.0	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	Phase 2 RI	saturated screen thickness > 10 ft
PC-162	10	45	8.2	8.2	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	Phase 2 RI	saturated screen thickness > 10 ft
PC-163	10	25	16	16.4	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	Phase 2 RI	
PC-164	15	30	21.5	21.5	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	
PC-165	13	38	12.2	12.2	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	Phase 2 RI	saturated screen thickness > 10 ft
PC-166	12	32	12.3	12.3	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	Phase 2 RI	saturated screen thickness > 10 ft
PC-167	15	35	11	11	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	Phase 2 RI	top screen depth - water table > 5 ft; saturated screen thickness > 10 ft
PC-168	15	35	20	19.6	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	Phase 2 RI, Phase 3 RI	saturated screen thickness > 10 ft
PC-169	15	30	23.4	23.4	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	
PC-171	15	30	20.6	20.6	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	
PC-172D	30	50	24.1	24.1	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI, Phase 3 RI	top screen depth - water table > 5 ft; saturated screen thickness > 10 ft
PC-174	10	25	22.7	23	Shallow	Monitoring	NERT	Trailer	≥ 20 ft bgs	Phase 2 RI	
PC-175	14	39	22.9	22.9	Shallow	Monitoring	NERT	Trailer	≥ 20 ft bgs	Phase 2 RI	saturated screen thickness > 10 ft
PC-177	45	60	22.0	22.0	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	top screen depth - water table > 5 ft; saturated screen thickness > 10 ft
PC-179	35	50	12.0	12.0	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	top screen depth - water table > 5 ft; saturated screen thickness > 10 ft
PC-18	11.5	51.5	23.7	37.5	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-180	35	45	27.2	27.2	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	top screen depth - water table > 5 ft
PC-181	55	65	26.4	26.4	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	top screen depth - water table > 5 ft
PC-183	35	45	23.0	23	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	top screen depth - water table > 5 ft
PC-184	55	65	24.4	24.4	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	top screen depth - water table > 5 ft
PC-186	20	35	18.4	18.4	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	saturated screen thickness > 10 ft
PC-187	45	55	26	25.7	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	top screen depth - water table > 5 ft
PC-187R	45	55	25.8	25.8	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	top screen depth - water table > 5 ft
PC-188	50	60	32.0	32.0	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, Phase 2 RI	top screen depth - water table > 5 ft
PC-189	50	60	30	30.0	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, Phase 2 RI	top screen depth - water table > 5 ft

TABLE 4-4. Shallow Groundwater Wells with VOC Sampling Data Evaluated in the BHRA
Nevada Environmental Response Trust Site
Henderson, Nevada

Well ID	Screen Top Depth (ft bgs)	Screen Bottom Depth (ft bgs)	Minimum Depth to Groundwater (ft bgs)	Maximum Depth to Groundwater (ft bgs)	Water Bearing Zone	Well Type	Well Owner	Land Use	Depth Category [1]	Sampling Events for VOCs	Note
PC-190	14	34	11	11	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	Phase 2 RI	saturated screen thickness > 10 ft
PC-192	35	50	16	15.5	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	top screen depth - water table > 5 ft; saturated screen thickness > 10 ft
PC-193	35	50	16.2	16.2	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	top screen depth - water table > 5 ft; saturated screen thickness > 10 ft
PC-194	44	59	10.1	10	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	Phase 2 RI	top screen depth - water table > 5 ft; saturated screen thickness > 10 ft
PC-21A	14	34	29.3	32.8	Shallow	Monitoring	NERT	Trailer	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring, Phase 1 RI	
PC-24	15	30	20	21.5	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring, Phase 1 RI	
PC-28	10	19.5	12.3	13.3	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring, Phase 1 RI	
PC-31	14.5	49.5	11.1	12.0	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-37	16.8	41.8	30.4	37.1	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2017 Annual Groundwater Monitoring, Phase 2 RI	
PC-50	11.8	41.8	12.5	13.7	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-54	9.5	34.5	24	25.8	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring, Phase 1 RI	
PC-55	15.3	55.3	23.9	35.5	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring	saturated screen thickness > 10 ft
PC-64	4	19	11.1	12.2	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring, Phase 1 RI	
PC-65	4.1	18.7	11.0	12.5	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring, Phase 1 RI	
PC-66	6.9	26.9	14	20.5	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring, Phase 1 RI	
PC-67	11	35.6	14.6	16	Shallow	Monitoring	NERT	Commercial	< 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring, Phase 1 RI	saturated screen thickness > 10 ft
PC-71	13.4	28.4	25.4	30.0	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring, Phase 2 RI	
PC-72	15	35	28.4	32.2	Shallow	Monitoring	NERT	Commercial	≥ 20 ft bgs	2020 Annual Groundwater Monitoring, 2019 Annual Groundwater Monitoring, 2018 Annual Groundwater Monitoring, 2017 Annual Groundwater Monitoring, Phase 2 RI	

Notes:

-- = not applicable
bgs = below ground surface
ft = feet
BHRA = Baseline Health Risk Assessment
NERT = Nevada Environmental Response Trust
Q = Quarter
RI = Remedial Investigation
VOC = volatile organic compound

[1] Groundwater wells categorized as "< 20 ft bgs" were conservatively modeled as 10 ft bgs and those categorized as "≥ 20 ft bgs" were conservatively modeled as 20 ft bgs during risk evaluation.

TABLE 4-5. Evaluation of Sample Quantitation Limits – Soil Gas at 5 feet bgs
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Screening Levels[1]	Screening Level Scenario	Unit	No. of Samples	No. of Detects	% Detects	Nondetects			
							Minimum SQL	Maximum SQL	No. of Samples Above Screen	No. of Samples Above 10% Screen
Acetone	49,700,000	Indoor resident scenario	µg/m^3	78	61	78	0.72	38	0	0
Acrolein	32	Indoor resident scenario	µg/m^3	11	0	0	0.23	21	0	4
Acrylonitrile	62	Indoor resident scenario	µg/m^3	63	5	7.9	0.10	29	0	21
t-Amyl methyl ether	7,570,000	Indoor resident scenario	µg/m^3	14	0	0	0.074	1.2	0	0
Benzene	9.97E+17	Indoor resident scenario	µg/m^3	78	48	62	0.16	15	0	0
Benzyl chloride	142	Indoor resident scenario	µg/m^3	78	1	1.3	0.13	50	0	1
Bromodichloromethane	209	Indoor resident scenario	µg/m^3	78	40	51	0.011	26	0	1
Bromoform	10,500	Indoor resident scenario	µg/m^3	78	4	5.1	0.11	43	0	0
Bromomethane	8,830	Indoor resident scenario	µg/m^3	29	2	6.9	0.074	77	0	0
1,3-Butadiene	159	Indoor resident scenario	µg/m^3	3	0	0	0.55	0.55	0	0
2-Butanone	9,190,000	Indoor resident scenario	µg/m^3	78	45	58	1.3	35	0	0
tert Butyl alcohol	49,900,000	Indoor resident scenario	µg/m^3	14	11	79	17	17	0	0
sec-Butylbenzene	1,220,000	Indoor resident scenario	µg/m^3	11	2	18	0.085	0.37	0	0
tert-Butylbenzene	1,220,000	Indoor resident scenario	µg/m^3	11	1	9.1	0.074	0.32	0	0
Carbon disulfide	1,180,000	Indoor resident scenario	µg/m^3	78	57	73	0.46	59	0	0
Carbon tetrachloride	1,280	Indoor resident scenario	µg/m^3	78	72	92	2.0	2.0	0	0
3-Chloro-1-propene	839	Indoor resident scenario	µg/m^3	11	1	9.1	0.074	0.32	0	0
Chlorobenzene	116,000	Indoor resident scenario	µg/m^3	78	22	28	0.075	18	0	0
Chloroethane	17,200,000	Indoor resident scenario	µg/m^3	78	32	41	0.031	48	0	0
Chloromethane	135,000	Indoor resident scenario	µg/m^3	78	27	35	0.043	24	0	0
Cumene	1,080,000	Indoor resident scenario	µg/m^3	11	5	45	0.082	0.36	0	0
Cyclohexane	12,800,000	Indoor resident scenario	µg/m^3	52	9	17	0.15	4.9	0	0
p-Cymene	899,000	Indoor resident scenario	µg/m^3	11	10	91	0.10	0.10	0	0
1,2-Dibromo-3-chloropropane	2.0	Indoor resident scenario	µg/m^3	63	0	0	0.0056	130	49	51
Dibromochloromethane	N/A	--	µg/m^3	78	15	19	0.0048	40	--	--
1,2-Dibromoethane	16	Indoor resident scenario	µg/m^3	78	6	7.7	0.0037	34	1	23
1,2-Dichlorobenzene	576,000	Indoor resident scenario	µg/m^3	78	2	2.6	0.097	47	0	0
1,3-Dichlorobenzene	482,000	Indoor resident scenario	µg/m^3	78	40	51	0.092	39	0	0
1,4-Dichlorobenzene	718	Indoor resident scenario	µg/m^3	78	17	22	0.11	53	0	0
Dichlorodifluoromethane	222,000	Indoor resident scenario	µg/m^3	78	67	86	3.0	43	0	0
1,1-Dichloroethane	3,450	Indoor resident scenario	µg/m^3	78	36	46	0.027	17	0	0
1,2-Dichloroethane	208	Indoor resident scenario	µg/m^3	78	11	14	0.024	21	0	1
1,1-Dichloroethene	400,000	Indoor resident scenario	µg/m^3	78	39	50	0.023	3.2	0	0
cis-1,2-Dichloroethene	2.85E+11	Construction worker scenario	µg/m^3	78	10	13	0.027	21	0	0

TABLE 4-5. Evaluation of Sample Quantitation Limits – Soil Gas at 5 feet bgs
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Screening Levels[1]	Screening Level Scenario	Unit	No. of Samples	No. of Detects	% Detects	Nondetects			
							Minimum SQL	Maximum SQL	No. of Samples Above Screen	No. of Samples Above 10% Screen
trans-1,2-Dichloroethene	6.75E+11	Construction worker scenario	µg/m^3	78	5	6.4	0.025	24	0	0
1,2-Dichloropropane	616	Indoor resident scenario	µg/m^3	78	4	5.1	0.010	66	0	1
1,3-Dichloropropene	1,490	Indoor resident scenario	µg/m^3	29	0	0	0.093	28	0	0
Diisopropyl ether	1,770,000	Indoor resident scenario	µg/m^3	14	0	0	0.087	0.38	0	0
1,4-Dioxane	724	Indoor resident scenario	µg/m^3	63	6	9.5	0.091	26	0	0
Ethanol	119,000,000	Indoor resident scenario	µg/m^3	63	48	76	0.33	14	0	0
Ethyl tert-butyl ether	7,570,000	Indoor resident scenario	µg/m^3	14	0	0	0.075	0.80	0	0
Ethyl acetate	143,000	Indoor resident scenario	µg/m^3	52	0	0	0.36	48	0	0
Ethylbenzene	2,620	Indoor resident scenario	µg/m^3	78	46	59	0.098	16	0	0
4-Ethyltoluene	899,000	Indoor resident scenario	µg/m^3	78	22	28	0.088	55	0	0
Freon 114	124,000,000	Indoor resident scenario	µg/m^3	29	4	14	0.077	64	0	0
n-Heptane	18,600,000	Indoor resident scenario	µg/m^3	63	15	24	0.22	5.7	0	0
Hexachlorobutadiene	694	Indoor resident scenario	µg/m^3	78	8	10	0.13	270	0	1
n-Hexane	1,610,000	Indoor resident scenario	µg/m^3	52	8	15	0.31	8.6	0	0
2-Hexanone	69,300	Indoor resident scenario	µg/m^3	78	13	17	0.16	21	0	0
Methyl tert-butyl ether	23,100	Indoor resident scenario	µg/m^3	14	7	50	0.077	0.51	0	0
4-Methyl-2-pentanone	7,040,000	Indoor resident scenario	µg/m^3	78	16	21	0.16	33	0	0
Methylene Chloride	477,000	Indoor resident scenario	µg/m^3	78	40	51	0.34	10	0	0
Methylmethacrylate	1,560,000	Indoor resident scenario	µg/m^3	63	0	0	0.11	140	0	0
alpha-Methylstyrene	2,610,000	Indoor resident scenario	µg/m^3	11	4	36	0.11	0.47	0	0
Naphthalene	212	Indoor resident scenario	µg/m^3	63	29	46	0.076	6.5	0	0
n-Octane	53,200	Indoor resident scenario	µg/m^3	11	9	82	0.077	0.083	0	0
n-Propylbenzene	2,720,000	Indoor resident scenario	µg/m^3	11	9	82	0.080	0.33	0	0
Propylene	4,940,000	Indoor resident scenario	µg/m^3	3	0	0	19	19	0	0
Styrene	2,350,000	Indoor resident scenario	µg/m^3	78	19	24	0.078	15	0	0
1,1,1,2-Tetrachloroethane	1,200	Indoor resident scenario	µg/m^3	52	1	1.9	0.0070	92	0	0
1,1,2,2-Tetrachloroethane	150	Indoor resident scenario	µg/m^3	78	1	1.3	0.0076	28	0	1
Tetrahydrofuran	3,470,000	Indoor resident scenario	µg/m^3	52	4	7.7	0.21	11	0	0
Toluene	10,900,000	Indoor resident scenario	µg/m^3	78	67	86	0.53	4.0	0	0
1,2,4-Trichlorobenzene	7,860	Indoor resident scenario	µg/m^3	78	2	2.6	0.11	190	0	0
1,1,1-Trichloroethane	12,700,000	Indoor resident scenario	µg/m^3	29	3	10	0.074	21	0	0
1,1,2-Trichloroethane	416	Indoor resident scenario	µg/m^3	78	1	1.3	0.012	22	0	0
Trichloroethene	1,590	Indoor resident scenario	µg/m^3	78	70	90	0.12	34	0	0
Trichlorofluoromethane	1.25E+13	Construction worker scenario	µg/m^3	78	47	60	1.8	66	0	0

TABLE 4-5. Evaluation of Sample Quantitation Limits – Soil Gas at 5 feet bgs
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Screening Levels[1]	Screening Level Scenario	Unit	No. of Samples	No. of Detects	% Detects	Nondetects			
							Minimum SQL	Maximum SQL	No. of Samples Above Screen	No. of Samples Above 10% Screen
1,2,3-Trichloropropane	839	Indoor resident scenario	µg/m^3	49	0	0	1.6	81	0	0
1,1,2-Trichloro-1,2,2-trifluoroethane	124,000,000	Indoor resident scenario	µg/m^3	78	25	32	0.27	74	0	0
1,2,4-Trimethylbenzene	162,000	Indoor resident scenario	µg/m^3	78	38	49	0.18	47	0	0
1,3,5-Trimethylbenzene	163,000	Indoor resident scenario	µg/m^3	78	20	26	0.092	37	0	0
Vinyl acetate	404,000	Indoor resident scenario	µg/m^3	78	12	15	0.32	30	0	0
Vinyl chloride	1,030	Indoor resident scenario	µg/m^3	78	3	3.9	0.0075	18	0	0
Xylenes (total)	243,000	Indoor resident scenario	µg/m^3	78	64	82	0.18	26	0	0

Notes:

-- = no value
µg/m^3 = microgram per cubic meter
bgs = below ground surface
N/A = no screening level available
RBTC = risk-based target concentration
SQL = sample quantitation limit

[1] Screening levels are the lowest RBTCs among residents, indoor commercial/industrial workers, outdoor commercial/industrial workers, and construction workers.

TABLE 4-6. Evaluation of Sample Quantitation Limits – Soil Gas at 10 to 15 feet bgs
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Screening Levels[1]	Screening Level Scenario	Unit	No. of Samples	No. of Detects	% Detects	Nondetects			
							Minimum SQL	Maximum SQL	No. of Samples Above Screen	No. of Samples Above 10% Screen
Acetone	151,000,000	Indoor resident scenario	µg/m^3	58	46	79	6.2	72	0	0
Acrolein	100	Indoor resident scenario	µg/m^3	9	1	11	0.23	21	0	3
Acrylonitrile	195	Indoor resident scenario	µg/m^3	46	1	2.2	0.20	43	0	11
t-Amyl methyl ether	25,600,000	Indoor resident scenario	µg/m^3	4	0	0	1.2	1.2	0	0
Benzene	1.15E+19	Indoor resident scenario	µg/m^3	58	30	52	0.41	19	0	0
Benzyl chloride	477	Indoor resident scenario	µg/m^3	58	0	0	0.19	64	0	2
Bromodichloromethane	716	Indoor resident scenario	µg/m^3	58	26	45	0.45	33	0	0
Bromoform	36,700	Indoor resident scenario	µg/m^3	58	0	0	0.22	55	0	0
Bromomethane	28,400	Indoor resident scenario	µg/m^3	16	0	0	0.36	98	0	0
1,3-Butadiene	511	Indoor resident scenario	µg/m^3	4	0	0	0.55	0.55	0	0
2-Butanone	29,000,000	Indoor resident scenario	µg/m^3	58	33	57	1.7	44	0	0
tert Butyl alcohol	145,000,000	Indoor resident scenario	µg/m^3	4	0	0	17	17	0	0
Carbon disulfide	3,770,000	Indoor resident scenario	µg/m^3	58	32	55	0.53	110	0	0
Carbon tetrachloride	4,360	Indoor resident scenario	µg/m^3	58	54	93	2.0	4.6	0	0
Chlorobenzene	388,000	Indoor resident scenario	µg/m^3	58	6	10	0.16	22	0	0
Chloroethane	55,100,000	Indoor resident scenario	µg/m^3	58	12	21	0.034	61	0	0
Chloromethane	420,000	Indoor resident scenario	µg/m^3	58	18	31	0.12	31	0	0
Cyclohexane	42,300,000	Indoor resident scenario	µg/m^3	46	5	11	0.20	9.3	0	0
1,2-Dibromo-3-chloropropane	7.0	Indoor resident scenario	µg/m^3	46	1	2.2	0.0056	190	41	42
Dibromochloromethane	N/A	--	µg/m^3	58	7	12	0.0048	51	--	--
1,2-Dibromoethane	57	Indoor resident scenario	µg/m^3	58	6	10	0.0037	44	0	16
1,2-Dichlorobenzene	1,970,000	Indoor resident scenario	µg/m^3	58	0	0	0.16	59	0	0
1,3-Dichlorobenzene	1,620,000	Indoor resident scenario	µg/m^3	58	25	43	0.26	50	0	0
1,4-Dichlorobenzene	2,460	Indoor resident scenario	µg/m^3	58	5	8.6	0.14	68	0	0
Dichlorodifluoromethane	740,000	Indoor resident scenario	µg/m^3	58	40	69	0.56	54	0	0
1,1-Dichloroethane	11,400	Indoor resident scenario	µg/m^3	58	36	62	0.046	7.7	0	0
1,2-Dichloroethane	681	Indoor resident scenario	µg/m^3	58	9	16	0.028	27	0	0
1,1-Dichloroethene	1,310,000	Indoor resident scenario	µg/m^3	58	42	72	0.12	7.7	0	0
cis-1,2-Dichloroethene	2.85E+11	Construction worker scenario	µg/m^3	58	8	14	0.039	27	0	0
trans-1,2-Dichloroethene	6.75E+11	Construction worker scenario	µg/m^3	58	7	12	0.042	30	0	0
1,2-Dichloropropane	2,060	Indoor resident scenario	µg/m^3	58	5	8.6	0.010	84	0	0
1,3-Dichloropropene	4,960	Indoor resident scenario	µg/m^3	16	0	0	0.30	36	0	0
Diisopropyl ether	5,970,000	Indoor resident scenario	µg/m^3	4	0	0	0.35	0.35	0	0

TABLE 4-6. Evaluation of Sample Quantitation Limits – Soil Gas at 10 to 15 feet bgs
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Screening Levels[1]	Screening Level Scenario	Unit	No. of Samples	No. of Detects	% Detects	Nondetects			
							Minimum SQL	Maximum SQL	No. of Samples Above Screen	No. of Samples Above 10% Screen
1,4-Dioxane	1,820	Indoor resident scenario	µg/m^3	46	0	0	0.13	38	0	0
Ethanol	306,000,000	Indoor resident scenario	µg/m^3	46	26	57	0.38	26	0	0
Ethyl tert-butyl ether	25,600,000	Indoor resident scenario	µg/m^3	4	0	0	0.80	0.80	0	0
Ethyl acetate	465,000	Indoor resident scenario	µg/m^3	46	3	6.5	0.36	72	0	0
Ethylbenzene	8,800	Indoor resident scenario	µg/m^3	58	23	40	0.11	21	0	0
4-Ethyltoluene	3,000,000	Indoor resident scenario	µg/m^3	58	7	12	0.21	69	0	0
Freon 114	438,000,000	Indoor resident scenario	µg/m^3	16	0	0	0.60	82	0	0
n-Heptane	63,300,000	Indoor resident scenario	µg/m^3	46	2	4.4	0.26	9.2	0	0
Hexachlorobutadiene	2,490	Indoor resident scenario	µg/m^3	58	3	5.2	0.15	350	0	2
n-Hexane	5,380,000	Indoor resident scenario	µg/m^3	46	8	17	0.37	16	0	0
2-Hexanone	227,000	Indoor resident scenario	µg/m^3	58	2	3.5	0.16	27	0	0
Methyl tert-butyl ether	76,800	Indoor resident scenario	µg/m^3	4	0	0	0.51	0.51	0	0
4-Methyl-2-pentanone	23,300,000	Indoor resident scenario	µg/m^3	58	7	12	0.19	42	0	0
Methylene Chloride	1,540,000	Indoor resident scenario	µg/m^3	58	27	47	0.42	15	0	0
Methylmethacrylate	5,160,000	Indoor resident scenario	µg/m^3	46	2	4.4	0.42	200	0	0
Naphthalene	719	Indoor resident scenario	µg/m^3	46	14	30	0.19	12	0	0
Propylene	15,700,000	Indoor resident scenario	µg/m^3	4	0	0	19	19	0	0
Styrene	7,870,000	Indoor resident scenario	µg/m^3	58	6	10	0.086	19	0	0
1,1,1,2-Tetrachloroethane	4,160	Indoor resident scenario	µg/m^3	46	1	2.2	0.0070	140	0	0
1,1,2,2-Tetrachloroethane	514	Indoor resident scenario	µg/m^3	58	0	0	0.0076	36	0	0
Tetrachloroethene	114,000	Indoor resident scenario	µg/m^3	58	57	98	1.7	1.7	0	0
Tetrahydrofuran	10,900,000	Indoor resident scenario	µg/m^3	46	5	11	0.21	11	0	0
Toluene	36,200,000	Indoor resident scenario	µg/m^3	58	39	67	0.53	15	0	0
1,2,4-Trichlorobenzene	27,600	Indoor resident scenario	µg/m^3	58	2	3.5	0.17	240	0	0
1,1,1-Trichloroethane	43,100,000	Indoor resident scenario	µg/m^3	16	0	0	0.35	27	0	0
1,1,2-Trichloroethane	1,400	Indoor resident scenario	µg/m^3	58	3	5.2	0.012	28	0	0
Trichloroethene	5,350	Indoor resident scenario	µg/m^3	58	50	86	0.30	13	0	0
Trichlorofluoromethane	1.25E+13	Construction worker scenario	µg/m^3	58	25	43	1.6	83	0	0
1,2,3-Trichloropropane	2,850	Indoor resident scenario	µg/m^3	42	0	0	1.4	120	0	0
1,1,2-Trichloro-1,2,2-trifluoroethane	438,000,000	Indoor resident scenario	µg/m^3	58	8	14	0.33	94	0	0
1,2,4-Trimethylbenzene	550,000	Indoor resident scenario	µg/m^3	58	20	34	0.31	60	0	0
1,3,5-Trimethylbenzene	555,000	Indoor resident scenario	µg/m^3	58	9	16	0.19	46	0	0
Vinyl acetate	1,320,000	Indoor resident scenario	µg/m^3	58	0	0	0.55	39	0	0

TABLE 4-6. Evaluation of Sample Quantitation Limits – Soil Gas at 10 to 15 feet bgs
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Screening Levels[1]	Screening Level Scenario	Unit	No. of Samples	No. of Detects	% Detects	Nondetects			
							Minimum SQL	Maximum SQL	No. of Samples Above Screen	No. of Samples Above 10% Screen
Vinyl chloride	3,270	Indoor resident scenario	µg/m^3	58	2	3.5	0.0075	23	0	0
Xylenes (total)	816,000	Indoor resident scenario	µg/m^3	58	37	64	1.7	33	0	0

Notes:

-- = no value
µg/m^3 = microgram per cubic meter
bgs = below ground surface
N/A = no screening level available
RBTC = risk-based target concentration
SQL = sample quantitation limit

[1] Screening levels are the lowest RBTCs among residents, indoor commercial/industrial workers, outdoor commercial/industrial workers, and construction workers.

TABLE 4-7. Evaluation of Sample Quantitation Limits – Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Screening Levels[1]	Screening Level Scenario	Unit	No. of Samples	No. of Detects	% Detects	Nondetects			
							Minimum SQL	Maximum SQL	No. of Samples Above Screen	No. of Samples Above 10% Screen
Benzene	1,510,000,000	Construction worker scenario	µg/L	278	4	1.4	0.20	2.5	0	0
Bromobenzene	11,200	Indoor resident scenario	µg/L	278	0	0	0.21	2.5	0	0
Bromochloromethane	6,950	Indoor resident scenario	µg/L	278	0	0	0.15	2.5	0	0
Bromodichloromethane	13	Indoor resident scenario	µg/L	278	21	7.6	0.17	2.5	0	18
Bromoform	2,300	Indoor resident scenario	µg/L	278	13	4.7	0.29	4.0	0	0
Bromomethane	133	Indoor resident scenario	µg/L	278	0	0	0.25	2.5	0	0
2-Butanone	12,900,000	Indoor resident scenario	µg/L	278	0	0	2.5	25	0	0
n-Butylbenzene	13,900	Indoor resident scenario	µg/L	278	0	0	0.24	4.0	0	0
sec-Butylbenzene	12,200	Indoor resident scenario	µg/L	278	0	0	0.17	2.5	0	0
tert-Butylbenzene	16,100	Indoor resident scenario	µg/L	278	1	0.36	0.17	2.5	0	0
Carbon tetrachloride	6.1	Indoor resident scenario	µg/L	278	123	44	0.18	2.5	0	10
Chlorobenzene	5,070	Indoor resident scenario	µg/L	278	44	16	0.18	2.5	0	0
Chloroethane	173,000	Indoor resident scenario	µg/L	278	0	0	0.36	4.0	0	0
Chloroform	8.6	Indoor resident scenario	µg/L	289	277	96	0.25	0.25	0	0
Chloromethane	1,570	Indoor resident scenario	µg/L	278	0	0	0.25	2.5	0	0
2-Chlorotoluene	5,580	Indoor resident scenario	µg/L	278	0	0	0.18	2.5	0	0
4-Chlorotoluene	4,670	Indoor resident scenario	µg/L	278	0	0	0.17	2.5	0	0
Cumene	15,300	Indoor resident scenario	µg/L	278	0	0	0.25	2.5	0	0
p-Cymene	69	Indoor resident scenario	µg/L	278	0	0	0.17	2.5	0	0
1,2-Dibromo-3-chloropropane	1.4	Indoor resident scenario	µg/L	278	0	0	0.50	5.0	20	278
Dibromochloromethane	N/A	--	µg/L	278	5	1.8	0.25	2.5	--	--
1,2-Dibromoethane	2.9	Indoor resident scenario	µg/L	278	0	0	0.21	2.5	0	29
Dibromomethane	1,630	Indoor resident scenario	µg/L	278	0	0	0.25	2.5	0	0
1,2-Dichlorobenzene	43,700	Indoor resident scenario	µg/L	278	97	35	0.19	2.5	0	0
1,3-Dichlorobenzene	22,700	Indoor resident scenario	µg/L	278	77	28	0.18	2.5	0	0
1,4-Dichlorobenzene	43	Indoor resident scenario	µg/L	278	86	31	0.17	2.5	0	0
Dichlorodifluoromethane	85	Indoor resident scenario	µg/L	278	0	0	0.17	4.0	0	0
1,1-Dichloroethane	75	Indoor resident scenario	µg/L	278	106	38	0.24	2.5	0	0
1,2-Dichloroethane	21	Indoor resident scenario	µg/L	278	18	6.5	0.20	2.5	0	8
1,1-Dichloroethene	1,810	Indoor resident scenario	µg/L	278	25	9.0	0.25	2.5	0	0
cis-1,2-Dichloroethene	29,100,000	Construction worker scenario	µg/L	278	0	0	0.21	2.5	0	0
trans-1,2-Dichloroethene	13,000,000	Construction worker scenario	µg/L	278	0	0	0.23	2.5	0	0
1,2-Dichloropropane	28	Indoor resident scenario	µg/L	278	0	0	0.25	2.5	0	0
1,3-Dichloropropane	1,160	Indoor resident scenario	µg/L	278	0	0	0.19	2.5	0	0

TABLE 4-7. Evaluation of Sample Quantitation Limits – Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Screening Levels[1]	Screening Level Scenario	Unit	No. of Samples	No. of Detects	% Detects	Nondetects			
							Minimum SQL	Maximum SQL	No. of Samples Above Screen	No. of Samples Above 10% Screen
2,2-Dichloropropane	52	Indoor resident scenario	µg/L	278	0	0	0.16	4.0	0	0
1,1-Dichloropropene	81	Indoor resident scenario	µg/L	278	0	0	0.20	2.5	0	0
1,3-Dichloropropene	55	Indoor resident scenario	µg/L	278	0	0	0.17	2.5	0	0
1,4-Dioxane	9,680	Indoor resident scenario	µg/L	278	145	52	0.50	0.50	0	0
Ethyl tert-butyl ether	412,000	Indoor resident scenario	µg/L	278	0	0	0.21	2.5	0	0
Ethylbenzene	47	Indoor resident scenario	µg/L	278	0	0	0.19	2.5	0	0
Hexachlorobutadiene	11	Indoor resident scenario	µg/L	278	3	1.1	0.25	2.5	0	19
Methylene Chloride	17,000	Indoor resident scenario	µg/L	278	22	7.9	0.88	8.8	0	0
Naphthalene	63	Indoor resident scenario	µg/L	278	0	0	0.21	4.0	0	0
n-Propylbenzene	39,600	Indoor resident scenario	µg/L	278	0	0	0.17	2.5	0	0
Styrene	119,000	Indoor resident scenario	µg/L	275	0	0	0.25	2.5	0	0
1,1,1,2-Tetrachloroethane	70	Indoor resident scenario	µg/L	278	0	0	0.15	2.5	0	0
1,1,2,2-Tetrachloroethane	46	Indoor resident scenario	µg/L	278	0	0	0.19	2.5	0	0
Tetrachloroethene	266	Indoor resident scenario	µg/L	278	130	47	0.14	2.5	0	0
Toluene	219,000	Indoor resident scenario	µg/L	278	13	4.7	0.17	2.5	0	0
1,2,3-Trichlorobenzene	1,030	Indoor resident scenario	µg/L	278	51	18	0.23	4.0	0	0
1,2,4-Trichlorobenzene	836	Indoor resident scenario	µg/L	278	67	24	0.20	4.0	0	0
1,1,1-Trichloroethane	96,100	Indoor resident scenario	µg/L	278	0	0	0.19	2.5	0	0
1,1,2-Trichloroethane	61	Indoor resident scenario	µg/L	278	0	0	0.19	2.5	0	0
Trichloroethene	21	Indoor resident scenario	µg/L	278	143	51	0.20	2.5	0	8
Trichlorofluoromethane	2,070,000	Construction worker scenario	µg/L	278	0	0	0.21	2.5	0	0
1,2,3-Trichloropropane	281	Indoor resident scenario	µg/L	299	209	70	0.0025	0.40	0	0
1,2,4-Trimethylbenzene	4,030	Indoor resident scenario	µg/L	278	0	0	0.17	2.5	0	0
1,3,5-Trimethylbenzene	2,870	Indoor resident scenario	µg/L	278	0	0	0.17	2.5	0	0
Vinyl chloride	4.0	Indoor resident scenario	µg/L	278	0	0	0.18	2.5	0	29
Xylenes (total)	5,210	Indoor resident scenario	µg/L	278	0	0	0.38	5.0	0	0

Notes:

-- = no value
µg/L = microgram per liter
N/A = no screening level available
RBTC = risk-based target concentration
SQL = sample quantitation limit
[1] Screening levels are the lowest RBTCs among residents, indoor commercial/industrial workers, outdoor commercial/industrial workers, and construction workers.

TABLE 4-8. Summary Statistics for VOCs in Soil Gas at 5 feet bgs
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Unit	No. of Samples	No. of Detects	% Detects	Nondetects		Detects						
					Minimum	Maximum	Minimum	Maximum	Median	Mean	Standard Deviation	Coefficient of Variation	Location of Maximum
Acetone	µg/m^3	78	61	78	0.72	38	3.6	140	18	27	28	1.0	RISG-2
Acrolein	µg/m^3	11	0	0	0.23	21	--	--	--	--	--	--	--
Acrylonitrile	µg/m^3	63	5	7.9	0.10	29	0.11	0.26	0.14	0.16	0.060	0.39	SG14
t-Amyl methyl ether	µg/m^3	14	0	0	0.074	1.2	--	--	--	--	--	--	--
Benzene	µg/m^3	78	48	62	0.16	15	0.23	10	1.8	2.4	2.3	0.96	RISG-30
Benzyl chloride	µg/m^3	78	1	1.3	0.13	50	10	10	10	10	--	--	RISG-5
Bromodichloromethane	µg/m^3	78	40	51	0.011	26	0.18	340	4.5	25	73	3.0	RISG-74
Bromoform	µg/m^3	78	4	5.1	0.11	43	0.27	4.5	0.71	1.5	2.0	1.3	RISG-5
Bromomethane	µg/m^3	29	2	6.9	0.074	77	0.088	0.091	0.089	0.089	0.0021	0.024	SG07
1,3-Butadiene	µg/m^3	3	0	0	0.55	0.55	--	--	--	--	--	--	--
2-Butanone	µg/m^3	78	45	58	1.3	35	0.56	44	4.1	6.3	7.6	1.2	RISG-2
tert Butyl alcohol	µg/m^3	14	11	79	17	17	0.37	3.2	0.58	0.85	0.83	0.97	SG13
n-Butylbenzene	µg/m^3	11	11	100	--	--	0.14	1.1	0.50	0.50	0.30	0.60	SG15
sec-Butylbenzene	µg/m^3	11	2	18	0.085	0.37	0.15	0.23	0.19	0.19	0.057	0.30	SG07
tert-Butylbenzene	µg/m^3	11	1	9.1	0.074	0.32	0.14	0.14	0.14	0.14	--	--	SG12
Carbon disulfide	µg/m^3	78	57	73	0.46	59	1.1	49	11	13	11	0.80	RISG-7
Carbon tetrachloride	µg/m^3	78	72	92	2.0	2.0	0.15	340	7.5	39	82	2.1	RISG-54
3-Chloro-1-propene	µg/m^3	11	1	9.1	0.074	0.32	0.19	0.19	0.19	0.19	--	--	SG09
Chlorobenzene	µg/m^3	78	22	28	0.075	18	0.085	8.2	0.58	1.7	2.2	1.3	RISG-8
Chloroethane	µg/m^3	78	32	41	0.031	48	0.064	160	0.30	17	45	2.7	RISG-30
Chloroform	µg/m^3	78	78	100	--	--	14	11,000	490	1,370	2,080	1.5	RISG-6
Chloromethane	µg/m^3	78	27	35	0.043	24	0.047	1.6	0.13	0.21	0.29	1.4	RISG-2
Cumene	µg/m^3	11	5	45	0.082	0.36	0.088	0.56	0.12	0.26	0.22	0.85	SG14
Cyclohexane	µg/m^3	52	9	17	0.15	4.9	0.37	9.8	0.64	1.8	3.1	1.7	RISG-2
p-Cymene	µg/m^3	11	10	91	0.10	0.10	0.16	12	0.57	2.3	3.7	1.6	SG15
1,2-Dibromo-3-chloropropane	µg/m^3	63	0	0	0.0056	130	--	--	--	--	--	--	--
Dibromochloromethane	µg/m^3	78	15	19	0.0048	40	0.12	40	0.88	6.4	12	2.0	RISG-74
1,2-Dibromoethane	µg/m^3	78	6	7.7	0.0037	34	0.09	0.35	0.10	0.14	0.10	0.71	RISG-75
1,2-Dichlorobenzene	µg/m^3	78	2	2.6	0.097	47	3.7	7.3	5.5	5.5	2.5	0.46	RISG-5
1,3-Dichlorobenzene	µg/m^3	78	40	51	0.092	39	0.098	22	3.5	5.1	5.5	1.1	RISG-74
1,4-Dichlorobenzene	µg/m^3	78	17	22	0.11	53	0.13	19	0.75	3.9	6.1	1.5	SG13
Dichlorodifluoromethane	µg/m^3	78	67	86	3.0	43	1.9	9.2	2.8	3.4	1.4	0.41	RISG-64
1,1-Dichloroethane	µg/m^3	78	36	46	0.027	17	0.053	120	0.83	12	33	2.8	RISG-30
1,2-Dichloroethane	µg/m^3	78	11	14	0.024	21	0.028	4.4	0.26	1.3	1.7	1.3	RISG-30
1,1-Dichloroethene	µg/m^3	78	39	50	0.023	3.2	0.088	93	3.7	14	24	1.6	RISG-2
cis-1,2-Dichloroethene	µg/m^3	78	10	13	0.027	21	0.13	11	0.58	1.6	3.3	2.0	RISG-2

TABLE 4-8. Summary Statistics for VOCs in Soil Gas at 5 feet bgs
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Unit	No. of Samples	No. of Detects	% Detects	Nondetects		Detects						
					Minimum	Maximum	Minimum	Maximum	Median	Mean	Standard Deviation	Coefficient of Variation	Location of Maximum
trans-1,2-Dichloroethene	µg/m^3	78	5	6.4	0.025	24	0.054	1.1	0.77	0.56	0.48	0.85	RISG-2
1,2-Dichloropropane	µg/m^3	78	4	5.1	0.010	66	0.088	0.59	0.18	0.26	0.23	0.87	RISG-1
1,3-Dichloropropene	µg/m^3	29	0	0	0.093	28	--	--	--	--	--	--	--
Diisopropyl ether	µg/m^3	14	0	0	0.087	0.38	--	--	--	--	--	--	--
1,4-Dioxane	µg/m^3	63	6	9.5	0.091	26	0.14	0.79	0.21	0.31	0.25	0.81	SG07
Ethanol	µg/m^3	63	48	76	0.33	14	0.93	32	8.1	10	7.7	0.75	SG12
Ethyl tert-butyl ether	µg/m^3	14	0	0	0.075	0.80	--	--	--	--	--	--	--
Ethyl acetate	µg/m^3	52	0	0	0.36	48	--	--	--	--	--	--	--
Ethylbenzene	µg/m^3	78	46	59	0.098	16	0.10	35	0.57	2.4	5.4	2.3	RISG-29
4-Ethyltoluene	µg/m^3	78	22	28	0.088	55	0.11	4.0	0.80	1.2	1.2	0.99	RISG-60
Freon 114	µg/m^3	29	4	14	0.077	64	0.089	0.10	0.10	0.097	0.0055	0.057	SG11
n-Heptane	µg/m^3	63	15	24	0.22	5.7	0.11	7.3	1.0	1.4	1.8	1.3	RISG-2
Hexachlorobutadiene	µg/m^3	78	8	10	0.13	270	0.21	11	0.81	3.3	4.5	1.4	SG15
n-Hexane	µg/m^3	52	8	15	0.31	8.6	0.38	24	1.3	4.8	8.1	1.7	RISG-2
2-Hexanone	µg/m^3	78	13	17	0.16	21	0.32	4.0	0.76	1.6	1.4	0.88	RISG-2
Methyl tert-butyl ether	µg/m^3	14	7	50	0.077	0.51	0.33	13	3.7	6.2	5.2	0.83	SG07
4-Methyl-2-pentanone	µg/m^3	78	16	21	0.16	33	0.15	20	0.40	5.1	7.3	1.4	SG13
Methylene Chloride	µg/m^3	78	40	51	0.34	10	0.23	28	1.2	4.1	7.4	1.8	RISG-30
Methylmethacrylate	µg/m^3	63	0	0	0.11	140	--	--	--	--	--	--	--
alpha-Methylstyrene	µg/m^3	11	4	36	0.11	0.47	0.39	7.7	0.46	2.2	3.6	1.6	SG12
Naphthalene	µg/m^3	63	29	46	0.076	6.5	0.082	4.2	0.56	0.90	0.99	1.1	SG06
n-Octane	µg/m^3	11	9	82	0.077	0.083	0.23	93	1.3	11	31	2.7	SG14
n-Propylbenzene	µg/m^3	11	9	82	0.080	0.33	0.084	1.1	0.24	0.39	0.37	0.94	SG14
Propylene	µg/m^3	3	0	0	19	19	--	--	--	--	--	--	--
Styrene	µg/m^3	78	19	24	0.078	15	0.11	6.1	0.31	0.80	1.4	1.7	RISG-5
1,1,1,2-Tetrachloroethane	µg/m^3	52	1	1.9	0.0070	92	0.065	0.065	0.065	0.065	--	--	RISG-2
1,1,2,2-Tetrachloroethane	µg/m^3	78	1	1.3	0.0076	28	5.6	5.6	5.6	5.6	--	--	RISG-5
Tetrachloroethene	µg/m^3	78	78	100	--	--	1.1	7,800	95	260	910	3.5	RISG-2
Tetrahydrofuran	µg/m^3	52	4	7.7	0.21	11	0.44	6.6	0.83	2.2	3.0	1.4	RISG-27
Toluene	µg/m^3	78	67	86	0.53	4.0	0.48	62	3.9	6.3	8.9	1.4	RISG-77
1,2,4-Trichlorobenzene	µg/m^3	78	2	2.6	0.11	190	0.26	3.6	1.9	1.9	2.4	1.2	RISG-2
1,1,1-Trichloroethane	µg/m^3	29	3	10	0.074	21	0.10	0.11	0.11	0.11	0.0058	0.054	SG07
1,1,2-Trichloroethane	µg/m^3	78	1	1.3	0.012	22	0.072	0.072	0.072	0.072	--	--	RISG-9
Trichloroethene	µg/m^3	78	70	90	0.12	34	0.10	240	3.5	19	45	2.4	RISG-30
Trichlorofluoromethane	µg/m^3	78	47	60	1.8	66	1.1	15	1.4	2.2	2.3	1.1	RISG-56
1,2,3-Trichloropropane	µg/m^3	49	0	0	1.6	81	--	--	--	--	--	--	--
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/m^3	78	25	32	0.27	74	0.42	0.79	0.54	0.56	0.081	0.14	RISG-1
1,2,4-Trimethylbenzene	µg/m^3	78	38	49	0.18	47	0.12	15	2.0	3.1	3.2	1.1	RISG-1

TABLE 4-8. Summary Statistics for VOCs in Soil Gas at 5 feet bgs
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Unit	No. of Samples	No. of Detects	% Detects	Nondetects		Detects						
					Minimum	Maximum	Minimum	Maximum	Median	Mean	Standard Deviation	Coefficient of Variation	Location of Maximum
1,3,5-Trimethylbenzene	$\mu g/m^3$	78	20	26	0.092	37	0.090	5.9	0.79	1.6	2.0	1.2	RISG-5
Vinyl acetate	$\mu g/m^3$	78	12	15	0.32	30	1.3	19	3.5	5.1	4.7	0.93	RISG-2
Vinyl chloride	$\mu g/m^3$	78	3	3.9	0.0075	18	0.21	1.6	0.22	0.68	0.80	1.2	RISG-8
Xylenes (total)	$\mu g/m^3$	78	64	82	0.18	26	0.41	225	3.1	11	29	2.8	RISG-29

Notes:

-- = no value

$\mu g/m^3$ = microgram per cubic meter

bgs = below ground surface

VOC = volatile organic compound

TABLE 4-9. Summary Statistics for VOCs in Soil Gas at 10 to 15 feet bgs
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Unit	No. of Samples	No. of Detects	% Detects	Nondetects		Detects						
					Minimum	Maximum	Minimum	Maximum	Median	Mean	Standard Deviation	Coefficient of Variation	Location of Maximum
Acetone	µg/m^3	58	46	79	6.2	72	5.9	210	22	30	31	1.0	RISG-2
Acrolein	µg/m^3	9	1	11	0.23	21	11	11	11	11	--	--	RISG-2
Acrylonitrile	µg/m^3	46	1	2.2	0.20	43	0.86	0.86	0.86	0.86	--	--	RISG-2
t-Amyl methyl ether	µg/m^3	4	0	0	1.2	1.2	--	--	--	--	--	--	--
Benzene	µg/m^3	58	30	52	0.41	19	0.21	75	2.2	5.6	13	2.4	RISG-1
Benzyl chloride	µg/m^3	58	0	0	0.19	64	--	--	--	--	--	--	--
Bromodichloromethane	µg/m^3	58	26	45	0.45	33	0.77	760	7.7	70	200	2.9	RISG-74
Bromoform	µg/m^3	58	0	0	0.22	55	--	--	--	--	--	--	--
Bromomethane	µg/m^3	16	0	0	0.36	98	--	--	--	--	--	--	--
1,3-Butadiene	µg/m^3	4	0	0	0.55	0.55	--	--	--	--	--	--	--
2-Butanone	µg/m^3	58	33	57	1.7	44	0.85	51	11	12	9.7	0.78	RISG-2
tert Butyl alcohol	µg/m^3	4	0	0	17	17	--	--	--	--	--	--	--
Carbon disulfide	µg/m^3	58	32	55	0.53	110	0.56	170	16	26	37	1.4	RISG-66
Carbon tetrachloride	µg/m^3	58	54	93	2.0	4.6	1.1	640	27	79	140	1.8	RISG-6
Chlorobenzene	µg/m^3	58	6	10	0.16	22	0.46	1.8	1.0	1.1	0.58	0.53	RISG-30
Chloroethane	µg/m^3	58	12	21	0.034	61	0.085	93	0.53	17	32	1.8	RISG-30
Chloroform	µg/m^3	58	58	100	--	--	62	22,000	1,800	3,210	4,150	1.3	RISG-6
Chloromethane	µg/m^3	58	18	31	0.12	31	0.13	1.0	0.44	0.43	0.25	0.59	RISG-27
Cyclohexane	µg/m^3	46	5	11	0.20	9.3	0.37	1.0	0.48	0.59	0.25	0.43	RISG-66
1,2-Dibromo-3-chloropropane	µg/m^3	46	1	2.2	0.0056	190	0.13	0.13	0.13	0.13	--	--	RISG-3
Dibromochloromethane	µg/m^3	58	7	12	0.0048	51	0.28	210	1.8	58	97	1.7	RISG-74
1,2-Dibromoethane	µg/m^3	58	6	10	0.0037	44	0.047	0.17	0.11	0.12	0.049	0.42	RISG-65
1,2-Dichlorobenzene	µg/m^3	58	0	0	0.16	59	--	--	--	--	--	--	--
1,3-Dichlorobenzene	µg/m^3	58	25	43	0.26	50	0.92	36	4.7	6.8	7.3	1.1	RISG-61
1,4-Dichlorobenzene	µg/m^3	58	5	8.6	0.14	68	0.13	0.79	0.31	0.35	0.26	0.74	RISG-1
Dichlorodifluoromethane	µg/m^3	58	40	69	0.56	54	2.0	8.8	3.5	3.7	1.4	0.39	RISG-64
1,1-Dichloroethane	µg/m^3	58	36	62	0.046	7.7	0.10	95	2.2	9.4	20	2.1	RISG-30
1,2-Dichloroethane	µg/m^3	58	9	16	0.028	27	0.13	1.1	0.73	0.61	0.34	0.55	RISG-1
1,1-Dichloroethene	µg/m^3	58	42	72	0.12	7.7	0.076	170	7.7	28	45	1.6	RISG-2
cis-1,2-Dichloroethene	µg/m^3	58	8	14	0.039	27	0.076	2.6	0.53	0.99	0.94	0.95	RISG-2
trans-1,2-Dichloroethene	µg/m^3	58	7	12	0.042	30	0.059	0.37	0.25	0.23	0.12	0.50	RISG-30
1,2-Dichloropropane	µg/m^3	58	5	8.6	0.010	84	1.1	1.6	1.2	1.2	0.21	0.17	RISG-58
1,3-Dichloropropene	µg/m^3	16	0	0	0.30	36	--	--	--	--	--	--	--
Diisopropyl ether	µg/m^3	4	0	0	0.35	0.35	--	--	--	--	--	--	--
1,4-Dioxane	µg/m^3	46	0	0	0.13	38	--	--	--	--	--	--	--
Ethanol	µg/m^3	46	26	57	0.38	26	2.3	160	15	21	30	1.4	RISG-1
Ethyl tert-butyl ether	µg/m^3	4	0	0	0.80	0.80	--	--	--	--	--	--	--
Ethyl acetate	µg/m^3	46	3	6.5	0.36	72	7.7	9.4	7.8	8.3	0.95	0.11	RISG-2
Ethylbenzene	µg/m^3	58	23	40	0.11	21	0.14	74	3.5	6.8	15	2.2	RISG-1
4-Ethyltoluene	µg/m^3	58	7	12	0.21	69	0.59	54	6.2	12	19	1.6	RISG-1
Freon 114	µg/m^3	16	0	0	0.60	82	--	--	--	--	--	--	--

TABLE 4-9. Summary Statistics for VOCs in Soil Gas at 10 to 15 feet bgs
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Unit	No. of Samples	No. of Detects	% Detects	Nondetects		Detects						
					Minimum	Maximum	Minimum	Maximum	Median	Mean	Standard Deviation	Coefficient of Variation	Location of Maximum
n-Heptane	µg/m^3	46	2	4.4	0.26	9.2	3.7	57	30	30	38	1.2	RISG-1
Hexachlorobutadiene	µg/m^3	58	3	5.2	0.15	350	2.5	80	38	40	39	0.97	RISG-27
n-Hexane	µg/m^3	46	8	17	0.37	16	1.4	55	3.0	10	18	1.8	RISG-1
2-Hexanone	µg/m^3	58	2	3.5	0.16	27	1.7	2.7	2.2	2.2	0.71	0.32	RISG-2
Methyl tert-butyl ether	µg/m^3	4	0	0	0.51	0.51	--	--	--	--	--	--	--
4-Methyl-2-pentanone	µg/m^3	58	7	12	0.19	42	0.89	33	3.0	7.7	11	1.5	RISG-1
Methylene Chloride	µg/m^3	58	27	47	0.42	15	0.67	23	2.8	6.3	6.8	1.1	RISG-6
Methylmethacrylate	µg/m^3	46	2	4.4	0.42	200	4.1	5.2	4.7	4.7	0.78	0.17	RISG-3
Naphthalene	µg/m^3	46	14	30	0.19	12	0.22	150	0.46	12	40	3.3	RISG-1
Propylene	µg/m^3	4	0	0	19	19	--	--	--	--	--	--	--
Styrene	µg/m^3	58	6	10	0.086	19	0.68	4.8	0.91	1.9	1.7	0.92	RISG-61
1,1,1,2-Tetrachloroethane	µg/m^3	46	1	2.2	0.0070	140	0.084	0.084	0.084	0.084	--	--	RISG-2
1,1,2,2-Tetrachloroethane	µg/m^3	58	0	0	0.0076	36	--	--	--	--	--	--	--
Tetrachloroethene	µg/m^3	58	57	98	1.7	1.7	3.8	11,000	200	610	1,610	2.6	RISG-2
Tetrahydrofuran	µg/m^3	46	5	11	0.21	11	2.4	7.6	4.2	4.8	2.1	0.44	RISG-2
Toluene	µg/m^3	58	39	67	0.53	15	0.40	220	2.9	17	45	2.7	RISG-61
1,2,4-Trichlorobenzene	µg/m^3	58	2	3.5	0.17	240	0.82	3.7	2.3	2.3	2.0	0.90	RISG-2
1,1,1-Trichloroethane	µg/m^3	16	0	0	0.35	27	--	--	--	--	--	--	--
1,1,2-Trichloroethane	µg/m^3	58	3	5.2	0.012	28	0.20	0.62	0.58	0.47	0.23	0.50	RISG-3
Trichloroethene	µg/m^3	58	50	86	0.30	13	0.20	160	10	30	38	1.3	RISG-2
Trichlorofluoromethane	µg/m^3	58	25	43	1.6	83	1.1	15	1.6	3.1	3.5	1.2	RISG-52
1,2,3-Trichloropropane	µg/m^3	42	0	0	1.4	120	--	--	--	--	--	--	--
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/m^3	58	8	14	0.33	94	0.48	2.1	0.61	0.85	0.54	0.64	RISG-1
1,2,4-Trimethylbenzene	µg/m^3	58	20	34	0.31	60	0.34	240	2.0	16	53	3.2	RISG-1
1,3,5-Trimethylbenzene	µg/m^3	58	9	16	0.19	46	0.30	81	2.4	12	26	2.1	RISG-1
Vinyl acetate	µg/m^3	58	0	0	0.55	39	--	--	--	--	--	--	--
Vinyl chloride	µg/m^3	58	2	3.5	0.0075	23	0.046	0.049	0.048	0.048	0.0021	0.045	RISG-30
Xylenes (total)	µg/m^3	58	37	64	1.7	33	0.54	450	4.5	25	74	3.0	RISG-1

Notes:

-- = no value

µg/m^3 = microgram per cubic meter
bgs = below ground surface

VOC = volatile organic compound

TABLE 4-10. Summary Statistics for VOCs in Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Unit	No. of Samples	No. of Detects	% Detects	Nondetects		Detects						
					Minimum	Maximum	Minimum	Maximum	Median	Mean	Standard Deviation	Coefficient of Variation	Location of Maximum
Benzene	µg/L	278	4	1.4	0.20	2.5	0.28	34	26	22	15	0.68	PC-194
Bromobenzene	µg/L	278	0	0	0.21	2.5	--	--	--	--	--	--	--
Bromochloromethane	µg/L	278	0	0	0.15	2.5	--	--	--	--	--	--	--
Bromodichloromethane	µg/L	278	21	7.6	0.17	2.5	0.26	2.0	0.44	0.69	0.57	0.81	PC-187
Bromoform	µg/L	278	13	4.7	0.29	4.0	0.40	7.7	0.80	2.4	2.6	1.1	PC-187
Bromomethane	µg/L	278	0	0	0.25	2.5	--	--	--	--	--	--	--
2-Butanone	µg/L	278	0	0	2.5	25	--	--	--	--	--	--	--
n-Butylbenzene	µg/L	278	0	0	0.24	4.0	--	--	--	--	--	--	--
sec-Butylbenzene	µg/L	278	0	0	0.17	2.5	--	--	--	--	--	--	--
tert-Butylbenzene	µg/L	278	1	0.36	0.17	2.5	0.34	0.34	0.34	0.34	--	--	PC-166
Carbon tetrachloride	µg/L	278	123	44	0.18	2.5	0.25	13	1.3	2.0	2.2	1.1	PC-188
Chlorobenzene	µg/L	278	44	16	0.18	2.5	0.27	54	1.0	5.1	9.4	1.8	PC-166
Chloroethane	µg/L	278	0	0	0.36	4.0	--	--	--	--	--	--	--
Chloroform	µg/L	289	277	96	0.25	0.25	0.25	1,000	16	100	160	1.6	PC-67
Chloromethane	µg/L	278	0	0	0.25	2.5	--	--	--	--	--	--	--
2-Chlorotoluene	µg/L	278	0	0	0.18	2.5	--	--	--	--	--	--	--
4-Chlorotoluene	µg/L	278	0	0	0.17	2.5	--	--	--	--	--	--	--
Cumene	µg/L	278	0	0	0.25	2.5	--	--	--	--	--	--	--
p-Cymene	µg/L	278	0	0	0.17	2.5	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	µg/L	278	0	0	0.50	5.0	--	--	--	--	--	--	--
Dibromochloromethane	µg/L	278	5	1.8	0.25	2.5	0.35	1.3	1.2	0.94	0.46	0.49	PC-187
1,2-Dibromoethane	µg/L	278	0	0	0.21	2.5	--	--	--	--	--	--	--
Dibromomethane	µg/L	278	0	0	0.25	2.5	--	--	--	--	--	--	--
1,2-Dichlorobenzene	µg/L	278	97	35	0.19	2.5	0.27	16	2.0	3.7	3.5	0.94	PC-166
1,3-Dichlorobenzene	µg/L	278	77	28	0.18	2.5	0.25	3.0	1.2	1.2	0.73	0.59	PC-186
1,4-Dichlorobenzene	µg/L	278	86	31	0.17	2.5	0.25	23	3.2	5.5	5.1	0.93	PC-166
Dichlorodifluoromethane	µg/L	278	0	0	0.17	4.0	--	--	--	--	--	--	--
1,1-Dichloroethane	µg/L	278	106	38	0.24	2.5	0.25	3.9	1.4	1.5	0.79	0.52	PC-18
1,2-Dichloroethane	µg/L	278	18	6.5	0.20	2.5	0.25	0.53	0.39	0.39	0.079	0.21	PC-160
1,1-Dichloroethene	µg/L	278	25	9.0	0.25	2.5	0.27	2.7	0.66	0.86	0.62	0.72	PC-175
cis-1,2-Dichloroethene	µg/L	278	0	0	0.21	2.5	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	278	0	0	0.23	2.5	--	--	--	--	--	--	--
1,2-Dichloropropane	µg/L	278	0	0	0.25	2.5	--	--	--	--	--	--	--
1,3-Dichloropropane	µg/L	278	0	0	0.19	2.5	--	--	--	--	--	--	--
2,2-Dichloropropane	µg/L	278	0	0	0.16	4.0	--	--	--	--	--	--	--
1,1-Dichloropropene	µg/L	278	0	0	0.20	2.5	--	--	--	--	--	--	--
1,3-Dichloropropene	µg/L	278	0	0	0.17	2.5	--	--	--	--	--	--	--

TABLE 4-10. Summary Statistics for VOCs in Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Analyte	Unit	No. of Samples	No. of Detects	% Detects	Nondetects		Detects						
					Minimum	Maximum	Minimum	Maximum	Median	Mean	Standard Deviation	Coefficient of Variation	Location of Maximum
1,4-Dioxane	µg/L	278	145	52	0.50	0.50	0.50	23	1.0	1.3	1.9	1.4	PC-67
Ethyl tert-butyl ether	µg/L	278	0	0	0.21	2.5	--	--	--	--	--	--	--
Ethylbenzene	µg/L	278	0	0	0.19	2.5	--	--	--	--	--	--	--
Hexachlorobutadiene	µg/L	278	3	1.1	0.25	2.5	0.27	0.38	0.34	0.33	0.056	0.17	M-48A
Methylene Chloride	µg/L	278	22	7.9	0.88	8.8	1.0	25	2.8	4.7	5.3	1.1	PC-67
Naphthalene	µg/L	278	0	0	0.21	4.0	--	--	--	--	--	--	--
n-Propylbenzene	µg/L	278	0	0	0.17	2.5	--	--	--	--	--	--	--
Styrene	µg/L	275	0	0	0.25	2.5	--	--	--	--	--	--	--
1,1,1,2-Tetrachloroethane	µg/L	278	0	0	0.15	2.5	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	µg/L	278	0	0	0.19	2.5	--	--	--	--	--	--	--
Tetrachloroethene	µg/L	278	130	47	0.14	2.5	0.18	68	1.1	4.0	10	2.6	PC-21A
Toluene	µg/L	278	13	4.7	0.17	2.5	0.25	1.4	0.44	0.50	0.29	0.58	PC-193
1,2,3-Trichlorobenzene	µg/L	278	51	18	0.23	4.0	0.40	3.1	0.84	1.0	0.58	0.55	PC-50
1,2,4-Trichlorobenzene	µg/L	278	67	24	0.20	4.0	0.41	14	5.1	5.6	3.3	0.60	PC-31
1,1,1-Trichloroethane	µg/L	278	0	0	0.19	2.5	--	--	--	--	--	--	--
1,1,2-Trichloroethane	µg/L	278	0	0	0.19	2.5	--	--	--	--	--	--	--
Trichloroethene	µg/L	278	143	51	0.20	2.5	0.25	2.7	0.48	0.80	0.69	0.86	PC-166
Trichlorofluoromethane	µg/L	278	0	0	0.21	2.5	--	--	--	--	--	--	--
1,2,3-Trichloropropane	µg/L	299	209	70	0.0025	0.40	0.0025	0.50	0.049	0.086	0.10	1.2	PC-67
1,2,4-Trimethylbenzene	µg/L	278	0	0	0.17	2.5	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	µg/L	278	0	0	0.17	2.5	--	--	--	--	--	--	--
Vinyl chloride	µg/L	278	0	0	0.18	2.5	--	--	--	--	--	--	--
Xylenes (total)	µg/L	278	0	0	0.38	5.0	--	--	--	--	--	--	--

Notes:

-- = no value

µg/L = microgram per liter

VOC = volatile organic compound

TABLE 5-1. Summary of Detected VOCs in Soil Gas and Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical [1]	Soil Gas		Shallow Groundwater [2]	
	5 ft bgs	10 - 15 ft bgs	< 20 ft bgs	≥ 20 ft bgs
Acetone	X	X		
Acrolein		X		
Acrylonitrile	X	X		
Benzene	X	X	X	X
Benzyl chloride	X			
Bromodichloromethane	X	X	X	X
Bromoform	X			X
Bromomethane	X			
2-Butanone	X	X		
tert-Butyl alcohol	X			
n-Butylbenzene	X			
sec-Butylbenzene	X			
tert-Butylbenzene	X		X	
Carbon disulfide	X	X		
Carbon tetrachloride	X	X	X	X
3-Chloro-1-propene	X			
Chlorobenzene	X	X	X	X
Chloroethane	X	X		
Chloroform	X	X	X	X
Chloromethane	X	X		
Cumene	X			
Cyclohexane	X	X		
p-Cymene	X			
1,2-Dibromo-3-chloropropane		X		
Dibromochloromethane	X	X		X
1,2-Dibromoethane	X	X		
1,2-Dichlorobenzene	X		X	X
1,3-Dichlorobenzene	X	X	X	X
1,4-Dichlorobenzene	X	X	X	X
Dichlorodifluoromethane	X	X		
1,1-Dichloroethane	X	X	X	X
1,2-Dichloroethane	X	X	X	X
1,1-Dichloroethene	X	X	X	X
cis-1,2-Dichloroethene	X	X		
trans-1,2-Dichloroethene	X	X		
1,2-Dichloropropane	X	X		
1,4-Dioxane	X		X	X
Ethanol	X	X		
Ethyl acetate		X		
Ethyl benzene	X	X		
4-Ethyltoluene	X	X		
Freon 114	X			
n-Heptane	X	X		
Hexachlorobutadiene	X	X		X
n-Hexane	X	X		
2-Hexanone	X	X		

TABLE 5-1. Summary of Detected VOCs in Soil Gas and Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical [1]	Soil Gas		Shallow Groundwater [2]	
	5 ft bgs	10 - 15 ft bgs	< 20 ft bgs	≥ 20 ft bgs
alpha-Methyl styrene	X			
Methyl tert-butyl ether	X			
4-Methyl-2-pentanone	X	X		
Methylene Chloride	X	X	X	X
Methylmethacrylate		X		
Naphthalene	X	X		
n-Octane	X			
n-Propylbenzene	X			
Styrene	X	X		
1,1,1,2-Tetrachloroethane	X	X		
1,1,2,2-Tetrachloroethane	X			
Tetrachloroethene	X	X	X	X
Tetrahydrofuran	X	X		
Toluene	X	X	X	X
1,2,3-Trichlorobenzene			X	X
1,2,4-Trichlorobenzene	X	X	X	X
1,1,1-Trichloroethane	X			
1,1,2-Trichloroethane	X	X		
Trichloroethene	X	X	X	X
Trichlorofluoromethane	X	X		
1,2,3-Trichloropropane			X	X
1,1,2-Trichloro-1,2,2-trifluoroethane	X	X		
1,2,4-Trimethylbenzene	X	X		
1,3,5-Trimethylbenzene	X	X		
Vinyl acetate	X			
Vinyl chloride	X	X		
Xylenes (total)	X	X		

Notes:

bgs = below ground surface

ft = feet

BHRA = Baseline Health Risk Assessment

OU = Operable Unit

VOCs = volatile organic compound

[1] VOCs detected in the soil gas or shallow groundwater samples included in the BHRA.

[2] Based on VOC results from the shallow monitoring wells (with top of well screens less than 60 ft bgs) collected between 2015-2020 in the OU-2 BHRA Area.

TABLE 5-2. Physical/Chemical Properties for VOCs Analyzed in Soil Gas and Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	Molecular Weight MW (g/mol)	Organic Carbon Partition Coefficient, K_{oc} (cm^3/g)	Diffusivity in Air, D_a (cm^2/s)	Diffusivity in Water, D_w (cm^2/s)	Pure Component Water Solubility, S (mg/L)	Henry's Law Constant at 25° C H (atm-m^3/mol)	Normal Boiling Point, T_B (^oK)	Critical Temperature, T_C (^oK)	Enthalpy of Vaporization at the Normal Boiling Point, ΔHv (cal/mol)	Source
Acetone	58.08	2.36E+00	1.06E-01	1.15E-05	1.00E+06	3.50E-05	328.50	508.10	6955.00	NDEP (2017)
Acrolein	56.07	1.00E+00	1.12E-01	1.22E-05	2.12E+05	1.22E-04	325.60	506.00	6730.77	NDEP (2017)
Acrylonitrile	53.06	8.51E+00	1.14E-01	1.23E-05	7.45E+04	1.38E-04	350.30	519.00	7786.00	NDEP (2017)
tert-Amyl methyl ether	102.18	2.27E+01	6.54E-02	7.76E-06	1.07E+04	1.32E-03	359.45	--	--	EPISuite (USEPA 2012) + Diisopropyl Ether for diffusivities
Benzene	78.12	1.46E+02	8.95E-02	1.03E-05	1.79E+03	5.55E-03	353.00	562.16	7342.00	NDEP (2017)
Benzyl chloride	126.59	4.46E+02	6.34E-02	8.81E-06	5.25E+02	4.12E-04	452.00	685.00	8773.26	NDEP (2017)
Bromobenzene	157.01	2.34E+02	5.37E-02	9.30E-06	4.46E+02	2.47E-03	429.00	670.00	10628.64	NDEP (2017)
Bromochloromethane	129.38	2.17E+01	7.87E-02	1.22E-05	1.67E+04	1.46E-03	341.00	511.50	7167.65	NDEP (2017)
Bromodichloromethane	163.83	3.18E+01	5.63E-02	1.07E-05	3.03E+03	2.12E-03	363.00	585.85	7800.00	NDEP (2017)
Bromoform	252.73	3.18E+01	3.57E-02	1.04E-05	3.10E+03	5.35E-04	422.25	633.38	9472.63	NDEP (2017)
Bromomethane	94.94	1.32E+01	1.00E-01	1.35E-05	1.52E+04	7.34E-03	276.50	467.00	5714.00	NDEP (2017)
1,3-Butadiene	54.09	3.96E+01	1.00E-01	1.03E-05	7.35E+02	7.36E-02	268.60	425.00	5370.33	NDEP (2017)
2-Butanone	72.11	4.51E+00	9.14E-02	1.02E-05	2.23E+05	5.69E-05	352.50	536.78	7480.70	NDEP (2017)
tert-Butyl alcohol	74.12	2.92E+00	9.00E-02	1.00E-05	1.81E+05	9.05E-06	--	--	--	NDEP (2017)
n-Butylbenzene	134.22	1.48E+03	5.28E-02	7.33E-06	1.18E+01	1.59E-02	456.30	720.00	12267.12	NDEP (2017)
sec-Butylbenzene	134.22	1.33E+03	5.28E-02	7.34E-06	1.76E+01	1.76E-02	451.50	677.25	11467.50	NDEP (2017)
tert-Butylbenzene	134.22	1.00E+03	5.30E-02	7.37E-06	2.95E+01	1.32E-02	443.15	664.73	11405.35	NDEP (2017)
Carbon disulfide	76.14	2.17E+01	1.06E-01	1.30E-05	2.16E+03	1.44E-02	319.00	552.00	6391.00	NDEP (2017)
Carbon tetrachloride	153.82	4.39E+01	5.71E-02	9.78E-06	7.93E+02	2.76E-02	349.80	556.60	7127.00	NDEP (2017)
3-Chloro-1-propene	76.53	3.96E+01	9.36E-02	1.08E-05	3.37E+03	1.10E-02	318.10	514.26	6936.08	NDEP (2017)
Chlorobenzene	112.56	2.34E+02	7.21E-02	9.48E-06	4.98E+02	3.11E-03	404.70	632.40	8410.00	NDEP (2017)
Chloroethane	64.52	2.17E+01	1.04E-01	1.16E-05	6.71E+03	1.11E-02	285.30	460.40	5879.40	NDEP (2017)
Chloroform	119.38	3.18E+01	7.69E-02	1.09E-05	7.95E+03	3.67E-03	334.10	536.40	6988.00	NDEP (2017)
Chloromethane	50.49	1.32E+01	1.24E-01	1.36E-05	5.32E+03	8.82E-03	249.00	416.25	5114.60	NDEP (2017)
2-Chlorotoluene	126.59	3.83E+02	6.29E-02	8.72E-06	3.74E+02	3.57E-03	432.00	654.10	9950.50	NDEP (2017)
4-Chlorotoluene	126.59	3.75E+02	6.26E-02	8.66E-06	1.06E+02	4.38E-03	435.40	658.70	10144.98	NDEP (2017)
Cumene	120.20	6.98E+02	6.03E-02	7.86E-06	6.13E+01	1.15E-02	425.40	631.10	10335.30	NDEP (2017)
Cyclohexane	84.16	1.46E+02	8.00E-02	9.11E-06	5.50E+01	1.50E-01	353.70	553.40	7153.60	NDEP (2017)
p-Cymene	134.00	2.20E+02	7.50E-02	7.10E-06	6.10E+01	1.20E+00	--	--	--	NDEP (2017)
1,2-Dibromo-3-chloropropane	236.33	1.16E+02	3.21E-02	8.90E-06	1.23E+03	1.47E-04	469.00	703.50	9960.05	NDEP (2017)
Dibromochloromethane	208.28	3.18E+01	3.66E-02	1.06E-05	2.70E+03	7.83E-04	393.00	678.20	5900.00	NDEP (2017)
1,2-Dibromoethane	187.86	3.96E+01	4.30E-02	1.04E-05	3.91E+03	6.50E-04	404.60	583.00	8310.03	NDEP (2017)
Dibromomethane	173.84	2.17E+01	5.51E-02	1.19E-05	1.19E+04	8.22E-04	370.00	583.00	7867.88	NDEP (2017)
1,2-Dichlorobenzene	147.00	3.83E+02	5.62E-02	8.92E-06	1.56E+02	1.92E-03	453.00	705.00	9700.00	NDEP (2017)
1,3-Dichlorobenzene	147.00	3.79E+02	6.90E-02	7.90E-06	1.56E+02	1.90E-03	--	--	--	NDEP (2017)
1,4-Dichlorobenzene	147.00	3.75E+02	5.50E-02	8.68E-06	8.13E+01	2.41E-03	447.00	684.75	9271.00	NDEP (2017)
Dichlorodifluoromethane	120.91	4.39E+01	7.60E-02	1.08E-05	2.80E+02	3.43E-01	243.20	384.95	9421.36	NDEP (2017)
1,1-Dichloroethane	98.96	3.18E+01	8.36E-02	1.06E-05	5.04E+03	5.62E-03	330.40	523.00	6895.00	NDEP (2017)
1,2-Dichloroethane	98.96	3.96E+01	8.57E-02	1.10E-05	8.60E+03	1.18E-03	356.50	561.00	7643.00	NDEP (2017)
1,1-Dichloroethene	96.94	3.18E+01	8.63E-02	1.10E-05	2.42E+03	2.61E-02	304.60	576.05	6247.00	NDEP (2017)
cis-1,2-Dichloroethene	96.94	3.96E+01	8.84E-02	1.13E-05	6.41E+03	4.08E-03	328.00	544.00	7192.00	NDEP (2017)
trans-1,2-Dichloroethene	96.94	3.96E+01	8.76E-02	1.12E-05	4.52E+03	9.38E-03	328.00	516.50	6717.00	NDEP (2017)

TABLE 5-2. Physical/Chemical Properties for VOCs Analyzed in Soil Gas and Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	Molecular Weight MW (g/mol)	Organic Carbon Partition Coefficient, K_{oc} (cm^3/g)	Diffusivity in Air, D_a (cm^2/s)	Diffusivity in Water, D_w (cm^2/s)	Pure Component Water Solubility, S (mg/L)	Henry's Law Constant at 25° C H (atm-m^3/mol)	Normal Boiling Point, T_B (^oK)	Critical Temperature, T_C (^oK)	Enthalpy of Vaporization at the Normal Boiling Point, ΔHv (cal/mol)	Source
1,2-Dichloropropane	112.99	6.07E+01	7.33E-02	9.73E-06	2.80E+03	2.82E-03	368.50	572.00	7590.00	NDEP (2017)
1,3-Dichloropropane	112.99	7.22E+01	7.39E-02	9.82E-06	2.75E+03	9.76E-04	393.90	590.85	8102.51	NDEP (2017)
2,2-Dichloropropane	112.99	4.39E+01	7.33E-02	9.73E-06	3.44E+02	1.61E-02	342.45	--	--	EPISuite (USEPA 2012) + 1,2-Dichloropropane for diffusivities
1,1-Dichloropropene	110.97	6.07E+01	7.63E-02	1.01E-05	7.49E+02	5.00E-02	349.65	--	--	EPISuite (USEPA 2012) + 1,3-Dichloropropene for diffusivities
1,3-Dichloropropene	110.97	7.22E+01	7.63E-02	1.01E-05	2.80E+03	3.55E-03	385.00	587.38	7900.00	NDEP (2017)
Diisopropyl ether	102.18	2.28E+01	6.54E-02	7.76E-06	8.80E+03	2.56E-03	341.50	499.90	No DHv,b	NDEP (2017)
1,4-Dioxane	88.11	2.63E+00	8.74E-02	1.05E-05	1.00E+06	4.80E-06	374.65	585.15	8687.35	NDEP (2017)
Ethanol	46.00	1.00E+00	1.24E-01	1.37E-05	1.00E+06	5.00E-06	--	--	--	NDEP (2017)
Ethyl tert-butyl ether	102.18	2.11E+01	6.54E-02	7.76E-06	1.20E+04	1.64E-03	345.75	--	--	EPISuite (USEPA 2012) + Diisopropyl Ether for diffusivities
Ethyl acetate	88.11	5.58E+00	8.23E-02	9.70E-06	8.00E+04	1.34E-04	350.10	523.30	7633.66	NDEP (2017)
Ethyl benzene	106.17	4.46E+02	6.85E-02	8.46E-06	1.69E+02	7.88E-03	409.10	617.20	8501.00	NDEP (2017)
4-Ethyltoluene	120.19	2.20E+02	7.50E-02	7.10E-06	6.10E+01	1.20E+00	--	--	--	NDEP (2017)
Freon 114	170.92	1.97E+02	3.76E-02	8.59E-06	1.30E+02	2.80E+00	276.95	--	--	EPISuite (USEPA 2012) + 1,1,2-Trichloro-1,2,2-trifluoroethane for diffusivities
n-Heptane	100.00	8.20E+03	6.16E-02	6.45E-06	3.40E+00	2.00E+00	371.50	No Tcrit	No DHv,b	NDEP (2017)
Hexachlorobutadiene	260.76	8.45E+02	2.67E-02	7.03E-06	3.20E+00	1.03E-02	488.15	732.23	10206.00	NDEP (2017)
n-Hexane	86.18	1.32E+02	7.31E-02	8.17E-06	9.50E+00	1.80E+00	341.70	508.00	6895.15	NDEP (2017)
2-Hexanone	100.16	1.50E+01	7.04E-02	8.44E-06	1.72E+04	9.32E-05	400.60	600.90	8610.39	NDEP (2017)
alpha-Methyl styrene	118.18	6.98E+02	6.29E-02	8.19E-06	1.16E+02	2.55E-03	438.40	657.00	11419.16	NDEP (2017)
Methyl tert-butyl ether	88.15	1.16E+01	7.53E-02	8.59E-06	5.10E+04	5.87E-04	328.20	497.10	6677.66	NDEP (2017)
4-Methyl-2-pentanone	100.16	1.26E+01	6.98E-02	8.35E-06	1.90E+04	1.38E-04	389.50	571.00	8243.11	NDEP (2017)
Methylene Chloride	84.93	2.17E+01	9.99E-02	1.25E-05	1.30E+04	3.25E-03	313.00	510.00	6706.00	NDEP (2017)
Methylmethacrylate	100.12	9.14E+00	7.50E-02	9.21E-06	1.50E+04	3.19E-04	373.50	567.00	8974.90	NDEP (2017)
Naphthalene	128.18	1.54E+03	6.05E-02	8.38E-06	3.10E+01	4.40E-04	490.90	748.40	10373.00	NDEP (2017)
n-Octane	114.23	4.37E+02	6.16E-02	6.45E-06	6.60E-01	3.21E+00	398.75	--	--	EPISuite (USEPA 2012) + n-Heptane for diffusivities
n-Propylbenzene	120.20	8.13E+02	6.02E-02	7.83E-06	5.22E+01	1.05E-02	432.20	630.00	9123.00	NDEP (2017)
Propylene	42.08	2.17E+01	1.10E-01	1.07E-05	2.00E+02	1.96E-01	225.60	364.95	4402.41	NDEP (2017)
Styrene	104.15	4.46E+02	7.11E-02	8.78E-06	3.10E+02	2.75E-03	418.00	636.00	8737.00	NDEP (2017)
1,1,1,2-Tetrachloroethane	167.85	8.60E+01	4.82E-02	9.10E-06	1.07E+03	2.50E-03	403.50	624.00	9768.28	NDEP (2017)
1,1,2,2-Tetrachloroethane	167.85	9.49E+01	4.89E-02	9.29E-06	2.83E+03	3.67E-04	419.50	661.15	8996.00	NDEP (2017)
Tetrachloroethene	165.83	9.49E+01	5.05E-02	9.46E-06	2.06E+02	1.77E-02	394.30	620.20	8288.00	NDEP (2017)
Tetrahydrofuran	72.11	1.08E+01	9.94E-02	1.08E-05	1.00E+06	7.05E-05	339.00	541.15	7073.99	NDEP (2017)
Toluene	92.14	2.34E+02	7.78E-02	9.20E-06	5.26E+02	6.64E-03	383.60	591.79	7930.00	NDEP (2017)
1,2,3-Trichlorobenzene	181.45	1.38E+03	3.95E-02	8.38E-06	1.80E+01	1.25E-03	491.50	762.50	12611.53	NDEP (2017)
1,2,4-Trichlorobenzene	181.45	1.36E+03	3.96E-02	8.40E-06	4.90E+01	1.42E-03	486.50	725.00	10471.00	NDEP (2017)
1,1,1-Trichloroethane	133.41	4.39E+01	6.48E-02	9.60E-06	1.29E+03	1.72E-02	347.00	545.00	7136.00	NDEP (2017)
1,1,2-Trichloroethane	133.41	6.07E+01	6.69E-02	1.00E-05	4.59E+03	8.24E-04	386.80	602.00	8322.00	NDEP (2017)
Trichloroethene	131.39	6.07E+01	6.87E-02	1.02E-05	1.28E+03	9.85E-03	360.20	544.20	7505.00	NDEP (2017)
Trichlorofluoromethane	137.37	4.39E+01	6.54E-02	1.00E-05	1.10E+03	9.70E-02	296.70	471.00	5998.90	NDEP (2017)
1,2,3-Trichloropropane	147.43	1.16E+02	5.75E-02	9.24E-06	1.75E+03	3.43E-04	430.00	652.00	9171.00	NDEP (2017)
1,1,2-Trichloro-1,2,2-trifluoroethane	187.38	1.97E+02	3.76E-02	8.59E-06	1.70E+02	5.26E-01	320.70	487.30	6462.56	NDEP (2017)
1,2,4-Trimethylbenzene	120.20	6.14E+02	6.07E-02	7.92E-06	5.70E+01	6.16E-03	442.30	649.17	9368.80	NDEP (2017)
1,3,5-Trimethylbenzene	120.20	6.02E+02	6.02E-02	7.84E-06	4.82E+01	8.77E-03	437.70	637.25	9321.00	NDEP (2017)

TABLE 5-2. Physical/Chemical Properties for VOCs Analyzed in Soil Gas and Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	Molecular Weight MW (g/mol)	Organic Carbon Partition Coefficient, K_{oc} (cm^3/g)	Diffusivity in Air, D_a (cm^2/s)	Diffusivity in Water, D_w (cm^2/s)	Pure Component Water Solubility, S (mg/L)	Henry's Law Constant at 25° C H (atm-m^3/mol)	Normal Boiling Point, T_B (^oK)	Critical Temperature, T_C (^oK)	Enthalpy of Vaporization at the Normal Boiling Point, ΔHv (cal/mol)	Source
Vinyl acetate	86.09	5.58E+00	8.49E-02	1.00E-05	2.00E+04	5.11E-04	345.50	519.13	7800.00	NDEP (2017)
Vinyl chloride	62.50	2.17E+01	1.07E-01	1.20E-05	8.80E+03	2.78E-02	259.70	432.00	5250.00	NDEP (2017)
Xylenes (total)	106.17	3.83E+02	6.85E-02	8.46E-06	1.06E+02	6.63E-03	411.30	616.20	8523.00	NDEP (2017)

Notes:

-- = Not available
atm-m^3/mol = atmosphere-cubic meter per mole
cal/mol = calorie per mole
cm^3/g = cubic centimeter per gram
cm^2/s = square centimeter per second
g/mol = gram per mole
^oK = degrees Kelvin
mg/L = milligram per liter
NDEP = Nevada Division of Environmental Protection
USEPA = United States Environmental Protection Agency
VOC = volatile organic compound

Sources:

NDEP. 2017. User's Guide and Background Technical Document for NDEP Basic Comparison Levels (BCLs) for Human Health for the BMI Complex and Common Areas. December 2008, Revision 14, July.
USEPA. 2012. Estimation Programs Interface Suite™ for Microsoft® Windows, v 4.11. Washington, DC, USA.

TABLE 5-3. Soil Properties Data for the OU-2 BHRA Area

Nevada Environmental Response Trust Site
Henderson, Nevada

Sample Location	Sample ID [1]	Start Depth (ft)	End Depth (ft)	Water-filled Porosity [2] (%Vb)	Dry Bulk Density [3] (g/cm^3)	Soil Total Porosity [4] (%Vb)	Soil Type
RISG-1	PT-RISG1-4.6-5.0-20190226	4.6	5	0.167	1.660	0.383	Silty sand
RISG-2	PT-RISG2-4.6-5.0-20190226	4.6	5	0.172	1.710	0.361	Poorly graded sand with clay
RISG-3	PT-RISG3-4.6-5.0-20190226	4.6	5	0.129	1.830	0.325	Well-graded sand with silt
RISG-4	PT-RISG4-4.6-5.0-20190226	4.6	5	0.121	1.770	0.342	Clayey sand
RISG-7	PT-RISG7-4.6-5.0-20190226	4.6	5	0.232	1.590	0.402	Silty sand
RISG-8	PT-RISG8-4.6-5.0	4.6	5	0.186	1.750	0.346	Poorly graded sand with clay
RISG-9	PT-RISG9-4.6-5.0-20190226	4.6	5	0.177	1.720	0.353	Clayey sand
RISG-1	PT-RISG1-9.6-10.0-20190226	9.6	10	0.226	1.520	0.434	Poorly graded sand with clay
RISG-2	PT-RISG2-9.6-10.0-20190226	9.6	10	0.195	1.710	0.357	Silty sand
RISG-3	PT-RISG3-9.6-10.0-20190226	9.6	10	0.190	1.700	0.371	Well-graded sand with silt
RISG-4	PT-RISG4-9.6-10.0-20190226	9.6	10	0.152	1.710	0.362	Poorly graded sand with clay
RISG-5	PT-RISG5-9.6-10.0-20190226	9.6	10	0.183	1.700	0.365	Well-graded sand with silt
RISG-7	PT-RISG7-9.6-10.0-20190226 [5]	9.6	10	0.546	1.510	0.423	Silty sand
RISG-8	PT-RISG8-9.6-10.0	9.6	10	0.243	1.630	0.389	Poorly graded sand with clay
RISG-9	PT-RISG9-9.6-10.0-20190226	9.6	10	0.227	1.800	0.323	Clayey sand
RISG-6	PT-RISG6-12.0-12.5	12	12.5	0.089	1.770	0.335	Clayey sand
RISG-6	PT-RISG6-14.5-15	14.5	15	0.079	1.420	0.475	Poorly graded sand with clay
RISG-1	PT-RISG1-14.6-15.0-20190226	14.6	15	0.318	1.570	0.410	Silty sand
RISG-2	PT-RISG2-14.6-15.0-20190226	14.6	15	0.156	1.830	0.317	Clayey sand
RISG-3	PT-RISG3-14.6-15.0-20190226	14.6	15	0.199	1.680	0.369	Silty sand
RISG-4	PT-RISG4-14.6-15.0-20190226	14.6	15	0.217	1.550	0.421	Silty sand
RISG-5	PT-RISG5-14.6-15.0-20190226	14.6	15	0.112	1.770	0.338	Well-graded sand with silt
RISG-8	PT-RISG8-14.6-15.0	14.6	15	0.337	1.670	0.374	Silty sand
	5 ft Mean	4.6	5.0	0.169	1.719	0.359	Loamy Sand
	5 ft Minimum	4.6	5.0	0.121	1.590	0.325	--
	5 ft Maximum	4.6	5.0	0.232	1.830	0.402	--
	Median	4.6	5.0	0.172	1.720	0.353	--
	10-15 ft Mean	12.1	12.5	0.195	1.669	0.376	Loamy Sand
	10-15 ft Minimum	9.6	10.0	0.079	1.420	0.317	--
	10-15 ft Maximum	14.6	15.0	0.337	1.830	0.475	--
	Median	12.0	12.5	0.195	1.700	0.369	--

Notes:

ft = feet

g/cm^3 = grams per cubic centimeter

API = American Petroleum Institute

ASTM = American Society for Testing and Materials

OU = Operable Unit

Vb = volume-based

RI = Remedial Investigation

[1] The soil properties were collected as part of the Phase 2 RI Modification #11 sampling in February 2019.

[2] As measured according to ASTM D 2216.

[3] As measured according to ASTM D 2937.

[4] As measured according to API RP40.

[5] Sample not included in the evaluation because it represents wetter than average conditions in OU-2.

Source:

Core Laboratories. 2019. Physical Properties Data, NERT Phase 2 RI. July 11.

TABLE 5-4. Modeling Parameters
Nevada Environmental Response Trust Site
Henderson, Nevada

Parameter	Units	Value	Notes
Source/Receptor Parameters			
Depth to groundwater	feet	10	Site-specific estimate based on depth to groundwater measurements
Depth to groundwater		20	
Soil gas sampling depth	feet	5	Site-specific estimate based on sampling depth
		10	
		15	
Soil temperature at source	Celsius	17	Site-specific measurement
Soil Parameters			
0-5 feet soil			
Bulk density	g/cm^3	1.719	Mean of site-specific measurements.
Total porosity	unitless	0.359	Mean of site-specific measurements.
Water-filled porosity	unitless	0.169	Mean of site-specific measurements.
5 - 15 feet soil			
Bulk density	g/cm^3	1.669	Mean of site-specific measurements.
Total porosity	unitless	0.376	Mean of site-specific measurements.
Water-filled porosity	unitless	0.195	Mean of site-specific measurements.
Parameters Used For Benzene Degradation			
Fraction organic carbon	unitless	0.006	Default value (USEPA 2002)
Minimum oxygen content for aerobic respiration	%	1	Default value (API 2012)
First order biodegradation rate for benzene	1/hour	0.79	Default value (API 2012)
Building Foundation Parameters (Slab-on-Grade)			
Commercial Indoor Air Scenario			
Depth to Bottom of Foundation, Slab-on-grade	cm	20	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Foundation crack ratio	unitless	0.001	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Average vapor flow rate into building	L/min	337.5	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Foundation thickness	cm	20	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Residential Indoor Air Scenario - Slab-on-Grade			
Depth to Bottom of Foundation, Slab-on-grade	cm	10	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Foundation crack ratio	unitless	0.001	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Average vapor flow rate into building	L/min	8.2	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Foundation thickness	cm	10	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Residential Indoor Air Scenario - Trailer			
Depth to bottom of foundation, dirt floor	cm	0	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Foundation thickness	cm	0	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Foundation crack ratio	unitless	1	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Air Dispersion Parameters			
Commercial Indoor Air Scenario			
Air exchange rate	1/hour	1.5	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Enclosed Floor Space Area	m^2	1500	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Mixing height of building, Slab-on-grade	m	3	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Commercial Outdoor Air Scenario			
Site-specific dispersion factor (Q/C)	g/m^2-s per kg/m^3	33.80	Based on the area of the main chloroform groundwater plume (as defined by >70 ug/L chloroform concentration) in the western portion of OU-2.
Construction Trench Scenario			
Length of construction trench	cm	609.60	Assumed (20 feet)
Width of construction trench	cm	152.40	Assumed (5 feet)
Trench wind speed	m/s	0.41	Conservative estimate (1/10 of the site-specific windspeed)
Site-specific dispersion factor (Q/C)	g/m^2-s per kg/m^3	34.17	Site-specific estimate based on box model
Residential Indoor Scenario (Slab-on-Grade and Trailer)			
Air exchange rate	1/hour	0.45	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Enclosed space floor area	m^2	150	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)
Mixing height of building, Slab-on-grade and Trailer	m	2.44	Default value in USEPA Spreadsheet Modeling Vapor Intrusion (USEPA 2017)

Notes:
API = American Petroleum Institute
cm = centimeter
cm^2/s = square centimeter per second
g/cm^3 = gram per cubic centimeter
g/m^2-s per kg/m^3 = (gram per square meter-second) per (kilogram per cubic meter)
L/min = liter per minute
m = meter
m/s = meter per second
m^2 = square meter
µg/L = microgram per liter
OU = Operable Unit
USEPA = United States Environmental Protection Agency

Source:
American Petroleum Institute (API). 2012. User's Manual - BioVapor A 1-D Vapor Intrusion Model with Oxygen-Limited Aerobic Biodegradation. http://www.api.org/oil-and-natural-gas/environment/clean-water/ground-water/vapor-intrusion/biovapor
USEPA. 2017. EPA Spreadsheet Modeling Subsurface Vapor Intrusion. Version 6.0. September.
USEPA. 2021. Regional Screening Levels User's Guide. May.

TABLE 5-5. Transfer Factors for VOCs Migrating from Soil Gas to Indoor Air, Outdoor Air, and Trench Air
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	TF for Soil Gas Migrating to Indoor Air - Commercial ($\mu g/m^3$ per $\mu g/m^3$)			TF for Soil Gas Migrating to Indoor Air - Residential ($\mu g/m^3$ per $\mu g/m^3$)			TF for Soil Gas Migrating to Outdoor Air ($\mu g/m^3$ per $\mu g/m^3$)			TF for Soil Gas Migrating to Trench Air ($\mu g/m^3$ per $\mu g/m^3$)	TF for Soil Gas Migrating to Indoor Air in Trailer ($\mu g/m^3$ per $\mu g/m^3$)		
	5 ft bgs	10 ft bgs	15 ft bgs	5 ft bgs	10 ft bgs	15 ft bgs	5 ft bgs	10 ft bgs	15 ft bgs	5 ft below or beside Trench	5 ft bgs	10 ft bgs	15 bgs
Acetone	2.0E-04	8.7E-05	5.6E-05	6.5E-04	3.2E-04	2.1E-04	6.5E-06	2.9E-06	1.9E-06	3.2E-05	7.5E-04	3.4E-04	2.2E-04
Acrolein	2.0E-04	8.5E-05	5.4E-05	6.5E-04	3.2E-04	2.1E-04	1.9E-06	8.2E-07	5.2E-07	8.7E-06	7.5E-04	3.3E-04	2.1E-04
Acrylonitrile	2.0E-04	8.7E-05	5.5E-05	6.6E-04	3.2E-04	2.1E-04	1.8E-06	7.9E-07	5.1E-07	8.4E-06	7.7E-04	3.4E-04	2.2E-04
tert-Amyl methyl ether	1.2E-04	4.9E-05	3.1E-05	4.1E-04	1.9E-04	1.2E-04	7.2E-08	3.2E-08	2.0E-08	3.3E-07	4.3E-04	1.9E-04	1.2E-04
Benzene	2.9E-19	4.6E-20	2.4E-20	3.6E-19	5.9E-20	3.1E-20	6.1E-23	1.0E-23	5.3E-24	9.4E-24	4.0E-19	6.1E-20	3.2E-20
Benzyl chloride	1.2E-04	4.8E-05	3.0E-05	4.0E-04	1.9E-04	1.2E-04	3.6E-07	1.6E-07	1.0E-07	1.7E-06	4.2E-04	1.9E-04	1.2E-04
Bromobenzene	9.9E-05	4.1E-05	2.6E-05	3.5E-04	1.6E-04	1.0E-04	5.5E-08	2.4E-08	1.6E-08	2.6E-07	3.6E-04	1.6E-04	1.0E-04
Bromochloromethane	1.4E-04	5.9E-05	3.7E-05	4.8E-04	2.2E-04	1.5E-04	1.1E-07	4.9E-08	3.1E-08	5.1E-07	5.2E-04	2.3E-04	1.5E-04
Bromodichloromethane	1.0E-04	4.3E-05	2.7E-05	3.6E-04	1.6E-04	1.1E-04	5.6E-08	2.5E-08	1.6E-08	2.6E-07	3.7E-04	1.6E-04	1.0E-04
Bromoform	6.7E-05	2.8E-05	1.7E-05	2.4E-04	1.1E-04	7.0E-05	1.6E-07	7.2E-08	4.6E-08	7.6E-07	2.4E-04	1.1E-04	6.8E-05
Bromomethane	1.8E-04	7.5E-05	4.7E-05	5.9E-04	2.8E-04	1.8E-04	2.5E-08	1.1E-08	7.1E-09	1.2E-07	6.6E-04	2.9E-04	1.9E-04
1,3-Butadiene	1.8E-04	7.5E-05	4.7E-05	5.9E-04	2.8E-04	1.8E-04	2.5E-09	1.1E-09	6.9E-10	1.1E-08	6.6E-04	2.9E-04	1.9E-04
2-Butanone	1.7E-04	7.3E-05	4.6E-05	5.7E-04	2.7E-04	1.8E-04	3.5E-06	1.6E-06	1.0E-06	1.7E-05	6.3E-04	2.8E-04	1.8E-04
tert-Butyl alcohol	1.9E-04	8.7E-05	5.6E-05	6.3E-04	3.2E-04	2.2E-04	1.7E-05	8.2E-06	5.4E-06	9.3E-05	7.2E-04	3.4E-04	2.2E-04
n-Butylbenzene	9.7E-05	4.0E-05	2.5E-05	3.4E-04	1.5E-04	9.9E-05	9.3E-09	4.1E-09	2.6E-09	4.3E-08	3.5E-04	1.5E-04	9.8E-05
sec-Butylbenzene	9.7E-05	4.0E-05	2.5E-05	3.4E-04	1.5E-04	9.9E-05	8.2E-09	3.6E-09	2.3E-09	3.8E-08	3.5E-04	1.5E-04	9.8E-05
tert-Butylbenzene	9.7E-05	4.0E-05	2.5E-05	3.4E-04	1.5E-04	1.0E-04	1.1E-08	4.8E-09	3.0E-09	5.0E-08	3.5E-04	1.5E-04	9.8E-05
Carbon disulfide	1.9E-04	7.9E-05	5.0E-05	6.2E-04	3.0E-04	1.9E-04	1.4E-08	6.3E-09	4.0E-09	6.6E-08	7.0E-04	3.1E-04	2.0E-04
Carbon tetrachloride	1.0E-04	4.3E-05	2.7E-05	3.7E-04	1.7E-04	1.1E-04	4.2E-09	1.8E-09	1.2E-09	1.9E-08	3.8E-04	1.7E-04	1.1E-04
3-Chloro-1-propene	1.7E-04	7.0E-05	4.4E-05	5.6E-04	2.6E-04	1.7E-04	1.7E-08	7.4E-09	4.7E-09	7.8E-08	6.2E-04	2.7E-04	1.7E-04
Chlorobenzene	1.3E-04	5.4E-05	3.4E-05	4.5E-04	2.1E-04	1.3E-04	5.2E-08	2.3E-08	1.5E-08	2.4E-07	4.8E-04	2.1E-04	1.3E-04
Chloroethane	1.8E-04	7.7E-05	4.9E-05	6.1E-04	2.9E-04	1.9E-04	1.7E-08	7.6E-09	4.9E-09	8.0E-08	6.9E-04	3.0E-04	1.9E-04
Chloroform	1.4E-04	5.8E-05	3.6E-05	4.7E-04	2.2E-04	1.4E-04	4.2E-08	1.8E-08	1.2E-08	1.9E-07	5.1E-04	2.2E-04	1.4E-04
Chloromethane	2.2E-04	9.2E-05	5.8E-05	7.0E-04	3.4E-04	2.2E-04	2.5E-08	1.1E-08	6.9E-09	1.1E-07	8.2E-04	3.6E-04	2.3E-04
2-Chlorotoluene	1.1E-04	4.7E-05	3.0E-05	4.0E-04	1.8E-04	1.2E-04	4.4E-08	1.9E-08	1.2E-08	2.0E-07	4.2E-04	1.8E-04	1.2E-04
4-Chlorotoluene	1.1E-04	4.7E-05	3.0E-05	4.0E-04	1.8E-04	1.2E-04	3.6E-08	1.6E-08	1.0E-08	1.7E-07	4.1E-04	1.8E-04	1.2E-04
Cumene	1.1E-04	4.5E-05	2.9E-05	3.8E-04	1.7E-04	1.1E-04	1.3E-08	5.8E-09	3.7E-09	6.2E-08	4.0E-04	1.7E-04	1.1E-04
Cyclohexane	1.4E-04	6.0E-05	3.8E-05	4.9E-04	2.3E-04	1.5E-04	1.1E-09	4.8E-10	3.1E-10	5.0E-09	5.3E-04	2.3E-04	1.5E-04
p-Cymene	1.4E-04	5.6E-05	3.5E-05	4.6E-04	2.1E-04	1.4E-04	9.1E-11	4.0E-11	2.6E-11	4.2E-10	5.0E-04	2.2E-04	1.4E-04
1,2-Dibromo-3-chloropropane	6.3E-05	2.6E-05	1.7E-05	2.3E-04	1.0E-04	6.7E-05	5.8E-07	2.6E-07	1.7E-07	2.8E-06	2.2E-04	1.0E-04	6.5E-05
Dibromochloromethane	6.8E-05	2.8E-05	1.8E-05	2.5E-04	1.1E-04	7.1E-05	9.1E-08	4.0E-08	2.5E-08	4.2E-07	2.4E-04	1.1E-04	6.9E-05
1,2-Dibromoethane	8.0E-05	3.3E-05	2.1E-05	2.9E-04	1.3E-04	8.3E-05	1.5E-07	6.7E-08	4.3E-08	7.1E-07	2.9E-04	1.3E-04	8.1E-05
Dibromomethane	1.0E-04	4.2E-05	2.6E-05	3.6E-04	1.6E-04	1.0E-04	1.4E-07	6.3E-08	4.1E-08	6.7E-07	3.7E-04	1.6E-04	1.0E-04
1,2-Dichlorobenzene	1.0E-04	4.2E-05	2.7E-05	3.6E-04	1.6E-04	1.1E-04	7.2E-08	3.1E-08	2.0E-08	3.3E-07	3.7E-04	1.6E-04	1.0E-04
1,3-Dichlorobenzene	1.3E-04	5.2E-05	3.3E-05	4.3E-04	2.0E-04	1.3E-04	5.3E-08	2.3E-08	1.5E-08	2.4E-07	4.6E-04	2.0E-04	1.3E-04
1,4-Dichlorobenzene	1.0E-04	4.2E-05	2.6E-05	3.6E-04	1.6E-04	1.0E-04	5.5E-08	2.4E-08	1.5E-08	2.5E-07	3.6E-04	1.6E-04	1.0E-04
Dichlorodifluoromethane	1.4E-04	5.7E-05	3.6E-05	4.7E-04	2.2E-04	1.4E-04	4.6E-10	2.0E-10	1.3E-10	2.1E-09	5.0E-04	2.2E-04	1.4E-04
1,1-Dichloroethane	1.5E-04	6.3E-05	4.0E-05	5.1E-04	2.4E-04	1.5E-04	3.0E-08	1.3E-08	8.3E-09	1.4E-07	5.5E-04	2.4E-04	1.5E-04
1,2-Dichloroethane	1.5E-04	6.4E-05	4.1E-05	5.2E-04	2.4E-04	1.6E-04	1.5E-07	6.7E-08	4.3E-08	7.1E-07	5.7E-04	2.5E-04	1.6E-04
1,1-Dichloroethene	1.6E-04	6.5E-05	4.1E-05	5.2E-04	2.4E-04	1.6E-04	6.3E-09	2.8E-09	1.8E-09	2.9E-08	5.7E-04	2.5E-04	1.6E-04
cis-1,2-Dichloroethene	1.6E-04	6.6E-05	4.2E-05	5.3E-04	2.5E-04	1.6E-04	4.4E-08	1.9E-08	1.2E-08	2.0E-07	5.9E-04	2.6E-04	1.6E-04
trans-1,2-Dichloroethene	1.6E-04	6.5E-05	4.1E-05	5.3E-04	2.5E-04	1.6E-04	1.9E-08	8.1E-09	5.2E-09	8.5E-08	5.8E-04	2.5E-04	1.6E-04
1,2-Dichloropropane	1.3E-04	5.5E-05	3.5E-05	4.6E-04	2.1E-04	1.4E-04	5.5E-08	2.4E-08	1.5E-08	2.5E-07	4.9E-04	2.1E-04	1.4E-04
1,3-Dichloropropane	1.3E-04	5.6E-05	3.5E-05	4.6E-04	2.1E-04	1.4E-04	1.7E-07	7.4E-08	4.7E-08	7.8E-07	4.9E-04	2.1E-04	1.4E-04
2,2-Dichloropropane	1.3E-04	5.5E-05	3.5E-05	4.6E-04	2.1E-04	1.4E-04	6.7E-09	2.9E-09	1.9E-09	3.1E-08	4.9E-04	2.1E-04	1.4E-04
1,1-Dichloropropene	1.4E-04	5.7E-05	3.6E-05	4.7E-04	2.2E-04	1.4E-04	2.2E-09	9.7E-10	6.2E-10	1.0E-08	5.0E-04	2.2E-04	1.4E-04

TABLE 5-5. Transfer Factors for VOCs Migrating from Soil Gas to Indoor Air, Outdoor Air, and Trench Air
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	TF for Soil Gas Migrating to Indoor Air - Commercial ($\mu g/m^3$ per $\mu g/m^3$)			TF for Soil Gas Migrating to Indoor Air - Residential ($\mu g/m^3$ per $\mu g/m^3$)			TF for Soil Gas Migrating to Outdoor Air ($\mu g/m^3$ per $\mu g/m^3$)			TF for Soil Gas Migrating to Trench Air ($\mu g/m^3$ per $\mu g/m^3$)	TF for Soil Gas Migrating to Indoor Air in Trailer ($\mu g/m^3$ per $\mu g/m^3$)		
	5 ft bgs	10 ft bgs	15 ft bgs	5 ft bgs	10 ft bgs	15 ft bgs	5 ft bgs	10 ft bgs	15 ft bgs	5 ft below or beside Trench	5 ft bgs	10 ft bgs	15 bgs
1,3-Dichloropropene	1.4E-04	5.7E-05	3.6E-05	4.7E-04	2.2E-04	1.4E-04	4.7E-08	2.0E-08	1.3E-08	2.2E-07	5.1E-04	2.2E-04	1.4E-04
Diisopropyl ether	1.2E-04	4.9E-05	3.1E-05	4.1E-04	1.9E-04	1.2E-04	3.6E-08	1.6E-08	1.0E-08	1.7E-07	4.3E-04	1.9E-04	1.2E-04
1,4-Dioxane	2.5E-04	1.2E-04	8.2E-05	7.8E-04	4.4E-04	3.1E-04	6.7E-05	3.4E-05	2.3E-05	4.1E-04	9.5E-04	4.8E-04	3.2E-04
Ethanol	2.9E-04	1.4E-04	9.2E-05	8.8E-04	4.9E-04	3.4E-04	4.9E-05	2.4E-05	1.6E-05	2.8E-04	1.1E-03	5.5E-04	3.6E-04
Ethyl tert-butyl ether	1.2E-04	4.9E-05	3.1E-05	4.1E-04	1.9E-04	1.2E-04	5.8E-08	2.5E-08	1.6E-08	2.7E-07	4.3E-04	1.9E-04	1.2E-04
Ethyl acetate	1.5E-04	6.4E-05	4.0E-05	5.1E-04	2.4E-04	1.6E-04	1.3E-06	5.9E-07	3.8E-07	6.2E-06	5.6E-04	2.5E-04	1.6E-04
Ethyl benzene	1.2E-04	5.1E-05	3.2E-05	4.3E-04	2.0E-04	1.3E-04	2.0E-08	8.6E-09	5.5E-09	9.1E-08	4.5E-04	2.0E-04	1.3E-04
4-Ethyltoluene	1.4E-04	5.6E-05	3.5E-05	4.6E-04	2.1E-04	1.4E-04	9.1E-11	4.0E-11	2.6E-11	4.2E-10	5.0E-04	2.2E-04	1.4E-04
Freon 114	7.0E-05	2.8E-05	1.8E-05	2.5E-04	1.1E-04	7.1E-05	2.0E-11	8.6E-12	5.5E-12	9.0E-11	2.5E-04	1.1E-04	6.9E-05
n-Heptane	1.1E-04	4.6E-05	2.9E-05	3.9E-04	1.8E-04	1.2E-04	4.5E-11	2.0E-11	1.3E-11	2.1E-10	4.1E-04	1.8E-04	1.1E-04
Hexachlorobutadiene	5.0E-05	2.0E-05	1.3E-05	1.8E-04	8.0E-05	5.1E-05	6.7E-09	2.9E-09	1.9E-09	3.1E-08	1.8E-04	7.7E-05	5.0E-05
n-Hexane	1.3E-04	5.5E-05	3.5E-05	4.5E-04	2.1E-04	1.4E-04	8.2E-11	3.6E-11	2.3E-11	3.8E-10	4.8E-04	2.1E-04	1.4E-04
2-Hexanone	1.3E-04	5.5E-05	3.5E-05	4.5E-04	2.1E-04	1.4E-04	1.8E-06	7.9E-07	5.1E-07	8.4E-06	4.8E-04	2.1E-04	1.4E-04
alpha-Methyl styrene	1.1E-04	4.7E-05	3.0E-05	4.0E-04	1.8E-04	1.2E-04	6.7E-08	2.9E-08	1.9E-08	3.1E-07	4.2E-04	1.8E-04	1.2E-04
Methyl tert-butyl ether	1.4E-04	5.7E-05	3.6E-05	4.7E-04	2.2E-04	1.4E-04	2.6E-07	1.1E-07	7.2E-08	1.2E-06	5.0E-04	2.2E-04	1.4E-04
4-Methyl-2-pentanone	1.3E-04	5.4E-05	3.4E-05	4.4E-04	2.1E-04	1.3E-04	1.2E-06	5.1E-07	3.3E-07	5.4E-06	4.7E-04	2.1E-04	1.3E-04
Methylene Chloride	1.8E-04	7.5E-05	4.7E-05	5.9E-04	2.8E-04	1.8E-04	6.0E-08	2.6E-08	1.7E-08	2.8E-07	6.6E-04	2.9E-04	1.9E-04
Methylmethacrylate	1.4E-04	5.7E-05	3.6E-05	4.7E-04	2.2E-04	1.4E-04	5.4E-07	2.4E-07	1.5E-07	2.5E-06	5.0E-04	2.2E-04	1.4E-04
Naphthalene	1.1E-04	4.6E-05	2.9E-05	3.9E-04	1.8E-04	1.1E-04	3.6E-07	1.6E-07	1.0E-07	1.7E-06	4.0E-04	1.8E-04	1.1E-04
n-Octane	1.1E-04	4.6E-05	2.9E-05	3.9E-04	1.8E-04	1.2E-04	2.8E-11	1.2E-11	7.8E-12	1.3E-10	4.1E-04	1.8E-04	1.1E-04
n-Propylbenzene	1.1E-04	4.5E-05	2.9E-05	3.8E-04	1.7E-04	1.1E-04	1.4E-08	6.0E-09	3.9E-09	6.3E-08	4.0E-04	1.7E-04	1.1E-04
Propylene	1.9E-04	8.2E-05	5.2E-05	6.3E-04	3.0E-04	2.0E-04	9.4E-10	4.1E-10	2.6E-10	4.3E-09	7.3E-04	3.2E-04	2.0E-04
Styrene	1.3E-04	5.3E-05	3.4E-05	4.4E-04	2.0E-04	1.3E-04	6.0E-08	2.6E-08	1.7E-08	2.7E-07	4.7E-04	2.1E-04	1.3E-04
1,1,1,2-Tetrachloroethane	8.9E-05	3.6E-05	2.3E-05	3.2E-04	1.4E-04	9.1E-05	4.7E-08	2.0E-08	1.3E-08	2.1E-07	3.2E-04	1.4E-04	8.9E-05
1,1,2,2-Tetrachloroethane	9.1E-05	3.8E-05	2.4E-05	3.2E-04	1.5E-04	9.4E-05	3.1E-07	1.4E-07	8.8E-08	1.5E-06	3.3E-04	1.4E-04	9.2E-05
Tetrachloroethene	9.3E-05	3.8E-05	2.4E-05	3.3E-04	1.5E-04	9.5E-05	6.3E-09	2.8E-09	1.8E-09	2.9E-08	3.3E-04	1.5E-04	9.3E-05
Tetrahydrofuran	1.8E-04	7.8E-05	4.9E-05	6.0E-04	2.9E-04	1.9E-04	3.0E-06	1.3E-06	8.5E-07	1.4E-05	6.8E-04	3.0E-04	1.9E-04
Toluene	1.4E-04	5.8E-05	3.7E-05	4.8E-04	2.2E-04	1.4E-04	2.5E-08	1.1E-08	7.1E-09	1.2E-07	5.1E-04	2.3E-04	1.4E-04
1,2,3-Trichlorobenzene	7.4E-05	3.0E-05	1.9E-05	2.7E-04	1.2E-04	7.6E-05	9.3E-08	4.1E-08	2.6E-08	4.3E-07	2.6E-04	1.2E-04	7.4E-05
1,2,4-Trichlorobenzene	7.4E-05	3.0E-05	1.9E-05	2.7E-04	1.2E-04	7.6E-05	7.4E-08	3.2E-08	2.1E-08	3.4E-07	2.6E-04	1.2E-04	7.4E-05
1,1,1-Trichloroethane	1.2E-04	4.9E-05	3.1E-05	4.1E-04	1.9E-04	1.2E-04	7.7E-09	3.4E-09	2.2E-09	3.5E-08	4.3E-04	1.9E-04	1.2E-04
1,1,2-Trichloroethane	1.2E-04	5.1E-05	3.2E-05	4.2E-04	1.9E-04	1.3E-04	1.8E-07	7.9E-08	5.1E-08	8.3E-07	4.4E-04	1.9E-04	1.2E-04
Trichloroethene	1.2E-04	5.2E-05	3.2E-05	4.3E-04	2.0E-04	1.3E-04	1.5E-08	6.4E-09	4.1E-09	6.8E-08	4.5E-04	2.0E-04	1.3E-04
Trichlorofluoromethane	1.2E-04	4.9E-05	3.1E-05	4.1E-04	1.9E-04	1.2E-04	1.3E-09	5.6E-10	3.6E-10	5.9E-09	4.3E-04	1.9E-04	1.2E-04
1,2,3-Trichloropropane	1.1E-04	4.4E-05	2.8E-05	3.7E-04	1.7E-04	1.1E-04	4.0E-07	1.8E-07	1.1E-07	1.9E-06	3.9E-04	1.7E-04	1.1E-04
1,1,2-Trichloro-1,2,2-trifluoroethane	7.0E-05	2.8E-05	1.8E-05	2.5E-04	1.1E-04	7.1E-05	1.4E-10	6.1E-11	3.9E-11	6.4E-10	2.5E-04	1.1E-04	6.9E-05
1,2,4-Trimethylbenzene	1.1E-04	4.6E-05	2.9E-05	3.9E-04	1.8E-04	1.1E-04	2.4E-08	1.1E-08	6.7E-09	1.1E-07	4.0E-04	1.8E-04	1.1E-04
1,3,5-Trimethylbenzene	1.1E-04	4.5E-05	2.9E-05	3.8E-04	1.7E-04	1.1E-04	1.7E-08	7.3E-09	4.7E-09	7.7E-08	4.0E-04	1.7E-04	1.1E-04
Vinyl acetate	1.5E-04	6.4E-05	4.0E-05	5.2E-04	2.4E-04	1.6E-04	3.6E-07	1.6E-07	1.0E-07	1.6E-06	5.6E-04	2.5E-04	1.6E-04
Vinyl chloride	1.9E-04	8.0E-05	5.0E-05	6.2E-04	3.0E-04	1.9E-04	6.9E-09	3.0E-09	1.9E-09	3.2E-08	7.1E-04	3.1E-04	2.0E-04
Xylenes (total)	1.2E-04	5.1E-05	3.2E-05	4.3E-04	2.0E-04	1.3E-04	2.4E-08	1.0E-08	6.6E-09	1.1E-07	4.5E-04	2.0E-04	1.3E-04

Notes:

bgs = below ground surface
ft = feet
$\mu g/m^3$ = microgram per cubic meter
TF = transfer factor, equivalent to attenuation factor for soil gas
VOC = volatile organic compound

TABLE 5-6. Transfer Factors for VOCs Migrating from Shallow Groundwater to Indoor Air, Outdoor Air, and Trench Air
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	TF for Groundwater Vapor Migrating to Commercial Indoor Air ($\mu g/m^3$ per $\mu g/L$)		TF for Groundwater Vapor Migrating to Residential Indoor Air ($\mu g/m^3$ per $\mu g/L$)		TF for Groundwater Vapor Migrating to Outdoor Air ($\mu g/m^3$ per $\mu g/L$)		TF for Groundwater Vapor Migrating to Trench Air ($\mu g/m^3$ per $\mu g/L$)		TF for Groundwater Vapor Migrating to Residential Indoor Air in Trailer ($\mu g/m^3$ per $\mu g/L$)	
	10 ft bgs	20 ft bgs	10 ft bgs	20 ft bgs	10 ft bgs	20 ft bgs	10 ft bgs	20 ft bgs	10 ft bgs	20 ft bgs
Acetone	8.5E-05	4.1E-05	3.2E-04	1.6E-04	3.0E-06	1.5E-06	1.1E-04	1.6E-05	3.3E-04	1.6E-04
Acrolein	2.5E-04	1.3E-04	9.5E-04	5.2E-04	8.9E-06	4.7E-06	1.9E-04	4.8E-05	9.9E-04	5.2E-04
Acrylonitrile	2.7E-04	1.4E-04	1.0E-03	5.5E-04	9.4E-06	5.0E-06	2.0E-04	5.1E-05	1.0E-03	5.5E-04
tert-Amyl methyl ether	1.6E-03	9.2E-04	6.2E-03	3.7E-03	5.5E-05	3.3E-05	7.0E-04	3.0E-04	6.1E-03	3.7E-03
Benzene	4.2E-18	1.9E-18	5.6E-18	2.5E-18	1.5E-19	6.8E-20	4.3E-07	3.4E-20	5.6E-18	2.5E-18
Benzyl chloride	3.6E-04	2.0E-04	1.4E-03	7.9E-04	1.3E-05	7.0E-06	2.1E-04	6.9E-05	1.4E-03	7.8E-04
Bromobenzene	1.4E-03	8.3E-04	5.6E-03	3.3E-03	5.0E-05	2.9E-05	6.4E-04	2.7E-04	5.5E-03	3.3E-03
Bromochloromethane	1.5E-03	8.9E-04	6.0E-03	3.6E-03	5.4E-05	3.2E-05	7.1E-04	3.0E-04	6.0E-03	3.5E-03
Bromodichloromethane	1.5E-03	8.9E-04	6.1E-03	3.6E-03	5.4E-05	3.2E-05	7.0E-04	3.0E-04	6.0E-03	3.5E-03
Bromoform	2.8E-04	1.5E-04	1.1E-03	6.0E-04	9.7E-06	5.2E-06	1.8E-04	5.3E-05	1.1E-03	5.8E-04
Bromomethane	1.0E-02	6.1E-03	3.9E-02	2.4E-02	3.6E-04	2.2E-04	4.3E-03	2.0E-03	4.0E-02	2.4E-02
1,3-Butadiene	1.0E-01	6.2E-02	4.0E-01	2.5E-01	3.6E-03	2.2E-03	4.3E-02	2.0E-02	4.0E-01	2.4E-01
2-Butanone	1.1E-04	5.3E-05	4.0E-04	2.1E-04	3.8E-06	1.9E-06	1.2E-04	2.0E-05	4.2E-04	2.1E-04
tert-Butyl alcohol	3.3E-05	1.5E-05	1.2E-04	6.1E-05	1.1E-06	5.5E-07	7.0E-05	6.4E-06	1.3E-04	6.1E-05
n-Butylbenzene	7.5E-03	4.5E-03	3.0E-02	1.8E-02	2.7E-04	1.6E-04	3.2E-03	1.5E-03	3.0E-02	1.8E-02
sec-Butylbenzene	8.5E-03	5.2E-03	3.4E-02	2.1E-02	3.0E-04	1.8E-04	3.6E-03	1.7E-03	3.3E-02	2.0E-02
tert-Butylbenzene	6.5E-03	3.9E-03	2.6E-02	1.6E-02	2.3E-04	1.4E-04	2.8E-03	1.3E-03	2.5E-02	1.5E-02
Carbon disulfide	2.0E-02	1.2E-02	7.7E-02	4.8E-02	7.0E-04	4.3E-04	8.4E-03	3.9E-03	7.8E-02	4.7E-02
Carbon tetrachloride	1.9E-02	1.2E-02	7.7E-02	4.7E-02	6.8E-04	4.2E-04	8.2E-03	3.8E-03	7.6E-02	4.6E-02
3-Chloro-1-propene	1.3E-02	7.8E-03	5.1E-02	3.1E-02	4.6E-04	2.8E-04	5.5E-03	2.5E-03	5.1E-02	3.1E-02
Chlorobenzene	2.6E-03	1.6E-03	1.0E-02	6.2E-03	9.2E-05	5.5E-05	1.1E-03	5.1E-04	1.0E-02	6.1E-03
Chloroethane	1.5E-02	9.3E-03	6.0E-02	3.7E-02	5.5E-04	3.3E-04	6.6E-03	3.0E-03	6.1E-02	3.7E-02
Chloroform	3.6E-03	2.2E-03	1.4E-02	8.7E-03	1.3E-04	7.7E-05	1.6E-03	7.1E-04	1.4E-02	8.5E-03
Chloromethane	1.5E-02	9.3E-03	6.0E-02	3.7E-02	5.5E-04	3.4E-04	6.6E-03	3.0E-03	6.1E-02	3.7E-02
2-Chlorotoluene	2.4E-03	1.4E-03	9.3E-03	5.7E-03	8.3E-05	5.0E-05	1.0E-03	4.6E-04	9.2E-03	5.5E-03
4-Chlorotoluene	2.8E-03	1.7E-03	1.1E-02	6.8E-03	1.0E-04	6.0E-05	1.2E-03	5.5E-04	1.1E-02	6.7E-03
Cumene	6.9E-03	4.1E-03	2.7E-02	1.7E-02	2.4E-04	1.5E-04	2.9E-03	1.3E-03	2.7E-02	1.6E-02
Cyclohexane	1.5E-01	8.8E-02	5.7E-01	3.5E-01	5.1E-03	3.1E-03	6.1E-02	2.8E-02	5.7E-01	3.5E-01
p-Cymene	1.5E+00	9.3E-01	6.0E+00	3.7E+00	5.4E-02	3.3E-02	6.4E-01	3.0E-01	6.0E+00	3.7E+00
1,2-Dibromo-3-chloropropane	8.4E-05	4.1E-05	3.3E-04	1.6E-04	2.9E-06	1.4E-06	9.6E-05	1.6E-05	3.2E-04	1.6E-04
Dibromochloromethane	4.7E-04	2.6E-04	1.9E-03	1.1E-03	1.7E-05	9.3E-06	2.6E-04	9.1E-05	1.8E-03	1.0E-03
1,2-Dibromoethane	4.0E-04	2.2E-04	1.6E-03	8.8E-04	1.4E-05	7.7E-06	2.3E-04	7.7E-05	1.6E-03	8.6E-04
Dibromomethane	6.5E-04	3.6E-04	2.6E-03	1.5E-03	2.3E-05	1.3E-05	3.4E-04	1.2E-04	2.5E-03	1.4E-03
1,2-Dichlorobenzene	1.2E-03	7.0E-04	4.8E-03	2.8E-03	4.2E-05	2.5E-05	5.5E-04	2.3E-04	4.7E-03	2.8E-03
1,3-Dichlorobenzene	2.3E-03	1.4E-03	9.2E-03	5.6E-03	8.2E-05	5.0E-05	1.0E-03	4.5E-04	9.1E-03	5.5E-03
1,4-Dichlorobenzene	1.5E-03	8.7E-04	5.9E-03	3.5E-03	5.2E-05	3.1E-05	6.7E-04	2.9E-04	5.8E-03	3.5E-03
Dichlorodifluoromethane	3.1E-01	1.9E-01	1.2E+00	7.6E-01	1.1E-02	6.7E-03	1.3E-01	6.1E-02	1.2E+00	7.5E-01
1,1-Dichloroethane	5.9E-03	3.6E-03	2.3E-02	1.4E-02	2.1E-04	1.3E-04	2.6E-03	1.2E-03	2.3E-02	1.4E-02
1,2-Dichloroethane	1.3E-03	7.7E-04	5.2E-03	3.1E-03	4.7E-05	2.7E-05	6.2E-04	2.6E-04	5.2E-03	3.0E-03
1,1-Dichloroethene	2.9E-02	1.8E-02	1.2E-01	7.1E-02	1.0E-03	6.4E-04	1.2E-02	5.8E-03	1.2E-01	7.0E-02
cis-1,2-Dichloroethene	4.6E-03	2.7E-03	1.8E-02	1.1E-02	1.6E-04	9.8E-05	2.0E-03	8.9E-04	1.8E-02	1.1E-02
trans-1,2-Dichloroethene	1.0E-02	6.3E-03	4.1E-02	2.5E-02	3.7E-04	2.2E-04	4.4E-03	2.0E-03	4.1E-02	2.5E-02
1,2-Dichloropropane	2.5E-03	1.5E-03	1.0E-02	6.1E-03	9.0E-05	5.4E-05	1.1E-03	5.0E-04	1.0E-02	6.0E-03
1,3-Dichloropropane	9.2E-04	5.3E-04	3.6E-03	2.1E-03	3.2E-05	1.9E-05	4.4E-04	1.8E-04	3.6E-03	2.1E-03
2,2-Dichloropropane	2.0E-02	1.2E-02	8.0E-02	4.9E-02	7.2E-04	4.4E-04	8.6E-03	4.0E-03	7.9E-02	4.8E-02
1,1-Dichloropropene	6.5E-02	3.9E-02	2.6E-01	1.6E-01	2.3E-03	1.4E-03	2.7E-02	1.3E-02	2.5E-01	1.6E-01

TABLE 5-6. Transfer Factors for VOCs Migrating from Shallow Groundwater to Indoor Air, Outdoor Air, and Trench Air
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	TF for Groundwater Vapor Migrating to Commercial Indoor Air ($\mu g/m^3$ per $\mu g/L$)		TF for Groundwater Vapor Migrating to Residential Indoor Air ($\mu g/m^3$ per $\mu g/L$)		TF for Groundwater Vapor Migrating to Outdoor Air ($\mu g/m^3$ per $\mu g/L$)		TF for Groundwater Vapor Migrating to Trench Air ($\mu g/m^3$ per $\mu g/L$)		TF for Groundwater Vapor Migrating to Residential Indoor Air in Trailer ($\mu g/m^3$ per $\mu g/L$)	
	10 ft bgs	20 ft bgs	10 ft bgs	20 ft bgs	10 ft bgs	20 ft bgs	10 ft bgs	20 ft bgs	10 ft bgs	20 ft bgs
1,3-Dichloropropene	3.2E-03	1.9E-03	1.3E-02	7.7E-03	1.1E-04	6.9E-05	1.4E-03	6.3E-04	1.3E-02	7.6E-03
Diisopropyl ether	3.0E-03	1.8E-03	1.2E-02	7.3E-03	1.1E-04	6.5E-05	1.3E-03	5.9E-04	1.2E-02	7.2E-03
1,4-Dioxane	1.6E-05	8.0E-06	5.8E-05	3.1E-05	5.8E-07	2.9E-07	5.1E-05	3.5E-06	6.4E-05	3.2E-05
Ethanol	2.9E-05	1.4E-05	1.0E-04	5.4E-05	1.0E-06	5.1E-07	7.9E-05	6.1E-06	1.2E-04	5.6E-05
Ethyl tert-butyl ether	1.9E-03	1.1E-03	7.6E-03	4.6E-03	6.8E-05	4.1E-05	8.5E-04	3.7E-04	7.5E-03	4.5E-03
Ethyl acetate	1.9E-04	1.0E-04	7.5E-04	4.0E-04	6.8E-06	3.6E-06	1.5E-04	3.7E-05	7.6E-04	4.0E-04
Ethyl benzene	6.0E-03	3.6E-03	2.4E-02	1.5E-02	2.1E-04	1.3E-04	2.6E-03	1.2E-03	2.4E-02	1.4E-02
4-Ethyltoluene	1.5E+00	9.3E-01	6.0E+00	3.7E+00	5.4E-02	3.3E-02	6.4E-01	3.0E-01	6.0E+00	3.7E+00
Freon 114	1.8E+00	1.1E+00	7.2E+00	4.4E+00	6.3E-02	3.9E-02	7.5E-01	3.5E-01	7.0E+00	4.3E+00
n-Heptane	2.1E+00	1.3E+00	8.3E+00	5.1E+00	7.4E-02	4.5E-02	8.8E-01	4.1E-01	8.2E+00	5.0E+00
Hexachlorobutadiene	2.8E-03	1.6E-03	1.1E-02	6.7E-03	9.7E-05	5.9E-05	1.2E-03	5.4E-04	1.1E-02	6.5E-03
n-Hexane	1.6E+00	9.8E-01	6.4E+00	3.9E+00	5.7E-02	3.5E-02	6.8E-01	3.2E-01	6.3E+00	3.9E+00
2-Hexanone	1.2E-04	5.8E-05	4.5E-04	2.3E-04	4.1E-06	2.1E-06	1.1E-04	2.2E-05	4.5E-04	2.3E-04
alpha-Methyl styrene	1.6E-03	9.3E-04	6.2E-03	3.7E-03	5.5E-05	3.3E-05	7.0E-04	3.1E-04	6.1E-03	3.7E-03
Methyl tert-butyl ether	6.4E-04	3.7E-04	2.5E-03	1.5E-03	2.3E-05	1.3E-05	3.2E-04	1.2E-04	2.5E-03	1.5E-03
4-Methyl-2-pentanone	1.6E-04	8.3E-05	6.3E-04	3.3E-04	5.7E-06	3.0E-06	1.2E-04	3.1E-05	6.3E-04	3.3E-04
Methylene Chloride	4.2E-03	2.5E-03	1.7E-02	1.0E-02	1.5E-04	9.1E-05	1.9E-03	8.3E-04	1.7E-02	1.0E-02
Methylmethacrylate	3.4E-04	1.9E-04	1.3E-03	7.4E-04	1.2E-05	6.6E-06	2.0E-04	6.5E-05	1.3E-03	7.3E-04
Naphthalene	3.3E-04	1.8E-04	1.3E-03	7.3E-04	1.2E-05	6.5E-06	1.9E-04	6.4E-05	1.3E-03	7.2E-04
n-Octane	3.4E+00	2.0E+00	1.3E+01	8.2E+00	1.2E-01	7.3E-02	1.4E+00	6.6E-01	1.3E+01	8.1E+00
n-Propylbenzene	6.6E-03	4.0E-03	2.6E-02	1.6E-02	2.3E-04	1.4E-04	2.8E-03	1.3E-03	2.6E-02	1.6E-02
Propylene	3.2E-01	1.9E-01	1.2E+00	7.7E-01	1.1E-02	6.9E-03	1.3E-01	6.2E-02	1.2E+00	7.6E-01
Styrene	2.2E-03	1.3E-03	8.7E-03	5.3E-03	7.8E-05	4.7E-05	9.8E-04	4.3E-04	8.7E-03	5.2E-03
1,1,1,2-Tetrachloroethane	1.4E-03	7.9E-04	5.4E-03	3.2E-03	4.8E-05	2.8E-05	6.2E-04	2.6E-04	5.3E-03	3.1E-03
1,1,2,2-Tetrachloroethane	2.7E-04	1.4E-04	1.1E-03	5.8E-04	9.4E-06	5.1E-06	1.7E-04	5.1E-05	1.0E-03	5.6E-04
Tetrachloroethene	1.0E-02	6.1E-03	4.1E-02	2.5E-02	3.6E-04	2.2E-04	4.3E-03	2.0E-03	4.0E-02	2.4E-02
Tetrahydrofuran	1.4E-04	7.1E-05	5.3E-04	2.8E-04	5.0E-06	2.5E-06	1.3E-04	2.7E-05	5.5E-04	2.8E-04
Toluene	6.0E-03	3.6E-03	2.4E-02	1.5E-02	2.1E-04	1.3E-04	2.6E-03	1.2E-03	2.4E-02	1.4E-02
1,2,3-Trichlorobenzene	5.1E-04	2.9E-04	2.0E-03	1.2E-03	1.8E-05	1.0E-05	2.6E-04	9.8E-05	2.0E-03	1.1E-03
1,2,4-Trichlorobenzene	6.3E-04	3.6E-04	2.5E-03	1.4E-03	2.2E-05	1.3E-05	3.1E-04	1.2E-04	2.4E-03	1.4E-03
1,1,1-Trichloroethane	1.4E-02	8.3E-03	5.4E-02	3.3E-02	4.8E-04	2.9E-04	5.8E-03	2.7E-03	5.4E-02	3.3E-02
1,1,2-Trichloroethane	7.3E-04	4.1E-04	2.9E-03	1.7E-03	2.6E-05	1.5E-05	3.6E-04	1.4E-04	2.8E-03	1.6E-03
Trichloroethene	8.1E-03	4.9E-03	3.2E-02	2.0E-02	2.9E-04	1.7E-04	3.5E-03	1.6E-03	3.2E-02	1.9E-02
Trichlorofluoromethane	8.4E-02	5.1E-02	3.3E-01	2.0E-01	3.0E-03	1.8E-03	3.5E-02	1.6E-02	3.3E-01	2.0E-01
1,2,3-Trichloropropane	2.8E-04	1.5E-04	1.1E-03	6.1E-04	9.9E-06	5.4E-06	1.8E-04	5.4E-05	1.1E-03	6.0E-04
1,1,2-Trichloro-1,2,2-trifluoroethane	2.5E-01	1.5E-01	1.0E+00	6.2E-01	8.9E-03	5.4E-03	1.1E-01	4.9E-02	9.8E-01	6.0E-01
1,2,4-Trimethylbenzene	3.9E-03	2.3E-03	1.6E-02	9.5E-03	1.4E-04	8.4E-05	1.7E-03	7.6E-04	1.5E-02	9.3E-03
1,3,5-Trimethylbenzene	5.5E-03	3.3E-03	2.2E-02	1.3E-02	1.9E-04	1.2E-04	2.3E-03	1.1E-03	2.1E-02	1.3E-02
Vinyl acetate	6.1E-04	3.4E-04	2.4E-03	1.4E-03	2.1E-05	1.2E-05	3.1E-04	1.2E-04	2.4E-03	1.4E-03
Vinyl chloride	4.1E-02	2.5E-02	1.6E-01	1.0E-01	1.5E-03	9.0E-04	1.8E-02	8.1E-03	1.6E-01	9.9E-02
Xylenes (total)	5.1E-03	3.0E-03	2.0E-02	1.2E-02	1.8E-04	1.1E-04	2.2E-03	9.9E-04	2.0E-02	1.2E-02

Notes:

bgs= below ground surface
ft = feet
µg/L = microgram per liter
$\mu g/m^3$ = microgram per cubic meter
TF = transfer factor
VOC = volatile organic compound

TABLE 5-7. Exposure Assumptions
Nevada Environmental Response Trust Site
Henderson, Nevada

Exposure Factors	Units	Symbol	Resident		Indoor Commercial/ Industrial Worker		Outdoor Commercial/ Industrial Worker		Construction Worker	
			Value	Source	Value	Source	Value	Source	Value	Source
Population-Specific Exposure Assumptions										
Exposure Time	hours/day	ET	24	NDEP 2017a	8	NDEP 2017a	8	NDEP 2017a	4	VDEQ 2020
Exposure Frequency	days/year	EF	350	NDEP 2017a	250	NDEP 2017a	225	NDEP 2017a	30	[1]
Exposure Duration	years	ED	26	NDEP 2017a	25	NDEP 2017a	25	NDEP 2017a	1	USEPA 2021
Averaging Time for Carcinogens	days	AT_c	25,550	NDEP 2017a	25,550	NDEP 2017a	25,550	NDEP 2017a	25,550	USEPA 2021
Averaging Time for Noncarcinogens	days	AT_{nc}	9,490	NDEP 2017a	9,125	NDEP 2017a	9,125	NDEP 2017a	365	USEPA 2021
Inhalation of Vapor Migrating from Soil Gas or Groundwater to Indoor, Outdoor, or Trench Air										
Conversion Factor	hour/day	CF	24	--	24	--	24	--	24	--
Intake Factor for Vapor Inhalation, cancer	unitless	$IF_{vapor.inh\_c}$	3.6E-01	USEPA 2009	8.2E-02	USEPA 2009	7.3E-02	USEPA 2009	2.0E-04	USEPA 2009
Intake Factor for Vapor Inhalation, noncancer	unitless	$IF_{vapor.inh\_nc}$	9.6E-01	USEPA 2009	2.3E-01	USEPA 2009	2.1E-01	USEPA 2009	1.4E-02	USEPA 2009

Notes:
-- = not applicable
NDEP = Nevada Division of Environmental Protection
USEPA = United States Environmental Protection Agency
VDEQ = Virginia Department of Environmental Quality

[1] Recommended exposure frequency in NDEP's January 12, 2017 comment letter (NDEP 2017b).

Sources:
NDEP. 2017a. User's Guide and Background Technical Document for NDEP Basic Comparison Levels (BCLs) for Human Health for the BMI Complex and Common Areas. December 2008, Revision 14, July.
NDEP. 2017b. Response to: Soil Gas Investigation and Health Risk Assessment for Parcels C, D, F, G, and H, Revision 1. January 12.
VDEQ. 2020. Virginia Unified Risk Assessment Model - VURAM User's Guide For Risk Assessors. Appendix 2. June.
USEPA. 2009. Risk Assessment Guidance for Superfund. Vol. 1: Part F, Supplemental Guidance for Inhalation Risk Assessment. Final. January.
USEPA 2021. Regional Screening Levels User's Guide. May.

TABLE 5-8. Chronic and Subchronic Inhalation Toxicity Criteria for VOCs Analyzed in Soil Gas and Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	Inhalation Unit Risk ($\mu g/m^3)^{-1}$		USEPA Weight-of-Evidence Carcinogen Classification		Inhalation Chronic RfC ($\mu g/m^3$)		Inhalation Subchronic RfC ($\mu g/m^3$)	
Acetone	--	--	D	IRIS	31,000	ATSDR	30,900	ATSDR
Acrolein	--	--	D	IRIS	0.020	IRIS	0.092	ATSDR
Acrylonitrile	0.000068	IRIS	B1	IRIS	2.0	IRIS	2.0	IRIS [1]
tert-Amyl methyl ether	--	--	--	--	3,000	IRIS [2]	2,520	ATSDR [2]
Benzene	0.0000078	IRIS	A	IRIS	30	IRIS	80	PPRTV
Benzyl chloride	0.000049	Cal/EPA	B2	IRIS	1.0	PPRTV	4.0	PPRTV
Bromobenzene	--	--	D	IRIS	60	IRIS	200	IRIS
Bromochloromethane	--	--	D	IRIS	40	PPRTV Appendix	100	PPRTV
Bromodichloromethane	0.000037	Cal/EPA	B2	IRIS	600	IRIS [3]	20	PPRTV
Bromoform	0.0000011	IRIS	B2	IRIS	--	--	--	--
Bromomethane	--	--	D	IRIS	5.0	IRIS	100	PPRTV
1,3-Butadiene	0.000030	IRIS	A	IRIS	2.0	IRIS	2.0	IRIS [1]
2-Butanone	--	--	D	IRIS	5,000	IRIS	1,000	HEAST
tert-Butyl alcohol	--	--	--	--	30,000	PPRTV [4]	30,000	PPRTV [4]
n-Butylbenzene	--	--	--	--	400	IRIS [5]	90	HEAST [5]
sec-Butylbenzene	--	--	--	--	400	IRIS [5]	90	HEAST [5]
tert-Butylbenzene	--	--	--	--	400	IRIS [5]	90	HEAST [5]
Carbon disulfide	--	--	--	--	700	IRIS	700	HEAST
Carbon tetrachloride	0.0000060	IRIS	B2	IRIS	100	IRIS	190	ATSDR
3-Chloro-1-propene	0.0000060	Cal/EPA	C	IRIS	1.0	IRIS	10	HEAST
Chlorobenzene	--	--	D	IRIS	50	PPRTV	500	PPRTV
Chloroethane	--	--	B2	PPRTV	10,000	IRIS	4,000	PPRTV
Chloroform	0.000023	IRIS	B2	IRIS	98	ATSDR	240	ATSDR
Chloromethane	--	--	D	IRIS	90	IRIS	3,000	PPRTV
2-Chlorotoluene	--	--	D	PPRTV	50	PPRTV [6]	800	PPRTV Appendix
4-Chlorotoluene	--	--	D	PPRTV	50	PPRTV [6]	500	PPRTV [6]
Cumene	--	--	D	IRIS	400	IRIS	90	HEAST
Cyclohexane	--	--	D	IRIS	6,000	IRIS	18,000	PPRTV
p-Cymene	--	--	--	--	400	IRIS [5]	90	HEAST [5]
1,2-Dibromo-3-chloropropane	0.0060	PPRTV	B2	PPRTV	0.20	IRIS	2.0	PPRTV
Dibromochloromethane	--	--	C	IRIS	--	--	--	--
1,2-Dibromoethane	0.00060	IRIS	B2	IRIS	9.0	IRIS	2.0	HEAST
Dibromomethane	--	--	D	PPRTV	4.0	PPRTV Appendix	40	PPRTV Appendix
1,2-Dichlorobenzene	--	--	D	IRIS	200	HEAST	2,000	HEAST
1,3-Dichlorobenzene	--	--	D	IRIS	200	HEAST [7]	2,000	HEAST [7]
1,4-Dichlorobenzene	0.000011	Cal/EPA	C	USEPA 2018	800	IRIS	1,200	ATSDR
Dichlorodifluoromethane	--	--	D	PPRTV	100	PPRTV Appendix	1,000	PPRTV
1,1-Dichloroethane	0.0000016	Cal/EPA	C	IRIS	--	--	--	--
1,2-Dichloroethane	0.000026	IRIS	B2	IRIS	7.0	PPRTV	70	PPRTV
1,1-Dichloroethene	--	--	C	IRIS	200	IRIS	79	ATSDR
cis-1,2-Dichloroethene	--	--	D	IRIS	--	--	790	ATSDR [8]

TABLE 5-8. Chronic and Subchronic Inhalation Toxicity Criteria for VOCs Analyzed in Soil Gas and Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	Inhalation Unit Risk ($\mu g/m^3)^{-1}$		USEPA Weight-of-Evidence Carcinogen Classification		Inhalation Chronic RfC ($\mu g/m^3$)		Inhalation Subchronic RfC ($\mu g/m^3$)	
trans-1,2-Dichloroethene	--	--	D	IRIS	--	--	790	ATSDR
1,2-Dichloropropane	0.000010	Cal/EPA	B2	USEPA 2018	4.0	IRIS	32	ATSDR
1,3-Dichloropropane	--	--	--	--	4.0	IRIS [9]	32	ATSDR [9]
2,2-Dichloropropane	--	--	--	--	4.0	IRIS [9]	32	ATSDR [9]
1,1-Dichloropropene	--	--	--	--	20	IRIS [10]	36	ATSDR [10]
1,3-Dichloropropene	0.0000040	IRIS	B2	IRIS	20	IRIS	36	ATSDR
Diisopropyl ether	--	--	--	--	700	PPRTV	700	PPRTV
1,4-Dioxane	0.0000050	IRIS	B2	IRIS	30	IRIS	720	ATSDR
Ethanol	--	--	--	--	100,000	NDEP	100,000	NDEP [1]
Ethyl tert-butyl ether	--	--	--	--	3,000	IRIS [2]	2,520	ATSDR [2]
Ethyl acetate	--	--	D	PPRTV	70	PPRTV	700	PPRTV
Ethyl benzene	0.0000025	Cal/EPA	D	IRIS	1,000	IRIS	9,000	PPRTV
4-Ethyltoluene	--	--	--	--	400	IRIS [5]	90	HEAST [5]
Freon 114	--	--	--	--	30,000	HEAST [11]	50,000	PPRTV [11]
n-Heptane	--	--	D	IRIS	7,000	NDEP	4,000	PPRTV
Hexachlorobutadiene	0.000022	IRIS	C	IRIS	--	--	--	--
n-Hexane	--	--	D	IRIS	700	IRIS	2,000	PPRTV
2-Hexanone	--	--	D	IRIS	30	IRIS	30	IRIS [1]
alpha-Methyl styrene	--	--	--	--	1,000	IRIS [12]	3,000	HEAST [12]
Methyl tert-butyl ether	0.00000026	Cal/EPA	--	--	3,000	IRIS	2,520	ATSDR
4-Methyl-2-pentanone	--	--	D	IRIS	3,000	IRIS	800	HEAST
Methylene Chloride	0.000000010	IRIS	B2	IRIS	600	IRIS	1,040	ATSDR
Methylmethacrylate	--	--	E	IRIS	700	IRIS	700	IRIS [1]
Naphthalene	0.000034	Cal/EPA	C	IRIS	3.0	IRIS	3.0	IRIS [1]
n-Octane	--	--	--	--	20	PPRTV [13]	200	PPRTV [13]
n-Propylbenzene	--	--	D	PPRTV	1,000	PPRTV Appendix	1,000	PPRTV Appendix
Propylene	--	--	--	--	3,000	Cal/EPA	3,000	Cal/EPA [1]
Styrene	--	--	--	--	1,000	IRIS	3,000	HEAST
1,1,1,2-Tetrachloroethane	0.0000074	IRIS	C	IRIS	--	--	--	--
1,1,2,2-Tetrachloroethane	0.000058	Cal/EPA	B2	IRIS	--	--	--	--
Tetrachloroethene	0.00000026	IRIS	B1	IRIS	40	IRIS	40	IRIS [1]
Tetrahydrofuran	--	--	C	IRIS	2,000	IRIS	2,000	IRIS [1]
Toluene	--	--	D	IRIS	5,000	IRIS	5,000	PPRTV
1,2,3-Trichlorobenzene	--	--	D	PPRTV	2.0	PPRTV [14]	20	PPRTV [14]
1,2,4-Trichlorobenzene	--	--	D	IRIS	2.0	PPRTV	20	PPRTV
1,1,1-Trichloroethane	--	--	D	IRIS	5,000	IRIS	5,000	IRIS
1,1,2-Trichloroethane	0.000016	IRIS	C	IRIS	0.20	PPRTV Appendix	2.0	PPRTV Appendix
Trichloroethene	0.0000041	IRIS	A	IRIS	2.0	IRIS	2.0	IRIS [1]
Trichlorofluoromethane	--	--	D	PPRTV	--	--	1,000	PPRTV
1,2,3-Trichloropropane	--	--	B2	IRIS	0.30	IRIS	0.30	IRIS [1]
1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	D	PPRTV	30,000	HEAST	50,000	PPRTV
1,2,4-Trimethylbenzene	--	--	D	IRIS	60	IRIS	200	IRIS

TABLE 5-8. Chronic and Subchronic Inhalation Toxicity Criteria for VOCs Analyzed in Soil Gas and Shallow Groundwater
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	Inhalation Unit Risk ($\mu g/m^3)^{-1}$		USEPA Weight-of-Evidence Carcinogen Classification		Inhalation Chronic RfC ($\mu g/m^3$)		Inhalation Subchronic RfC ($\mu g/m^3$)	
1,3,5-Trimethylbenzene	--	--	D	IRIS	60	IRIS	200	IRIS
Vinyl acetate	--	--	--	--	200	IRIS	35	ATSDR
Vinyl chloride	0.0000044	IRIS	A	IRIS	100	IRIS	77	ATSDR
Xylenes (total)	--	--	D	IRIS	100	IRIS	400	PPRTV

Notes:
-- = not available
$\mu g/m^3$ = microgram per cubic meter
ATSDR = Agency for Toxic Substances and Disease Registry (values as cited in USEPA 2021a)
Cal/EPA = California Environmental Protection Agency (values as cited in USEPA 2021a)
HEAST = Health Effects Assessment Summary Tables (values as cited in USEPA 2021a)
IRIS = Integrated Risk Information System (USEPA 2021b)
NDEP = Nevada Division of Environmental Protection (NDEP 2017)
PPRTV = Provisional Peer Reviewed Toxicity Values for Superfund (values as cited in USEPA 2021a)
RfC = reference concentration
USEPA = United States Environmental Protection Agency

USEPA Weight-of-Evidence Carcinogen Classification:
A = human carcinogen
B1 = probable carcinogen, limited human evidence
B2 = probable carcinogen, sufficient evidence in animals
C = possible human carcinogen
D = not classifiable
E = evidence of noncarcinogenicity

[1] Use chronic RfC as surrogate.
[2] Use methyl tert butyl ether as surrogate.
[3] Use dichloromethane (methylene chloride) as surrogate.
[4] Use sec-butyl alcohol as surrogate.
[5] Use cumene as surrogate.
[6] Use chlorobenzene as surrogate.
[7] Use 1,2-dichlorobenzene as surrogate.
[8] Use trans- 1,2- Dichloroethylene as surrogate.
[9] Use 1,2-dichloropropane as surrogate.
[10] Use 1,3-dichloropropene as surrogate.
[11] Use 1,1,2-trichloro-1,2,2-trifluoroethane as surrogate.
[12] Use Styrene as surrogate.
[13] Use n-nonane as surrogate.
[14] Use 1,2,4-Trichlorobenzene as surrogate.

Sources:
NDEP. 2017. Basic Comparison Level (BCL) Table. July.
USEPA. 2018. Prioritized Chronic Dose-Response Values for Screening Risk Assessments. June.
USEPA. 2021a. Regional Screening Levels. May.
USEPA. 2021b. Integrated Risk Information System (IRIS). Available online at https://www.epa.gov/iris. Accessed on May 31, 2021.

TABLE 5-9. Risk-Based Target Concentrations for Soil Gas – Residents Exposed to Soil Gas Migrating to Indoor Air
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	Slab-on-Grade Building									Trailer								
	5 ft bgs			10 ft bgs			15 ft bgs			5 ft bgs			10 ft bgs			15 ft bgs		
	$RBTC_{SG-IA-C}$ ($\mu g/m^3$)	$RBTC_{SG-IA-NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)	$RBTC_{SG-IA-C}$ ($\mu g/m^3$)	$RBTC_{SG-IA-NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)	$RBTC_{SG-IA-C}$ ($\mu g/m^3$)	$RBTC_{SG-IA-NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)	$RBTC_{SG-IA-C}$ ($\mu g/m^3$)	$RBTC_{SG-IA-NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)	$RBTC_{SG-IA-C}$ ($\mu g/m^3$)	$RBTC_{SG-IA-NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)	$RBTC_{SG-IA-C}$ ($\mu g/m^3$)	$RBTC_{SG-IA-NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)
Acetone	--	5.0E+07	5.0E+07	--	1.0E+08	1.0E+08	--	1.5E+08	1.5E+08	--	4.3E+07	4.3E+07	--	9.6E+07	9.6E+07	--	1.5E+08	1.5E+08
Acrolein	--	3.2E+01	3.2E+01	--	6.6E+01	6.6E+01	--	1.0E+02	1.0E+02	--	2.8E+01	2.8E+01	--	6.3E+01	6.3E+01	--	9.8E+01	9.8E+01
Acrylonitrile	6.2E+01	3.2E+03	6.2E+01	1.3E+02	6.5E+03	1.3E+02	1.9E+02	9.8E+03	1.9E+02	5.4E+01	2.7E+03	5.4E+01	1.2E+02	6.2E+03	1.2E+02	1.9E+02	9.6E+03	1.9E+02
tert-Amyl methyl ether	--	7.6E+06	7.6E+06	--	1.7E+07	1.7E+07	--	2.6E+07	2.6E+07	--	7.2E+06	7.2E+06	--	1.7E+07	1.7E+07	--	2.6E+07	2.6E+07
Benzene	1.0E+18	8.7E+19	1.0E+18	6.1E+18	5.3E+20	6.1E+18	1.1E+19	1.0E+21	1.1E+19	9.0E+17	7.9E+19	9.0E+17	5.9E+18	5.1E+20	5.9E+18	1.1E+19	9.9E+20	1.1E+19
Benzyl chloride	1.4E+02	2.6E+03	1.4E+02	3.1E+02	5.6E+03	3.1E+02	4.8E+02	8.7E+03	4.8E+02	1.4E+02	2.5E+03	1.4E+02	3.1E+02	5.6E+03	3.1E+02	4.8E+02	8.8E+03	4.8E+02
Bromodichloromethane	2.1E+02	1.7E+06	2.1E+02	4.6E+02	3.8E+06	4.6E+02	7.2E+02	5.9E+06	7.2E+02	2.0E+02	1.7E+06	2.0E+02	4.7E+02	3.8E+06	4.7E+02	7.3E+02	6.0E+06	7.3E+02
Bromoform	1.0E+04	--	1.0E+04	2.4E+04	--	2.4E+04	3.7E+04	--	3.7E+04	1.1E+04	--	1.1E+04	2.4E+04	--	2.4E+04	3.8E+04	--	3.8E+04
Bromomethane	--	8.8E+03	8.8E+03	--	1.9E+04	1.9E+04	--	2.8E+04	2.8E+04	--	7.8E+03	7.8E+03	--	1.8E+04	1.8E+04	--	2.8E+04	2.8E+04
1,3-Butadiene	1.6E+02	3.5E+03	1.6E+02	3.3E+02	7.5E+03	3.3E+02	5.1E+02	1.1E+04	5.1E+02	1.4E+02	3.1E+03	1.4E+02	3.2E+02	7.2E+03	3.2E+02	5.0E+02	1.1E+04	5.0E+02
2-Butanone	--	9.2E+06	9.2E+06	--	1.9E+07	1.9E+07	--	2.9E+07	2.9E+07	--	8.2E+06	8.2E+06	--	1.8E+07	1.8E+07	--	2.9E+07	2.9E+07
tert-Butyl alcohol	--	5.0E+07	5.0E+07	--	9.7E+07	9.7E+07	--	1.4E+08	1.4E+08	--	4.4E+07	4.4E+07	--	9.3E+07	9.3E+07	--	1.4E+08	1.4E+08
n-Butylbenzene	--	1.2E+06	1.2E+06	--	2.7E+06	2.7E+06	--	4.2E+06	4.2E+06	--	1.2E+06	1.2E+06	--	2.7E+06	2.7E+06	--	4.3E+06	4.3E+06
sec-Butylbenzene	--	1.2E+06	1.2E+06	--	2.7E+06	2.7E+06	--	4.2E+06	4.2E+06	--	1.2E+06	1.2E+06	--	2.7E+06	2.7E+06	--	4.3E+06	4.3E+06
tert-Butylbenzene	--	1.2E+06	1.2E+06	--	2.7E+06	2.7E+06	--	4.2E+06	4.2E+06	--	1.2E+06	1.2E+06	--	2.7E+06	2.7E+06	--	4.3E+06	4.3E+06
Carbon disulfide	--	1.2E+06	1.2E+06	--	2.5E+06	2.5E+06	--	3.8E+06	3.8E+06	--	1.0E+06	1.0E+06	--	2.4E+06	2.4E+06	--	3.7E+06	3.7E+06
Carbon tetrachloride	1.3E+03	2.8E+05	1.3E+03	2.8E+03	6.3E+05	2.8E+03	4.4E+03	9.7E+05	4.4E+03	1.2E+03	2.8E+05	1.2E+03	2.8E+03	6.3E+05	2.8E+03	4.4E+03	9.9E+05	4.4E+03
3-Chloro-1-propene	8.4E+02	1.9E+03	8.4E+02	1.8E+03	4.0E+03	1.8E+03	2.7E+03	6.1E+03	2.7E+03	7.6E+02	1.7E+03	7.6E+02	1.7E+03	3.9E+03	1.7E+03	2.7E+03	6.0E+03	2.7E+03
Chlorobenzene	--	1.2E+05	1.2E+05	--	2.5E+05	2.5E+05	--	3.9E+05	3.9E+05	--	1.1E+05	1.1E+05	--	2.5E+05	2.5E+05	--	3.9E+05	3.9E+05
Chloroethane	--	1.7E+07	1.7E+07	--	3.6E+07	3.6E+07	--	5.5E+07	5.5E+07	--	1.5E+07	1.5E+07	--	3.5E+07	3.5E+07	--	5.4E+07	5.4E+07
Chloroform	2.6E+02	2.2E+05	2.6E+02	5.6E+02	4.7E+05	5.6E+02	8.6E+02	7.2E+05	8.6E+02	2.4E+02	2.0E+05	2.4E+02	5.5E+02	4.6E+05	5.5E+02	8.6E+02	7.2E+05	8.6E+02
Chloromethane	--	1.3E+05	1.3E+05	--	2.8E+05	2.8E+05	--	4.2E+05	4.2E+05	--	1.1E+05	1.1E+05	--	2.6E+05	2.6E+05	--	4.1E+05	4.1E+05
Cumene	--	1.1E+06	1.1E+06	--	2.4E+06	2.4E+06	--	3.7E+06	3.7E+06	--	1.0E+06	1.0E+06	--	2.4E+06	2.4E+06	--	3.7E+06	3.7E+06
Cyclohexane	--	1.3E+07	1.3E+07	--	2.8E+07	2.8E+07	--	4.2E+07	4.2E+07	--	1.2E+07	1.2E+07	--	2.7E+07	2.7E+07	--	4.2E+07	4.2E+07
p-Cymene	--	9.0E+05	9.0E+05	--	1.9E+06	1.9E+06	--	3.0E+06	3.0E+06	--	8.4E+05	8.4E+05	--	1.9E+06	1.9E+06	--	3.0E+06	3.0E+06
1,2-Dibromo-3-chloropropane	2.0E+00	9.1E+02	2.0E+00	4.5E+00	2.0E+03	4.5E+00	7.0E+00	3.1E+03	7.0E+00	2.1E+00	9.3E+02	2.1E+00	4.7E+00	2.1E+03	4.7E+00	7.2E+00	3.2E+03	7.2E+00
Dibromochloromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	1.6E+01	3.3E+04	1.6E+01	3.6E+01	7.3E+04	3.6E+01	5.7E+01	1.1E+05	5.7E+01	1.6E+01	3.3E+04	1.6E+01	3.7E+01	7.4E+04	3.7E+01	5.8E+01	1.2E+05	5.8E+01
1,2-Dichlorobenzene	--	5.8E+05	5.8E+05	--	1.3E+06	1.3E+06	--	2.0E+06	2.0E+06	--	5.6E+05	5.6E+05	--	1.3E+06	1.3E+06	--	2.0E+06	2.0E+06
1,3-Dichlorobenzene	--	4.8E+05	4.8E+05	--	1.1E+06	1.1E+06	--	1.6E+06	1.6E+06	--	4.6E+05	4.6E+05	--	1.0E+06	1.0E+06	--	1.6E+06	1.6E+06
1,4-Dichlorobenzene	7.2E+02	2.3E+06	7.1790E+02	1.6E+03	5.2E+06	1.6E+03	2.5E+03	8.0E+06	2.5E+03	7.0E+02	2.3E+06	7.0E+02	1.6E+03	5.2E+06	1.6E+03	2.5E+03	8.2E+06	2.5E+03
Dichlorodifluoromethane	--	2.2E+05	2.2E+05	--	4.8E+05	4.8E+05	--	7.4E+05	7.4E+05	--	2.1E+05	2.1E+05	--	4.7E+05	4.7E+05	--	7.4E+05	7.4E+05
1,1-Dichloroethane	3.5E+03	--	3.5E+03	7.4E+03	--	7.4E+03	1.1E+04	--	1.1E+04	3.2E+03	--	3.2E+03	7.3E+03	--	7.3E+03	1.1E+04	--	1.1E+04
1,2-Dichloroethane	2.1E+02	1.4E+04	2.1E+02	4.4E+02	3.0E+04	4.4E+02	6.8E+02	4.6E+04	6.8E+02	1.9E+02	1.3E+04	1.9E+02	4.3E+02	2.9E+04	4.3E+02	6.8E+02	4.6E+04	6.8E+02
1,1-Dichloroethene	--	4.0E+05	4.0E+05	--	8.6E+05	8.6E+05	--	1.3E+06	1.3E+06	--	3.7E+05	3.7E+05	--	8.4E+05	8.4E+05	--	1.3E+06	1.3E+06
cis-1,2-Dichloroethene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	6.2E+02	9.2E+03	6.2E+02	1.3E+03	2.0E+04	1.3E+03	2.1E+03	3.1E+04	2.1E+03	5.8E+02	8.6E+03	5.8E+02	1.3E+03	2.0E+04	1.3E+03	2.1E+03	3.1E+04	2.1E+03
1,3-Dichloropropene	1.5E+03	4.4E+04	1.5E+03	3.2E+03	9.6E+04	3.2E+03	5.0E+03	1.5E+05	5.0E+03	1.4E+03	4.1E+04	1.4E+03	3.2E+03	9.4E+04	3.2E+03	5.0E+03	1.5E+05	5.0E+03
Diisopropyl ether	--	1.8E+06	1.8E+06	--	3.9E+06	3.9E+06	--	6.0E+06	6.0E+06	--	1.7E+06	1.7E+06	--	3.9E+06	3.9E+06	--	6.0E+06	6.0E+06
1,4-Dioxane	7.2E+02	4.0E+04	7.2E+02	1.3E+03	7.1E+04	1.3E+03	1.8E+03	1.0E+05	1.8E+03	5.9E+02	3.3E+04	5.9E+02	1.2E+03	6.5E+04	1.2E+03	1.7E+03	9.6E+04	1.7E+03
Ethanol	--	1.2E+08	1.2E+08	--	2.1E+08	2.1E+08	--	3.1E+08	3.1E+08	--	9.3E+07	9.3E+07	--	1.9E+08	1.9E+08	--	2.9E+08	2.9E+08
Ethyl tert-butyl ether	--	7.6E+06	7.6E+06	--	1.7E+07	1.7E+07	--	2.6E+07	2.6E+07	--	7.2E+06	7.2E+06	--	1.7E+07	1.7E+07	--	2.6E+07	2.6E+07
Ethyl acetate	--	1.4E+05	1.4E+05	--	3.0E+05	3.0E+05	--	4.6E+05	4.6E+05	--	1.3E+05	1.3E+05	--	3.0E+05	3.0E+05	--	4.6E+05	4.6E+05
Ethyl benzene	2.6E+03	2.4E+06	2.6E+03	5.7E+03	5.3E+06	5.7E+03	8.8E+03	8.2E+06	8.8E+03	2.5E+03	2.3E+06	2.5E+03	5.7E+03	5.3E+06	5.7E+03	8.9E+03	8.2E+06	8.9E+03
4-Ethyltoluene	--	9.0E+05	9.0E+05	--	1.9E+06	1.9E+06	--	3.0E+06	3.0E+06	--	8.4E+05	8.4E+05	--	1.9E+06	1.9E+06	--	3.0E+06	3.0E+06
Freon 114	--	1.2E+08	1.2E+08	--	2.8E+08	2.8E+08	--	4.4E+08	4.4E+08	--	1.3E+08	1.3E+08	--	2.9E+08	2.9E+08	--	4.5E+08	4.5E+08
n-Heptane	--	1.9E+07	1.9E+07	--	4.1E+07	4.1E+07	--	6.3E+07	6.3E+07	--	1.8E+07	1.8E+07	--	4.1E+07	4.1E+07	--	6.4E+07	6.4E+07
Hexachlorobutadiene	6.9E+02	--	6.9E+02	1.6E+03	--	1.6E+03	2.5E+03	--	2.5E+03	7.2E+02	--	7.2E+02	1.6E+03	--	1.6E+03	2.6E+03	--	2.6E+03
n-Hexane	--	1.6E+06	1.6E+06	--	3.5E+06	3.5E+06	--	5.4E+06	5.4E+06	--	1.5E+06	1.5E+06	--	3.5E+06	3.5E+06	--	5.4E+06	5.4E+06
2-Hexanone	--	6.9E+04	6.9E+04	--	1.5E+05	1.5E+05	--	2.3E+05	2.3E+05	--	6.5E+04	6.5E+04	--	1.5E+05	1.5E+05	--	2.3E+05	2.3E+05
alpha-Methyl styrene	--	2.6E+06	2.6E+06	--	5.7E+06	5.7E+06	--	8.8E+06	8.8E+06	--	2.5E+06	2.5E+06	--	5.7E+06	5.7E+06	--	8.9E+06	8.9E+06
Methyl tert-butyl ether	2.3E+04	6.7E+06	2.3E+04	5.0E+04	1.4E+07	5.0E+04	7.7E+04	2.2E+07	7.7E+04	2.2E+04	6.3E+06	2.2E+04	4.9E+04	1.4E+07	4.9E+04	7.7E+04	2.2E+07	7.7E+04
4-Methyl-2-pentanone	--	7.0E+06	7.0E+06	--	1.5E+07	1.5E+07	--	2.3E+07	2.3E+07	--	6.6E+06	6.6E+06	--	1.5E+07	1.5E+07	--	2.3E+07	2.3E+07
Methylene Chloride	4.8E+05	1.1E+06	4.8E+05	1.0E+06	2.2E+06	1.0E+06	1.5E+06	3.4E+06	1.5E+06	4.2E+05	9.5E+05	4.2E+05	9.7E+05	2.2E+06	9.7E+05	1.5E+06	3.4E+06	1.5E+06
Methylmethacrylate	--	1.6E+06	1.6E+06	--	3.4E+06	3.4E+06	--	5.2E+06	5.2E+06	--	1.5E+06	1.5E+06	--	3.3E+06	3.3E+06	--	5.2E+06	5.2E+06
Naphthalene	2.1E+02	8.0E+03	2.1E+02	4.7E+02	1.8E+04	4.7E+02	7.2E+02	2.7E+04	7.2E+02	2.0E+02	7.7E+03	2.0E+02	4.7E+02	1.8E+04	4.7E+02	7.3E+02	2.8E+04	7.3E+02

TABLE 5-9. Risk-Based Target Concentrations for Soil Gas – Residents Exposed to Soil Gas Migrating to Indoor Air
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	Slab-on-Grade Building									Trailer								
	5 ft bgs			10 ft bgs			15 ft bgs			5 ft bgs			10 ft bgs			15 ft bgs		
	RBTC$_{SG-IA-C}$ (µg/m^3)	RBTC$_{SG-IA-NC}$ (µg/m^3)	Minimum RBTC (µg/m^3)	RBTC$_{SG-IA-C}$ (µg/m^3)	RBTC$_{SG-IA-NC}$ (µg/m^3)	Minimum RBTC (µg/m^3)	RBTC$_{SG-IA-C}$ (µg/m^3)	RBTC$_{SG-IA-NC}$ (µg/m^3)	Minimum RBTC (µg/m^3)	RBTC$_{SG-IA-C}$ (µg/m^3)	RBTC$_{SG-IA-NC}$ (µg/m^3)	Minimum RBTC (µg/m^3)	RBTC$_{SG-IA-C}$ (µg/m^3)	RBTC$_{SG-IA-NC}$ (µg/m^3)	Minimum RBTC (µg/m^3)	RBTC$_{SG-IA-C}$ (µg/m^3)	RBTC$_{SG-IA-NC}$ (µg/m^3)	Minimum RBTC (µg/m^3)
n-Octane	--	5.3E+04	5.3E+04	--	1.2E+05	1.2E+05	--	1.8E+05	1.8E+05	--	5.1E+04	5.1E+04	--	1.2E+05	1.2E+05	--	1.8E+05	1.8E+05
n-Propylbenzene	--	2.7E+06	2.7E+06	--	6.0E+06	6.0E+06	--	9.3E+06	9.3E+06	--	2.6E+06	2.6E+06	--	6.0E+06	6.0E+06	--	9.4E+06	9.4E+06
Propylene	--	4.9E+06	4.9E+06	--	1.0E+07	1.0E+07	--	1.6E+07	1.6E+07	--	4.3E+06	4.3E+06	--	9.9E+06	9.9E+06	--	1.5E+07	1.5E+07
Styrene	--	2.4E+06	2.4E+06	--	5.1E+06	5.1E+06	--	7.9E+06	7.9E+06	--	2.2E+06	2.2E+06	--	5.1E+06	5.1E+06	--	7.9E+06	7.9E+06
1,1,1,2-Tetrachloroethane	1.2E+03	--	1.2E+03	2.7E+03	--	2.7E+03	4.2E+03	--	4.2E+03	1.2E+03	--	1.2E+03	2.7E+03	--	2.7E+03	4.2E+03	--	4.2E+03
1,1,2,2-Tetrachloroethane	1.5E+02	--	1.5E+02	3.3E+02	--	3.3E+02	5.1E+02	--	5.1E+02	1.5E+02	--	1.5E+02	3.4E+02	--	3.4E+02	5.2E+02	--	5.2E+02
Tetrachloroethene	3.3E+04	1.3E+05	3.3E+04	7.3E+04	2.8E+05	7.3E+04	1.1E+05	4.4E+05	1.1E+05	3.2E+04	1.2E+05	3.2E+04	7.4E+04	2.9E+05	7.4E+04	1.2E+05	4.5E+05	1.2E+05
Tetrahydrofuran	--	3.5E+06	3.5E+06	--	7.2E+06	7.2E+06	--	1.1E+07	1.1E+07	--	3.1E+06	3.1E+06	--	6.9E+06	6.9E+06	--	1.1E+07	1.1E+07
Toluene	--	1.1E+07	1.1E+07	--	2.4E+07	2.4E+07	--	3.6E+07	3.6E+07	--	1.0E+07	1.0E+07	--	2.3E+07	2.3E+07	--	3.6E+07	3.6E+07
1,2,4-Trichlorobenzene	--	7.9E+03	7.9E+03	--	1.8E+04	1.8E+04	--	2.8E+04	2.8E+04	--	7.9E+03	7.9E+03	--	1.8E+04	1.8E+04	--	2.8E+04	2.8E+04
1,1,1-Trichloroethane	--	1.3E+07	1.3E+07	--	2.8E+07	2.8E+07	--	4.3E+07	4.3E+07	--	1.2E+07	1.2E+07	--	2.8E+07	2.8E+07	--	4.3E+07	4.3E+07
1,1,2-Trichloroethane	4.2E+02	4.9E+02	4.2E+02	9.1E+02	1.1E+03	9.1E+02	1.4E+03	1.7E+03	1.4E+03	3.9E+02	4.7E+02	3.9E+02	9.0E+02	1.1E+03	9.0E+02	1.4E+03	1.7E+03	1.4E+03
Trichloroethene	1.6E+03	4.8E+03	1.6E+03	3.5E+03	1.1E+04	3.5E+03	5.4E+03	1.6E+04	5.4E+03	1.5E+03	4.6E+03	1.5E+03	3.4E+03	1.1E+04	3.4E+03	5.4E+03	1.6E+04	5.4E+03
Trichlorofluoromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	--	8.4E+02	8.4E+02	--	1.8E+03	1.8E+03	--	2.8E+03	2.8E+03	--	8.1E+02	8.1E+02	--	1.8E+03	1.8E+03	--	2.9E+03	2.9E+03
1,1,2-Trichloro-1,2,2-trifluoroethane	--	1.2E+08	1.2E+08	--	2.8E+08	2.8E+08	--	4.4E+08	4.4E+08	--	1.3E+08	1.3E+08	--	2.9E+08	2.9E+08	--	4.5E+08	4.5E+08
1,2,4-Trimethylbenzene	--	1.6E+05	1.6E+05	--	3.6E+05	3.6E+05	--	5.5E+05	5.5E+05	--	1.6E+05	1.6E+05	--	3.6E+05	3.6E+05	--	5.6E+05	5.6E+05
1,3,5-Trimethylbenzene	--	1.6E+05	1.6E+05	--	3.6E+05	3.6E+05	--	5.5E+05	5.5E+05	--	1.6E+05	1.6E+05	--	3.6E+05	3.6E+05	--	5.6E+05	5.6E+05
Vinyl acetate	--	4.0E+05	4.0E+05	--	8.6E+05	8.6E+05	--	1.3E+06	1.3E+06	--	3.7E+05	3.7E+05	--	8.4E+05	8.4E+05	--	1.3E+06	1.3E+06
Vinyl chloride	1.0E+03	1.7E+05	1.0E+03	2.2E+03	3.5E+05	2.2E+03	3.3E+03	5.4E+05	3.3E+03	9.0E+02	1.5E+05	9.0E+02	2.1E+03	3.4E+05	2.1E+03	3.2E+03	5.3E+05	3.2E+03
Xylenes (total)	--	2.4E+05	2.4E+05	--	5.3E+05	5.3E+05	--	8.2E+05	8.2E+05	--	2.3E+05	2.3E+05	--	5.3E+05	5.3E+05	--	8.2E+05	8.2E+05

Notes:

-- = not calculated

bgs = below ground surface

ft = feet

µg/m^3 = microgram per cubic meter

RBTC$_{SG-IA-C}$ = risk-based target concentration, cancer, inhalation of soil gas migrating to indoor air

RBTC$_{SG-IA-NC}$ = risk-based target concentration, noncancer, inhalation of soil gas migrating to indoor air

TABLE 5-10. Risk-Based Target Concentrations for Soil Gas – Indoor Commercial/Industrial Workers Exposed to Soil Gas Migrating to Indoor Air
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	5 ft bgs			10 ft bgs			15 ft bgs		
	$RBTC_{SG\text{-}IA\text{-}C}$ ($\mu g/m^3$)	$RBTC_{SG\text{-}IA\text{-}NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)	$RBTC_{SG\text{-}IA\text{-}C}$ ($\mu g/m^3$)	$RBTC_{SG\text{-}IA\text{-}NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)	$RBTC_{SG\text{-}IA\text{-}C}$ ($\mu g/m^3$)	$RBTC_{SG\text{-}IA\text{-}NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)
Acetone	--	6.8E+08	6.8E+08	--	1.6E+09	1.6E+09	--	2.4E+09	2.4E+09
Acrolein	--	4.3E+02	4.3E+02	--	1.0E+03	1.0E+03	--	1.6E+03	1.6E+03
Acrylonitrile	8.8E+02	4.3E+04	8.8E+02	2.1E+03	1.0E+05	2.1E+03	3.3E+03	1.6E+05	3.3E+03
tert-Amyl methyl ether	--	1.1E+08	1.1E+08	--	2.7E+08	2.7E+08	--	4.2E+08	4.2E+08
Benzene	5.3E+18	4.5E+20	5.3E+18	3.4E+19	2.9E+21	3.4E+19	6.6E+19	5.5E+21	6.6E+19
Benzyl chloride	2.1E+03	3.8E+04	2.1E+03	5.2E+03	9.1E+04	5.2E+03	8.2E+03	1.4E+05	8.2E+03
Bromodichloromethane	3.2E+03	2.5E+07	3.2E+03	7.8E+03	6.2E+07	7.8E+03	1.2E+04	9.8E+07	1.2E+04
Bromoform	1.7E+05	--	1.7E+05	4.0E+05	--	4.0E+05	6.4E+05	--	6.4E+05
Bromomethane	--	1.2E+05	1.2E+05	--	2.9E+05	2.9E+05	--	4.6E+05	4.6E+05
1,3-Butadiene	2.3E+03	4.9E+04	2.3E+03	5.5E+03	1.2E+05	5.5E+03	8.7E+03	1.9E+05	8.7E+03
2-Butanone	--	1.3E+08	1.3E+08	--	3.0E+08	3.0E+08	--	4.7E+08	4.7E+08
tert-Butyl alcohol	--	6.8E+08	6.8E+08	--	1.5E+09	1.5E+09	--	2.3E+09	2.3E+09
n-Butylbenzene	--	1.8E+07	1.8E+07	--	4.4E+07	4.4E+07	--	7.0E+07	7.0E+07
sec-Butylbenzene	--	1.8E+07	1.8E+07	--	4.4E+07	4.4E+07	--	7.0E+07	7.0E+07
tert-Butylbenzene	--	1.8E+07	1.8E+07	--	4.4E+07	4.4E+07	--	7.0E+07	7.0E+07
Carbon disulfide	--	1.6E+07	1.6E+07	--	3.9E+07	3.9E+07	--	6.1E+07	6.1E+07
Carbon tetrachloride	2.0E+04	4.2E+06	2.0E+04	4.8E+04	1.0E+07	4.8E+04	7.5E+04	1.6E+07	7.5E+04
3-Chloro-1-propene	1.2E+04	2.6E+04	1.2E+04	2.9E+04	6.3E+04	2.9E+04	4.6E+04	9.9E+04	4.6E+04
Chlorobenzene	--	1.7E+06	1.7E+06	--	4.0E+06	4.0E+06	--	6.4E+06	6.4E+06
Chloroethane	--	2.4E+08	2.4E+08	--	5.7E+08	5.7E+08	--	9.0E+08	9.0E+08
Chloroform	3.8E+03	3.1E+06	3.8E+03	9.2E+03	7.4E+06	9.2E+03	1.5E+04	1.2E+07	1.5E+04
Chloromethane	--	1.8E+06	1.8E+06	--	4.3E+06	4.3E+06	--	6.8E+06	6.8E+06
Cumene	--	1.6E+07	1.6E+07	--	3.9E+07	3.9E+07	--	6.1E+07	6.1E+07
Cyclohexane	--	1.8E+08	1.8E+08	--	4.4E+08	4.4E+08	--	7.0E+08	7.0E+08
p-Cymene	--	1.3E+07	1.3E+07	--	3.1E+07	3.1E+07	--	4.9E+07	4.9E+07
1,2-Dibromo-3-chloropropane	3.2E+01	1.4E+04	3.2E+01	7.8E+01	3.3E+04	7.8E+01	1.2E+02	5.3E+04	1.2E+02
Dibromochloromethane	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	2.5E+02	4.9E+05	2.548E+02	6.20E+02	1.2E+06	6.20E+02	9.8E+02	1.9E+06	9.85E+02
1,2-Dichlorobenzene	--	8.5E+06	8.5E+06	--	2.1E+07	2.1E+07	--	3.3E+07	3.3E+07
1,3-Dichlorobenzene	--	7.0E+06	7.0E+06	--	1.7E+07	1.7E+07	--	2.7E+07	2.7E+07
1,4-Dichlorobenzene	1.1E+04	3.5E+07	1.1E+04	2.7E+04	8.4E+07	2.7E+04	4.3E+04	1.3E+08	4.3E+04
Dichlorodifluoromethane	--	3.2E+06	3.2E+06	--	7.7E+06	7.7E+06	--	1.2E+07	1.2E+07
1,1-Dichloroethane	5.1E+04	--	5.1E+04	1.2E+05	--	1.2E+05	1.9E+05	--	1.9E+05
1,2-Dichloroethane	3.0E+03	2.0E+05	3.0E+03	7.3E+03	4.8E+05	7.3E+03	1.2E+04	7.6E+05	1.2E+04
1,1-Dichloroethene	--	5.6E+06	5.6E+06	--	1.4E+07	1.4E+07	--	2.2E+07	2.2E+07
cis-1,2-Dichloroethene	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	9.2E+03	1.3E+05	9.2E+03	2.2E+04	3.2E+05	2.2E+04	3.5E+04	5.0E+05	3.5E+04
1,3-Dichloropropene	2.2E+04	6.3E+05	2.2E+04	5.4E+04	1.5E+06	5.4E+04	8.5E+04	2.4E+06	8.5E+04
Diisopropyl ether	--	2.6E+07	2.6E+07	--	6.2E+07	6.2E+07	--	9.9E+07	9.9E+07
1,4-Dioxane	9.9E+03	5.3E+05	9.9E+03	2.0E+04	1.1E+06	2.0E+04	3.0E+04	1.6E+06	3.0E+04
Ethanol	--	1.5E+09	1.5E+09	--	3.1E+09	3.1E+09	--	4.8E+09	4.8E+09
Ethyl tert-butyl ether	--	1.1E+08	1.1E+08	--	2.7E+08	2.7E+08	--	4.2E+08	4.2E+08

TABLE 5-10. Risk-Based Target Concentrations for Soil Gas – Indoor Commercial/Industrial Workers Exposed to Soil Gas Migrating to Indoor Air
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	5 ft bgs			10 ft bgs			15 ft bgs		
	$RBTC_{SG\text{-}IA\text{-}C}$ (µg/m^3)	$RBTC_{SG\text{-}IA\text{-}NC}$ (µg/m^3)	Minimum RBTC (µg/m^3)	$RBTC_{SG\text{-}IA\text{-}C}$ (µg/m^3)	$RBTC_{SG\text{-}IA\text{-}NC}$ (µg/m^3)	Minimum RBTC (µg/m^3)	$RBTC_{SG\text{-}IA\text{-}C}$ (µg/m^3)	$RBTC_{SG\text{-}IA\text{-}NC}$ (µg/m^3)	Minimum RBTC (µg/m^3)
Ethyl acetate	--	2.0E+06	2.0E+06	--	4.8E+06	4.8E+06	--	7.6E+06	7.6E+06
Ethyl benzene	3.9E+04	3.5E+07	3.9E+04	9.5E+04	8.5E+07	9.5E+04	1.5E+05	1.4E+08	1.5E+05
4-Ethyltoluene	--	1.3E+07	1.3E+07	--	3.1E+07	3.1E+07	--	4.9E+07	4.9E+07
Freon 114	--	1.9E+09	1.9E+09	--	4.6E+09	4.6E+09	--	7.4E+09	7.4E+09
n-Heptane	--	2.7E+08	2.7E+08	--	6.6E+08	6.6E+08	--	1.1E+09	1.1E+09
Hexachlorobutadiene	1.1E+04	--	1.1E+04	2.7E+04	--	2.7E+04	4.4E+04	--	4.4E+04
n-Hexane	--	2.3E+07	2.3E+07	--	5.6E+07	5.6E+07	--	8.9E+07	8.9E+07
2-Hexanone	--	1.0E+06	1.0E+06	--	2.4E+06	2.4E+06	--	3.7E+06	3.7E+06
alpha-Methyl styrene	--	3.8E+07	3.8E+07	--	9.2E+07	9.2E+07	--	1.5E+08	1.5E+08
Methyl tert-butyl ether	3.4E+05	9.6E+07	3.4E+05	8.3E+05	2.3E+08	8.3E+05	1.3E+06	3.7E+08	1.3E+06
4-Methyl-2-pentanone	--	1.0E+08	1.0E+08	--	2.4E+08	2.4E+08	--	3.8E+08	3.8E+08
Methylene Chloride	6.9E+06	1.5E+07	6.9E+06	1.6E+07	3.5E+07	1.6E+07	2.6E+07	5.6E+07	2.6E+07
Methylmethacrylate	--	2.2E+07	2.2E+07	--	5.4E+07	5.4E+07	--	8.5E+07	8.5E+07
Naphthalene	3.2E+03	1.2E+05	3.2E+03	7.8E+03	2.8E+05	7.8E+03	1.2E+04	4.5E+05	1.2E+04
n-Octane	--	7.8E+05	7.8E+05	--	1.9E+06	1.9E+06	--	3.0E+06	3.0E+06
n-Propylbenzene	--	4.0E+07	4.0E+07	--	9.7E+07	9.7E+07	--	1.5E+08	1.5E+08
Propylene	--	6.8E+07	6.8E+07	--	1.6E+08	1.6E+08	--	2.5E+08	2.5E+08
Styrene	--	3.4E+07	3.4E+07	--	8.2E+07	8.2E+07	--	1.3E+08	1.3E+08
1,1,1,2-Tetrachloroethane	1.9E+04	--	1.9E+04	4.5E+04	--	4.5E+04	7.2E+04	--	7.2E+04
1,1,2,2-Tetrachloroethane	2.3E+03	--	2.3E+03	5.6E+03	--	5.6E+03	8.9E+03	--	8.9E+03
Tetrachloroethene	5.1E+05	1.9E+06	5.08E+05	1.24E+06	4.6E+06	1.24E+06	2.0E+06	7.3E+06	1.97E+06
Tetrahydrofuran	--	4.8E+07	4.8E+07	--	1.1E+08	1.1E+08	--	1.8E+08	1.8E+08
Toluene	--	1.6E+08	1.6E+08	--	3.8E+08	3.8E+08	--	6.0E+08	6.0E+08
1,2,4-Trichlorobenzene	--	1.2E+05	1.2E+05	--	2.9E+05	2.9E+05	--	4.6E+05	4.6E+05
1,1,1-Trichloroethane	--	1.9E+08	1.9E+08	--	4.5E+08	4.5E+08	--	7.1E+08	7.1E+08
1,1,2-Trichloroethane	6.3E+03	7.2E+03	6.3E+03	1.5E+04	1.7E+04	1.5E+04	2.4E+04	2.7E+04	2.4E+04
Trichloroethene	2.4E+04	7.0E+04	2.39E+04	5.80E+04	1.7E+05	5.80E+04	9.2E+04	2.7E+05	9.21E+04
Trichlorofluoromethane	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	--	1.2E+04	1.2E+04	--	3.0E+04	3.0E+04	--	4.7E+04	4.7E+04
1,1,2-Trichloro-1,2,2-trifluoroethane	--	1.9E+09	1.9E+09	--	4.6E+09	4.6E+09	--	7.4E+09	7.4E+09
1,2,4-Trimethylbenzene	--	2.4E+06	2.4E+06	--	5.8E+06	5.8E+06	--	9.1E+06	9.1E+06
1,3,5-Trimethylbenzene	--	2.4E+06	2.4E+06	--	5.8E+06	5.8E+06	--	9.2E+06	9.2E+06
Vinyl acetate	--	5.7E+06	5.7E+06	--	1.4E+07	1.4E+07	--	2.2E+07	2.2E+07
Vinyl chloride	1.5E+04	2.3E+06	1.5E+04	3.5E+04	5.5E+06	3.5E+04	5.5E+04	8.7E+06	5.5E+04
Xylenes (total)	--	3.5E+06	3.5E+06	--	8.5E+06	8.5E+06	--	1.4E+07	1.4E+07

Notes:

-- = not calculated

ft = feet

bgs = below ground surface

µg/m^3 = microgram per cubic meter

$RBTC_{SG\text{-}IA\text{-}C}$ = Risk-based target concentration, cancer, inhalation of soil gas migrating to indoor air

$RBTC_{SG\text{-}IA\text{-}NC}$ = Risk-based target concentration, noncancer, inhalation of soil gas migrating to indoor air

TABLE 5-11. Risk-Based Target Concentrations for Air – Outdoor Commercial/Industrial Workers Exposed to Outdoor Air

Nevada Environmental Response Trust Site

Henderson, Nevada

Chemical	Outdoor Air		
	$RBTC_{OA-C}$ ($\mu g/m^3$)	$RBTC_{OA-NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)
Acetone	--	1.5E+05	1.5E+05
Acrolein	--	9.7E-02	9.7E-02
Acrylonitrile	2.0E-01	9.7E+00	2.0E-01
tert-Amyl methyl ether	--	1.5E+04	1.5E+04
Benzene	1.7E+00	1.5E+02	1.7E+00
Benzyl chloride	2.8E-01	4.9E+00	2.8E-01
Bromobenzene	--	2.9E+02	2.9E+02
Bromochloromethane	--	1.9E+02	1.9E+02
Bromodichloromethane	3.7E-01	2.9E+03	3.7E-01
Bromoform	1.2E+01	--	1.2E+01
Bromomethane	--	2.4E+01	2.4E+01
1,3-Butadiene	4.5E-01	9.7E+00	4.5E-01
2-Butanone	--	2.4E+04	2.4E+04
tert-Butyl alcohol	--	1.5E+05	1.5E+05
n-Butylbenzene	--	1.9E+03	1.9E+03
sec-Butylbenzene	--	1.9E+03	1.9E+03
tert-Butylbenzene	--	1.9E+03	1.9E+03
Carbon disulfide	--	3.4E+03	3.4E+03
Carbon tetrachloride	2.3E+00	4.9E+02	2.3E+00
3-Chloro-1-propene	2.3E+00	4.9E+00	2.3E+00
Chlorobenzene	--	2.4E+02	2.4E+02
Chloroethane	--	4.9E+04	4.9E+04
Chloroform	5.9E-01	4.8E+02	5.9E-01
Chloromethane	--	4.4E+02	4.4E+02
2-Chlorotoluene	--	2.4E+02	2.4E+02
4-Chlorotoluene	--	2.4E+02	2.4E+02
Cumene	--	1.9E+03	1.9E+03
Cyclohexane	--	2.9E+04	2.9E+04
p-Cymene	--	1.9E+03	1.9E+03
1,2-Dibromo-3-chloropropane	2.3E-03	9.7E-01	2.3E-03
Dibromochloromethane	--	--	--
1,2-Dibromoethane	2.3E-02	4.4E+01	2.3E-02
Dibromomethane	--	1.9E+01	1.9E+01
1,2-Dichlorobenzene	--	9.7E+02	9.7E+02
1,3-Dichlorobenzene	--	9.7E+02	9.7E+02
1,4-Dichlorobenzene	1.2E+00	3.9E+03	1.2E+00
Dichlorodifluoromethane	--	4.9E+02	4.9E+02
1,1-Dichloroethane	8.5E+00	--	8.5E+00
1,2-Dichloroethane	5.2E-01	3.4E+01	5.2E-01
1,1-Dichloroethene	--	9.7E+02	9.7E+02
cis-1,2-Dichloroethene	--	--	--
trans-1,2-Dichloroethene	--	--	--
1,2-Dichloropropane	1.4E+00	1.9E+01	1.4E+00
1,3-Dichloropropane	--	1.9E+01	1.9E+01
2,2-Dichloropropane	--	1.9E+01	1.9E+01
1,1-Dichloropropene	--	9.7E+01	9.7E+01
1,3-Dichloropropene	3.4E+00	9.7E+01	3.4E+00
Diisopropyl ether	--	3.4E+03	3.4E+03

TABLE 5-11. Risk-Based Target Concentrations for Air – Outdoor Commercial/Industrial Workers Exposed to Outdoor Air

Nevada Environmental Response Trust Site

Henderson, Nevada

Chemical	Outdoor Air		
	$RBTC_{OA-C}$ ($\mu g/m^3$)	$RBTC_{OA-NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)
1,4-Dioxane	2.7E+00	1.5E+02	2.7E+00
Ethanol	--	4.9E+05	4.9E+05
Ethyl tert-butyl ether	--	1.5E+04	1.5E+04
Ethyl acetate	--	3.4E+02	3.4E+02
Ethyl benzene	5.5E+00	4.9E+03	5.5E+00
4-Ethyltoluene	--	1.9E+03	1.9E+03
Freon 114	--	1.5E+05	1.5E+05
n-Heptane	--	3.4E+04	3.4E+04
Hexachlorobutadiene	6.2E-01	--	6.2E-01
n-Hexane	--	3.4E+03	3.4E+03
2-Hexanone	--	1.5E+02	1.5E+02
alpha-Methyl styrene	--	4.9E+03	4.9E+03
Methyl tert-butyl ether	5.2E+01	1.5E+04	5.2E+01
4-Methyl-2-pentanone	--	1.5E+04	1.5E+04
Methylene Chloride	1.4E+03	2.9E+03	1.4E+03
Methylmethacrylate	--	3.4E+03	3.4E+03
Naphthalene	4.0E-01	1.5E+01	4.0E-01
n-Octane	--	9.7E+01	9.7E+01
n-Propylbenzene	--	4.9E+03	4.9E+03
Propylene	--	1.5E+04	1.5E+04
Styrene	--	4.9E+03	4.9E+03
1,1,1,2-Tetrachloroethane	1.8E+00	--	1.8E+00
1,1,2,2-Tetrachloroethane	2.3E-01	--	2.3E-01
Tetrachloroethene	5.2E+01	1.9E+02	5.2E+01
Tetrahydrofuran	--	9.7E+03	9.7E+03
Toluene	--	2.4E+04	2.4E+04
1,2,3-Trichlorobenzene	--	9.7E+00	9.7E+00
1,2,4-Trichlorobenzene	--	9.7E+00	9.7E+00
1,1,1-Trichloroethane	--	2.4E+04	2.4E+04
1,1,2-Trichloroethane	8.5E-01	9.7E-01	8.5E-01
Trichloroethene	3.3E+00	9.7E+00	3.3E+00
Trichlorofluoromethane	--	--	--
1,2,3-Trichloropropane	--	1.5E+00	1.5E+00
1,1,2-Trichloro-1,2,2-trifluoroethane	--	1.5E+05	1.5E+05
1,2,4-Trimethylbenzene	--	2.9E+02	2.9E+02
1,3,5-Trimethylbenzene	--	2.9E+02	2.9E+02
Vinyl acetate	--	9.7E+02	9.7E+02
Vinyl chloride	3.1E+00	4.9E+02	3.1E+00
Xylenes (total)	--	4.9E+02	4.9E+02

Notes:

-- = not calculated

$\mu g/m^3$ = microgram per cubic meter

$RBTC_{OA-C}$ = Risk-based target concentration, cancer, inhalation of outdoor air

$RBTC_{OA-NC}$ = Risk-based target concentration, noncancer, inhalation of outdoor air

TABLE 5-12. Risk-Based Target Concentrations for Soil Gas – Construction Workers Exposed to Soil Gas Migrating to Trench Air

Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	5 ft below or beside trench		
	$RBTC_{SG\text{-}TA\text{-}C}$ ($\mu g/m^3$)	$RBTC_{SG\text{-}TA\text{-}NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)
Acetone	--	7.1E+10	7.1E+10
Acrolein	--	7.7E+05	7.7E+05
Acrylonitrile	9.0E+06	1.7E+07	9.0E+06
tert-Amyl methyl ether	--	5.5E+11	5.5E+11
Benzene	7.0E+25	6.2E+26	7.0E+25
Benzyl chloride	6.2E+07	1.7E+08	6.2E+07
Bromodichloromethane	5.3E+08	5.6E+09	5.3E+08
Bromoform	6.1E+09	--	6.1E+09
Bromomethane	--	6.3E+10	6.3E+10
1,3-Butadiene	1.5E+10	1.3E+10	1.3E+10
2-Butanone	--	4.3E+09	4.3E+09
tert-Butyl alcohol	--	2.4E+10	2.4E+10
n-Butylbenzene	--	1.5E+11	1.5E+11
sec-Butylbenzene	--	1.7E+11	1.7E+11
tert-Butylbenzene	--	1.3E+11	1.3E+11
Carbon disulfide	--	7.8E+11	7.8E+11
Carbon tetrachloride	4.4E+10	7.1E+11	4.4E+10
3-Chloro-1-propene	1.1E+10	9.3E+09	9.3E+09
Chlorobenzene	--	1.5E+11	1.5E+11
Chloroethane	--	3.6E+12	3.6E+12
Chloroform	1.1E+09	9.0E+10	1.1E+09
Chloromethane	--	1.9E+12	1.9E+12
Cumene	--	1.1E+11	1.1E+11
Cyclohexane	--	2.6E+14	2.6E+14
p-Cymene	--	1.6E+13	1.6E+13
1,2-Dibromo-3-chloropropane	3.0E+05	5.2E+07	3.0E+05
Dibromochloromethane	--	--	--
1,2-Dibromoethane	1.2E+07	2.1E+08	1.2E+07
1,2-Dichlorobenzene	--	4.4E+11	4.4E+11
1,3-Dichlorobenzene	--	6.0E+11	6.0E+11
1,4-Dichlorobenzene	1.8E+09	3.5E+11	1.8E+09
Dichlorodifluoromethane	--	3.4E+13	3.4E+13
1,1-Dichloroethane	2.3E+10	--	2.3E+10
1,2-Dichloroethane	2.8E+08	7.2E+09	2.8E+08
1,1-Dichloroethene	--	2.0E+11	2.0E+11
cis-1,2-Dichloroethene	--	2.9E+11	2.9E+11
trans-1,2-Dichloroethene	--	6.8E+11	6.8E+11
1,2-Dichloropropane	2.0E+09	9.3E+09	2.0E+09
1,3-Dichloropropene	5.9E+09	1.2E+10	5.9E+09
Diisopropyl ether	--	3.1E+11	3.1E+11
1,4-Dioxane	2.5E+06	1.3E+08	2.5E+06
Ethanol	--	2.6E+10	2.6E+10
Ethyl tert-butyl ether	--	6.8E+11	6.8E+11
Ethyl acetate	--	8.2E+09	8.2E+09
Ethyl benzene	2.2E+10	7.2E+12	2.2E+10
4-Ethyltoluene	--	1.6E+13	1.6E+13
Freon 114	--	4.0E+16	4.0E+16

TABLE 5-12. Risk-Based Target Concentrations for Soil Gas – Construction Workers Exposed to Soil Gas Migrating to Trench Air

Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	5 ft below or beside trench		
	$RBTC_{SG\text{-}TA\text{-}C}$ ($\mu g/m^3$)	$RBTC_{SG\text{-}TA\text{-}NC}$ ($\mu g/m^3$)	Minimum RBTC ($\mu g/m^3$)
n-Heptane	--	1.4E+15	1.4E+15
Hexachlorobutadiene	7.5E+09	--	7.5E+09
n-Hexane	--	3.8E+14	3.8E+14
2-Hexanone	--	2.6E+08	2.6E+08
alpha-Methyl styrene	--	7.1E+11	7.1E+11
Methyl tert-butyl ether	1.7E+10	1.6E+11	1.7E+10
4-Methyl-2-pentanone	--	1.1E+10	1.1E+10
Methylene Chloride	1.8E+12	2.7E+11	2.7E+11
Methylmethacrylate	--	2.0E+10	2.0E+10
Naphthalene	9.0E+07	1.3E+08	9.0E+07
n-Octane	--	1.1E+14	1.1E+14
n-Propylbenzene	--	1.2E+12	1.2E+12
Propylene	--	5.1E+13	5.1E+13
Styrene	--	8.0E+11	8.0E+11
1,1,1,2-Tetrachloroethane	3.2E+09	--	3.2E+09
1,1,2,2-Tetrachloroethane	6.0E+07	--	6.0E+07
Tetrachloroethene	6.8E+11	1.0E+11	1.0E+11
Tetrahydrofuran	--	1.0E+10	1.0E+10
Toluene	--	3.1E+12	3.1E+12
1,2,4-Trichlorobenzene	--	4.3E+09	4.3E+09
1,1,1-Trichloroethane	--	1.0E+13	1.0E+13
1,1,2-Trichloroethane	3.8E+08	1.7E+08	1.7E+08
Trichloroethene	1.8E+10	2.2E+09	2.2E+09
Trichlorofluoromethane	--	1.2E+13	1.2E+13
1,2,3-Trichloropropane	--	1.2E+07	1.2E+07
1,1,2-Trichloro-1,2,2-trifluoroethane	--	5.7E+15	5.7E+15
1,2,4-Trimethylbenzene	--	1.3E+11	1.3E+11
1,3,5-Trimethylbenzene	--	1.9E+11	1.9E+11
Vinyl acetate	--	1.6E+09	1.6E+09
Vinyl chloride	3.7E+10	1.8E+11	3.7E+10
Xylenes (total)	--	2.7E+11	2.7E+11

Notes:

-- = not calculated

bgs = below ground surface

ft = feet

$\mu g/m^3$ = microgram per cubic meter

$RBTC_{SG\text{-}TA\text{-}C}$ = Risk-based target concentration, cancer, inhalation of soil gas migrating to trench air

$RBTC_{SG\text{-}TA\text{-}NC}$ = Risk-based target concentration, noncancer, inhalation of soil gas migrating to trench air

TABLE 5-13. Summary of Estimated Soil Gas Cancer Risks and Noncancer Hazard Indices
Nevada Environmental Response Trust Site
Henderson, Nevada

Scenario	Depth Interval (ft bgs)	Cancer Risk	Chronic HI
Residents (Slab-on-Grade Scenario) [1]	5	6E-08 - 2E-05	0.0004 - 0.03
	10 - 15	2E-07 - 2E-05	0.0008 - 0.03
Residents (Trailer Scenario) [1]	5	5E-07 - 1E-05	0.003 - 0.03
	10 - 15	3E-07 - 7E-06	0.002 - 0.01
Indoor Commercial/Industrial Worker [1]	5	5E-09 - 3E-06	0.00002 - 0.007
	10 - 15	4E-09 - 2E-06	0.00003 - 0.01
Outdoor Commercial/Industrial Worker [2]	5	2E-10	0.000001
	10 - 15	2E-10	0.00006
Construction Worker[1]	5	1E-14 - 1E-11	0.000000003 - 0.0000002
	10 - 15	5E-14 - 2E-11	0.000000007 - 0.00001

Notes:

bgs = below ground surface

ft = feet

HI = hazard index

OU = Operable Unit

VOC = volatile organic compound

UCL = upper confidence level

[1] The cancer risk and non-cancer chronic HI estimates for the residents, indoor commercial/industrial workers and construction workers were based on the maximum by sample risk/HI results for each scenario.

[2] The cancer risk and non-cancer chronic HI for the outdoor commercial/industrial workers were estimated based on the 95% UCLs calculated using the soil gas VOC data collected in the commercial/industrial area in the OU-2 BHRA Area.

TABLE 5-14. Risk-Based Target Concentrations for Shallow Groundwater - Residents Exposed to VOCs in Groundwater Migrating to Indoor Air
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	Slab-on-Grade Building						Trailer					
	10 ft bgs			20 ft bgs			10 ft bgs			20 ft bgs		
	$RBTC_{GW.vapor-IA-C}$ (µg/L)	$RBTC_{GW.vapor-IA-NC}$ (µg/L)	Minimum RBTC (µg/L)	$RBTC_{GW.vapor-IA-C}$ (µg/L)	$RBTC_{GW.vapor-IA-NC}$ (µg/L)	Minimum RBTC (µg/L)	$RBTC_{GW.vapor-IA-C}$ (µg/L)	$RBTC_{GW.vapor-IA-NC}$ (µg/L)	Minimum RBTC (µg/L)	$RBTC_{GW.vapor-IA-C}$ (µg/L)	$RBTC_{GW.vapor-IA-NC}$ (µg/L)	Minimum RBTC (µg/L)
Benzene	6.4E+16	5.6E+18	6.4E+16	1.4E+17	1.2E+19	1.4E+17	6.4E+16	5.5E+18	6.4E+16	1.4E+17	1.3E+19	1.4E+17
Bromobenzene	--	1.1E+04	1.1E+04	--	1.9E+04	1.9E+04	--	1.1E+04	1.1E+04	--	1.9E+04	1.9E+04
Bromochloromethane	--	7.0E+03	7.0E+03	--	1.2E+04	1.2E+04	--	7.0E+03	7.0E+03	--	1.2E+04	1.2E+04
Bromodichloromethane	1.3E+01	1.0E+05	1.3E+01	2.1E+01	1.7E+05	2.1E+01	1.3E+01	1.1E+05	1.3E+01	2.2E+01	1.8E+05	2.2E+01
Bromoform	2.3E+03	--	2.3E+03	4.3E+03	--	4.3E+03	2.4E+03	--	2.4E+03	4.4E+03	--	4.4E+03
Bromomethane	--	1.3E+02	1.3E+02	--	2.1E+02	2.1E+02	--	1.3E+02	1.3E+02	--	2.2E+02	2.2E+02
2-Butanone	--	1.3E+07	1.3E+07	--	2.5E+07	2.5E+07	--	1.3E+07	1.3E+07	--	2.5E+07	2.5E+07
n-Butylbenzene	--	1.4E+04	1.4E+04	--	2.3E+04	2.3E+04	--	1.4E+04	1.4E+04	--	2.3E+04	2.3E+04
sec-Butylbenzene	--	1.2E+04	1.2E+04	--	2.0E+04	2.0E+04	--	1.2E+04	1.2E+04	--	2.0E+04	2.0E+04
tert-Butylbenzene	--	1.6E+04	1.6E+04	--	2.6E+04	2.6E+04	--	1.6E+04	1.6E+04	--	2.7E+04	2.7E+04
Carbon tetrachloride	6.1E+00	1.4E+03	6.1E+00	9.9E+00	2.2E+03	9.9E+00	6.2E+00	1.4E+03	6.2E+00	1.0E+01	2.3E+03	1.0E+01
Chlorobenzene	--	5.1E+03	5.1E+03	--	8.3E+03	8.3E+03	--	5.1E+03	5.1E+03	--	8.5E+03	8.5E+03
Chloroethane	--	1.7E+05	1.7E+05	--	2.8E+05	2.8E+05	--	1.7E+05	1.7E+05	--	2.8E+05	2.8E+05
Chloroform	8.6E+00	7.2E+03	8.6E+00	1.4E+01	1.2E+04	1.4E+01	8.6E+00	7.2E+03	8.6E+00	1.4E+01	1.2E+04	1.4E+01
Chloromethane	--	1.6E+03	1.6E+03	--	2.5E+03	2.5E+03	--	1.5E+03	1.5E+03	--	2.5E+03	2.5E+03
2-Chlorotoluene	--	5.6E+03	5.6E+03	--	9.2E+03	9.2E+03	--	5.7E+03	5.7E+03	--	9.4E+03	9.4E+03
4-Chlorotoluene	--	4.7E+03	4.7E+03	--	7.7E+03	7.7E+03	--	4.7E+03	4.7E+03	--	7.8E+03	7.8E+03
Cumene	--	1.5E+04	1.5E+04	--	2.5E+04	2.5E+04	--	1.6E+04	1.6E+04	--	2.6E+04	2.6E+04
p-Cymene	--	6.9E+01	6.9E+01	--	1.1E+02	1.1E+02	--	6.9E+01	6.9E+01	--	1.1E+02	1.1E+02
1,2-Dibromo-3-chloropropane	1.4E+00	6.3E+02	1.4E+00	2.8E+00	1.3E+03	2.8E+00	1.5E+00	6.5E+02	1.5E+00	2.9E+00	1.3E+03	2.9E+00
Dibromochloromethane	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	2.9E+00	5.9E+03	2.9E+00	5.3E+00	1.1E+04	5.3E+00	3.0E+00	6.0E+03	3.0E+00	5.5E+00	1.1E+04	5.5E+00
Dibromomethane	--	1.6E+03	1.6E+03	--	2.9E+03	2.9E+03	--	1.7E+03	1.7E+03	--	2.9E+03	2.9E+03
1,2-Dichlorobenzene	--	4.4E+04	4.4E+04	--	7.3E+04	7.3E+04	--	4.4E+04	4.4E+04	--	7.5E+04	7.5E+04
1,3-Dichlorobenzene	--	2.3E+04	2.3E+04	--	3.7E+04	3.7E+04	--	2.3E+04	2.3E+04	--	3.8E+04	3.8E+04
1,4-Dichlorobenzene	4.3E+01	1.4E+05	4.3E+01	7.2E+01	2.4E+05	7.2E+01	4.4E+01	1.4E+05	4.4E+01	7.4E+01	2.4E+05	7.4E+01
Dichlorodifluoromethane	--	8.5E+01	8.5E+01	--	1.4E+02	1.4E+02	--	8.5E+01	8.5E+01	--	1.4E+02	1.4E+02
1,1-Dichloroethane	7.5E+01	--	7.5E+01	1.2E+02	--	1.2E+02	7.5E+01	--	7.5E+01	1.2E+02	--	1.2E+02
1,2-Dichloroethane	2.1E+01	1.4E+03	2.1E+01	3.5E+01	2.4E+03	3.5E+01	2.1E+01	1.4E+03	2.1E+01	3.6E+01	2.4E+03	3.6E+01
1,1-Dichloroethene	--	1.8E+03	1.8E+03	--	2.9E+03	2.9E+03	--	1.8E+03	1.8E+03	--	3.0E+03	3.0E+03
cis-1,2-Dichloroethene	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	2.8E+01	4.2E+02	2.8E+01	4.6E+01	6.8E+02	4.6E+01	2.8E+01	4.2E+02	2.8E+01	4.7E+01	7.0E+02	4.7E+01
1,3-Dichloropropane	--	1.2E+03	1.2E+03	--	2.0E+03	2.0E+03	--	1.2E+03	1.2E+03	--	2.0E+03	2.0E+03
2,2-Dichloropropane	--	5.2E+01	5.2E+01	--	8.5E+01	8.5E+01	--	5.3E+01	5.3E+01	--	8.6E+01	8.6E+01
1,1-Dichloropropene	--	8.1E+01	8.1E+01	--	1.3E+02	1.3E+02	--	8.2E+01	8.2E+01	--	1.3E+02	1.3E+02
1,3-Dichloropropene	5.5E+01	1.6E+03	5.5E+01	9.1E+01	2.7E+03	9.1E+01	5.6E+01	1.7E+03	5.6E+01	9.2E+01	2.7E+03	9.2E+01
1,4-Dioxane	9.7E+03	5.4E+05	9.7E+03	1.8E+04	1.0E+06	1.8E+04	8.8E+03	4.9E+05	8.8E+03	1.8E+04	9.8E+05	1.8E+04
Ethyl tert-butyl ether	--	4.1E+05	4.1E+05	--	6.8E+05	6.8E+05	--	4.2E+05	4.2E+05	--	6.9E+05	6.9E+05
Ethyl benzene	4.7E+01	4.4E+04	4.7E+01	7.7E+01	7.2E+04	7.7E+01	4.8E+01	4.4E+04	4.8E+01	7.9E+01	7.3E+04	7.9E+01
Hexachlorobutadiene	1.1E+01	--	1.1E+01	1.9E+01	--	1.9E+01	1.2E+01	--	1.2E+01	2.0E+01	--	2.0E+01
Methylene Chloride	1.7E+04	3.8E+04	1.7E+04	2.8E+04	6.2E+04	2.8E+04	1.7E+04	3.7E+04	1.7E+04	2.8E+04	6.2E+04	2.8E+04
Naphthalene	6.3E+01	2.4E+03	6.3E+01	1.1E+02	4.3E+03	1.1E+02	6.4E+01	2.4E+03	6.4E+01	1.2E+02	4.4E+03	1.2E+02
n-Propylbenzene	--	4.0E+04	4.0E+04	--	6.5E+04	6.5E+04	--	4.0E+04	4.0E+04	--	6.6E+04	6.6E+04
Styrene	--	1.2E+05	1.2E+05	--	2.0E+05	2.0E+05	--	1.2E+05	1.2E+05	--	2.0E+05	2.0E+05
1,1,1,2-Tetrachloroethane	7.0E+01	--	7.0E+01	1.2E+02	--	1.2E+02	7.2E+01	--	7.2E+01	1.2E+02	--	1.2E+02
1,1,2,2-Tetrachloroethane	4.6E+01	--	4.6E+01	8.4E+01	--	8.4E+01	4.6E+01	--	4.6E+01	8.6E+01	--	8.6E+01

TABLE 5-14. Risk-Based Target Concentrations for Shallow Groundwater - Residents Exposed to VOCs in Groundwater Migrating to Indoor Air
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	Slab-on-Grade Building						Trailer					
	10 ft bgs			20 ft bgs			10 ft bgs			20 ft bgs		
	$RBTC_{GW.vapor-IA-C}$ (µg/L)	$RBTC_{GW.vapor-IA-NC}$ (µg/L)	Minimum RBTC (µg/L)	$RBTC_{GW.vapor-IA-C}$ (µg/L)	$RBTC_{GW.vapor-IA-NC}$ (µg/L)	Minimum RBTC (µg/L)	$RBTC_{GW.vapor-IA-C}$ (µg/L)	$RBTC_{GW.vapor-IA-NC}$ (µg/L)	Minimum RBTC (µg/L)	$RBTC_{GW.vapor-IA-C}$ (µg/L)	$RBTC_{GW.vapor-IA-NC}$ (µg/L)	Minimum RBTC (µg/L)
Tetrachloroethene	2.7E+02	1.0E+03	2.7E+02	4.3E+02	1.7E+03	4.3E+02	2.7E+02	1.0E+03	2.7E+02	4.5E+02	1.7E+03	4.5E+02
Toluene	--	2.2E+05	2.2E+05	--	3.6E+05	3.6E+05	--	2.2E+05	2.2E+05	--	3.6E+05	3.6E+05
1,2,3-Trichlorobenzene	--	1.0E+03	1.0E+03	--	1.8E+03	1.8E+03	--	1.1E+03	1.1E+03	--	1.8E+03	1.8E+03
1,2,4-Trichlorobenzene	--	8.4E+02	8.4E+02	--	1.4E+03	1.4E+03	--	8.6E+02	8.6E+02	--	1.5E+03	1.5E+03
1,1,1-Trichloroethane	--	9.6E+04	9.6E+04	--	1.6E+05	1.6E+05	--	9.7E+04	9.7E+04	--	1.6E+05	1.6E+05
1,1,2-Trichloroethane	6.1E+01	7.3E+01	6.1E+01	1.1E+02	1.3E+02	1.1E+02	6.2E+01	7.4E+01	6.2E+01	1.1E+02	1.3E+02	1.1E+02
Trichloroethene	2.1E+01	6.5E+01	2.1E+01	3.5E+01	1.1E+02	3.5E+01	2.2E+01	6.6E+01	2.2E+01	3.5E+01	1.1E+02	3.5E+01
Trichlorofluoromethane	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	--	2.8E+02	2.8E+02	--	5.1E+02	5.1E+02	--	2.8E+02	2.8E+02	--	5.2E+02	5.2E+02
1,2,4-Trimethylbenzene	--	4.0E+03	4.0E+03	--	6.6E+03	6.6E+03	--	4.1E+03	4.1E+03	--	6.8E+03	6.8E+03
1,3,5-Trimethylbenzene	--	2.9E+03	2.9E+03	--	4.7E+03	4.7E+03	--	2.9E+03	2.9E+03	--	4.8E+03	4.8E+03
Vinyl chloride	4.0E+00	6.5E+02	4.0E+00	6.4E+00	1.0E+03	6.4E+00	3.9E+00	6.4E+02	3.9E+00	6.4E+00	1.0E+03	6.4E+00
Xylenes (total)	--	5.2E+03	5.2E+03	--	8.5E+03	8.5E+03	--	5.3E+03	5.3E+03	--	8.7E+03	8.7E+03

Notes:
-- = not calculated
bgs = below ground surface
ft = feet
µg/L = microgram per liter

$RBTC_{GW.vapor-IA-C}$ = Risk-based target concentration, cancer, inhalation of groundwater vapor migrating to indoor air
$RBTC_{GW.vapor-IA-NC}$ = Risk-based target concentration, noncancer, inhalation of groundwater vapor migrating to indoor air

TABLE 5-15. Risk-Based Target Concentrations for Shallow Groundwater - Indoor Commercial/Industrial Workers Exposed to VOCs in Groundwater Migrating to Indoor Air

Nevada Environmental Response Trust Site

Henderson, Nevada

Chemical	10 ft bgs			20 ft bgs		
	$RBTC_{GW.vapor-IA-C}$ (µg/L)	$RBTC_{GW.vapor-IA-NC}$ (µg/L)	Minimum RBTC (µg/L)	$RBTC_{GW.vapor-IA-C}$ (µg/L)	$RBTC_{GW.vapor-IA-NC}$ (µg/L)	Minimum RBTC (µg/L)
Benzene	3.8E+17	3.1E+19	3.8E+17	8.3E+17	6.9E+19	8.3E+17
Bromobenzene	--	1.9E+05	1.9E+05	--	3.2E+05	3.2E+05
Bromochloromethane	--	1.1E+05	1.1E+05	--	2.0E+05	2.0E+05
Bromodichloromethane	2.2E+02	1.7E+06	2.2E+02	3.7E+02	2.9E+06	3.7E+02
Bromoform	4.0E+04	--	4.0E+04	7.6E+04	--	7.6E+04
Bromomethane	--	2.2E+03	2.2E+03	--	3.6E+03	3.6E+03
2-Butanone	--	2.0E+08	2.0E+08	--	4.2E+08	4.2E+08
n-Butylbenzene	--	2.3E+05	2.3E+05	--	3.9E+05	3.9E+05
sec-Butylbenzene	--	2.0E+05	2.0E+05	--	3.4E+05	3.4E+05
tert-Butylbenzene	--	2.7E+05	2.7E+05	--	4.5E+05	4.5E+05
Carbon tetrachloride	1.1E+02	2.3E+04	1.1E+02	1.8E+02	3.8E+04	1.8E+02
Chlorobenzene	--	8.4E+04	8.4E+04	--	1.4E+05	1.4E+05
Chloroethane	--	2.8E+06	2.8E+06	--	4.7E+06	4.7E+06
Chloroform	1.5E+02	1.2E+05	1.5E+02	2.5E+02	2.0E+05	2.5E+02
Chloromethane	--	2.6E+04	2.6E+04	--	4.2E+04	4.2E+04
2-Chlorotoluene	--	9.3E+04	9.3E+04	--	1.6E+05	1.6E+05
4-Chlorotoluene	--	7.8E+04	7.8E+04	--	1.3E+05	1.3E+05
Cumene	--	2.6E+05	2.6E+05	--	4.2E+05	4.2E+05
p-Cymene	--	1.1E+03	1.1E+03	--	1.9E+03	1.9E+03
1,2-Dibromo-3-chloropropane	2.4E+01	1.0E+04	2.4E+01	5.0E+01	2.2E+04	5.0E+01
Dibromochloromethane	--	--	--	--	--	--
1,2-Dibromoethane	5.1E+01	9.8E+04	5.1E+01	9.4E+01	1.8E+05	9.4E+01
Dibromomethane	--	2.7E+04	2.7E+04	--	4.9E+04	4.9E+04
1,2-Dichlorobenzene	--	7.3E+05	7.3E+05	--	1.2E+06	1.2E+06
1,3-Dichlorobenzene	--	3.8E+05	3.8E+05	--	6.3E+05	6.3E+05
1,4-Dichlorobenzene	7.5E+02	2.4E+06	7.5E+02	1.3E+03	4.0E+06	1.3E+03
Dichlorodifluoromethane	--	1.4E+03	1.4E+03	--	2.3E+03	2.3E+03
1,1-Dichloroethane	1.3E+03	--	1.3E+03	2.1E+03	--	2.1E+03
1,2-Dichloroethane	3.6E+02	2.3E+04	3.6E+02	6.1E+02	4.0E+04	6.1E+02
1,1-Dichloroethene	--	3.0E+04	3.0E+04	--	4.9E+04	4.9E+04
cis-1,2-Dichloroethene	--	--	--	--	--	--
trans-1,2-Dichloroethene	--	--	--	--	--	--
1,2-Dichloropropane	4.8E+02	6.9E+03	4.8E+02	8.1E+02	1.2E+04	8.1E+02
1,3-Dichloropropane	--	1.9E+04	1.9E+04	--	3.3E+04	3.3E+04
2,2-Dichloropropane	--	8.7E+02	8.7E+02	--	1.4E+03	1.4E+03
1,1-Dichloropropene	--	1.3E+03	1.3E+03	--	2.2E+03	2.2E+03
1,3-Dichloropropene	9.5E+02	2.7E+04	9.5E+02	1.6E+03	4.6E+04	1.6E+03

TABLE 5-15. Risk-Based Target Concentrations for Shallow Groundwater - Indoor Commercial/Industrial Workers Exposed to VOCs in Groundwater Migrating to Indoor Air

Nevada Environmental Response Trust Site

Henderson, Nevada

Chemical	10 ft bgs			20 ft bgs		
	$RBTC_{GW.vapor-IA-C}$ (µg/L)	$RBTC_{GW.vapor-IA-NC}$ (µg/L)	Minimum RBTC (µg/L)	$RBTC_{GW.vapor-IA-C}$ (µg/L)	$RBTC_{GW.vapor-IA-NC}$ (µg/L)	Minimum RBTC (µg/L)
1,4-Dioxane	1.5E+05	8.0E+06	1.5E+05	3.1E+05	1.6E+07	3.1E+05
Ethyl tert-butyl ether	--	6.8E+06	6.8E+06	--	1.2E+07	1.2E+07
Ethyl benzene	8.2E+02	7.3E+05	8.2E+02	1.4E+03	1.2E+06	1.4E+03
Hexachlorobutadiene	2.0E+02	--	2.0E+02	3.4E+02	--	3.4E+02
Methylene Chloride	2.9E+05	6.2E+05	2.9E+05	4.8E+05	1.0E+06	4.8E+05
Naphthalene	1.1E+03	3.9E+04	1.1E+03	2.0E+03	7.2E+04	2.0E+03
n-Propylbenzene	--	6.6E+05	6.6E+05	--	1.1E+06	1.1E+06
Styrene	--	2.0E+06	2.0E+06	--	3.3E+06	3.3E+06
1,1,1,2-Tetrachloroethane	1.2E+03	--	1.2E+03	2.1E+03	--	2.1E+03
1,1,2,2-Tetrachloroethane	7.9E+02	--	7.9E+02	1.5E+03	--	1.5E+03
Tetrachloroethene	4.6E+03	1.7E+04	4.6E+03	7.7E+03	2.9E+04	7.7E+03
Toluene	--	3.6E+06	3.6E+06	--	6.0E+06	6.0E+06
1,2,3-Trichlorobenzene	--	1.7E+04	1.7E+04	--	3.1E+04	3.1E+04
1,2,4-Trichlorobenzene	--	1.4E+04	1.4E+04	--	2.5E+04	2.5E+04
1,1,1-Trichloroethane	--	1.6E+06	1.6E+06	--	2.7E+06	2.7E+06
1,1,2-Trichloroethane	1.1E+03	1.2E+03	1.1E+03	1.9E+03	2.1E+03	1.9E+03
Trichloroethene	3.7E+02	1.1E+03	3.7E+02	6.1E+02	1.8E+03	6.1E+02
Trichlorofluoromethane	--	--	--	--	--	--
1,2,3-Trichloropropane	--	4.6E+03	4.6E+03	--	8.7E+03	8.7E+03
1,2,4-Trimethylbenzene	--	6.7E+04	6.7E+04	--	1.1E+05	1.1E+05
1,3,5-Trimethylbenzene	--	4.8E+04	4.8E+04	--	8.0E+04	8.0E+04
Vinyl chloride	6.7E+01	1.1E+04	6.7E+01	1.1E+02	1.7E+04	1.1E+02
Xylenes (total)	--	8.7E+04	8.7E+04	--	1.4E+05	1.4E+05

Notes:

-- = not calculated

bgs = below ground surface

ft = feet

µg/L = microgram per liter

$RBTC_{GW.vapor-IA-C}$ = Risk-based target concentration, cancer, inhalation of groundwater vapor migrating to indoor air

$RBTC_{GW.vapor-IA-NC}$ = Risk-based target concentration, noncancer, inhalation of groundwater vapor migrating to indoor air

TABLE 5-16. Risk-Based Target Concentrations for Shallow Groundwater - Construction Workers Exposed to VOCs in Groundwater Migrating to Trench Air

Nevada Environmental Response Trust Site

Henderson, Nevada

Chemical	10 ft bgs			20 ft bgs		
	$RBTC_{GW.vapor\text{-}TA\text{-}C}$ (µg/L)	$RBTC_{GW.vapor\text{-}TA\text{-}NC}$ (µg/L)	Minimum RBTC (µg/L)	$RBTC_{GW.vapor\text{-}TA\text{-}C}$ (µg/L)	$RBTC_{GW.vapor\text{-}TA\text{-}NC}$ (µg/L)	Minimum RBTC (µg/L)
Benzene	1.5E+09	1.3E+10	1.5E+09	1.9E+22	1.7E+23	1.9E+22
Bromobenzene	--	2.3E+07	2.3E+07	--	5.3E+07	5.3E+07
Bromochloromethane	--	1.0E+07	1.0E+07	--	2.5E+07	2.5E+07
Bromodichloromethane	2.0E+05	2.1E+06	2.0E+05	4.7E+05	4.9E+06	4.7E+05
Bromoform	2.5E+07	--	2.5E+07	8.8E+07	--	8.8E+07
Bromomethane	--	1.7E+06	1.7E+06	--	3.7E+06	3.7E+06
2-Butanone	--	6.3E+08	6.3E+08	--	3.6E+09	3.6E+09
n-Butylbenzene	--	2.0E+06	2.0E+06	--	4.5E+06	4.5E+06
sec-Butylbenzene	--	1.8E+06	1.8E+06	--	3.9E+06	3.9E+06
tert-Butylbenzene	--	2.4E+06	2.4E+06	--	5.2E+06	5.2E+06
Carbon tetrachloride	1.0E+05	1.7E+06	1.0E+05	2.3E+05	3.7E+06	2.3E+05
Chlorobenzene	--	3.2E+07	3.2E+07	--	7.2E+07	7.2E+07
Chloroethane	--	4.4E+07	4.4E+07	--	9.6E+07	9.6E+07
Chloroform	1.4E+05	1.1E+07	1.4E+05	3.1E+05	2.5E+07	3.1E+05
Chloromethane	--	3.3E+07	3.3E+07	--	7.2E+07	7.2E+07
2-Chlorotoluene	--	5.6E+07	5.6E+07	--	1.3E+08	1.3E+08
4-Chlorotoluene	--	3.0E+07	3.0E+07	--	6.6E+07	6.6E+07
Cumene	--	2.2E+06	2.2E+06	--	4.9E+06	4.9E+06
p-Cymene	--	1.0E+04	1.0E+04	--	2.2E+04	2.2E+04
1,2-Dibromo-3-chloropropane	8.9E+03	1.5E+06	8.9E+03	5.4E+04	9.3E+06	5.4E+04
Dibromochloromethane	--	--	--	--	--	--
1,2-Dibromoethane	3.7E+04	6.3E+05	3.7E+04	1.1E+05	1.9E+06	1.1E+05
Dibromomethane	--	8.5E+06	8.5E+06	--	2.3E+07	2.3E+07
1,2-Dichlorobenzene	--	2.6E+08	2.6E+08	--	6.2E+08	6.2E+08
1,3-Dichlorobenzene	--	1.4E+08	1.4E+08	--	3.2E+08	3.2E+08
1,4-Dichlorobenzene	6.9E+05	1.3E+08	6.9E+05	1.6E+06	3.0E+08	1.6E+06
Dichlorodifluoromethane	--	5.6E+05	5.6E+05	--	1.2E+06	1.2E+06
1,1-Dichloroethane	1.2E+06	--	1.2E+06	2.7E+06	--	2.7E+06
1,2-Dichloroethane	3.2E+05	8.3E+06	3.2E+05	7.7E+05	2.0E+07	7.7E+05
1,1-Dichloroethene	--	4.7E+05	4.7E+05	--	1.0E+06	1.0E+06
cis-1,2-Dichloroethene	--	2.9E+07	2.9E+07	--	6.5E+07	6.5E+07
trans-1,2-Dichloroethene	--	1.3E+07	1.3E+07	--	2.8E+07	2.8E+07
1,2-Dichloropropane	4.6E+05	2.1E+06	4.6E+05	1.0E+06	4.7E+06	1.0E+06
1,3-Dichloropropane	--	5.4E+06	5.4E+06	--	1.3E+07	1.3E+07

TABLE 5-16. Risk-Based Target Concentrations for Shallow Groundwater - Construction Workers Exposed to VOCs in Groundwater Migrating to Trench Air
Nevada Environmental Response Trust Site
Henderson, Nevada

Chemical	10 ft bgs			20 ft bgs		
	$RBTC_{GW.vapor\text{-}TA\text{-}C}$ (µg/L)	$RBTC_{GW.vapor\text{-}TA\text{-}NC}$ (µg/L)	Minimum RBTC (µg/L)	$RBTC_{GW.vapor\text{-}TA\text{-}C}$ (µg/L)	$RBTC_{GW.vapor\text{-}TA\text{-}NC}$ (µg/L)	Minimum RBTC (µg/L)
2,2-Dichloropropane	--	2.8E+05	2.8E+05	--	6.0E+05	6.0E+05
1,1-Dichloropropene	--	9.7E+04	9.7E+04	--	2.1E+05	2.1E+05
1,4-Dioxane	2.0E+07	1.0E+09	2.0E+07	2.9E+08	1.5E+10	2.9E+08
Ethyl tert-butyl ether	--	2.2E+08	2.2E+08	--	4.9E+08	4.9E+08
Ethyl benzene	8.0E+05	2.6E+08	8.0E+05	1.7E+06	5.6E+08	1.7E+06
Hexachlorobutadiene	2.0E+05	--	2.0E+05	4.3E+05	--	4.3E+05
Methylene Chloride	2.8E+08	4.1E+07	4.1E+07	6.1E+08	9.1E+07	9.1E+07
Naphthalene	7.8E+05	1.1E+06	7.8E+05	2.4E+06	3.4E+06	2.4E+06
n-Propylbenzene	--	2.6E+07	2.6E+07	--	5.6E+07	5.6E+07
Styrene	--	2.2E+08	2.2E+08	--	5.1E+08	5.1E+08
1,1,1,2-Tetrachloroethane	1.1E+06	--	1.1E+06	2.6E+06	--	2.6E+06
1,1,2,2-Tetrachloroethane	5.1E+05	--	5.1E+05	1.7E+06	--	1.7E+06
Tetrachloroethene	4.5E+06	6.8E+05	6.8E+05	9.9E+06	1.5E+06	1.5E+06
Toluene	--	1.4E+08	1.4E+08	--	3.1E+08	3.1E+08
1,2,3-Trichlorobenzene	--	5.6E+06	5.6E+06	--	1.5E+07	1.5E+07
1,2,4-Trichlorobenzene	--	4.7E+06	4.7E+06	--	1.2E+07	1.2E+07
1,1,1-Trichloroethane	--	6.3E+07	6.3E+07	--	1.4E+08	1.4E+08
1,1,2-Trichloroethane	8.8E+05	4.0E+05	4.0E+05	2.3E+06	1.0E+06	1.0E+06
Trichloroethene	3.6E+05	4.2E+04	4.2E+04	7.9E+05	9.2E+04	9.2E+04
Trichlorofluoromethane	--	2.1E+06	2.1E+06	--	4.5E+06	4.5E+06
1,2,3-Trichloropropane	--	1.2E+05	1.2E+05	--	4.1E+05	4.1E+05
1,2,4-Trimethylbenzene	--	8.7E+06	8.7E+06	--	1.9E+07	1.9E+07
1,3,5-Trimethylbenzene	--	6.2E+06	6.2E+06	--	1.4E+07	1.4E+07
Vinyl chloride	6.6E+04	3.2E+05	6.6E+04	1.4E+05	6.9E+05	1.4E+05

Notes:
-- = not calculated
bgs = below ground surface
ft = feet
µg/L = microgram per liter

$RBTC_{GW.vapor\text{-}TA\text{-}C}$ = Risk-based target concentration, cancer, inhalation of groundwater vapor migrating to trench air

$RBTC_{GW.vapor\text{-}TA\text{-}NC}$ = Risk-based target concentration, noncancer, inhalation of groundwater vapor migrating to trench air

TABLE 5-17. Summary of Estimated Shallow Groundwater Cancer Risks and Noncancer Hazard Indices

Nevada Environmental Response Trust Site
Henderson, Nevada

Scenario	Cancer Risk	Chronic HI
Residents (Slab-on-Grade Scenario)[1]	3E-11 - 1E-04	0.00003 - 0.1
Residents (Trailer Scenario)[1]	1E-05 - 4E-05	0.01 - 0.08
Indoor Commercial/Industrial Worker[1]	2E-12 - 3E-06	0.00000007 - 0.004
Outdoor Commercial/Industrial Worker[2]	2E-08	0.00006
Construction Worker[1]	2E-15 - 7E-09	0.0000000006 - 0.0001

Notes:

HI = hazard index
OU = Operable Unit
VOC = volatile organic compound
UCL = upper confidence limit

[1] The cancer risk and non-cancer chronic HI estimates for residents, indoor commercial/industrial workers and construction workers were based on the maximum by sample risk/HI results for each scenario.

[2] The cancer risk and non-cancer chronic HI for the outdoor commercial/industrial workers were estimated based on the 95% UCLs calculated using the shallow groundwater VOC data collected in the commercial/industrial zone in the western portion of OU-2.

TABLE 7-1. Soil Gas Data Quality Assessment for Resident, Indoor Commercial/Industrial Worker and Construction Worker Scenarios
Nevada Environmental Response Trust Site
Henderson, Nevada

Medium	Soil Gas (5 ft bgs)								Soil Gas (10-15 ft bgs)							
Exposure Scenario	Resident (Slab-on-Grade Building Scenario)		Resident (Trailer Scenario)		Indoor Commercial/ Industrial Worker		Construction Worker		Resident (Slab-on-Grade Building Scenario)		Resident (Trailer Scenario)		Indoor Commercial/ Industrial Worker		Construction Worker	
Sample Size [1]	43		2		35		78		35		2		23		58	
P_1 [2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sample Count for Effect Size	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Effect Size [3]	0.023	0.047	0.50	1.00	0.029	0.057	0.013	0.026	0.029	0.057	0.50	1.00	0.043	0.087	0.017	0.034
P_2 [4]	0.023	0.047	0.50	1.00	0.029	0.057	0.013	0.026	0.029	0.057	0.50	1.00	0.043	0.087	0.017	0.034
Number of Samples Required [5]																
β=15%	82	40	3	NA	65	33	145	73	65	33	3	NA	44	21	111	55
β=20%	70	34	3	NA	55	28	123	62	55	28	3	NA	37	18	94	47
β=25%	60	29	2	NA	48	24	106	53	48	24	2	NA	32	16	81	41

Notes:

bgs = below ground surface

ft = feet

NA = not available

[1] Sample size is the number of samples included in the BHRA analysis for each exposure scenario.

[2] P_1 is the theoretical proportion of concentrations exceeding a threshold as specified in the null hypothesis. Input 0.000001 in G*Power, because the minimum input is 0.000001 in Gpower.

[3] Effect size is population proportion, set to defined number of samples over total number of samples.

[4] P_2 is P_1 plus effect size.

[5] Calculations were conducted using the Exact – Generic binomial test in the software program G*Power.

TABLE 7-2. Soil Gas Data Quality Assessment for Outdoor Commercial/Industrial Worker Scenarios
Nevada Environmental Response Trust Site
Henderson, Nevada

Medium	Soil Gas (5 ft bgs)		Soil Gas (10-15 ft bgs)	
Exposure Scenario	Outdoor Commercial/Industrial Worker			
	Cancer Risk	HI	Cancer Risk	HI
Target Cancer Risk or Target HI [1]	1.49×10^{-4}	1.49	1.49×10^{-4}	1.49
Total Cancer Risk/HI based on 95% UCL [2]	3E-10	0.000001	2E-10	0.00006
Cancer Risk/HI Driver	Chloroform	Chloroform	Chloroform	Chloroform
95% UCL of Driver Chemical Concentration ($\mu g/m^3$)	1.3E-04	1.3E-04	1.1E-04	1.1E-04
Cancer Risk/HQ based on 95%UCL of Driver Chemical	2.2E-10	0.00000028	1.8E-10	0.00000022
SD of Driver Chemical Concentration ($\mu g/m^3$)	1.1E-04	1.1E-04	7.1E-05	7.1E-05
SD of Cancer Risk/HQ from Driver Chemical [3]	1.9E-10	2.4E-07	1.2E-10	1.4E-07
Number of Samples Required [4]	2	2	2	2
Sample Size [5]	35	35	23	23

Notes:
bgs = below ground surface
ft = feet
$\mu g/m^3$ = microgram per cubic meter
HI = Hazard index
HQ = Hazard quotient
SD = Standard deviation
UCL = Upper confidence limit

[1] Target cancer risk is set as 1.49×10^{-4}, which can be rounded to 1×10^{-4}. Target HI is set as 1.49, which can be rounded to 1. These values were input as $Mean_1$ in G*Power, indicating an alternative hypothesis that the mean of population cancer risk or HI is greater than target cancer risk or target HI.

[2] The values were input as $Mean_0$ in G*Power, indicating a null hypothesis that the mean of population cancer risk or non-cancer HI is the same as the cancer risk or non-cancer HI based on the 95% UCL of sample results.

[3] It was assumed that the SD of total cancer risk/HI is similar to the SD of cancer risk/HQ from the driver chemical. These values were input as SD in G*Power to calculate corresponding effect size.

[4] Calculations were conducted using the t tests - Means: difference from constant (one sample case) in the software program G*Power.

[5] Sample size is the number of samples included in the BHRA analysis for soil gas for the outdoor commercial/industrial worker scenario.

TABLE 7-3. Groundwater Data Quality Assessment for Resident, Indoor Commercial/Industrial Worker and Construction Worker Scenarios

Nevada Environmental Response Trust Site

Henderson, Nevada

Exposure Scenario	Resident (Slab-on-Grade Building Scenario)		Resident (Trailer Scenario)		Indoor Commercial/ Industrial Worker		Construction Worker	
Sample Size [1]	69		4		241		310	
P_1 [2]	0	0	0	0	0	0	0	0
Sample Count for effect size	1	2	1	2	1	2	1	2
effect size [3]	0.014	0.029	0.25	0.50	0.0041	0.0083	0.0032	0.0065
P_2 [4]	0.014	0.029	0.25	0.50	0.0041	0.0083	0.0032	0.0065
Number of Samples Required [5]								
β=15%	135	65	7	3	462	237	592	291
β=20%	115	55	6	3	392	194	503	247
β=25%	99	48	5	2	338	167	433	213

Notes:

bgs = below ground surface

ft = feet

[1] Sample size is the number of groundwater samples included in the BHRA analysis for each exposure scenario.

[2] P_1 is the theoretical proportion of concentrations exceeding a threshold as specified in the null hypothesis. Input 0.000001 in G*Power, because the minimum input is 0.000001 in Gpower.

[3] Effect size is population proportion, set to defined number of samples over total number of samples.

[4] P_2 is P_1 plus effect size.

[5] Calculations were conducted using the Exact – Generic binomial test in the software program G*Power.

TABLE 7-4. Groundwater Data Quality Assessment for Outdoor Commercial/Industrial Worker Scenarios

Nevada Environmental Response Trust Site
Henderson, Nevada

Exposure Scenario	Outdoor Commercial/Industrial Worker	
	Cancer Risk	HI
Target Cancer Risk or Target HI [1]	1.49×10^{-4}	1.49
Cancer Risk/HI based on 95% UCL[2]	2.2E-08	0.00006
Cancer Risk/HI Driver	Chloroform	Chloroform
95% UCL of Driver Chemical Concentration ($\mu g/m^3$)	1.3E-02	1.3E-02
Cancer Risk/HQ based on 95%UCL of Driver Chemical	2.1E-08	0.000027
SD of Driver Chemical Concentration ($\mu g/m^3$)	1.3E-02	1.3E-02
SD of Cancer Risk/HQ from Driver Chemical [3]	2.1E-08	2.7E-05
Number of Samples Required[4]	2	2
Sample Size [5]	241	241

Notes:
bgs = below ground surface
ft = feet
$\mu g/m^3$ = microgram per cubic meter
HI = hazard index
HQ = hazard quotient
SD = standard deviation
UCL = upper confidence limit

[1] Target cancer risk is set as 1.49×10^{-4}, which can be rounded to 1×10^{-4}. Target HI is set as 1.49, which can be rounded to 1. These values were input as $Mean_1$ in G*Power, indicating an alternative hypothesis that the mean of population cancer risk or HI is greater than target cancer risk or target HI.

[2] The values were input as $Mean_0$ in G*Power, indicating a null hypothesis that the mean of population cancer risk or non-cancer HI is the same as the cancer risk or non-cancer HI based on the 95% UCL of sample results.

[3] It was assumed that the SD of total cancer risk/HI is similar to the SD of cancer risk/HQ from the driver chemical. These values were input as SD in G*Power to calculate corresponding effect size.

[4] Calculations were conducted using the t tests - Means: difference from constant (one sample case) in the software program G*Power.

[5] Sample size is the number of samples included in the BHRA analysis for soil gas for the outdoor commercial/industrial worker scenario.