AEI Consultants

January 18, 2019

Ms. Joey Pace
Arizona Department of Environmental Quality,
Voluntary Remediation Program,
1110 West Washington Street
Phoenix, AZ 85007

Subject: Request for No Further Action Determination
Avondale Cleaners
1579 North Dysart Road
Avondale, Arizona 85392
AEI Project No. 385213
VRP Site Code #513079-00

Dear Ms. Pace:

On behalf of Weingarten Realty Investors (WRI), AEI Consultants (AEI) is requesting that the Arizona Department of Environmental Quality (ADEQ) issue a No Further Action (NFA) determination for soil beneath the Avondale Cleaners ("the Site"). The Site is located at 1579 North Dysart Road, in Avondale, Arizona. The Maricopa County Assessor Parcel Number that includes the Site is (APN) 500-02-042. The Site location and vicinity are shown on Figure 1. Figure 2 presents the Site plan.

This request is made pursuant to Arizona Revised Statutes (ARS) § 49-181(A) to acquire an NFA determination from the ADEQ. The NFA determination is to address an approximate 3,104 square-foot portion of the Site as shown on Figure 3, where analytical data indicated that soil in this area may have been impacted by tetrachloroethene (PCE) and trichloroethene (TCE) from former dry cleaning operations.

SITE DESCRIPTION AND BACKGROUND

The Site is located within the Palmilla Shopping Center at the southeast corner of the intersection of North Dysart Road and West McDowell Road in Avondale, Arizona. The general land use in the vicinity of the Site is mixed commercial and residential.

The contour lines on the Tolleson, Arizona topographic map (dated 2014), show the Site is approximately 990 feet above mean sea level (msl) and the Site vicinity slopes gently toward the south-southeast. The Arizona Department of Water Resources (ADWR) Hydrologic Map Series (HMS) Number 35, indicates that groundwater in the vicinity of the Site is inferred to flow to the west-northwest in this area. The Agua Fria River, an ephemeral stream, is approximately 0.33 mile to the southeast. During Site characterization activities, groundwater was encountered at a depth of 139 feet bgs.

The October 11, 2017 Phase I ESA, performed by Partner Engineering and Science, Inc. (Partner), noted that Suite A has been occupied by Avondale Cleaners since 1999. The current owner of the Avondale Cleaners, Mr. Vi Phuong, has operated the facility since 2005 and reportedly has utilized DF-2000, a non-volatile organic compound (VOC) hydrocarbon-based solvent manufactured by ExxonMobil, since that time. Mr. Phuong stated that the former dry cleaner owner operated a typical dry-to-dry machine that utilized a PCE-based solvent. Previous reports of subsurface investigations were not included the ESA. The use of PCE as the dry cleaning solvent from approximately 1999 to 2005 was considered to be a Recognized Environmental Condition, and the Phase I ESA recommended a limited subsurface investigation to determine if the former dry cleaning activities had impacted the subsurface of the Site (Partner 2017a).

In November 2017, a limited subsurface investigation was performed as documented in the *Limited Phase II Subsurface Investigation* prepared by Partner, dated November 28, 2017. The investigation included advancing six soil borings (B1 through B6) and three sub-slab soil gas sampling points (SG-B1, SG-B2, and SG-B3). A total of five soil samples were collected and analyzed, none of which yielded VOCs at or above their respective laboratory reporting limits. PCE was detected in each of the three sub-slab soil gas samples collected and analyzed at concentrations of 4.44, 7.09, and 25.9 micrograms per cubic meter (µg/m^3). TCE was detected in each of the sub-slab soil gas samples collected and analyzed at concentrations of 38.0, 161, and 1,500 µg/m^3. The concentrations of TCE in two of the soil gas samples exceeded the commercial Vapor Intrusion Screening Level (VISL) for TCE of 99.7 µg/m^3 (Partner 2017b). Table 1 presents a summary of the Partners soil data and Table 2 presents a summary of the Partner soil gas data.

Based on the elevated concentrations of TCE observed in the sub-slab soil gas samples collected and analyzed, the Site was enrolled in the ADEQ Voluntary Remediation Program (VRP).

In April 2018, as a prophylactic measure to protect indoor air quality, AEI designed and installed a passive sub-slab ventilation system beneath Suite A. The passive sub-slab ventilation system includes four sumps located along the walls of the suite, each connected by PVC piping to a wind-driven turbine located above the roof to allow for vapor to be passively vented from the subsurface to the atmosphere.

In May 2018, AEI began a quarterly indoor air monitoring program at the Site to assess indoor air quality. To date, AEI has performed three rounds of indoor air sampling, including on May 8, August 8, and November 8, 2018. During each sampling event a total of two indoor air samples and one outside air sample were collected to assess the indoor air quality within the Suite A. The sampling locations are shown on Figure 3. The indoor air data is summarized in Table 3. PCE was detected in indoor air sample AC-E at concentrations of 6.25 µg/m^3 and 6.57 µg/m^3, in May and August 2018, respectively. PCE was detected in indoor air sample AC-W at a concentration of 1.42 µg/m^3 in November 2018. The detected concentrations of PCE do not exceed the industrial air Regional Screening Level (RSL) of 47 µg/m^3. TCE, 1,1-DCE, cis- and trans-1,2-DCE, and vinyl chloride have not been detected at or above their respective laboratory reporting detection limits (RDLs) in the air samples collected at the Site. AEI concluded that

since low levels of PCE were detected at concentrations well below the RSL and TCE has not been detected in indoor air, this indicates that indoor air quality is protected.

At the request of the ADEQ and in accordance with the approved Work Plan, Source Investigation dated July 31, 2018, on August 28 through 30 and on September 17, 2018, two deep soil borings (AEI-B7 and AEI-B8) were advanced characterize the vertical and lateral extent of VOCs in soil gas. Soil boring AEI-B7 was designated the source area boring and positioned behind the rear of the dry cleaning business. Boring AEI-B8 was designated the lateral assessment boring and positioned in front of the dry cleaning business. The results of the soil gas samples indicate that a limited release of PCE to the subsurface has occurred at the Site, presumably from the dry cleaning business operations. A total of 18 soil gas samples were collected, 2 of the 18 soil gas samples yielded PCE, observed at a maximum concentration of 3.85 $\mu g/m^3$, only in the soil gas samples collected from the source area soil boring AEI-B7. PCE was not observed in the soil gas samples collected from the lateral soil boring, AEI-B8. Table 4 presents a summary of the soil gas sample results.

The investigations performed to-date have shown that concentrations of PCE in soil gas do not appear to be laterally and vertically extensive and were not detected within 50 feet of the groundwater table. Minor concentrations of TCE, likely from the biological breakdown of PCE, were detected in soil gas samples collected from AEI-B8 near the sewer line extending to the west from the Avondale Cleaner suite. Based on the TCE results, concentrations of TCE in soil gas appear to attenuate by several magnitudes from the sub-slab soil gas sample SG-B2 where TCE was detected at a concentration of 1,500 $\mu g/m^3$ to not detected at concentrations at or above the laboratory RDLs in the deeper source area soil gas samples collected from soil boring AEI-B7.

Results from the three-phase partition method for calculating soil concentrations indicated that the potential residual mass of PCE and/or TCE in the subsurface is relatively small, at a maximum calculated PCE concentrations of 0.00007 mg/kg and TCE concentration of 0.00418 mg/kg. It is anticipated that the residual PCE and TCE will continue to degrade at the Site under existing conditions. Indoor air samples indicate that the observed concentrations of PCE and TCE at the Site do not pose an unacceptable risk to the current tenant of the commercial facility. Tables 5 and 6 presents the three-phase partitioning equations for PCE and TCE.

AEI will collect the fourth and final quarterly air samples at the Site to assess indoor air quality within Suite A and complete a calendar year of quarterly sampling.

Upon completion, the passive system will remain in place and be maintained by the owner. AEI recommends preparation of a No Further Action Report regarding the release from the Avondale Cleaners facility at the Site.

ADEQ REQUEST FOR CLOSURE

On December 4, 2018, the ADEQ issued a letter to WRI stating that the rationale for requesting the NFA determination was acceptable and to proceed with submitting this NFA application. A description of soil characteristics, per the seven report requirements listed in ARS § 49-181, Paragraph A, is provided below.

1. A Description of the Specific Contaminants of Concern for which a No Further Action Determination is Being Sought:

The NFA determination will address an approximate 3,104 square-foot area of soil as shown on Figure 3. Soil gas analytical data collected during the 2017 Partner investigation indicated that soil in this area may have been impacted by PCE and TCE (AEI 2018); therefore, an NFA for VOCs is requested. The analysis for the constituents of concern presented in Table 7.

2. A Description of the Actions Taken to Achieve Remediation Levels or Controls Determined in Accordance with 49-175, Subsection B:

No remedial actions were required to achieve remediation levels or controls regarding soil contamination at the Site. Calculations using the ADEQ Soil Phase Partitioning Program indicated that PCE and TCE concentrations in soil were below ADEQ non-residential soil remediation levels as shown in Tables 5 and 6. Thus, ADEQ stated in a letter dated December 4, 2018 that the NFA can be submitted.

3. A Description of Any Soil, Water, or Soil and Water Treatment Systems Used as Part of the Remediation:

As stated above, no remediation is required at the Site. Remedial efforts are neither required by nor being overseen by the ADEQ.

4. Whenever Institutional or Engineering Controls are Placed on the Site:

(a) A demonstration that any engineering control or combination of engineering controls has been constructed, is functioning, and will be maintained

(b) A description of the proposed land use for the site and a demonstration that the use will not compromise the integrity of the engineering controls and will be in accordance with any institutional controls

As mentioned above, a passive SSD system has been installed as a prophylactic engineering control to protect indoor air quality. AEI recommends the continued operation of the passive SSD system is warranted until TCE concentrations in soil gas are below the commercial VISL and performing one more quarter, in February 2019, of indoor air sampling. If indoor air sample results are consistent with previous quarters, no further indoor air sampling is warranted.

5. If Post-Remediation Monitoring is Proposed, a Description of the Type of Monitoring, Monitoring Locations, Contaminants to be Monitoring, Monitoring Frequency, and Sampling Procedures:

Due to the lack of active remediation required to meet soil SRLs, no post-remediation monitoring is needed.

6. A Description of Community Involvement Activities Undertaken to Meet the Requirements of § 49-176:

A public notice stating that NFA was requested for the Site has been drafted and is included as Attachment A. Upon approval from the ADEQ, the public notice will be submitted to the Arizona Republic newspaper and published for a minimum of one day. Upon publishing of the public notice, the 30-day comment period will commence. A draft of the public notice is presented in Appendix A.

7. List of Permits Under this Title Obtained for the Remedial Action or Held by the Applicant Pertaining to the Site:

No remedial action was necessary for site-wide soils; therefore, no permits were obtained.

CONCLUSIONS

Based on the site data, facts presented in this letter, and previous documents submitted to ADEQ, it is requested that ADEQ issue a NFA determination for soil beneath the approximately 3,104 square feet area.

It is specifically requested that the NFA letter indicate that no further action (including, without limitation, any investigation, characterization and/or any remediation) is necessary, and that no institutional controls, deed restrictions, or land use covenants, beyond the existing passive system, are required in regard to the Site.

Please contact Jacqueline Day at (858) 531-6297 if you have any questions or need additional information.

Sincerely,
AEI Consultants

Registered Geologist
CERTIFICATE NO.
54800
JACQUELINE C.
DAY
Date Signed 1/18/2019
ARIZONA, U.S.A.

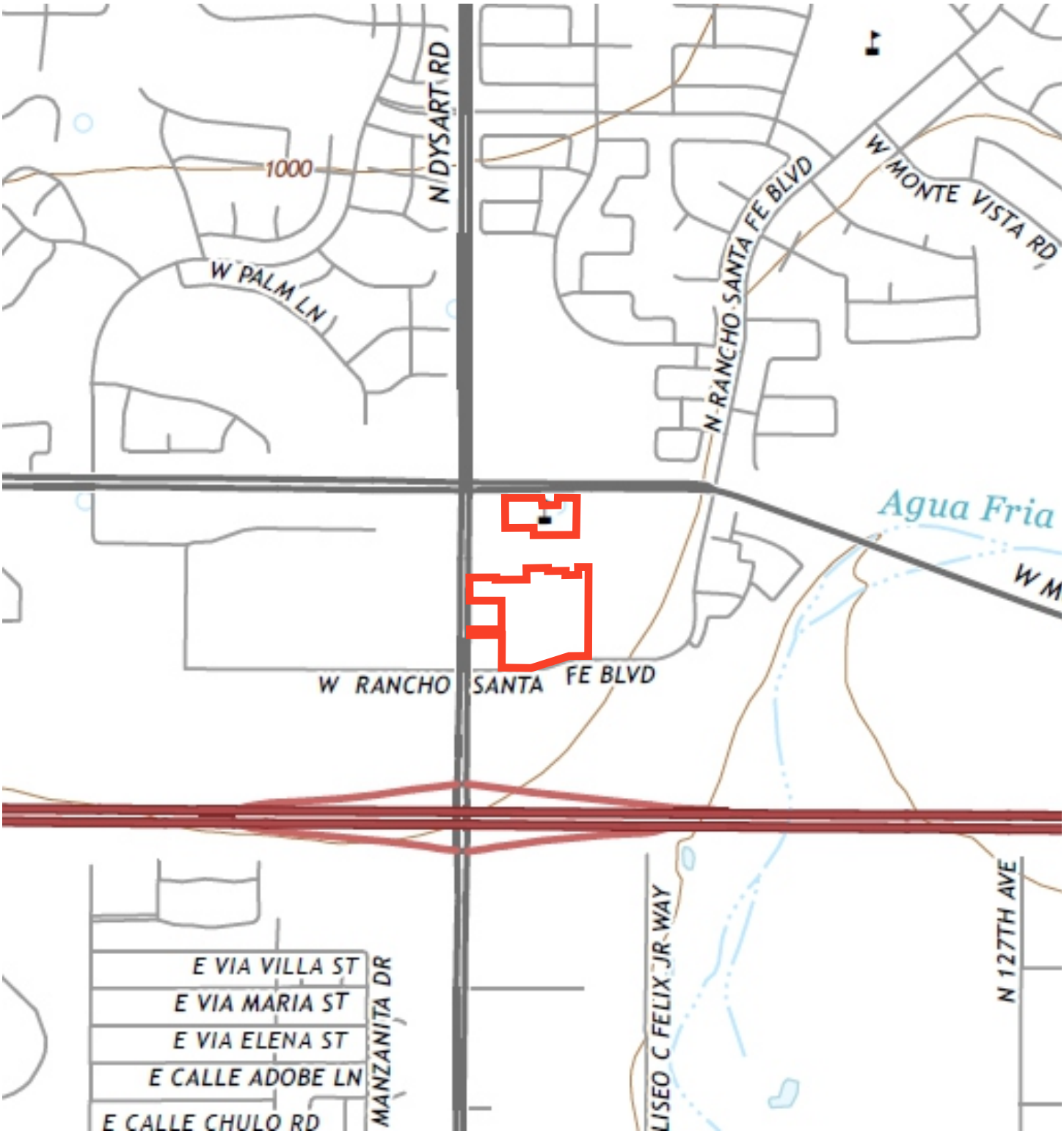
Jacqueline C. Day, R.G. 54800
Senior Geologist
(858) 531-6297

Brian Brody
Project Manager

Attachments: Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – NFA Boundary Map
Table 1 – Soil Sample Data Summary
Table 2 – Soil Gas Sample Data Summary – Partner 2017
Table 3 – Indoor Air Sample Data Summary
Table 4 – Soil Gas Sample Data Summary
Table 5 – Three-Phase Partitioning Equations PCE Soil Gas to Soil Concentration Conversion
Table 6 – Three-Phase Partitioning Equations TCE Soil Gas to Soil Concentration Conversion
Table 7 – Constituents of Concern
Attachment A: Draft Public Notice

cc: Weingarden Realty Investments
Attn: Mr. Charles Gurney
2600 Citadel Plaza Drive, Suite 125
Houston, Texas 77008

FIGURES



LEGEND

N

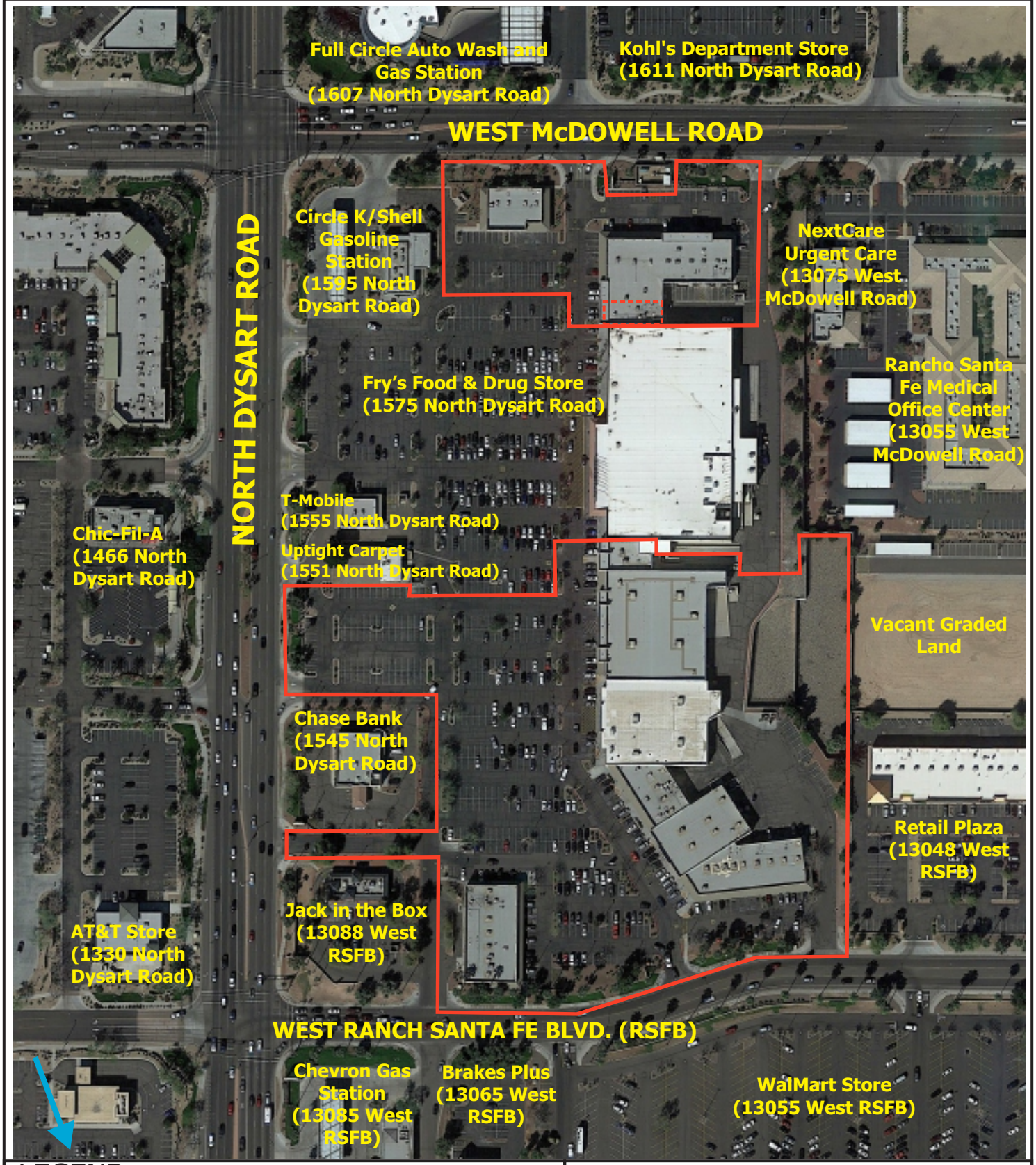
Map: Tolleson, Arizona
Date: 2014
Source: USGS

AEI Consultants
2500 Camino Diablo, Walnut Creek, California

SITE LOCATION MAP

1573-1579 North Dysart Road
Tolleson, Arizona

FIGURE 1
Project No. 385213



LEGEND

- Approximate Property Boundary
- Approximate Suite A Boundary
- Estimated Groundwater Flow Direction

0 100 200

SCALE: 1" = 200'

N

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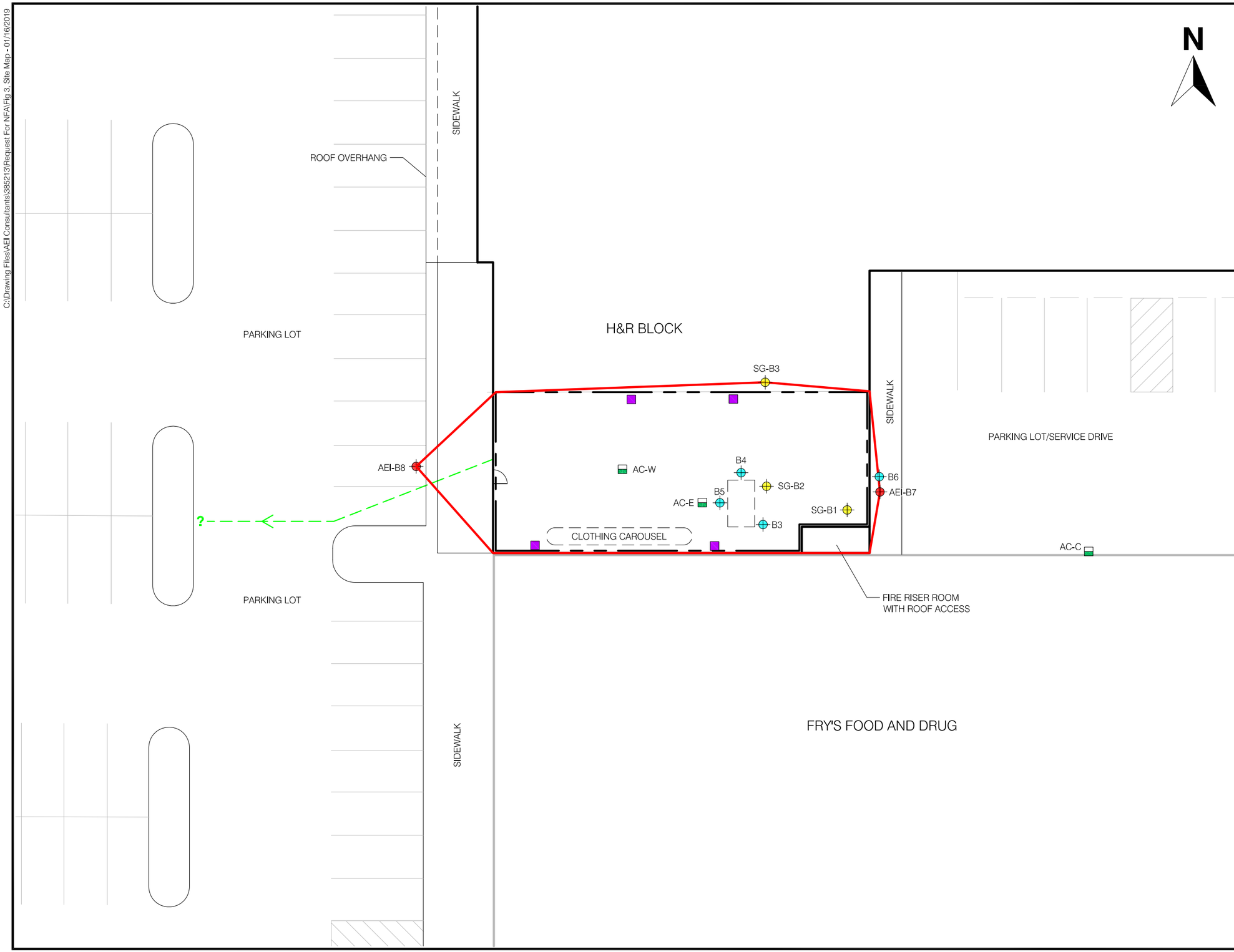
2500 Camino Diablo, Walnut Creek, California

SITE MAP

1579 North Dysart Road
Tolleson, Arizona

FIGURE 2
Project No. 385213

C:\Drawing Files\AEI Consultants\385213\Request For NFA\Fig 3. Site Map - 01/16/2019



LEGEND

- B6 — Soil Boring (Partner, 2017)
- SG-B3 — Soil Boring/Soil Gas Sample (Partner, 2017)
- AEI-B8 — Soil Boring (AEI, 2018)
- AC-W — Air Sample Location (AEI, 2018)
- Sub-Slab Ventilation Sump
- Approximate Location and Direction of Sewer Line Lateral
- Area For NFA Determination (3,104.1247 Sq Ft)
- Approximate Dry Cleaner Suite Boundary

0 10 20

APPROXIMATE SCALE IN FEET

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2500 Camino Diablo
Walnut Creek, California

SITE MAP

VRP Site Code - 513079-00
1579 North Dysart Road
Avondale, AZ

FIGURE 3
Project No. 385213

TABLES

TABLE 1: SOIL SAMPLE DATA SUMMARY
1579 North Dysart Road, Avondale, Arizona

Location ID	Date	Depth (feet bgs)	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	Vinyl Chloride	Other VOCs
PHASE II SUBSURFACE INVESTIGATION REPORT, Partner 2017									
B1	11/3/2017	4	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<MRL
B2	11/3/2017	4	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<MRL
B3	11/3/2017	3	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<MRL
B4	11/3/2017	3	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<MRL
B5	11/3/2017	5	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<MRL
B6	11/3/2017	4	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<MRL
Comparison Values:									
1E-06-SRL			0.51	3.0	--	--	--	0.085	Various
1E-05-SRL			5.1	30	--	--	--	--	Various
Non-carcinogen SRL			--	17	43	69	120	--	Various
Non-residential SRL			13	65	150	230	410	0.75	Various

Notes:

mg/kg	Milligrams per kilogram
<MRL	less than the laboratory method reporting limit
NA	Not Analyzed
---	No established regulatory screening level
bgs	Below ground surface
DCE	Dichloroethene
PCE	Tetrachloroethene
TCE	Trichloroethene
VOCs	Volatile organic compounds

Comparison Values:

1E-06-SRL	Arizona Department of Environmental Quality (ADEQ) Residential Soil Remediation Level (SRL), 1E-06 Risk for Carcinogens, protective of schools and daycare facilities, 2009
1E-05-SRL	Arizona Department of Environmental Quality (ADEQ) Residential Soil Remediation Level (SRL), 1E-05 Risk for Carcinogens, protective of residential, 2009
Non-carcinogen SRL	Arizona Department of Environmental Quality (ADEQ) Residential Soil Remediation Level (SRL), for Non-Carcinogens, 2009
Non-residential SRL	Arizona Department of Environmental Quality (ADEQ) Non-Residential Soil Remediation Level (SRL), 2009

TABLE 2: SOIL GAS SAMPLE DATA SUMMARY- Partner 2017
1579 North Dysart Road, Avondale, Arizona

VOCs by TO-15 Analyte	Units	SG-B1 11/3/2017 Sub-Slab (feet bgs)	SG-B2 11/3/2017 Sub-Slab (feet bgs)	SG-B3 11/3/2017 Sub-Slab (feet bgs)	VISL TR $=10^{-6}$, THQ=1 ($\mu g/m^3$)	VISL TR $=10^{-5}$, THQ=1 ($\mu g/m^3$)
Tetrachloroethene (PCE)	$\mu g/m^3$	7.09	4.44	25.9	1,570	5,840
Trichloroethene (TCE)	$\mu g/m^3$	**161**	**1,500**	38.0	99.7	292
cis-1,2-Dichloroethene	µg/m3	<1.59	<1.59	<1.59	NE	NE
trans-1,2-Dichloroethene	$\mu g/m^3$	<1.59	<1.59	<1.59	NE	NE
1,1-Dichloroethene	$\mu g/m^3$	<1.59	<1.59	<1.59	29,200	29,200
Vinyl Chloride	$\mu g/m^3$	<1.02	<1.02	<1.02	92.9	929

Notes:

VOCs	volatile organic compounds
$\mu g/m^3$	micrograms per cubic meter
bgs	below ground surface
NE	No establish comparison value
<MRL	Less than the laboratory method reporting limit
THQ	Target Hazard Quotient
TR	Target Cancer Risk
VISL	Vapor Intrusion Screening Levels
Bold	Exceeds comparison value

Comparison Values:
Based on Environmental Protection Agency (EPA) Resident Vapor Intrusion Screening Level Calculator, May 2018.
Based on commercial use, a target cancer risk (TR) of 1E-06, and 1E-05 and target hazard quotient (THQ) of 1 and using an attenuation factor 0.03 in accordance with EPA guidelines (OSWER publication 9200.0-154, dated June 2015).

TABLE 3: INDOOR AIR SAMPLE DATA SUMMARY
1579 North Dysart Road, Avondale, Arizona

Location ID	Date	PCE (µg/m^3)	TCE (µg/m^3)	1,1-DCE (µg/m^3)	Cis-1,2-DCE (µg/m^3)	Trans-1,2-DCE (µg/m^3)	VC (µg/m^3)	Benzene (µg/m^3)	Toluene (µg/m^3)	Ethyl-benzene (µg/m^3)	Total Xylenes (µg/m^3)	MTBE (µg/m^3)	1,2,4-Trimethyl-benzene (µg/m^3)	1,3,5-Trimethyl-benzene (µg/m^3)	2,4,4-Trimethyl-pentane (µg/m^3)	MEK (µg/m^3)	Acetone (µg/m^3)	Carbon Disulfide (µg/m^3)
AC-W	5/8/2018	<1.36	<1.07	<0.793	<0.793	<0.793	<0.511	<0.639	6.76	<0.867	<2.597	<0.721	<0.982	<0.982	<0.934	<3.69	15.6	<0.622
	8/8/2018	<1.36	<1.07	<0.793	<0.793	<0.793	<0.511	**7.30**	3.07	4.25	11.30	2.09	2.70	1.52	144	16.6	15.1	2.45
	11/8/2018	1.42	<1.07	<0.793	<0.793	<0.793	<0.511	0.922	3.86	<0.867	1.73	<0.721	<0.982	<0.982	1.78	4.05	35.2	<0.622
AC-E	5/8/2018	6.25	<1.07	<0.793	<0.793	<0.793	<0.511	<0.639	1.39	<0.867	<2.597	<0.721	<0.982	<0.982	1.96	<3.69	14.1	<0.622
	8/8/2018	6.57	<1.07	<0.793	<0.793	<0.793	<0.511	<0.639	<0.753	<0.867	<2.597	<0.721	<0.982	<0.982	<0.934	<3.69	13.2	<0.622
	11/8/2018	<1.36	<1.07	<0.793	<0.793	<0.793	<0.511	0.873	3.30	<0.867	<2.597	<0.721	<0.982	<0.982	1.68	<3.69	23.2	<0.622
AC-C	5/8/2018	<1.36	<1.07	<0.793	<0.793	<0.793	<0.511	<0.639	1.16	<0.867	<2.597	<0.721	<0.982	<0.982	<0.934	<3.69	15.0	<0.622
	8/8/2018	<1.36	<1.07	<0.793	<0.793	<0.793	<0.511	<0.639	<0.753	<0.867	<2.597	<0.721	<0.982	<0.982	<0.934	<3.69	14.4	<0.622
	11/8/2018	<1.36	<1.07	<0.793	<0.793	<0.793	<0.511	0.832	2.77	<0.867	<2.597	<0.721	<0.982	<0.982	1.48	<3.69	21.1	<0.622
Comparison Values:																		
RSL		47	3.0	880	--	--	2.8	1.6	22,000	4.9	440	47	260	260	--	22,000	140,000	3,100

Notes:

µg/m^3	micrograms per cubic meter
<RDL	less than the laboratory reported detection limit
--	No established comparison value
bgs	below ground surface
Bold	Exceeds the applicable comparison vlue
PCE	Tetrachloroethene
TCE	Trichloroethene
DCE	1,1-Dichloroethene
Cis-1,2-DCE	cis-1,2-Dichloroethene
Trans-1,2-DCE	trans-1,2-Dichloroethene
VC	Vinyl Chloride
MEK	Methyl etheyl ketone
MTBE	Methyl tert-butyl ether

Comparison Values:

RSL Based on Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for Industrial Air, with a target cancer risk (TR) of 1E-06 and target hazard quotient (THQ) of 1.0, dated May 2018.

TABLE 3: INDOOR AIR SAMPLE DATA SUMMARY
1579 North Dysart Road, Avondale, Arizona

Location ID	Date	Chloro-methane (µg/m^3)	Cylo-hexane (µg/m^3)	Ethanol (µg/m^3)	4-Ethyl-toluene (µg/m^3)	Dichloro-difluoro-methane (µg/m^3)	Trihloro-fluoro-methane (µg/m^3)	Heptane (µg/m^3)	n-Hexane (µg/m^3)	Iso-propyl-benzene (µg/m^3)	Methyl-methacrylat (µg/m^3)	Methylene chloride (µg/m^3)	Tetra-hydrofuran (µg/m^3)	2-Propanol (µg/m^3)	Remaining VOCs (µg/m^3)
AC-W	5/8/2018	1.05	0.855	29.0	<0.982	1.48	1.21	<0.818	1.05	<0.983	<0.819	2.42	<0.590	4.76	<RDL
	8/8/2018	<0.413	3.44	3.20	1.46	<0.989	<1.12	3.87	12.7	1.19	<0.819	<0.694	27.9	<3.07	<RDL
	11/8/2018	1.12	0.821	42.6	<0.982	1.66	1.47	<0.818	1.60	<0.983	<0.819	0.920	1.56	5.36	<RDL
AC-E	5/8/2018	1.09	<0.689	19.2	<0.982	1.46	1.20	<0.818	<0.705	<0.983	<0.819	9.90	<0.590	4.80	<RDL
	8/8/2018	1.03	<0.689	107	<0.982	1.35	1.17	<0.818	0.725	<0.983	<0.819	1.58	<0.590	<3.07	<RDL
	11/8/2018	1.05	0.762	34.5	<0.982	1.68	1.40	<0.818	1.52	<0.983	<0.819	0.903	<0.590	5.63	<RDL
AC-C	5/8/2018	1.03	<0.689	22.5	<0.982	1.48	1.19	<0.818	<0.705	<0.983	0.866	0.985	<0.590	8.60	<RDL
	8/8/2018	1.08	<0.689	12.8	<0.982	1.48	1.33	<0.818	<0.705	<0.983	<0.819	2.95	<0.590	<3.07	<RDL
	11/8/2018	1.09	0.691	27.5	<0.982	1.65	1.37	<0.818	1.37	<0.983	<0.819	0.932	<0.590	3.95	<RDL
Comparison Values:															
RSL		390	26,000	--	--	440	--	1,800	3,100	--	3,100	1,200	--	880	Various

Notes:

µg/m^3	micrograms per cubic meter
<RDL	less than the laboratory reported detection limit
--	No established comparison value
bgs	below ground surface
Bold	Exceeds the applicable comparison vlue
PCE	Tetrachloroethene
TCE	Trichloroethene
DCE	1,1-Dichloroethene
Cis-1,2-DCE	cis-1,2-Dichloroethene
Trans-1,2-DCE	trans-1,2-Dichloroethene
VC	Vinyl Chloride
MEK	Methyl etheyl ketone
MTBE	Methyl tert-butyl ether

Comparison Values:

RSL Based on Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for Industrial Air, with a target cancer risk (TR) of 1E-06 and target hazard quotient (THQ) of 1.0, dated May 2018.

TABLE 4: SOIL GAS SAMPLE DATA SUMMARY
1579 North Dysart Road, Avondale, Arizona

Location ID	Date	PCE (µg/m^3)	TCE (µg/m^3)	1,1-DCE (µg/m^3)	Cis-1,2-DCE (µg/m^3)	Trans-1,2-DCE (µg/m^3)	VC (µg/m^3)	Benzene (µg/m^3)	Toluene (µg/m^3)	Ethyl-benzene (µg/m^3)	Total Xylenes (µg/m^3)	1,2,4-Trimethyl-benzene (µg/m^3)	1,3,5-Trimethyl-benzene (µg/m^3)	2,4,4-Trimethyl-pentane (µg/m^3)	MEK (µg/m^3)	Acetone (µg/m^3)
AEI-B7-5	8/28/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	3.84	58.5	6.45	28.46	12.3	3.65	3.84	33.8	129
AEI-B7-15	8/28/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	5.84	91.0	9.37	40.50	16.8	5.01	4.31	58.2	223
AEI-B7-25	8/28/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	6.86	96.4	11.3	48.40	20.2	6.05	5.98	46.7	223
AEI-B7-35	8/28/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	8.22	72.7	11.2	48.00	23.8	7.18	5.69	41.7	227
AEI-B7-45	8/28/2018	2.73	<2.14	<1.59	<1.59	<1.59	<1.02	8.72	76.4	14.3	65.90	31.4	9.25	5.14	53.8	249
AEI-B7-55	8/28/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	8.20	66.2	15.0	69.00	31.4	9.50	5.29	28.3	189
AEI-B7-65	8/28/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	9.03	66.4	14.9	67.70	32.0	9.64	5.71	35.2	231
AEI-B7-75	8/28/2018	3.85	<2.14	<1.59	<1.59	<1.59	<1.02	5.58	32.5	7.18	31.70	13.5	3.87	4.55	23.4	228
AEI-B7-85	8/28/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	8.18	53.5	11.6	54.70	22.2	7.14	6.57	37.6	213
AEI-B7-95	8/29/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	2.96	16.6	3.21	13.08	6.10	<1.96	4.99	13.9	74.2
AEI-B7-105	8/29/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	3.85	29.4	6.58	31.30	17.1	4.89	5.25	14.3	92.9
AEI-B7-115	8/29/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	4.57	38.5	10.0	47.70	18.2	6.14	7.40	22.8	175
AEI-B7-130	8/29/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	4.36	49.0	13.1	60.60	24.3	8.24	5.84	27.6	325
AEI-B8-5	9/17/2018	<2.72	**359**	<1.59	<1.59	<1.59	<1.02	8.22	69.3	13.2	54.80	13.7	3.71	3.63	76.7	355
AEI-B8-15	9/17/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	10.2	113	15.8	58.40	9.31	2.66	5.60	62.1	351
AEI-B8-25	9/17/2018	<2.72	2.68	<1.59	<1.59	<1.59	<1.02	18.5	257	26.6	100.5	15.4	4.53	8.04	50.9	223
AEI-B8-35	9/17/2018	<2.72	<2.14	<1.59	<1.59	<1.59	<1.02	18.4	206	29.5	107.1	17.3	5.00	11.6	27.6	176
AEI-B8-45	9/17/2018	<2.72	16.9	<1.59	<1.59	<1.59	<1.02	23.4	227	17.9	98.90	16.9	18.9	5.87	32.1	1,950
Comparison Values:																
US EPA RSL		47	3.0	880	--	--	2.8	1.6	22,000	4.9	440	260	260	--	22,000	140,000
Attenuated Soil Gas Industrial		1,567	100	29,333	--	--	93	53	733,333	163	14,667	8,667	8,667	--	733,333	4,666,667

Notes:

µg/m^3	micrograms per cubic meter	DCE	1,1-Dichloroethene
<RDL	less than the laboratory reported detection limit	Cis-1,2-DCE	cis-1,2-Dichloroethene
--	No established comparison value	Trans-1,2-DCE	trans-1,2-Dichloroethene
bgs	below ground surface	VC	Vinyl Chloride
Bold	Exceeds the applicable comparison value	MEK	Methyl ethyl ketone
PCE	Tetrachloroethene	MTBE	Methyl tert-butyl ether
TCE	Trichloroethene	MIBK	4-Methyl-2-pentanone
VOCs	Volatile organic compounds		

Comparison Values:

US EPA RSL Based on United States Environmental Protection Agency (US EPA) Regional Screening Levels (RSLs) for Industrial Air, with a target cancer risk (TR) of 1E-06 and target hazard quotient (THQ) of 1.0, dated May 2018, and using attenuation factor 0.03 in accordance with EPA guidelines (OSWER publication 9200.0-154, dated June 2015).

TABLE 4: SOIL GAS SAMPLE DATA SUMMARY
1579 North Dysart Road, Avondale, Arizona

Location ID	Date	1,3-Butadiene (µg/m^3)	Carbon Disulfide (µg/m^3)	Chloro-methane (µg/m^3)	Cylo-hexane (µg/m^3)	Cis-1,3-Dichloro-propene (µg/m^3)	Trans-1,3-Dichloro-propene (µg/m^3)	1,4-Dioxane (µg/m^3)	Ethanol (µg/m^3)	4-Ethyl-toluene (µg/m^3)	Dichloro-difluoro-methane (µg/m^3)	Heptane (µg/m^3)	n-Hexane (µg/m^3)	Iso-propyl-benzene (µg/m^3)	MIBK (µg/m^3)	Methylene chloride (µg/m^3)
AEI-B7-5	8/28/2018	<8.85	8.17	1.68	5.64	<1.82	<1.82	<1.44	80.4	2.33	<1.98	18.2	12.1	<1.97	13.0	<1.39
AEI-B7-15	8/28/2018	<8.85	16.0	1.48	<1.38	<1.82	<1.82	<1.44	107	11.4	<1.98	58.3	22.5	<1.97	14.7	<1.39
AEI-B7-25	8/28/2018	<8.85	21.5	1.79	<1.38	<1.82	<1.82	<1.44	106	13.4	<1.98	57.0	25.3	<1.97	12.4	<1.39
AEI-B7-35	8/28/2018	<8.85	37.4	1.92	9.67	<1.82	<1.82	2.08	101	4.04	<1.98	35.4	28.7	<1.97	10.2	1.54
AEI-B7-45	8/28/2018	<8.85	27.9	1.61	9.75	<1.82	<1.82	<1.44	78.2	22.8	<1.98	35.2	28.1	<1.97	21.6	2.55
AEI-B7-55	8/28/2018	<8.85	37.3	1.43	8.88	<1.82	<1.82	<1.44	60.0	25.6	<1.98	20.0	30.1	2.08	<10.2	2.00
AEI-B7-65	8/28/2018	<8.85	33.9	2.13	9.38	<1.82	<1.82	<1.44	77.3	6.63	<1.98	20.4	32.7	<1.97	<10.2	2.36
AEI-B7-75	8/28/2018	<8.85	19.5	1.52	6.62	<1.82	<1.82	2.16	71.4	2.99	2.06	11.6	25.3	<1.97	<10.2	8.15
AEI-B7-85	8/28/2018	<8.85	33.2	1.66	11.0	<1.82	<1.82	<1.44	74.0	21.0	2.58	28.3	38.3	<1.97	<10.2	3.64
AEI-B7-95	8/29/2018	<8.85	20.7	1.41	7.32	<1.82	<1.82	<1.44	143	<1.96	<1.98	8.97	17.8	<1.97	<10.2	<1.39
AEI-B7-105	8/29/2018	<8.85	2.13	1.53	<1.38	<1.82	<1.82	<1.44	51.9	3.58	<1.98	11.1	9.59	<1.97	<10.2	<1.39
AEI-B7-115	8/29/2018	<8.85	2.73	1.96	<1.38	<1.82	<1.82	<1.44	65.3	6.24	<1.98	11.6	14.9	<1.97	<10.2	<1.39
AEI-B7-130	8/29/2018	<8.85	6.78	1.41	4.84	<1.82	<1.82	<1.44	133	25.5	<1.98	9.19	8.62	<1.97	<10.2	1.45
AEI-B8-5	8/29/2018	10.3	3.81	2.30	5.23	12.6	10.9	<1.44	308	3.80	2.97	15.9	19.2	<1.97	112	1.80
AEI-B8-15	8/29/2018	<8.85	4.09	1.67	10.0	10.2	7.03	<1.44	298	2.12	2.01	20.5	29.5	<1.97	16.0	4.50
AEI-B8-25	8/29/2018	11.1	17.3	2.24	14.7	3.68	3.42	<1.44	116	3.28	2.10	31.2	44.2	<1.97	11.2	1.80
AEI-B8-35	8/29/2018	<8.85	3.10	1.59	21.8	<1.82	<1.82	<1.44	123	17.5	2.05	37.2	43.9	2.12	<10.2	2.07
AEI-B8-45	8/29/2018	<8.85	3.83	1.61	26.7	<1.82	<1.82	<1.44	111	3.72	2.30	46.6	54.3	2.20	<10.2	2.55
Comparison Values:																
US EPA RSL		0.41	3,100	390	26,000	--	--	2.5	--	--	440	1,800	3,100	--	13,000	1,200
Attenuated Soil Gas Industrial		13.7	103,333	13,000	866,667	--	--	83	--	--	14,667	60,000	103,333	--	433,333	40,000

Notes:

µg/m^3	micrograms per cubic meter
<RDL	less than the laboratory reported detection limit
--	No established comparison value
bgs	below ground surface
Bold	Exceeds the applicable comparison value
PCE	Tetrachloroethene
TCE	Trichloroethene
VOCs	Volatile organic compounds
DCE	1,1-Dichloroethene
Cis-1,2-DCE	cis-1,2-Dichloroethene
Trans-1,2-DCE	trans-1,2-Dichloroethene
VC	Vinyl Chloride
MEK	Methyl ethyl ketone
MTBE	Methyl tert-butyl ether
MIBK	4-Methyl-2-pentanone

Comparison Values:

US EPA RSL Based on United States Environmental Protection Agency (US EPA) Regional Screening Levels (RSLs) for Industrial Air, with a target cancer risk (TR) of 1E-06 and target hazard quotient (THQ) of 1.0, dated May 2018, and using attenuation factor 0.03 in accordance with EPA guidelines (OSWER publication 9200.0-154, dated June 2015).

TABLE 4: SOIL GAS SAMPLE DATA SUMMARY
1579 North Dysart Road, Avondale, Arizona

Location ID	Tetrahydro-furan (µg/m^3)	2-Propanol (µg/m^3)	Propene (µg/m^3)	Styrene (µg/m^3)	Remaining VOCs (µg/m^3)	Helium Detected in Sample (%)	Field Helium Shroud (%)	Max Allowable Helium Detection in Sample (%)
AEI-B7-5	<1.18	13.2	69.7	<1.70	<RDL	<0.10	24.5	1.23%
AEI-B7-15	<1.18	20.2	42.9	<1.70	<RDL	<0.10	23.2	1.16%
AEI-B7-25	<1.18	18.4	20.4	<1.70	<RDL	<0.10	13.7	0.69%
AEI-B7-35	<1.18	28.6	21.5	<1.70	<RDL	<0.10	27.6	1.38%
AEI-B7-45	<1.18	62.7	26.8	<1.70	<RDL	<0.10	28.6	1.43%
AEI-B7-55	16.9	33.7	11.5	<1.70	<RDL	<0.10	26.9	1.35%
AEI-B7-65	18.7	35.2	15.5	<1.70	<RDL	<0.10	27.2	1.36%
AEI-B7-75	17.8	40.9	7.68	<1.70	<RDL	<0.10	25.6	1.28%
AEI-B7-85	<1.18	44.5	96.8	6.37	<RDL	<0.10	27.1	1.36%
AEI-B7-95	5.26	41.6	12.8	<1.70	<RDL	<0.10	27.6	1.38%
AEI-B7-105	<1.18	8.63	43.9	<1.70	<RDL	<0.10	26.9	1.35%
AEI-B7-115	<1.18	18.4	66.2	<1.70	<RDL	<0.10	27.3	1.37%
AEI-B7-130	<1.18	40.9	22.7	7.86	<RDL	<0.10	27.4	1.37%
AEI-B8-5	<1.18	24.7	44.3	3.32	<RDL	<0.10	45.0	2.25%
AEI-B8-15	6.75	21.4	32.4	2.69	<RDL	<0.10	27.9	1.40%
AEI-B8-25	8.99	9.65	43.4	3.92	<RDL	<0.10	24.7	1.24%
AEI-B8-35	12.0	10.4	13.9	<1.70	<RDL	<0.10	23.9	1.20%
AEI-B8-45	15.4	17.3	20.6	4.56	<RDL	<0.10	25.5	1.28%
Comparison Values:								
US EPA RSL	--	880	13,000	4,400	Various	--	--	--
Attenuated Soil Gas Industrial	--	29,333	433,333	146,667	Various	--	--	--

Notes:

µg/m^3	micrograms per cubic meter
<RDL	less than the laboratory reported detection limit
--	No established comparison value
bgs	below ground surface
Bold	Exceeds the applicable comparison value
PCE	Tetrachloroethene
TCE	Trichloroethene
VOCs	Volatile organic compounds
DCE	1,1-Dichloroethene
Cis-1,2-DCE	cis-1,2-Dichloroethene
Trans-1,2-DCE	trans-1,2-Dichloroether
VC	Vinyl Chloride
MEK	Methyl ethyl ketone
MTBE	Methyl tert-butyl ether
MIBK	4-Methyl-2-pentanone

Comparison Values:

US EPA RSL Based on United States Environmental Protection Agency (US EPA) Regional Screening Levels (RSLs) for Industrial Air, with a target cancer risk (TR) of 1E-06 and target hazard quotient (THQ) of 1.0, dated May 2018, and using attenuation factor 0.03 in accordance with EPA guidelines (OSWER publication 9200.0-154, dated June 2015).

Table 5: Three-Phase Partioning Equations
PCE Soil Gas to Soil Concentration Conversion
1759 North Dysart Road, Avondale, Arizona
VRP SITE CODE 513079-00

			PCE Concentration in Soil Gas		Concentration in Soil	
Sample ID	**Date**	**Depth**	**µg/m3**	**µg/l**	**µg/kg**	**mg/kg**
SG-B1	11/3/2017	Sub-Slab	7.09	0.00709	0.01974	0.00002
SG-B2	11/3/2017	Sub-Slab	4.44	0.00444	0.01236	0.00001
SG-B3	11/3/2017	Sub-Slab	25.9	0.0259	0.07210	0.00007
AEI-B7-5	8/28/2018	5	<2.72	<0.003	<0.008	<0.00001
AEI-B7-15	8/28/2018	15	<2.72	<0.003	<0.008	<0.00001
AEI-B7-25	8/28/2018	25	<2.72	<0.003	<0.008	<0.00001
AEI-B7-35	8/28/2018	35	<2.72	<0.003	<0.008	<0.00001
AEI-B7-45	8/28/2018	45	<2.72	<0.003	<0.008	<0.00001
AEI-B7-55	8/28/2018	55	2.73	0.00273	0.00760	0.00001
AEI-B7-65	8/28/2018	65	<2.72	<0.003	<0.008	<0.00001
AEI-B7-75	8/28/2018	75	3.85	0.00385	0.01072	0.00001
AEI-B7-85	8/28/2018	85	<2.72	<0.003	<0.008	<0.00001
AEI-B7-95	8/29/2018	95	<2.72	<0.003	<0.008	<0.00001
AEI-B7-105	8/29/2018	105	<2.72	<0.003	<0.008	<0.00001
AEI-B7-115	8/29/2018	115	<2.72	<0.003	<0.008	<0.00001
AEI-B7-130	8/29/2018	130	<2.72	<0.003	<0.008	<0.00001
AEI-B8-5	9/17/2018	5	<2.72	<0.003	<0.008	<0.00001
AEI-B8-15	9/17/2018	15	<2.72	<0.003	<0.008	<0.00001
AEI-B8-25	9/17/2018	25	<2.72	<0.003	<0.008	<0.00001
AEI-B8-35	9/17/2018	35	<2.72	<0.003	<0.008	<0.00001
AEI-B8-45	9/17/2018	45	<2.72	<0.003	<0.008	<0.00001

Notes:

PCE	Tetrachloroethene
µg/m^3	micrograms per cubic meter
µg/l	micrograms per liter
µg/kg	micrograms per kilograms
mg/kg	milligrams per kilograms
SRL-06	Arizona Department of Environmental Quality (ADEQ) Residential Soil Remediation Level (SRL), 1E-06 Risk for Carcinogens, protective of schools and daycare facilities, 2009 for PCE is 0.51 mg/kg.

Reference:

Arizona Department of Environmental Quality (ADEQ) Soil Vapor Sampling Guidance, dated July 10, 2008 (revised May 19, 2011 and April 21, 2017).

Table 6: Three-Phase Partioning Equations
TCE Soil Gas to Soil Concentration Conversion
1759 North Dysart Road, Avondale, Arizona
VRP SITE CODE 513079-00

			TCE Concentration in Soil Gas		Concentration in Soil	
Sample ID	**Date**	**Depth**	**µg/m3**	**µg/l**	**µg/kg**	**mg/kg**
SG-B1	11/3/2017	Sub-Slab	161	0.1610	0.44820	0.00045
SG-B2	11/3/2017	Sub-Slab	1500	1.5000	4.17573	0.00418
SG-B3	11/3/2017	Sub-Slab	38.0	0.0380	0.10579	0.00011
AEI-B7-5	8/28/2018	5	<2.14	<0.002	<0.006	<0.00001
AEI-B7-15	8/28/2018	15	<2.14	<0.002	<0.006	<0.00001
AEI-B7-25	8/28/2018	25	<2.14	<0.002	<0.006	<0.00001
AEI-B7-35	8/28/2018	35	<2.14	<0.002	<0.006	<0.00001
AEI-B7-45	8/28/2018	45	<2.14	<0.002	<0.006	<0.00001
AEI-B7-55	8/28/2018	55	<2.14	<0.002	<0.006	<0.00001
AEI-B7-65	8/28/2018	65	<2.14	<0.002	<0.006	<0.00001
AEI-B7-75	8/28/2018	75	<2.14	<0.002	<0.006	<0.00001
AEI-B7-85	8/28/2018	85	<2.14	<0.002	<0.006	<0.00001
AEI-B7-95	8/29/2018	95	<2.14	<0.002	<0.006	<0.00001
AEI-B7-105	8/29/2018	105	<2.14	<0.002	<0.006	<0.00001
AEI-B7-115	8/29/2018	115	<2.14	<0.002	<0.006	<0.00001
AEI-B7-130	8/29/2018	130	<2.14	<0.002	<0.006	<0.00001
AEI-B8-5	9/17/2018	5	359	0.3590	0.99939	0.00100
AEI-B8-15	9/17/2018	15	<2.72	<0.003	<0.008	<0.00001
AEI-B8-25	9/17/2018	25	2.68	0.00268	0.00746	0.00001
AEI-B8-35	9/17/2018	35	<2.72	<0.003	<0.008	<0.00001
AEI-B8-45	9/17/2018	45	16.9	0.01690	0.04705	0.00005

Notes:

TCE	Trichloroethene
µg/m^3	micrograms per cubic meter
µg/l	micrograms per liter
µg/kg	micrograms per kilograms
mg/kg	milligrams per kilograms
SRL-06	Arizona Department of Environmental Quality (ADEQ) Residential Soil Remediation Level (SRL), 1E-06 Risk for Carcinogens, protective of schools and daycare facilities, 2009 for TCE is 3.0 mg/kg.

Reference:
Arizona Department of Environmental Quality (ADEQ) Soil Vapor Sampling Guidance, dated July 10, 2008 (revised May 19, 2011 and April 21, 2017).

TABLE 7: CONSTITUENTS OF CONCERN
1579 North Dysart Road, Avondale, Arizona - VRP Site Code 513079-00

Soil Samples for NFA Determination

Constituent	Analytical Method	Analysis Date	Laboratory
VOCs	8260B	11/5-6/2017	Environmental Science Corporation

Soil Vapor Samples for NFA Determination

Constituent	Analytical Method	Analysis Date	Laboratory
VOCs	TO-15	11/5-6/2017	Environmental Science Corporation
VOCs	TO-15	8/30-31/2018	Pace Analytical
VOCs	TO-15	9/21-24/2018	Pace Analytical

ATTACHMENT A

DRAFT PUBLIC NOTICE