ADEQ Arizona Department of Environmental Quality

PUBLIC NOTICE

PROPOSED LEAKING UST (LUST) CASE CLOSURE

The Arizona Department of Environmental Quality (ADEQ) is considering closure of the following leaking underground storage tank (LUST) case:

LUST Case File # 4444.01, .04
Facility ID # 0-004099
Yavapai County

Blue Hills Market #418
210 South Highway 69
Dewey, Arizona 86327

The Arizona Revised Statutes (A.R.S.) §49-1005(E) and Arizona Administrative Code (A.A.C.) R18-12-263.04 allow case closure of LUST sites with groundwater contamination above the Arizona Aquifer Water Quality Standards (AWQS) if certain site specific conditions are met. For the above-referenced LUST site, ADEQ has considered the following:

1. Characterization of the groundwater plume,
2. Removal or control of the source of contamination,
3. Groundwater plume stability,
4. Natural Attenuation,
5. Threatened or impacted drinking water wells,
6. Other exposure pathways,
7. Requirements of A.R.S. §49-1005(D) and (E), and
8. Other information that is pertinent to the LUST case closure approval.

Site Summary
The LUST release was addressed by using a soil vapor extraction and air sparging system at the source area. The system has been operational since 2008. Soil samples were collected to verify that concentrations of chemicals of concern (COC) in the soil near the release points were less than the corrective action standards. A confirmation soil boring was drilled between former UST #3 (Release 4444.01) and former UST #2 (Release 4444.04), adjacent to the canopy over the east dispenser island (Figure 1). The analytical data are presented in Tables 1 and 2 below and are all non-detect. Only 1,2-dichloroethane in monitoring well MW-1 groundwater samples is currently detected above the Aquifer Water Quality Standard (AWQS), and all the other monitoring well data are below the AWQS criteria. However, a Wilhoit Water Company public supply well is located approximately 300 feet to the south of MW-1, but is equipped with a granular activated carbon canisters to treat any fuel related COCs prior to the water being distributed. Based on this, these LUST releases are recommended for closure under A.A.C. R18-12-263.03 for soil and A.A.C. R18-12-263.04 for groundwater.

How to Review the Submitted Document and LUST Case File
The document titled *Blue Hills Market #418, Corrective Action Completion Report,* dated August 2015, and the remainder of the LUST case file are available for review at the ADEQ

Records Center, located at 1110 West Washington Street, Suite 140, Phoenix, Arizona 85007. To review the file, you may call the Records Center at (602) 771-4380 or visit their website at http://www.azdeq.gov/function/assistance/records.html.

How to Submit Comments
Comments regarding the submitted document or LUST case closure for this site should be submitted in writing to the Arizona Department of Environmental Quality, Waste Programs Division, Attention: Jason Kocer, 1110 W. Washington Street, Phoenix, AZ 85007. Comments sent to ADEQ during **March 15, 2016** to **April 15, 2016** will be considered in ADEQ's evaluation for LUST case closure.

Additional Information
If sufficient public interest is demonstrated during the public comment period, ADEQ may hold a public meeting in accordance with A.A.C. R18-12-264.01(C). If a public meeting is to be held, ADEQ will schedule and notify the public in accordance with A.A.C. R18-12-264.01(A) of the meeting time and location.

Copies of the cited statutes and rules can be found at:
http://www.azleg.gov/ArizonaRevisedStatutes.asp?Title=49, and
http://www.azsos.gov/public_services/Title_18/18-12.htm

If you have questions regarding this notice, please contact Jason Kocer at (602) 771-4341 or hendler.harry@azdeq.gov.

Table 1
Analytical Results for VOCs and TICs in Soil Samples Collected by Zelen on July 16, 2015

Parameter	CB1-5	CB1-10	CB1-15	CB1-20	CB1-25	CB1-30	CB1-35	CB1-40	CB1-45	Regulatory Standard
	mg/kg, Method 8260B									mg/kg
Volatile Organic Compounds:										
Benzene	<0.0335	<0.0350	<0.0345	<0.0408	<0.0355	<0.0346	<0.0453	<0.0347	<0.0388	0.65(1)
n-Butyl benzene	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	41(2)
Sec-butyl benzene	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	39(2)
Tert-butyl benzene	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	69(2)
Carbon disulfide	<0.335	<0.0350	<0.0345	<0.0408	<0.0355	<0.0346	<0.0453	<0.0347	<0.0388	122(2)
Cumene (Isopropyl benzene)	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	21(2)
1,2-Dibromoethane	<0.0134	<0.0140	<0.0138	<0.0163	<0.0142	<0.0138	<0.0181	<0.0139	<0.0155	0.29(1)
1,2-Dichloroethane	<0.0335	<0.0350	<0.0345	<0.0408	<0.0355	<0.0346	<0.0453	<0.0347	<0.0388	0.23(2)
Ethylbenzene	<0.0669	<0.0700	<0.0691	<0.0817	<0.0709	<0.0692	<0.0906	<0.0693	<0.0776	82(2)
n-Hexane	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	24(2)
p-Isopropyl toluene	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	ne
Methyl tert-butyl ether	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	0.47(2)
Naphthalene	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	4(2)
n-Propylbenzene	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	41(2)
Toluene	<0.0669	<0.0700	<0.0691	<0.0817	<0.0709	<0.0692	<0.0906	<0.0693	<0.0776	159(2)
1,2,4-Trimethylbenzene	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	26(2)
1,3,5-Trimethylbenzene	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	6(2)
Xylenes	<0.0335	<0.0350	<0.0345	<0.0408	<0.0355	<0.0346	<0.0453	<0.0347	<0.0388	31(2)

Parameter	CB1-5	CB1-10	CB1-15	CB1-20	CB1-25	CB1-30	CB1-35	CB1-40	CB1-45	Regulatory Standard
	mg/kg, Method 8260B									mg/kg
Tentatively identified compounds:										
1,3-Butadiene	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	0.04(2)
Cyclohexane	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	44(2)
Dicyclopentadiene	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	0.54(1)
4-Ethyl toluene	nd	nd	nd	nd	nd	nd	nd	nd	nd	ne
Methyl cyclohexane	<0.167	<0.175	<0.173	<0.204	<0.177	<0.173	<0.226	<0.173	<0.194	49(2)
Propylene (Propene)	nd	nd	nd	nd	nd	nd	nd	nd	nd	ne
	mg/kg, McCampbell Analytical Method									
Tetraethyl lead	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0061(1)

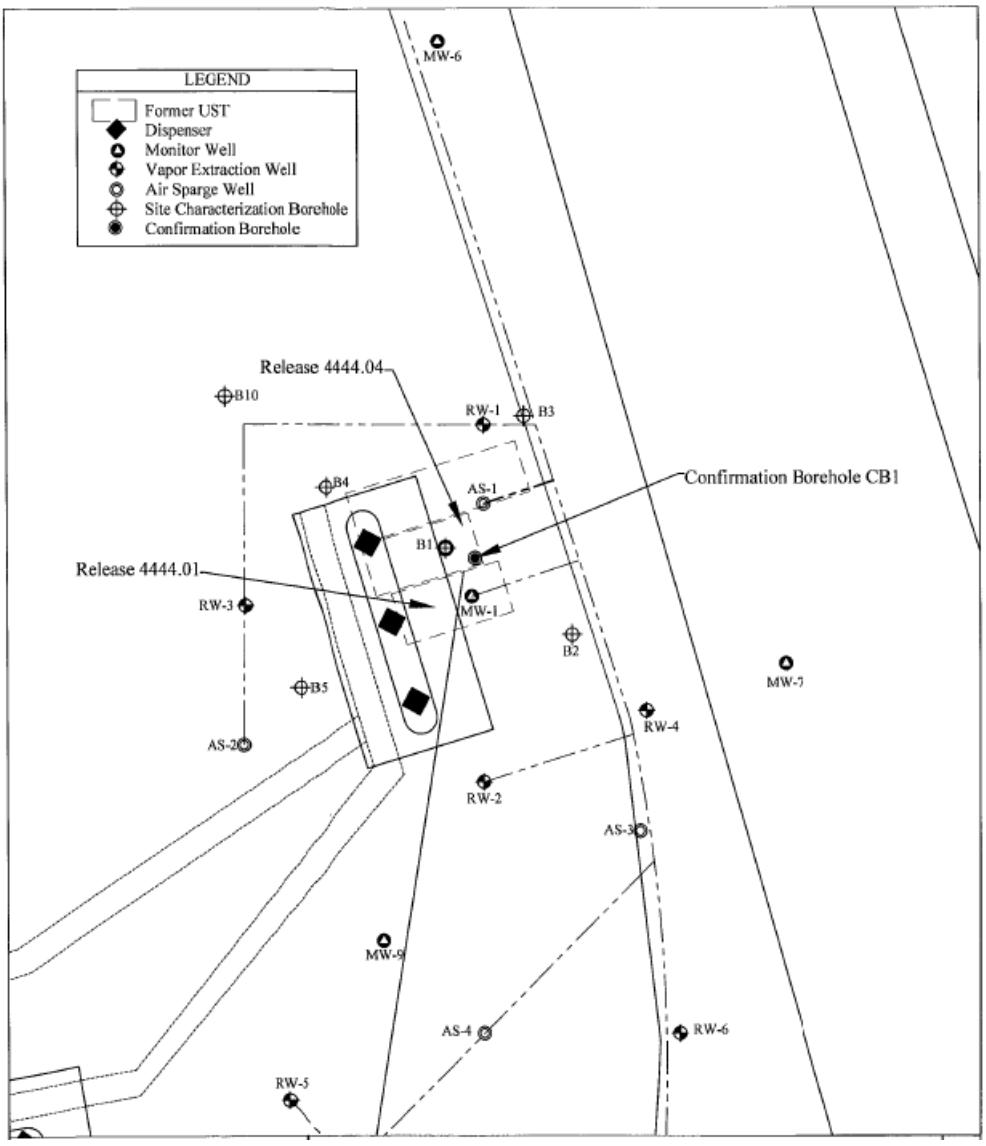
Notes: (1) = Residential Soil Remediation Standard (SRL), 10^{-5} risk.
(2) = Groundwater Protection Level (GPL).
ne = not established
nd = not detected

Table 2
Analytical Results for PAHs in Soil Samples Collected by Zelen on July 16, 2015

Parameter	CB1-5	CB1-10	CB1-15	CB1-20	CB1-25	CB1-30	CB1-35	CB1-40	CB1-45	Regulatory Standard
	mg/kg, Method 8270SIM									
Acenaphthene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	981(2)
Anthracene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	22,000(1)
Benz(a)anthracene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	6.9(1)
Benzo(a)pyrene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	0.69(1)
Benzo(b)fluoranthene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	6.9(1)
Benzo(k)fluoranthene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	69(1)
Chrysene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	680(1)
Dibenz(ah)anthracene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	0.69(1)
Fluoranthene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	2,300(1)
Fluorene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	2,091(2)
Ideno(1,2,3-cd) pyrene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	6.9(1)
Naphthalene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	4(2)
Pyrene	<0.0167	<0.0166	<0.00332	<0.00333	<0.00332	<0.00333	<0.00333	<0.00333	<0.00332	2,300(1)

Notes: (1) = Residential Soil Remediation Standard (SRL), 10^{-5} risk.
(2) = Groundwater Protection Level (GPL).
ne = not established
nd = not detected

Figure 1: Site Map



ADEQ Arizona Department of Environmental Quality

Memorandum

Date: January 6, 2016

To: LUST File

From: Debi Goodwin, UST Risk Assessor
State Lead Unit
WPD Corrective Action Section

Subject: Tier 3 Risk Assessment
Blue Hills Market #418 (Ray Bell #418)
Facility No. 0-004099 LUST No. 4444.01, .04

Background

The Site is developed with retail fuel sales, convenience store, retail businesses and offices. The Site is located at 210 S. Highway 69 in Dewey. The USTs were reportedly installed in 1976. Three USTs associated with the service station were removed in 1996. Four LUST releases were assigned. LUST release .02 was a surface spill and referred to the Solid Waste Section and closed in 1998. LUST release .03 was combined with release .01 and closed in 1998. Site characterization activities included the installation of three monitoring wells. Soil data indicated VOC contamination (benzene) present in the subsurface soil between 20 and 50 feet at concentrations that exceeded the rSRL. In 1998, ADEQ requested a CAP. The CAP was approved in 2003 for an AS/VE system and the installation of a GAC treatment system for the Wilhoit Water Company public supply well that is located south of the property. In 2004, the GAC system and additional sentinel and monitoring wells were installed. In 2008, the AS/VE system began operation. In 2009, the VE system was shut off due to low VOC concentrations in vapor. AS and groundwater monitoring continued between 2010 and 2014.

Purpose

The *Corrective Action Completion Report* dated August 2015, and all other available site information has been used by ADEQ to determine whether remaining levels of contaminants at the site are adequately protective of human health and the environment.

Data Evaluation

Groundwater

Groundwater samples have been collected at the site since 1998. The most recent groundwater sampling occurred in April 2015. The April 2015 data set shows that only MW-1 has any VOC contamination present over an applicable aquifer water quality standard (AWQS). The depth to water was 47.05 feet. Samples were analyzed for VOCs by EPA Method 8260B and EDB by EPA Method 504.1 and organic lead. Orange Coast Analytical analyzed the samples for VOCs and the EDB, and McCampbell Analytical did the organic lead analysis. MW-1 has 1,2-DCA at a concentration of 7.3 µg/L, and MTBE at a concentration of 58 µg/L, which both exceed the applicable regulatory standard. Both VOC concentrations dropped between the March 2015 and the April 2015 sampling events. All of the other on-site and off-site downgradient wells (MW-9, MW-10 and MW-4) show no contamination present above laboratory detection limits.

Soil

In June 2015, confirmation borehole CB1 was drilled and soil samples were collected at five-foot intervals between five and 45 feet bgs. CB1 was located within 5 feet of B1 where the original soil contamination was found between the two USTs where the releases were assigned. The soil samples were analyzed for VOCs by EPA Method 8260B, PAHs by EPA Method 82070C-SIM, and organic lead by Trans West Analytical and McCampbell Analytical respectively. No contamination was present over applicable laboratory reporting limits. The organic lead data for CB1-5 is reported as non-detect, but the sample required dilution due to high organic content in the sample. This doesn't affect the value of the organic lead concentration as being non-detect (below the laboratory reporting limit).

Tier 3 Risk Assessment

For alternative groundwater closure under A.A.C. R-18-12-263.04, several criteria must be met. Existing groundwater data shows that the groundwater plume is characterized, the source of contamination (former UST system) has been removed/controlled by the active remediation system that operated, the groundwater plume is stable, and based on an ADWR ¼ mile well search, there are 63 registered wells but no active drinking water wells. The VOC contamination that is present in groundwater is limited on-site to MW-1. The other monitoring wells that are located on and off site have no VOC contamination over applicable laboratory reporting limits.

MW-9 and MW-10 are located on-site downgradient from MW-1 and have not shown VOC contamination above laboratory reporting limits since 2009 when the wells were installed. MW-4 is located off-site downgradient towards the Wilhoit Water Company well. MW-4 has not shown VOC contamination above laboratory reporting limits since 2004 when the well was installed. No VOCs have been seen in the Wilhoit Water Company GAC system water samples since it began operating in 2004.

No soil contamination is present above any laboratory reporting limit.

Conclusions and Recommendations

A.A.C. R-18-7-206(D) and A.A.C. R-18-12-263.01 and A.A.C. R-18-12-263.04 allow for a site specific risk assessment. Under A.A.C. R-18-7-206(D), multiple contaminants, multiple pathways of exposure, uncertainty of exposure and sensitive populations are evaluated as part of a site specific risk assessment. There is no contamination present in the soil so there is no risk posed by any of the exposure routes. The groundwater data collected shows only 1,2-DCA and MTBE are present in an on-site monitoring well (MW-1 over an applicable regulatory standard. The contamination doesn't pose a risk to any drinking water sources and no sensitive receptors were identified.

Based on the data collected, it is recommended that LUST releases 4444.01 and .04 be closed under A.A.C. R-18-12.263.03 for soil and A.A.C. R-118-12-263.04 for groundwater.

If you have any questions regarding this memo, please contact me at (602) 771-4453 or dg1@azdeq.gov.