

PROPOSED LEAKING UST (LUST) CASE CLOSURE

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

LUST Case File #: 5399.01, .03
Facility ID # 0-004430
Yuma County

Sellers Petroleum
490 S. Gila Street
Yuma, Arizona 85365

The former Sellers Petroleum facility is approximately 0.75 acres and is located at 490 S. Gila Street in Yuma. The property is within the zoned "Old Town" area with a Historic District overlay. The City of Yuma is developing a conceptual plan for a downtown university campus on more than 50 acres and is considering purchasing this parcel as part of that redevelopment project. The UST system was installed in approximately 1985. The UST owner/operator was Snakebite Leasing Inc. Subsurface investigation activities beginning in 2004 indicated that fuel releases from the east gasoline pump island (release number 5399.01) and the east diesel pump island (release number 5399.02) had occurred. Several soil borings and groundwater monitoring wells (MWs) were installed at the site during investigation of the releases. The .02 release was subsequently closed in March 2010 when the Site Characterization Report was approved. Soil samples were analyzed for volatile organic compounds (VOCs) and polyaromatic hydrocarbons (PAHs). No lead scavenger VOC compounds were reported in historic soil or groundwater samples collected. Four 10,000 gallon USTs, associated dispensers and piping were removed in March 2012 and release number 5399.03 was assigned. Historic soil data shows benzene, xylene and trimethylbenzenes were reported over applicable regulatory standards. Historic groundwater data shows benzene and methyl tert-butyl ether (MTBE). MTBE was used to oxygenate unleaded gasoline to reduce vehicle exhaust pollution, until approximately 2004. The contamination source and the remainder of the facility is currently unoccupied. The land use around the property is mixed industrial, light commercial, and residential.

Corrective actions included over excavation of contaminated soil and aeration of the excavation area and the use of nutrient enhancement of the groundwater in offsite monitoring well MW-6. Contamination in groundwater is limited to MTBE in MW-6. The groundwater flow direction historically has been to the west-northwest and the depth to groundwater is approximately 15 feet below ground surface (bgs) as of April 2017. Fill material consisting of sand or gravelly clay is present to a depth of 10 to 13 feet bgs then fine-grained sand, with stringers of clay and silt extending to 45 feet bgs based on soil boring logs from the property.

Groundwater data has been collected since the first set of monitoring wells were installed in 2009. Benzene and MTBE are the only VOCs that historically have been present at concentrations that exceed any applicable regulatory standards. In 2016, CBNTM and CARBSTRATETM nutrient amendments were introduced into MW-6 to assist in the biodegradation of the MTBE in the groundwater. Groundwater sampling results showed significant decrease of contamination in MW-6 as of April 2017.

A site specific risk assessment and detailed file/information search were also completed. MTBE analytical groundwater results in MW-6, remain above applicable Tier 1 Corrective Action Standards.

Based upon the results of remedial activities and site specific information, the above-referenced LUST site is eligible for alternative LUST closure under Arizona Revised Statutes (A.R.S.) §49-1005(E). Arizona Administrative Code (A.A.C.) R18-12-263.04 allows case closure of a LUST site with groundwater contamination above the Arizona Aquifer Water Quality Standards (AWQS) or Tier 1 Corrective Action Standards. ADEQ has considered the results of a site specific assessment and the rule specific criteria below:

1. *Threatened or impacted drinking water wells:* According to the Arizona Department of Water Resources (ADWR) records, there are no threatened or impacted drinking water wells within ½ mile of the site. According to the City of Yuma's webpage, their primary water supply is the Colorado River delivered through the facilities of the Yuma County Water Users Association and the Gila Gravity Canal System. With two water treatment locations, the Main Street Water Treatment Plant can produce up to 40 million gallons daily (mgd), and the Agua Viva Water Treatment Facility can produce up to 20 mgd. The Main Street Water Treatment Plant has been producing drinking water for the Yuma area since 1892. The Agua Viva Water Treatment Facility can also treat groundwater from its wellfield and serve the eastern portion of Yuma, if needed. There are several monitoring wells registered within ½ mile of the property for various remediation projects.
2. *Other exposure pathways:* The contaminated soil (benzene, xylene and 1,2,4 and 1,3,5-trimethylbenzene) found during the UST system removal in March 2012 was over excavated in May 2012. Post excavation soil samples from October 2013 indicated no VOC contamination present over laboratory reporting limits. Previous soil data indicated no PAH contamination present. Since the contaminated soil was removed, there is no dermal contact, ingestion or vapor intrusion risk. Since there is no groundwater contamination present over an applicable regulatory standard on site, there is no unacceptable risk. As a precautionary measure, the offsite shallow groundwater in MW-6 was evaluated for potential risk. The vapor intrusion risk to indoor air was determined to be acceptable based on the MTBE concentration of 200 µg/L and modeled using the Johnson and Ettinger model (on-line screening version) by ADEQ. Ultra conservative residential parameters were used in the model. The cancer risk is 10^{-7} and the non-cancer risk is 0.002. Incidental dermal contact with the groundwater is considered *de minimis* risk. Since the shallow groundwater is not potable, there is no ingestion risk. In a ¼ mile receptor survey, there are no sensitive receptors like schools, day care centers or hospitals. The Colorado River is located approximately ½ mile north of the property. The LUST release (0144.01) associated with MW-46 was closed in October 2016 by the same process as this LUST case.
3. *Groundwater plume stability:* Groundwater plume stability is demonstrated by the remaining VOC contamination present over a regulatory standard in groundwater is limited to MW-6, and the onsite monitoring wells show no VOC contamination present over a regulatory standard. In 2010 a contractor to the UST owner/operator evaluated groundwater plume stability for MW-1, 2 and 3 using the Mann-Kendall statistical test. The plume was stable for benzene and decreasing plume size for MTBE in MW-2 and MW-3 which are down gradient of MW-1. MW-4, 5, and 6 are located off site down gradient from these wells. Groundwater monitoring wells and their respective sampling results since 2010 indicate that the contamination concentrations that exceed a regulatory standard has not extended to MW-46.

4. *Characterization of the groundwater plume:* Monitoring wells were installed and the collection of groundwater data has taken place since 2006. Dissolved-phase petroleum hydrocarbons have been characterized. The groundwater plume extends off site based on groundwater data collected from MW-6 (located in Maiden Lane, which is west of the property line). MW-46, which is located offsite past MW-6, has only shown low levels or levels below reporting limits of MTBE contamination since 1999. The highest MTBE concentration was 8.6 µg/L in June 2009. This well has never shown any other VOC contamination over laboratory reporting limits. Post nutrient injection sampling in MW-6 indicated the MTBE concentrations have significantly decreased, but are still over the Tier 1 Corrective Action Standard. MW-6 was last sampled in April 2017 and no other VOC contamination was reported over laboratory reporting limits. The onsite monitoring wells do not have any VOC contamination present over an applicable regulatory standard.
5. *Natural Attenuation:* The groundwater plume has migrated off site as demonstrated by the MTBE contamination present in MW-6. The source area onsite does not have any VOC contamination present over a regulatory standard. Groundwater data collected from both onsite and offsite monitoring wells show that natural attenuation is occurring as biodegradation. Nutrient amendments have been introduced into MW-6 to increase natural attenuation. It is expected that natural attenuation will result in the continued reduction of the MTBE concentration in MW-6 with time.
6. *Removal or control of the source of contamination:* Source control has been completed by the removal of the UST system in March 2012 and the over excavation of the area in May 2012. The secondary source of hydrocarbons remaining in groundwater has been effectively reduced through the use of CBN™ and CARBSTRATE™ nutrient amendments introduced into MW-6 during 2016. These amendments stimulate biodegradation which has reduced and will further reduce the MTBE contamination concentration in MW-6.
7. *Requirements of A.R.S. §49-1005(D) and (E):* The results of the corrective action completed at the site assure protection of public health, welfare and the environment, to the extent practicable, the clean-up activities completed at this site allow for the maximum beneficial use of the site, while being reasonable, necessary and cost effective.
8. *Other information that is pertinent to the LUST case closure approval:* The facility and LUST files were reviewed for information regarding prior cleanup activities, prior site uses and operational history of the UST system prior to removal.

Groundwater data for MW-6 (off site: down gradient from MW-2)

Date	Benzene AWQS is 5 µg/L	MTBE Tier 1 Corrective Action Standard is 94 µg/L	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Depth to water (feet)
7/17/2009	<1	220	-7.2	4.78	15.67
8/20/2009	<1	310	-44	1.88	15.70
9/5/2012	<1	930	-34	4.12	14.85
10/10/2012	<10*	1,100	-21	4.62	14.96
10/23/2013	<10*	1,800	-143.9	2.41	14.71
1/22/2014	<10*	1,800	--	--	14.70
10/8/2015	<2	1,400	--	--	15.2
9/15/2016	<0.50	420	--	--	15.25
4/3/2017	<10*	200	--	--	14.87

*It is noted that the reporting level for benzene is above the AWQS based on laboratory dilution. The historic benzene concentration has always been reported as less than the laboratory reporting limit.

Groundwater data for MW-46 (offsite: to the northwest of MW-6)

Date	Benzene AWQS is 5 µg/L	MTBE Tier 1 Corrective Action Standard is 94 µg/L	Depth to water (feet)
9/22/1999	<2.0	<5.0	24.62
1/24/2000	<2.0	<5.0	--
5/21/2003	<2.0	<5.0	25.27
6/10/2004	<1.0	<5.0	25.61
6/30/2005	<0.50	4.9	25.55
6/5/2006	<1.0	<3.0	26.23
6/19/2007	<1.0	<3.0	26.21
6/17/2008	<2.0	<4.0	25.75
6/9/2009	<1.0	8.6	25.45
6/7/2010	<1.0	2.4	25.12
6/12/2013	<0.50	<0.50	24.07
3/10/2014	<0.50	0.75	25.01
9/28/2015	<2.0	1.5	25.25

Groundwater data for MW-3

Date	Benzene AWQS is 5 µg/L	MTBE Tier 1 Corrective Action Standard is 94 µg/L	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Depth to water (feet)
8/15/2006	<0.50	1,900	--	--	17.35
9/21/2006	<0.50	500	--	--	17.26
7/17/2009	<1	530	-83.2	4.56	16.59
8/20/2009	<1	110	-98.6	1.71	16.51
9/4/2012	<1	260	45	7.50	15.77
10/10/2012	<1	80	67	5.73	15.87
10/23/2013	<1	31	-129.8	4.60	15.55

Groundwater data for MW-2

Date	Benzene AWQS is 5 µg/L	MTBE Tier 1 Corrective Action Standard is 94 µg/L	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Depth to water (feet)
8/15/2006	2.0	13,000	--	--	17.66
9/21/2006	4.0	9,700	--	--	17.71
7/17/2009	<1	<1.0	-130.5	4.20	16.90
8/20/2009	<1	2,000	-130.2	1.60	16.93
9/4/2012	<1	500	118	7.17	16.12
10/10/2012	<1	100	123	5.07	16.15
10/23/2013	<1	38	-158.5	4.53	15.91

Groundwater data for MW-1 (near release .01)

Date	Benzene AWQS is 5 µg/L	MTBE Tier 1 Corrective Action Standard is 94 µg/L	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Depth to water (feet)
5/4/2006	20	760	--	--	17.25
6/21/2006	32	2,000	-274	0.4	17.44
8/15/2006	11	790	--	--	17.61
9/21/2006	6.1	560	--	--	17.59
7/17/2009	<1	74	-119.6	5.34	16.82
8/20/2009	<1	60	-151.1	2.10	16.75
9/4/2012	<1	25	-42.3	3.39	---
10/10/2012	<1	27	-67.8	2.56	---
10/23/2013	<1	11	-183.1	4.63	---

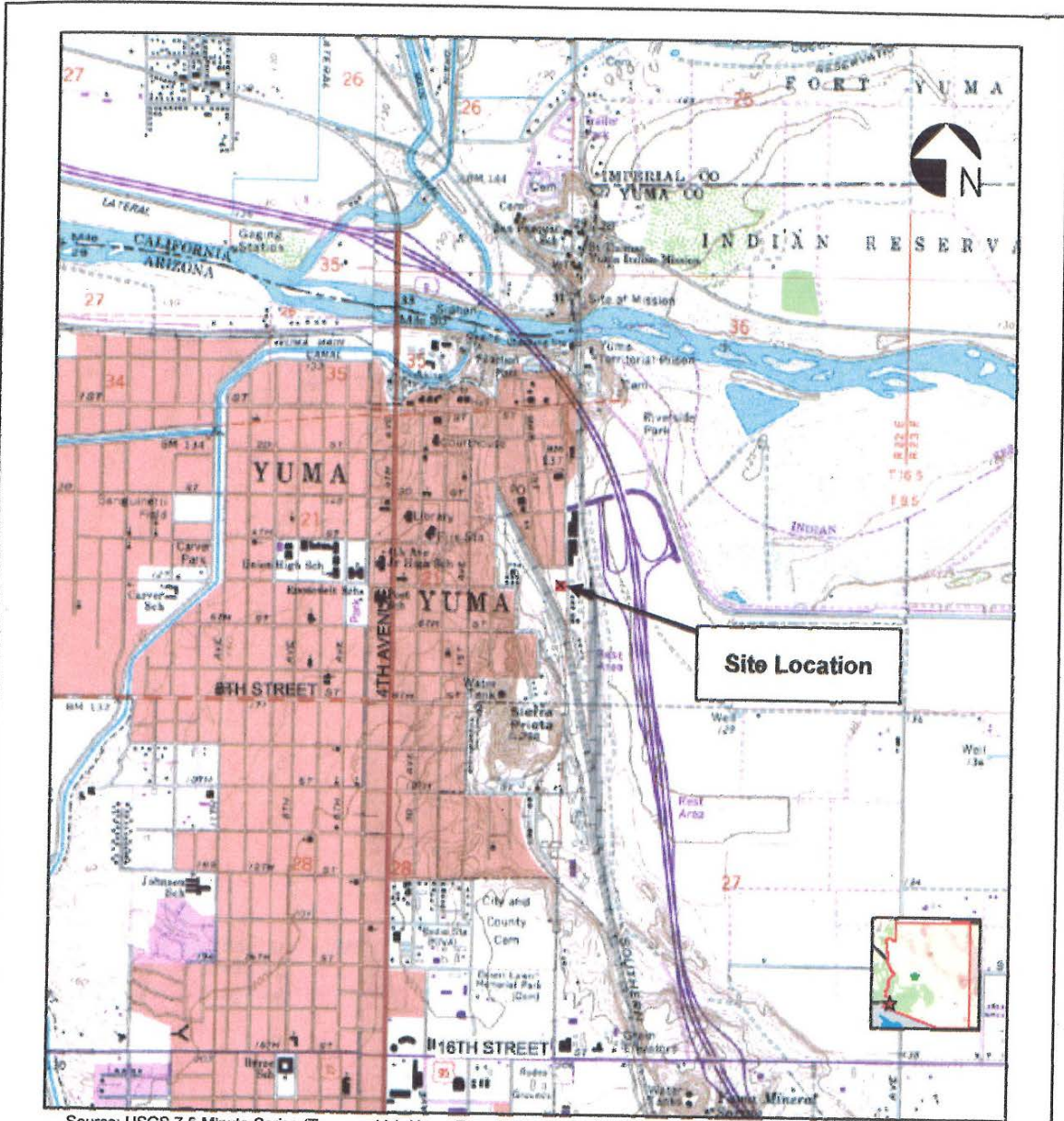
Site specific information concerning this closure is available for review during normal business hours at the ADEQ Records Center <http://www.azdeq.gov/records-center>, 1110 W. Washington St., Suite 140, Phoenix, AZ 85007. ADEQ welcomes comments on the proposed LUST case closure. Please call the Records Center at 602-771-4380 to schedule an appointment. A 30-day public comment period is in effect commencing **May 26, 2017 and ending June 26, 2017**. Comments should be submitted in writing to the Arizona Department of Environmental Quality, Waste Programs Division, and Attention: Tiffany Yee, 1110 W. Washington Street, Phoenix, AZ 85007.

If sufficient public interest is demonstrated during the public comment period, ADEQ may announce and hold a public meeting. ADEQ will respond to written comments following the public comment period. For more information on this notice, please contact the Case Manager, Tiffany Yee at (602) 771-2316 or at tjy@azdeq.gov. You may also contact the Sr. Risk Assessor, Debi Goodwin at (602) 771-4453 or at dgl@azdeq.gov.

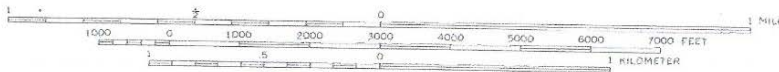
Copies of the cited statutes and rules can be found at:
<http://www.azleg.gov/ArizonaRevisedStatutes.asp?Title=49>, and
http://www.azsos.gov/public_services/Title_18/18-12.htm

ADEQ will take reasonable measures to provide access to department services to individuals with limited ability to speak, write, or understand English and/or to those with disabilities. Requests for language interpretation services or for disability accommodations must be made at least 48 hours in advance by contacting: 7-1-1 for TDD; (602) 771-2215 for Disability Accessibility; or Ian Bingham, Title VI Nondiscrimination Coordinator at (602) 771-4322 or idb@azdeq.gov.

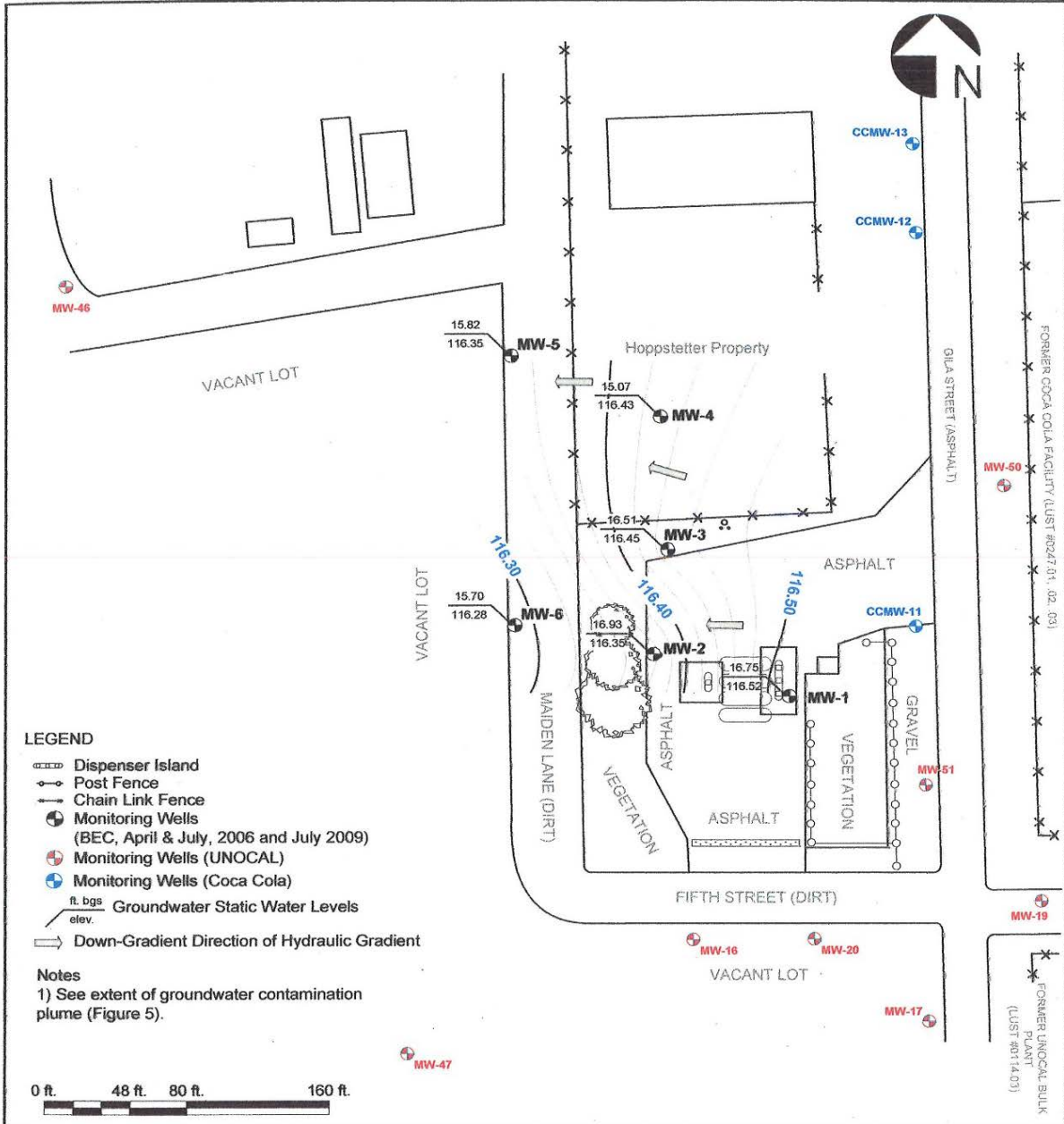
ADEQ tomará medidas razonables para proveer acceso a los servicios del departamento para personas con capacidad limitada para hablar, escribir o entender Inglés y / o para las personas con discapacidad. Las solicitudes de servicios de interpretación del lenguaje o de alojamiento de discapacidad deben hacerse por lo menos 48 horas de antelación poniéndose en contacto con Ian Bingham, Title VI Nondiscrimination Coordinator al (602) 771-4322 o idb@azdeq.gov.



Source: USGS 7.5-Minute Series (Topographic): Yuma East, AZ Quadrangle, Scale 1:24,000, 1965 (photorevised 1979)



	Vicinity Map		REVISIONS		LUST Site Characterization Report Cardlock Facility 490 Gila Street Yuma (Yuma County), AZ <small>(LUST No. 5399.01, .02; Facility No. 0-007295)</small>	Figure 1	
	DATE DRAFTED	SCALE	NO.	DATE			DESCRIPTION
	2/6/07	See Above					
	LATEST REVISION	JOB NO.	CHECKED	DRAWN			
	1/17/10	J050108	G. Bender	J. Luepke			



	Site Plan – Monitoring Well Locations & Hydraulic Gradient (August 20, 2009)		REVISIONS		
			NO.	DATE	DESCRIPTION
DATE ORIGINAL	SCALE				
2/16/07	1" = 80'				
LATEST REVISION	JOB NO.	CHECKED	DRAWN		
1/16/10	J050108	G. Bender	J. Luepke		
LUST Site Characterization Report		Cardlock Facility 490 Gila Street Yuma (Yuma County), AZ (LUST No. 5399.01, .02; Facility No. 0-007295)			
		Figure 4			