UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105
Underground Storage Tanks Program Office
(LND-4-3)

DEC 2 1 2016

CERTIFIED MAIL: 7015 0640 0001 1118 1981
RETURN RECEIPT REQUESTED

Stephen R. Lewis, Governor
Gila River Indian Community
P.O. Box 97
Sacaton, Arizona 85147

Subject: No Further Action with Institutional Control
Arizona Traders Underground Storage Tank Cleanup Site
Sacaton, Arizona (EPA ID No. GILA-026)

Dear Governor Lewis:

The U.S. Environmental Protection Agency ("EPA") is sending this letter to inform you of our determination regarding the status of the Arizona Traders underground storage tank ("UST") cleanup site ("Site"), located in Sacaton, Arizona, on land of the Gila River Indian Community ("GRIC"). To date, EPA has spent over $1,000,000 from the Federal LUST Trust Fund on extensive assessment and remediation work at the Site, which has resulted in the removal of an estimated 48,942 pounds of hydrocarbons from the subsurface. Therefore, EPA has determined, in concert with the GRIC Department of Environmental Quality ("GRIC DEQ"), that no further action ("NFA") is warranted for the Site, at this time. Specifically, this NFA determination is based on the following:

- Due to naturally occurring conditions described in the Enclosure, the shallow groundwater beneath the Site is not suitable for drinking water or agricultural purposes without undergoing potentially expensive treatment.
- Human exposure to contamination in soil through dermal contact, inhalation and ingestion is unlikely based on the depth of the soil contamination beginning at approximately 30 feet below ground surface ("bgs").
- Human exposure to the remaining contamination in groundwater is unlikely because the groundwater beneath the Site is not currently used for drinking water or agricultural purposes.
- The nearest hydraulically downgradient drinking water well currently operated by the GRIC is the Sacaton Substation Well, located approximately 0.9 mile west-southwest of the Site, which is screened 300-745 feet bgs and had no volatile organic compound ("VOC") detections during the GRIC's sampling event on November 13, 2014.
- The relatively deep soil and groundwater contamination at the Site would not impede future land use or development.

- Monitoring of water quality parameters indicates that in-situ biodegradation of hydrocarbons is likely occurring.

EPA's Five-Year Review and Potential Recommendation for Sampling by the GRIC

Within five years of this NFA determination, EPA will evaluate any new information pertaining to the Site and surrounding areas, which may include: new analytical data for soil and/or groundwater, precipitation data, pumping rates for drinking water and agricultural wells, proposed new development plans by the GRIC, any renewed use of currently inactive drinking water wells, verbal communications with GRIC-DEQ staff, or any other appropriate data.

One potential outcome of EPA's five-year review would be a recommendation for groundwater sampling by the GRIC. This could potentially occur if precipitation rates increased significantly, the water table rose, and additional hydrocarbons were mobilized as free product and/or as dissolved phase in groundwater. This situation would potentially warrant a reassessment of the assumption that the hydrocarbon plume is stable, if this were supported by the analytical results for the groundwater samples from all of the monitoring wells at the Site. EPA would work closely with the GRIC DEQ in implementing this potential future monitoring.

Recommended Amendment to the GRIC's Water Ordinance

Although significant hydrocarbon contamination has been remediated at the Site, residual contamination remains in soil and groundwater. In addition, the hydrocarbon concentrations in groundwater are currently above EPA's Maximum Contaminant Levels ("MCLs"). Based on these factors, EPA believes it would be prudent for the GRIC to amend its Water Ordinance to acknowledge the existence of the residual contamination in soil and groundwater at the Site. This amendment would also require the GRIC to consider potential impacts from the Site in any future decisions regarding planned new drinking water wells within ¼ mile of the Site, or proposed land development.

Status of the existing groundwater monitoring wells at the Site

In an email communication with EPA on November 10, 2016, GRIC DEQ stated its position that the groundwater monitoring wells at the Site should remain in-place for potential future monitoring purposes. In addition, GRIC DEQ indicated that it would conduct periodic monitoring of the groundwater monitoring wells in order to ensure their future integrity.

Conclusion

As noted previously in this letter, EPA has consulted with the GRIC DEQ, and the GRIC DEQ supports EPA's NFA determination for the Site. However, if additional information becomes available in the future regarding hydrocarbon contamination in soil and/or groundwater at the Site, EPA may determine that additional site assessment and/or corrective action is warranted.

If you have any questions regarding this letter, please have your staff contact Chris Prokop at (415) 972-3363, or me at (415) 972-3751.

Sincerely,

Tom Huetteman, Assistant Director
Land Division, EPA Region 9

Cc (via email, all w/enclosure):

Monica Antone, Lt. Governor, GRIC
Linus Everling, General Counsel, GRIC
Carolyn Williams, Council Representative, District 3 GRIC
Rodney Jackson, Council Representative, District 3 GRIC
Robert DeLeon, Acting Director, GRIC DEQ
Rudy Mix, Hazardous Waste Program Manager, GRIC DEQ
Janet Bollman, Environmental Scientist, GRIC DEQ
Keith Anna, Acting Director, Pima Agency BIA
Charles Reidhead, M.D., Acting Director, Phoenix Area IHS

Enclosure: Former UST Operations, Site Assessment and Investigation

ENCLOSURE
Arizona Traders UST Cleanup Site
Sacaton, Arizona (EPA ID No. GILA-026)
Former UST Operations, Site Assessment and Remediation

Site Background and Former UST Operations

The Site is located in on open lot in Sacaton, Arizona, which has a population of approximately 3,500. Two residences, GRIC government buildings and a church are located within approximately 400 feet of the Site. The Halbison family operated the former Arizona Traders store and two 1,000-gallon USTs were used for storing and dispensing gasoline. The Halbison family operated the UST facility from 1963 to 1985. After 1985, the USTs remained in the ground until they were removed by the GRIC DEQ in 1998. The trading post burned in 1994.

Site Assessment and Remediation Work from 1998 to 2012

1998 UST Removal and Site Assessment by the GRIC DEQ

In June 1998, the GRIC DEQ retained JBL & Associates ("JBL") to remove the USTs. Soil sampling during the UST removals showed a maximum total petroleum hydrocarbon ("TPH") concentration of 2,554 milligrams per kilogram ("mg/kg"). During its follow-up site assessment in October 1998, JBL drilled four borings, and collected multiple soil samples and one groundwater sample from beneath the former USTs. The analytical results for the soil samples showed elevated concentrations of TPH, and the analytical results for the groundwater sample showed benzene, toluene, ethylbenzene and total xylenes ("BTEX") concentrations above the MCLs. The maximum benzene concentrations in soil and groundwater were 56 mg/kg and 400 micrograms per liter ("µg/L"), respectively. Additionally, the benzene concentration in groundwater was above EPA's 5 µg/l benzene MCL.

2002-2003 EPA Site Assessment

In 2002, EPA's contractor, Arrowhead, Inc. ("Arrowhead"), conducted a site assessment to determine the extent of contamination in soil and groundwater, develop a site conceptual model, identify current and potential receptors, and evaluate remedial alternatives for the Site. Arrowhead installed seven groundwater monitoring wells, all of which were drilled to a total depth of 100 feet bgs except for MW-1 (located west of the USTs), which was extended to 120 feet bgs due to the presence of free product at 100 feet bgs. These monitoring wells showed that the hydrocarbon plume was localized in the vicinity of the former USTs and appeared to be stable.

The highest concentrations of contaminants in soil and groundwater were found below the area of the former USTs. The maximum benzene concentrations in soil and groundwater were 7.9 mg/kg and 270 µg/L, respectively. The site assessment showed that the benzene concentrations in groundwater near the source area were still above EPA's 5 µg/l benzene MCL.

2006-2008 EPA Site Assessment and Remediation

In 2006, EPA's contractor, Bristol Environmental & Engineering Services Corporation ("Bristol"), installed six additional groundwater monitoring wells at the Site, and conducted a pilot test for soil vapor extraction ("SVE") for removing hydrocarbon vapors from the subsurface. Following the favorable SVE pilot test, EPA activated the SVE system in August 2006. The SVE system included

catalytic oxidation ("catox") of the hydrocarbons in the vapor stream, and was operated through May 2008. During this time period, the SVE system removed an estimated 48,942 pounds (8,157 gallons) of hydrocarbons from the vadose zone. The removal of hydrocarbon mass from the subsurface, as well as the existence of natural attenuation processes, were also documented by the following:

- The reduced extent of the hydrocarbon plume in groundwater based on a comparison of the May 2004 and May 2008 benzene concentration contour maps.
- The lack of benzene detections in the shallow vapor point wells (at 16 feet bgs) since September 6, 2006.
- The significantly reduced hydrocarbon concentrations at the influent piping of the catox system.
- The extremely low hydrocarbon detections in the effluent piping of the catox system since November 6, 2006.
- The depressed dissolved oxygen and increased methane concentrations in groundwater, supporting an interpretation that natural attenuation processes were likely breaking down the hydrocarbons.

In May 2008, the maximum benzene concentration in groundwater was 2,500 µg/l in MW-13, which was significantly higher than the maximum benzene concentration of 670 µg/l in 2005. This increased benzene concentration in MW-13 and other monitoring wells in May 2008 was attributed to the 14-foot drop in the water table from 2002 to 2008. In May 2008, MW-13 also had a 35 µg/l 1,2-dichloroethane ("1,2-DCA") concentration, which was above EPA's 5 µg/l MCL for 1,2-DCA.

2012 GRIC DEQ Site Assessment

In 2012, the GRIC DEQ retained Kleinfelder, Inc. ("Kleinfelder") of Tempe, AZ to collect and analyze groundwater samples from MW-1, MW-3, MW-4A, MW-5 and MW11. Kleinfelder's groundwater sampling event in August 2012 showed free product in MW-5 (beneath the former UST location), and benzene concentrations above the MCL in hydraulically downgradient wells MW-11 (1,160 µg/l) and MW-4A (166 µg/l), and hydraulically sidegradient well MW-3 (14.3 µg/l). The compound 1,2-DCA was also detected above its MCL in MW-4A and at MW-11. The depth to groundwater during this sampling event was approximately 94 feet bgs, which represented a drop of approximately 24 feet in the water table since 2002.

EPA's 2016 Site Assessment

In 2016, EPA's contractor, iina ba, conducted assessment work at the Site, which included: evaluating the structural integrity of all 13 monitoring wells; obtaining water levels from all wells and contouring the water table; collecting groundwater samples from all wells and analyzing for petroleum hydrocarbons, total lead, and natural attenuation and water quality indicator parameters; contouring the analytical data; and locating public drinking water and agricultural supply wells within one mile of the Site. The analytical data in the "Site Assessment and Natural Attenuation Evaluation Report", dated April 2016, indicated the following:

- EPA's MCLs for benzene, ethylbenzene and lead were exceeded in multiple monitoring wells.
- The 5 µg/l benzene MCL was exceeded in MW-4A (170 µg/l), MW-5 (390 µg/l), MW-8 (7.7 µg/l), MW-10 (8.3 µg/l), MW-11 (290 µg/l) and MW-13 (150 µg/l).
- The 700 µg/l ethylbenzene MCL was exceeded in MW-5 (770 µg/l) and MW-11 (1,100 µg/l).
- The 15 µg/l lead MCL was exceeded in MW-2 (43 µg/l), MW-3 (20 µg/l), MW-4A (45 µg/l), MW-5 (29 µg/l), MW-6 (29 µg/l) and MW-13 (27 µg/l).

- The benzene plume in groundwater was of limited area extent, and its downgradient boundary was approximately 200 feet west-northwest of the former USTs.
- Depleted dissolved oxygen ("DO") concentrations in the central area of the plume showed that aerobic biodegradation of hydrocarbons was likely occurring.
- Elevated methane and ferrous iron concentrations, combined with reduced nitrate and sulfate concentrations, in the central area of the plume indicated that anaerobic biodegradation of hydrocarbons was likely occurring.
- The depth to groundwater ranged from 93.83 to 97.03 feet bgs.
- The groundwater flow direction was westerly.
- The nearest active drinking water well operated by the GRIC (Sacaton West Well) is located approximately 1,100 feet (0.21 mile) north of the Site, but this well is hydraulically sidegradient of the hydrocarbon plume at the Site. The only other active drinking water well operated by the GRIC (the Sacaton Substation Well) is located approximately 4,800 feet (0.90 mile) west-southwest of the Site.
- Other inactive drinking water wells are located within 1 mile of the Site, but none of these is hydraulically downgradient.

Discussion of Potential Receptors

As noted previously, two residences, GRIC government buildings and a church are located within approximately 400 feet of the Site. However, the relatively deep (i.e., approximately 30 feet bgs and deeper) residual hydrocarbon contamination in soil at the Site represents an incomplete exposure pathway for the direct contact and inhalation exposure routes. In addition, the groundwater at approximately 95 feet beneath the Site is not currently used for drinking water.

On August 19, 2016, Chris Prokop of EPA Region 9 contacted Chris Huang of the GRIC's Department of Public Works to discuss the GRIC's active drinking water wells. Mr. Huang informed Mr. Prokop that the active Sacaton West and Substation wells draw their drinking water from aquifers 300 feet and deeper bgs. Mr. Huang also noted that water samples collected by the GRIC from both wells on November 13, 2014 showed no detections for VOCs, and that there is no pretreatment of the water pumped from these wells other than the addition of disinfectant.

Assessment of Groundwater Quality beneath the Site

The groundwater beneath the Site was also evaluated for its potential suitability for drinking water and agricultural purposes. The analytical results for multiple natural attenuation parameters for groundwater samples collected on March 29-30, 2016 showed exceedances of EPA's Secondary Drinking Water Standards for iron, manganese and sulfate. In addition, the analytical results for these samples showed elevated specific conductance ("SC") readings in the range of 540 to 3,279 micromhos per square centimeter. The elevated iron, manganese and sulfate concentrations, combined with the elevated SC readings, indicate that the groundwater beneath the Site may not be suitable for human consumption or agricultural purposes without potentially expensive treatment.