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

FEB 0 6 2015

CERTIFIED MAIL: 7001 0360 0000 3639 4101
RETURN RECEIPT REQUESTED

Mr. Rudy Mix, Environmental Program Manager
Waste Program, Department of Environmental Quality
Gila River Indian Community
P.O. Box 97
Sacaton, Arizona 85147

Subject: No Further Action
Former UST Site at St. John's Mission
51st Avenue and Pecos Road, Laveen, Arizona (EPA ID# GILA-038)

Dear Mr. Mix:

The U.S. Environmental Protection Agency Region 9 ("EPA") has completed its review of file documentation pertaining to the St. John's Mission underground storage tank ("UST") Site ("the Site"). EPA's summary of the former UST operations, site assessment work and potential receptors, as well as the conclusions regarding the Site, are contained in Enclosure A.

Based on this file review, EPA has determined that no further action ("NFA") is required for the Site at this time. However, if additional information becomes available in the future regarding hydrocarbon contamination in soil and/or groundwater at the Site related to USTs, or the planned use of the Site changes, EPA may reopen the Site and require additional site assessment and/or corrective action.

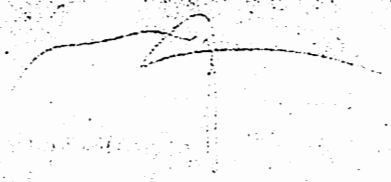
Please note that this NFA letter, as well as all supporting documentation, will be available to the general public. If you have any questions regarding this letter, please contact me at (415) 972-3369.

Sincerely,

Steven C. Linder, P.E., Manager
Underground Storage Tanks Program Office

Enclosure: A) Site Background and Justification for NFA

Cc (w/enclosure): Janet Bollman, GRIC DEQ
John Krause, BIA-Phoenix Area Office



ENCLOSURE A
Site Background and Justification for NFA

UST release at St. John's Mission, 51st Avenue and Pecos Road, Laveen, Arizona (EPA ID# GILA-038)

Site background and current use

Historical records indicated that the St. John's Mission was constructed on the four acre Site in approximately 1890, and a church and boarding school were operated by the Phoenix Catholic Diocese. The church continues to operate at the Site. On December 12, 1988, the Diocese prepared an UST Notification Form for the Site which listed one 1,000 gallon UST of unknown construction that was reportedly over 50 years old and last operated in June 1982. The Notification Form listed "St. John the Baptist Parish" as the owner of the UST. This UST, which had been located in a courtyard on the Site, is believed to have provided gasoline and potentially, diesel fuel, for the Mission's vehicles. A second UST was subsequently identified near the Post Office formerly located at the Site. On March 6, 1998, a second UST Notification Form was prepared for the Post Office UST by the Gila River Indian Community's Department of Environmental Quality ("GRIC DEQ"). The material of construction and installation date for the Post Office UST were listed as unknown. In 1997, the Diocese returned the property to the GRIC, but continued operating the church and convent buildings. In July 2004, the GRIC constructed a Diabetes Education and Resource Center on the property within approximately 200 feet of the former courtyard UST. The GRIC also converted the former cafeteria/gym into a Boys and Girls Club, but the Boys and Girls Club was subsequently relocated approximately 2,000 feet east of the Site.

UST removal and hydrocarbon release confirmation

On February 27, 1998, the Post Office UST was removed by the GRIC and the closure work was documented in the "Underground Storage Tank Closure Report", dated March 9, 1998. Based on the absence of hydrocarbon concentrations above EPA's screening levels, EPA issued an NFA determination for the Post Office UST on April 13, 1998. The "courtyard" UST was also removed in 1998, but elevated gasoline and diesel range hydrocarbons were found in soil samples from the excavation for the UST system.

Additional site assessment

On October 12, 1998, the GRIC DEQ's environmental consultant, JBL and Associates ("JBL"), drilled a single boring to 30 feet below ground surface ("bgs"), reportedly within 5 feet of the former location of the courtyard UST, and collected soil samples. JBL also collected a grab groundwater sample with a direct-push sampling device. The soil samples were reportedly analyzed for benzene, toluene, ethylbenzene and total xylenes ("BTEX") and total petroleum hydrocarbons ("TPH"). The analytical results for the soil samples showed detectable concentrations of toluene, ethylbenzene, total xylenes and TPH, but these concentrations were below EPA's screening levels in effect at that time. However, the grab groundwater sample contained benzene, toluene and ethylbenzene concentrations above EPA's Maximum Contaminant Levels ("MCLs"). Due to JBL's poor mapping of the exact location of the courtyard UST, there is some uncertainty regarding its actual location.

In 2002, the GRIC DEQ was awarded an EPA USTfields grant to conduct further work at the Site. In March 2003, the GRIC DEQ's contractor, Brown and Caldwell ("BC") drilled six borings at the Site, collected and analyzed soil samples, and installed groundwater monitoring wells in each boring. Groundwater was encountered at approximately 27 feet bgs. The soil samples from the borings for monitoring wells MW-1, MW-2 and MW-4 revealed the presence of a 5-foot thick, grey-stained soil layer from 37 to 42 feet bgs of petroleum contaminated soil ("PCS"). This layer of PCS, estimated to contain a total of 8,600 pounds of hydrocarbons, was deemed to be the submerged capillary fringe from a previously deeper water table. The soil sample collected at 37 feet bgs in the boring for MW-1 contained 22 mg/kg ethylbenzene, which was above EPA's current 5.8 mg/kg Regional Screening Level ("RSL") for this compound in a residential setting. In addition, the concentrations in this soil sample for gasoline-range organics ("GRO") and diesel-range organics ("DRO") were 2,100 mg/kg and 560 mg/kg, respectively. On April 14, 2003, BC sampled the six newly installed monitoring wells and analyzed those samples for volatile organic compounds ("VOCs") by EPA Method 8260. BC also had the groundwater sample from MW-1 analyzed for polynuclear aromatic hydrocarbons ("PAHs") by EPA Method 8310. The analytical results for these samples showed no exceedances of the MCLs, although benzene was detected at 2.2 µg/l in MW-4. The groundwater flow direction was northwest under a 0.003 feet/foot gradient.

In June 2004, EPA awarded a $200,000 Brownfields grant to the GRIC for additional work at the Site. In September 2004, BC conducted a passive soil vapor survey with the goal of identifying the best locations to install soil vapor extraction ("SVE") wells. This survey found elevated hydrocarbon vapors in the vadose zone near MW-2 and MW-4. Neither one of these hydrocarbon "hot spots" were in close proximity to the previously assumed location of the courtyard UST.

BC conducted additional groundwater monitoring at the six Site wells on November 30, 2004, February 22, 2005 and May 19, 2005. The results of the sampling were documented in BC's "Remedial Progress and Monitoring Report", dated January 13, 2006. The analytical results showed benzene concentrations of 7.3 µg/l and 5.7 µg/l in the groundwater samples from MW-4 on February 22, 2005 and May 19, 2005, respectively. Both of these concentrations were above EPA's 5 µg/l MCL for benzene. However, there were no other exceedances of the MCLs. The groundwater flow direction was generally to the west under a 0.008 feet/foot gradient.

BC's report also evaluated the Site for indicators of bioremediation, and the report noted that aerobic degradation of hydrocarbons was occurring based on depleted dissolved oxygen concentrations in the center of the plume. The report concluded, however, that monitored natural attenuation ("MNA"), by itself, would not achieve the goal of significantly reducing the mass of submerged PCS, or having all hydrocarbon concentrations in groundwater be below the MCLs. Based on this conclusion, the report recommended a bioventing ("BV") and biosparging ("BS") remedial system for the Site to address the vadose zone contamination and submerged PCS, respectively.

Implementation of the BV/BS remedial system

Following the submittal of regulatory agency comments, BC prepared its Final Remedial Action Plan ("RAP") for the Site on July 16, 2006. BC documented its implementation of the RAP in its Corrective Action Completion Report ("CACR") for the Site, dated September 25, 2008. Pursuant to the RAP, BC installed five BV/BS wells at the Site in October 2006, and operated the remedial system from February 5, 2007 through November 2007. The CACR indicates that during this remediation time period, 850,000

cubic feet of air (14,000 pounds of oxygen) were introduced into the vadose zone by the BV wells, and 1.65 million cubic feet of air (28,000 pounds of oxygen) were injected into the saturated zone by the BS wells. Based on these injection volumes and conservative biodegradation rates, BC estimated that 2,250 pounds of hydrocarbons had been destroyed by the remedial system.

Post-remediation verification sampling of groundwater and soil

On December 18, 2007 and January 23, 2008, BC conducted verification sampling of groundwater and analyzed all samples for VOCs, semi-volatile organic compounds ("SVOCs"), PAHs, TPH, and 1,2-dibromo-3-chloropropane ("DBCP") and ethylene dibromide ("EDB") by EPA Method 504.1. The analytical results showed no exceedances of the MCLs, except for bis-2(ethylhexyl)phthalate ("DEHP"), which is a common laboratory contaminant. During the first sampling event, the DEHP concentrations in MW-2 (13 µg/l) and MW-5 (33 µg/l) were above the 6 µg/l MCL for this compound. However, during the second verification sampling event, the DEHP concentrations were below the laboratory's 10 µg/l reporting limit. During this sampling, the groundwater water direction was northwest under a 0.0025 feet/foot gradient.

On March 13, 2008, BC drilled a soil boring 40 feet bgs in the area of the PCS for the purpose of conducting verification sampling of soil. BC collected soil samples at 10, 20, 30 and 40 feet bgs, and analyzed all samples for the same parameters as the groundwater samples, except that the Resource Conservation and Recovery Act group of eight metals was also analyzed. The only exceedances of the residential RSLs for individual compounds in soil were for naphthalene and arsenic. The maximum naphthalene concentration in soil was 120 mg/kg in the sample from 10 feet bgs, which was above the current 3.8 mg/kg residential RSL for this compound. The maximum arsenic concentration was 6.7 mg/kg at 20 feet bgs, which was above the current 0.39 mg/kg residential RSL for this metal. The maximum TPH (as gasoline) concentration was 47,000 mg/kg in the soil sample from 10 feet bgs.

Potential receptors

As noted previously in this document, the Diabetes Education and Resource Center is located within approximately 200 feet of the former courtyard UST. However, a vapor barrier was constructed within the foundation of the Center as an engineering control to limit any potential upward migration of vapors. In addition, an asphalt surface covers most of the hydrocarbon release area associated with the former courtyard UST. Hydrocarbon impacts to soil were documented at 10 feet bgs, but this is beyond the depth of human impacts by means of direct contact. The nearest surface water is the Gila River located over one mile west of the Site.

Conclusion

As noted above, only the naphthalene and arsenic concentrations during the verification soil sampling exceeded EPA's RSLs for residential settings. However, the soil sample containing this naphthalene concentration was from 10 feet bgs. Although the maximum arsenic concentration is soil was above the residential RSL, a 1984 study in a United States Geological Survey Professional Paper noted that naturally occurring arsenic concentrations in soil in the United States can range up to 97 mg/kg. Acknowledging these naturally occurring arsenic concentrations in soil, EPA is using the 22 mg/kg non-carcinogenic RSL for screening purposes at the Site.

With regard to groundwater, only the DEHP concentration during the first round of verification sampling was above its MCL. As noted above, DEHP is a common laboratory contaminant. The groundwater beneath the Site is not currently used for drinking water and GRIC DEQ staff are not aware of any future plans to use this groundwater. In addition, GRIC DEQ staff are not aware of any future plans that would involve using the Site directly above the former UST area. Based on information provided by GRIC DEQ staff, the nearest active drinking water well is located approximately 1.25 miles south of the Site, and the nearest surface water is the Gila River located over one mile west of the Site. Based on these findings, no further work is required for the Site at this time.