



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105
Underground Storage Tanks Program Office
(WST-8)

October 15, 2012

Gayl Honanie
Program Director
Hopi Environmental Protection Office
PO Box 123
Kykotsmovi, AZ 86039

Subject: Conditional No Further Action Determination for the Leaking Underground Storage Tank (UST) Site, Silas Hoyungowa, Hopi Nation, Hotevilla, Arizona (EPA ID: HOPI-026)

Dear Ms. Honanie:

The U.S. Environmental Protection Agency (EPA) Region 9 UST Program Office (USTPO) has completed the investigation and cleanup of the subject site. EPA has been working collaboratively since 1999 with the Hopi Environmental Program Office (EPO) regarding this site. The work was funded through the America Reinvestment and Recovery Act (ARRA) and overseen by the EPA and the Hopi EPO. EPA retained Bristol Environmental Remediation Services, LLC (Bristol) to perform the work for this site.

Site History

Based on information provided by the Hopi EPO, there was originally a 500-gallon underground storage tank (UST) at this site, which was removed and replaced by a 1,000 gallon UST. EPA has no official records of the removal or installation of the 500-gallon tank. The UST system may have been in use/operation as early as the 1960's and dispensing petroleum until 1984.

EPA removed the 1,000-gallon gasoline UST system from the site in May 2008. Evidence of petroleum release underneath the dispenser area was noted at time of UST removal.

Site Characterization and Cleanup Activities

Site activities involved the following:

- Removal of UST system;

- Excavation of petroleum-contaminated soil;
- Surface and subsurface soil sampling;
- Soil borings for groundwater monitoring well and soil gas sampling; and
- Sampling of the local springs.

The site activities were conducted by EPA from 2008 through 2011. Contaminants exceeding EPA screening levels at the site consisted of diesel range-organics (DRO), gas-range organics (GRO), benzene, and xylenes. Approximately, 300 cubic yards of contaminated soil was excavated and sent to an authorized disposal facility. All contaminated soil near the source was removed and the remaining contamination at the site is restricted to approximately 25 feet below ground surface (bgs) within the silty mudstone and sandstone units. The mudstone has prevented contamination migrating to greater depths.

The remaining soil contamination was not removed from the site because of the presence of structural constraints such as the building, roads, and subsurface utilities. Petroleum hydrocarbons are present beneath the roadways, in the backfill for a water line, and beneath the Silas building.

A soil boring for installation of a groundwater monitoring well was advanced to 75 feet without encountering water and was terminated in dry sandstone. There was no indication of petroleum hydrocarbon contamination in the soil boring. The monitoring well was not installed.

Human Health and Ecological Risk Assessment

To assess the risks posed by the remaining contamination at the site, EPA collected data in January 2011. EPA installed six temporary soil vapor probe points to evaluate vapors at the site, i.e., soil gas. Outdoor ambient air and indoor ambient air samples inside the abandoned Silas store were also collected.

Based upon the levels of residual contaminant concentrations remaining at the site and the calculation of the risks from the site data, adverse human health impacts to residents and workers are not anticipated. Groundwater was not impacted by this release and sampling results from the Hotevilla Springs has indicated no impacts to this water resource.

From an ecological standpoint, although individual organisms might be affected, the affected area is small enough that it does not threaten the animal population in and around the site and EPA bases remedial decisions on the protection of populations of animals. No threatened or endangered species are present at the site that may be affected by the residual contamination. Accordingly, the cleanup performed at this site is protective of the environment and no additional cleanup is warranted to protect the ecology.

Sampling the Hotevilla Springs

In May 2009, the Water Resources Program of the Hopi Tribe requested that EPA take water samples from the nearby Hotevilla Springs for petroleum contaminants. In response, EPA collected water samples from the Upper and Middle Hotevilla Springs. The water samples did not contain petroleum hydrocarbons. The aquifers below the spring are protected by approximately 300 feet of low hydraulic conductivity Mancos Shale.

Community Meeting

EPA presented the above findings to the Hotevilla Community and Hopi EPO on October 25, 2011. The residents' primary concern was the safety of their water and if the water was impacted with petroleum contamination. The Hotevilla residents get their drinking water from two groundwater wells in the village and EPA assured them that the contamination from the Silas site has not reached the groundwater. They were also concerned with the impact to the local springs because most of these residents tended gardens for their livelihood and they rely on the springs for watering their garden.

EPA Region's 9 Ecologist, John Beach, and Senior Regional Toxicologist, Patrick Wilson, attended the October 2011 community meeting and discussed the risk assessment process and results with members of the Hotevilla Community. The Agency's risk assessors reviewed the sampling results and contrasted those findings with the Agency's site-specific cleanup criteria. Members of the community were informed that the long-term threats to groundwater, the ecosystem and human health fell well within the Agency's limits of acceptability. In fact, the Hotevilla Springs - which are fed by deep groundwater aquifers - were sampled & evaluated by EPA and petroleum hydrocarbon contamination was not detected. A number of community members asked clarifying questions during the meeting and offered affirmative comments regarding the adequacy of cleanup activities.

The meeting culminated, with a visit to the Hotevilla Springs and the Hopi gardens.

Conclusion

Based on the findings presented in this letter, the EPA determined that the release at this site can be closed without additional action. EPA's intention is to resample the Upper and Middle Hotevilla Springs in approximately three years to address public concerns related to the protectiveness of the cleanup.

The USTPO has discussed this site and our recommendation with the Hopi EPO and Water Resources Program on December 2, 2011. The Hopi EPO requested sampling of the springs and groundwater below the site once every three years for a six year period to address public concerns. The letter from Hopi EPO to EPA Region 9 dated January 31, 2012 is attached, which requested the sampling of the springs and monitoring wells at the Silas site within five years. EPA intends to sample the Upper and Middle Hotevilla Springs in approximately three years to confirm that the petroleum the contamination was thoroughly addressed. Should any petroleum contamination be found in this sampling event, EPA intends to conduct additional investigation in order to determine the need for any additional cleanup. Since no monitoring wells were installed at the site, groundwater will not be sampled.

If new information becomes available prior to a sampling event regarding hydrocarbon contamination in soil and/or groundwater at this site, EPA may reopen this case and conduct additional site assessment and/or corrective action.

If you have any questions regarding the information contained in this letter, please contact Tess Salire of my staff at (415) 972-3376, or you can contact me directly at (415)-972-3369.

Sincerely,

Steven Linder, P.E., Manager
Underground Storage Tank Program Office

CC:

Lionel Puhuyestewa, Hopi Department of Water Resources
Mimi Newton, ORC
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John Beach, WST-5
Scott Ruth, Bristol Environmental Remediation Services, Inc.
Site File

EPA Edits/Reviews:

WST-8	WST-8			
<i>Salire</i>	<i>i. linder</i>			
<i>10/15/12</i>	<i>10/15/12</i>			