UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco, CA 94105-3901

April 1, 2010

Mr. Ken Norton
Hoopa Land Management Department
P.O. Box 1130
Site 1 Cannery Road
Hoopa, CA 95546

Subject: No Further Action (NFA) for the Former Underground Storage Tank Site at Former Bussel Hoopa (Hupa) Chevron, Highway 96, Hoopa, California (EPA ID# HOOP003).

Dear Mr. Norton:

The U.S. Environmental Protection Agency (EPA) has reviewed the report entitled Bussell Chevron (HOOP 003) Hoopa Valley Indian Reservation Site Assessment Report, Revision 0, dated November 2009 that was prepared by Bristol Environmental Services on behalf of EPA for the former underground storage tank (UST) facility at Highway 96, Hoopa, California. The closure report documents the removal of six USTs, associated piping and dispensers and sampling activities at the subject facility in June 2009.

Site Background

The USTs were installed in the 1950s and the facility operated under various lease holder agreements for over 40 years, until the site was abandoned in 1991. A fire destroyed the station in 1994 and in 1999, a Hoopa tribal representative verified that the USTs were still in the ground.

Site Closure Activities and Analytical Data

In June 2009, the U.S. EPA removed six USTs (one 10,000-gallon capacity diesel UST, two 7,500-gallon capacity gasoline USTs, one 2,300-gallon capacity gasoline UST, one 550-gallon capacity waste oil UST, and one small [approximately 50-gallon capacity] UST containing hydraulic fluid) from the site. Analyses of the soil from the tank excavation efforts indicated soil contamination below the waste oil tank. The soil contamination remained after the initial excavation and over-excavation efforts. The sample collected from beneath the cleanout for the waste oil UST had an oil-range organics (ORO) concentration of 610 milligrams per kilogram (mg/kg), exceeding the soil screening level of 370 mg/kg. However, the associated analytical results for the

same sample did not yield volatile organic compound (VOC) or semi-VOC (SVOC) results above applicable soil screening levels (SSLs). Arsenic was detected in the soil samples analyzed for metals above the SSL of 0.39. The arsenic concentrations detected at this site may reasonably be considered to fall within the range of native concentrations. (Please see attached literature review that validated this assumption.) No evidence suggesting that the groundwater has been impacted by this site was identified during this assessment.

Conclusion

Based on the findings of the UST closure report, EPA is not requiring further action for this site at this time. However, if additional information becomes available in the future regarding hydrocarbon contamination in soil and/or groundwater, EPA may require additional site work.

If you have any questions regarding this letter, please contact Curtis Payton of EPA's contract support staff at (916) 557-7431 or Mr. Carl Warren of my staff at 415-972-3355.

Sincerely,

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

CC: Scott Ruth, Bristol Environmental Services, Inc.
File copy Hoop-003

Attachment: Literature Review of Arsenic Levels in Soil in Hoopa Valley, California

Attachment

Literature Review of Arsenic Levels in Soil in Hoopa Valley

The area in which the soil samples were collected consists of alluvium and terrace deposits of the Trinity River derived chiefly from the Galice Formation bedrock upstream and north of the Hoopa Valley and from the Rattlesnake Creek assemblage of the Western Paleozoic Triassic Belt to the west of the site. The Galice formation is a slate, greywacke and greenstone formation derived from marine and island arc (volcanic) sources (McDonald et al., 2006). Wright and Wyld, (1994) describe the Rattle Snake Creek terrain as follows:

> "Trace element chemistry indicates that basalt, amphibolite, and greenstone blocks were derived from normal to enriched mid-oceanic-ridge basalt [volcanic] (N-MORB to E-MORB) and within-plate basalt [volcanic] (WPB) protoliths."

Based on research by the U.S. Geological Survey (USGS, 1999), "Naturally occurring arsenic commonly is found in volcanic glass in volcanic rocks of rhyolitic to intermediate composition; adsorbed to and co-precipitated with metal oxides, especially iron oxides; adsorbed to clay-mineral surfaces; and associated with sulfide minerals and organic carbon (Welch and others, 1988)". Based on the likely source materials of the Galice formation and the Rattlesnake Creek terrain, it would not be unexpected that some or all areas within the Hoopa Valley basin would contain arsenic levels greater that 0.39 mg/kg. Sediments derived from volcanic sources are typically rich in Arsenic. For example, the Napa River basin contains background arsenic levels that have a maximum concentration of 15 mg/kg (95 percent upper confidence level). In addition, the sample results for this site fall below the geometric mean for arsenic (5.6 mg/kg) in the Coterminous United States (Shacklette & Boerngren, 1984) and are very consistent with the geometric mean (2.8 mg/kg) for samples collected in California (Bradford, et al., 1996).

References

Bradford, G.R., Chang, A.C., Page, A.L., Bakhtar, D., Frampton, J.A., & Wright, H. *Background Concentrations of Trace and Major Elements in California Soils.* Kearney Foundation Special Report. Kearny Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California. March 1996.

MacDonald, James H., Harper, Gregory D., Zhu, Bin. *Petrology, Geochemistry, and Provenance of the Galice Formation, Klamath Mountains, Oregon and California.* Geological Society of America Special Papers 2006, 410, p.77-101. Doi:10.1130/2006.2410(04)

Shacklette, , Hansford T. and Boerngen, Josephine G. *Element Concentrations in Soils and Other Surficial Materials of the Coterminous United States.* U.S. Geological Survey Professional Paper 1270. U.S. Government Printing Office. Washington, DC. 1984.

U.S. Geological Survey. 1999. *Arsenic in Ground Water of the Willamette Basin, Oregon.* Internet site <http://oregon.usgs.gov/pubs_dir/Online/Html/WRIR98-4205/> Last modified 22 September 1999. Viewed 25 July 2008.

Welch, A.H., Lico, M.S., and Hughes, J.L., 1988, Arsenic in ground water of the Western United States: Ground Water, v. 26, p. 333-347.

Wright, James E. & Wyld, Sandra J. *The Rattlesnake Creek Terrane, Klamath Mountain, California: An Early Mesozoic Volcanic Arc and its Basement of Tectonically Disrupted Oceanic Crust.* GSA Bulletin, v.106 no.8 p1033-1056. August 1994. Doi: 10.1130/0016-7606(1994).