



ENVIRONMENTAL PROTECTION AGENCY

WASTE MINERAL RESOURCES & COMPLIANCE DEPARTMENT  
P.O. BOX 3089, WINDOW ROCK, NAVAJO NATION, AZ 86515  
TEL. (928) 871-7993 - FAX. (928) 871-7996



November 6, 2013

Ms. George Padilla  
Environmental Scientist  
BIA Navajo Region Environmental  
P.O. Box 1060  
Gallup, New Mexico 87301

RE: No Further Action (NFA) - NAV# 356 Lower BIA Complex Shiprock, NM.

Dear Ms. Padilla:

This correspondence refers to the groundwater monitoring report dated March 6, 2013, that was prepared by SCS Engineers, for the lower BIA complex in Shiprock, NM. Soil and groundwater was impacted at this site by hydrocarbon releases from an underground storage tank (UST).

Background

The UST was removed in 1999. Between 1999 and 2006, the site assessment was completed with monitoring wells installed on site. In 2006, phytoremediation system was implemented; however, analytical results indicated that the phytoremediation process was very slow in mitigating the contaminants.

Between November 2009 and June 2010 approximately 5,950 yds<sup>3</sup> of petroleum contaminated soil was excavated from the source area and properly disposed of at a certified landfarm in Bloomfield, NM. SCS recommended and initiated sampling five (5) monitoring wells (MW 2, 7, 9, 11, and TW 15) on a quarterly basis for one year to determine if any groundwater contamination would impact groundwater beyond the site.

SCS Engineer sampled on April 6, July 18, October 23, 2012, and January 22, 2013. Navajo EPA (NNEPA) review of the sampling results for BTEX in MWs 2, 7, 9, and TW15 indicated BTEX Maximum Contaminant Levels below NNEPA groundwater cleanup standards.

Recommendations

NNEPA has discussed and reviewed the report findings with EPA Region IX and jointly concurred that this site be closed without additional action. EPA Region IX will be issuing a separate NFA Letter in addition to NNEPA NFA letter. If additional information becomes available in the future regarding hydrocarbon contamination in soil and/or groundwater, NNEPA or EPA Region IX may reopen this site and require additional site assessment and/or corrective action.

Sincerely,

Diane Malone, Manager  
NNEPA WRCD



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 9

75 Hawthorne Street  
San Francisco, CA 94105-3901

November 26, 2013

**MEMORANDUM**

From: Chris Prokop  
To: File  
Subject: EPA Region 9's concurrence (noting residual soil contamination) on NNEPA's November 6, 2013 No Further Action (NFA) letter for the BIA LUST Site in Shiprock, NM (EPA ID# NAV-356)

**EPA Region 9's concurrence on NNEPA's November 6, 2013 NFA for NAV-356**

Based on discussions during the FY2013 End of Year meeting between EPA and NNEPA in San Francisco on November 19-21, 2013, between Steven Linder and Rebecca Jamison of Region 9, and Henry Haven of NNEPA, EPA Region 9 is concurring on NNEPA's November 6, 2013 NFA for NAV-356 (the "Site"). This concurrence is being granted because the most recent four quarters of groundwater monitoring at the Site (ending on January 13, 2013) showed no hydrocarbon concentrations exceeding the federal Maximum Contaminant Levels (MCLs) in four monitoring wells. In his June 10, 2010 email to George Padilla and Rose Duwyenie of BIA (that Carl Warren of EPA reviewed), Mr. Haven noted that NNEPA and EPA would evaluate the possibility of an NFA for the Site after BIA completed four quarters of groundwater monitoring.

NNEPA's NFA letter does not, however, mention the residual hydrocarbon concentrations in soil that were above NNEPA's current soil cleanup standards. Seven of the nine "confirmatory" soil samples that BIA's contractor collected after the extensive soil excavation in 2009-2010 had concentrations for at least one hydrocarbon compound that exceeded NNEPA's soil cleanup standards. In addition, Sample C-9 contained ethylbenzene at a concentration exceeding EPA Region 9's industrial RSL for soil (40 ppm vs. 27 ppm). These residual hydrocarbon concentrations may have declined over the last three years since the confirmatory sampling, but there is no data to demonstrate this.

During a November 6, 2013 telephone communication, Ms. Duwyenie of BIA indicated to me that, to her knowledge, BIA had no current or future plans to develop the Site, and that BIA would retain control of the Site. In addition, Ms. Duwyenie indicated that BIA would probably use the Site as a parking lot in the near term. Based on this stated usage by BIA of the Site, applying even an EPA Region 9 industrial RSL to the Site could be considered excessive. In addition, NNEPA's NFA letter for the Site

contains the standard site reopener language if additional information becomes available in the future regarding hydrocarbon contamination in soil and/or groundwater (as would occur in a potential future development of the Site). The sections below provide background on the Site (most of these sections were already in my draft NFA letter for the Site).

### **Recent discussions and decisions regarding the NFA for NAV-356**

On October 31, 2013, Mr. Haven contacted Ms. Jamison to request that EPA Region 9 review his draft NFA letter for NAV-356. Later this same day, Mr. Haven requested EPA's concurrence on his NFA letter. Ms. Jamison replied that EPA Region 9 would be preparing a separate NFA letter, but she did not address the concurrence issue.

During the FY2013 End of Year meeting between EPA and NNEPA in San Francisco on November 19-21, 2013, Mr. Linder, Mr. Haven and Ms. Jamison agreed that a separate Region 9 NFA was not necessary. Instead, it was agreed that EPA Region 9 would draft a memorandum to file concurring on NNEPA's NFA for NAV-356, but also noting the residual soil contamination.

### **The March 6, 2013 Quarterly Groundwater Monitoring Report for NAV-356**

Early this month, I reviewed the report entitled "Results of Quarterly Groundwater Monitoring for 2012 Performed at the BIA Shiprock Gasoline Plume Site located in Shiprock, NM" (the "Report") that was prepared by SCS Engineers for the Site. The Report describes previous work at the Site, and provides the results of the most recent four quarters of groundwater monitoring on April 6, July 18 and October 23, 2012, and January 22, 2013. During these four sampling events, the analytical results for the groundwater samples that were collected from four monitoring wells showed no exceedances of EPA's MCLs for drinking water. Based on these analytical results, the Report recommended that BIA request an NFA determination from EPA and the NNEPA.

### **Previous UST operations at the Site**

The EPA UST Notification Form for the Site, dated November 4, 1998, listed a single 1,000 gallon, bare steel UST that was used for the storage of gasoline. The notification form also indicated that the date of UST installation was unknown, and that the UST was last used until approximately 1973. Based on documentation in EPA's files, BIA operated a vehicle fueling facility at Building 60 using the single 1,000 gallon UST.

### **UST removal and petroleum release confirmation**

On October 15, 1998, Envirotech Inc. of Farmington, NM (BIA's contractor) removed the UST from the Site and transported the UST to its disposal facility. Petroleum contaminated soil (PCS) was documented visually, and the subsequent laboratory analyses revealed elevated concentrations for total petroleum hydrocarbons

(TPH), and benzene, toluene, ethylbenzene and total xylenes (BTEX). No PCS was removed from the Site at the time of the UST removal, and groundwater was not encountered. Envirotech Inc.'s subsequent site assessment in 1999 documented the presence of petroleum contaminants in five groundwater monitoring wells.

### **Remedial work at the Site**

In 2006, Advanced Environmental Services, Inc. installed a phytoremediation system at the Site, consisting of 142 trees, that was monitored by 13 groundwater monitoring wells. Although the groundwater analytical results showed that phytoremediation, as well as natural attenuation of the hydrocarbons was occurring, EPA and the NNEPA concluded that the rate of degradation was too slow. As a result of this finding and a 2008 remedial alternatives report prepared by iina ba, Inc. (another BIA contractor), BIA contracted with SCS Engineers (SCS) in 2009 to removed PCS from the Site. From November 2009 until June 2010, SCS' subcontractor (Flying Eagle Construction) excavated an estimated 5,950 cubic yards of PCS from the Site and properly disposed of the PCS at Envirotech's landfarm located near Bloomfield, NM. The dimensions of the PCS excavation were approximately 165 feet long by 155 feet wide by 7 feet deep (1-2 feet below the depth to groundwater). The excavation was subsequently backfilled with in-situ soil showing no hydrocarbon impacts, as well as clean imported backfill.

In June 2010, nine soil samples were collected from the pit sidewalls following the PCS excavation. All of the samples were collected from the depth interval 4.5 to 7.0 feet below ground surface. The analytical results for eight of the nine soil samples showed the presence of hydrocarbons. However, all of the individual hydrocarbon compound concentrations were below EPA Region 9's Regional Screening Levels (RSLs) except for the soil sample collected from location C-9. The benzene concentration in the C-9 sample (2.1 mg/kg) was above the 1.1 mg/kg RSL for residential settings. In addition, the ethylbenzene concentration in this same sample (40 mg/kg) was above both the 5.4 mg/kg residential RSL and the 27 mg/kg industrial RSL for ethylbenzene. Eight of the nine soil samples also had hydrocarbon concentrations above NNEPA's soil cleanup standards.

Two grab samples were also collected from standing water in the PCS excavation, but the laboratory analyses yielded no concentrations above laboratory detection limits for these samples.

### **Groundwater monitoring at the Site**

In approximately 1999, the initial five groundwater monitoring wells were installed at the Site. In 2001, eight additional monitoring wells were installed. These 13 total monitoring wells were sampled periodically until the beginning of the soil excavation work in 2009, when four wells were destroyed by the excavation. Additional monitoring wells were installed after the excavation work, and groundwater monitoring continued until January 2013. The highest benzene concentration in groundwater

documented in EPA's files was 18 ug/l, which was observed in well MW-13 on May 5, 2008. This benzene concentration was above EPA's 5.0 ug/l MCL for benzene. Since 2008, however, there have been no exceedances of EPA's MCLs for BTEX, and no detections of MTBE in any monitoring wells.

The depth to groundwater in monitoring wells at the Site has ranged over time from approximately 4 feet to 11 feet below ground surface, and groundwater flows to the west-southwest.

#### **Planned current and future use of the Site**

On November 6, 2013, I contacted Rose Duwyenie and George Padilla of BIA via phone to discuss BIA's planned current and future use of the Site, as well as some exposure considerations. During this phone conversation, Ms. Duwyenie indicated that, to her knowledge, BIA had no current or future plans to redevelop the Site. Ms. Duwyenie added that BIA would retain control over the Site for the foreseeable future, and potentially use the now vacant lot as a parking area for BIA vehicles. In summary, the Site is currently a vacant lot located in a light commercial area controlled by BIA.

#### **Potential residual hydrocarbon contamination at the Site**

As noted above, one of the nine soil samples collected following the PCS excavation work in 2009-2010 had a benzene concentration slightly above EPA's residential RSL for benzene, and an ethylbenzene concentration slightly above EPA's industrial RSL for ethylbenzene. Given the light commercial area surrounding the Site, and the absence of any current or apparent future BIA plans for redevelopment, EPA's residential RSL should not be applied to the Site. Furthermore, the lack of any current or future develop plans by BIA for the Site indicates that human exposures should probably not occur under these conditions.

During the FY2013 End of Year meeting between EPA and NNEPA in San Francisco on November 19-21, 2013, Mr. Haven noted that NNEPA's conservative soil cleanup standards are meant to be protective of groundwater. Mr. Haven added that since there were no exceedances of the MCLs in groundwater during the last year of groundwater monitoring at the Site, he was concluding that the residual hydrocarbon concentrations in the vadose zone (soil) are not high enough to present a leaching-to-groundwater problem.



# United States Department of the Interior

BUREAU OF INDIAN AFFAIRS

Post Office Box 1060

Gallup, NM 87305

IN REPLY REFER TO: MC:620 /Division of Environmental Cultural and Safety

MAR 18 2013

Ms. Tess Salire, Supervisor  
USEPA Region 9/Tribal Underground Storage Tanks Program  
75 Hawthorne Street  
San Francisco, California 94105-3901

Dear Ms. Salire:

Enclosed is the final report, "Results of Quarterly Groundwater Monitoring for 2012 Performed at BIA Shiprock Gasoline Plume Site Located in Shiprock, NM (Order No. TON00090093)" for the groundwater monitoring wells sampling conducted in 2012 and 2013 for the NAV356 BIA Shiprock Administration Building 90 (AKA BIA Shiprock Motors). Based on the review of the analyses of the samples, there were no exceedences of the Maximum Contamination Level of groundwater in the samples. Therefore, the Bureau of Indian Affairs, Navajo Region is requesting a determination of No Further Action for this site. Upon a favorable decision, BIA plans to commence with the final closure of the site.

BIA conducted a dig and haul in 2010-2011 to remove gasoline contaminated soil at NAV356-BIA Shiprock Administration Building 90 (aka BIA Shiprock Motors). The dig and haul of ~5,415 cubic yards of gasoline contaminated soils was completed and a final report was submitted to USEPA in 2011. Following the excavation, confirmatory samples of the monitoring wells were collected. The BIA contractor, SCS Engineers, then recommended three (3) additional quarters of sampling be conducted as a result of residual levels in four monitoring wells. USEPA concurred in the recommendation and three quarters of groundwater sampling was conducted the site. The wells sampled were MW-2, MW-9, MW-11 and TW-16 and the analytical results are documented in the enclosed report.

Should you have any questions regarding this project, please contact Ms. George Padilla, Regional Environmental Scientist at 505/863-8434 or by email at [George.Padilla@bia.gov](mailto:George.Padilla@bia.gov).

Sincerely,

Regional Director, Navajo

Enclosure-1

RECEIVED

DIVISION OF ENVIRONMENTAL  
CULTURAL AND SAFETY MANAGEMENT