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DAIM-ODB

May 22, 2018

Mr. John Kieling
Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

RE: Final Groundwater Supplemental RCRA Facility Investigation Work Plan, Revision 4, Army's Response to Comments, New Mexico Environment Department Approval with Modifications letter dated April 18, 2018 reference number HWB-FWDA-15-001, Fort Wingate Depot Activity McKinley County, New Mexico.

Dear Mr. Kieling:

This letter is in reply to the New Mexico Environment Department (NMED) Approval with Modifications letter dated April 18, 2018, reference number HWB-FWDA-15-001, regarding the Final Groundwater Supplemental RCRA Facility Investigation Work Plan, Revision 4. The following are the Army's responses to comments received from NMED.

Comments

1. Figure 9-1, Proposed Replacement Alluvial Well MW34

NMED Comment: Although the Permittee's Response to NMED's Comment 1 of the December 21, 2017 Disapproval letter for Final Groundwater Supplemental RCRA Facility Investigation Work Plan Revision 3 is satisfactory, Figure 9-1, Proposed Replacement Alluvial Well MW34 still depicts the location of the well more than 80 feet west of the area where petroleum contamination was discovered. Revise Figure 9-1 to be consistent with the proposed well location shown in Figure 2-1, Alluvial Contaminant Plumes and Proposed Alluvial Well Locations. Provide replacement page for Figure 9-1.

Army Response: Please find attached two copies of revised Figure 9-1.

2. Section 9.2, Background Monitoring Well Installation, lines 21-22, page 9-2

Permittee Statement: "BGMW11 is upgradient of sentinel wells MW23 and MW24, which have been unaffected by site activities."

NMED Comment: Some organic contaminants related to site activities have been detected in samples obtained from well MW23 sporadically while no organic contaminants have been detected from well MW24 in recent years. Well MW23 is screened from 64 to 134 feet below ground surface (bgs) while well MW24 is screened from 16 to 66 feet bgs according to Appendix B in the 2011 and 2012 Monitoring Well Installation and Abandonment Report Version 1, dated December 2012. The groundwater quality monitored in wells MW23 and MW24 has not been consistent

according to Table 5-1 in Groundwater Periodic Monitoring Reports. The saturated zones were reportedly encountered at 43 and 17.6 feet bgs in wells MW23 and MW24, respectively. Two different aquifers may be present in the vicinity of the proposed well BGMW11. An abandoned well (Wingate91) was installed in a similar location to where well BGMW11 is proposed according to Figure 5 in the Interim Facility- Wide Groundwater Monitoring Plan Version 2, dated March 28, 2008. Well Wingate91 was installed to a depth of 113.12 feet bgs in 1963; however, the well was not likely to be screened as a monitoring well because it was installed as a water supply well. Accordingly, construction data for well Wingate91 will not likely provide data on the presence or absence of separate aquifers. Propose to investigate whether separate aquifers are present in the response letter. If both shallow and deep aquifers are distinctly present in the vicinity of proposed well BGMW11, two separate background monitoring wells must be installed.

Army Response: Sporadic detections of organics have been recorded at well MW23 since the initial sampling conducted when the well was installed in 2011. MW24 has not had any detections of organics. The proposed location of BGMW11 is upgradient of MW24.

The intent of the background wells, such as BGMW11, is to assess the natural quality of ground water with similar origins and from depths comparable to the water sampled within the alluvial groundwater monitoring wells. The alluvial groundwater monitoring wells within the northern plume are screened at depths comparable to MW24, not the deeper MW23. For the intended purpose as a background well, a single shallow well is appropriate.

The water quality values reported in MW23 and MW24 are consistent with other alluvial monitoring wells found at FWDA, and are within range of groundwater found from a single water-bearing unit. Reviewing water quality data from MW23 and MW24 since 2012 to current shows the values have been within a ten-percent range of each other. Variances observed in the measurements between the two wells is expected, as change in ambient temperature and instrument accuracy in the field affects readings. Though MW23 and MW24 are screened at different depths, the boring log from MW23 (attached) does not support the existence of two separate and distinct water-bearing zones. The alluvium found at the FWDA is a highly heterogeneous unconsolidated silt with sand and clay, and varies between sandy to clayey intervals that are difficult to correlate between boreholes.

MW23 has much different purpose as a sentinel well for a nearby private production well and has a well screen length and depth that is intentionally similar to that private well. The sporadic, low-level detections in this well will be considered in the on-going efforts to define the northern groundwater plume.

The Army does not believe a separate investigation is needed proposes to forgo the investigation of multiple water bearing units within alluvium at the proposed BGMW11 location. The Army also proposes to install BGMW11 as stated in the above referenced work plan, with a targeted depth consistent with MW24, to achieve non-impacted native groundwater for the evaluation of groundwater background values.

If you have questions or require further information, please call me at (505) 721-9770.

Sincerely,

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PATTERSON.MARK.C.1229214493
K.C.1229214493 Date: 2018.05.22 14:26:43 -04'00'

Mark Patterson
BRAC Environmental Coordinator

Enclosures

Replacement Figure 9-1 (two copies)
Soil boring log for MW23

CF:

Dave Cobrain, NMED HWB
Ben Wear, NMED HWB
Michiya Suzuki, NMED HWB
Steve Smith, USACE
Saqib Khan, USACE SWT
Sharlene Begay-Platero, Navajo Nation
Mark Harrington, Pueblo of Zuni
Clayton Seoutewa, SW BIA
George Padilla, Navajo BIA
Dr. B.J Howerton, BIA
Admin Record, OH/NM

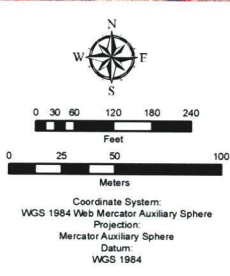


- Legend**
- Proposed Alluvial Monitoring Well
 - Existing Alluvial Monitoring Well
 - Abandoned Alluvial Well
 - FWDA Parcel Boundaries
 - FWDA SWMU/AOC Area
 - FWDA Railroad Lines
 - FWDA Parcel Number

Notes

Well FW26 was Abandoned in 2015

AOC = Area of Concern
 FWDA = Fort Wingate Depot Activity
 RCRA = Resource Conservation and Recovery Act
 RFI = RCRA Facility Investigation
 SWMU = Solid Waste Management Unit



Updated on:
 3/13/2018

Sundance
 Consulting Inc.

Figure 9-1
 PROPOSED REPLACEMENT
 ALLUVIAL WELL MW34
 GROUNDWATER SUPPLEMENTAL
 RFI WORK PLAN
 FORT WINGATE DEPOT ACTIVITY
 MCKINLEY COUNTY, NEW MEXICO

Installation Report

Monitoring Well MW-23

Project FWDA Well Installation

Date 6/30/11

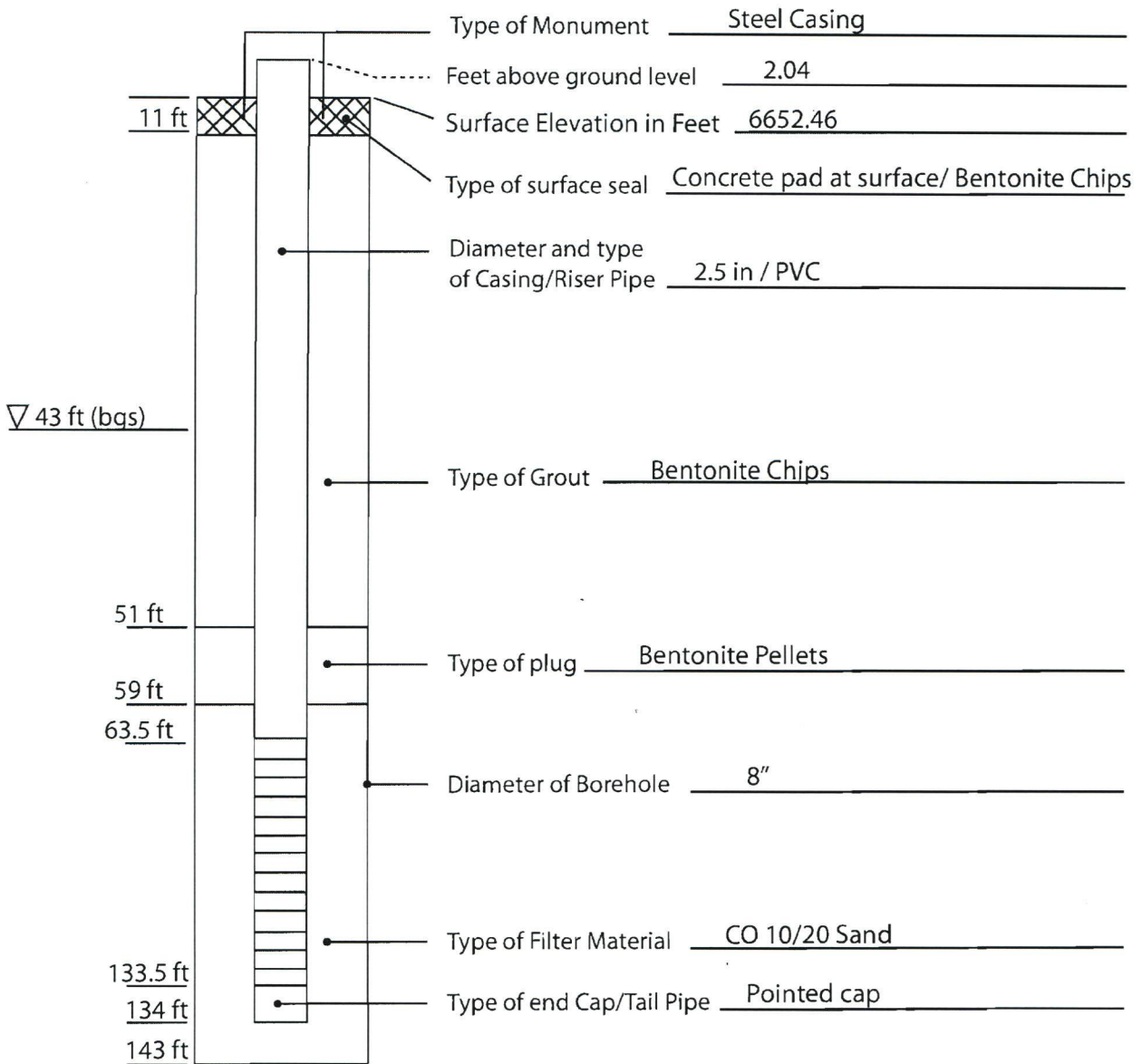
Location Ft Wingate

Logger Lawlis

Driller USGS/Grant

Northing 3934362.37

Easting 717236.18



Remarks: See geologic boring/ well log for a more detailed description of soil log.

Screen is 70 ft long.