DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF, G-9
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

December 28, 2022

Army Environmental Division – BRAC Operations Branch

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

RE: Additional LOD/LOQ Submission in Support of Analytical Performance Concerns at FWDA, Fort Wingate Depot Activity, McKinley County, New Mexico. EPA# NM6213820974

Dear Mr. Shean:

I am writing to provide additional information on the Army's previous submission in support of analytical performance concerns at FWDA. Please recall that Phase 1 of the collection of analytical performance by ELAP certified laboratories was previously submitted on July 18, 2022. Since that time, the Army has completed Phase 2 of data collection from the DENIX list of DoD-ELAP certified laboratories for additional methods that could be used at FWDA to achieve greater analytical sensitivity for compounds that had LOD/LOQ issues from Phase 1.

Of the 65 DoD-ELAP certified laboratories contacted in Phase 2, 45 labs responded. The types of responses and number of laboratories responding fell into 4 categories: 1) 19 laboratories provided LOD/LOQ information, 2) 8 laboratories responded they were unable to reach the SLs provided using other methods, 3) 12 responded they were unable to perform other test methods for a variety of reasons (e.g., discontinuing DoD-ELAP certifications, closing operations); and 4) 6 laboratories were identified as closed or not testing aqueous matrices.

Table 1 summarizes the Phase 1 and 2 findings by analytical category (i.e., VOCs, SVOCs, PAHs, explosives, PCBS, metals/inorganics, dioxins/furans, petroleum hydrocarbons and miscellaneous analyses). Phase 1 solicited input from ELAP certified laboratories on the methods currently used at FWDA; Phase 2 broadened the inquiries to all US EPA SW-846 methods, which are listed on the left side of Table 1 (attached).

The numbers of laboratories approached for answers and the numbers that responded are summarized on the right side of Table 1 for both Phase 1 and 2. In spite of the additional effort made in contacting the laboratories in Phase 2, marginal gains in analytical sensitivity were realized, and then only for a few targeted compounds. By analysis category, current programmatic methods (shaded green) and possible alternative methods (shaded yellow) can be summarized as follows:

1) VOCs: 8260 (GC/MS) is the current method used programmatically at FWDA; possible alternatives include 8011 (microextraction and GC) for 1,2-dibromo-3-chloropropane and ethylene dibromide, and 8260 in SIM mode for a complete suite analysis

2) SVOCs: 8270 (GC/MS) is the current method used programmatically at FWDA; possible alternatives include 8151 (chlorinated herbicides by GC/ECD) for pentachlorophenol

(PCP) and dinoseb, 8260 in SIM mode for a complete suite analysis, 8321 (solvent extractable, non-volatiles by HPLC) for dinoseb, and 8330 (HPLC) which is currently used for explosives but could be an alternative for 2,6-dintrotoluene and nitrobenzene

3) PAHs: 8270 (GC/MS) is the current method used programmatically for FWDA; a possible alternative includes 8270 in SIM mode

4) Explosives: 8330 (HPLC) is the current method used programmatically at FWDA; a possible alternative includes 8270 (GC/MS with or without SIM) for 2,4- and 2,6-dinitrotoluene

5) PCBs: 8082 (Arochlors and congeners) is the current method used programmatically at FWDA; no US EPA ELAP certified alternatives were identified

6) Pesticides: 8081 (organochlorine pesticides by GC) is the current method used programmatically at FWDA; possible alternatives include 8321 (solvent extraction by HPLC) and 8151 (chlorinated pesticides by GC/ECD) – both for MCPA

7) Metals/Inorganics: 6010 (ICP-OES), 6020 (ICP-MS) and 7470 (mercury cold vapor) are the current methods used programmatically at FWDA; possible alternatives include 200.8 (ICP-MS) for antimony, arsenic, lead and thallium as well as 7010 (graphite furnace AA) for antimony, arsenic and thallium

8) Dioxins/Dibenzofurans: 8290 (High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS) is the current method used programmatically at FWDA; no US EPA ELAP certified alternatives were identified

9) Petroleum Hydrocarbons and Miscellaneous Analyses: 8015 (diesel and gasoline), 6860 (perchlorate) and 9056 (inorganic ions including nitrite and nitrate by IC (Ion Chromatography)) are the current methods used programmatically at FWDA; no US EPA ELAP certified alternatives were identified

The supporting documentation for these efforts is provided in three attachments:

Attachment 1: Lists DoD-ELAP Certified Laboratory Contact Information Aggregated from the DENIX Database. This list was submitted in Phase 1 and also represents all of the laboratories contacted in Phase 2. This table now shows which labs were contacted and which laboratories responded in Phase 1 in 2020 **AND** Phase 2 in 2022.

Attachment 2: Summarizes the individual laboratory responses (alphabetically by laboratory name) for analytical performance for SW-846 DoD-ELAP methods from Phase 1 (2020); this was previously submitted (July 18, 2022) and is included again for continuity.

Attachment 3: Summarizes the individual laboratory responses (alphabetically by laboratory name) for analytical performance for additional SW-846 DoD-ELAP methods from Phase 2 (2022) inquiries.

In summary, the number of additional methods that laboratories could improve analytical sensitivity with was limited.

Next Steps

To determine whether the alternate methods identified in the Phase 2 inquiry produce results with improved LOD/LOQ performance than those from Phase 1, the Army is performing an additional performance evaluation that will be submitted for NMED review in early 2023.

This evaluation includes an assessment of the feasibility of pursuing the alternate method for those analytes where the current method produces an LOD/LOQ > SL. In addition, for those compounds where the LOD/LOQ remains a potential concern and no alternative methods at ELAP certified labs are available, the Army is developing a multiple Lines-of-Evidence (LOE) approach to assess whether the compound(s) is/are unlikely to be found at a particular AOC/SWMU at FWDA. This includes researching background in manufacturing and commercial uses, and site-specific FWDA use patterns, to determine whether the compound could reasonably be expected to occur at FWDA, with the rationale provided and then flagged for further discussion with NMED.

Frequency of detections (FOD) from the previous eight rounds (four years) of FWDA Northern Area periodic groundwater monitoring are also being calculated and tabulated for 5% and 10%, for VOCs, SVOCs, explosives and pesticides, for inclusion in the evaluation. Constituents with FOD > 5% from VOCs, SVOCs, explosives and pesticides are being evaluated for their terminal degradation products, due to the age of any Army attributable releases. Using the FOD > 5% threshold for site-related organic compounds that can degrade from parent to potentially persistent daughter products, terminal degradation products are being researched. If site-related constituents have FOD >5% for terminal degradation products, daughter products are being compared to the analyte list. The results of the LOE evaluation will be used to propose removal of certain COCs from further consideration at FWDA.

For those compounds where LODs/LOQs remain above the SL and that compound is likely to be found at FWDA, the Army requests to work with NMED to determine how to resolve the issue for that compound

If you have questions or require further information, please contact me at George.h.cushman.civ@army.mil, 703-455-3234 (Temporary Home Office, preferred) or 703-608-2245 (Mobile).

Sincerely,

George H. Cushman IV

George H. Cushman IV
BRAC Environmental Coordinator
Fort Wingate Depot Activity

Enclosures

CF:

Dave Cobrain, NMED, HWB
Ben Wear NMED, HWB
Michiya Suzuki, NMED, HWB
Lucas McKinney, U.S. EPA Region 6
George Padilla, BIA/NRO/DECSM
Alvin Whitehair, BIA SW
Val Panteah, Pueblo of Zuni
Carleton Bowekaty, Pueblo of Zuni
Eric Shepard, DOI
Sharlene Begay-Plater, Navajo Nation IDR
Alan Soicher, USACE
Saqib Khan, USACE
Cheryl Montgomery, ERDC
Ramon Sanchez, USACE
Admin Record, NM
Admin Record, Ohio