Fort Wingate
OB/OD Red File

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

MAR 14 2000

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2000

Ms. Julie Wanslow
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044A Galisteo St.
Santa Fe, NM 87505

RE: Fort Wingate Depot Activity
Final OB/OD Area RCRA Interim Status Closure Plan Phase 1A report

Dear Julie:

Cheryl Overstreet and I have reviewed this document on the OB/OD Area soils characterization, dated 29 November, 1999. We have the following comments on the report for your consideration:

This document focuses on soil contamination; a subsequent document (Phase 1B report) discusses groundwater. It has been our experience that piece-mealing the risk assessment is not helpful in making a remediation decision. It is not possible to determine if soil contamination presents a risk without knowing if soil contaminants are migrating to groundwater or offsite via sediment transfer. When risk assessment is done for this site, an integrated presentation of the environmental situation should be made.

The document provides information on ecological habitat and receptors, but no ecological risk assessment or other use is made of this information. An evaluation of ecological risk should come out of this information. This will require an assessment of the entire ecology, not just soils.

The report focuses on the current conditions, but likely future conditions may be different. The corrosion and leaching of munitions, bulk explosives, and metals may increase future soil and groundwater contamination. This eventuality should be considered in the risk assessment.

Soil pH measurements should have been reported to provide information on mobility of metals.

Page ES-1, 1st ¶: The correct title for BRAC I (P.L. 100-526) is: Base Closure and Realignment Act of 1988.

Section 1.3.3, page 1-5, Regulatory Status of OB/OD Operations: Information on the 1988 RCRA Part B submittal, and its subsequent withdrawal, should be added. Also, this section

should state the current regulatory status but does not do so.

Section 4.4, pp. 4-8 to 4-51, Trenching Operations: Some explanation of the items should be added. We had difficulty discerning which items were explosive hazards and which contained explosives and/or metals of concern. For instance, what is the difference between a 40 mm projectile and a live 40 mm projectile? Are they both loaded with explosives?

Section 4.4, pp. 4-8 to 4-51, Trenching Operations: Several concentrated masses of munitions were found, and avoided, during the trenching operations. These are obviously both safety risks and environmental risks. We believe that all of the wastes that have associated munitions and/or bulk explosives are source areas that need to be remediated. This remediation, depending on the selected remedy, will involve certain amounts of risk to the remedial workers; this risk needs to be quantified to some extent, recognizing that the acute risk to people such as occasional interlopers may be much greater than that to trained workers with UXO remediation experience operating under strict safety protocols. We noted that this report does not mention any significant injuries from the trenching operations, which totaled 9,694 linear feet of trenches.

Page 4-51, 1st ¶: The text states: "significant quantities of live ordnance were not encountered in the five craters investigated." But the detailed descriptions of the craters trenching in Section 4.4.2.2 did not mention any live or whole ordnance. This reporting conflict needs to be corrected.

Section 5.3, Risk-Based Closure Performance Standards: Equations for the on-site remediation worker should be provided. Risks to interlopers should be taken into account, particularly including the risks posed by ordnance. The potential risks of releases from soil to groundwater that is subsequently used offsite also need to be addressed.

Section 5.3, pages 5-2 & 5-3: The parameter "CF" is not defined in the equations.

Section 5.4.3.3, page 5-7: The conclusion that the explosive compound risk is limited because only one sample exceeded the CPS is flawed. Since only six samples were taken here, a single exceedance is significant.

Section 5.5.2.2, page 5-9: The high rate of RBL exceedances in the waste areas points to the need to remediate these areas.

Table 5-3. What is the basis for selecting "hand" surface area for exposure? Is there a requirement for long sleeves and face/head coverings for workers conducting clean-up?

Table 5-4. The footnote "c" is not explained. This footnote is found after the chemicals iron and aluminum. This same comment applies to Table 5-5.

Table 5-5: Note that the calculations conclude that the OB/OD Area soils can be composed of 100% explosives and still pose no risk to off-site recreational users.

Figure 4-16: Note that all five of the demolition craters that were investigated have waste areas defined. We assume that the other seven craters also have waste areas.

You can of course call me at (214) 665-2196 or e-mail me at hendrickson.charles@epa.gov if you have any questions for me on this subject.

Sincerely,

Chuck Hendrickson

Chuck Hendrickson, Environmental Scientist
New Mexico - Federal Facilities Section
Multimedia Planning & Permitting Division

cc: Larry Fisher, Army
Dwayne Ford, USACE

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Ms. Julie Wanslow
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044A Galisteo St.
Santa Fe, NM 87505

RE: Fort Wingate Depot Activity
Final OB/OD Area RCRA Interim Status Closure Plan Phase 1B Report

Dear Julie:

Cheryl Overstreet and I have reviewed this document on the OB/OD Area ground water characterization, dated 29 December, 1999. I have compiled the following comments on the report for your consideration:

The characterization of the primary aquifer of concern here, the Sonsela Sandstone, is far from complete. The surface outcrop map and the seismic data interpretations give a sense of its structure, but the structure of the Sonsela remains unmapped. Also lacking is a potentiometric surface map for the Sonsela. Without this definition of the aquifer, groundwater flow cannot be mapped and there can be no certainty in correct placement of compliance monitoring wells.

It would be helpful for the Army to explain the fate and transport of explosives in the groundwater, including degradation. Without this information, the risks present may be difficult to ascertain.

Section 2.2, page 2-11: I could not find the boring logs for SPB1 and SPB2 in Appendix B. Likewise, I could not find the electric logs for these borings in Appendix F.

Page 2-17, 3rd ¶: This text should add description of the Sonsela Sandstone, which underlies the Current OB/OD Area at shallow depths. Though not currently being used as such, the Sonsela appears to be a viable potable water source. And fracturing of the shales at shallow depths allows vertical water flow to the Sonsela.

Figure 2-4: These seismic line interpretations show a shift in structural dip: moving northward, the dip shifts from westward to eastward between Line 3 and Line 5. This structure indicates that ground water flow in the Sonsela and other units may be to the northeast from wells such as CMW16. More borings and monitoring wells are needed to define the situation.

Section 3.0, page 3-1, 4th ¶: "Elevated concentrations of aluminum are expected as a result of the

mineral composition of the soil, and are not related to anthropogenic activities at the OB/OD Areas" Aluminum concentrations have been elevated by the wastes here, as evidenced by the many large aureoles of aluminum corrosion surrounding items found during trenching operations. More consideration of aluminum levels is needed in the screening assessment.

Section 3.2.1, Ground Water Screening Criteria: The screening criteria do not seem to consider the potential for future residential exposure offsite, specifically from the Sonsela.

Section 3.3.1, page 3-5: For carcinogenic compounds without MCLs (which include explosives), the Risk-Based Screening Levels (RBLs) were multiplied by 100 to obtain a Closure Performance Standard (CPS) at a 10^{-4} risk level. This risk management presumption of the least protective standards is premature without site-specific justification. EPA has stated its policy on this issue (61 FR 19450, May 1, 1996):

> EPA's preference, all things being equal, is to select remedies that are at the more protective end of the risk range. Therefore, program implementors and facility owners/operators should generally use 10^{-6} as a point of departure when developing site-specific media cleanup standards.

Section 3.4.2.1.3, page 3-11. Does the Army have an explanation of why filtered fractions sometimes had higher concentrations than unfiltered fractions from the same samples?

Section 3.4.2.1.3, page 3-11: The text mentions boring SPB 1. I believe that the reference should be to boring SPB 2.

Section 3.4.2.3.1, page 3-13: The conclusion that the lateral extent of ground water explosives is delimited by CMW21 is based on the assumption that this well is hydraulically connected to CMW16. But the wells are probably separated by faulting since the top of the Sonsela is 25-30' lower in CMW21, while the wells are only about 50-60' apart. Further, CMW16 has good productivity while CMW21 has very poor productivity.

Sections 3.5 & 3.6: Why is the information on soils from borings and on sediment samples in this report instead of in the soils report? For overall description of site conditions and for risk management decisions the soil, sediment, and water information should be integrated to create a comprehensive picture.

Table 3-1, Background Values: What could be the background source of ammonia in the groundwater? Ammonia is an odd background constituent to have. Should it be included as a groundwater constituents to be monitored?

Table 3-1: Is the background value for fluoride correct for the Current Area? The Closed Area has 0 ug/l for both filtered and total fractions. The Current OB/OD Area has 1160 ug/l for the filtered fraction and 0 ug/l for the total fraction.

Table 3-4, Background Values: The concentrations are really high for background surface water. Were dissolved metals concentrations determined? This analysis might have shown that the high

turbidity was a reason for the high concentrations.

Table 3-6, Summary of Region 6 Human Health Medium Specific Screening Levels: Please recheck this table. It appears that some numbers have been truncated at the decimal point making 0.1 appear to be 0.

Table 3-9, Soil Exposure Scenario Assumptions: As commented upon in the Phase IA document, what is the basis for selecting "hand" surface area for exposure? This needs explanation.

Table 3-39: Phosphorus at KMW11 is higher than at other sites. What is the explanation for this? Why are there no background numbers for phosphorus in soil, but there are for sediments?

Section 4-2, page 4-2: The characterization of the shallow bedrock as "a thick sequence of shale units belonging to the Chinle Formation" is misleading. This sequence is comprised of shales, siltstones, and sandstones.

Section 4-2, page 4-2: The last paragraph on the page should be revised. It currently implies that because there is no CPS, there will be no further action on ammonia. A CPS for ammonia should be determined if needed.

Figure 2-8, Cross Sections: The screened intervals of wells should be shown on cross sections. Plotting them here shows that the screen in well CMW 19 is above the water table. The electric logs of the wells should have been used, along with the boring logs, in constructing the cross sections because they are more accurate than the boring logs in defining both depth and facies boundaries.

Figure 3-2: Potential sources of the ground water contamination (e.g. the residue piles) should be added to this map.

Appendix F, Downhole Electric Logs: An explanation needs to be made of the occasional resistivity spike zones that are present on all of these logs.

You can of course call me at (214) 665-2196 or e-mail me at hendrickson.charles@epa.gov if you have any questions for me on this subject.

Sincerely,

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