

DRAFT COMMENTS OF STATUTORY ENVIRONMENTAL ASSESSMENT
PALO DURO BASIN, TEXAS

WM DOCKET CONTROL
CENTER

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'84 SEP -5 P2:56

The fourth draft of the environmental assessments for the Deaf Smith and Swisher sites have been reviewed. They are very thorough and well prepared. Because of the similarity of the two documents, they are discussed together in these comments unless otherwise noted. Reasons for comments are as follows:

1. The interpretation disagrees with published literature.
2. The data allows for a different interpretation.
3. Not enough information was presented to allow the reader to determine how the conclusions were reached.
4. A different interpretation of how the guidelines can be met is possible.
5. The environmental effects have been mistated.
6. The tasks outlined in chapter 4 will not provide the required data.

Comment 1: Availability fo groundwater supplies.

References: 3.3.3, 5.2.2.2, 6.3.3.3.2

Reasons: 2,3,4

Water needs are estimated at 93 million gallons for construction, 3 1/2 billion gallons for repository operation, and an unknown amount for decommissioning. Section 3.3.3 concludes that "projected water requirements in the 10 county area are estimated to exceed available water supplies from 1990 through the year 2020." Section 6.3.3.3.2 states that the favorable condition, "availability of water required for repository construction, operation, and closure" is present "with some uncertainty." It does not appear that this condition is met at all. If groundwater resources are available in the Dockum which are potentially extractable, additional studies should be made to assess this potential. Also, it would be very helpful if the studies already presented on the Deaf Smith and the Swisher sites could be expressed in terms of declining water table with and without water usage from the site. Potentiometric maps showing the cone of depression from the site would be very useful. Also the extent of restricted farming from the site is important because non-irrigated cropland does not use groundwater. Section 5.2.2.2 states that "if water is insufficient to fulfill repository requirements, alternative sources would have to be sought." However, no alternative source scenarios are presented in either EA. If groundwater sources are depleted, water will need to be trucked or piped to the site from elsewhere.

Comment 2: Lack of site specific information.

References: 3.2.3.2, 3.2.3.3, 3.3.2.1.1

Reason: 3

The nearest test holes to the site are located at least 3 1/2 miles away and the geology is extrapolated to the site. The same E-W and N-S geologic sections are used for both sites and they ignore the DOE test wells and do not cross

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B-6935

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either site. Thus the actual stratigraphic thicknesses are assumed. Any paleodissolution at the site is also unknown. Although HSU B is known as "regional aquitard," without site specific information, any permeable zones which would be a potential radionuclide flow path will not be discovered until site characterization. Permeabilities from this zone are taken from nearby drill stem tests, the Salado salt, near Los Medanos, New Mexico, and Freeze and Cherry's textbook on groundwater (1979).

Comment 3: Flooding potential.

Reference: 3.3.1.3

Reason: 3

Figure 3-46 of the Deaf Smith report shows the aerial limits of the probable maximum flood. The flood flows from the unnamed tributary are speculative without a gauging history. Although site flooding appears to be remote a better evaluation could be made if the PMF elevation at the site was given along with the location and elevation of the structures, shaft entrances, and salt piles.

Comment 4: Sinkholes.

Reference: 3.2.3.3

Reason: 2

The reports state that sinkholes near the dissolution front are formed by solutioning of salt. While this is likely to be true in part, anhydrite/gypsum is near surface and is also subject to solutioning. This reviewer has documented many examples of caverns and collapse due to removal of gypsum. This discussion should use the term "evaporite" in place of "salt."

Comment 5: Test shaft drilling.

Reference: 4.1.2.2

Reason: 6

A 26.5 foot diameter auger hole 100 feet deep is to be drilled through the Ogallala in a mud-filled hole or dug with a clam shell without mud (presumably advancing casing with depth but not so stated). Hopefully, data for this section was furnished by those familiar with large diameter shafts in the unconsolidated sediments of the Ogallala formation. The drilling contractor should be prepared to use ground stabilization methods (grouting, freezing, etc.) if necessary to complete the initial augering phase.

Minor comments:

Figure 3-62, Swisher: 2 1/2 minute quads should be 7 1/2 minute quads.

Figure 3-18, 3-19, Deaf Smith and numerous figures in both reports: Poor quality copies and reductions vary from difficult to read to illegible. Emphasis should be given in final report to bold lines and larger print.