

July 26, 1999

Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, NM 87505

Att: Ben Stone, Engineering

RE: Sonat Raton, L.L.C., Vermejo Park "A", Well #7, disposal well application,  
Colfax County, New Mexico

Dear Ben,

Please see attached the "Geological Data" report which I received from the Sonat Raton, L.L.C. geological team this morning. Please add this report to our C-108 filing to supplement data supplied in the filing.

Please let me know if you need any further information regarding this filing. Thank you.

Yours truly,



Ann E. Ritchie, Regulatory Agent (1.581.422.4967)  
Sonat Raton, L.L.C.  
c/o P.O. Box 953  
Midland, TX 79702

Cc: Oil Conservation Division, District 4 – Roy Johnson  
Sonat Raton, L.L.C., att: Don Lankford/Raton

## Geological Data

### Injection Zones:

Injection zones will be sands in the Dakota, Morrison, and/or Entrada Formations. The Dakota Formation is approximately 200 feet thick and is characterized by predominately fine grained sand with some interbedded shale. The Upper Dakota sands are typically very well cemented and have very low permeability and porosity. The Lower Dakota sands are less well cemented and have higher permeability and porosity. Underlying the Dakota Formation is the Morrison Formation which is characterized by a series of interbedded sands and shales and is approximately 300 feet thick. Individual sands are typically 10 to 20 feet thick and are separated by shales 20 to 40 feet thick. The Entrada Formation is approximately 120 feet thick and is characterized by well cemented fine grained sands that are fractured. The Todilto Formation lies between the Morrison and Entrada Formations and is an anhydrite approximately 70 feet thick.

These injection zones are overlain by approximately 3700 feet of Pierre Shale that would confine the injected water to the injection zones. Structurally, the location is in the center of the Raton Basin. There are no known active faults.