STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

ADMINISTRATIVE ORDER SWD-583

APPLICATION OF J.K. EDWARDS ASSOCIATES, INC. FOR SALT WATER DISPOSAL, SAN JUAN COUNTY, NEW MEXICO.

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701(B), J.K. Edwards Associates, Inc. made application to the New Mexico Oil Conservation Division on February 15, 1995, for permission to complete for salt water disposal its Frontier Well No.1-A located 1750 feet from the South line and 790 feet from the East line (Unit P) of Section 8, Township 26 North, Range 12 West, NMPM, San Juan County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

(1) The application has been duly filed under the provisions of Rule 701(B) of the Division Rules and Regulations;

(2) Satisfactory information has been provided that all offset operators and surface owners have been duly notified;

(3) The applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 will be met; and

(4) No objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED THAT:

The applicant herein, is hereby authorized to complete its Frontier Well No.1-A located 1750 feet from the South line and 790 feet from the East line (Unit P) of Section 8, Township 26 North, Range 12 West, NMPM, San Juan County, New Mexico, in such manner as to permit the injection of salt water for disposal purposes into the Dakota formation at approximately 5760 feet to 6060 through 2 3/8-inch plastic-lined tubing set in a packer located at approximately 5660 feet.

IT IS FURTHER ORDERED THAT:

The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

In preparing the well for injection operations, the operator will deepen and complete the well as described in Exhibit "A" attached hereto.

Prior to commencing injection operations into the well, the operator shall run a cement bond log as described in Exhibit "A" to ensure adequate bonding exists in the wellbore. Such logging operations shall be witnessed by a representative of the Division. In the event cement bond is determined to not be adequate, this permit shall be subject to termination upon review by the Division.

The casing shall be pressure tested as described in Exhibit "A", from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 1000 psi.

Subsequent to implementation of injection operations, the operator shall run injection profile logs as described in, and at intervals specified in Exhibit "A" attached hereto. Such logging operations shall be witnessed by a representative of the Division.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Dakota formation. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify the supervisor of the Aztec district office of the Division of the date and time of the installation of disposal equipment and of the mechanical integrity test so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Aztec district office of the Division of the failure of the tubing, casing, or packer in said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

PROVIDED FURTHER THAT, jurisdiction of this cause is hereby retained by the Division for the entry of such further order or orders as may be deemed necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of the operator to conduct operations in a manner which will ensure the protection of fresh water or in a manner inconsistent with the requirements set forth in this order, the Division may, after notice and hearing, terminate the injection authority granted herein.

The operator shall submit monthly reports of the disposal operations in accordance with Rule Nos. 706 and 1120 of the Division Rules and Regulations.

The injection authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

Approved at Santa Fe, New Mexico, on this 30st day of March, 1995.

WILLIAM J. LEMAY, Director

WJL/BES

xc: Oil Conservation Division - Aztec

EXHIBIT "A"

WELL COMPLETION and MONITORING GUIDANCE

Frontier Well No.1-A
Section 8, Township 26 North, Range 12 West, San Juan County, New Mexico

DIVISION ORDER SWD-583

A. WELL COMPLETION

1) The operator shall deepen the subject well to an approximate depth of 6100 feet utilizing a 4.75 inch bit.

2) The completion shall consist of setting 3 1/2 in O.D. liner from approximately 5000 feet to the total depth drilled. Such liner shall be cemented in a manner consistent with available technology so as to optimize bonding between the casing and formation.

3) The operator shall run a cement bond log utilizing CET (or equivalent) technology or better. Due to the critical nature of this completion, the obsolescence of a standard CBL is not acceptable. Log curves shall be run under static and pressure conditions.

4) Subsequent to log interpretation and assessment of adequate cement, the operator shall perforate the Dakota interval from approximately 5760 feet to 6060 feet. The exact interval shall be determined by the operator after analyzing porosity utilizing whatever log type(s) and methods they see fit. Such logs shall also be submitted to the Division for inclusion in the permit file.

5) The operator shall run 2 3/8 inch plastic-coated tubing set in a packer located within 100 feet of the uppermost injection perforation. The well may be placed on injection pursuant to all provisions of this Division Order.

B. INJECTION MONITORING

1) At a time when injection into the well has been determined to be stabilized, but not to exceed six months from initial injection, the operator shall run an injection profile. This type of injection profile will be run again at the one year mark and at one year intervals thereafter. The injection profiles will always be witnessed by a representative of the Division. Such profiles shall be run in accordance with the following guidelines, items 2) through 8).

2) All injections profiles shall be a combination of temperature and radioactive tracer logs.

3) All log curves shall be started (finished) at a minimum of 200 feet above the liner top. If the well is on vacuum or goes on vacuum within minutes of shutting in the well,

temperature curves will be run a) while injecting, b) 30 minutes after shut-in, c) 1 hour after shut-in, and d) 2 hours after shut-in. If the well is holding surface pressure, temperature curves will be run a) while injecting, b) 1 hour after shut-in, c) 2 hours after shut-in, and d) 18 to 24 hours after shut-in.

4) Radioactive tracer runs shall start at a minimum of 150 feet above the top perforation and consist primarily of an "intensity" type survey. The initial recorded runs through the radioactive material should have a minimum of 6 inches deflection immediately above any anticipated loss interval. The tracer intensity shall be recorded until the R/A residual falls below 1 chart division deflection over background.

5) The "velocity" type and "drop shot" type surveys are not required but may be run at the discretion of the operator.

6) Channel (leak) checks should be made at the bottom and top perforations, and at the top of the liner. The R/A "burst" or "slug" should be of very high intensity and recorded on time-drive for a minimum of 5 minutes. At the conclusion of the time-drive survey, the logger shall drop below the remaining R/A material and make a number of depth-drive (log through) runs until the existence or severity of any channelling or leak is determined. In the cases of the upward channel check and liner top check, every effort should be made to establish the top of the channel if one exists. If there is a severe channel, this might include "unloading" the R/A ejector tool at the top perforation or the top of the liner in an attempt to saturate the fluid moving up in the channel. The logging unit operator should be able to allocate the useage of R/A material so as to leave no doubt about the existence and severity of channels or leaks at these two positions. In the event the liner top has a substantial leak, an effort should be made to determine the approximate percentage of fluid loss.

7) If an upward channel or liner top leak exists, the Division representative on location shall make the determination, based on their judgement as to the severity of the channel or leak, to immediately shut the well in or not.

8) Copies of all logs shall be forwarded to the District office and the Division office of the Oil Conservation Division. After reviewing the results in the Division office, a final determination shall be made as to the future status of the well.

C. MECHANICAL INTEGRITY TESTING

Prior to commencing injection operations into said well and every 5 years thereafter, the casing shall be pressure tested to 500 psi and monitored for 30 minutes. A sucessful test will be that which has lost no more than 10 percent (50 psi) for the duration of the test.