STATE OF NEW MEXICO
ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 12365
ORDER NO. R-11381

APPLICATION OF DUGAN PRODUCTION CORP. FOR SALT WATER DISPOSAL, SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on April 20, 2000, at Santa Fe, New Mexico, before Examiner Mark W. Ashley.

NOW, on this 17th day of May, 2000, the Division Director, having considered the testimony, the record and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given and the Division has jurisdiction of this case and its subject matter.

(2) The applicant, Dugan Production Corp. ("Dugan"), seeks authority to utilize its West Bisti Unit Well No. 153 (**API No. 30-045-05619**) located 1990 feet from the South line and 1960 feet from the West line (Unit K) of Section 35, Township 26 North, Range 13 West, NMPM, San Juan County, New Mexico, to dispose of produced water into the Mesaverde formation through the perforated interval from approximately 2,747 feet to 3,875 feet.

(3) Division records and evidence presented by the applicant indicate that the subject well was drilled by British-American Oil Producing Company in April, 1957, to a total depth of 5077 feet to test the Gallup formation, Bisti Lower-Gallup Pool. The well was perforated in the Gallup formation from 4,908 feet to 4,990 feet. The well was cased and cemented as follows:

Casing Size	Setting Depth	Top of Cement
9 5/8"	216'	Circulated to Surface

5 1/2"	5049'	4,450' (temperature survey)

(4) By Order No. R-1591, issued in Case No. 1866 and dated February 8, 1960, the Oil Conservation Commission approved the West Bisti Lower Gallup Sand Unit Agreement.

(5) In October of 1960, the subject well was converted to water injection. The existing perforations were used as the injection interval.

(6) Injection continued until a casing leak was discovered in the 5 1/2 inch casing in March of 1984. Chevron U.S.A., Inc. ("Chevron"), the operator of the unit at that time, set a cast iron bridge plug at 4,850 feet and placed 40 feet of cement on top of the plug. Additionally, holes in the 5 1/2 inch casing were found across the Mesaverde formation from 2,814 feet to 3,617 feet. The casing above 2,814 feet, and below 3,617 feet down to the a cast iron bridge plug at 4,850 feet was pressure tested and held with no leaks. Once the casing holes were found, Chevron decided to temporarily abandon the well by cement squeezing the casing holes. During the cementing operations, fluid was returned to the surface between the 5 1/2 inch casing and the 9 5/8 inch casing indicating that no cement existed between the two casing strings. The cement plug was tagged at 2,673 feet. Upon completion of the cementing operations, the 5 1/2 inch casing was pressure tested above the cement plug and held with no leaks.

(7) Effective November 1, 1989, Dugan became the successor operator of the West Bisti Lower Gallup Sand Unit.

(8) The subject well remained temporarily abandoned until May of 1999 when Dugan decided to re-enter it after it failed a mechanical integrity test.

(9) When Dugan re-entered the subject well, the cement plug was tagged at 2,747 feet. The 5 1/2 inch casing was pressure tested above the cement plug, but did not hold. Casing holes were found from 2,379 feet to 2,747 feet. A subsequent pressure test above 2,379 feet held with no leaks.

(10) The casing holes from 2,379 feet to 2,747 feet were cement squeezed, and once again fluid was returned to the surface between the 5 1/2 inch casing and the 9 5/8 inch casing. The top of cement behind the casing was calculated to be at approximately 1,250 feet. The casing was pressure tested and held with no leaks.

(11) The cement plug was drilled out and the casing was pressure tested but did not hold. Dugan continued in the wellbore to 3,210 feet where an impassable obstruction was encountered. The obstruction is located within the proposed injection interval and within the interval where the original casing holes from 2,814 feet to 3,617 feet were located.

(12) In March of 2000, Dugan submitted an application to the Santa Fe Division Office to convert its West Bisti Unit Well No. 153 to injection for disposal purposes into the Mesaverde formation.

(13) On February 29, 2000 Navajo Agricultural Products Industry ("NAPI"), the owner of the surface upon which the West Bisti Unit Well No. 153 is located, objected to Dugan's application on the grounds that the subject well is located in an area of proposed future NAPI irrigation fields.

(14) NAPI did not appear at the hearing to support its objection to Dugan's application. No other offset operator or interest owner appeared at the hearing in opposition to the application.

(15) Dugan presented the following evidence indicating that injection will be limited to the Mesaverde formation:

(a) at the lower limits of the injection zone, the Mancos shale will serve as an impermeable barrier to injection fluids;

(b) at the upper limits of the injection zone, the well has adequate cement behind the casing as a result of the cement squeeze at 2,747 feet.

(16) Before injection operations begin, Dugan should be required to run a cement bond log to determine the location of cement behind the casing. If the cement bond log indicates that any part of the casing above and below the proposed injection interval is not adequately cemented, Dugan should be required to perform additional operations to ensure that the proposed injection zone will be adequately isolated.

(17) The Division's Aztec District Office should be notified of the approximate date and time that the cement bond log is to be conducted. Copies of the log should be submitted to the Aztec District Office.

(18) Injection should be accomplished through 2 3/8 inch plastic-lined tubing installed in a packer located at approximately 2,747 feet; the casing-tubing annulus should

be filled with an inert fluid; and a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(19) Before injection operations begin, the casing in the subject well should be pressure-tested throughout the interval from the surface down to the proposed packer setting depth to ensure the integrity of such casing.

(20) The injection well or system should be equipped with a pressure limiting switch or other acceptable device that will limit the surface pressure on the injection well to no more than 549 psi.

(21) The Director of the Division may administratively approve an increase in the injection pressure upon a proper showing by the operator that such higher pressure will not result in migration of the injected fluid from the Mesaverde formation.

(22) The operator should notify the supervisor of the Division's Aztec District Office of the date and time of the installation of disposal equipment and of the performance of the mechanical integrity pressure test so that they may be witnessed.

(23) The operator should 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.

(24) Approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

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

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Dugan Production Corp., is hereby authorized to utilize its West Bisti Unit Well No. 153 (**API No. 30-045-05619**) located 1990 feet from the South line and 1960 feet from the West line (Unit K) of Section 35, Township 26 North, Range 13 West, NMPM, San Juan County, New Mexico, to dispose of produced water into the Mesaverde formation through the perforated interval from approximately 2,747 feet to 3,875 feet.

(2) Before injection operations begin, Dugan must run a cement bond log to determine the location of cement behind the casing. If the cement bond log indicates that any part of the proposed injection interval is not adequately isolated, Dugan must perform additional operations to ensure that the proposed injection zone will be adequately isolated.

(3) The Division's Aztec District Office shall be notified of the approximate date and time that the cement bond log is to be conducted. Copies of the log shall be submitted to the Aztec District Office.

(4) Injection shall be accomplished through 2 3/8 inch plastic-lined tubing installed in a packer set at approximately 2,747 feet; the casing-tubing annulus shall be filled with an inert fluid; and a pressure gauge or approved leak detection device shall be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(5) Before injection operations begin, the casing in the subject well shall be pressure-tested throughout the interval from the surface down to the proposed packer setting depth, to ensure the integrity of such casing.

(6) The injection well or system shall be equipped with a pressure limiting switch or other acceptable device that will limit the surface pressure on the injection well to no more than 549 psi.

(7) The Director of the Division may administratively approve an increase in the injection pressure upon a proper showing by the operator that such higher pressure will not result in migration of the injected fluid from the Mesaverde formation.

(8) The operator shall notify the supervisor of the Division's Aztec District Office of the date and time of the installation of disposal equipment and of the performance of the mechanical integrity pressure test so that they may be witnessed.

(9) 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.

(10) The operator shall immediately notify the supervisor of the Division's Aztec District Office of the failure of the tubing, casing, or packer in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(11) The applicant shall submit monthly reports of the disposal operations on C-115, in accordance with Division Rules 702 through 706, 708 and 1120.

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

(13) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Lori Wrotenbery

LORI WROTENBERY
Director

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