

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

**RECEIVED**  
DEC 17 1990  
OIL CON. DIV.  
DIST. 3

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

*ADMINISTRATIVE ORDER NO. PMX-163*

APPLICATION OF DUGAN PRODUCTION CORPORATION TO EXPAND ITS  
PRESSURE MAINTENANCE PROJECT IN THE BISTI LOWER GALLUP POOL IN  
SAN JUAN COUNTY, NEW MEXICO

ADMINISTRATIVE ORDER  
OF THE OIL CONSERVATION DIVISION

Under the provisions of Division Order No. R-1638, Dugan Production Corporation has made application to the Division on November 6, 1990 for permission to expand its West Bisti Pressure Maintenance Project in the Bisti Lower Gallup Pool in San Juan County, New Mexico.

NOW, on this 11th day of December, 1990, the Division Director finds that:

- (1) The application has been filed in due form.
- (2) Satisfactory information has been provided that all offset operators have been duly notified of the application.
- (3) No objection has been received within the waiting period as prescribed by Rule 701(B).
- (4) The proposed injection well is eligible for conversion to water injection under the terms of Rule 701.
- (5) The proposed expansion of the above-referenced pressure maintenance project will not cause waste nor impair correlative rights.
- (6) The application should be approved.

IT IS THEREFORE ORDERED THAT:

The applicant, Dugan Production Corporation, be and the same is hereby authorized to inject water into the Lower Gallup formation at approximately 5028 feet to approximately 5048 feet through 2 3/8-inch plastic lined tubing set in a packer at approximately 4950 feet in the following described well for purposes of pressure maintenance to wit:

West Bisti Unit Well No. 127  
1980' FNL & 1980' FEL (Unit G)  
Section 28, T-26 North, Range 13 West, NMPM,  
San Juan County, New Mexico.

**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.

Prior to commencing injection operations into the well, the casing shall be pressure tested 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 1006 psi.

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 Lower Gallup 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 injection 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.

*Administrative Order PMX-163  
Dugan Production Company  
December 11, 1990  
Page 3*

The subject well shall be governed by all provisions of Division Order No. R-1638 and Rules 701-708 of the Division Rules and Regulations not inconsistent herewith.

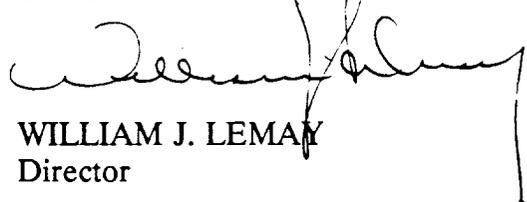
Prior to commencing injection operations into the well, the applicant shall be required to obtain the appropriate Federal and/or Indian injection permits in accordance with the requirements of 40 CFR Part 147.

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 progress reports of the project in accordance with Rules 706 and 1115 of the Division Rules and Regulations.

Approved at Santa Fe, New Mexico, on this 11th day of December, 1990.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
WILLIAM J. LEMAY  
Director

S E A L



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
 OIL CONSERVATION DIVISION  
 AZTEC DISTRICT OFFICE

GARREY CARRUTHERS  
 GOVERNOR

1100 RIO HAZARDO ROAD  
 AZTEC, NEW MEXICO 87410  
 (505) 334-6170

Date: 11-20-90

*DAVE CATANACH*

Oil Conservation Division  
 P.O. Box 2088  
 Santa Fe, NM 87504-2088

Re: Proposed MC \_\_\_\_\_  
 Proposed DHC \_\_\_\_\_  
 Proposed NSL \_\_\_\_\_  
 Proposed SWD ~~\_\_\_\_\_~~  
 Proposed WFX \_\_\_\_\_  
 Proposed PMX X

Gentlemen:

I have examined the application dated 11-6-90  
 for the DUGAN PROD CORP. WBL #127  
 Operator Lease & Well No.

G-28-26N-13W and my recommendations are as follows:  
 Unit, S-T-R

*Approve - with the stipulation that  
 yearly MITs be conducted on this well  
 to 300 P5T for 315 min.*

Yours truly,

*[Signature]*



APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose:  Secondary Recovery  Pressure Maintenance  Disposal  Storage  
Application qualifies for administrative approval?  yes  no

II. Operator: DUGAN PRODUCTION CORP.

Address: P.O. Box 420, Farmington, NM 87499

Contact party: John Alexander Phone: (505) 325-1821

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project?  yes  no  
If yes, give the Division order number authorizing the project R-1638

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

\*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: John Alexander Title: Operations Manager

Signature: John Alexander Date: 10-29-90

\* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. logs submitted 11-56 on completion.

**RECEIVED**  
NOV 06 1990  
OIL CON. DIV.  
DIST. 3

## III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

## XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

---

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

RECEIVED  
NOV 19 1983

NOV 19 1983

Nos. III, VII, VIII, IX, XI, XIV on Form C-108

Dugan Production Corp.  
P.O. Box 420  
Farmington, N.M. 87499

III A. Injection Well Information:

1. West Bisti Unit No. 127  
1980' FNL & 1980' FEL  
28-26N-13W
2. 9-5/8" 25.4 lb. set @ 214' in 13-3/4" hole. Cemented with 175 sks. "Regular" + 2% CaCl<sub>2</sub>. Circulated to surface.  
  
5 1/2" 14 and 15.5 lb. set @ 5201' in 7-7/8" hole. Cemented with 100 sks. + 3% gel. Cement top @ 4400' by temperature survey.
3. Tubing will be 2-3/8" 4.7 lb. EUE 8rd., plastic lined. Setting depth will be ±4950'.
4. Packer will be a Baker Model "FH" Hydostatic Set, plastic coated internally and externally. Setting depth will be ±4950'.

III B. Formation Information:

1. Gallup Sandstone. Bisti Lower Gallup Field.
2. Injection interval perforated 5028-5048.
3. Originally drilled as a production well.
4. There are no other zones perforated in this well.
5. Next highest production zone: Pictured Cliffs - 1343'.  
Next lower production zone: Dakota - 5700' (estimate)

VII Data On Proposed Operation:

1. Average daily injection rate is expected to be 400 bwpd, with a maximum rate expected to be 1,000 bwpd.
2. The system is closed.
3. The average injection pressure will be 650 psi, with a maximum of 750 psi.
4. Injected water will that produced from the Gallup formation, and re-injected into the Gallup formation.
5. This is not a disposal well.

VIII Geologic Information:

Injection will be into the Gallup sandstone. Top of the Gallup is at 4938' with a total thickness of 240'. There are no known underground sources of drinking water above or below the Gallup in this well.

IX Stimulation:

No stimulation is proposed.

XI Fresh Water Analysis:

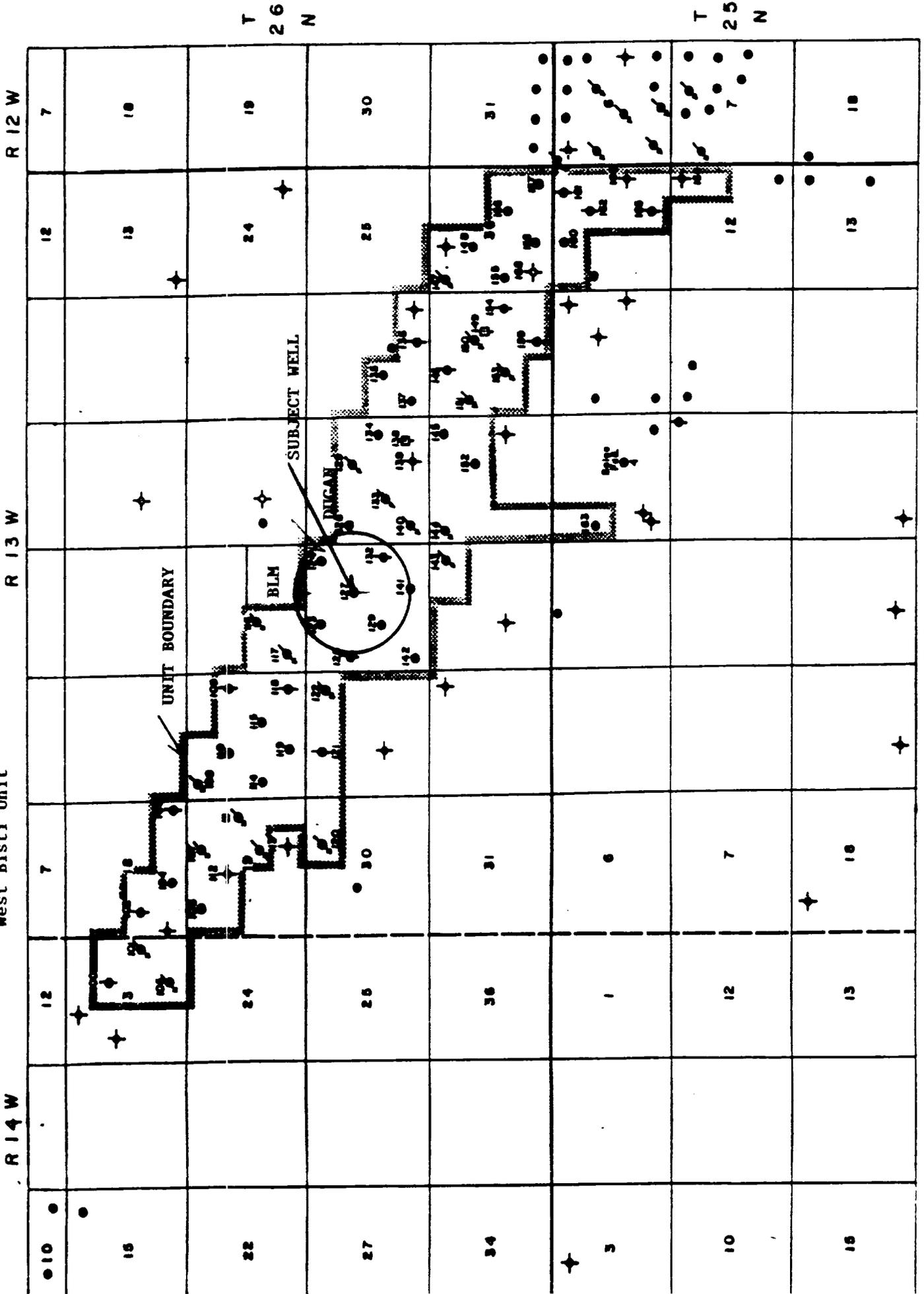
There are no active water wells in the area.

XIV Proof Of Notice:

Attached are copies of the certified mail receipts notifying The Navajo Tribe as surface owner, and BLM as offset lease owner. A copy of the letter provided is attached. Dugan Production is the unit operator and owns the N/2 N/2 of section 27, leaving only the unleased SE/4 of section 21 not operated by Dugan.

A certified copy of the legal notice published in The Farmington Daily Times is attached.

DUGAN PRODUCTION CORP.  
West Bisti Unit



## DUGAN PRODUCTION CORP.

## DATA ON WELLS OFFSET TO WEST HISTI UNIT NO. 127

No. VI on Form C-108

WELL	LOCATION	TYPE	DRILLED	DEPTH	DATA
WBU 124	660' FWL & 660' FWL 28-26N-13W	PRODUCER	6-57	5176	9-5/8" 25.4 LB. CASING @ 214' - CEMENTED W/ 200 SKS. - CIRCULATED TO SURFACE. ✓  5 1/2" 14 LB. CASING @ 5176' - CEMENTED W/ 100 SKS. + 3% GEL. CEMENT TOP @ 4600' BY TEMPERATURE SURVEY  GALLUP PERFORATED 5020-30; 5070-86 SAND-OIL FRAC W/ 25,000 GAL. OIL & 30,000 LB. SAND. RE-FRAC 76,250 GAL. WATER & 131,000 LB. SAND

WELL	LOCATION	TYPE	DRILLED	DEPTH	DATA
WBU 123	660' FWL & 1980' FWL 28-26N-13W	PRODUCER	4-57	5229	9-5/8" 25.4 LB. CASING @ 214' - CEMENTED W/ 175 SKS. - CIRCULATED TO SURFACE. ✓  5 1/2" 14 LB. CASING @ 5229' - CEMENTED W/ 100 SKS. + 3% GEL. CEMENT TOP @ 4600' BY TEMPERATURE SURVEY  GALLUP PERFORATED 5080-99. SAND-OIL FRAC W/ 50,000 GAL. OIL & 50,000 LB. SAND

WELL	LOCATION	TYPE	DRILLED	DEPTH	DATA
WBU 141	660' FWL & 1980' FWL 28-26N-13W	PRODUCER	4-57	5122	9-5/8" 25.4 LB. CASING @ 214' - CEMENTED W/ 200 SKS. - CIRCULATED TO SURFACE. ✓  5 1/2" 14 LB. CASING @ 5229' - CEMENTED W/ 100 SKS. + 3% GEL. CEMENT TOP @ 4400' BY TEMPERATURE SURVEY  GALLUP PERFORATED 4994-5008; 5026-34; 5040-44; 5052-66. SAND-OIL FRAC W/ 7700 GAL. OIL & 1500 LB. SAND.

WELL	LOCATION	TYPE	DRILLED	DEPTH	DATA
WBU 132	1980' FWL & 660' FWL 28-26N-13W	PRODUCER (TA)	3-57	5114	9-5/8" 25.4 LB. CASING @ 214' - CEMENTED W/ 200 SKS. - CIRCULATED TO SURFACE. ✓  5 1/2" 14 LB. CASING @ 5114' - CEMENTED W/ 100 SKS. + 3% GEL. CEMENT TOP @ 4365' BY TEMPERATURE SURVEY  GALLUP PERFORATED 5026-38; 4968-88. SAND-OIL FRAC W/ 20,000 GAL. OIL & 20,000 LB. SAND.  CAST IRON BRIDGE PLUG SET @ 4918 W/ 29.5 CU. FT. CEMENT ON TOP. PACKER FLUID SPOTTED ABOVE CEMENT.

## DUGAN PRODUCTION CORP.

DATA ON WELLS OFFSET TO WEST BISTI UNIT NO. 127  
No. VI on Form C-108

WELL	LOCATION	TYPE	DRILLED	DEPTH	DATA
WBU 129	1980' PSL & 1980' FWL 28-26N-13W	PRODUCER	5-57	5174	9-5/8" 25.4 LB. CASING @ 214' - CEMENTED W/ 200 SKS. - CIRCULATED TO SURFACE. ✓  5 1/2" 14 LB. CASING @ 5174' - CEMENTED W/ 100 SKS. + 3% GEL. CEMENT TOP @ 4400' BY TEMPERATURE SURVEY  GALLUP PERFORATED 5038-54; 5072-80; 5096-5110. SAND-OIL FRAC W/ 40,000 GAL. OIL & 40,000 LB. SAND. RE-FRAC PERFORATIONS 5038-54 W/ 30,000 GAL. WATER & 30,000 LB. SAND.



PROOF OF NOTICE TO OFFSET LEASE AND SURFACE OWNERS  
 LUGAN PRODUCTION CORP'S WEST BISTI UNIT NO. 127  
 APPLICATION TO CONVERT TO INJECTION WELL

**SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
 Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1  Show to whom delivered, date, and addressee's address. (Extra charge) 2  Restricted Delivery (Extra charge)

3. Article Addressed to:  The Navajo Nation  Eastern Navajo Land Office P.O. Box 948  Crownpoint, NM 87313	4. Article Number P 551 202 005
	Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise
Always obtain signature of addressee or agent and DATE DELIVERED.	
5. Signature - Addressee X	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature - Agent X <i>[Signature]</i>	
7. Date of Delivery 10-31-90	

PS Form 3811, Apr. 1989      \*U.S.G.P.O. 1989-238-81      DOMESTIC RETURN RECEIPT

**SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
 Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1  Show to whom delivered, date, and addressee's address. (Extra charge) 2  Restricted Delivery (Extra charge)

3. Article Addressed to:  Bureau of Land Management 1235 La Plata Hwy.  Farmington, NM 87401	4. Article Number P 551 202 004
	Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise
Always obtain signature of addressee or agent and DATE DELIVERED.	
5. Signature - Addressee X <i>[Signature]</i>	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature - Agent X	
7. Date of Delivery 10-30-90	

PS Form 3811, Apr. 1989      \*U.S.G.P.O. 1989-238-81      DOMESTIC RETURN RECEIPT