HIXON DEVELOPMENT COMPANY
P. O. BOX 2810
FARMINGTON, NEW MEXICO 87499

April 16, 1984

Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Subject: CBU Well No. 73
SW/4 SE/4 Section 8, T25N, R12W
San Juan County, New Mexico

Gentlemen:

Attached for your approval is our Application for Authorization to Inject for the subject well.

Very truly yours,

Hixon Development Company

by _____

Aldrich L. Kuchera
Executive Vice President

ALK:cb

Attachments

cc: Mr. Frank Chavez
Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

HIXON DEVELOPMENT COMPANY
P. O. BOX 2810
FARMINGTON, NEW MEXICO 87499

April 16, 1984

Bureau of Indian Affairs
Navajo Area Office
Minerals Department
Box 146
Window Rock, Arizona 86515

Subject: CBU Well No. 73
SW/4 SE/4 Section 8, T25N, R12W
San Juan County, New Mexico

Gentlemen:

Attached is our Application for Authorization to Inject for the subject well. We are required by the Oil Conservation Division to furnish copies of these applications to the surface owners.

Very truly yours,

Hixon Development Company

by Aldrich L. Kuchera

Aldrich L. Kuchera
Executive Vice President

ALK:cb

Attachments

Certified Mail No. 933628

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: Hixon Development Company

Address: P.O. Box 2810, Farmington, New Mexico 87499

Contact party: Aldrich L. Kuchera Phone: (505) 325-6984

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? [X] yes [ ] no
If yes, give the Division order number authorizing the project R-1636-A.

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: Aldrich L. Kuchera Title Petroleum Engineer

Signature: Aldrich L. Kuchera Date: 4/16/84

* 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.

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division

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.

Hixon Development Company
Application for Authorization to Inject
Form C-108 Supplemental Information

CBU Well No. 73
SW/4 SE/4, Section 8, T25N, R12W
San Juan County, New Mexico

I. Shown on Application.

II. Shown on Application.

III. Well data attached.

IV. This well is located in a Federal and State approved waterflood project operational since 1959.

V. Area of review is shown on attached map.

VI. Information for well's located in the area of review are attached as follows:

CBU Well No. 68
CBU Well No. 34
CBU Well No. 42
CBU Well No. 43
CBU Well No. 31
CBU Well No. 30
CBU Well No. 29

VII. 1. Proposed average injection rate is 600 BWPD, expected maximum injection rate is 1200 BWPD.

2. The injection system will be closed.

3. Average injection pressures are expected to be in the 840-965 psi range. Maximum injection pressure will be 965 psi.

4. Refer to the attached water analysis report. Since the formation water to be encountered is primarily previously injected water no problems are expected in mixing the two waters.

5. This well is part of an extensive waterflood project active in the Central Bisti Unit since 1959. All produced water is re-injected into the oil productive Lower Gallup sand to maintain pressure. Injection into the Lower Gallup sand is for waterflooding not disposal.

VIII. The injection zone is the upper bench of the Lower Gallup sandstone. This zone is shown to be 34' in thickness with a top of 4752' KBE as shown on SP log

previously submitted No known sources of underground drinking water exist in this area. Water well drilling in the area has shown the Ojo Alamo to be dry.

IX. The well will be acidized if required to maintain injection rate and pressure.

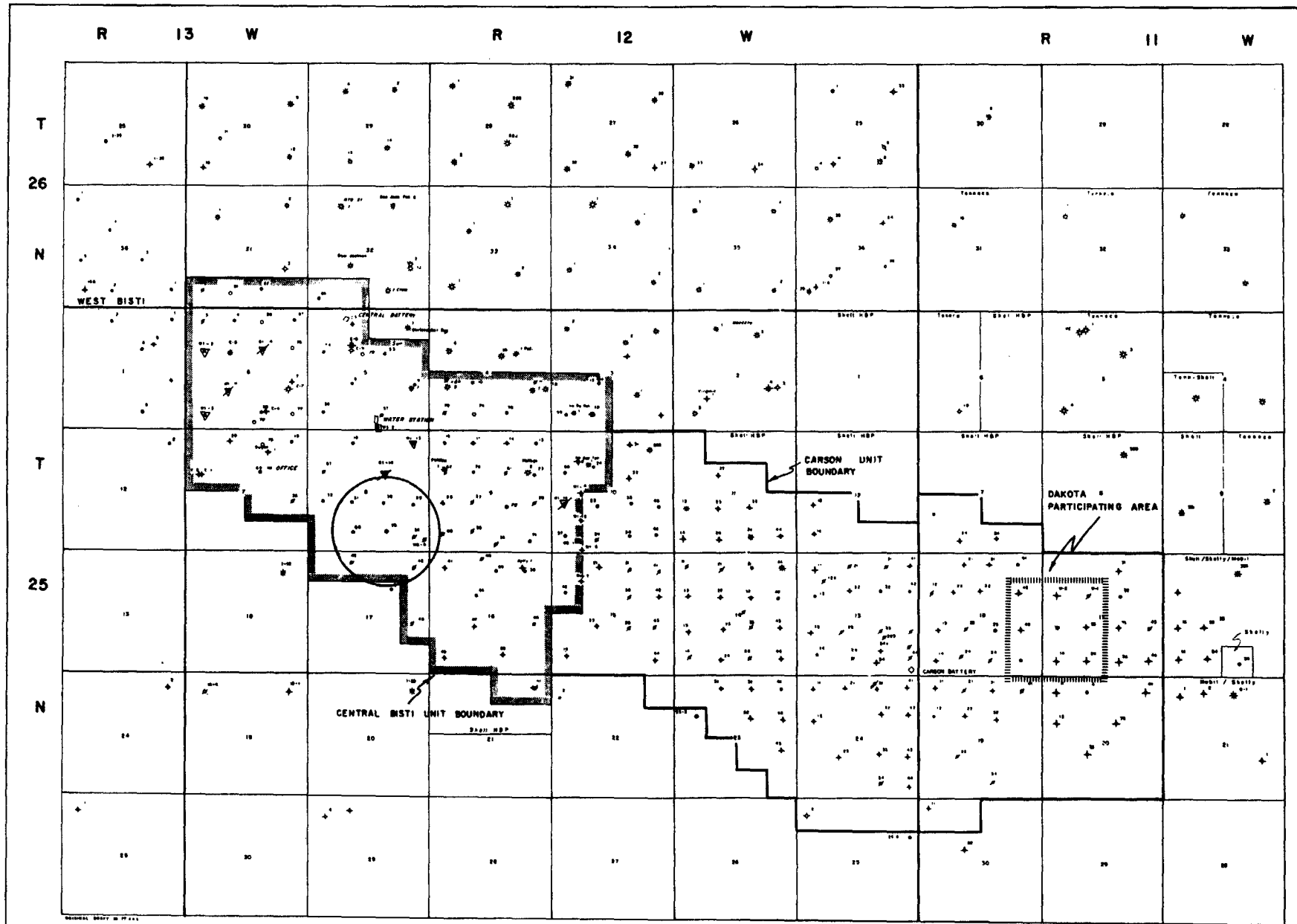
X. Logs were previously submitted.

XI. No known sources of drinking water exist in this area.

XII. This well is part of the existing approved waterflood operation for the Central Bisti Lower Gallup Sand Unit. It is not a disposal well.

XIII. Proof of notification attached.

XIV. Certification shown on application.



HIXON DEVELOPMENT COMPANY

CENTRAL BISTI - CARSON UNIT AREA

San Juan County, New Mexico

san juan testing laboratory, inc.

907 WEST APACHE • P.O. BOX 2079 • FARMINGTON, NEW MEXICO

PHONE
327-4966

Date June 10, 1977

Report to Hixon Development Company

Requested by A. Kuchera, Mgr. Sampled by Hixon Personnel

Project CBU #5 Location NW NW Sec. 6, T25N, R12W

Source of Material Lower Gallup Produced Water

Lab No. 24509 Water Analysis for Petroleum Engineering

TEST RESULTS

WATER ANALYSIS FOR PETROLEUM ENGINEERING

Constituent	
Total Solids	2263 ppm
pH	7.25
Resistivity	2.94 ohms/meter @70°F
Conductivity	3,400 micromhos/cm @ 70°F

Comments

Essentially this is a 0.2% sodium sulfate solution.

Constituents		
Cations	**Meg/L**	**ppm**
Sodium	29.3	674
Calcium	2.3	45
Magnesium	0.5	6
Iron	neg.	3
Barium	0	0
Anions		
Chloride	4.1	145
Bicarbonate	4.0	244
Carbonate	0	0
Hydroxide	0	0
Sulfate	24.0	1150

Copies to Hixon Development Co. (3)
P.O. Box 2810
Farmington, New Mexico 87401

TEST NO. 22096

Certified by:

LAWRENCE A. BREWER REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR 3122 STATE OF NEW MEXICO

Form 360-7

WELL DATA

WELL NAME: CBU_WELL_NO._73_____
LOCATION: 790' FSL, 1650' FEL, SECTION 8, T25N, R12W
GLE: 6231' RBM: 6245' DF: KB:

SURFACE CASING HOLE SIZE: 12-1/4"
SURFACE CASING: 8-5/8" 24# K-55
SURFACE CASING SET AT: 242.41'

FORMATION TOPS
FRUITLAND:
PICTURED CLIFFS: 1163'
LEWIS:
CLIFFHOUSE:
MENEFEE:
POINT LOOKOUT: 3567'
MANCOS:
UPPER GALLUP: 4660'
LOWER GALLUP: 4752'

PBD: 4947'
TOTAL DEPTH: 5000'

PRODUCTION CASING HOLE SIZE: 7-7/8"
PRODUCTION CASING: 4-1/2" 10.5# K-55
PRODUCTION CASING SET AT: 4985.44'

PERFS: 4772'-78', 4794'-4802',
: 4816'-22', 4834'-42',
: 4850'-56'

WELL HISTORY
SPUD DATE: 11/6/80
IP: 51 BOPD-24 BWPD GOR:
COMPLETION:
:

REMARKS:
:
:

WELL DATA

WELL NAME: CBU_WELL_NO._68_____
LOCATION: 520' FSL, 1980' FWL, SECTION 8, T25N, R12W
GLE: 6242' RBM: DF: 6252' KB: 12'

SURFACE CASING HOLE SIZE: 12-1/4"
SURFACE CASING: 8-5/8" 24# 8RD
SURFACE CASING SET AT: 221'

FORMATION TOPS
FRUITLAND:
PICTURED CLIFFS: 1169'
LEWIS:
CLIFFHOUSE:
MENEFEE:
POINT LOOKOUT: 3614'
MANCOS:
UPPER GALLUP: 4678'
LOWER GALLUP: 4764'

PBD: 4944'
TOTAL DEPTH: 4955'

PRODUCTION CASING HOLE SIZE: 7-7/8"
PRODUCTION CASING: 5-1/2" 15.5# 8RD
PRODUCTION CASING SET AT: 4954'

PERFS: 4770'-92', 4806'-36',
: 4848'-54', 4860'-75'
:

WELL HISTORY
SPUD DATE: 6/24/56
IP: 378 BOPD GOR:
COMPLETION:
:

REMARKS:
:
:

WELL DATA

WELL NAME: CBU_WELL_NO._34_____
LOCATION: 660' FSL, 660' FEL, SECTION 8, T25N, R12W
GLE: 6227' RBM: 6240' DF: 6238' KB:

SURFACE CASING HOLE SIZE: 12-1/4"
SURFACE CASING: 8-5/8" 24#
SURFACE CASING SET AT: 286'

FORMATION TOPS
FRUITLAND:
PICTURED CLIFFS: 1136'
LEWIS:
CLIFFHOUSE:
MENEFEE:
POINT LOOKOUT: 3578'
MANCOS:
UPPER GALLUP: 4458'
LOWER GALLUP: 4745'

PBD: 5909'
TOTAL DEPTH: 4918'

PRODUCTION CASING HOLE SIZE: 7-7/8"
PRODUCTION CASING: 5-1/2" 15.5#
PRODUCTION CASING SET AT: 4918'

PERFS: 4758-68', 4786-4820',
: 4832-40', 4846-60',
: 3733'-37'

WELL HISTORY
SPUD DATE: 5/3/56
IP: 218 BOPD GOR: 1444
COMPLETION: FRAC W/ 10000# SAND
:

REMARKS:
:
:

WELL DATA

WELL NAME: CBU WELL NO. 42
LOCATION: 660' FNL, 660' FEL, SECTION 17, T25N, R12W
GLE: 6228' RBM: 6240' DF: 6238' KB:

SURFACE CASING HOLE SIZE: 13-3/8"
SURFACE CASING: 9-5/8" 32.3# 8RD
SURFACE CASING SET AT: 240'

FORMATION TOPS
FRUITLAND:
PICTURED CLIFFS: 1143'
LEWIS:
CLIFFHOUSE:
MENEFEE:
POINT LOOKOUT: 3580'
MANCOS: 3725'
UPPER GALLUP: 4643'
LOWER GALLUP:

PBD: 4883'
TOTAL DEPTH: 4915'

PRODUCTION CASING HOLE SIZE: 8-3/4"
PRODUCTION CASING: 7" 20# & 23# 8RD
PRODUCTION CASING SET AT: 4915'

PERFS: 4760'-80', 4784'-85',
: 4790'-4824', 4832'-41',
: 4847'-60'

WELL HISTORY
SPUD DATE: 3/29/56
IP: 528 BOPD GOR: 536
COMPLETION:
:

REMARKS:
:
:

WELL DATA

WELL NAME: CBU_WELL_NO._43_____
LOCATION: 660' FNL, 1980' FWL, SECTION 17, T25N, R12W
GLE: 6291' RBM: 6302' DF: 6300' KB: 11'

SURFACE CASING HOLE SIZE: 12-1/4"
SURFACE CASING: 8-5/8" 24# J-55 8RD
SURFACE CASING SET AT: 382'

FORMATION TOPS
FRUITLAND:
PICTURED CLIFFS: 1196'
LEWIS:
CLIFFHOUSE:
MENEFEE:
POINT LOOKOUT: 3633'
MANCOS: 3802'
UPPER GALLUP: 4712'
LOWER GALLUP: 4798'

PBD: 4954
TOTAL DEPTH: 4990'

PRODUCTION CASING HOLE SIZE: 7-7/8"
PRODUCTION CASING: 5-1/2" 14# J-55 8RD
PRODUCTION CASING SET AT: 4989'

PERFS: 4815'-23', 4861'-71',
: 4881'-88', 4896'-4907'
:

WELL HISTORY
SPUD DATE: 7/19/56
IP: 424 BOPD GOR:
COMPLETION:
:

REMARKS:
:
:

WELL DATA

WELL NAME: CBU WELL # 31 (WIW-15)
LOCATION: 1980' FSL, 1900' FWL, SECTION 8, T25N, R12W
GLE: 6235' RBM: DF: KB:

SURFACE CASING HOLE SIZE: 12-1/4"
SURFACE CASING: 8-5/8" 24#
SURFACE CASING SET AT: 315'

FORMATION TOPS
FRUITLAND:
PICTURED CLIFFS:
LEWIS:
CLIFFHOUSE:
MENEFEE:
POINT LOOKOUT:
MANCOS:
UPPER GALLUP: 4768'
LOWER GALLUP:

PBD: 4920'
TOTAL DEPTH: 4953'

PRODUCTION CASING HOLE SIZE: 7-7/8"
PRODUCTION CASING: 4-1/2" 9.5#
PRODUCTION CASING SET AT: 4953'

PERFS: 4782'-93', 4812'-27',
: 4832'-41', 4852'-60',
: 4866'-78'

WELL HISTORY
SPUD DATE: 8/14/59
IP: 80 BOPD GOR:
COMPLETION: 9/59
:

REMARKS:
:
: _____

WELL DATA

WELL NAME: CBU WELL NO. 30
LOCATION: 1980' FSL, 1980' FEL, SECTION 8, T25N, R12W
GLE: 6219' RBM: DF: 6228' KB: 6229'

SURFACE CASING HOLE SIZE: 12-1/4"
SURFACE CASING: 8-5/8" 24#
SURFACE CASING SET AT: 298'

FORMATION TOPS
FRUITLAND:
PICTURED CLIFFS: 1146'
LEWIS:
CLIFFHOUSE: 2936'
MENEFEE: 3016'
POINT LOOKOUT: 3550'
MANCOS: 3755'
UPPER GALLUP: 4668'
LOWER GALLUP: 4754'

PBD: 4930'
TOTAL DEPTH: 4940'

PRODUCTION CASING HOLE SIZE: 7-7/8"
PRODUCTION CASING: 5-1/2" 15.5#
PRODUCTION CASING SET AT: 4940'

PERFS: 4772'-82', 4806'-28',
: 4840'-48
:

WELL HISTORY
SPUD DATE: 5/19/56
IP: 1368 BOPD GCR:
COMPLETION:
:

REMARKS:
:
: _____

WELL DATA

WELL NAME: CBU WELL NO. 29
LOCATION: 1980' FSL, 660' FEL, SECTION 8, T25N, R12W
GLE: 6216' RSM: 6223' DF: KB:

SURFACE CASING HOLE SIZE: 12-1/4"
SURFACE CASING: 8-5/8" 24# J-55
SURFACE CASING SET AT: 330'

FORMATION TOPS
FRUITLAND:
PICTURED CLIFFS:
LEWIS:
CLIFFHOUSE:
MENEFEE:
POINT LOOKOUT:
MANCOS:
UPPER GALLUP: 4750'
LOWER GALLUP:

PBD: 4920'
TOTAL DEPTH: 4957'

PRODUCTION CASING HOLE SIZE: 7-7/8"
PRODUCTION CASING: 4-1/2" J-55 9.5#
PRODUCTION CASING SET AT: 4952'

PERFS: 4763-70', 4772-82', 4792
: -4802', 4808-15', 4819-
: 25', 4833-44', 4848-59'

WELL HISTORY
SPUD DATE: 8/24/59
IP: 21 BOPD,14 BWPD GOR: 3238
COMPLETION: OIL FRAC W/ 20000#
: SAND

REMARKS:
:
:

NOTICE

Hixon Development Company, P.O. Box 2810, Farmington, New Mexico 87499, (505)325-6984 whoes agent is Aldrich L. Kuchera hereby notifies interested parties that the following list of wells are to be converted to water injection wells. Maximum rate will be 1200 BWPD at less than 965 psi. Any request for information or objections should be filed with the Oil Conservation Divsion, P.O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

CBU Well No. 66, SW/4 SW/4, Section 32, T26N, R12W;
CBU Well No. 63, SW/4 NW/4, Section 8, T25N, R12W;
CBU Well No. 57, SW/4 SE/4, Section 5, T25N, R12W;
CBU Well No. 56, SW/4 SW/4, Section 5, T25N, R12W;
CBU Well No. 53, SW/4 NW/4, Section 5, T25N, R12W;
CBU Well No. 52, SW/4 SE/4, Section 31, T26N, R12W;
CBU Well No. 64, SW/4 NE/4, Section 7, T25N, R12W;
CBU Well No. 21, SW/4 NW/4, Section 7, T25N, R12W;
CBU Well No. 73, SW/4 SE/4, SEction 8, T25N, R12W

To be published: 4/26/84

Legal No.: 14698

HIXON DEVELOPMENT COMPANY
P. O. BOX 2810
FARMINGTON, NEW MEXICO 87499

May 21, 1984

Mr. Frank Chavez
Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

Subject: Waterflood Data
Central Bisti Lower Gallup Unit
San Juan County, New Mexico

Dear Frank:

Per our telecon, today, attached are water analyses of the Cliffhouse (water source) and the Lower Gallup (water injection zone).

The Cliffhouse water source zone is approximately from 1780'-2441' in our WSW#2 in Section 5, T25N, R12W.

Water analyses show that the original Bisti Gallup water had TDS in the range of 50,000 ppm. The Cliffhouse water has TDS in the range of 4000-5000 ppm. It is not, however, potable. We are essentially injecting a better quality water into the Gallup.

Very truly yours,

Aldrich L. Kuchera
President

ALK:cb

Attachment

CHEMICAL & GEOLOGICAL LABORATORIES

Casper Farmington Glendive Sterling

WATER ANALYSIS REPORT

Field Bisti, New Mexico Well No. 27 Carson Bisti Unit

Operator Sunray Mid-Continent Oil Company Location

Sampled by Date

Formation Gallup Depths 4763 How sampled Production

Other pertinent data Rusty, clear filtrate.

Analyzed by DM Date March 10, 1960 Lab. No. 15169

CONSTITUENTS	PPM	MEQ.	MEQ.%
Sodium	17,332	753.89	47.40
Calcium	542	27.05	1.70
Magnesium	173	14.22	0.90
Sulfate	Trace	-	-
Chloride	27,800	783.96	49.30
Carbonate	-	-	-
Bicarbonate	683	11.20	0.70
Hydroxide			

TOTAL SOLIDS IN PARTS PER MILLION:

By evaporation	47,470
After ignition	46,970
Calculated	46,183

PROPERTIES OF REACTION IN PERCENT:

Primary salinity	94.80
Secondary salinity	3.80
Primary alkalinity	0.00
Secondary alkalinity	1.40
Chloride salinity	100.00
Sulfate salinity	0.00

Observed pH 7.1 Resistivity @ 68°F. ohms/meter³ 0.167

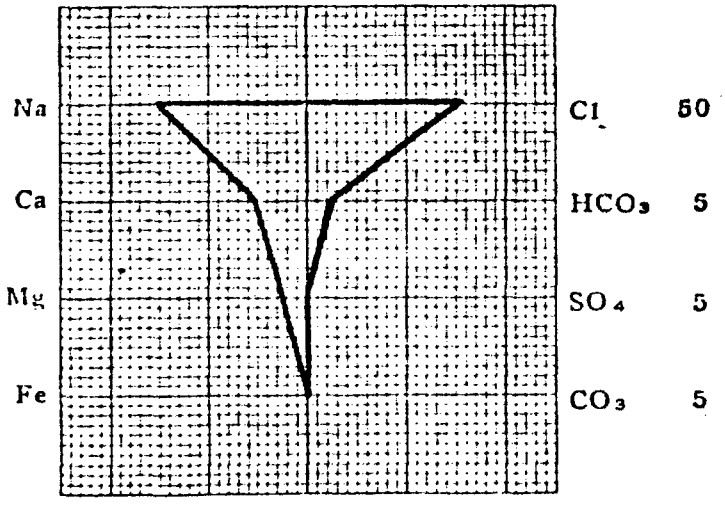
Remarks Correlates with Gallup water in this field.

Note: PPM=Milligrams per liter (1 PPM is equivalent to 0.0001% by weight). MEQ=Milliequivalents per liter. MEQ%=Milliequlivalents per liter in percent.

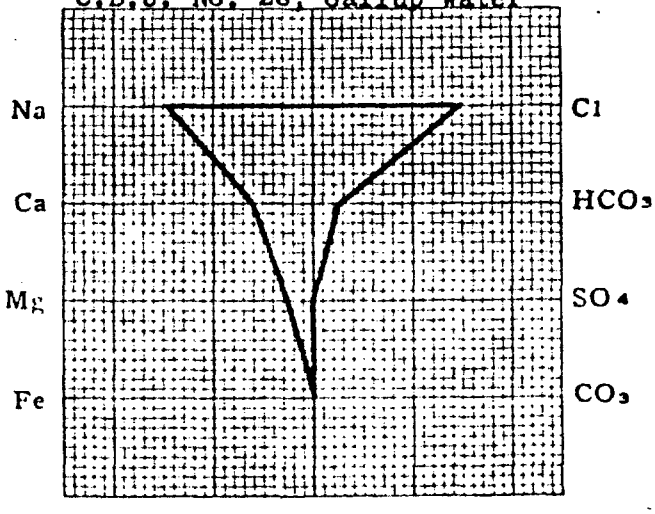
WATER ANALYSIS PATTERN

Sample above described

Scale MEQ per Unit



Bisti, New Mexico
C.B.U. No. 28, Gallup water



[illegible] LABORATORY

FIELD: [illegible] SAMPLED: 10-28-60

[illegible]: Surrey's Utility Well Cliffhouse MV

[illegible]		PPM	Meq./Liter
[illegible]		6	0.0
[illegible]	[illegible]	41[illegible]	0.6
[illegible]	[illegible]	19[illegible]	[illegible]
[illegible]	[illegible]	2,180	45.4
[illegible]	[illegible]	0	0
[illegible]	Ca	19	1.0
[illegible]	Mg	2	0.2
[illegible]	NH_4	trace	
[illegible]	Na	1,30[illegible]	57
Total dissolved solids (by addition)		4,161	
Total dissolved solids (180°C)		3,385	
Resistivity (ohm-meters at 74°F)		2.22	
pH		8.2	
Salinity (P.P.T.)		328	
Total Hardness (3.80g)		56	
Iron (Fe)		0.5	

RECEIVED
MAY 22 1984
OIL CON. DIV.
DIST. 3

[illegible]
[illegible]

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

OIL CONSERVATION DIVISION
BOX 2088
SANTA FE, NEW MEXICO 87501

DATE _____

RE: Proposed MC _____
Proposed DHC _____
Proposed NSL _____
Proposed SWD _____
Proposed WFX ✓
Proposed PMX _____

Gentlemen:

I have examined the application dated 4-26-84

for the Nixon Dev. Co. CBU #73 O-8-25N-12W
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approve

Yours truly,

Frank D. Chavez