



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 8/24/87

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

Gentlemen:

I have examined the application dated 8/24/87
for the Nixon Dev. Co. Canon Unit 23-18 K-18-25N-11W
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approve

Yours truly,

Frank D. Day

August 20, 1987

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

Subject: Carson Unit No. 23-18
NE/4 SW/4 Section 18, T 25N, R 11W
San Juan County, New Mexico

RECEIVED
AUG 21 1987
OIL CON. DIV.
DIST. 3

Dear Mr. Chavez:

Enclosed for your information is our Application for Authorization to Inject for the above referenced well. The original Application for Authorizaion to Inject has been sent to the New Mexico Oil Conservation Commission in Santa Fe for approval.

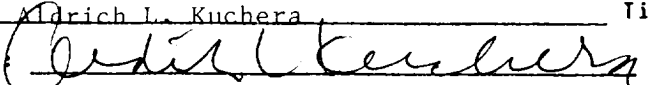
Very truly yours,


Aldrich L. Kuchera
President

Enclosures

EJB/res

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☒ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: Hixon Development Company
Address: P.O. Box 2810, Farmington, New Mexico 87499
Contact party: Aldrich L. Kuchera Phone: 326-3325
- 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 _____.
- 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 President
Signature:  Date: _____
- * 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.

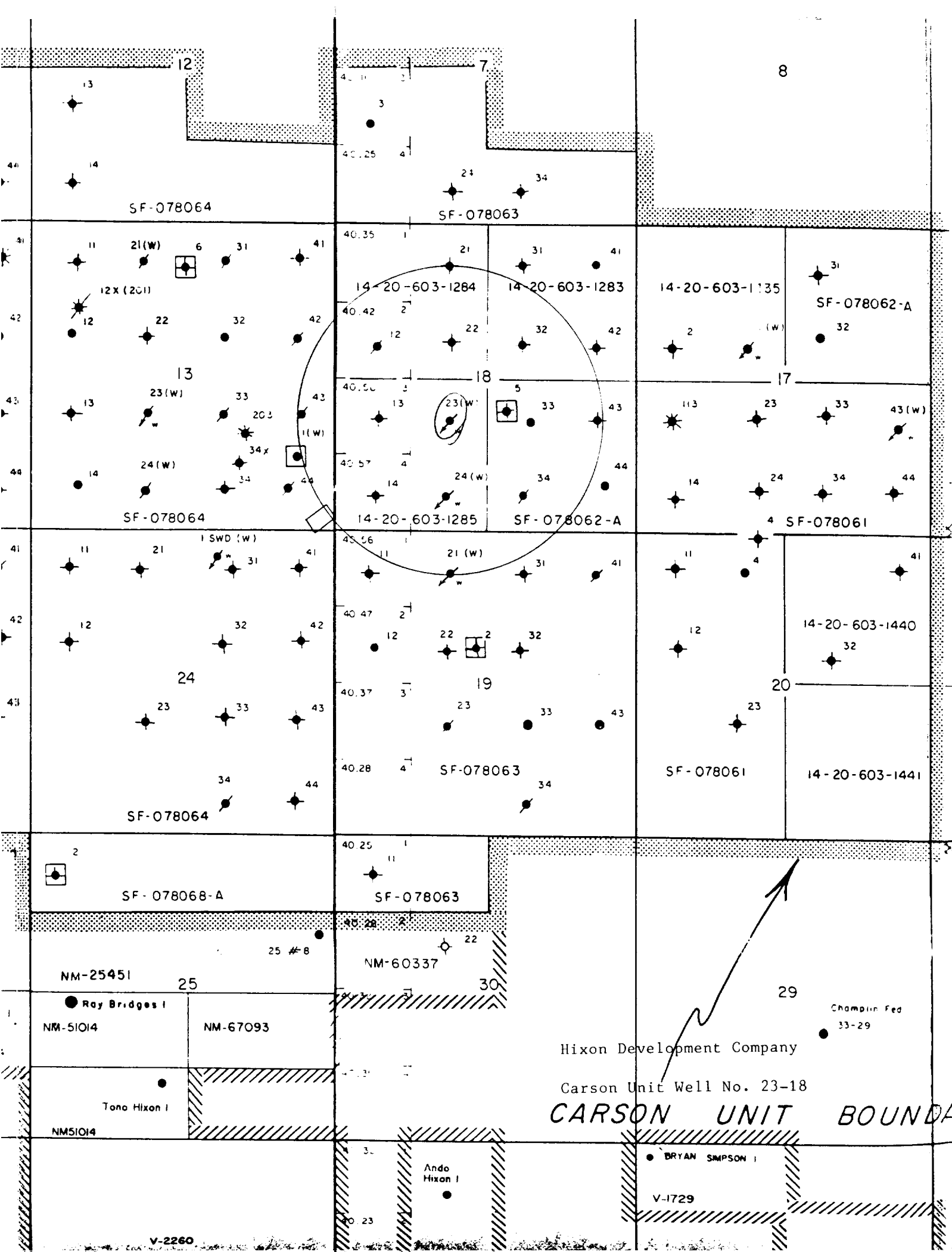
Hixon Development Company
Application for Authorization to Inject
Form C-108 Supplemental Information

Carson Unit Well No. 23-18
NE/4 SW/4, Section 18, T 25N, R 11W
San Juan County, New Mexico

- I. Shown on Application.
- II. Shown on Application.
- III. Well data attached.
- IV. This well is located in 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 area of review are attached as follows:

Carson Unit Well No. 43-13
Carson Unit Well No. 12-18
Carson Unit Well No. 13-18
Carson Unit Well No. 14-18
Carson Unit Well No. 21-18
Carson Unit Well No. 22-18
Carson Unit Well No. 24-18
Carson Unit Well No. 32-18
Carson Unit Well No. WI33-18
Carson Unit Well No. 34-18
Carson Unit Well No. 43-18
Carson Unit Well No. 21-19
- VII.
 1. Proposed average injection rate is 600 BWPD, expected maximum injection rate is 1000 BWPD.
 2. The injection system will be closed.
 3. Average injection pressures are expected to be in the 800-975 psi range. Maximum injection pressure will be 975 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 Carson Unit since 1959. All produced water is reinjected 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 Lower Gallup sandstone. This zone is shown to be 44' in thickness with a top of 4870' 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 Carson Unit. It is not a disposal well.
- XIII. Proof of notification attached.
- XIV. Certification shown on application.

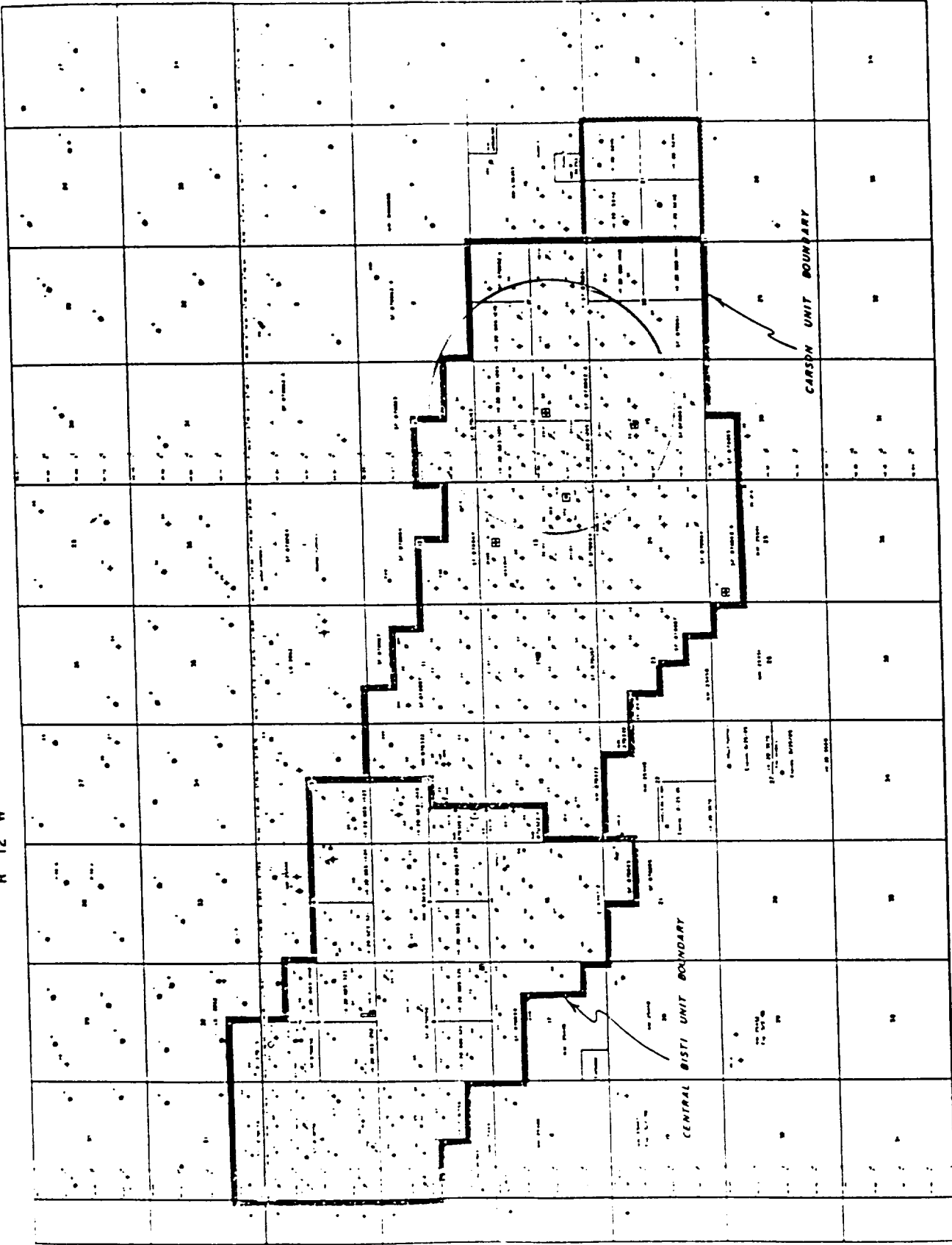


R 11 W

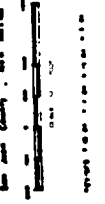
R 12 W

T 26 N

T 25 N



HIXON DEVELOPMENT COMPANY
CENTRAL BISTI - CARSON UNIT AREA



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
Object CBU #5 Location NW NW Sec. 6, T25N, R12W
Source of Material Lower Gallup Produced Water

Lob No. 24509 Water Analysis for Petroleum Engineering

TEST RESULTS

WATER ANALYSIS FOR PETROLEUM ENGINEERING

<u>Constituent</u>		<u>Constituents</u>		
Total Solids	2263 ppm	Cations	Meg/L	ppm
	7.25	Sodium	29.3	674
Resistivity	2.94 ohms/meter @70°F	Calcium	2.3	45
Conductivity	3,400 micromhos/cm @ 70°F	Magnesium	0.5	6
		Iron	neg.	3
		Barium	0	0
<u>Comments</u>		<u>Anions</u>		
Essentially this is a 0.2% sodium sulfate solution.		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:



INJECTION WELL

DATA SHEET

III. WELL DATA

PART A

1. Carson Unit Well No. 23-18
1980' FSL, 1888' FWL
Section 18, T 25N, R 11W
2. Surface Casing
Hole Size: 12-1/4"
Casing: 8-5/8", 24#
Setting Depth: 102'

Production Casing
Hole Size: 7-7/8"
Casing: 4-1/2"
Setting Depth: 5006'

PBD: 4937'
3. Tubing: 2-3/8"
Setting Depth: 4875'
4. Packer: Baker Model "AD-1" Packer
Set at 4675'

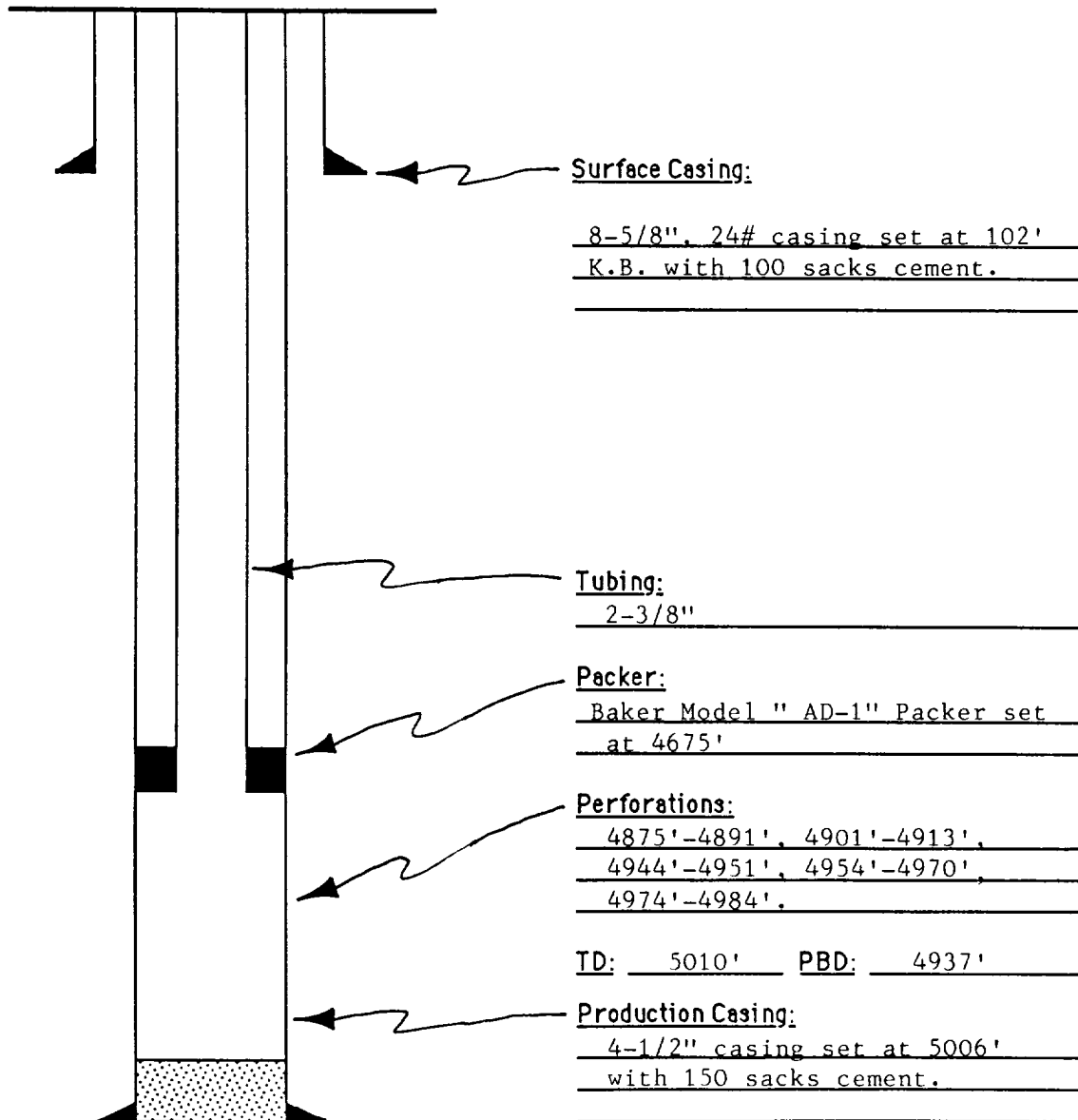
PART B

1. Injection Formation: Bisti Lower Gallup
Field or Pool Name: Bisti Lower Gallup
2. Perforated Injection Intervals: 4875'-4891', 4901'-4913',
4944'-4951', 4954'-4970',
4974'-4984'
3. Well was drilled as a producing well.
4. None
5. Next Higher Oil and Gas Zone: Pictured Cliffs at 1198'
Next Lower Oil and Gas Zone: Dakota at Unknown Depth

Hixon Development Company
Injection Well Schematic

Well Name: Carson Unit Well No.1 23-18

Legal Location: 1980' FSL, 1888' FWL
Section 18, T25N, R11W
San Juan County, New Mexico



AFFIDAVIT OF PUBLICATION

Copy of Publication

No. 20434

STATE OF NEW MEXICO,
County of San Juan:

Betty Shipp being duly

sworn, says: That he is the Nat'l. Ad Manager of

THE FARMINGTON DAILY TIMES, a daily newspaper of general circulation
published in English at Farmington, said county and state, and that the

hereto attached legal notice

was published in a regular and entire issue of the said FARMINGTON DAILY
TIMES, a daily newspaper duly qualified for the purpose within the
meaning of Chapter 167 of the 1937 Session Laws of the State of New
Mexico for ~~one~~ one ~~XXXXXX~~ (days) (~~weeks~~) on the same day as
follows:

First Publication Tuesday, July 28, 1987

Second Publication _____

Third Publication _____

Fourth Publication _____

and that payment therefor in the amount of \$ 6.25
has been made.

Betty Shipp

Subscribed and sworn to before me this 28th day
of July, 1987.

Connie Andrae

NOTARY PUBLIC, SAN JUAN COUNTY, NEW MEXICO

My Commission expires: July 3, 1989

NOTICE

Hixon Development Company,
PO Box 2810, Farmington, New
Mexico 87499, (505) 326-3325
whose agent is Aldrich L. Kuchera
hereby notifies interested parties
that the following well is to be con-
verted to a water injection well.
Maximum rate will be 1000 BWPD
at less than 975 psi. Any request
for information or objections
should be filed with the Oil Con-
servation Division, State Land Of-
fice Building, PO Box 2088, Santa
Fe, New Mexico 87501 within 15
days.

Carson Unit Well 23-18, NE/4
SW/4, Section 18, T25N, R11W

Legal No. 20434 published in
the Farmington Daily Times, Farm-
ington, New Mexico on Tuesday,
July 28, 1987.

NOTICE

Hixon Development Company, P.O. Box 2810, Farmington, New Mexico 87499, (505) 326-3325 whose agent is Aldrich L. Kuchera hereby notifies interested parties that the following well is to be converted to a water injection well. Maximum rate will be 1000 BWPD at less than 973 psi. Any request for information or objections should be filed with the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

Carson Unit Well 23-18, NE/4 SW/4, Section 18, T 25N, R 11W

To be published: July 28, 1987

Legal No. : 20434

WELL DATA SHEET

Well Name:	Carson Unit #43-13
Legal Description:	1980' FSL, 660' FEL Sec. 13, T25N-R12W San Juan County, N.M.
Well Type:	Oil Well
Spud Date:	01/12/57
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	234'
Cementing Record:	150 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5033'
Cementing Record:	200 sx.
Perforations:	4889'-4897' 4900'-4914' 4922'-4927' 4972'-4982' 4990'-4994'
Plug-Back Depth:	5033'
Total Depth:	5054'

WELL DATA SHEET

Well Name:	Carson Unit #12-18
Legal Description:	2080' FNL, 660' FWL Sec. 18, T25N-R11W San Juan County, N.M.
Well Type:	Oil Well
Spud Date:	03/11/58
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	103'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5018'
Cementing Record:	150 sx.
Perforations:	4880'-4898' 4904'-4918' 4947'-4954' 4960'-4974' 4978'-4988'
Plug-Back Depth:	5015'
Total Depth:	5020'

WELL DATA SHEET

Well Name: Carson Unit #13-18

Legal Description: 1980' FSL, 750' FWL
Sec. 18, T25N-R11W
San Juan County, N.M.

Well Type: P & A

Spud Date: 01/11/60

Surface Casing Hole Size: 12-1/4"
Surface Casing Size: 8-5/8"
Surface Casing Depth: 109'

Cementing Record: 100 sx.

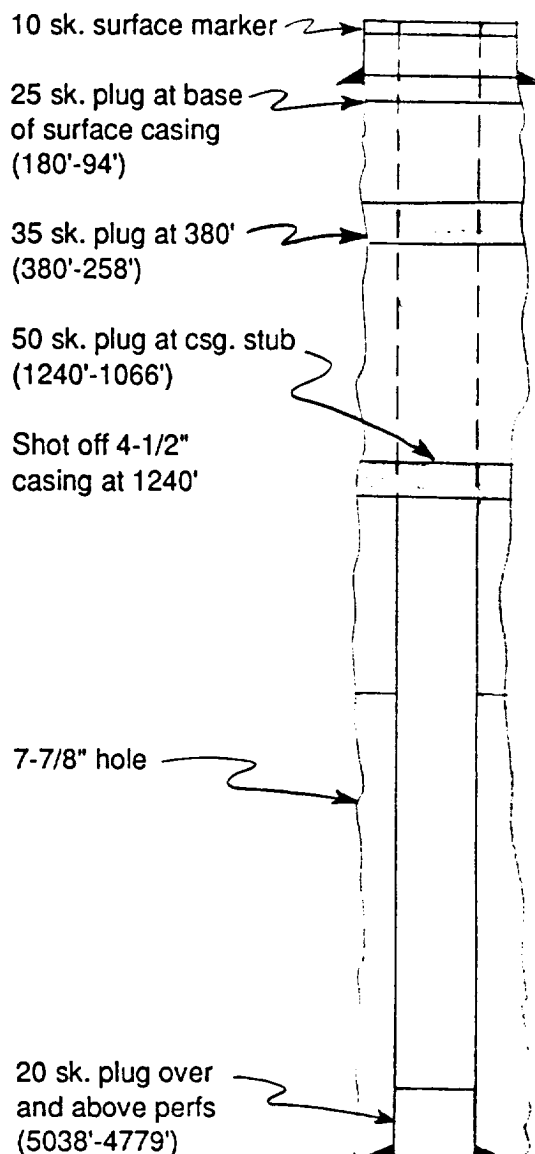
Production Casing Hole Size: 7-7/8"
Production Casing Size: 4-1/2"
Production Casing Depth: 5038'

Cementing Record: 150 sx.

Perforations: 4874'-4890'
4892'-4898'
4904'-4912'
4954'-4968'
4974'-4984'

Plug-Back Depth: 5038'

Total Depth: 5040'



WELL DATA SHEET

Well Name: Carson Unit #14-18
Legal Description: 660' FSL, 662.8' FWL
Sec. 18, T25N-R11W
San Juan County, N.M.

Well Type: P & A
Spud Date: 01/17/58

Surface Casing Hole Size: 12-1/4"
Surface Casing Size: 8-5/8"
Surface Casing Depth: 100.5'

Cementing Record: 100 sx.

Production Casing Hole Size: 7-7/8"
Production Casing Size: 4-1/2"
Production Casing Depth: 5023'

Cementing Record: 150 sx.

Perforations:
4877'-4904'
4911'-4923'
4951'-4957'
4962'-4976'
4980'-4997'

Plug-Back Depth: 5020'

Total Depth: 5025'

Abandonment marker

25 sk. plug at base
of surface casing
(100'-15')

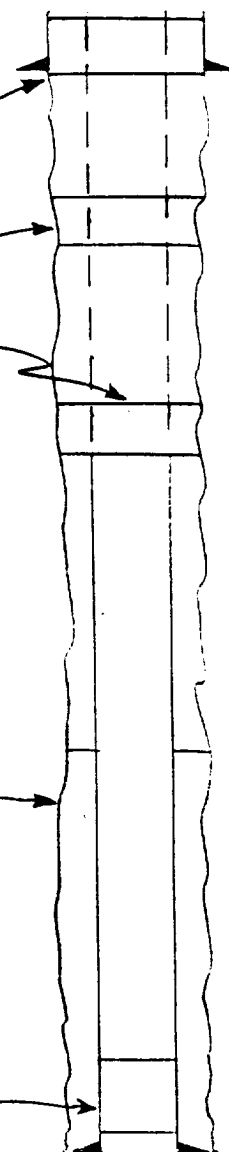
35 sk. plug at 320'
(380'-201')

45 sk. plug at csg. stub
(1400'-1247')

Shot off 4-1/2"
casing at 1400'

7-7/8" hole

25 sk. plug over
perforations
(4941'-4626')



WELL DATA SHEET

Well Name: Carson Unit #21-18

Legal Description: 660' FNL, 1973' FWL
Sec. 18, T25N-R11W
San Juan County, N.M.

Well Type: P & A

Spud Date: 07/29/58

Surface Casing Hole Size: 12-1/4"
Surface Casing Size: 8-5/8"
Surface Casing Depth: 106'

Cementing Record: 100 sx.

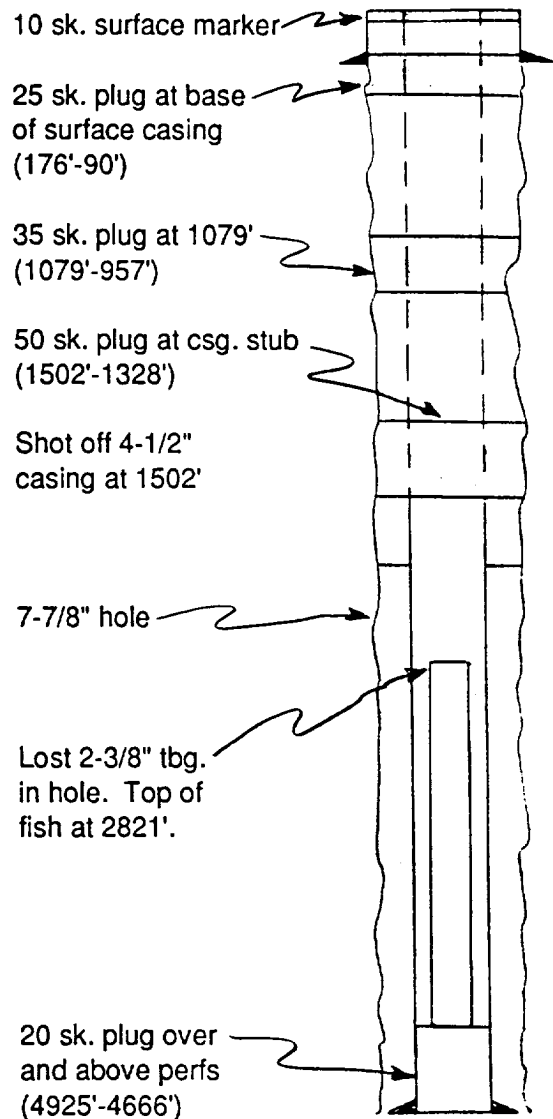
Production Casing Hole Size: 7-7/8"
Production Casing Size: 4-1/2"
Production Casing Depth: 5015'

Cementing Record: 150 sx.

Perforations: 4883'-4912'
4936'-4942'
4950'-4965'
4968'-4980'

Plug-Back Depth: 5015'

Total Depth: 5024'



WELL DATA SHEET

Well Name: Carson Unit #22-18

Legal Description: 1980' FNL, 1980' FWL
Sec. 18, T25N-R11W
San Juan County, N.M.

Well Type: P & A

Spud Date: 01/19/60

Surface Casing Hole Size: 12-1/4"
Surface Casing Size: 8-5/8"
Surface Casing Depth: 109'

Cementing Record: 100 sx.

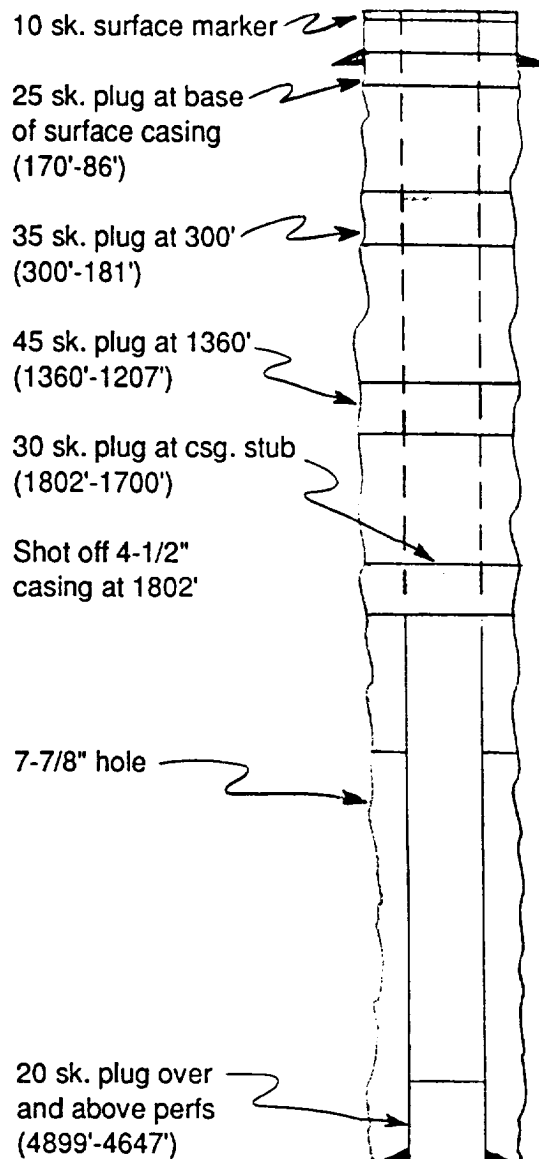
Production Casing Hole Size: 7-7/8"
Production Casing Size: 4-1/2"
Production Casing Depth: 5024'

Cementing Record: 150 sx.

Perforations:
4881'-4891'
4895'-4913'
4940'-4944'
4954'-4966'
4972'-4982'

Plug-Back Depth: 5024'

Total Depth: 5025'



WELL DATA SHEET

Well Name:	Carson Unit #24-18
Legal Description:	660' FSL, 1930' FWL Sec. 18, T25N-R11W San Juan County, N.M.
Well Type:	Gas Storage Well (awaiting approval)
Spud Date:	04/28/59
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	106'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5007'
Cementing Record:	150 sx.
Perforations:	4861'-4889' 4894'-4902' 4934'-4941' 4946'-4960' 4963'-4976'
Plug-Back Depth:	5007'
Total Depth:	5010'

WELL DATA SHEET

Well Name:	Carson Unit #32-18	10 sk. surface marker	
Legal Description:	1980' FNL, 1980' FEL Sec. 18, T25N-R11W San Juan County, N.M.	25 sk. plug at base of surface casing (195'-109')	
Well Type:	P & A	50 sk. plug at 450' (450'-276')	
Spud Date:	11/17/57	50 sk. plug at csg. stub (1297'-1123')	
Surface Casing Hole Size:	12-1/4"	Shot off 4-1/2" casing at 1297'	
Surface Casing Size:	8-5/8"		
Surface Casing Depth:	124'		
Cementing Record:	100 sx.		
Production Casing Hole Size:	7-7/8"	7-7/8" hole	
Production Casing Size:	4-1/2"		
Production Casing Depth:	5020'		
Cementing Record:	150 sx.		
Perforations:	4924'-4935' 4940'-4957' 4984'-4990' 4998'-5010'		
Plug-Back Depth:	5016'	20 sk. plug over and above perms (5016'-4757')	
Total Depth:	5030'		

WELL DATA SHEET

Well Name:	Carson Unit #33-18
Legal Description:	1930' FSL, 1980' FEL Sec. 18, T25N-R11W San Juan County, N.M.
Well Type:	Water Injection Well
Spud Date:	05/06/59
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	109'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5045'
Cementing Record:	150 sx.
Perforations:	4899'-4919' 4928'-4940' 4969'-4975' 4982'-4997' 5001'-5018'
Plug-Back Depth:	5045'
Total Depth:	5050'

WELL DATA SHEET

Well Name:	Carson Unit #34-18
Legal Description:	660' FSL, 1980' FEL Sec. 18, T25N-R11W San Juan County, N.M.
Well Type:	Oil Well
Spud Date:	08/17/57
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	176'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5010'
Cementing Record:	150 sx.
Perforations:	4869'-4886' 4900'-4908' 4952'-4958' 4971'-4978'
Plug-Back Depth:	4995'
Total Depth:	5014'

WELL DATA SHEET

Well Name:	Carson Unit #43-18	10 sk. surface marker	
Legal Description:	1980' FSL, 660' FEL Sec. 18, T25N-R11W San Juan County, N.M.	25 sk. plug at base of surface casing (180'-94')	
Well Type:	P & A	35 sk. plug at 475' (475'-353')	
Spud Date:	02/08/58	50 sk. plug at csg. stub (1218'-1044')	
Surface Casing Hole Size:	12-1/4"	Shot off 4-1/2" casing at 1218'	
Surface Casing Size:	8-5/8"		
Surface Casing Depth:	111'		
Cementing Record:	100 sx.		
Production Casing Hole Size:	7-7/8"	7-7/8" hole	
Production Casing Size:	4-1/2"		
Production Casing Depth:	5070'		
Cementing Record:	150 sx.		
Perforations:	4932'-4946' 4953'-4971' 4995'-5003' 5010'-5024' 5028'-5040'		
Plug-Back Depth:	5070'	20 sk. plug over and above perms (4971'-4712')	
Total Depth:	5071'		

WELL DATA SHEET

Well Name:	Carson Unit #21-19
Legal Description:	660' FNL, 1980' FWL Sec. 19, T25N-R11W San Juan County, N.M.
Well Type:	Water Injection Well (awaiting approval)
Spud Date:	06/22/57
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	213'
Cementing Record:	130 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5022'
Cementing Record:	150 sx.
Perforations:	4866'-4892' 4900'-4908' 4939'-4944' 4951'-4962' 4969'-4978'
Plug-Back Depth:	5022'
Total Depth:	5026'

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE*
(Other instructions on re-
verse side)

Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.
14-20-603-1285

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
Carson Unit

8. FARM OR LEASE NAME

9. WELL NO.

23-18

10. FIELD AND POOL, OR WILDCAT
Bisti Lower Gallup

11. SEC., T., R., M., OR BLK. AND
SURVEY OR AREA

Sec. 18, T25N, R11W

12. COUNTY OR PARISH 13. STATE

San Juan

New Mexico

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☒ GAS WELL ☐ OTHER ☐

2. NAME OF OPERATOR
Hixon Development Company

3. ADDRESS OF OPERATOR
P.O. Box 2810, Farmington, New Mexico 87499

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*
See also space 17 below.)
At surface

1980' FSL, 1888' FWL, Section 18, T25N, R11W, NMPM

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, ST, GR, etc.)

6392.5' KB

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐ PULL OR ALTER CASING ☐
FRACTURE TREAT ☐ MULTIPLE COMPLETE ☐
SHOOT OR ACIDIZE ☐ ABANDON* ☐
REPAIR WELL ☐ CHANGE PLANS ☐
(Other) Convert to Water Injection ☒

SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐ REPAIRING WELL ☐
FRACTURE TREATMENT ☐ ALTERING CASING ☐
SHOOTING OR ACIDIZING ☐ ABANDONMENT* ☐
(Other) ☐

(NOTE: Report results of multiple completion on Well
Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Hixon Development Company plans to convert this well to water injection as part of our current water flood system. We will inject water into the Lower Gallup perforations 4875' - 4891', 4901' - 4913', 4944' - 4951', 4965' - 4970', and 4974' - 4894'.

We will change the name of this well from Carson Unit Well No. 23-18 to Carson Unit Well No. WI 23-18.

18. I hereby certify that the foregoing is true and correct

SIGNED Bruce E. Delventhal TITLE Petroleum Engineer

DATE October 16, 1987

(This space for Federal or State office use)

APPROVED BY _____
CONDITIONS OF APPROVAL, IF ANY:

TITLE _____

DATE _____

*See Instructions on Reverse Side

NMCCO