

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION AZTEC DISTRICT OFFICE

ARREY CARRUTHERS
GOVERNOR

10XXX PIO BRAZOS ROAD AZTEC, NEW MEXICO 87410 (505) 334-6178

Date: 2-26-90	
Oil Conservation Division P.O. Box 2088 Santa Fe, NM 87504-2088	
Re: Proposed MC Proposed DMC Proposed MSL Proposed SWD Proposed WFX Proposed PMX	
Gentlemen:	
I have examined the application dated 2-9-90	
for the Hiron Wellelopment G. CARSON Wat 24. Operator Lease & Well No.	13
N-13-25N-12W and my recommendations are as follows:	
- Aprove	
Yours truly,	
Pui Busel	

APPI	DITEST	N EUB	AUTHORI	TATION	TO 1	[N: 1FC1

I.	Purpose: Secondary Recovery X Pressure Maintenance Disposal Storage Application qualifies for administrative approval? Secondary Storage
II.	Operator: Hixon Development Company
	Address: P.O. Box 2810, Farmington, New Mexico 87499
	Contact party: Aldrich L. Kuchera Phone: (505) 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? X yes \Box no If yes, give the Division order number authorizing the project
٧.	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:
,	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and 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.).
III.	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.
х.	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.
III.	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: Leuly Date: February 8, 1990

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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 2008, 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

Carson Unit Well No. 24-13 SE/4, SW/4, Section 13, T 25N, R 12W San Juan County, New Mexico

- I. Shown on Application.
- II. Shown on Application.
- III. Well data attached.
- IV. Shown on Application.
 - V. Area of review is shown on attached map.
- VI. Information for wells located in area of review are attached as follows:

Carson Unit Well No. 13-13
Carson Unit Well No. 14-13
Carson Unit Well No. 23-13
Carson Unit Well No. 33-13
Carson Unit Well No. 34-13
Carson Unit Well No. 44-13
Carson Unit Well No. 44-14
Carson Unit Well No. 1-24
Carson Unit Well No. 11-24
Carson Unit Well No. 21-24

Carson Unit Well No. 31-24 Carson Unit Well No. 203

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- VII. 1. Proposed average injection rate is 600 bwpd, expected maximum injection rate is 1200 bwpd.
 - 2. This system will be closed.
 - 3. Average injection pressures are expected to be in the 973 996 psi range. Maximum injection pressure will be 996 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 to be 211' in thickness with a top of 4767' as shown on the SP log previously submitted. No known sources of drinking water exist in this area. Water well drilling in this 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.

Well Name: Carson Unit #24-13

Legal Description: 660' FSL, 1980' FWL

Sec. 13, T25N, R12W San Juan County, N.M.

Well Type: Water Injection Well

Spud Date: 12-01-59

Surface Casing Hole Size: 12-1/4"
Surface Casing Size: 8-5/8"
Surface Casing Depth: 111'

Cementing Record: 100 sks.

Production Casing Hole Size: 7-7/8"
Production Casing Size: 4-1/2"
Production Casing Depth: 5031'

Cementing Record: 150 sks.

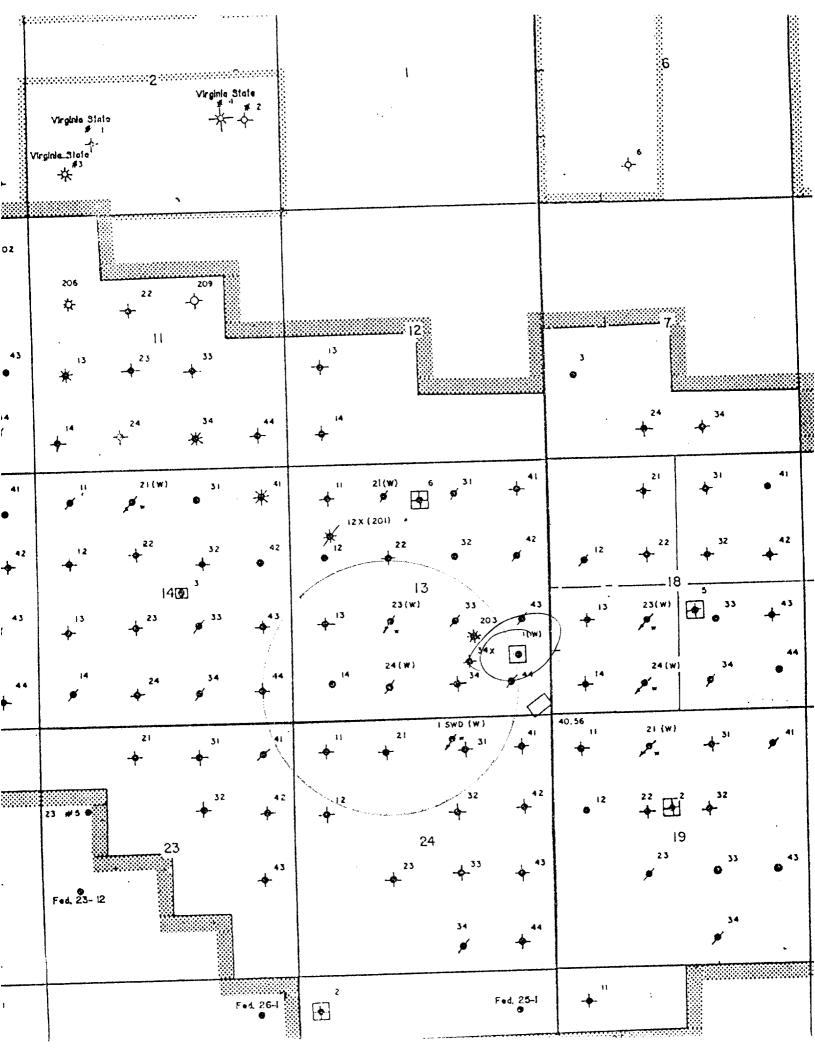
Perforations: 4864' - 4888'

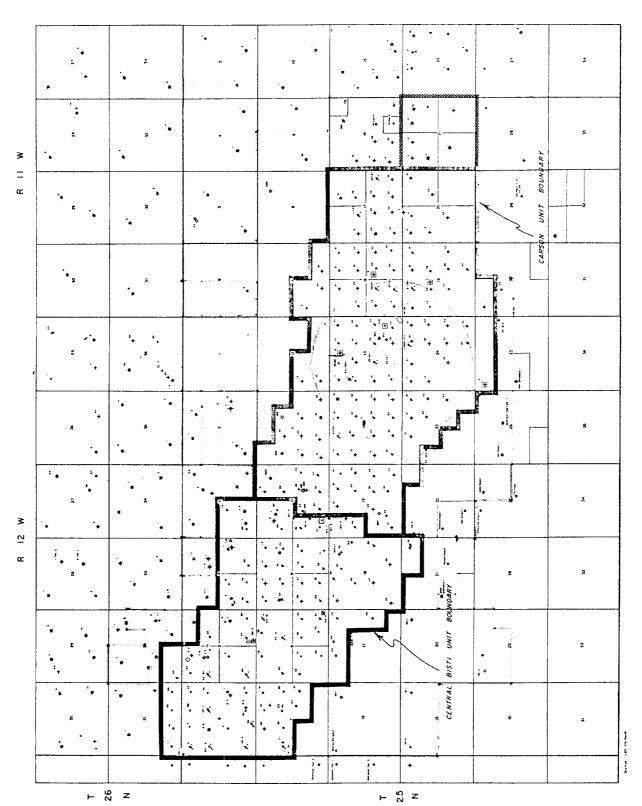
4897' - 4905' 4932' - 4938' 4946' - 4958' 4964' - 4978'

Plug Back Depth: 5031'

Total Depth: 5035'

WELL NAME Carson Unit Well No. 2		<i>P</i>
LOCATION 660' FSL, 1980' FWL		SECTION 13 T 25 N R 12 W
COUNTY San Juan		STATE New Mexico
SURFACE CASING		GLE 6407.2'
Hole Size: 12-1/4" Casing: 8-5/8", 28#		KBE_6416.4'
Casing Set @ 111' with 100 sks		DF 6414.9'
of cement		WELL HISTORY
		Spud date: 12/1/59
FORMATION TOPS		Original owner: Shell Oil Co.
Pictured Cliffs 1222'		IP_12/25/59BOPD_264BWPD_0
Lewis 1392'		
Cliff House 1570'		MCFD 218 GOR 825
Allison-Menefee 2064' Point Lookout 3568'		Completion Treatment:
Mancos 3834'		Fraced with 50,000 gal crude,
Gallup 4767'		1#/qal sand, and 130 balls
		CURRENT DATA
CEMENT TOP Office		Pumping Unit
PERFORATIONS		Rod string
4864'-88'		Remarks
4897'-4905'		Water Injection Schematic
4932'-38'		
4946'-58'		Set Baker Model "AD-1"
4964'-78'		Packer at 4808'
PBD		
PRODUCTION CASING	X	***************************************
Hole Size: 7-7/8"		
Casing: 4-1/2", 9.5#		-
Casing Set @ 5031' with 150		And the second s
sks of cement		
ORD OF COMMITTEE		
-		
	5035 'TD	Date Last Revised: 2/2/90





HIXON DEVELOPMENT COMPANY
CENTRAL BISTI - CARSON UNIT AREA

Jan.

101 WEST APACHE

PHONL 127-4966

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Report to	Hixon Development Company
lequested by	A. Kuchera. Mgr. Sompled by Hixon Personnel
roject	CBU #5 Location NW NW Sec. 6. T25N, R12W
ource of Material	Lower Gallup Produced Water
Lab No	24509 Water Analysis for Petroleum Engineering TEST RESULTS
	1 LUI ALUGATO

WATER ANALYSIS FOR PETROLEUM ENGINEERING

Constituents onstituent ppm 674 Meg/L Cations 2263 ppm otal Solids Sodium 7.25 45 2.3 2.94 ohms/meter @70°F Calcium esistivity 6 0.5 3,400 micromhos/cm @ 70°F Magnesium onductivity 3 neg. Iron 0 . 0 Barium Anions_ omments 145 4.1 Chloride ssentially this is a 0.2% sodium 244 4.0 Bicarbonate ulfate solution. 0 0 , Carbonate 0 Hydroxide

Sulfate

Copies to <u>Hixon Development Co.</u> P.O. Box 2810 Farmington, New Mexico 87401

Centifield



24.0

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. Injection will be into the Lower Gallup perforated interval from 4864' to 4978'. Maximum rate will be 1200 BWPD at less than 996 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 87504 within 15 days.

Carson Unit Well No. 24-13 SE/4 SW/4 Sec. 13, T25N, R12W

LOCATION 1930' FSL, 660' FWL		SECTION 13 T 25 N R 12 W
		STATE New Mexico
SURFACE CASING		GLE 6400'
Hole Size:		KBE_6409.5'
Casing:		KBL_0103.3
Casing Set @		DF 6408'
		WELL HISTORY
	\$ 1	Spud date: 8/25/59
FORMATION TOPS		Original owner: Shell Oil Co.
Pictured Cliffs 1216'		Oliginal owner. Shell Oll Co.
Lewis 1434'		IP 9/12/59 BOPD 144BWPD 0
Cliff House 1580'		MCFD 320 GOR 2220
Allison-Menefee 2067'		Completion Treatment:
Point Lookout 3692'		Fraced with 50,000 gal crude,
Mancos 3843'		1#/gal sand, 200 rubber balls
Gallup 4771		1#/qai sand, 200 lubber balls
		CURRENT DATA
-		Pumping Unit
		Tubing
CEMENT TOP 21 4085	X	Pump Size
PERFORATIONS		Rod string
4866'-92'		Remarks
4898'-4906'		Plug and abandoned 9/3/77
4936'-40'		
4949'-57'		10 sk cmt plug at surface
4967'-75'		20 sk cmt plug set at 180'
		35 sk cmt plug set at 350'
PBD		50 sk cmt plug set at 1220'
PRODUCTION CASING		15 sk cmt plug set across
Hole Size:		perforations (4866'-4975')
Casing:		
Casing Set @		

	TD	Date Last Revised: 1/31/90

Well Name:

Carson Unit #14-13

Legal Description:

660' FSL, 660' FWL Sec. 13, 725N, R12W San Juan County, N.M.

Well Type:

Oil Well

Spud Date:

04-12-57

Surface Casing Hole Size: Surface Casing Size: Surface Casing Depth:

12-1/4* 8-5/8* 222'

Cementing Record:

130 sks.

Production Casing Hole Size: Production Casing Size: Production Casing Depth:

7-7/8* 5-1/2" 5040'

Cementing Record:

200 sks.

Perforations:

4876' - 4891' 4943' - 4948' 4954' - 4966' 4972' - 4986'

Plug Back Depth:

50031

Total Depth:

Well Name:

Carson Unit #23-13

Legal Description:

1980' FSL, 1980' FWL Sec. 13, T25N, R12W San Juan County, N.M.

Well Type:

Water Injection Well

Spud Date:

01-31-58

Surface Casing Hole Size: Surface Casing Size: Surface Casing Depth: 12-1/4" 8-5/8" 92'

Cementing Record:

100 sks.

Production Casing Hole Size: Production Casing Size: Production Casing Depth: 7-7/8" 4-1/2" 5001'

Cementing Record:

150 sks.

Perforations:

4871' - 4900' 4907' - 4916' 4946' - 4951' 4956' - 4970' 4974' - 4984'

Plug Back Depth:

50041

Total Depth:

Well Name:

Carson Unit #33-13

Legal Description:

1980' FSL, 1980' FEL Sec. 13, T25N, R12W San Juan County, N.M.

Well Type:

Oil Well

Spud Date:

07-03-59

Surface Casing Hole Size: Surface Casing Size: Surface Casing Depth: 12-1/4" 8-5/8" 100'

Cementing Record:

104 sks.

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

Cementing Record:

150 sks.

Perforations:

4876' - 4898' 4907' - 4914' 4945' - 4951' 4959' - 4968' 4978' - 4982'

Plug Back Depth:

Total Depth:

Well Name:

Carson Unit #34-13

Legal Description:

660' FSL, 1976' FEL Sec. 13, T25N, R12W San Juan County, N.M.

Well Type:

Oil Well

Spud Date:

05-13-57

Surface Casing Hole Size: Surface Casing Size: Surface Casing Depth: 12-1/4" 8-5/8" 2181

Cementing Record:

130 sks.

Production Casing Hole Size: Production Casing Size: Broduction Casing Depth: 7-7/8**"** 4-1/2" 5096'

Cementing Record:

150 sks.

Perforations:

4876' - 4900' 4908' - 4916' 4944' - 4952' 4958' - 4972' 4976' - 4994'

Plug Back Depth:

50601

Total Depth:

Well Name:

Carson Unit #44-13

Legal Description:

735' FSL, 735' FEL Sec. 13, T25N, R12W San Juan County, N.M.

Well Type:

Oil Well

Spud Date:

07-11-59

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

1061

Cementing Record:

100 sks.

Production Casing Hole Size: Production Casing Size: Production Casing Depth: 7-7/8* 4-1/2* 5013*

Cementing Record:

150 sks.

Perforations:

4869' - 4895' 4904' - 4912' 4942' - 4946' 4956' - 4962' 4972' - 4978'

Plug Back Depth:

Total Depth:

WELL NAME Carson Unit Well No.	44-14
LOCATION 660' FSL, 660' FEL	SECTION 14 T 25 N R 12 V
COUNTY San Juan	STATE New Mexico
SURFACE CASING	GLE 6411.9'
Hole Size:	WDF (421 01
Casing: 8-5/8", 24#	KBE 6421.0'
Casing Set @ 104'	DF6419.8'
	WELL HISTORY
	Spud date:12/23/57
FORMATION TOPS	Original owner: Shell Oil Co.
Pictured Cliffs 1224'	
Lewis 1408'	IP <u>2/10/58</u> BOPD <u>372</u> BWPD <u>0</u>
Cliff House 1584'	MCFD 96 GOR 260
Allison-Menefee 2075' Point Lookout 3690'	Completion Treatment:
Mancos 3862'	_Fraced with 50,000 gal crude
Gallup 4773'	and 1 #/gal 20-40 mesh sand.
	CURRENT DATA
	Pumping Unit
	Tubing
CEMENT TOP Cal 4021	Pump Size
PERFORATIONS	Rod string
4869'-92'	Remarks
4937'-46'	Plug and abandoned 10/19/77
4952'-65'	
4970'-85'	10 sk cmt plug at surface
	25 sk cmt plug set at 175'
	55 sk cmt plug set at 360'
PBD	70 sk cmt plug set at 1200'
PRODUCTION CASING	25 sk cmt pluq set across
Hole Size:	
Casing: 4-1/2", 9.5#	
Casing Set @ 4999!	
	Date Last Heviseu. 2/1/90

Well Name:

Carson Unit #1-24

Legal Description:

454' FNL, 2074' FEL Sec. 24, T25N, R12W San Juan County, N.M.

Well Type:

Salt Water Disposal

Spud Date:

09-06-60

Surface Casing Hole Size: Surface Casing Size: Surface Casing Depth: 17-1/2" 13-3/8" 70"

Cementing Record:

70 sks.

Intermediate Casing Hole Size: Intermediate Casing Size: Intermediate Casing Depth: 12-1/4" 8-5/8" 2835'

Cementing Record:

750 sks.

Liner Size: Liner Depth: 6-5/8" 3815'

Cementing Record:

None - Gravel Packed

Perforations:

2835' - 3815'

Plug Back Depth:

Total Depth:

LOCATION 660' FNL, 660' FWL		SECTION 24 T 25 N R 12 W
COUNTY San Juan		STATE New Mexico
SURFACE CASING		GLE_6428.9'
Hole Size:		KBE <u>6437.9'</u>
Casing Set @ 112'		DF 6436.4
		WELL HISTORY
		Spud date: 4/13/59
FORMATION TOPS		Original owner: Shell Oil Co.
Pictured Cliffs 1264'		IP_5/8/59 BOPD 71 BWPD 0
Lewis 1408' Cliff House 1587'		IP 37 07 39 BOPD 71 BWPD 0
Cliff House 1587' Allison-Menefee 2121'		MCFD 40 GOR 560
Point Lookout 3686'		Completion Treatment:
Mancos 3842'		Fraced with 50,000 gal crude,
Gallup 4778'		2#/qal sand, 320 rubber balls
		CURRENT DATA
		Pumping Unit
/ - :		Tubing
CEMENT TOP		Pump Size
PERFORATIONS		Rod string
4874'-93'		Remarks
4907'-25'		Plug and abandoned 10/3/75
4934'-49'		
4955'-69'		10 sk cmt plug at surface
4973'-89'		35 sk cmt plug set at 182'
PBD		55 sk cmt plug set at 386'
PRODUCTION CASING		20 sk cmt plug set across
Hole Size:		<u>perforations (4874'-4898')</u>
Casing: 4-1/2", 9.5"		
Casing Set @ 5013'		
casing out w		
	/	
41-2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	5015 'TD	Date Last Revised: 2/1/90

LOCATION 660' FNL, 1881' FWL		SECTION24T_25_N_R_12_1
COUNTY San Juan		STATE New Mexico
SURFACE CASING		GLE 6428.2'
Hole Size:		KDE 6436 71
Casing: 8-5/8", 24#		KBE 6436.7'
Casing Set @ 107 '		DF 6435.7'
		WELL HISTORY
		Spud date: 3/29/58
FORMATION TOPS		·-
Pictured Cliffs 1332'		Original owner: Shell Oil Co.
Lewis 1415'		IP_6/27/58_BOPD_146BWPD_0
Cliff House 1582'		MCFD 31 GOR 210
Allison-Menefee 2081'		
Point Lookout 3716'		Completion Treatment:
Mancos 3862'		Fraced with 72,000 gal crude
Gallup 4779'		1 #/qal 20/40 sand.
		CURRENT DATA
	X	
		Pumping Unit
		Tubing
CEMENT TOP Cal 4013		Pump Size
PERFORATIONS		Rod string
4876'-4904'		Remarks
4939'-50'	j l	Plug and abandoned 9/30/75
4956'-68'		
4973'-90'		10 sk cmt plug at surface
		40 sk cmt plug set at 170'
		37 sk cmt plug set at 390'
PBD 5002'		50 sk cmt plug set at 1519'
PRODUCTION CASING		20 sk cmt plug set at 4728'
Hole Size:		The same play bet do 1720
Casing: 4-1/2", 9.5#		
Casing Set @5013		
	X .	
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	<u>5015</u> 'TD	Date Last Revised: 2/1/90

WELL NAME Carson Unit Well No	0. 31-24	
LOCATION 660' FNL, 1980' FEL	SECTION 24 T 25 N	R 12 W
COUNTY San Juan		
SURFACE CASING	GLE_6	429.0
Hole Size:	VDF (420 21
Casing: 8-5/8", 32#, J-55	KBE_6	438.2
Casing Set @ 105'	DF_6	436.7'
	WELL HISTORY	
	Spud date: 3/21/60	
FORMATION TOPS	Original owner: Shell Oil o	Co.
Pictured Cliffs 1227'		
Lewis 1415' Cliff House 1587'	IP_4/15/60_BOPD_196BWPD) <u>0</u>
Cliff House 1587' Allison-Menefee 2070'	MCFD 643 GOR 3280	<u>) </u>
Point Lookout 3694'	Completion Treatment:	
Mancos 3859'	Fraced with 50,000 gal	<u>cr</u> ude,
Gallup 4780'	1#/gal sand, and 100 h	oalls.
	CURRENT DATA	
	Pumping Unit	
	Tubing	
CEMENT TOP	Pump Size	
PERFORATIONS	Rod string	
4876'-94'	Remarks	
4919'-24'	Plug and abandoned 8/8	
4943'-51'		
4960'-68'	_10 sk cmt plug at suri	face
4976'-86'	35 sk cmt plug set at	
	50 sk cmt plug set at	
PBD 5029	50 sk cmt plug set at	
PRODUCTION CASING	20 sk cmt plug set acr	
Hole Size:	perforations (4876'-	
Casing: 4-1/2", 9.5#		
Casing Set @ 5029 •		*********
		
	N-P-1	
	Date Last Nevised. 2/1/90	

WELL NAME Carson Unit Well No. 203	
LOCATION 1620' FSL, 1630 FEL	SECTION 13 T 25 N R 12 W
COUNTY San Juan	STATE New Mexico
SURFACE CASING Hole Size: Casing: 7", 23#, K-55 Casing Set @ 94' with Class "B" containing 2% CaCl.	GLE_6400' KBE_6405' DF WELL HISTORY
FORMATION TOPS	Spud date: Original owner: IPBOPDBWPD MCFDGOR Completion Treatment:
CEMENT TOP Leader Lagrage PERFORATIONS 1200'-1211'	CURRENT DATA Pumping Unit
PBD 1236' PRODUCTION CASING Hole Size: Casing: 2-7/8", 6.5#, J-55 Casing Set @ 1300' Light tail-in with 50:50 pozmix, 2% gel.	1305'TD Date Last Revised: 1/31/90