CHEVRON U.S.A. INC.
P. O. Box 1150
Midland, Texas 79702

FAX

TO: DAVID CATANACH
CO./DEPT.: OCD
PHONE #: 505. 476. 3466
FAX #: 505. 476. 3471
DATE: 6/21/01

FROM: JOE WILLIAMS
CO./DEPT.: ENGINEERING
PHONE #: 915. 687. 7193
FAX #: 915. 687. 7905
NO. OF PAGES: 8 INCLUDING COVER

COMMENTS:

PLEASE REFER TO ATTACHMENTS RE STEP RATE TEST WE DISCUSSED YESTERDAY.

THANKS

JOE

30-015-29735

June 21, 2001

Mr. David Catanach
Hearing Examiner
New Mexico Oil Consevation Division
Santa Fe, NM

David

Attached plot and data table shows step rate test data that I discussed with you yesterday. I have also attached a copy of the disposal permit and a wellbore diagram.

The well is equipped with 2-7/8" tubing to 2814'. The data table shows measured injection rates and wellhead pressures (WHP) and calculated friction losses and bottom hole pressures (BHP). The measured WHP and calculated BHP are plotted.

It appears that the formation parting occurs at a WHP of 1000 psi and a calculated BHP of 2260 psi at a rate of 1800 BPD. The calculated frac gradient to the middle of the perforated interval at 2957' is 0.76 psi/ft.

Chevron proposes to increase the permitted wellhead injection pressure from 600 psi to 800 psi. This would correspond to a calculated bottom hole pressure of 2083 psi or a gradient of 0.70 psi/ft to mid perf. The proposed pressure increase would allow Chevron to dispose of all lease produced water in this well.

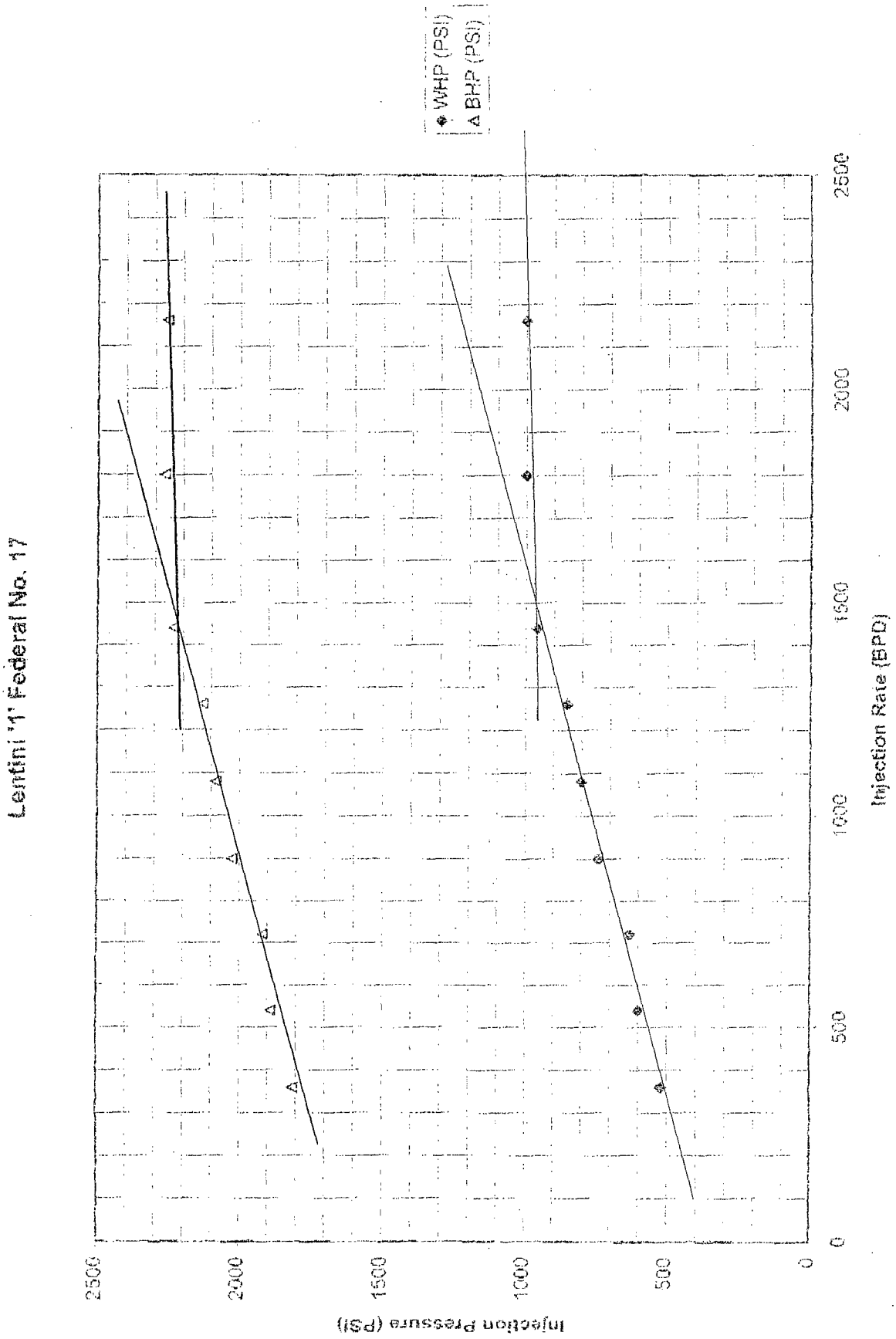
If this test is sufficient for your requirements, please let me know if additional supporting documentation is needed. If Chevron needs to schedule another test to be witnessed by the OCD, please let me know what to do to schedule the test. Thanks for your consideration.

Sincerely

Joe Williams

Joe Williams
Petroleum Engineer
Chevron
Midland, Tx
Phone 915.687.7193
Fax 915.687.7905
Email wjoe@chevron.com

30-015-29735


Lentini '1' Federal No. 17
WHP (PSI)
BHP (PSI)
Injection Pressure (PSI)
Injection Rate (BPD)
0
500
1000
1500
2000
2500

Lentini '1' Federal No. 17
Step Rate Test Data
Test Date June 18, 2001

Injection Rate (BPD)	WHP (PSI)	dPf (PSI)	BHP (PSI)
360	520	1	1812
540	600	3	1890
720	630	5	1918
900	740	7	2028
1080	800	10	2083
1260	850	14	2129
1440	960	17	2236
1800	1000	26	2267
2160	1000	36	2257

Injection Rate and Wellhead Pressure (WHP) are measured data.
Friction Loss (dPf) and Bottom Hole Pressure (BHP) are calculated values.

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

ADMINISTRATIVE ORDER SWD-659

APPLICATION OF CHEVRON U.S.A. PRODUCTION COMPANY FOR SALT WATER DISPOSAL, EDDY COUNTY, NEW MEXICO.

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701(B), Chevron U.S.A. Production Company made application to the New Mexico Oil Conservation Division on April 23, 1997, for permission to complete for salt water disposal its Lentini '1' Federal Well No.17 located 1687 feet from the North line and 2505 feet from the West line (Unit F) of Section 1, Township 23 South, Range 28 East, NMPM, Eddy County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

(1) The application has been duly filed under the provisions of Rule 701(B) of the Division Rules and Regulations;

(2) Satisfactory information has been provided that all offset operators and surface owners have been duly notified;

(3) The applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 will be met; and

(4) No objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED THAT:

The applicant herein, Chevron U.S.A. Production Company is hereby authorized to complete its Lentini '1' Federal Well No.17 located 1686 feet from the North line and 2505 feet from the West line (Unit F) of Section 1, Township 23 South, Range 28 East, NMPM, Eddy County, New Mexico, in such manner as to permit the injection of salt water for disposal purposes into the Bell Canyon formation at approximately 2800 feet to 3000 feet through 2 7/8-inch plastic-lined tubing set in a packer located at approximately 2780 feet.

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 600 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 Bell Canyon 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 Artesia district office of the Division of the date and time of the installation of disposal 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 Artesia 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.

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 reports of the disposal operations in accordance with Rule Nos. 706 and 1120 of the Division Rules and Regulations.

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

Approved at Santa Fe, New Mexico, on this 20th day of May, 1997.

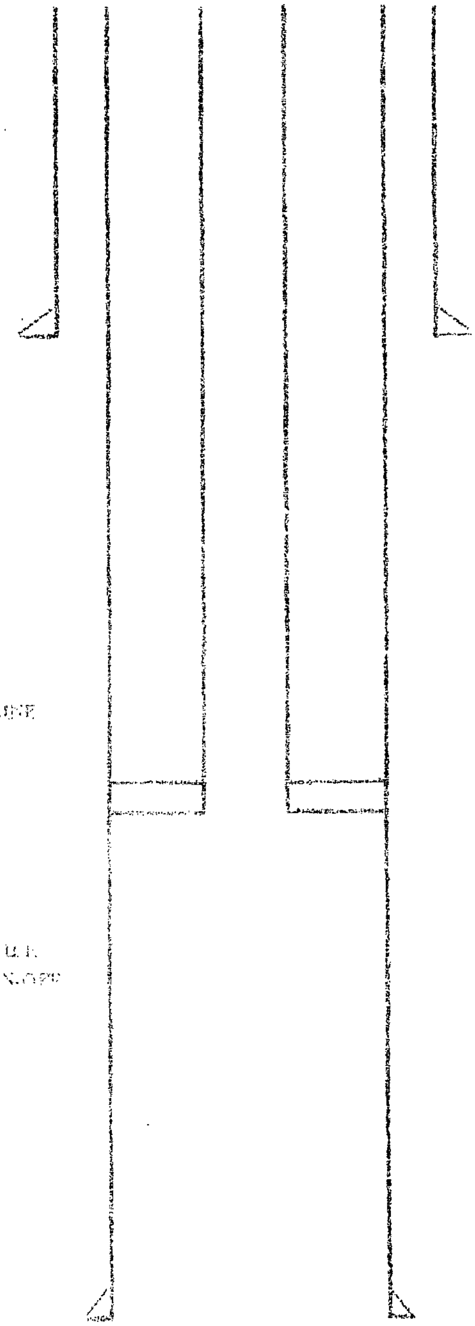
WILLIAM J. LEMAY, Director

WJL/BES

xc: Oil Conservation Division - Artesia
Bureau of Land Management - Carlsbad

CURRENT WELLBORE DIAGRAM

LEASE:	LENTINI "1" FED	WELL:	1?	FIELD:	E. HERRUDURA BEND	API:	
LOC:	1686' FNL & 2505' FWL	SEC:	1	BLK:	T23S, R28E	REF NO:	
SVY:		GL:		CTY/ST	EDDY, N.M.	SPUD:	
CURRENT STATUS:	SW	KB:	12'	DF:		TD DATE:	
						COMP. DATE:	9/17/97



FRESH WATER DEPTH

HOLE SIZE:	12 1/4"
SURF CSG & SIZE:	8 5/8", 24#, WC-50
SET @:	312'
SXS CMT:	
CIRC:	25 SKS
TOC AT:	SUR
TOC BY:	VISUAL

COMMENTS:

PKR NICKEL PLATED AND TBG LINED W/ RICE ENGINEER DUO-LINE.

GEOLOGY

TOPS OF ALL ZONES PRODUCTIVE OF HYDRO-CARBONS:

CURRENT PERFS:

2859', 65', 74', 79'

2910', 20', 26', 34', 41', 57', 65'

2971', 78', 88', 94'

3003', 10', 19', 23', 50', 60', 70',

76', 3123', 20', 50', 53', 59'

SQUEEZE JOBS:

TBG:	2 7/8" DUO LINE
JTS:	89
SN:	2814'
TAC	
ROD SIZE	
PKR:	2816'
TYPE:	SEN-LOK LOW PROFILE NIPPLE IN ON-OFF TOOL
OH ID:	
COTD:	3200'
PBTD:	3197'
TD:	3200'

HOLE SIZE:	7 7/8"
PROD. CSG & SIZE:	5 1/2" 15.5#, K-55
SET @:	3200'
SXS CMT:	
CIRC:	YES
TOC AT:	SURFACE
TOC BY:	VISUAL

BY: RICHARD LOGAN
9/18/97

OPEN HOLE: LINER:

119238174 IP1-156 N/R

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P. O. Box 1150
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TO: DAVID CATANACH
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PHONE #: 505.476.3466
PHONE #: 915.687.7193

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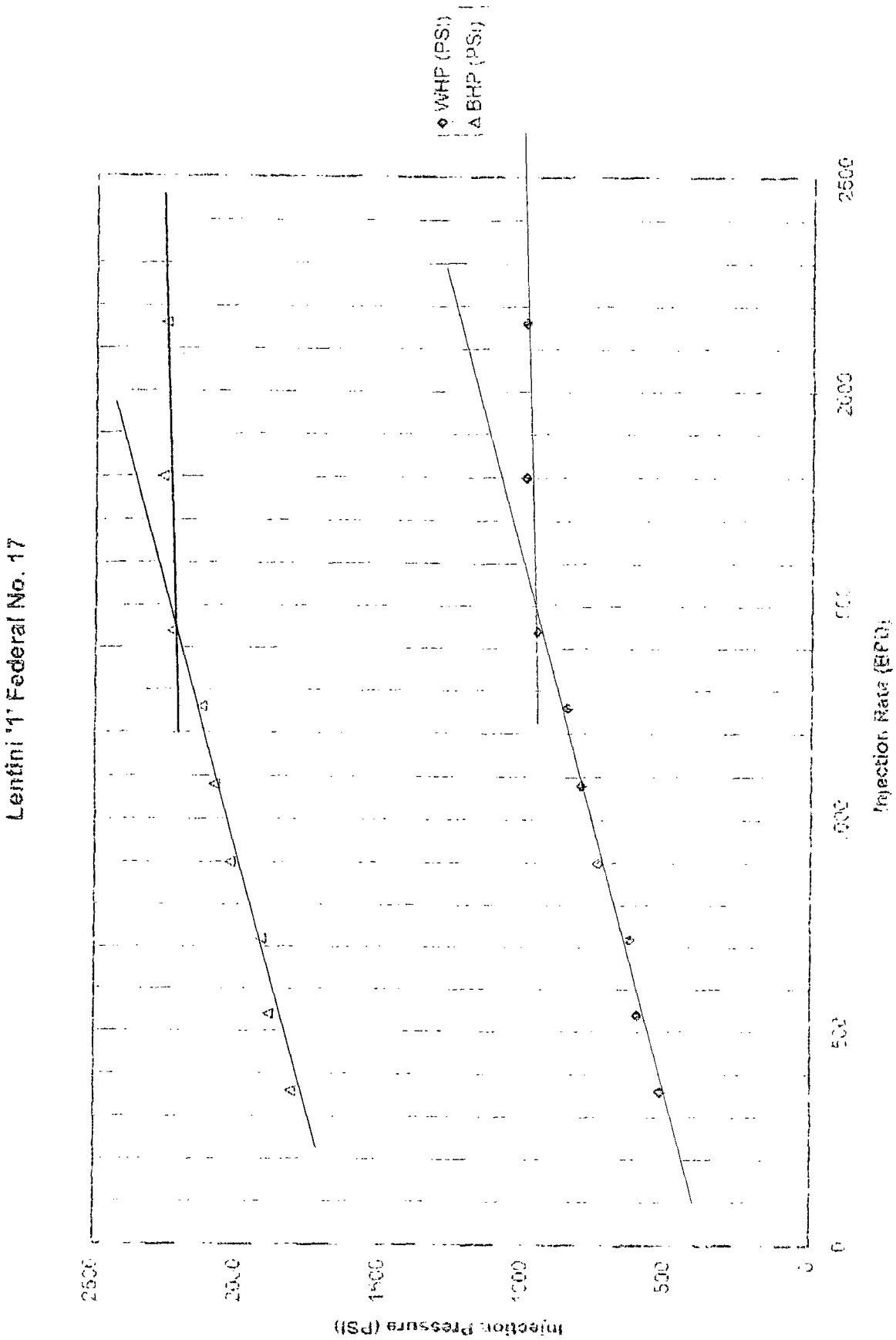
Lentini '1' Federal No. 17
◇ WHP (PSI)
△ BHP (PSI)
Injection Pressure (PSI)
Injection Rate (BPD)
2500
2000
1500
1000
500
0
500
1000
2000
2500

Lenton 'I' Federal No. 17
Step Rate Test Data
Test Date June 18, 2001

Injection Rate (BPD)	WHP (PSI)	dPf (PSI)	BHP (PSI)
360	520	1	1812
540	600	3	1890
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1080	800	10	2083
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WILLIAM J. LEMAY, Director

WJL/BES

xc: Oil Conservation Division - Artesia
Bureau of Land Management - Carlsbad

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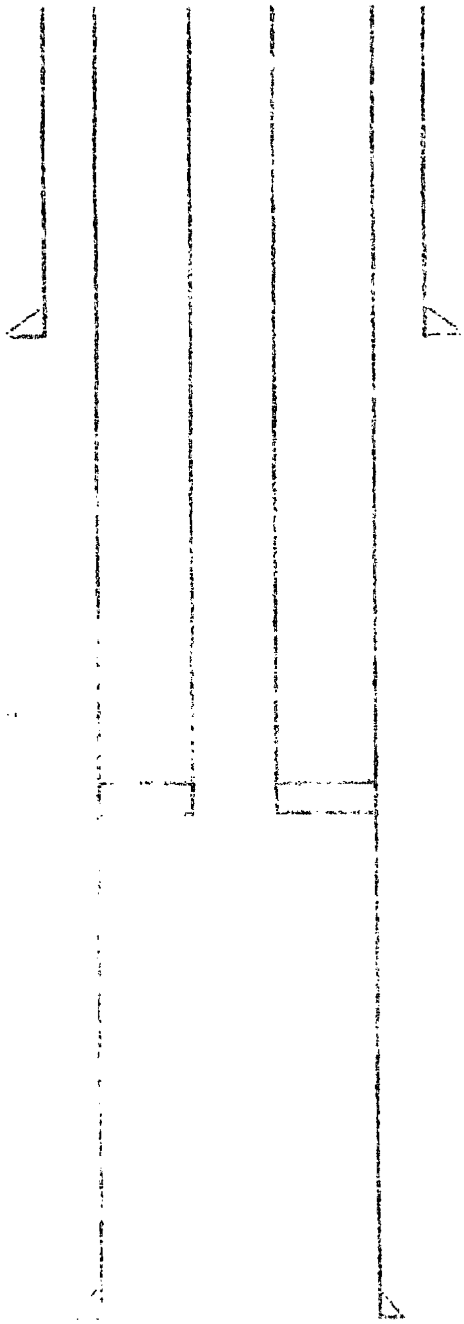
LEASE:	LENTINI [illegible] FED	WELL:	[illegible]	FIELD:	E. HERRADURA BEND	AFE:			
LOC	1886' SNL & 2505' FWL	SEC:	[illegible]	BLK:	T23S, R28E	REF NO:			
SVY.		GL		CTY/ST	EDDY, NM	SPUD			
CURRENT STATUS	[illegible]	KB	[illegible]	DF		TD DATE			
						COMP. DATE	[illegible]		



HOLE SIZE	[illegible]
SURF CSG & SIZE	8 5/8", 24#, WC-50
SET @:	317'
SXS CMT	
CIRC	[illegible]
TOC AT	SURF
TOC BY	VISUAL

COMMENTS:

PKR NICKEL PLATED AND TBG LINED W/ RICE ENGINEER DUO LINE

GEOLOGY

TOPS OF ALL ZONES PRODUCTIVE OF HYDROCARBONS

FRE[illegible]
DEF[illegible]

TBG [illegible]
SN [illegible]
TAC
Rods [illegible]

PKR [illegible]
TYPE [illegible]

[illegible]

20[illegible] 73'
2940', 50', 56', 34', 41', 57', 65'
2971', 28', 86', 93'
3001', [illegible], 53', 56', 60', 70'
[illegible] 76', 80', 85', 59'

HOLE SIZE	[illegible]
PROD CSG & SIZE	[illegible]
SET @	[illegible]
SXS CMT	
CIRC	YES
TOC AT	SURFACE
TOC BY	VISUAL

OH ID
COTD [illegible]
PBTD [illegible]
TD: [illegible]

OPEN HOLE

LINER

BY: [illegible]
[illegible]

Catanach, David

[redacted]

From: Catanach, David

Sent: Tuesday, July 17, 2001 2:15 PM

To: 'Joe Williams'

Subject: Step Rate Test

Joe, I have not yet issued an order approving the pressure increase, however, the test looks good and you will not have to re-run it. I'll get your increase just as soon as I can.

DRC