

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING
GOVERNOR



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

April 14, 1992

PDEV0020900455

Mitchell Energy Corporation
P.O. Box 4000
The Woodlands, Texas 77387-4000

Attention: Mark N. Stephenson

*RE: Injection Pressure Increase
Sapphire Federal SWD No. 1
Lea County, New Mexico*

Dear Mr. Stephenson:

Reference is made to your request dated March 16, 1992, to increase the surface injection pressure on the Sapphire Federal SWD Well No. 1. This request is based on a step rate test conducted on the well on March 4, 1992. The results of the test have been reviewed by my staff and we feel an increase in injection pressure on the well is justified at this time.

You are therefore authorized to increase the surface injection pressure on the following well.

<u>WELL AND LOCATION</u>	<u>MAXIMUM INJECTION SURFACE PRESSURE</u>
Sapphire Federal SWD No. 1 Unit J, Section 23, T-19S, R-33E, NMPM Lea County, New Mexico	1070 PSIG

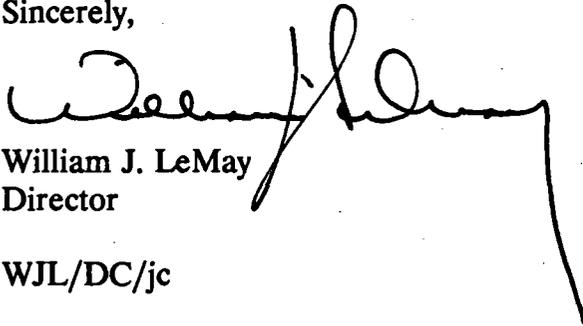
Mitchell Energy Corporation

April 14, 1992

Page 2

The Division Director may rescind this injection pressure increase if it becomes apparent that the injected water is not being confined to the injection zone or is endangering any fresh water aquifers.

Sincerely,

A handwritten signature in black ink, appearing to read "William J. LeMay". The signature is fluid and cursive, with a long horizontal stroke at the end that extends to the right.

William J. LeMay
Director

WJL/DC/jc

cc: Oil Conservation Division - Hobbs
File: SWD-455
D. Catanach
R. Brown

NO WAITING PERIOD

COMPANY: Mitchell Energy Corporation
ADDRESS: P.O. Box 4000
CITY, STATE, ZIP: The Woodlands, Texas 77387-4000
ATTENTION: Mark N. Stephenson

Re: Injection Pressure Increase
Sapphire Federal SWD No. 1
Lea County, New Mexico

Dear Sir:

Reference is made to your request dated March 16, 1992, to increase the surface injection pressure on the Sapphire Federal SWD Well No. 1. This request is based on a step rate test conducted on the well on March 4, 1992. The results of the test have been reviewed by my staff and we feel an increase in injection pressure on the well is justified at this time.

You are therefore authorized to increase the surface injection pressure on the following well:

<u>Well & Location</u>	<u>Maximum Injection Surface Pressure</u>
<u>Sapphire Federal SWD No. 1</u> <u>Unit J, Section 23, T-19Roth, L-33Erd, N.M.M.</u> <u>Lea County, New Mexico</u>	<u>1070 PSI</u>

The Division Director may rescind this injection pressure increase if it becomes apparent that the injected water is not being confined to the injection zone or is endangering any fresh water aquifers.

R. Brown
XC: T. CALLEGOS
D. CATANACH
FILE- SWD-455
OCD- Hobb

Via Federal Express

March 16, 1992

Mr. Mike Stogner
Oil Conservation Division
State of Land Office Building
310 Old Santa Fe Trail
Santa Fe, NM 87504



Re: **ADMINISTRATIVE ORDER NO. SWD-455**
SAPPHIRE FEDERAL SWD WELL NO. 1
LEA COUNTY, NEW MEXICO

Dear Mr. Stogner:

The above referenced Order was approved by the Oil Conservation Division on December 13, 1991, authorizing Mitchell Energy Corporation to inject salt water for disposal purposes into the Queen formation at approximately 4300 feet to approximately 4820 feet, subject to an injection pressure limitation of 860 psi at the wellhead. The Order provides for an increase in injection pressure upon a showing that such higher pressure will not result in migration of the injected fluid from the Queen formation. Based on the attached step-rate test, Mitchell requests that the authorized injection pressure be increased to 1070 psi.

If you have any questions, please call me at (713) 377-5818.

Very truly yours,

MITCHELL ENERGY CORPORATION

A handwritten signature in black ink, appearing to read 'Mark N. Stephenson'. The signature is fluid and cursive, with a long horizontal stroke at the end.

Mark N. Stephenson
Manager
Production-Regulatory Affairs

MNS:mtb
sappfed.mns

enc.

STEP RATE TESTERS, INC.

915/366-3409

P. O. Box 13094

ODESSA, TEXAS 79768

No. _____

COMPANY Mitchell Energy Corp. DATE 3-4-92

ADDRESS 400 W. Illinois, Midland, TX

WELL # SWD#1 LEASE Sapphire Federal

WELL FILE DATA:

T.D. 4800 PACKERS @ 4236 PERFS. OH 4324-4820

TBG. ID. 2 7/8 TBG. COATING _____ DEPTH SN. _____ BHP @ 4340'

115

STABILIZATION:

RATE 0 BWPD PRES. 2349 PSIG. CUMULATIVE _____ BBLs.

INCREMENTS:

RATE 100 BWPD PRES. _____ PSIG. STEP LENGTH 15 MINS.
SURFACE 1120 635

TEST RESULTS:

FORMATION PARTING POINT BHP. 2995 PSIG. @ 650 BWPD

	RATE BWPD	PRESSURE SURFACE PSIG.	PRESSURE MINUS FRICTION PSIG.	PRESSURE BOTTOM HOLE PSIG.
1.	0	115		2349
2.	100	339		2501
3.	200	474		2539
4.	300	667		2627
5.	400	866		2735
6.	500	969		2835
7.	600	1083		2944
8.	700	1165		3023
9.	800	1230		3082
10.	900	1283		3128
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				

REMARKS _____

TESTER Wade Rice

COMPANY REP. _____

STEP RATE TESTERS INC.

WELL # SWD #1

DATE 3-4-92

STABILIZATION

RATE 0 BWPD.

PRESS 2349 PSI.

CUM. INJ _____ BWD.

INCREMENTS

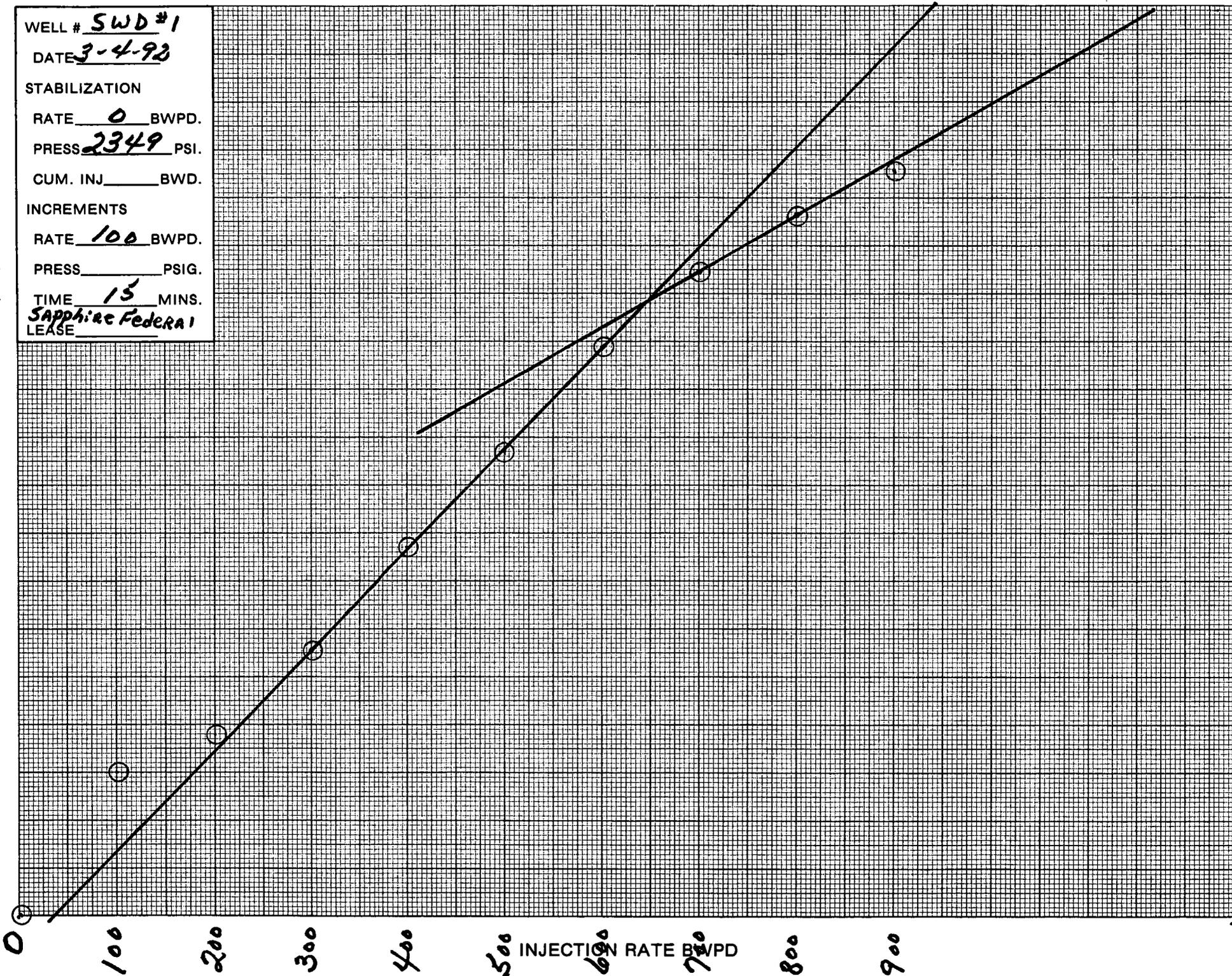
RATE 100 BWPD.

PRESS _____ PSIG.

TIME 15 MINS.

Sapphire Federal
LEASE

BOTTOM HOLE PRESSURE (PSI)



3200
75
50
25
3100
75
50
25
3000
75
50
25
2900
75
50
25
2800
75
50
25
2700
75
50
25
2600
75
50
25
2500
75
50
25
2400
75
2350

INJECTION RATE BWPD

0

100

200

300

400

500

600

700

800

900

STEP RATE TESTERS INC.

WELL # SWD #1

DATE 3-4-92

STABILIZATION

RATE 0 BWPD.

PRESS 115 PSI.

CUM. INJ _____ BWD.

INCREMENTS

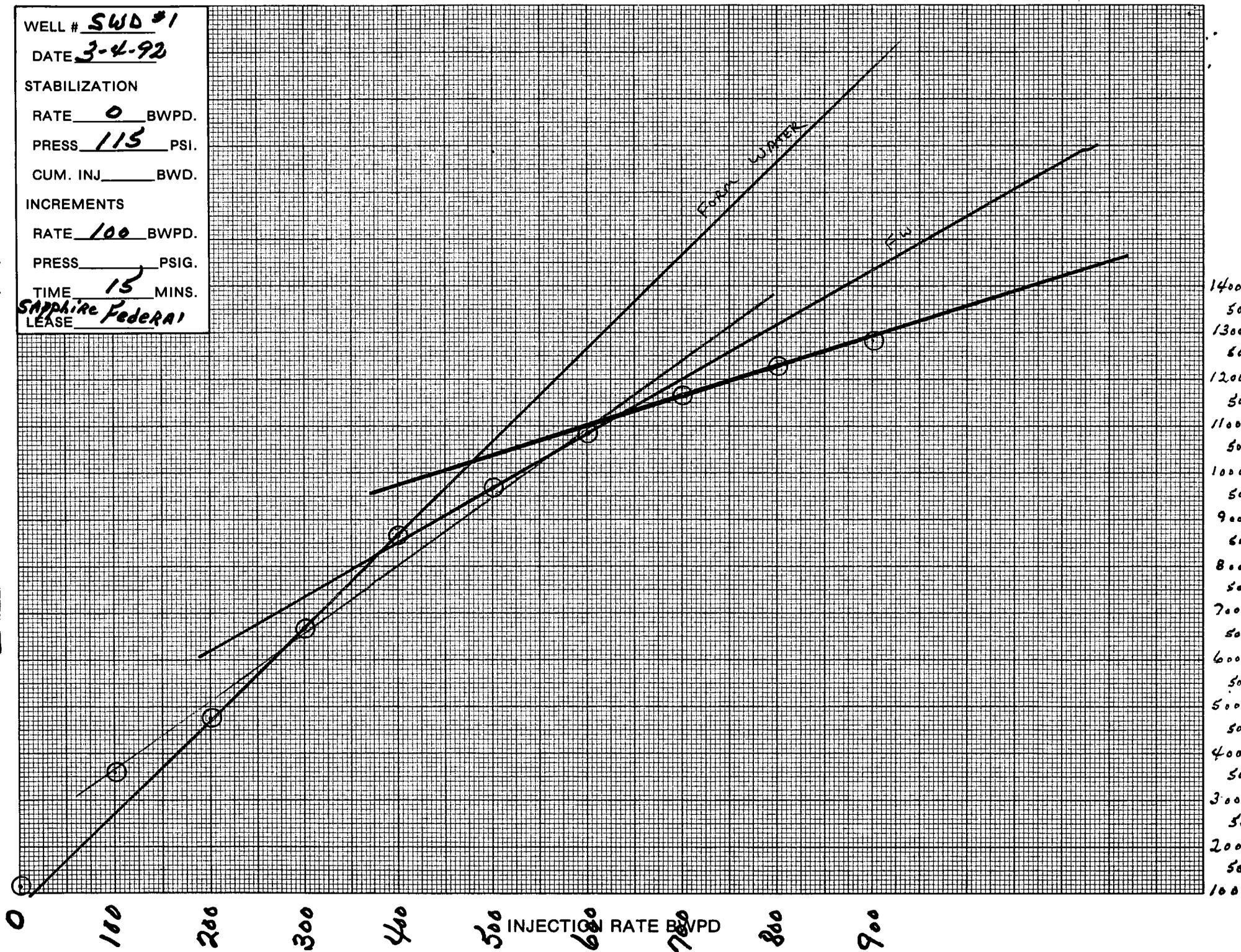
RATE 100 BWPD.

PRESS _____ PSIG.

TIME 15 MINS.

LEASE Sapphire Federal

SURFACE PRESSURE (PSI)



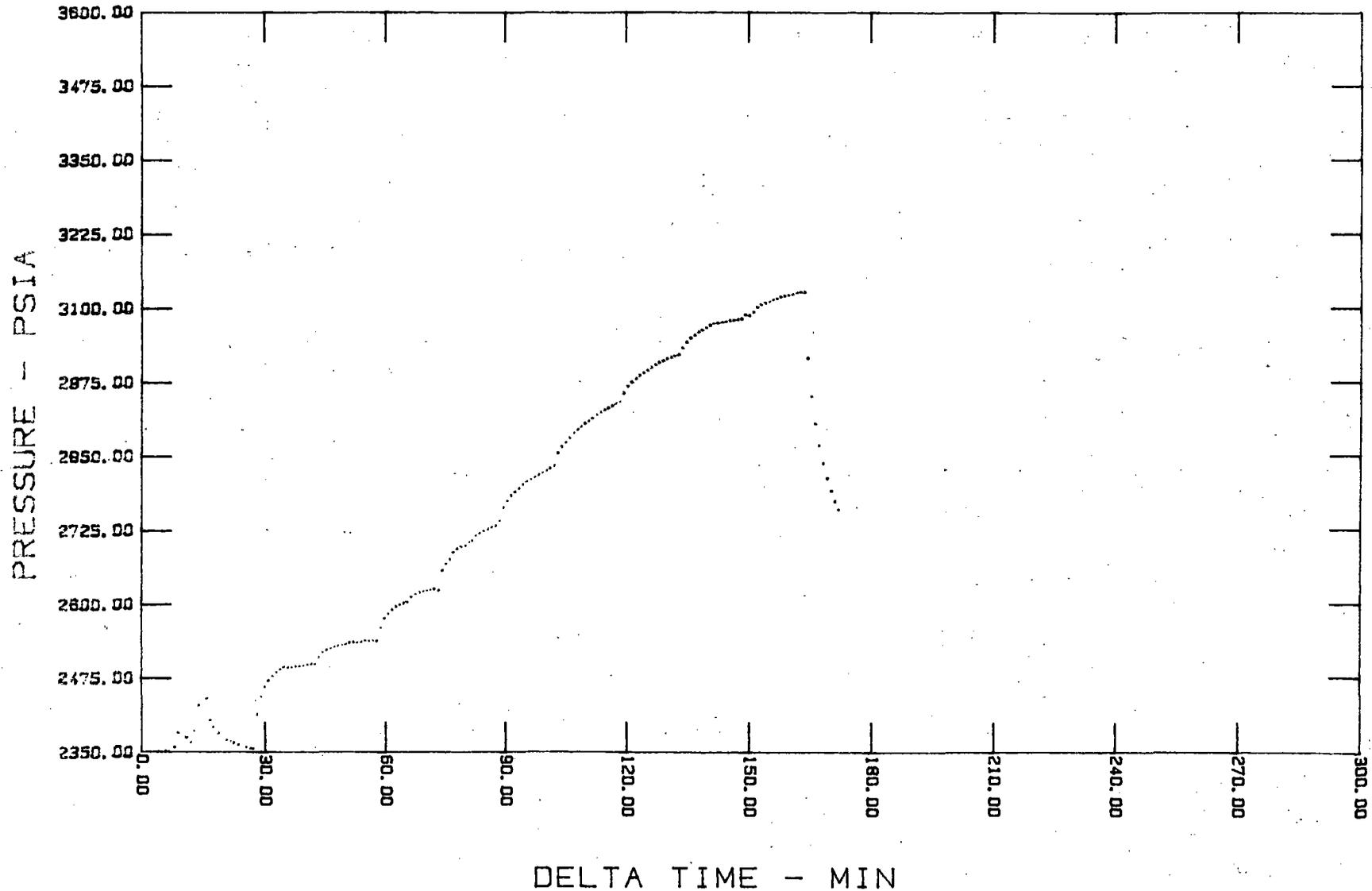
INJECTION RATE BWPD

1400
50
1300
50
1200
50
1100
50
1000
50
900
50
800
50
700
50
600
50
500
50
400
50
300
50
200
50
100

Plot starting date: 3/ 4/92
time: 8: 52: 29
Gauge S/N 64750

Company: STEP RATE TESTERS INC.
Client: MITCHELL ENERGY CORP.
Well name: SAPPHIRE FEDERAL
Well number: SWD #1
Test number: 1

Location: LEA COUNTY N.M.
Test Operator: WADE RICE
Comments: STEP RATE TEST
BHP AT 4340





OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

'92 APR 10 AM 8:53

OIL CONSERVATION DIVISION

HOBBS DISTRICT OFFICE

April 7, 1992

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88240
(505) 393-6161

OIL CONSERVATION DIVISION
P.O. BOX 2088
SANTA FE, NEW MEXICO 87504-2088

RE: APPLICATION FOR PRESSURE LIMIT INCREASE FOR DISPOSAL & INJECTION WELLS

Gentlemen:

I have examined the step rate test for the:

Mitchell Energy Corp.	Sapphire Federal SWD #1-I	23-19-33
Operator	Lease & Well No.	Unit
		S-T-R

and my recommendations are as follows:

OK

Very truly yours

Jerry Sexton
Supervisor, District I

/bp