

BASIN DISPOSAL STEP-RATE TEST 4/1/01

$$\begin{array}{rcl}
 \text{AT 3 BPM SURFACE PRESSURE} & = & 970 \\
 + \text{HYDROSTATIC } 8.46 \times 3650 \times 0.05 & = & \underline{1605} \\
 & & 2575 \\
 - \text{FRICTION } 1.8 \times 36 & & \underline{- 65} \\
 \text{CALCULATED BHP} \rightarrow & & 2510 \\
 \text{MEASURED BHP} \rightarrow & & 2511
 \end{array}$$

FROM FRESH WATER FRICTION CHART $\phi 3.5$ " TBG

$$\begin{array}{rcl}
 \text{AT 6 BPM SURFACE PRESSURE} & = & 1250 \\
 + \text{HYDROSTATIC} & & \underline{1605} \\
 & & 2855 \\
 - \text{FRICTION } 6.5 \times 36 & & \underline{- 234} \\
 \text{CALCULATED BHP} \rightarrow & & 2621 \\
 \text{MEASURED BHP} \rightarrow & & 2625
 \end{array}$$

$$\begin{array}{rcl}
 \text{AT 9 BPM SURFACE PRESSURE} & = & 1575 \\
 + \text{HYDROSTATIC} & & \underline{1605} \\
 & & 3180 \\
 - \text{FRICTION } 13.3 \times 36 & & \underline{- 478} \\
 \text{CALC BHP} & & 2702 \\
 \text{MEASURED BHP} & & 2733
 \end{array}$$

CLOSE AGREEMENT IN CALCULATED & MEASURED VALUES SHOW THAT THE ASSUMPTIONS OF 8.46 #/GAL FLUID & FRESH WATER FRICTION CURVES ARE VALID.

ORIGINAL STEP-RATE TEST RUN 4/14/88

$$\begin{array}{rcl}
 \text{AT 1.5 BPM SURFACE PRESSURE} & = & 1750 \\
 + \text{HYDROSTATIC} & & \underline{1605} \\
 & & 3355 \\
 - \text{FRICTION } 1.4 \times 36 & & \underline{- 50} \\
 \text{CALC BHP} & & 3305 \\
 \text{BEFORE BREAKOVER}
 \end{array}$$

FROM FRESH WATER CHART $\phi 2\frac{7}{8}$ " TBG

ORIGINAL STEP RATE TEST - CONT

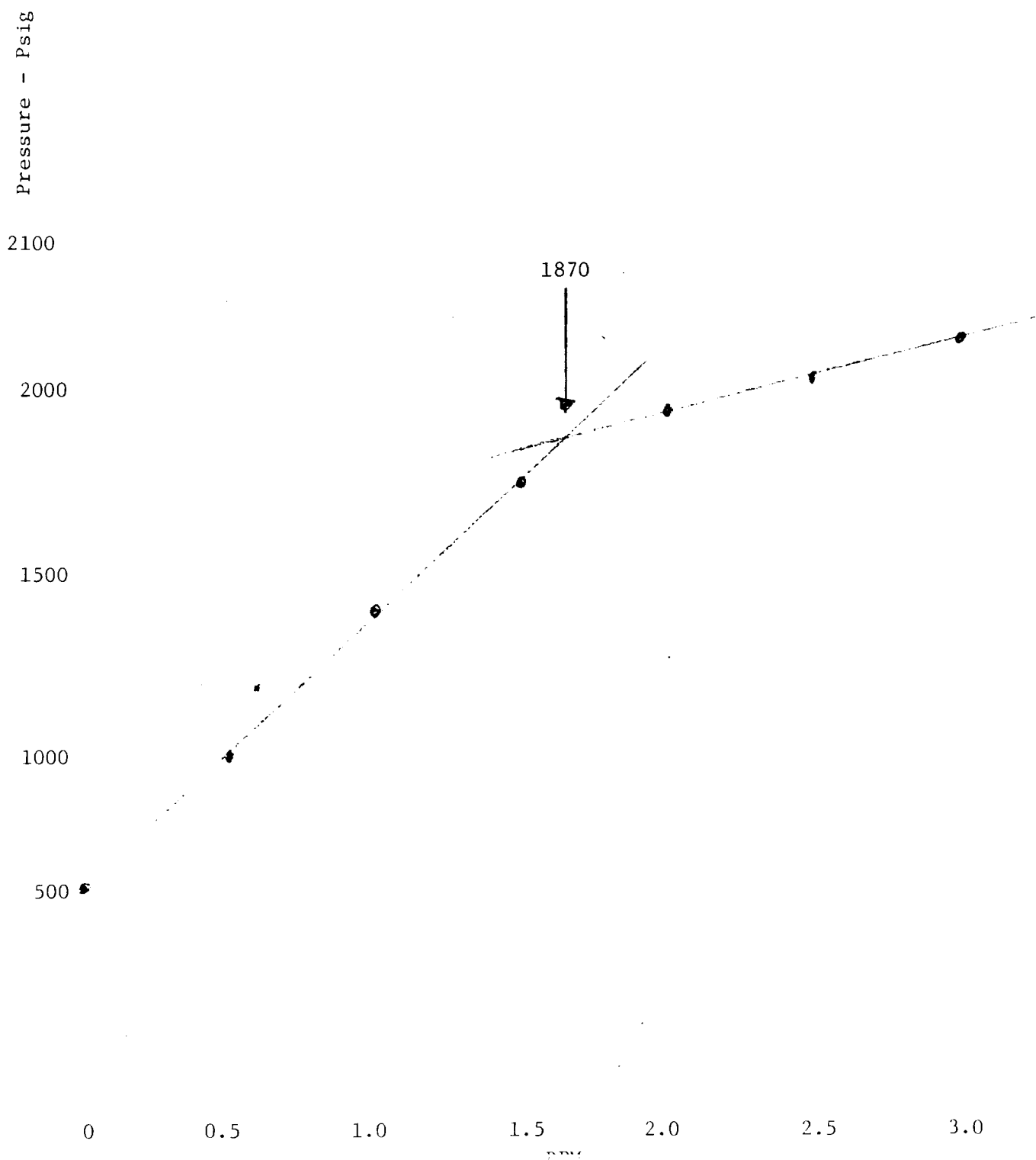
$$\begin{array}{rcl} \text{AT 2 BPM SURFACE PRESSURE} & = & 1740 \\ + \text{HYDROSTATIC} & & \underline{1605} \\ & & 3345 \\ - \text{FRICTION } 2.3 \times 36 = & & \underline{83} \\ \text{CALC. BHP} & & 3462 \\ \text{PAST BREAKOVER} & & \end{array}$$

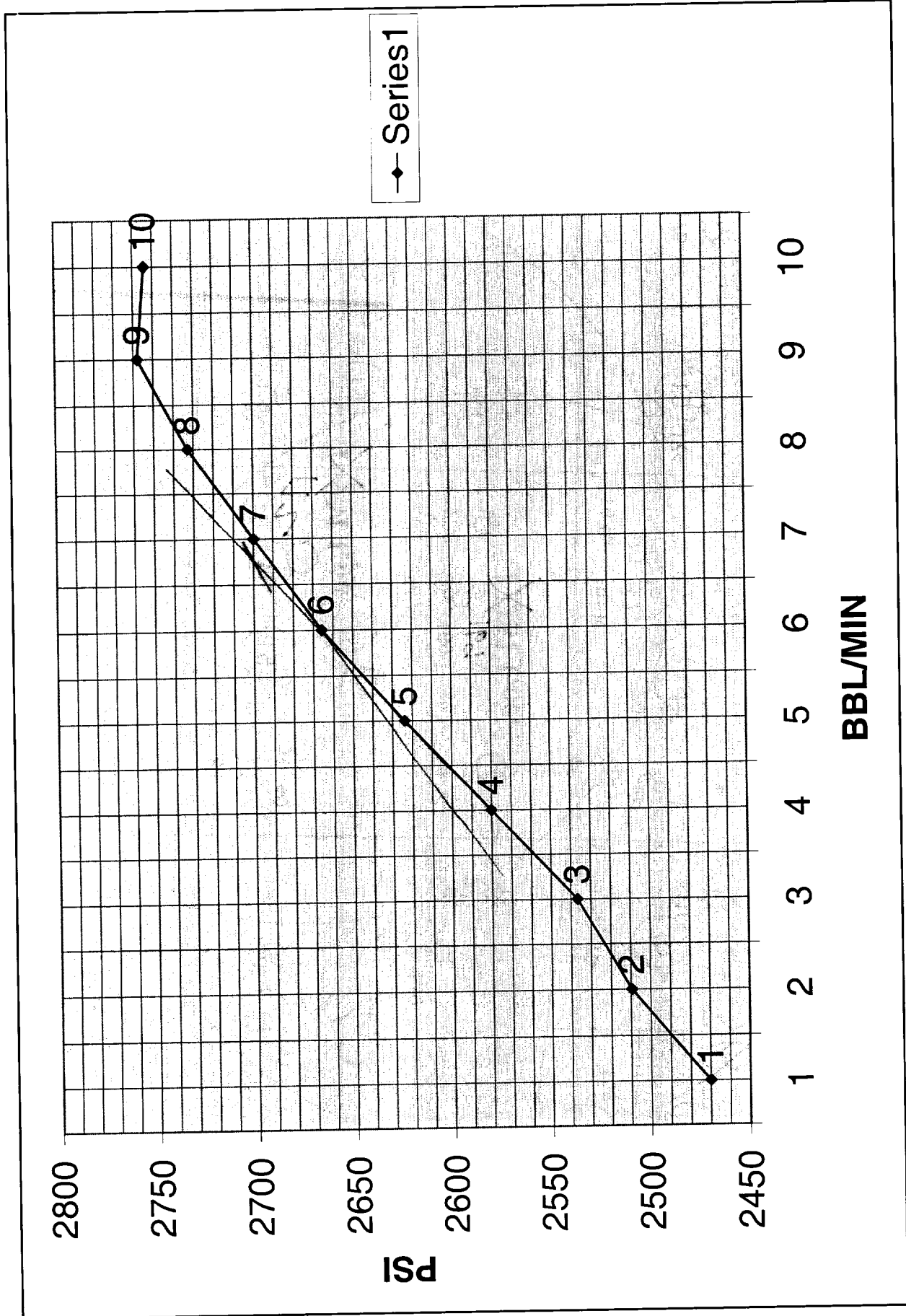
SINCE THE FRACTURE PRESSURE DURING THE ORIGINAL TEST WAS BETWEEN 3305 PSI AND 3462 PSI BOTTOM HOLE PRESSURE, THEN THE FRACTURE PRESSURE WAS NEVER REACHED ON THE SECOND STEP RATE TEST (4/1/2001) BECAUSE THE MAXIMUM BOTTOM HOLE PRESSURE WAS ONLY 2770 PSI.

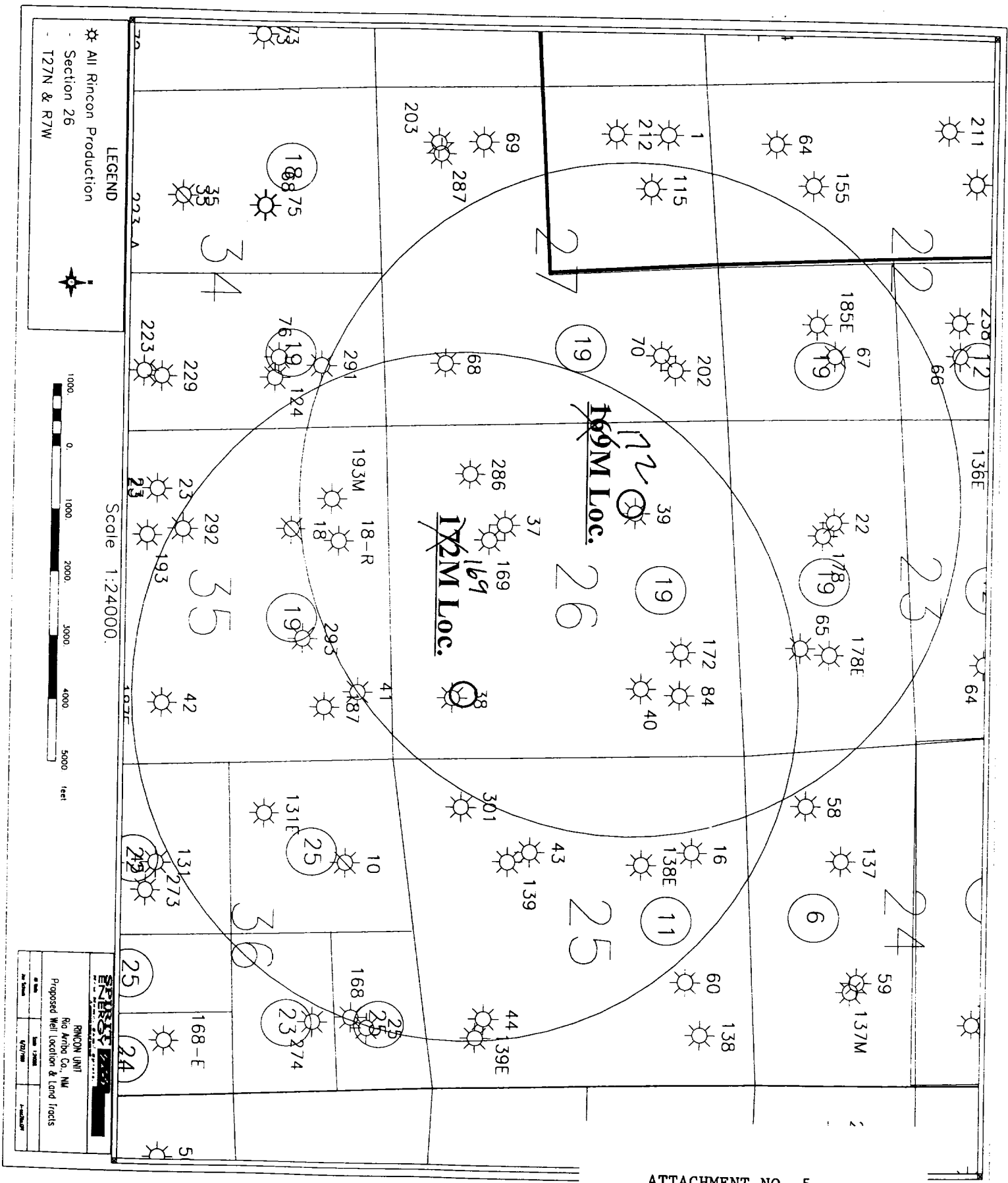
BASIN DISPOSAL REQUESTS THAT THE MAXIMUM ALLOWABLE SURFACE INJECTION PRESSURE BE 1650 PSI, WHICH IS THE MAXIMUM PRESSURE ACHIEVED DURING THE 4/1/01 TEST AND IS STILL BELOW THE FORMATION FRACTURE PRESSURE.

<u>BPM</u>	<u>PRESS. PSIG</u>
0	640
0.5	1000
1.0	1400
1.5	1750
2.0	1940
2.5	2030
3.0	2140

BASIN DISPOSAL, INC.
DISPOSAL NO. 1
Injectivity Test
April 14, 1988







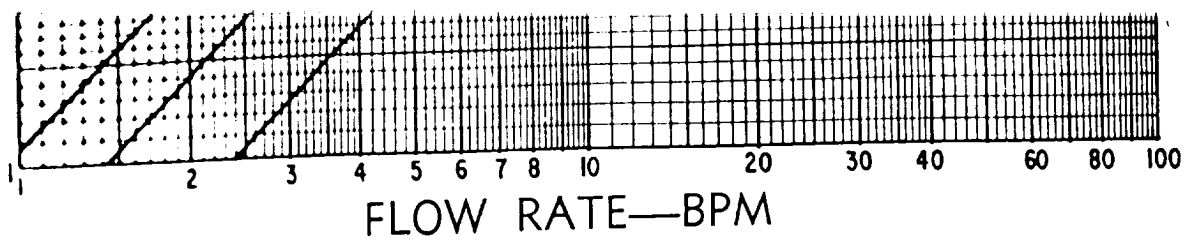
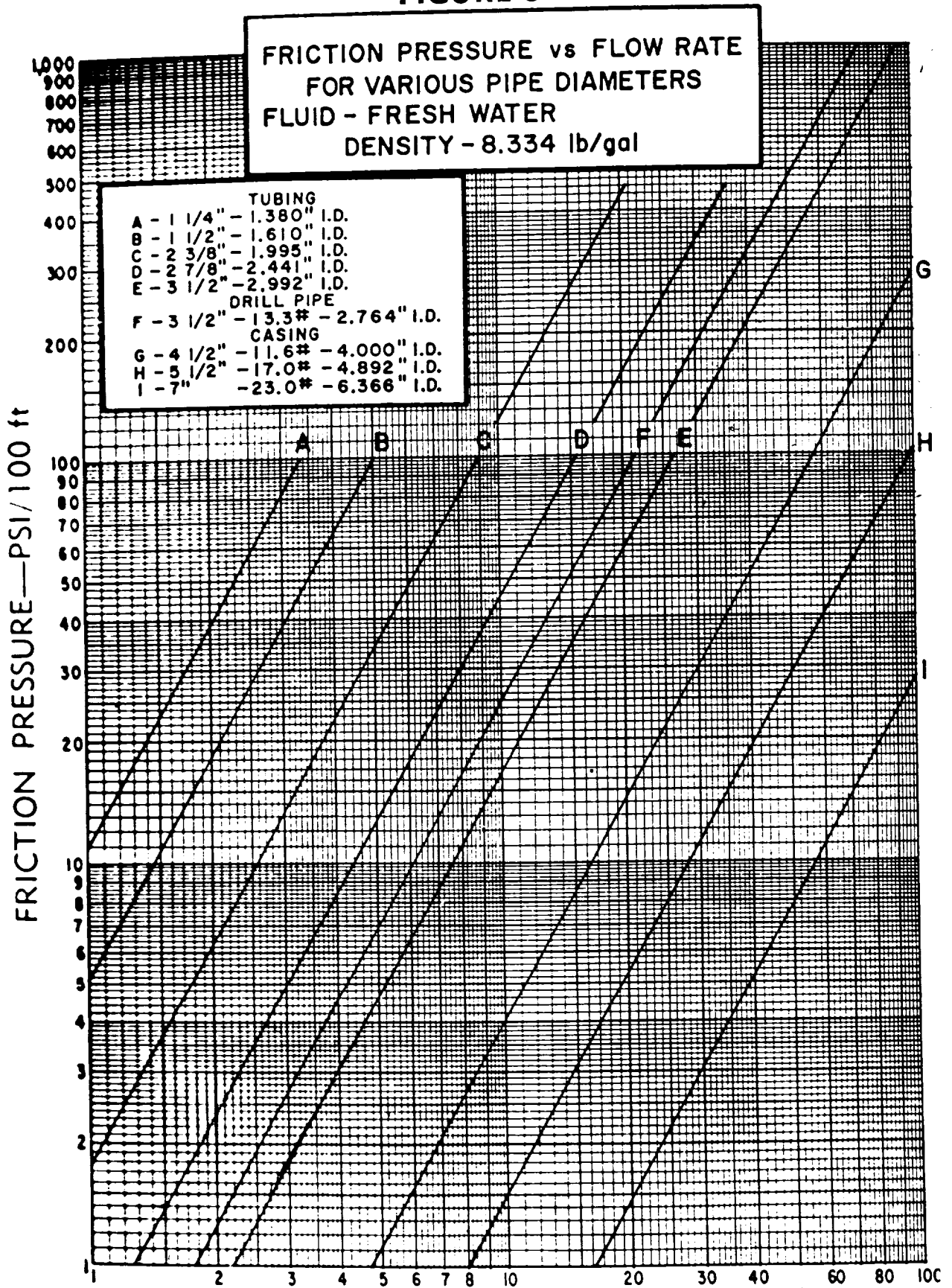


FIGURE 5



Prepared by

Company Name: American Energy Services

Well Name: Basin Disposal

Field:

Formation:

County: San Juan

State: NM

Job Date: 04/01/01

Comments: step rate

Fluids: water

Proppants:

Average Rate: 1 to 10 BPM

Average STP: 860 to 1560

Tubing: 3 1/2

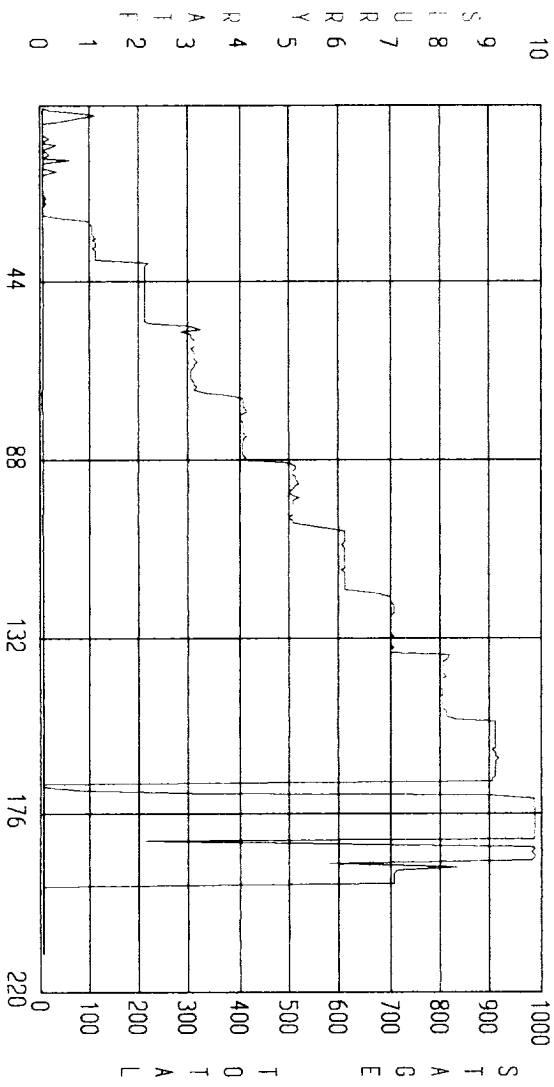
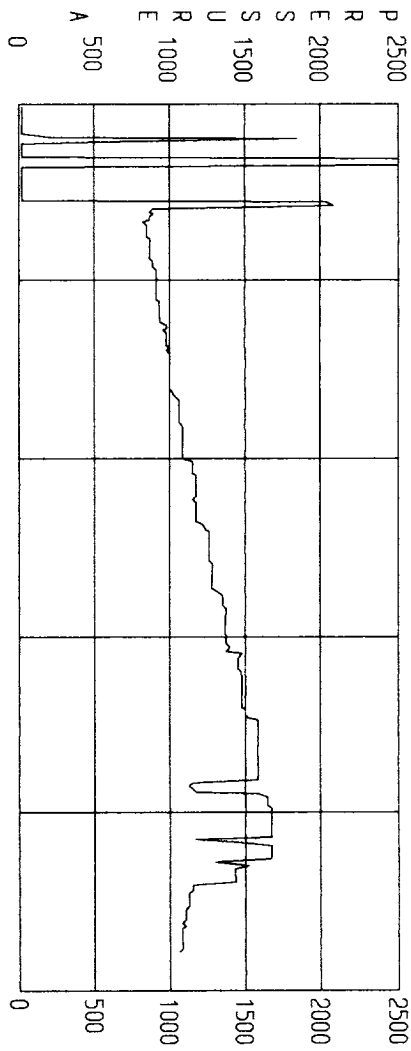
Casing:

Packer:

Filename:

Closure Pres: 4000

LINEAR PLOT

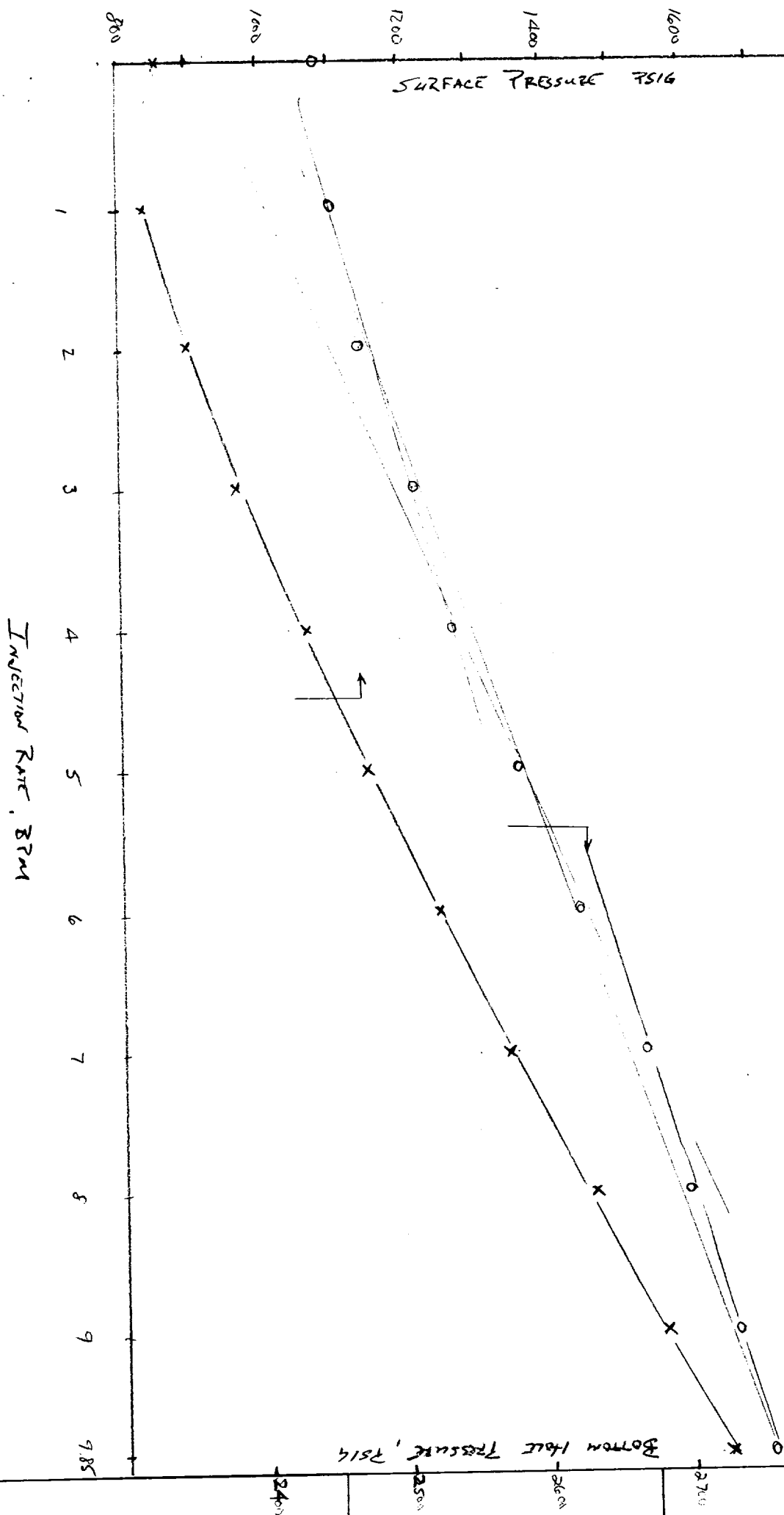


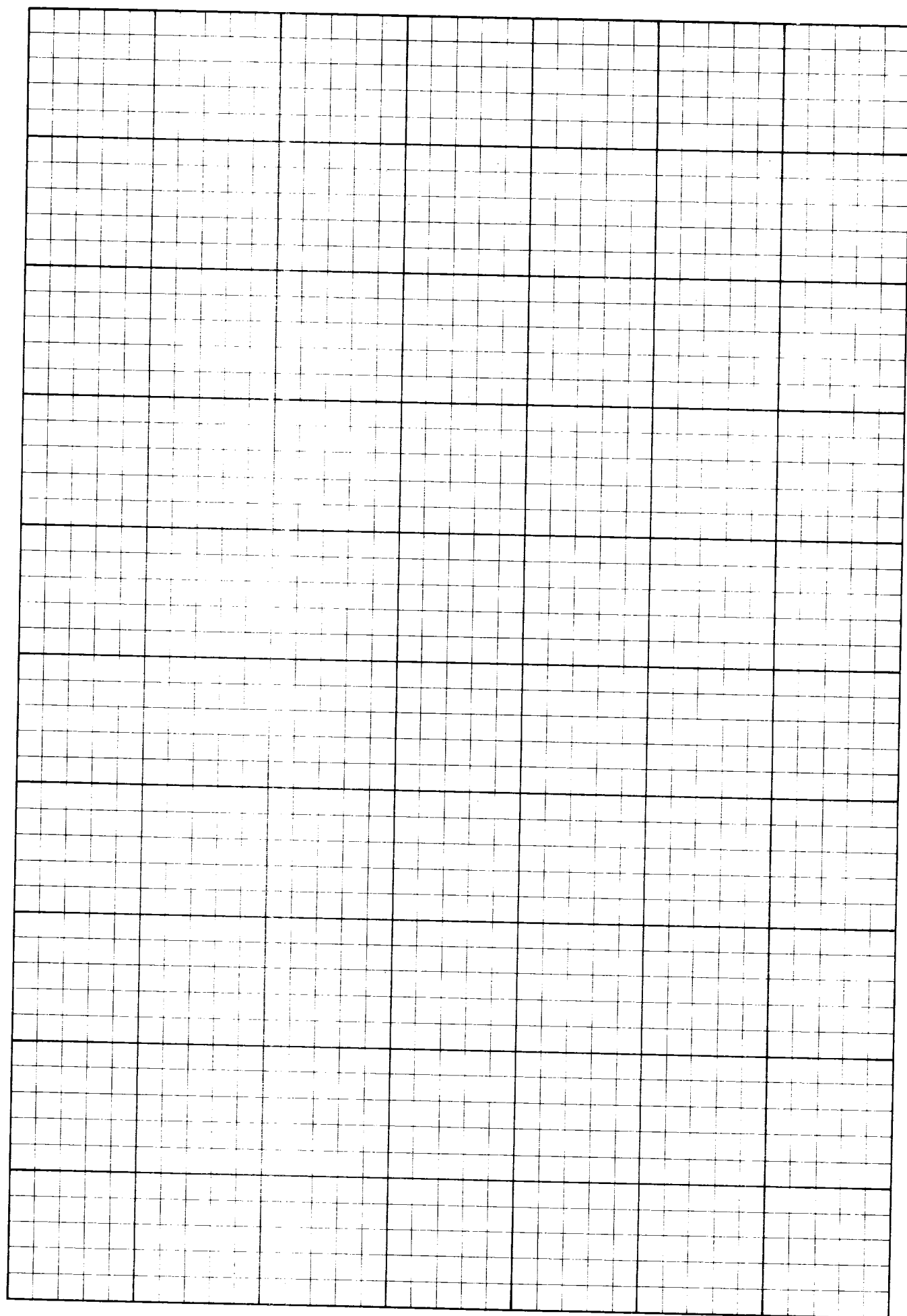


22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS

BASIN DISPOSAL SWD #1
STEER RATE TEST 4/1/01

PAUL THOMPSON

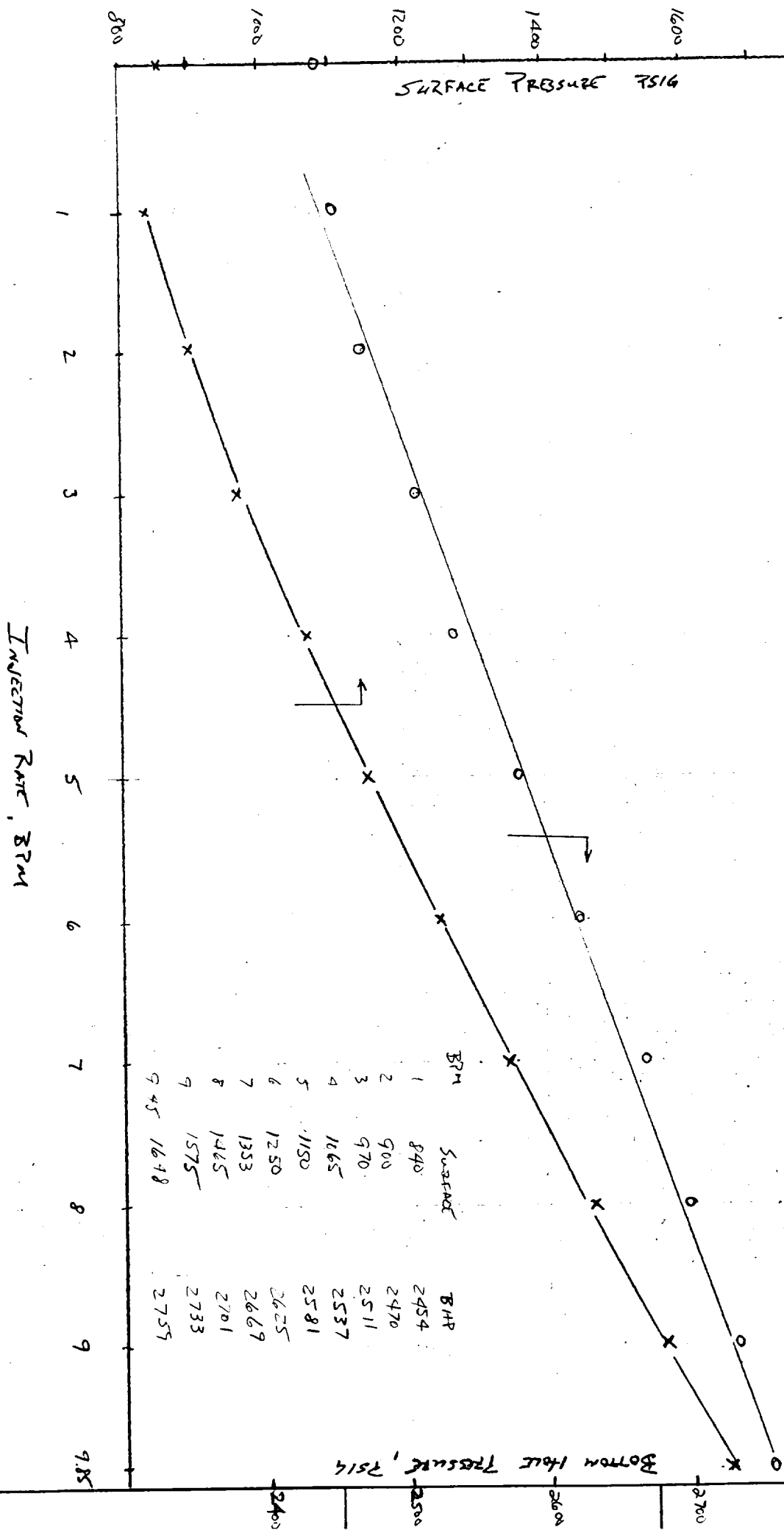






22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS

BASIN DISPOSAL SWD #1
STEP RATE TEST 4/1/01
PAUL THOMAS



WALSH Engineering & Production Corporation

7415 E. Main
Farmington, New Mexico 87402
(505)327-4892 FAX (505)327-8834

Petroleum Engineering Consulting
Lease Management
Contract Pumping

FACSIMILE TRANSMITTAL

DATE: _____ TIME: _____

NUMBER OF PAGES (including cover sheet): _____

TO: COMPANY: _____

ATTN: Charles

PHONE NUMBER: _____

FAX NUMBER: 334-6170

FROM: WALSH ENGINEERING & PROD. CORP.

SENT BY: Paul Thompson

MESSAGE:

IF YOU HAVE ANY QUESTIONS REGARDING THIS TRANSMITTAL, PLEASE
CALL (505)327-4892. THANK YOU.

received
7-21-93



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

July 13, 1993

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87507
(505) 827-5800

RECEIVED

JUL 19 1993

OIL CON. DIV.
DIST. 3

Basin Disposal, Inc.
c/o Walsh Engineering & Production Corporation
P.O. Drawer 419
Farmington, NM 87499

Attention: Ewell N. Walsh

RE: *Injection Pressure Increase Disposal No. 1, Section 3, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico*

Dear Mr. Walsh:

Reference is made to your request dated April 15, 1988 to increase the surface injection pressure on the above-referenced well. This request is based on a step rate tests conducted on this well on April 14, 1988. The results of the test have been reviewed by my staff and we feel an increase in injection pressure on this well is justified at this time. This approval will be retroactive to cover that time which has elapsed since the original step rate test, at which time, the supervisor of the Aztec District Office verbally authorized the increase in injection pressure.

You are therefore authorized, as of April 15, 1988 and now, to increase the surface injection pressure on the following well:

Well and Location	Maximum Injection Surface Pressure
Disposal Well No. 1 Unit F, Section 3, Township 29 North, Range 11 West	1870
This well is located in San Juan County, New Mexico.	

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,

William J. LeMay
Director

WJL/BES/amg

cc: Oil Conservation Division - Aztec
D. Catanach
File: Case No. 9220



WALSH

ENGINEERING & PRODUCTION CORP.

Petroleum Engineering Consulting
Lease Management
Contract Pumping

3001 Northridge Drive
P.O. Drawer 419
Farmington, New Mexico 8
(505) 327-4882

April 15, 1988

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

REF: Basin Disposal, Inc.
Disposal No. 1
Unit F, Section 3-T29N-R11W
San Juan County, New Mexico

Dear Mr. Chavez:

Attached is data obtained during the injectivity test conducted April 14, 1988 on the above-referred-to well.

It is requested that the maximum injectivity pressure, at this time, be approved at 1870 psig.

The test was witnessed by Mr. Charley Gholson of your office.

Very truly yours,

Ewell N. Walsh, P.E.
President

ENW:rr

cc: Basin Disposal, Inc.
Roger Anderson, OCD, Santa Fe, New Mexico

Enclosures

BASIN DISPOSAL, INC.
DISPOSAL NO. 1
Injectivity Test
April 14, 1988

BPM	PRESS. PSIG
0	640
0.5	1000
1.0	1400
1.5	1750
2.0	1940
2.5	2030
3.0	2140

46 1323
Pressure - Psig

2100

2000

1500

1000

500

1870

K&E
10 X 10 TO 1/2 INCH
KUDPFEL & ESSER CO. MADE IN U.S.A.

0

0.5

1.0

1.5

2.0

2.5

3.0

BPM