DATE IN	SUSPENSE	ENGINEER	LOGGED IN	TYPE	APP NO
7-8-04		Catanach	7-8-04	IPI	pSEM0418050294

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505

2004 JUL 8 AM 8 07

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

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Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☑ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ☑ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

James Bruce	James Bruce	Attorney for Applicant	7/8/04
Print or Type Name	Signature	Title	Date

jamesbruc@aol.com
e-mail Address

Amerada Hess Corporation

Permian Business Asset
P. O. Box 840
100 N. W. 7th Street
Seminole, Texas 79360

Mr. David Catanach
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Administrative Application for Injection Pressure Increase
34 wells located in Sections 29, 30, 31, and 32, Township 19S, Range 37E & Section 5, Township 20S, Range 37E
North Monument Grayburg / San Andres Unit (NMGSAU)
Lea County, New Mexico

Dear Mr. Catanach:

Amerada Hess Corporation respectfully requests administrative approval for injection pressure increase in the referenced portion of the NMGSAU waterflood area. Current approved limits range from 734-762 psi (surface) for this area. It is requested that the pressure limit be increased to 1100 psi in order to maximize throughput and improve recovery of hydrocarbon reserves. The requested area is shaded in the attached field map, and all thirty-four (34) injectors are listed in Table 1.

Currently, the limiting pressure for the wells at NMGSAU is 0.2 psi per foot of depth to the top injection perforation, or in the case of openhole completions, the casing shoe (per Order R-9596). In support of Amerada Hess' IPI application, eight (8) step-rate tests were performed in the area. Parting pressures ranged from 1124 psi to 1775 psi. The results of each step-rate test are summarized in Table 2 and also presented graphically.

Additionally, injection profiles were run at increased pressure on four (4) of the same wells. The results of the profiles indicate that injection was maintained within the approved waterflood interval of the Grayburg/San Andres, and that distribution within the waterflood interval was also improved in some instances.

The pilot area was chosen because it is an area where Amerada Hess has seen good response to waterflooding and has not experienced many water breakthrough issues. Amerada Hess' plan is to place a booster pump on the southeast injection lateral which supplies water to all the requested wells. If results of increasing pressure are positive, Amerada Hess may make future application to increase pressure in other areas of the unit.

Thank you for your consideration of our request. If you have any questions, please contact me at (432) 758-6707.

Sincerely,

Chad McGehee
Sr. Petroleum Engineer

NMGSAU Waterflood Area (IPI area shaded red)

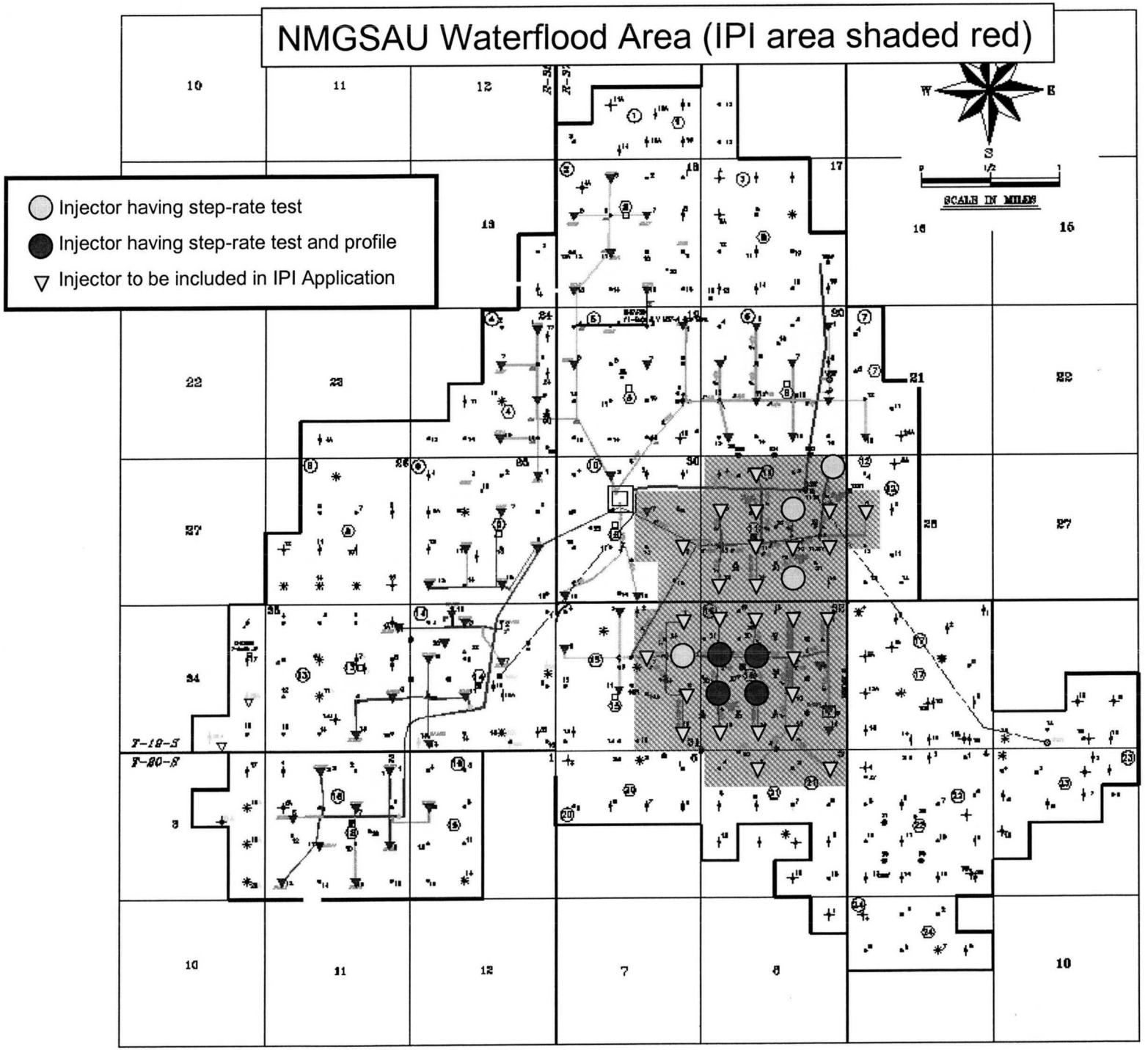


Table 1: NMGSAU Injectors On SE Lateral from Central Plant

(Wells included in IPI Application – requested max pressure 1100 psi surface)

AHC WELL #	API	UNIT LTR	SEC	TWN	RGE	INJECTION START DATE	INJECTION RATE 03/31/04 (BWIPD)	CURRENT MAX PRESS (PSI-SURFACE)	PROPOSED MAX PRESS (PSI-SURFACE)
1009	3002505754		30	19S	37E	12/9/96	686	750	1100
1101	**3002505738**		**29**	**19S**	**37E**	**6/24/93**	**151**	**762**	**1100**
1103	3002505722		29	19S	37E	2/27/95	308	754	1100
1105	3002505727		29	19S	37E	2/27/95	258	734	1100
1106	3002505721		29	19S	37E	2/20/02	614	753	1100
1107	**3002505732**		**29**	**19S**	**37E**	**6/25/93**	**293**	**760**	**1100**
1108	3002505737		29	19S	37E	2/20/02	0	760	1100
1109Y	3002505735		29	19S	37E	1/23/97	218	759	1100
1110	3002505729		29	19S	37E	3/6/02	0	750	1100
1111	3002505725		29	19S	37E	7/10/94	452	753	1100
1113	3002505724		29	19S	37E	6/24/93	434	753	1100
1114	3002505726		29	19S	37E	2/21/02	374	751	1100
1115	**3002505730**		**29**	**19S**	**37E**	**6/24/93**	**159**	**747**	**1100**
1205	3002505713		28	19S	37E	1/23/97	302	756	1100
1501	3002505767		31	19S	37E	3/1/95	394	757	1100
1507	3002505761		31	19S	37E	3/1/95	288	760	1100
1508	**3002505760**		**31**	**19S**	**37E**	**12/8/97**	**340**	**753**	**1100**
1509	3002505763		31	19S	37E	3/20/95	349	745	1100
1516	3002505764		31	19S	37E	2/25/02	731	738	1100
1601	3002505795		32	19S	37E	3/1/95	79	758	1100
1602	3002505783		32	19S	37E	3/6/02	303	742	1100
1603	3002531503		32	19S	37E	3/1/95	247	755	1100
1604	3002505787		32	19S	37E	2/17/98	422	751	1100
1605	**3002505786**		**32**	**19S**	**37E**	**3/1/95**	**380**	**752**	**1100**
1606	**3002505781**		**32**	**19S**	**37E**	**2/26/98**	**208**	**735**	**1100**
1607	3002505784		32	19S	37E	3/1/95	494	753	1100
1610	3002505785		32	19S	37E	2/14/02	198	757	1100
1611	**3002505797**		**32**	**19S**	**37E**	**3/1/95**	**237**	**747**	**1100**
1612	**3002505796**		**32**	**19S**	**37E**	**3/7/02**	**308**	**742**	**1100**
1613	3002505793		32	19S	37E	3/1/95	400	742	1100
1614	3002505794		32	19S	37E	2/28/02	531	744	1100
1615	3002505789		32	19S	37E	11/15/96	331	743	1100
2101	3002505920		5	20S	37E	12/9/96	0	746	1100
2103	3002505908		5	20S	37E	11/19/96	454	738	1100

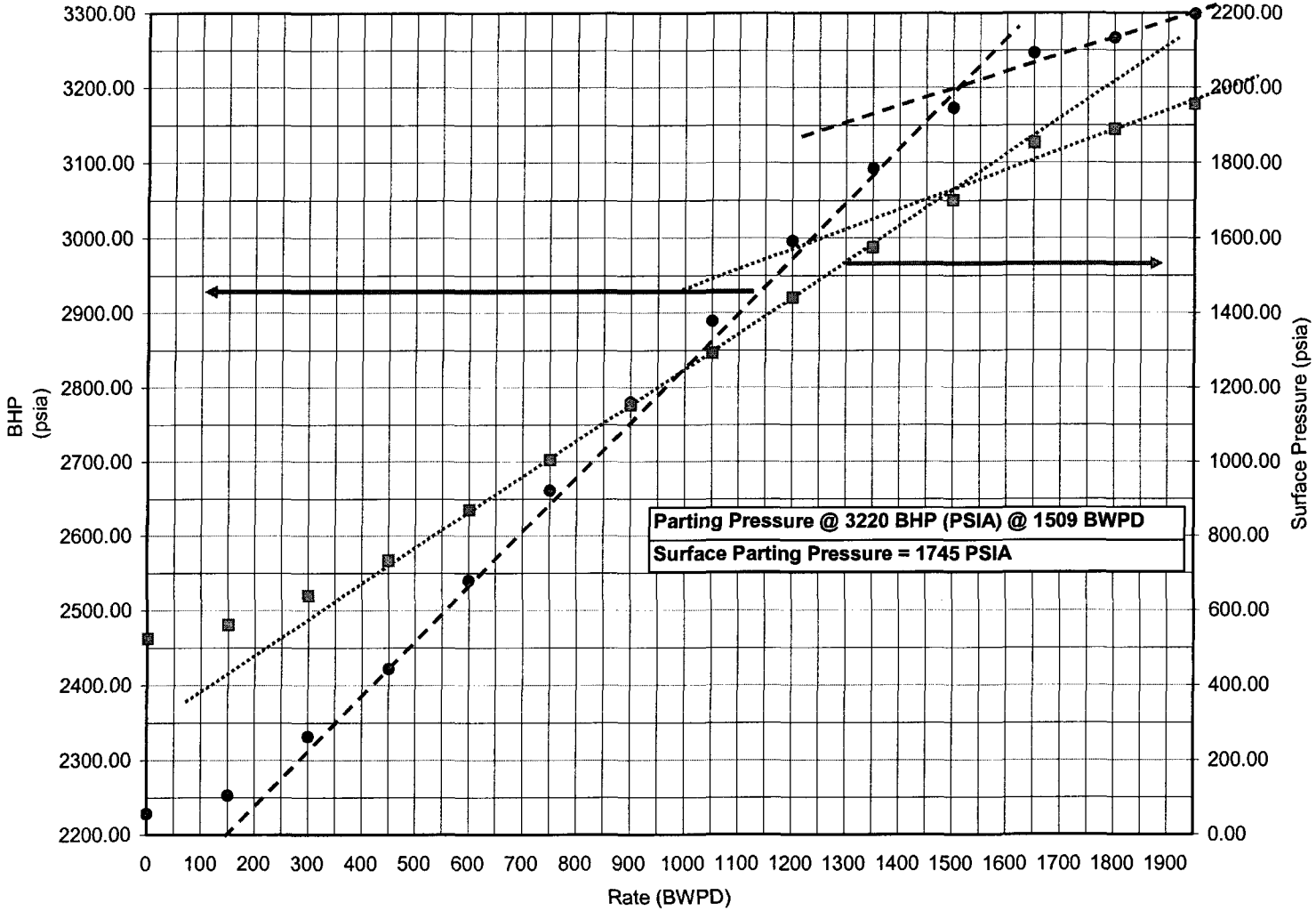
*** NOTE: BOLD INDICATES WELL HAVING STEP-RATE TEST DATA.**

Table 2: NMGSAU Injector Step-rate Results

AHC WELL #	API	INJECTION START DATE	STEP-RATE FRAC PRESS (PSI-SURFACE)	CURRENT MAX PRESS (PSI-SURFACE)	PROPOSED MAX PRESS (PSI-SURFACE)
1101	3002505738	6/24/93	1745	762	1100
1107	3002505732	6/25/93	1775	760	1100
1115	3002505730	6/24/93	1294	747	1100
1508	3002505760	12/8/97	1124	753	1100
1605	3002505786	3/1/95	1192	752	1100
1606	3002505781	2/26/98	1389	735	1100
1611	3002505797	3/1/95	1703	747	1100
1612	3002505796	3/7/02	1430	742	1100

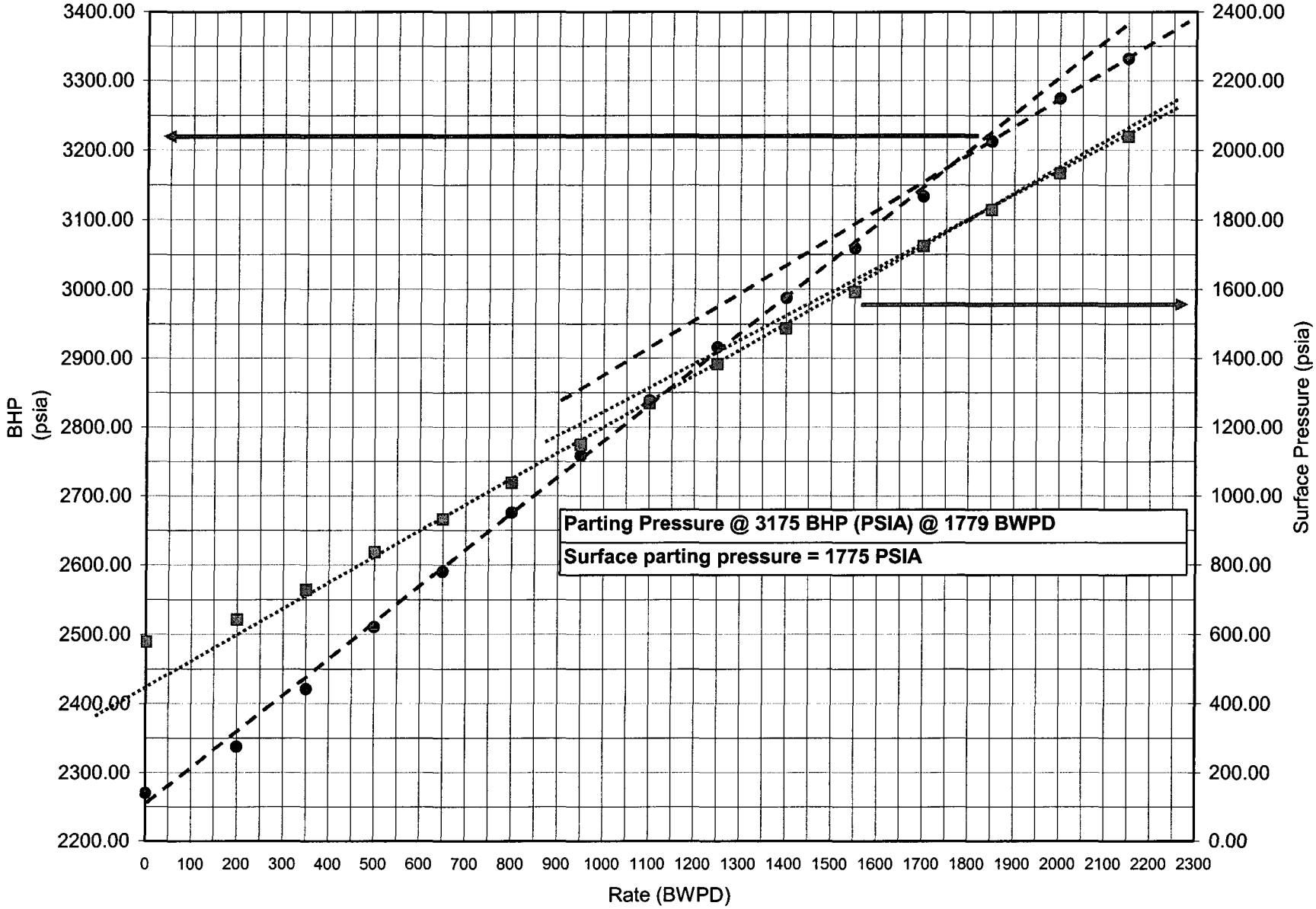
Step Rate Test
Amerada Hess
NMGSAU #1101
2/09/2004

PRECISION
PRESSURE
DATA, INC.



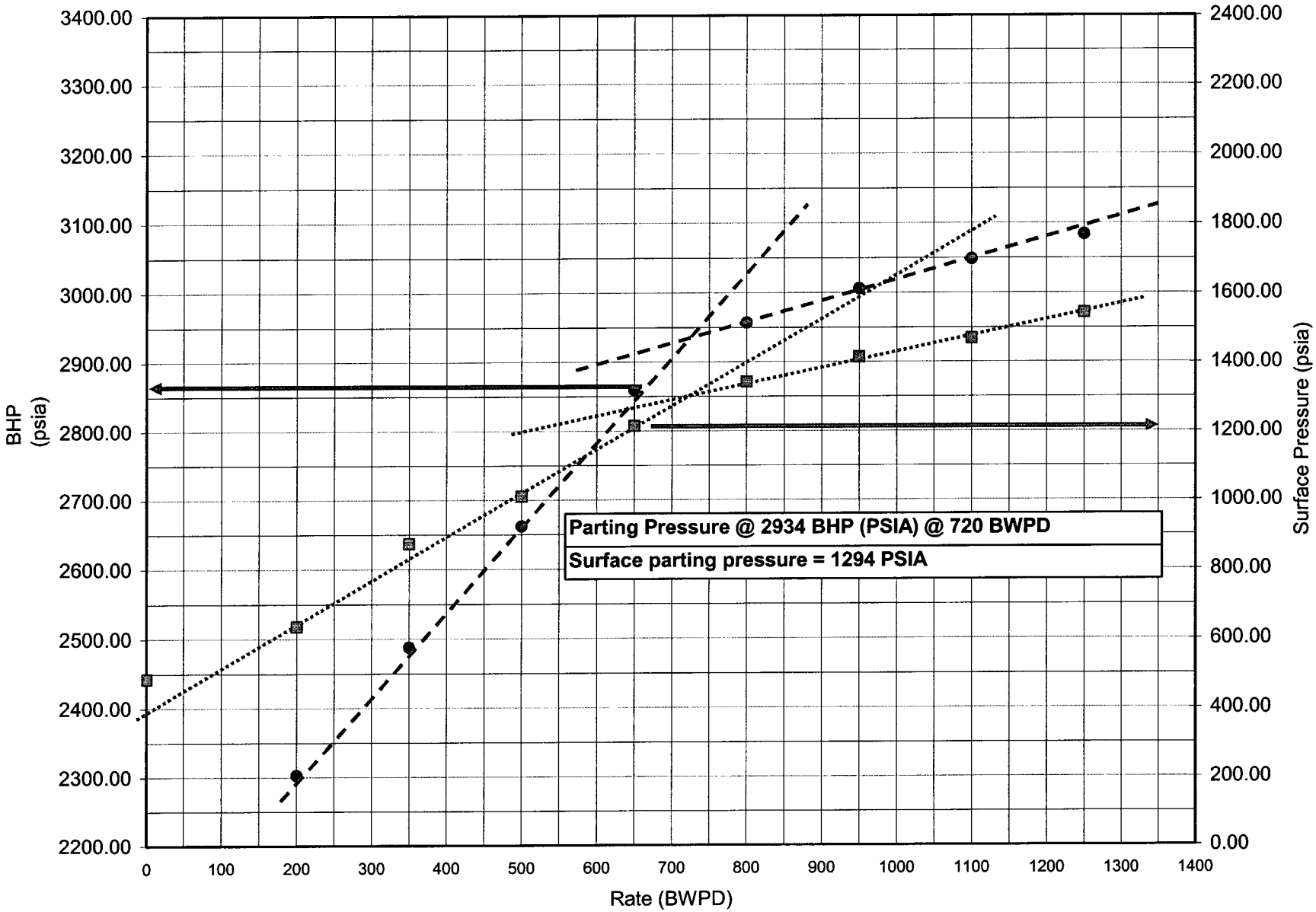
Step Rate Test
Amerada Hess
NMGSAU #1107
2/10/2004

PRECISION
PRESSURE
DATA, INC.



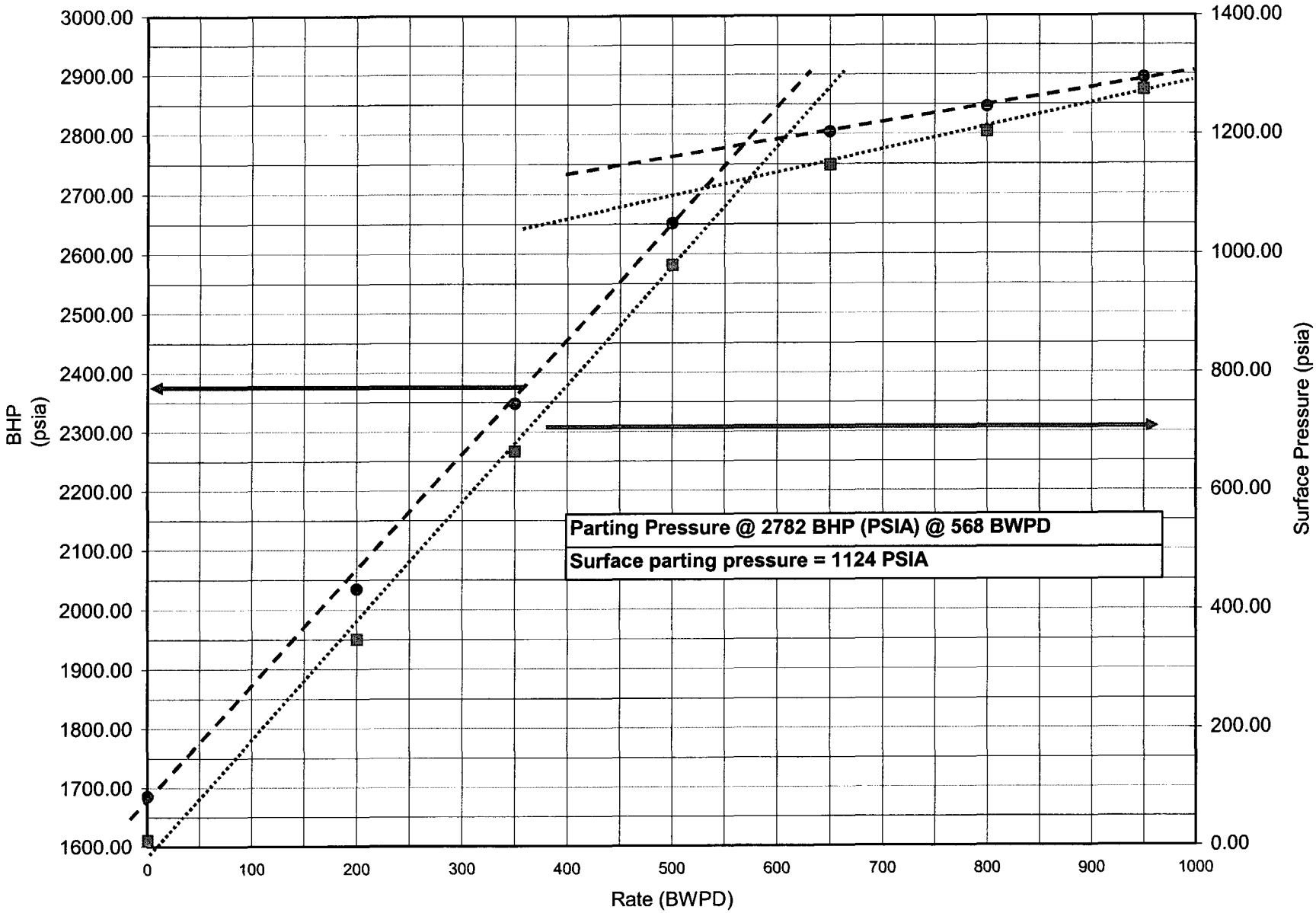
Step Rate Test
Amerada Hess
NMGSAU #1115
2/11/2004

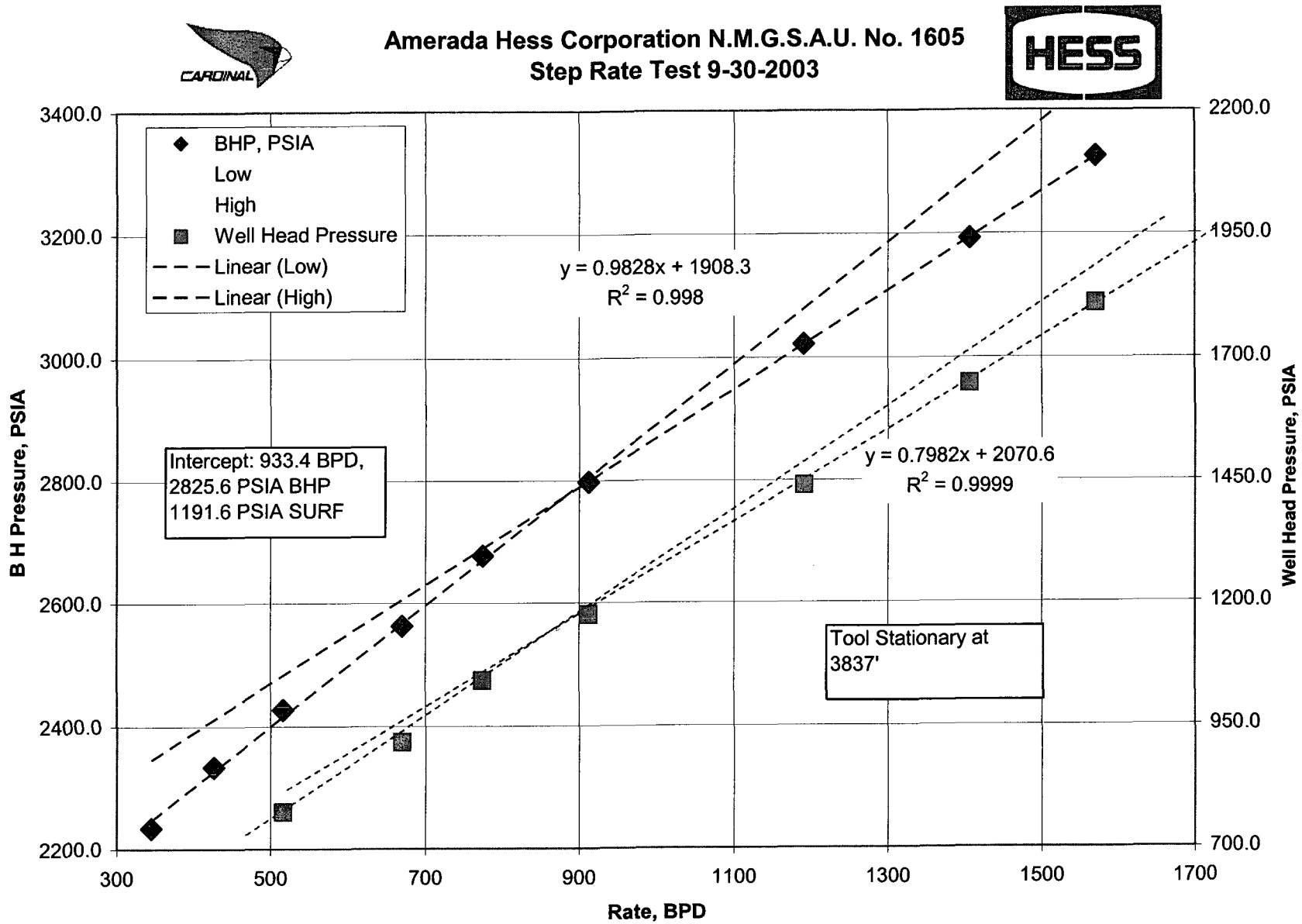
PRECISION
PRESSURE
DATA, INC.



Step Rate Test
Amerada Hess
NMGSAU #1508
2/09/2004

PRECISION PRESSURE DATA, INC.




Amerada Hess Corporation N.M.G.S.A.U. No. 1605
Step Rate Test 9-30-2003
CARDINAL
HESS
BHP, PSIA
Low
High
Well Head Pressure
Linear (Low)
Linear (High)
y = 0.9828x + 1908.3
R2 = 0.998
y = 0.7982x + 2070.6
R2 = 0.9999
Intercept: 933.4 BPD,
2825.6 PSIA BHP
1191.6 PSIA SURF
Tool Stationary at
3837'
B H Pressure, PSIA
Well Head Pressure, PSIA
Rate, BPD
3400.0
3200.0
3000.0
2800.0
2600.0
2400.0
2200.0
2200.0
1950.0
1700.0
1450.0
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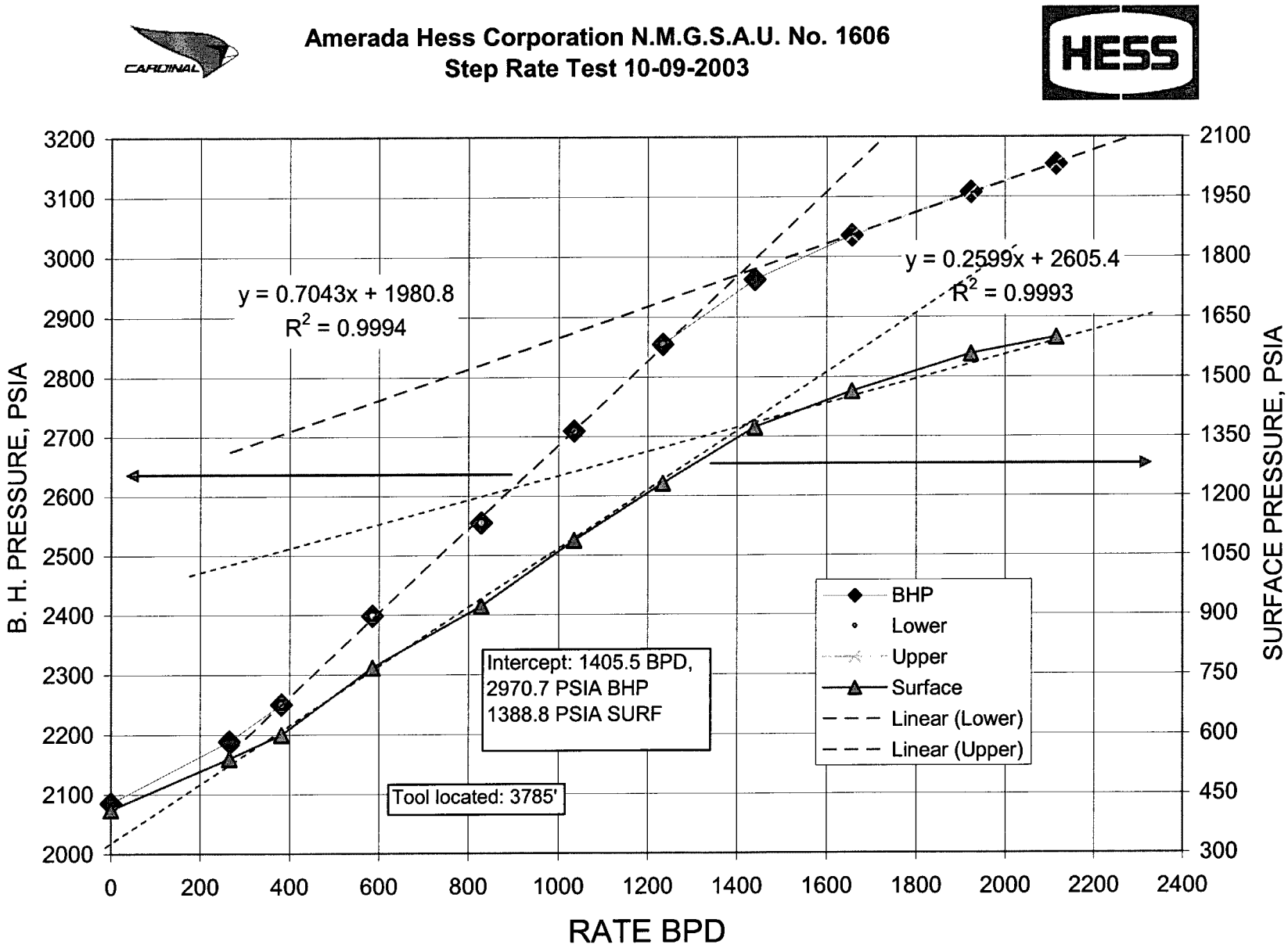
700.0
300
500
700
900
1100
1300
1500
1700


Amerada Hess Corporation N.M.G.S.A.U. No. 1606
Step Rate Test 10-09-2003
CARDINAL
HESS
y = 0.7043x + 1980.8
R2 = 0.9994
y = 0.2599x + 2605.4
R2 = 0.9993
Intercept: 1405.5 BPD,
2970.7 PSIA BHP
1388.8 PSIA SURF
Tool located: 3785'
BHP
Lower
Upper
Surface
Linear (Lower)
Linear (Upper)
B. H. PRESSURE, PSIA
SURFACE PRESSURE, PSIA
RATE BPD
3200
3100
3000
2900
2800
2700
2600
2500
2400
2300
2200
2100
2000
2100
1950
1800
1650
1500
1350
1200
1050
900
750
600
450
300
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400