

DATE IN <u>9.29.10</u>	SUSPENSE	ENGINEER <u>TW.</u>	LOGGED IN <u>9.29.10</u>	TYPE <u>IPI</u>	APP NO. <u>1027250321</u>
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
 - Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505



Resaca
263848

ADMINISTRATIVE APPLICATION CHECKLIST

8Wells

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]

IPI-380

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

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

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.

KEITH B. MASTERS, P.E.
 Print or Type Name

(Signature)
 Signature

CONSULTANT
 Title

09/29/10
 Date

k-b-masters@mastersconsultingllc.com
 e-mail Address

CURRENT & PROPOSED MAXIMUM SURFACE INJECTION PRESSURES
RESACA OPERATING COMPANY
COOPER JAL UNIT

Well No.	API No.	NMOCD Order No. Authorizing Injection	Current Maximum Surface Injection Pressure (psig)	Depth of Top Perforation (ft)	Surface Parting Pressure * (psig)	Surface Parting Pressure ** Gradient (psig/ft)	Proposed Maximum Surface Injection Pressure (psig)
122	30-025-09638	WFX-648	600	3,020	933	0.309	880
126	30-025-09636	WFX-648	604	3,021	932	0.309	880
132	30-025-09639	WFX-671	590	3,024	726	0.240	675
135	30-025-09641	WFX-657	604	3,019	882	0.292	830
151	30-025-25682	WFX-648	659	3,296	924	0.280	870
205	30-025-09620	WFX-648	600	2,988	874	0.293	820
211	30-025-09787	WFX-648	604	3,001	853	0.284	800
220	30-025-11162	WFX-648	597	2,986	783	0.262	730

* - This value was determined by extrapolation based on the observed Bottomhole Parting Pressure, and will therefore differ from the pressure shown on the Contractor's plot of surface pressure data.

** - Surface Parting Pressure / Depth of Top Perforation

W-1

Masters Consulting, LLC

7500 Rialto Blvd.; Ste. 180
Austin, TX 78735

RECEIVED OCD

Keith B. Masters, P.E.
President

email: k_b_masters@mastersconsultingllc.com

2010 SEP 26 10:10
Phone: (512) 906-2016
Fax: (512) 906-2729

September 26, 2010

Mr. Terry G. Warnell
New Mexico Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

Re: Injection Pressure Increase
Resaca Operating Company
Cooper Jal Unit
Lea County, NM

Dear Terry:

[263848]
Resaca Operating Company ("Resaca") hereby requests an increase in the authorized surface injection pressure for certain wells within the Cooper Jal Unit ("the Unit"), Lea County, New Mexico.

By Order No. R-4018, dated August 25, 1970, the NMOCD approved the Cooper Jal Unit Agreement. A waterflood project in the Langlie-Mattix Pool underlying the Unit was approved by NMOCD Order R-4019. A waterflood project in the Jalmat Pool underlying the Unit was approved by NMOCD Order R-4020. Water injection was authorized by these orders and by Administrative Orders WFX-648, WFX-657, and WFX-671. Twenty-eight injection wells and sixty-eight producing wells are currently active. The producing wells have been granted authority for surface commingling of the Langlie-Mattix and the Jalmat Pools, and under current operations the Unit is effectively operated as a single waterflood project.

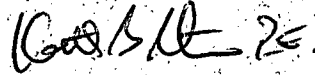
Plans are being formulated to perform tertiary recovery operations within the Unit, which will involve injection of CO₂. Consistent therewith, it is necessary to increase reservoir pressure to achieve miscibility. This application will facilitate increased injection rates which are necessary to prepare the reservoir for tertiary recovery operations.

miscibility
Step rate tests have been run in certain wells within the Unit. The enclosed table entitled "Current & Proposed Maximum Surface Injection Pressures" summarizes results of the step rate tests in eight wells, and lists the proposed maximum surface injection pressures on a well-by-well basis. Back-up data in the form of a well-bore diagram (provided by Resaca) and the empirical data recorded during the step-rate tests (provided by Arc) are attached for your reference.

Mr. Terry G. Warnell
September 26, 2010
Page 2

Thank you for your assistance with regard to this application. Resaca respectfully requests that it be expedited to the extent possible. Please direct any inquiries regarding this matter to the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Keith B. Masters".

Keith B. Masters, P.E.
for Resaca Operating Company

cc: Resaca Operating Company

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC		LEASE NAME Cooper Jal Unit		WELL NO 122 WIW	
		STATUS: Active		Water Injector	
		LOCATION: 330 FNL & 990 FEL, Sec 24, T - 24S, R - 36E; Lee County, New Mexico		API# 30-025-09638	
		SPUD DATE: TD 3552		KB 3.321' DF	
		INT. COMP. DATE: 06/18/54		PBTB 3552 GL 3.311'	
		ELECTRIC LOGS:		GEOLOGICAL DATA	
		GR-CCL (12-2-93 Halliburton)		CORES, DST'S or MUD LOGS:	
		Injection Profile log (4-20-95 Houston, Inc.)			
		GR-N from 100 - 3553' (6-14-54 Schlumberger)			
		HYDROCARBON BEARING ZONE DEPTH TOPS:			
		Yates @ 3019' 7-Rivers @ 3247' Queen @ 3610'			
		CASING PROFILE			
		SURF. 8 5/8" - 32#, J-55 set @ 280' Cmt'd w/150 sxs - circ cmt to surf.			
		PROD. 5 1/2" - 14#, H-40 set @ 3465' Cmt'd w/200 sxs - TOC @ 2265' f/ surf by calc. DV tool @1200' - pmp 100 sxs.			
		LINER None			
		5 1/2" - TOC @ 600' by calc.			
		CURRENT PERFORATION DATA			
		CSG. PERFS:			
		Interval Net feet No. holes Interval Net feet No. Holes Open Hole: 3465'-3552'			
		3020 - 52' 32 64 3324'-29' 5 11			
		3069 - 89' 20 40 3341'-43' 2 5			
		3103 - 20' 17 34 3360'-68' 8 17			
		3133 - 46' 13 26 3370'-72' 2 5			
		3152 - 82' 30 60 3376'-82' 6 13			
		3188 - 98' 10 20 3385'-88' 3 7			
		3237 - 45' 8 16 3406'-08' 4 5			
		3297 - 3307' 10 20 3420'-21' 4 5			
		280 3430'-35' 5 11			
		3438'-44' 12 13			
		3452'-55' 6 7			
		3459'-61' 6 7			
		TUBING DETAIL 10/31/2003 ROD DETAIL			
		Length (ft) Detail			
		10 KB			
		2927 93 2 3/8" 4.7#, CPL, J-55, 8rd EUE tbg.			
		3 1 5 1/2" x 2 3/8" Baker Model AD-1 packer			
		2940 btm			
		WELL HISTORY SUMMARY			
		18-Jun-54 Initial completion interval: 3465 - 3552' (Lower 7 Rivers OH). Frac'd w/4,000 gals oil & 6,000#s sand. IP=254 bopd, 0 bwpd & 222 Mcfgpd (flowing)			
		09-Jun-56 Placed well on rod pump			
		05-May-71 Converted well to injection: C/O fill rom 3535 - 3546'			
		10-Feb-84 C/O to 3552' (TD). Installed new IPC tbg.			
		29-Nov-93 C/O f/ 3479'-3554'. Set pkr @ 3399' & acdz OH 3465'-3552 w/4,200 gals 20% HCL & 168 gals TW-45 in 4-stages using 1,900#s RS as diversion. PM=4,000'-700 psi, AIR=4 bpm. Ran GR-CCL f/ 3300'-2800'. Perf'd Yates f/ 3030'-3307' w/2 spf (280 - .46" holes). Set pkr @ 2890' & acdz perfs (3020 - 3307') w/ 4,200 gals 20% NEFE HCL and TW- 425 dropping 300 7/8" RCN BCs. PM=2400 - 650 psi, AIR=4.5 bpm no good ball action. ISIP=650 psi, P2min= vacuum. RIH w/ pkr on IPC tbg and set pkr @ 2962'. Placed well on injection @ 450 bwpd (avg), TP=vacuum. Tag TD using SL unit (1 1/4" x 5' sinker bar). Tag fill @ 3056' (496' of fill).			
		14-Feb-02 POOH w/ IPC tbg & laid down 4 1/2" AD-1 PKR. Tallied in hole w/2 7/8" work string & set RBP at 3000'. Test RBP to 500 psi - held. Ran GR/CBL f/ 2990' to 151' - TOC at 160'. Sling shot 5 1/2" csg at 149'. Recovered 149' of csg. Ran new 5 1/2" casing, tie back at 149' onto old 5 1/2" casing. Pressure casing to 500 psi - held. Perf'd 7-Rivers (Jalmat) f/ 3324'-3388', Perf'd 7-Rivers (Langlie Mattix) f/ 3406'-3461'. Total feet 45, total holes 102. Treated perfs w/ 280 bbls surfactant water & 3000 gals of 15% NEFE HCL acid via PerfClean Tool. Cleaned out with 3 1/2" bailer from 3453' to 3468'. RIH with 5 1/2" AD-1 packer while hydrotesting 2 3/8" IPC tbg to 7000 psig. Set PKR 2962', pressure test to 500 psi - held. Placed on injection at 300 BWPD at 0 psi.			
		01-Oct-93 Administrative Order No. WFX-648. Approve Division Order No. R-4019 & R-4020 for Waterflood Expansion.			
		30-Oct-03 Had pressure on annulus. Reset packer - test W/O success. POOH w/ 2 3/8" IPC tbg & 5 1/2" AD-1 packer. Redressed packer. RIH w/ 5 1/2" Ad-1 packer on 93 - 2 3/8" IPC tubing to 2927. Circulated w/ 70 barrels of 2% KCl plus inhibited packer fluid. Set 5 1/2" AD-1 packer w/ 23,000# tension. Pressure to 500 psig - held. Pulled a pressure chart OCD.			
		02-Dec-04 Before Rate & Pressure: 353 bwpd at 290 psig. RIH w/ 1 1/4" Perf-Clean Tool on 1 1/4" Coiled Tbg Unit: washed perforations & open hole f/ 2940' to 3511'. TP=3500 psig, Annulus Press=480 psig. Acidize same interval w/ 4200 gallons 15% NEFE HCL acid via PerfClean Tool. TP= 4800 psig, Annulus Pressure= 480 psig. POOH & laid down Perf-Clean Tool. After Rate & Pressure: 286 bwpd at 0 psig.			
		07-Nov-05 RIH with 1 1/4" sinker bar and tagged at 3,469'.			
		21-Apr-09 RU Gray WL. Tagged @ 3,338' w/ caliper. RD Gray WL. Placed well on injection. Rate/Press: 608 bwpd/642#.			
Surface Csg Hole Size: 11 in Csg. Size: 8 5/8 in Set @: 280 ft Sxs Cmt: 150 Circ: Yes TOC @: surf TOC by: circ Production Csg. Hole Size: 7 5/8 in Csg. Size: 5 1/2 in Set @: 3465 ft Sxs Cmt: 300 Circ: No TOC @: 600 f/surf TOC by: calc. PBTB: 3552 ft TD: 3552 ft		Tie Back at 149' 5 1/2" Csg TOC @ 600' BY Calc. DV Tool @ 1200' TOC @ 2273' by 80% Calc By Calc. pkR @ 2937' Yates @ 3019' Jalmat 3020'-52' 3069'-89' 3103'-20' 3133'-46' 3152'-82' 3188'-98' 7-R @ 3247' 3237'-45' 3297'-3307' 3324'-29' 3341'-43' 3360'-68' 3370'-72' 3376'-82' 3385'-88' Langlie Mattix 3406'-08' 3420'-21' 3430'-35' 3438'-44' 3452'-55' 3459'-61' OH Interval 3465'-3552' Fill at 3469' Queen @ 3610' TOF @ 3515' OH ID 4 3/4 in		3020	
		PREPARED BY: Larry S. Adams Domingo Carrizales UPDATED: 19-May-09			



WELL GRADIENT SHEET

COMPANY RESACA OPERATING

LEASE COOPER JAL UNIT

WELL NO. 122WIW

FIELD COOPER JAL UNIT

COUNTY LEA

STATE NM

FORMATION YATES

SHUT IN DATE & TIME

HOURS SHUT IN

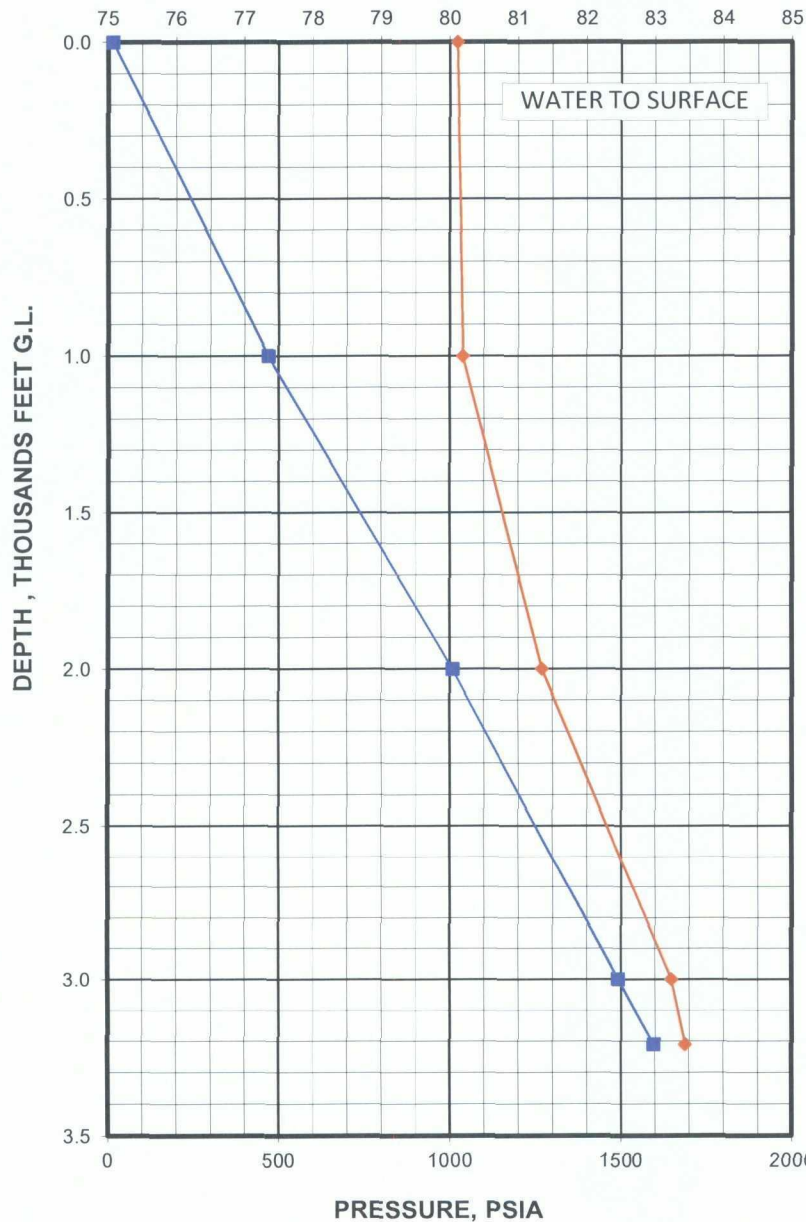
TEST DATE 9/10/2010

TIME 8:00

WELL STATUS STATIC

JOB NUMBER 79662

TEMPERATURE, °F



MEAS. DEPTH FEET G.L.	TRUE DEPTH FEET G.L.	TEMP. °F	PRESSURE PSIA	GRADIENT PSI/FT
0	0	80.1	14.42	
1000	1000	80.2	470.19	0.4558
2000	2000	81.3	1007.88	0.5377
3000	3000	83.2	1492.17	0.4843
3210	3210	83.4	1596.27	0.4957

Elev: K.B. -	G.L. -
Pressure Datum	GL
Tubing	2.375"
S.N.	Depth
Casing	Depth
Perforations	3019'-3610'
Total Depth	3552' PBTD
Casing Pressure	
Tubing Pressure	
Instrument No.	PP00005
Run By	AUGIE ORTIZ
Calculated By	DAVID SANDERS

—■— PRESSURE —●— TEMPERATURE

***ENGINEER SUPERVISOR APPROVAL: SN DATE: 9/14/2010



COMPANY: RESACA OPERATING
LEASE: COOPER JAL UNIT # 122WIW
FIELD (FORMATION): COOPER JAL UNIT (YATES)
COUNTY: LEA
STATE: NM

TEST DATES: 9/10/2010 - 9/10/2010
RUN DEPTH: 3210
INSTRUMENT: PP00005

REAL TIME	DELTA TIME, HOURS	BOTTOMHOLE PRESSURE, PSIA	WELLHEAD PRESSURE, PSIG	INJECTION RATE, BPD	JOB NUMBER: 79662
09/10/10 11:14:58 AM	0.4333	1877.15	607.50	102.00	
09/10/10 11:45:13 AM	0.9375	1974.99	750.00	201.00	
09/10/10 12:14:13 PM	1.4208	2056.44	815.00	305.50	
09/10/10 12:41:58 PM	1.8833	2088.79	900.00	408.00	
09/10/10 01:15:03 PM	2.4347	2130.07	932.50	503.50	
09/10/10 01:45:58 PM	2.9500	2234.27	935.00	601.00	
09/10/10 02:17:18 PM	3.4722	2278.00	960.00	709.00	
09/10/10 02:48:13 PM	3.9875	2301.04	1002.50	810.00	
09/10/10 03:15:53 PM	4.4486	2317.00	1007.50	900.00	

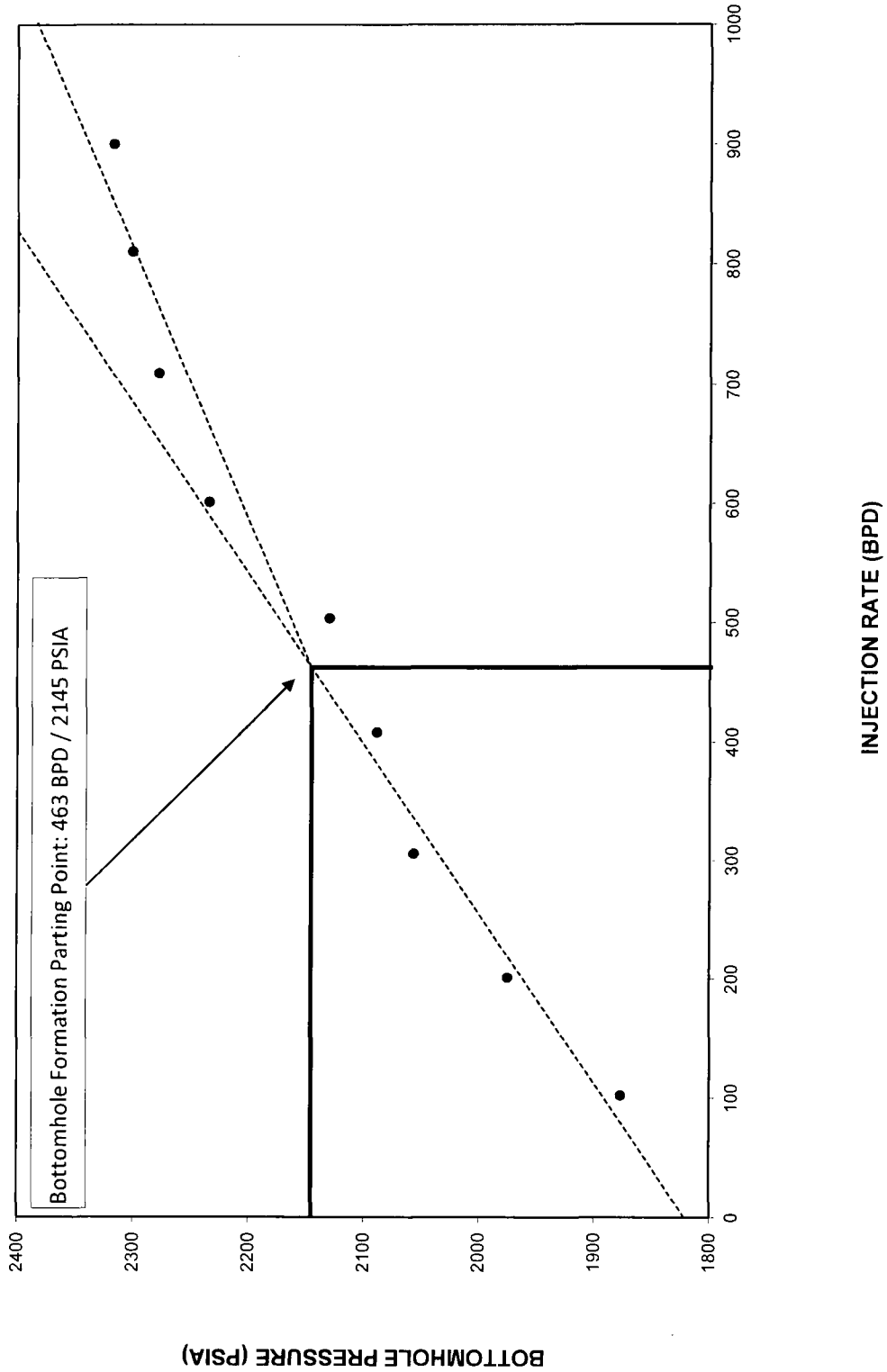


COMPANY: RESACA OPERATING
LEASE: COOPER JAL UNIT
WELL NUMBER: 122WW

FIELD: COOPER JAL UNIT
COUNTY: LEA
STATE: NM

JOB #: 79662
TEST DATE: 9/10/2010 - 9/10/2010

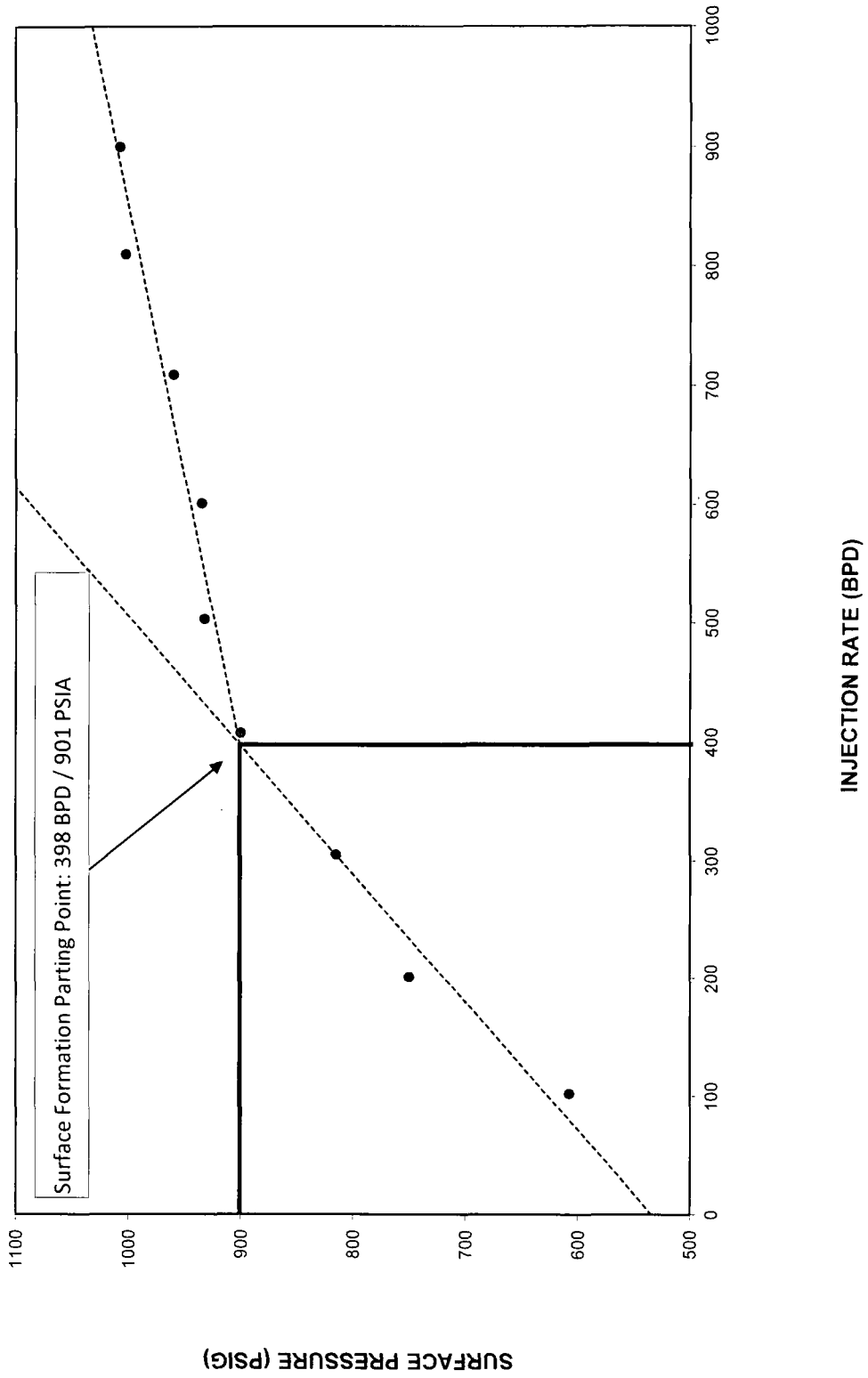
STEP-RATE TEST - BHP VS. INJECTION RATE





COMPANY:	RESACA OPERATING	FIELD:	COOPER JAL UNIT	JOB #	79662
LEASE:	COOPER JAL UNIT	COUNTY:	LEA	TEST DATE:	9/10/2010
WELL NUMBER:	122W1W	STATE:	NM		9/10/2010

STEP-RATE TEST - WHP VS. INJECTION RATE



WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC		LEASE NAME		Cooper Jal Unit		WELL NO. 126 WIW	
Surface Csg Hole Size: 12 1/4 in Csg. Size: 8 5/8 in Set @: 280 ft Sxs Cmt: 125 Circ: Yes TOC @: surf TOC by: circ Production Csg Hole Size: 7 7/8 in Csg. Size: 5 1/2 in Set @: 3470 ft Sxs Cmt: 300 Circ: No TOC @: 680 f / surf TOC by: calc. PBDT: 3560 ft TD: 3560 ft PBTD @ 3548' OH ID: 4 3/4 in		STATUS: Active		Water Injector		API # 30-025-09636	
		LOCATION: 1650 FNL & 2310 FEL, Sec 24, T - 24S, R - 36E, Lee County, New Mexico					
		SPUD DATE: TD 3560 KB 3,320' DF					
		INT. COMP. DATE: 05/13/54 PBDT 3560 GL 3,311'					
TOC @ 24' by CBL TOC @ 680' by calc TOC @ 2415' By Calc. pkR @ 2882' Jalimat @ 2920' Yates @ 3020' 3021'-3025' 3027'-3063' 3066'-3093' 3098'-3128' 3132'-3141' 3143'-3150' 3152'-3156' 3159'-3164' 3166'-3168' 3170'-3174' 3176'-3188' 3192'-3196' 3208'-3210' 3214'-3224' 3225'-3227' 3232'-3237' 3244'-3247' 3280'-3282' 3284'-3293' 3295'-3297' Langlie Mattix @ 3400' 3355'-3360' 3431'-3433' 3442'-3445' 3454'-3457' 3462'-3464' 3473'-3475' 3495'-3497' 3501'-3505' 3508'-3510' 3512'-3514' 3517'-3519' 3522'-3527' OH Interval 3470 - 3560' Queen @ 3620'		GEOLOGICAL DATA		CORES, DST'S or MUD LOGS:			
		ELECTRIC LOGS:		Borehole Analysis Casing Insp. Log (2/7/08 (CNG/GR/CCL (2/7/08 Gray WL)			
		GR-N (5-11-54 Schlumberger)		Radial Bond GR/CCL (2/29/08 Gray WL)			
		GR-CCL ((2-3-87 Rotary Wireline)		Injection Profile (3/14/08 Gray WL)			
3002' 3022'-3090' 3102'-3190' 3202'-3234' Liner Size: 3 1/2 in Set @: 3400 ft Sxs Cmt: 240 Circ: No TOC 24'		HYDROCARBON BEARING ZONE DEPTH TOPS:					
		Yates @ 3020' 7-Rivers @ 3240' Queen @ 3620'					
		CASING PROFILE					
		SURF. 8 5/8" - 24#, J-55 set @ 280' Cmt'd w/125 sxs - circ cmt to surf.					
3005 96 2 3/8" 4.7#, IPC, J-55, 8rd EUE tbg. 3 1 5 1/2" x 2 3/8" Baker Model AD-1 packer 3017 btm		PROD. 5 1/2" - 14#, J-55 set @ 3470' Cmt'd w/200 sxs - TOC @ 2415' from surf. DV tool @ 1206' - pmp 100 sxs -					
		LINER 3 1/2" - 9.5# Flush Max @ 3,400', Cmt'd w/ 170 sx Cl C w/6% gel, tailed w/ 70 sx Cl C w/ 2% gel. Circ'd 4 bbls cmt.					
		5 1/2" - TOC @ 680' f / surf by calc.					
		CURRENT PERFORATION DATA					
CSG. PERFS: 18-Feb-87 Perf'd Yates f/3022,28,32,41,45,52,57,59,71,75,78,84,86,90, 3102,06, 12', 29', 35', 51'-58', 67', & 3190' 18-Feb-87 Perf'd Seven Rivers: from: 3202,17,19,21,23,32, & 34 w/2 spf (60 holes total). 29-Feb-08 Perf'd 7-Rivers f/3522'-27', 17'-19', 12'-14', 08'-10', 01'-05', 01'-05', 3495'-3497', 73'-75', 62'-64', 3454'-57', 3442'-45', 3431'-31' & 3360'-3360'. 29-Feb-08 Perf'd Yates f/ 3295'-3297', 84'-93', 80'-82', 44'-47', 32'-37', 25'-27', 14'-24', 3208'-10', 3192'-96', 76'-88', 70'-74', 3166'-68', 59'-64', 52'-56', 43'-50', 3132'-41', 3098'-3128', 66'-93', 27'-63', & 3021'-3025', Total Holes= 215, 1 JHPF.		TUBING DETAIL 3/4/2008		ROD DETAIL			
		Length (ft) Detail					
		9 KB					
		3005 96 2 3/8" 4.7#, IPC, J-55, 8rd EUE tbg.					
3017 btm		WELL HISTORY SUMMARY					
		13-May-54 Initial completion interval: 3470 - 3560' (7 RVRS/Queen OH). Frac'd w/4,000 gals oil & 6,000#s sand. IP=480 bopd, 0 bwpd & 672 Mcfgpd (flowing)					
		25-Jun-74 C/O fill from 3530 - 60' (30')					
		25-May-75 C/O to TD @ 3560'. Acdz'd w/4,000 gals in 3 stages.					
3022'-3090' 3102'-3190' 3202'-3234'		22-Aug-75 C/O to 3560'. Acdz with 1,500 gals (During job, after rock salt blocks). Frac with 34,000 gals X-L gel, 30,000#s 20/40 sand and 10,000#s 10/20 sand (3 stages, with rock salt blocks, max conc. 1.5 ppg). Clean out to 3560'.					
		18-Feb-87 C/O L M OH 3470'-3560' (90'-fill). Set BP @ 3394'. Perf Yates (Jalimat) f/ 3022,28,32,41,45,52,57,59,71,75,78,84,86,90, 3102'-06', 3102, 06, 12, 29, 35, 51, 58, 67, 90, 3202, 17, 19, 21, 23, 32, & 34 w/2 spf (60 holes). Acdz'd Jal (3022-3234') w/ 4000 gals. Frac'd w/ 33,600 gals X-L gel & 50,000#s 12/20 sd (2 stages with BS, max conc. 5 ppg). Rls BP, C/O to 3560'.					
		11-Jan-89 Tag fill @ 3529'. Did not Clean out.					
		1-Oct-93 Administrative Order No. WFX-648. Approve Division Order No. R4019 & R-4020 for Waterflood Expansion.					
3022'-3090' 3102'-3190' 3202'-3234'		3-Nov-93 C/O f/ 3488'-3560'. Set pkr @ 3394' & acdz OH w/4,200 gals 20% NEFE HCL mixed w/ 220 gals Unichem TW425 mutual solvent. AIR=4 bpm. ISIP=vac. RIH w/pkr on CL tbg. Set pkr @ 2923'. Tst pkr. OK. Notified NMOCCD. SI.					
		19-Dec-93 WELL CONVERTED TO INJECTION - injecting into zones (3022 - 3234' & 3470 - 3560') at 316 bwpm, ISIP=vac.					
		17-Sep-97 POOH w/pkr & tbg. Found hole in 3rd jt f/ surface. Repaired leaking tbg head spacer spool. Ran Sonic Hammer tool w/ 5,000 gals 15% NEFE HCL & mutual solvent. Ran Baker AD-1 pkr on 93 jts of 2 3/8" CL tbg. Set pkr @ 2905'. Test PKR - OK. Initiated injection @ 265 bwpm.					
		2-Jun-05 POOH w/ pkr & tbg. Could not hydrotest cement lined tubing. RIH with new 2 3/8" IPC tubing and packer to 2,913'. Circulated with 70 bbls of packer fluid. Set packer. MIT annulus to 500 psig for 30 minutes did not test. Set PKR at 2,882'. MIT passed. Pulled pressure chart for OCD.					
3022'-3090' 3102'-3190' 3202'-3234'		7-Nov-05 RIH with 1 1/4" sinker bar and tagged at 3,089'.					
		4-Feb-08 POOH w/ 2 3/8" IPC Tbg & 5 1/2" AD-1 PKR. RIH w/ 4 3/4" & 3 1/2" DCs on 2 7/8" TBG. Tagged @ 3,084', C/O to 3,560'. Recovered scale & iron sulfide. RU Gray, ran CSG Insp log f/3,455' to surf & CNG/CCL f/3,551' to 2,400'. Hydrotest 2 3/8" IPC TBG set PKR @ 2,884'. Could not get a press test. POOH w/inj. string. PKR had a piece on rubber missing. Re-ran inj string - could not get a pressure test. Test csg w/RBP & PKR - could not get press test. RIH w/injection string. Could not get a press test. Hydrotest tbg string to 7000#. Found csg lk f/ 447' to 320'. Free Point showed csg free @ 132'. Laid down inj string. RIH w/ 3 1/2" Shoe, 1 joint and Float Collar. Landed Shoe @ 3,400'. Cemented w/ 170 sx Class C, w/ 6% gel; tailed w/ 70 sx Class C w/ 2% gel. Circ'd w/ 4 bbls cmt. Weld Flange on liner/csg. RIH w/ 2 3/4" Mill Tooth bit - drilled cmt f/ 2,900' to 3,548' w/ 5 bits. Recovered a bolt on the last bit. Ran Radial Bond Gamma Ray/CCL f/ 3,527' to surf. TOC @ 24'. Perf'd 7-Rivers f/ 3522'-3527', 17'-19', 12'-14', 08'-10', 01'-05', 3501'-05', 3495'-3497', 3473'-75', 62'-64', 54'-57', 42'-45', 3431'-33' & 3355'-3360'; Perf'd Yates f/ 3295'-3297', 3284'-93', 3280'-82', 3244'-47', 3232'-37', 25'-27', 14'-24', 3208'-10', 3192'-96', 76'-88', 70'-74', 66'-68', 59'-64', 52'-56', 42'-50', 3132'-41', 3098'-3128', 3066'-93', 3027'-63', & 3021'-3025'. Total Holes= 215, 1 JHPF. RIH with 3 1/2" Arrow Set 1X PKR on 2 3/8" IPC tbg. Set PKR @ 3008'. Pulled Press Chart for OCD. RIG up Cuatro: Pumped 1442 gals of 15% NEFE HCL acid. Initial rate @ 0,25 bpm, final rate= 2.0 bpm. Before Treatment: 150 bwpm at 1000 psig. After treatment: 335 bwpm @ 805 psig.					
		PREPARED BY: Larry S. Adams Domingo Carrizales		UPDATED: 24-Sep-09			



WELL GRADIENT SHEET

COMPANY RESACA OPERATING

LEASE COOPER JAL UNIT

WELL NO. 126 WIW

FIELD

COUNTY LEA

STATE NM

FORMATION

SHUT IN DATE & TIME

HOURS SHUT IN

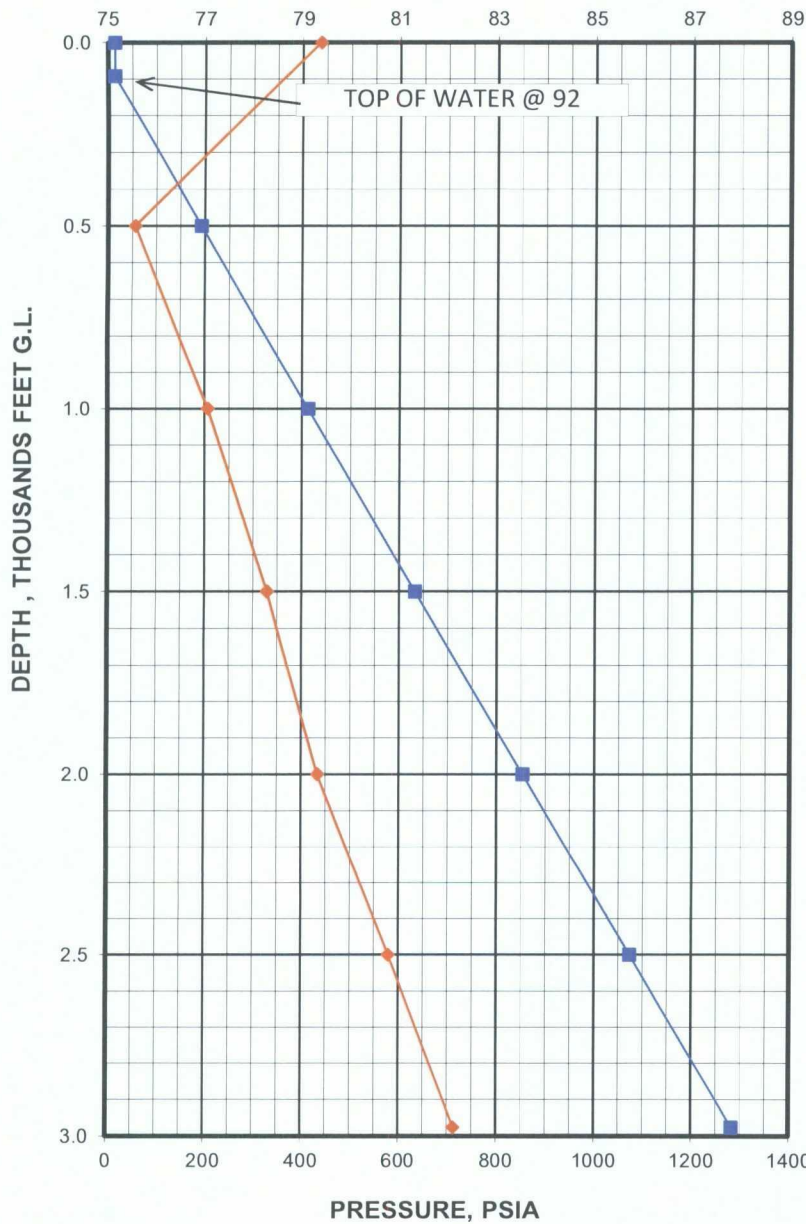
TEST DATE 8/30/2010

TIME 11:01

WELL STATUS STATIC

JOB NUMBER 79616

TEMPERATURE, °F



MEAS. DEPTH FEET G.L.	TRUE DEPTH FEET G.L.	TEMP. °F	PRESSURE PSIA	GRADIENT PSI/FT
0	0	79.4	14.30	
500	500	75.6	192.84	0.3571
1000	1000	77.1	413.02	0.4404
1500	1500	78.3	632.67	0.4393
2000	2000	79.3	853.45	0.4415
2500	2500	80.8	1073.43	0.4400
2976	2976	82.1	1282.61	0.4395

Elev: K.B. -	G.L. -
Pressure Datum	GL
Tubing	2.375"
S.N.	
Casing	
Perforations	3021'-3527'
Total Depth	PBTD 3548'
Casing Pressure	
Tubing Pressure	
Instrument No.	PP00005
Run By	AUGIE ORTIZ
Calculated By	DAVID SANDERS

***ENGINEER SUPERVISOR APPROVAL: SN DATE: 9/1/2010



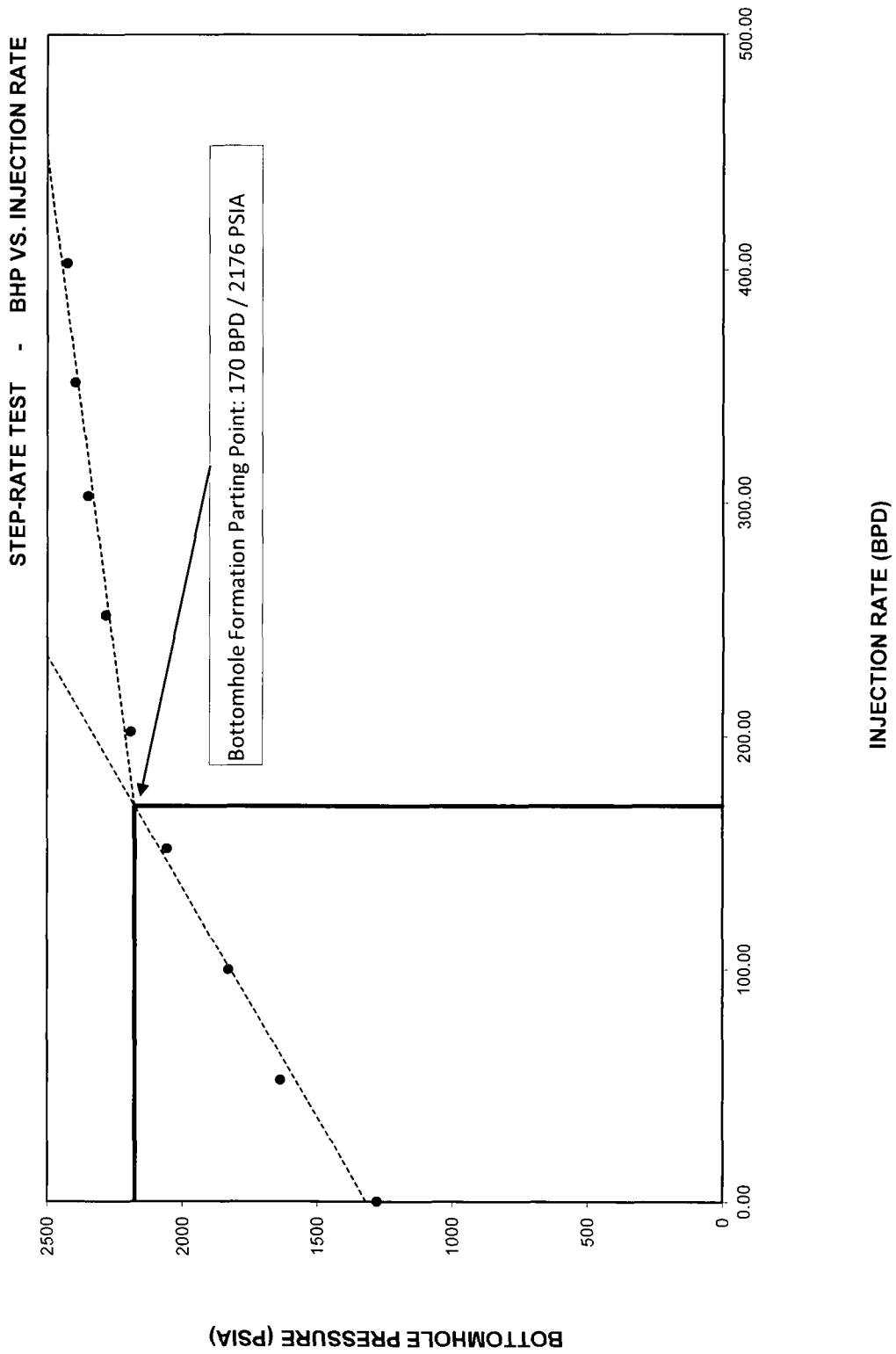
COMPANY: RESACA OPERATING
LEASE: COOPER JAL UNIT # 126 WIW
FIELD (FORMATION): ()
COUNTY: LEA
STATE: NM

TEST DATES: 8/30/2010 - 8/30/2010
RUN DEPTH: 2976
INSTRUMENT: PP00005

REAL TIME	DELTA TIME, HOURS	BOTTOMHOLE PRESSURE, PSIA	WELLHEAD PRESSURE, PSIG	INJECTION RATE, BPD	JOB NUMBER: 79616
08/30/10 10:37:20 AM	0.0000	1279.62	0.00	0.00	
08/30/10 11:07:50 AM	0.5083	1638.23	420.00	52.00	
08/30/10 11:39:10 AM	1.0306	1831.29	580.00	100.00	
08/30/10 12:39:20 PM	2.0333	2059.03	875.00	152.00	
08/30/10 01:36:40 PM	2.9889	2191.83	940.00	202.00	
08/30/10 02:34:40 PM	3.9556	2283.93	1050.00	252.00	
08/30/10 03:37:00 PM	4.9944	2349.79	1120.00	303.00	
08/30/10 04:38:30 PM	6.0194	2397.45	1175.00	352.00	
08/30/10 05:36:20 PM	6.9833	2426.92	1190.00	403.00	



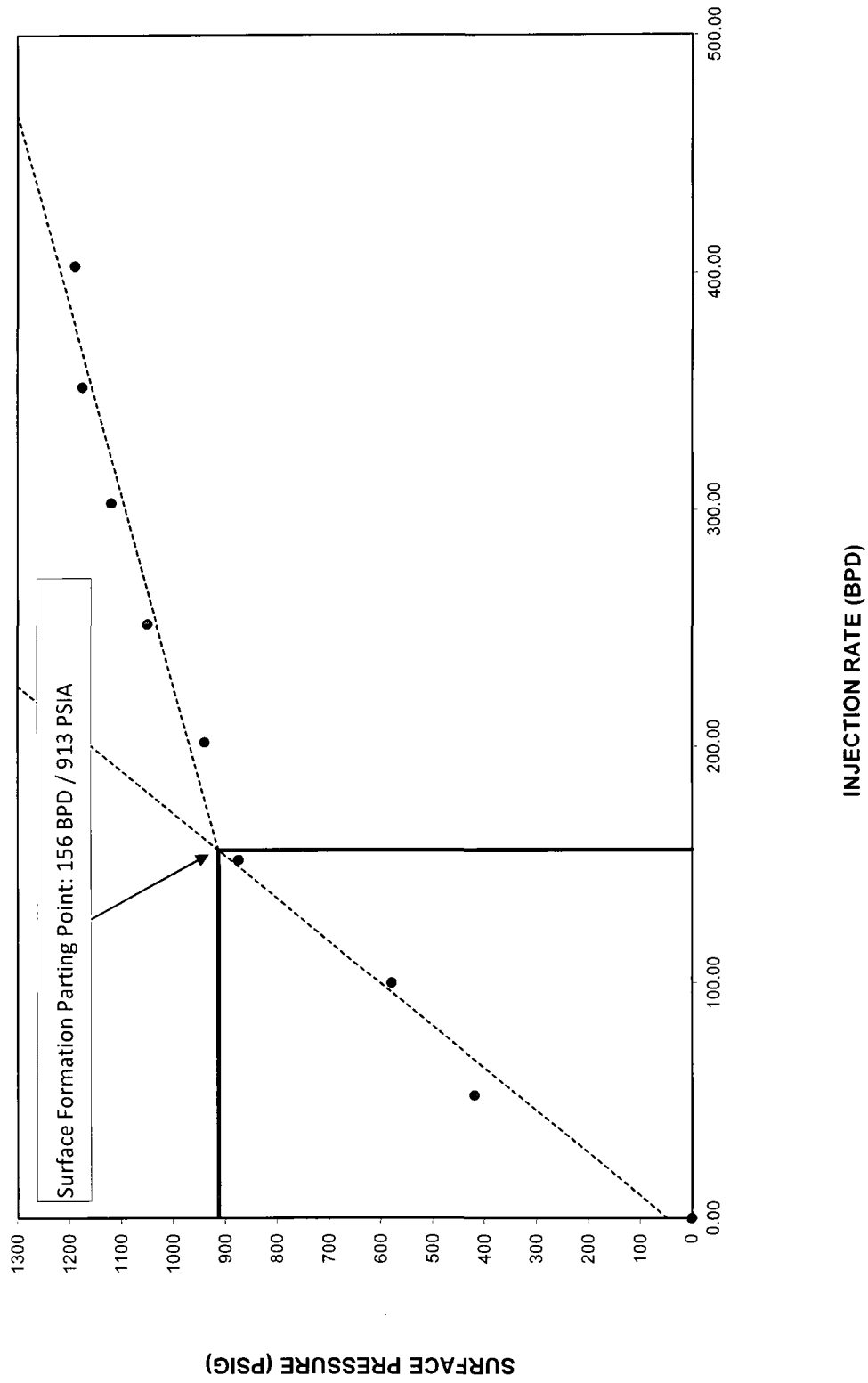
COMPANY:	RESACA OPERATING	FIELD:		JOB #	79616
LEASE:	COOPER JAL UNIT	COUNTY:	LEA	TEST DATE:	8/30/2010
WELL NUMBER:	126 WW	STATE:	NM		8/30/2010





COMPANY:	RESACA OPERATING	FIELD:	79616	JOB #
LEASE:	COOPER JAL UNIT	COUNTY:	8/30/2010	TEST DATE:
WELL NUMBER:	126 WIW	STATE:	NM	8/30/2010

STEP-RATE TEST - WHP VS. INJECTION RATE



WELLBORE SCHEMATIC AND HISTORY					
CURRENT COMPLETION SCHEMATIC		Cooper Jal Unit		WELL NO. 132 WIW	
STATUS: Active		Water Injector		API# 30-025-09639	
LOCATION: 2310 FSL & 990 FEL, Sec 24, T - 24S, R - 36E, Lee County, New Mexico					
SPUD DATE: 04/06/54 TD		3640		KB 3,315' DF	
INT. COMP. DATE: 05/12/54 PBTB		3265		GL 3,307'	
ELECTRIC LOGS:		GEOLOGICAL DATA		CORES, DST'S or MUD LOGS:	
GR-N from 0 - 3556' (4/25/54 Schlumberger)					
GR-CBL-MSG-CCL from 2,000 - 3,300' (6-7-95 Halliburton)					
Injection Profile (1-29-97 Houston, Inc.)					
HYDROCARBON BEARING ZONE DEPTH TOPS:					
Yates @ 3016'		7-Rivers @ 3236'		Queen @ 3628'	
CASING PROFILE					
SURF. 8 5/8" - 24#, J-55 set@ 283' Cmt'd w/124 sxs - circ cmt to surf.					
PROD. 5 1/2" - 14#, J-55 set@ 3475' Cmt'd w/400 sxs - TOC @ 2420' from surf. DV tool @ 1211' - pmp 100 sxs -					
LINER None				5 1/2" - TOC@ 685' f/ surf by calc.	
CURRENT PERFORATION DATA					
CSG. PERFS:		OPEN HOLE :		3475 - 3555' (7 RVRS/Queen OH).	
1-Jun-95 Perf'd Yates f/ 3024'-42', 3066'-83', 3095'-3112', 3125'-33' & 3148'-70' w/ 2 spf (164 holes total)					
26-Jan-09 Perf'd 7-R f/ 3466'-74', 3282'-93', 3212'-16'; Perf'd Yates f/ 3152'-70', 3124'-34', 3118'-22', & 3046'-54', 75 ft, 75 holes, 1 JHPF.					
TUBING DETAIL 1/28/2009		ROD DETAIL			
Length (ft) Detail					
8 KB					
2915 98 jts - 2 7/8" 6.5#, CL, J-55, 8rd EUE tbg.					
3 1 - 5 1/2" x 2 7/8" Baker Model AD-1 packer					
2926 btm					
WELL HISTORY SUMMARY					
12-May-54 Initial completion interval: 3475 - 3555' (7 RVRS/Queen OH). Frac'd w/4,000 gals & 0 #'s sand. Burst csg @ 280'. Cement sqz csg leak w/200 sxs (3 jobs) Tst OK @ 875 psi. Frac'd w/4,000 gals & 6,000#'s sand. IP = 173 bopd, 245 Mcfpd (flowing).					
11-Apr-76 Acdz'd OH w/ 1,500 gals. Tight spot in csg @ 210'					
18-Feb-85 C/O fill from 3473 - 3555' (82' of fill). Deepened to 3640'. Acdz'd OH 3475 - 3640' w/4,000 gals in 2 stages using 500# rock salt. Frac'd w/22,000 gals X-L gel & 56,000#'s 12/20 sand ramping to 6 ppq.					
11-Mar-87 C/O fill to 3640'					
21-Apr-87 C/O fill to 3628'					
15-Apr-88 Tag fill @ 3628'					
01-Oct-93 Administrative Order No. WFX-648. Approved Division Order No. R-4019 & R-4020 for Waterflood Expansion.					
01-Dec-93 CONVERTED TO INJECTOR: C/O from 3508 - 3640'. Acdz'd OH w/4,000 gals 20% NEFE combined with 110 gals UT-460 & 110 gals T-425 microlular solvent & 1400#'s rock salt. AIR=3 bpm @ 900 psi. ISIP=680 psi. RIH w/ CL tbg & pkr. Set pkr @ 3370'. Noted pkr is 105' above hole in csg. Inject @ 263 bwppd w/ TP=vacuum.					
01-Jun-95 Ran GR-CBL-CCL. Perf (Jalmat) 2950 - 3170 (selectively). Acdz'd w/5,000 gals 15% NEFE HCL & 250 RCN ball sealers in 6 stages. Ran 2 3/8" CL tbg & pkr. Set pkr @ 2962'. Tst pkr. OK. Inject @ 481 bwppd w/ TP=580 psi. Converted to DHC injector w/ Pmax surf injection press = 590 psi.					
28-Jun-00 C/O hard scale from 3145 - 3370'. Set CIBP @ 3300' and dmp 35' cmt on top. (PBTB @ 3265'). Acdz'd perfs 3024'-3170' w/ 4,000 gals 15% NEFEHCL & 2,000#'s rocksalt in 3 stages. AIR=4 bpm @ 1380 psi. ISIP=570 psi, P15 min= 140 psig. Ran pkr on 2 3/8" CL tbg & set pkr @ 2955'. Injecting @ 250 bwppd, TP=160 psi.					
14-Feb-02 Tag TD using SL unit (1 1/4" x 5' sinker bar). Tag fill @ 129' (3511' of fill)					
14-Oct-03 Btadenhead Test failed: Bled CSG dn to 0 psi. SI for 15 min-press build up to 500#. Witnessed by OCD Rep-Buddy Hill.					
28-Oct-03 POOH with 2 3/8" IPC tbg & 5 1/2" x 2 3/8" AD - 1 packer. Laid down 2 3/8" IPC tbg. Clean out to 3265'. POOH and laid down with 4 3/4" bit, 6 - 3 1/2" drill collars. RIH with redressed 5 1/2" x 2 3/8" AD-1 packer on reconditioned 90 - 2 3/8" IPC tubing to 2954'. Packer would not test. Set packer at 2925', would not test. POOH with injection string. Test casing to 500 psig - held. RIH with injection string to 2931'. Circulated annulus with 70 barrels of 2 % KCl & inhibited packer fluid. Set Packer with 20,000# tension. Test casing to 500 psig - held. Pulled pressure chart for OCD.					
07-Nov-05 RIH with 1 1/4" sinker bar and tagged at 3,272' (PBTB).					
20-Jan-09 POOH w/2 3/8" IPC tbg & 5 1/2" x 2 3/8" AD - 1 packer. RIH w/ 4 3/4" bit & DCs. Drilled cmt & CIBP @ 3300'. C/O to 3640'. Lost Perf Gun in open hole. Fished Perf Gun. Perf'd 7-R f/ 3466'-74', 3282'-93', 3212'-16'; Perf'd Yates f/3124'-34', 3118'-22', & 3046'-54', 75 ft, 75 holes, 1 jsp, 120 degree phasing. Test annulus to 350 psig.					
24-Apr-09 RU Gray WL. Tagged @ 37' w/ logging tool. RD wireline. Placed well on injection. Rate/Press: 781 bwppd.694#.					
PREPARED BY: Larry S. Adams D. Carrizales		UPDATED: 20-May-09			

Surface Csg
Csg. Size: 8 5/8 in
Sxs Cmt: 124
Circ: Yes
TOC @: surf
TOC by: circ

283'

Burst
5 1/2" @
280', Cmt
w/200 sxs

TOC @ 685'
by calc.

DV Tool @ 1211'

TOC @ 2420'
By Calc.

3024

Pkr @ 2926'

Jalmat

Yates @ 3016'

3024'-42'

3046'-54'

3066'-83'

3095'-3112'

3118'-222'

3124'-34'

3148'-70'

7-R @ 3212'

3212'-16'

3282'-93'

Langlie Mattix

3466'-74'

OH Interval
##

Queen @ 3628'

PBTD: 3265 ft
TD: 3640 ft

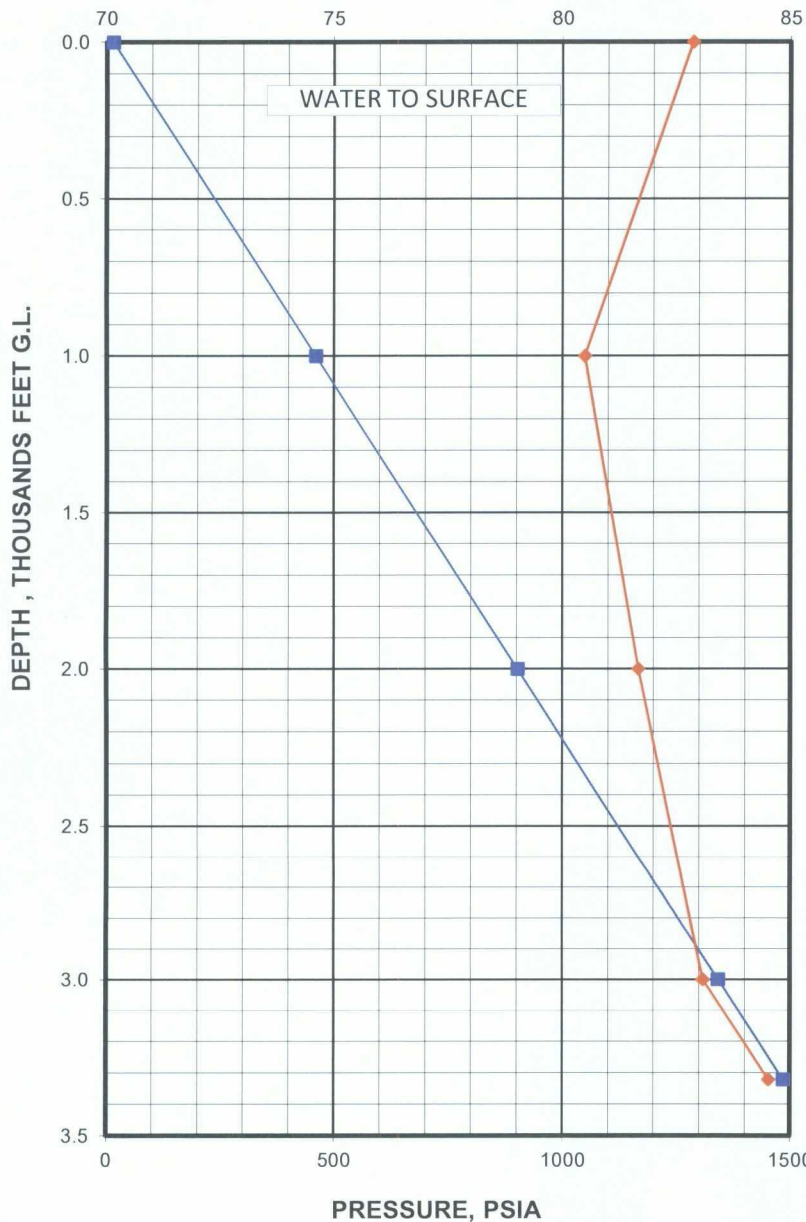
OH ID 4 3/4 in



WELL GRADIENT SHEET

COMPANY	RESACA OPERATING	LEASE	COOPER JAL UNIT	WELL NO.	132WIW
FIELD		COUNTY	LEA	STATE	NM
FORMATION		SHUT IN DATE & TIME		HOURS SHUT IN	
TEST DATE	9/9/2010	TIME	8:00	WELL STATUS	STATIC
				JOB NUMBER	79658

TEMPERATURE, °F



MEAS. DEPTH FEET G.L.	TRUE DEPTH FEET G.L.	TEMP. °F	PRESSURE PSIA	GRADIENT PSI/FT
0	0	82.9	14.30	
1000	1000	80.5	460.20	0.4459
2000	2000	81.7	902.25	0.4420
3000	3000	83.1	1342.65	0.4404
3322	3322	84.5	1485.20	0.4427

Elev. K.B. -	3315'	G.L. -	3307'
Pressure Datum	GL		
Tubing	2.375"	Depth	2915'
S.N.		Depth	
Casing	5.5"	Depth	3475'
Perforations	3016'-3628'		
Total Depth			
Casing Pressure			
Tubing Pressure			
Instrument No.	PP00005		
Run By	AUGIE ORTIZ		
Calculated By	DAVID SANDERS		

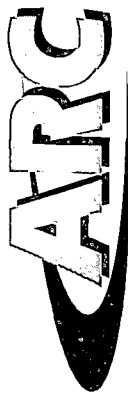
***ENGINEER SUPERVISOR APPROVAL: SN DATE: 9/14/2010



COMPANY: RESACA OPERATING
LEASE: COOPER JAL UNIT # 132WIW
FIELD (FORMATION): ()
COUNTY: LEA
STATE: NM

TEST DATES: 9/9/2010 - 9/9/2010
RUN DEPTH: 3322
INSTRUMENT: PP00005

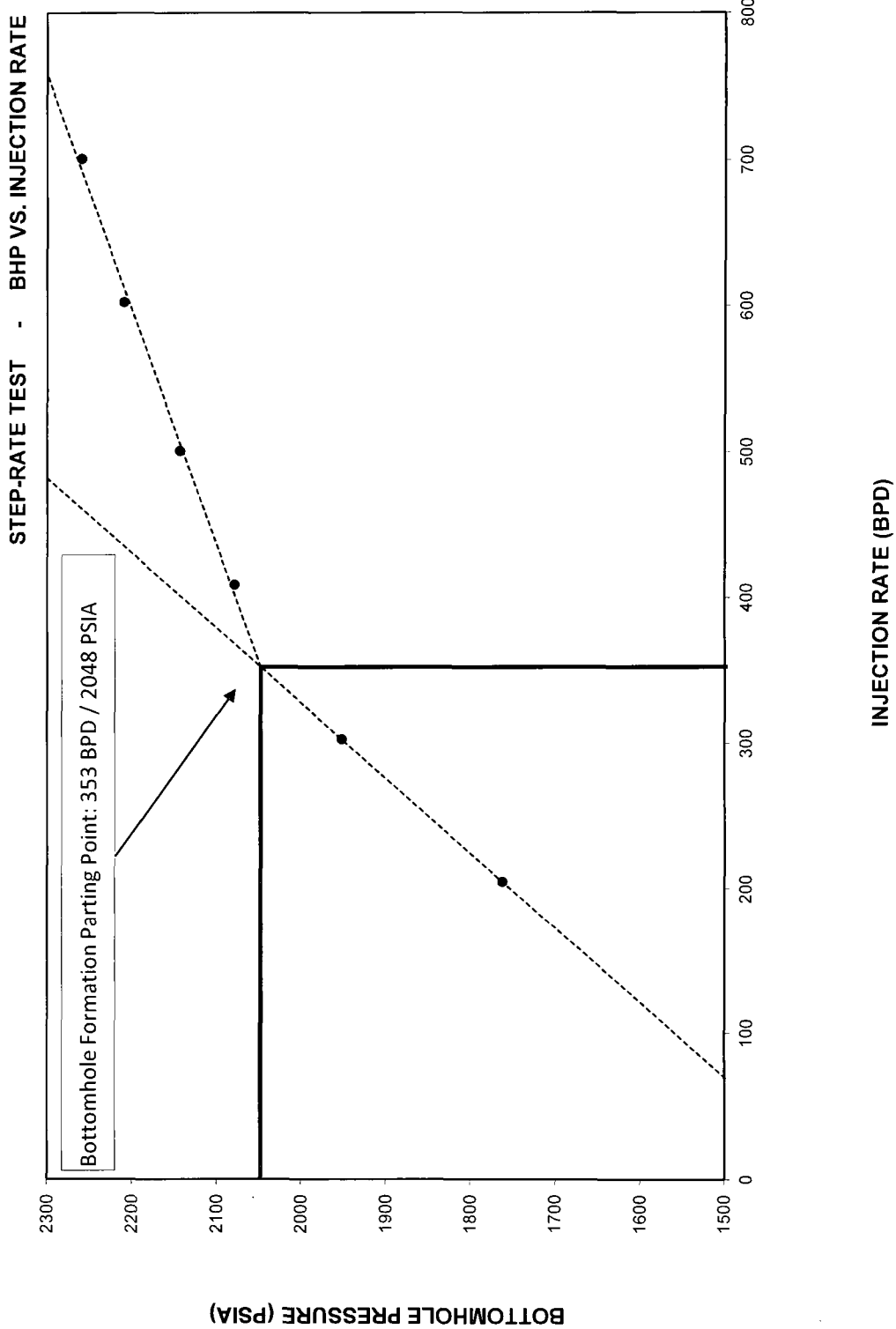
REAL TIME	DELTA TIME, HOURS	BOTTOMHOLE PRESSURE, PSIA	WELLHEAD PRESSURE, PSIG	INJECTION RATE, BPD	JOB NUMBER: 79658
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09/9/10 11:49:03 AM	0.5125	1762.30	427.50	205.00	
09/9/10 12:18:03 PM	0.9958	1952.27	645.00	303.00	
09/9/10 12:47:08 PM	1.4806	2079.16	752.50	409.00	
09/9/10 01:16:33 PM	1.9708	2143.64	825.00	501.00	
09/9/10 01:46:28 PM	2.4695	2209.64	892.50	602.50	
09/9/10 02:19:03 PM	3.0125	2259.45	940.00	701.00	



COMPANY: RESACA OPERATING
LEASE: COOPER JAL UNIT
WELL NUMBER: 132WW

FIELD: LEA
COUNTY: NM
STATE: NM

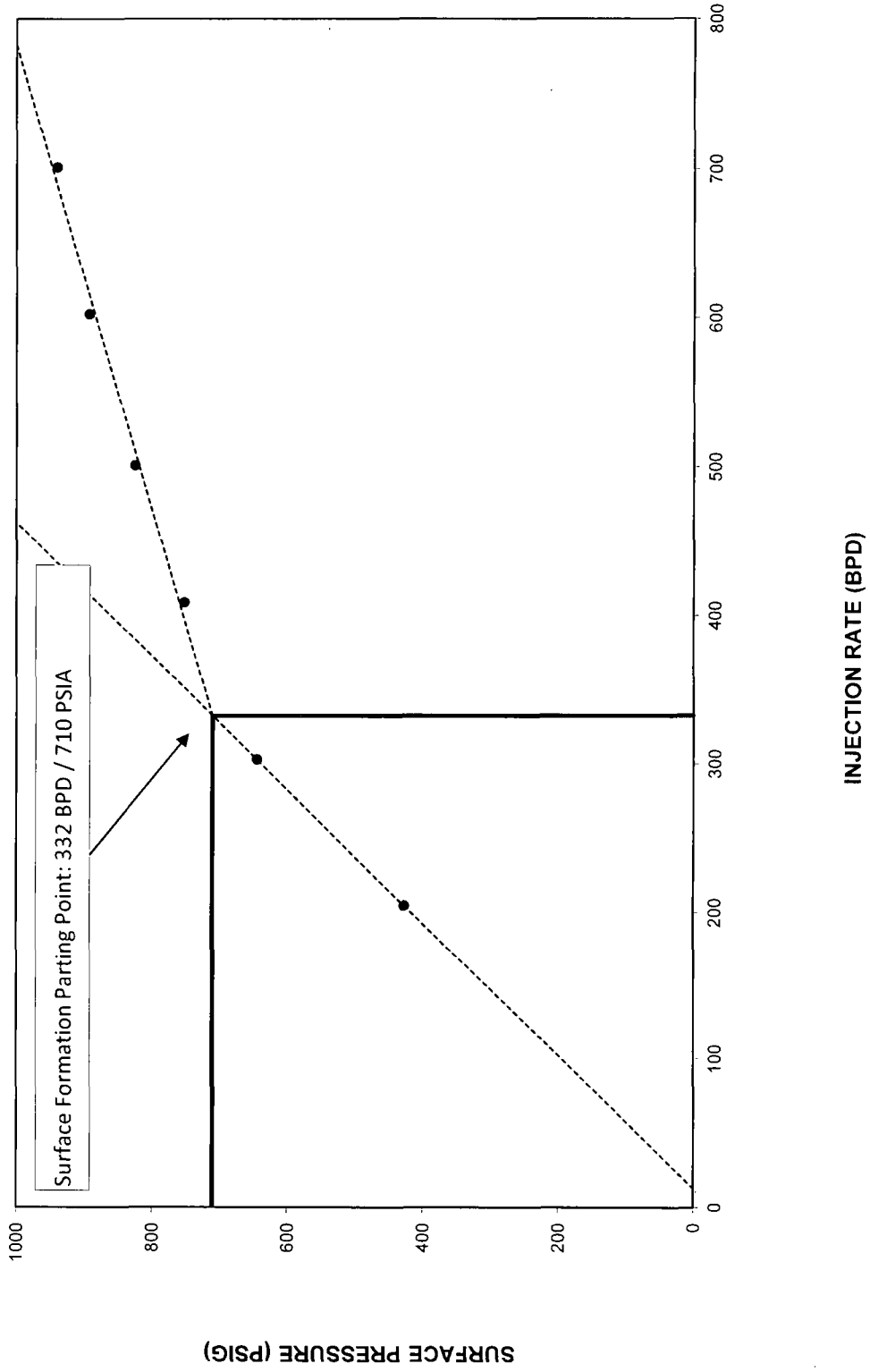
JOB # 79658
TEST DATE: 9/9/2010 - 9/9/2010





COMPANY:	RESACA OPERATING	FIELD:	JOB #	79658
LEASE:	COOPER JAL UNIT	COUNTY:	TEST DATE:	9/9/2010
WELL NUMBER:	132WIW	STATE:		9/9/2010

STEP-RATE TEST - WHP VS. INJECTION RATE



WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC		LEASE NAME		Cooper Jal Unit		WELL NO 135 WIW	
		STATUS:		Active		Water Injector	
		LOCATION:		990 FSL & 1980 FEL, Sec 24, T - 24S, R - 36E; Lee County, New Mexico		API# 30-025-09641	
		SPUD DATE:		02/14/54		TD 3650 KB 3.318' DF	
		INT. COMP. DATE:		03/01/54		PBDT 3530 GL 3.312'	
				ELECTRIC LOGS:		CORES, DST'S or MUD LOGS:	
				Micro Laterolog (2-23-54 Schlumberger)			
				GR-CNL (8-25-86 Dresser Atlas)			
				GR-VDR-CBL (8-25-86 Dresser Atlas)			
				HYDROCARBON BEARING ZONE DEPTH TOPS:			
				Yates @ 3017'		7-Rivers @ 3236'	
				Queen @ 3609'			
				CASING PROFILE			
		SURF.		8 5/8" - 28#, J-55 set @ 290' Cmt'd w/125 sxs - circ cmt to surf.			
		PROD.		5 1/2" - 14#, J-55 set @ 3472' Cmt'd w/400 sxs - TOC @ 2728' from surf by cement bond log.			
		LINER		None			
				CURRENT PERFORATION DATA			
		CSG. PERFS:		OPEN HOLE :		3472 - 3650'	
				Perfs Yates (Jalmat): 3019', 22, 24, 26, 28, 30, 3', 59, 62, 70, 72, 74, 76, 82, 93, 97, 3102', 06, 09, 16, 27,			
				30, 38, 45, 51, 56, 65, 70, 76, 83, 90, 94, 3201', 0' w/ 2 spf (84 holes total)			
				Perf'd 7-Rivers (Jalmat) f/ 3285' - 3302' & 3358 - 62' w/ 1 spf (21 holes total)			
		TUBING DETAIL		4/5/1999		ROD DETAIL	
				Length (ft)		Detail	
				6 KB			
				2923 90		2 3/8" 4.7#, CL, J-55, 8rd EUE tbg.	
				3 1		5 1/2" x 2 3/8" Baker Model AD-1 packer	
				2932 btm			
				WELL HISTORY SUMMARY			
				1-Mar-54 Initial completion interval: 3472 - 3575' (7 RVRS/Queen OH). Natural completion.			
				IP= 51 bopd, 0 bwpd, & 72 Mcfgpd (flowing)			
				9-Sep-54 Frac w/ 4,000 gals lse oil & 4,000#s sand.			
				15-Jun-73 Placed well on rod pump.			
				8-Oct-74 C/O fill to 3575'. Jetwash OH 3472 - 3575'			
				11-Feb-75 Tagged for fill - No fill.			
				29-Aug-86 C/O OH 3480'-3575' (95' fill). Deepened to 3650'. Ran CBL, TOC @ 2728'. Acid'd OH (3472'-3650') w/2,000 gals; Frac'd w/ 34,000 gals X-L gel carrying 80,000#s 12/20 sand in 2 equal stages. Max sand conc. of 7 ppg. C/O to 3650'.			
				30-Sep-86 Perf (Jalmat) f/ 3019'-3210' w/ 2 spf, (84 holes total) & 3285 - 3362' w/ 1 spf (21 holes total). Acid'd all open perfs w/ 2,000 gals; Frac w/ 30,000 gals X-L gel carrying 50,000#s 12/20 sand in 2 equal stages using RS diversion. Max sand concentration 7 ppg. C/O to 3650'. Lost RBP in OH. Top @ 3530'.			
				CONVERTED TO COMINGLED DOWNHOLE INJECTOR. (Jalmat & Langlie Mattix)			
				13-Feb-87 C/O OH fill from 3472 - 3524' (52' fill). PBDT @ 3524'.			
				9-Sep-87 C/O OH fill from 3495 - 3524' (29' fill). PBDT @ 3524'.			
				22-Jul-88 C/O OH fill from 3475 - 3524' (49' fill). PBDT @ 3524'.			
				01-Oct-93 Administration Order No-648. Approved Order No. R2019 & R-4020 for Waterflood Expansion.			
				15-Nov-93 Replaced 2 jts tbg & rod pmp. Placed well on production.			
				9-Jan-94 Ran 91 jts - 2 3/8" tbg & pkr. Set pkr @ 2956'.			
				05-Dec-94 LD rods & pmp (junk). C/O to 3524' (scale & formation). Tagged solid @ 3524'. Acid'd perfs & OH w. 8,400 gals 20% NEFE acid mixed w/ 170 gals xylene using 5,600#s RS generating 8 stages. AIR=3 bpm PM=500-126 psi. ISIP= 280 psig. P5min= vacuum. Ran 2 3/8" CL tbg & pkr. Set pkr @ 2956'. Inject @ 933 bwpd, TP=vacuum.			
				02-Apr-99 Reset pkr @ 2925'. Tst csg & pkr @ 500 psi. OK. Initiate injection @ 580 bwpd, TP=580 psi.			
				14-Feb-02 Tag TD using SL unit (1 1/4" x 5' sinker bar). Tag fill @ 3524' (137' of fill)			
				07-Nov-05 RIH with 1 1/4" x 5' sinker bar and tagged at 3,265'.			
				24-Mar-08 POOH w/ 2 3/8" IPC tbg & 5 1/2" AD-1 PKR. RIH w/ 4 3/4" bit & DCs, tagged @ 3157'. Cleaned out to 3530'. RIH w/ 5 1/2" AL IPC tbg. Circulated w 70 bbls 2% KCl. Set PKR @ 2923', press annulus to 420 psig for 30 minutes.			
				10-Jul-08 Acid treat Jalmat & langlie Mattix with 3,096 gals 15% NEFE HCl. AIR= 4.5 bpm Pavg= 1590 psi, ISIP= 920 psi. Prior Rate/Pre 389 bpd @ 949 psi. After Rate/Press: 485 bpd @ 790 psi.			
				27-Apr-09 RU Gray Wireline. Tagged @ 2,962' w/ logging tool. RD wireline. Place well on injection. Rate/Press: 441 bwpd/904#.			
				TOC @ 2728' By CBL			
				pkf @ 2923'			
				Jalmat			
				Yates @ 3017'			
				3019 - 3097'			
				3102 - 3194'			
				3201, 03, & 10'			
				7-R @ 3236'			
				3285 - 3302'			
				3358 - 3362'			
				Langlie Mattix			
				OH Interval			
				3472 - 3650'			
				Fill at 3,265'			
				Fill at 3524'			
				CIBP pushed into			
				OH to 3530'			
				OH ID 4 3/4 in			
				Q @ 3609'			
				PBDT: 3530 ft			
				TD: 3650 ft			
				PREPARED BY:			
				Larry S. Adams			
				Domingo Carrizales			
				UPDATED:			
				20-May-09			

Surface Csg

Hole Size: 11 in
Csg. Size: 8 5/8 in
Set @: 290 ft
Sxs Cmt: 125
Circ: Yes
TOC @: surf
TOC by: circ

3019

Production Csg

Hole Size: 7 7/8 in
Csg. Size: 5 1/2 in
Set @: 3472 ft
Sxs Cmt: 400
Circ: No
TOC @: 2728 f / surf
TOC by: CBL

Langlie Mattix

OH Interval
3472 - 3650'



WELL GRADIENT SHEET

COMPANY RESACA OPERATING

LEASE COOPER JAL UNIT

WELL NO. 135

FIELD

COUNTY LEA

STATE NM

FORMATION YATES

SHUT IN DATE & TIME

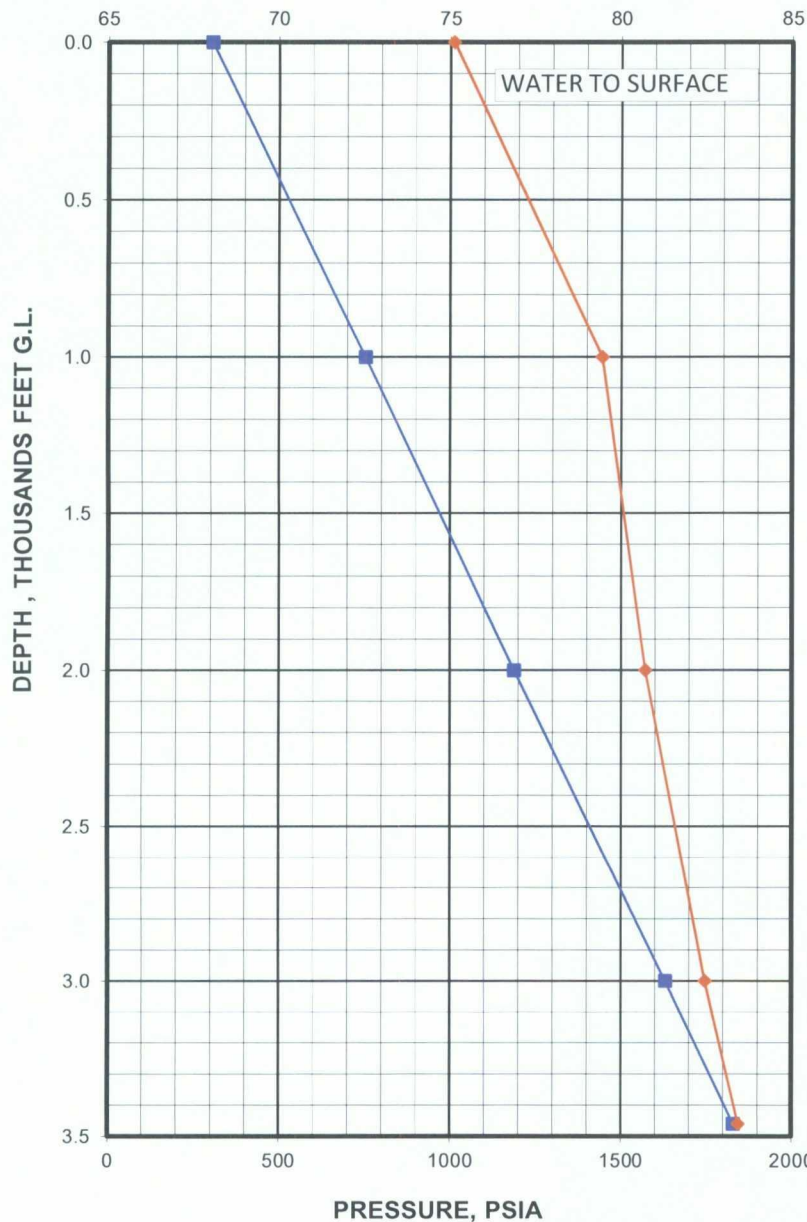
HOURS SHUT IN

TEST DATE TIME

WELL STATUS STATIC

JOB NUMBER 79687

TEMPERATURE, °F



MEAS. DEPTH FEET G.L.	TRUE DEPTH FEET G.L.	TEMP. °F	PRESSURE PSIA	GRADIENT PSI/FT
0	0	75.1	304.04	
1000	1000	79.4	752.82	0.4488
2000	2000	80.7	1187.53	0.4347
3000	3000	82.5	1630.79	0.4433
3460	3460	83.4	1829.68	0.4324

Elev: K.B. -	G.L. -
Pressure Datum	
Tubing	Depth
S.N.	Depth
Casing	Depth
Perforations	
Total Depth	
Casing Pressure	
Tubing Pressure	
Instrument No.	PP-0005
Run By	GABRIEL GONZALES
Calculated By	DAVID SANDERS

—■— PRESSURE —◆— TEMPERATURE

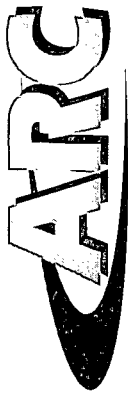
***ENGINEER SUPERVISOR APPROVAL: SN DATE: 9/21/2010



COMPANY: RESACA OPERATING
LEASE: COOPER JAL UNIT # 135
FIELD (FORMATION): (YATES)
COUNTY: LEA
STATE: NM

TEST DATES: 9/20/2010 - 9/20/2010
RUN DEPTH: 3460
INSTRUMENT: PP-0005

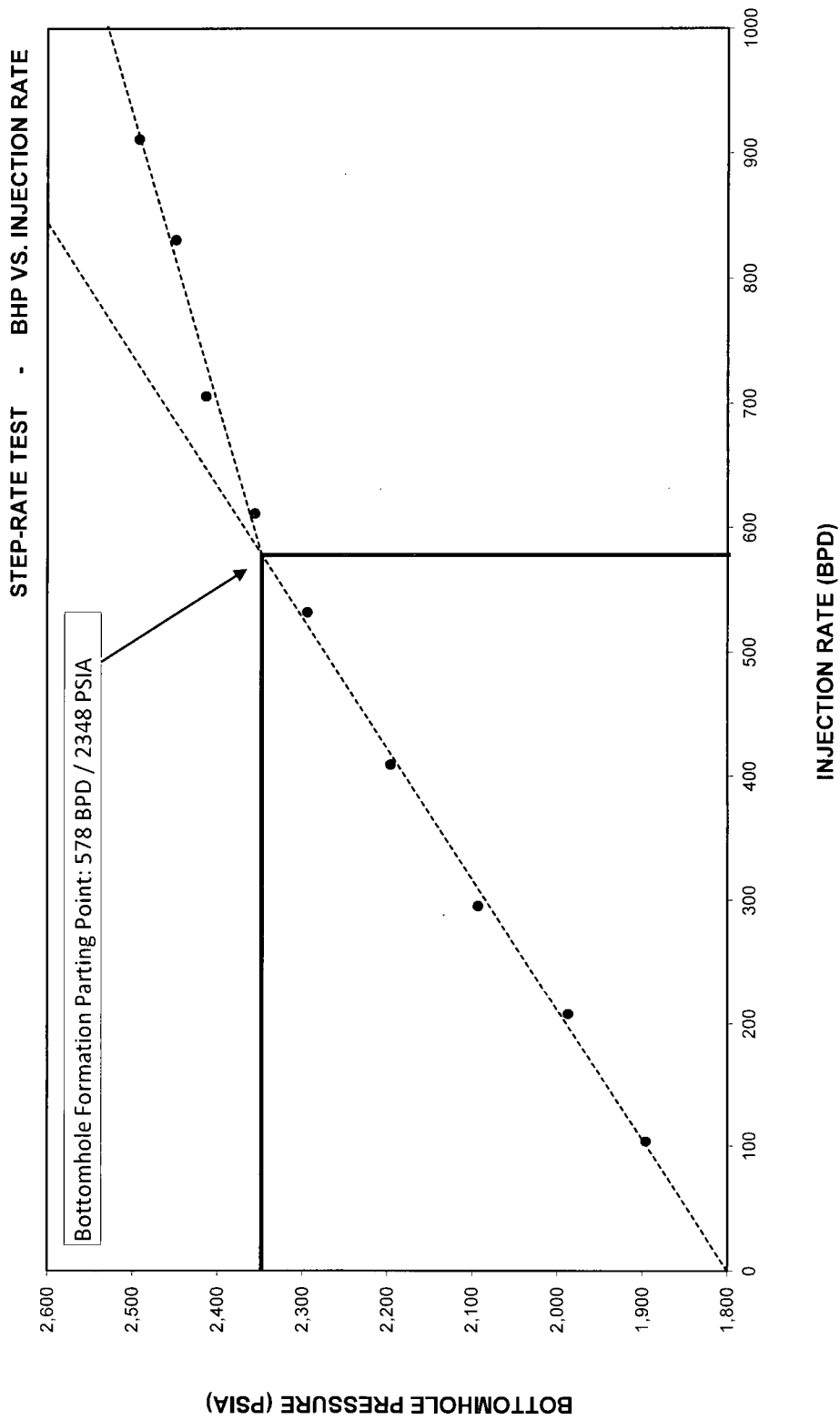
REAL TIME	DELTA TIME, HOURS	BOTTOMHOLE PRESSURE, PSIA	WELLHEAD PRESSURE, PSIG	INJECTION RATE, BPD	JOB NUMBER: 79687
09/20/10 11:22:00 AM	0.0000	1895.90	370.00	103.84	
09/20/10 11:48:15 AM	0.4375	1987.39	486.00	207.68	
09/20/10 12:16:30 PM	0.9083	2093.26	624.00	295.28	
09/20/10 12:47:05 PM	1.4181	2196.22	740.00	409.12	
09/20/10 01:18:25 PM	1.9403	2294.19	835.00	531.80	
09/20/10 01:47:00 PM	2.4167	2356.14	889.00	611.24	
09/20/10 02:17:50 PM	2.9306	2413.79	941.00	705.64	
09/20/10 02:39:20 PM	3.2889	2449.08	965.00	830.50	
09/20/10 03:13:30 PM	3.8583	2492.28	980.00	910.96	



COMPANY: RESACA OPERATING
LEASE: COOPER JAL UNIT
WELL NUMBER: 135

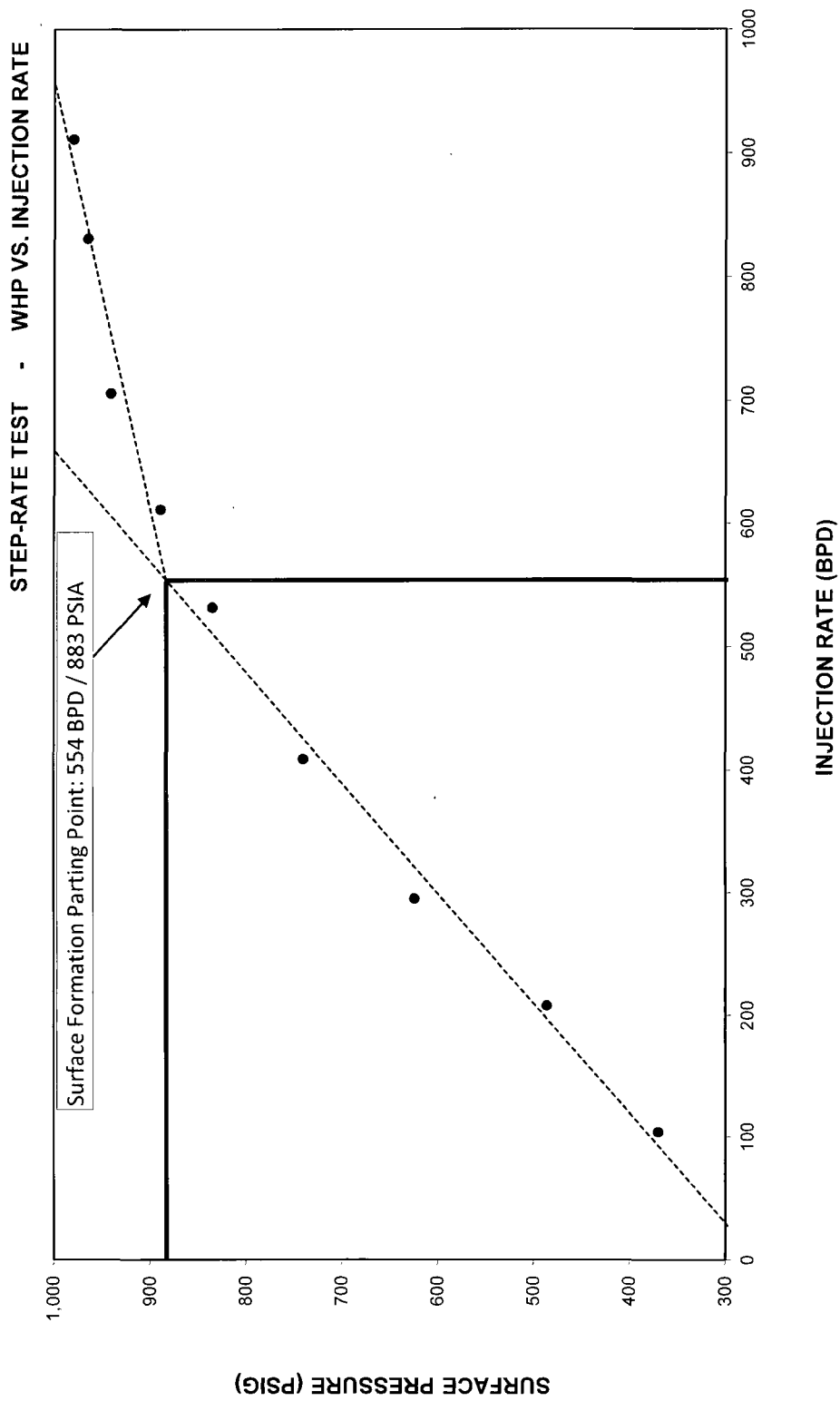
FIELD: COUNTY: LEA STATE: NM

JOB # 79687
TEST DATE: 9/20/2010 - 9/20/2010





COMPANY:	RESACA OPERATING	FIELD:		JOB #	79687
LEASE:	COOPER JAL UNIT	COUNTY:	LEA	TEST DATE:	9/20/2010
WELL NUMBER:	135	STATE:	NM		9/20/2010



WELLBORE SCHEMATIC AND HISTORY			
CURRENT COMPLETION SCHEMATIC		LEASE NAME Cooper Jal Unit	
Surface Csg Hole Size: 12 1/4 in Csg. Size: 8 5/8 in Set @: 373 ft Sxs Cmt: 275 Circ: Yes TOC @: surf TOC by: circ Production Csg. Hole Size: 7 7/8 in Csg. Size: 5 1/2 in Set @: 3656 ft Sxs Cmt: 740 Circ: Yes TOC @: surface TOC by: circ		WELL NO. 151 WIW	
		API# 30-025-25682	
		STATUS: Active Water Injector	
		LOCATION: 771 FNL & 170 FEL, Sec 24, T - 24S, R - 36E; Lee County, New Mexico	
SPUD DATE: TD 3662 KB 3,316' DF		INT. COMP. DATE: 11/18/77 PBTD 3662 GL 3,304'	
ELECTRIC LOGS:		GEOLOGICAL DATA	
GR-CCL (1-26-93 Halliburton)		Dul Laterolog (10-22-77 Dresser Atlas)	
GR-CCL (10-27-77 Welox)		GR-CDN (10-22-77 Dresser Atlas)	
Gammatrol (11-1-77 Cardinal Surveys)		CORES, DST'S or MUD LOGS:	
HYDROCARBON BEARING ZONE DEPTH TOPS:		Casing Profile	
Yates @ 3021'		7-Rivers @ 3248'	
Queen @ 3603'		SURF. 8 5/8" - 24#, K-55 set@ 373' Cmt'd w/275 sxs - circ cmt to surf.	
PROD. 5 1/2"-15.5#, J-55 set@ 3656' Cmt'd w/525 sxs-TOC @ 1300' f/surf. DV tool @1300' - pmp 215 sxs - cmt cir to surf.		LINER None	
CURRENT PERFORATION DATA		OPEN HOLE :	
CSG. PERFS:		18-Nov-77 Perf'd Yates & 7-Rivers (Jalmat) f/ 3296 - 3530' w/ 1 spf (42 holes total), 3572' - 76' w/ 1 spf (5 holes),	
18-Nov-77 Perf'd Queen (Langlie Mattix) f/ 3604 - 08' w/ 1 spf (5 holes),		30-Jan-93 Perf'd 7-Rivers (Langlie Mattix) f/ 3460 - 80' w/8 spf (160 - 0.46" holes total)	
TUBING DETAIL		ROD DETAIL	
Length (ft)		Detail	
10.00 KB		3240.00 2 3/8" 4.7#, IPC, J-55, 8rd EUE tbq.	
2.87 1- 5 1/2" x 2 7/8" Baker Model AD-1 packer		3252.87 btm	
WELL HISTORY SUMMARY			
18-Nov-77 IC: Perf'd 7-Rivers f/ 3296'-3530' w/1 spf (42 holes) & 3572'-76' w/ 1 spf (5 holes); Perf'd Queen f/ 3604'-08',w/ 1 spf (5 holes). Frac'd all perfs w/60,000 gals carrying 44,000#s 20/40 sand & 40,000#s 10/20 sand in 2 equal stages w/ BSs blocks. (PPGmax= 2 ppg). IP: 66 bopd, 116 bwpd, & 56.8 Mcfgpd (pumping)			
16-Oct-79 Acdd'd perfs w/1,500 gal containing 2 drums of scale inhibitor.			
10-Nov-87 Tagged fill @ 3608'. No C/O. Acdd'd all perfs using 2,000 gals acid.			
30-Jan-93 Tagged fill @ 3603'. Did not C/O. Perf'd 7-Rivers f/ 3460'-80' w/8 spf (160 - 0.46" holes total). Frac w/35,650 gals carrying 78,000#s 12/20 Brady sand. (Screened out w/ 9 ppg on formation).			
23-Aug-93 CONVERT TO INJECTOR: L/D production equipment. RIH w/pkr on 2 3/8" IPC tbq. Set pkr @ 3241'. Initiated injection at 480 bwpd, TP=500 psi.			
01-Oct-93 Administrative Order No. WFX. Approve Division OrderNo. R04019 & R-4020 for Waterflood Expansion.			
08-Nov-05 RIH with 1 1/4" x 5' sinker bar and tagged at 3,630'.			
17-Mar-08 POOH with IPC tubing and AD-1 PKR. RIH with 4 3/4" bit, tagged at 3600'. Cleaned out to 3662'. RIH with injection string. Set PKR at 3240'. Test annulus to 420 psig. Placed well on injection.			
5/15/09 RU Gray Wireline. Ran injection profile. Placed well on Injection. Rate/Press: 894 bwpd @ 806#.			
PREPARED BY:		UPDATED:	
Larry S. Adams		19-May-09	



WELL GRADIENT SHEET

COMPANY RESACA OPERATING

LEASE COOPER JAL UNIT

WELL NO. 151 WIW

FIELD

COUNTY LEA

STATE NM

FORMATION YATES

SHUT IN DATE & TIME

HOURS SHUT IN

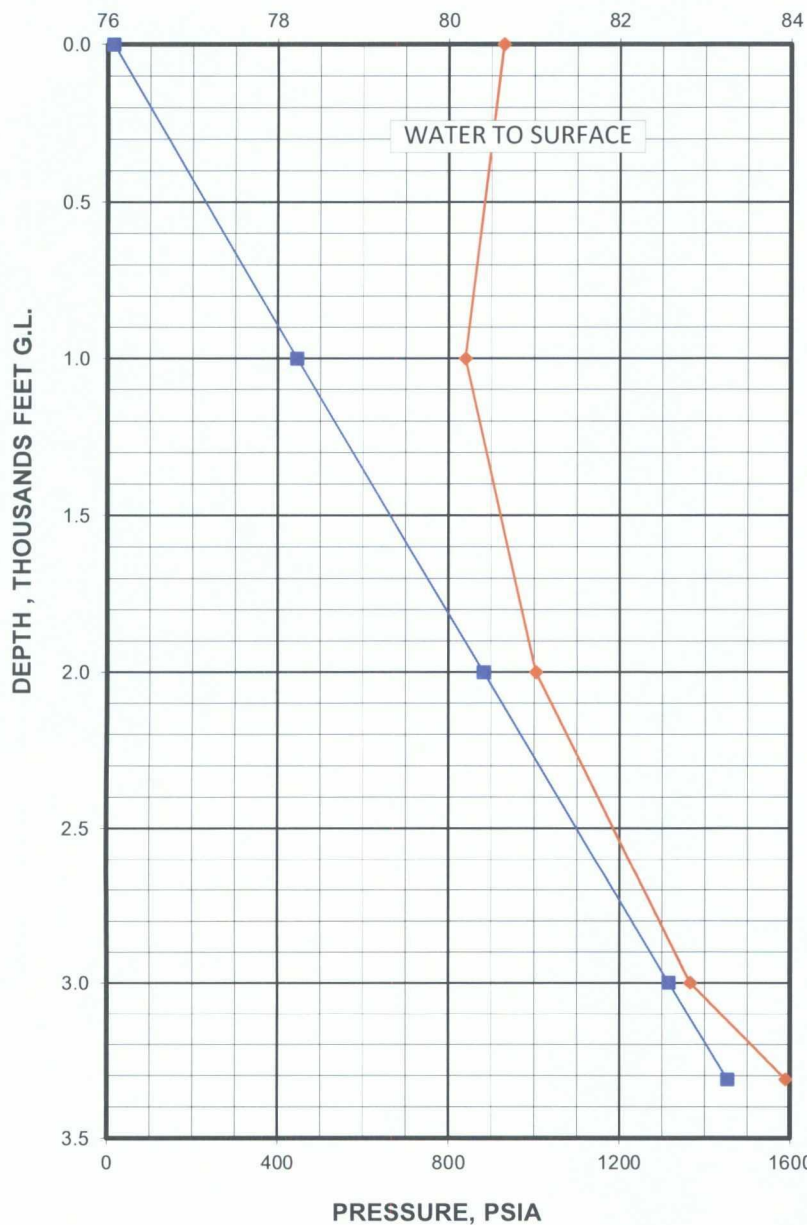
TEST DATE 9/13/2010

TIME 8:00

WELL STATUS STATIC

JOB NUMBER 79665

TEMPERATURE, °F



MEAS. DEPTH FEET G.L.	TRUE DEPTH FEET G.L.	TEMP. °F	PRESSURE PSIA	GRADIENT PSI/FT
0	0	80.6	14.30	
1000	1000	80.2	444.79	0.4305
2000	2000	81.0	882.32	0.4375
3000	3000	82.8	1316.06	0.4337
3312	3312	83.9	1453.20	0.4396

Elev: K.B. -	3316'	G.L. -	3304'
Pressure Datum	GL		
Tubing	2.375"	Depth	3240'
S.N.		Depth	
Casing		Depth	
Perforations	3021'-3603'		
Total Depth	PBTD 3662'		
Casing Pressure			
Tubing Pressure			
Instrument No.	P00005		
Run By	AUGIE ORTIZ		
Calculated By	DAVID SANDERS		

—■— PRESSURE —●— TEMPERATURE

***ENGINEER SUPERVISOR APPROVAL: SN DATE: 9/16/2010



COMPANY: RESACA OPERATING
LEASE: COOPER JAL UNIT # 151 WIW
FIELD (FORMATION): (YATES)
COUNTY: LEA
STATE: NM

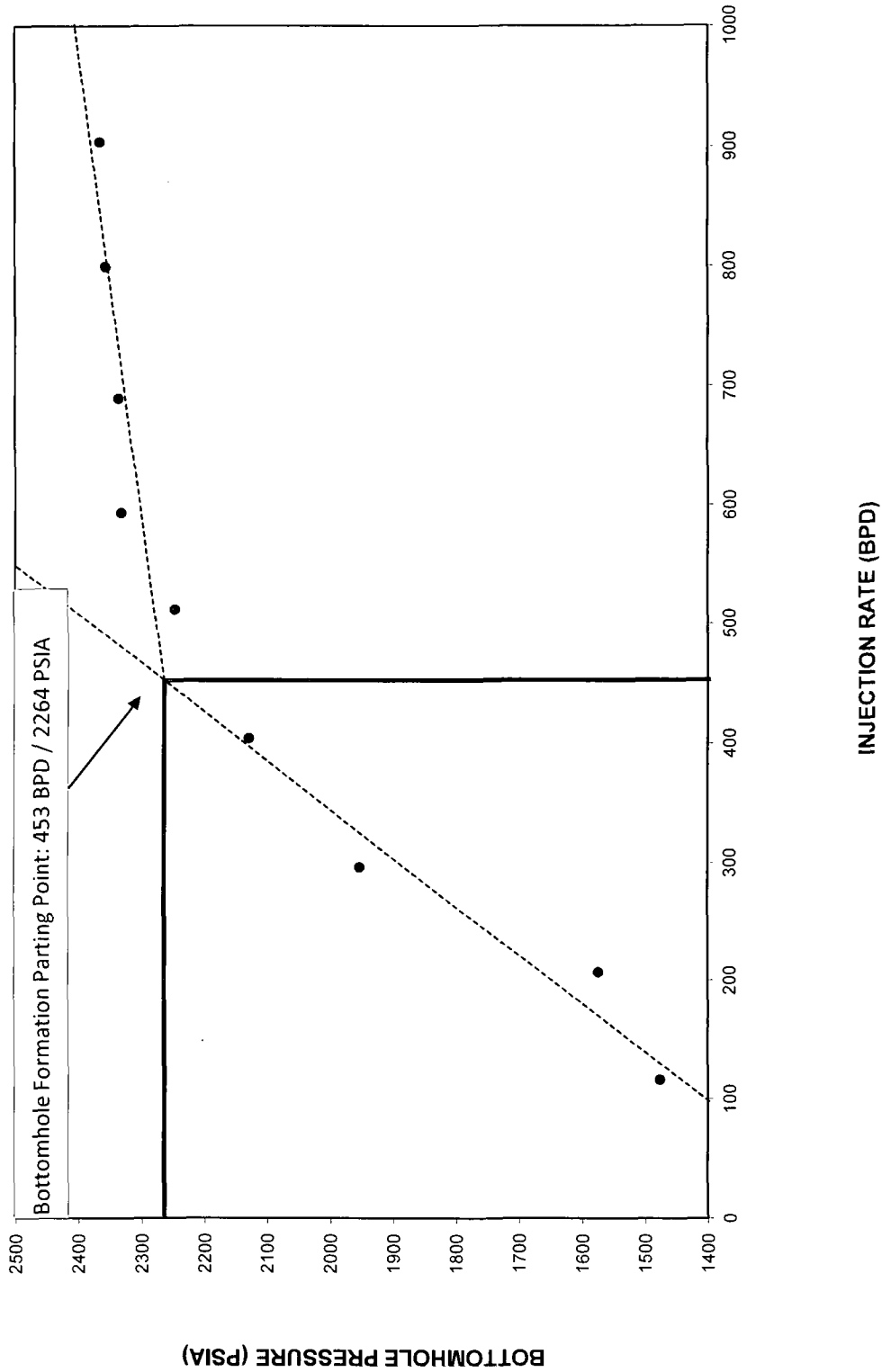
TEST DATES: 9/13/2010 - 9/13/2010
RUN DEPTH: 3312
INSTRUMENT: P00005

REAL TIME	DELTA TIME, HOURS	BOTTOMHOLE PRESSURE, PSIA	WELLHEAD PRESSURE, PSIG	INJECTION RATE, BPD	JOB NUMBER: 79665
09/13/10 11:33:23 AM	0.0000	1476.92	40.00	116.00	
09/13/10 12:02:43 PM	0.4889	1574.58	202.50	207.00	
09/13/10 12:31:33 PM	0.9695	1953.47	630.00	296.50	
09/13/10 01:01:13 PM	1.4639	2129.65	720.00	404.50	
09/13/10 01:29:53 PM	1.9417	2246.42	912.50	512.00	
09/13/10 01:59:33 PM	2.4361	2332.19	967.50	593.50	
09/13/10 02:30:03 PM	2.9445	2335.91	1002.50	689.50	
09/13/10 03:01:13 PM	3.4639	2356.52	1022.50	799.50	
09/13/10 03:33:13 PM	3.9972	2365.04	1037.50	904.00	



COMPANY:	RESACA OPERATING	FIELD:	JOB #	79665
LEASE:	COOPER JAL UNIT	COUNTY:	TEST DATE:	9/13/2010
WELL NUMBER:	151 WW	STATE:		9/13/2010

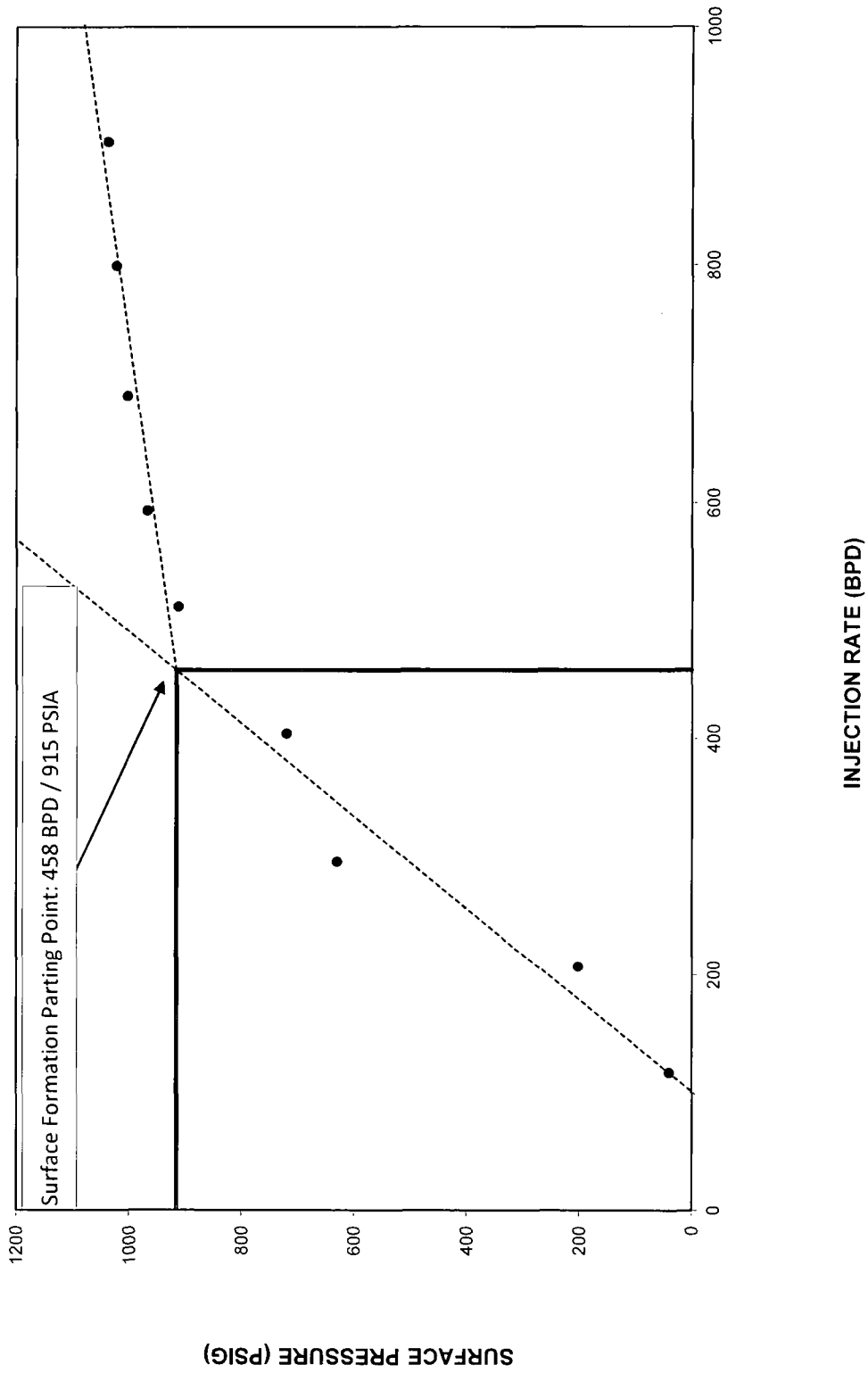
STEP-RATE TEST - BHP VS. INJECTION RATE





COMPANY:	RESACA OPERATING	FIELD:	JOB #	79665
LEASE:	COOPER JAL UNIT	COUNTY:	TEST DATE:	9/13/2010
WELL NUMBER:	151 WW	STATE:		9/13/2010

STEP-RATE TEST - WHP VS. INJECTION RATE



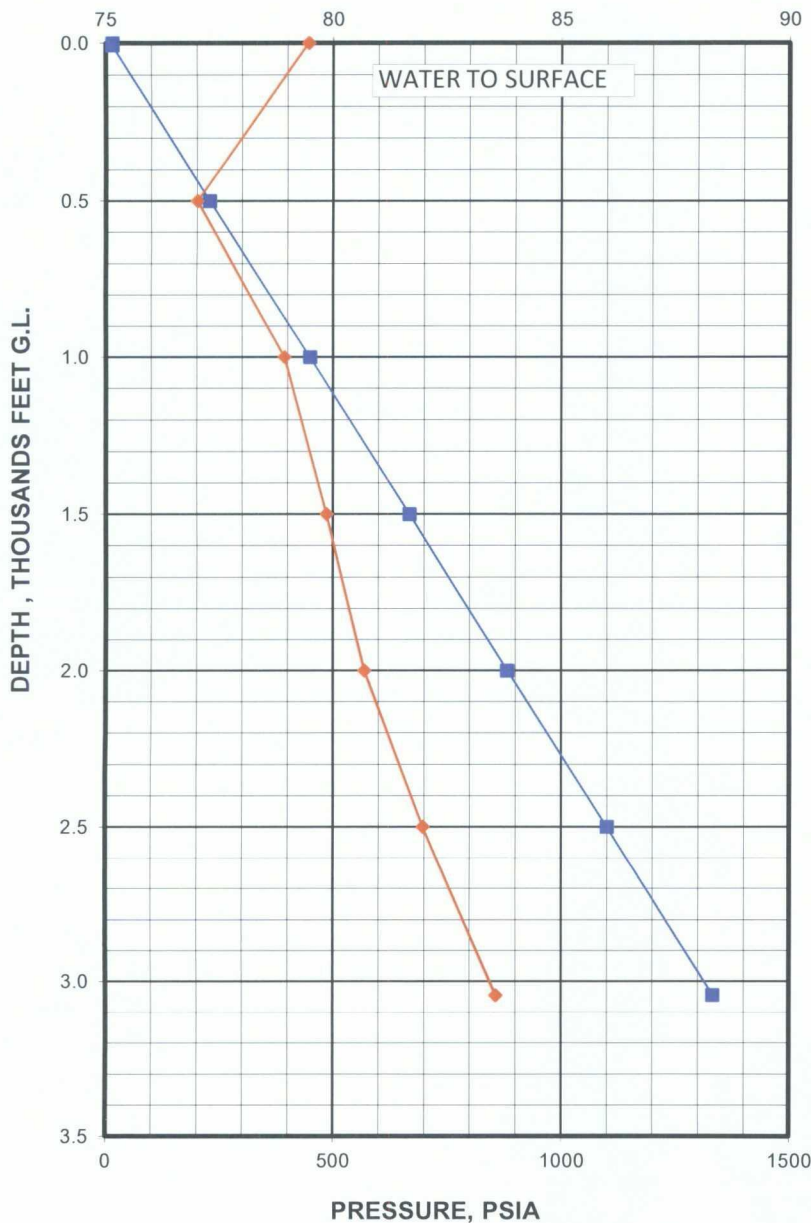
WELLBORE SCHEMATIC AND HISTORY																			
CURRENT COMPLETION SCHEMATIC			LEASE NAME				WELL NO.												
			Cooper Jal Unit				205 WIW												
			STATUS: Active				Water Injector												
			API#				30-025-09620												
			LOCATION: 1980 FNL & 1650 FEL, Sec 24, T - 24S, R - 36E; Lee County, New Mexico																
			SPUD DATE:		TD	3600	KB	3,319'	DF										
			INT. COMP. DATE:		05/06/50	PBTD	3600	GL	3,308'										
			<u>ELECTRIC LOGS:</u>				<u>GEOLOGICAL DATA</u>												
							<u>CORES, DST'S or MUD LOGS:</u>												
Surface Csg Hole Size: 11 in Csg. Size: 8 5/8 in Set @: 300 ft Sxs Cmt: 125 Circ: Yes TOC @: surf TOC by: circ			TOC @ 125' by calc. Ejecto Log Tracer (3-16-78 Cardinal Surveys Co.) GR-Compensated Sonic (1-6-94 Halliburton) GR-DSN-SDL (1-6-94 Halliburton) GR-DSN-DLL (1-6-94 Halliburton) Injection Profile (4-27-95 Houston Inc.) <u>HYDROCARBON BEARING ZONE DEPTH TOPS:</u> Yates @ 3024' 7-Rivers @ 3248' Queen @ 3610'																
			<u>CASING PROFILE</u>																
			SURF. 8 5/8" - 28#, J-55 set@ 300' Cmt'd w/125 sxs - circ cmt to surf.																
			PROD. 5 1/2" - 14#, J-55 set @ 2988' Cmt'd w/200 sxs - TOC @ 1935' f/ surf by calc. DV tool @1198' - pmp 200 sxs -																
			LINER None 5 1/2" - TOC@ 125' f/ surf by calc.																
			<u>CURRENT PERFORATION DATA</u>																
			CSG. PERFS: OPEN HOLE : 2988 - 3600'																
			<u>TUBING DETAIL</u> 01/11/94 <u>ROD DETAIL</u>																
			<table border="1"> <thead> <tr> <th>Length (ft)</th> <th>Detail</th> </tr> </thead> <tbody> <tr> <td>0 KB</td> <td></td> </tr> <tr> <td>2957 91</td> <td>2 3/8" 4.7#, CL, J-55, 8rd EUE tbg.</td> </tr> <tr> <td>3 1</td> <td>5 1/2" x 2 3/8" Baker Model "A-1" packer</td> </tr> <tr> <td>2960' btm</td> <td></td> </tr> </tbody> </table>							Length (ft)	Detail	0 KB		2957 91	2 3/8" 4.7#, CL, J-55, 8rd EUE tbg.	3 1	5 1/2" x 2 3/8" Baker Model "A-1" packer	2960' btm	
Length (ft)	Detail																		
0 KB																			
2957 91	2 3/8" 4.7#, CL, J-55, 8rd EUE tbg.																		
3 1	5 1/2" x 2 3/8" Baker Model "A-1" packer																		
2960' btm																			
			<u>WELL HISTORY SUMMARY</u>																
			6-May-50 Initial completion 2988 - 3251' (Yates OH). No stimulation. IP=48 bopd, 0 bwpd, & 61 Mcfgpd (flowing) 4-Dec-54 C/O fill from 3054 - 3251' (197'). Frac'd OH w/ 12,000 gals lse oil carrying 16,000#'s sand. After WO: 51 bopd, 0 bwpd, & GOR=4379 14-Feb-61 Placed well on rod pump system. 1-Apr-62 Cumulative Production=111,613 Bo & 572,309 Mcfg 21-Sep-71 CONVERTED TO INJECTOR: C/O fill to 3251'. Ran pkr on 2 3/8" CL tbg. Set pkr @ 2927'. Initiated injection. 16-Mar-78 Ran injection profile. Tagged fill @ 3177' (74'). No C/O. 07-Oct-84 Tagged fill @ 3063' (188'). 15-Oct-86 C/O fill f/ 3058 - 3251' (193'). Jetwash OH. Acdz'd OH w/4,000 gals 15% NEFE HCL using 1,000#'s RS in 2 equal stages. AIR= 5 bpm @ 970#. ISIP=730#, P15min=210#. RIH w/pkr on new 2 3/8" CL tbg. Set pkr @ 2955'. Tst csg. OK. RWO. 01-Oct-93 Administrative Order No. WFX-648. Approved Division Order No. R-4019 & R-4020 for Waterflood Expansion. 20-Dec-93 Deepened well to 3600' w/4 3/4" bit. Acdz'd OH (2988'-3600') w/8,400 gals 20% NEFE HCL in 5 stages using a total of 5,000#'s rock salt between stages. AIR=5.5 bpm @ 1090 psi. ISIP=920 psi, P15min=690 psi. Ran pkr on 2 3/8" CL tubing. Initiated injection at 171 bwpd @ 450 psi. 14-Feb-02 Tag TD using SL unit (1 1/4" x 5' sinker bar). Tag fill @ 3040' (560' of fill). 08-Nov-05 RIH with 1 1/4" x 5' sinker bar and tagged at 3,078'.																
Production Csg. Hole Size: 7 7/8 in Csg. Size: 5 1/2 in Set @: 2988 ft Sxs Cmt: 400 Circ: No TOC @: 125 f / surf. TOC by: calc.			pkrs @ 2960' OH Interval 2988 - 3600' Yates @ 3024' Fill @ 3078' 7-R @ 3248' Queen @ 3610'																
PBTD: 3600 ft TD: 3600 ft			OH IC 4 3/4 in																
			PREPARED BY: Larry S. Adams				UPDATED: 04-May-02												



WELL GRADIENT SHEET

COMPANY	RESACA OPERATING	LEASE	COOPER JAL UNIT	WELL NO.	205
FIELD		COUNTY	YATES	STATE	NM
FORMATION	YATES	SHUT IN DATE & TIME		HOURS SHUT IN	
TEST DATE	9/2/2010	TIME	7:45	WELL STATUS	STATIC
				JOB NUMBER	79633

TEMPERATURE, °F



MEAS. DEPTH FEET G.L.	TRUE DEPTH FEET G.L.	TEMP. °F	PRESSURE PSIA	GRADIENT PSI/FT
0	0	79.5	14.30	
500	500	77.0	228.40	0.4282
1000	1000	78.9	449.01	0.4412
1500	1500	79.9	667.90	0.4378
2000	2000	80.7	882.06	0.4283
2500	2500	82.0	1100.25	0.4364
3045	3045	83.6	1332.66	0.4264

Elev: K.B. -	G.L. -
Pressure Datum	GL
Tubing	2.375'
S.N.	Depth 2960'
Casing	5.5'
Perforations	2988'-3600'
Total Depth	3047'
Casing Pressure	
Tubing Pressure	
Instrument No.	PP-0005
Run By	GAB]
Calculated By	DAVID SANDERS

—■— PRESSURE —◆— TEMPERATURE

***ENGINEER SUPERVISOR APPROVAL: SN DATE: 9/3/2010



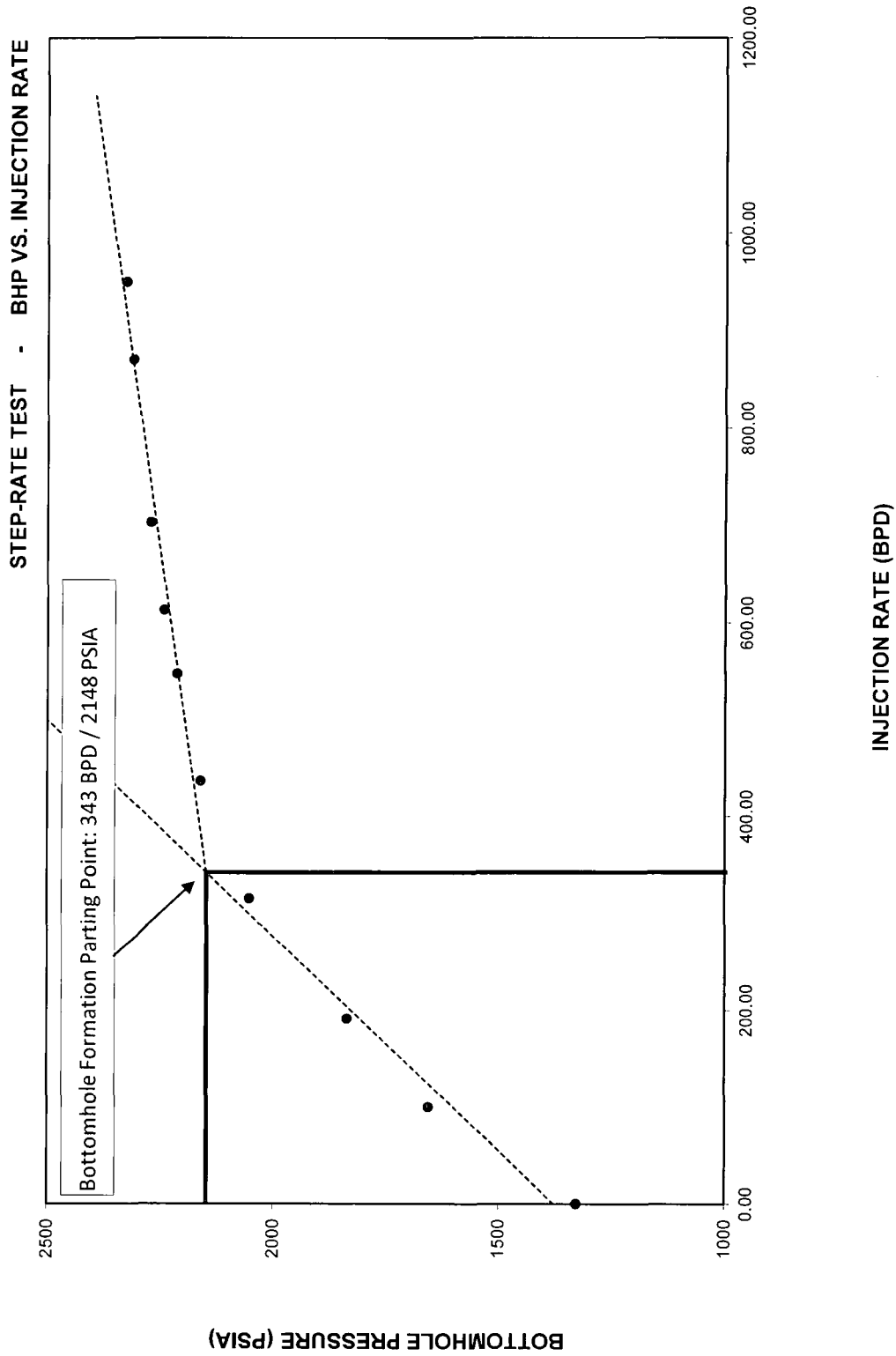
COMPANY: RESACA OPERATING
LEASE: COOPER JAL UNIT # 205
FIELD (FORMATION): (YATES)
COUNTY: LEA
STATE: NM

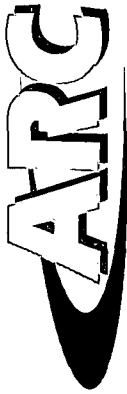
TEST DATES: 9/2/2010 - 9/2/2010
RUN DEPTH: 3045
INSTRUMENT: PP-0005

REAL TIME	DELTA TIME, HOURS	BOTTOMHOLE PRESSURE, PSIA	WELLHEAD PRESSURE, PSIG	INJECTION RATE, BPD	JOB NUMBER: 79633
09/2/10 09:58:45 AM	0.8606	1328.80	0.00	0.00	
09/2/10 10:31:10 AM	1.4008	1656.59	353.00	99.12	
09/2/10 11:00:10 AM	1.8842	1836.31	562.00	191.16	
09/2/10 11:28:35 AM	2.3578	2052.96	780.00	316.24	
09/2/10 11:58:40 AM	2.8592	2161.54	887.00	436.60	
09/2/10 12:30:20 PM	3.3869	2214.25	950.00	547.52	
09/2/10 12:57:55 PM	3.8467	2242.83	987.00	613.60	
09/2/10 01:29:45 PM	4.3772	2271.74	1012.00	703.28	
09/2/10 01:57:25 PM	4.8383	2310.43	1087.00	870.92	
09/2/10 02:27:10 PM	5.3342	2326.84	1100.00	950.44	



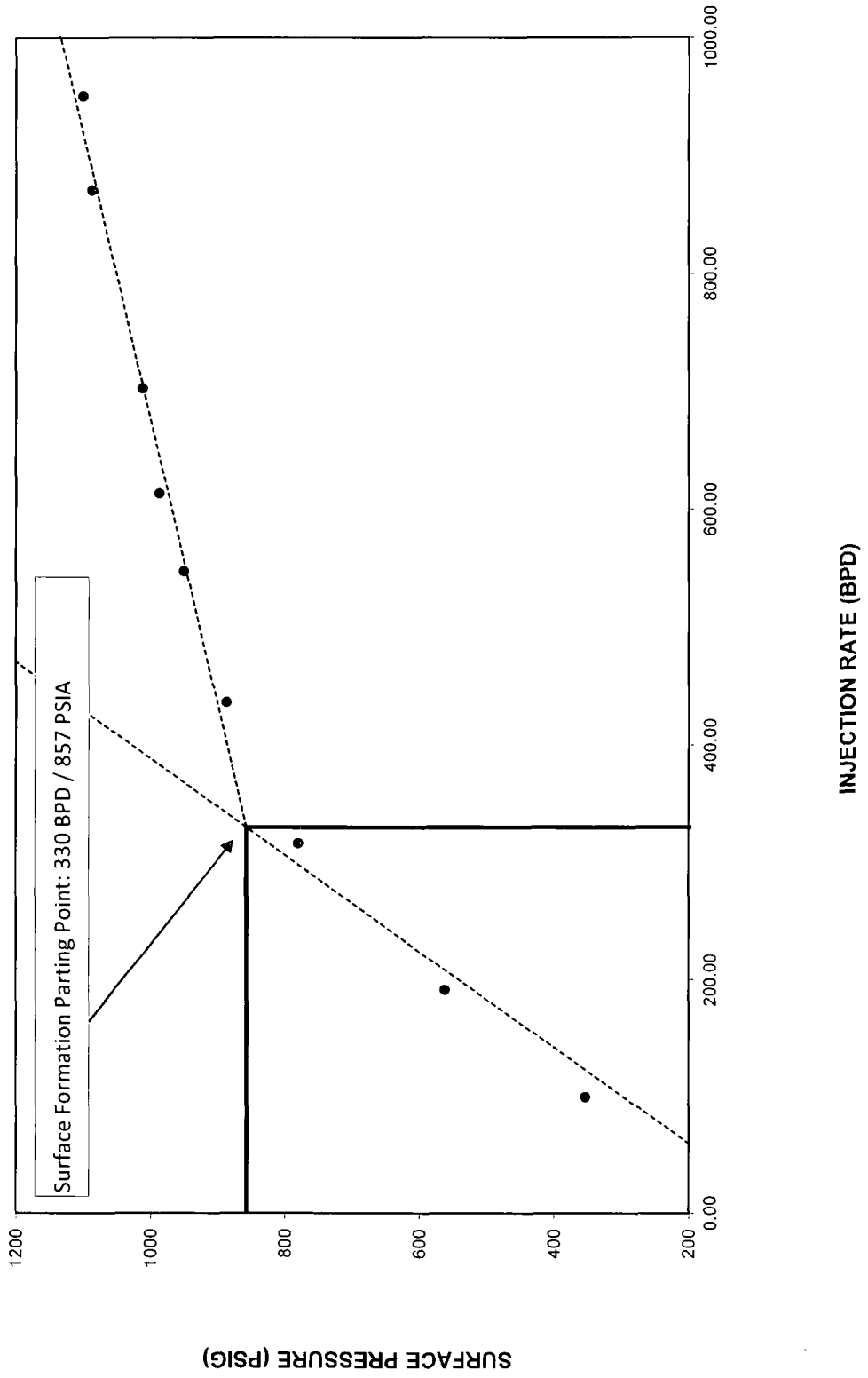
COMPANY:	RESACA OPERATING	FIELD:		JOB #	79633
LEASE:	COOPER JAL UNIT	COUNTY:	LEA	TEST DATE:	9/2/2010
WELL NUMBER:	205	STATE:	NM		9/2/2010





COMPANY:	RESACA OPERATING	FIELD:	JOB #	79633
LEASE:	COOPER JAL UNIT	COUNTY:	TEST DATE:	9/2/2010
WELL NUMBER:	205	STATE:		9/2/2010

STEP-RATE TEST - WHP VS. INJECTION RATE



WELLBORE SCHEMATIC AND HISTORY

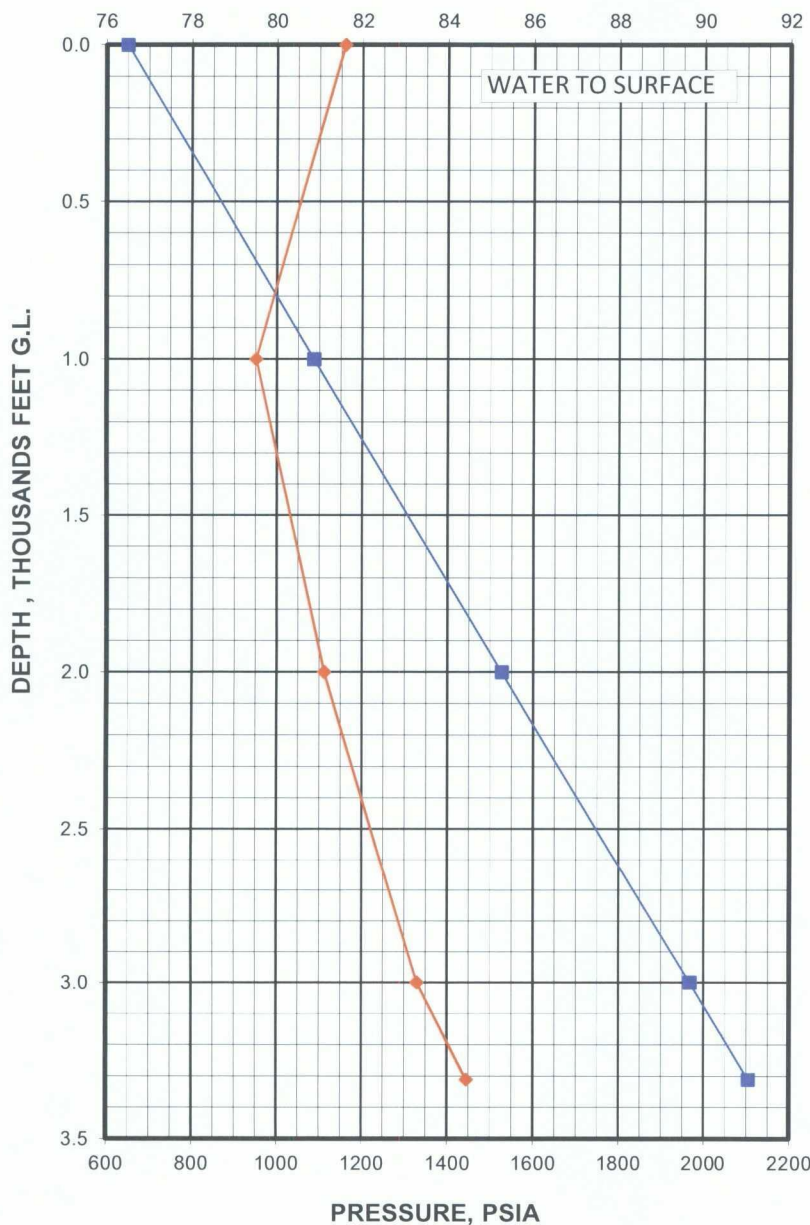
CURRENT COMPLETION SCHEMATIC		LEASE NAME		Cooper Jal Unit		WELL NO.		211 W			
Surface Csg Hole Size: 11 in Csg. Size: 8 5/8 in Set @: 302 ft Sxs Cmt: 125 Circ: Yes TOC @: surf TOC by: circ		STATUS:		Active		Water Injector		API# 30-025-09787			
		LOCATION:		2310 FSL & 2310 FWL, Sec 24, T - 24S, R - 36E; Lee County, New Mexico							
		SPUD DATE:		TD		3600		KB		3,325'	
		INT. COMP. DATE:		04/04/50		PBTD		3600		GL	
Production Csg. Hole Size: 7 7/8 in Csg. Size: 5 1/2 in Set @: 3001 ft Sxs Cmt: 400 Circ: No TOC @: 895 f / surf. TOC by: calc.		ELECTRIC LOGS:		CORES, DST'S or MUD LOGS:							
		Injection Profile (3-18-97 Houston Inc.)		GR-DSN-DLL from 3600 - surface (2-1-94 Halliburton)							
		Injection Profile (5-4-95 Houston Inc.)		GR-DSN-SDL from 3600 - 3001' (2-1-94 Halliburton)							
				GR-Compensated Sonic from 3600 - 3001' (2-1-94 Halliburton)							
OH IC 4 3/4 in 5 1/2" csg lk @ 320'-350' sqz w/150 cl c sqz w/200 cl c Nov-03 TOC@ 895' By Calc.		HYDROCARBON BEARING ZONE DEPTH TOPS:									
		Yates @ 3018'		7-Rivers @ 3235'		Queen @ 3605'					
		SURF.		8 5/8" - 29.75# J-55 set@ 302' Cmt'd w/125 sxs - circ cmt to surface.							
		PROD.		5 1/2" - 14# J-55 set@ 3001' Cmt'd w/400 sxs - TOC @ 895' from surface by calculation.							
OH IC 4 3/4 in 4" - 10.46# Hydrill F. J. set at 2970'. Cemented with 200 sx Class C to surface.		CURRENT PERFORMANCE DATA		OPEN HOLE: 3001 - 3400'							
		CSG. PERFS:									
		TUBING DETAIL		1/23/2009		ROD DETAIL					
		Length (ft)		Detail							
OH IC 4 3/4 in 2921 92 3 1 2924 btm		0 KB									
		2921 92		2 3/8" 4.7# IPC, J-55, 8rd EUE tbg.							
		3 1		4" x 2 3/8" Baker AD-1 packer							
		2924 btm									
OH IC 4 3/4 in 2921 92 3 1 2924 btm		WELL HISTORY SUMMARY									
		04-Apr-50 Initial completion 3001 - 3244' (Yates OH): No stimulation. IP=56 bopd, 0 bwppd, & 53 Mcfgpd. (flowing) 09-Sep-54 Frac OH w/2,000 gals lse oil carrying 3,000#s sand. Re-frac OH w/14,000 gals lse oil carrying 18,000#s sand. 14-Jul-57 C/O to 3244' & place on pmp. 22-Feb-59 C/O to 3244'. (No report on location of fill) 17-Nov-70 CONVERTED TO INJECTOR: C/O fill to 3244'. 07-Jul-89 C/O fill from 3030 - 3244' (214'). Acidz'd OH w/4,000 gals 15% NEFE HCL in 4 equal stages diverting w/500# rock salt blocks. Ran PKR on 2 3/8" CL tbg. Placed well on injection @ 445 bwppd, TP=875 psi. 11-Jan-94 RIH 4 3/4" bit, 12 - 3 1/2" OD DCs. Tagged @ 3235', getting returns out of bradenhead. Found holes in 5 1/2" csg'. At 320' to 350'. Sqzd w/ 150 sacks class "c" w/2%. Circ'd w/ 22 sxs cmt. Drilled & test sqzd to 500#-held. Tagged junk at 3255'. Drilled junk & deepened well to new TD of 3600'. Ran GR-MSFL-DLL, GR-DSN-SDL, & GR-Borehole Compensated Sonic Logs. Acidz'd OH w/ 8,400 gals 20% NEFE HCL. Well DHC Injection (Jal & L.M). Begin injection @ 339 bwppd @ 450 psig. Ran injection profile. Results: 73% fluid - 3060 - 70', 11% fluid - 3300-11', & 16% fluid - 3528-43'. 04-May-95 Tagged fill @ 3538'. (62') Dumped sand in OH & PB f/ 3538 - 3420'. Dmp cmt f/ 3420-3400'. Acidz'd OH (3001'-3400') w/ 4,000 gals 15% using N2 foam as diverter using coiled tubing. AIR (fluid)=1.2 bpm. Ran PKR on 2 3/8" CL tbg. Set PKR @ 2952'. Test casing - good test. Initiated injection @ 486 bwppd, TP=250 psi. 14-Feb-02 Tag TD using SL unit (1 1/4" x 5' sinker bar). Tag fill @ 3048' (352' of fill). 23-May-02 Wash w/surfactant H2O. 3 passes & wash w/acid. Pump w/1240 gals. Pmp., flush w/ acid. Flow Bk. Put on Inj. @ 200 BWPPD. 01-Oct-93 Administrtave Order No. WFX-648. Approved Division Order No. R-4019 & R-4020 for Waterflood Expansion. 17-Nov-03 POOH w/ 2 3/8" IPC tbg & AD-1 pkr. RIH w/ 4 3/4" bit, 6 3 1/2" DCs & tagged @ 3148'. C/O to 3400'. Located 5 1/2" csg lk between 325' to 356'. Sqz'd w/200 sx Class C Neat w/2% CaCl. Hesitation sqz - final press was 330 psig, dropped 200# in 5 minutes. Drilled cmt f/ 230' to 300'. Test sqz to 500 psig - bled to 300# in 5 minute. Recovered RBP. RIH w/ 5 1/2" Baker AD-1 Tension packer and set 2901'. Pressure annulus to 500 psig. Pull pressure chart for OCD filing. 26-Jan-04 POOH w/ 2 3/8" IPC tbg & lay down AD-1 pkr. RIH w/ 4.45" Junk Basket & CCL on W/L. Found end of csg @ 3001'. RIH w/ Composite Bridge Plug & set @ 2980'. RIH w/72"-4" Lnr. Cmt w/ 200 sx Class C Neat cmt, circ'd w/ 34 bbls cmt. Test 5 1/2" csg to 500# - did not held. D/O wiper plug, float shoe, & tagged Composite Bridge Plug @ 2970'. Test 4" Inr to 500# - held. Composite Bridge Plug & tagged @ 3400'. Circ'd clean & laid down work string & BHA. RIH w/ 4" Baker Model AD-1 PKR. Hydrotest tbg to 5000#. Locate PKR @ 2962', circ annulus w/ 50 bbls of inhibited 2% KCl wtr. Set PKR & test annulus to 500# - held. PBTD @ 3400'. Pulled chart for OCD. Prior rate & press: S/I. After rate & press: 230 BWPPD @ 420 psig. 25-Mar-04 Pumped 30 bbls surfactant water. Acidized with 1000 gals 15% NEFE acid @ 2.5 BPM. Flushed with 12.5 bbls water. Prior rate & pressure: 288 BWPPD @ 700 psig. After rate & pressure: 255 @ 500 psig. 04-Dec-04 Before Rate & Press: 279 bwppd at 820 psig. RIH w/ 1 1/4" Perf-Clean Tool on 1 1/4" CT. Washed OH (2975'-3400') w/ surfactant 2% KCl fresh water. Made 3 passes: TP= 3500#, Annulus Press= 100#. Acidized open hole (2975'-3400') w/ 4200 g 15% NEFE HCL. Made 3 passes: TP= 3700psig, Annulus Press= 960#, ISIP= 770#. After Rate & Press: 208 bwppd @ 500 ps 08-Nov-05 RIH with 1 1/4" x 5' sinker bar and tagged at 3,092'. 18-Apr-08 POOH w/inj String & AD-1 PKR. RIH w/3 1/4" on 2 3/8" tbg, tagged fill @ 3107'. Bit kept plugging up. RIH w/Notch Collar. C/C 3107' to 3251', circ'd form. & oil. Next day tagged at 3251'. C/O to 3400'. RIH w/ 4" AD-1 PKR on 2 3/8" CL tbg. Discovered cr in cement line through out tubing string. Laid down 91 joints CL tubing. RIH w/ AD-1 PKR on new 2 3/8" IPC tubing. Set PKR & pressure annulus to 420 psig for 30 minutes. Pulled chart for OCD. 21-May-08 Acidized Jalmat w/ 71 bbls 15% NEFE HCL acid 3000# rock salt & d 29 Tons of CO2. Rate = 7.8 bpm @ 2827 psi. ISIP = 751 Before Rate & Press: 253 bwppd at 733 psig. After Rate & Press: 341 bpd @ 680 psi. 20-Jan-09 POOH with injection string & AD-1 PKR. RIH with 3 1/4" on 2 3/8" tbg, tagged bridge @ 3089'. Cleaned out from 3372' to 3, Recovered 80% sand & 20% formation. Cleaned from 3450' to 3600'. Hydrotest tubing - no holes. Test annulus to 560#. 27-Apr-09 RU Gray Wireline. Tagged @ 3,058' with 1" sinker bar. RD wireline. Placed well on injection. Rate/Press: 539 bwppd/750#.									
		Jalmat									
		Yates @ 3018'									
OH Interval		3001 - 3400'									
pkR @ 2923'											
Langlie Mattix at 3400'											
Queen @ 3605'											
PBTD: 3600 ft											
TD: 3600 ft											
OH IC 4 3/4 in											
PREPARED BY:		Larry S. Adams		Domingo Carrizales		UPDATED:		20-May-09			



WELL GRADIENT SHEET

COMPANY	RESACA OPERATING	LEASE	COOPER JAL UNIT	WELL NO.	211 WIW
FIELD		COUNTY	LEA	STATE	NM
FORMATION		SHUT IN DATE & TIME		HOURS SHUT IN	
TEST DATE	9/8/2010	TIME	8:00	WELL STATUS	STATIC
				JOB NUMBER	79652

TEMPERATURE, °F



MEAS. DEPTH FEET G.L.	TRUE DEPTH FEET G.L.	TEMP. °F	PRESSURE PSIA	GRADIENT PSI/FT
0	0	81.6	649.37	
1000	1000	79.5	1086.91	0.4375
2000	2000	81.1	1526.48	0.4396
3000	3000	83.3	1967.72	0.4412
3311		84.5	2104.25	0.4390

Elev: K.B. -	G.L. -
Pressure Datum	GL
Tubing	2.375"
S.N.	
Casing	
Perforations	3018'-3605'
Total Depth	
Casing Pressure	
Tubing Pressure	
Instrument No.	PP00005
Run By	AUGIE ORTIZ
Calculated By	DAVID SANDERS

—■— PRESSURE —●— TEMPERATURE

***ENGINEER SUPERVISOR APPROVAL: SN DATE: 9/14/2010



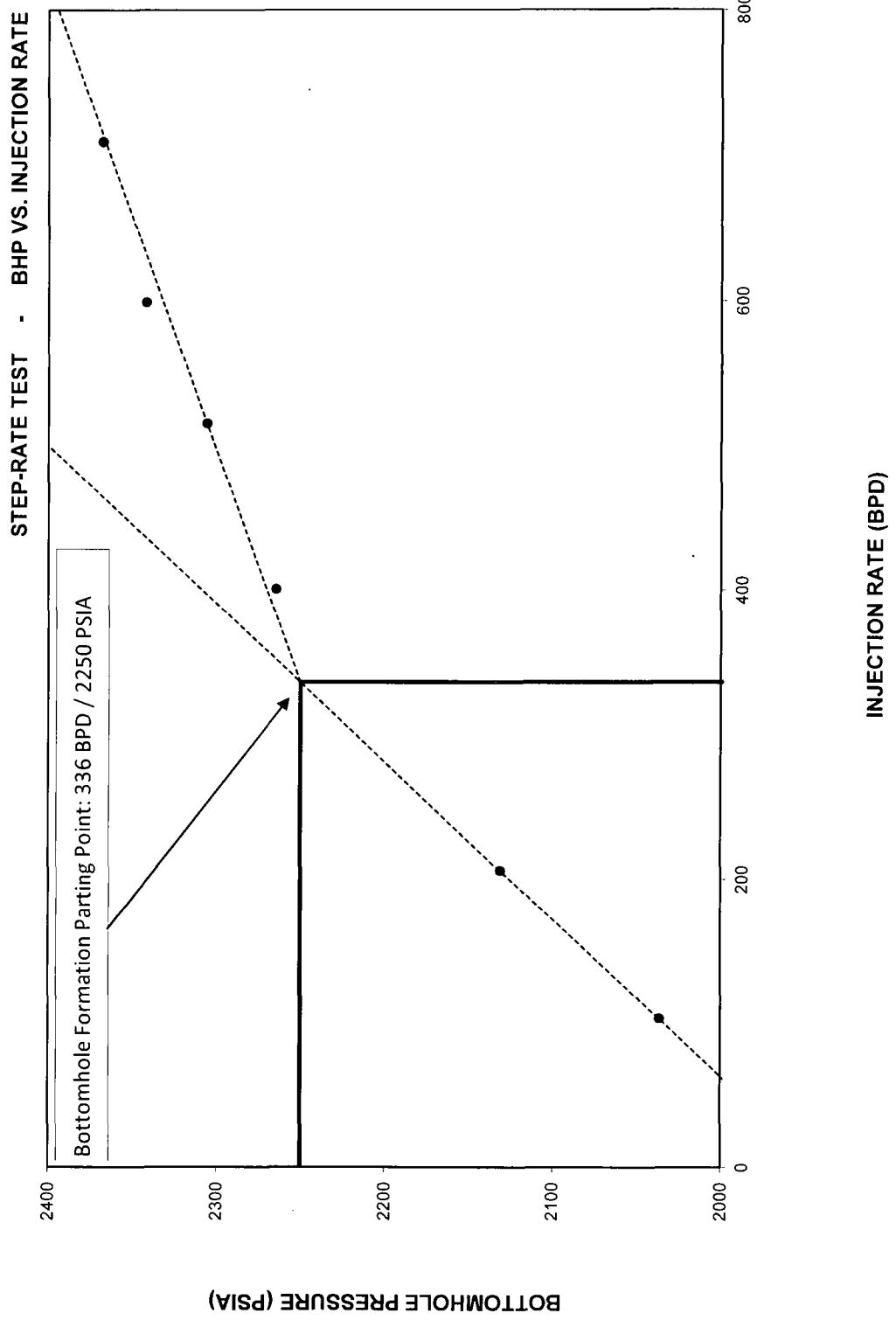
COMPANY: RESACA OPERATING
LEASE: COOPER JAL UNIT # 211 WIW
FIELD (FORMATION): ()
COUNTY: LEA
STATE: NM

TEST DATES: 9/8/2010 - 9/8/2010
RUN DEPTH: 3311
INSTRUMENT: PP00005

REAL TIME	DELTA TIME, HOURS	BOTTOMHOLE PRESSURE, PSIA	WELLHEAD PRESSURE, PSIG	INJECTION RATE, BPD	JOB NUMBER: 79652
09/8/10 10:56:43 AM	0.0000	2100.82	475.00	0.00	
09/8/10 11:27:33 AM	0.5139	2036.59	647.50	102.50	
09/8/10 11:56:38 AM	0.9986	2131.22	747.50	206.00	
09/8/10 12:28:03 PM	1.5222	2215.44	750.00	311.00	
09/8/10 12:57:43 PM	2.0167	2264.71	897.50	400.50	
09/8/10 01:27:08 PM	2.5069	2305.99	955.00	515.50	
09/8/10 01:56:48 PM	3.0014	2342.02	985.00	599.00	
09/8/10 02:26:53 PM	3.5028	2367.81	1017.50	710.00	
09/8/10 02:57:58 PM	4.0208	2389.95	1072.50	805.50	



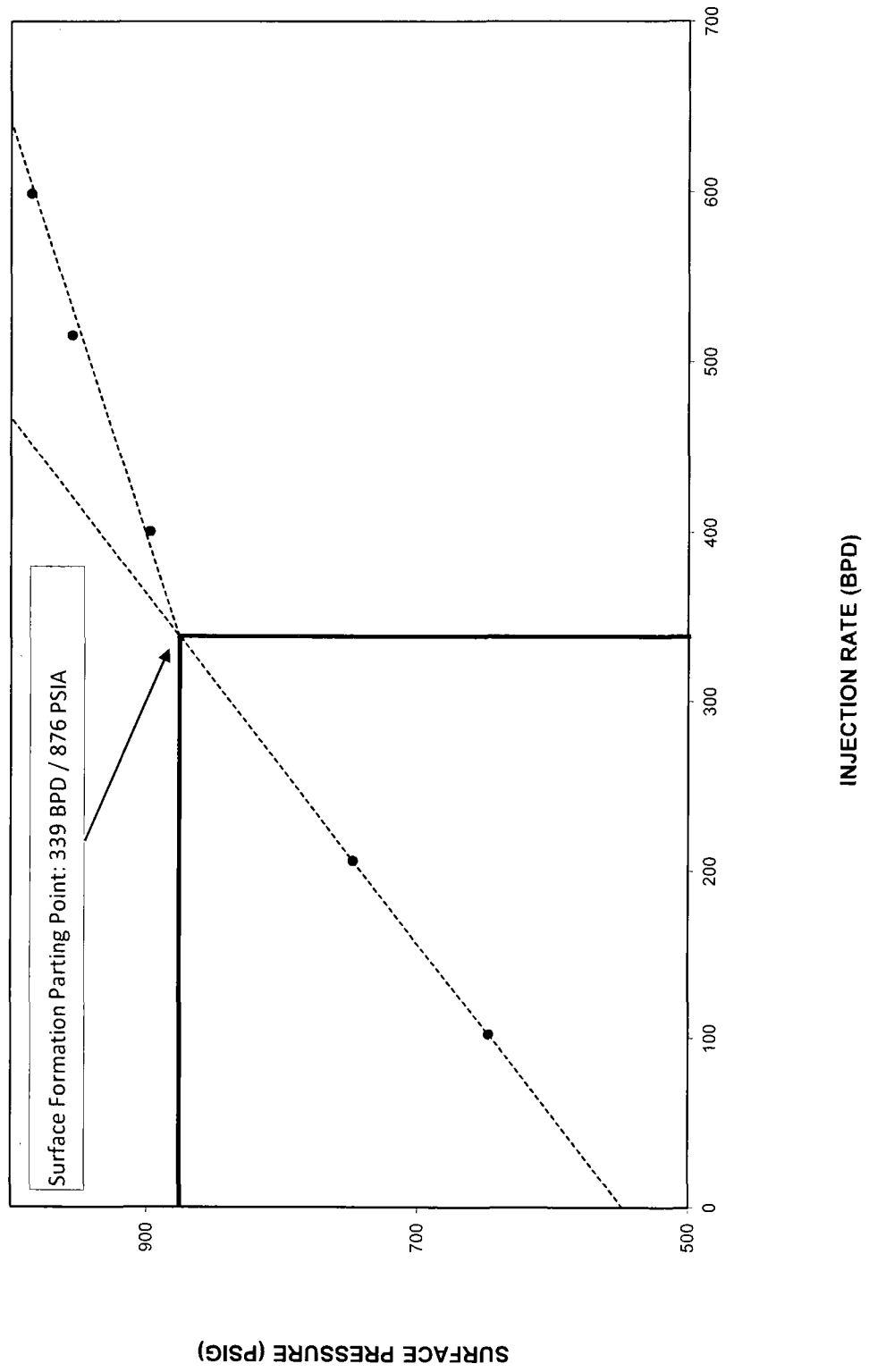
COMPANY:	RESACA OPERATING	FIELD:	JOB #	79652
LEASE:	COOPER JAL UNIT	COUNTY:	TEST DATE:	9/8/2010
WELL NUMBER:	211 WIW	STATE:		9/8/2010





COMPANY:	RESACA OPERATING	FIELD:		JOB #	79652
LEASE:	COOPER JAL UNIT	COUNTY:	LEA	TEST DATE:	9/8/2010
WELL NUMBER:	211 WW	STATE:	NM		9/8/2010

STEP-RATE TEST - WHP VS. INJECTION RATE



CURRENT COMPLETION SCHEMATIC		LEASE NAME		Cooper Jal Unit		WELL NO. 220 WIW			
Surface Csg Hole Size: 11 in Csg. Size: 8 5/8 in Set @: 291 ft Sxs Cmt: 175 Circ: Yes TOC @: surf TOC by: circ 2986' TOC @ 1450' By T. S. Fill @ 2322' pkc @ 2950' Jalmat Yates @ 2979' 2986 - 3050' 3060 - 3158' 3160 - 3320 7-R @ 3210' Langlie Mattix OH Interval ## Queen @ 3548'		STATUS: Active		Water Injector		API# 30-025-11162			
		LOCATION: 660 FSL & 628 FWL, Sec 19, T - 24S, R - 37E; Lee County, New Mexico							
		SPUD DATE: 03/22/50		TD 3600		KB 3,294'		DF	
		INT. COMP. DATE: 03/22/50		PBD 3600		GL 3,284'			
		ELECTRIC LOGS:		GEOLOGICAL DATA		CORES, DSTS or MUD LOGS:			
		GR-Resistivity (3-17-50 Schlumberger)		GR-DSN-SDL from 3600 - 2600' (1-28-94 Halliburton)					
		Ejecto Log Tracer (11-8-76 Cardinal Surveys Co.)		GR-BHC Sonic log from 3600 - 3350' (1-28-94 Halliburton)					
		GR-N (10-17-87 Wedge CRC Inc.)		Injection Profile (4-24-95 Houston Inc.)					
		GR-MSFL-DLL from 3600 - 3350' (1-28-94 Halliburton)							
		HYDROCARBON BEARING ZONE DEPTH TOPS:							
		Yates @ 2979'		7-Rivers @ 3210'		Queen @ 3548'			
		Casing Profile							
		SURF. 8 5/8" - 22.70#, J-55 set @ 291' Cmt'd w/175 sxs - circ cmt to surf.							
		PROD. 5 1/2" - 15.5#, J-55 set @ 3350' Cmt'd w/1000 sxs - TOC @ 1450' from surface by Temperature Survey.							
		LINER None							
		CURRENT PERFORATION DATA							
		CSG. PERFS: 25-Oct-87 Perforated Jalmat 1/ 3000 - 3158' w/ 4 spt (392 noies)		OPEN HOLE: Langlie Mattix					
		22-Mar-50 Perforated Jalmat 1/ 2986 - 3050' w/ 1 spt (20 noies) & 3160 - 3320' w/ 1 spt (30 noies)							
		TUBING DETAIL 10/20/2005		ROD DETAIL					
		Length (ft)		Detail					
		10 KB							
		2941 91		2 3/8" 4.7#, C.P.L., J-55, 8rd EUE tbg.					
		3 1		5 1/2" x 2 3/8" Baker PC, AD-1 packer					
		2954 btm							
		WELL HISTORY SUMMARY							
		22-Mar-50 Initial completion (Yates) perf'd 3060 - 3158'. Acid'd w/ 1,000 gals. IP=84 bopd, 0 bwpd, & 63.7 Mcfgpd.							
		2-Jul-71 CONVERTED TO INJECTOR.							
		8-Nov-76 Ran injection survey. Tagged fill @ 3136'. No fluid flow below 3065'.							
		25-Oct-87 Cmt sqz'd csg leak from 697'-729'. Perf'd intervals 2986 - 3050' & 3160 - 3320' (56 holes total). Acid'd perf'd w/ 7,000 gals in 4 stages. Installed new injection tbg & pkr. Placed well on injection.							
		13-Jan-94 C/O scale f/ 3320'-3347' (127'). Deepened well w/ 4 3/4" bit to 3600' (TD). Ran GR-MSFL-DLL f/ 3600'-3350'. Run GR-DSN-SDL f/ 3600 - 2600'. Ran GR-BHC Sonic log f/ 3600 - 3350'. Set pkr @ 2936' & acid'd all perfs & OH w/ 8,400 gals 20% NEFE HCL & 0.2% Claytrol in 3 stages diverted with 3,500#s rock salt (total). AIR=5.4 bpm. ISIP=655 psig. P15 min= 479 psi. Installed injection equipment. Initiated injection @ 519 bwpd, TP= 590 psi.							
		14-Feb-02 Tag TD using SL unit (1 1/4" x 5' sinker bar). Tag fill @ 3449' (151' of fill).							
		22-May-02 RIH w/coil tbg. wash down. Tag @ 3585' & clean to 3586'. Sand wash Pass up to pkr @ 2955' & down 2955' to 3586'. Fill to 3590', check depth POH w/coil & found pinhole in coil @ 360' f/perf/clean tool. Cut & redo tool. RIH & wash to 3600'. SI annulus + pump acid pass. Pmp. rate- 9 BPM PSI- 3565# Csg- 63# Pump 60 bbls 15% NEFE + flush to TD w/ 23 bbls. POOH w/ coil tbg. ISIP- 660# put on Inj. 350 BPD rate @ 300#.							
		01-Oct-93 Administrative Order No. WFX-648. Approved Division Order No. R-4019 & R-4020 Waterflood Expansion.							
		19-Oct-05 Found hole on top cmt lined tbg jt. POOH w/CL tbg & AD-1 pkr. Hydrotest tbg in hole to 4,000#. Circ'd pkr fluid, set PKR at 2,954'. Press test annulus to 280# - held. Pull press chart for OCD. PWOL: 300 BWPD at 400#.							
		08-Nov-05 RIH with 1 1/4" x 5' sinker bar and tagged at 2,322'.							
		22-Jan-08 SITP= 0#. POOH with injection tubing and AD-1 PKR. RIH with 4 3/4" mill tooth bit, 6 - 3 1/2" drill collars on 2 7/8" work string. at 3,100', cleaned out to 3,600'. Recovered iron sulfide and formation. Waited one day for coated injection tubing from Permian Enterprises. RIH with 5 1/2" AD-1 PKR on 2 3/8". Circulated with packer fluid, set PKR at 2,950'. Pressure test annulus to 400 psig - okay. Pull chart for OCD.							
		21-May-08 Acidized down injection string: Yates, Upper 7-Rivers & Lower 7-Rivers w/ 72 bbls 15% NEFE HCl acid, 3000# RS & 27 Tons Rate = 5.4 bpm @ 1817 psi. ISIP = 978 psi. Before: 369 bpd @ 715 psi; After: 432 bpd @ 400 psi.							



WELL GRADIENT SHEET

COMPANY RESACA OPERATING

LEASE COOPER JAL UNIT

WELL NO. 220 WIW

FIELD COOPER JAL UNIT

COUNTY LEA

STATE NM

FORMATION YATES

SHUT IN DATE & TIME

HOURS SHUT IN

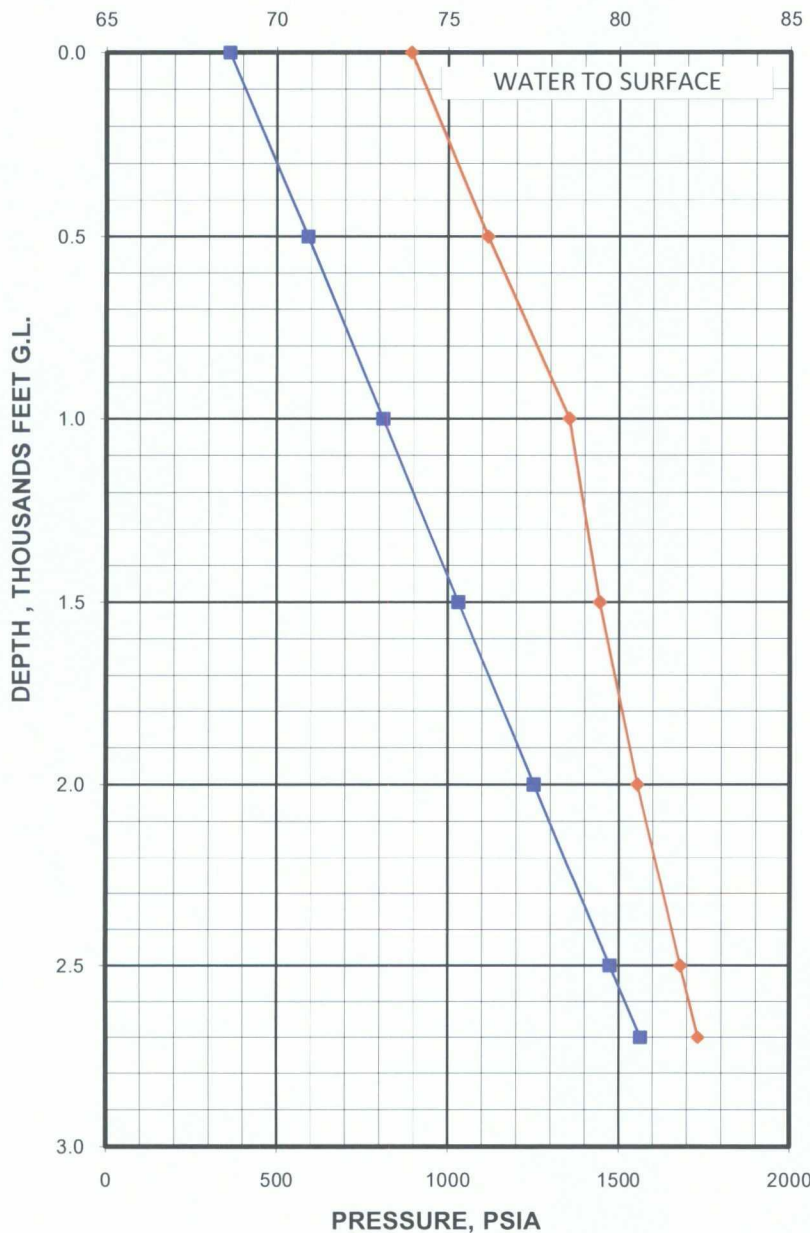
TEST DATE 9/3/2010

TIME 9:50

WELL STATUS STATIC

JOB NUMBER 79641

TEMPERATURE, °F



MEAS. DEPTH FEET G.L.	TRUE DEPTH FEET G.L.	TEMP. °F	PRESSURE PSIA	GRADIENT PSI/FT
0	0	73.9	361.48	
500	500	76.2	591.17	0.4594
1000	1000	78.6	811.25	0.4401
1500	1500	79.4	1031.17	0.4398
2000	2000	80.5	1251.83	0.4413
2500	2500	81.8	1473.97	0.4443
2700	2700	82.3	1564.02	0.4502

Elev: K.B. -	3294'	G.L. -	3284'
Pressure Datum	GL		
Tubing	2.375"	Depth	2954'
S.N.		Depth	
Casing	5.5"	Depth	3350'
Perforations	2979'-3548'		
Total Depth	3600' PBDT		
Casing Pressure			
Tubing Pressure	475		
Instrument No.	PP00005		
Run By	AUGIE ORTIZ		
Calculated By	MICHAEL WOODS		

***ENGINEER SUPERVISOR APPROVAL: SN DATE: 9/8/2010



COMPANY: RESACA OPERATING
LEASE: COOPER JAL UNIT # 220 WIW
FIELD (FORMATION): COOPER JAL UNIT (YATES)
COUNTY: LEA
STATE: NM

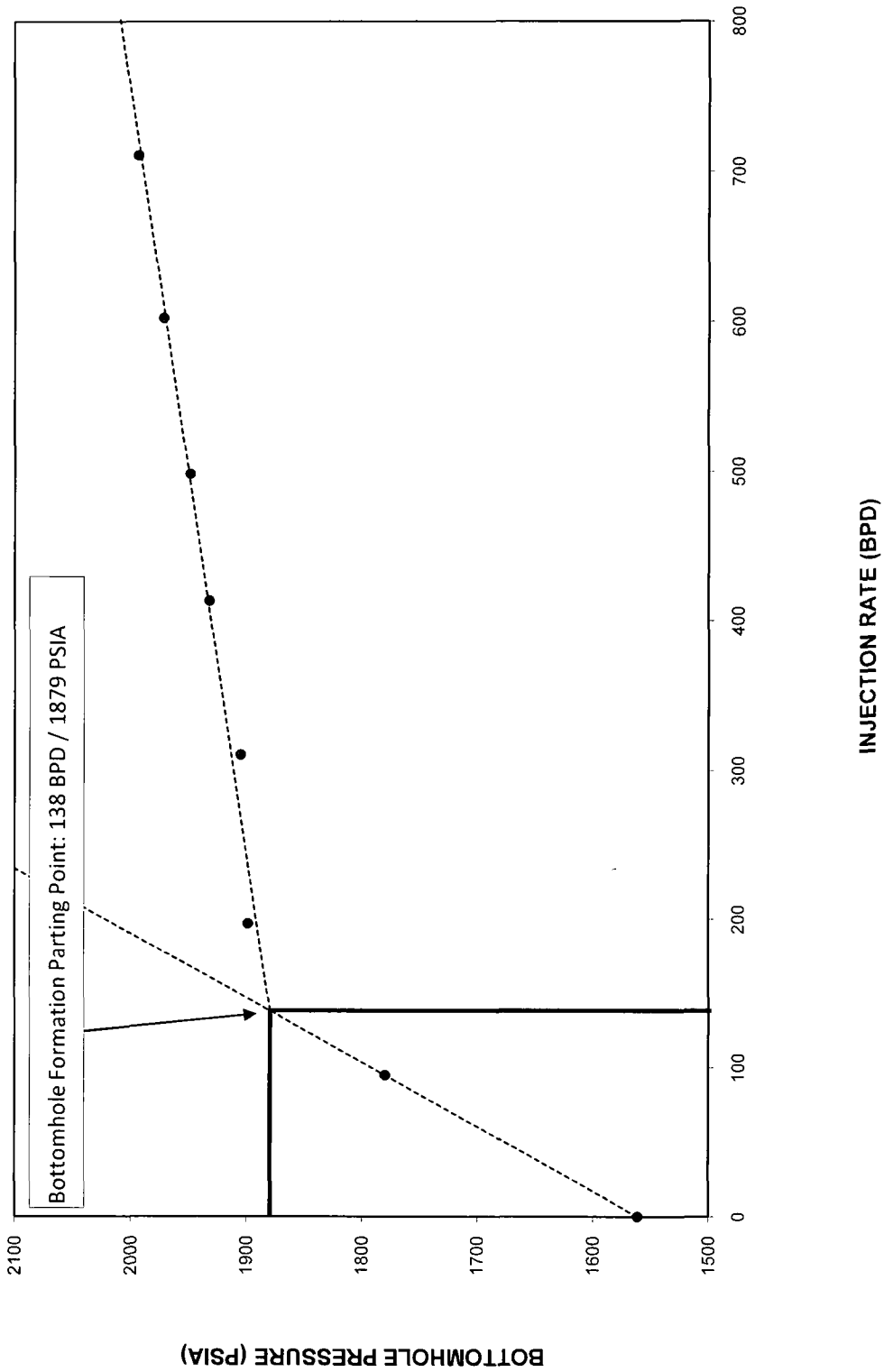
TEST DATES: 9/3/2010 - 9/3/2010
RUN DEPTH: 2700
INSTRUMENT: PP00005

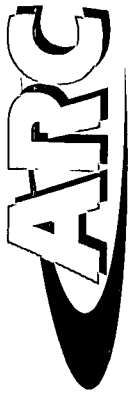
REAL TIME	DELTA TIME, HOURS	BOTTOMHOLE PRESSURE, PSIA	WELLHEAD PRESSURE, PSIG	INJECTION RATE, BPD	JOB NUMBER: 79641
09/3/10 11:02:18 AM	1.3883	1561.64	475.00	0.00	
09/3/10 11:29:38 AM	1.8439	1779.74	710.00	95.00	
09/3/10 12:02:13 PM	2.3869	1898.34	797.00	197.50	
09/3/10 12:29:48 PM	2.8467	1904.93	805.00	311.00	
09/3/10 01:01:18 PM	3.3717	1931.74	832.50	413.50	
09/3/10 01:30:28 PM	3.8578	1948.71	857.50	498.50	
09/3/10 02:02:13 PM	4.3869	1971.50	901.00	602.50	
09/3/10 02:31:03 PM	4.8675	1993.21	923.00	711.00	



COMPANY:	RESACA OPERATING	FIELD:	COOPER JAL UNIT	JOB #	79641
LEASE:	COOPER JAL UNIT	COUNTY:	LEA	TEST DATE:	9/3/2010
WELL NUMBER:	220 WIW	STATE:	NM		9/3/2010

STEP-RATE TEST - BHP VS. INJECTION RATE





COMPANY:	RESACA OPERATING	FIELD:	COOPER JAL UNIT	JOB #	79641
LEASE:	COOPER JAL UNIT	COUNTY:	LEA	TEST DATE:	9/3/2010
WELL NUMBER:	220 WIW	STATE:	NM		9/3/2010

