

CONFIDENTIAL

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

ORIGINAL

Form ACO-1
June 2009

Form Must Be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

2/18/13

OPERATOR: License # 5278
Name: EOG RESOURCES, INC.
Address 1: 3817 NW EXPRESSWAY, SUITE 500
Address 2: _____
City: OKLAHOMA CITY State: OK Zip: 73112 + _____
Contact Person: DAWN ROCKEL
Phone: (405) 246-3226
CONTRACTOR: License # 34000
Name: KENAI MID-CONTINENT, INC.
Wellsite Geologist: _____
Purchaser: ANADARKO PETROLEUM CORP.

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API No. 15 - 189-22757-00-00
Spot Description: _____
SE NW SE SE Sec. 21 Twp. 32 S. R. 37 East West
780 Feet from North / South Line of Section
910 Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:
 NE NW SE SW
County: STEVENS
Lease Name: LAURA Well #: 21 #1
Field Name: WILDCAT

Producing Formation: MISSISSIPPIAN
Elevation: Ground: 3139' Kelly Bushing: 3151'
Total Depth: 6550' Plug Back Total Depth: _____
Amount of Surface Pipe Set and Cemented at: 1714 Feet
Multiple Stage Cementing Collar Used? Yes No
If yes, show depth set: _____ Feet
If Alternate II completion, cement circulated from: _____
feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)
Chloride content: 4000 ppm Fluid volume: 1000 bbls
Dewatering method used: EVAPORATION
Location of fluid disposal if hauled offsite: _____
Operator Name: WEST SUNSET DISPOSAL, LLC
Lease Name: ROHER License #: 32462
Quarter _____ Sec. 36 Twp. 34 S. R. 36 East West
County: STEVENS Permit #: D27649

Designate Type of Completion:
 New Well Re-Entry Workover
 Oil WSW SWD SIOW
 Gas D&A ENHR SIGW
 OG GSW Temp. Abd.
 CM (Coal Bed Methane)
 Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:
Operator: _____
Well Name: _____
Original Comp. Date: _____ Original Total Depth: _____
 Deepening Re-perf. Conv. to ENHR Conv. to SWD
 Conv. to GSW
 Plug Back: _____ Plug Back Total Depth _____
 Commingled Permit #: _____
 Dual Completion Permit #: _____
 SWD Permit #: _____
 ENHR Permit #: _____
 GSW Permit #: _____
10/31/2010 11/12/2010 11/30/2010
Spud Date or Date Reached TD Completion Date or Recompletion Date

INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

AFFIDAVIT
I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.
Signature: Dawn Rockel
Title: SR. OPERATIONS ASSISTANT Date: 2/16/2011

KCC Office Use ONLY RECEIVED
 Letter of Confidentiality Received
Date: 2/18/11 - 2/18/13 **FEB 25 2011**
 Confidential Release Date: _____
 Wireline Log Received
 Geologist Report Received
 UIC Distribution
ALT I II III Approved by: NJ Date: 3-3-11
KCC WICHITA

Operator Name: EOG RESOURCES, INC. Lease Name: LAURA Well #: 21 #1
 Sec. 21 Twp. 32 S. R. 37 East West County: STEVENS

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Submitted Electronically <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i> List All E. Logs Run: SD/DS Neutron Micro, Resistivity, Array Sonic, Cement Bond, Collar Locator, Micro & SD/DS Neutron.	<input checked="" type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Name</th> <th style="text-align: left;">Top</th> <th style="text-align: left;">Datum</th> </tr> </thead> <tbody> <tr> <td>BASE OF HEEBNER</td> <td>4145</td> <td>-994</td> </tr> <tr> <td>LANSING</td> <td>4263</td> <td>-1112</td> </tr> <tr> <td>MARMATON</td> <td>4923</td> <td>-1772</td> </tr> <tr> <td>CHEROKEE</td> <td>5160</td> <td>-2009</td> </tr> <tr> <td>ATOKA</td> <td>5547</td> <td>-2396</td> </tr> <tr> <td>MORROW</td> <td>5660</td> <td>-2509</td> </tr> <tr> <td>ST. GENEVIEVE</td> <td>6168</td> <td>-3017</td> </tr> </tbody> </table>	Name	Top	Datum	BASE OF HEEBNER	4145	-994	LANSING	4263	-1112	MARMATON	4923	-1772	CHEROKEE	5160	-2009	ATOKA	5547	-2396	MORROW	5660	-2509	ST. GENEVIEVE	6168	-3017
Name	Top	Datum																							
BASE OF HEEBNER	4145	-994																							
LANSING	4263	-1112																							
MARMATON	4923	-1772																							
CHEROKEE	5160	-2009																							
ATOKA	5547	-2396																							
MORROW	5660	-2509																							
ST. GENEVIEVE	6168	-3017																							

CASING RECORD <input checked="" type="checkbox"/> New <input checked="" type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
SURFACE	12 1/4	8 5/8	24#	1714	MIDCON2	300	SEE ATTACHED
					CLASS 'A'	200	
PRODUCTION	7 7/8	5 1/2	15.5#	6514	50/50 POZ	125	SEE ATTACHED

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)	Depth
4	6366'-6378'	Acidize w/1500 gal HCL.	6366-6378

TUBING RECORD:	Size: <u>2 7/8</u>	Set At: <u>6415</u>	Packer At:	Liner Run: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Date of First, Resumed Production, SWD or ENHR. <u>12/2/10</u>		Producing Method: <input type="checkbox"/> Flowing <input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____		
Estimated Production Per 24 Hours	Oil Bbls. <u>122</u>	Gas Mcf <u>736</u>	Water Bbls. <u>20</u>	Gas-Oil Ratio <u>6032</u>
				Gravity <u>46</u>

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input checked="" type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input checked="" type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: <u>6366'-6378'</u>
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FEB 18 2011
CONFIDENTIAL **Cementing Job Summary**

HALLIBURTON

The Road to Excellence Starts with Safety

Sold To #: 348223		Ship To #: 2816807		Quote #:		Sales Order #: 7743937	
Customer: EOG RESOURCES INC EBUSINESS				Customer Rep: Knox, Mike			
Well Name: Laura 21			Well #: #1		API/UWI #:		
Field:		City (SAP): HUGOTON		County/Parish: Stevens		State: Kansas	
Legal Description: Section 21 Township 32S Range 37W							
Contractor: Kenai			Rig/Platform Name/Num: 55				
Job Purpose: Cement Surface Casing							
Well Type: Development Well				Job Type: Cement Surface Casing			
Sales Person: DRAKE, BRANDON			Srvc Supervisor: CARRILLO, EDUARDO			MBU ID Emp #: 371263	

Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
ARNETT, JAMES Ray	4.5	226567	CARRILLO, EDUARDO Carrillo	4.5	371263	DEETZ, DONALD E	4.5	389855
FARNUM, GORDON Lamar	4.5	477892	PORTILLO, CESAR	4.5	457847			

Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10714253C	25 mile	10717476	25 mile	10825713	25 mile	10994449	25 mile

Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
11-1-10	4.5	4						

TOTAL *Total is the sum of each column separately*

Job				Job Times				
Formation Name	Formation Depth (MD)	Top	Bottom	Called Out	Date	Time	Time Zone	
					01 - Nov - 2010	16:00	CST	
Form Type			BHST	95 degF	On Location	01 - Nov - 2010	18:00	CST
Job depth MD	1719. ft		Job Depth TVD	1719. ft	Job Started	01 - Nov - 2010	20:37	CST
Water Depth			Wk Ht Above Floor	4. ft	Job Completed	01 - Nov - 2010	22:03	CST
Perforation Depth (MD) From			To		Departed Loc	01 - Nov - 2010	23:30	CST

Well Data

Description	New / Used	Max pressure psig	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Surface Hole				12.25					1700.		
Surface Casing	Unknown		8.625	8.097	24.				1700.		

Sales/Rental/3rd Party (HES)

Description	Qty	Qty uom	Depth	Supplier
CENTRALIZER ASSY - API - 8-5/8 CSG X	12	EA		
CLAMP - LIMIT - 8-5/8 - HINGED -	2	EA		
BASKET - CEMENT - 8 5/8 CSG X 12 1/4	1	EA		
PLUG,CMTG, TOP, 8 5/8, HWE, 7.20 MIN/8.09 MA	1	EA		

Tools and Accessories

Type	Size	Qty	Make	Depth	Type	Size	Qty	Make	Depth	Type	Size	Qty	Make
Guide Shoe					Packer					Top Plug	8 5/8	1	h
Float Shoe					Bridge Plug					Bottom Plug			
Float Collar					Retainer					SSR plug set			
Insert Float										Plug Container	8 5/8	1	h
Stage Tool										Centralizers	8 5/8	12	h

Miscellaneous Materials

Gelling Agt	Conc	Surfactant	Conc	Acid Type	Qty	Conc	%
Treatment Fld	Conc	Inhibitor	Conc	Sand Type	Size	Qty	

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Cementing Job Summary

Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density lbm/gal	Yield ft ³ /sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk	
1	Lead Cement	VARICEM (TM) CEMENT (452009)	300.0	sacks	11.4	2.96	18.14		18.14	
	3 %	CALCIUM CHLORIDE - HI TEST PELLET (100005053)								
	0.1 %	WG-17, 50 LB SK (100003623)								
	0.25 lbm	POLY-E-FLAKE (101216940)								
	18.138 Gal	FRESH WATER								
2	Tail Cement	SWIFTCEM (TM) SYSTEM (452990)	200.0	sacks	15.6	1.2	5.22		5.22	
	2 %	CALCIUM CHLORIDE - HI TEST PELLET (100005053)								
	0.25 lbm	POLY-E-FLAKE (101216940)								
	5.218 Gal	FRESH WATER								
3	Displacement		106.00	bbl	8.33	.0	.0	.0		
Calculated Values			Pressures			Volumes				
Displacement	106	Shut In: Instant		Lost Returns	70	Cement Slurry	201	Pad		
Top Of Cement	???	5 Min		Cement Returns	0	Actual Displacement	106	Treatment		
Frac Gradient		15 Min		Spacers	0	Load and Breakdown		Total Job	307	
Rates										
Circulating	8	Mixing	6	Displacement	9	Avg. Job	7			
Cement Left in Pipe	Amount	45 ft	Reason	Shoe Joint						
Frac Ring # 1 @	ID	Frac ring # 2 @	ID	Frac Ring # 3 @	ID	Frac Ring # 4 @	ID			
The Information Stated Herein is Correct				Customer Representative Signature						

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HALLIBURTON

Cementing Job Log

The Road to Excellence Starts with Safety

Sold To #: 348223	Ship To #: 2816807	Quote #:	Sales Order #: 7743937
Customer: EOG RESOURCES INC EBUSINESS		Customer Rep: Knox, Mike	
Well Name: Laura 21	Well #: #1	API/UWI #:	
Field:	City (SAP): HUGOTON	County/Parish: Stevens	State: Kansas
Legal Description: Section 21 Township 32S Range 37W			
Lat: N 0 deg. OR N 0 deg. 0 min. 0 secs.		Long: E 0 deg. OR E 0 deg. 0 min. 0 secs.	
Contractor: Kenal		Rig/Platform Name/Num: 55	
Job Purpose: Cement Surface Casing		Ticket Amount:	
Well Type: Development Well		Job Type: Cement Surface Casing	
Sales Person: DRAKE, BRANDON		Srv Supervisor: CARRILLO, EDUARDO	MBU ID Emp #: 371263

Activity Description	Date/Time	Cnt #	Rate bbl/min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Call Out	11/01/2010 16:00							
Pre-Convoy Safety Meeting	11/01/2010 17:30							discuss routs and stops
Arrive At Loc	11/01/2010 19:00							rig was pulling drill pipe
Assessment Of Location Safety Meeting	11/01/2010 19:05							walk around look for trip hazards
Pre-Rig Up Safety Meeting	11/01/2010 19:10							with everyone on location
Rig-Up Completed	11/01/2010 20:10							
Post-Job Safety Meeting (Pre Rig-Down)	11/01/2010 20:15							
Start Job	11/01/2010 20:37							
Test Lines	11/01/2010 20:38							4000
Pump Lead Cement	11/01/2010 20:42		6	158			135.0	300 sks @ 11.4
Pump Tail Cement	11/01/2010 21:05		6	43	201		140.0	200 sks @ 15.6 had problems mixing tail cement kept dry mixing top plug only
Drop Plug	11/01/2010 21:17							
Pump Displacement	11/01/2010 21:20		9	108	307		300.0	fresh water staged in the last 20 bbl
Bump Plug	11/01/2010 22:00							bumped plug @ 300 took to 950 lost returns no cement returns
Check Floats	11/01/2010 22:01							ok
End Job	11/01/2010 22:03							wait on directions

Sold To #: 348223

Ship To #: 2816807

Quote #:

Sales Order #: 7743937

SUMMIT Version: 7.20.130

Monday, November 01, 2010 09:43:00

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Cementing Job Log

Activity Description	Date/Time	Cht #	Rate bbl/min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Pre-Rig Down Safety Meeting	11/01/2010 22:05							watch pinch points, trip hazards
Rig-Down Completed	11/01/2010 23:00							
Pro-Convoy Safety Meeting	11/01/2010 23:15							
Crew Leave Location	11/01/2010 23:30							thanks for calling halliburton Eric and crew

Sold To #: 348223

Ship To #: 2816807

Quote #:

Sales Order #: 7743937

SUMMIT Version: 7.20.13U

Monday, November 01, 2010 09:43:00

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 348223	Ship To #: 2816807	Quote #:	Sales Order #: 7770428
Customer: EOG RESOURCES INC EBUSINESS		Customer Rep: Sessions, Jackie	
Well Name: Laura	Well #: 21-1	API/UWI #:	
Field:	City (SAP): HUGOTON	County/Parish: Finney	State: Kansas
Contractor: KENAI	Rig/Platform Name/Num: 55		
Job Purpose: Cement Production Casing			
Well Type: Development Well		Job Type: Cement Production Casing	
Sales Person: DRAKE, BRANDON		Srvc Supervisor: HULSEY, JASON	MBU ID Emp #: 305277

Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
FARNUM, GORDON	8	477892	HULSEY, JASON Alan	8	305277	MATA, ADOLFO V	8	419999

Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10025025	25 mile	10243558	25 mile	10744298C	25 mile	10988832	25 mile
11133699	25 mile						

Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
11/12/2010	8	2						

TOTAL

Total is the sum of each column separately

Job

Job Times

Formation Name	Formation Depth (MD)	Top	Bottom	Date	Time	Time Zone
Form Type			BHST	Called Out	12 - Nov - 2010	04:30 CST
Job depth MD	6550. ft		Job Depth TVD	On Location	12 - Nov - 2010	08:30 CST
Water Depth			Wk Ht Above Floor	Job Started	12 - Nov - 2010	13:45 CST
Perforation Depth (MD)	From		To	Job Completed	12 - Nov - 2010	14:58 CST
				Departed Loc	12 - Nov - 2010	16:00 CST

Well Data

Description	New / Used	Max pressure psig	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Production Hole				7.875				1700.	6550.		
5 1/2" Production Casing	Unknown		4.5	4.052	10.5				6550.		
Surface Casing	Unknown		8.625	8.097	24.				1700.		

Sales/Rental/3rd Party (HES)

Description	Qty	Qty uom	Depth	Supplier
CENTRALIZER ASSY - TURBO - API -	18	EA		
CLAMP - LIMIT - 5-1/2 - HINGED -	2	EA		
PLUG,CMTG, TOP, 5 1/2, HW, 4.38 MIN/5.09 MA	1	EA		
KIT, HALL WELD-A	1	EA		

Tools and Accessories

Type	Size	Qty	Make	Depth	Type	Size	Qty	Make	Depth	Type	Size	Qty	Make
Guide Shoe					Packer					Top Plug			
Float Shoe					Bridge Plug					Bottom Plug			
Float Collar					Retainer					SSR plug set			
Insert Float										Plug Container			
Stage Tool										Centralizers			

Miscellaneous Materials

Gelling Agt	Conc	Surfactant	Conc	Acid Type	Qty	Conc	%
Treatment Fld	Conc	Inhibitor	Conc	Sand Type	Size	Qty	


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Cementing Job Summary

Fluid Data									
Stage/Plug #: 1									
Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density lbm/gal	Yield ft ³ /sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk
1	Primary Cement	ECONOCEM (TM) SYSTEM (452992)	125.0	sacks	13.5	1.76	8.52		8.52
	6 %	CAL-SEAL 60, 50 LB BAG (101217146)							
	10 %	SALT, BULK (100003695)							
	2 lbm	PRESSUR-SEAL LCM, 40 LB (101204356)							
	0.6 %	HALAD(R)-344, 50 LB (100003670)							
	0.5 %	D-AIR 3000 (101007446)							
	0.1 %	WG-17, 50 LB SK (100003623)							
	8.516 Gal	FRESH WATER							
2	2% KCL Displacement		154.00	bbl	8.45	.0	.0	.0	
	7.15 lbm/bbl	POTASSIUM CHLORIDE - KCL, 50 LB BAG (100001585)							
3	Rat Hole Plug Cement	PLUGCEM (TM) SYSTEM (452969)	50.0	sacks	13.5	1.76	8.52		8.52
	6 %	CAL-SEAL 60, 50 LB BAG (101217146)							
	10 %	SALT, BULK (100003695)							
	2 lbm	PRESSUR-SEAL LCM, 40 LB (101204356)							
	0.6 %	HALAD(R)-344, 50 LB (100003670)							
	0.5 %	D-AIR 3000 (101007446)							
	0.1 %	WG-17, 50 LB SK (100003623)							
	8.516 Gal	FRESH WATER							
Calculated Values		Pressures			Volumes				
Displacement		Shut In: Instant		Lost Returns		Cement Slurry		Pad	
Top Of Cement		5 Min		Cement Returns		Actual Displacement		Treatment	
Frac Gradient		15 Min		Spacers		Load and Breakdown		Total Job	
Rates									
Circulating		Mixing		Displacement		Avg. Job			
Cement Left In Pipe	Amount	47.24 ft	Reason	Shoe Joint					
Frac Ring # 1 @	ID	Frac ring # 2 @	ID	Frac Ring # 3 @	ID	Frac Ring # 4 @	ID		
The Information Stated Herein Is Correct				Customer Representative Signature  R. S. Session 12/Nov/10					

HALLIBURTON

Cementing Job Log

Activity Description	Date/Time	Cht #	Rate bbl/min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
End Job	11/12/2010 14:58							
Pre-Rig Down Safety Meeting	11/12/2010 15:05							All HES employees present
Rig-Down Equipment	11/12/2010 15:10							
Depart Location Safety Meeting	11/12/2010 16:00							All HES employees present
Depart Location for Service Center or Other Site	11/12/2010 16:05							

Sold To #: 348223

Ship To #: 2816807

Quote #:

SUMMIT Version: 7.20.130

Friday, November 12, 2010 03:26:00

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Sales Order #: 7770428
FEB 25 2011

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Weatherford[®]

Completion Systems

DRILL STEM TEST REPORT

Prepared For: **EOG Resources**

3817 NW EXPWY STE500
Oklahoma City Ok, 73112

ATTN: Mike Knox

21/32s/37w

Laura 21-1

Start Date: 2010.11.08 @ 02:59:11

End Date: 2010.11.08 @ 16:34:56

Job Ticket #: 39356 DST #: 1

ALPINE OIL SERVICES CORPORATION
2460, 240 - 4 Avenue S.W. Calgary, AB. T2P 4H4
ph: 263-7800 fax: 264-7260

Printed: 2010.11.11 @ 08:07:54 Page

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EOG Resources

Laura 21-1

21/32s/37w

DST # 1

MOFFAW

2010.11.08



Weatherford® Completion Systems

DRILL STEM TEST REPORT

EOG Resources
3817 NW EXPWY STE500
Oklahoma City Ok, 73112
ATTN: Mike Knox

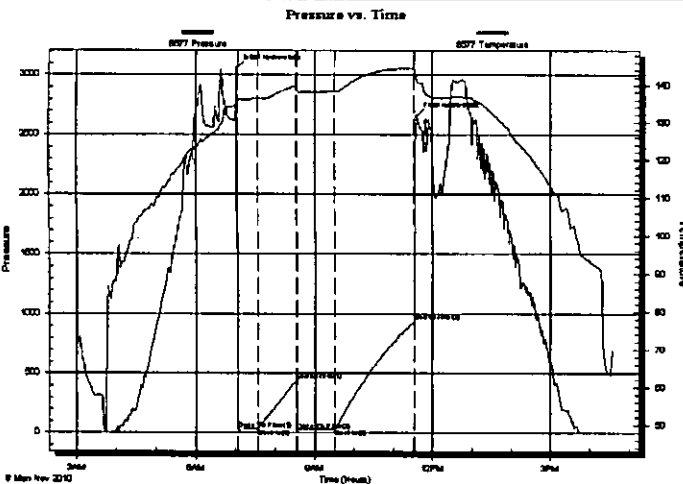
Laura 21-1
21/32s/37w
Job Ticket: 39356 **DST#: 1**
Test Start: 2010.11.08 @ 02:59:11

GENERAL INFORMATION:

Formation: **Morrow**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 07:04:26
Time Test Ended: 16:34:56
Interval: **5649.00 ft (KB) To 5721.00 ft (KB) (TVD)**
Total Depth: 5721.00 ft (KB) (TVD)
Hole Diameter: 7.78 inches Hole Condition: Good
Test Type: Conventional Bottom Hole
Tester: Mike Slemp
Unit No: 53
Reference Elevations: 3151.00 ft (KB)
3139.00 ft (CF)
KB to GR/CF: 12.00 ft

Serial #: 8677 **Inside**
Press@RunDepth: 35.97 psig @ 5651.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2010.11.08 End Date: 2010.11.08 Last Calib.: 2010.11.08
Start Time: 02:59:12 End Time: 16:34:56 Time On Btrr: 2010.11.08 @ 07:02:41
Time Off Btrr: 2010.11.08 @ 11:35:41

TEST COMMENT: F- Strong blow , BOB in 30 seconds
IS- No blow back
FF- Strong blow , BOB ASAO
FSI- No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	3059.17	134.91	Initial Hydro-static
2	29.20	136.02	Open To Flow (1)
32	32.44	136.34	Shut-in(1)
90	442.79	139.76	End Shut-in(1)
91	20.98	138.53	Open To Flow (2)
149	35.97	138.33	Shut-in(2)
270	938.57	144.44	End Shut-in(2)
273	2660.14	140.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
882.00	100% mud	9.02

Gas Rates

Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/d)



**Weatherford®
Completion Systems**

DRILL STEM TEST REPORT

TOOL DIAGRAM

EOG Resources

Laura 21-1

3817 NW EXPWY STE500
Oklahoma City Ok, 73112

21/32s/37w

Job Ticket: 39356

DST#: 1

ATTN: Mike Knox

Test Start: 2010.11.08 @ 02:59:11

Tool Information

Drill Pipe:	Length: 5262.00 ft	Diameter: 3.80 inches	Volume: 73.81 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 368.00 ft	Diameter: 2.25 inches	Volume: 1.81 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 75.62 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 86000.00 lb
Depth to Top Packer:	5649.00 ft			Final 96000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	72.00 ft			
Tool Length:	101.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			5625.00	
Sampler	3.00			5628.00	
Hydraulic tool	5.00			5633.00	
Jars	5.00			5638.00	
Safety Joint	2.00			5640.00	
Packer	5.00			5645.00	29.00 Bottom Of Top Packer
Packer	4.00			5649.00	
Stubb	1.00			5650.00	
Perforations	1.00			5651.00	
Recorder	0.00	8678	inside	5651.00	
Recorder	0.00	8677	inside	5651.00	
Perforations	5.00			5656.00	
Change Over Sub	1.00			5657.00	
Drill Pipe	60.00			5717.00	
Change Over Sub	1.00			5718.00	
Bullnose	3.00			5721.00	72.00 Bottom Packers & Anchor
Total Tool Length:	101.00				



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DRILL STEM TEST REPORT

FLUID SUMMARY

EOG Resources

Laura 21-1

3817 NW EXPWY STE500
 Oklahoma City Ok, 73112

21/32s/37w

Job Ticket: 39356

DST#: 1

ATTN: Mike Knox

Test Start: 2010.11.08 @ 02:59:11

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.97 cm³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
882.00	100% mud	9.020

Total Length: 882.00 ft Total Volume: 9.020 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Sampler-750 PSI, 8 cu/ft air



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Completion Systems

DRILL STEM TEST REPORT

GAS RATES

EOG Resources

Laura 21-1

3817 NW EXPWY STE500
Oklahoma City Ok, 73112

21/32s/37w

Job Ticket: 39356

DST#: 1

ATTN: Mike Knox

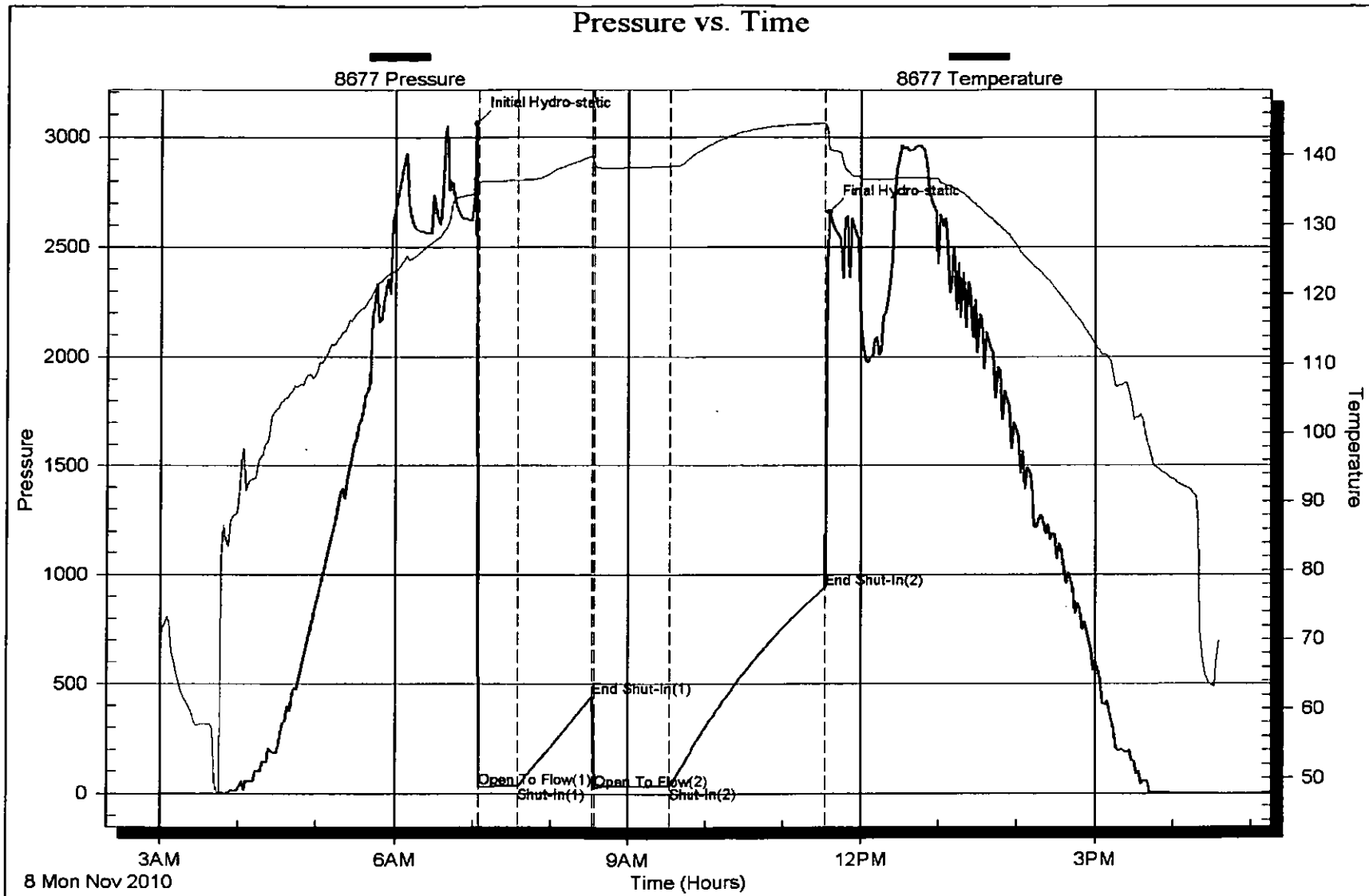
Test Start: 2010.11.08 @ 02:59:11

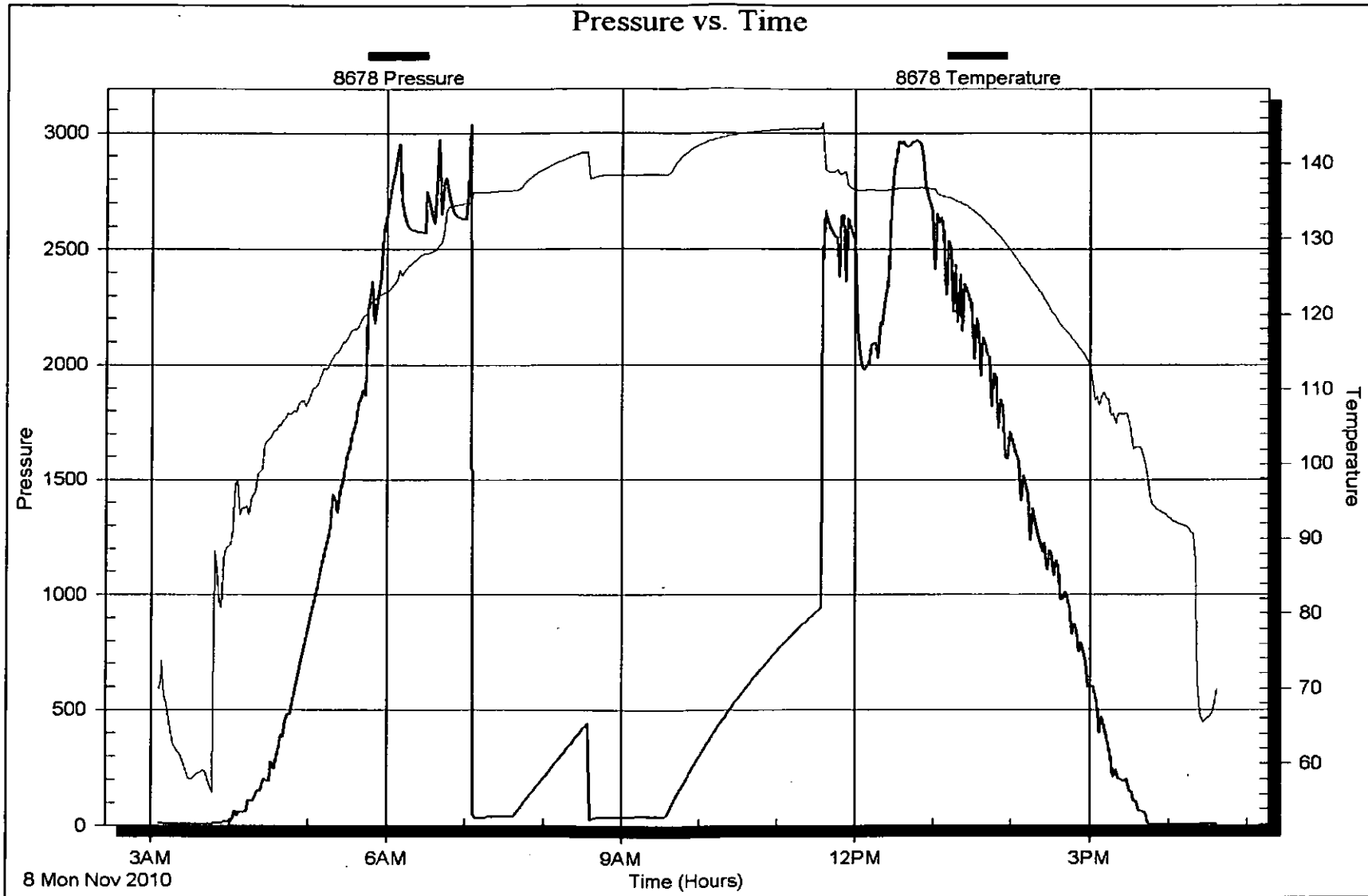
Gas Rates Information

Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m ³ /d)
		0.00	0.00	0.00





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Weatherford® Completion Systems

DRILL STEM TEST REPORT

Prepared For: **EOG Resources**

3817 NW EXPWY STE500
Oklahoma City Ok, 73112

ATTN: Mike Knox

21/32s/37w

Laura 21-1

Start Date: 2010.11.10 @ 02:20:35

End Date: 2010.11.10 @ 17:04:20

Job Ticket #: 39357 DST #: 2

ALPINE OIL SERVICES CORPORATION
2460, 240 - 4 Avenue S.W. Calgary, AB. T2P 4H4
ph: 263-7800 fax: 264-7260



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Completion Systems

DRILL STEM TEST REPORT

EOG Resources
3817 NW EXPWY STE500
Oklahoma City Ok, 73112
ATTN: Mike Knox

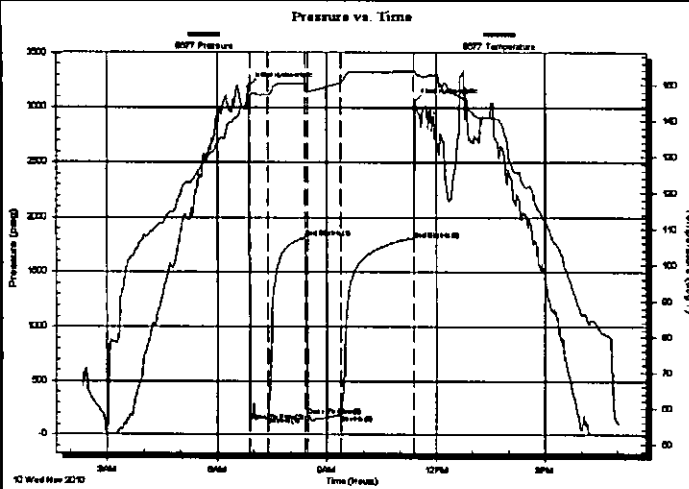
Laura 21-1
21/32s/37w
Job Ticket: 39357 **DST#: 2**
Test Start: 2010.11.10 @ 02:20:35

GENERAL INFORMATION:

Formation: **St. Louis**
Deviated: **No Whipstock** **ft (KB)**
Time Tool Opened: **08:52:50**
Time Test Ended: **17:04:20**
Interval: **6334.00 ft (KB) To 6385.00 ft (KB) (TVD)**
Total Depth: **6385.00 ft (KB) (TVD)**
Hole Diameter: **7.78 inches** Hole Condition: **Good**
Test Type: **Conventional Bottom Hole**
Tester: **Mike Slemp**
Unit No: **53**
Reference Elevations: **3151.00 ft (KB)**
3139.00 ft (CF)
KB to GR/CF: **12.00 ft**

Serial #: 8677 **Inside**
Press@RunDepth: **186.25 psig @ 6336.00 ft (KB)** Capacity: **8000.00 psig**
Start Date: **2010.11.10** End Date: **2010.11.10** Last Calib.: **2010.11.10**
Start Time: **02:20:36** End Time: **17:04:20** Time On Btm: **2010.11.10 @ 06:50:50**
Time Off Btm: **2010.11.10 @ 11:24:35**

TEST COMMENT: IF- BOB in 4 min, GTS at shut in
IS- No blow back
FF-BOB in 1 min GTS ASAO, TSTM
FSI- No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	3191.78	144.50	Initial Hydro-static
2	128.95	144.52	Open To Flow (1)
32	164.57	147.10	Shut-in(1)
92	1815.49	150.46	End Shut-in(1)
98	181.62	148.00	Open To Flow (2)
152	186.25	150.55	Shut-in(2)
272	1802.35	153.88	End Shut-in(2)
274	3058.77	154.08	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1227.00	OCGM25%gas30%oil45%mud	13.86

Gas Rates

Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/d)



Weatherford®
Completion Systems

DRILL STEM TEST REPORT

TOOL DIAGRAM

EOG Resources

Laura 21-1

3817 NW EXPWY STE500
Oklahoma City Ok, 73112

21/32s/37w

Job Ticket: 39357

DST#: 2

ATTN: Mike Knox

Test Start: 2010.11.10 @ 02:20:35

Tool Information

Drill Pipe:	Length: 5947.00 ft	Diameter: 3.80 inches	Volume: 83.42 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 368.00 ft	Diameter: 2.25 inches	Volume: 1.81 bbl	Weight to Pull Loose:	120000.0 lb
			<u>Total Volume: 85.23 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial	90000.00 lb
Depth to Top Packer:	6334.00 ft			Final	100000.0 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	51.00 ft				
Tool Length:	80.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			6310.00	
Sampler	3.00			6313.00	
Hydraulic tool	5.00			6318.00	
Jars	5.00			6323.00	
Safety Joint	2.00			6325.00	
Packer	5.00			6330.00	29.00 Bottom Of Top Packer
Packer	4.00			6334.00	
Stubb	1.00			6335.00	
Perforations	1.00			6336.00	
Recorder	0.00	8678	inside	6336.00	
Recorder	0.00	8677	inside	6336.00	
Perforations	13.00			6349.00	
Change Over Sub	1.00			6350.00	
Drill Pipe	31.00			6381.00	
Change Over Sub	1.00			6382.00	
Bullnose	3.00			6385.00	51.00 Bottom Packers & Anchor
Total Tool Length:	80.00				



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DRILL STEM TEST REPORT

FLUID SUMMARY

EOG Resources

Laura 21-1

3817 NW EXPWY STE500
 Oklahoma City Ok, 73112

21/32s/37w

Job Ticket: 39357

DST#: 2

ATTN: Mike Knox

Test Start: 2010.11.10 @ 02:20:35

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.39 cm³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1227.00	OCGM25%gas30%oil45%mud	13.859

Total Length: 1227.00 ft Total Volume: 13.859 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Sampler- 1300psi, 1000ml oil, 7 cu/ft gas



DRILL STEM TEST REPORT

GAS RATES

Weatherford[®]
Completion Systems

EOG Resources
3817 NW EXPWY STE500
Oklahoma City Ok, 73112
ATTN: Mike Knox

Laura 21-1
21/32s/37w
Job Ticket: 39357 DST#: 2
Test Start: 2010.11.10 @ 02:20:35

Gas Rates Information

Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m ³ /d)
		0.00	0.00	0.00

