



KANSAS CORPORATION COMMISSION 1069379  
OIL & GAS CONSERVATION DIVISION

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

OPERATOR: License # 34506  
Name: Empire Energy E&P, LLC  
Address 1: 17 ARENTZEN BLVD, STE 203  
Address 2: \_\_\_\_\_  
City: CHARLEROL State: PA Zip: 15022 + \_\_\_\_\_  
Contact Person: Rob Kramer  
Phone: ( 316 ) 313-4395  
CONTRACTOR: License # 34541  
Name: Ninnescah Drilling LLC  
Wellsite Geologist: James Musgrove  
Purchaser: Coffeyville Crude

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 #: \_\_\_\_\_  
08/06/2011    08/13/2011    08/29/2011  
Spud Date or    Date Reached TD    Completion Date or  
Recompletion Date    Recompletion Date

API No. 15 - 15-185-23688-00-00  
Spot Description: \_\_\_\_\_  
SE NE SE Sec. 19 Twp. 22 S. R. 12  East  West  
1650 Feet from  North /  South Line of Section  
330 Feet from  East /  West Line of Section  
Footages Calculated from Nearest Outside Section Corner:  
 NE     NW     SE     SW  
County: Stafford  
Lease Name: KRANKENBERG Well #: 5-19  
Field Name: \_\_\_\_\_  
Producing Formation: Arbuckle  
Elevation: Ground: 1870 Kelly Bushing: 1882  
Total Depth: 3876 Plug Back Total Depth: 3819  
Amount of Surface Pipe Set and Cemented at: 688 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: 35000 ppm Fluid volume: 1200 bbls  
Dewatering method used: Hauled to Disposal  
Location of fluid disposal if hauled offsite: \_\_\_\_\_  
Operator Name: Empire Energy  
Lease Name: Krankenber East License #: 0  
Quarter NW Sec. 20 Twp. 22 S. R. 12  East  West  
County: Stafford Permit #: 0

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.

Submitted Electronically

KCC Office Use ONLY

- Letter of Confidentiality Received  
Date: \_\_\_\_\_  
 Confidential Release Date: \_\_\_\_\_  
 Wireline Log Received  
 Geologist Report Received  
 UIC Distribution  
ALT  I  II  III Approved by: Deanna Garrison Date: 12/05/2011



1069379

Operator Name: Empire Energy E&P, LLC Lease Name: KRANKENBERG Well #: 5-19  
 Sec. 19 Twp. 22 S. R. 12  East  West County: Stafford

**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 type="checkbox"/> Yes <input checked="" 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: <b>Attached</b>	<input checked="" type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum Attached Attached Attached
---	--

CASING RECORD <input checked="" type="checkbox"/> New <input 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	12.25	8.625	23	688	common	350	2% Gel, 3% CaCl, 1/4#/sk Flow-sea
Production	7.875	5.5	14	3873	AA-2	175	10% NaCl, 3% CFR, 25% defoamer, .8

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate				
___ Protect Casing	-			
___ Plug Back TD	-			
___ 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	3771 - 3772	150 gals. 7.5% MCA	3771 - 3772

TUBING RECORD: Size: <u>2.875</u> Set At: <u>3822</u> Packer At: _____		Liner Run: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Date of First, Resumed Production, SWD or ENHR. <u>09/01/2011</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 Bbbs. <u>60</u>	Gas Mcf <u>214</u>	Water Bbbs. _____ Gas-Oil Ratio _____ Gravity <u>36</u>

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input 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) (Submit ACO-4)</i> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: <u>3771</u> <u>3772</u>
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Form	ACO1 - Well Completion
Operator	Empire Energy E&P, LLC
Well Name	KRANKENBERG 5-19
Doc ID	1069379

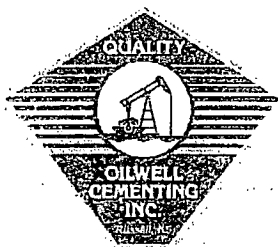
All Electric Logs Run

Dual Receiver CBL
Micro Log
Sonic Log
Compensated Density/Neutron Log
Dual Induction Log

Form	ACO1 - Well Completion
Operator	Empire Energy E&P, LLC
Well Name	KRANKENBERG 5-19
Doc ID	1069379

Tops

Name	Top	Datum
Anhydrite	679	1203
Base Anhydrite	701	1181
Heebner	3193	-1311
Toronto	3209	-1327
Douglas	3225	-1343
Brown Lime	3326	-1444
Lansing	3349	-1467
Base Kansas City	3571	-1689
Conglomerate	3621	-1739
Conglomerate Sand	3629	-1747
Viola	3638	-1756
Simpson Shale	3689	-1807
Arbuckle	3751	-1869



**QUALITY OILWELL CEMENTING, INC.**  
 PO Box 32 - 740 West Wichita Ave, Russell KS 67665  
 Phone: 785-324-1041 fax: 785-483-1087  
 Email: cementing@ruraltel.net

Date: 8/10/2011  
 Invoice # 5128

P.O.#:  
 Due Date: 9/9/2011  
 Division: *Russell*

# Invoice

**Contact:**  
 EMPIRE ENERGY  
**Address/Job Location:**  
 EMPIRE ENERGY  
 PO Box 548  
 Great Bend Ks 67530

**Reference:**

~~KRANKENBERG 5-19~~  
*Krankenberg 5-19 - AFE*  
**Description of Work:**  
 LONG SURFACE JOB

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor							
Common-Class A	350						
Bulk Truck Matl-Material Service Charge	370						
Calcium Chloride	13						
Pump Truck Mileage-Job to Nearest Camp	23						
Bulk Truck Mileage-Job to Nearest Bulk Plant	23						
Premium Gel (Bentonite)	7						
8 5/8" Top Rubber Plug	1						
Baffle Plate Aluminum, 8 5/8"	1						

**Invoice Terms:**

Net 30

*SubTotal:*

*Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:*

*SubTotal for Taxable Items:*

*SubTotal for Non-Taxable Items:*

*Total:*

*Tax:*

7.30% Stafford County Sales Tax

**Thank You For Your Business!**

**Amount Due:**  
**Applied Payments:**  
**Balance Due:**

Past Due Invoices are subject to a service charge (annual rate of 24%)  
 This does not include any applicable taxes unless it is listed.  
 ©2008-2013 Straker Investments, LLC. All rights reserved.

*#9208*  
*OK.*  
*Kern*  
*8.10.11*

APPROVED AUG 12 2011  
*RJK*

# QUALITY OILWELL CEMENTING, INC.

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 5128

Date	8-7-11	Sec.	19	Twp.	22	Range	12	County	Stafford	State	Ks	On Location		Finish	5:15 AM		
Lease	Krankenber	Well No.	S-19			Location 281 • K-19 Sect, 4E, 2 1/2 S, W 1/4											
Contractor	Minnescah			Rig # 101			Owner To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.										
Type Job	Surface																
Hole Size	12 1/4"			T.D.	693'			Charge To								Empire energy	
Csg.	8 5/8"			Depth	688'			Street									
Tbg. Size				Depth										City		State	
Cement Left in Csg.	41.23'			Shoe Joint	41.23'			The above was done to satisfaction and supervision of owner agent or contractor.									
Meas Line				Displace	41 BLS			Cement Amount Ordered 350 sx Common 3% CC									

**EQUIPMENT**

Pumptrk	1	No.	Cementer	Cisco	Mike	2% Gel	Common	350
Bulktrk	13	No.	Helper			Poz. Mix		
Bulktrk	p.u.	No.	Driver	Co #		Gel.	7	
			Driver	Rick		Calcium	13	

**JOB SERVICES & REMARKS**

Remarks:	Cement did Circulate.			Hulls	
Rat Hole				Salt	
Mouse Hole				Flowseal	
Centralizers				Kol-Seal	
Baskets				Mud CLR 48	
D/V or Port Collar				CFL-117 or CD110 CAF 38	
				Sand	
				Handling	3.70
				Mileage	

**FLOAT EQUIPMENT**

	Guide Shoe	
	Centralizer	
	Baskets	
	AFU Inserts	
	Float Shoe	
	Latch Down	
	1- Baffle plate	
	1- Rubber plug	
	Pumptrk Charge	Long Surface
	Mileage	23

Signature	Terry J. Quinn	Tax	
		Discount	
		Total Charge	

# BASIC

energy services, L.P.

## TREATMENT REPORT

Customer: E. Mobile Energy Fund PLLC	Lease No. Kranzenberg	Date: 8-12-11
Field Order # 4804	Station Pratt, Kansas	Well # 5-19
Type Job C.N.W. - Longstring	Casing 2 1/2 14 1/2	Depth 3976 Ft.
	County Stafford	State Kansas
	Formation	Legal Description 14-225-12W

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size 5 1/2 14 1/2	Tubing Size 6 1/2 11 1/2	Shots/Ft 175	Acid AA2 with	Pre Pad 5.3Lb./Gal.	58FLA-22-28	RATE	PRESS	ISIP
Depth 3976 Feet	Depth	From Blot	To 1085	Pad 15.3Lb./Gal.	Max			5 Min.
Volume 94.6 Bbl.	Volume	From	To	Frac	Min			10 Min.
Max Press. 1500 PSI	Max Press.	From	To		Avg			15 Min.
Well Connection Full Annulus	Annulus Vol. 50 sacks	From 60/40 Poz	To Plug Rat	Flush 93.5 Bbl. 2% HCL	HHP Used			Annulus Pressure
Plug Depth 3976 Feet	Packer Depth	From	To		Gas Volume			Total Load

Customer Representative: Rick Popp	Station Manager: David Scott	Treater: Clarence R. Messick
Service Units: 37,216	19,907	19,905
Driver Names: Messick	Mattal	Mc Grow

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
5:30					Trucks on location and hold safety meeting
9:30					Minnesota Drilling start to run Auto Fill Float Shoe. Shoe Joint with Latch and a total of 92 Joints new 14Lb/ft 5 1/2" A Baster was installed above collar # 13 Turbolizers were installed on collars # 1, 3, 5, 7, 9, 11, 13, 15, 17, and # 19
11:45					Casing in well. Rotate and Circulate for 2Hr.
2:05					Shut in well. Pressure Test Open Well.
	300			6	Start 2% HCL Pre-Flush.
			20	6	Start Mud Flush.
			32	5	Start 2% HCL Spacer
2:14	300		37	5	Start mixing 175 sacks AA2 cement.
	-0-		79		Stop pumping Shut in well. Wash down annulus. Release Latch Down Plug. Open Well.
2:27	100			6.5	Start 2% HCL Displacement.
				5	Start to lift cement.
2:43	1100		93.5		Plug down.
	1500				Pressure up.
					Release pressure Insert hold
	-0-		7.5	3	Plug Rat and Mouse holes
					Washup pump truck.
3:30					Job Complete
					Thank You. Clarence. Mike. Mike



PAGE 1 of 1	CUST NO 1007035	INVOICE DATE 08/18/2011
INVOICE NUMBER 1718 - 90676192		

Pratt (620) 672-1201

J LEASE NAME Krankenberg 5-19 *ATE*  
 O LOCATION  
 B COUNTY Stafford  
 S STATE KS  
 I JOB DESCRIPTION Cement-New Well Casing/Pi  
 T JOB CONTACT  
 E

B EMPIRE ENERGY E&P LLC  
 I PO BOX 548  
 L GREAT BEND  
 L KS US 67530  
 T  
 O ATTN:

JOB #	EQUIPMENT #	PURCHASE ORDER NO.	TERMS	DUE DATE
40358092	19905		Net - 30 days	09/17/2011

	QTY	U of M	UNIT PRICE	INVOICE AMOUNT
<i>For Service Dates: 08/12/2011 to 08/12/2011</i>				
0040358092				
171804804A Cement-New Well Casing/Pi 08/12/2011 Longstring				
AA2 Cement	175.00	EA		
60/40 POZ	50.00	EA		
De-foamer (Powder)	33.00	EA		
Salt (Fine)	804.00	EA		
Gas-Blok	124.00	EA		
FLA-322	83.00	EA		
Gilsonite	875.00	EA		
CS-1L KCL Substitute	5.00	EA		
Mud Flush	500.00	EA		
Latch Down Plug & Baffle 5 1/2" (Blue)	1.00	EA		
Auto Fill Float Shoe 5 1/2" (Blue)	1.00	EA		
Turbolizer 5 1/2" (Blue)	10.00	EA		
5 1/2" Basket (Blue)	1.00	EA		
Unit Mileage Charge-Pickups, Vans & Cars	45.00	HR		
Heavy Equipment Mileage	90.00	MI		
Proppant and Bulk Delivery Charges	468.00	MI		
Depth Charge; 3001-4000'	1.00	HR		
Blending & Mixing Service Charge	225.00	MI		
Plug Container Utilization Charge	1.00	EA		
Casing Swivel Rental	1.00	EA		
Supervisor	1.00	HR		

*#9208  
OK  
Jim  
8-23-11*

APPROVED AUG 26 2011  
*RSK*

PLEASE REMIT TO:	SEND OTHER CORRESPONDENCE TO:	SUB TOTAL
BASIC ENERGY SERVICES, LP	BASIC ENERGY SERVICES, LP	TAX
PO BOX 841903	PO BOX 10460	INVOICE TOTAL
DALLAS, TX 75284-1903	MIDLAND, TX 79702	



**JAMES C. MUSGROVE**

Petroleum Geologist  
212 Main Street  
P.O. Box 215  
Claflin, KS 67525

Office (620) 588-4250

Res. Claflin (620) 587-3444

Empire Energy E&P LLC  
Krankenbergs #5-19  
SE-NE-SE; Section 19-22s-12w  
Stafford County, Kansas  
Page 1

**5 1/2" Production Casing Set**

**Contractor:** Ninnescah Drilling Company (Rig #1)  
**Commenced:** August 6, 2011  
**Completed:** August 11, 2011  
**Elevation:** 1882' K.B; 1880 D.F; 1870' G.L.  
**Casing program:** Surface; 8 5/8" @ 688'  
Production; 5 1/2" @ 3879'  
**Sample:** Samples saved and examined 2900' to the Rotary Total Depth.  
**Drilling time:** One (1) foot drilling time recorded and kept 2900 ft to the Rotary Total Depth.  
**Measurements:** All depths measured from the Kelly Bushing.  
**Drill Stem Tests:** There was one (1) Drill Stem Test ran by Trilobite Testing.  
**Electric Log:** By Superior Well Services; Dual Induction, Compensated Density/Neutron Log, Micro Log and Sonic Log.

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	679	+1203
Base Anhydrite	701	+1181
Heebner	3193	-1311
Toronto	3209	-1327
Douglas	3225	-1343
Brown Lime	3326	-1444
Lansing	3349	-1467
Base Kansas City	3571	-1689
Conglomerate	3621	-1739
Conglomerate Sand	3629	-1747
Viola	3638	-1756
Simpson Shale	3689	-1807
Arbuckle	3751	-1869
Rotary Total Depth	3880	-1998
Log Total Depth	3876	-1994

(All tops and zones corrected to Electric Log measurements).

**SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.**

**TOPEKA SECTION**

3100-3130' Limestone; tan, finely crystalline, dolomitic, sucrosic in part, fair to good porosity, questionable brown stain and saturation, no show of free oil and no odor in fresh samples.

**TORONTO SECTION**

3200-3220' Limestone; cream, white, finely crystalline, chalky, poorly developed porosity, no shows.

**LANSING SECTION**

3349-3360' Limestone; cream, fine and medium crystalline, fossiliferous, chalky, trace brown stain, no show of free oil and no odor in fresh samples.

3369-3374' Limestone; tan, gray, oolitic, chalky, poor visible porosity, gray and brown stain, no show of free oil and faint odor in fresh samples.

3385-3400' Limestone; tan/brown, finely crystalline, chalky, scattered pinpoint type porosity, poor brown stain, no show of free oil and questionable odor in fresh samples.

3414-3421' Limestone; white, gray, finely crystalline, oolitic, chalky, trace brown stain, weak show of free oil and no odor in fresh samples.

3430-3440' Limestone; gray, white, cream, oolitic, oomoldic, fair oomoldic porosity, chalky, trace light brown stain, weak show of free oil and no odor in fresh samples.

3450-3470' Limestone; gray, white, yellow, finely crystalline, chalky, few cherty, (dense), plus gray chert.

3478-3486' Limestone; gray, oomoldic, good oomoldic porosity, fair light brown stain, fair show of free oil and fair to good odor in fresh samples.

3497-3504' Limestone; white, gray, oolitic, chalky, dark black stain, no show of free oil, no odor.

3511-3524' Limestone; gray, white, medium crystalline in part, oolitic/fossiliferous, chalky, scattered porosity, brown and gray stain, show of free oil and odor in fresh samples.

3540-3550' Limestone; gray, oolitic, chalky, fair porosity, brown stain, show of free oil and no odor, plus white chalk.

**CONGLOMERATE SECTION**

3621-3629' Chert; amber, orange, white and maroon black shale.

3629-3632' Sand; gray, very fine grained, calcareous, poorly developed, black stain, no show of free oil and no odor in fresh samples.

**Drill Stem Test #1** **3613-3645'**

Times: 30-30-30-30  
Blow: weak

Recovery: 15' mud  
Pressures: ISIP 34 psi  
FSIP 45 psi  
IFP 17-22 psi  
FFP 20-33 psi  
HSH 1830-1791 psi

**VIOLA SECTION**

- 3638-3650' Chert; white, gray, cream, few semi-tripolitic, trace brown stain, show of free oil and gassy odor in fresh samples.
- 3650-3660' Chert; white, boney, trace brown black edge staining, no show of free oil and no odor in fresh samples.
- 3660-3679' Chert; white, cream, tan, boney, black staining, fair porosity, no show of free oil and no odor.

**SIMPSON SECTION**

- 3720-3726' Sand; white, clear, gray, dolomitic, poorly sorted, trace black stain, n show of fresh oil and no odor.

**ARBUCKLE SECTION**

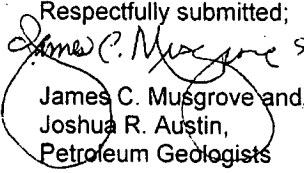
- 3751-3760' Dolomite; tan, gray, finely crystalline, few medium crystalline, fair intercrystalline and vuggy porosity, dark brown stain, show of free oil and fair odor in fresh samples.
- 3760-3780' Dolomite; tan, cream, fine and medium crystalline, fair intercrystalline type porosity, brown stain, show of free oil and faint to fair odor in fresh samples.
- 3780-3800' Dolomite; cream, finely crystalline, few cherty, poor visible porosity, trace brown stain, show of free oil and questionable odor in fresh samples.
- 3800-3820' Dolomite; clear, finely crystalline, few medium crystalline, fair intercrystalline and vuggy type porosity, trace stain, no show of free oil and no odor.
- 3840-3850' Dolomite; gray, finely crystalline, few oomoldic, fair vuggy/oomoldic type porosity, dark brown stain, trace of free oil (2 pieces) faint odor.
- 3850-3860' Dolomite; cream, tan, finely crystalline, sucrosic in part, dense, plus white boney chert.
- 3860-3880' Dolomite and chert; as above, no shows.

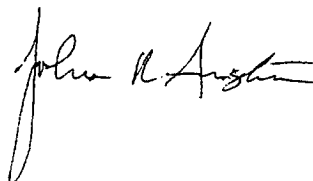
Rotary Total Depth      3880 (-1998)  
Log Total Depth        3876 (-1994)

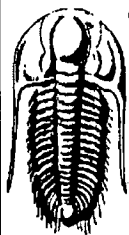
**Recommendations:**

5 1/2" production casing was set and cemented.

Respectfully submitted;

  
James C. Musgrove and  
Joshua R. Austin,  
Petroleum Geologists





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Empire Energy E&P LLC  
 17 Arentzen Blvd.Ste.203  
 Charlerol Pa.15022  
 ATTN: Musgrove/ Austin

**Krankenbergs#5-19**  
**19-22s-12w Stafford**  
 Job Ticket: 43954      **DST#: 1**  
 Test Start: 2011.08.10 @ 15:17:03

## GENERAL INFORMATION:

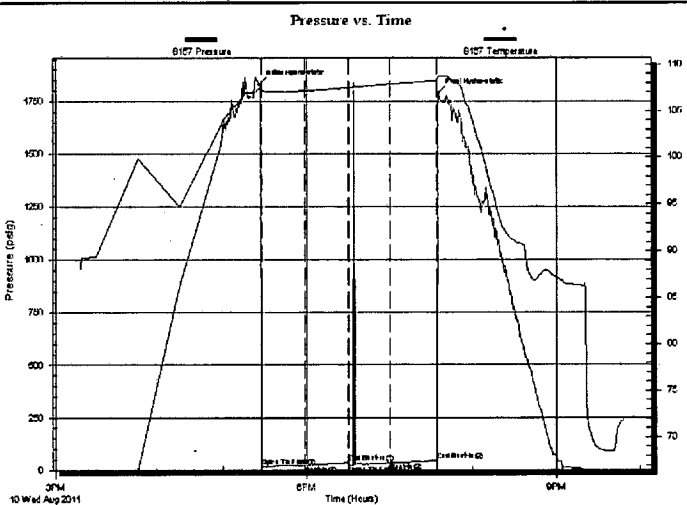
Formation: **Conglomerate**  
 Deviated: No      Whipstock:      ft (KB)  
 Time Tool Opened: 17:27:33  
 Time Test Ended: 21:49:03  
 Interval: **3613.00 ft (KB) To 3645.00 ft (KB) (TVD)**  
 Total Depth: 3645.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches      Hole Condition: Poor  
 Test Type: Conventional Bottom Hole  
 Tester: Gary Pevoteaux  
 Unit No: 56  
 Reference Elevations: 1883.00 ft (KB)  
 1870.00 ft (CF)  
 KB to GR/CF: 13.00 ft

## Serial #: 8167

Inside

Press@RunDepth: 33.47 psig @ 3614.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2011.08.10      End Date: 2011.08.10      Last Calib.: 2011.08.10  
 Start Time: 15:17:08      End Time: 21:49:02      Time On Btm: 2011.08.10 @ 17:26:03  
 Time Off Btm: 2011.08.10 @ 19:35:48

**TEST COMMENT:** IF:Weak blow . 1/4" or less.  
 IS:No blow .  
 FF:No blow . Flushed tool 5 mins.in FFP. No blow .  
 FS:No blow .



## PRESSURE SUMMARY

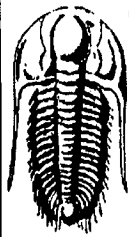
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1830.33	107.39	Initial Hydro-static
2	17.15	106.92	Open To Flow (1)
33	21.90	107.13	Shut-in(1)
65	34.48	107.47	End Shut-In(1)
65	19.87	107.47	Open To Flow (2)
95	33.47	107.86	Shut-In(2)
128	44.53	108.22	End Shut-In(2)
130	1790.70	108.71	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	Drlg.mud	0.07

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Empire Energy E&P LLC  
17 Arentzen Blvd.Ste.203  
Charlerol Pa.15022  
ATTN: Musgrove/ Austin

**Krankenbergs#5-19**  
**19-22s-12w Stafford**  
Job Ticket: 43954      **DST#: 1**  
Test Start: 2011.08.10 @ 15:17:03

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 10.00 lb/gal	Cushion Length: ft	Water Salinity:	5000 ppm
Viscosity: 49.00 sec/qt	Cushion Volume: bbl		
Water Loss: 11.99 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 5000.00 ppm			
Filter Cake: 0.20 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Drig.mud	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #: none  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

