Confidentiality Requested: Yes No

KANSAS CORPORATION COMMISSION **OIL & GAS CONSERVATION DIVISION**

1162015

Form ACO-1 August 2013 Form must be Typed Form must be Signed All blanks must be Filled

WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License #	API No. 15
Name:	Spot Description:
Address 1:	
Address 2:	Feet from North / South Line of Section
City: State: Zip:+	Feet from East / West Line of Section
Contact Person:	Footages Calculated from Nearest Outside Section Corner:
Phone: ()	
CONTRACTOR: License #	GPS Location: Lat:, Long:
Name:	(e.g. xx.xxxx) (e.gxxx.xxxx)
Wellsite Geologist:	Datum: NAD27 NAD83 WGS84
Purchaser:	County:
Designate Type of Completion:	Lease Name: Well #:
New Well Re-Entry Workover	Field Name:
	Producing Formation:
	Elevation: Ground: Kelly Bushing:
Gas D&A ENHR SIGW	Total Vertical Depth: Plug Back Total Depth:
GG GSW Temp. Abd.	Amount of Surface Pipe Set and Cemented at: Feet
CM (Coal Bed Methane) Cathodic Other (Core, Expl., etc.):	Multiple Stage Cementing Collar Used?
	If yes, show depth set: Feet
If Workover/Re-entry: Old Well Info as follows:	
Operator:	If Alternate II completion, cement circulated from:
Well Name:	feet depth to:w/sx cmt.
Original Comp. Date: Original Total Depth:	
Deepening Re-perf. Conv. to ENHR Conv. to SWD	Drilling Fluid Management Plan
Plug Back Conv. to GSW Conv. to Producer	(Data must be collected from the Reserve Pit)
Commingled Permit #:	Chloride content: ppm Fluid volume: bbls
Dual Completion Permit #:	Dewatering method used:
SWD Permit #:	Location of fluid disposal if hauled offsite:
ENHR Permit #:	
GSW Permit #:	Operator Name:
	Lease Name: License #:
Spud Date or Date Reached TD Completion Date or	QuarterSecTwpS. R East West
Recompletion Date Recompletion Date	County: Permit #:

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
Confidentiality Requested
Date:
Confidential Release Date:
Wireline Log Received
Geologist Report Received
UIC Distribution
ALT I II III Approved by: Date:

	Page Two	
Operator Name:	Lease Name:	Well #:
Sec TwpS. R East _ West	County:	

INSTRUCTIONS: Show important tops 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.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken (Attach Additional Sh	eets)	Yes No		Log Formation (Top), Depth and Datum			
Samples Sent to Geolog	gical Survey	Yes No	Nam	e		Тор	Datum
Cores Taken Electric Log Run		☐ Yes ☐ No ☐ Yes ☐ No					
List All E. Logs Run:							
					an ata		
		Report all strings set-c	conductor, surface, inte	ermediate, producti	on, 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
		ADDITIONAL	CEMENTING / SQU	JEEZE RECORD		· · · · · ·	
Purpose: Perforate	Depth Top Bottom	Type of Cement	# Sacks Used		Type and Pe	ercent Additives	
Protect Casing							
Plug Off Zone							

Did you perform a hydraulic fracturing treatment on this well?	Yes	No
Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?	Yes	No
Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?	Yes	No

No(If No, skip questions 2 and 3)No(If No, skip question 3)

No (If No, fill out Page Three of the ACO-1)

Shots Per Foot				RD - Bridge Plugs S Each Interval Perfora		e	Ac		ement Squeeze Record d of Material Used)	Depth
TUBING RECORD:	Siz	ze:	Set At:		Packer	At:	Liner Run		No	
Date of First, Resumed	Producti	ion, SWD or ENHF	l.	Producing Method:] Pump	ing	Gas Lift	Other (Explain)		
Estimated Production Per 24 Hours		Oil Bb	S.	Gas Mc	f	Wate	er	Bbls.	Gas-Oil Ratio	Gravity
DISPOSITI				МЕТ		OF COMPLE			PRODUCTION INT	
	_	JSed on Lease		_	Perf.	Dually	Comp.	Commingled		
(If vented, Su	bmit ACO	D-18.)		Other (Specify)		(Submit A	,	(Submit ACO-4)		

Form	ACO1 - Well Completion
Operator	Hess Oil Company
Well Name	Stanley 1-14
Doc ID	1162015

Tops

Name	Тор	Datum
Anhydrite	1047	+782
Base Anhydrite	1081	+761
Topeka	2762	-933
Heebner	2996	-1167
Toronto	3018	-1189
Lansing	3038	-1209
Stark	3229	-1400
Hertha	3262	-1433
Base Kansas City	3277	-1448
Conglomerate	3302	-1473
Arbuckle	3376	-1547
RTD	3379	-1550

ALLIED OIL & GAS SERVICES, LLC 060532 Federal Tax I.D. # 20-8651475 REMIT TO P.O. BOX 93999 SERVICE POINT: SOUTHLAKE, TEXAS 76092 Great Beal SEC. TWP. RANGE CALLED OUT ON LOCATION JOB START JOB FINISH DATE 6-12-13 14 115 17 7 PM G/I 1:20 AM 1:40 AM Cathering KS STATE COUNTY LEASE Staley WELL# 1-14 LOCATION E Ellis OLD OR NEW (Circle one) Siste CONTRACTOR Mallaco OWNER ess TYPE OF JOB Surface HOLE SIZE 121/4 21 T.D. CEMENT CASING SIZE 85 DEPTH 21 AMOUNT ORDERED 150 SAS **TUBING SIZE** DEPTH Glass A 3% 6.6. 2. DRILL PIPE DEPTH TOOL DEPTH PRES. MAX 500 **MINIMUM** 150 COMMON_ @ 17.90 2685,00 MEAS. LINE SHOE JOINT 20 POZMIX @ CEMENT LEFT IN CSG 04 3 661 GEL @ 22.40 70.20 PERFS. 5 CHLORIDE @ 64.00 320.00 DISPLACEMENT 12.78 <u>66/<</u> ASC @ EOUIPMENT @ 0 @ **PUMP TRUCK** CEMENTER 10 000 @. <u># .798</u> HELPER Sast @ BULK TRUCK @ <u># GIO</u> DRIVER evel æ BULK TRUCK @ # DRIVER HANDLING 162.09 401.98 @2.48 MILEAGE 7.4x 40 X 2.60 769.60 **REMARKS:** TOTAL 42 46 78 5 HL vater Spacet 2000-6 661 cenet SERVICE -0 hbl coment ロマダ displacement Sh - C . DEPTH OF JOB _____7 PUMP TRUCK CHARGE 1512.25 Contatal LИс 1 ome EXTRA FOOTAGE @ Sunt MILEAGE <u>ним 40 @ 7.70</u> 308:00 MANIFOLD _ @ 4.40 LVM 40@ 176.00 @ CHARGE TO: _ TOTAL 1996.25 STREET CITY_ STATE _ ZIP_ **PLUG & FLOAT EQUIPMENT** 0 @ @ To: Allied Oil & Gas Services, LLC. Ø You are hereby requested to rent cementing equipment @ and furnish cementer and helper(s) to assist owner or

Everse side. SALES TAX (If Any) TOTAL CHARGES 6243.03 \sqrt{K} DISCOUNT -1560.76 IF PAID IN 30 DAYS \$4,682.27

TOTAL .

You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME SIGNATURE

JOB LC					SWIFT	Servi	ices, Inc.	DATE 6-18-13 PAGENO
CUSTOMER	soil	Co	WELL NO.	1-14	LEASE Sta.	aler	JOB TYPE 2-5 faye	TICKET NO. 24290
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T C	PRESSUR	E (PSI) CASING	DESCRIPTION OF OPERATIO	
	1430						onloc WIFE	
							RTD 3379'	
							RTD 3379' 5'2" × 15-5 "3382' × 21	/
		ļ					Turbo 1-5,56	
	ļ					×	Bask 57	
				· · · · ·			DV STO IOII'	
	1645						Start FE Breakling + set Pkry	
	1845					1200	Breakling + set Pkry	Shoe
	10.0							1 11 11.
	1925	5	0			200	Start Preflashes 20 %	1 KCL fluch
· · · · · · · · · · · · · · · · · · ·	: (111 A	<u> </u>	32/0			200	Start 2005ks EA-2 C	erent
·····	1940	·	48				End Conent	····
				×.			Hasplth	
	1949	6	0				Drep L.D. Mug	KOW TT ,
	//.¥.9	5-	60			200	Drep L.D. Plug Sturt Displacement Catch Cenert	somed
	2000		80			ng l	Larch Cenert	
_						1400	Land Plug. T. P.	
	2015					10.00	Drop Opening & Plu Open DV	§
	<u> </u>	<u>.</u>				ou)	C Ulis	
	2350						Circ 4hrs PI, PH	·····
	0000		0				Plug RH Sturt 2066/KCL	
		5	20/0				Start 145 sks SMD	1 +
	0020	_	80				End Cenent	Cropent
		·				ľ	Drep Glosing Plus	······
	0025	5	Ó				Drep Elosing Plug Start Displacement	1
	0030		24			·	Land Plug	
							Release Pressure	
							DV Classed	·····
							· · · · · · · · · · · · · · · · · · ·	
			╡────┤				CITC 60 sks	topit
<u> </u>			┼────┤					-
			<u> </u>					
			╂────┤				Thank you Nick, David By	~ 0 +
	<u>i</u>					L	Nick, David Br	7 Kap

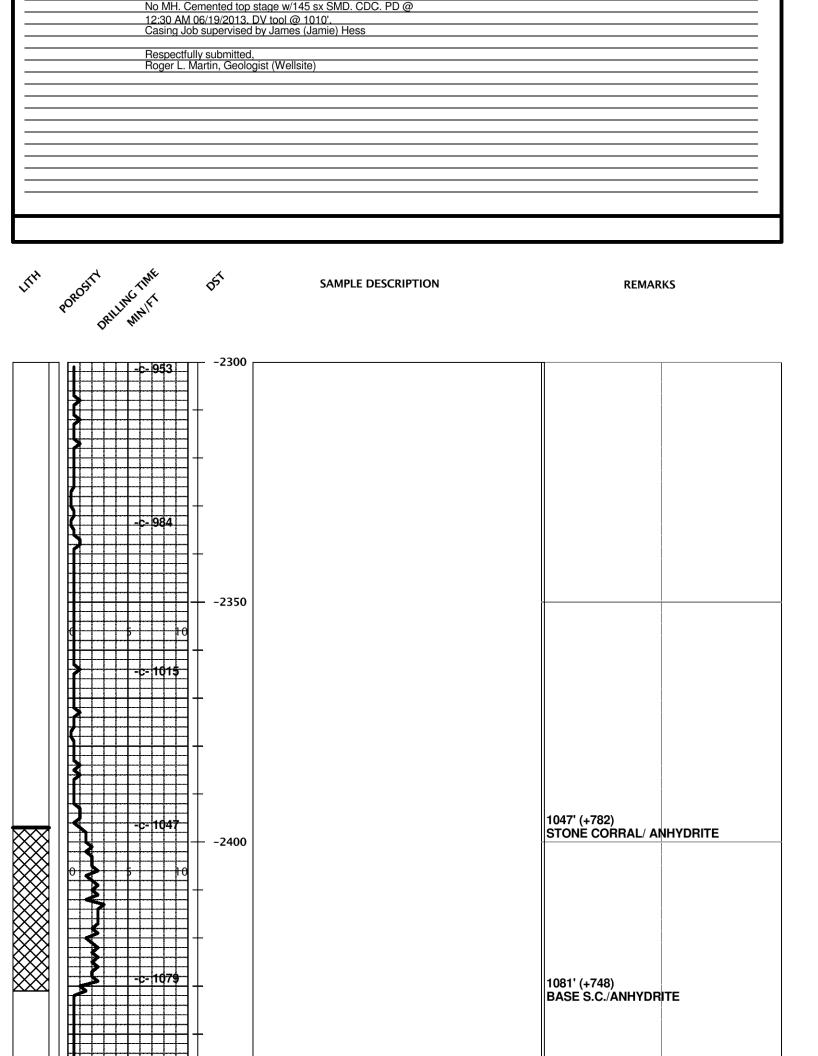
ROGER L. MARTIN

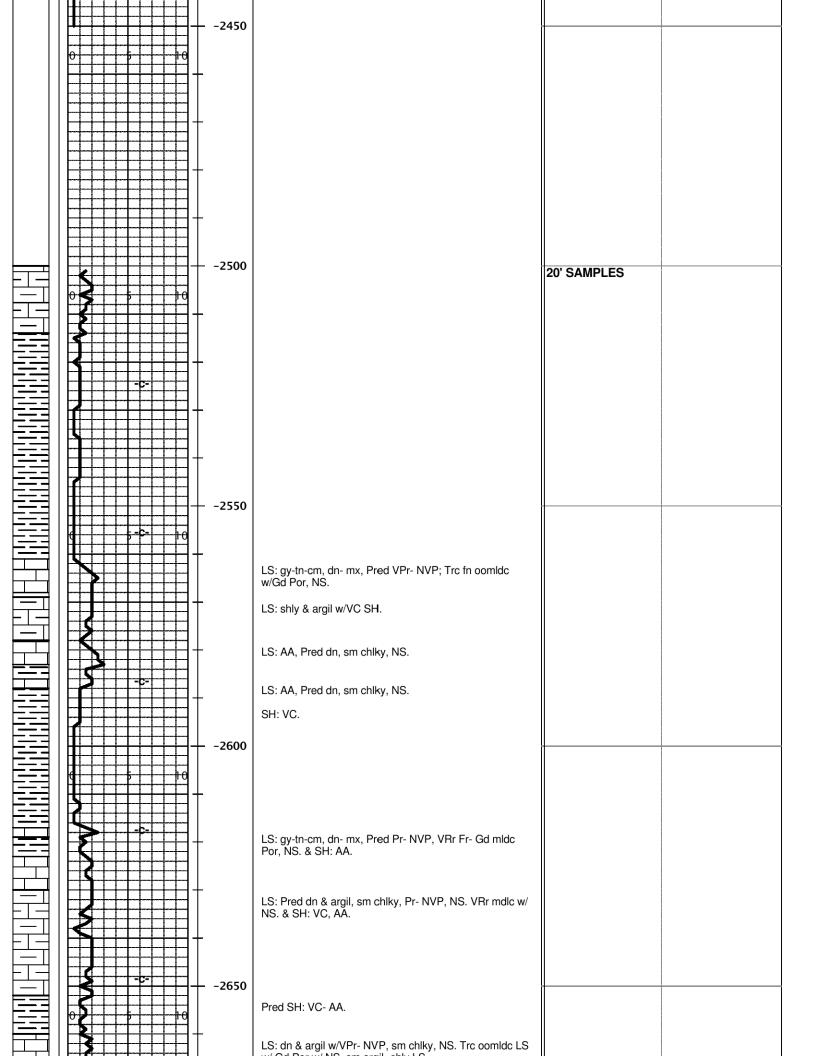
INDEPENDENT PETROLEUM GEOLOGIST 316-250-6970

		GIST'S RE		
COMPANY HESS OIL CO	MPANY		ELEVATIONS	
LEASE STANLEY 1-14			KB <u>1829'</u> GL <u>1824'</u>	
		Measurements Are All		
LOCATION 1292' FNL & 2	970' FEL	From KB		
SECTION 14 TOWNSH	IIP <u>115</u>	RANGE <u>17W</u>	API <u>15-051-26538-00-00</u>	
COUNTY ELLIS	STATE	KANSAS		
CONTRACTOR MALLAR	D DRILLING		CASING	
SPUD <u>6/13/13</u>	COMP <u>6/19</u>	/13	SURFACE 8&5/8" X 20# X 209'	
			set @ 216' w/ 150sx com.	
	CAL SURVEYS	•	PRODUCTION <u>5&1/2" X 15.5# set @</u>	
No Open Hole E-logs	CAL SURVETS		3376' (see remarks)	
4 DST's by Trilobite				
	-			
FORMATION TOPS	LOG	SAMPLES	CHRONOLOGY	
FORMATION TOPS	LOG	SAMPLES 2762' (-933)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x	
	LOG		06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @	
ТОРЕКА	LOG	2762' (-933)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013	
TOPEKA HEEBNER	LOG	2762' (-933) 2996' (-1167)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'.	
TOPEKA HEEBNER TORONTO	LOG	2762' (-933) 2996' (-1167) 3018' (-1189)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC.	
TOPEKA HEEBNER TORONTO LANSING		2762' (-933) 2996' (-1167) 3018' (-1189) 3038' (-1209)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'.	
TOPEKA HEEBNER TORONTO LANSING STARK		2762' (-933) 2996' (-1167) 3018' (-1189) 3038' (-1209) 3229' (-1400) 3262' (-1433)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'. 06/14/2013- Drilling @ 2548'. 06/15/2013- Drilled to 3120'. Ran DST #1: 2991'-3120'. 45-45-45-45.Rec 30' mud w/oil spots. Pressures: IH 1442#, IF 17-27#, ISI 225#,	
TOPEKA HEEBNER TORONTO LANSING STARK HERTHA		2762' (-933) 2996' (-1167) 3018' (-1189) 3038' (-1209) 3229' (-1400) 3262' (-1433) 3277' (-1448)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'. 06/14/2013- Drilling @ 2548'. 06/15/2013- Drilled to 3120'. Ran DST #1: 2991'-3120'. 45-45-45-45.Rec 30' mud w/oil spots. Pressures: IH 1442#, IF 17-27#, ISI 225#, FF 29-34#, FSI 119#, FH 1447#.	
TOPEKA HEEBNER TORONTO LANSING STARK HERTHA BASE KANSAS CITY		2762' (-933) 2996' (-1167) 3018' (-1189) 3038' (-1209) 3229' (-1400) 3262' (-1433) 3277' (-1448) 3302' (-1473)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'. 06/14/2013- Drilling @ 2548'. 06/15/2013- Drilled to 3120'. Ran DST #1: 2991'-3120'. 45-45-45-45.Rec 30' mud w/oil spots. Pressures: IH 1442#, IF 17-27#, ISI 225#, FF 29-34#, FSI 119#, FH 1447#. 06/16/2013- Drilled to 3143'. Ran DST #2: 3101'-3143'. 45-45-45-45. Rec. 30' of 3% oil,	
TOPEKA HEEBNER TORONTO LANSING STARK HERTHA BASE KANSAS CITY CONGLOMERATE ARBUCKLE		2762' (-933) 2996' (-1167) 3018' (-1189) 3038' (-1209) 3229' (-1400) 3262' (-1433) 3277' (-1448) 3302' (-1473) 3376' (-1547)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'. 06/14/2013- Drilling @ 2548'. 06/15/2013- Drilled to 3120'. Ran DST #1: 2991'-3120'. 45-45-45-45.Rec 30' mud w/oil spots. Pressures: IH 1442#, IF 17-27#, ISI 225#, FF 29-34#, FSI 119#, FH 1447#. 06/16/2013- Drilled to 3143'. Ran DST #2: 3101'-3143'. 45-45-45-45. Rec. 30' of 3% oil, 2%wtr, 95% mud, 60' of 5% oil, 15% wtr, 80% mud, and 210' GIP. Press: IH 1506#, IF 14-39#,	
TOPEKA HEEBNER TORONTO LANSING STARK HERTHA BASE KANSAS CITY CONGLOMERATE		2762' (-933) 2996' (-1167) 3018' (-1189) 3038' (-1209) 3229' (-1400) 3262' (-1433) 3277' (-1448) 3302' (-1473)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'. 06/14/2013- Drilling @ 2548'. 06/15/2013- Drilled to 3120'. Ran DST #1: 2991'-3120'. 45-45-45-Rec 30' mud w/oil spots. Pressures: IH 1442#, IF 17-27#, ISI 225#, FF 29-34#, FSI 119#, FH 1447#. 06/16/2013- Drilled to 3143'. Ran DST #2: 3101'-3143'. 45-45-45. Rec. 30' of 3% oil, 2%wtr, 95% mud, 60' of 5% oil, 15% wtr, 80% mud, and 210' GIP. Press: IH 1506#, IF 14-39#, ISI 99#, FF 37-53#, FSI 95#, FH 1446#.	
TOPEKA HEEBNER TORONTO LANSING STARK HERTHA BASE KANSAS CITY CONGLOMERATE ARBUCKLE		2762' (-933) 2996' (-1167) 3018' (-1189) 3038' (-1209) 3229' (-1400) 3262' (-1433) 3277' (-1448) 3302' (-1473) 3376' (-1547)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'. 06/14/2013- Drilling @ 2548'. 06/15/2013- Drilled to 3120'. Ran DST #1: 2991'-3120'. 45-45-45.Rec 30' mud w/oil spots. Pressures: IH 1442#, IF 17-27#, ISI 225#, FF 29-34#, FSI 119#, FH 1447#. 06/16/2013- Drilled to 3143'. Ran DST #2: 3101'-3143'. 45-45-45-45. Rec. 30' of 3% oil, 2%wtr, 95% mud, 60' of 5% oil, 15% wtr, 80% mud, and 210' GIP. Press: IH 1506#, IF 14-39#, ISI 99#, FF 37-53#, FSI 95#, FH 1446#. 06/17/2013- Drilled to 3277'. Ran DST #3: 3256'-3277'. 30-30-30. 30. Rec 10' mud w/	
TOPEKA HEEBNER TORONTO LANSING STARK HERTHA BASE KANSAS CITY CONGLOMERATE ARBUCKLE		2762' (-933) 2996' (-1167) 3018' (-1189) 3038' (-1209) 3229' (-1400) 3262' (-1433) 3277' (-1448) 3302' (-1473) 3376' (-1547)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'. 06/14/2013- Drilling @ 2548'. 06/15/2013- Drilled to 3120'. Ran DST #1: 2991'-3120'. 45-45-45.Rec 30' mud w/oil spots. Pressures: IH 1442#, IF 17-27#, ISI 225#, FF 29-34#, FSI 119#, FH 1447#. 06/16/2013- Drilled to 3143'. Ran DST #2: 3101'-3143'. 45-45-45-45. Rec. 30' of 3% oil, 2%wtr, 95% mud, 60' of 5% oil, 15% wtr, 80% mud, and 210' GIP. Press: IH 1506#, IF 14-39#, ISI 99#, FF 37-53#, FSI 95#, FH 1446#. 06/17/2013- Drilled to 3277'. Ran DST #3:	
TOPEKA HEEBNER TORONTO LANSING STARK HERTHA BASE KANSAS CITY CONGLOMERATE ARBUCKLE		2762' (-933) 2996' (-1167) 3018' (-1189) 3038' (-1209) 3229' (-1400) 3262' (-1433) 3277' (-1448) 3302' (-1473) 3376' (-1547)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'. 06/14/2013- Drilling @ 2548'. 06/15/2013- Drilled to 3120'. Ran DST #1: 2991'-3120'. 45-45-45-45.Rec 30' mud w/oil spots. Pressures: IH 1442#, IF 17-27#, ISI 225#, FF 29-34#, FSI 119#, FH 1447#. 06/16/2013- Drilled to 3143'. Ran DST #2: 3101'-3143'. 45-45-45-45. Rec. 30' of 3% oil, 2%wtr, 95% mud, 60' of 5% oil, 15% wtr, 80% mud, and 210' GIP. Press: IH 1506#, IF 14-39#, ISI 99#, FF 37-53#, FSI 95#, FH 1446#. 06/17/2013- Drilled to 3277'. Ran DST #3: 3256'-3277'. 30-30-30-30. Rec 10' mud w/ oil spots. Press: IH 1597#, IF 25-33#, ISI 447#, FF 34-39#, FSI 252#, FH 1537#. 06/18/2013- Drilled to 3370'. Ran DST #4:	
TOPEKA HEEBNER TORONTO LANSING STARK HERTHA BASE KANSAS CITY CONGLOMERATE ARBUCKLE		2762' (-933) 2996' (-1167) 3018' (-1189) 3038' (-1209) 3229' (-1400) 3262' (-1433) 3277' (-1448) 3302' (-1473) 3376' (-1547)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'. 06/14/2013- Drilling @ 2548'. 06/15/2013- Drilled to 3120'. Ran DST #1: 2991'-3120'. 45-45-45.Rec 30' mud w/oil spots. Pressures: IH 1442#, IF 17-27#, ISI 225#, FF 29-34#, FSI 119#, FH 1447#. 06/16/2013- Drilled to 3143'. Ran DST #2: 3101'-3143'. 45-45-45. Rec. 30' of 3% oil, 2%wtr, 95% mud, 60' of 5% oil, 15% wtr, 80% mud, and 210' GIP. Press: IH 1506#, IF 14-39#, ISI 99#, FF 37-53#, FSI 95#, FH 1446#. 06/17/2013- Drilled to 3277'. Ran DST #3: 3256'-3277'. 30-30-30. Rec 10' mud w/ oil spots. Press: IH 1597#, IF 25-33#, ISI 447#, FF 34-39#, FSI 252#, FH 1537#. 06/18/2013- Drilled to 3370'. Ran DST #4: 3273'-3379'. 30-45-40-45. Rec 120' of 25% G, 45% O, 15% W, 15% M, 180' of 10% G, 40% O,	
TOPEKA HEEBNER TORONTO LANSING STARK HERTHA BASE KANSAS CITY CONGLOMERATE ARBUCKLE		2762' (-933) 2996' (-1167) 3018' (-1189) 3038' (-1209) 3229' (-1400) 3262' (-1433) 3277' (-1448) 3302' (-1473) 3376' (-1547)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'. 06/14/2013- Drilling @ 2548'. 06/15/2013- Drilled to 3120'. Ran DST #1: 2991'-3120'. 45-45-45-45.Rec 30' mud w/oil spots. Pressures: IH 1442#, IF 17-27#, ISI 225#, FF 29-34#, FSI 119#, FH 1447#. 06/16/2013- Drilled to 3143'. Ran DST #2: 3101'-3143'. 45-45-45. Rec. 30' of 3% oil, 2%wtr, 95% mud, 60' of 5% oil, 15% wtr, 80% mud, and 210' GIP. Press: IH 1506#, IF 14-39#, ISI 99#, FF 37-53#, FSI 95#, FH 1446#. 06/17/2013- Drilled to 3277'. Ran DST #3: 3256'-3277'. 30-30-30-30. Rec 10' mud w/ oil spots. Press: IH 1597#, IF 25-33#, ISI 447#, FF 34-39#, FSI 252#, FH 1537#. 06/18/2013- Drilled to 3370'. Ran DST #4: 3273'-3379'. 30-45-40-45. Rec 120' of 25% G,	
TOPEKA HEEBNER TORONTO LANSING STARK HERTHA BASE KANSAS CITY CONGLOMERATE ARBUCKLE		2762' (-933) 2996' (-1167) 3018' (-1189) 3038' (-1209) 3229' (-1400) 3262' (-1433) 3277' (-1448) 3302' (-1473) 3376' (-1547)	06/11/2013- Moved in Mallard Drilling rig. Spudded @ 7:30 PM. Drilled to 216' and ran 5 jts 8-5/8"x 20# x 209' surface casing. Set @ 216' and cemented w/ 150 sx common, 2% gel, 3% cc. CDC. PD @ 1:45 AM 6/12/2013 06/12/2013- WOC. 06/13/2013- Drilling ahead @ 1722'. 06/14/2013- Drilling @ 2548'. 06/15/2013- Drilled to 3120'. Ran DST #1: 2991'-3120'. 45-45-45.Rec 30' mud w/oil spots. Pressures: IH 1442#, IF 17-27#, ISI 225#, FF 29-34#, FSI 119#, FH 1447#. 06/16/2013- Drilled to 3143'. Ran DST #2: 3101'-3143'. 45-45-45. Rec. 30' of 3% oil, 2%wtr, 95% mud, 60' of 5% oil, 15% wtr, 80% mud, and 210' GIP. Press: IH 1506#, IF 14-39#, ISI 99#, FF 37-53#, FSI 95#, FH 1446#. 06/17/2013- Drilled to 3277'. Ran DST #3: 3256'-3277'. 30-30-30. Rec 10' mud w/ oil spots. Press: IH 1597#, IF 25-33#, ISI 447#, FF 34-39#, FSI 252#, FH 1537#. 06/18/2013- Drilled to 3370'. Ran DST #4: 3273'-3379'. 30-45-40-45. Rec 120' of 25% G, 45% O, 15% W, 15% M, 180' of 10% G, 40% O, 50%M; 60' of 5% G, 50% O, 45% M and 75' of	

REMARKS:

Casing Job: Ran 81 jts 5 1/2" x 15.5# casing. Set @ 3376' and cemented bottom stage w/200 sx EA-2. RH w/30 sx.





		w/ Go Por w/ NS. sm argii- sniy LS.	
	┝╌┼┲╃╌┾╌┼╌┼╌┼╌┼╌┼╌┥╵│		
		SH: VC, sm blk carb.	
	┝┼┫╴┼┼┼┼┼┼┥┼	LS: gy-wh-tn, dn to chlky, sm fos & ool w/Pr- NVP, NS.	
	┝╍┫╍╁╍╁╍╁╍╁╍╁╍╁╍┧	SH: gy-blk, sm carb.	
	-2700		
		L Cuaru ta vula da cara arail cara ability \/Dr. NI\/D. NC	
		LS: gy-tn-wh, dn- sm argil, sm chlky, VPr- NVP, NS.	
	┝╌╊╌┼╌┼╌┼╼┡╍┼╌┼╌┥╴│	SH: VC- AA.	
	┝╍╊╍┾╍┾╍┾╍┾╍┾╍┿╍┥		
	┝┫╌┾╌┾╌┾╌┿╌┿╌┿╌┿╌┥╵		
	┝╋┼┽┽┽┽┥┥		
	┫		
		LS: gy, dn, & dn & argil- shly w/Pr- NVP.	
		LS: tn-gy, dn- mx- fnx w/VPr- NVP, NS.	
	-2750		
· · ·		SH- SILTS: sm blk carb SH.	
· · · · · ·	<mark>┍┎╶┼╌┼╌┾╌╞╌┼╌┼╌┾┍</mark>		
· <u>· · · ·</u>			2762' (-933)
	┠┺╪╅┼┼┼┼┼┼┤│		ТОРЕКА
		{TOPEKA} LS: gy-bf-cm, Pred dn- mx- Vfnxln, sm argil, VPr- NVP, NS.	
		VEI-INVE, NO.	
│ │────┩ │	──────		
		LS: gy-cm & tn, mx- fnx, sm fos- fragmntl Pkst w/Pr- Trc	
	┝╍┾┺╋╦┾╍┾╍┾╍┾╍┾╍┾╍┥│	Fr Por, NS, sm chlky & sm argil.	
		Fr Por, NS, sm chlky & sm argil.	
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred	
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS.	
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr	{Trc SFO)
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- VfnxIn, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst; Pr- Trc Fr Por; IX Por,	{Trc SFO)
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- VfnxIn, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnIr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut,	{Trc SFO)
	-2800	LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- VfnxIn, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst; Pr- Trc Fr Por; IX Por,	{Trc SFO)
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky.	{Trc SFO)
	-2800	LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil.	{Trc SFO)
	-2800	LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb.	{Trc SFO)
	-2800	LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil.	{Trc SFO)
	-2800	LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil.	{Trc SFO)
	-2800	LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil.	{Trc SFO)
	-2800	LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- VfnxIn, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnIr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd.	{Trc SFO)
	-2800	LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd.	{Trc SFO)
	-2800	LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- VfnxIn, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnIr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd.	{Trc SFO)
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR,	{Trc SFO)
	-2800	LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty.	{Trc SFO)
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR,	{Trc SFO)
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty.	{Trc SFO)
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty.	{Trc SFO)
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty.	{Trc SFO)
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- VfnxIn, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty. LS: tn-gy-cm, dn- mx w/VPr- NVP.	{Trc SFO)
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- VfnxIn, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty. LS: tn-gy-cm, dn- mx w/VPr- NVP. LS: AA & argil Mdst, VPr- NVP.	{Trc SFO)
		 LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty. LS: tn-gy-cm, dn- mx w/VPr- NVP. LS: AA & argil Mdst, VPr- NVP. LS: cm-bf-gy, sm fos Pkst w/Pr- Fr Por, NS. sm chlky, SI 	{Trc SFO)
		LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- VfnxIn, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty. LS: tn-gy-cm, dn- mx w/VPr- NVP. LS: AA & argil Mdst, VPr- NVP.	{Trc SFO)
		 LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty. LS: tn-gy-cm, dn- mx w/VPr- NVP. LS: AA & argil Mdst, VPr- NVP. LS: cm-bf-gy, sm fos Pkst w/Pr- Fr Por, NS. sm chlky, SI 	{Trc SFO)
		 LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty. LS: tn-gy-cm, dn- mx w/VPr- NVP. LS: AA & argil Mdst, VPr- NVP. LS: cm-bf-gy, sm fos Pkst w/Pr- Fr Por, NS. sm chlky, SI Cherty. SH: blk carb. 	{Trc SFO)
		 LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty. LS: tn-gy-cm, dn- mx w/VPr- NVP. LS: AA & argil Mdst, VPr- NVP. LS: cm-bf-gy, sm fos Pkst w/Pr- Fr Por, NS. sm chlky, SI Cherty. 	{Trc SFO)
		 LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty. LS: tn-gy-cm, dn- mx w/VPr- NVP. LS: AA & argil Mdst, VPr- NVP. LS: cm-bf-gy, sm fos Pkst w/Pr- Fr Por, NS. sm chlky, SI Cherty. SH: blk carb. 	{Trc SFO)
		 LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty. LS: tn-gy-cm, dn- mx w/VPr- NVP. LS: cm-bf-gy, sm fos Pkst w/Pr- Fr Por, NS. sm chlky, SI Cherty. SH: blk carb. LS: cm-bf-gy, sm fos Pkst w/Pr- Fr Por, NS. sm chlky, SI Cherty. SH: blk carb. LS: tn-gy, dn. 	{Trc SFO)
		 LS: gy-tn-cm, Pred dn- mx, Rr fnx, sm fos, sm argil, Pred VPr- NVP w/ NS. LS: cm-bf-gy, mx- Vfnxln, sm m- sucro- SI dolomc, VRr fn- MdX's- 2nd ReX, sm grnlr Pkst: Pr- Trc Fr Por: IX Por, IGr Por, pp Por, Trc <1% w/spt'd- sat STN & FLR & Cut, Trc SFO & Cut, Trc Odor; sm chlky. SH: blk carb. LS: dn- argil. SH: gy-gn-rd. LS: cm-bf, gy, mx- Vfnx- sm msucro, sm chlky, Pr- Fr Por: IX Por, I Gr Por, pp Por, NS. sm md- fn X's, Rr dull FLR, NSO, NC. SI Cherty. LS: tn-gy-cm, dn- mx w/VPr- NVP. LS: AA & argil Mdst, VPr- NVP. LS: cm-bf-gy, sm fos Pkst w/Pr- Fr Por, NS. sm chlky, SI Cherty. SH: blk carb. 	{Trc SFO)

		LS: tn-gy-wh, Pred dn- Mdst, mx, sm chlky, VPr- NVP, NS.		
		LS: AA, sm fos Wkst- Pkst w/ VPr- Pr Por, NS. VCherty: blu-gy, shrp, sm wh- chlky.		
	-2900	bid gy, ship, shi wir chiky.		
		LS: AA & gy argil & VC SH.		
		LS: cm-tn-gy, Pred dn- mx, VPr- NVP. SI Cherty. NS.		
		SH: blk carb. LS: gy, dn Mdst,		
		SH: AA.		
		LS: gy-tn-wh, Pred dn- mx, sm chlky, VPr- NVP- NSFO, Trc dd STN.		
	-2950	LS: AA, sm fos Pkst w/VPr- Pr Por: Ifos & pp Por w/		
		NSFO. Trc dd STN. Pred dn- mx- fnx w/VPr- NVP.		
		LS: gy-tn, argil w/ VPr- NVP.		
		SH: AA, sm blk carb.		
		LS: gy-tn-wh, dn Mdst, SI Cherty.		
		LS: cm-gy-tn, sm Pkst, prt chlky, VPr- Pr pp Por, Trc STN,	{Trc SFO)	
		Trc SFO. >99% barren. CHERTY: shrp, blu-gy & VC, frsh, sm argil- dn w/ VPr Por.		
		iish, shi aigii- un w/ vri roi.		
		LS: gy-tn, dn & argil, sm chlky, NS.		
			2996' (-1167)	
	-3000	{HEEBNER} SH: blk carb- Vcarb (Abndt in 3020' spl)	HEEBNER	
		LS: gy dn Mdst.	10' samples	DST #1 LKC 'A'-'D' 2991'-3120'
		SH: gn-gy, rd.		45-45-45-45 1st Op: Wk surf
				blow, blt to 1", No BB
			3018' (-1189) TORONTO	2nd Op: dd, no
		{TORONTO} LS: cm-gy-tn, dn- mx- fnx, VPr- NVP, sm chlky, sm argil- shly, NS.		blow, No BB. Rec: 10' Ospt'd M
		LS: AA, dn- fnx.		
┃ ┿╡				TOOL SPL: 2%0.98%M
		SH: VC- gn-gy & rd.		2%O,98%M IHP: 1443
		SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc	3038' (-1209) LANSING	2%0,98%M IHP: 1443 IFP: 18-28 ISIP: 225
		SH: VC- gn-gy & rd.	3038' (-1209) LANSING {Trc SFO)	2%0,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120
		SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc SFO- ool Pkst w/Pr- Fr lool Por & IX Por- pp Por w/ STN	LANSING	2%0,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120 FHP: 1448
	-3050	SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc SFO- ool Pkst w/Pr- Fr lool Por & IX Por- pp Por w/ STN & Cut. SH: VC, gn-gy & rd-mrn.	LANSING {Trc SFO)	2%0,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120 FHP: 1448 BHT: 99 F
	-3050	 SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc SFO- ool Pkst w/Pr- Fr lool Por & IX Por- pp Por w/ STN & Cut. SH: VC, gn-gy & rd-mrn. {"B" zone} LS: cm-tn, mx- fnx, Rr ool & fos w/Pr- Fr Por, Trc SFO- STN- FLR & Cut. & LS: gy-tn-cm, mot, ool Pkst, 	LANSING	2%O,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120 FHP: 1448 BHT: 99 F Mud-Co Report 5:30am; 6/15/13
	-3050	SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc SFO- ool Pkst w/Pr- Fr lool Por & IX Por- pp Por w/ STN & Cut. SH: VC, gn-gy & rd-mrn. {"B" zone} LS: cm-tn, mx- fnx, Rr ool & fos w/Pr- Fr Por,	LANSING {Trc SFO)	2%0,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120 FHP: 1448 BHT: 99 F Mud-Co Report 5:30am; 6/15/13 CFS @ 3088' Wt: 8.9 Vis:41
	-3050	 SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc SFO- ool Pkst w/Pr- Fr lool Por & IX Por- pp Por w/ STN & Cut. SH: VC, gn-gy & rd-mrn. {"B" zone} LS: cm-tn, mx- fnx, Rr ool & fos w/Pr- Fr Por, Trc SFO- STN- FLR & Cut. & LS: gy-tn-cm, mot, ool Pkst, 	LANSING {Trc SFO)	2%O,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120 FHP: 1448 BHT: 99 F Mud-Co Report 5:30am; 6/15/13 CFS @ 3088' Wt: 8.9 Vis:41 PV:12 YP:17
	-3050	 SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc SFO- ool Pkst w/Pr- Fr lool Por & IX Por- pp Por w/ STN & Cut. SH: VC, gn-gy & rd-mrn. {"B" zone} LS: cm-tn, mx- fnx, Rr ool & fos w/Pr- Fr Por, Trc SFO- STN- FLR & Cut. & LS: gy-tn-cm, mot, ool Pkst, Pr Por, Trc SFO- STN- Cut. SH: AA- VC- Incrs. {C zn} LS: tn-gy-cm, Pred dn, sm mx- fnxln- 2nd ReX, 	LANSING {Trc SFO) {Trc SFO)	2%0,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120 FHP: 1448 BHT: 99 F Mud-Co Report 5:30am; 6/15/13 CFS @ 3088' Wt: 8.9 Vis:41 PV:12 YP:17 pH:11.0 WL:7.8 CT:1/32 Ca: Nil
	-3050	 SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc SFO- ool Pkst w/Pr- Fr lool Por & IX Por- pp Por w/ STN & Cut. SH: VC, gn-gy & rd-mrn. {"B" zone} LS: cm-tn, mx- fnx, Rr ool & fos w/Pr- Fr Por, Trc SFO- STN- FLR & Cut. & LS: gy-tn-cm, mot, ool Pkst, Pr Por, Trc SFO- STN- Cut. SH: AA- VC- Incrs. {C zn} LS: tn-gy-cm, Pred dn, sm mx- fnxln- 2nd ReX, >5% <10% w/Pr- Fr Por: pp- vug Por, IX Por w/ spt'd- sat Tn STN- FLR, SI SFO & SI Odor. >10% <20% w/spt'd- 	LANSING {Trc SFO)	2%0,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120 FHP: 1448 BHT: 99 F Mud-Co Report 5:30am; 6/15/13 CFS @ 3088' Wt: 8.9 Vis:41 PV:12 YP:17 pH:11.0 WL:7.8 CT:1/32 Ca: Nil CI: 4,200 ppm Solids: 4.1%
	0 5 - C- 10	 SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc SFO- ool Pkst w/Pr- Fr lool Por & IX Por- pp Por w/ STN & Cut. SH: VC, gn-gy & rd-mrn. {"B" zone} LS: cm-tn, mx- fnx, Rr ool & fos w/Pr- Fr Por, Trc SFO- STN- FLR & Cut. & LS: gy-tn-cm, mot, ool Pkst, Pr Por, Trc SFO- STN- Cut. SH: AA- VC- Incrs. {C zn} LS: tn-gy-cm, Pred dn, sm mx- fnxln- 2nd ReX, >5% <10% w/Pr- Fr Por: pp- vug Por, IX Por w/ spt'd- sat 	LANSING {Trc SFO) {Trc SFO)	2%0,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120 FHP: 1448 BHT: 99 F Mud-Co Report 5:30am; 6/15/13 CFS @ 3088' Wt: 8.9 Vis:41 PV:12 YP:17 pH:11.0 WL:7.8 CT:1/32 Ca: Nil CI: 4,200 ppm
		 SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc SFO- ool Pkst w/Pr- Fr lool Por & IX Por- pp Por w/ STN & Cut. SH: VC, gn-gy & rd-mrn. {"B" zone} LS: cm-tn, mx- fnx, Rr ool & fos w/Pr- Fr Por, Trc SFO- STN- FLR & Cut. & LS: gy-tn-cm, mot, ool Pkst, Pr Por, Trc SFO- STN- Cut. SH: AA- VC- Incrs. {C zn} LS: tn-gy-cm, Pred dn, sm mx- fnxln- 2nd ReX, >5% <10% w/Pr- Fr Por: pp- vug Por, IX Por w/ spt'd- sat Tn STN- FLR, SI SFO & SI Odor. >10% <20% w/spt'd- subsat STN- FLR & SI- Fr Cut, Fr Odor. VRr Gd vug Por 	LANSING {Trc SFO) {Trc SFO)	2%0,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120 FHP: 1448 BHT: 99 F Mud-Co Report 5:30am; 6/15/13 CFS @ 3088' Wt: 8.9 Vis:41 PV:12 YP:17 pH:11.0 WL:7.8 CT:1/32 Ca: Nil CI: 4,200 ppm Solids: 4.1% ECD:9.47#/gal
	θ 5=C= +6 	 SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc SFO- ool Pkst w/Pr- Fr lool Por & IX Por- pp Por w/ STN & Cut. SH: VC, gn-gy & rd-mrn. {"B" zone} LS: cm-tn, mx- fnx, Rr ool & fos w/Pr- Fr Por, Trc SFO- STN- FLR & Cut. & LS: gy-tn-cm, mot, ool Pkst, Pr Por, Trc SFO- STN- Cut. SH: AA- VC- Incrs. {C zn} LS: tn-gy-cm, Pred dn, sm mx- fnxln- 2nd ReX, >5% <10% w/Pr- Fr Por: pp- vug Por, IX Por w/ spt'd- sat Tn STN- FLR, SI SFO & SI Odor. >10% <20% w/spt'd- subsat STN- FLR & SI- Fr Cut, Fr Odor. VRr Gd vug Por w/ sat STN. SH: AA. {D zn} LS: cm-tn-gy, Pred dn, sm chlky, sm mx- fnx- 2nd 	LANSING {Trc SFO) {Trc SFO) {SI SFO)	2%0,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120 FHP: 1448 BHT: 99 F Mud-Co Report 5:30am; 6/15/13 CFS @ 3088' Wt: 8.9 Vis:41 PV:12 YP:17 pH:11.0 WL:7.8 CT:1/32 Ca: Nil CI: 4,200 ppm Solids: 4.1% ECD:9.47#/gal
	0 5 5 C 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	 SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc SFO- ool Pkst w/Pr- Fr lool Por & IX Por- pp Por w/ STN & Cut. SH: VC, gn-gy & rd-mrn. {"B" zone} LS: cm-tn, mx- fnx, Rr ool & fos w/Pr- Fr Por, Trc SFO- STN- FLR & Cut. & LS: gy-tn-cm, mot, ool Pkst, Pr Por, Trc SFO- STN- Cut. SH: AA- VC- Incrs. {C zn} LS: tn-gy-cm, Pred dn, sm mx- fnxln- 2nd ReX, >5% <10% w/Pr- Fr Por: pp- vug Por, IX Por w/ spt'd- sat Tn STN- FLR, SI SFO & SI Odor. >10% <20% w/spt'd- subsat STN- FLR & SI- Fr Cut, Fr Odor. VRr Gd vug Por w/ sat STN. SH: AA. {D zn} LS: cm-tn-gy, Pred dn, sm chlky, sm mx- fnx- 2nd 	LANSING {Trc SFO) {Trc SFO)	2%0,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120 FHP: 1448 BHT: 99 F Mud-Co Report 5:30am; 6/15/13 CFS @ 3088' Wt: 8.9 Vis:41 PV:12 YP:17 pH:11.0 WL:7.8 CT:1/32 Ca: Nil CI: 4,200 ppm Solids: 4.1% ECD:9.47#/gal
	θ 5=C= +6 	 SH: VC- gn-gy & rd. {LANSING} LS: tn-gy-wh, Pred dn- chlky, mx- fnx, Trc SFO- ool Pkst w/Pr- Fr lool Por & IX Por- pp Por w/ STN & Cut. SH: VC, gn-gy & rd-mrn. {"B" zone} LS: cm-tn, mx- fnx, Rr ool & fos w/Pr- Fr Por, Trc SFO- STN- FLR & Cut. & LS: gy-tn-cm, mot, ool Pkst, Pr Por, Trc SFO- STN- Cut. SH: AA- VC- Incrs. {C zn} LS: tn-gy-cm, Pred dn, sm mx- fnxln- 2nd ReX, >5% <10% w/Pr- Fr Por: pp- vug Por, IX Por w/ spt'd- sat Tn STN- FLR, SI SFO & SI Odor. >10% <20% w/spt'd- subsat STN- FLR & SI- Fr Cut, Fr Odor. VRr Gd vug Por w/ sat STN. SH: AA. {D zn} LS: cm-tn-gy, Pred dn, sm chlky, sm mx- fnx- 2nd ReX, Trc (<5%) Pr pp Por & IGr Por & IX Por w/It STN, VSI SFO. 	LANSING {Trc SFO) {Trc SFO) {SI SFO)	2%0,98%M IHP: 1443 IFP: 18-28 ISIP: 225 FFP: 29-34 FSIP: 120 FHP: 1448 BHT: 99 F Mud-Co Report 5:30am; 6/15/13 CFS @ 3088' Wt: 8.9 Vis:41 PV:12 YP:17 pH:11.0 WL:7.8 CT:1/32 Ca: Nil CI: 4,200 ppm Solids: 4.1% ECD:9.47#/gal

	AA, Trc STN- SFO- Cut. SH: blk carb; & LS: gy, dn Mdst & argil. SH: VC, sm calc.		45-45-45-45 Rec: 60' TF:
	{E zn} LS: cm-tn-gy, Pred dn, mx- Vfnx, <5% w/pp Por, IGr Por, spt'd-subsat STN- FLR, SI SFO & Cut.	{SI SFO)	30' VSIOCMW (3%O,2%W 95%M)
	{F zn}LS: gy-tn-cm, Pred dn- mx- Rr fnx- 2nd ReX, sm fos & grnIr Pkst, Pr- Fr Por, <5% w/spt'd- sat FLR- STN- SI SFO & SI Odor. SI CHERTY: gy-tn-wh, sm fos.	{SI SFO)	60' VSIOCMW (5%O,15%W 80%M) TOOL SPL:
-CFS(+1304) wt 9.2	{G zn} LS: cm-gy-tn, sm STN, mx- fnx- sm 2nd ReX, ~10% w/Pr- Fr Por- Fr SFO & GB- STN, Fr Odor. VRr Gd Por: mldc- ool- STN- SFO.	{Fr SFO)	2%O,58%W 40%M IHP: 1507
-GFS(+1314) wt 9,2	LS: tn-wh, dn- mx & fnx & chlky w/Pred VPr- NVP (Trc LS w/ Por- STN- SFO AA)		IFP: 15-39 ISIP: 100 FFP: 38-53
	LS: gy-tn-wh, Pred dn, sm chlky, VRr ool & fos w/ Fr- Gd	{VSI SFO)	FSIP: 96 FHP: 1446 BHT: 98 F
	Por w/ STN- SFO- FLR- Cut. SH: sm blk carb; & LS: gy, dn, VPr- NVP.		 Mud-Co Report 5;30am; 6-16-13
	SH: (Abndt in 3170' spl) gy & gn & blk carb.		TIH w/ DST#2 @ 3143'
			Wt:9.1 Vis:53 PV:15 YP:20
	{H zn} LS: It tn-gy-wh, Pred dn- mx- fnx- SI 2nd ReX, sm chlky, Rr fos, VPr- Fr pp Por, Trc SFO- STN- FLR- Cut. SI	{Trc SFO)	pH:10.5 WL:7.8 CT:1/32" Ca:Trc
	CHERTY: ool & fos, opq. SH: gy-blk, rd.		CI: 4,500 ppm
			Solids: 5.5% LCM: 1#/bbl
	{I zn} LS: tn-gy-wh, Pred dn & chlky, sm fos & frgmntl, Pr- Fr Por: IX Por, pp- vug Por, I fos Por, Trc Gd IX & IGr Por,	{SI SFO&GB)	ECD: 9.72#/gal.
-320	SI- Fr SFO & GB, VRr sat STN, SI- Fr Cut, VSI Odor,		
	& Ifos Por w/ STN- SFO- Cut.		DST #3 LKC 'H'-'L' 3156'-3277'
			30-30-30-30 1st Op: Wk surf
	{J zn}LS: tn-wh, Pred dn- chlky, Rr grnlr Pkst & mx- fnx w/ Pr- Fr Ifos Por, VRr Gd Por; mldc w/ STN & SI- Fr SFO &	{SI- Fr SFO)	blow, No BB 2nd Op: dd, no
	Odor w/ sm Gs Bubls, >5% <10% w/ STN-SFO- Cut.		blow, No BB. Rec: 10' Ospt'd M
			TOOL SPL: 100%M w/Ospts
	{STARK} SH: blk carb.	3229' (-1400) STARK SH	IHP: 1597 IFP: 25-33
	LS: tn-gý, dn- mx, NVP. SH: VC.		ISIP: 447
	{Swope} LS: tn-wh, Rr ool & fos Pkst, ~10% w/Pr- Fr Por: lool & fos, I Gr Por w/ spt'd- sat It Tn STN & FLR, SI- Fr SFO- Gs Bubls.	{SI- Fr SFO & GB)	FFP: 34-40 FSIP: 252 FHP: 1448 BHT: 100 F
-325 	Pred dn- chlky.		Mud-Co Report 6:00am; 6/17/13
0 		3262' (-1433)	TOH w/ DST#3 @ 3277'
	SH: gy & blk carb.	HERTHA	Wt:9.2 Vis:51 PV:11 YP:20
	{HERTHA} LS: tn-wh, mx- fnx, ~5% w/Pr- Fr Por: IGr Por, lool Por, fos & mldc Por w/spt'd- subsat FLR & STN, SI SFO w/ sm Gs bubls & Cut, Incrs ool & fos Pkst. sm chlky.	{SI SFO)	pH:10.5 WL:7.8 CT:1/32 Ca:Trc CI: 4,500 ppm
	{BASE KANSAS CITY} SH: blk carb & VC.	3277' (-1448) BASE KANSAS CITY	Solids: 6.2%
	LS: wh-gy-tn, prt chlky & mx- fnxln, sm ool Pkst, VPr- NVP. NS.		
	SH: VC, Pred rd. LS: AA, dn Mdst.		
	CONGLOMERATE} SH: Pred mrn-rd, Rr CHERT: cm- yel-gn, shrp.	3302' (-1473) CONGLOMERATE	DST #4 ARBUCKLE 3273'-3379' 30-45-30-45
	CHERT: wh-cm-gy, blu-gy, shrp & shly- rd SH, sm wthr'd Chert w/ Pr visbl Por- NVP, NSFO, NF, NC.		1st Op: BOB in 20 min, No BB
	SH: Pred rd SH, AA. sm Chert & LS, AA.	Mud-Co Report 5:30am; 6/18/13 DST#4 @ 3379'	2nd Op: BOB in 20 min, No BB Rec: 75' Gsv OlL

Rouge -c-	-3350	LS: wh-gy, chlky to dn & mx- fnx, VPr- NVP. CHERT: AA, sm wthr'd & mrn-rd SH. LS: wh-mrn, mx- fnxln, sm argil- shly, SH: VC- olv-gn &	Wt:9.2 Vis:50 PV:14 YP:20 pH:10.5 WL:7.8 CT:1/32" Ca:Trc CI: 4,600 ppm Solids: 6.2% LCM: 2#/bbl ECD:9.80 #/gal	(2%Gas; 98%Oil) 60' MCGO (dp) (5%G;50%O;45%M) 180' GOCM (DC) (10%G; 40%O; 50%M) 120' MWCGO (DC) (25%G;45%O; 15%W;15%M)
0 -CFS(-1536) -CFS(-1536) -CFS(-1546) -CFS(-1546) -CFS(-1550) -C	3400	& SI SFO & Cut, ~10% w/Fr Por, fnxIn- MdxIn, sm 2nd ReX, spt'd- sat STN- FLR- SI- Fr SFO, ~10% Gd IX & vug Por w/sat STN, FLR, Fr-Gd SFO & Cut, Frly Strng Odor. CHERTY: wh-cm-bf-tn-gy, shrp, sm mot'd, Vfn ool. (3379' 60 min} (~50% ARB) DOLO: AA, gy- tn-STN, fn- MdxIn, rhmbc w/Fr- Gd IX & vug Por, Rr Crs-VCrs 2nd ReX, subsat- sat STN, dull FLR, Fr-Gd SFO- SI Gsy, sm	3376' (-1547) ARBUCKLE {SI- Fr SFO) RTD:3379'(-1550) HESS OIL CO STANLEY #1-14	435' TF ~3.4 bbl TOOL SPL: 30%Gas, 30%Oil 10%Water;30%Mud IHP: 1692 IFP: 59-165 ISIP: 1116 FFP: 167-221 FSIP: 1115 FHP: 1626 BHT: 103 F
	-	Cuu.	1292'FNL&2970'FEL Sec 14-11S-17W ELLIS CO., KS API#15-051-26538	

	DRILL STEM TES	T REPC	DRT		
	Hess Oil Company		14-11-17-	Ellis Co KS	
ESTING , INC	PO Box 1009 McPherson KS, 67460		Stanley Job Ticket:		DST#: 1
	ATTN: Roger Martin			2013.06.15 @	
GENERAL INFORMATION:					
Formation:Lansing A-DDeviated:NoWhipstock:Time Tool Opened:16:48:04Time Test Ended:21:35:19	ft (KB)		Test Type: Tester: Unit No:	Conventional Tate Lang 54	l Bottom Hole (Initial)
Interval:2991.00 ft (KB) To31Total Depth:3120.00 ft (KB) (TVHole Diameter:7.88 inches Hole			Reference KI	Elevations: B to GR/CF:	1829.00 ft (KB) 1824.00 ft (CF) 5.00 ft
Serial #: 6668 Inside					
Press@RunDepth:34.48 psigStart Date:2013.06.15Start Time:14:33:36	@ 2992.00 ft (KB)End Date:End Time:	2013.06.15 21:35:19	Capacity: Last Calib.: Time On Btm Time Off Btm:	2013.06.15 (2013.06.15 (0
TEST COMMENT: Weak dsurface b Dead no blow ba Dead no blow Dead no blow ba	ack				
Pressure vs. T	`ime □ ▽		PRESSI	JRE SUMMA	ARY
9000 Presure 1000	0000 Temperature Tan November 100	Time (Min.)	Pressure Temp (psig) (deg F		

1 17.69 97.26 Open To Flow (1) 46 27.91 98.04 Shut-In(1) 92 29.12 98.30 Open To Flow (2) 137 34.48 98.57 Shut-In(2) 181 119.74 98.81 End Shut-In(2) 183 1447.56 99.15 Final Hydro-static Gas Rates Choke (inches) 100%M with oil spots 0.15 0.00 Tool Sample 2%O 98%M 0.00				0	1442.01	90.07	Initial Hydro-static	
000 0	г			1	17.69	97.26	Open To Flow (1)	
90 91 225.12 98.38 End Shut-In(1) 090 92 29.12 98.30 Open To Flow (2) 137 34.48 98.57 Shut-In(2) End Shut-In(2) End Shut-In(2) End Shut-In(2) 181 119.74 98.81 Ind Shut-In(2) 183 1447.56 99.15 Final Hydro-static Gas Rates Choke (inches) Description 100%M with oil spots 0.15	-			46	27.91	98.04	Shut-In(1)	
000000000000000000000000000000000000			L IX		225.12	98.38	End Shut-In(1)	
Instrumental solution Instrumental solution Instrumental solution Instrumental solution Instrumental solution Instrumental solution Image: solution of the solut	_ = /			92	29.12	98.30	Open To Flow (2)	
Instrumental solution Instrumental solution Instrumental solution Instrumental solution Instrumental solution Instrumental solution Image: solution of the solut			- 85	137	34.48	98.57	Shut-In(2)	
Image: Set Jun 2013 Image: Set Jun 2	: 🖡 📗	$-\tilde{t}$ i i i		181	119.74	98.81	End Shut-In(2)	
Image: Set Jun 2013 SPM SPM OPM 15 Sat Jun 2013 SPM SPM Set Jun 2013 SPM Set Jun 2013 Set Jun 2013 SPM Set Jun 2013 Set Jun 2013 SPM Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 Set Jun 2013 <th>-</th> <th></th> <th></th> <th>183</th> <th>1447.56</th> <th>99.15</th> <th>Final Hydro-static</th> <th></th>	-			183	1447.56	99.15	Final Hydro-static	
Best Jun 2013 BFM Time (Hours) OPM 3PM BFM Time (Hours) OPM Recovery Gas Rates Length (ft) Description Volume (bbl) 30.00 100%M with oil spots 0.15	250	<i>y</i> ⁴						
Recovery Gas Rates Length (ft) Description Volume (bbl) 30.00 100%M with oil spots 0.15								
Length (ft) Description Volume (bbl) 30.00 100%M with oil spots 0.15	3PM Sat Jun 2013	8PM Time (Hours)	9PM					
30.00 100%Mw ith oil spots 0.15		Recovery				Ga	s Rates	
		Description	Volume (bbl)			Choke (i	nches) Pressure (psig) Gas Rate (N	1cf/d)
0.00 Tool Sample 2%O 98%M 0.00	Length (ft)	100%Mwith oil spots	0.15					
	• • •							
	30.00		0.00					
	30.00		0.00					
	30.00		0.00					
	30.00		0.00					
	30.00		0.00					

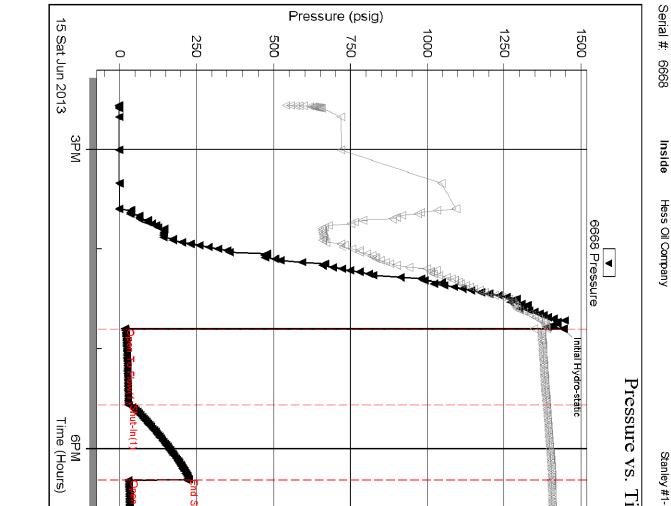
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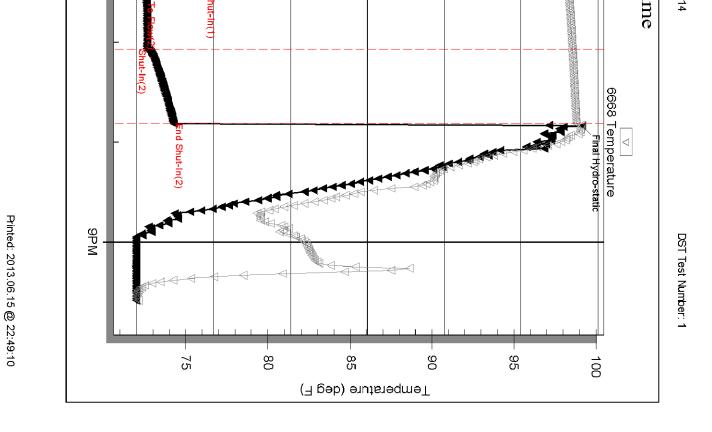
don-	RILOBITE	DRILL	STEM TEST REPO	ORT	FLUI	
			ompany	14-11-17	7-Ellis Co KS	
	ESTING , INC.	10 000 10		Stanley	[,] #1-14	
		McPhersor	n KS, 67460	Job Ticke	:: 5324 DS 1	ſ#: 1
		ATTN: Ro	ger Martin	Test Start	: 2013.06.15 @ 14:33:3	34
Mud and Cu	shion Information					
Mud Type: Ge	el Chem		Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal		Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	41.00 sec/qt		Cushion Volume:	bbl		
Water Loss:	7.80 in ³		Gas Cushion Type:			
Resistivity:	ohm.m		Gas Cushion Pressure:	psig		
Salinity:	4200.00 ppm					
Filter Cake:	1.00 inches					
Recovery In	formation					
			Recovery Table			
	Leng ft	lth	Description	Volume bbl)	
		30.00 10	0%Mw ith oil spots	0.	148	
		0.00 To	ol Sample 2%O 98%M	0.	000	
	Total Length:	30.001	t Total Volume:	bbl		
	Num Fluid Sam	oles: 0	Num Gas Bombs: 0	Seria	al #:	
	Laboratory Nar		Laboratory Location:			

Ref. No: 5324

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Trilobite Testing, Inc



RILOBITE	DRILL STEM TES	DRILL STEM TEST REPORT					
	Hess Oil Company	14-11-17-	14-11-17-Ellis Co KS				
ESTING , INC	PO Box 1009 McPherson KS, 67460		Stanley a Job Ticket:		DST#:2		
	ATTN: Roger Martin		Test Start:	2013.06.16 @	05:31:09		
GENERAL INFORMATION:							
Formation: Lansing F-G Deviated: No Whipstock: Time Tool Opened: 07:26:54 Time Test Ended: 12:00:39	ft (KB)		Test Type: Tester: Unit No:	Conventiona Tate Lang 54	al Bottom Hole (Reset)		
Interval:3101.00 ft (KB) To3'Total Depth:3120.00 ft (KB) (THole Diameter:7.88 inches Hole			Reference K	Elevations: B to GR/CF:	1829.00 ft (KB) 1824.00 ft (CF) 5.00 ft		
Serial #: 6668 Inside							
Press@RunDepth:53.25 psigStart Date:2013.06.16Start Time:05:31:11	 @ 3102.00 ft (KB) End Date: End Time: 	2013.06.16 12:00:39	Capacity: Last Calib.: Time On Btm: Time Off Btm:	2013.06.16 2013.06.16			
TEST COMMENT: Fair surface blov Dead no blow ba Fair surface blov Dead no blow ba	ack w built to 5 1/2in.						
Pressure vs. 7	Time To 8888 Temperature			JRE SUMM			
6008 Pressure 1000	0000 Temperature	Time (Min.)	Pressure Temp (psig) (deg l				

120			56 8 Temperature	1 44 90 91 135	14.69 39.30 99.70 37.73 53.25	96.35 97.24 97.94 97.92 98.56	End Shut-In(1) Open To Flow (2) Shut-In(2)	
500 200 0 0 500 500 500 500 500 500 500	Contraction of the second seco		80	180 181	95.59 1446.45	96.95 99.78	End Shut-In(2) Final Hydro-static	
	Recovery					Ga	s Rates	
Length (ft)	Description	Volume (bbl)				Choke (i	nches) Pressure (psig)	Gas Rate (Mcf/d)
30.00	3%O 2%W 95%M	0.15					ł	
60.00	5%O 15%W 80%M	0.30	•					
0.00	210 GIP	0.00						
0.00	Tool sample 2%O 58%W 40%M	0.00						
* Recovery from mul		No: 52225					2012 06 17 @ 07:55	

Ref. No: 53225

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0.295

0.000

RILOBITE	DR	ILL STEM TEST REPOR	RT		FLUID SUMMAR
		Dil Company	14-11-17-	Ellis Co KS	
ESTING , IN	PO Bo	PO Box 1009		#1-14	
	McPhe	erson KS, 67460	Job Ticket:	53225	DST#:2
	ATTN:	Roger Martin	Test Start:	2013.06.16 @ 0	5:31:09
Mud and Cushion Information	1				
Mud Type: Gel Chem		Cushion Type:		Oil API:	deg API
Mud Weight: 9.00 lb/gal		Cushion Length:	ft	Water Salinity:	23000 ppm
Viscosity: 41.00 sec/qt		Cushion Volume:	bbl		
Water Loss: 7.79 in ³		Gas Cushion Type:			
Resistivity: ohm.m		Gas Cushion Pressure:	psig		
Salinity: 4200.00 ppm					
Filter Cake: 1.00 inches					
Recovery Information					
		Recovery Table			
	igth t	Description	Volume bbl		
	30.00	3%O 2%W 95%M	0.14	-8	

Tool sample 2%O 58%W 40%M					
0.443 bbl					
0	Serial #:				
n:					
ool sample					
r	0.443 bbl 0 n:				

5%O 15%W 80%M

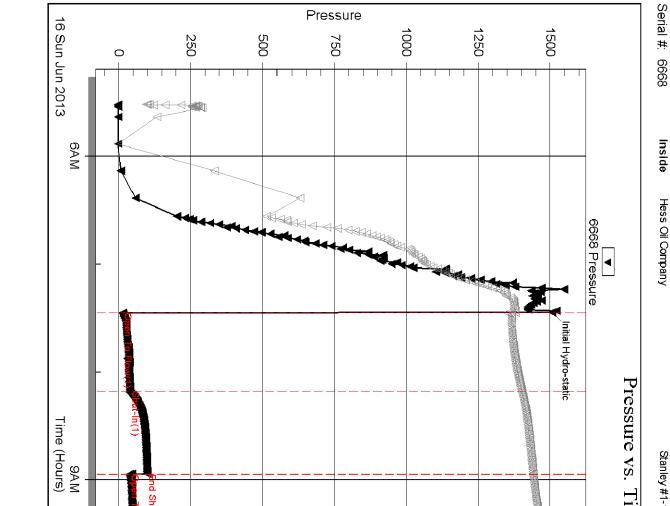
210 GIP

60.00

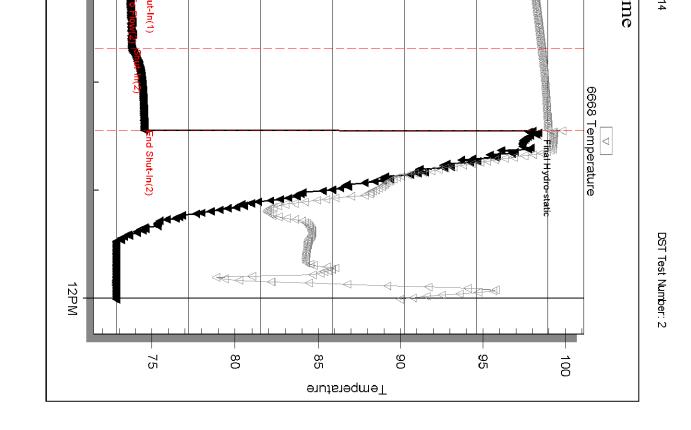
0.00

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Trilobite Testing, Inc



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RILOBITE	DRILL STEM TES	T REPC	DRT		
	Hess Oil Company		14-11-17-Ellis	Co KS	
ESTING , INC	PO Box 1009 McPherson KS, 67460		Stanley #1-14 Job Ticket: 53977		
	ATTN: Roger Martin		Test Start: 2013.0	06.17 @ 01:53:37	
GENERAL INFORMATION:	1				
Formation:LKC H-LDeviated:NoWhipstock:Time Tool Opened:03:43:22Time Test Ended:07:30:07	ft (KB)		• ·	ventional Bottom Hole Lang	(Reset)
Interval: 3256.00 ft (KB) To 3 Total Depth: 3277.00 ft (KB) (1			Reference Elevati	ions: 1829.00 f 1824.00 f	. ,
Hole Diameter: 7.88 inches Ho	le Condition: Good		KB to G	R/CF: 5.00 f	ť
Serial #: 6668 Inside					
Press@RunDepth: 39.52 psig Start Date: 2013.06.17	,	2013.06.17	Capacity: Last Calib.:	8000.00 2013.06.17	osig
Start Time: 01:53:39	End Time:	07:30:07		3.06.17 @ 03:43:07 3.06.17 @ 05:46:52	
TEST COMMENT: Weak surface B Dead no blow b Dead no blow Dead no blow b	back				
Pressure vs.			PRESSURES	SUMMARY	
900	0000 Temperature 0000 Temperature 100 100 100 100	Time (Min.)	(psig) (deg F)	Annotation	

	K + .	6	1	25.34		Open To Flow (1)	
			32				
		U					
		тет				. ,	
		peratu					
		o (deg) er	123	251.57		. ,	
			124	1537.00	99.77	Final Hydro-static	
Recovery					Ga	s Rates	
Description	Volume (bbl)				Choke (i	nches) Pressure (psig)	Gas Rate (Mcf/d)
100%M w ith oil spots	0.05					•	
Tool Sample 100%M with oil spots	0.00						
	34M Time (Hous) 66 Recovery Description	Junction Junct	Jeta Jeta	63 63 <td>Image: Second second</td> <td>Image: Constraint of the second se</td> <td>Additional and a state of the state of</td>	Image: Second	Image: Constraint of the second se	Additional and a state of the state of

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Serial #:

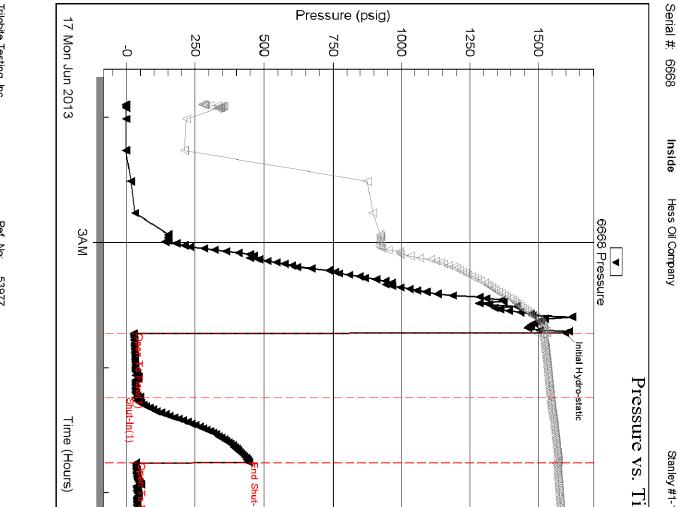
	RILOBITE	DRI	LL STEM TEST REPORT	Γ		FLUID S	UMMAR
	ESTING, INC		Dil Company	14-11-17-6	Ellis Co KS		
			x 1009	Stanley #	1-14		
			rson KS, 67460	Job Ticket:	53977	DST#: 3	
		ATTN:	Roger Martin	Test Start: 2	2013.06.17 @ (01:53:37	
Mud and Cu	shion Information	ļ					
Mud Type: Ge	el Chem		Cushion Type:		Oil API:		deg API
Mud Weight:	9.00 lb/gal		Cushion Length:	ft	Water Salinity	:	ppm
Viscosity:	53.00 sec/qt		Cushion Volume:	bbl			
Water Loss:	7.50 in ³		Gas Cushion Type:				
Resistivity:	ohm.m		Gas Cushion Pressure:	psig			
Salinity:	4500.00 ppm						
Filter Cake:	1.00 inches						
Recovery In	formation						
			Recovery Table				
	Len fi		Description	Volume bbl]		
		10.00	100%M w ith oil spots	0.04	9		
		0.00	Tool Sample 100%M with oil spots	0.00	0		

Total Length:10.00 ftTotal Volume:0.049 bblNum Fluid Samples:Num Gas Bombs:0Laboratory Name:Laboratory Location:

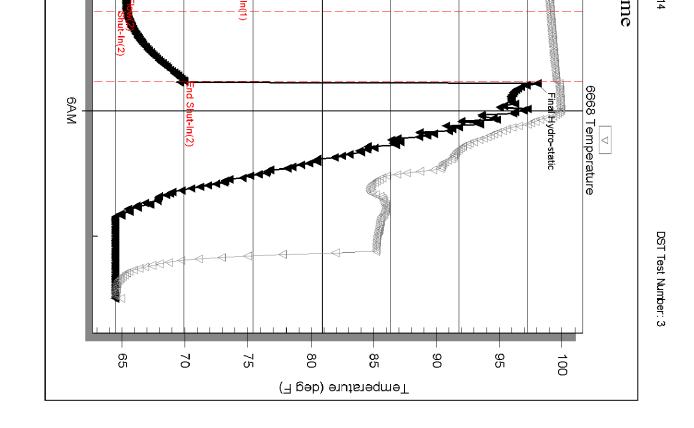
Recovery Comments:

Ref. No: 53977

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Trilobite Testing, Inc



Printed: 2013.06.17 @ 07:53:34

RILOBITE	DRILL STEM TEST REPORT						
	Hess Oil Company	14-11-17-	14-11-17-Ellis Co KS				
ESTING , INC	PO Box 1009 McPherson KS, 67460	-	Stanley #1-14 Job Ticket: 53978 DST#:4				
	ATTN: Roger Martin			2013.06.18 @	DST#:4 01:33:25		
GENERAL INFORMATION:							
Formation:ArbuckleDeviated:NoWhipstock:Time Tool Opened:03:46:10Time Test Ended:08:49:40	ft (KB)		Test Type: Tester: Unit No:	Conventiona Tate Lang 54	l Bottom Hole	e (Reset)	
Interval:3273.00 ft (KB) To33Total Depth:3379.00 ft (KB) (The construction of the con			Reference	Elevations: B to GR/CF:	1829.00 1824.00 5.00	ft (CF)	
					0.00		
Serial #: 6668 Inside Press@RunDepth: 220.84 psig Start Date: 2013.06.18 Start Time: 01:33:27		2013.06.18 08:49:40	Capacity: Last Calib.: Time On Btm: Time Off Btm:	2013.06.18 (2013.06.18 (-	psig	
TEST COMMENT: B.O.B. in 20 mins Dead no blow ba B.O.B. in 20 mins Dead no blow ba	ack s.						
Pressure vs. 7	PRESSURE SUMMARY						
	0000 Temperature 105	Time (Min.)	Pressure Temp (psig) (deg l 1691 75 1004				

1200 1000 760 200 0 5 Tue Jun 2013	A 1 1114(0 1017) 3AM Em(Hous)	00 00 00 00 00 00 00 00 00 00 00 00 00	Temperature (deg F)	1 31 75 76 104 151 152	59.13 165.45 1115.99 167.45 220.84 1114.73 1625.97	100.10 100.90 102.01	Open Shut- End S Open Shut- End S	Shut-In(1) To Flow (2)	
Recovery				Gas Rates					
Length (ft) Description Volume (bbl)			Choke (inches) Pressure (psig) Gas Rate (Mcf					Gas Rate (Mcf/d)	
120.00 25%G 45%O 15%W 15%M 0.5		0.59				•	•		•
180.00 10%G 40%O 50%M		0.92							
60.00	5%G 50%O 45%M	0.84							
75.00	2%G 98%O	1.05							
0.00	Tool Sample 30%G 30%O 10%W 30%N	1 0.00							
* Recovery from mu		0: 53078				<u> </u>	00404)6 18 @ 10·01	40

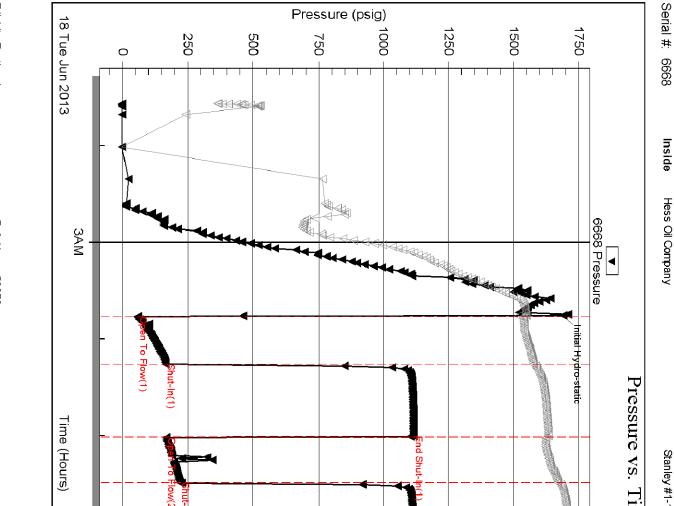
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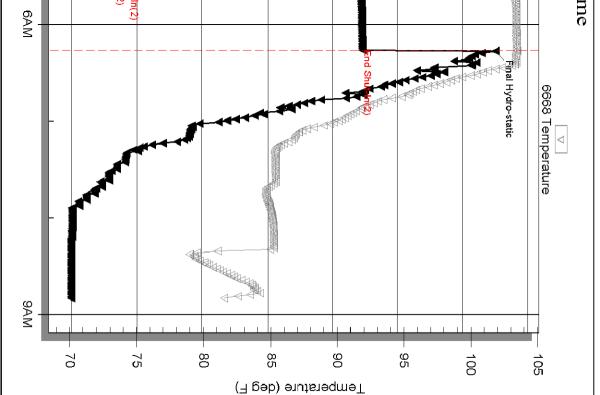
RILOBITE TESTING, INC		DRI	LL STEM TEST REPORT	-	FLUID SUMMARY		
)il Company	14-11-17-	Ellis Co KS		
		1000	< 1009 rson KS, 67460	Stanley # Job Ticket: 4		DST#:4	
		ATTN:	Roger Martin	Test Start: 2	2013.06.18 @ ()1:33:25	
Mud and Cu	ushion Information						
Mud Type: G	el Chem		Cushion Type:		Oil API:	29 deg API	
Mud Weight:	9.00 lb/gal		Cushion Length:	ft	Water Salinity	: ppm	
Viscosity:	51.00 sec/qt		Cushion Volume:	bbl	-		
Water Loss:	7.80 in ³		Gas Cushion Type:				
Resistivity:	ohmm		Gas Cushion Pressure:	psig			
Salinity:	4500.00 ppm						
Filter Cake:	1.00 inches						
Recovery In	nformation						
,			Recovery Table				
	Leng ft	th	Description	Volume bbl]		
		120.00	25%G 45%O 15%W 15%M	0.59	0		
		180.00	10%G 40%O 50%M	0.92	2		
		60.00	5%G 50%O 45%M	0.84	2		
		75.00	2%G 98%O	1.05	2		
		0.00	Tool Sample 30%G 30%O 10%W 30%M	0.00	0		
	Total Length:	435	.00 ft Total Volume: 3.406 bbl				
	Num Fluid Samp Laboratory Nan Recovery Com	ne:	Num Gas Bombs: 0 Laboratory Location: P127 @ 80 F = 29	Serial #	ŧ		

Ref. No: 53978

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Trilobite Testing, Inc



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Conservation Division Finney State Office Building 130 S. Market, Rm. 2078 Wichita, KS 67202-3802



Phone: 316-337-6200 Fax: 316-337-6211 http://kcc.ks.gov/

Mark Sievers, Chairman Thomas E. Wright, Commissioner Shari Feist Albrecht, Commissioner Sam Brownback, Governor

October 09, 2013

Bryan Hess Hess Oil Company PO BOX 1009 MCPHERSON, KS 67460-1009

Re: ACO1 API 15-051-26538-00-00 Stanley 1-14 NW/4 Sec.14-11S-17W Ellis County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully, Bryan Hess