



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1187493
OIL & GAS CONSERVATION DIVISION

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 # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

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
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ 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: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

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: _____

1187493

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. 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 <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input 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

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				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

Date of First, Resumed Production, SWD or ENHR: _____ Producing Method: Flowing Pumping Gas Lift Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

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 type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	H & D Exploration LLC
Well Name	Hearn-Debes Unit 1
Doc ID	1187493

Tops

Name	Top	Datum
Heebner	3360	-1484
Toronto	3375	-1499
Douglas	3394	-1518
Brown Lime	3514	-1638
Lansing	3538	-1662
Base KC	3804	-1928
Viola	3966	-2090
Simpson Shale	4076	-2200
Arbuckle	4144	-2268
T.D.	4216	-2340

These trespass abating services performed by us or our employees, agents, or independent contractors, shall not constitute an admission of liability or an offer of insurance.



TREATMENT REPORT

Lease No. HAD EXPLORATION LLC Date 1-25-14
 Well # HAWK-DEBES UNIT #1
 Station PRATT, KS Casing 8 7/8 Depth 680 County SMITHSON State KS
 Field Order # 2819 Type Job CNW-SURFACE Formation 680-TD Legal Description 3-25-12

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP	
8 7/8				Pre Pad	Max		5 Min.	
680	Depth	From	To	Pad	Min		10 Min.	
Volume	Volume	From	To	Frac	Avg		15 Min.	
Max Press	Max Press	From	To		HHP Used		Annulus Pressure	
Well Connection	Annulus Vol.	From	To	Flush	Gas Volume		Total Load	
Plug Depth	Packer Depth	From	To					

Customer Representative CONNOR Station Manager KEVIN Treater CONROY
 Service Units 19907 19885-19843 19871-19862
 Driver Names KG MCCRAW JOSH

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
0430					DN LOCATED
					RUN 686' 8 7/8 CSC.
					BRACK CORK
					WAX CEMENT
0545	200		77	6	175 SK A-COW 3% CC, 1/4 CC
	200		32	6	150 SK COMMON 2% CC, 1/4 CC
					STOP - DROP PLUG
	0		0	6	START DISP
0615	500		40.8	2	PLUG DOWN
					CORK 30 bbl. CEMENT TO PIT
0700					JOB COMPLETE - KEVIN

TREATMENT REPORT

Customer: Grand D Exploration, LLC
 Lease: Hearn-Debes Unit
 Lease No.: Well # 1
 Date: 2-1-14
 Field Order #: 9854
 Station: Pratt, Kansas
 Casing: 5 1/2 15.5 Lb./ft.
 Depth: 4,215 feet
 County: Stafford
 State: Kansas
 Type Job: C.N.W. - Longstring
 Formation:
 Legal Description: 3-255-12W

PIPE DATA		PERFORATING DATA		CEMENT USED		TREATMENT RESUME			
Casing Size: 5 1/2	Tubing Size: 5 1/2 Lb./ft.	Shots/Ft: 175	sacks: 5	AA 2 cement	with: 5%	Fluid Loss: 3%	Friction	ISIP	5 Min.
Depth: 4,215 feet	Depth: 4,215 feet	From: Reducer, 28"	To: Defoamer, 18"	15.2 Lb./Gal.	Gas Blot, 10%	Salt, 5%	6 1/2" St. Gilsomite	Min. 2.63 Gal/stk.	1.38 CU FT. 1 st.
Volume: 100.3 Bbl.	Volume: 100.3 Bbl.	From: 30	To: 40	60/40 Poz to Plug Rat Hole	HHF Used	Annulus Pressure			
Max Press: 3,000	Max Press: 3,000	From: 4,200	To: 4,200	100 Bbl. 28" TCCL	Gas Volume	Total Load			

Customer Representative: Gerald Schetz
 Station Manager: Kevin Gordley
 Treater: Clarence R. Messick
 Service Units: 28,443
 Driver Names: Messick, Mc Graw, Young

Time	Casing Pressure	Tubing Pressure	Bbbs. Pumped	Rate	Service Log
3:45					Trucks on location and hold safety meeting.
4:00					Southwind Drilling start to run Auto Fill Float Shoe, Shoe Joint with Lat Down Baffle screwed into collar and a total of 95 Joints new 15.5 Lb./ft. 5 1/2" casing. A Turbolizer was installed on collars # 1, 3, 5, 7, 9, 11, 13 and # 15. A Baster was installed onto top of collar # 3.
5:30					Casing in well. Circulate for 45 minutes.
6:22		2000			Shut in well. Pressure Test. Open Well.
6:26	300			6	Start Fresh water Pre-Flush.
)		20	6	Start mud Flush.
			32	6	Start Fresh water spacer.
6:36	300		52	5	Start mixing 175 sacks AA 2 cement
	0		95		Stop pumping. Shut in well. Wash pump and lines. Release Latch Down Plug. Open well.
7:00	150			26.5	Start Fresh water Displacement.
			80	25	Start to lift Cement.
7:38	300		100		Plug down.
					Pressure up
					Release pressure. Float Shoe held
			7	3	Plug Rat Hole.
8:15					Wash up pump truck.
					Job Complete.

10244 NE Hiway 61 • P.O. Box 8613 • Pratt, KS 67124-8613 • (620) 672-1201 • Fax (620) 672-5383

MORNING DRILLING REPORT

SOUTHWIND DRILLING, INC.

For: H&D Exploration, LLC

RIG No. 6

Well Name: **Hearn-Dabes Unit #1**
 Location: **142' FSL & 2284' FWL**
 Section: **3-25S-12W**
 County: **Stafford**
 API: **15-185-23852-00-00**

Elevation: **GL 1868'**
KB 1876'
 Est. TD: **4300'**
 Conductor: **N/A**

Rig No. 6 (Pusher Wes Pfaff) 620 566-7094
 Rig No. 6 (Doghouse) 620 566-7156
 Southwind Drilling Office 620 564-3800



Surface Casing: Ran 16 joints of new 23#, 8 5/8" casing. Tally @ 670', Set @ 680', used 325 sacks of Acon, 3% cc, 1/4 CF, used 150 sacks of Common, 2% cc, 1/4 CF, cement circulated, by Basic (Ticket #9879), plug down @ 6:15 am on 01.25.14.

Production Info: Ran 75 joints of 5 1/2" casing. Tally @ 4218', Set @ 4218', used 175 sacks of AA2 w/ 5% Flo, 2% Defoamer, 10% salt, 5% Gilsomite, 30 sacks for Rat hole, cemented, by Basic (Ticket #9854). Job complete @ 7:45 pm on 02.01.14.

Rotary Total Depth: **4220'**
 Log Total Depth: **4216'**

Geologist: **Jim Musgrove**

7:00 A.M. Depth: 4220'		7:00 A.M. Current Operation: TEAR DOWN								Total
Spud Date & Time:	01/24/14	01/25/14	01/26/14	01/27/14	01/28/14	01/29/14	01/30/14	01/31/14	02/01/14	
01/24/2014 @ 12:30 PM	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	
Total Depth (7:00am)	0	680	1615	2530	3310	3580	3810	3996	4220	4220
Daily Progress	680	935	915	780	270	230	186	224		38.80
Ft. Per Hr.	90.67	110.00	46.33	36.71	22.98	17.36	14.31	16.29	#DIV/0!	
Current Operation (7:00am)	Rig Up	WOC	Drilling	Drilling	Drilling	DST #1	TIWT	Drilling	Arbuckle	
Formation	Surface	Surface	Sand / Shale	Shale	Shale	Lansing	Lansing	Viola / Simpson	Arbuckle	
Fuel Used	421.84	220.45	373.81	402.99	320.33	252.27	300.56	406.58	183.20	2882.02
Survey (degree & depth)	1° @ 680'				1° @ 3580'			1 1/4° @ 4220'		
Mud Info										
Mud Cost	\$0.00	\$580.50	\$2,370.80	\$2,369.75	\$0.00	\$255.65	\$55.15	\$1,577.05		\$7,228.90
Weight (# / Gal)	10.0	9.3	9.7	8.9	9.1	9.1	9.0	9.2		
Vls (Funnel)	41	28	28	52	58	61	62	50		
Water Loss (cc)					8.0	7.6	8.0	8.8		
Bit #1										
Bit Make / Type	JZ Tooth ReTip									
Bit Size	12 1/4									7.50
Bit Hours	7.50									
Bit #2										
Bit Make / Type		JZ HA20Q	JZ HA20Q	JZ HA20Q	JZ HA20Q	JZ HA20Q	JZ HA20Q	JZ HA20Q	JZ HA20Q	
Bit Size		7 7/8	7 7/8	7 7/8	7 7/8	7 7/8	7 7/8	7 7/8	7 7/8	
Bit Hours		8.50	19.75	21.25	11.75	13.25	13.00	13.75		101.25
Bit Cumulative Hours	7.50	8.50	19.75	21.25	11.75	13.25	13.00	13.75	0.00	108.75
Weight on Bit (WOB)	20,000	32,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	
RPM	100	80	80	80	80	80	80	70	70	
Pump Pressure	450	600	650	600	600	600	750	1000		
Drilling (Rotating) Hours	7.50	8.50	19.75	21.25	11.75	13.25	13.00	13.75	0.00	108.75
Daywork Hrs. (Operator's time)										
Rat Hole (>.75 Hrs)										0.00
Wait on Cement	0.75	11.25								12.00
Trip					5.00	5.25	4.50	2.00	2.25	19.00
Circulate					2.75	2.50	1.75	1.75	1.00	9.75
Tool					0.75	1.25	0.75	0.50		3.25
Testing					2.75	0.50	3.00			6.25
Clean Floor										0.00
Logging								5.00		5.00
LDDP / LDDC									3.75	3.75
Run Casing / Cement	2.25								4.75	7.00
Nipple Down / Jet Cellar									0.50	0.50
Set Slips / Jet Pits									1.00	1.00
Wait on Loggers										0.00
Wait on Orders										0.00
Billable Hours	3.00	11.25	0.00	0.00	11.25	9.50	10.00	9.25	13.25	67.50
Non-Billable Hours (Southwind's time)										
Rig Up / Rig Down	5.25								2.25	7.50
Wait on Cement (if NC)		1.25								1.25
Drill Rat Hole (<.75 hrs)	0.25									0.25
Drill Plug		0.25								0.25
Circulate / Trip (Surface)	1.50									1.50
Rig Repair	2.75		0.50			0.50	0.50			4.25
Connections	3.00	2.50	2.75	1.75	0.75	0.75	0.50	0.75		12.75
Jet/Displace	0.50	0.25	1.00	1.00						2.75
Surveys	0.25				0.25			0.25		0.75
Rig Check										0.00
Circulate (NB)										0.00
Trip Time (NB)										0.00
Plugged Bit										0.00
Lost Circulation (< 2 hrs)									0.50	0.50
Lay Down Kelly / RH										0.00
Non-Billable Hrs.	13.50	4.25	4.25	2.75	1.00	1.25	1.00	1.00	2.75	31.75
Footage Cost	\$ 9,520.00	\$ 13,090.00	\$ 12,810.00	\$ 10,920.00	\$ 3,780.00	\$ 3,220.00	\$ 2,604.00	\$ 3,136.00	\$ -	\$ 59,080.00
Daywork Cost	\$ 1,050.00	\$ 3,937.50	\$ -	\$ -	\$ 3,937.50	\$ 3,325.00	\$ 3,500.00	\$ 3,237.50	\$ 4,637.50	\$ 23,625.00
Combined Est. Cost*	\$ 10,570.00	\$ 17,027.50	\$ 12,810.00	\$ 10,920.00	\$ 7,717.50	\$ 6,545.00	\$ 6,104.00	\$ 6,373.50	\$ 4,637.50	\$ 82,705.00

*Please note that this is estimated footage & daywork cost only. Additional charges will apply on invoice (fuel surcharge, water transfer pump, etc)

DST #1 Info -

Footage Interval: 3545' - 3580' Lansing "B"
 Recovery: 1240' Gas in Pipe
 15' Mud

DST #2 Info -

Footage Interval: 3745' - 3810' Lansing "K-L"
 Recovery: 870' Oil Cut Mud

Anhydrite @ 670'

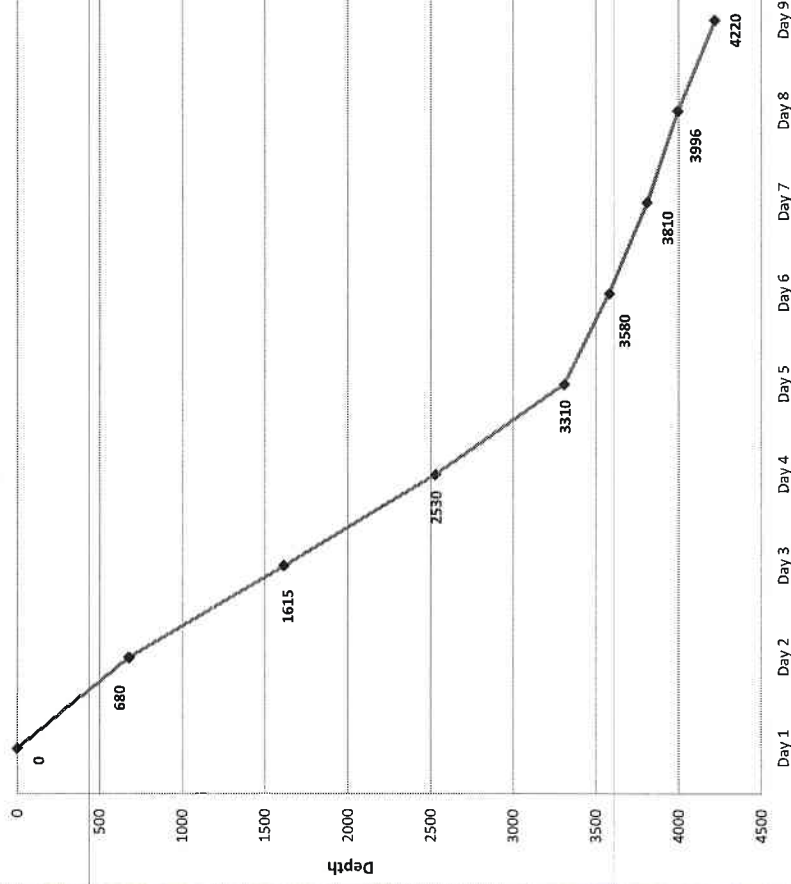
Displaced @ 2644'



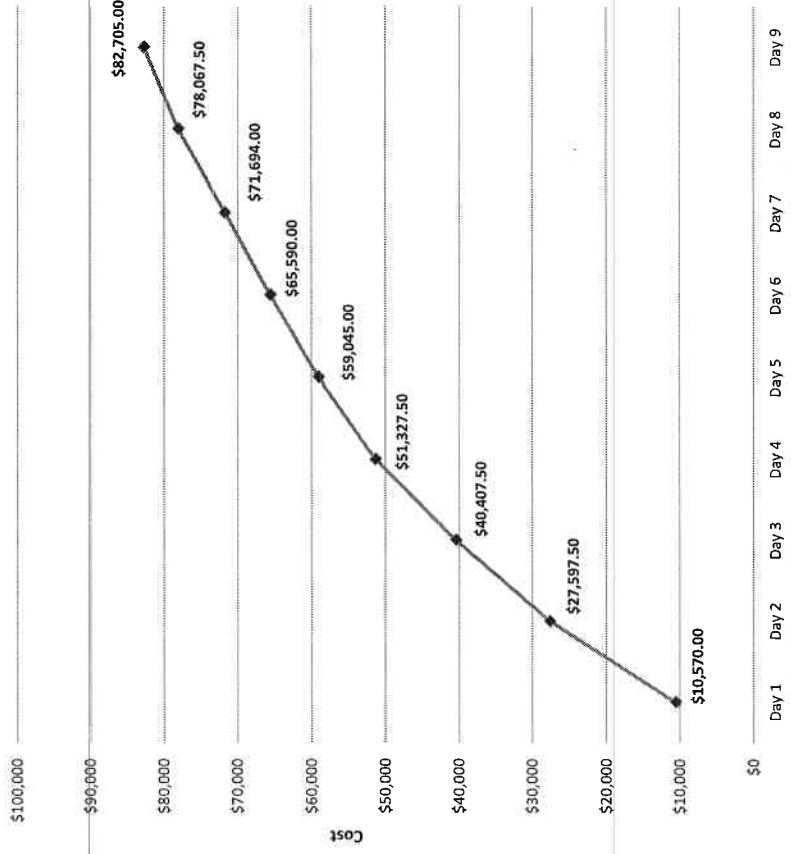
Job Summary Graphical Report

Southwind Rig #6
Hearn-Debes Unit #1

Days vs Depth



Days vs Cost



H&D Exploration, LLC well comparison sheet

On the basis of the positive drill stem test and after reviewing the electric logs, it was recommended by all parties involved in the Hearn-Debes Unit #1 to set and cement 5 1/2" production casing at the rotary total depth 4220'

NOTES

Electronic Surveys: By Pioneer Energy Services

Surface Casing: 8 5/8" @680
Production Casing: 5 1/2" @

Geologist on Well: Josh Austin

Geological Supervision From: 3200' to RTD

Samples Examined From: 3200' to RTD

Drilling Time Kept From: 3200' to RTD

Samples Saved From: 3200' to RTD

Mud Up: 2800' Type Mud: Chemical was displaced

RTD: 4220 LTD: 4216

Spud: 01/24/2014 Comp: 02/01/2014

CONTRACTOR: Southwind Drilling Company (Rig #6)

API # 15-185-23852-00-00

KB: 1876' GL: 1868'

COUNTRY: Stafford STATE: Kansas

SEC: 3 TWSP: 25s RGE: 12w

LOCATION: SW-SE-SW (142' FSL & 2284' FWL)

FIELD: Wildcat

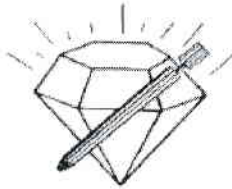
LEASE: Hearn-Debes Unit #1

COMPANY: H&D Exploration LLC

**PETROLEUM
CORPORATION**
Clifton, Kansas



Hearn-Debes unit #1					BONANZA OIL CORP Fritzemeier #1 SW SW SE				Hilderbrand #1			
1876 KB					1877 KB		Structural Relationship		1876 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Sample	Sub-Sea	Sample	Log	Sample	Sub-Sea	Sample	Log
Heebner	3361	-1485	3360	-1484	3368	-1491	6	7	3357	-1481	-3	-3
Toronto	3375	-1499	3375	-1499	3377	-1500	1	1	3371	-1495	-4	-4
Douglas	3393	-1517	3394	-1518	3402	-1525	8	7	3394	-1518	0	0
Brown Lime	3517	-1641	3514	-1638	3520	-1643	2	5	3512	-1636	-2	-2
Lansing	3539	-1663	3538	-1662	3544	-1667	4	5	3536	-1660	-2	-2
Base KC	3803	-1927	3804	-1928	3808	-1931	4	3	3804	-1928	0	0
Viola	3969	-2093	3966	-2090	3972	-2095	2	5	3952	-2076	-14	-14
Simpson Shale	4077	-2201	4076	-2200	4081	-2204	3	4	4072	-2196	-4	-4
Arbuckle	4146	-2270	4144	-2268	4144	-2267	-3	-1	4136	-2260	-8	-8
Total Depth	4220	-2344	4216	-2340	4176	-2299			4214	-2338		



DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: HDU1DST1

TIME ON: 1:03 AM
TIME OFF: 9:20 AM

Company HD Exploration LLC Lease & Well No. Hearn-Debes Unit #1
Contractor Southwind Drilling Rig #6 Charge to HD Exploration LLC
Elevation 1876' KB Formation Lansing "B" Effective Pay _____ Ft. Ticket No. F237
Date 1-29-14 Sec. 3 Twp. 25 S Range 12 W County Stafford State KANSAS
Test Approved By Josh Austin Diamond Representative Jake Fahrenbruch

Formation Test No. ONE Interval Tested from 3545 ft. to 3580 ft. Total Depth 3580 ft.
Packer Depth 3540 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
Packer Depth 3545 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
Depth of Selective Zone Set _____

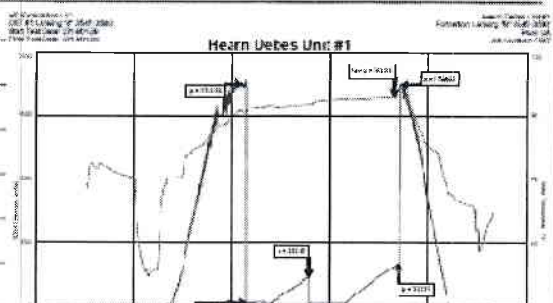
Top Recorder Depth (Inside) 3531 ft. Recorder Number 5951 Cap. 5,000 P.S.I.
Bottom Recorder Depth (Outside) 3546 ft. Recorder Number 5584 Cap. 5,000 P.S.I.
Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type Chemical Viscosity 61 (1.5# LCM) Drill Collar Length _____ ft. I.D. 2 1/4 in.
Weight 9.0 Water Loss 8.0 cc. Weight Pipe Length _____ ft. I.D. 2 7/8 in.
Chlorides 5800 P.P.M. Drill Pipe Length 3520 ft. I.D. 3 1/2 in.
Jars: Make STERLING Serial Number _____ Test Tool Length 25 ft. Tool Size 3 1/2-IF in.
Did Well Flow? NO Reversed Out NO Anchor Lengths 35 ft. Size 4 1/2-FH in.
Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: Fairly strong blow, B.O.B. in 6 minutes. Very weak surface blow-back.
2nd Open: Strong blow, B.O.B. immediately. No G.T.S. Very weak surface blow-back.

Recovered 15 ft. of Drilling Mud
Recovered _____ ft. of 1200' G.I.P.
Recovered _____ ft. of _____
Recovered _____ ft. of _____
Recovered _____ ft. of _____
Recovered _____ ft. of _____

Remarks:



Time Set Packer(s) 8:00 AM ^{A.M.} P.M. Time Started Off Bottom 11:00 AM ^{A.M.} P.M. Maximum Temperature 108 Deg F

Initial Hydrostatic Pressure..... (A) 1895 P.S.I.

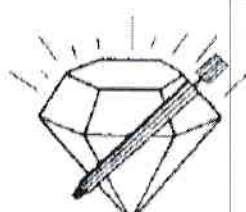
Initial Flow Period..... Minutes 30 (B) 78 P.S.I. to (C) 161 P.S.I.

Initial Closed In Period..... Minutes 45 (D) 1204 P.S.I.

Final Flow Period..... Minutes 45 (E) 129 P.S.I. to (F) 202 P.S.I.

Final Closed In Period..... Minutes 60 (G) 1186 P.S.I.

Final Hydrostatic Pressure..... (H) 1876 P.S.I.



DIAMOND TESTING
P. O. Box 157
HOISINGTON, KANSAS 67544
(316) 653-7550
GAS VOLUME REPORT

Company H D Exploration LLC Lease & Well No. Hearn-Debes Unit #1

Date 1-30-14 Sec. 3 Twp. 25S Rge. 12W Location _____ County Stafford State KS

Drilling Contractor Southwind #6 Formation Lansing "K&L" DST No. 2

Remarks: G.T.S. 18 minutes into initial flow period. Gas sample recovered.

INITIAL FLOW

Time O'Clock	Orifice Size	Gauge	CF/D
	in.	in.	
	in.	in.	
	in.	in.	
	in.	in.	
	in.	in.	
	in.	in.	
	in.	in.	
	in.	in.	
	in.	in.	
	in.	in.	

FINAL FLOW

Time O'Clock	Orifice Size	Gauge	CF/D
	.25 in.	PSI in.	
9:20am	" in.	10 in.	30,800
9:30am	" in.	19 in.	45,500
9:40am	" in.	19 in.	45,500
*9:50am	" in.	17 in.	42,400
10:00am	" in.	16 in.	40,900
	in.	in.	
	in.	in.	
	in.	in.	
	in.	in.	

*SAMPLE TAKEN

FINAL FLOW

ROCK TYPES

Cht
 Lmst fw7>
 shale, gry
 Ss
 Dolsec
 shale, grn
 Carbon Sh

OTHER SYMBOLS

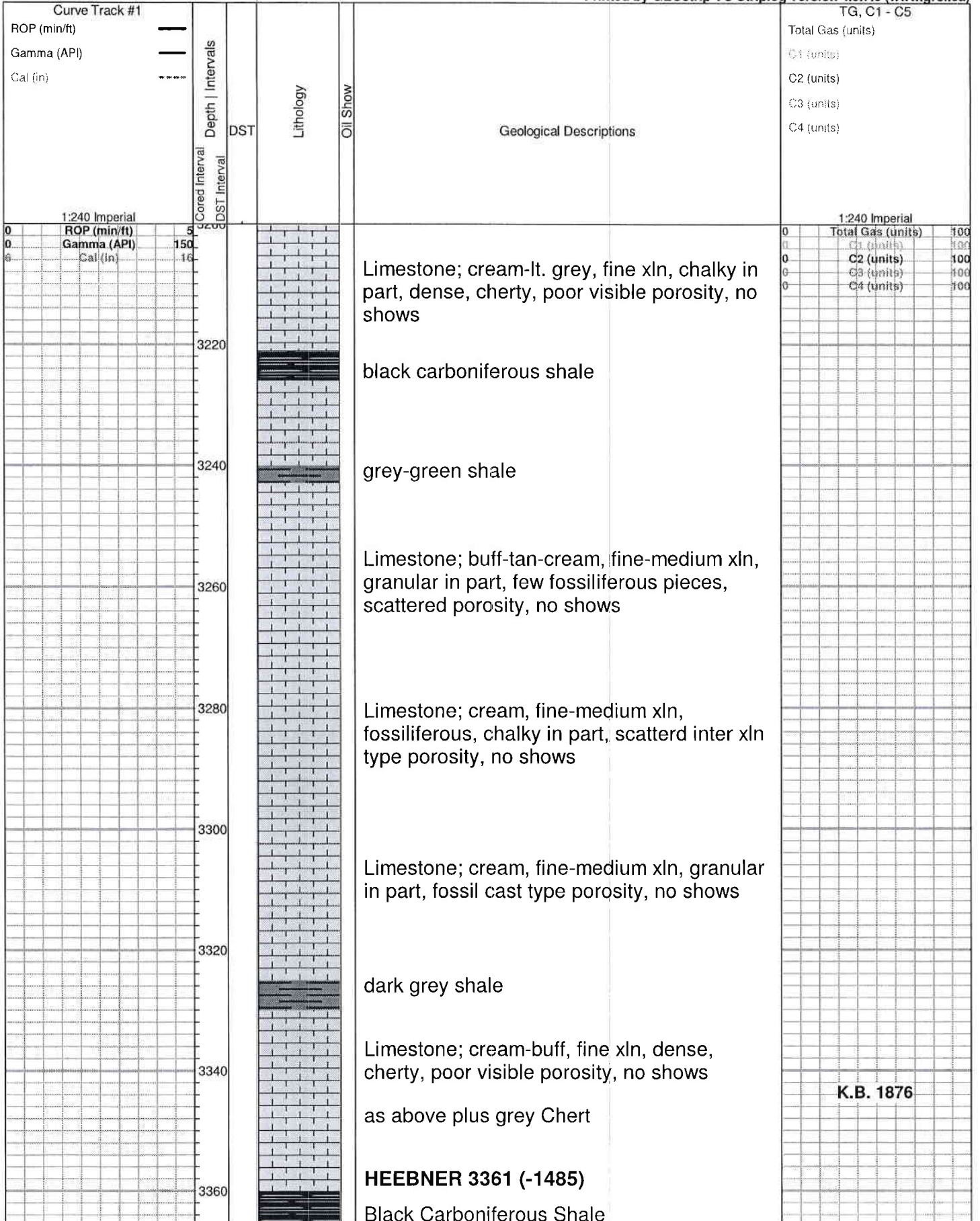
Oil Show
● Even Stn
● Spotted Stn 50-75
● Spotted Stn 25-50

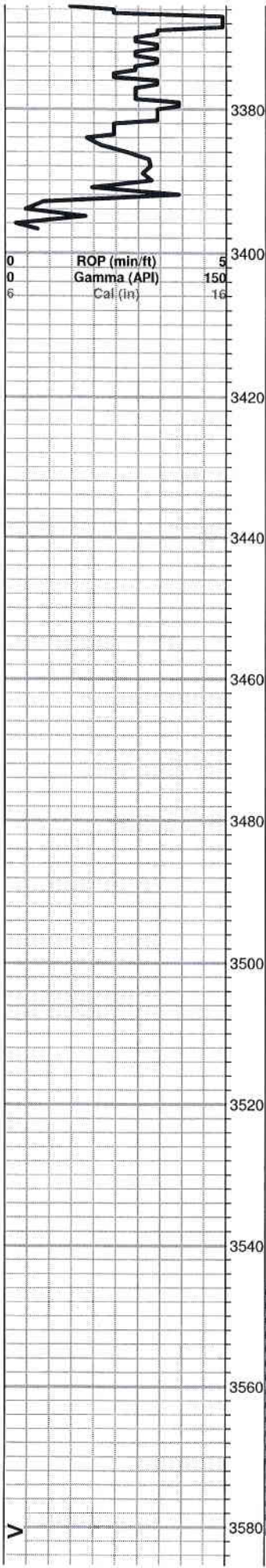
DST
■ DST Int
■ DST alt
■ Core

- Spotted Stn 1-25
- Questionable Stn
- Dead Oil Stn
- Fluorescence
- * Gas

|| tail pipe

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TORONTO 3375 (-1499)

Limestone; cream-white, fine xln, chalky, fossiliferous in part, spotty brown SFO, faint odor, few pin point-inter xln type porosity

DOUGLAS 3393 (-1517)

Shale; grey-greyish green, soft, silty, micaceous

Sand; grey-greyish green, very fine grained, sub rounded, sub angular, micaceous, poor inter granular porosity, no shows

Shale; grey-dark grey, silty in part, slightly micaceous

Shale; grey-dark grey, silty, micaceous

shale as above

BROWN LIME 3517 (-1641)

Limestone; buff-tan, fine xln, dense, fossiliferous, cherty

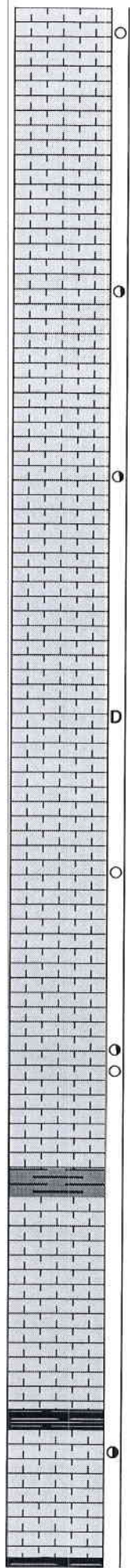
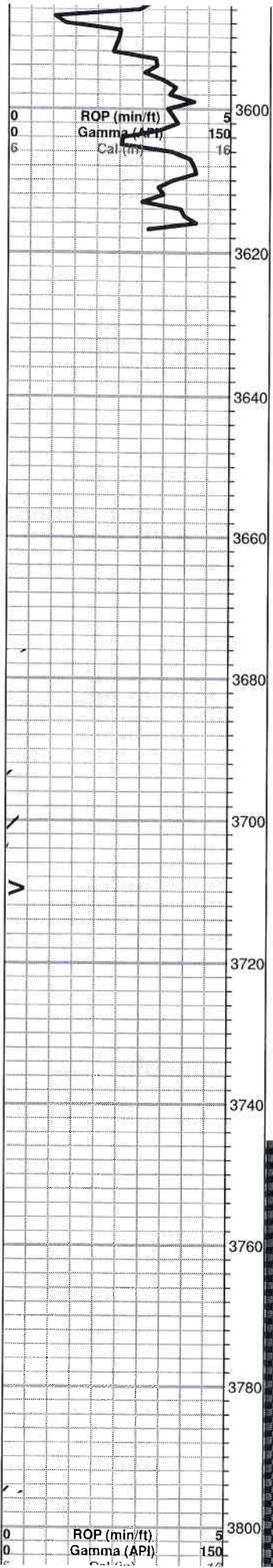
LANSING 3539 (-1663)

Limestone; cream-tan, fine xln, dense, fossiliferous in part

grey shale

Limestone; grey-cream, fine xln, vuggy-inter xln porosity, lt brown stain, SFO, faint-fair odor, trace gas bubbles

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100



○ Limestone; cream-grey-tan, fine xln, oolitic in part, questionable trace brown stain, nsfo

Limestone; cream, fine xln, chalky, dense, plus white boney Chert

○ Limestone; cream-buff, fine-medium xln, granular, poorly deviated porosity, brown-grey stain, trace spotty free oil, faint-fair odor

○ Limestone; buff-tan, fine xln, dense, trace brown stain, trace spotty free oil, faint odor

Limestone; cream, fine xln, dense, cherty

D Limestone; white-grey, fine xln, chalky, oolitic, black stain, NSFO, no odor

○ Limestone; cream, oolitic, chalky in part, few scattered porosity, questionable trace brown stain, NSFO, very faint odor

○ Limestone; cream, chalky, oomoldic, few oolitic, fair oomoldic porosity, trace brown stain, questionable trace free oil, very faint odor

grey shale

Limestone; cream, oomoldic/oolitic, fair oomoldic porosity, questionable trace brown stain, NSFO, no odor

Limestone; cream-buff-tan, fine xln, dense, cherty, no visible porosity, no shows, plus grey Chert

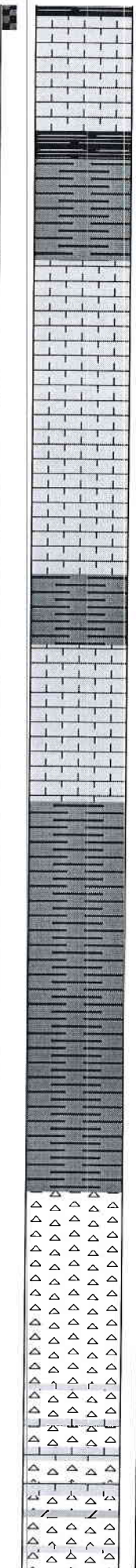
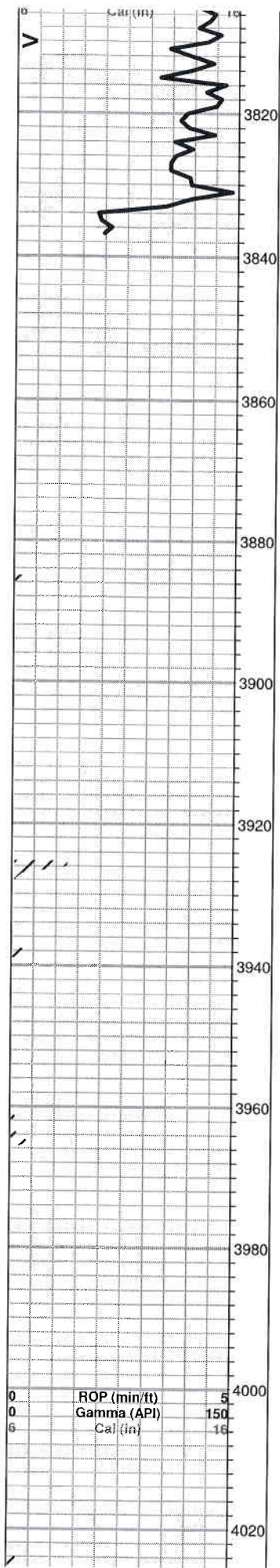
black carboniferous shale

○ Limestone; buff-grey, fine-medium xln, fair inter xln porosity, brown-black stain, SFO, faint-fair odor

BKC 3803 (-1947)

Total Gas (units)	100
C1 (units)	100
C2 (units)	100
C3 (units)	100
C4 (units)	100

Total Gas (units)	100
C1 (units)	100
C2 (units)	100
C3 (units)	100
C4 (units)	100



black carboniferous shale

Limestone; grey-cream, fine xln, chalky, dense

black carboniferous shale

Shale; grey-greyish green

Limestone; cream-white, fine xln, chalky, dense, slightly fossiliferous, few scattered porosity, no shows

Limestone; cream, fine xln, dense, cherty, poor porosity, no shows, plus Orange Chert

Limestone and Chert as above

Shale; grey-green, plus gummy/soft shale

Limestone; grey-cream, fine xln, chalky in part, slightly fossiliferous, poor porosity, no shows,

Shale; brick red-grey-green, soft, waxey

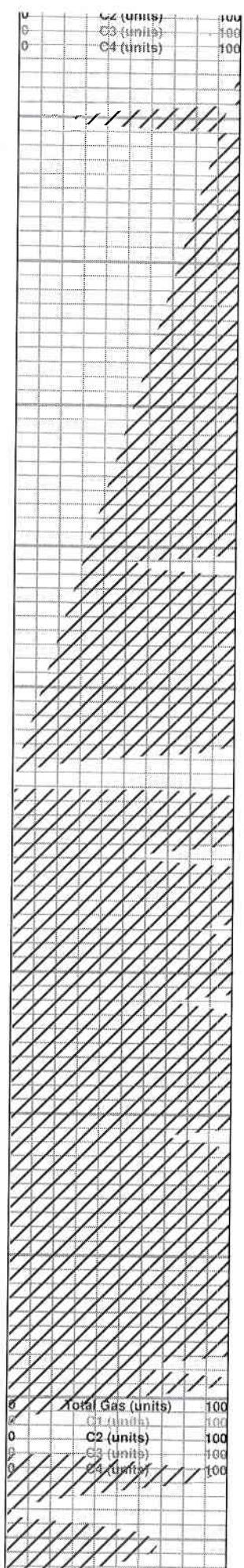
Shale; as above

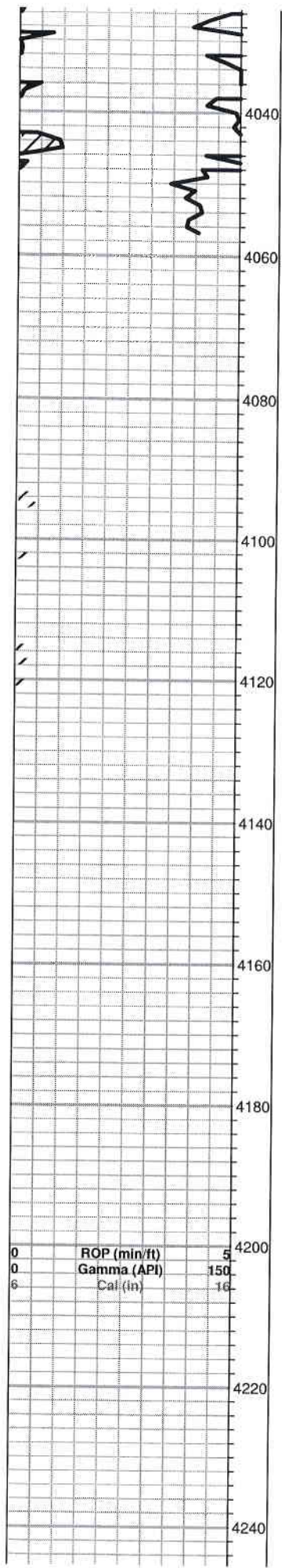
Shale; grey-green-maroon, soft, waxey

VIOLA 3969 (-2093)

Chert; cream-lt. grey, boney, semi tripolitic, few scattered porosity, golden brown stain, questionable trace free oil, gassy odor

Chert as above, plus Limestone; cream, fine xln, chalky, dense





Chert; white-cream, semi tripolitic, boney, few pieces Dolomite; cream, fine-medium xln, sucrosic, no shows

Limestone; lt. grey-cream, fine xln, dense, cherty, plus Chert; white-cream, boney, semi tripolitic

SIMPSON SHALE 4077 (-2201)

Shale; grey-green, micaceous, soft/gummy

Sand; cream-grey, very fine grained, sub rounded, sub angular, micaceous in part, fair inter granular porosity, black-dark grey stain, trace spotty free oil, very faint odor

Shale; variety of colors, plus Sand; cream, fine-medium grained, sub angular, sub rounded, dolomitic in part, friable in part, fair inter granular porosity, no shows

ARBUCKLE 4146 (-2270)

Dolomite; buff-grey, fine xln, sucrosic, dense, poorly developed porosity, few vuggy porosity, trace spotty stain, trace spotty free oil, faint odor

Dolomite; grey-cream, fine xln, sucrosic, poorly developed porosity, dense, plus white Chert, no shows

Dolomite; cream-buff, fine xln, slightly sucrosic, dense, poor porosity, no shows

Dolomite; as above, few scattered white-lt. grey boney Chert

ROTARY TOTAL DEPTH 4220 (-2344)

