

Confidentiality Requested:

Yes  No

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

Form ACO-1

January 2018

**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

Gas  DH  EOR

OG  GSW

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 EOR  Conv. to SWD  
 Plug Back  Liner  Conv. to GSW  Conv. to Producer

Commingled Permit #: \_\_\_\_\_

Dual Completion Permit #: \_\_\_\_\_

SWD Permit #: \_\_\_\_\_

EOR Permit #: \_\_\_\_\_

GSW Permit #: \_\_\_\_\_

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: \_\_\_\_\_

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  Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

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

1. Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
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) (Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Cobalt Energy LLC
Well Name	BROTHERS "A" 1-11
Doc ID	1327436

All Electric Logs Run

Dual Induction
Neutron-Density
Micro
Sonic

Form	ACO1 - Well Completion
Operator	Cobalt Energy LLC
Well Name	BROTHERS "A" 1-11
Doc ID	1327436

Tops

Name	Top	Datum
Anhy	2130	831
Herrington	2567	394
Krider	2610	351
Winfield	2652	309
Towanda	2711	250
Heebner	3804	-843
Lansing	3850	-889
Stark	4208	-1247
Cherokee	4454	-1493
Morrow Shale	4578	-1617
Morrow Sand	4613	-1652
Mississippian	4673	-1712

Form	ACO1 - Well Completion
Operator	Cobalt Energy LLC
Well Name	BROTHERS "A" 1-11
Doc ID	1327436

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	4613-4638	none	4638





Services, Inc.

CHARGE TO: **COBALT ENERGY LLC**  
 ADDRESS  
 CITY, STATE, ZIP CODE

TICKET 29688

PAGE 1 OF 2

1. SERVICE LOCATIONS <b>Ness City, KS</b>	WELL/PROJECT NO. <b>1-11</b>	LEASE <b>BROTHERS "A"</b>	COUNTY/PARISH <b>SCOTT</b>	STATE <b>Ks</b>	CITY	DATE <b>10-23-16</b>	OWNER <b>same</b>
2. <b>SALES</b>	TICKET TYPE <b>SALES</b>	CONTRACTOR <b>MURPHY Dole # 22</b>	RIG NAME/NO.	SHIPPED VIA <b>OR</b>	DELIVERED TO <b>LOCATION</b>	ORDER NO.	
3. REFERRAL LOCATION	WELL TYPE <b>Oil</b>	WELL CATEGORY <b>Development</b>	JOB PURPOSE <b>5 1/2" 2-STAGE LONGSTRING</b>	WELL PERMIT NO.	WELL LOCATION <b>Scott City, KS - 11s, 2w, 14w</b>		
	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575					MILEAGE # 115	90	MI			5.00	450.00
579					PUMP CUMPS - 2 STAGE	1	PCS	4765	FT	1700.00	1700.00
580					ADDITIONAL HOOPS - CONCRETE	0	YES			200.00	
221					LEAD KEY	4	Gal			25.00	100.00
281					MUDFLUSH	500	Gal			1.25	625.00
403					CEMENT BAGS	2	EA	5 1/2"		250.00	500.00
407					INSERT FOOT SHOE w/AUTO FILL	1	EA			300.00	300.00
408					DV TOOL & PUG SET	1	EA	2151	FT	3250.00	3250.00
409					TURBOLIZERS	8	EA			75.00	600.00
417					DV LATCH DOWN PLOG & BATTER	1	EA			200.00	200.00

**LEGAL TERMS:** Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY**, and **LIMITED WARRANTY** provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

**REMIT PAYMENT TO:**  
**SWIFT SERVICES, INC.**  
 P.O. BOX 466  
 NESS CITY, KS 67560  
 785-798-2300

DATE SIGNED **10-23-16** TIME SIGNED **1830**

*Ruby Pope*

A.M.  P.M.

SURVEY		AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL #	AMOUNT
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?					1	7725.00
WE UNDERSTOOD AND MET YOUR NEEDS?						
OUR SERVICE WAS PERFORMED WITHOUT DELAY?						
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?						
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO				
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND						
DISC TAX 16087.09 1038.00 17125.09						

SWIFT OPERATOR **Wayne Watson** APPROVAL

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

Thank You!





**JOB LOG**

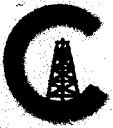
**SWIFT Services, Inc.**

DATE **10-23-16** PAGE NO. **1**

CUSTOMER **COBALT ENERGY LLC** WELL NO. **1-11** LEASE **BROTHERS "A"** JOB TYPE **2-STAGE LONGSTRENG** TICKET NO. **29688**

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL)(GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1830							ON LOCATION
	2230							START 5 1/2" CASING IN WELL
								TD-4780' SET = 4765'
								TP-4769' 5 1/2" # 15.5
								ST-44'
								TURBOLIZERS - 1,2,3,4,5,6,7,80
								CMT BSKTS - 58,59
								DV TOOL = 2151' TOP JT # 59
	0115							DROP BALL - CIRCULATE
	0220	6	12		✓	500		PUMP 500 GAL MUDFLUSH
	0222	6	20		✓	500		PUMP 20 BBLS KCL-FLUSH
	0227		7-5					PLUG RH (30 SKS) MH (20 SKS)
	0235	4 1/2	36		✓	300		MIX CEMENT - 150 SKS EA-2 @ 15.4 PPG
	0242							WASH OUT PUMP - LINES
	0242							RELEASE 1ST STAGE LATCH DOWN PLUG
	0245	7	0		✓			DISPLACE PLUG
	0305	5	112.5			1500		PLUG DOWN - PSE UP LATCH IN PLUG
	0308					OK		RELEASE PSE - HELD
	0310							DROP DV OPENING PLUG
	0325				✓			OPEN DV TOOL - CIRCULATE
	0325	6	20		✓	300		PUMP 20 BBLS KCL-FLUSH
	0330	6	130		✓	200		MIX CEMENT - 235 SKS SMD @ 11.2 PPG
	0400							WASH OUT PUMP - LINE
	0400							RELEASE DV CLOSING PLUG
	0405	5	0		✓			DISPLACE PLUG
	0415	3	51.2		✓	1500		PLUG DOWN - PSE UP CLOSE DV TOOL
	0418					OK		RELEASE PSE - HELD
								CIRCULATED 30 SKS CEMENT TO PSE
								WASH TRUCK
	0500							JOB COMPLETE

THANK YOU  
WAYNE, DAVE K., PRESTON



**CONSOLIDATED**  
Oil Well Services, LLC

6826  
6728

TICKET NUMBER 51602  
LOCATION Oakley KS  
FOREMAN Jerry Y

PO Box 884, Chanute, KS 66720  
620-431-9210 or 800-467-8676

**FIELD TICKET & TREATMENT REPORT**  
**CEMENT**

Invoice # 808802 KS

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
10-11-16	2180	Brothers 'A' 1-11	11	20S	33W	Scott
CUSTOMER						
MAILING ADDRESS			TRUCK #	DRIVER	TRUCK #	DRIVER
CITY			731	Cory D		
STATE			7727129	Steve O		
ZIP CODE			assist	Keith C		

JOB TYPE surface HOLE SIZE 12 1/4 HOLE DEPTH 270' CASING SIZE & WEIGHT 8 5/8 23#  
 CASING DEPTH 270' DRILL PIPE \_\_\_\_\_ TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
 SLURRY WEIGHT 14.8 SLURRY VOL 1.24 WATER gal/sk \_\_\_\_\_ CEMENT LEFT in CASING 20'  
 DISPLACEMENT 16 bbl DISPLACEMENT PSI \_\_\_\_\_ MIX PSI \_\_\_\_\_ RATE \_\_\_\_\_

REMARKS: Safety meeting & rig upon Martin 22 circulate casing with rig tree mix 190 sks surface blend II which up & displace with 16 bbl fresh water & shut in circulated approx 4 bbl to pt

Cement did  
circulate

Thank you  
Jerry & crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE 0450 ✓	1	PUMP CHARGE	1500.00	1500.00 ✓
CE 0002 ✓	45	MILEAGE	7.15	321.75 ✓
CE 0710 ✓	8.93	ton mileage delivery	175	703.25 ✓
CC 5871 ✓	190 sks	surface blend II	23.00	4370.00 ✓
			Subtotal	6894.97
			-45%	3102.74
			Subtotal	3792.23 ✓
			SALES TAX	204.29 ✓
			ESTIMATED TOTAL	3996.54 ✓

Ravin 3737

AUTHORIZATION [Signature] TITLE \_\_\_\_\_ DATE \_\_\_\_\_

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.

# DIAMOND TESTING, LLC

TESTER : TIM VENTERS  
CELL # 620-388-6333

## General Information

Company Name	COBALT ENERGY, LLC	Job Number	T565
Contact	NICHOLAS HESS	Representative	TIM VENTERS
Well Name	BROTHERS "A" #1-11	Well Operator	COBALT ENERGY, LLC
Unique Well ID	DST #1, KRIDOR, 2584-2625	Report Date	2016/10/14
Surface Location	SEC 11-20S-33W, SCOTT CO. KS.	Prepared By	TIM VENTERS
Well License Number			
Field	SHALLOW WATER		
Well Type	Vertical		

## Test Information

Test Type	CONVENTIONAL		
Formation	DST #1, KRIDOR, 2584-2625		
Well Fluid Type	02 Gas		
Test Purpose	Initial Test	Gauge Name	5504

Start Test Date	2016/10/13		
Final Test Date	2016/10/14	Start Test Time	23:22:00
		Final Test Time	08:27:00

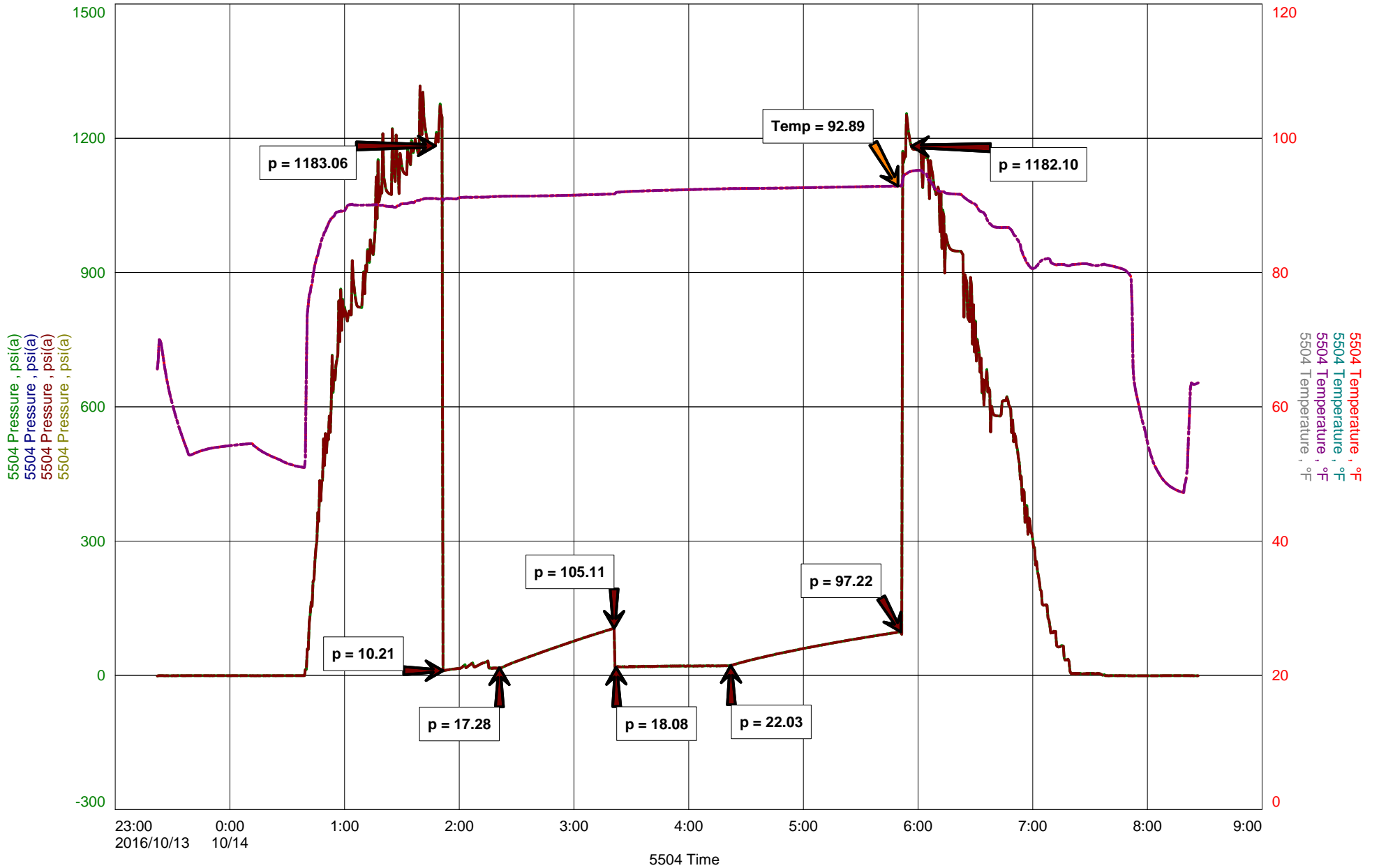
Gauge Name	5504
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## Test Results

RECOVERED: 20' DRILLING MUD

TOOL SAMPLE: 100% DRILLING MUD

# BROTHERS "A" #1-11





**DIAMOND TESTING**  
P.O. Box 157  
**HOISINGTON, KANSAS 67544**  
(800) 542-7313  
**DRILL-STEM TEST TICKET**  
FILE: BROTHERSA1-1DST1

TIME ON: 23:22 10-13-16  
TIME OFF: 08:27 10-14-16

Company COBALT ENERGY, LLC Lease & Well No. BROTHERS "A" #1-11  
Contractor MURFIN DRILLING CO., INC. RIG #22 Charge to COBALT ENERGY, LLC  
Elevation 2961 KB Formation KRIDER Effective Pay \_\_\_\_\_ Ft. Ticket No. T565  
Date 10-14-16 Sec. 11 Twp. 20 S Range 33 W County SCOTT State KANSAS  
Test Approved By TERRY MCLEOD Diamond Representative TIM VENTERS

Formation Test No. 1 Interval Tested from 2584 ft. to 2625 ft. Total Depth 2625 ft.  
Packer Depth 2579 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.  
Packer Depth 2584 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.

Depth of Selective Zone Set \_\_\_\_\_  
Top Recorder Depth (Inside) 2570 ft. Recorder Number 5504 Cap. 5,000 P.S.I.  
Bottom Recorder Depth (Outside) 2622 ft. Recorder Number 11029 Cap. 5,025 P.S.I.  
Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ P.S.I.  
Mud Type CHEMICAL Viscosity 33 Drill Collar Length 204 ft. I.D. 2 1/4 in.  
Weight 9.4 Water Loss N/C cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.  
Chlorides 23,000 P.P.M. Drill Pipe Length 2352 ft. I.D. 3 1/2 in.  
Jars: Make STERLING Serial Number STY JT. 1 SP Test Tool Length 28 ft. Tool Size 3 1/2-IF in.  
Did Well Flow? NO Reversed Out NO Anchor Length 41 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: WEAK SURFACE BLOW, BUILDING TO 1 3/4 INCH. (NO BB)  
2nd Open: WEAK SURFACE BLOW, BUILDING TO 1/14", DEPLETING BACK TO 1/2" (NO BB)

Recovered <u>20</u> ft. of <u>DRILLING MUD</u>	
Recovered _____ ft. of _____	
Recovered _____ ft. of _____	
Recovered _____ ft. of _____	
Recovered _____ ft. of _____	Price Job
Recovered _____ ft. of _____	Other Charges
Remarks: _____	Insurance
TOOL SAMPLE: 100% DRILLING MUD	Total

Time Set Packer(s) 1:51 AM A.M. P.M. Time Started Off Bottom 5:51 AM A.M. P.M. Maximum Temperature 93 deg.  
Initial Hydrostatic Pressure..... (A) 1183 P.S.I.  
Initial Flow Period..... Minutes 30 (B) 10 P.S.I. to (C) 17 P.S.I.  
Initial Closed In Period..... Minutes 60 (D) 105 P.S.I.  
Final Flow Period..... Minutes 60 (E) 18 P.S.I. to (F) 22 P.S.I.  
Final Closed In Period..... Minutes 90 (G) 97 P.S.I.  
Final Hydrostatic Pressure..... (H) 1182 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

# DIAMOND TESTING, LLC

TESTER : TIM VENTERS  
CELL # 620-388-6333

## General Information

Company Name	COBALT ENERGY, LLC	Job Number	T566
Contact	NICHOLAS HESS	Representative	TIM VENTERS
Well Name	BROTHERS "A" #1-11	Well Operator	COBALT ENERGY, LLC
Unique Well ID	DST #2, CHEROKEE, 4518-4590	Report Date	2016/10/21
Surface Location	SEC 11-20S-33W, SCOTT CO. KS.	Prepared By	TIM VENTERS
Well License Number			
Field	SHALLOW WATER		
Well Type	Vertical		

## Test Information

Test Type	CONVENTIONAL
Formation	DST #2, CHEROKEE, 4518-4590
Well Fluid Type	01 Oil
Test Purpose	Initial Test

Start Test Date	2016/10/21	Start Test Time	00:26:00
Final Test Date	2016/10/21	Final Test Time	08:35:00

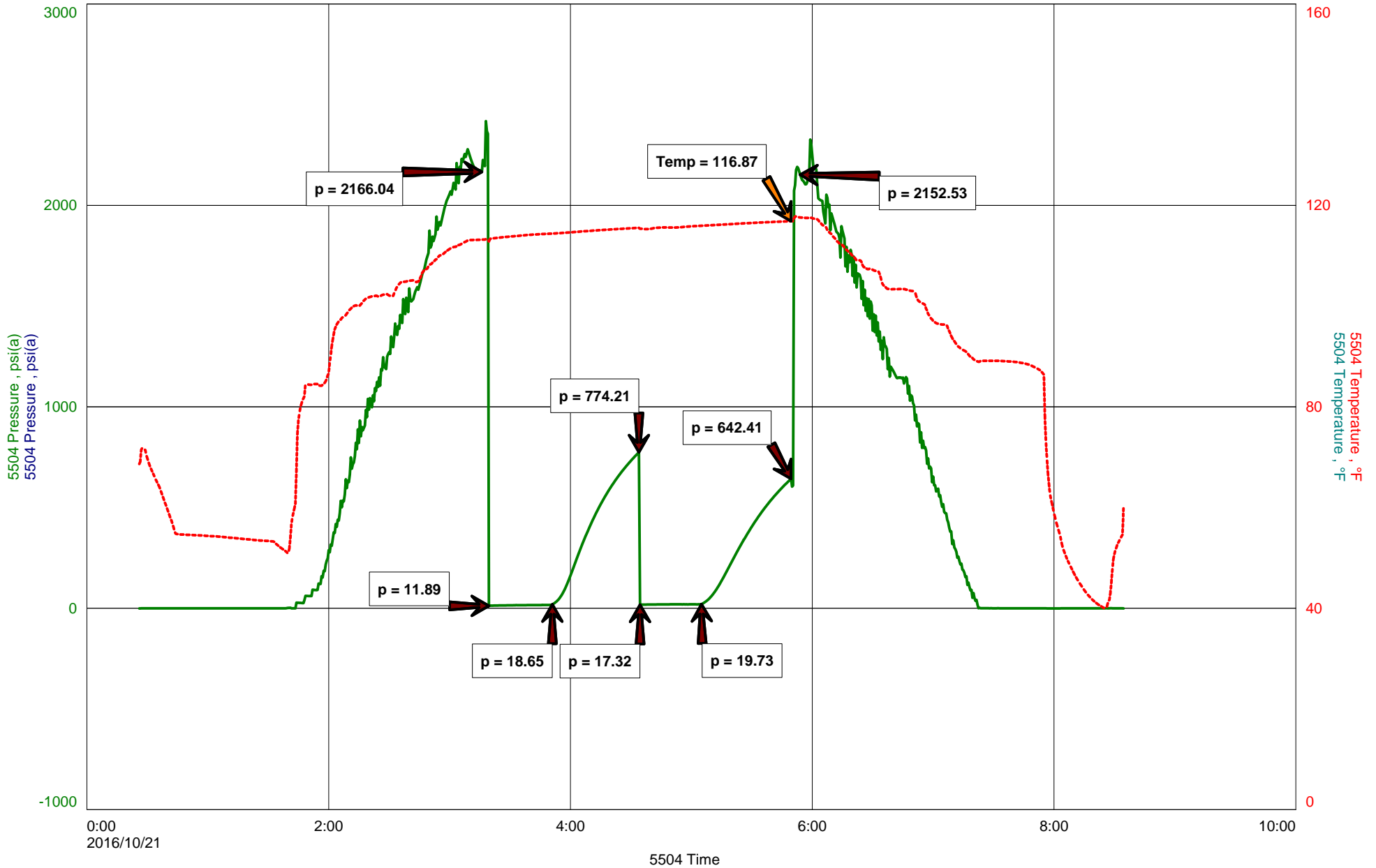
Gauge Name	5504
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## Test Results

RECOVERED: 5' DRILLING MUD

TOOL SAMPLE: 100% DRILLING MUD

# BROTHERS "A" #1-11





**DIAMOND TESTING**  
P.O. Box 157  
**HOISINGTON, KANSAS 67544**  
(800) 542-7313  
**DRILL-STEM TEST TICKET**  
FILE: BROTHERSA1-1DST2

TIME ON: 00:26  
TIME OFF: 08:35

Company COBALT ENERGY, LLC Lease & Well No. BROTHERS "A" #1-11  
Contractor MURFIN DRILLING CO., INC. RIG #22 Charge to COBALT ENERGY, LLC  
Elevation 2961 KB Formation CHEROKEE Effective Pay \_\_\_\_\_ Ft. Ticket No. T566  
Date 10-21-16 Sec. 11 Twp. 20 S Range 33 W County SCOTT State KANSAS  
Test Approved By TERRY MCLEOD Diamond Representative TIM VENTERS

Formation Test No. 2 Interval Tested from 4518 ft. to 4590 ft. Total Depth 4590 ft.  
Packer Depth 4513 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.  
Packer Depth 4518 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.

Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) 4499 ft. Recorder Number 5504 Cap. 5,000 P.S.I.  
Bottom Recorder Depth (Outside) 4587 ft. Recorder Number 11029 Cap. 5,025 P.S.I.  
Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ P.S.I.

Mud Type CHEMICAL Viscosity 57 Drill Collar Length 204 ft. I.D. 2 1/4 in.  
Weight 9.3 Water Loss 8.0 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.  
Chlorides 4,500 P.P.M. Drill Pipe Length 4281 ft. I.D. 3 1/2 in.  
Jars: Make STERLING Serial Number 4, 1SP Test Tool Length 33 ft. Tool Size 3 1/2-IF in.  
Did Well Flow? NO Reversed Out NO Anchor Length 41 ft. Size 4 1/2-FH in.  
Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. <sup>31' DP IN ANCHOR</sup> Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: WEAK SURFACE BLOW THROUGHOUT PERIOD. (NO BB)  
2nd Open: NO BLOW THROUGHOUT PERIOD. (NO BB)

Recovered 5 ft. of DRILLING MUD  
Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered _____ ft. of _____	Price Job
Recovered _____ ft. of _____	Other Charges
Remarks: _____	Insurance
TOOL SAMPLE: 100% DRILLING MUD	Total

Time Set Packer(s) 3:19 AM <sup>A.M.</sup>/<sub>P.M.</sub> Time Started Off Bottom 5:49 AM <sup>A.M.</sup>/<sub>P.M.</sub> Maximum Temperature 117 deg.

Initial Hydrostatic Pressure..... (A) 2166 P.S.I.  
Initial Flow Period..... Minutes 30 (B) 12 P.S.I. to (C) 19 P.S.I.  
Initial Closed In Period..... Minutes 45 (D) 774 P.S.I.  
Final Flow Period..... Minutes 30 (E) 17 P.S.I. to (F) 20 P.S.I.  
Final Closed In Period..... Minutes 45 (G) 642 P.S.I.  
Final Hydrostatic Pressure..... (H) 2153 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# DIAMOND TESTING, LLC

TESTER : TIM VENTERS  
CELL # 620-388-6333

## General Information

Company Name	COBALT ENERGY, LLC	Job Number	T567
Contact	NICHOLAS HESS	Representative	TIM VENTERS
Well Name	BROTHERS "A" #1-11	Well Operator	COBALT ENERGY, LLC
Unique Well ID	DST #3, MORROW SD., 4581-4660	Report Date	2016/10/21
Surface Location	SEC 11-20S-33W, SCOTT CO. KS.	Prepared By	TIM VENTERS
Well License Number			
Field	SHALLOW WATER		
Well Type	Vertical		

## Test Information

Test Type	CONVENTIONAL
Formation	DST #3, MORROW SD., 4581-4660
Well Fluid Type	01 Oil
Test Purpose	Initial Test

Start Test Date	2016/10/21	Start Test Time	17:45:00
Final Test Date	2016/10/21	Final Test Time	23:08:00

## Test Results

RECOVERED: 290' DRILLING MUD

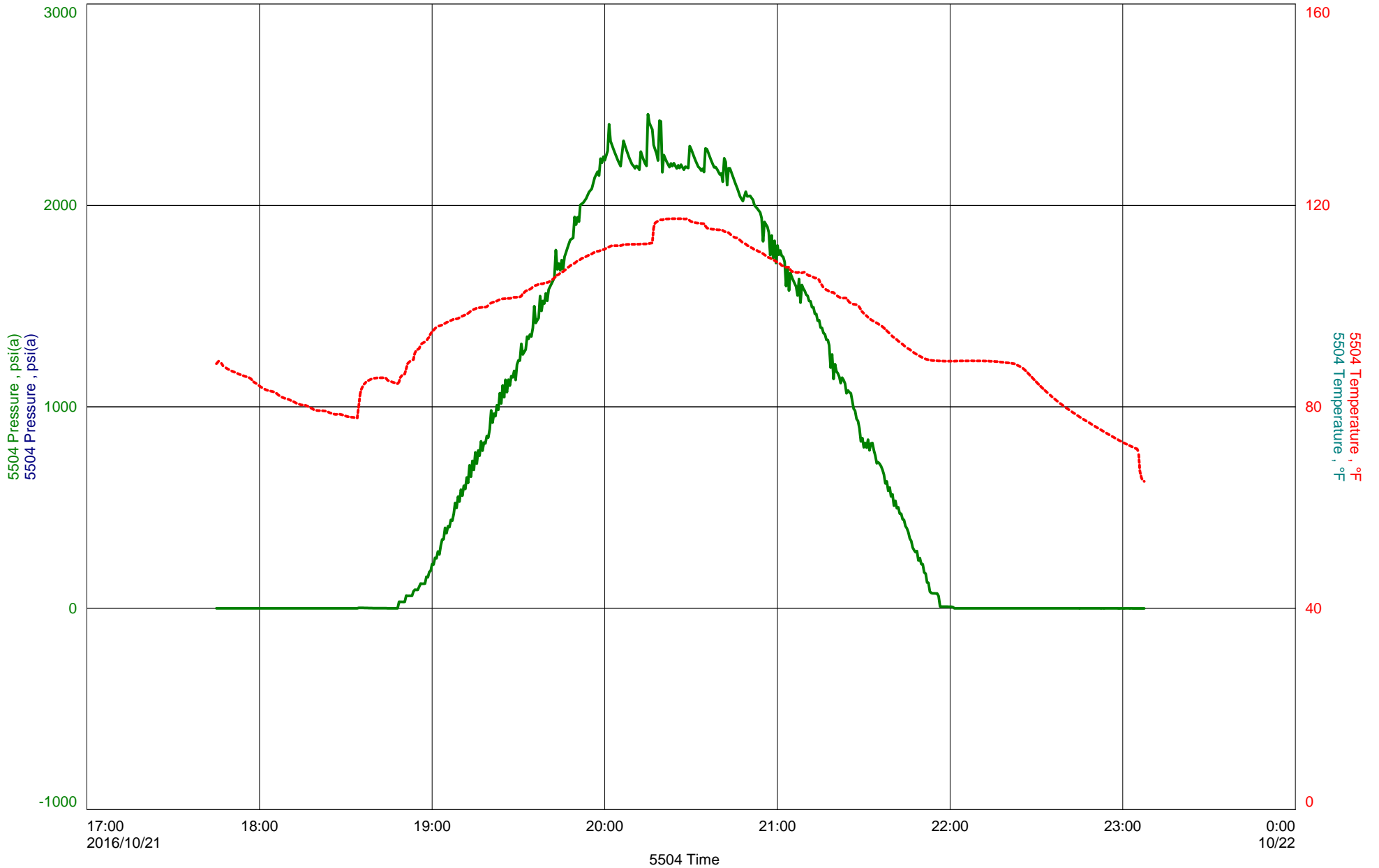
TOOL SAMPLE: 100% DRILLING MUD

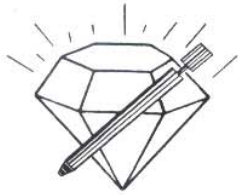
PACKER FAILURE

COBALT ENERGY, LLC  
DST #3, MORROW SD., 4581-4660  
Start Test Date: 2016/10/21  
Final Test Date: 2016/10/21

BROTHERS "A" #1-11  
Formation: DST #3, MORROW SD., 4581-4660  
Pool: SHALLOW WATER  
Job Number: T567

# BROTHERS "A" #1-11





**DIAMOND TESTING**  
P.O. Box 157  
**HOISINGTON, KANSAS 67544**  
(800) 542-7313  
**DRILL-STEM TEST TICKET**  
FILE: BROTHERSA1-1DST3

TIME ON: 17:45  
TIME OFF: 23:08

Company COBALT ENERGY, LLC Lease & Well No. BROTHERS "A" #1-11  
Contractor MURFIN DRILLING CO., INC. RIG #22 Charge to COBALT ENERGY, LLC  
Elevation 2961 KB Formation MORROW SD. Effective Pay \_\_\_\_\_ Ft. Ticket No. T567  
Date 10-21-16 Sec. 11 Twp. 20 S Range 33 W County SCOTT State KANSAS  
Test Approved By TERRY MCLEOD Diamond Representative TIM VENTERS

Formation Test No. 3 Interval Tested from 4581 ft. to 4660 ft. Total Depth 4660 ft.  
Packer Depth 4576 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.  
Packer Depth 4581 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.

Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) 4562 ft. Recorder Number 5504 Cap. 5,000 P.S.I.  
Bottom Recorder Depth (Outside) 4657 ft. Recorder Number 11029 Cap. 5,025 P.S.I.  
Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ P.S.I.

Mud Type CHEMICAL Viscosity 57 Drill Collar Length 176 ft. I.D. 2 1/4 in.  
Weight 9.4 Water Loss 8.8 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.  
Chlorides 4,700 P.P.M. Drill Pipe Length 4372 ft. I.D. 3 1/2 in.  
Jars: Make STERLING Serial Number 4, 1SP Test Tool Length 33 ft. Tool Size 3 1/2-IF in.  
Did Well Flow? NO Reversed Out NO Anchor Length 48 ft. Size 4 1/2-FH in.  
Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. <sup>31' DP IN ANCHOR</sup> Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: PACKER FAILURE  
2nd Open: \_\_\_\_\_

Recovered 290 ft. of DRILLING MUD  
Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered _____ ft. of _____	Price Job
Recovered _____ ft. of _____	Other Charges
Remarks: <u>PACKER FAILURE</u>	Insurance
TOOL SAMPLE: <u>100% DRILLING MUD</u>	Total

Time Set Packer(s) \_\_\_\_\_ A.M. \_\_\_\_\_ P.M. Time Started Off Bottom \_\_\_\_\_ A.M. \_\_\_\_\_ P.M. Maximum Temperature \_\_\_\_\_  
Initial Hydrostatic Pressure..... (A) \_\_\_\_\_ P.S.I.  
Initial Flow Period..... Minutes (B) \_\_\_\_\_ P.S.I. to (C) \_\_\_\_\_ P.S.I.  
Initial Closed In Period..... Minutes (D) \_\_\_\_\_ P.S.I.  
Final Flow Period..... Minutes (E) \_\_\_\_\_ P.S.I. to (F) \_\_\_\_\_ P.S.I.  
Final Closed In Period..... Minutes (G) \_\_\_\_\_ P.S.I.  
Final Hydrostatic Pressure..... (H) \_\_\_\_\_ P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

# DIAMOND TESTING, LLC

TESTER : TIM VENTERS  
CELL # 620-388-6333

## General Information

Company Name	COBALT ENERGY, LLC	Contact	NICHOLAS HESS	Job Number	T568
Well Name	BROTHERS "A" #1-11	Well Operator	COBALT ENERGY, LLC	Report Date	2016/10/22
Unique Well ID	DST #4, MORROW SD., 4549-4660	Well Operator	COBALT ENERGY, LLC	Report Date	2016/10/22
Surface Location	SEC 11-20S-33W, SCOTT CO. KS.	Report Date	2016/10/22	Prepared By	TIM VENTERS
Well License Number		Prepared By	TIM VENTERS		
Field	SHALLOW WATER				
Well Type	Vertical				

## Test Information

Test Type	CONVENTIONAL
Formation	DST #4, MORROW SD., 4549-4660
Well Fluid Type	01 Oil
Test Purpose	Initial Test

Start Test Date	2016/10/21	Start Test Time	23:09:00
Final Test Date	2016/10/22	Final Test Time	10:15:00

Gauge Name 5504

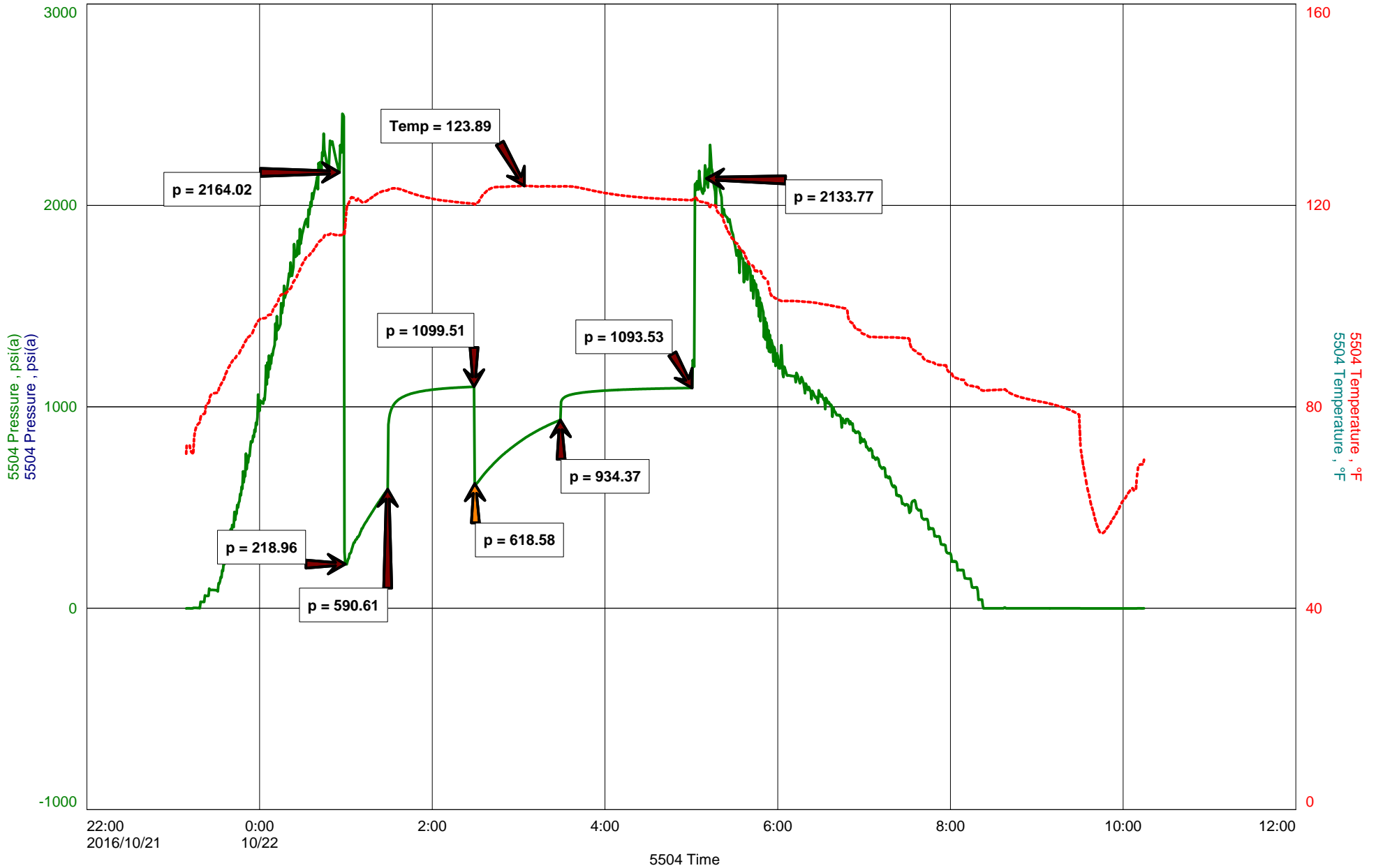
## Test Results

RECOVERED: 475' GAS IN PIPE  
95' G,MCO, 7% GAS, 66% OIL, 34% MUD  
2015' G,SMCO, 9% GAS, 86% OIL, 3% MUD, GRAVITY: 26  
180' G,SW&MCO, 6% GAS, 73% OIL, 4% WATER, 17% MUD  
120' G,SWHMCO, 18% GAS, 44% OIL, 10% WATER, 28% MUD  
2410' TOTAL FLUID

TOOL SAMPLE: 17% GAS, 27% OIL, 16% WATER, 40% MUD

CHLORIDES: 11,000 ppm  
PH: 7.0  
RW: .65 @ 59 deg.

# BROTHERS "A" #1-11





**DIAMOND TESTING**  
P.O. Box 157  
**HOISINGTON, KANSAS 67544**  
(800) 542-7313  
**DRILL-STEM TEST TICKET**  
FILE: BROTHERSA1-1DST4

TIME ON: 23:09 10-21-16  
TIME OFF: 10:15 10-22-16

Company COBALT ENERGY, LLC Lease & Well No. BROTHERS "A" #1-11  
Contractor MURFIN DRILLING CO., INC. RIG #22 Charge to COBALT ENERGY, LLC  
Elevation 2961 KB Formation MORROW SD. Effective Pay \_\_\_\_\_ Ft. Ticket No. T568  
Date 10-22-16 Sec. 11 Twp. 20 S Range 33 W County SCOTT State KANSAS  
Test Approved By TERRY MCLEOD Diamond Representative TIM VENTERS

Formation Test No. 4 Interval Tested from 4549 ft. to 4660 ft. Total Depth 4660 ft.  
Packer Depth 4544 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.  
Packer Depth 4549 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.

Depth of Selective Zone Set \_\_\_\_\_  
Top Recorder Depth (Inside) 4530 ft. Recorder Number 5504 Cap. 5,000 P.S.I.  
Bottom Recorder Depth (Outside) 4657 ft. Recorder Number 11029 Cap. 5,025 P.S.I.  
Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ P.S.I.

Mud Type CHEMICAL Viscosity 57 Drill Collar Length 176 ft. I.D. 2 1/4 in.  
Weight 9.4 Water Loss 8.8 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.  
Chlorides 4,700 P.P.M. Drill Pipe Length 4340 ft. I.D. 3 1/2 in.  
Jars: Make STERLING Serial Number 4, 1SP Test Tool Length 33 ft. Tool Size 3 1/2-IF in.  
Did Well Flow? NO Reversed Out NO Anchor Length 48 ft. Size 4 1/2-FH in.  
Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. <sup>63' DP IN ANCHOR</sup> Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: STRONG 4 INCH BLOW, BUILDING, REACHING BOB 2 MIN. (1" BB)  
2nd Open: WEAK 1/2 INCH BLOW, BUILDING, REACHING BOB 2 1/2 MIN. (NO BB)

Recovered <u>475</u> ft. of <u>GAS IN PIPE</u>	
Recovered <u>95</u> ft. of <u>G,MCO, 7% GAS, 66% OIL, 34% MUD</u>	
Recovered <u>2015</u> ft. of <u>G,SMCO, 9% GAS, 86% OIL, 3% MUD, GRAVITY: 26</u>	
Recovered <u>180</u> ft. of <u>G,SW&amp;MCO, 6% GAS, 73% OIL, 4% WATER, 17% MUD</u>	
Recovered <u>120</u> ft. of <u>G,SWHMCO, 18% GAS, 44% OIL, 10% WATER, 28% MUD</u>	Price Job
Recovered <u>2410</u> ft. of <u>TOTAL FLUID CHLORIDES: 11,000 ppm</u>	Other Charges
Remarks: <u>PH: 7.0</u>	Insurance
<u>RW: .65 @ 59 deg.</u>	
<u>TOOL SAMPLE: 17% GAS, 27% OIL, 16% WATER, 40% MUD</u>	Total

Time Set Packer(s) 12:59 AM <sup>A.M.</sup> P.M. Time Started Off Bottom 4:59 AM <sup>A.M.</sup> P.M. Maximum Temperature 124 deg.

Initial Hydrostatic Pressure..... (A) 2164 P.S.I.  
Initial Flow Period..... Minutes 30 (B) 219 P.S.I. to (C) 591 P.S.I.  
Initial Closed In Period..... Minutes 60 (D) 1100 P.S.I.  
Final Flow Period..... Minutes 60 (E) 619 P.S.I. to (F) 934 P.S.I.  
Final Closed In Period..... Minutes 90 (G) 1094 P.S.I.  
Final Hydrostatic Pressure..... (H) 2134 P.S.I.

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**Terry McLeod**  
 Consulting Geologist  
 P.O. Box 503  
 Wichita, Kansas 67201  
 316-640-2440

**GEOLOGIST'S REPORT**  
 DRILLING TIME AND SAMPLE LOG

OPERATOR Cobalt Energy, L.L.C.  
 LEASE Brothers "A" WELL NO. 1-11  
 FIELD shallow water  
 LOCATION 1709' FSL & 1735' F.W.L.  
 SEC. 11 TWP. 20S RGE. 33W  
 COUNTY Scott STATE Kansas

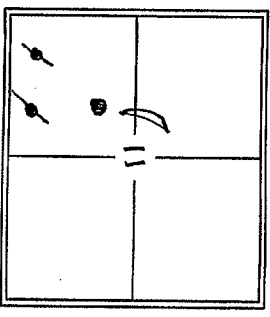
CONTRACTOR Murfin drlg co. Rig 22  
 COMM. 10-10-2016 COMP. 10-23-2016  
 RTD 4780' LOG TD 4782'  
 SAMPLES SAVED FROM 2500-2900+3500' TO RTD  
 DRILLING TIME KEPT FROM 2100' TO RTD  
 SAMPLES EXAMINED FROM 2500-2900+3500' TO RTD  
 GEOLOGICAL SUPERVISION FROM 1500 ft. TO RTD  
 MUD UP 1500 TYPE MUD Chematic

FORMATION	TOP	LOG DATUM	TOP SAMPLE DATUM	STRUCT. COMP.
Bohydrite	2130	+831	+831	+1
KRIDER	2610	+351	+351	+1
Heebner	3804	-843	3804-843	+11
Lansing	3850	-889	3858-877	413
Stark	4200	-1247	4208-1247	49
BKC	4281	-1320	4281-1320	+6
Marmaton	4336	-1345	4333-1342	+6
Altamont	4333	-1372	4333-1372	+11
Lawnee	4384	-1423	4383-1422	+11
Lawnee Sta.	4417	-1456	4418-1457	+11
Cherokee sh.	4454	-1493	4454-1493	+11
Morrow sh.	4578	-1617	4578-1617	+13
Morrow sd.	4613	-1652	4612-1651	+6
MISSISSIPPI	4674	-1713	4673-1712	-17
Miss St Louis	Not picked			

ELEVATION  
 KB 2961'  
 DF 2950'  
 Measurements Are All From KB.

CASING RECORD  
 SURFACE 8 5/8" @ 270'  
W190 SX  
 PRODUCTION 5 1/2"

ELECTRICAL SURVEYS,  
 Pioneer Energy Services  
 Dual Induction/Puls-Neu  
 Sonic-Micro



REFERENCE WELL FOR STRUCTURAL COMPARISON Shallow water Refining  
Wassinger "A" 1 w/2 SE SW, Sec 11-20S-33 W, 2944 KB.

DATE	DEPTH	NO	SIZE	NAME	TYPE	DEPTH OUT	FEET	HOURS
10-10-16	Spud well	A	12 1/4	HTC	GIC-1	270	270	4 1/2
10-11-16	270' surface	1	7 7/8	HTC	GX22	4246	3976	136
10-12-16	1262' drlg (100')	2	7 7/8	HTC	GX22	4300	54	8
10-13-16	2285' drlg 42'	3	7 7/8	HTC	DP 506	4780	480	32 1/4
10-14-16	2625' drlg 73'							
10-15-16	3075' drlg							
10-16-16	3560' drlg -4-							
10-17-16	3945' drlg -5-							
10-18-16	4162' drlg -6-							
10-19-16	4300' by trips -7-					Board	2068.06'	
10-20-16	4485' drlg -8-					Strap	2065.73'	
10-21-16	4590' drlg 23-9-					diff	2.33'S	
10-28-16	4660' drlg 4-10-							
10-23-16	4780' Logging -11-							

FORMATION	INTERVAL	DESCRIPTION OF SHOW	LOG ANALYSIS
KRIDER	2610-2625	Dolomite tan-H. Brown, xln w/ scry xln, dr. dull floor, across chips no rock - detector may not be peer	DST-1
Heebner	3804-3804	limstone - tan & r-7, sly + 570 in. pr. rcs w/ foss & sd. color 1/2 U.K.	DST-2
Heebner	3850-3850	sandstone, cgsr, 546 rounded, clusters w/ f.sfd + drk. flaky sta in good condition of 25-40 U.K. + dull floor	DST-4 DST-3
Morrow sd	4622-4629	fair - good set sta in porosity	

No.	Interval
1	2584-2625
2	4518-4590
3	4581-4660
4	4549-4660
	///

REMARKS AND RECOMMENDATIONS  
Page 1 of 1

DRILL STEM TESTS

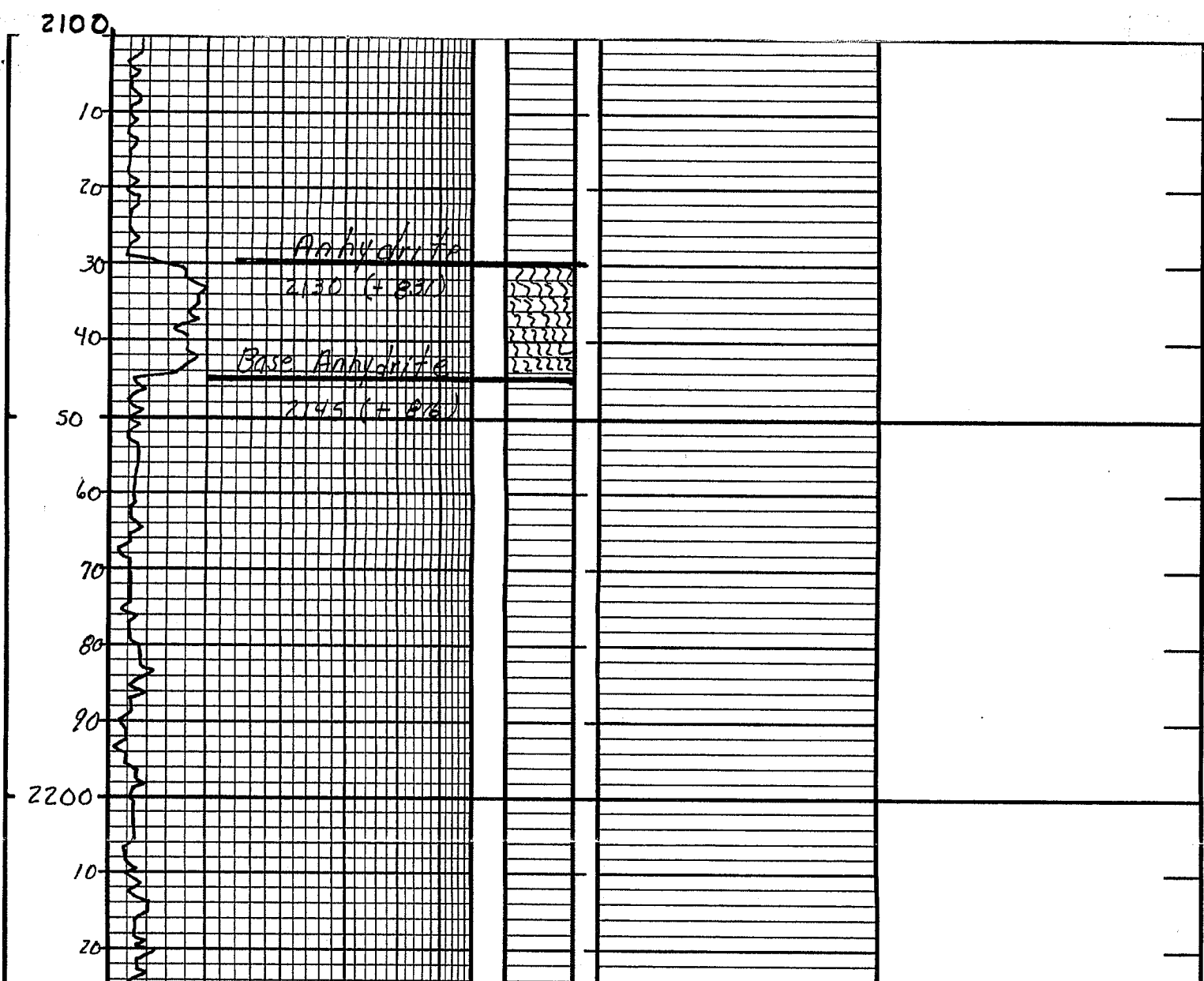
No.	Interval	IFP/Time	ISIP/Time	FFP/Time	FSIP/Time	HH-FHH	RECOVERY
1	2584-2625 41'	* # 10-17 30"	* # 105 60"	* # 18-22 60"	* # 97 90"	1183 / 1182	20' mud
2	4518-4590 72'	* # 12-19 30"	* # 774 45"	* # 17-20 30"	* # 642 45"	2166 / 2153	5' mud PACKER FAILURE
3	4581-4660 79'						
4	4549-4660 111'	* # 219-591 30"	* # 1100 60"	* # 619-934 60"	* # 1094 90"		2410' Flow GMO + Gmud diamond testing

REMARKS AND RECOMMENDATIONS with the success of dst #4, production pipe will be set to further evaluate

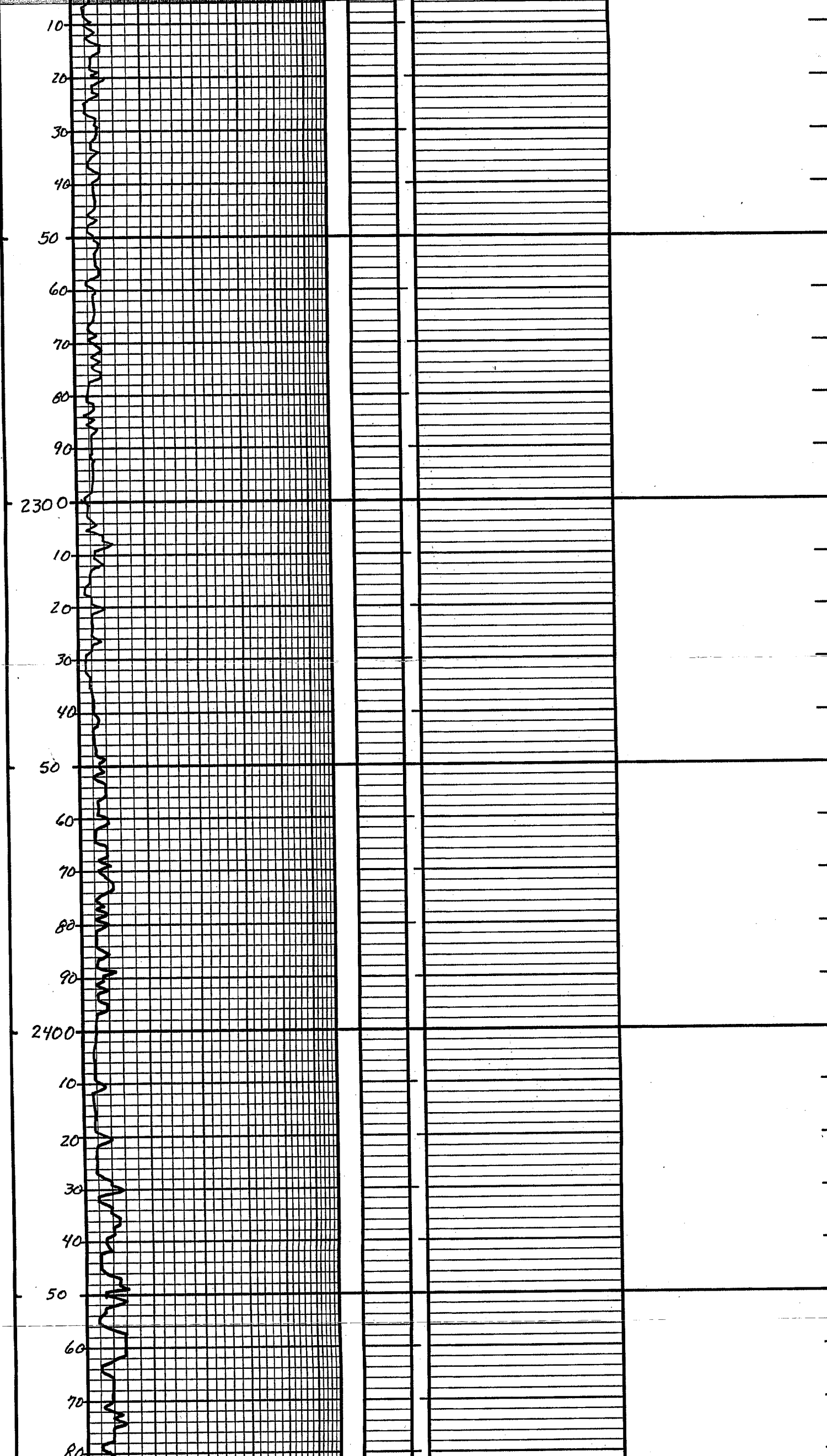
Respectfully,

Greg A. Wood

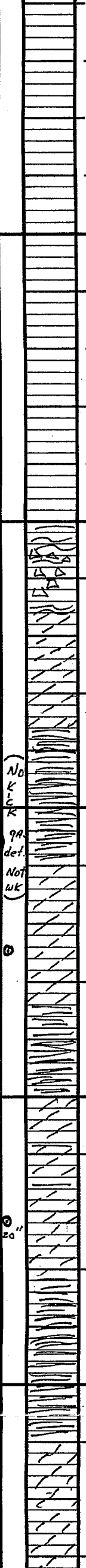
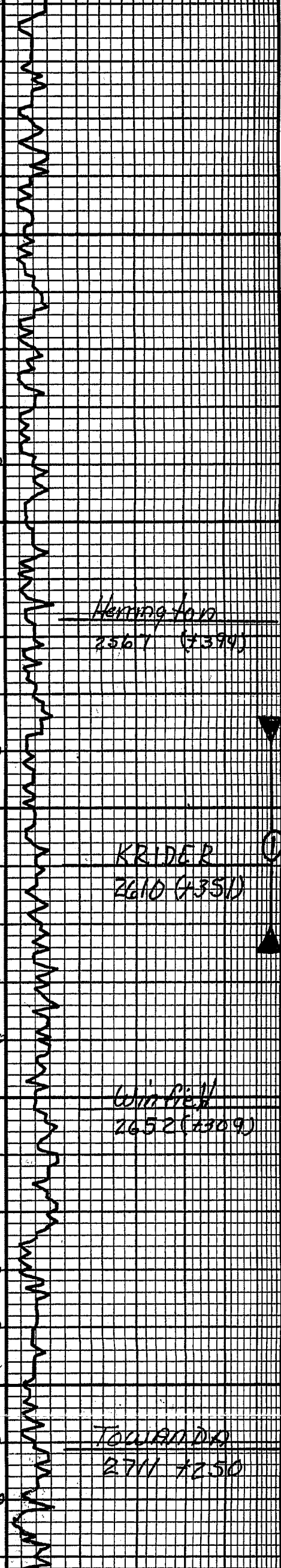
Retroleum Geologist  
10-23-2016







60  
70  
80  
90  
2500  
10  
20  
30  
40  
50  
60  
70  
80  
90  
2600  
10  
20  
30  
40  
50  
60  
70  
80  
90  
2700  
10  
20  
30



sh-gry-mar-onh  
sl. chalky

sh-gry-mar-onh  
sl. chalky

sh-gry-mar; onh  
sl. chalky

dal fan xln, mostly  
tight rx, pr & N.S.  
No kick

dal fan xln, tight  
N.V.P. N.S.

sh gry - drx gry MAR

dal fan - H brn xln w  
scz # xln & dull  
floor.

dal fan - H brn xln -  
tighter - No vis &  
dull floor

dal fan - H brn xln - tight  
rx. N.V.P. shly

sh. gry-mar

dal fan - H brn xln -  
sl. foss - pr & N.S.  
No kick

dal fan - H brn xln -  
tight - N.V.P. N.S.  
No kick

sh. gry-mar

sh - gry-mar

dal fan - H brn xln - tight  
N.V.P. N.S. No floor  
sl. foss

dal fan - H brn xln -  
sl. foss

dal fan - H brn xln -  
sl. foss

samples start - 2500'

DST Nal 2584' - 2625'  
surface blow  $\rightarrow$  1 3/4" 1st op  
wk blow 1 1/4"  $\rightarrow$  1/2" 2nd op

30" 60" 60" 90"

Rec: 20' mud N.S.

SIP: 105" - 97"  
FP: 10" - 17" + 18" - 22"  
HP: 1183" - 1182"  
T = 93°

dst-1 chart

25 unit increase  
will check E-109

1001111111  
2711 7250

dal - tan - fr - xln - tight  
N.S. NO floor  
slt foss

25 unit increase  
will check E-109

dal - tan - xln - sec w/ pr  
N.S. NO floor  
slt foss

dal - tan - H - brn - fr - xln  
scat pr of chky - N.S.  
No floor - slt foss

sh - gry - MAR - GRN

dal - ls - tan - Crm  
fr - xln, some fine  
xln of N.S. NO kick

dal - ls - tan - xln →  
Crm - xln, slt chky  
scat of N.S. NO  
kick

ls. brn - ool, tight  
pr - N.S. NO kick  
shly

sh - med - dkv GRV  
- red

sh gry - MAR

ls. tan - brn - fr - xln - dse  
slt foss - N.V. NO N.S.  
No kick

ls. tan - brn a/a - N.V.  
slt foss N.S. NO kick

ls. tan - Crm, fr - xln  
foss w/ fr, foss of  
slt chky, N.S. NO KICK

START ΔT @ 3500

ls. tan - brn. ool - dkv  
blk galtes, tight pr.  
N.S.

sh - gry - MAR - dkv GRV

ls. tan - H - brn, fr - xln - dse  
N.V. NO N.S.

ls. tan, fine xln, slt foss  
pr - foss of, slt chky  
N.S.

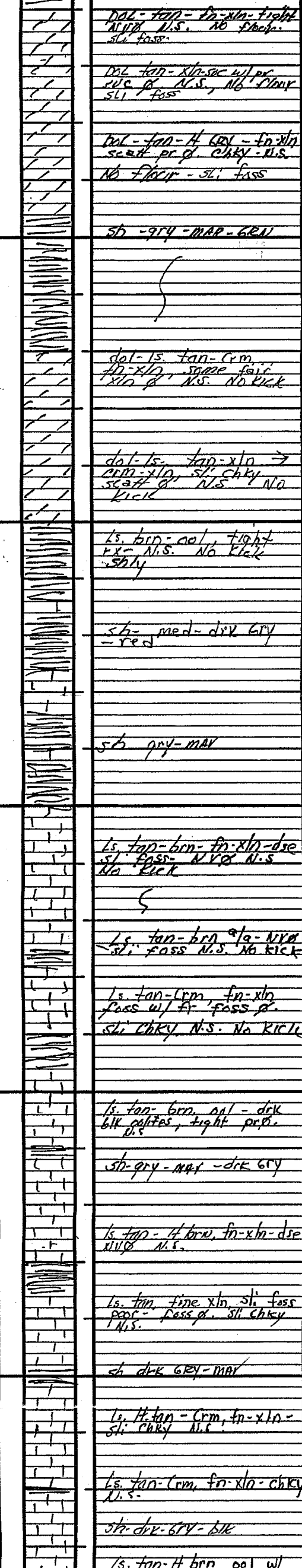
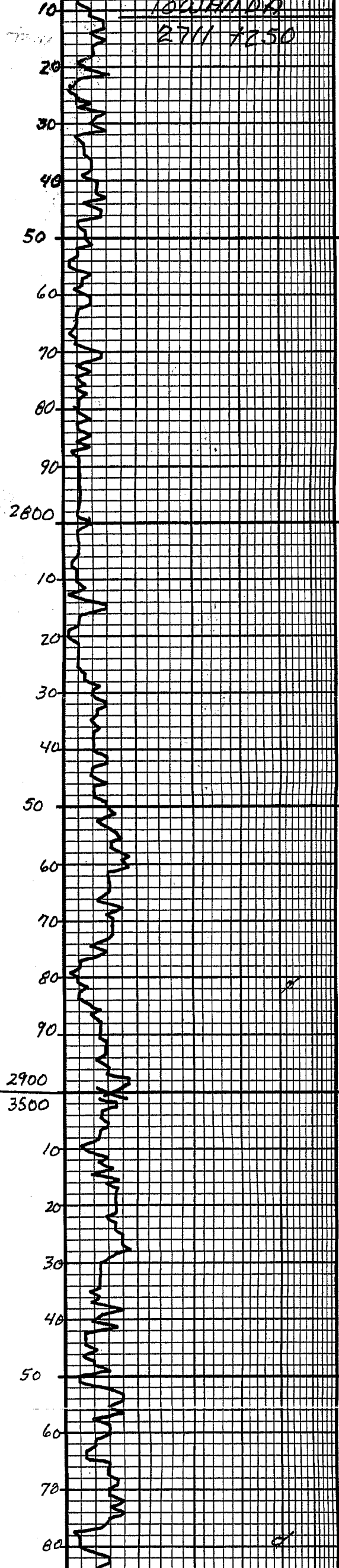
sh dkv GRV - MAR

ls. H. tan - Crm, fr - xln -  
slt chky N.S.

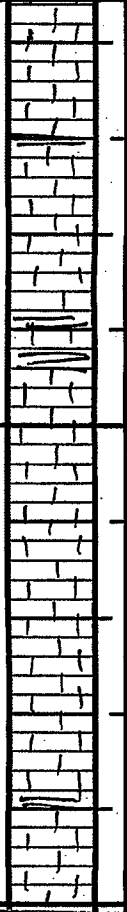
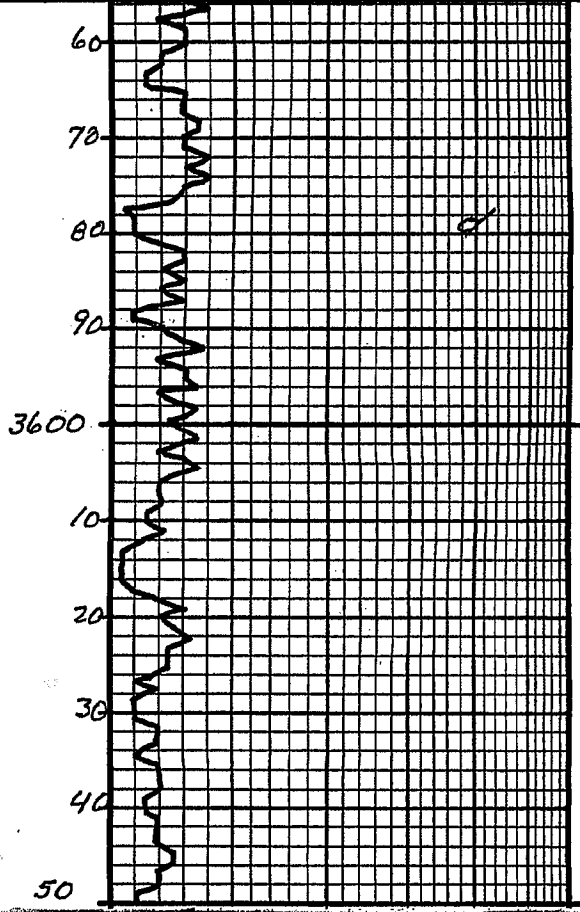
ls. tan - Crm, fr - xln - chky  
N.S.

sh - dkv - GRV - blk

ls. tan - H - brn ool w/



Handwritten notes and descriptions on the right side of the page, including '25 unit increase will check E-109' and 'START ΔT @ 3500'. The text is organized into sections corresponding to the stratigraphic units.



ls. H. tan - Crm, fr-xln -  
sl: chky N.S.

ls. tan - Crm, fr-xln - chky  
N.S.

sh. dk. gr. - blk

ls. tan - H brn. ool w/  
poor ool. N.S.

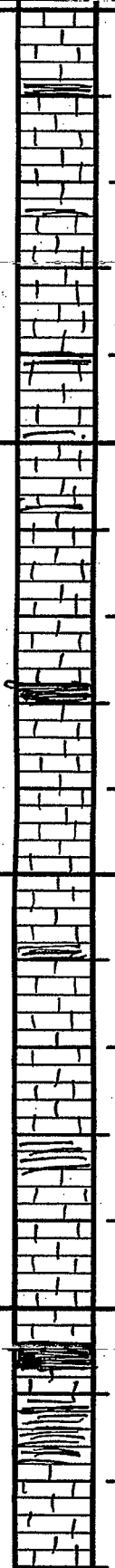
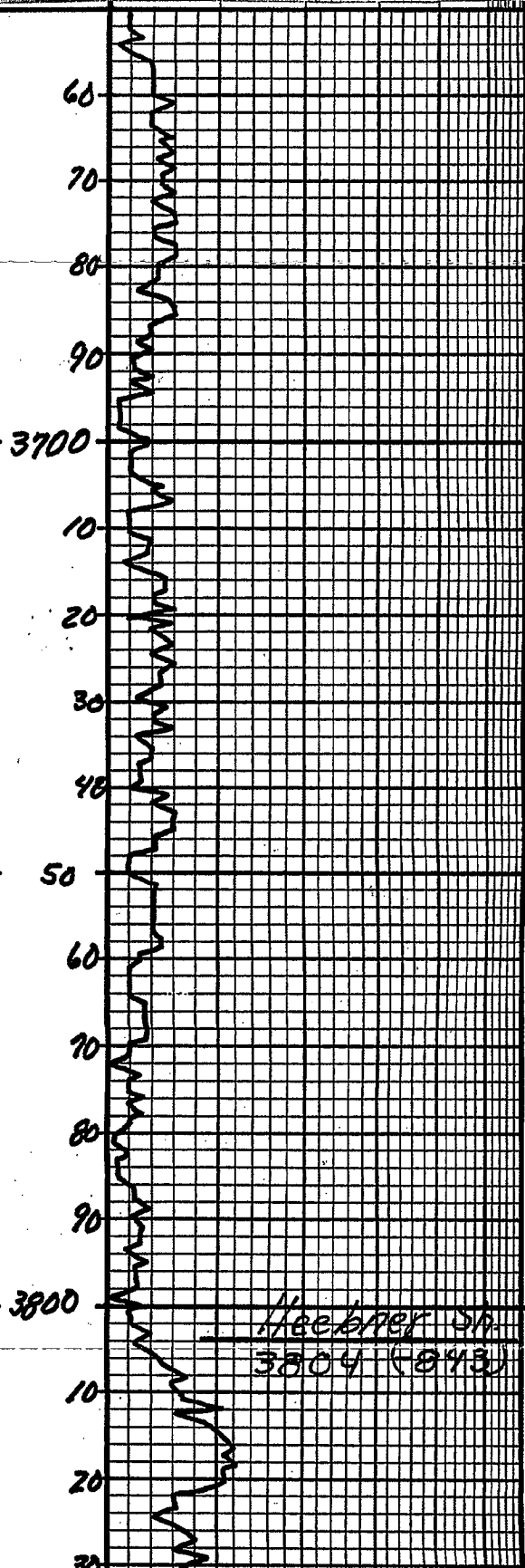
sh. gry - mar

ls. tan - fine xln, to plat  
sl: chky

ls. tan, foss w/ pr - fr  
foss. V-chky - N.S.

ls. tan - fr-xln, sl,  
foss, sca # p - N.S. chky

sh. gry's



ls. tan - ool w/ fr ool  
N.S.

ls. tan - H brn, xln - ool  
ls. tight rx. N.S. No  
kick

ls. tan - H brn, fr-xln  
-dse, N.S.

ls. tan - H brn. gry, dse  
sl: chky, N.S.

shly

ls. H tan - tan, fr-xln -  
sl: chky - N.S.

ls. tan - Crm - gry, fr-xln  
sl: foss - sl: chky, N.S.  
N. blk sh carb

ls. tan, gry, fr-xln  
V-sl: foss - tight rx,  
N.S. sl: chky

ls. H tan, ool w/ fair ool  
N.S. No kick,  
sl: chky

ls. tan, six + ool w/ fr  
suc - ool. sl: chky

sh. gry - mar

sh. blk carb  
ls. tan - fr-xln, sl: foss  
tight - chky

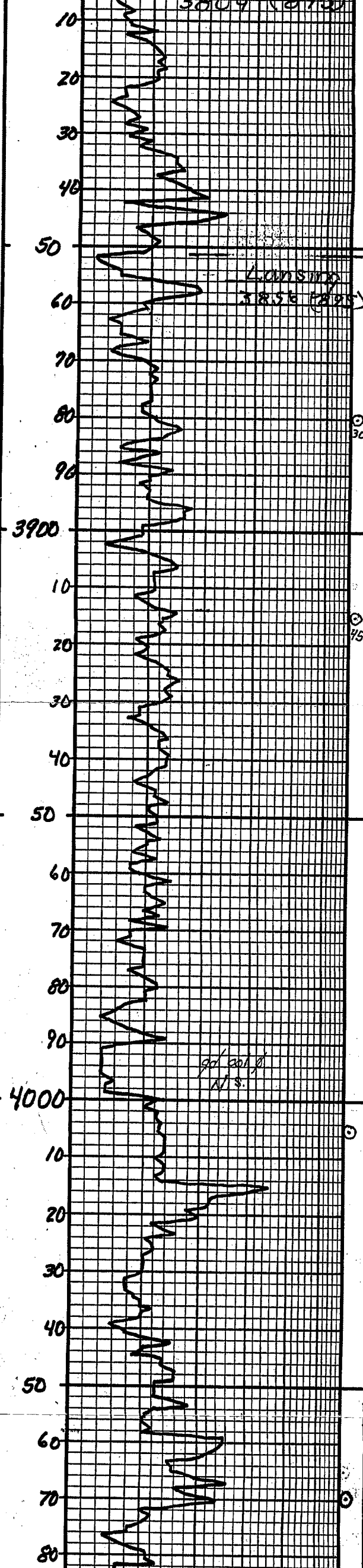
sh. - dk. gry - mar

ls. tan - gry - Crm, fr-xln  
sl: foss, sca # foss of  
N.S. No kick, sl: chky

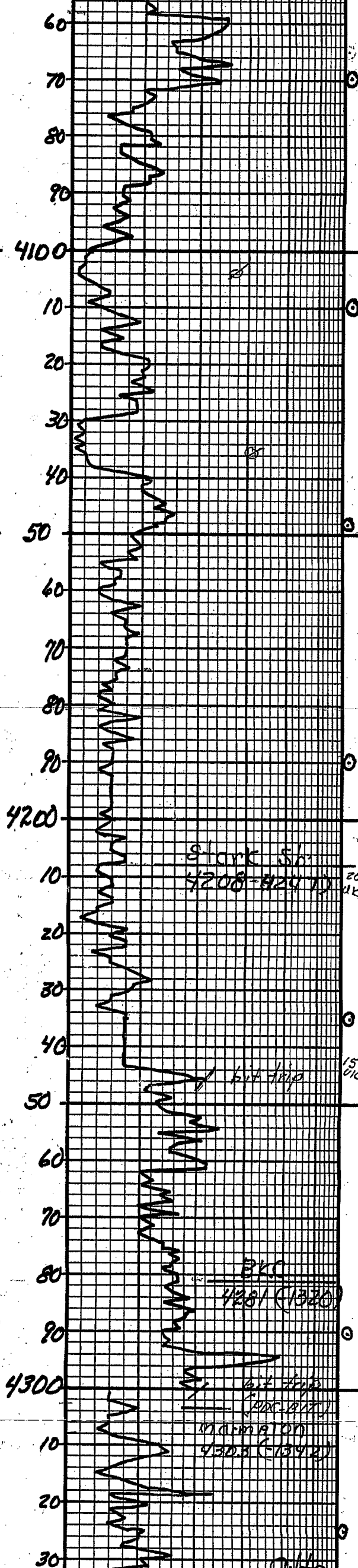
Neckbaer Sh  
3804 (043)

SUK.

3009 (215)



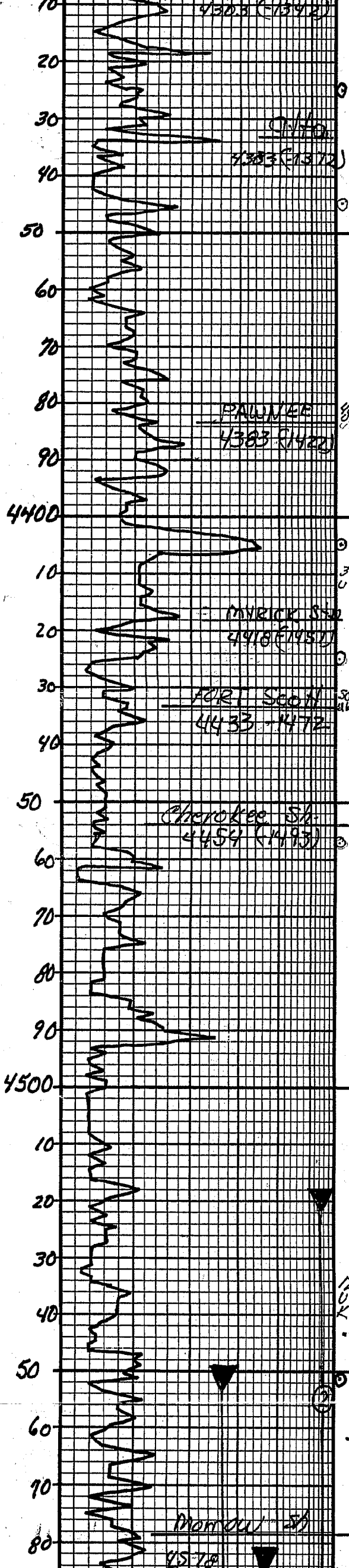
10	sh - drk gry - MAR
20	ls. tan - gry - Crm. fr-xln sl. foss, scatt foss of N.S. No Kick, sl. Chk
30	ls. tan - Crm - Gry foss w/ scatt foss p. sl. Chk
40	ls. tan - fr-xln - fight ry N.S.
50	sh - Grys - MAR
60	ls. tan fr-xln, fight rx N.V. N.S.
70	ls. tan ool w/ scatt fair ool of N.S. No Kick. gry ap Δ
80	ls. tan. dse, N.V. N.S.
90	sh - gry - MAR
3900	ls. tan fr-xln foss w/ scatt foss p.
10	ls. tan fr-xln. foss w/ fair pp. foss p. v. chky N.S. No Kick
20	ls. tan - fr-xln - dse, N.S. sh - GRy - MAR ls. tan - fr-xln - ool - dse, N.V. N.S.
30	ls. tan - Crm - ool w/ pr ool of sl. chky N.S. N.K.
40	ls. tan - ool w/ pr ool of N.S. No Kick
50	ls. tan - fr-xln - fight rx, N.V. N.S. sl. chky
60	ls. tan - fr-xln - dse, N.V. N.S. inc Chk
70	sh. drk gry - med gry
80	ls. tan - fr-xln - dse Chky N.S.
90	ls. H tan - Gry - Crm. fr-xln - dse, chky N.S.
4000	ls. tan - Gry - ool w/ scatt ool of N.S. Chky N.K.
10	ls. H tan - H Gry oolitic w/ good inter-ool of. N.S. No Kick
20	ls. H tan - H Gry, dse - N.V. - N.S.
30	ls. tan - fr-xln - dse N.V. N.S. sl. Chky
40	ls. tan - fr-xln - dse N.V. N.S.
50	ls. tan - Gry - fr-xln - dse same Δ N.S.
60	sh. drk gry MAR
70	sh. gry MAR
80	ls. tan - Gry fr-xln sl. foss scatt pp. foss of N.S. N.K.
90	ls. brn - Crm fr-xln. foss, 2 pcc w/ dcs in foss of N.V. No odor, No Kick
100	ls. Crm. fr-xln - dse, N.S. wh. gry fr ap foss Δ.



1s. tan-GRY fn-xln sl-foss  
 scatt pp-foss of N.S. N.K.  
 1s. brn-crm. fn-xln-foss, 2  
 pr's w/ dgs in foss of  
 N.F.O., No odor, No Kick  
 1s. Crm. fn-xln-dse, N.S.  
 wh-gry tr op foss Δ.  
 sh. blk Cor h ISUK  
 1s. Crm. fn-xln sl-foss w/  
 fair-poor foss of wh-gry  
 foss fresh op Δ N.S.  
 1s. tan, fn-xln, scatt foss of  
 1s. tan-dolitic, w/ good  
 inter ool of N.S. No Kick  
 1s. tan-crm-ool w/ fr-  
 ed inter-ool of N.S.  
 + sh-gry-mar  
 1s. 1/2 ool-xln, w/ pr  
 fair of N.S.  
 1s. tan-ft tan, fn-xln-N.S.  
 shly  
 1s. tan-crm, ool-ool w/  
 good ool of 2 pr's  
 w/ dgs in of No K.O. No  
 oil, NO KICK fr Δ  
 1s. tan-brn-gry, fn-xln  
 -dse, N.V.P. N.S. fr Δ  
 sh. drk-blk  
 1s. Crm-gry, fn-xln-  
 foss w/ poor foss of  
 N.S. sl. chky  
 1s. Crm-ft tan-gry, fn-xln  
 sl. chky. N.S.  
 1s. ft tan-crm, ool-sl. ool  
 w/ fair ool + ool of sl. chky  
 N.S. No Kick  
 1s. tan-brn, fn-xln-  
 sl. foss, scatt poor of  
 N.S.  
 1s. tan-brn, fn-xln-  
 dse, sl. foss, N.V.P. N.S.  
 sh. blk Cor h-  
 1s. Crm-ft tan, fn-xln-sl  
 foss, pr-N.V.P. N.S. No  
 odor-No Kick  
 1s. tan-brn, fn-xln-sl. foss  
 pr of N.S. shly  
 1s. tan, fn-xln foss-w/  
 pr-ft foss of N.S.  
 1/2 Kick  
 sh. drk GRY-blk  
 1s. tan ool w/ poor ool  
 of N.S.  
 1s. tan, fn-xln sl. foss-  
 sl. ool-pr of N.S.  
 1s. tan-fn-xln-dse  
 sl. foss, poor foss of  
 N.S.  
 shly  
 1s. tan-gry, fn-xln-N.S.  
 sh. gry-mar  
 sh. gry-grn-mar  
 1s. tan-brn, fn-xln-tight  
 pr-N.S. NO Kick  
 sh. gry  
 1s. tan-sl ool-N.V.P.  
 N.S. No Kick-No odor  
 1s. tan-brn, fn-xln-ool  
 pr-N.V.P. N.S. No  
 odor  
 1s. tan-brn-ool-xln-dse  
 pr ool of mostly tight pr  
 N.S. No Kick  
 1s. tan-ft tan, fn-xln-N.S.

BIT TRIP short button  
bit to longer button bit

bit trip from longer  
buttons f. PDC-



Ls. tan-brn - ool - xln - ool  
 pr - N.V. N.S. No odor

Ls. tan-brn - ool - xln - dse  
 pr ool d. mostly light rx  
 N.S. No kick

Ls. tan-brn - sl. foss - N.S.  
 SH - GRV - MAR

SHLY

Ls. tan - xln - sl. foss pr or  
 N.S., No kick

}

Sh. grys + mar

}

Ls. tan - lt brn - fr - xln  
 sl. foss, N.V. N.S.

}

SHLY

Sh. blk Carb.

}

Ls. tan, fr - xln - v. ss  
 foss. pr. N.S.

Ls. tan oolitic w/ fr - pr  
 ool d. N.S. No odor

}

Sh. black Carb

}

Ls. Crm - tan xln - foss - ool  
 w/ pr. N.S. No odor

Ls. Crm - tan - sl. ool pr  
 ool d. N.S., No odor

}

SH - BLK - Carb

Ls. tan - Crm, ool - scatt  
 ool d. - matt, sl. - chky  
 N.S. No odor

Ls. gr. ool - matt - scatt  
 d. N.S. No odor

}

Sh. blk carb

Ls. tan, fr - xln - sl. foss  
 N.V. N.S.

}

Ls. lt tan - tan - str ool  
 pr ool d. N.S.

Sh. blk - Carb

Ls. tan - brn - xln - sl. ool  
 N.V. N.S.

}

Ls. tan - brn - xln - sl. ool  
 N.S. SHLY

}

Sh. gry - mar - grn

Ls. tan - brn - xln, sl.  
 foss. pr - N.V. N.S.

Ls. tan - brn - shly

Ls. lt tan - fr - xln - sl.  
 foss w/ fr. spt d. str  
 + SED. w/ pr. fr pp -  
 70% d. gr. odor

Ls. lt tan, brn xln - sl. foss  
 fr str. 3-4 pieces. NED  
 faint odor

}

Sh. gry - dex gry

Ls. tan - brn - fr - xln -  
 dse, N.V. N.S.

\* did small short trip  
 circ. dst - 2.  
 Rig got stuck @ 2340  
 pulled out bit and  
 will return. CF dst 2.  
 driller thinks bit is  
 balled up coming out  
 No problems w/ (conventional)  
 bits on trips - ? - \*

DST No. 2 4518-4590

wk blow 1st op. No blow 2nd op  
 30" 45" 30" 45"

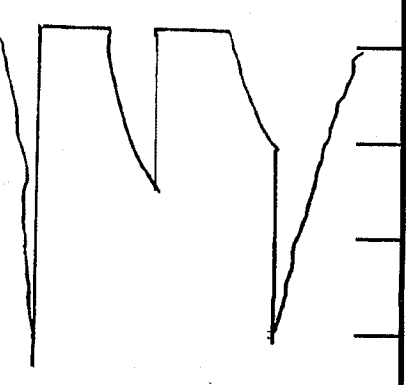
Rec: 5' mud

SIP: # 774 - 642 #

DST No. 2 4518-4590

WK blow 1st op. No blow 2nd op  
30" 45" 30" 45"  
Rec: 5' mud  
# 774-642  
SIP: 774-642  
FP: 12'-19" + 17'-20"  
HP: 2166# - 2153#  
T = 117°

Chart dist-2

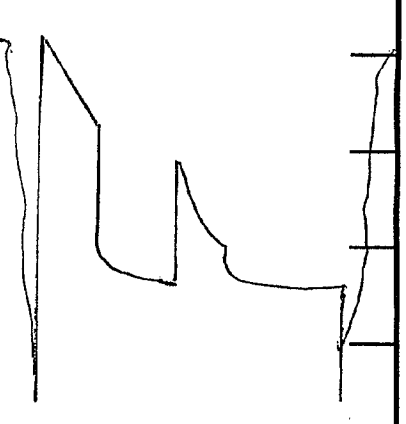


(-PKR FAILURE-)  
DST No. 3 4581-4660

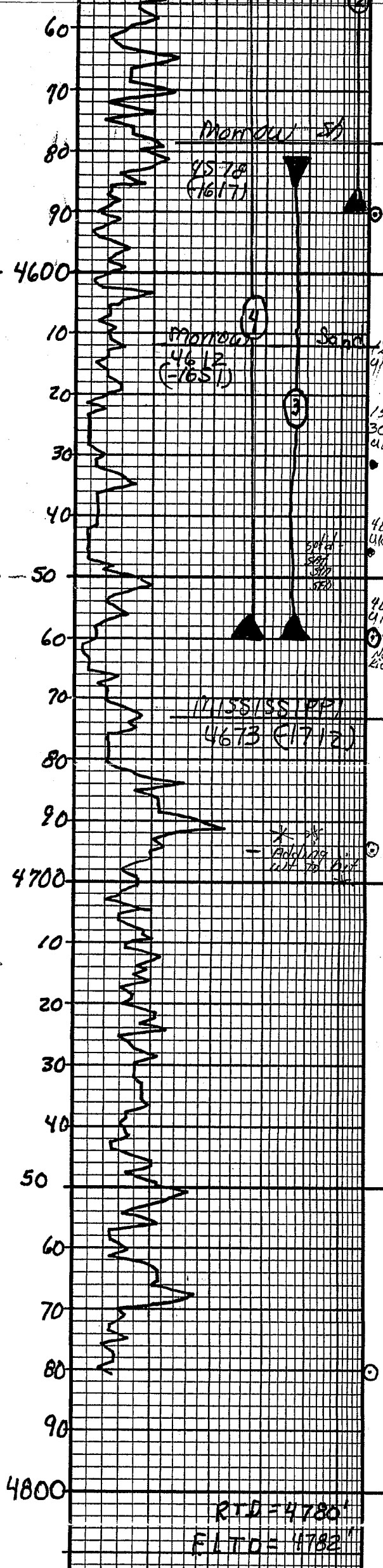
DST No. 4 4549-4660  
BoB 2" 1st open, 1" BB  
BoB 2 1/2" 2nd op, No BB  
30" 60" 60" 90"

Rec: 2015' 9sq-mdy oil, 86% oil  
95' " " " 66% oil  
180' sl. wtry mud 73% oil  
120' sl. wtry oil 44% oil  
2410' Total rec  
SIP: 1100# FP 219-59 6-26  
1094# 619-934

Chart dist-4



mud: 60 vis, 9.4 wt  
9.0 wL good mud  
throughout well \*



Ls. tan fn-xln-sh. foss  
fr. sh. 3-4 pieces. NVO  
faint odor  
sh-gry-dk gry  
Ls. tan-brn-fn-xln-  
col, NVO N.S.  
sh. gry-s-grn-mar  
sh-varicolored  
sdstone, clear, sub-md clusters  
fr. pr. fair odor  
dull flour  
sdstone q/a-shly  
sdstone, clear, atzitic, sub-  
md clusters, SEP + clastic  
dead oil when broken.  
Fair odor, dull flour  
also sat oil str ind  
sh + siltstone, N.S.  
sh-siltstone  
ss atzitic w/ sep  
+ clayey oil spots on  
sd grn sh - gcl odor  
Ls. tan fn-xln-tight N.S.  
shly - sh-stone. Gd  
flour  
Ls. tan-gry-ool-xln  
w/ pr ool & chky N.S.  
Ls. (rm xln-ool - N.S.  
sh-gry-mar + siltstone  
sh-shly faint odor N.S.  
shly  
Ls. tan-fn-xln-Vst.  
foss, tight rx - N.S. shly  
Ls. tan-H tan fn-xln-sh  
ool-tight rx, NVO N.S.  
shly  
Ls. (rm-H tan fn-xln, some  
ool ls, pr o. shly N.S.  
Ls. H tan-fn, fn-xln-  
shly ool, NVO, N.S.  
Ls. tan-fn-xln, tight rx  
NVO N.S.  
Ls. H tan-fn-xln-ool  
pr ool - NVO N.S.  
Ls. tan-ool, w/ ool fr ool &  
N.S. - no odor  
Ls. tan-H brn, fn-xln -  
tight rx, NVO N.S.  
Ls. tan-H brn, fn-xln -  
tight rx N.S.  
Ls. tan-ool, fair rx, N.S.

RTD = 4780'  
ELTD = 4782'



90 4800	RTD = 4780' FLT D = 4782'			mud: 60 VIS, 9.4 WT 9.0 WL good mud throughout well *
5" 10" 15" 20" 25"	DRILLING TIME Minutes/Foot	LITHOLOGY	SAMPLE DESCRIPTIONS	REMARKS
DEPT H	Rate of Penetration Increases			

COMPANY Cobalt Energy L.L.C.  
 LEASE Boothers "A" 1-11  
 LOCATION 1709' E 1/4 & 1735' E 1/4 SEC. 11 TWP 20S RNG 33W  
 COUNTY Scott STATE Kansas

ELEVATION: 2961 K.B.