GEOLOGIST'S REPORT

DRILLING TIME & SAMPLE LOG

COMPANY Berexco LLC

LEASE Melodie NO. 1-20

LOCATION 900' FNL + 531' FEL

SEC. 20 TWP. 21S RNG. 32W

COUNTY Finney , STATE Kansas

FIELD Wildcat

ELEVATIONS

KB 2908

DF 2906

GL 2896

MEASUREMENTS ARE ALL FROM KB

CONTRACTOR Beredco Drlg Rig #1

COMM. 3-11-2019 COMP. 3-24-2019

RTD 4950 LTD 4953

No. of DST'S Two No. of CORES None

CASING RECORD

8⅝" at 1802 w/800 sx.

at w/ sx.

at w/ sx.

at w/ sx.

EL. LOG ACT Res·SP·GR DEN·NEUT·GR Caliper ML·Sonic

SAMPLES SAVED FROM 3700 TO TD

DRILLING TIME KEPT FROM 3700 TO TD

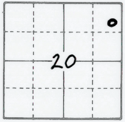
SAMPLES EXAMINED FROM 3700 TO TD

GEOLOGICAL SUPERVISION FROM 3700 TO TD

GEOLOGIST ON WELL Edwin H. Grieves

FORMATION TOPS

	SAMPLE	LOG	SUBSEA
Base Heebner	3887	3909	-1001
Lansing Fm.	3930	3954	-1046
Kansas City Fm	4228	4278	-1370
BKC	4361	4404	-1496
Marmaton Fm	4391	4426	-1518
Pawnee	4449	4503	-1596
Ft Scott	4476	4528	-1620
Cherokee Fm	4494	4547	-1639
Poss, Chester	4700	4700	-1792
St Louis	4764	4762	-1854
TD	4950	4953	



API# 15-005-22516

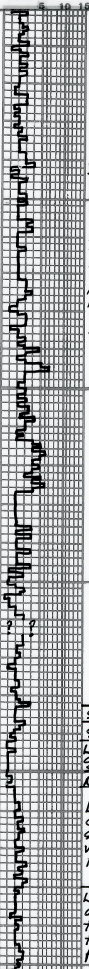
REMARKS Earth-Tech had an unmaned gas detection trailer on this well from 3700 feet to total depth.

It is obvious the geologist on this well, meaning me, was a cycle off on his tops in the upper part of this well. All I can say is there were no shows of oil or gas in the samples even if I did not know where I was in the hole part of the time.

Thank you,
Edwin H. Grieves
Geologist

LITHOLOGY		CHROMATOGRAPH	
SANDSTONE	SILTSTONE	HOT WIRE BY TOTAL GAS VOLUME	C1 = METHANE
LIMESTONE	DOLOMITE		C2 = ETHANE
SHALE	GRANITE WASH		C3 = PROPANE
CHERT	ANHY & GYP		C4 = ISOBUTANE
			C5 = BUTANE
			C6 = ISOPENTANE
			C7 = PENTANE

DRILL TIME SCALE	SAMPLE DESCRIPTION		GAS SCALE



3700-3883 Interbedded Lmst w/scatted Shs
1. Slower Drlg Lms. lt. to trs med. gry-Shly.; crypto. to v.v. fn. xln.; sub-chlk &/or Shly., sub-sucro + packstn.; trs. foss.; No fluor.; No Cut; No Vis Por.
2. Faster Drlg. Lms trs to huy trs. wht. to crm-chlk + tan to grayish tan; crypto to v.v. fn. xln.; sub-chlk.; sub-sucro. to trs sucro + packstn sl. trs. oolicastic; dul. lt. to trs. lt. yel. fluor.; No Cut; trs. pr to fr + sl. trs gd. oolicastic micro-pp + poss interxln. por.
3. Sl. trs chert, wht. crm to tan; opque
4. scattered thin Shs med to trs drk. gry; calc. lP's

Sh v. drk gry. to black-carb.

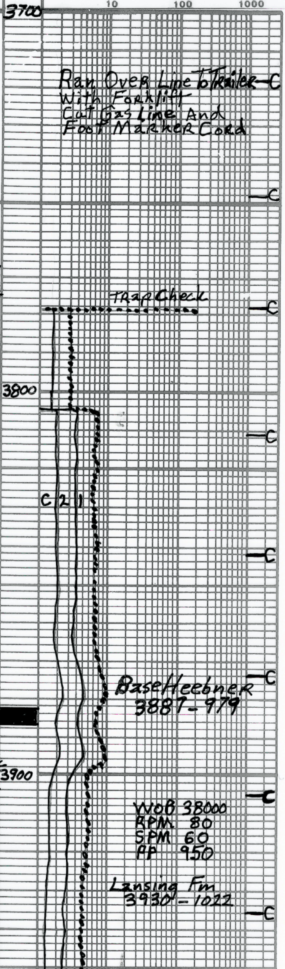
Sh lt. green to lt. gry; soft + mushy when wet

Lms. extr. abn wht to crm-chlk + lt. gry-shly to tan; crypto to v.v. fn. xln.; trs. oolicastic &/or trs. oolitic sub-sucro & packstn; trs dul. yel. fluor.

No Cut; trs. pr to fr + sl. trs gd oolicastic por + poss interxln por. Quest. Perm!

Lms. abn. wht. to crm-chlk + grayish tan to tan; crypto. to v.v. fn. xln.; sub-chlk, sub-sucro to sucro + packstn.; dul. yel. fluor. lP's; No Cut v. sl. trs v. pr to pr micro-pp por; poss. interxln. por lP's.

Lms. abn. wht. to crm-chlk + tan, grayish lP's; crypto to v.v. fn. xln.; sub-chlk, sub-sucro. to trs. sucro, packstn + sub-lithogr.; dul. yel. to yel. fluor; No Cut; scattered trs. pr. micro-pp por w/ trs chert; lt. to med gray; opq.

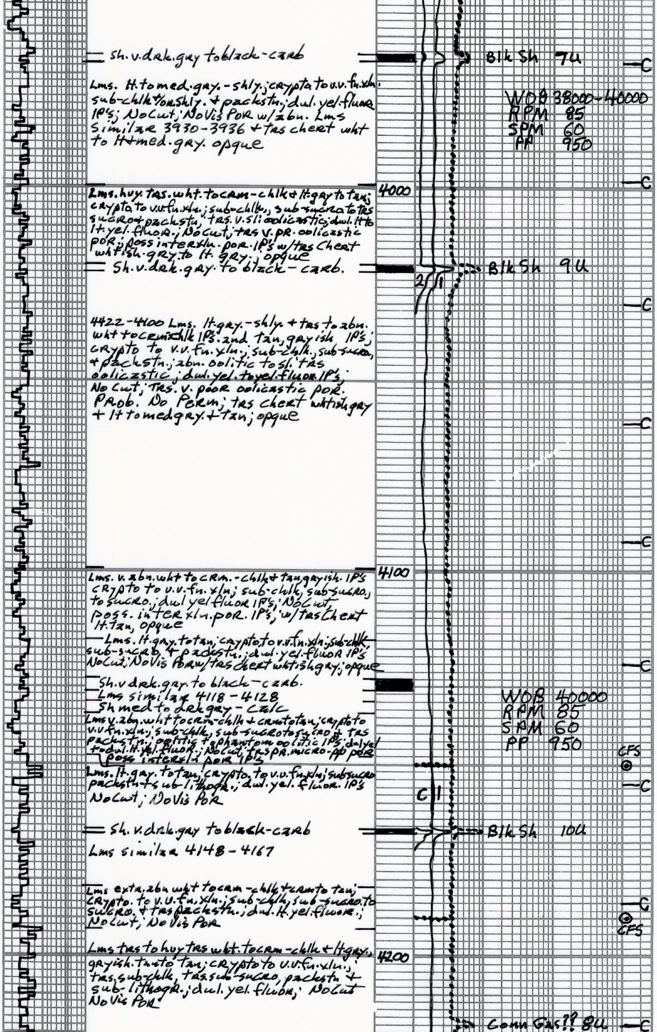


Ran Over Line To Trailer
With Forklift
Cut Gas Line And
Foot Marker Cord

Base Heebner
3887-979

WOB 38000
RPM 80
SPM 60
PP 950

Lansing Fm
3930-1022



Sh. v. drk. gry to black-carb

Lms. lt. to med. gry. -shly.; crypto to v.v. fn. xln. sub-chlk +/or shly. + packstn.; dul. yel. fluor IP's; No Cut; No Vis POR w/ abn. Lms similar 3930-3936 + trs chert wht to lt + med. gry. opque

Lms. hvy. trs. wht. to crm-chlk + lt. gry to tan; crypto to v.v. fn. xln.; sub-chlk., sub-sucro to trs sucro + packstn, trs. v. sli oolicastic; dul. lt to lt. yel. fluor.; No Cut; trs v. pr. oolicastic POR.; poss interxln. por. IP's w/ trs Chert whtish. gry. to lt. gry. opque

Sh. v. drk. gry. to black-carb.

4422-4100 Lms. lt. gry. -shly. + trs to abn. wht to crm. chlk IP's and tan, grayish IP's; crypto to v.v. fn. xln.; sub-chlk., sub-sucro, + packstn.; abn. oolitic to sl. trs oolicastic; dul. yel. to yel. fluor. IP's, No Cut; Trs. v. poor oolicastic POR. Prob. No Perm; trs chert whtish gry + lt to med gry. + tan; opque

Lms. v. abn. wht to crm. -chlk + tan, grayish. IP's crypto to v.v. fn. xln; sub-chlk, sub-sucro, to sucro.; dul yel fluor IP's; No Cut, poss. inter xln. por. IP's; w/ trs Chert lt. tan, opque

Lms. lt. gry. to tan; crypto, to v.v. fn. xln; sub-chlk, sub-sucro, + packstn.; dul. yel. fluor IP's No Cut; No Vis Por w/ trs Chert whtish gry; opque

Sh. v drk. gry. to black-carb.

Lms similar 4118-4128

Sh med to drk gry - calc

Lms v. abn. wht to crm-chlk + crm to tan; crypto to v.v. fn. xln.; sub-chlk, sub-sucro to sucro + trs packstn.; oolitic + phantom oolitic IP's; dul yel to dul. lt. yel. fluor.; No Cut; trs pr. micro-pp POR poss interxln por IP's

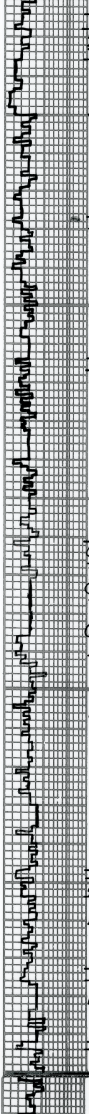
Lms. lt. gry. to tan; crypto. to v.v. fn. xln; sub sucro packstn + sub lithogr.; dul. yel. fluor. IP's No Cut; No Vis POR

Sh. v. drk. gry to black-carb

Lms similar 4148-4167

Lms extra. abn wht to crm-chlk + crm to tan; crypto. to v.v. fn. xln.; sub-chlk, sub-sucro. to sucro. + trs packstn.; dul. lt. yel. fluor.; No Cut; No Vis POR

Lms trs to hvy trs wht. to crm-chlk + lt gry., grayish. tan to tan; crypto to v.v. fn. xln.; trs sub-chlk, trs sub-sucro, packstn + sub-lithogr.; dul. yel. fluor.; No Cut No Vis POR



Sh v. drk. gry. to black-carb

Lms. lt. to med gry. -v. to extaly Shly; crypto. xln. sub-chlk &/or Shly + packstn; No fluor; No Cut NoVis Por

Lms. hvy. trs. wht. to crm-chlk & greyish tan. to tan; extraly oolicastic & osl. to frly oolitic lPs; matrix sub-sucro + packstn.; dul. lt. yel. fluor; No Cut; abu. pr., freqd. to excel. oolicastic por; Prob No Perm

4250-4277 Lms. trs to hvy. trs. wht. to crm chlk + lt. gry. to gryish tan; crypto. xln.; sub-chlk, packstn + sub-lithographic dul. yel. fluor. lPs; No Cut; No Vis Por

Sh v. drk. gry. to black-carb

4480-4314 Lms. similar 4250-4277

Sh. v. drk. gry. to black-carb

4317-4361 Lms similar 4250-4277 w/trs. chert lt. gry. opque

4361-4391 Interbedded Lmsts

① Lms. med to drk. gry-frly to extaly Shly, grdng to calc. Shs.; crypto. xln.; sub-chlk &/or Shly + packstn No fluor; No Cut; No Vis Por.

② Lms. gryish-tan to tan; crypto to trs. v. v. fn. xln; trs sub-sucro., packstn + sub-lithogr.; trs. dul. yel. fluor.; No Cut; No Vis Por

③ trs chert gry to tan; opque

4391-4447 Lms lt. to med gry-Shly to tan; trs. sub-chlk, packstn + trs sub-lithogr. dul. lt. yel. fluor lPs; No Cuts; No Vis Por. w/abu. chert gry to tan; opque

Sh v. drk. gry to black-carb

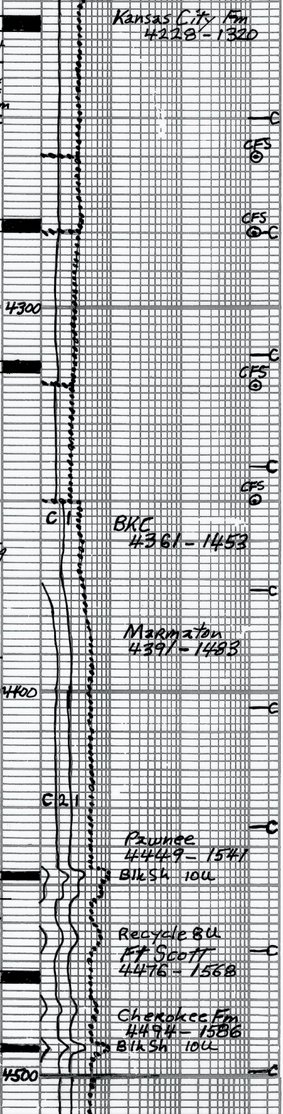
Sh. med to drk. gry v. to extaly calc grdng to Shly Lms

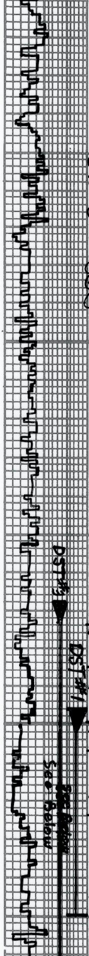
4454-4473 Lms w/chert similar 4391-4447

Sh. v. drk gry to black-carb

4476-4492 Lms w/chert similar 4391-4447

Sh v. drk. gry to black-carb





4494 - 4674 Interbedded Lmsts. + Shs.

① Lms. med to drk gry. - frly to extrly Shly. grdng to calc Shs.; crypto. to trs v.v.fn. x/n; sub-chlk + / or Shly. + packstn; No fluor.; No Cut; No Vis Por.

② Lms trs. wht to crm-chlk + grayish. tan to tan; crypto. to v.v. fn. x/n.; sub-chlk., trs. sub-sucro., packstn + trs. sub-lithogr scattered dul. yel. fluor; No Cut; No Vis Por

③ Sh med to v. drk. gry. sli. to frly. calc IP's

④ Sh v. drk gry to black - carb

⑤ scattered trs chert grys to tans, opque

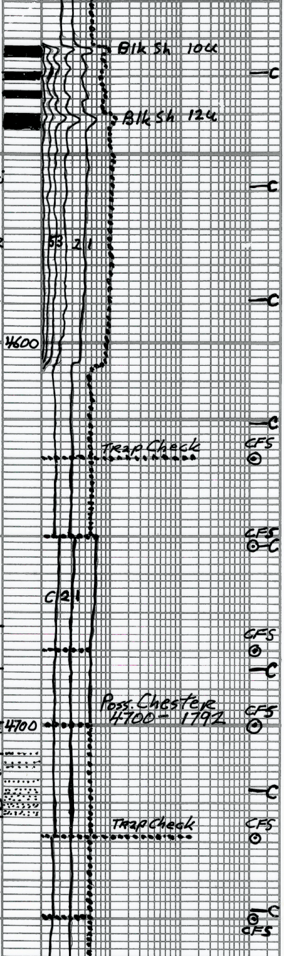
4674 - 4685 Interbedded Lmsts + Shs similar 4494 - 4674 w/ extrly abn wht to crm - chlk w/ trs med to lg oolites tan to wht chlk oolites w/ trs green shs

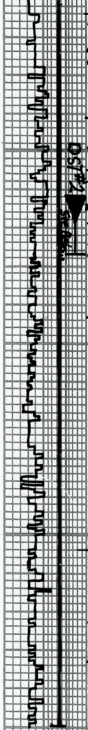
4685 - 4700 Interbedded Lmsts + Shs similar 4494 - 4674 w/ hvy trs to abn. verigated Shs greens, Reds + yellows

4700 - 4707 Interbedded Lms + Shs similar 4494 - 4674 w/ extrly abn. verigated Shs. yellows, green + reds

Qtz Sds trs wht. to lt. grey mostly yellows, greens + Reds from verigated clay fillings sl. to frly. friable IP's to v. firm; v.v. fn to vfn gr.; ang.; pr to trs fr sort; No fluor; No Cut; trs pr. micro-pp Por in wht to gry, v. abn verigated Shs yellows, grns, pinks + Reds

4724 - 4764 Lms. lt. to med gry., tanish IP's crypto. x/n; packstn to trs sub-lithogr. sli. trs. foss; No fluor.; No Cut; w/ hvy trs verigated Shs. yellows + grens w/ hvy trs to abn. Shs med to drk. gry + trs v. drk gry; splintery IP's; Sh. increases w/ depth to 70 to 80 % of Samples





4764-4791 Lms. trs. wht. to crm.-chlk w/ chlk oolites lP's; + crm, tanish lP' + grayish lP's crypto. to v.v fn. xln.; extrely oolitic (micro, sm w/ abn. med. lP's) matrix chlk, sub-chlk + sub-sucro; v. dul. yel. fluor.; No Cut No Vis. Por

4791-4799 Lms. similar 4764-4791 w/ incr. incr. to hvy. trs. to abn. chlk w/ chlk oolites + trs. chert orange opque

4799-4805 Lms. similar 4764-4791 w/ hvy trs to abn. Lms; lt. gry, crypto xln, packstn v. dul yel fluor; No cut; No Vis Por w/ trs chert grys., opque

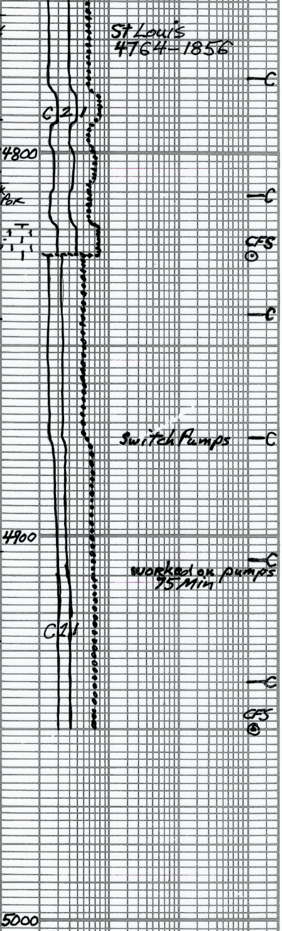
4805-4808 Lms trs. wht. chlk + crm. to lt. tan; crypto. to v.v fn. xln.; extrely. oolitic (sm, med + lg) matrix sub-chlk sub-sucro + packstn.; v. dul yel. fluor; No cut No Vis Por

4808-4819 Lms. similar 4799-4805

4819- Lms. trs. wht to crm-chlk + crm, grayish lP's; crypto. to v.v. fn. xln.; extrely oolitic (med to lg + sm) matrix sub-chlk, sub-sucro to sucro + trs. packstn; dul yel to dul gldn yel fluor.; trs w/ faint ring cuts; hvy trs pr, trs fr to sl. trs gd interoolitic to micro-pp por; Quest Perm. (No loose oolites)

Lms. trs. to abn. wht to chlk w/ chlk oolites lP's + tan, grayish tan to trs. lt. gry.; crypto. to v.v fn. xln.; v. to extrly oolitic (sm, med + lg.); matrix sub-chlk, sub-sucro. to sl. trs. sucro + packstn; dul. yel. fluor lP's; No Cut; No Vis POR. w/ trs. chert grys, tans to oranges; opque

Lms. hvy. trs. to abn. wht. to crm-chlk, trs w/ chlk oolites + tan, grayish tan to trs lt. gry.; crypto. to v.v. fn. xln.; very to extrly oolitic (sm, med + trs lg) matrix sub-chlk, sub-sucro to sl. trs sucro. + packstn.; dul. yel. fluor lP's; No cut No Vis Por.; trs. to hvy. trs. Chert grys tans to oranges; opque to trs transl.



TD 4950

Bit Info: 7⅞ inch
JZ JN80423
In 1802 Out 4950 TD

Dev. Surv.:

1 703 ¾°
3 4750 1°
2 1803 1°
4 4950 1° TD

Cir Points:

1. 4150
2. 4190
3. 4260
4. 4280
5. 4320
6. 4350
7. 4630
8. 4653
9. 4680
10. 4700
11. 4729
12. 4750
13. 4827
14. 4950 TD

Daily Drlg. Progress:

1.	3285	At 7 AM	3-17-19
2.	3842	At 7 AM	3-18-19
3.	4280	At 7 AM	3-19-19
4.	4630	At 7 AM	3-20-19
5.	4750	At 7 AM	3-21-19
6.	4815	At 7 AM	3-22-19
7.	4827	At 7 AM	3-23-19
8.	4950	At 7 AM	3-24-19 TD

DST#1 Poss. Chester 4696-4750
I.O. Weak Blow Built to 2 inches
F.O. Weak Blow after 10 min built to 2 inches
Rec 100 MCW 60% wtr 40% Mud
BHT 117°F
Rw .195 @ 62°F Chl 43000 ppm
Pit Chl 3800 ppm

IHP 2401#
IFP 21-41# in 30 min
ISIP 1189# in 60 min
FFP 46-67# in 60 min
FSIP 1150# in 120 min
FHP 2292#

DST#2 St Louis 4810-4827
I.O. weak Blow incr to ½"
FO No Blow
Rec 3' Mud 100% mud
BHT 117°F

IHP 2474#
IFP 17-19# in 30 min.
ISIP 24# in 60 min.
FFP 19-20# in 30 min.
FSIP 30# in 120 min.
FHP 2475#

DST#3 Base Cher., Chester + St Louis
4668-4950; 282 ft of Anchor
IO Built to 7½ inches
FO Built to 8 inches
Rec. 225 MCW 50% wtr 50% mud
BHT 117° Rw .171 @ 57°F

Chl. 54000 ppm Pit Chl 4500 ppm
IHP 2458#
IFP 29-60# in 30 min
ISIP 1225# in 60 min
FFP 67-122# in 60 min
FSIP 1208# in 120 min
FHP 2367#

Date	3-17 9:00A	3-18 9:00A	3-19 8:30A	3-20 9:15A	3-21 10:00A	3-22 10:30A	3-23 10:45A	3-24 8:00A
Depth	3360	3905	4303	4649	4750	4827	4827	4950
Wt.	9.8	8.8	9.4	9.6	9.4	9.3	9.3	9.4
Vis	29	57	48	55	70	57	60	60
PV		17	16	16	19	17	18	18
YP		20	17	19	22	21	22	22
GS		14/36	14/32	13/36	16/43	15/36	16/39	15/38
WL	NC	7.2	7.2	8.0	8.0	7.2	8.0	8.0
Cake		1/32	1/32	1/32	1/32	1/32	1/32	1/32
pH	7.0	10.5	10.5	10.0	9.0	10.5	9.5	10.0
Chl	31000	3500	4000	3800	3800	4000	4200	3800
Ca	Hvy	20	40	40	40	40	40	40
LCM	tR.	1.0	2.0	1.0	1.0	2.0	2.0	2.0

OPERATOR BerexcoLLC
LOCATION 900'FNL + 531'FEL
LEASE Melodie NO. 1-20
SEC 20 TWP. 21S RNG. 32W
ELEVATION 2908 KB RTD 4950
COUNTY Finney STATE Kansas