

ELI J. FELTS

CONSULTING PETROLEUM GEOLOGIST

GEOLOGIST'S REPORT DRILLING TIME AND SAMPLE LOG 15-185-24031

OPERATOR ROYAL ENERGY, INC.
LEASE ALPERS #2
FIELD HUDSON SOUTH
LOCATION SW NE NE NW
SECTION 4 TOWNSHIP 23S RANGE _____
COUNTY STAFFORD STATE KANSAS
CONTRACTOR SOUTHWIND DRILLING, RIG #1
SPUD 8/30/2018 COMP 9/8/2018
RTD 3800' LTD 3798'
SAMPLES SAVED FROM 3000' TO RTD
DRILLING TIME KEPT FROM 3000' TO RTD
SAMPLES EXAMINED FROM 3200' TO RTD
GEO SUPERVISION FROM 3150' TO RTD
MUD UP 2800'-2840'
MUD TYPE CHEMICAL DRISPAC (MUD-CO)

ELEVATION

KB 1851'
GL 1841'

CASING RECORD

CONDUCTOR

N/A

SURFACE

340'

PRODUCTION

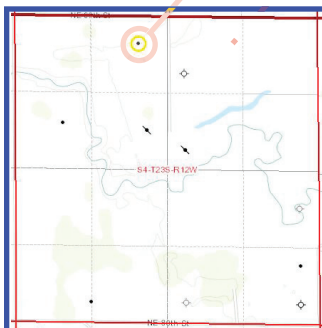
N/A

ELECTRICAL SURVEYS

- CNL/CDL
- DUAL INDUCTION
- MICRO
- SONIC

FORMATION TOPS & STRUCTURAL COMPARISON

FORMATION	DEPTH	SUBSEA	STRUCTURE
Anhydrite	636	1215	+8
Base/Anhydrite	657	1194	+8
Heebner	3156	-1305	+8
Brown Lime	3289	-1438	+9
Lansing	3314	-1463	+9
Stark	3503	-1652	+10
Base/Kansas City	3568	-1717	+5
Viola	3590	-1739	+6
Simpson	3675	-1824	-24
Arbuckle	3705	-1854	+26



2
3
S

Comparison Well Used for Structure: Dixon Operating Company, Alpers 1-4 (15-185-23370) 12W

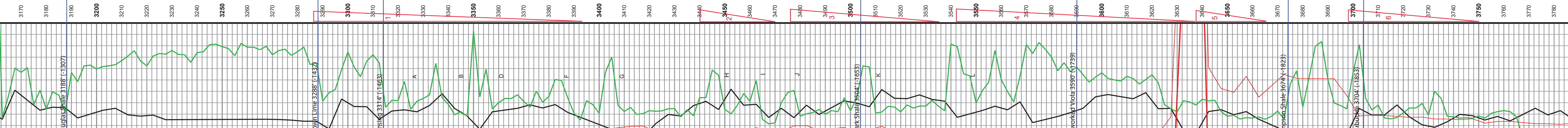
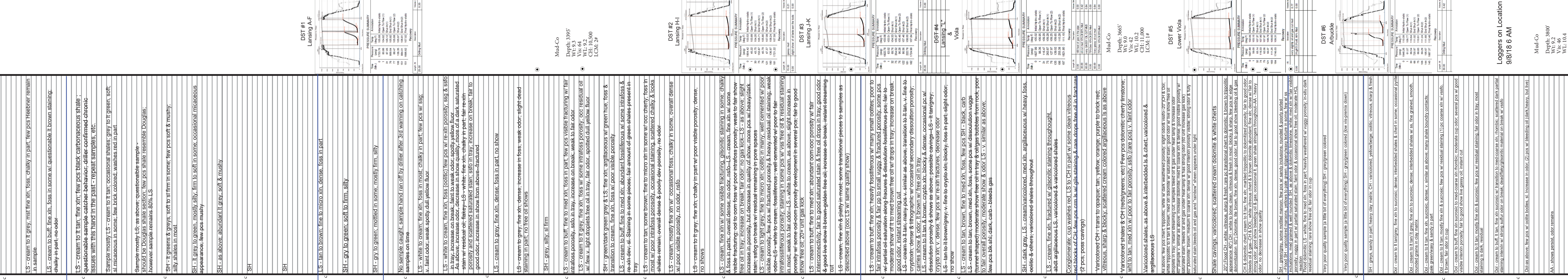
REMARKS As a result of careful sample & log analysis; DST results, and the lack of commercial oil recoveries

and/or formation pressures on those tests, it was decided to plug and abandon the Alpers #2.

Respectfully Submitted,

Eli J. Felts

DEPTH (ft)	DESCRIPTION
2810	
2820	
2830	
2840	
2850	
2860	
2870	
2880	
2890	
2900	
2910	
2920	
2930	
2940	
2950	
2960	
2970	
2980	
2990	
3000	
3010	
3020	
3030	
3040	
3050	
3060	
3070	
3080	
3090	
3100	
3110	
3120	
3130	
3140	
3150	
3160	SH - dark brown to black; earthy, organic, bleeds gas
3170	LS - cream to lt grey, mist fine xln, floss, chalky in part, few pcs Heebner remain in sample
3180	LS - cream to buff, fine xln, floss in some w/ questionable lt brown staining, earthy in part, no odor
3190	LS - cream to lt tan, fine xln; few pcs black carbonaceous shale; questionable sample catcher behavior; driller confirmed chronic issues with this hand in the past - repeat samples, etc.
3200	Sample mostly LS - cream to lt tan; occasional shales; grey to lt green, soft; silty micaceous in some, few dark colored, wasties red in part
3210	Sample mostly LS; as above; questionable sample - should be Douglas shale section; few pcs shale resemble Douglas; however sample remains 80% LS
3220	SH - lt greens & greys; soft to st firm in some; few pcs soft & musty, silty shales in most
3230	
3240	SH - lt grey to green, mostly silty; firm to soft in some; occasional micaceous appearance; few pcs musty
3250	SH - as above; abundant lt grey, soft & musty
3260	SH
3270	SH
3280	
3290	
3300	LS - tan to brown; fine to micro xln, dense, loss in part
3310	SH - grey to green; mottled in some; mostly firm, silty
3320	No sample caught; sample hand ran off by driller after 3rd warning on catching samples on time
3330	LS - white to cream; fine xln, loss in most; chalky in part, few pcs w/ ssg; v. faint odor; weak spotty dull yellow floor
3340	LS - white to cream; fine xln, loss (colitic) few pcs w/ re-xln porosity, ssg & ssgs in tray; increase on break; faint to weak odor; spotty yellow floor. As above, but with more fine xln, some low quality, some dark saturated porosity and ssgs; some ssgs in tray; fine xln, some dark; faint to weak odor; increase in ssgs from above; fractured
3350	LS - cream to grey; fine xln, dense; loss in part, no show
3360	LS - cream to grey; fine xln; dense; increase in floss; weak odor; slight dead staining in part, no free oil shows
3370	SH - grey, silty, sl firm
3380	LS - cream to buff, fine to med xln, loss in part, few pcs visible fracturing w/ fair intraloss porosity, ssg in tray, increase on break, weak to fair odor
3390	LS - cream to lt grey, fine xln, loss w/ some intraloss porosity; occ residual oil w/ few v. light droplets free oil in tray; fair odor, spotted dull yellow floor
3400	SH - green/dark green grey & LS - fine xln; argillaceous w/ green hue; floss & transition to cream, fine xln, loss w/ poor visible porosity
3410	LS - cream to buff, fine to med xln; abundant fossiliferous w/ some intraloss & re-xln dev; sl. Staining in some pieces; fair amount of green shales present in tray
3420	LS - cream to tan, some brown, fine to micro xln in some w/ occ cherty; floss in most w/ poor intraloss porosity, occasional staining, scattered chalky & looks shales remain - overall dense & poorly dev porosity, no odor
3430	LS - cream, mostly fine xln w/ occasional floss; chalky in some; overall dense w/ poor visible porosity, no odor, nsb
3440	LS - cream to lt grey, fine xln, chalky in part w/ poor visible porosity; dense, no shows
3450	LS - cream, fine xln w/ some visible fracturing, argillonic staining in some; chalky & floss in parts; overall dense, no odor, nsb to lt S - cream, fine xln w/ some visible fracturing; odd to oom floss w/ poor intraloss porosity; weak to fair show free oil in tray; increase on break; fair odor; no gas kick - LS - as above; slight stain; soft on break w/ residual remaining in pore spaces
3460	LS - cream to lt tan, many pcs w/ fractured porosity & heavy residual oil staining; weak odor - LS - white to cream; fine to micro xln; colitic in many; well cemented w/ poor intraloss porosity; staining in some pcs w/ v. ssg free oil & residual staining in most; weak to fair odor - LS - white to cream, as above; slight increase in porosity w/ some ood-oom porosity development in several pcs; fair to good show free oil; 20" unit gas kick
3470	LS - cream to tan, brown, fine to med xln, loss, few pcs SH - black, carb
3480	LS - cream to tan, brown, med xln, loss, some pcs w/ dissolution vugs (fines) moderate show free oil in tray & gas bubbles from rock; poor to fair overall porosity; moderate show & odor; LS - v. similar as above, few pcs blk sh, dark, carb - bleeds gas
3490	SH - dark grey, LS - cream/varicolored, med xln, argillaceous w/ heavy floss, oolitic & others; varicolored shales throughout
3500	LS - fine xln, fractured w/ argillonic staining throughout; about argillaceous LS, varicolored shales
3510	Conglomerate; cup washes red, LS to CH in part w/ some clean vitreous bed blocks of CH; few pcs cm ls w/ gels staining & rare drops free oil in fractures (2 pcs, posse cavings)
3520	Varicolored CH - trans to opaque; tan, yellow, orange, purple to brick red; vitreous, shaly & blocky, scattered cream colored argillaceous ls as above
3530	Varicolored shales; as above & interbedded ls & chert, varicolored & argillaceous LS
3540	SH - greenish grey, some mottled iron, few pcs w/ sandy nodules, rounded & poorly sorted inclusions, med grained & well rounded SH as above & dolomite limestones, white, med xln w/ fair visible porosity, v. frag in part w/ partial saturated stain; fair odor & occasional show free oil, moderate HCL residual staining, rare show free oil, fair odor in cup
3550	Very poor quality sample (a little bit of everything) SH - grey/green colored
3560	Very poor quality sample (a little bit of everything) SH - grey/green colored (low vis premix down)
3570	SH + grys, sandy in part; heavy clay matrix, CH - varicolored, yellow/beige, oolitic, vitreous, sharp & fresh
3580	Dol - cream to lt tan/grey, fine xln to sucrosic, dense; interbedded shales & chert in some; occasional pink stained grains in clay matrix
3590	Dol - cream to lt tan; lt grey, fine xln to sucrosic, dense, interbedded shales, w/ ss, fine grained, smooth pale green/gray & sandy in part
3600	Dol - cream to lt tan, mostly fine xln & sucrosic; few pcs w/ residual staining (J) pc coarse xln w/ v. ssgs, fair odor in cup
3610	Dol - cream to buff, fine xln sucrosic to med-coarse xln rhombic; moderate cup odor; several pcs w/ good visible intraloss porosity; fair to good show live gassy oil; instant cut
3620	Dol - cream to tan, mostly fine xln & sucrosic; few pcs w/ residual staining; fair odor in tray, most staining is dark, residual
3630	Dol - cream to buff, lt tan, fine xln sucrosic w/ transition to med-coarse xln, rhombic; scattered dark partial staining intraloss w/ strong buffer odor on break; clear/fine argillonic material on break w/ v. ssgs
3640	Dol as above, few pcs w/ oolitic bodies, sl. increase in odor; (2) pcs w/ bleeding oil (dark heavy, but live)
3650	AA - shows persist, odor remains
3660	Dol - cream to buff, fine to med xln, dense, fair odor
3670	Dol - cream to buff, fine to med xln, dense, few pcs oolitic



Eli J. Felts
on Location
9/3/2018 5 PM

Mud-Co
Depth: 3995'
Vis: 64
WT: 9.2
CH: 10.500
LCM: 2#

Mud-Co
Depth: 3665'
Vis: 42
WT: 10.2
CH: 10.000
LCM: 1#

Mud-Co
Depth: 3800'
Vis: 46
WT: 10.4
CH: 12.000
LCM: 1#

Loggers on Location
9/8/18 6 AM

Mud-Co
Depth: 3800'
Vis: 46
WT: 10.4
CH: 12.000
LCM: 1#

FTD 82687
4 AM 9/20/18