# COBALT ENERGY
OIL & NATURAL GAS

## GEOLOGIST'S REPORT
## DRILL TIME & SAMPLE LOG

COMPANY COBALT ENERGY, LLC
LEASE Shapland Trust 'A' #1-2
FIELD Wildcat
LOCATION 1255' FSL & 1412' FEL
SEC 2 TWSP 19S RGE 28W
COUNTY Lane STATE KS
CONTRACTOR Val Energy , Rig #7
SPUD 11/25/11 COMP 12/6/11
RTD 4700' LTD 4701'
MUD UP 3400' TYPE MUD Chemical
SAMPLES SAVED FROM 3700' to RTD
DRILLING TIME KEPT FROM 3700' TO RTD
SAMPLES EXAMINED FROM 3800' TO RTD
GEOLOGICAL SUPERVISION FROM 3930' to RTD
GEOLOGIST ON WELL Corey N. Baker

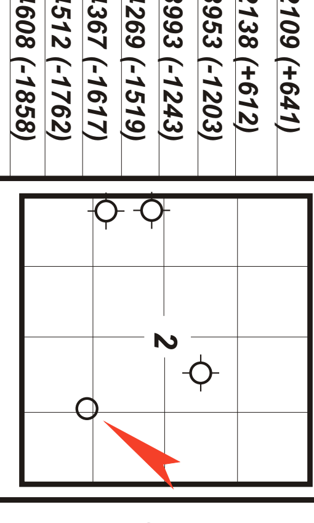
ELEVATIONS
KB 2750'
DF
GL 2740'
Measurements Are All From KB

CASING
Conductor NA
Surface 8 5/8" @ 220'
Production None

Electrical Surveys
Dual Induction
Compensated Neutron-Density

| FORMATION TOPS | ELECTRIC LOG | SAMPLE |
|---|---|---|
| Anhydrite | 2095 (+655) | 2109 (+641) |
| Base of Anhydrite | 2124 (+626) | 2138 (+612) |
| Heebner | 3953 (-1203) | 3953 (-1203) |
| Lansing | 3993 (-1243) | 3993 (-1243) |
| Stark | 4266 (-1516) | 4269 (-1519) |
| BKC | 4359 (-1609) | 4367 (-1617) |
| Cherokee Shale | 4507 (-1757) | 4512 (-1762) |
| Mississippian | 4600 (-1850) | 4608 (-1858) |
| RTD | 4701 (-1951) | 4700 (-1950) |

Section



REMARKS Based on sample descriptions, negative DST results and a review of all logs, the parties involved elected to plug the Shapland Trust 'A' #1-2 as a dry hole.

Respectfully Submitted,

Corey Baker
Petroleum Geologist

API #15-101-22320-00-00

## LEGEND

- Anhydrite
- Sandstone
- Limestone
- Shale
- Carb Sh
- Cherty LS
- Chert
- Dolomite

LITHOLOGY | DEPTH | DRILLING TIME IN MINUTES PER FOOT (Rate of Penetration Increases) | OIL SHOWS | SAMPLE DESCRIPTION | REMARKS

### SAMPLE DESCRIPTION

Limestone: grey, fine crystalline, dirty, mottled, slightly fossiliferous, dense.

Limestone: grey - light grey, fine crystalline, cherty, slightly foss., Slightly pyritic, dense
w/abundance of milky to tan slightly fossiliferous angular dense chert.

Limestone: grey, fine crystalline, slighlty fossiliferous, mottled, dirty, argellacious, chalky in part, dense.

Limestone: AA

Limestone: grey, fine crystalline, slighlty fossiliferous, mottled, chrty & chalky in part, dense.

Shale: Black, carb.

Shale: vari-colored

Limestone: tan, very fine crystalline, sucrosic in part, soft, slighlty fossiliferous, chalky, very poor intercrystalline porosity, no show.

Limestone: AA

Limestone: white - light grey, very fine to fine crystalline, slightly fossiliferous, cherty, chalky, dense.

Limestone: white -light grey, very fine to fine crystalline, slightly fossiliferous, chalky, poor intercrystalline porosity, no show.

Shale: multi-colored, soft, argillacious.

Limestone: tan - grey, fine crystalline, slightly fossiliferous, chalky, no show.

Limestone: tan - grey, fine crystalline, very fossiliferous, cherty, slightly chalky in part, dense.

Limestone: AA

Limestone: light grey, very fine crystalline, cherty, slightly chalky, dense.
W/abundant milky chert, sharp, angular, dense.

Shale: grey - black, soft.

Limestone: white - tan, fine crystalline, calcitic, fossiliferous, chalky, slightly pelletal, dense.

Limestone: white - light grey, very fine to fine crystalline, slighlty fossiliferous, cherty & chalky in part, dense.

Limestone: tan - light grey, medium crystalline, fossiliferous, oolitic, oomoldic, some dense, cherty oolitic, mostly fair to good oomoldic porosity, no show.

Limestone: white - light grey, very fine crystalline, slightly fossiliferous, cherty, dense.

Limestone: AA

Limestone: white - tan, fine crystalline, chalky, pelletal in part, poor intercrystalline porosity, no show.

Limestone: white - light grey, very fine crystalline, abundant secondary calcite, cherty in part, dense.

Shale: Black, carb.

Limestone: brown - grey, fine to medium crystalline, fossiliferous, mottled, slightly cherty, dense.

Limestone: white - light grey, very fine crystalline, fossiliferous, oolitic in very cherty, dense matrix.

Limestone: light grey, fine crystalline, slightly fossiliferous, chalky, few pieces with poor oolicastic porosity, no show.

Limestone: light grey - grey, fine crystalline, very cherty, fossiliferous in part, blocky, dense.
Shale: grey - black, waxy.

Limestone: grey, very fine crystalline, fossiliferous in part, cherty, blocky, dense.

Limestone: white - light grey, fine crystalline, mealy, chalky, slightly fossiliferous, dense.

Limestone: light grey - grey, very fine crystalline, slightly fossiliferous, cherty & chalky in part, abundant dark grey, sharp, angular, fresh chert.

Limestone: light grey, very fine crystalline, fossiliferous, chalky in part, cherty, dense.

Limestone: white to light grey, medium crystalline, fossiliferous, ool. & oom., Chalky with occassional pyritic inclusions, fair to scattered good oomoldic porosity, no show, no fluorescence, no stain, poor flash odor.

Limestone: white to light grey, very fine crystalline, slightly fossiliferous, slightly chlky, dense.

Shale: Black, carb.

Limestone: tan, fine to scattered medium crystalline, fossiliferous in part, poor pinpoint & scattered fair vugular porosity, poor pinpoint show of free oil, poor show of free oil on break, good patchy light brown stain, few pieces with dark saturation, poor to fair cut, fair yellow-green flourescence, good odor.

Limestone: white to light grey, very fine crystalline, slightly fossiliferous, chlky, dense.

Shale: grey-black

Shale: multi-colored, arg.

Limestone: grey - dark grey, fine crystalline, mealy, cherty, some recrystalized calcite cement, occasional fossils, no visible porosity.

Limestone: white - light grey, very fine - fine crystalline, much recrystalized calcite, chalky, some with mealy texture, no visible por.

Limestone: white to light grey, very fine to fine crystalline, chalky, dense, 3 pieces in tray were tan with trace to poor pinpoint porosity, poor pinpoint beads of oil on break, light brown even saturated stain, yellow-green fluorescence, good odor.

Limestone: white to light grey, very fine to fine crystalline, chalky, some cherty, no visible porosity, no show.

Limestone: grey, fine to scattered medium crystalline, mealy, foss. In part, chalky in part, dense.
Shale, multi-colored, arg.

Limestone: cream, very fine to fine crystalline, chalky, semi-sucrosic, fossiliferous, trace pinpoint porosity, no show.

Limestone: cream, white, fine crystalline, slighlty fossiliferous, chalky, mealy, 2 pieces in tray cream - brown, fine to medium crystalline, foss., Ool in part, poor intercrystalline w/trace of poor vugular por, Trace black beads of oil on break, poor cut, yellow-green flourescence, dark brown patchy to saturated stain, fair odor.

Limestone: white - grey, fine crystalline, mostly cherty, chalky, no visible porosity, no show.

Shale: vari-colored, arg.

Limestone: white - light grey, very fine crystalline, occ fossils, cherty, chalky in part, dense. 1 piece in tray that is blocky with trace to poor scattered pinpoint & intercrystalline porosity, scattered poor pinpoint shows of slowly bleeding oil, occasional gas bubble, poor cut, light brown patchy stain, no fluorescence, fair odor. From above?

Grey-green shales & very arg. Limestone, grey, fine crystalline, soft

Limestone: white to light grey, very fine crystalline, cherty, part chalky, dense.
AA

Limestone: flood, white to light grey, very fine to fine crystalline, slightly fossiliferous, cherty, some chalky, dense.

Grey-green shales, arg.

Limestone: white - light grey, very fine crystalline, cherty, chalky in part, several pieces with trace intercrystalline & very scattered small pinpoint porosity, trace of fract shows of free oil, poor cut, dull yellow fluorescence, very light brown patchy edge stain, fair odor.

Shale: grey-black.

Limestone: cream, very fine crystalline, fossiliferous in part, cherty & chalky, dense.

Shale: Black, carb, soft.

Shale: grey-green, arg.

Limestone: light - dark grey, fine crystalline, blocky, cherty & chalky in part, dense.

Limestone: white - light grey, very fine crystalline, slightly fossiliferous in cherty, blocky matrix, some recrystallized calcite filled fractures, dense.

Shale: Black, carb.

Limestone: white - cream, very fine crystalline, very cherty, very oolitic, tight calcite cement, sharp, angular, dense. A few pieces with trace to poor interparticle porosity, gas bubbles, patchy dull fluorescence, trace cut, 1 piece with poor show of free oil on break, medium brn saturated stain with fair odor, otherwise very spotty light brown stain, questionable odor.

Shale: grey-black.
Limestone: white - light grey, very fine crystalline, some blocky, chalky & cherty in part, dense.

Limestone: white - light grey, very fine to fine crystalline, chalky, soft in part, few pieces with black, flaky dead oil along fracture lines, flash odor when broken apart, very light brown patchy surface stain.

Limestone: grey, very fine crystalline, cherty, hard, dense.

Shales: grey - black.

Limestone: AA, slightly fossiliferous.

Shales: AA.

Limestones and shales AA.

Abundant shales, grey - black, waxy.

AA, w/SS, salt and pepper frosted, very fine grained, well sorted, some pieces tight, some friable, pinpoint flecks of gilsonite, occasionally pyritic, poor pinpoint porosity, trace pinpoint dull yellow fluorescence, flash odor.

Dolomitic Limestone, white - cream, fine to scattered medium crystalline sucrosic in part, poor pinpoint with some scattered poor vugular porosity, no show, no fluorescence, no odor.

Dolomitic Limestone, AA with occasional pyritic inclusions.

AA, w/abundant vari-colored shales.

AA, becoming less dolomitic, more dense, blocky.

AA

AA, a few pieces with pinpoint trace of black, flaky, dead edge stain.

AA, becoming glauconitic
w/Chert, milky - smokey, fresh, angular, blocky, dense.

AA, increase in Chert.

Mostly Chert, milky white, fresh, angular, blocky, dense

### REMARKS

Anhydrite
2109 (+641)

Base of Anhydrite
2138 (+612)

12/1/2011, 12:32pm
Geologist on location
@ 3932'

Heebner
3953 (-1203)

Counter clicked off 4 extra feet
Made adjustment

Lansing
3993 (-1243)

Mud-Check
Vis: 46
Weight: 9.2
LCM: 3#

Mud-Check
Vis: 52
Weight: 9.2
LCM: 2#

CFS @ 4210'

CFS @ 4240'

CFS @ 4259'

Stark
4269 (-1519)

Mud-Co
Vis: 48
Weight: 9.3
LCM: 3#

7:00am, 12/2/2011

CFS @ 4285'

DST #1 (4268-4285') 'B' Zone
30-60-30-30
1st OP: 1" blow, built to 1½" in 30 minutes.
*Tool was plugging.
2nd OP: No blow, flushed tool, blow surged then died, no help.

Rec: 31' mud

SIP: 933/1033#
IFP: 12/19#
FFP: 40/17#

*Plugging due to upper 10' of fill on bottom.

CFS @ 4324'

Pipe Strap
1.10' Long to Board

7:00am, 12/3/2011

BKC
4367 (-1617)

CFS @ 4410'

DST #2 (4312-4482') 'C' Zone - Pawnee
30-60-40-90
1st OP: 1/4" blow, died in 15 minutes.
2nd OP: Surface blow, built to 4".

Rec: 31' GIP
31' Oil Cut Mud (10% o, 90% m)

IFP: 22-264
FFP: 22-304
SIP: 415-6240

Mud-Check
Vis: 53
Weight: 9.3
LCM: 2#

CFS @ 4482'

7:00am, 12/4/2011

Cherokee Shale
4512 (-1762)

Mud-Check
Vis: 53
Weight: 9.3
LCM: 2#

Mississippian
4608 (-1858)

CFS @ 4616'

CFS @ 4622'

RTD
4700 (-1950)

DRILLING TIME IN MINUTES PER FOOT (Rate of Penetration Increases) | OIL SHOWS | SAMPLE DESCRIPTION | REMARKS

Company COBALT ENERGY, LLC Elevation 2750' KB
Lease Shapland Trust 'A' #1-2
Location 1255' FSL & 1412' FEL SEC. 2 TWP. 19S RGE. 28W
County Lane State Kansas