# BERENERGY CORPORATION

# H. J. ROETZEL 'A' #26

## SE NE SEC 2 T20S R11W

# BARTON COUNTY, KANSAS

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#### **SUMMARY**

Berenergy Corporation completed the vertical H. J. Roetzel 'A' #26 as an oil well in the Cambrian-Ordovician Arbuckle Group where TD was reached at 3260' MD. Onsite geologic services started after surface casing was set at 1037' MD, and included examination of drill cuttings and Pason total gas/chromatography. Drill-cutting samples were analyzed at 30' intervals from 1370' - 1490' and 2170' - 2300' MD to look at the top of the Chase Group and at the Tarkio Limestone, respectively. 10-ft samples were analyzed from 2590' MD to TD. Openhole logs were run from the base of the surface casing to TD, and included DIL-GR-SP-CNL-CDL-CAL-MLL.

#### Drilling

After 8 5/8" surface casing was set at 1037' MD, drilling with fresh water continued to 2520' MD. The remainder of the hole was drilled with water-based mud. At 2285' MD, the surface casing had risen ~2 ft and drilling stopped. Orders to TOOH were given so the excess pipe could be cut off. After open-hole logs were run, it became evident that the bottom joint of surface casing had fallen to 1208' MD. Besides abundant iron filings in the cuttings, no further problems occurred from this incident. DST 1 tested Lansing-Kansas City zones C, D, and E in interval 3016' - 3060' MD. Total depth was reached at 3260' MD, where DST 2 of interval 3250' - 3260' MD was run at the top of the Arbuckle. Lastly, 5 1/2" production casing was set at 3250' MD, allowing for 10 ft of open-hole production from the top of the Arbuckle.

#### **Tarkio Limestone**

No significant gas shows were noted while drilling the Tarkio Limestone. No hydrocarbons were observed.

#### **Topeka Limestone**

Total gas increased from a background of 20 units to a peak of 347 units when the bit entered the top of the Topeka Limestone. No hydrocarbon shows were observed.

#### **Lansing-Kansas City Groups**

Zones A through L were documented at this site. Porosities and shows varied from zone to zone depending on the type of limestone present, ranging from the most common oil-stained vug-type porosity to no-show tight micrite. Total gas averaged 150 to 200 units, with peak formation gas at 546 units and trip gas at 1253 units. DST 1 tested zones C through E and yielded 1 ft of oil on top of 1299 ft of gas-cut muddy water. Solvent tests of drill cuttings yielded a range of results from slow streaming pale yellow cuts to fast streaming blue-white cuts with white halos.

#### **Arbuckle Group**

The Arbuckle dolomite was the primary target for the Roetzel 'A' #26 well. Drill cuttings commonly exhibited oil-stained visible porosity and a strong petroliferous odor. Total gas was between 100 and 150 units in the top 9 ft of dolomite. Solvent tests of cuttings commonly yielded instant bright white-blue fast streaming cuts with white halos. DST 2 recovered 1698 ft of water and 932 ft of oil.

Ryan Thress Consulting Wellsite Geologist October 2013

#### WELL DATA

OPERATOR: Berenergy Corporation

WELL NAME: H. J. Roetzel 'A'#26

SURFACE LOCATION: 2530' FNL & 775' FEL

SE NE Sec. 2, T20S, R11W Barton County, Kansas

LAT/LONG: 38.2972944° N, 98.4820429° W

ELEVATIONS: GL 1745' KB 1756'

API NUMBER: 15-009-25867

ROAD DIRECTIONS: From Great Bend, KS, travel east 16 miles on KS-96; turn right on 2<sup>nd</sup> Rd

and travel 4 miles to Ave Q and turn right; travel 1 mile on Ave Q then

turn right on SE 160<sup>th</sup> Ave and travel 1 mile; well on the left.

SURFACE CASING: 8 5/8" set at 1037' MD

PRODUCTION CASING: 5 1/2" set at 3250' MD

SPUD DATE: Morning of September 24, 2013

DRILLING COMPLETED: 02:00 September 30, 2013

TOTAL DEPTH: 3260' MD

LAST FORMATION: Arbuckle Group

WELL STATUS: Open-hole completion in the upper 9' of the Arbuckle Group

OPERATOR REPS: Energy Operating Company Inc.

David Braden – Engineer Dan Hall – Engineer

WELLSITE SUPERVISION: L.E. Ed Buchanan

# FORMATION TOPS--VERTICAL HOLE

Formation KB	Wireline Top MD	Datum 1756.0	Sample Drilled Thickness (ft)
KB	MD	1730.0	Tillekiless (It)
Pennsylvanian	_		
Tarkio	2263	-507	21
Topeka	2594	-838	38
Heebner	2846	-1090	16
Toronto	2862	-1106	19
Douglas	2881	-1125	89
Brown-Lime	2970	-1214	4
Lansing-Kansas City Group	_		
Zone A	2990	-1234	16
Zone B	3006	-1250	12
Zone C	3018	-1262	14
Zone D	3032	-1276	24
Zone E	3056	-1300	7
Zone F	3063	-1307	15
Zone G	3078	-1322	56
Zone H	3134	-1378	16
Zone I	3150	-1394	17
Zone J	3167	-1411	32
Zone K	3199	-1443	36
Zone L	3235	-1479	16
~			
Cambrian-Ordovician	_		
Arbuckle Group	3251	-1495	9
Total Depth Driller	3260	-1504	

# Geologic ages from:

Moore et al. (1951); *The Kansas rock column* (No. 89-93). University of Kansas Publications.

The following descriptions are interpretive. Derrick hands collected lagged 10-ft samples over predefined intervals, along with spot samples to constrain select tops and when drilling activities dictated. Samples were reviewed with the aid of wireline logging tools from 1037' MD to a TD of 3260' MD, and wireline logs were adjusted to rig depths.

Samples were inspected using an Olympus SZ61 stereoscope. Grain sizes were determined by use of an AmStrat grain size comparator. Colors of wet cuttings were determined from the Rock-Color Chart distributed by the Geological Society of America. 10% HCl was used in acid reaction tests, and Alizarin red was used to aid with carbonate species determination.

Selected samples were examined for oil fluorescence with a US GeoSupply brand fluoroscope. Cut tests for liquid hydrocarbons were performed with solvent on wet cuttings. All samples collected were drilled with fresh water-based mud and sieved and rinsed in fresh water.

Significant gas shows, as determined with a Pason Gas Analyzer (TG; C1-C4), are described in each formation overview. The reader should refer to the accompanying mudlogs for the lagged record of all gas shows.

Surface Casing: 8 5/8" set at 1037' KB Production Casing 5 1/2" set at 3250' KB

Total Depth: 3260' MD

WELLINGTON FM/ CHASE GROUP SAMPLE TOP: N/A' LOG: N/A' TVD: N/A' DATUM: N/A'

Overview:

Note: Samples associated with depths 1370' MD - 1490' MD on the log were taken at 30ft intervals and due to lapses in communication were not lagged, and therefore probably represent the base of the Wellington Formation of the Sumner Group instead of the top of the Chase Group. Gray, silty shale predominates but there are also beds of green shale and deposits of dolomite, limestone, gypsum, and anhydrite. No significant gas shows were observed.

1370' - 1490'

Predominately **SHALE**: light olive gray to greenish gray, soft to firm, occasional platy cuttings, some zones very calcareous, others non-calcareous without significant difference in appearance. Rare pyrite nodules, rare mollusk fossils, no fluorescence, no cut; locally **SILTSTONE**: medium gray to medium dark gray, firm, blocky cuttings, significant very fine sand, calcareous; with stringers of **LIMY DOLOMITE**: Light gray to medium gray, firm, sub-rounded cuttings, microcrystalline, effervescent in HCl, slight mottled stain in Alizarin, weak, diffuse cloudy dull yellow cut, patchy halo; and **LIMESTONE**: bluish white to light greenish gray, locally very pale orange, firm, platy cuttings, fossiliferous, locally sparry, very effervescent in HCl, no insoluble residue. No fluorescence, no cut, no shows; and **ANHYDRITE**: white to clear, locally dark yellowish brown, semi translucent, firm, rounded cuttings, no reaction in HCl, produces selenite crystals when reprecipitated; **GYPSUM**: selenite crystals <3mm, pearly white to transluscent, fibrous stucture, soft but brittle. Likely rehydrated and recrystalized anhydrite in fresh-water drilling fluid.

RICHARDSON GROUP SAMPLE TOP: N/A' LOG: N/A' TVD: N/A' DATUM: N/A'

Overview:

The Richardson Subgroup comprises the youngest Pennsylvanian rocks of the Wabaunsee Group and includes strata from the top of the Brownville limestone to the top of the Tarkio limestone. Samples were caught at the base of the Richardson Subgroup to identify the transition into the Tarkio limestone. Predominantly shale with silty lenses and limestone stringers. No significant gas or oil shows were

observed in this section.

2170' - 2263'

Predominantly alternating species of SHALE: medium gray (N5) to meduim dark gray (N4), very soft, platy to sub rounded, no to slight reaction in HCl; with SHALE: dark reddish brown (10R 3/4) to very dusky red (10R 2/2), platy, soft, slight to moderate reaction to HCl, locally grity appearance; and also with SHALE: dark greenish gray (5GY 4/1), soft, platy, moderate reaction to HCl, light patchy oil staining; local lenses of SILTSTONE: medium gray (N5) to meduim dark gray (N4), sub blocky, soft, grity with local areas of high clay content, moderately reacts to HCl; with stringers of **LIMESTONE**: very light gray (N8) to light gray (N7), platy to sub blocky, firm to moderately hard, brittle, very reactive to HCl.

TARKIO LS SAMPLE TOP: 2263' LOG: 2263' TVD: 2263' DATUM: -507'

Overview: The Tarkio limestone is youngest member of the Nemaha Subgroup of the

Wabaunsee Group. It is gray to weathered brown and commonly consists of two massive beds separated by a shaly zone. Fossils are very common, especially fusulinids. Algal remains are present in the upper bed. No significant gas or oil

shows were observed in this section.

2263' - 2285' LIMESTONE: white (N9) to very light gray (N8), sub-blocky, soft to firm, reacts

very strongly to HCl, very fossiliferous and local algal remains, no fluorescence, no

cut.

SHAWNEE GROUP SAMPLE TOP: 2594' LOG: 2594' TVD: 2594' DATUM: -838'

Overview: The Shawnee group is part of the Upper Pennsylvanian Series and comprises four

limestone formations and three shale formations. Thick limestones and a distinctive type of cyclic sedimentation are characteristics that distinguish these rocks from those of neighboring groups. Total Gas increased from a background of 20 units to a peak of 347 units when the bit entered the top of the Topeka Limestone. No

hydrocarbon shows were observed.

2594' - 2676' TOPEKA LIMESTONE; LIMESTONE: mottled white (N9) to light gray (N7) to

med. dark gray (N4), crystalline and algal limestone common, blocky, firm to very

hard, very fossiliferous, vigorous reaction to HCl, locally limestome occurs as a white (N9) grainstone, firm to hard, smells strongly of sulfur while reacting with HCl; and **LIMESTONE**: white (N9) to grayish orange (10YR 7/4), hard, sub blocky cuttings, fossiliferous, subhedral pyrite, rare vugs, locally a grainstone but more commonly dense, pale yellow fluorescence, slow diffuse pale yellow cut, pale yellow halo; interbedded with **SHALE**: light gray (N6) to med. dark gray (N4) to grayish black (N2), platy to sub blocky, very soft to moderately firm, locally micaceous, no reaction to a moderately strong reaction to HCl, pyrite nodules common.

	common.
2676' – 2701'	Zone of <b>SHALE</b> : medium gray (N5) to brownish gray (5YR 4/1), platy, smooth, calcareous, trace pale yellow fluorescence; and <b>SHALE</b> : dark reddish brown (10R 3/4) to very dusky red (10R 2/2), platy, soft, slight to moderate reaction to HCl, locally gritty appearance.
2701' – 2752'	Second limestone formation; <b>LIMESTONE</b> : moderate yellowish brown (10YR 5/4), firm, sub blocky cuttings, various textures, hacky appearance, unidentifiable fossil debris and possible oolites, locally sparry, no visible porosity, argillaceous to very argillaceous, very dull yellow fluorescence, yellow diffuse cloudy cut.

- 2752' 2756' Zone of **SHALE**: medium gray (N5) to medium dark gray (N4), firm, platy cuttings, slightly calcareous, no fluorescence.
- 2756' 2803' Third limestone formation; **LIMESTONE**: very pale orange (10YR 8/2), sub platy cuttings, very effervescent in HCl with minimal residue, micrite, tight, possible remnant finestral porosity with calcite fill, pale yellow with splotches of yellow mineral fluorescence, pale yellow diffuse cut.
- Zone of **SHALE**: medium gray (N5) to medium dark gray (N4), firm, platy cuttings, slightly calcareous, no fluorescence; and **SHALE**: dark reddish brown (10R 3/4) to very dusky red (10R 2/2), platy, soft, slight to moderate reaction to HCl, locally gritty appearance.
- 2807' 2846' OREAD LIMESTONE: fourth limestone formation of the Shawnee Group; **LIMESTONE**: Light brownish gray (5YR 6/1), very hard, blocky cuttings, micrite, tight, pale dull yellow fluorescence.
- 2846' 2862' HEEBNER SHALE MEMBER of the OREAD LS: **SHALE**: med dark gray (N4) to dark gray (N3), platy and elongated, firm and brittle, locally very silty, strong reaction to HCl; also locally a very dusky red (10R 2/2), higher silt content, soft, slightly calcareous.
- 2862' 2881' TORONTO LIMESTONE MEMBER of the OREAD LS: **LIMESTONE**: light brownish gray (5YR 6/1) to white (N9), firm, micrite, local intraclasts, tight, pale yellow fluorescence, pale yellow cut.

DOUGLAS GROUP SAMPLE TOP: 2881' LOG: 2881' TVD: 2881' DATUM: -1125'

Overview: The Douglas group underlies the Shawnee group conformably. The Douglas Group

consists primarily of clastic rocks, the most prominent being shale. Limestones are quantitatively of minor importance. No significant oil or gas shows, though

background Total Gas through the Douglas Group was on average 100 units.

2881' – 2970' Predominantly **SHALE**: medium gray (N5) to medium dark gray (N4), firm, platy

cuttings, slightly calcareous, no fluorescence; and **SHALE**: moderate brown (5YR 3/4), moderately soft, sub blocky cuttings, gritty, silty, calcareous, no fluorescence; with minor stringers of **LIMESTONE**: light brownish gray (5YR 6/1) to white (N9), firm, micrite, local intraclasts, tight, pale yellow fluorescence, pale yellow cut.

BROWN LIME SAMPLE TOP: 2970' LOG: 2970' TVD: 2970' DATUM: -1214'

Overview: Easily recognizable marker bed right above the Lansing-Kansas City Group. The

limestone is commonly dark brown and very hard, easily seen on engineering data. Included in this section is the shale zone that separates the BROWN LIME and the LANSING-KANSAS CITY GROUP. No significant gas or oil shows were observed

in this section.

2970' – 2974' LIMESTONE: dark yellowish brown (10YR 4/2), blocky, angular, very hard,

dense, crystalline, locally fossiliferous, reacts vigorously to HCl.

2974' – 2990' SHALE: medium gray (N5) to medium dark gray (N4), firm, platy cuttings, slightly

calcareous, no fluorescence.

LANSING-KANSAS SAMPLE TOP: 2990' LOG: 2990' TVD: 2990' DATUM: -1234' CITY GROUP

Overview: The Lansing-Kansas City Group contains 12 limestone formations (zones 'A'

through 'L') alternating with marine shale units and has a thickness of about 260 feet in this location. Many of the limestones are cross-bedded, oolitic, and algal. Porosities and shows varied from zone to zone depending on the type of limestone present, ranging from the most common oil-stained vug-type porosity to no-show tight micrite. Total Gas averaged between 150-200 units, with the peak formation gas at 546 units and trip gas at 1253 units. The first DST tested zones 'C' through 'E' and yielded 1' of oil on top of 1299' of gas-cut muddy water. Solvent tests also yielded a range of results from slow streaming pale yellow cuts to fast streaming

blue-white cuts with white halos.

2990' – 3006' Zone A; **LIMESTONE**: moderate yellowish brown (10YR 5/4), locally very pale

3150' - 3167'

#### LITHOLOGY AND SHOWS

	vugs and fenestral porosity, oil staining, rare ammonite fossils, slow streaming to cloudy light blue cut, light blue halo; <b>SHALE</b> : moderate brown (5YR 3/4), moderately firm, platy to sub platy cuttings, generally smooth, locally gritty/silty, calcareous.
3006' – 3018'	Zone B; <b>LIMESTONE</b> : white (N9) to grayish orange (10YR 7/4), hard, sub blocky cuttings, fossiliferous, subhedral pyrite, rare vugs, locally a grainstone but more commonly dense, local oil staining, pale yellow to yellow fluorescence; <b>SHALE</b> : medium gray (N5), firm platy chips and bit scrapings, locally silty, non-calcareous, silty chips remain intact in H2O, no fluorescence.
3018' – 3032'	Zone C; <b>LIMESTONE</b> : light brownish gray (5YR 6/1), firm, sub platy cuttings, varied textures, fossiliferous, well preserved ammonite, slight porosity and oil staining, yellow fluorescence, light blue streaming cut, patchy halo; <b>SHALE</b> : med. dark gray (N4) to black (N1), mod firm, locally calcareous, common pyrite, common thin (< 1mm) black lamina, no fluorescence.
3032' – 3056'	Zone D; <b>LIMESTONE</b> : white (N9) to mod yellowish brown (10YR 5/4), sub blocky to platy, firm, micrite, commonly fossiliferous, locally soft and chalky, trace fenestral porosity, common light oil staining, pale yellow fluorescence, fast streaming to cloudy white blue cut, patchy halo.
3056' – 3063'	Zone E; <b>LIMESTONE</b> : white (N9), boundstone or biolithite with inter- and intra- clastic porosity stained with oil residue, calcareous, slow streaming blue cut, faint halo; and <b>LIMESTONE</b> : light brownish gray (5YR 6/1), very firm, micrite, no visible porosity, locally chalky and moderately firm, locally oil stained.
3063' – 3078'	Zone F; <b>LIMESTONE</b> : very pale orange (10YR 8/2), occurs as ~1mm sub-rounded chips, firm to hard, locally fossiliferous - fossils mainly occur as loose crinoid hash, reacts vigorously to HCl, occasional chip has fast streaming blue cut.
3078' – 3134'	Zone G; A thick sequence of <b>LIMESTONE</b> : yellowish gray (5Y 8/1), blocky, very hard, tight, fenestral porosity in-filled with translucent calcite cement, common vug porosity, fossiliferous, occasional oil staining, pale yellow fluorescence, streaming bright yellow cut; and <b>LIMESTONE</b> : mottled yellowish gray (5Y 8/1) and greenish gray (5G 6/1) to med bluish gray (5B 5/1) packstone, soft to moderately firm, sub angular chips; and <b>LIMESTONE</b> : mod yellowish brown (10YR 5/4), locally very pale orange (10YR 8/2), firm, sub blocky cuttings, micrite but also commonly peloidal, local vug porosity and fenestral porosity, oil staining inside of vugs, rare fossils, instant fast streaming bright white blue cut, bright yellow halo.
3134' – 3150'	Zone H; <b>LIMESTONE</b> : yellowish gray (5Y 8/1), micrite, very hard, sub blocky, local vug porosity and stylolites, vugs and stylolites are oil stained, locally fossiliferous, instant fast streaming blue white cut, dull yellow halo; and <b>SHALE</b> : med light gray (N6) to dark greenish gray (5GY 4/1) to dark reddish brown (10R 3/4), mod firm, platy to sub blocky cuttings, generally smooth, locally gritty/silty, locally calcareous.

Zone I; **LIMESTONE**: white (N9) to med light gray (N6) to mod yellowish brown (10YR 5/4), micrite, locally vuggy with oil stains, common fenestral porosity, also

oil stained; grainstone to boundstone, very fossiliferous, light intraparticle oil staining, dull yellow fluorescence, slow streaming dull yellow green cut.

3167' - 3199'

Zone J; **LIMESTONE**: white (N9) to light gray (N7), occurs as ~1mm sub-rounded grains/chips and ~5mm blocky chips, firm to hard, locally fossiliferous - fossils mainly occur as loose crinoid hash, reacts vigorously to HCl; also fossiliferous grainstone, rare pyrite, dull yellow fluorescence, slow streaming blue white cut; and **SHALE**: med dark gray (N4) to a dark greenish gray (5G 4/1), platy to sub blocky, soft to mod firm, locally micaceous, locally calcareous.

3199' - 3235'

Zone K; **LIMESTONE**: mottled pale yellowish brown (10YR 6/2) with very light gray (N8), crystalline, firm to hard, blocky, locally fossiliferous, locally vuggy with oil residue, rare intercrystal porosity, instant fast streaming to cloudy white cut; and **LIMESTONE**: white (N9) to med light gray (N6) to mod yellowish brown (10YR 5/4), micrite, hard, blocky, locally vuggy, no oil stains, locally fossiliferous, weak slow streaming pale yellow cut; and **SHALE**: grayish black (N2) to a dark greenish gray (5G 4/1), platy, soft to mod firm, locally micaceous, locally silty, calcareous, no fluorescence, no cut.

3235' - 3251'

Zone L; **LIMESTONE**: white (N9) to med light gray (N6) to moderate yellowish brown (10YR 5/4), micrite, locally crystalline, hard, locally soft and chalky, blocky, locally vuggy, no oil stains, locally fossiliferous, no fluorescence, no cut; and **LIMESTONE**: very pale orange (10YR 8/2) to pale yellowish brown (10YR 6/2), blocky, firm to hard, though can be soft, algal laminations visible, fossiliferous, no oil staining, patchy dull yellow fluorescence, no cut; and **SHALE**: med dark gray (N4) to a dark greenish gray (5G 4/1), platy to sub blocky, long thin blades common, soft to mod firm, locally micaceous, locally calcareous.

ARBUCKLE GROUP

SAMPLE TOP: 3251' LOG: 3251' TVD: 3251' DATUM: -1495'

Overview:

The Arbuckle Dolomite (Cambrian-Ordovician), composed mostly of light gray to white, vuggy dolomite, was the primary target for the Roetzel 'A' #26 well. Drill cuttings commonly had oil-stained, visible porosity and a strong petroliferous odor. Total Gas was between 100-150 units in the top 9' of the dolomite. Solvent tests often yielded instant bright white-blue fast streaming cuts with white halos. The second DST resulted in 932' of oil.

3251' - 3260' TD

**DOLOMITE**: white (N9) to buff, crystalline, sucrosic texture common, visible porosity, hard, vugs common, no stain in Alizarin Red, slow mild reaction in HCl, strong petroliferous odor, yellow fluorescence, instant bright white blue fast streaming cut and milky cloud, white halo.

#### **SERVICES**

CONTRACTOR: Val Energy Rig 2 Wichita, KS SUPERVISION: L.E. Ed Buchanan 661-204-2565 WELLSITE GEOLOGY: T. M. McCoy & Co., Inc. Wilson, WY Ryan J. Thress 307-733-4332 RIG INSTRUMENTATION: Pason Systems Golden, CO 877-255-3158 WIRELINE SERVICES: Pioneer Energy Services Hays, KS Dale Legleiter 785-625-3858 Trilobite Testing, Inc. DRILLSTEM TESTING: Hays, KS 785-625-4778 Andy Carriera PRODUCTION CASING: Murray Casing Crews Inc. Great Bend, KS 620-793-7587 CEMENT: Allied Oil & Gas Services Great Bend, KS 620-793-3600

Day	Report Date	Depth	Ft Cut	Start	End	Hrs	Reported Activity (previous 24 hr leading to 6am report time)
0	9/24	0	0	07:00 21:00 23:30	21:00 23:30 06:00	00:00 12:00 12:00	Mobe in rig & rig up equipment. Welder fabricate sample box for Pason gas detector.  Drill rat & mouse holes  Dry watch rig  Note: Will spud 12.25" surface hole tomorrow morning 9/24/2013
1	9/25	1037	1037	06:00 06:30 08:15 15:15 15:30 04:00 04:30	06:30 08:15 15:15 15:30 04:00 04:30 06:00	12:00 18:00 00:00 06:00 12:00 12:00 12:00	Dry watch rig Finish rig up to spud 12.25" hole Drlg 12.25" surface hole F/surface T/420' Service rig Drlg 12.25" surface hole F/420' T/1037' Circ hole clean Wipe hole to bit
2	9/26	1037	0	06:00 06:45 07:15 08:30 12:15	06:45 07:15 08:30 12:15 13:00	18:00 12:00 06:00 18:00 18:00	Wipe hole RIH tagged at 1022' (15' fill) Circ hole clean Drop survey tool . Pooh 3rd party safety meeting with rig crew & casing crew. R/U power tongs. Run 24 jts 24# 1040.27' J-55 ST&C 8rd 8 5/8" csg. Shoe set @ 1037', float collar @ 992' Install 8 5/8" circ swedge & circ 12' fill to bottom at 1037'. Reciprocate 20' while circ casing clean. R/D casing tongs. Hold 3rd party safety meeting with rig crew & cementers. Install 8 5/8" cement head Test lines to 2000psi. Pump 5bbls fresh water ahead followed by 591/ft3 or 105bbls or 300sx of Lead Cmt Yield=1.97ft3/sx Density=12.5ppg Water=10.7gal/sx followed by 234/ft3 or 41.6bbls or 200sx of Tail Cmt Yield=1.17ft3/sx Water=6.4gal/sx Density=14.8ppg. Drop wiper plug displace with 63.43bbls fresh water. Bump plug with 800psi with 300psi prior.
							Hold 800 psi for 5 minutes, release pressure, float held (ok) CIP @ 14:15hrs 9/25/2013 Received 23bbls good cmt returns to surface

Day	Report Date	Depth	Ft Cut	Start	End	Hrs	Reported Activity (previous 24 hr leading to 6am report time)
							Monitor cmt for fall back, no fall back (ok) R/D cementers
				14:15	02:15	00:00	Wait on cement
				02:15	05:15	00:00	Break off landing joint, Install Larkin wellhead. N/U annular Bop. Welder cut off 10" top of flow nipple
				05:15	06:00	18:00	Make up bit #2 7.875" tricone bit, BHA & RIH
3	9/27	2022	985	06:00	06:30	12:00	RIH tagged cement at 986'
				06:30	07:00	12:00	Service Rig
				07:00	07:45	18:00	Calibrate Pason recorder equipment
				07:45	08:45	00:00	Drlg out cement & shoe F/986' to shoe @ 1037'. 51' / 1hr / 51 fph
				08:45	14:30	18:00	Drlg 7 7/8" hole F/1037' T/1390'. 353' / 5.75hrs / 61.39 fph
				14:30	14:45	06:00	Service Rig
				14:45	19:00	06:00	Drlg 7 7/8" hole F/1390' to 1585'. 195' / 4.25hrs / 45.88 fph
				19:00	20:00	00:00	Crown-a-matic bracket broke off, relaese brakes. Pooh 4 stands to 1359'. Weld on crown-a-matic bracket. RIH T/1585'
				20:00	22:45	18:00	Drlg 7 7/8" hole F/1585' T/1771'. 186' / 2.75hrs / 67.63 fph
				22:45	23:00	06:00	Service Rig
				23:00	23:45	18:00	Drlg 7 7/8" hole F/1771' T/1802'. 31' / 0.5hrs / 62 fph
				23:45	00:00	06:00	Repair auto driller
				00:00	05:15	06:00	Drlg 7 7/8" hole F/1802' T/2019'. 217' / 5.25hrs / 41.33 fph
				05:15	05:45	12:00	Survey at 2019'
				05:45	06:00	06:00	Drlg 7/ 7/8" hole F/2019' T/2022'. 3' /0.25hrs / 12 fph
4	9/28	2688	666	06:00	06:45	18:00	Drlg 7 7/8" hole F/2022' T/2051'. 29' / 0.75hrs / 38.66 fph
				06:45	07:00	06:00	Service Rig
				07:00	12:00	00:00	Drlg 7 7/8" hole F/2051' T/2285'. 234' / 5hrs / 46.8 fph
				12:00	12:30	12:00	Pooh T/1979', main rotary chain busted. Pvc flow line broke off flow nipple from Bop
							Surface casing has grown 14".

Day	Report Date	Depth	Ft Cut	Start	End	Hrs	Reported Activity (previous 24 hr leading to 6am report time)
				12:30	13:30	00:00	Main input chain in drawworks to rotary clutch broke, repair same Pooh F/1979' to surface
				13:30	14:15	18:00	
				14:15	18:15	00:00	N/D Bope, Have welder cut 2' out of surface csg to lower wellhead by two foot, N/U Bope, install flow line
				18:15	19:15	00:00	RIH T/1037' tagged bridge below shoe
				19:15	19:45	12:00	Wash out bridge F/1037' to 1099'. (wash 62' bridge)
				19:45	20:00	06:00	RIH F/1099' T/2210' tagged bridge
				20:00	20:15	06:00	Wash out bridge F/2210' T/2285' (wash 75' fill to bottom)
				20:15	23:00	18:00	Drlg 7 7/8" hole F/2285' T/2422'. 137' / 2.75hrs / 49.81 fph
				23:00	23:15	06:00	Service Rig
				23:15	00:30	06:00	Drlg 7 7/8" hole F/2422' T/2495'. 73' / 1.25hrs / 58.4 fph
				00:30	01:00	12:00	Clean suction pit to displace hole with chemical mud
				01:00	06:00	00:00	Drlg 7 7/8" hole F/2495' T/2688'. 193' / 5hrs / 38.6 fph ( Mud displacement completed at 2520' )
5	9/29	3060	372	06:00	06:45	18:00	Drlg 7 7/8" hole F/2688' T/2703'. 15' / 0.75hrs / 20 fph
				06:45	07:00	06:00	Service Rig (EDR down reboot same)
				07:00	15:00	00:00	Drlg 7 7/8" hole F/2703' T/3015'. 312' / 8hrs / 39 fph
				15:00	15:30	12:00	Service Rig
				15:30	17:15	18:00	Drlg 7 7/8" hole F/3015' T/3060'. 45' / 1.75hrs / 25.7 fph
				17:15	17:45	12:00	Circulate bottoms up
				17:45	19:15	12:00	Wipe hole to shoe at 1037'. RIH to 3060'
				19:15	20:15	00:00	Circulate 60 minutes 2 x bottoms up
				20:15	22:15	00:00	Drop survey tool, Pooh for DST #1 (Strap drill pipe out)
				22:15	23:00	18:00	Pick up & make up DST tools
				23:00	00:45	18:00	RIH with DST #1
				00:45	05:15	12:00	Open DST tool. (IF) 15 minutes had 1 minute bottom of bucket blow, (ISI) 60 min, (FF) 60 min, (FSI)120 min

Day	Report Date	Depth	Ft Cut	Start	End	Hrs	Reported Activity (previous 24 hr leading to 6am report time)
				05:15	06:00	18:00	Pooh with DST #1 Note: Bit #2 looks new Note: Pason EDR system went down several times today, Pason showed up @ 03:30hrs 9/29/2013 to repair same
6	9/30	3260	200	06:00	06:30	12:00	Pooh with DST #1, gas at 1330', shut down & wait for daylight
				06:30	07:45	06:00	Wait on daylight to finish Pooh with DST #1
				07:45	08:45	00:00	Pooh with DST #1. 2 hand held H2S montitors alarms going off, 38 & 38.9ppm H2S
				08:45	10:30	18:00	Wait on floor fan & breeze to finish trip out with DST #1. Rig up floor fan
				10:30	11:00	12:00	Pooh with DST #1 ( Very gassey )
				11:00	11:45	18:00	Remove clocks & lay down DST tools
				11:45	13:00	06:00	Make up bit #2, BHA & RIH to 493'
				13:00	14:15	06:00	Bit plugged. Pooh BHA rebuild drill string float
				14:15	16:45	12:00	Make up bit #2, BHA & RIH to 3060' (fill pipe at 1458')
				16:45	23:00	06:00	Drlg 7 7/8" hole F/3060' T/3234'. 174' / 6.25hrs / 27.8 fph
				23:00	03:00	00:00	Drlg 7 7/8" hole in 5' increments. Circ samples F/3234' t 3260'. 26' / 4hrs / 6.5 fph
				03:00	04:15	06:00	Wipe hole 10 stands F/3260' T/2609', RIH to 3260'
				04:15	05:15	00:00	Circ hole clean for DST #2
				05:15	06:00	18:00	Pooh for DST #2
7	10/1	3260	0	06:00	07:00	00:00	Pooh for DST #2
				07:00	07:30	12:00	Make up tools for DST #2
				07:30	08:30	00:00	RIH with DST #2
				08:30	13:00	12:00	Open DST for 15 min (IF) bottom of bucket 20 sec. (ISI) 60 min gas to surface bottom of bucket in 12 min. (FF) 60 minutes, bottom of bucket immediately caught gas sample 2nd open (FSI) 120 min
				13:00	13:30	12:00	Release packers. Pooh with DST #2 to 2567', oil & gas at 11 stands out with 28-30 ppm H2S gas
				13:30	14:30	00:00	Wait on vac truck to reverse out oil from DST #2

Day	Report Date	Depth	Ft Cut	Start	End	Hrs	Reported Activity (previous 24 hr leading to 6am report time)
				14:30	16:00	12:00	Reverse out 9bbls live oil to vac truck, reverse 20bbls gassey water to reserve pit (Estimate 12bbls oil recovery DST #2)
				16:00	16:45	18:00	Pooh with DST #2
				16:45	17:45	00:00	Remove clocks & lay down DST tools
				17:45	19:30	18:00	Make up bit #2, BHA & RIH to 3260' (Fill BHA at 500')
				19:30	20:00	12:00	Circulate bottoms up
				20:00	20:30	12:00	Wipe hole 12 stands to 2500', RIH to 3260'
				20:30	22:00	12:00	Circulate hole clean for logs
				22:00	23:30	12:00	Pooh for logs
				23:30	06:00	12:00	Held 3rd party safety meeting with rig crew & Pioneer loggers. R/U logging tools. Run GR-DILL-CND / GR on bottom /
							Son-Mill. Drillers TD=3260' Loggers TD=3257'. R/D Loggers
8	10/2	3260	0	06:00	06:45	18:00	Make up 7 7/8" bit #2, BHA T/493' (Fill BHA)
				06:45	07:15	12:00	Service Rig
				07:15	08:30	06:00	Crew & Tools cost
				08:30	11:30	00:00	Circulate hole clean for 5.5" production casing (Unload 5.5" casing, drift, clean threads, & strap same)
				11:30	15:45	06:00	Lay down drill pipe, dcs', swivel, kelly,rat hole & mouse hole
				15:45	18:00	06:00	Held 3rd party safety meeting with rig crew & casing crew. R/U power tongs. Run 79 jonts of 15.5#/ft 5.5" production csg. Shoe set @ 3250', latch plug @ 3213.10', flag joint @ 2821.44'. R/D casing tongs & tools (Baker-Lok triplex shoe & 2nd jnt csg)
				18:00	19:30	12:00	Install head, circulate to bottom, mark csg & pickup 10' off bottom @ 3250'. Drop ball set cement basket & open sliding sleeve Held 3rd party safety meeting with rig crew & cementers while circulate 5.5" csg
				19:30	21:00	12:00	Test lines to 2000psi, pump 5bbls fresh water, followed by 10bbls mud flush, followed by 5bbls fresh water.

Day	Report Date	Depth	Ft Cut	Start	End	Hrs	Reported Activity (previous 24 hr leading to 6am report time)
				21:00	22:30	12:00	Mix 30sx cmt pump in rat hole, mix 20sx cmt pump in mouse hole. Pump 274.75/ft3 or 48.93bbls or 175sx of ASC cmt rate of 6 bpm Yield=1.57ft3/sx Water=7.23gal/sx Density=14.5ppg. Shut down flush lines clean, drop latch plug, displace with 76.47bbls fresh water.  Bump plug with 1100psi with 500psi prior to bump rate of 5bpm. Hold 1100psi for 5 minutes, release pressure latch plug held (ok) CIP @ 21:00hrs  N/D Bop & lift same, set 5.5" csg slips with 56K. Cut off 5.5" csg, L/D Bop. Cap 5.5" csg
				21.00	22.30	12.00	with weep hole. R/D cementers
				22:30	06:00	12:00	Clean mud pits, shovel out cuttings from same
9	10/3	3260	0	06:00 07:00	07:00 13:00	00:00 00:00	Finish clean out mud pits ((Release Val Rig #2 @ 07:00hrs 10/02/2013)) Return 7 joints 5.5" & 12' cut 5.5" csg with weld head, nipple, ball valve, bull plug & csg thread dope to Sunrise yard Pason R/D gas detector, geologist work station, rig monitor equipment Dry watch rig (Wait for morning to R/D & load out Hoppes & Pason equipment) Hoppes will be Here in the morning between 09:00 /10:00hrs 10/03/2013 to R/D man camp
							& equipment & move out same Pason will be here in morning 08:00hrs 10/03/2013 to R/D Satelite System & move out same
10	10/4	3260	0	06:00 08:00	08:00 14:00	00:00 00:00	Wait for Pason & Hoppes R/D Pason Satelite System, load out same. R/D Hoppes man camp, potable water tank, generator,pump out septic tanks & load out all equipment Rainbow Trucking loading up & moving Val Rig #2 off location at 07:00hrs

#### MUD RECORD

Date	Depth	Wt	Vis	PV	YP	Gels	WL	Cake	pН	Alkilinity	H <sub>2</sub> O %	Chlorides	Solids	Sand	Calcium	LCM	Remarks
9/24	0																
9/25	1037	9.8	35														
9/26	1037	9.8	36	5	11	16/18	n/c	n/c	8.0		89	35,000	10.7	1		0.5	
9/27	2022	8.7	26	1	1	0	n/c	n/c	11.5	1.5	99.5	49,000	10.7	trace	hvy	0	
9/28	2688	9.3	30	4	5	2/2	n/c	n/c	7.0	0.0	95.4	49,000	4.6	trace	hvy	0	
9/29	3060	8.8	48	11	11	15/18	8.80	1	11.0	1.1/-	96.7	6,700	3.3	trace	20	0	
9/30	3260	9.2	49	13	11	10/52	9.20	2	10.5	0.45/-	94.7	7,100	5.3	trace	20	0	
10/1	3260	9.2	53	12	12	13/53	9.20	1	11.0	0.59/-	94	8,300	6	trace	0	0.5	
10/2	3260	9.2	68	16	14	18/64	9.60	2	10.5	0.33/-	94.2	9,500	5.8	trace	60	trace	
10/3	3260																
10/4	3260																

#### ABBREVIATIONS & UNITS

Weight (Wt)lbs/galViscosity (Vis)sec/qtPlastic Viscosity (PV)centipoiseYield Point (YP)lbs/100 sq ft

Gel Strengths (Gels) lbs/100 sq ft (10 sec / 10 min)

 $H_2O$  % % water by volume

Chlorides ppm in water phase

Solids % by volume

Sand % by volume

Calcium ppm in water phase

Lost circulation material (LCM) lb/bbl added

# BIT RECORD

Run	Bit	Size	Make	Serial No.	Type	Depth	Ft	Hrs	Ft/Hr	WOB	RPM	Pump	Pump	Nozzle	Condition	Reason
						Out	Cut			K		Press	GPM	Size	TBG	Pulled
1	1	12 1/4	J2	N/A	Rerip Tricone	1037	1037	19.5	53.1	15	140	400	335	3x15	6/6/1/8"out	Surface Casing
1	2	7 7/8	J2	1315501	HA20 Tricone	1979	942	33.8	51.8	26-35	80-100	800	358	2x14-1x15	-	
2	2	7 7/8	J2	1315501	HA20 Tricone	3060	1081	44.5	45.7	26-35	80-100	800	358	2x14-1x15	1/1/IN	
3	2	7 7/8	J2	1315501	HA20 Tricone	3260	200	54.5	40.8	35	80	980	300	2x14-1x15	1/1/IN	

# **DEVIATIONS**

MD	INC
ft	deg
0	0
1037	1
2019	1
3060	1



## DRILL STEM TEST REPORT

Berenergy Corp.

24-20s-11w Barton

PO Box 5850

Roetzel "A" #2526

Denver Co. 80217+5850

ft (KB)

Job Ticket: 53630

**DST#: 1** 

ATTN: Ryan Thress

Test Start: 2013.09.28 @ 22:45:01

#### GENERAL INFORMATION:

Formation:

LKC"D-F"

Deviated:

No

Whipstock:

Test Type: Conventional Bottom Hole (Initial)

Time Tool Opened: 00;34:00

Time Test Ended: 11:33:30

Tester:

Andy Carreira

Interval:

Unit No:

Total Depth:

3016.00 ft (KB) To 3060.00 ft (KB) (TVD)

Reference Elevations:

1755.00 ft (KB) 1745.00 ft (CF)

3060.00 ft (KB) (TVD)

Hole Diameter:

7.88 inches Hole Condition: Fair

KB to GR/CF:

10.00 ft

Serial #: 8372 Press@RunDepth:

Inside

527.90 psig @

3021.00 ft (KB)

2013.09.29

Capacity:

8000.00 psig

Start Date:

2013.09.28

End Date:

Last Calib.:

2013.09.29

Start Time:

22:45:01

End Time:

11:33:30

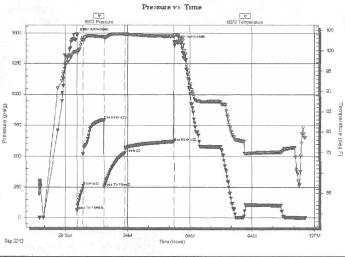
Time On Btm: Time Off Btm:

2013.09.29 @ 00:33:30 2013.09.29 @ 05:14:30

TEST COMMENT: IF:(15min) BOB in 1 Min.

ISI:(60min) No Return

FF:(60min) BOB in 2 min. FSI:(120min) No Return



# DDECOLIDE CLIMATELY

13	PRESSURE SUMMARY						
	Time	Pressure	Temp	Annotation			
	(Min.)	(psig)	(deg F)				
1	0	1482.09	99.79	Initial Hydro-static			
	1	61.56	99.44	Open To Flow (1)			
	18	261.12	102.65	Shut-in(1)			
-1	78	793.39	103.40	End Shut-In(1)			
empe	79	253.55	103.22	Open To Flow (2)			
Temperature (deg	139	527.90	104.03	Shut-in(2)			
(deg	281	618.31	103.54	End Shut-In(2)			
₽	281	1425.34	103.76	Final Hydro-static			
				_			
				-			

# Recovery

Description	Volume (bbl)
MOGW g=15% m=10% w =75%	18.22
GO	0.01
	MCGW g=15% m=10% w =75%

Gas Rates

Choke (inches) Pressure (psig)

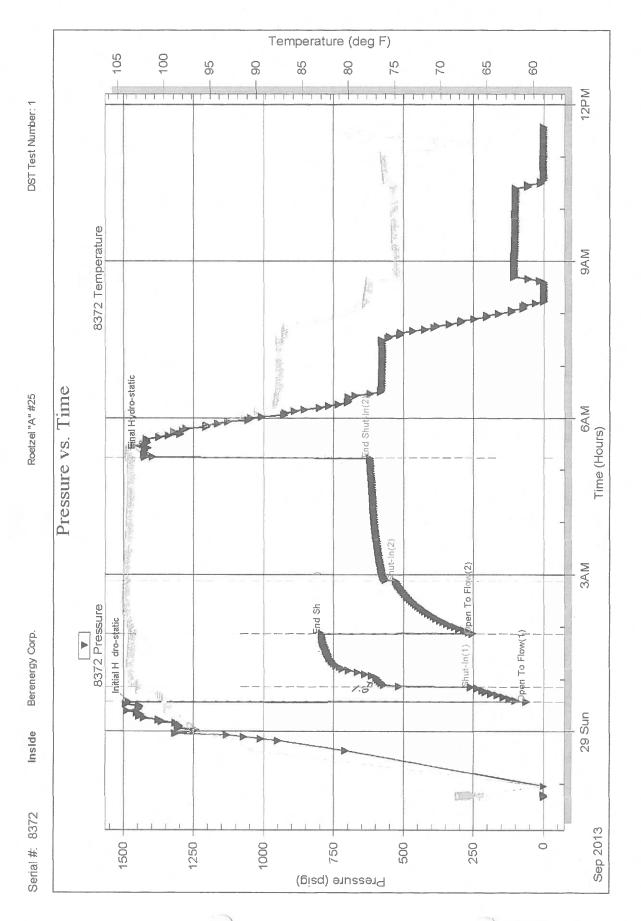
Gas Rate (Mcf/d)

Trilobite Testing, Inc

Ref. No: 53630

Printed: 2013.09.29 @ 12:04:57





Trilobite Testing, Inc

Ref. No: 53630



# RILOBITE ESTING INC.

**Test Ticket** 

NO. 53630

1515 Commerce Parkway • Hays, Kansas 67601

Well Name & No. ROETZEI A"	#26	Test No	/	Date 9-28	7-13
Company BERENERGY CO	RD	Elevation /	755	KB 174	5 GL
Address Po Box 3 850	DENVE			7+585	
Co. Rep/Geo. Ryan Thres	5	Rig X	11 #2		,
Location: Sec. <u>24</u> Twp. <u>205</u>	Rge. 1/W	CO. BAR	ton	State _K	5
Interval Tested 30/6-3060	Zone Tested	1KC"D-1	F		
Anchor Length 44'	Drill Pipe Run	3013		Mud Wt. 32	8.8
Top Packer Depth 3011	Drill Collars Run	0		Vis #	58
Bottom Packer Depth 3016	Wt. Pipe Run	0		NL 8.8	Face Ac-
Total Depth 3060	Chlorides	,700 ppm	System I	CM O	
Blow Description IF: BOB /m	in				
ISI: NO RETUR	N	-			
FF: BOB 2mil	N		The state of the s		
FSI NO RETUR	N	weeks the second second		Wite II	
Rec / Feet of GO		%gas	%oil	%water	%mud
Rec A 99 Feet of 1710 (3)	$\mathcal{N}$	%gas	%oil	%water	%mud
Rec Feet of		%gas	%oil	%water	%mud
Rec Feet of		%gas	%oil	%water	%mud
Rec Feet of		%gas	%oil	%water	%mud
11/-0	Gravity	API RW .273 @	73°F	Chlorides 2600	O ppm
(A) Initial Hydrostatic 1480	Test		T-On Lo	cation 2/:05	5
(B) First Initial Flow	Jars		T-Starte	d <u>XX:45</u>	7112
(C) First Final Flow	Safety Joint		T-Open_	00:3	770
(D) Initial Shut-In 793	☐ Circ Sub		T-Pulled	11:40	
(E) Second Initial Flow	Hourly Standby_	5hRS	T-Out _	//· 7 V	
(F) Second Final Flow	Mileage 180	)RT	Comme	has stand	1,,
(G) Final Shut-In 6/8	□ Sampler			PRS SINIO	By
(H) Final Hydrostatic	☐ Straddle	· ·	Ruir	ned Shale Packer	
	☐ Shale Packer			ned Packer	
Initial Open	☐ Extra Packer			a Copies	
Initial Shut-In 60	☐ Extra Recorder _			al	
Final Flow 60	☐ Day Standby				
Final Shut-In / Q U	☐ Accessibility		MP/DS	T Disc't	
10.1	Sub Total			10	
Approved By L. alund Busham 9/29/		r Representative	the	& Cu	
Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or pequipment, or its statements or opinion concerning the results of any test, tools lost	personnel of the one for whom a st or damaged in the hole shall l	a test is made, or for any loss be paid for at cost by the part	suffered or sustain y for whom the test	ed, directly or indirectly, thro is made.	ough the use of its



## DRILL STEM TEST REPORT

Berenergy Corp.

24-20s-11w Barton

PO Box 5850

Denver Co. 80217+5850

Roetzel "A" #26 26

Job Ticket: 53631

DST#: 2

ATTN: Ryan Thress

Test Start: 2013.09.30 @ 06:38:01

GENERAL INFORMATION:

Time Tool Opened: 08:28:30

Time Test Ended: 18:07:30

Formation:

Arbuckle

Deviated:

Interval:

No Whipstock: ft (KB)

Test Type: Conventional Bottom Hole (Reset)

Tester: Andy Carreira

Unit No:

Reference Elevations:

1755.00 ft (KB) 1745.00 ft (CF)

Total Depth: Hole Diameter: 3250.00 ft (KB) To 3260.00 ft (KB) (TVD)

3260.00 ft (KB) (TVD)

7.88 inches Hole Condition: Fair

KB to GR/CF:

10.00 ft

Serial #: 8372

Press@RunDepth:

Inside

1042.45 psig @ 2013.09.30

End Date:

3251.00 ft (KB)

2013.09.30

Capacity: Last Calib .: 8000.00 psig

Start Date: Start Time:

06:38:01

End Time:

18:07:30

Time On Btm:

2013.09.30 2013.09.30 @ 08:28:00

Time Off Btm:

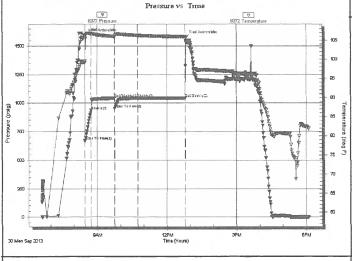
2013.09.30 @ 12:49:30

TEST COMMENT: IF:(15min) BOB in 20 seconds

ISI:(60min) GTS during bleed off. Blow built to BOB in 12 min. Gas burned w/orange flame

FF:(60min) BOB immediately. Gas TSTM

FSI:(120min) Return blow, built to BOB in 6 min. after bleed off



Ы	RESSUR	E SUMMARY
ure	Temp	Annotation

Pressure	Temp	Annotation
(psig)	(deg F)	
1592.50	99.05	Initial Hydro-static
671.63	99.44	Open To Flow (1)
934.30	106.74	Shut-In(1)
1042.27	106.02	End Shut-in(1)
950.69	106.05	Open To Flow (2)
1042.45	106.30	Shut-In(2)
1043.84	105.95	End Shut-In(2)
1573.61	104.89	Final Hydro-static
	(psig) 1592.50 671.63 934.30 1042.27 950.69 1042.45 1043.84	(psig) (deg F) 1592.50 99.05 671.63 99.44 934.30 106.74 1042.27 106.02 950.69 106.05 1042.45 106.30 1043.84 105.95

#### Recovery

Description	Volume (bbi)
Water	21.85
Oil	12.00
	Water

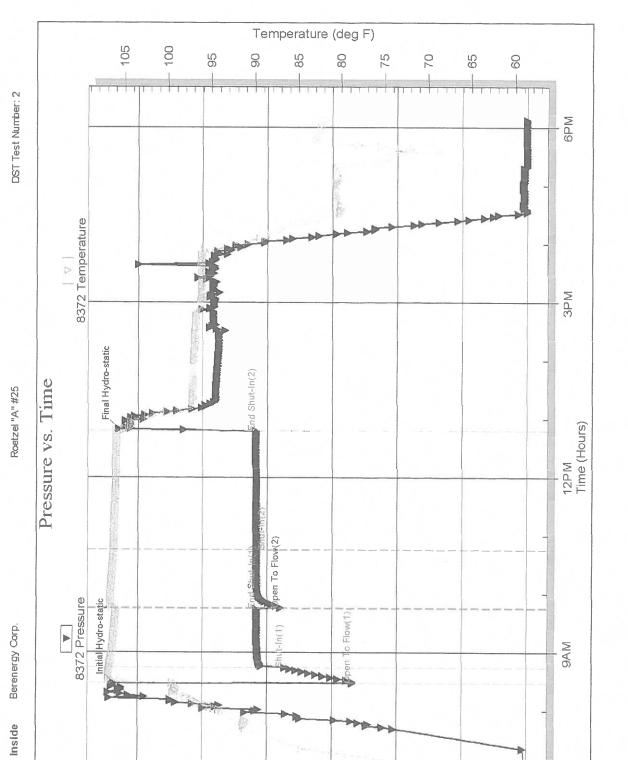
Gas Rates

Gas Rate (Mcf/d) Choke (inches) | Pressure (pslg)

Trilobite Testing, Inc.

Ref. No: 53631

Printed: 2013.09.30 @ 18:37:28



Trilobite Testing, Inc

30 Mon Sep 2013

0

EDITOR:

250

Ref. No: 53631

Printed: 2013.09.30 @ 18:37:28

750

Pressure (psig)

500

Serial #: 8372

1500

1250

1000

WF

#### NATURAL GAS ANALYSIS REPORT GPA 2145-09

Analyzed by: Sampled by: Caraway Analytical, Inc Trilobite Testing, Inc. P. O. Box 2137 Hays, Kansas Scott City, Kansas Liberal, Kansas 67905 Phone: 620-482-2371 Phone: 800-728-5369 Fax: 785-625-5620 Fax: 620-626-7108 \_\_\_\_\_\_ Analyzed: Lab Number: 20132235 10/04/13 Pressure: Sample From: RUETZEL A-26 BERENERGY CORP Temperature: Producer: 24-20-11 Date: Location: Time: County: BARTON State: KANSAS Sampler: DST 2 Formation: ARBUCKLE Source: Mole % GPM He: 0.357 0.000 Helium H2: 0.000 0.000 Hydrogen 02: 0.000 0.000 Oxygen 0.000 Nitrogen N2: 15.778 CO2: 0.027 0.000 Carbon Dioxide C1: 36.899 0.000 Methane C2: 13.129 4.924 Ethane 5.267 Propane C3: 14.051 iC4: 3.128 0.958 Iso Butane nC4: 7.260 Normal Butane 2.309 iC5: 2.096 nC5: 2.767 Iso Pentane 0.575 Normal Pentane 0.765 Hexanes Plus C6+: 4.508 1.036 TOTAL: 100.000 15.834 Z Fact: 0.9994 SP.GR.: 1.1840 BTU (SAT): 1728.0 @ 14.73 psia BTU (DRY): 1758.6 @ 14.73 psia OCTANE RATING: 88.9

COMMENTS: 303-297-951 0.000

25



# TRILOBITE TESTING, INC. P.O. Box 362 • Hays, Kansas 67601

# **FLUID SAMPLER DATA**

Ticket No. 5-3631	Date 9-30-13
Company Name BERENERGY COL	RP
	Test No.
	Sec. 24 Twp. 20s Rng. 1/w
SAMPLER RECOVERY	PIT MUD ANALYSIS
	ML Chlorides 8/00 ppm.
Oil	ML Resistivity ohms @ F
MudN	ML Viscosity53
Water 900	ML Mud Weight 9.2
	ML Filtrate 9,2
Pressure 290/6s	ML Other 15#4cm
Total 4000	ML
SAMPLER ANALYSIS	PIPE RECOVERY
Resistivity 276_ ohms @87	
Chlorides	om.
	Chloridesppm.
Gravity corrected @60	MIDDLE  OF Resistivity ohms @ F
	Chloridesppm.
	воттом
	Resistivity ohms @ F
	Chloridesppm.



# RILOBITE ESTING INC.

Test Ticket

NO. 53631

1515 Commerce Parkway • Hays, Kansas 67601

Well Name & No. RUETZELA'	#26	Test No.	2	Date 9-3	0-13
Company BERENIZERY COR	D	Elevation	7755	KB 174	5 GL
Address Po Box 5850 I	ENVER (	70, 802	17+5	850	
Co. Rep/Geo. RVAN Thress		Rig \/	1#2		
Location: Sec. 24 Twp. 205	Rge. //W	n	ton	Statek	5
Interval Tested 3250 - 3260	Zone Tested	ARBUCKI	3		
Anchor Length/()	Drill Pipe Run	3231		Mud Wt. 9. 2	?
Top Packer Depth 3245	_ Drill Collars Rur	0		Vis #9	53
Bottom Packer Depth 3250	Wt. Pipe Run	12-		WL 9.2	
Total Depth 3260	Chlorides	8/00 ppr	n System	LCM_	台井
Blow Description IF : BOB in 205					
ISI: GTS JURING 5/2	EDOFF, Blou	Sbuilt to B	BOB IN	12min.	
FF: 130B immediately	1. GASTS	TM		~	
FSI: RETURN Blow B	will to BO	Bin Gmin.	Atter bl	HUGS3	
Rec 932 Feet of 0,		%gas	%oil	%water	%mud
Rec 1698 Freet of WATER		%gas	%oil	%water	%mud
Rec Feet of		%gas	%oil	%water	%mud
RecFeet of		%gas	%oil	%water	%mud
RecFeet of	*	%gas	%oil	%water	%mud
Rec Total 263UBHT 105"	Gravity 40	_API RW_276	@ 87°F	Chlorides 190	00 ppm
(A) Initial Hydrostatic 1592	Test <del>C</del>		_ T-On Lo	cation <u>05:3</u>	36
(B) First Initial Flow	Jars <u></u>	2	T-Starte	d 06:38	1
(C) First Final Flow 934	Safety Joint		T-Open_	08:30	_
(D) Initial Shut-In 1042	☐ Circ Sub		T-Pulled		
(E) Second Initial Flow 950	Hourly Standby	3 hrs	T-Out _	18:08	` /
(F) Second Final Flow 1042	Mileage 180	RT	Comme - ULA	nts Gas burn	5) W/
(G) Final Shut-In	Sampler			uge Plame	,
(H) Final Hydrostatic	☐ Straddle			ned Shale Packer	
				ned Packer	
Initial Open	☐ Extra Packer			a Copies	
Initial Shut-In				al	
Final Flow 60					
Final Shut-In				T Disc't	
		-		1/7	
Approved By & Quel Burham 9/301	2013 0	our Representative	trek	1 Car	
Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or equipment, or its statements or opinion concerning the results of any test, tools I	personnel of the one for whor	m a test is made, or for any los	ss suffered or sustain	ed, directly or indirectly, thr	ough the use of its
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