State of New Mexico
Energy, Minerals and Natural Resources Department

**Susana Martinez**
Governor

**David Martin**
Cabinet Secretary

**Brett F. Woods, Ph.D.**
Deputy Cabinet Secretary

**David R. Catanach Division Director**
Oil Conservation Division

New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 6-23-15
Well information;
Operator Bridgecreek, Well Name and Number Kingsnake #34-6
API# 30-045-35735, Section 34, Township 31 N/S, Range 15 E/W

Conditions of Approval:
(See the below checked and handwritten conditions)

- ✓ Notify Aztec OCD 24hrs prior to casing & cement.
- o Hold C-104 for directional survey & "As Drilled" Plat
- o Hold C-104 for NSL, NSP, DHC
- o Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- o Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- o Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ✓ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ✓ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ✓ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

NMOCD Approved by Signature

11-17-15
Date

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3460 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd

OIL CONS. DIV DIST. 3

NOV 09 2015

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JUN 23 2015
BUREAU OF LAND MANAGEMENT

Form 3160-3
(August 2007)

FORM APPROVED
OMB No. 1004-0136
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
751141038

6. If Indian, Allottee or Tribe Name
UTE MOUNTAIN UTE

1a. Type of Work: ☒ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
KINGSNAKE 34-6

2. Name of Operator
BRIDGECREEK RESOURCES COLO LLC

Contact: CHRISTINE CAMPBELL
E-Mail: ccampbell@bridgecreekresources.com

9. API Well No.
30-045-35735

3a. Address
405 URBAN STREET, SUITE 400
LAKEWOOD, CO 80228

3b. Phone No. (include area code)
Ph: 303-945-2642

10. Field and Pool, or Exploratory
VERDE GALLUP

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface F SENW 2128FNL 2060FWL 36.858868 N Lat, 108.406705 W Lon

At proposed prod. zone F SENW 1983FNL 1981FWL 36.859268 N Lat, 108.406972 W Lon

11. Sec., T., R., M., or Blk. and Survey or Area
Sec 34 T31N R15W Mer NMP
SME: BIA

14. Distance in miles and direction from nearest town or post office*
17.0 MILES NW FROM KIRTLAND, NM POST OFFICE

12. County or Parish
SAN JUAN

13. State
NM

15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
1980 FEET

16. No. of Acres in Lease
8915.98

17. Spacing Unit dedicated to this well
40.00

18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.
88 FEET FROM NEAREST APPLIED FOR WELL

19. Proposed Depth
3851 MD
3846 TVD

20. BLM/BIA Bond No. on file
B008918

21. Elevations (Show whether DF, KB, RT, GL, etc.
5524 GL

22. Approximate date work will start
8/14/15

23. Estimated duration
10 days

## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature
(Electronic Submission)

Name (Printed/Typed)
CHRISTINE CAMPBELL Ph: 303-945-2642

Date
06/23/2015

Title
REGULATORY LEAD

APPROVED FOR A PERIOD
NOT TO EXCEED 2 YEARS

Approved by (Signature)
/S/ Connie Clementson

Name (Printed/Typed)
/S/ Connie Clementson

Date
OCT 30 2015

Title
Field Manager

Office
TRES RIOS FIELD OFFICE

Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**Additional Operator Remarks (see next page)**

Approval of this agreement does not warrant or certify that the operator thereof and other holders of operating rights hold legal or equitable title to those rights in the subject lease which are committed hereto...

**Electronic Submission #306254 verified by the BLM Well Information System**
**For BRIDGECREEK RESOURCES COLO LLC, sent to the Durango**
**Committed to AFMSS for processing by BARBARA TELECKY on 06/25/2015 (15BDT0318AE)**

NMOCD

Venting / Flaring approved for 30 days per NTL-4A

SEE ATTACHED CONDITIONS OF APPROVAL

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
611 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, N.M. 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, N.M. 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| 1 API Number | 2 Pool Code | 3 Pool Name |
|---|---|---|
| 30-045-35735 | 82510 | Verde Gallup |

| 4 Property Code | 5 Property Name | 6 Well Number |
|---|---|---|
| 315657 | KINGSNAKE 34 | 6 |

| 7 OGRID No. | 8 Operator Name | 9 Elevation |
|---|---|---|
| 310262 | BRIDGECREEK RESOURCES (COLORADO), LLC | 5529 |

KP

## 10 Surface Location

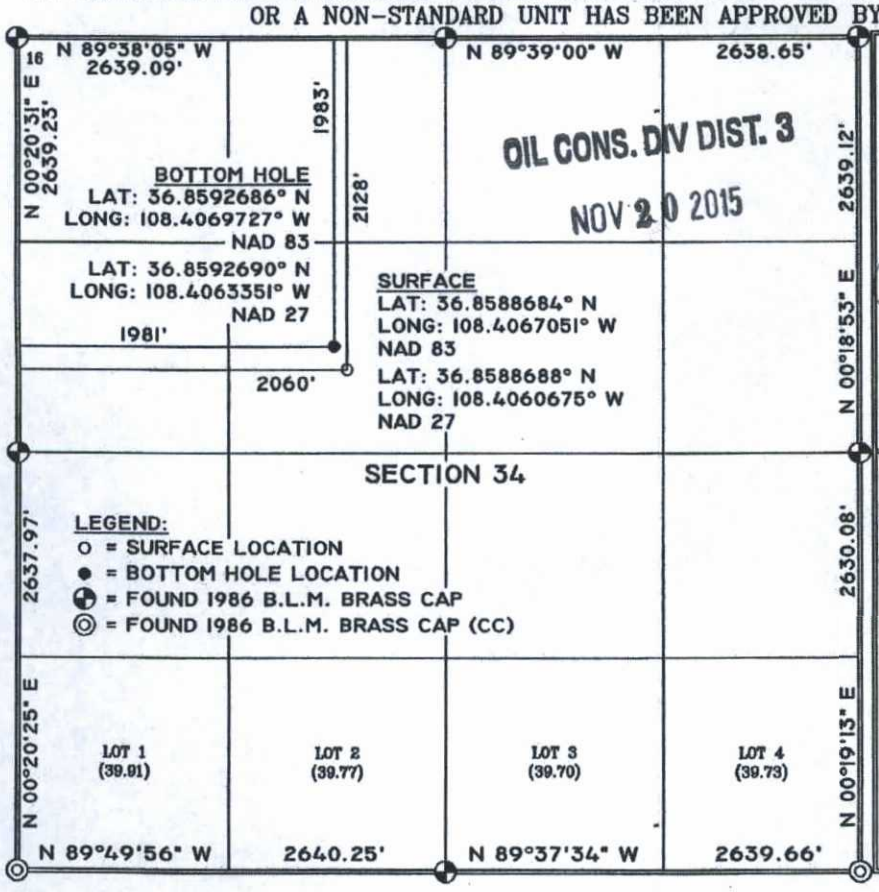
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| F | 34 | 31 N | 15 W | | 2128 | NORTH | 2060 | WEST | SAN JUAN |

## 11 Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| F | 34 | 31 N | 15 W | | 1983 | NORTH | 1981 | WEST | SAN JUAN |

| 12 Dedicated Acres | 13 Joint or Infill | 14 Consolidation Code | 15 Order No. |
|---|---|---|---|
| 40 SE/NW 34 | | | |

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION




## 17 OPERATOR CERTIFICATION

*I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.*

11/15/15
Signature Date

Christie Campbell
Printed Name

CCampbell@bridgecreekresources.com
E-mail Address

## 18 SURVEYOR CERTIFICATION

*I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.*

04/21/15
Date of Survey

Signature and Seal of Professional Surveyor

MARSHALL W. LINDEEN
NEW MEXICO
17078
7-15-15
PROFESSIONAL SURVEYOR

17078
Certificate Number

**Attachment to Application for Permit to Drill**
**Drilling Plan**

Bridgecreek Resources (Colorado), LLC
405 Urban St, Suite 400
Lakewood, CO 80228

**Kingsnake 34-6**

Surface Location: 2128' FNL – 2060' FWL
Section 34, T31N, R15W, N.M.P.M.
Latitude = 36.8588684° N
Longitude = 108.4067051°W
Ungraded GL Elev. = 5529'
Graded GL Elev. = 5524'

Proposed Bottom Hole Location: 1983' FNL – 1981' FWL
Section 34, T31N, R15W, N.M.P.M.
Latitude = 36.85926862° N
Longitude =108.4069727° W

SAN JUAN COUNTY, NEW MEXICO

*Drilling Program written in compliance with Onshore Oil and Gas Order No. 1 (OO1 III.D.3, effective May 7, 2007) and Onshore Order No. 2, Dated November 18, 1988*

Drilling Plan:

The KINGSNAKE 34-6 well is intended to be drilled as a slightly deviated well with limited directional guidance to the Graneros formation. After a 16" conductor is preset at a depth of 40' below ground level, the location will be prepared for operations, including all prudent storm water controls. This well will be drilled using a closed-loop mud system without the use of an earthen reserve pit.

The well will be spud with using a 12 ¼" bit and fresh water-based mud to a depth of 1,010' MD. At a minimum, wireline directional surveys will be run at intervals not exceeding 500'. At a depth of +/- 1,010' MD (to be adjusted according to KB of rig selected), 9-5/8" 36#/ft. J-55 STC surface casing will be run and cemented into place. Surface casing will be set at 1,010'MD or 50' into the Top Menefee, whichever is deeper. Top Menefee will be determined by mudlogger. If, for some reason the cement is not circulated to surface, or if cement falls further than 10' from ground level, the 9-5/8" x 12-1/4" annulus will be filled to the surface from the top of cement using 1" tubing.

The surface casing will be drilled out using an 8-3/4" bit, performance BHA and water based mud to a total depth (TD) of 3,851' MD. Upon reaching TD, we will utilize open hole logs to evaluate prospective interval(s) from the Mancos marker to the top of the Greenhorn formation in which to perforate for stimulation. Planned logs to be run include GR/DIL/DEN/NEU/ML from TD to surface casing. Optional sidewall percussion sidewall cores from TD to surface casing.

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Depending on geologic conditions observed through mud logger analysis and results from open hole logs, Bridgecreek may elect to run and cement 5 ½" 17#/ft. N-80 LTC casing and cement into place.

**1. Estimated Tops for Important Geological Formations**

| Formation | Est/ MD | TVD | Comments |
|---|---|---|---|
| Pictured Cliffs | 0 ' | 0 ' | Aquifer (Water) |
| Cliffhouse | 756 ' | 756 ' | Aquifer (Water) |
| Menefee | 960 ' | 960 ' | Deepest Coal |
| Point Lookout | 1,677 ' | 1,676 ' | None |
| Upper Mancos | 2,123 ' | 2,121 ' | None |
| MRZ | 2,482 ' | 2,479 ' | Possible Pay (Oil/Gas) |
| ElVado | 3,033 ' | 3,030 ' | Possible Pay (Oil/Gas) |
| Tocito | 3,278 ' | 3,274 ' | Possible Pay (Oil/Gas) |
| Juana Lopez | 3,445 ' | 3,440 ' | Possible Pay (Oil/Gas) |
| Greenhorn | 3,783 ' | 3,778 ' | Possible Pay (Oil/Gas) |
| Graneros | 3,846 ' | 3,841 ' | None |

**2. Anticipated Depths of Prospective Oil, Gas and Other Hydrocarbons**

Primary objectives are productive zones within the Mancos (Top Mancos is anticipated at approximately 2,121' TVD) through the Greenhorn (Top Greenhorn is anticipated at approximately 3,778' TVD).

**3. Minimum Specifications For Pressure Control Equipment Complies with Onshore Order #2.A.1**

The working pressure of all BOP shall exceed the anticipated surface pressure to which it may be subjected, assuming a partially evacuated hole with a pressure gradient of 0.22 psi/ft.

Bottom Hole pressure = 3,846' TVD x 0.45 psi/ft = 1,730 psi (based on measured offset bottom hole pressures, see plan point 8 for details).

Maximum Surface Pressure = 1,730 psi - (3,846' TVD x .22 psi/ft)
= 1,730 psi – 846 psi
= 884 psi (less than 3000 psi working pressure.)
Therefore 3,000 psi BOP system required.

A. Wellhead Equipment 3,000 PSI System (See Exhibit A)

1. 9 5/8" slip-on / welded x 11" 3,000 psi casing head.
2. One (1) 11" x 3,000 psi WP single-ram preventer with one (1) set of pipe rams, complete with hand wheels and extension arms.
3. One (1) 11" 3,000 psi WP drilling spool with side outlets for 2" kill line and minimum 3" choke line
4. One 11" 3,000 psi WP double-ram preventer with one (1) set of blind rams on bottom & one (1) set of pipe rams on top complete with hand wheels and extension arms.
5. One 11" x 3,000 psi WP Hydril GK (or equivalent) annular preventer.

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6. Accumulator - Four Station Koomey (or equivalent) 120 gallon closing unit with remote, backup. The accumulator shall have sufficient capacity to open the hydraulically-controlled gate valve and close all rams plus the annular preventer, with a 50% safety factor and retain a minimum of 200 psi above the pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity shall be double the usable accumulator capacity, and the fluid level shall be maintained at the manufacturer's recommendations.
7. The BOP system shall have two (2) independent power sources (electric and air) available for powering the closing unit pumps. Sufficient nitrogen bottles are suitable as a backup power source only, and shall be recharged when the pressure falls below manufacturer's specification.
8. A valve shall be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative.

All BOP equipment will be hydraulically operated with controls accessible both on the rig floor and on the ground.

B. Auxiliary Equipment To Be Used – Minimum 3,000 PSI System (See Exhibit B)

1. Upper & lower kelly cock valve with handles available.
2. Safety valve and subs to fit drill pipe, on rig floor.
3. Choke manifold for 3,000 psi system with 2 chokes (pressure gauge on manifold).
4. Two (2) kill lines (2" minimum, one remote to end of substructure) both with 2" kill line full open valves, plus a check valve for each line.
5. Minimum 3" choke line.
6. Two choke line gate valves, 3" minimum, with one choke line gate valve being hydraulically operated.
7. Two chokes (1 remote, 1 manual) on choke manifold
8. Fill-up line above the uppermost preventer.
9. Wear Bushing or Bowl Protector in the casing head.
10. Inside BOP or (float sub) available
11. All BOPE connections subjected to well pressure shall be flanged, welded or clamped.
12. Choke line shall be straight lines unless turns use tee blocks or are targeted with running tees, and shall be anchored to prevent whip and reduce vibration.

The wellhead BOP equipment will be nippled-up on the 9-5/8" x 11" 3,000 psi casing head prior to drilling out from under surface casing. All ram preventers and related equipment will be tested to 250 psi for 10 minutes then 3,000 psi for 10 minutes. Annular preventers will be tested to 50% of rated working pressure for 10 minutes. Surface casing will be tested to 70% of internal yield pressure. All preventers and surface casing will be tested before drilling out of surface casing. BOP equipment will be tested every 14 days, after any repairs are made to the BOP equipment, and after the BOP equipment is subjected to pressure. Annular preventers will be functionally operated at least once per week. Pipe rams will be activated daily and blind rams shall be activated each trip or at least weekly. The Bureau of Land Management, the Bureau of Indian Affairs and Ute Mountain Ute Tribe will be notified 24 hours in advance of testing of BOPE.

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4. **Proposed Bit and Casing Program**

A. Bit Program
12 1/4" Surface Hole = Surface to 1,010' MD
8 3/4" Production= 1,010' MD to TD (approximately 3,851' MD)

B. Casing Program – all casing stings are new casing

| Casing & Hole Size | Weight | Grade | Coupling | Setting Depth (MD) | Comments |
|---|---|---|---|---|---|
| 16" Conductor | | | | 0' - 40-ft BGL | New casing. |
| 9-5/8" (12-1/4") | 36 ppf | J-55 | ST&C | 0' – 1,010' MD | New casing. Cement to surface. |
| 5-1/2" (8-3/4") | 17 ppf | N-80 | LT&C | 0'-3,851' MD | New casing. Cement to surface. |

**Casing strings below the conductor casing will be tested to .22 psi per foot** of casing string length or 1,500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield.

Minimum casing design factors used: Collapse - 1.0
Burst - 1.1
Jt. Strength - 1.3

Surface casing shall have a minimum of 1 centralizer per joint on the bottom three (3) joints, starting with the shoe joint for a total of (4) minimum centralizers. Centralizers will be placed 10' above the shoe on the shoe joint, on the 1st, 2nd and 3rd casing collars.

The production casing will be centralized using 1 centralizer the first 6 jts and then spaced +/- 1 centralizer / 4 jts through the remainder of the cement column.

5. **Proposed Cementing Program**

**Surface Casing Single Stage Job – (0- 1,010' MD):**
**Excess – 100% over gauge hole – 12-1/4" hole and 9-5/8" casing (0.3132 ft3/ft)**
**Top of Cement - Surface**
Yield – 2.21 ft3/sx
Water requirement – 12.6 gal/sx
**Total sacks of cement pumped = 290x**

**Production Casing Single Stage Job – (0- 3,851' MD):**
**Excess –25% over gauge hole – 8-3/4" hole and 5-1/2" casing (0.3157 ft3/ft)**
**Top of Cement – Surface**
Yield – 1.21 ft3/sx
Water requirement –5.68 gal/sx
**Total sacks of cement pumped = 1,010sx**

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6. **Characteristics for Drilling Fluids (all depths are MD)**

| Depth (MD) | Hole Size (in) | Type | Fluid Density (ppg) | PV (cP) | YP (lb/100 ft²) | API (mL) | pH | MBT (ppb) | Salinity (PPM) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 – 1,010' | 12-1/4" | FW/Gel | 8.4 - 8.8 | 2 - 8 | 12 | N/C | 8.5 - 9.5 | < 15 | < 500 | spud mud |
| 1,010' – 3,851' | 8-3/4" | WBM | 8.4 - 8.8 | 8 - 14 | 7-8 | </= 6 | 8.5 - 9.5 | < 15 | < 1,000 | LSND |

Sufficient weighting material will be on hand to weight mud up to 11.0 PPG, if required.

The formula for weight up with barite is listed below:
**Sacks of Barite per 100 bbl of mud = 1470 x (W2 – W1) ÷ (35 – W2)**

Where; W1 = current mud weight

W2 = new mud weight

**Sacks = 1470 x (11.0 – 8.6)/(35-11.0) = 147sx * 20 (2000bbls minimum) = 2940sx**

Pason Pit Volume Totalizer (PVT) equipment will be on each pit to monitor pit levels. A closed-loop mud system will be utilized while drilling. Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blowout will be available at the well site during drilling operations. All necessary spill prevention and remediation materials and procedures will be utilized to control any potential discharges on the surface. A steel tank will be used to collect all of the cuttings. The cuttings will be disposed of onsite in an approved lined cuttings disposal trench, in accordance with the rules and regulations of the BLM and New Mexico Oil Conservation Division.

7. **Testing, Logging, Coring and Completion Program**

A. Drill-Stem Testing Program: None

B. Logging Program:
The following logs (Dipole/GR/DIL/DEN/NEU/ML) will be run in 8-3/4" hole from TD (~3,851' MD) to the surface casing shoe (~1,010' MD).
Submission of digital logging data shall be in Log ASCII Standard (LAS) file format.

BLM shall be provided with a final survey to establish the location of the bottom hole location. If reduced data are provided, the algorithm, datum, and projection should also be provided.

C. Mud Logging
Geologist & a manned mud-logging unit will be operational @ +/-400' on the main hole to TD. Samples will be caught every 30 feet during drilling, with the exception of possible pay zones, where samples will be caught every 5 feet.

D. Coring: Option for 60 percussion sidewall cores from surface casing to TD.

E. Cement Bond Log: Will be run after the drilling of the well has been completed and as the start of the completion process. The CBL will confirm the quality of the

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JUL 24 2015
BUREAU OF LAND MANAGEMENT

cement bond and the actual TOC. If either of these two data points were not satisfactory per BLM, State and standard procedure, remedial cement work, if required, will be performed after consultation and approval of a plan from both the BLM and State agencies.

F. Drilling and Stimulation: Drilling is expected to take 7 days. Completion (if the well is deemed productive) is estimated to take 2 days. The duration of flowback/testing operations is 3 days. We are planning a 4 stage nitrogen foam frac for this well. Based on frac modeling work, we anticipate an average frac length away from the wellbore to be ~400 feet in the horizontal direction. Estimated fresh water usage per stage during completion is ~476 bbls. A total of ~1,540 bbls of sand/nitrogen/water mix will be injected during the completion. A total of ~3,700 lb of premium white 40/70 sand and a total of ~70,300 lb of premium white 20/70 sand will be injected during the completion. A hydraulic fracture treatment will be designed for the completion of this well based on open hole log analysis and surface shows. If a hydraulic fracture treatment is warranted. The drill site, as approved, will be sufficient size to accommodate all completion activities.

**8. Expected Bottom Hole Pressure and any Anticipated Abnormal Pressures, Temperatures or Other Potential Hazards**

A. Based on offset information the expected bottom-hole pressure at the Graneros is 0.45 psi x 3,846' TVD = 1,730 psi.

| Well | TVD (ft) | BHP (PSI) | Pressure Gradient (psi/ft) | EMW (ppg) |
|---|---|---|---|---|
| Harris Hawk 20-1 | 3578 | 1610 | 0.45 | 8.7 |
| Prairie Falcon 19-1 | 3269 | 1471 | 0.45 | 8.7 |
| **Estimated BHP** | **3846** | **1730** | **0.45** | **8.7** |

B. Expected bottom-hole temperature @ the Graneros formation is ~110 deg F.
C. No lost circulation is anticipated.
D. No zones of potable water are expected to be encountered during the drilling of this well.
E. No H2S sour gas is known to exist in the formations that we will drill through.
F. Estimated fresh water usage for drilling operations will start at ~1,000 bbls of fresh water. The mud system will dewater after a well is drilled. We can reuse the same water over and over (re-use of drilling mud on subsequent wells). Accounting for fluid loss to formation and evaporation, we estimated needing to add approximately 250 bbls of new fresh water when the mud is transported to the next well. This assumes no lost circulation events.
G. Estimated fresh water usage for cementing operations is ~162 bbls for surface casing, and ~351 bbls for production casing. Both of these estimates include using fresh water as the displacement fluid.
H. Estimated maximum fresh water usage for completion operations is ~3,022 bbls. This includes 25% excess water on hand per stage. This assumes a 4-stage nitrogen foam frac. The water usage for the completion activities will vary depending on the number of stages selected for stimulation and will be provided in the completion report.

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JUL 29 2015
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**9. Plugging and Abandonment**

No plugging and abandonment of the well would occur until after the well has been drilled, completed, hydraulically stimulated and production tested, unless extenuating circumstances arise. Full authorization will be verbally sought from the Bureau of Land Management and the New Mexico Oil Conservation Division prior to actual plugging operations being initiated with written reports submitted as a followed up.

**10. Other**

A Cultural Resource Inventory and Paleontology reconnaissance has been conducted for the well location and access route. The reports shall be submitted to the Ute Mountain Ute Tribe and the BLM upon their receipt.

| | |
|---|---|
| Anticipated Commencement Date: | Within 30 days of APD approval based on ability to source appropriate rig to complete operations |

**11. Protecting Valuable deposits of fluid or solid minerals**

We will run 2 strings of casing (surface and production) and cement to surface both. Surface casing cement will have 100% returns to surface. Production casing will have 25% returns to surface. This extra cement back at surface ensures that the quality of cement downhole is good. A CBL will be run from TD to surface to ensure the cement bond is good quality. We will drill the well with the appropriate mud weight based on anticipated and encountered pressures while drilling. Fresh water, usable water and coal deposits will be protected by surface casing and production casing. Oil and gas bearing zones will be isolated from fresh water and usable water zones by the production casing. Formations will be selected for completion and perforated. This ensures we are targeting only the zones of interest for completion.

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JUL 29 2015


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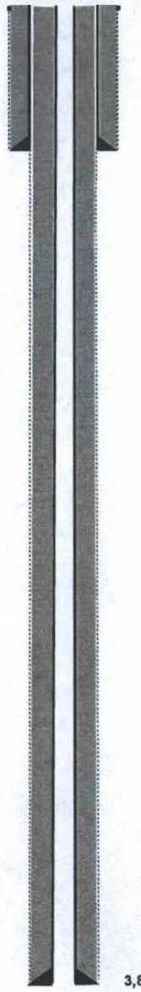
# DRILLING AND GEOLOGICAL INFORMATION

| | | | | | |
|---|---|---|---|---|---|
| PROSPECT/FIELD | Gallup Verde | COUNTY | San Juan | GROUND ELEVATION | GR 5,524' |
| OPERATOR | Bridgecreek Resources (Colorado), LLC | STATE | New Mexico | RIG HT. 12.0' KB | KB ± 5,536' |
| LEASE & WELL NO. | Kingsnake 34-6 | | | | |
| FORM @ TD | Graneros | | | | |
| Initial Target Line | n/a | | | | |

Source of drilling program: Alicia Branch
Source of geological tops: John Frame

WELLBORE



3,851'

9-5/8" CASING DEPTH
MD: 1,010'
TVD: 1,010'

9-5/8" CEMENT TOP TARGET
MD: 0'
TVD: 0'

DV TOOL Placement (if required)
MD:
TVD:

5 1/2" CEMENT TOP TARGET:
MD: 0'
TVD: 0'

KOP
TVD/MD: 1,100'

Based on 5,536' KB

GEOLOGICAL TOPS:

| Formation | Est MD | TVD | Comments |
|---|---|---|---|
| Pictured Cliffs | 0 ' | 0 ' | Aquifer (Water) |
| Cliffhouse | 756 ' | 756 ' | Aquifer (Water) |
| Menefee | 960 ' | 960 ' | Deepest Coal |
| Point Lookout | 1,677 ' | 1,676 ' | None |
| Upper Mancos | 2,123 ' | 2,121 ' | None |
| MRZ | 2,482 ' | 2,479 ' | Possible Pay (Oil/Gas) |
| ElVado | 3,033 ' | 3,030 ' | Possible Pay (Oil/Gas) |
| Tocito | 3,278 ' | 3,274 ' | Possible Pay (Oil/Gas) |
| Juana Lopez | 3,445 ' | 3,440 ' | Possible Pay (Oil/Gas) |
| Greenhorn | 3,783 ' | 3,778 ' | Possible Pay (Oil/Gas) |
| Graneros | 3,846 ' | 3,841 ' | None |
| TD | 3,851 ' | 3,846 ' | None |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Proposed TD | 3,851 ' | 3,846 ' | NA |

LOGGING PROGRAM:

| Interval | LWD Requested | Open Hole & Mud Logging Program |
|---|---|---|
| Surface to TD | n/a | mud logging |
| Surface to 1,010' | n/a | mud logging |
| 1,010' to TD | n/a | GR/DIL/DEN/NEU/ML |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Special Request | optional percussion sidewall cores surface casing to TD | |
| | | |
| | | |

POTENTIAL DRILLING PROBLEMS:
May encounter loss circulation in Menefee Coal and Lower Mancos sections

DEVIATION:
This will be a slightly deviated wellbore, with 3.61 degrees inclination, 331.75 azimuth and 165.5' of vertical section at TD.

MUD PROGRAM:

| Mud Type | Interval | Corresponding Depths | Weight | Vis | API (mL) | Remarks |
|---|---|---|---|---|---|---|
| SPUD | Surface | 0 - 1010 | 8.4 - 8.6 | 32-45 | NC | |
| LSND | Production | 0 - 3851 | 8.4-8.8 | 45-50 | <6 | |

CASING & CEMENT PROGRAM:

| | Size | Wt (ppf) | Grade | Thread | Hole | Top | Bottom | Cement: | Ft | Sx | Density (ppg) | Yield (cf/sk) | GPS | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Casing: | 9.625" | 36.0 | J-55 | LTC | 12.25" | 0' | 1,010' | Lead | 1,010 ' | ±290 sx | 12.5 | 2.21 | 12.66 | Type II Cement |
| *Note Conductor to be pre-set | *16."* | *42.09* | Conductor to be cemented with 5 bags ready mix | | | *0'* | *40'* | | | | | | | |
| Lead Cmt Additives | 1/4 lb/sk Poly-E-Flake | | | | | | | | | | | | | |
| Intermediate Casing: | n/a | n/a | n/a | n/a | | | | | | | | | | |
| N/A | | | | | | | | | | | | | | |
| Production Csg: | 5.500" | 17 | N-80 | LTC | 8.75" | 0' | 3,851' | Lead | 3,851 ' | ±1,010 sx | 12.8 | 1.21 | 5.68 | Class G + additives |
| Lead Cmt Additives | 0.25 pps Poly-E- Flake | | | | | | | | | | | | | |
| Tail Cmt Additives | | | | | | | | | | | | | | |

TOE / 5 ½" LINER SETTING DEPTH:
MD: 3,851' TVD: 3,846'

PILOT HOLE:
MD: n/a
TVD: n/a
n/a

BOTTOM HOLE PRESSURE

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Formation: | Graneros | | 1,730 | psi @ | 3,846' | or Gradient: | 0.45 | psi/ft |
| | | | | psi @ | | or Gradient: | | psi/ft |

Prepared by: S Geiser Date: 07/28/15 Doc: Well Draft Drilling Diagram.xls

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BUREAU OF LAND MANAGEMENT

BRIDGECREEK RESOURCES (COLORADO), LLC

Well Name: Kingsnake 34-6
Surface Location: Section 34 T31N, R15W
North American Datum 1983 , US State Plane 1983 , New Mexico Central Zone
Ground Elevation: 5524.0

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 2139041.65 | 1009447.57 | 36° 51' 31.926 N | 108° 24' 24.138 W | |

PLAN KB Kingsnake 34-6 @ 5536.0usft (PLAN KB)

Azimuths to True North
Magnetic North: 9.69°
Magnetic Field
Strength: 50322.2snT
Dip Angle: 63.35°
Date: 7/9/2015
Model: IGRF2010

Section 34 T31N, R15W
Kingsnake 34-6
Design #5
15:11, July 10 2015

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
|---|---|---|---|---|---|---|---|---|
| Kingsnake 34-6 TGT | 3846.0 | 145.8 | -78.3 | 2139189.15 | 1009372.59 | 36° 51' 33.367 N | 108° 24' 25.102 W | Point |

ANNOTATIONS

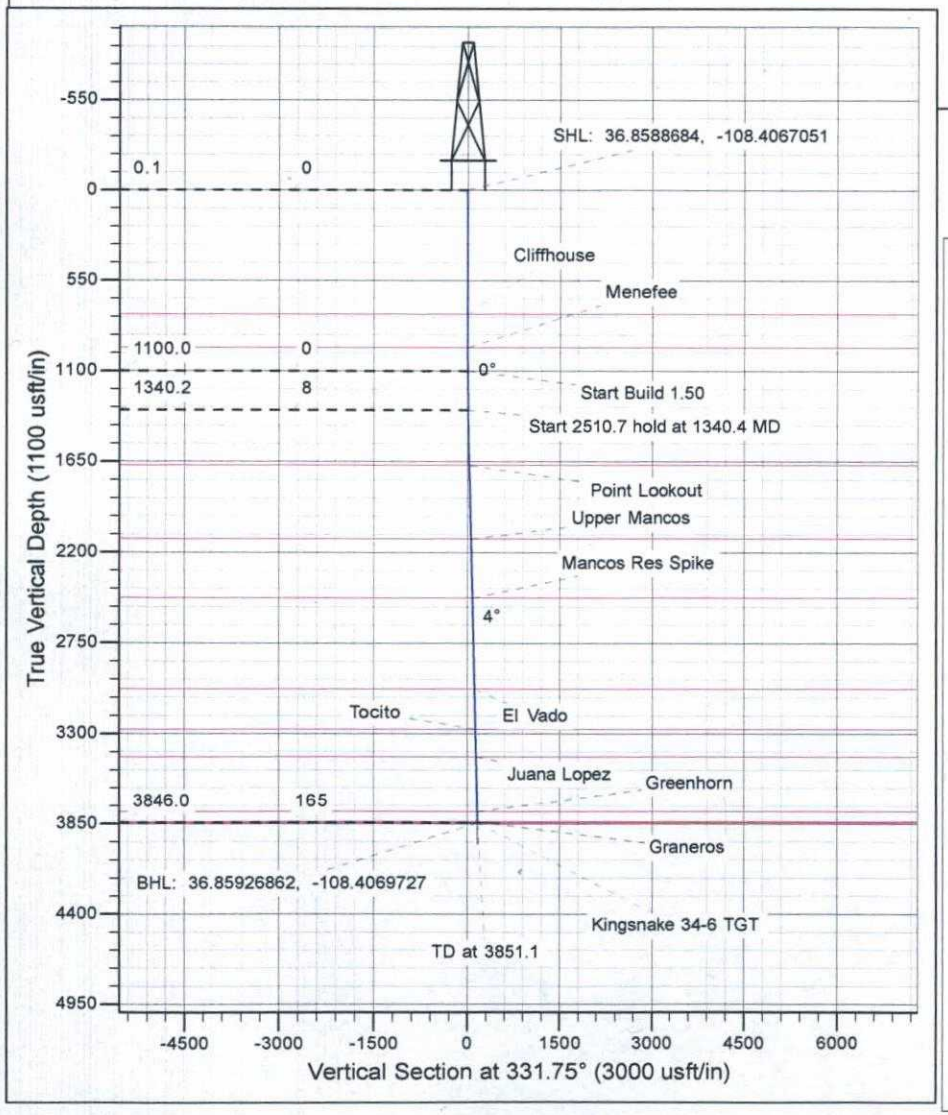
| TVD | MD | Annotation |
|---|---|---|
| 0.1 | 0.1 | SHL: 36.8588684, -108.4067051 |
| 1100.0 | 1100.0 | Start Build 1.50 |
| 1340.2 | 1340.4 | Start 2510.7 hold at 1340.4 MD |
| 3845.9 | 3851.0 | BHL: 36.85926862, -108.4069727 |
| 3846.0 | 3851.1 | TD at 3851.1 |

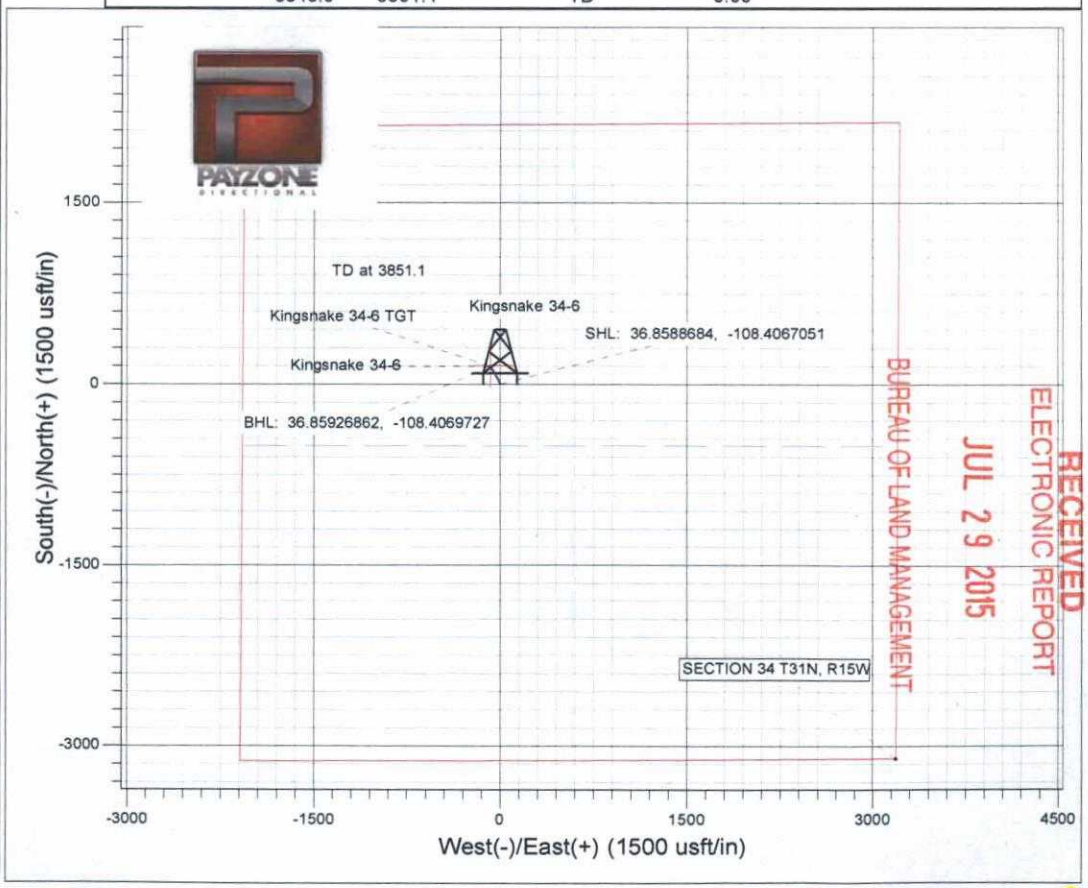
SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | DLeg | TFace | VSect | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 2 | 1100.0 | 0.00 | 0.00 | 1100.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 3 | 1340.4 | 3.61 | 331.75 | 1340.2 | 6.7 | -3.6 | 1.50 | 331.75 | 7.6 | |
| 4 | 3851.1 | 3.61 | 331.75 | 3846.0 | 145.8 | -78.3 | 0.00 | 0.00 | 165.5 | Kingsnake 34-6 TGT |

FORMATION TOP DETAILS

| TVDPath | MDPath | Formation | DipAngle | DipDir |
|---|---|---|---|---|
| 756.0 | 756.0 | Cliffhouse | 0.00 | |
| 960.0 | 960.0 | Menefee | 0.00 | |
| 1676.0 | 1676.8 | Point Lookout | 0.00 | |
| 2121.0 | 2122.7 | Upper Mancos | 0.00 | |
| 2479.0 | 2481.4 | Mancos Res Spike | 0.00 | |
| 3030.0 | 3033.5 | El Vado | 0.00 | |
| 3274.0 | 3278.0 | Tocito | 0.00 | |
| 3440.0 | 3444.3 | Juana Lopez | 0.00 | |
| 3778.0 | 3783.0 | Greenhorn | 0.00 | |
| 3841.0 | 3846.1 | Graneros | 0.00 | |
| 3846.0 | 3851.1 | TD | 0.00 | |

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BRIDGECREEK RESOURCES
(COLORADO), LLC

# Bridgecreek Resources

**KINGSNAKE**
**Section 34 T31N, R15W**
**Kingsnake 34-6**

**Wellbore #1**

**Plan: Design #5**

# Standard Planning Report

**10 July, 2015**

PATZONE DIRECTIONAL
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ELECTRONIC REPORT
JUL 29 2015
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| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well Kingsnake 34-6 |
| **Company:** | Bridgecreek Resources | **TVD Reference:** | Kingsnake 34-6 @ 5536.0usft (PLAN KB) |
| **Project:** | KINGSNAKE | **MD Reference:** | Kingsnake 34-6 @ 5536.0usft (PLAN KB) |
| **Site:** | Section 34 T31N, R15W | **North Reference:** | True |
| **Well:** | Kingsnake 34-6 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Design #5 | | |

| **Project** | KINGSNAKE | | |
|---|---|---|---|
| **Map System:** | US State Plane 1983 | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | North American Datum 1983 | | |
| **Map Zone:** | New Mexico Central Zone | | |

| **Site** | Section 34 T31N, R15W | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 2,139,041.64 usft | **Latitude:** | 36° 51' 31.926 N |
| **From:** | Lat/Long | **Easting:** | 1,009,447.57 usft | **Longitude:** | 108° 24' 24.138 W |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | -1.29 ° |

| **Well** | Kingsnake 34-6, SHL: 36.8588684, -108.4067051 | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 usft | **Northing:** | 2,139,041.64 usft | **Latitude:** | 36° 51' 31.926 N |
| | **+E/-W** | 0.0 usft | **Easting:** | 1,009,447.57 usft | **Longitude:** | 108° 24' 24.138 W |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | 5,536.0 usft | **Ground Level:** | 5,524.0 usft |

| **Wellbore** | Wellbore #1 | | | |
|---|---|---|---|---|
| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
| | IGRF2010 | 7/9/2015 | 9.69 | 63.35 | 50,322 |

| **Design** | Design #5 | | | | |
|---|---|---|---|---|---|
| **Audit Notes:** | | | | | |
| **Version:** | | **Phase:** | PROTOTYPE | **Tie On Depth:** | 0.0 |
| **Vertical Section:** | **Depth From (TVD) (usft)** | **+N/-S (usft)** | **+E/-W (usft)** | **Direction (°)** | |
| | 0.0 | 0.0 | 0.0 | 331.75 | |

**Plan Sections**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,100.0 | 0.00 | 0.00 | 1,100.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,340.4 | 3.61 | 331.75 | 1,340.2 | 6.7 | -3.6 | 1.50 | 1.50 | 0.00 | 331.75 | |
| 3,851.1 | 3.61 | 331.75 | 3,846.0 | 145.8 | -78.3 | 0.00 | 0.00 | 0.00 | 0.00 | Kingsnake 34-6 TGT |

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| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well Kingsnake 34-6 |
| **Company:** | Bridgecreek Resources | **TVD Reference:** | Kingsnake 34-6 @ 5536.0usft (PLAN KB) |
| **Project:** | KINGSNAKE | **MD Reference:** | Kingsnake 34-6 @ 5536.0usft (PLAN KB) |
| **Site:** | Section 34 T31N, R15W | **North Reference:** | True |
| **Well:** | Kingsnake 34-6 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Design #5 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 0.1 | 0.00 | 0.00 | 0.1 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **SHL: 36.8588684, -108.4067051** | | | | | | | | | |
| 100.0 | 0.00 | 0.00 | 100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 600.0 | 0.00 | 0.00 | 600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 700.0 | 0.00 | 0.00 | 700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 756.0 | 0.00 | 0.00 | 756.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **Cliffhouse** | | | | | | | | | |
| 800.0 | 0.00 | 0.00 | 800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 900.0 | 0.00 | 0.00 | 900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 960.0 | 0.00 | 0.00 | 960.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **Menefee** | | | | | | | | | |
| 1,000.0 | 0.00 | 0.00 | 1,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,100.0 | 0.00 | 0.00 | 1,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **Start Build 1.50** | | | | | | | | | |
| 1,200.0 | 1.50 | 331.75 | 1,200.0 | 1.2 | -0.6 | 1.3 | 1.50 | 1.50 | 0.00 |
| 1,300.0 | 3.00 | 331.75 | 1,299.9 | 4.6 | -2.5 | 5.2 | 1.50 | 1.50 | 0.00 |
| 1,340.4 | 3.61 | 331.75 | 1,340.2 | 6.7 | -3.6 | 7.6 | 1.50 | 1.50 | 0.00 |
| **Start 2510.7 hold at 1340.4 MD** | | | | | | | | | |
| 1,400.0 | 3.61 | 331.75 | 1,399.7 | 10.0 | -5.4 | 11.3 | 0.00 | 0.00 | 0.00 |
| 1,500.0 | 3.61 | 331.75 | 1,499.5 | 15.5 | -8.3 | 17.6 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 3.61 | 331.75 | 1,599.3 | 21.0 | -11.3 | 23.9 | 0.00 | 0.00 | 0.00 |
| 1,676.8 | 3.61 | 331.75 | 1,676.0 | 25.3 | -13.6 | 28.7 | 0.00 | 0.00 | 0.00 |
| **Point Lookout** | | | | | | | | | |
| 1,700.0 | 3.61 | 331.75 | 1,699.1 | 26.6 | -14.3 | 30.2 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 3.61 | 331.75 | 1,798.9 | 32.1 | -17.3 | 36.5 | 0.00 | 0.00 | 0.00 |
| 1,900.0 | 3.61 | 331.75 | 1,898.7 | 37.7 | -20.2 | 42.8 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 3.61 | 331.75 | 1,998.5 | 43.2 | -23.2 | 49.0 | 0.00 | 0.00 | 0.00 |
| 2,100.0 | 3.61 | 331.75 | 2,098.3 | 48.7 | -26.2 | 55.3 | 0.00 | 0.00 | 0.00 |
| 2,122.7 | 3.61 | 331.75 | 2,121.0 | 50.0 | -26.9 | 56.8 | 0.00 | 0.00 | 0.00 |
| **Upper Mancos** | | | | | | | | | |
| 2,200.0 | 3.61 | 331.75 | 2,198.1 | 54.3 | -29.2 | 61.6 | 0.00 | 0.00 | 0.00 |
| 2,300.0 | 3.61 | 331.75 | 2,297.9 | 59.8 | -32.1 | 67.9 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 3.61 | 331.75 | 2,397.7 | 65.4 | -35.1 | 74.2 | 0.00 | 0.00 | 0.00 |
| 2,481.4 | 3.61 | 331.75 | 2,479.0 | 69.9 | -37.5 | 79.3 | 0.00 | 0.00 | 0.00 |
| **Mancos Res Spike** | | | | | | | | | |
| 2,500.0 | 3.61 | 331.75 | 2,497.5 | 70.9 | -38.1 | 80.5 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 3.61 | 331.75 | 2,597.3 | 76.4 | -41.1 | 86.8 | 0.00 | 0.00 | 0.00 |
| 2,700.0 | 3.61 | 331.75 | 2,697.1 | 82.0 | -44.1 | 93.1 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 3.61 | 331.75 | 2,797.0 | 87.5 | -47.0 | 99.4 | 0.00 | 0.00 | 0.00 |
| 2,900.0 | 3.61 | 331.75 | 2,896.8 | 93.1 | -50.0 | 105.7 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 3.61 | 331.75 | 2,996.6 | 98.6 | -53.0 | 111.9 | 0.00 | 0.00 | 0.00 |
| 3,033.5 | 3.61 | 331.75 | 3,030.0 | 100.5 | -54.0 | 114.1 | 0.00 | 0.00 | 0.00 |
| **El Vado** | | | | | | | | | |
| 3,100.0 | 3.61 | 331.75 | 3,096.4 | 104.2 | -56.0 | 118.2 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 3.61 | 331.75 | 3,196.2 | 109.7 | -58.9 | 124.5 | 0.00 | 0.00 | 0.00 |
| 3,278.0 | 3.61 | 331.75 | 3,274.0 | 114.0 | -61.3 | 129.4 | 0.00 | 0.00 | 0.00 |
| **Tocito** | | | | | | | | | |
| 3,300.0 | 3.61 | 331.75 | 3,296.0 | 115.2 | -61.9 | 130.8 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well Kingsnake 34-6 |
| **Company:** | Bridgecreek Resources | **TVD Reference:** | Kingsnake 34-6 @ 5536.0usft (PLAN KB) |
| **Project:** | KINGSNAKE | **MD Reference:** | Kingsnake 34-6 @ 5536.0usft (PLAN KB) |
| **Site:** | Section 34 T31N, R15W | **North Reference:** | True |
| **Well:** | Kingsnake 34-6 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Design #5 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 3,400.0 | 3.61 | 331.75 | 3,395.8 | 120.8 | -64.9 | 137.1 | 0.00 | 0.00 | 0.00 |
| 3,444.3 | 3.61 | 331.75 | 3,440.0 | 123.2 | -66.2 | 139.9 | 0.00 | 0.00 | 0.00 |
| **Juana Lopez** | | | | | | | | | |
| 3,500.0 | 3.61 | 331.75 | 3,495.6 | 126.3 | -67.9 | 143.4 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 3.61 | 331.75 | 3,595.4 | 131.9 | -70.8 | 149.7 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 3.61 | 331.75 | 3,695.2 | 137.4 | -73.8 | 156.0 | 0.00 | 0.00 | 0.00 |
| 3,783.0 | 3.61 | 331.75 | 3,778.0 | 142.0 | -76.3 | 161.2 | 0.00 | 0.00 | 0.00 |
| **Greenhorn** | | | | | | | | | |
| 3,800.0 | 3.61 | 331.75 | 3,795.0 | 142.9 | -76.8 | 162.3 | 0.00 | 0.00 | 0.00 |
| 3,846.1 | 3.61 | 331.75 | 3,841.0 | 145.5 | -78.2 | 165.2 | 0.00 | 0.00 | 0.00 |
| **Graneros** | | | | | | | | | |
| 3,851.0 | 3.61 | 331.75 | 3,845.9 | 145.8 | -78.3 | 165.5 | 0.00 | 0.00 | 0.00 |
| **BHL: 36.85926862, -108.4069727** | | | | | | | | | |
| 3,851.1 | 3.61 | 331.75 | 3,846.0 | 145.8 | -78.3 | 165.5 | 0.00 | 0.00 | 0.00 |
| **TD at 3851.1** | | | | | | | | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| Kingsnake 34-6 TGT<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 3,846.0 | 145.8 | -78.3 | 2,139,189.14 | 1,009,372.56 | 36° 51' 33.367 N | 108° 24' 25.102 W |

**Formations**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 756.0 | 756.0 | Cliffhouse | | 0.00 | |
| 960.0 | 960.0 | Menefee | | 0.00 | |
| 1,676.8 | 1,676.0 | Point Lookout | | 0.00 | |
| 2,122.7 | 2,121.0 | Upper Mancos | | 0.00 | |
| 2,481.4 | 2,479.0 | Mancos Res Spike | | 0.00 | |
| 3,033.5 | 3,030.0 | El Vado | | 0.00 | |
| 3,278.0 | 3,274.0 | Tocito | | 0.00 | |
| 3,444.3 | 3,440.0 | Juana Lopez | | 0.00 | |
| 3,783.0 | 3,778.0 | Greenhorn | | 0.00 | |
| 3,846.1 | 3,841.0 | Graneros | | 0.00 | |
| 3,851.1 | 3,846.0 | TD | | 0.00 | |

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| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well Kingsnake 34-6 |
| **Company:** | Bridgecreek Resources | **TVD Reference:** | Kingsnake 34-6 @ 5536.0usft (PLAN KB) |
| **Project:** | KINGSNAKE | **MD Reference:** | Kingsnake 34-6 @ 5536.0usft (PLAN KB) |
| **Site:** | Section 34 T31N, R15W | **North Reference:** | True |
| **Well:** | Kingsnake 34-6 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Design #5 | | |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 0.1 | 0.1 | 0.0 | 0.0 | SHL: 36.8588684, -108.4067051 |
| 1,100.0 | 1,100.0 | 0.0 | 0.0 | Start Build 1.50 |
| 1,340.4 | 1,340.2 | 6.7 | -3.6 | Start 2510.7 hold at 1340.4 MD |
| 3,851.0 | 3,845.9 | 145.8 | -78.3 | BHL: 36.85926862, -108.4069727 |
| 3,851.1 | 3,846.0 | 145.8 | -78.3 | TD at 3851.1 |

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JUL 29 2015
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constructed above the cut slope to divert stormwater around the well pad. All stormwater mitigations will be in accordance with BLM Gold Book BMP construction and installation standards and practices.

Other than the oil and gas production and processing facilities, no new construction activities are proposed.

## ~~8.~~ 7. METHODS OF FOR HANDLING WASTE

A. Portable toilets will be provided by Serrano's Portable Toilets (505-632-9497) or similar commercial sanitation service. The waste will be disposed at the Farmington OMI Waste Water Treatment plant located in Farmington, NM. The toilets will be onsite during all operations.

B. Drilling operations will utilize a closed loop water based mud system. Bridgecreek anticipates that during the flowback stage of the well there will be four (4) 300bbl tanks on location placed outside of the workover rig and rig crew equipment areas, in a designated area that be safe for all other operations on the pad.

C. Drill cuttings (rock fragments generated during drilling) will be produced during drilling of the borehole. The operator will follow Onshore Oil and Gas Order No. 1 regarding the placement, operation and removal of the closed-loop systems. No blow pit will be used.

D. Drill cuttings will be disposed on-site in a burial trench. The entire area designated to include one or more burial trench will not exceed the dimension of 10 feet wide x 10 feet deep x 162 feet maximum length. The operator will obtain an approved Form C-144 for each burial trench per NMOCD's Pit Rule NMAC 19.15.17 prior to on-site disposal of drill cuttings. The drill cuttings will be temporarily stored in above-ground steel containment until drilling completion. Cuttings will be dried and mixed with a bonding agent or clean fill for stabilization. The drill cuttings will not be mixed greater than a 3:1 ratio.

E. Prior to disposal, cuttings will be tested by taking at a minimum 5-point sample for the analysis of constituents under the regulations listed in the NMAC 19.15.17.13 Closure and Site Reclamation requirements, Ute Mountain Ute (UMU) Tribe's "Standards for Spill Clean-up and Chlorides Reclamation" table, and EPA SW-846 methods. These results will be submitted to the BLM via a 3160-5 Sundry Form to the Tres Rios BLM Field Office.

F. After drilling operations and during equipment demobilization, the operator will transfer the drill cuttings into the burial trench. The first well will be drilled and completed and a burial trench utilized. The remaining wells on this pad will be drilled at a later date and a subsequent burial trench(s) will be placed end-to-end within the same contiguous burial trench area shown on Attachment F. The boundaries of the trench will be designated by surface and depth markers to avoid the possibility of mixing one with another. The markers will clearly define the edge and the depth of the trench to allow for subsequent excavation without disturbing previously buried cuttings.

G. The cuttings burial trench will be compacted to ground level to prevent the collection of surface runoff and erosion and located on the pad as shown on the well pad layout-Attachment F. The burial trench will be lined with a minimum of 20 mil string reinforced LLDPE liner or equivalent liner and capped with a minimum of 4 feet of clean fill dirt. No trash will be placed in the cuttings trench.

H. Drilling fluids will be stored onsite in above-ground storage tanks. Upon termination of drilling operations, the drilling fluids will be recycled and transferred to other permitted locations or returned to the vendor for re-use, as practical. Residual fluids will be vacuumed from the storage tanks and disposed of at an appropriate waste disposal facility. Drilling fluid storage tanks will be adequately sized to ensure confinement of all fluids and will provide a minimum of 2 feet of freeboard to prevent uncontrolled releases.

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**Bridgecreek Resources** **3160**
**Tribal IMDA: 751-14-1038**
**Well: Kingsnake # 34-6**
**Surface Location: 2128' FNL & 2060' FWL**
**Sec. 34, T. 31 N., R. 15 W.**
**San Juan County, New Mexico**

## Conditions of Approval - Drilling Plan:

1. Notify this office at least **3 days** prior to:

    a. spudding the well

    b. running casing strings and cementing

    c. BOP tests

    d. Drill Stem Testing

**For the above procedures, Operators must talk to BLM personnel directly. Do not leave messages on answering machines. Contact Dan Rabinowitz, BLM Petroleum Engineer: office: 970-385-1363, or Rod Brashear: office: 970-385-1347, and cell: 970-799-1244.**

2. All BOP tests will be performed with a test plug in place. BOP will be tested to full stack working pressure and annular preventer to 50% maximum stack working pressure. All accumulators will be function tested as per Onshore Order #2. All 2M or greater systems require **adjustable** chokes as per Onshore Order #2.

3. No additional zones will be commingled without UMU Tribal and BLM approval.

4. If a BLM Inspector is not present during the initial BOP test, please provide chart record.

5. Submit copies of all logs to this office both paper and in Log ASCII Standard (LAS) format.

Continued on Page 2.

**6. If any operations are to start over the weekend, notify this office by noon Friday. If any problems arise after hours or on weekends, call BLM personnel using the home phone or cell phone numbers listed on the following 'INFORMATIONAL NOTICE - APD's'. Do not leave messages on answering machines.**

7. If cement cannot be brought to at least 10 ft. from ground level in 9-5/8" surface string then the operator must run a CBL log and obtain BLM approval prior to drilling ahead.

8. A CBL is also required if cement is not circulated to the surface on the production casing string. BLM verbal approval will be required prior to squeezing.

9. The BLM must witness the topping-off of the Surface Casing Cement.

10. The tops of all major identifiable geologic units (formations) from surface to TD will be logged and recorded.

**11. Stabilized bottomhole pressure measurements and flowrates must be collected and submitted to the BLM.**

**12. The operator is required to set the surface casing shoe at a minimum depth of 1,010 ft. MD/TVD or at least 50 ft. below the top of the Menefee Formation, WHICHEVER IS DEEPER.**

13. Please provide the following information if possible. All tests and operations on any well on subject lands shall be conducted at Operator's sole discretion.

All Wire Line Logs - Fields & Final Print (Electrical, Radioactive, Sonic, Velocity, Cement Bond, Temperature, etc with digitized and log analysis).

Drill Stem Tests - Field and Final Reports.

Core Analysis - Field and Final Reports.

Mud Log - Final Report.

Structure and Isopach Maps.

Continued on page 3.

Location (Surveyors) Plat.
Application to Drill (Drilling Permit).
Daily Drilling Reports, Daily Work Over Reports and Final Drilling Report Summary.
Directional Survey.
Geological Summary Report.
Completion Report.
Production Tests (All Production Tests during Completion, AOF, Potential, GOR, etc).
30 Day Well Production Test Record
Bottom Hole Pressure Surveys including build up tests.
Shut in Surface Pressure Surveys.
Gas, Oil and Water Analyses.
State and/or BLM Completion Reports.
State and/or BLM and/or MMS Monthly Production and OGOR Reports.
Additional Governmental Permits and Reports.
Drilling Contracts.
Operating Agreements.
Oil and Gas Sales Contracts.
Plug and Abandon Reports.
Monthly, Gas and/or Plant Products Purchasing Statements.
Well Bore Profiles.
Division Orders/Title Opinions.
AFEs.
Final Drill and Completion Costs.
Other wellfile information as requested by the Tribal Department of Energy.

Exhibit A: Blow Out Prevention Equipment

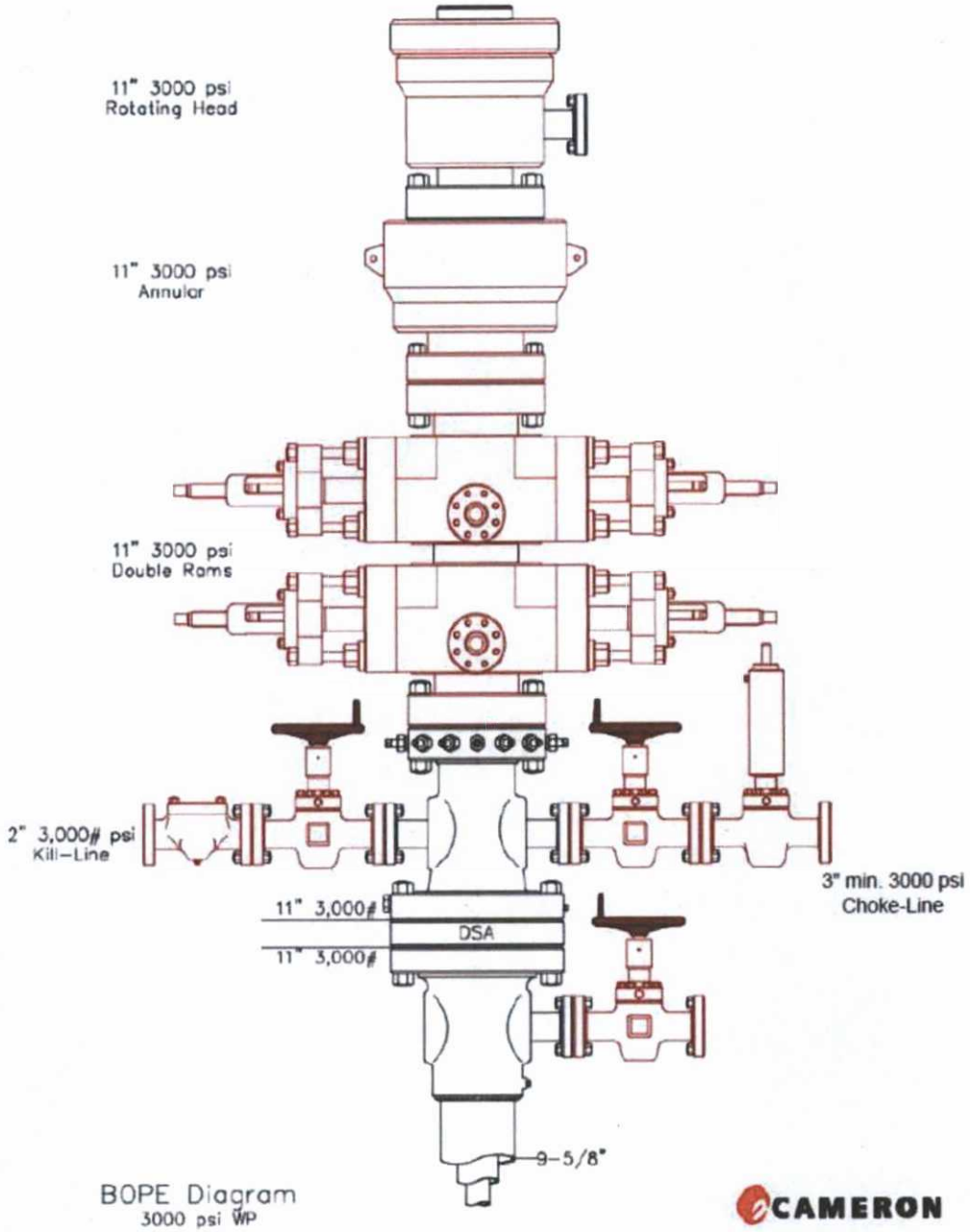


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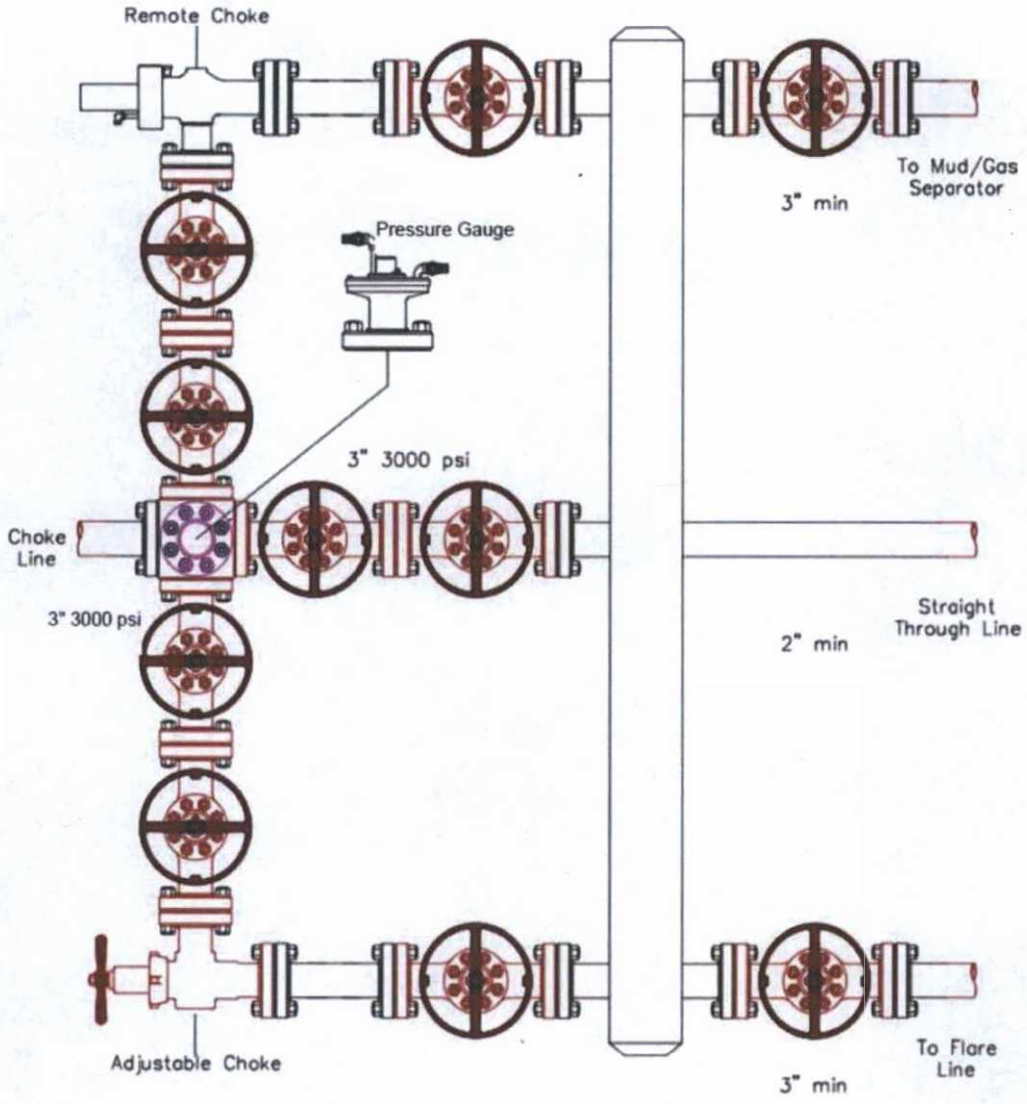
Exhibit B: Choke Manifold

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