



CRESTONE PEAK
RESOURCES

Bare Spaces 11-36
API# 05-123-18955
Re-Entry and Re-P&A

DRAFT

August 21, 2017

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Attachments:

Attachment 1 – Current Plugged Wellbore Diagram
Attachment 2 – Proposed Plugged Wellbore Diagram

Safety

Safety meetings are to be held with all service company personnel prior to each job. Wellsite supervisor must notify contractors as to known hazards of which the contractors may be unaware. Well site supervisor must ensure that all workers are aware of their responsibilities and duties under the EH&S guidelines. All safety meetings will be recorded on the Crestone Peak Resources daily completion reports in Wellview. Follow best practices for well control and proper handling of gas, oil and well fluids.

Regulations

All verbal notifications and approval from government regulatory agencies will be recorded on the Crestone Peak Resources daily report. The name of the individual contacted and the subject matter of approval or notification will be recorded.

Reason for Work

Re-Plug well to provide proper isolation for offset mitigation.

- a) Casing to be pulled: No.
- b) Fish in hole: No
- c) Wellbore has uncemented casing leaks: No

Additional COGCC COAs**Additional Information**

Well will be re-entered and re-P&A'd using drilling rig.

Objective:

Find well and prep to re-enter well. Drill out all plugs. Plug well again with improved plugging requirements.

Procedure:

1. Contractor to obtain Line locates for ground disturbance. Locate well or casing stump. Have surveyor gather an as built survey of well location for records. Approvals from surface owner will be required. Submit Form 6 for approval of re-plug prior to hydraulic stimulation of proposed horizontal well. Refer to all COA's from approval from the COGCC.
2. Have mud engineer contact Crestone Peak Resources Chemical Coordinator for chemical additives in fluid.
3. Construct approved location and temporary access for the site after approvals have been made.
4. Submit Form 42 electronically to COGCC 48 hours prior to MIRU. Notify COGCC Inspector 24 hours prior to MIRU.
5. Dig up stump of original surface casing. Create bell hole to provide safe working area for welder. Cut off marker and prep for a slip on collar with pup joint to get surface flange to ground level. Install 8-5/8", 3K, flange with adapter spool to go to 11" BOP, 3K Flange on top.
6. Back fill area and prep for rig.
7. MIRU drilling rig and auxiliary equipment.
8. Install 11", 3K BOP, including pipe rams for work string, blind rams, annular, circulating head, mud cross with 3" line to choke manifold and 3" flow line to fluid system. Rig up a 2" kill line on bottom spool below Blind Rams. Test all equipment with a function test and a pressure test against test plug. Test surface casing patch to 1915 psi (65% of internal yield pressure of 2950 psi)
9. Pick up 7-7/8" rock bit, bit sub, xo sub, Drill Collars. Drill out surface plug from surface to about 32'. Continue to pick up BHA elements until the full BHA is picked up. Gather measurements for all BHA components before they are picked up.
10. Circulate hole clean when surface plug is drilled out. Run in hole to the next plug. Expected top of 1254'. Report the actual tag depth. Circulate hole with clean mud. Discard returned mud in waste tank. Have 9.5 ppg mud in system before drilling out plug.
11. Drill out next plug from 1254' to about 1354'. Pull back up inside surface casing. Circulate hole clean. Be prepared for gas kick. Circulate as needed to work gas out of system. Notify fire dispatch of any flaring or incinerator use.
12. Run in hole and circulate continuously with fresh mud. Discard the original well fluid in waste tank. Use proper manifest to haul waste mud to landfill. Please note well conditions and adjust mud weight as needed to control well. If bridge or obstruction is encountered, attempt to wash or otherwise remove without rotation. Only rotate as a last resort.
13. Tag J Sand cement plug. Anticipated tag at 7770'. Please note actual depths in report and report to engineer. Circulate well with clean mud.
14. Rig up wireline or slick line to run Gyro Survey from PBTD (just above bit). File survey in electronic well file.
15. Condition mud as necessary to prepare for cement operations. Reduce viscosity to about 10 cp if possible.
16. TOOH and lay down BHA.
17. RIH with drill pipe open-ended.

18. Rig up cement equipment and pump plugs as follows:

- a. Plug 1: 7700' to 6700' (plug isolating Niobrara-Codell) 475 sks of Class G cement, mixed at 15.8 ppg, with 4.97 gal/sk mix water, and 1.15 cu ft/sk yield. Pump a balanced plug based on tubulars and capacity. Assume 9.5" hole size from caliper log plus 10% excess. Trip out of hole to ~6250' and circulate to clear drill string.
- b. Tag up to confirm plug top. Pump additional cement to get plug top to 6700' if necessary. Repeat to tag top before moving to next plug.
- c. Lay down drill pipe to 5700'.
- d. Plug 2: 5700' to 4850' (~225' below base of Shannon to ~168' below top of Sussex) 430 sks of Class G cement, mixed at 15.8 ppg, with 4.97 gal/sk mix water, and 1.15 cu ft/sk yield. Pump a balanced plug based on tubulars and capacity. Assume 9.8" hole size from caliper log plus 10% excess. Trip out of hole to 4400' and circulate to clear drill string. Circulate for 4 hours at slow pump rate to allow cement to cure.
- e. Plug 3: 4850' to 4000' (~168' below top of Sussex to ~682' above top of Sussex) 435 sks of Class G cement, mixed at 15.8 ppg, with 4.97 gal/sk mix water, and 1.15 cu ft/sk yield. Pump a balanced plug based on tubulars and capacity. Assume 9.9" hole size from caliper log plus 10% excess. Trip out of hole to 3550' and circulate to clear tubing. Circulate for 4 hours at slow pump rate to allow cement to cure.
- f. Tag up to confirm plug top. Add additional cement to get plug top to 4000' if necessary. Repeat to tag top before moving to next plug.
- g. Lay down drill pipe to 2500'.
- h. Plug 4: 2500' to 1400' (~336' below base of Upper Pierre to 1400') 480 sks of Class G cement, mixed at 15.8 ppg, with 4.97 gal/sk mix water, and 1.15 cu ft/sk yield. Pump a balanced plug based on tubulars and capacity. Assume 9.1" hole size from caliper log plus 10% excess. Trip out of hole to 1000' and circulate to clear drill string. Circulate for 4 hours at slow pump rate to allow cement to cure.
- i. Tag up to confirm plug top. Pump additional cement to get plug top to 1400' if necessary. Repeat to tag top before moving to next plug.
- j. Plug 5: 1400' to surface 445 sks of Class G cement, mixed at 15.8 ppg, with 4.97 gal/sk mix water, and 1.15 cu ft/sk yield. Pump cement back to surface. Plan on having an extra 200 sks of neat cement available. Assume 9.1" hole size to the base of surface casing. Trip out of hole laying down rest of work string.
- k. Top off casing to surface. Wash up to waste tank. Have all waste hauled to certified disposal with Crestone Peak Resources manifest for each load.

19. ND BOP's and surface equipment.

20. Rig down rig and all other auxiliary equipment. Move off location.

21. Cut off casing 4' below ground level or as approved by COA's.

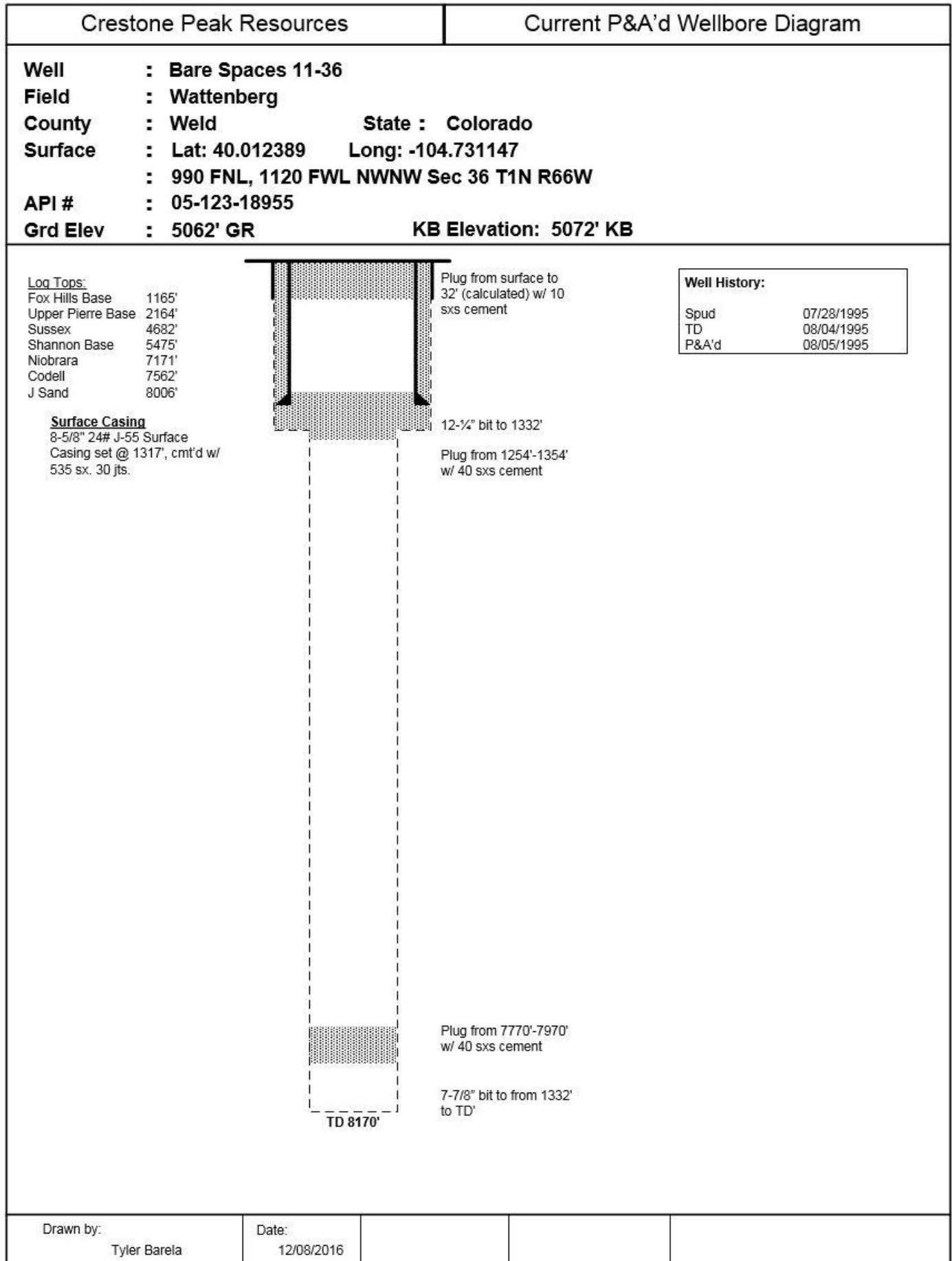
22. Weld on metal plate and/or dry hole marker as per regulation.

23. Restore surface location and reclaim per arrangements with the surface developer.

24. Ensure all cement tickets are mailed or emailed to the Denver office for subsequent reporting.

25. Submit as-built well location GPS data with the Form 6 Subsequent Report of Abandonment. Submit gyro survey data with Form 6 Subsequent Report of Abandonment.

Attachment #1 – Current Plugged Wellbore Diagram



Attachment #2 – Proposed Plugged Wellbore Diagram

