Geist 4-2-32

Annular Fill/Surface Casing Hole Remediation

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Attachments:

Attachment 1 – 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 Encana daily completion reports in Wellview.

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

Reason for Work

Hole found in surface casing below grade, gas leaking to surface outside casing

Additional COGCC COAs

None

COGCC Rule 317.i

Production casing cementing. The operator shall ensure that all cement required under this rule placed behind production casing shall be of adequate quality to achieve a minimum compressive strength of at least three hundred (300) psi after twenty-four (24) hours and eight hundred (800) psi after seventy-two (72) hours measured at ninety-five degrees fahrenheit (95 °F) and at eight hundred (800) psi. After thorough circulation of a wellbore, cement shall be pumped behind the production casing (200) feet above the top of the shallowest known producing horizon. **All fresh water aquifers which are exposed below the surface casing shall be cemented behind the production casing. All such cementing around an aquifer shall consist of a continuous cement column extending from at least fifty (50) feet below the bottom of the fresh water aquifer which is being protected to at least fifty (50) feet above the top of said fresh water aquifer.** Cement placed behind the production casing shall be allowed to set seventy-two (72) hours, or until eight hundred (800) psi calculated compressive strength is developed, whichever occurs first, prior to the undertaking of any completion operation.

Objective:

Pull tubing and lay down. Set RBP, Un-land 4.5" Casing and pump annular fill to cover hole in surface casing ~10' below grade. Run CBL, Pull RBP, Land tubing.

Procedure:

1. Hold a pre-job safety meeting. Discuss all aspects of the procedure with any involved personnel. Identify and address any safety concerns before the job begins.
2. MIRU pulling unit. Kill well with produced water.
3. ND wellhead, NU BOP.
4. POOH with tubing. Replace joints as needed.
5. RIH and set RBP @ 7150'and dump 2 sxs of sand on top.
6. Un-land 4-1/2" production casing.
7. RIH down 4-1/2" by 8-5/8" annulus with 1-1/4" tubing to 850'. **Call Production Engineer @ 720-369-0654 if you are unable to reach specified depth.**
8. Establish circulation and pump 100 sxs of class G neat cement.
9. Pull up to 400' and pump 100 sxs of class G neat cement, taking returns up annulus to surface.
10. Top off cement to surface.
11. **Ensure continuous cement from at least 775' to surface for coverage of casing hole and that all cementing work complies with COGCC rule 317.i (listed on previous page).**
12. POOH and lay down 1-1/4" tubing.
13. Reland 4-1/2" casing
14. Run CBL and log from 1750' to surface'
15. RD E-line.
16. RIH and retrieve RBP @ 7150'.
17. POOH with work string.
18. RIH and Hydrotest completion as follows:
    Seat nipple/EOT @ 7865'
    2-3/8 tubing to surface
19. ND BOP, NU wellhead.
20. RDMO Workover rig.