

**State of Colorado
Oil and Gas Conservation Commission**

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BRADENHEAD TEST REPORT

Step 1. Record all tubing and casing pressures as found. Step 2. Sample now. If intermediate or surface casing pressure > 25 psi. In sensitive areas, 1 psi.
Step 3. Conduct Bradenhead test. Step 4. Conduct intermediate casing test. Step 5. Send report to BLM within 3 days and to OGCC within 10 days. Include wellbore diagram if not previously submitted or if wellbore configuration has changed since prior program. Attach gas and liquid analyses if sampled.

1. OGCC Operator Number: 10531 3. BLM Lease No: _____
 2. Name of Operator: VANGUARD OPERATING LLC
 4. API Number; 05-045-18456-00 5. Multiple completion? Yes No
 6. Well Name: KAUFMAN Number: 33D-24-692
 7. Location (QtrQtr, Sec, Twp, Rng, Meridian): NWSE,24,6S,92W,6
 8. County GARFIELD 9. Field Name: MAMM CREEK
 10. Minerals: Fee State Federal Indian

11. Date of Test: 06/20/2018
 12. Well Status: Flowing
 Shut In Gas Lift
 Pumping Injection
 Clock/Intermitter
 Plunger Lift
 13. Number of Casing Strings:
 Two Three Liner?

14. EXISTING PRESSURES

| | | | | | |
|-------------------------------|---------------------------------------|----------------------------|--|----------------------------|-------------------------|
| Record all pressures as found | Tubing: <u>315</u> Fm: <u>WMFK</u> | Tubing: _____ Fm: _____ | Prod Csg <u>315</u> Fm: <u>WMFK</u> | Intermediate Csg: _____ | Surf. Csg <u>186</u> |
|-------------------------------|---------------------------------------|----------------------------|--|----------------------------|-------------------------|

BRADENHEAD TEST

Buried valve? Yes No
 Confirmed open? Yes No
 With gauges monitoring production, intermediate casing and tubing pressures, open surface casing (bradenhead) valve (if no intermediate casing, monitor only the production casing and tubing pressures.) Record pressures at five minute intervals Define characteristics of flow in "Bradenhead Flow" column using letter designations below:
 O = No Flow; C = Continuous; D = Down to 0; V = Vapor
 H = Water H2O; M = Mud; W = Whisper; S = Surge; G = Gas

| Elapsed Time (Min:Sec) | Fm: Tubing | Fm: Tubing: | Prod Csg PSIG | Intermedia Csg PSIG | Bradenhead Flow: |
|------------------------|------------|--------------------------|------------------------------|---------------------|------------------|
| 00:00 | WMFK 315 | <input type="checkbox"/> | <input type="checkbox"/> 315 | | G |
| 05:00 | WMFK 316 | <input type="checkbox"/> | <input type="checkbox"/> 316 | | O |
| 10:00 | WMFK 317 | <input type="checkbox"/> | <input type="checkbox"/> 317 | | O |
| 15:00 | WMFK 317 | <input type="checkbox"/> | <input type="checkbox"/> 317 | | O |
| 20:00 | WMFK 318 | <input type="checkbox"/> | <input type="checkbox"/> 318 | | O |
| 25:00 | WMFK 318 | <input type="checkbox"/> | <input type="checkbox"/> 318 | | O |
| 30:00 | WMFK 318 | <input type="checkbox"/> | <input type="checkbox"/> 318 | | O |

BRADENHEAD SAMPLE TAKEN?
 Yes No Gas Liquid
 Character of Bradenhead fluid: Clear Fresh
 Sulfur Salty Black
 Other:(describe) _____
 Sample cylinder number: _____

Instantaneous Bradenhead PSIG at end of test: > 0

INTERMEDIATE CASING TEST

Buried valve? Yes No
 Confirmed open? Yes No
 With gauges monitoring production, intermediate casing and tubing pressures, open the intermediate casing valve. Record pressures at five minute intervals Characterize flow in "Intermediate Flow" column using letter designations below:
 O = No Flow; C = Continuous; D = Down to 0; V = Vapor
 H = Water H2O; M = Mud; W = Whisper; S = Surge; G = Gas

| Elapsed Time (Min:Sec) | Fm: Tubing | Fm: Tubing: | Prod Csg PSIG | Intermedia Csg PSIG | Bradenhead Flow: |
|------------------------|--------------------------|--------------------------|--------------------------|---------------------|------------------|
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |

INTERMEDIATE SAMPLE TAKEN?
 Yes No Gas Liquid
 Character of Intermediate fluid: Clear Fresh
 Sulfur Salty Black
 Other:(describe) _____
 Sample cylinder number: _____

Instantaneous Intermediate Casing PSIG at end of test: >

Comments:

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Test Performed By: Dustin Miller Title: Production Foreman Phone: (970) 230-1154

Signed: Dustin Miller Title: Production Foreman Date: 6/22/2018

Witnessed By: _____ Title: _____ Agency: _____