02055530

Page 1

FORM 4 Rev 12/05

State of Colorado

Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801 Denver, Colorado 80203 Phone: (303)894-2100 Fax:(303)894-2109

DA | DA

RECEIVED

JUN 04 2012

COGCC

SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

1. OGCC Operator Number: 10091
2. Name of Operator: BERRY PETROLEUM COMPANY
3. Address: 1999 BROADWAY SUITE 3700
City: DENVER State: CO Zip: 80202
4. Contact Name: HEIDI BANG
Phone: 303-999-4262
Fax: 303-999-4362

Complete the Attachment Checklist

	OP	OGCC
Survey Plat		
Directional Survey		
Surface Eqpmt Diagram		
Technical Info Page	X	
Other		X

5. API Number 05- 045-13648
6. Well/Facility Name: LATHAM 7 Well/Facility Number 29-17D
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): SWSE, SEC. 29, T5S, R96W, 6 PM
9. County: GARFIELD / 045
10. Field Name: ~~PARACHUTE~~ / 67350 GRAND VALLEY
11. Federal, Indian or State Lease Number:

DA

General Notice

☐ CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)

	FNL/FSL		FEL/FWL	
Change of **Surface** Footage from Exterior Section Lines:				
Change of **Surface** Footage to Exterior Section Lines:				
Change of **Bottomhole** Footage from Exterior Section Lines:				
Change of **Bottomhole** Footage to Exterior Section Lines:				

attach directional survey

Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer

Latitude | Distance to nearest property line | Distance to nearest bldg, public rd, utility or RR

Longitude | Distance to nearest lease line | Is location in a High Density Area (rule 603b)? Yes/No

Ground Elevation | Distance to nearest well same formation | Surface owner consultation date:

GPS DATA:
Date of Measurement PDOP Reading Instrument Operator's Name

☐ CHANGE SPACING UNIT

Formation	Formation Code	Spacing order number	Unit Acreage	Unit configuration

☐ Remove from surface bond
Signed surface use agreement attached

☐ CHANGE OF OPERATOR (prior to drilling):
Effective Date:
Plugging Bond: ☐ Blanket ☐ Individual

☐ CHANGE WELL NAME NUMBER
From:
To:
Effective Date:

☐ ABANDONED LOCATION:
Was location ever built? ☐ Yes ☐ No
Is site ready for Inspection? ☐ Yes ☐ No
Date Ready for Inspection:

☐ NOTICE OF CONTINUED SHUT IN STATUS
Date well shut in or temporarily abandoned:
Has Production Equipment been removed from site? ☐ Yes ☐ No
MIT required if shut in longer than two years. Date of last MIT

☐ SPUD DATE:

☐ REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)

☐ SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK *submit cbl and cement job summaries

Method used	Cementing tool setting/perf depth	Cement volume	Cement top	Cement bottom	Date

☐ RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004.
Final reclamation will commence on approximately
☐ Final reclamation is completed and site is ready for inspection

Technical Engineering/Environmental Notice

☒ Notice of Intent Approximate Start Date: 6/4/2012
☐ Report of Work Done Date Work Completed:

Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)

☐ Intent to Recomplete (submit form 2)
☐ Change Drilling Plans
☐ Gross Interval Changed?
☐ Casing/Cementing Program Change
☐ Request to Vent or Flare
☐ Repair Well
☐ Rule 502 variance requested
☒ Other: INJ WELL TEST
☐ E&P Waste Disposal
☐ Beneficial Reuse of E&P Waste
☐ Status Update/Change of Remediation Plans for Spills and Releases

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

Signed: Heidi Bang Date: 6/4/12 Email: HSB@BRY.COM

Print Name: Heidi Bang Title: REGULATORY COMPLIANCE ASSISTANT

COGCC Approved: David Andrews Title: PE II Date: 6/5/2012

CONDITIONS OF APPROVAL, IF ANY:

1) Notify Dave Andrews at (970) 456-5262 at least 24-hours prior to commencing the step-rate injectivity test. 2) The test volume must not exceed 20,000 bbls and the test duration must not exceed 20 days. 3) Contact Dave Andrews at (970) 456-5262 to discuss test progress when the cumulative volume injected reaches 15,000 bbls. Pending test results, COGCC Staff may consider an increase in the allowable test volume and/or duration.

FORM 4 Rev 12/05

TECHNICAL INFORMATION PAGE

1. OGCC Operator Number: 10091 API Number: 05-045-13648
2. Name of Operator: BERRY PETROLEUM COMPANY OGCC Facility ID #
3. Well/Facility Name: LATHAM Well/Facility Number: 29-17D
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): SWSE, SEC. 29, T5S, R96W, 6 PM

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5. **DESCRIBE PROPOSED OR COMPLETED OPERATIONS**

- Attached is a Water Sample Analysis from the Ohio Creek Formation.

Obtain approval to proceed with fracture stimulation on the Ohio Creek formation and conduct injectivity test with 20,000 bbl of fluid.

completed and remaining

D.A. See attached procedure ~~for the~~ work to be performed.

JACAM LABORATORIES

DownHole R_X

WATER CHEMISTRY

BERRY PETROLEUM
ROB SIMEONE

O-29 PAD 29-17
GARFIELD CO

Report Date: 05-30-2012
Sample #: 18875

Sampled: 05-29-2012
at 0000

CATIONS		ANIONS	
Calcium (as Ca)	537.80	Chloride (as Cl)	6900
Magnesium (as Mg)	36.57	Sulfate (as SO_4)	490.00
Barium (as Ba)	0.204	Bromine (as Br)	0.00
Strontium (as Sr)	16.30	Dissolved CO_2 (as CO_2)	30.00
Sodium (as Na)	3421	Bicarbonate (as HCO_3)	732.00
Potassium (as K)	190.30	Carbonate (as CO_3)	0.00
Lithium (as Li)	9.53	Oxalic acid (as C_2O_4)	0.00
Ammonia (as NH_3)	0.00	Silica (as Si)	0.00
Aluminum (as Al)	45.83	Phosphate(as PO_4)	0.00
Iron (as Fe)	847.40	H_2S (as H_2S)	0.00
Manganese (as Mn)	15.37	Fluoride (as F)	0.00
Zinc (as Zn)	1.98	Nitrate (as NO_3)	0.00
Lead (as Pb)	0.00	Boron (as B)	18.71

PARAMETERS

pH	7.33
Temperature (^oF)	120.00
Density(g/mL)	1.01
Pressure(atm)	1.00
Calculated T.D.S.	13364
Molar Conductivity	17119
Dissolved O2	0.00

JACAM LABORATORIES
205 S. Broadway · P.O. Box 96 · Sterling, KS 67579-0096

SAMPLE COLLECTED FROM OHIO CREEK PERFS 6656' - 6914' PRIOR TO STIMULATION

D.A.

Berry Petroleum Company
Latham 29-17D
SWSE Sec 29, T5S, R96W
API # 05-045-13648-0000
Garfield County, Colorado

GL: 7933', KB: 7952', PBTD: 9774'

D.A. PRIOR **Surface casing:** **9 5/8" 36# J-55 @ 2473'**
Production casing: **4 1/2" 11.6# P-110 @ 9826', FC @ 9781'**
~~Current~~ Perforations: **Stage 1: 9423-9648', 24 holes @ 2 spf**
Stage 2: 9164-9343', 20 holes @ 2 spf
Stage 3: 8807-9010', 20 holes @ 2 spf

Current production tubing: **None**

D.A. COMPLETED **~~Proposed~~ work:** **Convert well to test Ohio Creek Injection**

1. MIRU workover rig, NU BOP's.
2. RIH with wireline and set CIBP @ 7,050' and dump 2 sx cement on top.
3. Pressure test casing to 5,000 psi.
4. RU wireline to perforate the following intervals at 2 spf using 0.35" diameter, 120 degree phasing, 21 gram charges:

   6912'-6914' (2', 4 holes)
   6898'-6900' (2', 4 holes)
   6815'-6817' (2', 4 holes)
   6793'-6795' (2', 4 holes)
   6783'-6785' (2', 4 holes)
   6771'-6773' (2', 4 holes)
   6742'-6744' (2', 4 holes)
   6724'-6726' (2', 4 holes)
   6708'-6710' (2', 4 holes)
   6694'-6696' (2', 4 holes)
   6678'-6680' (2', 4 holes)
   6656'-6658' (2', 4 holes)

   Total of 24' perforated and 48 holes

5. RIH with 4-1/2 pkr on work string. Set pkr @ +/- 6580'. Test csg to 1000 psi.
6. Swab back tbg volume to bottom perf. After swabbing back tbg load, take water sample from bottom hole formation water.
7. Send formation water sample to be analyzed.

D.A. (ANALYSIS ATTACHED TO THIS SUNDRY NOTICE)

D.A. PROPOSED WORK:

8. Wait for approval to proceed with workover procedure

9. MIRU pumping service company, frac iron and flowback equipment.

10. Pump 2000 gals 7.5% HCL with bio ball sealers. Flowback or swab to recover load. Flowtest if applicable.

11. POOH w/ pkr laying down tbg. r/d rig. Move off location. If rig not in way, leave rig standing.

12. Sand frac existing perfs with 375,000 gals slick water and 275,000# 30/50 sand at 60 BPM ramping sand concentration to a maximum of 1.5 PPA. Final design to be determined.

13. MIRU workover rig and power swivel.

14. RIH with 4 ½" bit and 2 3/8" work string. Clean out well to CIBP as necessary. Circulate 2 times bottoms up.

SUBMIT FORM 5A AND REVISED FORM 33 TO COGCC

15. POOH with work string and lay down.

16. RIH w/ 4-1/2 loc-set pkr and on & off tool p/u 2-3/8 plastic lined tbg. Set pkr @ +/- 6580'. n/d bop. n/u wellhead.

17. Fill csg w/ pkr fluid. Pressure test casing to 1000 psi.* Chart and record pressure test for MIT. Notify COGCC prior to conducting test. Rig down workover rig. COMPLETE FORM 21 AND SUBMIT TO COGCC

D.A.

Perform Injection Testing-Testing will consist of (1) a 6 hour step rate test, (2) a 10 day constant rate test, and (3) a 96 hour pressure fall off test.

18. At the surface, install one pressure gauge to monitor tubing pressure. Have pumping service company that will pump the test install pressure monitoring transducer on the tubing, tubing-casing annulus and braden head. Visually monitor pressures for any leaks.

    20,000 Barrels of treated/filtered produced water should be made available on site for testing.

19. RU slickline with lubricator. Test lubricator to 2000 psig. Run 2 electronic digital quartz 5000# pressure bomb into hole and hang off of seating nipple. Allow well to set static for 30 minutes prior to performing injection test.

20. Perform 6 hour step rate test as follows: Tubing, casing, braden head pressures should be recorded and monitored on the pump truck.

* CONSIDER A HIGHER TEST PRESSURE. THE APPROVED MAX. INJECTION PRESSURE FOR UIC WELLS IS THE MIT PRESSURE OR THE FRAC PRESSURE, WHICHEVER IS LESS.

Stage	Rate (BPM)	Volume (bbls)	Time (min)	Total Time (hrs)	Total Vol. (bbls)
Step 1	0.25	7.5	30	0.5	7.5
Step 2	0.50	15.0	30	1.0	22.5
Step 3	0.75	22.5	30	1.5	45.0
Step 4	1.0	30.0	30	2.0	75.0
Step 5	1.25	37.5	30	2.5	112.5
Step 6	1.5	45.0	30	3.0	157.5
Step 7	1.75	52.5	30	3.5	210
Step 8	2.0	60.0	30	4.0	270
Step 9	2.5	75.0	30	4.5	345
Step 10	3.0	90.0	30	5.0	435
Step 11	4.0	120.0	30	5.5	555
Step 12	5.0	150.0	30	6.0	705

Watch for and record the ISIP immediately upon cessation of pumping

A plot of injection rates vs. stabilized pressure values will be prepared by the pumping contractor on site to identify the fracture pressure. The fracture pressure will be used to determine the injection rate during the 10 day constant rate injection test.

21. Perform a 10 day constant rate injection test. Pump water down the tubing at a constant rate that is below the maximum allowable injection rate determined from the Step Rate test until a total volume of 20,000 barrels (including step rate total volume) have been injected. The Fall Off Test will start immediately at the conclusion of pumping. **

22. Perform pressure fall Off test: Shut the well in and record tubing pressure immediately at the cessation of pumping for 96 hours

23. POOH with bottom hole pressure gauges

D.A. 24. Shut well in and wait for injection permit. SUBMIT INJECTIVITY TEST DATA TO COGCC, INCLUDING STEP RATE TEST-DERIVED FRAC GRADIENT

Proposed by:
J.T. Albi
303-902-0666

5-18-12

** NOTIFY DAVE ANDREWS (COGCC ENGINEER, 970-456-5262) AT 15,000 bbls PUMPED TO DISCUSS ANY PRESSURE CHANGES INDICATIVE OF RESEVOIR BOUNDARY CONDITIONS AND NECESSITY OF PUMPING THE REMAINING 5,000 bbls.