

RAILROAD COMMISSION OF TEXAS

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Tracking No.: 208752

Status: Submitted

Oil and Gas Division

API No. 42- 405-30660

7. RRC District No.

06

8. RRC Gas ID No.

Gas Well Back Pressure Test,
Completion or Recompletion Report, and Log

| | | | | | |
|--|--|---|--|---|--|
| 1. FIELD NAME (as per RRC Records or Wildcat) CARTHAGE (HAYNESVILLE SHALE) | | 2. LEASE NAME MISSISSIPPI GAS UNIT | | 9. Well No. 1H | |
| 3. OPERATOR'S NAME (Exactly as shown on Form P-5, Organization Report) BP AMERICA PRODUCTION COMPANY | | RRC Operator No. 040798 | | 10. County of well site SAN AUGUSTINE | |
| 4. ADDRESS ATTN JEANINE HALLER-PISKURICH 15377 MEMORIAL DRIVE HOUSTON, TX 77079-0000 | | | | 11. Purpose of filing Initial Potential <input type="checkbox"/> Retest <input type="checkbox"/> Reclass <input type="checkbox"/> Well record only (Explain in remarks) <input checked="" type="checkbox"/> | |
| 5. Location (Section, Block, and Survey) 12, SP RR CO/GRAN, L C, A-607 | | 5b. Distance and direction to nearest town in this county. BROADDUS | | | |
| 6. If operator has changed within last 60 days, name former operator | | | | | |
| 12. If workover or reclass, give former field (with reservoir) & Gas ID or oil lease no. FIELD & RESERVOIR | | | | GAS ID or OIL LEASE # | |
| N/A | | | | Oil-0 Gas-G | |
| | | | | Well # | |

| | | | | | |
|---|--|---|--|--|--|
| 13. Pipe Line Connection MIDCOAST PIPELINES (ETX) L. P. | | 15. Any condensate on hand at time of workover or recompletion? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | 16. Type of Electric or other Log Run. Gamma Ray (MWD) | |
| 14. Completion or recompletion date 02/02/2019 | | | | | |

| Section I GAS MEASUREMENT DATA | | | | | | | | | | |
|-----------------------------------|-----------|--|-----------------------------|--------------------------|---------------------|---------------------------------|------------------------------|-------------------------------|---------------------------------|----------------|
| Date of Test | | Gas Measurement Method (Check One) Orifice Meter <input type="checkbox"/> Flange Taps <input type="checkbox"/> <input type="checkbox"/> Positive Choke <input type="checkbox"/> Orifice Vent Meter <input type="checkbox"/> Pitot Tube <input type="checkbox"/> Critical-flow Prover <input type="checkbox"/> | | | | Gas produced during test MCF | | | | |
| Run Size | Line Size | Orif. or Choke Size | 24 hr Coeff. Orif. or Choke | Static Pm or Choke Press | Diff h _w | Flow Temp. ° F | Temp. Factor F _{tf} | Gravity Factor F _g | Compress Factor F _{pv} | Volume MCF/DAY |
| 1 | N/A | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |

| Section II FIELD DATA AND PRESSURE CALCULATIONS | | | | | | | | | | | |
|--|-----------------|--|--|----------------------------------|--|--|--|---|---------------------------------|-----------------------------------|--|
| Gravity (Dry Gas) | | Gravity Liquid Hydrocarbon Deg. API | | Gas-Liquid Hydro Ratio CF/Bbl | | Gravity of Mixture G _{mix} = | | Avg. Shut-in Temp. ° F | | Bottom Hole Temp. ° F@ (Depth) | |
| $D_{eff}^{8/3} =$ | | $\sqrt{T_f} = \sqrt{\quad} =$ | | $\sqrt{GL} = \sqrt{\quad} =$ | | | | | | | |
| $C = \frac{1118 \times (D_{eff})^{8/3}}{\sqrt{T}} =$ | | | | $\frac{\sqrt{GL}}{C} =$ | | | | | | | |
| Run No. | Time of Run Min | Choke Size | Wellhead Press. PSIA P _w | Wellhead Flow Temp ° F | P _w ² (Thousands) | R | R ² (Thousands) | P ₁ | P _w / P ₁ | | |
| Shut-in | N/A | | | | | | | | | | |
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| Run No. | F | K | $S = \frac{1}{Z}$ | E ^{ks} | P _f and P _s | P _f ² and P _s ² (Thousands) | P _f ² - P _s ² (Thousands) | Angle of Slope θ n Absolute Open Flow MCF/DAY | | | |
| Shut-in | | | | | | | | | | | |
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |

WELL TESTERS CERTIFICATION: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I conducted or supervised this test and that data and facts shown in Sections I and II above are true, correct, and complete, to the best of my knowledge. Bottomhole temperature and the diameter and length of flow string were furnished by the operator of the well.

BP AMERICA PRODUCTION COMPANY(040798)

Signature: Well Tester

Name of Company

RRC Representative

OPERATORS CERTIFICATION: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this report, that I or prepared supervised and directed this report, and that data and facts stated therein are true, correct, and complete, to the best of my knowledge.

Anita Curtis

Signature: Operator's representative

Regulatory Specialist

Title

07/03/2019

Date

Tel: (281) 892-5782

A/C Number

| | | | | | | | | | | | | | | | | | | | |
|---|--|-----------|--|------------|---------------------|-----------------------|--|------------------------------|--|---|--|---------------|--|---------------------|-------|--|--|--|--|
| SECTION III | | | | | | | | | | DATA ON WELL COMPLETION AND LOG (Not Required on Retest) | | | | | | | | | |
| 17. Type of Completion | | | | | | | | | | 18. Permit to Drill, Plug Back or Deepen | | | | | | | | | |
| New Well <input checked="" type="checkbox"/> Deepening <input type="checkbox"/> Plug Back <input type="checkbox"/> Other <input type="checkbox"/> | | | | | | | | | | DATE 03/07/2018 PERMIT NO. 835819 | | | | | | | | | |
| 19. Notice of Intention to Drill this well was filed in Name of | | | | | | | | | | Rule 37 Exception | | | | | | | | | |
| BP AMERICA PRODUCTION COMPANY | | | | | | | | | | PERMIT NO. | | | | | | | | | |
| 20. Number of producing wells on this lease in this field (reservoir) including this well | | | | | | | | | | Water Injection Permit | | | | | | | | | |
| 1 | | | | | | | | | | PERMIT NO. | | | | | | | | | |
| 21. Total number of acres in this lease | | | | | | | | | | Salt Water Disposal Permit | | | | | | | | | |
| 1006.44 | | | | | | | | | | PERMIT NO. | | | | | | | | | |
| 22. Date Plug Back, Deepening, Workover or Drilling Operations: | | | | | | | | | | Other | | | | | | | | | |
| Commenced 08/05/2018 Completed 02/02/2019 | | | | | | | | | | PERMIT NO. | | | | | | | | | |
| 23. Distance to nearest well, Same Lease & Reservoir | | | | | | | | | | 0.0 | | | | | | | | | |
| 24. Location of well, relative to nearest lease boundaries | | | | | | | | | | Feet From West Line and 185.0 Feet from | | | | | | | | | |
| 404.0 North | | | | | | | | | | Line of the MISSISSIPPI GAS UNIT Lease | | | | | | | | | |
| 25. Elevation (DF. RKB, RT. GR ETC.) | | | | | | | | | | 26. Was directional survey made other than inclination (Form W-12)? | | | | | | | | | |
| 231 GL | | | | | | | | | | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | | |
| 27. Top of Pay | | | | | | | | | | 28. Total Depth | | | | | | | | | |
| 15219 MD:24080 | | | | | | | | | | 29. P. B. Depth | | | | | | | | | |
| 30. Surface Casing Determined by | | | | | | | | | | Field Rules <input type="checkbox"/> | | | | | | | | | |
| Recommendation of T.D.W.R. | | | | | | | | | | <input checked="" type="checkbox"/> | | | | | | | | | |
| Railroad Commission (Special) | | | | | | | | | | <input type="checkbox"/> | | | | | | | | | |
| Dt. of Letter 03/04/2018 | | | | | | | | | | Dt. of Letter | | | | | | | | | |
| 31. Is well multiple completion? | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | | | | | | | | | | | | | | | | | |
| 32. If multiple completion, list all reservoir names (completions in this well) and Oil Lease or Gas ID No. | | | | | | | | | | GAS ID or OIL LEASE # | | | | | | | | | |
| FIELD & RESERVOIR | | | | | | | | | | Oil-0 Gas-G | | | | | | | | | |
| N/A | | | | | | | | | | Well # | | | | | | | | | |
| 33. Intervals Drilled by: | | | | | | | | | | 34. Name of Drilling Contractor | | | | | | | | | |
| Rotary Tools <input checked="" type="checkbox"/> Cable Tools | | | | | | | | | | 35. Is Cementing Affidavit Attached? | | | | | | | | | |
| | | | | | | | | | | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | | |
| 36. CASING RECORD (Report All Strings Set in Well) | | | | | | | | | | | | | | | | | | | |
| CASING SIZE | | WT #/FT. | | DEPTH SET | | MULTISTAGE TOOL DEPTH | | TYPE & AMOUNT CEMENT (sacks) | | HOLE SIZE | | TOP OF CEMENT | | SLURRY VOL. cu. ft. | | | | | |
| 13 3/8 | | | | 4285 | | | | CLASS A 1990 | | 17 1/2 | | SURFACE | | 4062.14 | | | | | |
| 9 5/8 | | | | 14360 | | | | NEOCEN TM/H 490 | | 10 5/8 | | 8000 | | 881.25 | | | | | |
| 5 1/2 | | | | 24053 | | | | CLASS H 2235 | | 8 1/2 | | 12400 | | 3178.17 | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| 37. LINER RECORD | | | | | | | | | | | | | | | | | | | |
| Size | | Top | | Bottom | | Sacks Cement | | Screen | | | | | | | | | | | |
| 11 7/8 | | 4099 | | 9117 | | 810 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| 38. TUBING RECORD | | | | | | | | | | | | | | | | | | | |
| Size | | Depth Set | | Packer Set | | From | | L1 15728 | | To | | 23913 | | | | | | | |
| 2 3/8 | | 14509 | | 14520 | | From | | | | To | | | | | | | | | |
| | | | | | | From | | | | To | | | | | | | | | |
| | | | | | | From | | | | To | | | | | | | | | |
| 40. ACID, SHOT, FRACTURE, CEMENT SQUEEZE. ETC. | | | | | | | | | | | | | | | | | | | |
| Depth Interval | | | | | | | | | | Amount and Kind of Material Used | | | | | | | | | |
| 15728.0 | | | | | | | | | | 23913.0 | | | | | | | | | |
| | | | | | | | | | | REFERENCE TO FRAC FOCUS UPLOAD | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |
| 41. FORMATION RECORD (LIST DEPTHS OF PRINCIPAL GEOLOGICAL MARKERS AND FORMATION TOPS) | | | | | | | | | | | | | | | | | | | |
| Formations | | | | | Depth | | | | | Formations | | | | | Depth | | | | |
| AUSTIN CHALK | | | | | 6374.0 MD: 6422.0 | | | | | | | | | | | | | | |
| JAMES LIME | | | | | 9144.0 MD: 9193.0 | | | | | | | | | | | | | | |
| HAYNESVILLE | | | | | 14254.0 MD: 14304.0 | | | | | | | | | | | | | | |
| REMARKS: N/A | | | | | | | | | | | | | | | | | | | |
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