

# Bureau of Land Management Final Hydraulic Fracturing Rule

80 Fed. Reg. 16,126 (Mar. 26, 2015)

Effective Date; June 24, 2015

## **Summary of Requirements & Key Provisions**



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## I. Applicability.<sup>1</sup>

Well Status	Compliance Obligations
No APD submitted before June 24, 2015	All sections of new rule apply
APD submitted, but not approved, before June 24, 2015	All sections of new rule apply
APD (or APD extension) was approved before June 24, 2015, but drilling did not begin before June 24, 2015	All operational provisions apply, but pre-approval application not necessary
Drilling began, but was not completed, before June 24, 2015	All operational provisions apply, but pre-approval application not necessary
Authorized drilling was completed after December 26, 2014.	All operational provisions apply, but pre-approval application not necessary
Drilling was completed before December 26, 2014	All sections of new rule apply

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<sup>1</sup> 43 C.F.R. § 3162.3-3(a).

## II. Usable Water.

### A. Protection.

- “The operator must isolate all usable water and other mineral-bearing formations and protect them from contamination.”<sup>2</sup>

### B. Key Definitions.<sup>3</sup>

1. *Isolating* or to *isolate* means using cement to protect, separate, or segregate usable water and mineral resources
2. *Usable Water* means generally those waters containing up to 10,000 parts per million of total dissolved solids

Usable Water	
<b>Expressly Includes:</b> <ol style="list-style-type: none"><li>1. Underground Sources of Drinking Water (as defined at 40 C.F.R. § 144.3)<sup>4</sup></li><li>2. Sources of drinking water protected under state law</li><li>3. Zones that states or tribes designate for protection from hydraulic fracturing operations</li></ol>	<b>Expressly Exempts:</b> <ol style="list-style-type: none"><li>1. Zones from which the operator is authorized to produce hydrocarbons</li><li>2. Aquifers exempted under 40 C.F.R. § 144.7.</li><li>3. Zones that do not represent underground sources of drinking water under 40 C.F.R. § 144.3, and which a state has designated as exempt from protection</li></ol>

<sup>2</sup> 43 C.F.R. § 3162.5-2.

<sup>3</sup> 43 C.F.R. § 3160.0-5.

<sup>4</sup> An “underground source of drinking water” under 40 C.F.R. § 144.3 means an aquifer (or portion of an aquifer) that supplies a public water system or a non-exempted aquifer that contains a sufficient quantity of ground water to supply a public water system and either currently supplies drinking water for human consumption or contains fewer than 10,000 mg/l total dissolved solids.

### III. Authorization for Hydraulic Fracturing.

#### A. Pre-Approval Required.

- “A request for approval of hydraulic fracturing must be submitted by the operator *and approved by the authorized officer before commencement of operations.*”

#### B. Application Method.<sup>5</sup>

- Request for authorization can be in several formats:
  1. APD
  2. Sundry Notice & Report on Wells (Form 3160-5) as a notice of intent (“NOI”)
  3. Master Hydraulic Fracturing Plan (submission of a Master Hydraulic Fracturing Plan does not eliminate the requirement to obtain an approved APD for each individual well)
- If operator becomes aware of significant new information, it must submit a new NOI

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<sup>5</sup> 43 C.F.R. § 3162.3-3(c).

## IV. Information Required For Approval.

### A. Wellbore & Geology.<sup>6</sup>

1. Geologic names, geologic description, and estimated depths (to top and bottom) of formation into which hydraulic fracturing fluids will be injected
2. Estimated depths (to top and bottom) of confining zones
3. Estimated depths (measured and true vertical) to top and bottom of all occurrences of usable water

### B. Geologic Mapping.<sup>7</sup>

1. A map showing the location, orientation, and extent of any known or suspected faults or fractures within ½-mile distance of the wellbore trajectory that may transect the confining zones

### C. Water Usage.<sup>8</sup>

1. Source and location of water supply
2. Anticipated access route and transportation method for all water planned for use in hydraulically fracturing the well

### D. Hydraulic Fracturing Plan.<sup>9</sup>

1. Estimated total volume of fluid to be used
2. Maximum anticipated surface pressure that will be applied during the hydraulic fracturing process
3. Hydraulic Fracturing Map displaying:
  - a. Trajectory of the wellbore into which hydraulic fracturing fluids are to be injected
  - b. Estimated direction and length of the fractures that will be propagated and a notation indicating the true vertical depth (top of bottom) of the fractures
  - c. All existing wellbore trajectories within ½-mile of any portion of the wellbore into which hydraulic fracturing fluid will be

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<sup>6</sup> 43 C.F.R. § 3162.3-3(d)(1)(i)-(iii).

<sup>7</sup> 43 C.F.R. § 3162.3-3(d)(2).

<sup>8</sup> 43 C.F.R. § 3162.3-3(d)(3).

<sup>9</sup> 43 C.F.R. § 3162.3-3(d)(4).

injected (true vertical depth of each wellbore must be mapped)

- d. Estimated distance between top of fractures and nearest usable water
- e. Measured depth of proposed perforated or open-hole interval

**E. Fluid Recovery.<sup>10</sup>**

- 1. Estimated volume of fluid to be recovered.
- 2. Proposed method of handling recovered fluids.
- 3. Proposed method of disposing of recovered fluids.

**F. Additional Info Required In NOI.<sup>11</sup>**

- 1. Surface Use Plan if hydraulic fracturing will causes additional disturbance to the surface
- 2. Documentation that casing and cement have isolated usable water zones (if the proposal is to hydraulically fracture a well that was completed without hydraulic fracturing)

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<sup>10</sup> 43 C.F.R. § 3162.3-3(d)(5).

<sup>11</sup> 43 C.F.R. § 3162.3-3(d)(6).



## V. Cement Operations.

### A. Cement Monitoring Report.<sup>12</sup>

- During cementing operations on any casing used to isolate and protect usable water, operator must monitor *and* record:
  1. Flow rate
  2. Density
  3. Pump pressure.
- Monitoring report must be submitted to BLM at least 48 hours before commencing hydraulic fracturing operations

### B. Previously Drilled Wells.<sup>13</sup>

- For wells drilled pursuant to an APD that did not include authorization for hydraulic fracturing, operator must submit documentation to demonstrate that adequate cementing was achieved for all casing strings designed to isolate and protect usable water (authorized officer may require additional testing)

### C. Cementing Requirements.<sup>14</sup>

1. Surface Casing.
  - a. Must observe cement returns to surface and document any indications of inadequate cement (*e.g.*, lost returns, cement channeling, gas cut mud, failure of equipment, fallback from surface exceeding 10% of surface casing depth or 200 feet, whichever is less)
  - b. If indications of inadequate cement, must determine top of cement with a CEL, temperature log, or other approved device
2. Intermediate & Production Casing.
  - a. If casing is cemented to the surface, rules for surface casing apply
  - b. If casing is not returned to surface, operator must run a CEL to demonstrate there is at least 200 feet of adequately

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<sup>12</sup> 43 C.F.R. § 3162.3-3(e)(1)(i).

<sup>13</sup> 43 C.F.R. § 3162.3-3(e)(1)(ii).

<sup>14</sup> 43 C.F.R. § 3162.3-3(e)(2).

bonded cement between the zone to be hydraulically fractured and the deepest usable water zone.

**D. Mechanical Integrity Testing.<sup>15</sup>**

- A mechanical integrity test (“MIT”) must be performed *before* hydraulic fracturing:
  1. If hydraulic fracturing is through casing, all casing must be tested to not less than the maximum anticipated surface pressure that will be applied during the hydraulic fracturing process
  2. If hydraulic fracturing is through a fracturing string, the fracturing string must be inserted into a liner or run on a packer-set not less than 100 feet below the cement top of the production or intermediate casing. The fracturing string must be tested to not less than the maximum anticipated surface pressure that will be applied during the hydraulic fracturing process.
  3. MIT considered successful if pressure applied holds for thirty minutes with no more than a 10% pressure loss

**E. Indications of Inadequate Cement.<sup>16</sup>**

- For any indication of inadequate cement, operators must:
  1. Notify the authorized officer within 24 hours of discovery
  2. Submit NOI requesting approval to perform a remedial action plan (in emergency situations, oral approval may be granted followed by a written report to be submitted within 5 business days)
  3. Verify remedial action was successful with a CEL or other pre-approved procedure
  4. Submit a Sundry Notice and Report on Wells including:
    - a. Certification that the inadequacy was corrected through the application of the approved remedial action plan; and
    - b. Results from the CEL or other testing demonstrating that there is adequate cement (results of CEL or other testing must be submitted at least 72 hours before hydraulic fracturing begins)

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<sup>15</sup> 43 C.F.R. § 3162.3-3(f).

<sup>16</sup> 43 C.F.R. § 3162.3-3(e)(3).

## VI. Hydraulic Fracturing Operations.

### A. Monitoring And Recording.<sup>17</sup>

1. During operations, operator must continuously monitor *and* record (continuous record of all annuli pressure must be submitted with subsequent reporting after hydraulic fracturing operations):
  - a. Annulus pressure at the bradenhead
  - b. Pressure in the annulus between any intermediate casings and the production casing
2. If during hydraulic fracturing, any annulus pressure increases by more than 500 psi above the pressure immediately preceding the stimulation, operator must:
  - a. Stop hydraulic fracturing operation
  - b. Take corrective action
  - c. Orally notify the authorized officer as soon as practicable
  - d. Determine reasons for the pressure increase
  - e. Before recommencing any stopped hydraulic fracturing operation, operator must perform all required remedial action and perform an MIT consistent with the MIT guidelines under this rule
  - f. Within thirty days of a hydraulic fracturing operation being completed, submit an incident report detailing the problem that led to the incident and all corrective action taken.

### B. Recovered Fluids Management.<sup>18</sup>

1. All fluids recovered between the commencement of hydraulic fracturing operations and BLM's approval of a produced water disposal plan must be stored in rigid, enclosed, covered, or netted, and screened above-ground tanks.
2. Tanks may not exceed 500 barrel capacity unless approved in advance

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<sup>17</sup> 43 C.F.R. § 3162.3-3(g).

<sup>18</sup> 43 C.F.R. § 3162.3-3(h).

3. Lined pits may be approved if the use of tanks is infeasible for environmental, public health, or safety reasons, and all the following apply:
  - a. Distance between the lined pit and intermittent or ephemeral water sources is at least 300 feet
  - b. Distance between the lined pit and perennial water sources is at least 500 feet
  - c. No usable ground water is present within 50 feet of the lined pit
  - d. Distance between the lined pit and location expected to be publicly occupied is greater than 300 feet
  - e. The lined pit is not constructed in fill or an unstable area
  - f. The construction of the lined pit would not disturb the hydrology of the 100-year floodplain
  - g. The lined pit's use and construction complies with all other applicable law
  - h. The lined pit is constructed with a durable, leak proof synthetic material and equipped with a leak detection system
  - i. The lined pit is regularly inspected and maintained

## VII. Post-Completion Submissions.<sup>19</sup>

- Operators must submit a subsequent report within 30 days after the completion of the last stage of a hydraulic fracturing operation
- Post-completion report is required for every well (even if application for authorization was pursuant to a master hydraulic fracturing plan)
- Chemical information may be submitted to FracFocus,<sup>20</sup> but other operational information must be submitted to BLM in a Subsequent Report Sundry Notice

### A. Chemical Information (Fracfocus Submission).

1. True vertical depth of well
  2. Total volume of water used
  3. Description of base fluid and each additive in the hydraulic fracturing fluid, including:
    - a. Trade name
    - b. Supplier
    - c. Purpose
    - d. Ingredients
    - e. Chemical Abstract Service Number
    - f. Maximum ingredient concentration in additive (percent by mass)
    - g. Maximum ingredient concentration in hydraulic fracturing fluid (percent by mass)
- If the operator withholds any chemical identity information required under this section as trade secret exempt from disclosure under the rule,<sup>21</sup> the operator must still provide the generic chemical name of the withheld ingredient

### B. Operational Information.

1. Actual source of water and location of water used in hydraulic fracturing

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<sup>19</sup> 43 C.F.R. § 3162.3-3(i).

<sup>20</sup> The information that may be submitted to FracFocus is identified in Part VII.A of this Outline.

<sup>21</sup> See Part VIII.B.

2. Maximum surface pressure and rate at the end of each stage of hydraulic fracturing operation and the actual flush volume
3. Actual, estimated, or calculated fracture length, height, and direction
4. Actual measured depth of perforations or open-hole interval
5. Volume of recovered fluid between completion of last stage of hydraulic fracturing and when the operator begins to report water produced from the well to the Office of Natural Resources Revenue (if the operator has not begun to report produced water to ONRR at the time the hydraulic fracturing completion report is due, the operator will have to supplement the hydraulic fracturing report at the time reporting to ONRR begins)
6. Handling Information
  - a. Methods of handling recovered fluids (e.g., transfer pipes and tankers, holding pond use, re-use for other stimulation activities, or injection)
  - b. Method of disposal (e.g., percent injected, percent stored at an off-lease facility, percent recycled)
7. Operator's Certification that:
  - a. Operator complied with all rules related to protection of usable water, cementing operations, mechanical integrity testing, and cement monitoring
  - b. Hydraulic fracturing fluids complied with all applicable permit and legal requirements including requirements under state and tribal law
8. Mechanical Integrity Test results
9. Any other information the authorized officer requires

## VIII. Exemptions from Disclosure.<sup>22</sup>

### A. Waiver.

- Any information submitted in a Post-Operational Report to BLM or FracFocus will be deemed a waiver of any right to protect that information from public disclosure

### B. Asserting Confidentiality.

- To protect any information required to be submitted in the post-operational report from disclosure, a corporate officer must sign an Affidavit:
  1. Identifying the owner of the information
  2. Identifying the law that prohibits disclosure
  3. Affirming that the operator has access to the records being withheld
  4. Affirming information is not publicly available
  5. Affirmomng that the information is not required to be disclosed under any other law
  6. Affirming owner is in competition and identifies other competitors that could use the information
  7. Affirming that release of the information is likely to cause substantial competitive harm
  8. Affirming that the information is not readily reverse engineered with publicly available information
- If operator relies upon information from third parties to make any affirmations, the operator must provide a written affidavit from the third-party that sets forth the relied upon information
- BLM may require the operator to submit to BLM any withheld information and any information relevant to evaluating operator's assertion that the information is exempt from disclosure
- Should BLM determine that withheld information is not exempt from public disclosure, BLM will provide the operator no fewer than 10 days' notice before publicly releasing the information

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<sup>22</sup> 43 C.F.R. § 3162.3-3(j).

### **C. Records Retention**

- Operator must maintain records of any information withheld under this rule until the later of:
  1. BLM's approval of a final abandonment notice
  2. Seven years after hydraulic fracturing on federal lands
  3. Six years after hydraulic fracturing on Indian lands



## IX. Variances.<sup>23</sup>

### A. Individual Variances.

- Requests for variance must:
  1. Identify the regulatory provision for which the variance is being sought
  2. Explain the reason the variance is needed
  3. Demonstrate how operator will satisfy the objectives of the regulation for which the variance is being requested

### B. State or Tribal Variance.

- Requests for variance must:
  1. Identify the regulatory provision for which the variance is being sought
  2. Explain the reason the variance is needed
  3. Demonstrate how operator will satisfy the objectives of the regulation for which the variance is being requested

### C. Approval.

1. Variances may be granted only when BLM determines “that the proposed alternative meets or exceeds the objectives of the regulation for which the variance is being requested”
2. Decision on variance is not subject to administrative appeal
3. BLM reserves right to rescind a variance or modify a condition of approval at any time, but such rescission must be in writing

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<sup>23</sup> 43 C.F.R. § 3162.3-3(k).

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