



Public Outreach Meeting

Proposed Revision of Onshore Orders 3, 4, and 5

December 1st, 3rd, and 8th, 2015

Outline

- Why are these regulations important?
- Why are we revising these Orders?
- Changes proposed for all three Orders
- Part 3170
- Subpart 3173 (Onshore Order 3)
- Subpart 3174 (Onshore Order 4)
- Subpart 3175 (Onshore Order 5)
- *Questions/comments*

**Why Are These Regulations
Important?**

Royalty Determination

Oil

$$\text{Royalty} = \text{Royalty Rate} \leftarrow \text{Lease terms} \\ \times \text{Volume (bbl)} \\ \times \text{Value}^* (\$/\text{bbl}) \leftarrow \text{ONRR}$$

↑
[API gravity]

*value less transportation allowances

Royalty Determination

Oil

$$\begin{aligned} \text{Royalty} = & \text{Royalty Rate} \longleftarrow \text{Lease terms} \\ & \times \text{Volume (bbl)} \longleftarrow \text{Onshore Order 4 and 3} \\ & \times \text{Value}^* (\$/\text{bbl}) \longleftarrow \text{ONRR} \\ & \quad \uparrow \\ & \quad [API \text{ gravity}] \end{aligned}$$

*value less transportation allowances

Royalty Determination

Oil

$$\begin{aligned} \text{Royalty} = & \text{Royalty Rate} \leftarrow \text{Lease terms} \\ & \times \text{Volume (bbl)} \leftarrow \text{Onshore Order 4 and 3} \\ & \times \text{Value* (\$/bbl)} \leftarrow \text{ONRR} \\ & \quad \uparrow \\ & \text{[API gravity]} \leftarrow \end{aligned}$$

*value less transportation allowances

Royalty Determination

Gas

$$\begin{aligned} \text{Royalty} = & \text{Royalty Rate} \longleftarrow \text{Lease terms} \\ & \times \text{Volume (Mcf)} \\ & \times \text{Heating Value (MMBtu/Mcf)} \\ & \times \text{Value* (\$/MMBtu)} \longleftarrow \text{ONRR} \end{aligned}$$

*value less transportation and processing allowances

Royalty Determination

Gas

$$\begin{aligned} \text{Royalty} = & \text{Royalty Rate} \longleftarrow \text{Lease terms} \\ & \times \text{Volume (Mcf)} \longleftarrow \text{Onshore Order 5 and 3} \\ & \times \text{Heating Value (MMBtu/Mcf)} \\ & \times \text{Value* (\$/MMBtu)} \longleftarrow \text{ONRR} \end{aligned}$$

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Royalty Determination

Gas

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*value less transportation and processing allowances

Why Are We Revising These Regulations?

43 CFR Part 3170

Definitions, recordkeeping, bypass and tampering, variances, appeals, enforcement

Subpart 3173 (Onshore Order 3): Site security, FMP, Commingling, Off-lease measurement

Subpart 3174 (Onshore Order 4): Oil Measurement

Subpart 3175 (Onshore Order 5, Statewide NTLs for electronic flow computers): Gas Measurement

Why revise these Orders?

- Last revised in 1989
- Current orders do not address new technology or incorporate the latest industry standards & practices
- Gaps in existing orders that need to be addressed
- Need to respond to various reports and audits questioning adequacy of existing requirements:
 - RPC report (2007)
 - GAO audit (2010)
 - OIG audits

Why revise these Orders?

- Improve measurement accuracy, reporting, and accountability

General: Proposed Changes
Common to All Three Orders

Common Proposed Revisions

Orders

- Enforcement actions (major/minor, corrective action, timeframes) included with each provision

Proposed Regulations

- Enforcement actions would be placed in a new enforcement handbook

Common Proposed Revisions

Orders

- One immediate assessment (Federal seals)

Proposed Regulations

- Immediate assessments would be added to each subpart for liquidated damages

Common Proposed Revisions

Orders

- Technical review of alternate meter/device variances left up to individual Field Offices

Proposed Regulations

- Would direct a Production Measurement Team (PMT) to provide meter/device approval at a national level

**Part 3170: Proposed Changes
Common to All Three Orders**

Part 3170 Proposed Revisions

Orders

- Requirements apply only to operators

Proposed 3170

- Requirements for recordkeeping would apply to purchasers and transporters through the royalty settlement point or the point of first sale, whichever came first

Part 3170 Proposed Revisions

Orders

- Definitions given in each Order

Proposed 3170

- Would include definitions common to more than one subpart

Part 3170 Proposed Revisions

Orders

- Variance section specific to each Order

Proposed 3170

- One section on variances would apply to all three subparts
- Specific guidance on requesting and processing variance requests

Subpart 3173: Site Security, FMP,
Commingling, Off-lease Measurement

3173 Proposed Revisions

Order 3

- No guidance or requirements for commingling and off-lease measurement

Proposed 3173

- New procedures and requirements would be applied to obtain commingling and off-lease measurement approval:

Commingling

The BLM would only approve commingling if:

- **There are no royalty impacts from allocation**
- **The BLM determined that the properties to be commingling qualified as “low volume”**
- **The BLM determined that there are extenuating circumstances such as environmental concerns or to achieve maximum ultimate economic recovery**

The BLM would review existing commingling approvals during the FMP approval process. Existing approvals that did not meet the requirements in 3173 would be rescinded or modified.

3173 Proposed Revisions

Order 3

- Applies to “sales and allocation” meters
- Measurement relating to royalty payment is not consistently defined or tracked

Proposed 3173

- Would apply to measurement affecting royalty
- BLM approval and tracking of Facility Measurement Points (FMP)

3173 Proposed Revisions

Order 3

- Run tickets only required for tank sales; includes seal number, date on and off, valve/component, reason (water draining, hot oiling, etc.)

Proposed 3173

- Documentation would be required for water draining, hot oiling, clean-up, and completion operations
- Run tickets covered in proposed 3174

3173 Proposed Revisions

Order 3

- End of month inventory is not required

Proposed 3173

- Operators would be required to measure and maintain records of end-of-month inventory

3173 Proposed Revisions

Order 3

- No information required relating to royalty-free use

Proposed 3173

- Make, model and BTU rating required for all equipment for which royalty-free use is claimed
- How royalty-free use will be determined (estimation or measurement)

3173 Proposed Revisions

Order 3

- Required self inspection and site security plan

Proposed Regulations

- Self inspection and site security plan would be eliminated

3173 Proposed Revisions

Specific Data/Comment Requests

- Comments on whether or not a 10% rate of return is appropriate for determining whether a property qualifies as “low volume”
- Comments on time frames and volume thresholds for submitting applications for FMPs

Subpart 3174: Oil Measurement

3174 Proposed Revisions

Order 4

- No overall performance standards

Proposed 3174

- Performance standards for uncertainty would be established:

3174 Proposed Uncertainty Requirements

If the monthly volume averaged over the previous 12 months or the life of the FMP, whichever is shorter, is:	The overall volume measurement uncertainty must be within:
Greater than 10,000 bbl/month	± 0.35 percent
Greater than 100 bbl/month and less than 10,000 bbl/month	± 1.0 percent
Less than 100 bbl/month	± 2.5 percent

3174 Proposed Revisions

Order 4

- References numerous industry standards published as of 1989

Proposed 3174

- Would Incorporate by reference the most current versions of 21 API standards and 2 ASTM standards

3174 Proposed Revisions

Order 4

- Requires pressure-vacuum thief hatch or vent line valve for tanks

Proposed 3174

- Would require pressure-vacuum relief valve set at inlet/outlet pressures greater/less than the thief hatch setting (not applicable to VRUs)

3174 Proposed Revisions

Order 4

- Requires tank calibrations; however no increments are specified

Proposed 3174

- Would require tanks capacities to be reported in 1/8" increments

3174 Proposed Revisions

Order 4

- Includes requirements for gauging and sampling; however, no set procedure is specified

Proposed 3174

- Would specify the sequence of tank gauging and sampling in addition to requirements for each step

3174 Proposed Revisions

Order 4

- Requires two consecutive gauges within $\frac{1}{4}$ "

Proposed 3174

- Would require two consecutive identical gauges or three gauges within $\frac{1}{8}$ "

3174 Proposed Revisions

Order 4

- LACT systems require ATC/ATG
- Positive Displacement (PD) meter only

Proposed 3174

- ATC/ATG prohibited, must use temperature averager instead
- Allows Coriolis meter in lieu of PD meter

3174 Proposed Revisions

Order 4

- Measurement by tank gauge or LACT only

Proposed 3174

- Would also allow and define standards for stand-alone Coriolis Measurement Systems (CMS):

3174 Proposed CMS Requirements

- 8,400 pulses per bbl minimum
- Specifications for each Coriolis meter including reference accuracy, influence effects, stability, pressure drop
- Notify BLM within 24 hours of changing any of the calibration factors
- Non-resettable totalizer
- Verification of meter zero prior to proving and on BLM request
- Determination of net-standard volume
- API gravity determined from composite sampler or from average density, pressure, and temperature
- On-site display with minimum requirements
- Retention of QTR, configuration log, event log, alarm log

3174 Proposed Revisions

Order 4

- LACT proving done quarterly ($\leq 100,000$ bbls month), monthly if $>100,000$ bbls/month

Proposed 3174

- Proving for LACT and CMS would be required every 50,000 bbls or quarterly, whichever comes first

3174 Proposed Revisions

Order 4

- No standards for prover size
- No standards for proving conditions
- No standards for minimum pulses during proving

Proposed 3174

- Would establish minimum/maximum fluid velocity
- Proving at normal flow, pressure, gravity
- Pulse interpolation if pulses < 10,000

3174 Proposed Revisions

Order 4

- Measurement tickets not required for LACTs

Proposed 3174

- Generate measurement ticket after proving and monthly for LACT and CMS

3174 Proposed Revisions

Specific Data/Comment Requests

- Proposed Measurement Volume Uncertainty Levels
- Use of Automatic Tank Gauging Systems
- Composite Sampling Systems on a CMS
- Ways to Address Meter Factor Determinations with Variable Flow Rates, Pressures, or API Oil Gravities
- Handbook Approach for dealing with Violations and Corrective Actions

Subpart 3175: Gas Measurement

3175 Proposed Revisions

Order 5

- Orifice plates and mechanical recorders only
- EGM systems (statewide NTLs)

Proposed 3175

- Orifice plates
- Mechanical recorders
- Approved EGM systems
- Specific guidance for alternate measurement and flow conditioners

3175 Proposed Revisions

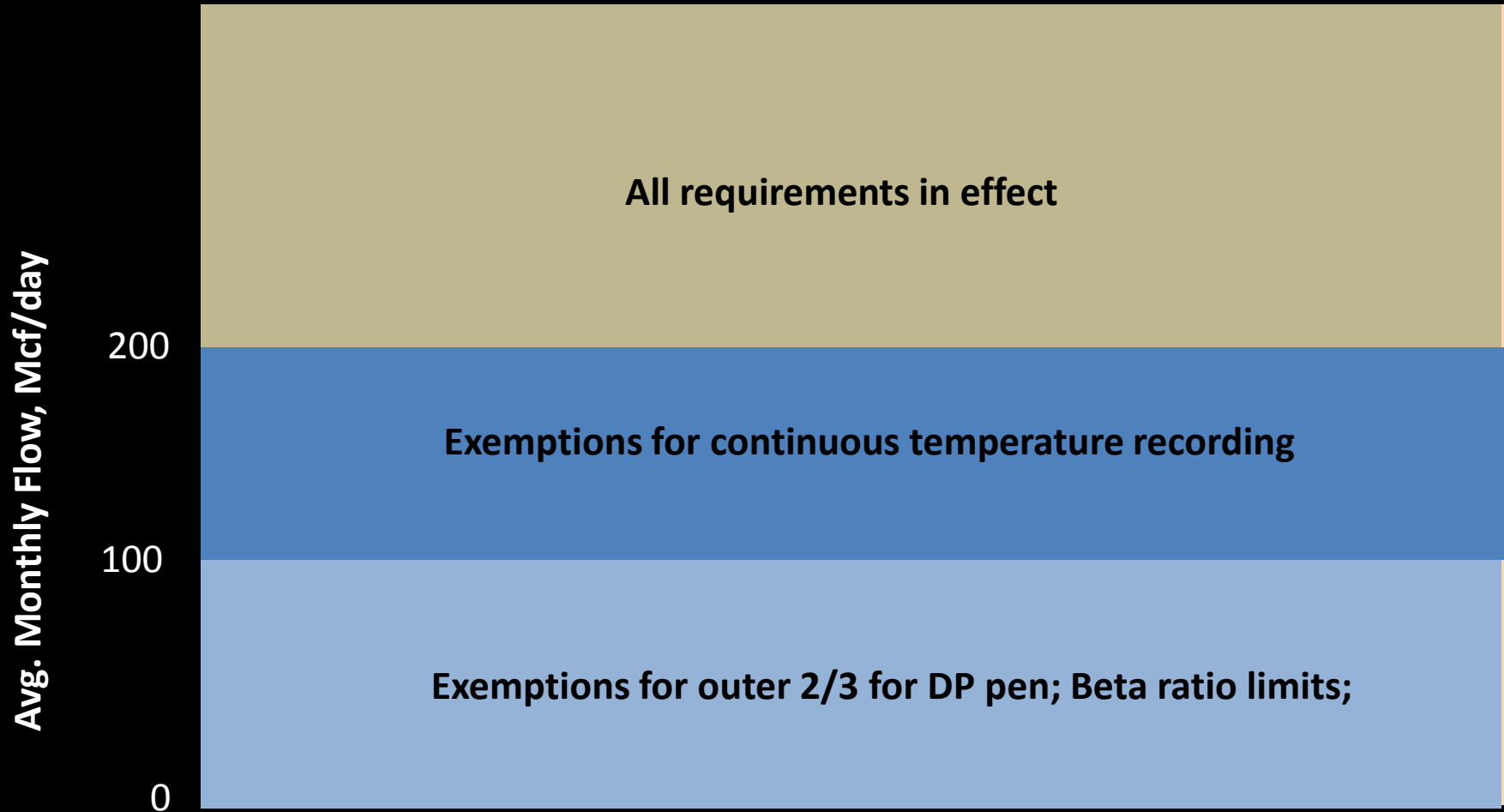
Order 5

- No overall performance standards given
- Three tiers of requirements

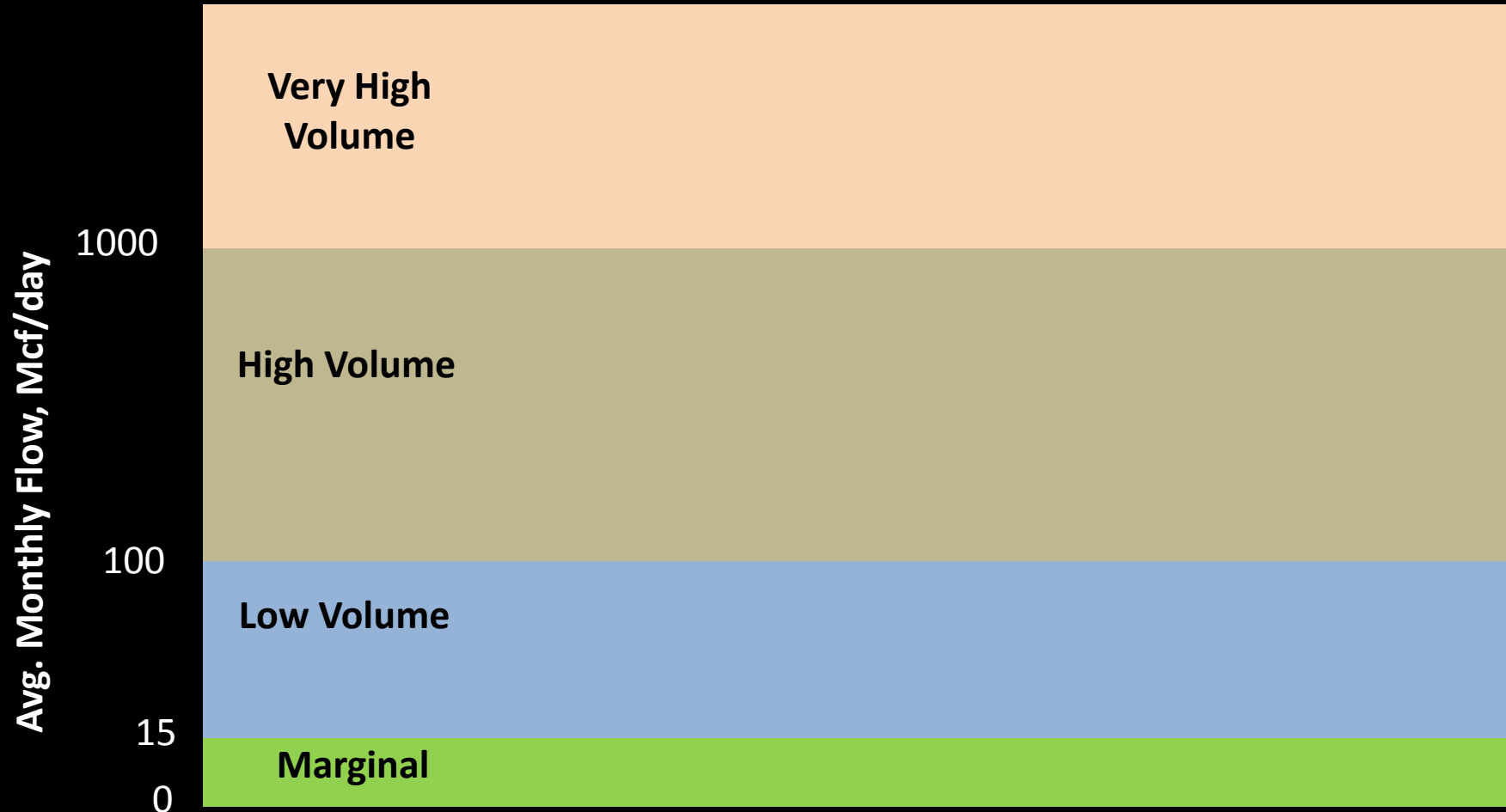
Proposed 3175

- Would establish 4 tiers of performance standards based on average flow rate:

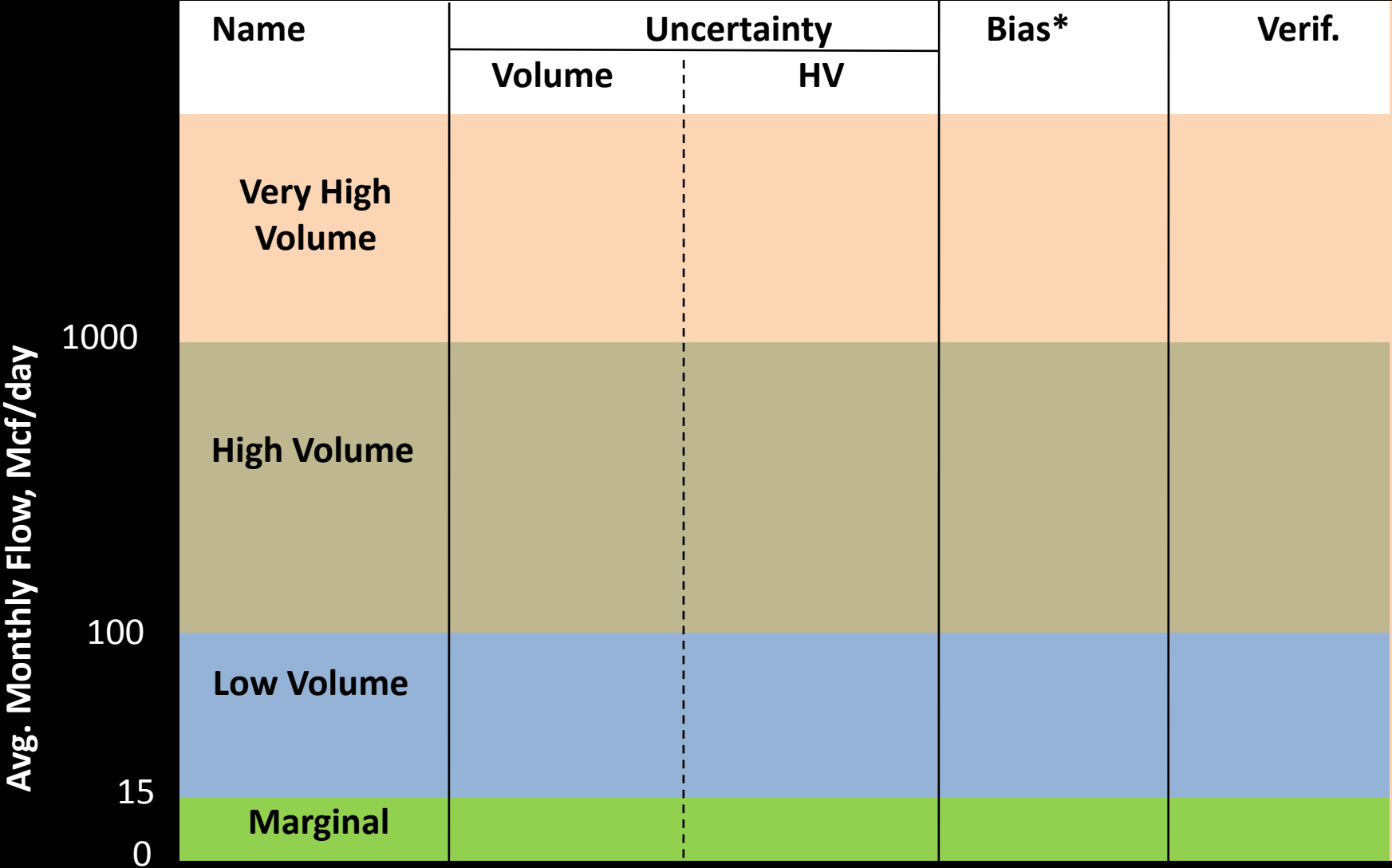
Order 5



3175 Proposed Revisions



3175 Proposed Revisions



3175 Proposed Revisions

	Name	Uncertainty		Bias*	Verif.
		Volume	HV		
1000	Very High Volume	±2%	±1%	0	yes
100	High Volume	±3%	±2%	0	yes
15	Low Volume	n/a	n/a	0	yes
0	Marginal	n/a	n/a	n/a	yes

3175 Proposed Revisions

Order 5

- **Adopts AGA Report No. 3 (1985) – primary device and flow rate calculations**

Proposed 3175

- **Would adopt new API and GPA standards covering:**
 - **Primary device**
 - **Electronic Gas Measurement Systems**
 - **Flow rate, volume, and heating value calculations**
 - **Gas sampling and analysis**

3175 Proposed Revisions

Current Order 5

- No inspection requirements for meter tubes

Proposed 3175

- Meter tubes would have to be inspected
- Frequency would depend on classification of meter:

3175 Proposed Meter Tube Inspection Requirements

Category	Visual Inspection	Detailed Inspection
Marginal Volume (< 15 Mcf/day)	n/a	n/a
Low Volume (15 – 100 Mcf/day)	Once every 5 years	n/a
High Volume (100 – 1000 Mcf/day)	Once every 2 years	Once every 10 years
Very-High Volume (> 1000 Mcf/day)	Once every year	Once every 5 years

3175 Proposed Revisions

Order 5

- Mechanical recorders automatically approved

Proposed 3175

- Mechanical recorders would be restricted to marginal and low volume FMPs (< 100 Mcf/day)

3175 Proposed Revisions

Order 5

- Btu determined at least once per year

Proposed 3175

- Sampling frequency as follows:

3175 Proposed Sampling Frequency

Category	Sampling Frequency
Marginal Volume (< 15 Mcf/day)	Once per year
Low Volume ($15 - 100$ Mcf/day)	Once every 6 months
High Volume ($100 - 1000$ Mcf/day)	Once every 3 months; achieve heating value uncertainty of $\pm 2\%$
Very-High Volume (> 1000 Mcf/day)	Once every month; achieve heating value uncertainty of $\pm 1\%$

3175 Proposed Revisions

Proposed 3175 (continued)

- **Composite or online GC would be required if spot sampling cannot meet uncertainty requirements**
- **Would require all gas analyses to be submitted**

3175 Proposed Revisions

Order 5

- No requirements for sample location or method
- No requirements for gas chromatograph (GC)

Proposed 3175

- Sampling probe 1 – 2 times dimension “DL”
downstream of the primary device
- Four spot-sampling methods would be allowed
- Requirements for GC calibration and operation
- Extended analysis (C9+) required if C6+ was > 0.25
mole %

3175 Proposed Revisions

Order 5

- No requirements for Btu reporting

Proposed 3175

- Btu reporting would be:
 - Gross, Net
 - Real, Ideal
 - Dry, Wet, As-Delivered
 - 14.65 psi, 14.696 psi, 14.73 psi, 15.025 psi
 - 60° F

3175 Proposed Revisions

Order 5 and Statewide NTLs

- No requirements for independent testing of transducers or flow computers
- All transducers and flow computers accepted

Proposed 3175

- Testing protocol would be defined for all transducers and flow computers
- PMT would review results and develop list of approved devices

3175 Proposed Revisions

Specific Data/Comment Requests

- Cost to industry for type testing transducers
- Comments on whether 5 transducers constitutes a statistically representative sample
- Requirements/standards for on-line gas chromatographs (e.g. API 22.6)
- Data showing water vapor saturation
- Data showing correlations between sample probe placement and composition

3175 Proposed Revisions

Specific Data/Comment Requests

- Costs of retrofitting orifice meters to meet eccentricity requirements of API 14.3.2
- Costs to chart integration companies to switch from the 1985 to the 1992/2013 calculations
- Data showing the difference between C6+ and C9+ analysis as a function of C6+ mole percent

Questions/Comments

Additional comments on the proposed rule may be submitted until December 14, 2015, by any of the following means:

- Mail to U.S. Department of the Interior, Director (630), Bureau of Land Management, Mail Stop 2134LM, 1849 C Street, NW, Washington, DC 20240,
 - Attention: 1004-AE15 (for Site Security),
 - 1004-AE16 (for Oil Measurement), or
 - 1004-AE17 (for Gas Measurement), or

- Via the Internet at <http://www.regulations.gov>