Staff Presentation
Flowline Rulemaking

February 13, 2018

Rulemaking Docket No. 171200767

COLORADO
Oil & Gas Conservation Commission
Department of Natural Resources

COLORADO 811
KNOW WHAT'S BELOW. CALL BEFORE YOU DIG.

Staff Recommended Revisions

January 26, 2018 draft– follow-up to January 8-9 hearing

February 9, 2018 – Rule 1104 Integrity Management revisions

February 13, 2018 – minor additional proposed revisions

DEFINITION for
CRUDE OIL TRANSFER LINE

Means a piping system that is not regulated or subject to regulation by the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to 49 C.F.R. § 195 Subpart A, and that transfers crude oil, crude oil emulsion or condensate from more than one well site or production facility to a production facility with permanent storage capacity greater than 25,000 barrels of crude oil or condensate or a PHMSA gathering system. 49 C.F.R. § 195 Subpart A, in existence as of the date of this regulation and not including later amendments, is available for public inspection during normal business hours from the Public Room Administrator at the office of the Commission, 1120 Lincoln Street, Suite 801, Denver, Colorado 80203. Additionally, 49 C.F.R. § 195 Subpart A may be found at https://www.phmsa.dot.gov.

Blue = COGCC revised language

DEFINITION for

ISOLATION VALVE means a valve ~~that is~~ closed to the atmosphere ~~and used~~ that stops fluid flow and isolates a ~~pipe~~ segment in a flowline or crude oil transfer line ~~system to stop fluid flow and segregate pipe segment~~.

Off-Location Flowline means a flowline transferring produced fluids . . . from ~~a well~~ an oil and gas location to a production facility . . .

1101.a Off-Location Flowline Registration

(1)An operator must register ~~a newly constructed~~ an off-location flowline constructed after May 1, 2018 by submitting a Flowline Report, Form 44, to the Director within 30 days after ~~completing construction of~~ the flowline. is placed into service. An off-location flowline in existence prior to ~~February 14~~**May 1, 2018**, must be registered by ~~January 1~~**October 31, 2019**, ~~and include the information below to the extent known by the operator~~. An off-location flowline registered as part of a produced water transfer system is not subject to this requirement.

(2) Registration Requirements.

A. For off-location flowlines constructed after May 1, 2018, operators must include the following information:

i. **A geodatabase containing the pipeline alignment in the North American Datum of 1983 (NAD 83) with the following attributes: fluid type, material type and pipe size in a format approved by the Director;**

vii. A layout drawing sufficient to identify the alignment of the flowline, associated oil and gas locations, and existing and proposed pipelines related to the oil and gas locations; and

1101.a Off-Location Flowline Registration

B. For off-location flowlines in **existence prior to May 1, 2018**, operators must, **to the extent such information is known by the operator or can be acquired from such relevant records in the possession of the operator or its immediate predecessor in interest** include in their registration:

i. the information set forth in 2.(A)ii-viii above, and
ii. the latitude and longitude of the risers.

Revised the "Easement" Language

1101.a (4) Off-Location Flowline Registration
1101.c (5) Crude Oil Transfer Line and Produced Water Transfer System Registration

~~Within 60 days~~All documents executed after May 1, 2018, that grant a right of ~~completing construction of~~ access or easement to locate an off-location flowline on lands must be recorded by the operator ~~must record an easement identifying~~ in the ~~location~~ office of the county clerk and recorder of the ~~off-location flowline with the applicable local government~~ county where the lands are located.

Revised the "Easement" Language

1101.a (4) Off-Location Flowline Registration
1101.c (5) Crude Oil Transfer Line and Produced Water Transfer System Registration

~~All~~ If a document~~s~~ is executed after May 1, 2018, that grants a right of access or easement to locate an off-location flowline on lands, then either the document itself or a memorandum of such document, must be recorded by the operator in the office of the county clerk and recorder of the county where the lands are located. If the document contains a legal description or map of the access of easement thaen the memordum or notice must include the legal description or map. Upon the surface owner's request, the operator shall provide a copy of the recorded document to the surface owner.

1101.b Domestic Tap Registration

(2) For domestic taps installed after May 1, 2018, an operator must register the domestic tap pursuant to subpart (1) and notify the domestic tap owner in writing that the domestic tap must: ……

(3) An operator must supply odorant to the domestic tap owner at the time of installation until abandonment of the domestic tap.

1101.c *Crude Oil Transfer Line and Produced Water Transfer System Registration*

(1) Registration. At least ~~30~~ 10 days before beginning construction of a crude oil transfer line or a produced water transfer system, [operators must submit Form 44 with a layout drawing sufficient to show its route . . . and the surrounding topography.]

[For existing] crude oil transfer line or produced water transfer system constructed before May 1, 2018, the operator must register it by submitting a Flowline Report, Form 44, to the Director by October 31, 2019. The submittal must include the information specified in section (2) below, to the extent such information is known by the operator or can be acquired from such relevant records in the possession of the operator or its immediate predecessor in interest.

1101.d Disclosure of Confidential Form 44 Data to Local Governments.

Upon request from a local government, and subject to executing a confidentiality agreement, the Commission will provide to the local government the geodatabase information submitted with a Form 44, and any periodic updates received, for all off-location flowlines, crude oil transfer lines, and produced water transfer systems within that local government's jurisdiction. The sole purpose for providing the geodatabase information is to assist local governments with their emergency management and planning. The Commission will keep all such geodatabase information confidential to the extent allowed by the Colorado Open Records Act.

1102.d Installation: The addition of steel line weld testing standards

(2) All workers performing welding on ~~crude oil transfer~~ steel lines in pressure service must be certified in accordance with:

(3) Non-destructive testing of welds for newly constructed steel off-location flowlines or steel crude oil transfer lines must be done in accordance with one of the following:

A. Those standards established by the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration pursuant to 49 C.F.R. § 192.243 and 49 C.F.R. § 195.234, in existence as of the date of this regulation, and no later amendments. 49 C.F.R. § 192.243 and 49 C.F.R. § 195.234 are available for public inspection during normal business hours from the Public Room Administrator at the office of the Commission, 1120 Lincoln Street, Suite 801, Denver, Colorado 80203. Additionally, 49 C.F.R. § 192.243 and 49 C.F.R. § 195.234 may be found at https://www.phmsa.dot.gov.

B. One of the standards set forth in Section 1102.b. or 1102.d (2)A. and B. above.

(4) Non-destructive testing is not required for repairs of existing steel off-location flowlines or steel crude oil transfer lines.

1102.i Maintenance

(2) Whenever an operator discovers any condition that could adversely affect the safe and proper operation of a flowline or crude oil transfer line, the operator must correct the condition ~~within a reasonable time~~ as soon as possible.

1103. Isolation Valves on Flowlines and Crude Oil Transfer Lines

a. ~~An operator~~ Operators must ~~fully open and close or perform~~ annually conduct of one of the following maintenance operations on all isolation valves ~~at least annually and~~:

(1) Perform a function test, or

(2) Maintain the isolation valve in accordance with its manufacturer's specifications.

Operators must repair or replace isolation valves that are fot fully operable.

On-location manifold ~~piping~~, peripheral, and process piping flowlines are exempt from the annual maintenance operations set forth in this section 1103.a.

1103. Isolation Valves on Flowlines and Crude Oil Transfer Lines

d. Flowlines and crude oil transfer lines constructed before May 1, 2018, must be retrofitted with isolation valves at each of the locations identified in c.(1)-(5) by October 31, 2019. On location manifold ~~piping~~, peripheral and process piping flowlines are exempt from the retrofit provisions set forth in this section 1103.d.

1103.e Check Valve Requirements on Flowlines and Crude Oil Transfer Lines

(2) The check valve or other comparable reverse flow prevention mechanism . . .

(3) The operator must keep ~~the check valve~~ all check valves or other comparable reverse flow mechanisms in good working order.

(4) Upon the Director's request, operators must test the operation of the check valve or other comparable reverse flow mechanism.

(5) The requirements set forth in subsection (1) and (2) above, apply only to those check valves or comparable reverse flow mechanisms installed after May 1, 2018. Existing check valves or comparable reverse flow mechanisms must comply with subsection (3) and (4) above.

1104. Integrity Management

c. Integrity Management for Below-ground Dump Lines. An operator must verify integrity of below-ground dump lines by performing an annual static-head test and a monthly audio, visual, olfactory (AVO) inspection of the entire line. The use of an optical gas imaging instrument is not required with an AVO test conducted on below-ground dump lines.

d. Integrity Management for Above-ground On-location Flowlines. An operator must verify the integrity of above-ground on-location flowlines by performing a monthly audio, visual, olfactory (AVO) inspection of the entire line. The use of an optical gas imaging instrument is not required with an AVO test conducted on above-ground on-location flowlines.

1104. Integrity Management

e. Integrity Management for Below-ground On-location Flowlines.

(1) Any flowlines not subject to c. or d. above, must conduct an annual AVO inspection using an optical gas imaging instrument in accordance with 1104.j. and adhere to one of the following integrity management programs:

(2) If an operator elects to use smart pigging to comply with this section, the smart pig must be able to measure flowline wall thickness, and measure for flowline defects that could affect integrity, including measurement of metal loss.

1104. Integrity Management

f. Off-Location Flowlines and Crude Oil Transfer Lines

(1) For all off-location flowlines and crude oil transfer lines ~~must~~, but not including off-location produced water flowlines, operators must conduct an annual AVO inspection using an optical gas imaging instrument in accordance with 1104.j. and adhere to one of the following integrity management programs:

(A) Annual pressure testing;
(B) Continuous pressure monitoring; or
(C) Smart pigging conducted every three years

1104. Integrity Management

f. Off-Location Flowlines and Crude Oil Transfer Lines

(2) For ~~above-ground lines~~ off-location produced water flowlines, operators must conduct an annual AVO inspection and adhere to one of the following integrity management programs:

A. Annual pressure testing
B. Continuous pressure monitoring; or;
C. Smart pigging conducted every three years.

The use of an optical gas imaging instrument is not required with an AVO test for off-location produced water flowlines.

(3) If an operator elects to use smart pigging to comply with this section, the smart pig must be able to measure flowline wall thickness, and measure for flowline defects that could affect integrity, including measurement of metal loss.

1104. Integrity Management

Staff recommends that COGCC spend a year conducting similar research regarding leak detection efficacy for belowground lines that could be conveying produced water, natural gas, crude oil, crude oil emulsion, condensate, or a combination of these fluids. Until that study is complete, Staff recommends rules that ensure operators regularly verify integrity using one of the COGCC-approved tests, surveys, or monitoring. Staff therefore would request that the Commission include the following language in its order adopting rules:

The Commission orders the Director to empanel a stakeholder group consisting of representatives from industry, local governments, NGOs, and COGCC staff to examine current and developing instrument-based technologies and processes for detecting leaks and spills from flowlines. In twelve months, Staff will present to the Commission the stakeholder group's results, conclusions, and recommendations, if any, for changes to COGCC's policies or rules.

Staff's Recommended Changes to Section 1104 Integrity Management

1104. INTEGRITY MANAGEMENT

1104.a. Initial Pressure Testing Requirements. Prior to operating any newly installed segment of flowline or crude oil transfer line, an operator must test the line to at least maximum anticipated operating pressure and demonstrate integrity. In conducting tests, each operator must ensure that reasonable precautions are taken to protect its employees and the general public. The operator may use a hydrostatic test or conduct the test using **inert gas or** wellhead pressure sources and well bore fluids, including gas, in accordance with one of the applicable standards set forth in Section 1104.h.(1) below.

Staff's Recommended Changes to Section 1104 Integrity Management Cont'd.

1104.c. **Integrity Management for Below-ground Dump Lines**. An operator must verify integrity of below-ground dump lines by performing an annual static-head test and a monthly audio, visual, olfactory (AVO) ~~inspection of the entire line. The use of an optical gas imaging instrument is not required with an AVO test conducted on below-ground dump lines.~~**detection survey of the entire line.**

1104.d. **Integrity Management for Above-ground On-location Flowlines**. An operator must verify the integrity of above-ground on-location flowlines by performing a monthly audio, visual, olfactory (AVO) ~~inspection of the entire line. The use of an optical gas imaging instrument is not required with an AVO test conducted on above-ground on-location flowlines.~~**detection survey of the entire line.**

Staff's Recommended Changes to Section 1104 Integrity Management Cont'd.

1104.e. **Integrity Management for Below-Ground On-location Flowlines.**

(1) ~~Any~~**For any below-ground on-location** flowlines not subject to c. or d. above ~~must conduct an annual AVO inspection using an optical gas imaging instrument in accordance with 1104.j. and~~ **an operator must** adhere to one of the following integrity management programs:

A. A pressure test **to maximum anticipated operating pressure** every three years;

B. Smart pigging conducted every three years; ~~or~~

C. Continuous pressure monitoring.; **or**

D. An annual instrument monitoring method integrity survey conducted pursuant to Rule 1104.j.(2).

Staff's Recommended Changes to Section 1104 Integrity Management Cont'd.

1104.f. **Off-Location Flowlines and Crude Oil Transfer Lines.**

(1) For all off-location flowlines and crude oil transfer lines, but not including off-location produced water flowlines, operators must ~~conduct an annual AVO inspection using an optical gas imaging instrument in accordance with 1104.j. and~~ adhere to one of the following integrity management programs:

A. **An** annual pressure ~~testing~~ **test to maximum anticipated operating pressure**;

B. Continuous pressure monitoring; ~~or~~

C. Smart pigging conducted every three years.; **or**

D. Annual instrument monitoring conducted pursuant to Rule 1104.j.(2).

Staff's Recommended Changes to Section 1104 Integrity Management Cont'd.

1104.f. **Off-Location Flowlines and Crude Oil Transfer Lines.**

(2) For off-location **below ground** produced water flowlines, operators must ~~conduct an annual AVO inspection and~~ adhere to one of the following integrity management programs:

A. **An** annual pressure ~~testing~~ **test to maximum anticipated operating pressure**;

B. Continuous pressure monitoring; ~~or~~ **and**;

C. Smart pigging conducted every three years.

Staff's Recommended Changes to Section 1104 Integrity Management Cont'd.

1104.f. **Off-Location Flowlines and Crude Oil Transfer Lines.**

(3) ~~The use of an optical gas imaging instrument is not required with an AVO test for~~ **For above ground** off-location produced water flowlines, **operators may use any of the options listed in 1104.f.(2), or monthly AVO inspections.**

(~~3~~ 4) If an operator elects to use smart pigging to comply with this section, the smart pig must be able to measure flowline wall thickness, and measure for flowline defects that could affect integrity, including measurement of metal loss.

Staff's Recommended Changes to Section 1104 Integrity Management Cont'd.

1104.g. **Leak protection, detection, and monitoring.**

(1) All crude oil transfer line operators must prepare and file with the Director a leak protection and monitoring plan **with their registration.**

1104.h. **Pressure Test Requirements.**

(1) Initial Pressure Test.

C. The test can be hydrostatic or the test fluid can be the produced fluids of oil, produced water or natural gas **or inert gas** in accordance with the applicable sections of the above-mentioned standards.

Staff's Recommended Changes to Section 1104 Integrity Management Cont'd.

1104.j. Audio, Visual and Olfactory (AVO) ~~Inspection~~ **Detection Survey or Alternative Survey** Requirements.

(1) When performing an ~~audio, visual and olfactory, aerial, or other~~ **AVO detection** survey ~~of~~, **an operator must survey** the entire flowline length **using audio, visual and olfactory techniques** to detect integrity failures, leaks, spills, or releases, or signs of a leak, spill, or release like stressed vegetation or soil discoloration~~, an operator must use an optical gas imaging instrument designed for and capable of detecting hydrocarbons contained in the pipeline. An operator must document the date and time of the inspection, the detection methodology or technology used and the name of the employee who conducted the inspection~~.

(2) Instrument Monitoring Method (IMM). Where the regulations permit, an operator also may conduct a survey using an instrument monitoring method capable of detecting integrity failures, leaks, spills or releases, or signs of a leak, spill or release.

Staff's Recommended Changes to Section 1104 Integrity Management Cont'd.

1104.j. **(3) For either survey method, an operator must document the date and time of the survey, the detection methodology and technology, if any, used and the name of the employee who conducted the survey.**

1104. Integrity Management

j. Audio, Visual and Olfactory (AVO) Inspection Requirements.

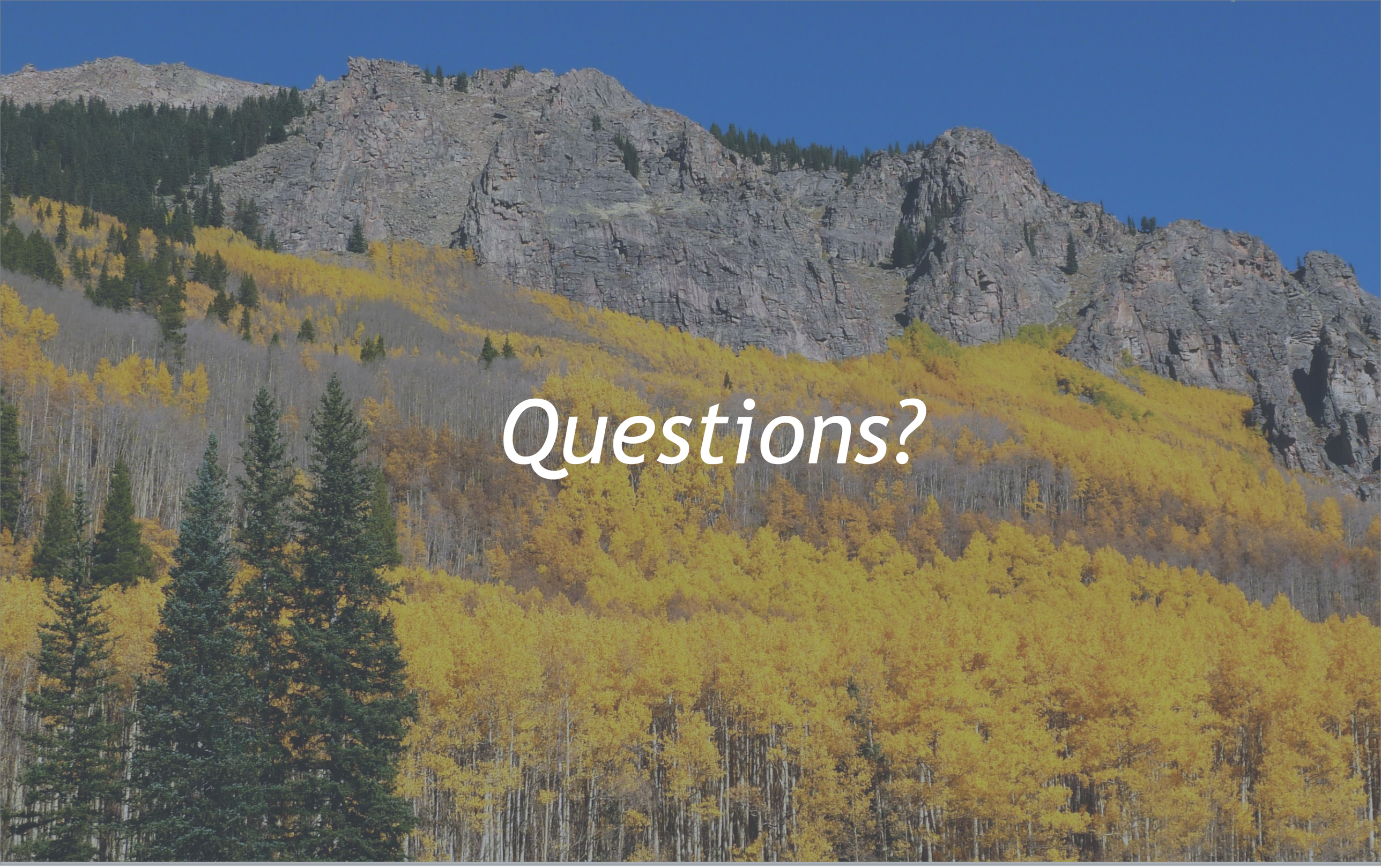
When performing an audio, visual and olfactory, aerial, or other survey of the entire flowline length to detect integrity failures, leaks, spills, or releases, or signs of a leak, spill, or release like stressed vegetation or soil discoloration., an operator must use an optical gas imaging instrument designed for and capable of detecting hydrocarbons contained in the pipeline. An operator must document the date and time of the inspection, the detection methodology or technology, the name of the employee who conducted the inspection.

602. General

- c. An operator must notify the Director of reportable safety events at an oil and gas facility. Reportable safety events include:

- (2) Any accident or natural event that results in a reportable injury as defined by the U.S. Department of Labor, Occupational Safety and Health Administration, at 29 C.F.R. 1904.39 in existence as of the date of this regulation . . .

- (3) Any accident or natural event that results in an injury to a member of the general public that requires medical treatment.



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