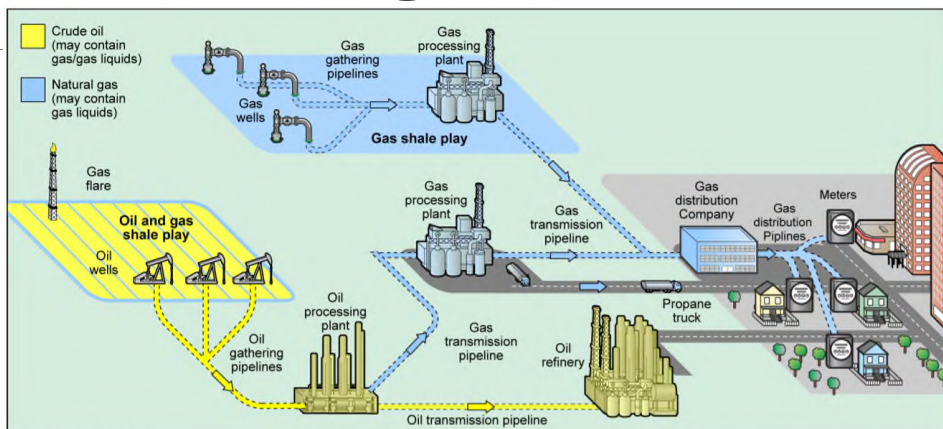


# GAS GATHERING LINES

## Gathering Function



Source: GAO. | GAO-17-639

Note: Oil products are also transmitted from the refinery through transmission pipelines to storage tanks and other facilities not depicted in this figure.

## Natural Gas Act of 1968

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- Provided PHMSA the jurisdiction over pipeline facilities from downhole to the burner tip
- Chose not to regulate certain parts of system
  - Downstream of meter – National Fuel Gas Code
  - Downhole – until added storage in 2016
  - Production and gathering outside of the limits of any incorporated or unincorporated city, town or village and any designated residential or commercial area

## Gathering and Production

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- In 1992, Congress gave the authority to define gas gathering for purpose of safety regulations, and to designate “regulated gas gathering lines”
- API RP 80, published in 2000
- In 2006, published Gas Gathering Line Definition
  - Relied on API RP 80 to help define
  - Established regulatory requirements for newly regulated gathering lines

## Gathering Lines - 2006

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- Established the start and end points of gathering as defined in §192.8 and API RP 80
- Incorporated by reference API RP 80 (1<sup>st</sup> edition, 2000)
- Established regulated gathering lines by class location.
  - Class 2, 3, and 4 became regulated
  - Class 1 (<10 buildings per mile) remained unregulated
- Established types of regulated lines by material and pressures

## Gathering Lines - 2006

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- **Type A**
  - metallic, MAOP with hoop stress  $\geq 20\%$  SMYS
  - Non-metallic with MAOP  $>125$  psig
  - Class 2, 3, or 4 locations
- **Type B**
  - Metallic with MAOP  $< 20\%$  SMYS
  - Non-metallic with MAOP  $\leq 125$  psig
  - Class 3 and 4, Class 2 by one of three methods (cluster)

## Gathering Lines

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- Conventional wells when regulation issued
- Never anticipated:
  - Growth of new technology for horizontal wells
  - Shale plays such as Utica and Marcellus
- Safety concerns – large diameter lines operating at pressures exceeding most transmission lines

## NPRM; 4/16/2016

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- All gas gathering lines subject to Annual and Incident reports
- Changes in Definitions; Move away from RP 80
- New category of regulated gathering lines
  - Class 1
    - Diameter 8" or greater
    - High-pressure
      - Metallic with MAOP >20% of SMYS
      - Non-metallic MAOP > 125 psi
- Approximately 90,000 miles affected.

## **Gas Gathering Final Rule 11/15/2021**

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- Subject all gas gathering lines, including previously unregulated lines, to PHMSA annual and incident reporting requirements (estimated > 425,000 miles of pipeline nationally)
  - WV – unknown – between 500 and 5000 miles, and a number of new operators
- Limit the use of the incidental gathering line exception to lines 10 miles or less. No other definition changes adopted.

## **Gas Gathering Final Rule 11/15/2021**

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Previously-unregulated gathering pipelines (SMYS >20% in Class 1 areas) now subject to safety standards:

- Approximately 91,000 additional miles of pipe subject to damage prevention, and emergency planning requirements.
- 20,000 additional miles of pipe subject to public awareness, line marker, corrosion control and leak survey requirements.
- 14,000 additional miles of pipe subject to MAOP requirements.
- All new and replaced pipe 8 inches or greater will have to be constructed in accordance with the current pipeline safety regulations.

## **Gas Gathering Final Rule 11/15/2021**

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Added two new categories of gathering line - Type R & Type C

Effective Date – May 16, 2022

- Incident reporting after this date

Annual Reports – Due March 15, 2023

Type C lines identified by November 16, 2022

Compliance with safety standards by May 16, 2023

## **Type R Gathering Lines**

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- §192.8 defines Type R as all other onshore gathering lines, specifically in Class 1 and Class 2 locations
  - Class 1 <8” in diameter, no pressure limitation
  - Class 2 location outside of Area 2 (b) and (c) definitions
- Type R gathering line is subject to the reporting requirements under Part 191, but is not a regulated gathering line.

## **Type R Requirements**

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§191.5 – Immediate notice of certain incidents

- Incident defined in §191.3
- Call within 1 hour of confirmation to NRC

§191.15 – Transmission Systems; gathering systems .....: Incident report

- Written report within 30 days of incident using PHSMA Form F 7100.2

## **Type R Requirements**

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§191.22 – National Registry of Operators

- OPID request PHSMA Form F 1000.1

§191.17 – Transmission Systems; gathering systems;...: Annual Report

- Due March 15 of every year
- First annual report due March 15, 2023 for lines operated in 2022

## Type R Requirements

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### §191.7 – Report Submission Requirements

- Each report required by this part must be submitted electronically at <http://portal.phmsa.dot.gov/pipeline> unless alternative reporting is authorized
- Operator may submit request use of alternative reports if undue burden and hardship
- PHMSA will review request and determine reporting method

## Type C Gathering Lines

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Defined in §192.8(b)(2) - Outside diameter  $\geq 8.625$ " and any of the following:

- Metallic with MAOP produces hoop stress  $> 20\%$  SMYS
- If hoop stress unknown, metallic with MAOP  $> 125$  psig
- Non-metallic with MAOP  $> 125$  psig
  - Non-metallic could include plastic or various composite type pipe



## Summary of Type C Requirements

Criteria	Type C requirements (cumulative)
All pipelines with diameter equal to or greater than 8.625 inches	-Damage prevention § 192.614 -Emergency Plans § 192.615 - New/replaced - Design, installation, construction, inspection, and testing requirements* (allowance for composite pipe)
Diameter 8.625 inches through 12.75 inches with a PIR exception:	The above and: -Public Awareness § 192.616 -Line Markers § 192.707 -Corrosion control (subpart I - Leakage surveys (192.706)
Diameter > 12.75 inches through 16 inches with a PIR exception, or Diameter > 16 inches	The above and: -Plastic pipe requirements -Establish maximum allowable operating pressure (MAOP, § 192.619)

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## Type C Requirements

All gathering lines >8.625" must:

- Meet reporting requirements of Part 191
- Damage prevention program meeting requirements of §192.614
  - One Call
- Develop Emergency Plans as outlined in §192.615
  - Includes training, liaison with emergency responders

## Type C Requirements

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All gathering lines >8.625" must:

- Meet design (§192, Subparts B, C and D), construction (§192. Subparts E, F, and G), and testing (§192, Subpart K) for all:
  - New pipelines
  - Replaced, relocated, or otherwise changed lines
- Exemption for composite materials (§192.9(h)), including notification to PHMSA – but allows short (<40 feet replacements) on existing composite lines
- Keep records to documenting methodology for start and endpoint of regulated pipelines (§192.8(b)) and current class location in compliance with §192.5

## Type C Exception

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192.9(f)(1) Pipeline <16" diameter may apply a PIR exception

Allows operators to parse line if one of the following

- Method 1 – no building for human occupancy or other impacted site located in PIR
- Method 2 - the segment is not located in a class location unit containing a building intended for human occupancy or other impacted site

## Type C Exception

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Both methods use

- Buildings suitable for human occupancy such as houses, office buildings, stores, restaurants, factories, outside recreation areas

Other impacted sites include

- Small well defined outside area occupied by 20 or more persons at least 5 days/week for 10 weeks (days and week do not need to be consecutive) – ball fields, playgrounds, picnic areas, rest areas
- Any portion of paved surface of designated interstate, other freeway or expressway or other principal arteria road with 4 or more lanes

## Type C Exceptions – Method 1

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PIR – Potential impact radius as defined in §192.903

$$\text{PIR} = .73 * d * p^{1/2}$$

d = diameter

p = pressure

PIR = radius in feet

.73 safety factor for production or high BTU gas

## Pipeline Rupture Appomattox Co, VA 9/28/08



## Method 1 - PIR Exception

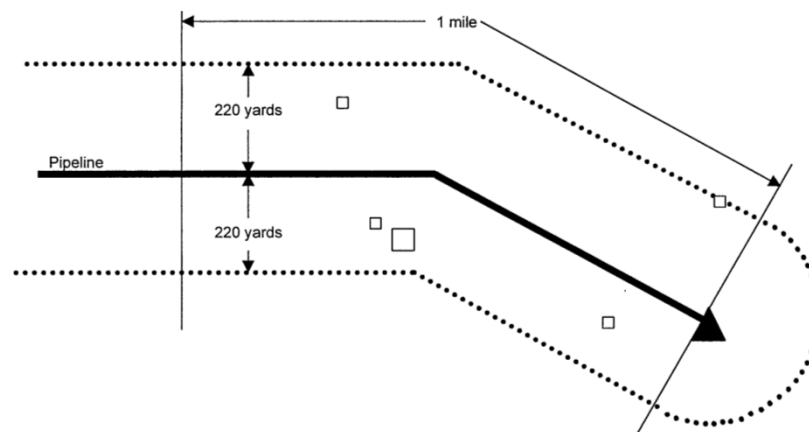


## Type C Exceptions – Method 2

Class unit defined in §192.5

- Extends 220 yards on either side of the centerline of any continuous 1 miles of pipeline

## Class Location Unit



## Type C

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Pipelines diameter 8.625 through 16" with PIR exception and all pipelines >16" must also have:

- Public Awareness Plan according to §192.616
  - Follow requirements of API RP 1162 (1<sup>st</sup> edition, IBR)
- Install line markers according to §192.707
  - Name of operator, product, warning, and 24 hour emergency number

## Type C – Additional Requirement

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Pipelines diameter 8.625 through 16" with PIR exception and all pipelines >16" must also have:

- Corrosion Control according to §192 Subpart I
  - Only for metallic pipe
- Leakage survey according to §192.706
  - Instruments not required for Class 1 locations
- Fix hazardous leaks as per §192.703(c)

## **Type C – More Requirements**

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Pipelines >12.75 through 16" with PIR and all pipelines >16"

- Follow Plastic Pipe requirements
  - Design, joining, qualification of joiners
- Establish Maximum allowable operating pressure (MAOP) according to §192.619
  - May use maximum pressure for 5 years prior to becoming regulated

## **Type C**

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Not required to have:

- Operator Qualification Plan
- Integrity Management Plan
- Exempt from certain design, construction and testing requirements – mostly records requirements

## Compliance Deadlines

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Rule effective May 16, 2022

- Determine Type C by November 16, 2022 (§192.8)
  - 2022 annual report due March 15, 2023
- Existing pipelines must comply with requirements by May 16, 2023
- Newly regulated Type C – one year for compliance

## Things to Consider

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- 20% SMYS – if unknown materials:
  - Follow §192.107(b)(2) and use 24,000 psi for grade
  - Measure wall thickness or conservative estimate
- Establish operating pressure or MAOP for PIR calculation
  - Chart or record with pressure
- PIR exception – regulated equipment may lie outside of regulated segment



## Things to Consider

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Well pads with multiple wells – gathering starts at common header

Composite materials grandfathered

- Regulations do not allow newly incorporated regulations to apply to existing pipelines

Operators of Type C need to apply for OPID number as per §191.22

## Other Stuff

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Petitions for reconsideration by AGA

- No stay of enforcements
- Still need to work with existing compliance deadlines

Task group to work on FAQs, inspection forms and other compliance issues

- Includes PHMSA and State Program representatives

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