





**F5 – MATERIAL OR WELDS**

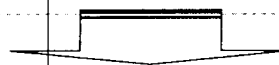
**Material**

14.  Body of Pipe ⇒  Dent  Gouge  Wrinkle Bend  Arc Burn  Other: \_\_\_\_\_
15.  Component ⇒  Valve  Fitting  Vessel  Extruded Outlet  Other: \_\_\_\_\_
16.  Joint ⇒  Gasket  O-Ring  Threads  Fusion  Other: \_\_\_\_\_

**Weld**

17.  Butt ⇒  Pipe  Fabrication  Other: \_\_\_\_\_
18.  Fillet ⇒  Branch  Hot Tap  Fitting  Repair Sleeve  Other: \_\_\_\_\_
19.  Pipe Seam ⇒  LF ERW  DSAW  Seamless  Flash Weld  Other: \_\_\_\_\_
- HF ERW  SAW  Spiral  Other: \_\_\_\_\_

Complete a-f if you indicate **any** cause in part F5.



a. Type of failure:

- Construction Defect ⇒  Poor Workmanship  Procedure not followed  Poor Construction Procedures
- Material Defect

b. Was failure due to pipe damage sustained in transportation to the construction or fabrication site?  Yes  No

c. Was part which leaked pressure tested before incident occurred?  Yes, complete d-f, **if known**  No

d. Date of test: / / mo. / / / day / / / yr.

e. Time held at test pressure: / / / hr.

f. Estimated test pressure at point of incident: \_\_\_\_\_ PSIG

**F6 – EQUIPMENT OR OPERATIONS**

20.  Malfunction of Control/Relief Equipment ⇒  Valve  Instrumentation  Pressure Regulator  Other: \_\_\_\_\_
21.  Threads Stripped, Broken Pipe Coupling ⇒  Nipples  Valve Threads  Mechanical Couplings  Other: \_\_\_\_\_
22.  Leaking Seals

23.  Incorrect Operation

a. Type:  Inadequate Procedures  Inadequate Safety Practices  Failure to Follow Procedures  Other: \_\_\_\_\_

b. Number of employees involved in incident who failed post-incident drug test: / / / / Alcohol test: / / / /

c. Was person involved in incident qualified per OQ rule?  Yes  No d. Hours on duty for person involved: / / / /

**F7 – OTHER**

24.  Miscellaneous, describe: \_\_\_\_\_
25.  Unknown  
 Investigation Complete  Still Under Investigation (submit a supplemental report when investigation is complete)

**PART G – NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE EVENT**

(Attach additional sheets as necessary)

**INSTRUCTIONS FOR COMPLETING FORM PHMSA F 7100.1 (03-04)  
INCIDENT REPORT - GAS DISTRIBUTION SYSTEM**

All references are to Title 49 of the Code of Federal Regulations. Each operator of a gas distribution system, including petroleum gas systems (§ 192.11), shall file Form PHMSA F 7100.1 for any incident described in §191.3 as soon as practicable but not more than 30 days following the occurrence of the incident. See §192.3 for definitions of operator, distribution line, gathering line, and transmission line.

Master meter and LNG facilities need not file a report per §191.9(c).

Release of gas, for the purpose of maintenance or other routine activities, need not be reported if the only reportable criterion is loss of gas of \$50,000 or more as described in §191.3 under "Incident" (1)(ii).

**Submit reports to:**

Office of Pipeline Safety  
Information Resources Manager  
DPS-13  
400 7<sup>th</sup> St. S.W.  
Washington, D.C. 20590

If you have any questions concerning this report or these instructions, or copies of Form PHMSA F 7100.1, please call Jefferson Tancil at (202) 366-8075. All forms and instructions are available over the Internet at the OPS home page, <http://ops.dot.gov> in the OPS FORMS section of the ONLINE LIBRARY.

**GENERAL INSTRUCTIONS**

1. An entry should be made in each space.
2. Please try to obtain the information necessary to accurately and completely answer each question.
3. If the data is unavailable, enter "unknown."
4. If possible, provide an estimate in lieu of answering a question with "unknown."
5. For unknown or estimated data entries, the operator should file a supplemental report when additional information becomes available.
6. If the block is not applicable, please enter N/A.

In blocks requiring numbers, all blocks should be filled in using zeroes when appropriate. When decimal points are required, the decimal point should be placed in a separate block.

Examples:

Nominal Pipe Size    /0/0/2/4/ inches  
    /1/.1/2/5/ inches

Wall Thickness        /.5/0/0/ inches  
    /1/.4/5/ inches

If OTHER is checked, include an explanation or description on the line next to the item checked.

## SPECIFIC INSTRUCTIONS

### PART A - GENERAL REPORT INFORMATION

Initial, Supplemental, Final Report Section - Check the appropriate box:

Original Report    Supplemental Report    Final Report.

If this is the initial report filed for this incident, check the box for "Original Report." If all of the information requested is known and provided at the time the initial report is filed, including final property damages and failure cause information, check the box for Final Report as well as the box for Original Report, indicating that no further information will be forthcoming.

If this is an update or revision to an Original Report but all information requested is still not known, check "Supplemental Report."

If all requested relevant information has been provided, and there will be no further updates to reported property damages or incident cause information, check the box for "Final Report."

If you are filing a supplemental or final report, please check the Supplemental Report or Final Report box and complete Part A, Items 1, 2 and 3, and Part B. Please do not enter previously submitted information.

A 1. The Pipeline and Hazardous Material Safety Administration (PHMSA) assigns the **operator's** five digit identification number. If you do not know the identification number, please contact the Jefferson Tancil at (202) 366-8075. If you wish to file the report immediately, you may leave the field blank. The operator address entry in 1.d. is the office filing the incident report. If the operator does not own the pipeline, enter the owner's five digit identification number in 1.b., if known.

A 2. The time of the incident should be shown by 24-hour clock notation.

Examples:

1. (0000) = midnight = /0/0/0/0/
2. (0800) = 8:00 a.m. = /0/8/0/0/
3. (1200) = Noon = /1/2/0/0/
4. (1715) = 5:15 p.m. = /1/7/1/5/
5. (2200) = 10:00 p.m. = /2/2/0/0/

A 3. Incident location information should be as complete as possible, including the nearest City, Town, Township, County or Parish, Borough, Section, and Range. In addition to the general location information, provide latitude and longitude in block 3d. Latitude and longitude should be stated in decimal degrees (no projection). A minimum of five decimal places is required. Western Hemisphere longitude should be a negative value. Acceptable values are -180.00000 to 0.00000. Northern Hemisphere latitude should be a positive value. Acceptable values are 0.00000 to 90.00000.

If latitude and longitude of the incident are unknown, the U.S. Census Bureau provides a tool, located at: <http://tiger.census.gov/cgi-bin/mapbrowse-tbl>, for determining them. Many similar tools are available that will provide adequate latitude/longitude information. The filer can use the online tool to identify the geographic location of the incident. The tool displays the latitude and longitude below the map. These coordinates are in a decimal degree format (e.g. Lat: 38.89664 Long: -77.04327 are for the Washington Monument) but do not have to be converted to degree/minute/second. If a filer has questions about the use of this tool, or does not have Internet access, please contact Sam Hall at 202-493-0591. PHMSA/OPS will provide the filer with a base map that can be used in identifying the incident location.

The class location should be the class location at the incident site as defined in §192.5.

Federal Lands: As defined in 30 U.S.C. §185, federal lands means "all lands owned by the United States except lands in the National Park System, lands held in trust for an Indian or Indian tribe, and lands on the Outer Continental Shelf."

A 4. Leak - an unintentional release of gas from a pipeline requiring repair of the pipeline. The source of the leak may be holes, cracks (including propagating and non-propagating, longitudinal and circumferential cracks), separation or pull-out, and loose connections.

Note: Do not report leaks that are either inconsequential or incidental to the operation of a pipeline and which can be repaired under routine daily maintenance. Examples of such leaks include gas escaping through valve stem packing, compressor rod packing, loosened connections or relief valves. Such leaks do not meet the reporting criteria for natural gas distribution incidents.

Only report information about the one leak the operator determined to be the proximate cause of the incident.

Pinhole - a leak that is hard to see with the naked eye characterized as being a small hole made as by a pin. We do not request a diameter or length measurement for a pinhole leak.

Puncture – a leak which can readily be measured as to diameter or representational cross section in inches, such as average length or width.

Rupture - a complete failure of a portion of the pipeline.

Propagation - the extension of the original opening in the pipeline in an area of nominal wall thickness resulting from the internal forces on the pipeline.

Tear - an extension of the original opening in the pipeline resulting from an externally applied force, such as a bulldozer, backhoe, or grader.

A 5b. In-patient hospitalization means hospital admission and at least one overnight stay.

A 5c. Estimate costs/losses for the items provided in this section. Include property damage or loss due to property damage to the operator's facilities; to others' property; gas lost; facility repair and replacement; leak locating; right-of-way cleanup; environmental cleanup and damage, and cost of relighting. Do not report costs incurred for facility repair, replacement, or change that is not related to the incident and performed solely for convenience. An example of doing work for the operator's convenience is working on facilities unearthed because of the incident. Do not report litigation and other legal expenses related to the incident.

A 5d. Check this box if gas ignited and indicate whether or not there was an explosion by checking the appropriate circular radio button.

A 5e. Check this box if gas did not ignite, and indicate whether or not there was an explosion by checking the appropriate circular radio button.

An explosion is a sudden violent burst as an effect of sudden release of pressure.

Estimate the number of persons (not including employees or contractors) evacuated in item 5e, and check off the reason for evacuation. Provide an estimate to closest order of magnitude (i.e., closest 1, 10, closest hundred if less than 1,000, closest thousand if less than 10,000, etc.)

A 6. "Elapsed time until the area was made safe" means the amount of time starting from the incident occurrence until the time that the incident is brought under control and does not significantly threaten public safety. This does not necessarily mean that the flow of product has been stopped. If the time of occurrence is unknown, the time when the operator was first notified or made aware of the incident should be used to calculate elapsed time.

#### PART B - PREPARER AND AUTHORIZED SIGNATURE

Preparer is the name of the person who prepared the responses to the form and who is to be contacted for more information (preferably the person most knowledgeable about the information in the report).

Authorized Signature may be the preparer, an officer, or other person whom the operator has designated to review and sign reports. Please enter the preparer's e-mail address if the preparer has one.

#### PART C - ORIGIN OF INCIDENT

C 1. METER SET ASSEMBLY is that portion of the service line extending from the service line riser valve (stop cock) to the connection to the customer's piping; including the meter, regulator, and relief vent line. In the absence of a service line riser valve, the meter set assembly starts at the first above ground fitting.

C 2. If the failure occurred on an item not provided in this section, check the "OTHER" box and specify the item in the space provided. A sample list of possible "OTHERS" is included in the appendix under Part C, Item 2, Other.

C 3. If OTHER is checked, state the type of material. For example, copper, aluminum, etc.

C 4. "Year the pipe or component which failed was installed" means the year installed at the

incident location.

#### PART D - MATERIAL SPECIFICATION

Complete section D (D1 through D6) if a pipe or valve failed.

D 1. Nominal Pipe Size is the diameter in inches used to describe the pipe size; for example, 2-inch, 4-inch, 8-inch, 12-inch.

D 2. Enter pipe wall thickness in inches. Use decimals as necessary.

D 3. Specification is the specification to which the pipe or component was manufactured, such as API 5L or ASTM A106. When more than one item has failed, and the origin of the failure is not clear, complete Part C Item 2 to explain the additional item(s).

D 4. See the appendix section of these instructions under Part D, Item 4, Seams for a list of common seam types.

D 5. Enter valve type (flange-welded, bell-plug, etc.) See the appendix section of these instructions under Part D, Item 5, Valves for a list of common valve types.

D 6. Provide the pipe or valve manufacturer if failure was on pipe or valve. Enter year pipe or valve was manufactured. See the appendix section of these instructions under Part D, Item 6, Pipe Manufacturers for a list of common pipe manufacturers.

#### PART E - ENVIRONMENT

"Under pavement" includes under streets, sidewalks, paved roads, driveways and parking lots.

Provide depth of cover in inches where incident involved buried pipe or component.

#### PART F - APPARENT CAUSE

There are 25 numbered causes in Part F. The 25 causes are divided into seven categories in sections F1 through F7. Check the box indicating the general cause of the incident and check the circle indicating the specific cause.

#### PART F1 - CORROSION

Corrosion includes a leak or failure caused by galvanic, bacterial, chemical, stray current, or other corrosive action. Examples: A corrosion leak is not limited to a hole in the pipe. If the bonnet or packing gland on a valve or flange on piping becomes loose and leaks due to corrosion and failure of bolts, it is classified as "Corrosion." If the bonnet, packing, or other gasket has deteriorated before the end of its expected life and caused a leak or failure and a new gasket is required, it is classified as a Material Defect. Leaks resulting from material deteriorating after the expected life of the materials are classified as "Other." Leaks due to deterioration from corrosion, however, are classified as "Corrosion."

Complete F1 parts a - e if applicable.



Subpart a - Pipe Coating

Galvanized pipe with no dielectric coating is considered bare.

Subpart d - Cathodic Protection

"Under cathodic protection" means cathodic protection in accordance with Part 192, Appendix D. Recognizing that older pipelines may have had cathodic protection added over a number of years, provide an estimate if exact year cathodic protection started is unknown.

PART F2 - NATURAL FORCES

F2 3 - 7: This includes all outside forces attributable to causes not involving humans. "Earth Movement" refers to failures caused by land shifts such as earthquakes, landslides, or subsidence.

"Heavy rains and floods" refer to all water related failure causes such as washouts, flotation, mudslides, or water scouring. While mudslides involve earth movement, report them here since typically they are an effect of heavy rains or floods.

"Temperature" refers to those causes that are related to temperature effects, or where temperature was the initial cause; for example, thermal stress, frost heave, or frozen component failures.

F3 - EXCAVATION

F3 8 Operator Excavation Damage/Not Third Party - Check this item if the failure was caused by the operator or the operator's contractor or agent or other party working for the operator as a result of excavation.

F3 9 Third Party Excavation Damage - check this item if failure cause was from excavation damages resulting from action by outside party/third party caused by personnel or other party other than the operator or his agent.

F3 9c - "Prior notification" means that the operator had been notified that excavation or construction work was to be done near the pipeline before the incident occurred. If the operator was notified, but the operator believes the notice was inadequate, improper, or incomplete, check NO and explain in Part G, Narrative Description Of Factors Contributing to the Event.

Examples: A contractor working for the operator gouges the operator's pipeline and buries it without repair. If the pipeline leaks at a later date, the leak should be classified as damage resulting from item F3.8 - Operator Excavation Damage (including their contractors)/Not Third Party if the operator can determine the leak resulted from the contractor's actions. If the contractor had been working for someone other than the operator, the leak should be classified as F3.9 - Third Party Excavation Damage.

A contractor working for the operator excavates near the operator's pipeline, which is later damaged by earth movement in the zone the excavation affects. The damage should be classified as F3.8 - Operator Excavation Damage (including their contractors)/Not Third Party. If the contractor had been working for other than the operator in this situation, F3.9 - Third Party Excavation Damage. In both situations, the damage should not be attributed to damage by moving earth.

Pipeline leaks resulting from vehicular traffic loading should be classified as "Car, truck or other vehicle not relating to excavation activity damaging pipe."

Pipeline leaks resulting from pullout of a mechanical fitting due to the repeated action of freezing should be classified as "Temperature, Frost heave."

A pipeline or coating that an outside party or third party damages that later leaks due to corrosion or outside force should be reported under F3.9 - Third Party Excavation Damage.

A pipeline or coating that the operator or a contractor working for the operator damages that causes later leaks due to corrosion or outside force should be reported under F3.8 - Operator Excavation Damage (including their contractors)/Not Third Party.

#### PART F4 - OTHER OUTSIDE FORCE DAMAGE

ITEMS 10- 13 cover other failures caused by damages to pipelines by external forces other than excavation or natural forces.

Fire/explosion as primary cause of failure implies that fire/explosion occurred prior to failure and not as a result of failure. If a fire/explosion occurred as a result of the failure not as primary cause of the failure, do not check item 10, but check Part A 5d or 5e.

If the primary failure cause was damage by a vehicle other than a vehicle involved in excavation, check item 11. If a vehicle involved in excavation caused the damage, check the appropriate item under the Excavation Damage section (items 8 and 9).

#### PART F5 - MATERIAL OR WELDS

"Fitting" means a device, usually metal, for joining lengths of pipe into various piping systems. It includes couplings, ells, tees, crosses, reducers, unions, caps and plugs.

F5 14 - 16, Material. This section includes leaks or failures from a defect within the material of the pipe, component or joint due to faulty manufacturing procedures. Leaks or failures from material deterioration and not resulting from an original defect or corrosion are reported under "Other." Complete subparts a - f if any cause was checked in Part F5.

F5 17 - 19, Welds.

Acronyms used in this section:

LF ERW : low frequency electro-resistance weld

HF ERW : high frequency electro-resistance weld

DSAW : double-submerged arc weld

SAW : submerged arc weld

"Weld-related material defects" includes leaks or failures from a defect within the material of the pipe, component or longitudinal weld or seam due to faulty welding or weld-related manufacturing procedures. Leaks or failures from material deterioration in service that do not result from an original defect or corrosion are reported under "Other".

Sub-Elements a - f.

"Construction defect" force applied during field construction results in a dent, gouge, excessive stress, or some other defect to originally sound material that leads to eventual failure of the pipe. Includes leaks due to wrinkle bends, faulty field welds, and damage sustained in transportation to the construction or fabrication site.

## PART F6 - EQUIPMENT OR OPERATIONS

This section includes malfunctions of control and relief equipment (typically the result of failed and leaking valves), failures of threaded components and broken pipe couplings, and seal failures such as compressor pump packing failures. Incidents resulting from incorrect operations or inadequate procedures are also included in this category. Report gasket or o-ring failures under Part F5, item 16, Joints, by checking the appropriate circle for gasket or o-ring.

### F6 20 - Malfunction of Control/Relief Equipment

Examples of this type of failure cause include overpressurizations resulting from malfunction of control or alarm device, relief valve malfunction, and valves failing to open or close on command; or which opened or closed when not commanded to do so.

### F6 21 - Threads stripped, broken pipe coupling

Examples of this type of failure include failures on compressors, meters, or regulator stations where the failure resulted from a crack in a component or threads of a component such as nipples, flanges, valve connections, line pipe collars, etc.

### F6 22 – Leaking Seals

### F6 23 - Incorrect Operation

Incorrect operation failures typically result from faulty or inadequate procedures. These types of failures most often occur during maintenance activities. Some examples of this type of failure are unintentional product ignition during a welding or maintenance activity; other reportable incidents causing a fire; or failures where human error, employee fatigue, and/or lack of experience may have played a role.

## Part F7 - OTHER

This section is provided for failure causes that do not fit in any category in Sections F1 through F6. If the failure cause is unknown at time of filing this report, check item 25. If the failure cause is known but doesn't fit in any category in sections F1 through F6, check item 24 and describe the cause. Continue in Part G, narrative description, if more space is needed.

## PART G - NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE EVENT

Concisely describe the incident, including the facts, circumstances, and conditions that may have contributed directly or indirectly to causing the incident. You may explain any estimated data in the narrative. If you checked the OTHER block in Part F7 item 24 or 25, the narrative should describe the incident in detail, including the timeline, sequence of events, and all known or suspected causes. Use this section to clarify or explain unusual conditions.

APPENDIX

Part C, Item 2, Other

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NIPPLE FITTING  
FLANGE FITTING  
COMPRESSOR/TURBINE  
GASKET  
DRIP/RISER  
GIRTH WELD  
LONGITUDINAL WELD  
FILLET WELD

Part C, Item 3, Other Material

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PACKING  
ALUMINUM  
ASBESTOS  
FIBER GLASS  
GALVANIZED RUBBER  
REINFORCED RUBBER  
UNKNOWN

Part D, Item 4, Seam Types

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ELECTRIC RESISTANCE WELD  
SUBMERGED ARC WELD  
DOUBLE SUBMERGED ARC WELD  
BUTT WELD  
FURNACE LAP WELD  
SEAMLESS WELD  
FLASH WELD

Part D, Item 5, Valve Types

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BALL  
CHECK  
BLEEDING  
PRESSURE REDUCING  
RECIPROCATING  
GATE  
PLUG  
UNKNOWN

Part D, Item 6, Pipe Manufacturers

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ACME NEWPORT  
AMER. MANNEX CO  
ANDERSON GREENWOOD  
AO SMITH  
ARMCO STEEL  
BETHLEHEM STEEL  
CONSOLIDATED WESTERN  
GROVE  
INGERSOL RAND  
JONES & LAUGHLIN  
KAISER STEEL CO.  
LONE STAR STEEL  
NATIONAL TUBE  
REPUBLIC STEEL  
ROCKWELL  
U S STEEL  
YOUNGSTOWN  
YOUNGSTOWN SHEET&TUBE  
Unknown

Part F1, Subpart c, Cause of Corrosion - "Other"

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ATMOSPHERIC CORROSION  
CHEMICAL CORROSION  
SOUR GAS  
INTERGRANULAR CORROSION