

EVALUATION REPORT OF LIQUID PIPELINE CONSTRUCTION

A completed **Standard Inspection Report** is to be submitted to the Director within 60 days from completion of the inspection. A **Post Inspection Memorandum (PIM)** is to be completed and submitted to the Director within 30 days from the completion of the inspection, or series of inspections, and is to be filed as part of the **Standard Inspection Report**.

Inspection Report	Post Inspection Memorandum
Inspector/Submit Date: _____	Inspector/Submit Date: _____ Peer Review/Date: _____ Director Approval/Date: _____
POST INSPECTION MEMORANDUM (PIM)	
Name of Operator: _____	OPID #: _____
Name of Unit(s): _____	Unit #(s): _____
Records Location: _____	
Unit Type & Commodity: _____	
Inspection Type: _____	Inspection Date(s): _____
PHMSA Representative(s): _____	AFO Days: _____

Summary:

Findings:

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Name of Operator:		
OP ID No. ⁽¹⁾	Unit ID No. ⁽¹⁾	
H.Q. Address:	System/Unit Name & Address: ⁽¹⁾	
Co. Official:	Activity Record ID#:	
Phone No.:	Phone No.:	
Fax No.:	Fax No.:	
Emergency Phone No.:	Emergency Phone No.:	
Persons Interviewed	Titles	Phone No.
PHMSA Representative(s) ⁽¹⁾		Inspection Date(s) ⁽¹⁾
Company System Maps (copies for Region Files):		
Description of Construction ⁽¹⁾		

¹ Information not required if included on page 1.

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.100	DESIGN REQUIREMENTS	S	U	N/A	N/C
.112	Pipe Specifications <input type="checkbox"/> New <input type="checkbox"/> Replacement ■ Manufacturer: ■ Manufacturing Standard: ■ Pipe Grade: ■ Outside Diameter (D): ■ Wall Thickness (t): ■ Type of Longitudinal Seam: ■ Specified Min. Yield Strength: ■ Joint Design - Bevel: ■ External Coating: ■ Internal Coating: ■ Minimum Joint Length: ■ Footage or Miles:				
.104	Check all components for pressure rating.				
.106	Pipeline design formula: $P = (2St/D) \times F \times E \times T$				
.108	External design pressure.				
.110(a)	Outside support for pipe and components.				
.110(b)	Attachments to pipe design computed and compensated.				
.112(b)	Pipe manufactured in accordance to API or ASTM.				
.112(c)	Mark each length of pipe $\geq 4\frac{1}{2}$ inches OD to indicate SMYS or grade, pipe size, and specification.				
.114	Used pipe installed in a pipeline system must comply with §195.112(a) and (b) and the following:				
	■ Meet an API or ASTM specification.				
	■ Free of buckles, cracks, grooves, gouges, dents, corroded areas, or other surface defects that exceed the maximum depth.				
	■ Depth of the corroded areas - is the remaining wall thickness equal to or greater than the minimum required by the tolerance in specifications.				
.116	Valves installed in the pipeline system must comply with the following:				
	(a) Sound engineering design.				
	(b) Compatible with the pipe or fittings to which the valve is attached.				
	(c) Compatible with carbon dioxide or each hazardous liquid the pipeline may carry.				
	(d) Both hydrostatically shell and seat tested without leakage.(Sect. 10 API 6D)				
	(e) Equipped with a means for clearly indicating open or closed.				
	(f) Marked on the body or nameplate with the following:				
	(1) Manufacturer's name or trademark.				
	(2) Class designation or maximum working pressure.				
	(3) Body material.				
	(4) Nominal size.				
.118(a)	Marking, end preparation, and bursting requirements of ANSI B16.9 or MSS SP-75.				
.118(b)	Fittings free of any buckles, dents, cracks, gouges, or other defects that might reduce strength.				
.118(c)	Butt welded fittings rated at or above same pressure and temperature of the pipe.				
.120	New and replaced line pipe, valve, fitting, or other line component designed and constructed to accommodate the passage of instrumented internal inspection devices.				

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.200	CONSTRUCTION REQUIREMENTS	S	U	N/A	N/C																										
	SPECIFICATIONS																														
	.202 Comprehensive written construction specifications.																														
	.204 Qualified inspector performing inspections.																														
	.208 Supports and braces not welded to the pipe.																														
	.210(a) Pipeline ROW selected to avoid areas containing private dwellings, industrial buildings, and places of public assembly.																														
	.210(b) Pipeline located within 50 feet of any private dwelling, industrial building, or place of public assembly provide with at least an additional 12 inches of cover .																														
	.212(b) Field bends made in compliance:																														
	(1) Not impair serviceability.																														
	(2) Smooth, free from buckles, cracks, or mechanical damage.																														
	(3) Longitudinal weld near neutral axis unless - an internal bending mandrel is used; or pipe is ≤ 12 inches or D/t ratio is less than 70% .																														
	INSTALLATION OF PIPE																														
	.246(a) Pipe installed to minimize stresses and protect the pipe coating from damage.																														
	.248(a) Installed below the level of cultivation. (refer to table below)																														
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Location</th> <th colspan="2" style="text-align: center;">Cover (inches)</th> </tr> <tr> <th style="text-align: center;">For Normal Excavation</th> <th style="text-align: center;">For Rock Excavation</th> </tr> </thead> <tbody> <tr> <td>Industrial, commercial, and residential areas</td> <td style="text-align: center;">36</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Crossings of inland bodies of water with a width of at least 100 ft from high water mark to high water mark</td> <td style="text-align: center;">48</td> <td style="text-align: center;">18</td> </tr> <tr> <td>Drainage ditches at public roads and railroads</td> <td style="text-align: center;">36</td> <td style="text-align: center;">36</td> </tr> <tr> <td>Deepwater port safety zone</td> <td style="text-align: center;">48</td> <td style="text-align: center;">24</td> </tr> <tr> <td>Gulf of Mexico and its inlets in water less than 15 ft deep as measured from the mean low tide.</td> <td style="text-align: center;">36</td> <td style="text-align: center;">18</td> </tr> <tr> <td>Other offshore areas under water less than 12 ft deep as measured from the mean low tide.</td> <td style="text-align: center;">36</td> <td style="text-align: center;">18</td> </tr> <tr> <td>Any other area</td> <td style="text-align: center;">30</td> <td style="text-align: center;">18</td> </tr> </tbody> </table>	Location	Cover (inches)		For Normal Excavation	For Rock Excavation	Industrial, commercial, and residential areas	36	30	Crossings of inland bodies of water with a width of at least 100 ft from high water mark to high water mark	48	18	Drainage ditches at public roads and railroads	36	36	Deepwater port safety zone	48	24	Gulf of Mexico and its inlets in water less than 15 ft deep as measured from the mean low tide.	36	18	Other offshore areas under water less than 12 ft deep as measured from the mean low tide.	36	18	Any other area	30	18				
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	.248(b) If minimum cover prescribed above cannot be attained because it is impracticable to do otherwise additional protection being provided as required?																														
	.250 12 inches of clearance between the pipeline and any other underground structure.																														
	.252 Backfilling performed in a manner that provides firm support for the pipe and does no damage to the coating																														
	.256 Pipe at each railroad or highway crossing installed so as to adequately withstand the dynamic forces exerted by anticipated traffic loads.																														
	VALVES																														
	.258(a) Install valve in a location, accessible to authorized employees and protected from damage or tampering.																														
	.258(b) Each submerged valve located offshore or in inland navigable waters marked, or located by conventional survey techniques, to facilitate quick location when operation of the valve is required.																														
	.260 Are valves being installed at each of the following locations:																														
	(a) On the suction end and discharge end of a pump station in a manner that permits isolation of the pump station equipment in the event of an emergency.																														
	(b) On each line entering or leaving a breakout storage tank area in a manner that permits isolation of the tank area from other facilities.																														
	(c) On each mainline at locations along the pipeline system that minimizes damage or pollution from accidental hazardous liquid discharge, as appropriate for the terrain in open country, for offshore areas, or for populated areas.																														

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.200	CONSTRUCTION REQUIREMENTS	S	U	N/A	N/C
	(d) On each lateral takeoff from a trunk line in a manner that permits shutting off the lateral without interrupting the flow in the trunk line.				
	(e) On each side of a water crossing that is more than 100 feet wide from high-water mark to high-water mark unless a waiver has been granted for a particular case where valves not are justified.				
	(f) On each side of a reservoir holding water for human consumption.				

.200	WELDING	S	U	N/A	N/C
.214(a)	Welding must be performed by qualified welders using qualified welding procedures. Are welding procedures qualified in accordance with Sec. 5 of API 1104 or Section IX of ASME Boiler & Pressure Code? Welding procedures must be qualified by destructive testing.				
.214(b)	Each welding procedure must be recorded in detail, including results of qualifying tests.				
.222(a)	Welders must be qualified in accordance with Section 6 of API Standard 1104 (19th Ed., 1999) or Section IX of the ASME Boiler and Pressure Vessel Code (2004 Ed. Including addenda through July 1, 2005) , except that a welder qualified under an earlier edition than listed in §195.3 may weld, but may not requalify under that earlier edition.				
.222(b)	Welders may not weld with a particular welding process unless, within the preceding 6 calendar months, the welder has--(1) Engaged in welding with that process; and (2) Had one weld tested and found acceptable under Section 9 of API 1104.				
.224	Welding operations protected from weather conditions.				
.226(a)	Arc burns require repair.				
.226(b)	If a notch is not repairable by grinding , a cylinder of the pipe containing the entire notch must be removed. Do arc burn repair procedures require verification of the removal of the metallurgical notch by nondestructive testing? (Ammonium Persulfate).				
.226(c)	Ground not welded to pipe.				
.228	Inspectors performing visual inspections supplemented by nondestructive testing, acceptability of welds per Section 9, API 1104 , except for Subsection 9.7 .				
.230(a)	Remove or repair cracks \leq 8% , remove cracks longer than 8% .				
.230(b)	Welds repaired, remove defect down to clean metal, preheat pipe, and assure acceptability.				
.230(c)	Repairs done in accordance with qualified written welding procedures, and mechanical properties of the repaired weld equal to those specified for the original weld.				

.200	NONDESTRUCTIVE TESTING OF WELDS	S	U	N/A	N/C
.228/.234	Detailed written procedure established and qualified for nondestructive testing.				
.234(b)	Nondestructive testing of welds must be performed: (1) In accordance with written procedures for NDT . (2) Radiographer trained and qualified. (Level II or better). (3) By a process that will indicate any defects that may affect the integrity of the weld				
.234(c)	Procedures established for proper interpretation.				
.234(d)	Nondestructively test 10% of each welder's welds per day.				
.234(e)	Test 100% or 90% , if impractical. (1) Stream, river, lake, reservoir, or other body of water. (2) Within railroad or public road ROWs. (3) Overhead road crossings and within tunnels. (4) Within the limits of any incorporated subdivision. (5) Within populated areas such as residential subdivisions.				
.234(f)	100% of all girth welds nondestructively tested on used pipe.				
.234(g)	Test 100% of girth welds at tie-ins.				

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CORROSION PROTECTION REQUIREMENTS		S	U	N/A	N/C
.557	Buried or submerged pipelines (constructed, relocated, replaced, or changed) must be externally coated prior to placing in service. See code for exceptions.				
.563(a)	Adequate cathodic protection of the system.				
	Cathodic protection system installed 1 year . (refer. ADB note below)				
.567	Sufficient number of test leads properly installed.				

.266	CONSTRUCTION RECORDS	S	U	N/A	N/C
	Are there complete records showing the following:				
	(a) Number of girth welds and number of nondestructively tested welds, including number? and disposition of each rejected weld.				
	(b) The amount, location, and cover of each size of pipe installed?				
	(c) The location of each crossing of another pipeline?				
	(d) The location of each buried utility crossing?				
	(e) The location of each overhead crossing?				
	(f) The location of each valve and corrosion test station?				

.300	PRESSURE TESTING	S	U	N/A	N/C
.302(a)	Has the pipeline been hydrostatically tested or is a hydrostatic test planned?				
.302(c)	If the pipeline was hydrostatically tested:				
	1. Was the entire buried portion tested without leakage for 8 hours ?				
	2. Was the above ground portion tested for at least 4 hours ?				
.304	Does the operator hydrostatically test all pipe and attached fittings, including components, unless - if a component is the only item being replaced or added and the manufacturer certifies that it was hydrostatically tested at the factory or it was manufactured under a quality control system that ensures that the component is at least equal inn strength to a prototype that was hydrostatically tested at the factory?				
	Test pressure must be maintained for at least 4 continuous hours at a pressure equal to 125 percent, or more, of the MOP. If not visually inspected during the test, at least an additional 4 hours at 110 percent of MOP is required.				
.306	Appropriate test medium				
.308	Was pipe associated with tie-ins either pretested or hydrostatically tested in place?				
.310(a)	Are hydrostatic test records retained for the life of the facility tested?				
.310(b)	Do the hydrostatic test records include the following:				
	(1) The pressure recording charts?				
	(2) The test instrument calibration data?				
	(3) The operator's name, the name of the person responsible for making the test, and the name of the test company used, if any?				
	(4) The date and time of the test?				
	(5) The minimum test pressure?				
	(6) The test medium?				
	(7) A description of the facility tested and the test apparatus?				
	(8) An explanation of any pressure discontinuities, including test failures, that appear on the pressure recording charts?				
	(9) Where elevation differences in the test section exceed 100 feet , a profile of the pipeline showing the elevation and test sites over the entire length of the test section?				
	(10) Temperature of the test medium or pipe during the test period?				

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.501-.509	OPERATOR QUALIFICATION FIELD VERIFICATION	S	U	N/A	N/C
	Operator Qualification - Use PHMSA Form 15 Operator Qualification Field Inspection Protocol Form if applicable to the project.				

Leave this list with the operator.

Recent Applicable PHMSA Advisory Bulletins

<u>Number</u>	<u>Date</u>	<u>Subject</u>
ADB-06-01	January 17, 2006	Pipeline Safety: Notice to Operators of Natural Gas and Hazardous Liquid Pipelines To Integrate Operator Qualification Regulations into Excavation Activities
ADB-06-03	November 22, 2006	Pipeline Safety-Notice to Operators of Natural Gas and Hazardous Liquid Pipelines to Accurately Locate and Mark Underground Pipelines Before Construction-Related Excavation Activities Commence Near the Pipelines
ADB-07-01	April 27, 2007	Pipeline Safety: Senior Executive Signature and Certification of Integrity Management Program Performance Reports
ADB-07-02	September 6, 2007	Pipeline Safety: Updated Notification of the Susceptibility to Premature Brittle-Like Cracking of Older Plastic Pipe

For more PHMSA Advisory Bulletins, go to <http://ops.dot.gov/regs/advise.htm>