US Department of Transportation
Pipeline and Hazardous Materials Safety Administration
Office of Pipeline Safety

Gas IMP Field Verification Inspection
49 CFR Subparts 192.911, 192.921, 192.933, & 192.935

General Notes:

1. This Field Verification Inspection is performed on field activities being performed by an Operator in support of their Integrity Management Program (IMP).
2. This is a two part inspection form:
   i. A review of applicable Operations and Maintenance (O&M) and IMP processes and procedures applicable to the field activity being inspected to ensure the operator is implementing their O&M and IMP Manuals in a consistent manner.
   ii. A Field Verification Inspection to determine that activities on the pipeline and facilities are being performed in accordance with written procedures or guidance.
3. Not all parts of this form may be applicable to a specific Field Verification Inspection, and only those applicable portions of this form need to be completed. The applicable portions are identified in the Table below by a check mark. Only those sections of the form marked immediately below need to be documented as either "Satisfactory"; "Unsatisfactory"; or Not Checked ("N/C"). Those sections not marked below may be left blank.

Operator Inspected: Puget Sound Energy
Op ID: 22189

Perform Activity *(denoted by mark)*	Activity Number	Activity Description
	1A	In-Line Inspection
	1B	Hydrostatic Pressure Testing
X	1C	Direct Assessment Technologies
	1D	Other Assessment Technologies
X	2A	Remedial Actions
X	2B	Remediation – Implementation
X	3A	Preventive & Mitigative – additional measures evaluated for HCAs
	3B	Preventive & Mitigative – automatic shut-off valves
X	4A	Field Inspection for Verification of HCA Locations
X	4B	Field Inspection for Verification of Anomaly Digs
	4C	Field Inspection to Verify adequacy of the Cathodic Protection System
X	4D	Field inspection for general system characteristics
	attachment	Anomaly Evaluation Report
	attachment	Anomaly Repair Report

Gas IMP Field Verification Inspection Form

Name of Operator: Puget Sound Energy

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Company Official: Sue McLain Senior Vice President, Delivery Operations
Phone Number: (425) 462-3696
Fax Number:
Operator ID: 22189

Persons Interviewed	Title	Phone No.	E-Mail
Darryl Hong	Primary Contact		Darryl.Hong@pse.com
Cheryl McGrath	Manager Gas Compliance	425-462-3207	Cheryl.mcgrath@pse.com
Scott Sammons	Damage Prevention Coordinator	425-457-5816	Scott.sammons@pse.com
Steve Schueneman	Consulting Engineer Gas System Engr	425-462-3971	Steven.schueneman@pse.com
Stephanie Silva	Consulting Engineer Gas for Standards		Stephanie.silva@pse.com

OPS/State Representative(s): Patti Johnson, Lex Vinsel, Dave Cullom - Date(s) of Inspection: July 26, 2011

Inspector Signature: Dave Cullom Date: 7/26/2011

Pipeline Segment Descriptions: *[note: Description of the Pipeline Segment Inspected as part of this field verification. (If information is available, include the pipe size, wall thickness, grade, seam type, coating type, length, normal operating pressure, MAOP, %SMYS, HCA locations, class locations, and Pipeline Segment boundaries.)]*

Site Location of field activities: *[note: Describe the portion of the pipeline segment reviewed during the field verification, i.e. milepost/stations/valves/pipe-to-soil readings/river crossings/etc. In addition, a brief description and case number of the follow up items in any PHMSA compliance action or consent agreement that required field verification. Note: Complete pages 8 & 9 as appropriate.]*

Summary:
In 2004 they started the program, 50% by 2007 and 100% by 2012. As of 2011 they are nearly complete at their assessments. They use method 2 for HCA determination. They reassess every 7 years. They have annual meetings to discuss preventative and migitative measures. Their performance plan reports to PHMSA key metrics annually. They have a quality control plan and a management of change plan as well.

16812 feet 20.1% SMYS In Olympia

They used CIS and DCVG on the Olympia Supply in 5/25/2010. They performed one dig and found no major corrosion.

Findings:

There was a potential issue with the quality of the HCA mapping and I reviewed the plan again during the second phase of the inspection and found it to be acceptable. They use method 2 for HCA determination.

Key Documents Reviewed:

Document Title	Document No.	Rev. No	Date
OS 7500.2000 HCA Standard			**10/01/10**
7500.4100 is the dig table in fig 13-3			

Part 1 - Performance of Integrity Assessments

1A. In-Line Inspection	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that Operator's O&M and IMP procedural requirements (e.g. launching/receiving tools) for performance of ILI were followed.			X	They use the process outlined in 7500.4100 They use CIS and DCVG.
Verify Operator's ILI procedural requirements were followed (e.g. operation of trap for launching and receiving of pig, operational control of flow), as appropriate.				
Verify ILI tool systems and calibration checks before run were performed to ensure tool was operating correctly prior to assessment being performed, as appropriate.				Pre-assessment Indirect inspection Direct examination Post assessment
Verify ILI complied with Operator's procedural requirements for performance of a successful assessment (e.g. speed of travel within limits, adequate transducer coverage), as appropriate.				
Document ILI Tool Vendor and Tool type (e.g. MFL, Deformation). Document other pertinent information about Vendor and Tool, as appropriate				192.925
Verify that Operator's personnel have access to applicable procedures for preparing, running and monitoring the pipeline for ILI tools include performance requirements (e.g.: tool speeds, pipe cleanliness, operation of tool sensors, and ILI field calibration requirements), as appropriate.				The operator does not use this method
Other:				*[Note: Add location specific information, as appropriate.]*

1B. Hydrostatic Pressure Testing	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that hydrostatic pressure tests complied with Part 192 Subpart J requirements.			X	The operator does not use this method. They have identified that this pipeline has external corrosion as its primary risk so they use DCVG and CIS to look for anomalies.
Review documentation of Hydrostatic Pressure Test parameters and results. Verify test was performed without leakage and in compliance with Part 192 Subpart J requirements.				
Review test procedures and records and verify test acceptability and validity.				
Review determination of the cause of hydrostatic test failures, as appropriate.				
Document Hydrostatic Pressure Test Vendor and equipment used, as appropriate.				
Verify that the baseline assessment is conducted in a manner that minimizes environmental and safety risks (reference §192.919(e) and ADB-04-01)				
Other:				

1C. Direct Assessment Technologies	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that application of "Direct Assessment Technology" complied with Part 192.923	X			This method has been used for some time and we reviewed the plan in 2006. This procedure is in the FP.
Review documentation of Operator's application of "Direct Assessment Technology", if available. Verify compliance with Part 192.923 and Operator's procedural requirements, as applicable.				
Verify that appropriate tests and/or inspections are being performed and appropriate data is being collected, as appropriate.				
Other.				

1D. Other Assessment Technologies	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that application of "Other Assessment Technology" complied with Operator's requirements, that appropriate notifications had been submitted to PHMSA, and that appropriate data was collected.			X	The operator does not use other assessment technology
Review documentation of notification to PHMSA of Operator's application of "Other Assessment Technology", if available. Verify compliance with Operator's procedural requirements. If documentation of notification to PHMSA of Operator's application of "Other Assessment Technology" is available, verify performance of assessment within parameters originally submitted to PHMSA.				
Verify that appropriate tests are being performed and appropriate data is being collected, as appropriate.				
Other.				

Part 2 - Remediation of Anomalies

2A. Remedial Actions – Process	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that remedial actions complied with the Operator's procedural requirements.	X			On the 6" STW transmission main, they exposed, characterized, and collected data from the one anomalous condition as identified by ECDA Memo dated 6/5/10 from Steve Schueneman.
Witness anomaly remediation and verify documentation of remediation (e.g. Exposed Pipe Reports, Maintenance Report, any Data Acquisition Forms). Verify compliance with Operator's O&M Manual and Part 192 requirements.				
Verify that Operator's procedures were followed in locating and exposing the anomaly (e.g. any required pressure reductions, line location, identifying approximate location of anomaly for excavation, excavation, coating removal).				
Verify that procedures were followed in measuring the anomaly, determining the severity of the anomaly, and determining remaining strength of the pipe. Review the class location factor and failure pressure ratio used by Operator in determining repair of anomaly.				
Verify that Operator's personnel have access to and knowledge of applicable procedures.				Cathodic Protection readings of pipe to soil at dig site (if available): On Potential: _____ mV Off Potential: _____ mV
Other:				*[Note: Add location specific information and note whether CP readings were from the surface or from the pipe following exposure, as appropriate.]*

2B. Remediation - Implementation	Satisfactory	Unsatisfactory	N/C	Notes: The anomaly determined by DCVG was remediated.
Verify that the operator has adequately implemented its remediation process and procedures to effectively remediate conditions identified through integrity assessments or information analysis.	X			
If documentation is available, verify that repairs were completed in accordance with the operator's prioritized schedule and within the time frames allowed in §192.933(d). **Notes - They use Dynamic Risk Consultants to prioritize				
Review any documentation for this inspection site for an immediate repair condition (§192.933(d)(1)) where operating pressure was reduced or the pipeline was shutdown. Verify for an immediate repair condition that temporary operating pressure was determined in accordance with the requirements in §192.933(a) or, if not applicable, the operator should provide an engineering basis justifying the amount of pressure reduction.				
Verify that repairs were performed in accordance with §192.103, §192.111, §192.713, §192.717, §192.719, §192.933 and the Operator's O&M Manual, as appropriate. If welding is performed, verify a qualified welding procedure and qualified welders are used to perform repairs. If composite repair methods are used, verify that a method approved by the Operator is used, procedures are followed, and qualified personnel perform the repair.				Cathodic Protection readings of pipe to soil at dig site (if available): On Potential: ____-1.672_____ mV Off Potential: _____ mV
Review CP readings at anomaly dig site, if possible. (See Part 4 of this form – "Field Inspection to Verify adequacy of the Cathodic Protection System" , as appropriate.				*[Note: Add location specific information and note whether CP readings were from the surface or from the pipe following exposure, as appropriate.]*
Other:				

Part 3 - Preventive and Mitigative Actions

3A. P&M Measures for Third Party Damage	Satisfactory	Unsatisfactory	N/C	Notes:
Identify additional measures evaluated for the HCA section of the pipeline and facilities.	X			
Verify that P & M measures regarding threats due to third party damage are being implemented: [§192.915(c), §192.935(b)(1)(iv)]:				
Confirm the use of qualified personnel for marking, locating, and direct supervision of known excavation work, as appropriate.				
Confirm the use of qualified personnel for monitoring of excavations conducted on covered pipeline segments by pipeline personnel, as appropriate.				
Other:				*[Note: Add location specific information, as appropriate.]*

3B. Installed Automatic Shut-off Valves (Protocol H.07)	Satisfactory	Unsatisfactory	N/C	Notes:
Verify additional preventive and mitigative actions implemented by Operator.			X	No remote control valves or auto shutoff valves. They have meetings
Document that additional measures evaluated by the operator cover alternatives such as, installing Automatic Shut-off Valves or Remote Control Valves, installing computerized monitoring and leak detection systems, replacing pipe segments with pipe of heavier wall thickness, providing additional training to personnel on response procedures, conducting drills with local emergency responders and implementing additional inspection and maintenance programs, as appropriate				
Verify that the operator has a process to decide if automatic shut-off valves or remote control valves represent an efficient means of adding protection to potentially affected high consequence areas. [§192.935(c)]				
Verify operation of installed remote control valve by reviewing operator inspection/remote control records for partially opening and closing the valve, as appropriate.				
Other:				*[Note: Add location specific information, as appropriate.]*

Part 4 - Field Investigations (Additional Activities as appropriate)

4A. Field Inspection for Verification of HCA Locations	Satisfactory	Unsatisfactory	N/C	Notes:
Review HCAs locations as identified by the Operator. Utilize NPMS and Operator maps, as appropriate.	X			
Verify that the operator's integrity management program includes accurate and updated system maps or other suitably detailed means documenting the pipeline segment locations that are located in high consequence areas, as appropriate. [§192.905(a)] ****Notes – I had a question about the 20 or more buildings intended for human occupancy. They resolved it. ****				
Review the operator's applicable procedures and forms used to document new information from one-calls, surveys, aerial & ground patrols are being completed by field personnel to communicate new developments that may impact high consequence areas or that may create new high consequence areas to IM personnel, as appropriate. [§192.905(c)] ****Notes – Reviewed the patrol information for identifying new HCAs.****				
Review the operator's applicable procedures and forms to confirm that new HCAs and class location changes are being identified through it's continuing surveillance program as required by §192.613 and §192.905.				*[Note: Add location specific information, as appropriate.]*

4B. Field Inspection for Verification of Anomaly Digs	Satisfactory	Unsatisfactory	N/C	Notes:
Verify repair areas, ILI verification sites, etc.	X			
Document the anomaly dig sites observed and reviewed as part of this field activity and the actions taken by the operator.				*[Note: Add location specific information, as appropriate.]*

4C. Field Inspection to Verify adequacy of the Cathodic Protection System	Satisfactory	Unsatisfactory	N/C	Notes:
In case of hydrostatic pressure testing, Cathodic Protection (CP) systems must be evaluated for general adequacy.			X	No hydrotesting performed.
The operator should review the CP system performance in conjunction with a hydrostatic pressure test to ensure the integrity assessment addressed applicable threats to the integrity of the pipeline. Has the operator reviewed the CP system performance in conjunction with the hydrostatic pressure test?				
Review records of CP readings from CIS and/or annual survey to ensure minimum code requirements are being met, if available.				Cathodic Protection readings of pipe to soil at dig site (if available): On Potential: _____ mV Off Potential: _____ mV
Review results of random field CP readings performed during this activity to ensure minimum code requirements are being met, if possible. Perform random rectifier checks during this activity and ensure rectifiers are operating correctly, if possible.				*[Note: Add location specific information and note whether CP readings were from the surface or from the pipe following exposure, as appropriate.]*

4D. Field inspection for general system characteristics	Satisfactory	Unsatisfactory	N/C	Notes:
Through field inspection determine overall condition of pipeline and associated facilities for a general estimation of the effectiveness of the operator's IMP implementation.	X			
Evaluate condition of the ROW of inspection site to ensure minimum code requirements are being met, as appropriate.				
Comment on Operator's apparent commitment to the integrity and safe operation of their system, as appropriate.				
Check ROW for pipeline markers in line-of-sight and Emergency call-in number on marker posts.				
Other:				

Anomaly Evaluation Report *(to be completed as appropriate)*

Pipeline System and Line Pipe Information	
Operator (OpID and System Name):	
Unit ID (Pipeline Name)	
Pipe Manufacturer and Year:	Seam Type and Orientation:
Pipe Nominal OD (inch):	Depth of Cover:
Pipe Nominal Wall thickness (inch):	Coating Type and Condition:
Grade of Pipe:	MAOP:
ILI Reported Information	
ILI Technology (e.g., Vendor, Tools):	
Anomaly Type (e.g., Mechanical, Metal Loss):	
Is anomaly in a segment that can affect an HCA? (Yes / No)	
Date of Tool Run (MM/DD/YY):	Date of Inspection Report (MM/DD/YY):
Date of "Discovery of Anomaly" (MM/DD/YY):	
Type of "Condition" (e.g.; Immediate; 60-day; 180-day):	
Anomaly Feature (Int/Ext):	Orientation (O'clock position):
Anomaly Details: Length (in):	Width (in): Depth (in):
Anomaly Log Distance (ft):	Distance from Upstream weld (ft):
Length of joint(s) of pipe in which anomaly is identified (ft):	
Anomaly Dig Site Information Summary	
Date of Anomaly Dig (MM/DD/YY):	
Location Information (describe or attach map):	
Mile Post Number:	Distance from A/G Reference (ft):
Distance from Upstream weld (ft):	
GPS Readings (if available) Longitude:	Latitude:
Anomaly Feature (Int/Ext):	Orientation:
Length of joint of pipe in which anomaly is found (ft):	
For Mechanical Damage Anomaly	
Damage Type (e.g., original construction, plain dent, gouge):	
Length (in):	Width (in): Depth (in):
Near a weld? (Yes / No):	
Gouge or metal loss associated with dent? (Yes / No):	Are multiple dents present? (Yes / No):
Did operator perform additional NDE to evaluate presence of cracks in dent? (Yes / No):	
Cracks associated with dent? (Yes / No):	
For Corrosion Metal Loss Anomaly	
Anomaly Type (e.g., pitting, general):	
Length (in):	Width (in): Max. Depth (in):
Remaining minimum wall thickness (in):	Maximum % Wall Loss measurement(%):
Safe pressure calculation (psi), as appropriate:	
For "Other Types" of Anomalies	
Describe anomaly (e.g., dent with metal loss, crack, seam defect, SCC):	
Length (in):	Width (in): Max. Depth (in):
Other Information, as appropriate:	
Did operator perform additional NDE to evaluate presence of cracks? (Yes / No):	
Cracks present? (Yes / No):	

Anomaly Repair Report *(to be completed as appropriate)*

Repair Information
Was a repair of the anomaly made? (Yes / No): Was Operating Pressure Reduced per 192.933(a) requirements?
Was defect ground out to eliminate need for repair? (Yes / No):
If grinding used, complete the following for affected area: Length (in): Width (in): Depth (in):
If NO repair of an anomaly for which RSTRENG/B31.G is applicable, were the Operator's RSTRENG/B31.G calculations reviewed? (Yes / No):
If Repair made, complete the following:
Repair Type (e.g., Type B-sleeve, composite wrap)
Was defect ground out prior to making repair? (Yes / No):
Operating Pressure at the time of repair:
Length of Repair: Pipe re-coating material used:
Comments on Repair material, as appropriate (e.g., grade of steel, wall thickness):
Comments on Repair procedure, as appropriate (e.g., welded sleeve, composite wrap):
General Observations and Comments
Was a diagram (e.g., corrosion map) of the anomaly made? (Yes / No): (Include in report if available)
Were pipe-to-soil cathodic protection readings taken? (Yes / No):
If CP readings taken, Record: On Potential: _____mV; Off Potential: _____mV *[Note: Note whether CP readings were from the surface or from the pipe following exposure, as appropriate.]*
Describe method used by Operator to locate anomaly (as appropriate):
Comments regarding procedures followed during excavation, repair of anomaly, and backfill (as appropriate):
General Observations and Comments *(Note: attach photographs, sketches, etc., as appropriate)*: