



PII Pipeline Solutions

a GE Oil & Gas and Al Shaheen joint venture

William H. Brown
Level 3 UltraScan WM Data Analyst
PII Pipeline Solutions

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Friday, January 4, 2013

Mr. Thomas Hrcir
Marathon Pipe Line LLC
539 South Main Street
Findlay, Ohio 45840-3229
Phone: [REDACTED]



Re: 2012 UltraScan™ WM (Run 2MWR) & CalScan In-Line inspections
Final Report, Issue 1
PII Project 120265_22A
Roxana to Patoka, 22-inch Crude Oil Pipeline

Dear Mr. Hrcir:

Enclosed you will find the following items:

- Two (02) sets of hard copies in binders of the UltraScan™ WM In-Line Inspection Final Report including the results of the CalScan geometry inspection. There is one volume per set.
- Two (02) sets of the Listings (Excel spreadsheets), analysis database, text of the Final Report (Acrobat PDF format), UltraScan™ WM run 2MWR data files, and Pipelimage WM Client data browser software (version 4.0.2) – one USB Flash Drive per set.

Electronic copies of the same were uploaded to the GE Support Central Community site.

As always, we appreciate this opportunity to be of service to preserve the integrity of your pipelines. If PII can be of further assistance, do not hesitate to call.

Sincerely,

per procuracionem Ratif Ikiler

Enclosures

DOT PROGRAM/INTEGRITY MANAGEMENT PROGRAM T&C TRANSMITTAL

To be completed electronically (via Excel)

DOT: IMP: YEAR: 2012

SYSTEM SPECIFIC FILES

System Name: Woodpat 22" Crude

Segment Name: Roxanna - Patoka Woodpat 22in Segment Number: 125
(Segment Name and Number is derived from the Baseline Assessment Plan)

Facility:

Element Number: 5 - Integrity Management Process

Org Code: Classification/Retention: Record, Maintenance and Repair - Pipeline and Terminal (ACT+10)

Record Description: IMP Documentation for 2012 ILI Tool Run on Roxana - Patoka Woodpat 22". Tool received on 9/18/2012.
PLEASE FILE IN PROJECT FILE.

Document: New Revision Year: 2012 AFE: 2121145 Year: AFE:

PROCESS SPECIFIC FILES (To be completed if IMP applicable)

Element Number:

Classification/Retention:

Record Description:

Document: New Revision Year: AFE: Year: AFE:

To be completed by hand after printed

Signatures:

Originator: [Signature]

Date: 9/21/15

T&C: _____

Date: _____

To be completed by T&C

T&C File Number: _____ (Established by T&C) Cross-Reference (X) _____

Executive Summary

A full TranScan survey of the Marathon Pipe Line LLC Woodpat Roxana Str. to Patoka pipeline was successfully completed by PII Pipeline Solutions a GE Oil & Gas and Al Shaheen joint venture between 05 September 2012 and 06 September 2012.

This survey provides information relating to defects that are associated with the longitudinal seam weld in addition to general metal loss. The seam weld defects have been classified in accordance with the Seam Weld Defect Discrimination table contained in the Inspection System Performance Specification (Appendix G).

A total of **5477 seam weld defects** and **11527 metal loss defects** have been detected by the inspection survey.

Of the 5477 seam weld defects, 5 exhibit the characteristics associated with crack-like defects. A further 63 seam weld defects exhibit some, but not all, of the characteristics associated with crack-like defects. They may possibly be SEAM WELD ANOMALIES but, in the interests of conservatism, they have been included as SEAM WELD FEATURE B defects, in accordance with the Seam Weld Defect Discrimination table in Appendix G. The remaining 5409 seam weld defects have been classified as SEAM WELD ANOMALIES.

Of the 11527 metal loss defects, 2074 have been classified as SEAM WELD METAL LOSS and 9453 have been classified as GENERAL METAL LOSS.

The seam weld defects and metal loss defects in this survey are distributed throughout the pipeline. Approximately 53% of the total number of spools contain a seam weld defect or a metal loss defect.

A Geometric / IMU inspection of the pipeline was completed by PII Pipeline Solutions a GE Oil & Gas and Al Shaheen joint venture on 21 August 2012. The Geometric survey information is included in this report and details of the dents identified in both inspection surveys can be found in the dent report section. All reported features have been assessed using PII Pipeline Solutions enhanced geometric analysis algorithm.

We should hereby like to express our appreciation for the assistance and co-operation that we received from Marathon Pipe Line LLC in the course of this project.

Data Analyst: Sebastian Alvarez

Report Approved by: David Classen
Analysis Team Leader

Date: December 6, 2012

Project Manager: Ronald Coryell

Telephone: [REDACTED]

Inspection Summary

This section presents a summary of inspection operation 120265_22A which was conducted for Marathon Pipe Line LLC in the Woodpat Roxana Stn. to Patoka, 22 inch nominal diameter, 54.8 miles, Crude Oil pipeline.

The pipeline was inspected by PII Pipeline Solutions using the TranScan inspection tool between 05 September 2012 and 06 September 2012.

This survey provides information relating to defects that are associated with the longitudinal seam weld in addition to general metal loss. Seam weld defects detected on this survey have been classified in accordance with the Seam Weld Defect Discrimination table contained in the Inspection System Performance Specification (Appendix G). Further details of these are contained in the following sections.

1.1. Seam Weld Defects

A total of 5477 seam weld defects have been detected on the inspection survey, 5 of which exhibit the characteristics associated with crack-like defects. A further 63 seam weld defects exhibit some, but not all, of the characteristics associated with crack-like defects. They may possibly be SEAM WELD ANOMALIES but have been included as SEAM WELD FEATURE B defects, in the interests of conservatism. The remaining 5409 seam weld defects have been classified as SEAM WELD ANOMALIES.

A breakdown of these 5477 seam weld defects is as follows:

SEAM WELD FEATURE A:	5
SEAM WELD FEATURE B:	63
SEAM WELD ANOMALY:	5409

Those seam weld defects classified as SEAM WELD ANOMALY are not considered to be crack-like, but display some sort of seam weld abnormality. Many of these will have originated from the manufacturing process and will have been present in the pipeline since it was commissioned. It can be difficult to achieve the normal sizing accuracy for defects of this nature depending on whether they are the result of hot working or cold working of the pipe steel. Consequently, it should be noted that the sizing accuracy specified for seam weld defects in the Inspection System Performance Specification (Appendix G) contained in the contract may not be applicable to SEAM WELD ANOMALIES.

Detailed inspection sheets for 15 of these seam weld defects are provided in Section 2. Summaries of all the seam weld defects are presented in Section 3.1.

1.2. Metal Loss Defects

A total of 11527 metal loss defects have been detected on the inspection survey. Metal loss defects have been classified in accordance with the Inspection System Performance Specification (Appendix G).

A breakdown of the classification of the 11527 metal loss defects is as follows:

SEAM WELD METAL LOSS:	2074
GENERAL METAL LOSS:	9453

Metal loss defects classified as SEAM WELD METAL LOSS are narrow, axially oriented and encroach into the seam weld. Metal loss defects classified as GENERAL METAL LOSS are not confined to the seam weld.

Detailed inspection sheets for 15 of these metal loss defects are provided in Section 2. Summaries of all the metal loss defects are presented in Section 3.1.

1.3. Pipeline Anomalies

The following is a summary of any pipeline anomalies which have been detected on the inspection survey:

ferrous metal objects:	50
dents:	1

In addition to the above mentioned anomalies, the following repairs have been identified during the course of the pipeline analysis:

shell repairs:	32
patch repaired spools:	0

More information on pipeline anomalies is given in the anomaly reports presented in Sections 3.2.2 to 3.2.4.