Enbridge Interim Partial Termination Update Report May 23, 2022, to October 18, 2022

DJ# 90-5-1-1-10099

October 27, 2022

Enbridge Consent Decree (United States v. Enbridge Energy, Limited Partnership, et al., Case 1:16-cv-914)

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Glossary

A listing of many of the acronyms and initialisms in this report

AGM	Above Ground Marker
AIWP	Anchor Inspection Work Plan
AIS	Automated Identification System
ALD	Alternative Leak Detection
ALJ	Administrative Law Judge
AMSTEP	Area Maritime Security Training and Exercise Program
APE	Area of Potential Effect
APP	Agricultural Protection Plan
ART	Alarm Response Team
API	American Petroleum Institute
ATC	American Transmission Company
AUV	Autonomous Underwater Vehicle
AVB	Automated Volume Balance
BIWP	Biota Investigation Work Plan
CCO	Control Centre Operations
COTP	Coast Guard of the Port
CD	Consent Decree
CGR	Corrosion Growth Rate
COS	Community Outreach Session
CP	Cathodic Protection
CP CIS	Cathodic Protection Close Interval Survey
CRO	Control Room Operator
DAS	Distributed Acoustic Sensing
DOC	Department of Commerce
DOJ	Department of Justice
DPR	Discharge Pressure Restriction
DQA	Data Quality Assessment
DQR	Data Quality Review
DSAW	Double Submerged Arc Welded
DWSMAs	Minnesota Department of Drinking Water Supply Management Areas
EA	Engineering Assessment
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EIS	Environmental Impact Statement
EMOP	Established Maximum Operating Pressure
EPA	Environmental Protection Agency
ER	Emergency Response
ESA	Endangered Species Act
ESMOC	Enbridge Straits Maritime Operations Center
eAtoN	Electronic Aids to Navigation
FCC	Federal Communications Commission
FEA	Finite Element Analysis
FHLA	Field Level Hazard Assessment
FLIR	Forward-Looking Infrared
FMP	Fen Management Plan
FdL	Fond du Lac Band of Lake Superior Chippewa
FRT	Field Response Team
FR	Future Report
FRE	Features Requiring Excavation
FWT	Fluid Withdrawal Testing
GW	Girth Weld
HCA	High Consequence Area
HDD	Horizontal Directional Drill
HIVES	Hydrologic Imagery Visualization Enterprise System

ICP	Integrated Contingency Plan
ICS	Incident Command System
ILI	In-Line Inspection
ILIMRR	In-Line Inspection Minimum Reporting Requirements
IMT	Incident Management Team
IPTUR	Interim Partial Termination Update Report
IR	Information Request
ISD	In-service Date
ITP	Independent Third Party
IVP	Intelligent Valve Placement
L3R	US Line 3 Replacement
LDA	Leak Detection Analyst
LDAM	Leak Detection Alarm Management
LDPIP	Leak Detection Project Integration Plan
LEPC	Local Emergency Planning Committee
MAOP	Maximum Allowed Operating Pressure
MBS	Material Balance System
MSCA	Mackinac Straits Corridor Authority
MSEL	Master Scenario Events List
MI	Michigan
MDEQ	Michigan Department of Environmental Quality
MN	Minnesota
MDA	Minnesota Department of Agriculture
MDNR	Minnesota Department of Natural Resources
MFL	Magnetic Flux Leakage
MnDOT	Minnesota Department of Transportation
MOP	Maximum Operating Pressure
MP	Milepost
MPCA	Minnesota Pollution Control Agency
MPUC	Minnesota Public Utilities Commission
MRR	Minimum Reporting Requirement
MSP	Most Severe Point
NA	Not Applicable
ND	North Dakota
NDDH	North Dakota Department of Health
NDE	Non-destructive Examination
NDGF	North Dakota Game and Fish
NDPSC	North Dakota Public Service Commission
NDSWC	North Dakota State Water Commission
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historical Properties
NTSB	National Transportation Safety Board
NWT	Nominal Wall Thickness
OD	Outside Diameter
OSRO	Oil Spill Response Organization
OMM	Operations & Maintenance Manual
PCSLD	Pipeline Control Systems and Leak Detection
PHMSA	Pipeline Hazardous Materials Safety Administration
P	Paragraph
PI	Pipeline Integrity
PLM	Pipeline Maintenance
PN	Priority Notification
PO	Purchase Order

PPR	Point Pressure Restriction
PAWSA	Ports and Waterways Safety Assessment
PT	Pressure Transmitter
PR	Pressure Restriction
PAtoN	Private Aids to Navigation
RDS	Rupture Detection System
RFBS	Rupture Flow-based Solution
RNA	Regulated Navigation Area
ROA	Record of Alarms
ROV	Remote Operated Vehicle
RPR	Rupture Pressure Ratio
SAR	Semi-Annual Report
SAW	Submerged Arc Welded
SAWP	Screw Anchor Work Plan
SCADA	Supervisory Control and Data Acquisition
SCC	Stress Crack Corrosion
SHPO	State Historic Preservation Office
SME	Subject Matter Expert
SML	Subject Matter Lead
SOA	Summary of Alarms
SOC	Security Operations Center
SoM	State of Michigan
SRAHC	Saginaw River All Hazards Committee
SRB	Sulfate Reducing Bacteria
STA	Senior Technical Advisor
TPC	Third Party Consultant
TT	Temperature Transmitter
TTX	Table Top Exercises
US	United States
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
USWM	Ultrasonic Wall Measurement
VAIS	Visual Aids to Navigation
VIR	Verification Issue Record
VCI	Vapor Corrosion Inhibitor
VSR	Verification Status Record
VMRS	Vessel Movement Reporting System
WLOA	Weekly List of Alarms
WMA	Wildlife Management Area
WQC	Water Quality Certification
WT	Wall Thickness

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Introduction

Enbridge[1] submits this update to the tenth Semi-Annual Report (also referred to herein as the "Interim Partial Termination Update Report", "IPTUR" or "Report") in electronic form in accordance with United States Environmental Protection Agency ("EPA") request and Section IX, Reporting Requirements, of the Consent Decree entered in *United States v. Enbridge Energy, Limited Partnership, et al.*, Civ. No. 1:16-cv-00914 (referred to herein as "Consent Decree," "Decree," or "CD"). Specifically, this update to the tenth SAR documents Enbridge's compliance with the Consent Decree for the reporting period dated May 23, 2022, to October 18, 2022. This update to the tenth SAR is being served in accordance with Section XVI of the Consent Decree (Notices), and a copy is being supplied to the Independent Third Party (also referred to herein as the "ITP").

This IPTUR summarizes any updates to the requirements in Subsections VII.A-J of the Consent Decree that became due and/or were required to be complied with by Enbridge after May 22, 2022, and that are subject to Partial Termination under the Seventh Modification of the Consent Decree. It does not include updates to requirements that continue to be in effect following approval of Partial Termination. This Report is organized by Paragraph and Subparagraph number of the Consent Decree. The IPTUR supplements the Partial Termination Report ("PTR") provided to the United States and ITP on October 18, 2022.

In accordance with Paragraph 144, this IPTUR provides for items that occur during the covered time period the information that is required to be submitted to the United States under Paragraphs 29, 31, 49, 96, and Subparagraph 110.c, with each having specific SAR requirements. In accordance with Paragraph 144, Enbridge shall discuss any updates since SAR10, Paragraph-by-Paragraph, such matters as completion of milestones, status of permit applications, operation and maintenance issues, reports to state agencies, number of features, by type, planned for future repair or mitigation, and any significant changes or issues since the first SAR. Enbridge has reported specific activities encountered during this reporting period in Paragraph 144 of this Report, where there were problems encountered or anticipated in implementing the requirement (together with implemented or proposed solutions).

Enbridge is compliant with the Consent Decree requirements unless otherwise stated in the applicable section of the Report, and includes the information and analysis required by Paragraph 145. Discharge information and post-incident reports required by Paragraphs 146 and 148 also are set forth in this IPTUR.

Enbridge has also enclosed appendices to this IPTUR, which provide supporting tables, further information on Enbridge's compliance with the Consent Decree, and/or documents that are required to be submitted to the United States under Section IX. The Table of Contents identifies each of these appendices.

VII. Injunctive Measures

20. Sixth Modification [Established Maximum Operating Pressure and Consent Decree Pressure Restrictions]

Not applicable. This paragraph is not in scope of partial termination; however, details regarding the October 3, 2022, Line 6A Overpressure are found in P. 145.

[1] *As used herein, "Enbridge" refers to the following entities: Enbridge Energy, L.P., Enbridge Pipelines (Lakehead) L.L.C., Enbridge Energy Partners, L.P., Enbridge Energy Management, L.L.C., Enbridge Energy Company, Inc., Enbridge Employee Services, Inc., Enbridge Operational Services, Inc., Enbridge Pipelines Inc., and Enbridge Employee Services Canada Inc.*

Section A – Original US Line 6B

21. [Original US Line 6B]

No change since SAR10.

Section B – Replacement of Line 3; Evaluation of Replacement of Line 10

22.a, c-d [Replacement of Line 3 in the United States]

Details about the comprehensive enforcement agreements from October 17, 2022, related to P. 22.a Line 3 replacement construction are in P. 144.

Paragraph 22.b will be addressed in SAR11.

Enbridge has continued to report to the ITP the maximum pressure compared to the maximum allowable pressure on Original US Line 3 Section 1 until the final cleanout on August 29, 2022. This completes the requirements of Paragraph 22.c.

There has been no change to P. 22.d since SAR10.

22.e [Prohibition Regarding the Use of Original US Line 3 Following Replacement]

No change since SAR10.

23 [Line 10 Replacement Evaluation]

No change since SAR10.

Section C – Hydrostatic Pressure Testing

No change since SAR10.

Section D – In-Line Inspection Based Spill Prevention Program

(I) In-Line Inspections

27 [Timely Identification and Evaluation of All Features]

Enbridge's implementation of the requirements of Subsection VII.D.(I) (Paragraphs 27 to 31) for the timely identification and evaluation of features of significance is set forth in the paragraphs that follow. Enbridge continues to implement the requirements for geometry, corrosion and axial cracking features. Circumferential cracks are not included in the IPTUR as they are not subject to partial termination.

28.a-b [Periodic In-Line Inspections and ILI Schedule]

A complete list of in-line inspection (ILI) programs conducted by Enbridge to identify features of interest for the pipelines in the Lakehead System, during the reporting period for this IPTUR is provided in **Table D-1**.

Enbridge conducts ILIs on Lakehead System Pipelines using tools identified on the Enbridge Approved ILI Tool List which was submitted to the ITP. All ILIs that Enbridge believes are currently required under Paragraphs 65 and 66 of the Consent Decree for all Lakehead System Pipelines have been completed for this reporting period. Those ILIs required to detect crack features on Line 2 were addressed in the "Stipulation and Agreement Regarding Assessment and Payment of Stipulated Penalties Relating to Timeliness of Certain In-Line Inspection" which was filed with the Court on May 2, 2018 (referred to herein as the "ILI Stipulation"). This was reported on in previous SARs.

Refer to **Table IX-1** in P. 144 Problems Anticipated in Appendix 1 for circumferential cracking details and the Paragraph 144 discussion regarding cracking: [Section D] Circumferential Cracking Engineering Assessment Process – Various Paragraphs.

28.c [Incomplete or Invalid ILI]

Enbridge's contracts with vendors that are retained to conduct ILIs on the Lakehead System reference the In-Line Inspection Minimum Reporting Requirements, ("ILIMRR" version 8.3, version date March 1, 2020). This was updated from the previous version which was issued to all approved ILI vendors prior to the Consent Decree Effective Date. The requirements that vendors must submit Data Quality Assessments ("DQA") according to the deadlines specified in the Consent Decree are specified in the ILIMRR. The ILIMRR is incorporated into the ILI vendors' overall contracts with Enbridge. In addition to the ILIMRR, ILI vendor contracts stipulate that all work under the contract is completed in accordance with the terms and conditions of the Consent Decree, and each ILI is contracted through Enbridge's contract Work Order Process.

In addition, Enbridge Lakehead System work order contracts, including those concerning ILIs, contained and continue to contain the following stipulating language:

"The following are specifically made part of this Work Order Contract and all work shall be performed in accordance with the following: Company's Consent Decree in United States of America v. Enbridge Energy, Limited Partnership, et al., Case No. 1:16-CV-914, available at:

https://www.epa.gov/sites/production/files/2017-06/documents/enbridgeentered-cd_0.pdf.

There were no incomplete or invalid ILI runs in this reporting period.

29 [12-Month ILI Schedule]

Table D-4 outlines changes to the 12-month Lakehead ILI schedule provided in SAR10, which covers the reporting period up to May 22, 2023.

30 [ILI Schedule Modification]

ILIs have been performed by Enbridge, as shown **Table D-1**.

Table D-4 outlines changes to the 12-month Lakehead ILI schedule provided in SAR10, which covers the reporting period up to May 22, 2023. All schedule changes associated with the ILIs are planned to be completed as per the re-inspection interval requirements in Paragraphs 65, 66 and 70 of the Consent Decree and the ILI Stipulation agreed to by EPA and Enbridge and filed with the Court on May 2, 2018. The modified schedule was communicated to the ITP and EPA during monthly technical meetings, or through email.

31 [ILI Compliance with Tool Specifications]

Enbridge reviewed the vendor-provided Data Quality Assessment ("DQA") reports for each ILI performed and compared the reports against vendor tool specifications and other relevant information. There were no incomplete or invalid ILIs in this reporting period.

The ILIs that operated outside of the tool specifications are summarized below. The tool performance summaries are provided in **Table D-6** with details available in the Initial ILI Reports and ILI Summary Documents.

ILIs with Minor Tool Performance Deficiencies (did not meet vendor specification)

Line 6A PE-AM Vectra Corrosion (Tool Run ID 12061)

During the initial inspection, 11 MFL heads malfunctioned part way through the inspection resulting in an overall corrosion data degradation and data loss of 6.39%. This resulted in an incomplete initial ILI as reported in SAR10.

A re-run was carried out between April 25, 2022, to April 28, 2022. During the re-run inspection, multiple MFL heads encountered issues, either losing data, becoming broken or going dead at the end of the run. As a result, the re-run had an overall corrosion degradation and data loss of 14.69%.

Sensor data from both runs were combined, resulting in 98.32% of the pipe surface meeting the standard POD and sizing specification. 0.81% of the pipe surface having a reduced specification and 0.87% of the pipe surface having no specification. Based on the updated specification, it was determined that the ILI data set could be accepted for feature analysis and assessment.

Line 93 CR-KD MFL-A Corrosion (Tool Run ID 12054)

During the inspection four non-adjacent MFL sensor carriers were not functional at various distances. The distances affected by Sensor Carrier 19, 4, 67 and 14 are 66.4 miles, 64.2 miles, 34.4 miles and 11.65 miles, respectively.

Neighboring sensors were used to compensate the missing data. As a result, 99.148% of the pipe surface meets the standard POD and sizing specification. The remaining 0.85% of the pipe surface affected by the sensor loss will have adequate detection for anomalies with depths greater or equal to 20% and a diameter greater than or equal to 20 mm. Based on the updated specification, it was determined that the ILI data set could be accepted for feature analysis and assessment. See also P. 144.

Line 93 GF-CR MFL-A Corrosion (Tool Run ID 10301)

During the inspection two non-adjacent MFL sensor carriers were not functional. One MFL sensor carrier was not functional from launcher to the end of the survey, and the second MFL sensor carrier was malfunctioning starting from ROSEN log distance 66,890.602 m to the end of the survey.

Neighboring sensors were used to compensate the missing data. As a result, 98.47% of the pipe surface meets the standard POD and sizing specification. The remaining 1.53% of the pipe surface affected by sensor loss will have adequate detection for anomalies with depths greater or equal to 20% and a diameter greater than or equal to 20 mm. Based on the updated specification, it was determined that the ILI data set could be accepted for feature analysis and assessment.

(II) Review of ILI Data

32.a-c [Initial ILI Reports for Crack, Corrosion and Geometric Features Received]

Table D-7 lists valid ILI tool runs for which the Initial ILI Reports were received during this Reporting Period. Three initial ILI Reports were received past the timelines outlined in Paragraph 32.a through c.

Line 93 CR-KD XGG Geometry (Tool Run ID 12053)

On August 8, 2022, Enbridge identified an error wherein the tool pulled date was entered into Enbridge's internal tracking system with an incorrect date of March 9 instead of the correct date of March 8, 2022. As a result, the calculated report due date was erroneously calculated as June 7, instead of June 6 and the report was received one day late. All other requirements of the CD were completed within the required timeframes. See also P. 144.

Line 93 GF-CR MFL-A Corrosion & Geometry (Tool Run ID 10301)

On August 2, 2022, Enbridge identified an error wherein the tool pulled date was entered into Enbridge's internal tracking system with an incorrect date of April 20 instead of the correct date of April 19, 2022. As a result, the calculated report due date was erroneously calculated as July 19, instead of July 18 and the two reports were received one day late. All other requirements of the CD were completed within the required timeframes.

33 [Priority Features]

33.a [Immediate Priority Feature Notification Requirements]

Enbridge contracts require that vendors notify Enbridge of Priority Features as specified in Subparagraphs 33.a and 33.b[2].

The immediate priority feature notification requirements are documented in the ILI MRR, which forms part of all Enbridge contracts with vendors, as described above in Subparagraph 28.c.

33.b [Priority Feature Definition]

Reporting criteria for what are deemed as Priority Features are outlined in the ILIMRR which is a contractual obligation for all ILI vendors (**Table D-8**). The ILI Reporting Profile Standard has been provided to the ITP for compliance verification activities and specifies the following priority notification reporting criteria, which are consistent with Appendix A of the Consent Decree and Exhibit 1 – Fifth Modification of the Consent Decree:

1. Features that the ILI Vendor may consider to be an immediate threat to the integrity of the pipeline.
2. Ovalities greater or equal than 10 percent of the outside diameter ("OD") of the pipe.
3. Dent or geometric features (other than ovalities) greater than or equal to 5 percent of the outside diameter ("OD") of the pipe.

[2] *Enbridge has not applied Consent Decree Priority Notification requirements to circumferential cracking features and has not applied Appendix B to evaluate circumferential crack features as it is not suitable for such features.*

4. Metal loss features with peak depth greater than or equal to 75 percent of the nominal wall thickness of the pipe.
5. Metal loss features forecasted to reach a maximum depth of greater than or equal to 75 percent of nominal wall thickness with 365 calendar days.
6. Metal loss features with an effective area RPR less than or equal to 0.85.
7. Unmatched metal loss features with a depth greater than or equal to 50 percent of the nominal wall thickness or actual wall thickness.
8. Crack features that meet or exceed the saturation limit of the crack detection tool.
9. Crack features greater than or equal to 2.5 mm/0.098 inch detected on the internal and external pipe surface at the same location.
10. Priority notification criteria specifically identified in a project work order. For example, the ILIMRR specifies Priority Notification Criteria for Ovalities, Wrinkles or Ovalities associated with Dents with a minimum ID less than or equal to the values shown in ILIMRR Table 5. The appropriate application of Appendix A with regards to ovality features has been incorporated into the Fifth Modification of the Consent Decree. For the purposes of this reporting period, Enbridge has applied the Priority Notification Criteria for ovalities as per the Fifth Modification requirements. Refer to **Table D-8** for Enbridge's Priority Notification Criteria for Ovalities and other Deformation Features.

Upon receiving notice of any Priority Feature, Enbridge determines whether the feature was correctly identified and whether the feature was previously repaired or mitigated. After making such a determination, Enbridge then determines whether any Priority Feature is a Feature Requiring Excavation ("FRE") in accordance with Section VII.D(III) of the Consent Decree. All Priority Features that Enbridge determined to be FREs during this reporting period are summarized in Subparagraph 33.d **Table D-9**.

33.c-d [Priority Feature Review and Mitigation if Required]

Table D-9 identifies Priority Features for which Enbridge received notification from vendors and/or repaired during this reporting period.

Line 6A AM-GT NDT UCx (Tool Run ID 11053)

The priority notification was received on 9/27/2022 in accordance with the priority notification criteria in Appendix A due to a crack field (FID 5004094) interacting with a geometric anomaly (FID 755278) feature on GW 270060. The assessment on the priority notification feature was completed, approved, and added to the Dig List on 9/28/2022. As shown in **Table D-9**, this feature was mitigated/repaired on 10/13/2022, prior to the 10/28/2022 deadline.

34, 34.a[Data Quality Review - Preliminary Review of Initial ILI Report]

Initial ILI reports that were received and reviewed during this Reporting Period are reported in **Table D-10**. This table provides a comparison of the Data Quality Review ("DQR") timeline and the requirements in Subparagraph 34.a of the Consent Decree.

34.b [Evaluation of Features Requiring Excavation]

For ILI runs for which no data quality concerns were identified, Enbridge proceeded to evaluate the pipeline segments and/or features against the requirements in Subsection VII.D.(III) of the Consent Decree. Paragraph 37 of this IPTUR identifies the timelines when FREs were identified and placed onto the Dig List during this IPTUR reporting period.

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34.c [Resolution of Identified Data Quality Issues]

Enbridge identified quality concerns during its preliminary review of some Initial ILI Reports (**Table D-11**). Enbridge completed evaluations required to resolve all identified data quality concerns. Details regarding data quality issues are reported below.

Line 4 FW-WR UCM Corrosion (Tool Run ID 10895)

During the inspection, minor echo loss was encountered. This did not affect the tool's performance nor data quality. Full performance specification was achieved across the whole pipeline surface.

While performing the assessment, two joints in the ILI report were identified to have the incorrect girth weld numbers, with one of the joints having a reported feature. Analysis on all the other issue 1 reported features were completed within Issue 1's CD timelines.

The ILI vendor quickly addressed the data quality problem and issued an Issue 2 ILI report with the corrected girth weld numbers on 9/16/2022. Analysis of the one feature with the wrong girth weld number was also completed within the Issue 1's CD timelines.

Line 4 PL-CR UCM Corrosion (Tool Run ID 10879)

During the inspection, minor echo loss was encountered. This did not affect the tool's performance nor data quality. Full performance specification was achieved across the whole pipeline surface.

While performing the assessment, discrepancies on the wall thickness and depth percent for some features located at a valve were identified. Analysis was able to be continued without impeding the identification of CD FREs within Issue 1's CD timelines.

The ILI vendor subsequently issued an Issue 2 ILI report with the corrected wall thicknesses and depth percent on 8/2/2022. Only features located at the valve were affected. All other ILI data remained unchanged.

Line 4 PL-CR UCM Crack (Tool Run ID 10879)

During the inspection, four crack sensors had intermittent functionality from the launcher to the receiver. This did not affect the tool's performance nor data quality. Full performance specification was achieved across the whole pipeline surface.

Line 5 ENO-EMA UCC Crack (Tool Run ID 10902)

There was a decrease in the feature population when compared to the 2021 UCc inspection. The overall reported feature population for both the 2022 inspection and the 2021 inspection was low. As a result, a minor decrease in the number of features reported between 2021 and 2022 due to an increase in the reporting threshold in the 2022 inspection triggered a feature population decrease of more than 20%.

Line 5 ENO-EMA MFL4 Corrosion (Tool Run ID 10901)

During the inspection there was a short speed excursion that exceeded the vendor specified maximum velocity. If the ILI tool exceeds the specified maximum velocity, then the performance of the inspection may be degraded. The ILI vendor determined that there were no features located within the area of the speed excursion and that the ILI vendor's specification was not affected. Enbridge accepted the ILI run because the data is of sufficient quality to complete the required analysis.

Line 5 ENO-EMA MFL4 Geometry (Tool Run ID 10901)

During the inspection, channel 41 was observed to be faulty for the entire line. This did not affect the tool's performance nor data quality. Full performance specification was achieved across the whole pipeline surface.

Line 5 WNO-WMA UCC Crack (Tool Run ID 10911)

There was a decrease in the feature population when compared to the 2021 UCc inspection. The overall reported feature population for both the 2022 inspection and the 2021 inspection was low. As a result, a minor decrease in the number of features reported between 2021 and 2022 due to an increase in the reporting threshold in the 2022 inspection triggered a feature population decrease of more than 20%.

Line 5 WNO-WMA MFL4 Geometry (Tool Run ID 12071)

There was a change in the feature density and severity when compared to the 2021 UCc inspection.

The overall reported feature population for both the 2022 inspection and the 2021 inspection was low. As a result, a minor decrease in the number of features reported between 2021 and 2022 due to an increase in the reporting threshold in the 2022 inspection triggered a feature population decrease of more than 20%. Additionally, the inclusion of a feature in the 2022 report which was below the reporting threshold in 2021 explains the increase in severity.

Line 6A AM-GT MFL4 Geometry (Tool Run ID 12046)

There was a sensor out of alignment that effected some dent profiles. A review was completed by the ILI vendor comparing the 2022 profiles to the 2018 profiles to identify any change. Given no change was identified, the ILI vendor recommended to use the 2018 profiles for the effected features.

Line 6A PE-AM Vectra Corrosion (Tool Run ID 12061)

During the initial inspection, 11 MFL heads malfunctioned part way through the inspection resulting in an overall corrosion data degradation and data loss of 6.39%. This resulted in an incomplete initial ILI as reported in SAR10.

A re-run was carried out between 4/25/2022 to 4/28/2022. During the re-run inspection, multiple MFL heads encountered issues, either losing data, becoming broken or going dead at the end of the run. As a result, the re-run had an overall corrosion degradation and data loss of 14.69%.

Sensor data from both runs were combined, resulting in 98.32% of the pipe surface meeting the standard POD and sizing specification. 0.81% of the pipe surface have a reduced specification and 0.87% of the pipe surface have no specification. To compensate for the degraded specification data from 2022, the 2019 Vectra run was leveraged.

Line 62 HD-FN MFL4 Corrosion (Tool Run ID 11028)

During the inspection, the ILI tool velocity slowed down indicating a potential tool stoppage. This did not affect the tool's performance nor data quality. Full performance specification was achieved across the whole pipeline surface.

Line 62 HD-FN MFL4 Geometry (Tool Run ID 11028)

During the inspection, the ILI tool velocity slowed down indicating a potential tool stoppage. This did not affect the tool's performance nor data quality. Full performance specification was achieved across the whole pipeline surface.

Line 93 CR-KD XGG Geometry (Tool Run ID 12053)

While performing the data quality review of the issue 1 ILI pipeline listing spreadsheet, multiple fields were identified to be incorrectly populated. As a result, the report could not be uploaded to OneSource, nor the data used to complete the required assessment. The issue 1 report was rejected due to these data quality concerns, and a reissue requested. Issue 2 was received on 8/10/2022 and accepted to be of sufficient quality to complete the required assessment.

Line 93 CR-KD MFL-A Corrosion (Tool Run ID 12054)

During the inspection four non-adjacent MFL sensor carriers were not functional at various distances. The distances affected by Sensor Carrier 19, 4, 67 and 14 are 66.4 miles, 64.2 miles, 34.4 miles and 11.65 miles, respectively.

Neighboring sensors were used to compensate the missing data. As a result, 99.148% of the pipe surface meets the standard POD and sizing specification. The remaining 0.85% of the pipe surface affected by the sensor loss will have adequate detection for anomalies with depths greater or equal to 20% and a diameter greater than or equal to 20 mm. Based on the updated specification, it was determined that the ILI data set could be accepted for feature analysis and assessment.

While performing the data quality review of the issue 1 ILI pipeline listing spreadsheet, multiple fields were identified to be incorrectly populated. As a result, the report could not be uploaded, nor the data used to complete the required assessment. The issue 1 report was rejected, and a reissue requested. Issue 2 was received on 8/29/2022.

While performing the assessment, discrepancies in multiple metal loss related fields were identified in the issue 2 ILI pipeline listing spreadsheet. As a result, the data could not be used to complete the required assessment. The issue 2 report was rejected due to these data quality concerns, and a reissue requested. Issue 3 was received on 9/12/2022 and accepted to be of sufficient quality to complete the required assessment.

A subsequent issue 4 ILI report was received consisting of a correction in the PDF report. No changes were made to the ILI pipeline listing spreadsheet. As a result, a reissue of the ILI pipeline listing spreadsheet was not required.

Line 93 GF-CR MFL-A Corrosion (Tool Run ID 10301)

During the inspection two non-adjacent MFL sensor carriers were not functional. One MFL sensor carrier was not functional from launcher to the end of the survey, and the second MFL sensor carrier was malfunctioning starting from ROSEN log distance 66,890.602 m to the end of the survey.

Neighboring sensors were used to compensate the missing data. As a result, 98.47% of the pipe surface meets the standard POD and sizing specification. The remaining 1.53% of the pipe surface affected by sensor loss will have adequate detection for anomalies with depths greater or equal to 20% and a diameter greater than or equal to 20 mm. Based on the updated specification, it was determined that the ILI data set could be accepted for feature analysis and assessment.

While performing the data quality review of the issue 1 ILI pipeline listing spreadsheet, the nominal wall thickness field was identified to be incorrectly populated along with additional non-compliances to Enbridge's ILI minimum reporting requirements. As a result, the data could not be used to complete the required assessment. The issue 1 report was rejected due to these data quality concerns, and a reissue requested. Issue 2 was received on 7/26/2022.

While performing the assessment, discrepancies in multiple metal loss related fields were identified in the issue 2 ILI pipeline listing spreadsheet. As a result, the data could not be used to complete the required assessment due to these data quality concerns. The issue 2 report was rejected, and a reissue requested. Issue 3 was received on 8/11/2022 and accepted to be of sufficient quality to complete the required assessment.

Line 93 GF-CR MFL-A Geometry (Tool Run ID 10301)

While performing the data quality review of the issue 1 ILI pipeline listing spreadsheet, the feature depth values were missing and nominal wall thickness field incorrectly populated. As a result, the data could not be used to complete the required assessment. The issue 1 report was rejected due to these data quality concerns, and a reissue requested. Issue 2 was received on 7/26/2022 and accepted to be of sufficient quality to complete the required assessment.

Line 93 KD-PW XGG Geometry (Tool Run ID 12055)

While performing the data quality review of the issue 1 ILI pipeline listing spreadsheet, multiple fields were identified to be incorrectly populated. As a result, the data could not be used to complete the required assessment. The issue 1 report was rejected due to these data quality concerns, and a reissue requested. Issue 2 was received on 8/22/2022.

A subsequent issue 3 ILI report was received consisting of a correction in the PDF report. No changes were made to the ILI pipeline listing spreadsheet. As a result, a reissue of the ILI pipeline listing spreadsheet was not required.

Line 93 KD-PW MFL-A Corrosion (Tool Run ID 12056)

While performing the data quality review of the issue 1 ILI pipeline listing spreadsheet, multiple fields were identified to be incorrectly populated. As a result, the report could not be uploaded, nor the data used to complete the required assessment. The issue 1 report was rejected due to these data quality concerns, and a reissue requested. Issue 2 was received on 8/22/2022.

34.d [ILI Data Quality Evaluation Timelines]

As outlined in the CD, all ILI data quality evaluations must be completed within 180 Days after the ILI tool is removed from the pipeline at the conclusion of any ILI investigation. As outlined in **Table D-12**, Enbridge completed all data reviews within 180 days.

34.e [Discrepancies between Two Successive ILI Runs]

Inspections with significant discrepancies in either feature population, severity, or type related to the previous assessment of the line segment were identified during Enbridge's preliminary review of the initial ILI Reports and are reported in **Table D-13**. Enbridge conducted investigations to evaluate the accuracy and reliability of the data discrepancies for use in integrity assessments. Details of these discrepancies are reported below.

Line 4 FW-WR UCM Corrosion (Tool Run ID 10895)

There was a significant increase in the feature population when compared to the 2017 UCM inspection. The increase in the feature population is primarily for low level corrosion features, which is typical due to tool detection tolerance and reporting threshold differences between the two runs.

Line 4 PL-CR UCM Crack (Tool Run ID 10879)

There was a significant increase in the feature population when compared to the 2018 UCM inspection. The increase in feature population can be attributed to features near the detection threshold not being reported in 2018 due to inspection variability.

Line 5 ENO-EMA MFL4 Geometry (Tool Run ID 10901)

There was an increase in the feature population when compared to the 2021 MFL4 Geometry inspection. The 2022 MFL4 tool reported two new dent features with a depth less than 1%. Both features were visible in the 2021 inspection data but were measured to be below the reporting threshold. The change in the feature population can be attributed to features near the detection threshold that were not previously reported.

Line 5 ENO-EMA UCC Crack (Tool Run ID 10902)

There was a decrease in the feature population when compared to the 2021 UCc inspection. The overall reported feature population for both the 2022 inspection and the 2021 inspection was low. As a result, one feature reported in 2021 was not reported in 2022 due to an increase in the reporting threshold in the 2022 inspection. This triggered a feature population decrease of more than 20%.

Line 5 WNO-WMA UCC Crack (Tool Run ID 10911)

There was a decrease in the feature population when compared to the 2021 UCc inspection. The overall reported feature population for both the 2022 inspection and the 2021 inspection was low. As a result, one feature reported in 2021 was not reported in 2022 due to an increase in the reporting threshold in the 2022 inspection. This triggered a feature population decrease of more than 20%.

Line 5 WNO-WMA MFL4 Geometry (Tool Run ID 12071)

There was a change in the feature density and severity when compared to the 2021 MFL4 inspection.

The overall reported feature population for both the 2022 inspection and the 2021 inspection was low. As a result, one feature reported in 2021 was not reported in 2022 due to an increase in the reporting threshold in the 2022 inspection. This triggered a feature population decrease of more than 20%. Additionally, the inclusion of a feature in the 2022 report which was below the reporting threshold in 2021 resulted in the increase in severity.

Line 62 HD-FN CD+ Crack (Tool Run ID 11029)

There was a decrease in the feature population when compared to the 2013 USCD+ inspection. The change is driven by the reclassification of historical crack colonies & crack like features to mill anomalies, laminations, or weld imperfections. The largest change in density is in the 1-2mm depth range, which is on the lower end of the detection limit.

Line 62 HD-FN MFL4 Corrosion (Tool Run ID 11028)

There was a decrease in the feature population when compared to the 2014 Vectra inspection. The change is driven by the reclassification of metal loss defects to manufacturing defects. The largest change in density is in the 10%-20% depth range, which when accounting for tool error could be near or below the detection limits.

34.f-g [Investigative Digs]

There were no Investigative Dig Programs issued during this reporting period.

(III) Identification of Features Requiring Excavation

35 [Evaluation of Each Feature in Initial ILI Report for Feature Requiring Excavation]

Following each ILI tool run, Enbridge evaluated each feature identified in the Initial ILI Report to determine if the feature was an FRE.

36 [Feature Requiring Excavation Definition]

With respect to crack and corrosion features, Enbridge applies three methods to identify an FRE:

1. Enbridge estimates the lowest pressure at which the feature is predicted to rupture or leak (i.e., Predicted Burst Pressure) using the procedures set forth in Subsection VII.D.(IV) of the Consent Decree.
2. Enbridge estimates the amount of time remaining until the feature is predicted to rupture or leak (i.e., Remaining Life) using the procedures set forth in Subsection VII.D.(VI) of the Consent Decree.
3. Enbridge considers other unique characteristics of a feature using the criteria set forth in Subsection VII.D.(V) of the Consent Decree. The records of these methods being applied are in the Assessment Sheets for each ILI tool run as well as Program Summary Documents and other detailed documentation which the ITP has access to.

With respect to Geometric and Intersecting or Interacting features, Enbridge applied the Fifth Modification analysis process to identify FREs and to set pressure restrictions for these features. Refer to Section IX Implementation of Fifth Modification of the Consent Decree for Geometric and Intersecting or Interacting Features for more details.

37 [Deadlines for Adding Features Requiring Excavation on the Dig List]

Following each successful Consent Decree ILI tool run, Enbridge identified all crack, corrosion, and geometric features detected by the ILI tool runs that are FREs. Enbridge added such features to an electronic list of features scheduled for excavation and repair or mitigation (i.e. Dig List) in accordance with the schedule outlined in Paragraph 37 of the Consent Decree. This listing does not include features that EPA/ITP may consider FREs due to differing interpretations of Consent Decree provisions such as those relating to circumferential crack features.

All FREs identified based on their Predicted Burst Pressure or their Remaining Life were added to the Dig List within 5 days of calculating the Predicted Burst Pressure and the Remaining Life of the features in accordance with Subsection VII.D.(IV) of the Consent Decree.

All FREs identified based on interacting or intersecting criteria were added to the Dig List within 5 days of completing the preliminary review of the initial ILI reports, in all cases where the preliminary review did not identify any data quality concerns related to the feature.

Table D-14 provides a list of the FREs that were identified during the reporting period of this IPTUR. Priority notification FREs are excluded from this table as they are included in Paragraph 33 **Table D-9**. ILI tool runs that did not identify any FREs are excluded from this table.

37.a-e. [Sixth Modification – Re-evaluation of Certain Features Based on Updated Wall Thickness]

Paragraph 37.a-e Sixth Modification – Re-evaluation of Certain Features Based on Updated Wall Thickness is complete as reported in SAR10.

38 [Establishing Excavation and Repair Deadlines for FRE's]

Enbridge has complied with the requirements of Paragraph 38, as set forth in the Subparagraphs below.

38.a [Excavation and Repair Deadlines]

For each FRE placed on the Dig List, Enbridge established excavation and repair deadlines that accounted for the level of threat posed by the feature and that complied with the dig criteria deadlines specified in Subsection VII.D.(V) of the Consent Decree. If a feature met more than one dig-selection criteria, Enbridge set the excavation and repair deadline in accordance with the shortest applicable timetable set forth in Subsection VII.D.(V) of the Consent Decree.

38.b [Establish Pressure Restrictions if Required]

All pressure restrictions (PRs) required for FREs are established pursuant to Subsection VII.D.(V) of the Consent Decree.

In cases where an FRE is subject to more than one PR under Subsection VII.D.(V) of the Consent Decree; Enbridge established the PR that results in the lowest operating pressure at the location of the feature.

The "Point Pressure Restriction (PPR) values" requirements were satisfied by implementing operating limits that use a combination of discharge and suction limits to manage pressures. These operating limits maintain pressures to a level that assured compliance with the PPR value at the location of the feature.

During the SAR6 reporting period, and at the request of the ITP, Enbridge started providing a monthly summary of implemented Consent Decree PPRs and the maximum pressure achieved during each month at PPR locations. During the SAR8 reporting period, Enbridge provided the ITP with access to a PowerBI report that allows the ITP to generate their own PPR reports. Consequently, Enbridge ceased providing a monthly PPR report as it was no longer required. Consent Decree PPRs include all PPRs based on Consent Decree requirements and does not include other PPRs set by Enbridge or other regulatory bodies. This update is provided at the Pipeline Control Systems and Leak Detection/Control Centre Operations ("PCSLD/CCO") monthly technical meetings.

There was one exceedance of a Consent Decree PPR in this reporting period:

On 9/30/2022 an alternate interim pressure restriction of 408 psi was imposed as per AP 12 for a feature on GW 270060 on L6A, AM-GT. On 10/3/2022, Enbridge became aware of a possible overpressure on Line 6A. This possible overpressure occurred on the line near Milepost 414.968. On October 3, SMEs determined that the pressure on this line reached 414.6 psi. This pressure is well below the EMOP at this location, which is 619 psi. The recorded pressure, however, exceeded the point pressure restriction of 408 psi that was recently calculated in AP 12 for this location. The recorded pressure of 414.6 was equal to

101.62% of the pressure restriction of 408 psi. The recorded pressure was transient. The estimated length of time for the event was less than one second. See details in P. 145.

39.a-b [Field Measurements of Excavated Features]

During the reporting period of this IPTUR, Enbridge followed its processes to excavate and repair or mitigate and record field measurements for all crack and geometry features, and all corrosion features with depths greater than 10% wall thickness in accordance with Subsection VII.D.(V) of the Consent Decree. Ten percent (10%) is the general corrosion ILI tool detection depth threshold.

During excavations for FREs and any additional segments of pipeline, including investigative digs pursuant to Subparagraph 34.e of the Consent Decree, Enbridge obtained and recorded field measurements of all applicable features on the excavated segments and these were stored in OneSource as per Paragraph 77. All approved Non-destructive examination ("NDE") reports were uploaded to the Enbridge Shared Drive for ITP access.

During the reporting period of this IPTUR, Enbridge did not discover any pipe segments that contained a high volume of unreported features as denoted in the Consent Decree. Hence, the requirements of Subparagraph 39.a are not applicable for this IPTUR.

During this IPTUR reporting period, the FREs repaired and planned for repair are listed in **Table D-15**. Please note that Priority Features that were repaired are reported in **Table D-9** under Paragraph 33.c-d, therefore they are not reported in **Table D-15**.

40 [Field Data Comparison to ILI Data]

Complete ILI programs with the associated Consent Decree digs completed within the reporting period for this IPTUR are listed in **Table D-16**.

Within 30 Days after completing excavation of all Features Requiring Excavation identified on a pipeline based on any Initial ILI Report, Enbridge completed an analysis of field data obtained during all excavations conducted and determined whether field data indicated that the ILI tool tended to understate the actual severity of features on the excavated sections of the pipeline ("ILI tool depth bias").

Enbridge, the EPA and the ITP have discussed refinements to when excavations of FREs would be deemed "completed." Enbridge and the ITP have provided an interpretation document to provide clarity around this issue and are awaiting further comments or concurrence from the EPA on this issue.

41 [ILI Electronic Records]

For each ILI investigation conducted during this reporting period, Enbridge maintained electronic records relating to ILI data, including but not limited to all 14 categories of information listed in Paragraph 41 of the Consent Decree. Enbridge procedures require that such ILI data records be maintained for at least 5 years after termination of the Consent Decree.

(IV) Predicted Burst Pressure/Fitness for Service

42 [Predicted Burst Pressure]

Enbridge calculated the Predicted Burst Pressure of all crack[3] and corrosion features identified by ILI tools, in accordance with the requirements of Subsection VII.D.(IV) of the Consent Decree.

43 [Predicted Burst Pressure Definition]

Enbridge calculated the Predicted Burst Pressure of ILI features in accordance with the inputs and procedures in Appendix B of the Consent Decree[3]. Enbridge calculated the Predicted Burst Pressure of NDE features, as described in SAR5 Paragraph 144 [Section D] crack and corrosion Field Burst Pressure Calculations per Appendix B in the Consent Decree – Paragraph 43.

The ILI Assessment Sheets document all ILI feature Burst Pressure calculations, including the methodology and all the inputs as stated above.

44.a-b [Initial Predicted Burst Pressure Calculations and Initial Remaining Life Calculations]

Table D-17 summarizes the timelines for completing initial Predicted Burst Pressure calculations and initial Remaining Life calculations for all crack[4] or corrosion features identified in reports that were received within the reporting period. Refer to **Table D-7** under Paragraph 32.a-c for a list of all valid ILI runs with reports received within the reporting period.

As shown in **Table D-17**, all calculations for features were completed no later than the earlier of either: (1) eight weeks after completing data quality review with respect to the feature and/or pipeline section where the feature is located; or (2) 175 Days after the ILI tool was removed from the pipeline at the conclusion of the ILI run.

45 [Retention of Electronic Records]

Enbridge maintains electronic records documenting all Predicted Burst Pressure calculations, and all Remaining Life calculations, including inputs and dates the calculations were completed with respect to features, and will continue to do so until five years after termination of the Consent Decree.

(V) Dig Selection Criteria

46.a-d [Dig Selection Criteria]

Where Enbridge has identified features meeting dig selection criteria, it has within set timeframes, excavated, and repaired or mitigated such features in accordance with Tables 1 through 5 of the Consent Decree. A summary of each dig and the related timeframes are provided in **Table D-18**. The feature repair and mitigation of the Priority Notification features are reported in Subparagraphs 33.c-d **Table D-9** and therefore are not included in **Table D-18.** There were no cancelled digs in this reporting period.

During each excavation required under this Paragraph, Enbridge inspected all excavated portions of the pipeline and collected field measurements of features on excavated portions of the pipeline. Enbridge determined, based on an analysis of field measurement values of feature length and depth and other

[3] *Enbridge has not applied Appendix B to evaluate circumferential crack features as it is not suitable for such features.*

relevant field observations, whether excavated portions of the pipeline contained any additional features not previously identified on the Dig List that satisfy one or more of the dig selection criteria.

At the time of excavation, Enbridge repaired or mitigated the features based on an analysis of field measurement values for feature length and depth or other field observations, regardless of whether the feature was placed on the Dig List based on an analysis of ILI-reported values for feature length and depth.

Where applicable, Enbridge established pressure restriction requirements and imposed PPRs in accordance with Consent Decree requirements as summarized in **Table D-20**. Note that when the imposition deadline of a PPR was a weekend or United States Federal holiday, the deadline was moved to the following business day in accordance with the definition of Day in Paragraph 10(m) of the Consent Decree.

46.e [Alternate Plans and Alternate Interim Pressure Restrictions]

Enbridge submitted one new Alternate Plan ("AP") during the reporting period. The total number of Alternate Plans and Alternate Interim Pressure Restrictions submitted since the Effective Date of the Consent Decree to the end of this IPTUR reporting period are provided in **Table D-21.**

46.f [Saturated Signal Crack Feature]

Enbridge submitted one Alternate Plan for an alternate interim pressure restriction for a crack field (FID 5004094) interacting with a geometric anomaly (FID 755278) feature on GW 270060 within the reporting period. **Table D-22** reports the details related to this AP.

46.g [Alternate Plans and Alternate Interim Pressure Restrictions]

Enbridge did not submit any APs during the reporting period relating to an alternate timetable for excavation and repair.

46.h [Alternate Plans and Temporary Pressure Restrictions]

An Alternate Interim Pressure Restrictions was imposed in accordance with the details in **Table D-22**.

46.i. [Compliance with applicable laws and regulations]

Enbridge submitted one new Alternate Plan during the reporting period. During the implementation, Enbridge complied with applicable laws and regulations.

46.j [Alternate Plans and Alternate Pressure Restrictions Implementation]

Enbridge has implemented the Alternate Plan and alternate interim pressure restriction as set forth in the applicable notification submitted pursuant to Paragraph 46.g.(2).

46.k [Documentation Maintenance]

Enbridge has maintained all documentation relating to the selection and implementation of the Alternate Plans. Enbridge is prepared to make such documents available to EPA upon request, consistent with the requirements of Section X (Information Collection and Retention). Information is being retained in an internal repository in conformance with this requirement.

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46.l [Updates of Alternate Plans and Alternate Pressure Restrictions]

On 10/19/2022, Enbridge notified the EPA that the feature requiring excavation (FRE) for AP 12 was mitigated via pressure containment sleeve on 10/13/2022 and the AP is complete. There are no updates to other previous APs.

47 [Dig-Selection Criteria and Pressure Restriction Requirements for Crack Features]

Enbridge has set schedules for the excavation and repair or mitigation of each crack feature that meets one (or more) of the Dig Selection Criteria set forth in Table 1 of the Consent Decree, in accordance with the timeframes specified in column 2 of Table 1, and the PR requirements specified in column 3 of Table 1 of the Consent Decree. During the reporting period no crack FREs were identified and no PPRs for crack features were implemented.

Enbridge also issued dig packages to excavate and repair or mitigate crack features that intersected or interacted with corrosion features, dents, or other Geometric features, and established appropriate pressure restrictions for such interacting features, as per Table 5 and Paragraph 59 of the Consent Decree, and associated Modifications to the Consent Decree[4]. For more information about these interacting features, see Paragraph 59 in this IPTUR.

Enbridge and the ITP have identified a difference in interpretation regarding the incorporation of circumferential cracking within the CD. Enbridge has also identified difficulties encountered, from a technical perspective, of applying the Consent Decree as written to circumferential cracking features. Enbridge, the EPA, and the ITP continue to discuss ways to resolve this challenge and this item is included in **Table IX-1** in Paragraph 144 Problems Anticipated in Appendix 1.

48 [Crack Feature Mitigation Timelines]

During this reporting period, Enbridge determined the deadline for each feature repair / mitigation as the shortest deadline specified in Tables 1, 3, or 5 of the Consent Decree, and Enbridge established the lowest operating pressure at the location of the feature which is subject to more than one pressure restriction.

49 [Dig Timeline Extensions]

During this reporting period, no dig deadline was extended beyond 180 days due to seasonal considerations or unusual circumstances as per CD Paragraph 49.a.

50 [Corrosion Features]

Enbridge has set schedules for the excavation and repair or mitigation of each corrosion feature that meets one (or more) of the Dig Selection Criteria set forth in Table 2 of the Consent Decree, in accordance with the timeframes specified in column 2 of Table 2 for corrosion features located in any HCA, and the timeframes specified in column 3 of Table 2 for corrosion features not located within an HCA. The corrosion features that meet the above criteria are summarized in **Table D-26** and the associated PPRs are listed in **Table D-27**.

Enbridge also issued dig packages to excavate and repair or mitigate corrosion features that intersect or interact with crack features, dents, or other Geometric features, and established appropriate pressure restrictions for such interacting features, as provided in Table 5 and Paragraph 59 of the Fifth Modification

[4] *Enbridge does not interpret the CD to cover interacting or intersecting circumferential crack features.*

of the Consent Decree.[5] For more information about these interacting features, see Paragraph 59 in this IPTUR. These features are not included in **Table D-26.**

51 [Corrosion Feature Mitigation Timelines]

During this reporting period, Enbridge determined the deadline for each feature repair / mitigation as the shortest deadline specified in Tables 2, 3, or 5 of the Consent Decree, and Enbridge established the lowest operating pressure at the location of the feature which is subject to more than one pressure restriction.

52 [Corrosion Feature Pressure Restrictions]

Enbridge established PRs within the timeframes identified in Paragraph 51 Table 2 of the Consent Decree and specified in Subparagraphs 52.a and 52.b (i.e., within 2 days after determining that any corrosion feature had a depth greater than 80 percent of the wall thickness of the joint where the feature is located, or within 2 days after determining that any feature had a RPR less than 1.00 or a Predicted Burst Pressure that is less than 1.39 x MOP).

Table D-27 lists the PRs imposed due to these criteria in this reporting period of the IPTUR. Note that where the imposition deadline for PPRs was on a weekend or United States Federal holiday, the imposition deadlines were moved to the following business day in accordance with the Definition of Day in Paragraph 10.m of the Consent Decree.

53 [Dig Selection Criteria for Axial Slotting, Axial Grooving, Selective Seam Corrosion and Seam Weld Anomaly A/B Features]

During this reporting period, there were no Axial Slotting, Axial Grooving and Selective Seam Corrosion, or Weld Anomaly A/B FREs identified.

54 [Pressure Restrictions for Axial Slotting, Axial Grooving, Selective Seam Corrosion and Seam Weld Anomaly A/B Features]

There were no Pressure Restrictions required as a result of Axial Slotting, Axial Grooving, Selective Seam Corrosion features or Seam Weld anomaly A/B features in accordance with Table 3 of the Consent Decree.

55 [Dig Selection Criteria for Dents and other Geometric Features]

Enbridge excavated and repaired or mitigated each dent that met one or more of the Dig Selection Criteria set forth in Table 4 of the Fifth Modification and established pressure restrictions for identified interacting dents as provided in Paragraph 57.[7] Enbridge met the timeframes specified in column 2 of Table 4 of the Consent Decree for features located within an HCA, or timeframes specified in column 3 of Table 4 in the Consent Decree for features not located within an HCA, where applicable.

56 [Dent and other Geometric Feature Mitigation Timelines]

Enbridge determined the deadline of a geometry feature repair or mitigation as the shortest deadline. The same process provides that Enbridge will establish the PR resulting in the lowest operating pressure at the location of the feature that was subject to more than one pressure restriction. There were no features of this type reported during this reporting period.

[5] *Enbridge does not interpret the Consent Decree to cover interacting or intersecting circumferential crack features.*

57 [Dent and other Geometric Feature Pressure Restrictions]

Enbridge established PRs for dents within the timeframes identified in Paragraph 57 of the Consent Decree.

58 [Dig Selection Criteria for Interacting Features]

Within 30 days after receiving any Initial ILI Report, Enbridge reviewed OneSource (i.e. the integrated database specified under Paragraph 74 of this IPTUR) for the purpose of determining whether any feature reported by the ILI tool intersected or interacted with a feature of a different feature type that was detected during a previous ILI Tool Run but not repaired or mitigated.[6] As reported in **Table D-31,** one intersecting/interacting feature was identified for excavation in this reporting period by the ILI vendor due to a priority notification.

Enbridge, the ITP, EPA and DOJ negotiated the Fifth Modification of the Consent Decree to resolve differences in interpretation in regard to this Paragraph. Consistent with the Fifth Modification, Enbridge has requested that ILI vendors report all deformations down to the tool tolerance of the geometric ILI tool.

59 [Pressure Restrictions for Interacting Features]

Except when described in the discussion of Paragraph 46 above, Enbridge established the PRs within the timeframes identified in Table 5 and specified in Subparagraphs 59.a and 59.b of the Fifth Modification of the Consent Decree for each interacting feature identified during the period of this IPTUR. Within two days after determining that any intersecting or interacting crack, and/or corrosion feature had a Predicted Burst Pressure that is less than 1.25x Established MOP, Enbridge limits operating pressure at the location of the feature to not more than 80 percent of the Predicted Burst Pressure. As identified in **Table D-32** there was one feature of this type during this reporting period.

(VI) Remaining Life Determinations/Re-inspection Intervals

60 [Remaining Life]

Enbridge completed the Remaining Life calculation for all detected crack and corrosion features that did not meet any of the dig selection criteria. These calculations are in the ILI Assessment Sheets. As reported in Paragraph 44.a-b of this IPTUR, all Remaining Life calculations were completed no later than the earlier of either: (1) eight weeks after completing data quality review with respect to the feature and/or pipeline section where the feature is located; or (2) 175 Days after the ILI tool was removed from the pipeline at the conclusion of the ILI run. **Table D-33** summarizes the remaining life calculations completed during this reporting period.

61 [Remaining Life Calculations]

Paragraph 61 provides instances where the remaining life does not need to be calculated for a feature. Pursuant to Paragraph 61, Enbridge does not always calculate the remaining life for repaired or mitigated crack features. Enbridge does not utilize the other exception criteria provided in Paragraph 61.

[6] *Enbridge does not interpret the Consent Decree to cover interacting or intersecting circumferential crack features.*

62 [Operating Pressure Used when Determining the Remaining Life of Crack Features]

Enbridge monitors and records the actual operating pressures of pipeline segments for each month to be used in the crack feature Remaining Life Calculation as outlined in the Lakehead System Integrity Remediation process:

a. In determining the number and magnitude of pressure cycles, Enbridge uses the worst cycling quarter between the most recent valid crack ILI tool run and the immediately prior valid crack ILI run. The worst cycling quarter reflects the worst combination of cycling frequency and cycling magnitude for the applicable line or line segment during the period between the successive ILI runs.

b. Enbridge did not increase the operating pressure limit in any segment of a Lakehead System pipeline after determining the Remaining Life of unrepaired crack features in accordance with this Paragraph 62.

63 [Crack Feature Remaining Life Calculations]

Enbridge used a fatigue crack growth model and a Stress Crack Corrosion ("SCC") crack growth model and determined the remaining life with the model yielding the fastest projected growth rate and the shortest Remaining Life.

The application of fatigue crack growth model and SCC growth model to yield the fastest projected growth rate and the shortest Remaining Life is illustrated in the ILI Assessment sheets which the ITP has access to for verification purposes.

Paragraph 44 of the Consent Decree discusses how all calculations were completed within the required timeframes. **Table D-34** summarizes the remaining life calculations completed during this reporting period.

64 [Corrosion Growth Rate]

Enbridge used a Corrosion Growth Rate ("CGR") based on back-to-back corrosion runs (if available), or a historical CGR estimate for newly constructed pipeline or pipeline segments with no less than 0.005 inch per year. The application of a CGR based on back-to-back corrosion runs, or a historical CGR estimate for newly constructed pipeline or pipeline segments with no less than 0.005 inch per year, is illustrated in more detail in the ILI Assessment sheets which the ITP have access to for verification purposes.

65 [Maximum Interval between Successive ILIs Based on Half-Life Criteria]

Other than crack inspections for Line 2, the maximum interval between successive ILIs to assess crack and corrosion features did not exceed one-half of the shortest Remaining Life of any unrepaired crack or corrosion feature in the pipeline, calculated as described in Subsection VII.D.(VI) as of the end of the reporting period for this IPTUR. Crack inspections for Line 2 (as per the Stipulation filed with the Court on May 2, 2018) were completed in 2020 and reported in SAR8.

66 [Maximum Interval between Successive ILIs – Not to Exceed Five Years]

The maximum interval between successive ILIs does not exceed 5 years for all Lakehead pipeline segments. The 12-month ILI schedule for this reporting period was reported in SAR10 subject to the changes identified in **Table D-4**. The ILI runs completed during this reporting period are included in Paragraph 28 **Table D-1**.

Section E – Measures to Prevent Spills in the Straits of Mackinac

67 [Applicability]

A discussion of Enbridge's implementation of the requirements of Subsection VII.E (Paragraphs 67 to 73) to the two Line 5, 4.09-mile, 20-inch diameter pipelines (referred to herein as the "Dual Pipelines") that cross the Straits of Mackinac ("Straits") is set forth in the following sections.

Paragraph 68 Span Management Program and Anchor Strike Mitigation reporting will be included in SAR11.

69.a [Biota Investigation]

This requirement has been met and is complete. No further update is required at this time or in future SARs.

69.b [Biota Investigation Work Plan ("BIWP")]

This requirement has been met and is complete. No further update is required at this time or in future SARs.

69.c [Biota Work Plan Implementation]

This requirement has been met and is complete. No further update is required at this time or in future SARs.

70 [In-Line Inspections of the Dual Pipelines]

This requirement has been met and is complete. No further update is required at this time or in future SARs.

71 [Investigation and Repair of Axially-aligned Features]

This requirement has been met and is complete. No further update is required at this time or in future SARs.

72 [Pipeline Movement Investigation]

Enbridge's compliance with Paragraph 72 was previously reported in SAR1. Enbridge continues to conduct annual circumferential crack inspections in accordance with the Pipes Act. No Features Requiring Excavation have been identified as a result of those inspections in this reporting period.

Paragraph 73 Quarterly Inspections Using Acoustic Lake Detection Tool reporting will be included in SAR11.

Section F – Data Integration

74 [Feature Integration Database]

Enbridge operates and maintains the feature integration database, referred to as "OneSource," for all pipelines in the Lakehead System since August 14, 2013. OneSource integrates information about corrosion, crack and geometry features from multiple in-line investigations of the pipelines and field measurement devices. OneSource enables pipeline integrity-management personnel to identify and track any changes to any feature detected by an ILI tool on successive investigations (i.e., Tool Runs) of the pipeline. In addition, the Feature Match Macro tool uses data from OneSource and permits pipeline integrity

personnel to identify and track changes to features detected by successive tool runs, including enabling personnel to evaluate features detected by different types of ILI tools that may overlap or otherwise interact.

75 [Integrity Management Personnel Access to Feature Integration Database]

Enbridge integrity management personnel, including, but not limited to, personnel responsible for identifying FREs, are able to access and view OneSource from their desktop computers and laptops. Personnel are able to search for and view a schematic image of each joint of each Lakehead System pipeline. The information provided with each schematic image has not changed from the information as presented in SAR1.

A difficulty encountered when implementing this requirement is related to the ITP's access to the OneSource data. Currently, data covering all of the Enbridge-owned pipelines is included in OneSource – it is not limited only to the Lakehead System Pipelines that are subject to the terms of the Consent Decree. While this allows Enbridge to access and store the OneSource data consistently across its entire pipeline system, Enbridge is unable to provide a gateway to the ITP that is limited to OneSource data for Lakehead System Pipelines covered by the Consent Decree. Enbridge has demonstrated that the data required under Paragraph 75 is readily accessible to personnel responsible for identifying FREs.

76 [Successive ILI Data Sets]

Enbridge's compliance with this Paragraph is fully explained in SAR1 and has not changed since that submission. As explained in SAR1, with respect to each type of ILI Tool, OneSource includes at least two successive ILI data sets for lines that have operated since the effective date of the CD – one data set from the most recently completed ILI Tool Run and another data set from the second most-recently completed ILI Tool Run.

77 [Update of OneSource Database]

As per Paragraph 77.a, Enbridge completed an update of OneSource and compliance with this Paragraph was reported in SAR1. Enbridge provided a demonstration of compliance regarding Paragraph 77.a-c on October 23, 2018. Enbridge has completed the requirements for Paragraph 77.a-c.

Enbridge continues to update the OneSource database with information collected from new NDE investigations as per Subparagraph 77.d of the Consent Decree. Enbridge completed all field investigations of the Consent Decree excavations related to the particular ILI Tool Runs and uploaded the NDE reports within 60 Days into OneSource after the field excavation report was quality reviewed and approved by Enbridge. The OneSource NDE updates for this covered period are summarized in **Table F-1**.

During this reporting period, Enbridge has fully complied with Paragraph 77 by timely uploading to OneSource all NDE data for FRE digs and investigative digs that are subject to Consent Decree requirements. Although Enbridge disagrees that the CD was intended to incorporate excavations that are not governed by the CD, Enbridge agreed that NDE reports from all integrity dig excavations issued from CD ILI programs, including CD FRE, investigative digs and non-CD digs, would be uploaded into OneSource within 60 days after completing the last field investigation related to an ILI.

78 [Mandatory Use of Data Integration Database to Prepare Dig List]

78.a [OneSource ILI Updates]

All new ILI reports were uploaded to OneSource within 29 days after Enbridge's receipt of the Initial ILI report for this reporting period. The dates upon which the various ILI reports were received by Enbridge and uploaded to OneSource during this IPTUR reporting period are listed in **Table F-2**.

78.b [OneSource Interacting Features]

Enbridge completes ILI data review for the purpose of identifying any overlapping, or otherwise interacting, features that may qualify as FREs (in reference to Paragraph 35), within 180 days after the ILI tool is removed from the pipeline, as outlined in the "Lakehead System Integrity Remediation Process" Table 2, Step 7.0. The FREs resulting from this review are summarized in Paragraph 58. **Table F-3** summarizes the reviews completed during this reporting period for axial cracking, corrosion and geometry features. All interacting feature reviews were completed within 180 days after the ILI tool was removed from the pipeline.

Section G – Leak Detection and Control Room Operations

(I) Assessment of Alternative Leak Detection Technologies

79-80 [Create and Submit ALD Report]

No change since SAR10.

(II) Report on Feasibility of Installing External Leak Detection System at the Straits of Mackinac

81-83 [Create and Submit ALD Mackinac Report]

No change since SAR10.

(III) Requirements for New Lakehead Pipelines and Replacement Segments

84 - 91 [Applicability]

Line 62 and Line 93 are not subject to Partial Termination of this subsection and therefore are not included in this report. Line 61 is subject to Partial Termination of this subsection except for P90 and P91. Information for lines not included in this report will be included in SAR11.

The requirements of these paragraphs were not triggered in the reporting period on lines subject to partial termination given no Replacement Segments or New Lakehead Pipeline projects were under design or went into service.

(IV) Leak Detection Requirements for Pipelines within the Lakehead System

Line 62 and Line 93 are not subject to Partial Termination of this subsection and therefore are not included in this report. Line 61 is subject to Partial Termination of this subsection, except where explicitly stately otherwise. Information for lines not included in this report will be included in SAR11.

92 [Operation of MBS Leak Detection System]

Enbridge continuously operated the combined MBS and AVB solution on all Lakehead pipelines in accordance with this Paragraph during the reporting period.

93 [Temporary Suspension of MBS Leak Detection Capabilities]

Please refer to **Table G-1** for a list of occurrences of each type of instrumentation outage during this reporting period, including the reason(s) for any such outages.

94 [Overlapping MBS Segments]

For the events listed in **Table G-1**, leak detection capability was maintained through the use of overlapping segments, except for events where ALD was implemented, as per paragraph 95.

95 [Alternative Leak Detection Requirements]

For the events listed in **Table G-1** where the first and/or last MBS segment had its leak detection capabilities suspended or lost, leak detection capability was maintained by implementing ALD.

96 [Reporting of MBS Outages]

Enbridge restored MBS as soon as practical when leak detection capability was lost or suspended and reported those outages, as required, during the reporting period.

97 [Reporting Requirements]

Refer to **Table G-1** for a table identifying the number of occurrences by type where MBS was temporarily suspended and the number of outages that exceeded reporting requirements. There were no exceedances of the *Time Period to Restore* for this reporting period.

98 [Tolling Requirements]

Station bypass durations for items listed in **Table G-1** included tolling, where applicable.

99 [Installation of New Equipment at Remotely-Controlled Valves]

There were no excavations identified during the reporting period that met the defined criteria for Paragraph 99 and, therefore, there were no new installations of pressure or temperature transmitters.

As agreed with the ITP, the updated Paragraph 99 Project Logbook will be provided.

100 [Requirements for Valve Excavation]

There were no excavations identified during the reporting period that met the defined criteria for Paragraph 100.

101 [Transient-State Sensitivity Analysis]

No change since SAR10.

102 [Rupture Detection System Alarm]

Enbridge continuously operated the combined RDS solution on all Lakehead pipelines in accordance with this Paragraph during the reporting period.

103.a-b ["24-hour" Alarm]

Enbridge continuously operated the 24-hour alarm (AVB) on all Lakehead pipelines in accordance with this Paragraph during the reporting period.

103.c ["24-hour" Alarm Optimization Study within one year of establishing the new 24-Hour alarm]

There were no AVB optimizations during the reporting period. Enbridge continuously maintained the previously defined thresholds for each Lakehead pipeline.

103.d-f ["24-hour" Alarm Optimization Study within one year of Initial Linefill of Line 93 or any other New Lakehead Pipeline or Replacement Segment]

Line 61, Line 62, and Line 93 replacement segments are not subject to Partial Termination of P.103.d-f and will be included in SAR11.

The requirements of this paragraph were not triggered in the reporting period given no Replacement Segments or New Lakehead Pipeline projects went into service.

103.g(1)-(5) [Compliance and exceptions of compliance to 24-hour alarm optimized threshold and reporting]

There were no re-optimizations during the reporting period.

(V) Leak Detection Requirements for Control Room

Line 61, Line 62, and Line 93 are not subject to Partial Termination of this subsection and will be included in SAR11.

104 [Applicability]

In order to ensure compliance with Section VII.G.V of the CD, Enbridge applies the term "alarm" or "alarms" to mean any and all alarms that are generated by the MBS and AVB leak detection systems and by the RDS.

105 [Alarm Response Team]

All MBS, AVB and RDS alarms that occurred in the reporting period were addressed by the ART.

106 [Remote Notification of Alarm Response Team]

Remote notification capabilities were in place for all Alarms that occurred in the reporting period as required by this paragraph.

107 [Audible and Visual Alarms]

Audible and visual alarm capabilities have remained compliant with the requirements of this paragraph through the reporting period.

108.a-f [Alarm Clearance Procedures]

Alarm Clearance procedures have been employed and adhered to throughout the reporting period.

109.a-e [Unscheduled Shutdown in Response to an Alarm]

Unscheduled Shutdown procedures have been employed and adhered to throughout the reporting period.

110 a-d [Certification of Compliance with 10-Minute Rule and other Requirements of this Subsection]

Enbridge certifies its compliance with the 10-Minute Rule by providing the Lakehead Leak Alarm Report (Appendix 2) signed by the Vice-President, Pipeline Control. This report provides the weekly list of alarms ("WLOA"), Record of Alarms ("ROA"), and Summary of Alarms ("SOA"), as required by this paragraph. There were no non-compliances with the 10-Minute Rule in the reporting period.

111 [Unscheduled Shutdown Procedures in Response to Other Events]

Enbridge responded to reported emergencies following procedures that align with this paragraph for the reporting period.

112 [Reporting of Events from Paragraph 111]

Information related to all incidents during this reporting period where Enbridge received information concerning a potential leak or rupture, including the information provided with each such notice, the start and end times of each respective investigation, and the conclusion and findings of each investigation, is provided in Section G **Table G-3** to this IPTUR: Lakehead System Pipeline Incident Reporting.

Section H – Spill Response and Preparedness

113 [Immediate Action to Confirmed Pipeline Leak or Rupture]

Enbridge had no confirmed leaks of one or more barrels on the Lakehead System Mainline within the reporting period. Enbridge had no confirmed pipeline leaks or ruptures of any harmful quantity that reached the waters of the United States or adjoining shorelines during this reporting period. With respect to releases, when they occur, Enbridge proceeds without delay to dispatch trained personnel to the location of the leak and takes action to prevent any migration of oil into waters of the United States, including shutting down the affected line.

During the reporting period, three releases on the Lakehead System triggered PHMSA reporting requirements, including 2 releases at Lakehead facilities (Flanagan Terminal and Superior Terminal) and one on the Lakehead System Mainline (Line 5). The Line 5 Mainline release was less than one barrel. The Superior Terminal and Line 5 mainline releases only triggered PHMSA and NRC reporting requirements due to the cost exceeding $50,000. When applicable, releases are reported to PHMSA in accordance with either 49 C.F.R. § 195.50(b), which requires the reporting of any release of 5 gallons or more of hazardous liquid, or 49 C.F.R. § 195.50(e), which requires reporting if the initial estimated property damage, including

the cost of clean-up and recovery, value of lost product, and/or damage to the property of the operator and/or others would exceed $50,000.

The release at Flanagan Terminal met PHMSA reporting criteria because it was 7 barrels. Additional details regarding the Flanagan Terminal PHMSA-reportable release of one or more barrels from a Lakehead facility that occurred during this reporting period is provided in response to Paragraph 146. PHMSA-reportable releases from Lakehead facilities are not reportable per Paragraph 146 of the Consent Decree.

With respect to the releases, Enbridge proceeded, without delay, to dispatch trained personnel to the location of the leaks and took action to prevent any migration of oil into waters of the United States or adjoining shorelines.

114 [Required Actions]

Enbridge's compliance with Paragraph 114 is demonstrated by its compliance with Paragraphs 115 to 119, as explained below.

115 [Agreed Exercises]

No change since SAR10.

116 [Field Exercises, Table-Top Exercises, and Community Outreach]

116.a [Annual Field Exercise and Table-Top Exercise Requirements]

In accordance with Subparagraph 116.a, Enbridge conducted the following Field Exercises ("FDE") during this reporting period (May 23, 2022 – September 15, 2022):

- Marysville, Michigan on May 26, 2022
- Saxon, Wisconsin on July 12, 2022
- Ironwood, Michigan on July 14, 2022
- Grand Rapids, Minnesota on August 31, 2022
- Portage, Indiana on September 29, 2022

In accordance with Subparagraph 116.a, Enbridge conducted the following Table-Top Exercises ("TTXs") during this reporting period (May 23, 2022 – September 15, 2022):

- Escanaba, Michigan on June 8, 2022
- Wisconsin Rapids, Wisconsin on June 9, 2022
- Marshall, Michigan on June 29, 2022
- Ironwood, Michigan on July 13, 2022
- Griffith, Indiana on August 4, 2022
- Cavalier, North Dakota on August 18, 2022
- St. Ignace, Michigan on September 8, 2022

Information about problems encountered or anticipated in implementing Consent Decree Requirements due to COVID-19 restrictions is further discussed in Paragraph 144 under the heading Various Paragraphs [Section H] COVID-19 Restriction Impacts to FDE, TTX, Community Outreach.

116.b [Field Exercise Requirements]

In accordance with Subparagraph 116.b, each of the Field Exercises identified above consisted of training exercises conducted in the field to test and practice specific oil spill emergency response tactics used in the initial hours of an oil spill of at least 1,000 gallons into water.

Field deployment exercises test and practice the emergency response actions and tactics of both Enbridge and Government (Federal, Tribal, State, County, and Local) response personnel and equipment, in relation to a release of crude oil from an Enbridge pipeline. A scenario is required to initiate the appropriate level of emergency response within the organizations participating in the exercise. An after-action review (hot wash) is conducted at the conclusion of the exercise to identify areas that went well and areas that need improvement.

The standard schedule for a field exercise is as follows:

- Welcome and Safety Moment
- Operations and Safety Briefing
- Field Deployment
- Equipment Retrieval/Decontamination
- After Action Review (Hot Wash)
- Closing Comments

Each Field Exercise included the following:

- A deployment of select equipment and personnel to water.
- A review of locations downstream of a spill where containment and recovery operations can occur.
- Implementation of one or more containment and collection measures from the Enbridge's "Inland Spill Response Guide" at locations downstream of the potential spill entry point.

Further, in accordance with Subparagraph 116.b, an after-action review and discussion was held after each of the Field Exercises. Specific details for each exercise are summarized in the following sections.

St. Clair River, Marysville Michigan on May 26, 2022

This exercise was attended by 16 Enbridge employees and 12 external participants. The exercise took place on the St. Clair River near Marysville, Michigan. The objectives of this field exercise were as follows:

Objective 1: Demonstrate containment and mitigation (recovery) tactics.

Objective 2: Test control point GLRCP0336 containment and recovery tactics and verify site information.

Objective 3: Assess ability to utilize the Incident Command System to manage an equipment deployment.

Objective 4: Educate and inform stakeholders about Enbridge's Response Capabilities.

Equipment used included: Spill response trailer, work boats, hard boom, Danforth anchors, line, and boom accessories (bridle, shackles).

During the after-action review, discussion of both positive observations and areas for improvement were identified and documented. Positive observations included:

- The Bay City and Marshall Field Response Teams were well prepared to execute the boom deployment tactics.

- Pre-deployment assessment allowed for alternate boom configuration to be discussed, planned and executed as the initial configuration does not accommodate the dynamics of the water crossing, specifically swift current.
- This exercise provided positive demonstration for stakeholders that were observing the various operations. Specifically, the Oakland County Fire Department, Marine Unit, will acquire similar equipment for their deployable boom trailer.

Areas for improvement included:

- Alter the "horseshoe" boom configuration to a scalene chevron. The straight lines allow for fewer anchors and better angle for the quick current.
- Add additional 50-75' of boom to better accommodate the exclusion configuration.
- Utilize a mechanical device (winch/come along) to maneuver the boom into an ideal position.
- Utilize toe-posts or alternate anchor to best secure around the sea wall. Magnetic connection could be utilized.

West Fork of Montreal River, Saxon Wisconsin on July 12, 2022

This exercise was attended by 16 Enbridge employees and 12 external participants. The exercise took place on the West Fork of the Montreal River near Saxon, WI. The objectives of this field exercise were as follows:

Objective 1: Demonstrate the ability to deploy on-water containment and mitigation (recovery) tactics.

Objective 2: Test SURCP0324 containment and recovery tactics and verify site information.

Objective 3: Assess ability to utilize the Incident Command System to manage an equipment deployment.

Objective 4: Educate and inform stakeholders about Enbridge's response capabilities.

Equipment used included: River boom, drum skimmer, Turner-Valley gates.

During the after-action review, discussion of both positive observations and areas for improvement were identified and documented. Positive observations included:

- It was highly beneficial to get Ironwood and Superior Pipeline Maintenance (PLM) involved in a drill on the border of Wisconsin and Michigan.
- External stakeholders found value in responders from Michigan and Wisconsin working together in preparation for an emergency on or near the border.
- Crew executed the plan with an effective outcome.

Areas for improvement included:

- Due to river conditions at the time of the exercise, the deployments listed in Control Point SURCP0324 was conducted just north of the listed location where there is a clearing next to the river.
- Ironwood PLM does not have Turner-Valley gates and would benefit from obtaining them. It should be noted that plans have been made to obtain them for Ironwood PLM.
- The West Fork of the Montreal River and the Montreal River are somewhat shallow and quick moving water. Multiple tactics will be needed depending on water depth and speed. Ensuring proper equipment and preparation is in place is important.

Montreal River, Ironwood Michigan on July 14, 2022

This exercise was attended by 17 Enbridge employees and 4 external participants. The exercise took place on the Montreal River near Ironwood, Michigan. The objectives of this field exercise were as follows:

> **Objective 1:** Demonstrate ability to assemble the response organization identified in the response plan.
>
> **Objective 2**: Demonstrate the ability to control and stop the discharge at the source, and to effectively coordinate source control activities within the response management system used for the overall incident.
>
> **Objective 3**: Demonstrate the ability to provide an initial assessment of the discharge or potential discharge and provide continuing assessments of the effectiveness of the tactical planning.
>
> **Objective 4**: Demonstrate the ability to contain the discharge at the source or in various locations for recovery operations.
>
> **Objective 5**: Demonstrate the ability to mitigate the discharged product through the use of oil spill countermeasures, including but not limited to, dispersants, in-situ burning, and bioremediation, in addition to mechanical oil recovery (boom and skimmers).[7]
>
> **Objective 6**: Demonstrate the ability to protect the environmentally and economically sensitive areas identified in the Area Contingency Plan and the respective industry response plan.

Equipment used included: Spill response trailer, 6" hard boom, 8' grooved drum skimmer, anchors, lines, and a Capstan winch.

During the after-action review, discussion of both positive observations and areas for improvement were identified and documented. Positive observations included:

- The responders exercised good safety protocol.
- The Ironwood and Superior Pipeline Maintenance (PLM) responders worked collaboratively.
- Participation from external stakeholders provided the opportunity to understand the extent of resources and capabilities in the area.
- Good conversations for cross border authority and jurisdiction. Increase exercises to facilitate further development of multi-state jurisdiction.

Areas for improvement included:

- Utilize small river boom for shallow depth watercourses to prevent entrainment due to inappropriate equipment utilization.
- Commence the Right of Way/Land use process early in the exercise planning phase to ensure all interested parties are appropriately notified and permissions granted.
- Appropriate Personal Protective Equipment (PPE): Utilize felts/slip prevention for waders to prevent slip hazards while working in water. Neoprene waders are too warm and carry potential for heat stress.

[7] *This objective is worded based on NPREP Guidelines. For clarity, dispersants, in-situ burning, and bioremediation were not conducted during the FDE, however mechanical recovery was demonstrated through boom and skimmer.*

Mississippi River, Grand Rapids Minnesota on August 31, 2022

This exercise was attended by 12 Enbridge employees and 7 external participants. The exercise took place on the Mississippi River near Grand Rapids, Minnesota. The objectives of this field exercise were as follows:

Objective 1: Demonstrate the ability to deploy on-water containment and mitigation (recovery) tactics.

Objective 2: Test SURCP0188 containment and recovery tactics and verify site information.

Objective 3: Assess ability to utilize the Incident Command System to manage an equipment deployment.

Objective 4: Educate and inform stakeholders about Enbridge's Response Capabilities.

Equipment used included: River boom, drum skimmer, boats, capstan winch, rope.

During the after-action review, discussion of both positive observations and areas for improvement were identified and documented. Positive observations included:

- Crews worked through various obstacles and utilized appropriate tactics to overcome challenges.
- SURCP0188 serves as a good containment and recovery location with plenty of room and access.
- Crew executed plan with an effective outcome.

Areas for improvement included:

- Not all boats had ability to tow boom from center of transom, making it difficult to use full power of boat in a manner that allowed easy maneuverability manner.
- Some boats lacked the power to efficiently tow large amounts of boom in high current.
- Some of the boom used did not have cable loops for each section. This boom is effective, but newer boom with cable loops is better. Trailer organization would benefit so best boom is used first.
- Rope with shackle or hook ends is not as versatile as large spools of rope that can be cut to desired length.

All items identified under the "Areas for Improvement" categories above are reviewed and addressed prior to the next Field Deployment Exercise as they improve the response capabilities of the Field Response team in both field exercises and in the unlikely event of a release.

Little Calumet River, Portage Indiana on September 29, 2022

This exercise was attended by 13 Enbridge employees and 9 external participants. The exercise took place on the Little Calumet River near Portage, Indiana. The objectives of this field exercise were as follows:

Objective 1: Demonstrate containment and mitigation (recovery) tactics.

Objective 2: Test control point GLRCP0201 containment and recovery tactics and verify site information.

Objective 3: Assess ability to utilize the Incident Command System to manage an equipment deployment.

Objective 4: Educate and inform stakeholders about Enbridge's Response Capabilities.

Equipment used included: Spill response trailer, work boats, hard boom, Danforth anchors, line, and boom accessories (bridle, shackles).

During the after-action review, discussion of both positive observations and areas for improvement were identified and documented. Positive observations included:

- The experience and training of the Griffith and Marshall Field Response Teams ensured a smooth deployment and establishment of the control point.
- The marina provided ample space for staging equipment and a good venue for facilitating conversations with stakeholders. The boat launch is well suited for large response vessels.
- The water course provided a good location to operate response vessels. The depth was ample enough to conduct maneuvers within the river.

Areas for improvement included:

- The control point is situated in the vicinity of busy marinas, and vessel traffic impedes the establishment of the boom and anchors.
- Utilize the 3-way assembly mechanism to provide single point of contact for anchor lines.
- Consider the use of smaller boom as it meets protection and containment ratings and is easier to handle and manipulate when adjusting position once deployed.

116.c [Table-Top Exercise Requirements]

In accordance with Subparagraph 116.c, the Table-Top Exercises identified under Subparagraph 116.a above were conducted to test and practice non-field oil spill emergency response processes and procedures.

The scope of each Table-Top Exercise is to review the response capabilities of Enbridge, local first response agencies and community participants in relation to a release of crude oil from a pipeline. It utilizes multiple Emergency Response Plans to map out the combined response to the incident using the Incident Command System (“ICS”) and is based on a simulation of a realistic emergency situation that included a description of the situation (scenario) with communications between players and facilitator. It identifies all responding agencies, resources, the establishment of a Unified Command, and situational assessment, and how the incident would be documented during the initial response.

The Table-Top Exercise structure consists of two modules; Module 1: Initial Notifications and Response (Reactive Phase) and Module 2: Mobilization and Sustained Response (Proactive Phase). Each module begins with a multimedia update that summarizes key events occurring within that time period. After the updates, participants review the situation and engage in group discussions of appropriate response issues. A formal hot wash and or after-action reports are not required for Table-Tops, however discussions are held during the exercise and discussion points are captured during or after the exercise.

Information about problems encountered or anticipated in implementing Consent Decree Requirements due to COVID-19 restrictions is further discussed in Paragraph 144 under the heading [Section H] COVID-19 Restriction Impacts to FDE, TTX, Community Outreach, and Coordination with Government Planners – Various Paragraphs.

The exercises included the following:

- A minimum spill scenario of at least 1,000 gallons from a Lakehead System Pipeline located in close proximity to water.
- Notifications of the spill to all the government entities, including tribal authorities, that are identified in the Enbridge Integrated Contingency Plan (“ICP”).

- Both near and long-term response actions to address the spill.
- Anticipated response times for Enbridge equipment and personnel.
- The risks that the spill scenario could pose to public health and the environment.
- Potential resources at risk; and
- Protective measures for the local community, including evacuation procedures, as identified in the Enbridge ICPs.

Specific details for each exercise are included in the following sections.

Escanaba, Michigan on June 8, 2022

This was a hybrid virtual/in-person exercise. The in-person exercise was attended by 12 participants (6 Enbridge employees). Virtual participants included 4 external participants.

Discussion points included:

- The scenario and duration of the exercise were appropriate. The discussion was informative and provided contextual material with built in challenges that that identified shortcomings within local response plans and procedures.
- Local Fire Departments assume responsibility for the incident site, review of Enbridge response posture is reassuring as they have limited capabilities and resources.
- Fire departments have limited awareness of how to respond to oil and chemical fires. Best practices is to not apply water.
- Emergency Response may be limited, as local fire departments are on a volunteer basis, and thus are not readily available during normal workhours.
- The Michigan Department of Health and Human Services can provide guidance on safety standards in relation to response operations (air monitoring, water intakes, etc.).

Wisconsin Rapids, Wisconsin on June 9, 2022

This was a hybrid virtual/in-person exercise. The in-person exercise was attended by 13 Enbridge members and 10 external participants. Virtual participants included 4 Enbridge members. Total of 27 participants.

Discussion points included:

- City of Nekoosa public works informed Enbridge of a shallow well near the release location in the scenario.
- City of Nekoosa storm water drains would be easily contaminated by released product in the area. City public works are able to assist in blocking water drains.
- Local area has a number of man-made irrigation ditches that serve local cranberry fields. Extra consideration would be needed to prevent product from getting into these ditches.
- State Emergency Management can assist in response as needed or requested.

Marshall, Michigan on June 29, 2022

This was a hybrid virtual/in-person exercise. The in-person exercise was attended by 26 participants (5 Enbridge employees). Virtual participants included 1 external participant.

Discussion points included:

- The group consisted of several stakeholders which allowed for good conversation and learning opportunities.
- The face-to-face interaction of mixed groups generated authentic discussion.
- The EPA provided fantastic insight, despite participating virtually.
- The Michigan Department of Natural Resources can provide information on watercourse conditions which may yield best response locations or tactics, and the Drain Commission should be leveraged to address additional access point to the watercourse via the drainage system.
- Keeping a pre-generated communications plan (i.e., ICS 205) in contingency plans to pre-emptively communicate situation status and logistics to all responders for incidents.
- Michigan Critical Incident Management System (MI CIMS) is a useful tool to record and document incident progress. The program should include a local resource list to provide to first responders to an incident.

Ironwood, Michigan on July 13, 2022

This was a hybrid virtual/in-person exercise. The in-person exercise was attended by 12 participants (6 Enbridge employees). Virtual participants included 35 external participants.

Discussion points included:

- The group was comprised of several agencies, representing two states, as the scenario would impact two jurisdictions. There was great conversation and initial groundwork established for multi-jurisdictional authorities to coordinate during an incident.
- The multi-jurisdictional approach provided fantastic insight, and discussion regarding a realistic scenario.
- Due to the cross-state jurisdictional component, expanded external stakeholder participation is necessary as more agencies have specific insight and jurisdiction over components of the scenario. Their input would prove valuable to the module conversations/discussion.

Griffith, Indiana on August 4, 2022

This was a hybrid virtual/in-person exercise. The in-person exercise was attended by 12 participants (6 Enbridge employees). Virtual participants included 35 external participants.

Discussion points included:

- The significant Enbridge participation and presence demonstrated commitment to emergency response and management to local, state and federal stakeholders.
- The virtual component allowed participants to contribute when not able to travel or other time constraints that limit their ability to interact face-to-face.
- The scenario provided external stakeholders an opportunity to review internal response plans to better prepare their agencies in the event of a pipeline incident.
- The scenario location did not provide a dynamic response; based on complexity and proximity to initial responders, the incident scenario was limited in tactics developed.
- Expand inter-county stakeholder communications, as first response agencies are organized in districts, and not solely one county. More agencies have specific insight and jurisdiction as well as broader access to resources.

Cavalier, North Dakota on August 18, 2022

This was a hybrid virtual/in-person exercise. The in-person exercise was attended by 10 participants (4 Enbridge employees). Virtual participants included 7 Enbridge members and 2 external participants.

Discussion points included:

- Cell reception was not ideal in the area. As such it would be beneficial to bring in supplemental communication capabilities.
- It is recommended to reach out to the Department of Transportation, U.S. Game and Fish and U.S Army Corp of engineers to participate in a future exercise and/or real-world events.
- The Sheriff's department currently does not have gas monitors. Should there be a release, gas monitors could assist in avoiding hot zones, especially at night.

St. Ignace, Michigan on September 8, 2022

This was a hybrid virtual/in-person exercise. The in-person exercise was attended by 23 participants (8 Enbridge employees). Virtual participants included 1 external participant.

Discussion points included:

- The local contingency plans take into consideration the remote nature of the area, and address mass communications, road closures and detours as well as external communications to surrounding counties for additional support.
- Local first responders are comprised of a small group and would become fatigued within the first 48 hours of an incident.
- The US Coast Guard and the US Environmental Protection Agency should clearly define their respective jurisdictional boundaries to ensure the appropriate agency is leading response efforts. In the event of an incident that crossed jurisdictions, a decision memo would be generated to document which agency was the Federal On-Scene Coordinator, per regulation.
- The Michigan Critical Incident Management System (MI CIMS) can be used as a documentation repository for all incidents. External stakeholders can be provided access and make entries/contributions to incidents which they are assigned.

116.d [Field and Table-Top Invitees]

In accordance with Subparagraph 116.d, prior to conducting the Field and Table-Top Exercises identified under Subparagraph 116.a above, Enbridge sent out 494 invitations for the scheduled 2022 Table-Top and Field Exercises on December 13, 2021.

The invitations provided recipients with more than four weeks' notice of the exercise date. The invitation also indicated that Enbridge would provide meals to persons who attended each exercise, and that the training would be provided at no cost to the invitees, excluding travel costs. Interested respondents were directed in the letter to an external-facing website (http://emergencyresponderexercises.com/) wherein they could register, in addition to being provided with a contact telephone number and e-mail address. During the reporting period 9 registrations were submitted using the online system, zero calls were received using the telephone system, and zero e-mail requests for additional information were received and responded to.

Improvements made to the exercise registration program during the past SAR reporting cycles continued as originally implemented. Due to COVID-19 impacts, the postcard mailings (which were a supplemental effort not required by the Consent Decree) continued to be placed on hold, as exercise locations and formats were fluid due to evolving state and local restrictions. Information regarding the virtual exercises was updated on the website as appropriate with regional Emergency Response Coordinators conducting follow up as needed with invitees, including providing situation manuals as needed.

116.e [Community Outreach Sessions]

Enbridge did not conduct any Community Outreach sessions during this reporting period.

117 [Control Point Plans]

No change since SAR10.

118 [Response Time]

No change since SAR10.

119 [Coordination with Governmental Planners]

Enbridge's coordination with governmental planners is described in its response to Subparagraphs 119.a to 119.k below.

119.a [Planning Meeting Participation]

In accordance with Subparagraph 119.a, Enbridge attended the following Area and Sub-Area Committee planning meetings:

Eastern Great Lakes Area Committee Meeting, June 1, 2022

A variety of topics were discussed including 2021 workload breakdown, discussion of various emergency events, and a discussion about the Great Lakes Centre of Expertise and Area Contingency plan submission.

Northwest Indiana Sub-Area Committee, June 14, 2022

A variety of topics were discussed including but not limited to the following:

- EPA Region 5: A review and revision of the Area Contingency Plan is being completed.
- Information about the fall 2022 meeting; and
- A review of the EPA's Indiana mapping tool.

North Lower West Michigan Subarea Committee Meeting, October 5, 2022

Enbridge attended the hybrid North Lower West Michigan Subarea Committee meeting in person. A variety of topics were discussed including but not limited to the following:

- the number of pollution reports in the area to date,
- the outreach conducted to clarify all hazards warning sirens,
- an *Oil in Ice* course that will be delivered during the *No Spills Conference* in 2023,
- information was provided about a Tier 2 exercise on the Niagara River,
- boom strategies for the Grand River were reviewed,
- the role and responsibility of the Department of Interior during pollution incidents, and
- assessing response sites for historical/cultural resources including a Table-Top Exercise which addressed these resources.

Enbridge also attended the fall Regional Response Team (RRT) meeting that was held on October 12-13, 2022. This meeting fell outside of the Sub-Area planning meetings. Topics discussed included the following:

- Case study of a fuel spill near Minneapolis, MN. Product entered into the city sewer system and created a complex response. Multiple agencies responded and the situation was eventually mitigated.
- The US Department of the Interior presented on ongoing remediation and restoration efforts across state, federal and tribal lands. The primary work involves site plugging of orphaned wells.
- A review of response activities for spills of oil in fresh water. This study was carried out by EnviroScience and several federal agencies.
- A case study of a pipeline spill which included oil entering Cahokia Creek in southern Illinois. The volume of this release was estimated at 3000 barrels. The tactics of the response prevented oil from reaching the Mississippi river.

119.b(1) and (2) [Sub-Area Activities Participation]

Sector Buffalo TTX, June 14, 2022

A discussion was held reviewing the Columbus Day 2021 response and identifying improvements to the response.

Webinar: National Tsunami Warning and Notification System, June 23, 2022

The seminar described the Tsunami warning center and the types of emergency notifications and messaging provided to the public.

NMAC Planning Meeting and USCG/US Venture US Oil Equipment Deployment Drill, July 19, 2022

The regularly scheduled NMAC meeting was replaced by an expo/deployment event held in Rogers City, MI. The event consisted of US Oil/Venture Oil (their facility was the host, and they were the “responsible party” for the incident scenario) OSROs, vendors, and stakeholders. Enbridge personal supported a static display, showcasing ER equipment including a Current Buster, Pyro boom, posters of equipment deployments, and an info table.

Webinar: The Chemical Aquatic Fate and Effects (CAFE) Database use in Spill Response, July 27, 2022

The use of the Chemical Aquatic Fate and Effects (CAFE) database in spill response was discussed. The CAFE database is a tool that is used to assess the chemical and oil release into aquatic environments. This database includes aquatic toxicity data. Case studies were presented.

119.c [Response Requirements to Sub-Area or Area Committee Recommendations]

No Sub-Area Committee or Area Committee for the Lakehead System made written recommendations to Enbridge regarding its emergency preparedness plans and implementation and thus, Enbridge did not revise its plans or implementation under Subparagraph 119.c.

119.d [Response Planning Meetings Requirements]

Enbridge did not receive a request to meet and discuss response planning strategies to ensure consistency with the Area Plan during this reporting period.

119.e-g [Plans and Prepositioned Emergency Response Locations and Equipment]

Requirements for Subparagraphs 119.e-g were fully satisfied during the first SAR reporting period and reported in SAR1; accordingly, this activity is complete.

119.h [Emergency Response Equipment]

Enbridge continues to maintain, in good working order, its prepositioned emergency response equipment and materials. No equipment was moved during this reporting period.

119.i [Inland Spill Response Tactics Guide on Website]

In accordance with Subparagraph 119.i, the "Inland Spill Response Tactics Guide" has been available on Enbridge's website since May 23, 2017, at https://www.emergencyresponderinfo.com/. Accordingly, this activity is complete.

119.j [Inland Spill Response Guide to EPA]

As reported in SAR3, this activity is complete.

119.k [Electronic Submittal of Documents]

Enbridge has provided electronic copies of all documents that are required to be submitted under Paragraph 119 in accordance with the electronic submittal requirements specified under Subparagraph 119.k.

120 [Incident Command System Training]

Enbridge's compliance with ICS training requirements is described in Enbridge's response to Subparagraphs 120.a to 120.c below.

120.a [Incident Command System Training Requirements]

Enbridge has ensured that, upon assigning a person to take on the following roles, each person has completed the training identified below prior to beginning such duties or within the timeframe specified under Subparagraph 120.a:

- Incident Commanders, Deputy Incident Commanders or Alternative Incident Commanders of any Regional Incident Management Team in any Lakehead ICP: ICS 100B - 400 and position- specific training.
- All other personnel listed as members of any Regional Incident Management Team in any Lakehead ICP: ICS 100B - 300 and position-specific training.
- Regional Emergency Response Specialist Coordinators: ICS 100B - 400 training.
- All emergency management department personnel: ICS 100B – 300 training within 90 days of being assigned.
- Any person designated as Vice President of U.S. Operations, or in an equivalent capacity: ICS 402 training.

- Any other manager or executive who give direction to field personnel, or is responsible for making funding, personnel, or resource decisions during a spill response (if ICS 100B – 400 has not been taken): ICS 402 training.

The Director of Southwest Region obtained ICS 100-200 in August 2022, ICS 300-400 in September 2022, and Role Specific training in October 2022. Also, the Supervisor of Emergency Response received ICS 100-300 training prior to being hired.

120.b [ICS Training and Incident Management Team Personnel]

In accordance with Subparagraph 120.b, Enbridge has trained at least one employee for each Incident Management Team position as indicated in its ICP.

120.c [Training Requirements and Electronic Certification Documents]

In accordance with Subparagraph 120.c, Enbridge maintains electronic certification documents that confirm personnel training as described in Subparagraph 120.a.

Section I – New Remotely Controlled Valves

121-122. [Installation of 14 Remotely Controlled Valves]

No change since SAR10.

123. [Enbridge Computer Modeling for Valve Locations]

No change since SAR10.

124. [Valve Design and Closure]

No change since SAR10.

Section J – Independent Third Party Consent Decree Compliance Verification

126. [ITP Access to Enbridge Lakehead System]

No change since SAR10.

132. [Enbridge – ITP Agreement Tasks 2, 3, 4, and 5]

No change since SAR10.

133.b [Enbridge Response to ITP Verification Report]

No change since SAR10.

134.l [General Requirements – ITP Annual Certification]

No change since SAR10.

135. [Enbridge Enforcement of the Agreement]

No change since SAR10.

136. [ITP Replacement]

No change since SAR10.

IX. – Reporting Requirements

144. [SAR Requirements]

This section summarizes information required by Paragraph 144 to the extent that the information is relevant to Enbridge's compliance with a requirement of the Decree and has not been reported separately above. Enbridge also recognizes that all of the matters listed in Paragraph 144 will not always be applicable relative to each of the Decree's requirements. Among matters listed in Paragraph 144 are the following:

i. Completion of milestones
ii. Problems encountered or anticipated in implementing the requirement (together with implemented or proposed solutions)
iii. Status of permit applications
iv. Operation and maintenance issues
v. Reports to State Agencies
vi. Number by types, of features repaired or mitigated during the reporting period and the number, by type, planned for future repair or mitigation
vii. Any significant changes or issues since the previous SAR

In many cases, the matters listed above have been reported in previous sections of the Report that relate to specific Consent Decree requirements. However, Enbridge has selected the activities reported below to draw specific attention to challenges encountered during the reporting period, pursuant to Paragraph 144.

In support of transparency about interpretation issues with the Consent Decree as well as problems encountered, Enbridge included a table listing the interpretation issues (details below) as well as a bulleted list of problems encountered with a discussion for each following the list.

Consent Decree Interpretation Issues

There are a number of Consent Decree interpretation issues that the parties have resolved or that Enbridge is working to resolve with the ITP and EPA. Enbridge is proceeding using the current Enbridge interpretation in areas where the interpretation has not been agreed on by all parties. Refer to **Table IX-1** for a list of interpretation issues.

Problems Encountered or Anticipated in Implementing Consent Decree Requirements

The following is a list of the problems encountered or anticipated in implementing Consent Decree requirements for the reporting period. Each of these are discussed in more detail in the sections below and are referenced in the applicable injunctive paragraph.

- [Section B] Minnesota Attorney General; Minnesota Department of Natural Resources, Fond du Lac Band of Lake Superior Chippewa, and Minnesota Pollution Control Agency Enforcement Resolution Agreements Related to Line 3 Replacement Construction– P. 22.a
- [Section D] Circumferential Cracking Engineering Assessment Process – Various Paragraphs
- [Section D] Line 6A, PE-AM, MFL, Stitching
- [Section F] Line 93 CR-KD XGG Geometry (Tool Run ID 12053)
- [Section F] Line 93 CR-KD MFL-A Corrosion (Tool Run ID 12054)
- [Section F] Line 93 GF-CR MFL-A Corrosion (Tool Run ID 10301)
- [Section F] Line 93 GF-CR MFL-A Geometry (Tool Run ID 10301)
- [Section F] Line 93 KD-PW MFL-A Corrosion (Tool Run ID 12056)
- [Section H] COVID-19 Restriction Impacts to FDE, TTX, Community Outreach, and Coordination with Government Planners - Various Paragraphs

[Section B] Minnesota Attorney General; Minnesota Department of Natural Resources, Fond du Lac Band of Lake Superior Chippewa, and Minnesota Pollution Control Agency Enforcement Resolution Agreements Related to Line 3 Replacement Construction

The Minnesota Attorney General filed a misdemeanor criminal charge for the taking of water without a permit at the Clearbrook aquifer. A continuance for dismissal was subsequently filed with this charge ultimately being dismissed following one year of compliance with the state water appropriation rules.

On October 17, 2022, Enbridge entered into enforcement resolution agreements with the:

1. Minnesota Department of Natural Resources for breaches of the confining layer of two artesian aquifers during the construction of the Line 3 replacement project near Enbridge's Clearbrook Terminal and near LaSalle Creek in Hubbard County;

2. Minnesota Department of Natural Resources and Fond du Lac Band of Lake Superior Chippewa for breaching the confining layer of an aquifer at MP 1102.5 in St. Louis County; and

3. Minnesota Pollution Control Agency to resolve alleged violations related to the construction of the Line 3 replacement project.

[Section D] Circumferential Cracking Engineering Assessment Process and Associated Discussions of the Parties – Various Paragraphs

No change since SAR10.

[Section D] Line 6A, PE-AM, MFL, Stitching

During the initial inspection, 11 MFL heads malfunctioned part way through the inspection resulting in an overall corrosion data degradation and data loss of 6.39%. This resulted in an incomplete initial ILI as reported in SAR10.

A re-run was carried out between 4/25/2022 to 4/28/2022. During the re-run inspection, multiple MFL heads encountered issues, either losing data, becoming broken or going dead at the end of the run. As a result, the re-run had an overall corrosion degradation and data loss of 14.69%.

Sensor data from both runs were combined, resulting in 98.32% of the pipe surface meeting the standard POD and sizing specification. 0.81% of the pipe surface have a reduced specification and 0.87% of the

pipe surface have no specification. To compensate for the degraded specification data from 2022, the 2019 Vectra run was leveraged.

The deadline for the tool run was 4/27/2022. Enbridge considers this deadline to have been met as the initial run was completed on 4/8/2022 and the rerun was launched on 4/25/2022.

[Section F] Line 93 CR-KD XGG Geometry (Tool Run ID 12053); Line 93 CR-KD MFL-A Corrosion (Tool Run ID 12054); Line 93 GF-CR MFL-A Corrosion (Tool Run ID 10301); Line 93 GF-CR MFL-A Geometry (Tool Run ID 10301); Line 93 KD-PW MFL-A Corrosion (Tool Run ID 12056)

The ILI reports for these runs contained errors, formatting issues, and did not pass quality control procedures. These problems also prevented the ILI reports from being uploaded to OneSource until the reissues corrected the data quality issues. Once the problems were corrected, the updated Issue was accepted and was uploaded within CD timelines.

[Section H] COVID-19 Restriction Impacts to FDE, TTX, Community Outreach, and Coordination with Government Planners - Various Paragraphs

The ability to host in-person TTXs and COSs continued to be impacted by COVID-19 during this reporting period. **Table IX-2** lists the TTXs and FDEs held during the IPTUR reporting period. The EPA was asked to approve the use of virtual TTXs and COSs using the Force Majeure notification process and approval for these changes was granted by the EPA. **Table IX-3** summarizes the notifications.

Reports to State Agencies

Enbridge is currently party to litigation involving Line 3 in Minnesota, Line 5 in Michigan and Line 5 in Wisconsin. In connection with these matters, the company periodically provides legal filings to courts or agencies in those states. Enbridge does not consider those submissions, most of which are publicly available, to be “reports” of the type covered by the Consent Decree. Similarly, Enbridge is in the process of seeking Wisconsin and federal permits relating to construction of a line replacement project on Line 5 to reroute the segment around the Bad River Reservation in Wisconsin. As well, Enbridge submitted materials to Michigan state agencies in connection with the planned replacement of the Straits Pipelines at the Straits of Mackinac. Enbridge does not consider permit applications of this type to be “reports” covered by Paragraph 144.

Any significant changes or issues since the previous SAR

Any significant changes or issues since the previous SAR are addressed above.

145. [Non-Compliance]

There were three potential non-compliances identified during the IPTUR reporting period; see also **Table IX-4.**

Enbridge has identified three instances where reports were received one day late:

Line 93 CR-KD 2022 XGG Geometry

Enbridge identified an error wherein the tool pulled date was entered into Enbridge’s internal tracking system with an incorrect date of 3/9/2022 instead of the correct date of 3/8/2022. As a result, the calculated report due date was erroneously calculated as 6/7/2022, instead of 6/6/2022 and the report was received one day late. All other requirements of the CD were completed within the required timeframes.

Enbridge has determined the likely cause was a non-systemic manual data entry error. Specifically, the tool receipt date was assumed and not validated against the actual receipt date, which was one day earlier than the assumed date. This resulted in the ILI reports being one day late.

Enbridge has reviewed other programs to confirm this was an isolated, non-systemic error. This issue was also discussed with the Pipeline Integrity team accountable for the data entry and the ILI Vendors accountable for reporting timelines.

Line 93 GF-CR 2022 MFL-A Corrosion/Geometry

Enbridge identified an error wherein the tool pulled date was entered into Enbridge's internal tracking system with an incorrect date of 4/20/2022 instead of the correct date of 4/19/2022. As a result, the calculated report due date was erroneously calculated as 7/19/2022, instead of 7/18/2022 and the two reports were received one day late. All other requirements of the CD were completed within the required timeframes.

Enbridge has determined the likely cause was a non-systemic manual data entry error. Specifically, the tool receipt date was assumed and not validated against the actual receipt date, which was one day earlier than the assumed date. This resulted in the ILI reports being one day late.

Enbridge has reviewed other programs to confirm this was an isolated, non-systemic error. This issue was also discussed with the Pipeline Integrity team accountable for the data entry and the ILI Vendors accountable for reporting timelines.

Line 6A PPR Overpressure

Line 06A had a 101.6 % overpressure at milepost 414.968 on October 3, 2022, at 02:48 MST. The overpressure was for a pressure restriction of 408 psi that had recently been implemented on September 30, 2022. The pipeline was in the midst of performing a maneuver to change delivery locations from Griffith (GT) terminal to Mokena (MK) terminal when the MK terminal PCV failed to open, causing an obstruction that sent a pressure wave into the mainline. When the pressure wave reached MP 414.968, the pressure there reached 414.6 psi, well below the EMOP of 619 psi, but equal to 101.62 % of the pressure restriction. Given the overpressure was caused by a pressure wave, the duration of the overpressure is estimated to be less than one second. As per procedures, the line was shut down, which was done within 1 minute of the overpressure. The line was kept down until its integrity could be determined and started up approximately 70 minutes later. The overpressure was immediately discovered by the operator, investigated by control room staff, and confirmed by engineering within 7 hours of it occurring.

146. [Discharges from a Lakehead System Pipeline]

Table IX-5 in Appendix 1 identifies one discharge from a Lakehead System facility of one or more barrels of oil that occurred during the reporting period for this IPTUR. Enbridge confirms that this discharge did not reach any waterbody or waters of the United States or adjoining shoreline. There were no other instances of discharge of oil during the reporting period that reached any waterbody or waters of the United States or adjoining shoreline in a quantity as may be harmful. Enbridge has committed to report all Post Incident Reports that were not previously requested and provided during the current IPTUR reporting period. This report is provided in **Appendix 3**.

As discussed above, during this reporting period, one release occurred at a Lakehead System facility that triggered PHMSA reporting requirements that did not meet the CD reporting threshold per this paragraph. When applicable, releases are reported to PHMSA in accordance with either 49 C.F.R. § 195.50(b), which

requires the reporting of any release of 5 gallons or more of hazardous liquid, or 49 C.F.R. § 195.50(e), which requires reporting if the initial estimated property damage, including the cost of clean-up and recovery, value of lost product, and/or damage to the property of the operator and/or others would exceed $50,000. With respect to the releases, when they occur, Enbridge proceeds without delay to dispatch trained personnel to the location of the leak and takes action to prevent any migration of oil into waters of the United States, including shutting down the affected line.

147. [Update on Discharges from a Lakehead System Pipeline reported in SAR10]

There is one update to SAR10 report at a Lakehead System facility, as shown in **Table IX-6**. This discharge at a Lakehead System facility was not CD reportable, but for reporting consistency with previous SARs the information has been included in the table.

148. [Copies of all Post Incident Reports in IPTUR10]

A copy of each post incident report is provided in **Appendix 3**.

ENBRIDGE

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on any personal knowledge I may have and my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

FOR DEFENDANTS:

ENBRIDGE ENERGY, LIMITED PARTNERSHIP,
ENBRIDGE PIPELINES (LAKEHEAD) L.L.C.,
ENBRIDGE ENERGY PARTNERS, L.P.,
ENBRIDGE ENERGY MANAGEMENT, L.L.C.,
ENBRIDGE ENERGY COMPANY, INC., and
ENBRIDGE EMPLOYEE SERVICES, INC.,

[redacted], Vice President U.S. Operations,
Liquids Pipelines

FOR DEFENDANTS:

ENBRIDGE OPERATIONAL SERVICES, INC.,
ENBRIDGE PIPELINES INC., and
ENBRIDGE EMPLOYEE SERVICES CANADA INC.

[redacted] Executive Vice President and President,
Liquids Pipelines

Appendix 1 IPTUR Sections A-J and IX Tables

Reporting Period: May 23, 2022 to October 18, 2022

Section A

There are no tables associated with Section A.

Section B

There are no tables associated with Section B.

Section C

There are no tables associated with Section C.

Section D

The following 1 page is Table D-1: P. 28.a-b ILI Runs Completed During this Reporting Period.

Section D

Notes for Section D tables:

1. Dates below are in month/day/year format.
2. For all dates where the deadline fell on a weekend or US holiday the date required was adjusted to the next business day per Consent Decree Definition for “Day” under IV.10.m.

Table D-1: P. 28.a-b ILI Runs Completed During this Reporting Period

Tool Run ID	Line	Segment	Tool	Pull Date[ODS1]	Threat Monitored	Required Completion Date[ODS2]
10888	04	[redacted]	DuDi UCM	7/20/2022	Corrosion	10/17/2022
10888	04		DuDi UCM	7/20/2022	Crack	10/17/2022
10895	04		DuDi UCM	5/25/2022	Corrosion	6/29/2022
10895	04		DuDi UCM	5/25/2022	Crack	6/13/2022
10904	05		MFL4	7/21/2022	Corrosion	8/23/2022
10904	05		MFL4	7/21/2022	Geometry	8/23/2022
10905	05		UCx	7/13/2022	Crack	8/8/2022
10907	05		UCx	6/28/2022	Crack	7/25/2022
10909	05		UCx	6/17/2022	Crack	7/18/2022
11053	06A		UCx	6/18/2022	Crack	9/16/2022
12046	06A		MFL4	5/23/2022	Corrosion	6/6/2022
12046	06A		MFL4	5/23/2022	Geometry	1/9/2023
10300	93		UCx	6/1/2022	Crack	10/3/2022

TABLE NOTE:

[ODS1] Pull Date: Milestone Report – Power BI Dashboard

[ODS2] Required Completion Date:

The following 1 page is Table D-4: P. 30 Changes to Previous 12-Month ILI Schedule (May 23, 2021 to May 22, 2022).

Table D-4: P. 30 Changes to Previous 12-Month ILI Schedule (May 23, 2021 – May 22, 2022)							
Original Run ID	**Revised Run ID**	**Line**	**Segment Name**	**Tool**	**Threat Monitored**	**Required Completion Date**	**Schedule Revision Comments**
11195	N/A	5	[redacted]	MFL4	Corrosion	5/3/2023	Required completion date updated from 4/4/2023 to 5/3/2023 based on actual tool pulled date of last run.
11195	N/A	5		MFL4	Geometry	5/3/2023	Required completion date updated from 4/4/2023 to 5/3/2023 based on actual tool pulled date of last run.
11145	N/A	5		MFL4	Corrosion	5/6/2023	Required completion date updated from 4/4/2023 to 5/6/2023 based on actual tool pulled date of last run.
11145	N/A	5		MFL4	Geometry	5/6/2023	Required completion date updated from 4/4/2023 to 5/6/2023 based on actual tool pulled date of last run.

The following 1 page is Table D-6: P. 31 ILIs with Minor Tool Performance Deficiencies.

Table D-6: P. 31 ILIs with Minor Tool Performance Deficiencies							
Tool Run ID	**Line**	**Segment**	**Tool**	**Inspection Deadline** *ODS1*	**Pull Date** *ODS2*	**ILI Tool Run Accepted?**	**Further Action Required?**
12061	6A	[redacted]	Vectra	4/27/2022	4/28/2022[1]	Yes	No
12054	93		MFL-A	10/3/2022	4/7/2022	Yes	No
10301	93		MFL-A	10/3.2022	4/19/2022	Yes	No

TABLE NOTE:

ODS1 Inspection Deadline: Previous SAR

ODS2 Pull Date: Milestone Report – Power BI Dashboard

1 Initial run was completed on 4/8/2022, prior to inspection deadline. See P144 story for more details.

The following 1 page is Table D-7: P. 32.a-c Valid In-line Inspection Runs with Initial ILI Report Received.

Table D-7: P. 32.a-c Valid In-line Inspection Runs with Initial ILI Report Received							
Tool Run ID[1]	**Line**	**Segment**	**Tool**	**Report Type**	**Report Due Date**	**Report Received Date[ODS1]**	**Report Received On Time?**
10888	04	[redacted]	DuDi UCM	Corrosion	10/18/2022	10/18/2022	Yes
10895	04		DuDi UCM	Corrosion	8/23/2022	8/23/2022	Yes
10895	04		DuDi UCM	Crack	9/22/2022	9/22/2022	Yes
10879	04		DuDi UCM	Corrosion	7/5/2022	7/5/2022	Yes
10879	04		DuDi UCM	Crack	8/4/2022	8/4/2022	Yes
10901	05		MFL4	Corrosion	8/1/2022	8/1/2022	Yes
10901	05		MFL4	Geometry	8/1/2022	8/1/2022	Yes
10909	05		UCx	Crack	10/17/2022	10/17/2022	Yes
12071	05		MFL4	Corrosion	8/4/2022	8/4/2022	Yes
12071	05		MFL4	Geometry	8/4/2022	8/4/2022	Yes
10919	06A		USWM+	Corrosion	6/14/2022	6/14/2022	Yes
12046	06A		MFL4	Corrosion	8/22/2022	8/22/2022	Yes
12046	06A		MFL4	Geometry	8/22/2022	8/22/2022	Yes
11053	06A		UCx	Crack	10/17/2022	10/17/2022	Yes
12061	06A		Vectra	Corrosion	7/27/2022	7/7/2022	Yes
11028	62		MFL4	Corrosion	8/2/2022	6/27/2022	Yes
11028	62		MFL4	Geometry	8/2/2022	6/27/2022	Yes
10296	93		UCx	Crack	8/22/2022	8/22/2022	Yes
12053	93		XGG	Geometry	6/6/2022	6/7/2022	No
12054	93		MFL-A	Corrosion	7/6/2022	7/6/2022	Yes
10301	93		MFL-A	Corrosion	7/18/2022	7/19/2022	No
10301	93		MFL-A	Geometry	7/18/2022	7/19/2022	No
10300	93		UCx	Crack	9/29/2022	9/29/2022	Yes
10298	93		UCx	Crack	9/8/2022	9/8/2022	Yes
12055	93		XGG	Geometry	6/22/2022	6/22/2022	Yes
12056	93		MFL-A	Corrosion	8/2/2022	8/2/2022	Yes

TABLE NOTE:

[ODS1] Report Received Date: Vendor ILI Report Email

The following 1 page is Table D-8: P. 33.b ILIMRR Version 8.3 Table 5 Inside Diameter Priority Notification Criteria for Ovalities and Other Deformation Features.

Table D-8: P. 33.b ILIMRR Version 8.3 Table 5 Inside Diameter Priority Notification Criteria for Ovalities and Other Deformation Features				
NPS (inch)	**Actual OD (inch)**	**Actual OD (mm)**	**Min ID (inch)**	**Min ID (mm)**
6	6.625	168.28	5.2	131.2
8	8.625	219.08	7.1	179.3
10	10.75	273.05	9.1	230.3
12	12.75	323.85	11.0	279.4
16	16	406.4	14.3	362.0
18	18	457.2	15.8	400.1
20	20	508	17.9	454.7
22	22	558.8	19.7	500.6
24	24	609.6	21.5	546.1
26	26	660.4	23.5	596.9
30	30	762	27.1	687.8
34	34	863.6	31.1	789.9
36	36	914.4	33.0	837.0
42	42	1066.8	38.6	981.2
48	48	1219.2	44.4	1127.8

The following 1 page is Table D-9: P. 33.c-d Priority Features.

Table D-9: P. 33.c-d Priority Features											
Run ID	**Line**	**Seg-ment**	**Tech-nology**	**Girth Weld (GW)**	**Date Priority Notifica-tion Received** *ODS1*	**Date Priority Notification Reviewed (Valid PN)** *ODS2*	**Date of Discovery/ Date Features Added to Dig List** *ODS3*	**Pres-sure Restric-tion Requir-ed?**	**Date Pressure Restrict-ion Imposed** *ODS4*	**Repair/ Mitigation Deadline** *ODS5*	**Date of Repair/ Mitigation** *ODS6*
11053[1]	06A	[redacted]	UCx	270060	9/27/2022	9/28/2022	9/28/2022	Yes	9/30/2022	10/28/2022	10/13/2022

TABLE NOTE:

[1]AP12, Alternate Interim Pressure Restriction

ODS1 Date Priority Notification Received: Share Drive - ILI Vendor Priority Notification Email

ODS2 Date of Priority Notification Reviewed (Valid PN): Share Drive – Priority Notification Approval Request Email

ODS3 Date of Discovery/Date Features Added to Dig List: Share Drive – Priority Notification Approval Email

ODS4 Date Pressure Restriction Imposed: PPR Report

ODS5 Repair/Mitigation Deadline: eDig Report - Power BI Dashboard

ODS6 Date of Repair / Mitigation: eDig Report - Power BI Dashboard, added columns (NDE Assessed Date and Sleeve Post Repair Assessed Date) to report to track new interpretation dates for P40/77d

The following 2 pages are Table D-10: P. 34.a Preliminary Review of Initial ILI Reports.

Table D-10: P. 34.a Preliminary Review of Initial ILI Reports									
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Received Date** *ODS1*	**Report Type**	**Date Preliminary Review Required**	**Date Preliminary Review Completed** *ODS2*	**Review Complet-ed on Time?**	**Data Quality Concerns?** *ODS3*
10895	04	[redacted]	DuDi UCM	8/23/2022	Corrosion	9/22/2022	9/20/2022	Yes	Yes
10895	04		DuDi UCM	9/16/2022	Corrosion	10/16/2022	9/21/2022	Yes	No
10879	04		DuDi UCM	7/5/2022	Corrosion	8/4/2022	8/4/2022	Yes	Yes
10879	04		DuDi UCM	8/4/2022	Crack	9/3/2022	9/1/2022	Yes	No
10901	05		MFL4	8/1/2022	Corrosion	8/31/2022	8/29/2022	Yes	Yes
10901	05		MFL4	8/1/2022	Geometry	8/31/2022	8/24/2022	Yes	Yes
10902	05		UCc	5/12/2022	Crack	6/11/2022	6/2/2022	Yes	No
10911	05		UCc	5/11/2022	Crack	6/10/2022	6/2/2022	Yes	No
12071	05		MFL4	8/4/2022	Corrosion	9/3/2022	8/29/2022	Yes	No
12071	05		MFL4	8/4/2022	Geometry	9/3/2022	8/24/2022	Yes	No
12046	06A		MFL4	8/22/2022	Corrosion	9/21/2022	9/21/2022	Yes	No
12046	06A		MFL4	8/22/2022	Geometry	9/21/2022	9/21/2022	Yes	No
10919	06A		USWM+	6/14/2022	Corrosion	7/14/2022	7/14/2022	Yes	No
12061	06A		Vectra	7/7/2022	Corrosion	8/6/2022	8/4/2022	Yes	Yes
11028	62		MFL4	6/27/2022	Corrosion	7/27/2022	7/26/2022	Yes	Yes
11028	62		MFL4	6/27/2022	Geometry	7/27/2022	7/22/2022	Yes	Yes
11029	62		CD+	5/3/2022	Crack	6/2/2022	5/30/2022	Yes	No
12054	93		MFL-A	7/6/2022	Corrosion	8/5/2022	7/14/2022	Yes	Yes
12054	93		MFL-A	8/29/2022	Corrosion	9/28/2022	9/5/2022	Yes	Yes
12054	93		MFL-A	9/12/2022	Corrosion	10/12/2022	9/22/2022	Yes	No
10296	93		UCx	8/22/2022	Crack	9/21/2022	9/21/2022	Yes	No
12053	93		XGG	6/7/2022	Geometry	7/7/2022	6/21/2022	Yes	Yes
12053	93		XGG	8/9/2022	Geometry	9/8/2022	8/31/2022	Yes	No
10301	93		MFL-A	7/19/2022	Corrosion	8/18/2022	7/21/2022	Yes	Yes
10301	93		MFL-A	7/26/2022	Corrosion	8/25/2022	8/8/2022	Yes	Yes
10301	93		MFL-A	8/11/2022	Corrosion	9/10/2022	8/17/2022	Yes	No
10301	93		MFL-A	7/19/2022	Geometry	8/18/2022	7/21/2022	Yes	Yes

Table D-10: P. 34.a Preliminary Review of Initial ILI Reports									
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Received Date** *ODS1*	**Report Type**	**Date Preliminary Review Required**	**Date Preliminary Review Completed** *ODS2*	**Review Complet-ed on Time?**	**Data Quality Concerns?** *ODS3*
10301	93	[redacted]	MFL-A	7/26/2022	Geometry	8/25/2022	8/17/2022	Yes	No
12055	93		XGG	6/22/2022	Geometry	7/22/2022	7/11/2022	Yes	Yes
12055	93		XGG	8/22/2022	Geometry	9/21/2022	9/16/2022	Yes	No
12056	93		MFL-A	8/2/2022	Corrosion	9/1/2022	8/17/2022	Yes	Yes
12056	93		MFL-A	8/22/2022	Corrosion	9/21/2022	9/1/2022	Yes	No
10298	93		UCx	9/8/2022	Crack	10/8/2022	9/29/2022	Yes	No

TABLE NOTE:

ODS1 Report Received Date: Share Drive – PI Listing Approval Confirmation Email

ODS2 Date Preliminary Review Complete: Share Drive – PI Listing Approval Confirmation Email

ODS3 Data Quality Concerns?: Share Drive - Program Summary Document: Crack/Corrosion: Inspection Report Review and Remarks, Geometry: Back to Back Inspection Comparison

The following 1 page is Table D-11: P. 34.c ILI Reports with Reporting and/or Data Quality Issues.

Table D-11: P. 34.c ILI Reports with Reporting and/or Data Quality Issues								
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Type**	**Initial Report Received Date**[ODS1]	**Date Preliminary Review of Initial ILI Report Required**	**Date Preliminary Review of Initial ILI Report Completed**[ODS2]	**Data Quality Concerns Identified and Resolved**
10895	04	[redacted]	DuDi UCM	Corrosion	8/23/2022	9/22/2022	9/20/2022	Yes[1]
10879	04		DuDi UCM	Corrosion	7/5/2022	8/4/2022	8/4/2022	Yes[1]
10879	04		DuDi UCM	Crack	8/4/2022	9/3/2022	9/1/2022	Yes
10901	05		MFL4	Corrosion	8/1/2022	8/31/2022	8/29/2022	Yes
10901	05		MFL4	Geometry	8/1/2022	8/31/2022	8/24/2022	Yes
10902	05		UCC	Crack	5/12/2022	6/11/2022	6/2/2022	Yes
10911	05		UCC	Crack	5/11/2022	6/10/2022	6/2/2022	Yes
12071	05		MFL4	Geometry	8/4/2022	9/3/2022	8/24/2022	Yes
12046	06A		MFL4	Geometry	8/22/2022	9/21/2022	9/19/2022	Yes
12061	06A		Vectra	Corrosion	7/7/2022	8/6/2022	8/4/2022	Yes
11028	62		MFL4	Corrosion	6/27/2022	7/27/2022	7/26/2022	Yes
11028	62		MFL4	Geometry	6/27/2022	7/27/2022	7/22/2022	Yes
12053	93		XGG	Geometry	6/7/2022	7/7/2022	6/21/2022	Yes[1]
12054	93		MFL-A	Corrosion	7/6/2022	8/5/2022	7/14/2022	Yes[1]
12054	93		MFL-A	Corrosion	8/29/2022	9/28/2022	9/5/2022	Yes[1]
10301	93		MFL-A	Corrosion	7/19/2022	8/18/2022	7/21/2022	Yes[1]
10301	93		MFL-A	Corrosion	7/26/2022	8/25/2022	8/8/2022	Yes[1]
10301	93		MFL-A	Geometry	7/19/2022	8/18/2022	7/21/2022	Yes[1]
12055	93		XGG	Geometry	6/22/2022	7/22/2022	7/11/2022	Yes[1]
12056	93		MFL-A	Corrosion	8/2/2022	9/1/2022	8/17/2022	Yes[1]

TABLE NOTE:

[1]A reissue was requested from the ILI vendor to correct the data quality issue.

[ODS1] Initial Report Received Date ODS: Share Drive – PI Listing Approval Confirmation Email

[ODS2] Date Preliminary Review of Initial ILI Report Completed ODS: PI Listing Approval Request Email

The following 1 page is Table D-12: P. 34.d Data Quality Evaluation Timelines.

Table D-12: P. 34.d Data Quality Evaluation Timelines							
Tool Run ID	**Line**	**Segment**	**Tool**	**Pull Date[ODS1]**	**Report Type**	**Deadline to Complete All ILI Data Quality Evaluations**	**Data Quality Evaluations Completed Within 180 Days?**
10895	04	[redacted]	DuDi UCM	5/25/2022	Corrosion	11/21/2022	Yes
10879	04		DuDi UCM	4/6/2022	Corrosion	10/3/2022	Yes
10879	04		DuDi UCM	4/6/2022	Crack	10/3/2022	Yes
10901	05		MFL4	5/3/2022	Corrosion	10/30/2022	Yes
10901	05		MFL4	5/3/2022	Geometry	10/30/2022	Yes
10902	05		UCc	1/12/2022	Crack	7/11/2022	Yes
10911	05		UCc	1/11/2022	Crack	7/10/2022	Yes
12071	05		MFL4	5/6/2022	Corrosion	11/2/2022	Yes
12071	05		MFL4	5/6/2022	Geometry	11/2/2022	Yes
10919	06A		USWM+	3/16/2022	Corrosion	9/12/2022	Yes
12046	06A		MFL4	5/23/2022	Corrosion	11/19/2022	Yes
12046	06A		MFL4	5/23/2022	Geometry	11/19/2022	Yes
12061	06A		Vectra	4/28/2022	Corrosion	10/25/2022	Yes
11028	62		MFL4	5/4/2022	Corrosion	10/31/2022	Yes
11028	62		MFL4	5/4/2022	Geometry	10/31/2022	Yes
11029	62		CD+	3/4/2022	Crack	8/31/2022	Yes
10296	93		UCx	4/22/2022	Crack	10/19/2022	Yes
12053	93		XGG	3/8/2022	Geometry	9/4/2022	Yes
12054	93		MFL-A	4/7/2022	Corrosion	10/4/2022	Yes
10301	93		MFL-A	4/19/2022	Corrosion	10/16/2022	Yes
10301	93		MFL-A	4/19/2022	Geometry	10/16/2022	Yes
10298	93		UCx	5/11/2022	Crack	11/7/2022	Yes
12055	93		XGG	3/24/2022	Geometry	9/20/2022	Yes
12056	93		MFL-A	5/4/2022	Corrosion	10/31/2022	Yes

TABLE NOTE:

[ODS1] Pull Date: Milestone Report – Power BI Dashboard

The following 1 page is Table D-13: P. 34.e Discrepancies between Two Successive ILI Runs.

Table D-13: P. 34.e Discrepancies between Two Successive ILI Runs							
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Type**	**Severity Discrepancy?**	**Density Discrepancy?**	**Feature Type Discrepancy?**
10895	04	[redacted]	DuDi UCM	Corrosion	No	Yes	No
10879	04		DuDi UCM	Crack	No	Yes	No
10901	05		MFL4	Geometry	No	Yes	No
10902	05		UCC	Crack	No	Yes	No
10911	05		UCC	Crack	No	Yes	No
12071	05		MFL4	Geometry	Yes	Yes	No
11029	62		CD+	Crack	No	Yes	No
11028	62		MFL4	Corrosion	No	Yes	No

The following 1 page is Table D-14: P. 37 Deadlines for Placing Features Requiring Excavation on the Dig List.

Table D-14: P. 37 Deadlines for Placing Features Requiring Excavation on the Dig List													
Tool Run ID	**Line**	**Seg-ment**	**Tool**	**Threat Type**	**Pull Date** *ODS1*	**Burst Pressure Calculation Date** *ODS2*	**Remaining Life Calculation Date** *ODS3*	**Other Features Identified Date** *ODS4*	**SQuAD and QuAD Complet-ion date** *ODS5*	**Numbe r of Featur es Identifi ed**	**Date All Features Added to Dig List** *ODS6*	**Within 180 Days of Tool Pull Date?**	**Within 5 Days of Calculat ions?**
10919	L6A	[redacted]	USWM+	Corrosion	3/16/2022	7/14/2022	7/14/2022	7/14/2022	7/14/2022	22	7/14/2022	Yes	Yes
10919	L6A		USWM+	Corrosion	3/16/2022	7/14/2022	7/14/2022	7/14/2022	7/14/2022	31	7/15/2022	Yes	Yes
12061	L6A		VECTR A	Corrosion	4/28/2022	8/4/2022	8/4/2022	8/4/2022	8/4/2022	36	8/4/2022	Yes	Yes

TABLE NOTES:

ODS1 Pull Date: Milestone Report – Power BI Dashboard

ODS2 Burst Pressure Calculation Date: Share Drive - PI Listing Approval Confirmation Email

ODS3 Remaining Life Calculation Date: Share Drive - PI Listing Approval Confirmation Email

ODS4 Other Features Identified Date: Share Drive - PI Listing Approval Confirmation Email

ODS5 SQuAD and QuAD Completion date: Share Drive - PI Listing Approval Confirmation Email

ODS6 Date All Features Added to Dig List: Share Drive - Assessment Sheet – Column JB "UPLOAD TO EDIG", PI Listing (Corrosion) – Column IV "Upload to Edig"

The following 3 pages are Table D-15: P. 39.a-b FREs Repaired and Planned for Repair.

Table D-15: P. 39.a-b FREs Repaired and Planned for Repair										
Dig ID	Line	Segment	Girth Weld	Tool Run ID	Date of Repair / Mitigation[1], *ODS1*	Crack Features	Corrosion Features	Axial Grooving Features	Interacting Features	Geometry Features
31096	L0004	[redacted]	48060	6679	7/21/2022	0	1	0	0	0
31097	L0004		49080	6679	7/11/2022	0	1	0	0	0
31098	L0004		49240	6679	7/23/2022	0	1	0	0	0
31099	L0004		49280	6679	7/30/2022	0	1	0	0	0
31100	L0004		49530	6679	7/12/2022	0	1	0	0	0
31101	L0004		54210	6679	7/30/2022	0	1	0	0	0
31472	L0006A		18190	10919	FR	0	1	0	0	0
31473	L0006A		73930	10919	FR	0	1	0	0	0
31474	L0006A		74040	10919	FR	0	1	0	0	0
31475	L0006A		74790	10919	FR	0	1	0	0	0
31476	L0006A		80630	10919	FR	0	1	0	0	0
31477	L0006A		92550	10919	FR	0	1	0	0	0
31478	L0006A		95950	10919	FR	0	1	0	0	0
31479	L0006A		96300	10919	FR	0	1	0	0	0
31480	L0006A		96310	10919	FR	0	1	0	0	0
31481	L0006A		127040	10919	FR	0	1	0	0	0
31482	L0006A		137980	10919	FR	0	1	0	0	0
31483	L0006A		155400	10919	FR	0	1	0	0	0
31484	L0006A		174640	10919	FR	0	1	0	0	0
31485	L0006A		256721	10919	FR	0	1	0	0	0
31486	L0006A		257540	10919	FR	0	1	0	0	0
31487	L0006A		289800	10919	FR	0	1	0	0	0
31488	L0006A		297480	10919	FR	0	1	0	0	0
31490	L0006A		298810	10919	FR	0	1	0	0	0
31491	L0006A		299720	10919	FR	0	1	0	0	0
31493	L0006A		302470	10919	FR	0	1	0	0	0
31494	L0006A		303050	10919	FR	0	1	0	0	0
31496	L0006A		309480	10919	FR	0	1	0	0	0
31498	L0006A		73870	10919	FR	0	1	0	0	0
31499	L0006A		82500	10919	FR	0	1	0	0	0
31500	L0006A		88260	10919	FR	0	1	0	0	0
31501	L0006A		88840	10919	FR	0	1	0	0	0

Table D-15: P. 39.a-b FREs Repaired and Planned for Repair										
Dig ID	Line	Segment	Girth Weld	Tool Run ID	Date of Repair / Mitigation[1], *ODS1*	Crack Features	Corrosion Features	Axial Grooving Features	Interacting Features	Geometry Features
31502	L0006A	[redacted]	100120	10919	FR	0	1	0	0	0
31503	L0006A		109830	10919	FR	0	1	0	0	0
31504	L0006A		149930	10919	FR	0	1	0	0	0
31505	L0006A		224170	10919	FR	0	1	0	0	0
31506	L0006A		237600	10919	FR	0	1	0	0	0
31507	L0006A		249190	10919	FR	0	1	0	0	0
31508	L0006A		250670	10919	FR	0	1	0	0	0
31509	L0006A		273430	10919	FR	0	1	0	0	0
31510	L0006A		276150	10919	FR	0	1	0	0	0
31511	L0006A		278260	10919	FR	0	1	0	0	0
31512	L0006A		279820	10919	FR	0	1	0	0	0
31513	L0006A		280000	10919	FR	0	1	0	0	0
31514	L0006A		280790	10919	FR	0	1	0	0	0
31515	L0006A		289430	10919	FR	0	1	0	0	0
31516	L0006A		289630	10919	FR	0	1	0	0	0
31517	L0006A		292570	10919	FR	0	1	0	0	0
31518	L0006A		295080	10919	FR	0	1	0	0	0
31519	L0006A		297120	10919	FR	0	1	0	0	0
31520	L0006A		297910	10919	FR	0	1	0	0	0
31521	L0006A		299420	10919	FR	0	1	0	0	0
31522	L0006A		300920	10919	FR	0	1	0	0	0
31523	L0006A		301880	10919	FR	0	1	0	0	0
31524	L0006A		302160	10919	FR	0	1	0	0	0
31525	L0006A		302190	10919	FR	0	1	0	0	0
31526	L0006A		306470	10919	FR	0	1	0	0	0
31527	L0006A		310450	10919	FR	0	1	0	0	0
31528	L0006A		310810	10919	FR	0	1	0	0	0
31593	L0006A		45130	12061	FR	0	1	0	0	0
31594	L0006A		45390	12061	FR	0	1	0	0	0
31595	L0006A		57830	12061	FR	0	1	0	0	0
31596	L0006A		64570	12061	FR	0	1	0	0	0
31597	L0006A		64830	12061	FR	0	1	0	0	0

Table D-15: P. 39.a-b FREs Repaired and Planned for Repair										
Dig ID	**Line**	**Segment**	**Girth Weld**	**Tool Run ID**	**Date of Repair / Mitigation[1], *ODS1***	**Crack Features**	**Corrosion Features**	**Axial Grooving Features**	**Interacting Features**	**Geometry Features**
31598	L0006A	[redacted]	101870	12061	FR	0	1	0	0	0
31599	L0006A		115000	12061	FR	0	1	0	0	0
31600	L0006A		123920	12061	FR	0	1	0	0	0
31601	L0006A		160140	12061	FR	0	1	0	0	0
31602	L0006A		165590	12061	FR	0	1	0	0	0
31603	L0006A		169990	12061	FR	0	1	0	0	0
31604	L0006A		174660	12061	FR	0	2	0	0	0
31605	L0006A		178850	12061	FR	0	1	0	0	0
31606	L0006A		184960	12061	FR	0	1	0	0	0
31607	L0006A		185580	12061	FR	0	2	0	0	0
31608	L0006A		187800	12061	FR	0	1	0	0	0
31609	L0006A		187850	12061	FR	0	1	0	0	0
31610	L0006A		188020	12061	FR	0	3	0	0	0
31611	L0006A		189830	12061	FR	0	1	0	0	0
31612	L0006A		190480	12061	FR	0	1	0	0	0
31613	L0006A		196210	12061	FR	0	1	0	0	0
31614	L0006A		200170	12061	FR	0	1	0	0	0
31615	L0006A		216570	12061	FR	0	1	0	0	0
31616	L0006A		220620	12061	FR	0	1	0	0	0
31617	L0006A		221100	12061	FR	0	1	0	0	0
31618	L0006A		222010	12061	FR	0	2	0	0	0
31619	L0006A		225660	12061	FR	0	1	0	0	0
31620	L0006A		225780	12061	FR	0	1	0	0	0
31621	L0006A		225860	12061	FR	0	1	0	0	0
31622	L0006A		230000	12061	FR	0	1	0	0	0
31623	L0006A		247400	12061	FR	0	1	0	0	0
Total: 95						**0**	**95**	**0**	**0**	**0**

TABLE NOTE:

[1] "FR" indicates that this information is outside the reporting period of this IPTUR

[1ODS] Date of Repair / Mitigation: eDig Report - Power BI Dashboard, Added columns (NDE Assessed Date and Sleeve Post Repair Assessed Date) to report to track new interpretation dates for P40/77d

The following 1 page is Table D-16: P. 40 ILI Programs with all Features Requiring Excavation Repaired/Mitigated during the reporting period.

Table D-16: P. 40 ILI Programs with all Features Requiring Excavation Repaired/Mitigated during the reporting period						
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Type**	**Last NDE Report Approved Date**[ODS1]	**Analysis of Field Data/Statistical Analysis Date**[1, ODS2]
6679	L0004	[redacted]	UCMUTWM	UTWM	8/24/2022	9/20/2022

TABLE NOTE:

[1] *Enbridge, the EPA and the ITP discussed refinements to when excavations of FREs would be deemed "completed." Enbridge and the ITP have provided an interpretation document to provide clarity around this issue and are awaiting further comments or concurrence from the EPA on this issue. For the purposes of this IPTUR the Statistical Analysis Completed by the SML date is being used.*

[ODS1] *Last NDE Report Approved Date ODS: AP "Date of Mitigation" eDig, Reissue: "Original NDE Report Approval Date" eDig*

[ODS2] *Analysis of Field Data/Statistical Analysis Date: Share Drive - Program Summary Document: Geometry: Field Trending, Crack: Tool Bias, Re-Inspection Interval, Dig Deadline Revisions, Trending, Corrosion: Updates based on Statistical Analysis of field data*

The following 2 pages are Table D-17: P. 44.a-b Initial Predicted Burst Pressure and Initial Remaining Life Calculations.

Table D-17: P. 44.a-b Initial Predicted Burst Pressure and Initial Remaining Life Calculations											
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Type**	**Pull Date** *ODS1*	**Date Preliminary Review Completed** *ODS2*	**Data Quality Concerns?**	**Calculation Deadline (1)[1]**	**Calculation Deadline (2)[1]**	**Burst Pressure Calculation Date** *ODS3*	**Remaining Life Calculation Date** *ODS4*
10895	04	[redacted]	DuDi UCM	Corrosion	5/25/2022	9/21/2022	Yes	11/16/2022	11/16/2022	9/21/2022	9/21/2022
10879	04		DuDi UCM	Corrosion	4/6/2022	8/4/2022	Yes	9/29/2022	9/28/2022	8/4/2022	8/4/2022
10879	04		DuDi UCM	Crack	4/6/2022	9/1/2022	No	10/27/2022	9/28/2022	9/1/2022	9/1/2022
10902	05		UCc	Crack	1/12/2022	6/2/2022	No	7/28/2022	7/6/2022	6/2/2022	6/2/2022
10901	05		MFL4	Corrosion	5/3/2022	8/29/2022	Yes	10/24/2022	10/25/2022	8/29/2022	8/29/2022
10911	05		UCc	Crack	1/11/2022	6/2/2022	No	7/28/2022	7/5/2022	6/2/2022	6/2/2022
12071	05		MFL4	Corrosion	5/6/2022	8/29/2022	No	10/24/2022	10/28/2022	8/29/2022	8/29/2022
10919	06A		USWM+	Corrosion	3/16/2022	7/14/2022	No	9/8/2022	9/7/2022	7/14/2022	7/14/2022
12046	06A		MFL4	Corrosion	5/23/2022	9/21/2022	No	11/16/2022	11/14/2022	9/21/2022	9/21/2022
12061	06A		Vectra	Corrosion	4/28/2022	8/4/2022	Yes	9/29/2022	10/20/2022	8/4/2022	8/4/2022
11028	62		MFL4	Corrosion	5/4/2022	7/26/2022	Yes	9/20/2022	10/26/2022	7/26/2022	7/26/2022
11029	62		CD+	Crack	3/4/2022	5/30/2022	No	7/25/2022	8/26/2022	5/30/2022	5/30/2022
11028	62		MFL4	Corrosion	5/4/2022	7/26/2022	Yes	9/20/2022	10/26/2022	7/26/2022	7/26/2022
10296	93		UCx	Crack	4/22/2022	9/20/2022	No	11/15/2022	10/14/2022	9/20/2022	9/20/2022
12054	93		MFL-A	Corrosion	4/7/2022	9/22/2022	Yes	11/17/2022	9/29/2022	9/22/2022	9/22/2022
10301	93		MFL-A	Corrosion	4/19/2022	8/17/2022	Yes	10/12/2022	10/11/2022	8/17/2022	8/17/2022
10298	93		UCx	Crack	5/11/2022	9/29/2022	No	11/24/2022	11/2/2022	9/29/2022	9/29/2022
12056	93		MFL-A	Corrosion	5/4/2022	9/1/2022	Yes	10/27/2022	10/26/2022	9/1/2022	9/1/2022

TABLE NOTE:

[1] Calculation Deadline (1) – 8 weeks after completing data quality review with respect to the feature and/or pipeline section where the feature is located. Calculation Deadline (2) – 175 days after the ILI tool pull date.

[ODS1] *Pull Date: Milestone Report – Power BI Dashboard*
[ODS2] *Date Preliminary Review Complete: Share Drive – PI Listing Approval Confirmation Email*
[ODS3] *Burst Pressure Calculation Date: PI Listing Approval Confirmation Email – Share Drive Documentation*
[ODS4] *Remaining Life Calculation Date: PI Listing Approval Confirmation Email – Share Drive Documentation*

The following 3 pages are Table D-18: P. 46.a, c Identified Digs.

Table D-18: P. 46.a, c Identified Digs								
Dig ID	**Line**	**Segment**	**Girth Weld**	**Tool Run ID**	**Tech-nology**	**Date of Discovery / Feature Added to Dig List** *ODS1*	**Repair / Mitigation Deadline** *ODS2*	**Date of Repair / Mitigation[1],** *ODS3*
31096	L0004	[redacted]	48060	6679	UTWM	1/6/2022	1/6/2023	7/21/2022
31097	L0004		49080	6679	UTWM	1/6/2022	1/6/2023	7/11/2022
31098	L0004		49240	6679	UTWM	1/6/2022	1/6/2023	7/23/2022
31099	L0004		49280	6679	UTWM	1/6/2022	1/6/2023	7/30/2022
31100	L0004		49530	6679	UTWM	1/6/2022	1/6/2023	7/12/2022
31101	L0004		54210	6679	UTWM	1/6/2022	1/6/2023	7/30/2022
31472	L0006A		18190	10919	UTWM	7/14/2022	7/14/2023	FR
31473	L0006A		73930	10919	UTWM	7/14/2022	7/14/2023	FR
31474	L0006A		74040	10919	UTWM	7/14/2022	7/14/2023	FR
31475	L0006A		74790	10919	UTWM	7/14/2022	7/14/2023	FR
31476	L0006A		80630	10919	UTWM	7/14/2022	7/14/2023	FR
31477	L0006A		92550	10919	UTWM	7/14/2022	7/14/2023	FR
31478	L0006A		95950	10919	UTWM	7/14/2022	7/14/2023	FR
31479	L0006A		96300	10919	UTWM	7/14/2022	7/14/2023	FR
31480	L0006A		96310	10919	UTWM	7/14/2022	7/14/2023	FR
31481	L0006A		127040	10919	UTWM	7/14/2022	7/14/2023	FR
31482	L0006A		137980	10919	UTWM	7/14/2022	7/14/2023	FR
31483	L0006A		155400	10919	UTWM	7/14/2022	7/14/2023	FR
31484	L0006A		174640	10919	UTWM	7/14/2022	7/14/2023	FR
31485	L0006A		256721	10919	UTWM	7/14/2022	7/14/2023	FR
31486	L0006A		257540	10919	UTWM	7/14/2022	7/14/2023	FR
31487	L0006A		289800	10919	UTWM	7/14/2022	7/14/2023	FR
31488	L0006A		297480	10919	UTWM	7/14/2022	7/14/2023	FR
31490	L0006A		298810	10919	UTWM	7/14/2022	7/14/2023	FR
31491	L0006A		299720	10919	UTWM	7/14/2022	7/14/2023	FR
31493	L0006A		302470	10919	UTWM	7/14/2022	7/14/2023	FR
31494	L0006A		303050	10919	UTWM	7/14/2022	7/14/2023	FR
31496	L0006A		309480	10919	UTWM	7/14/2022	7/14/2023	FR
31498	L0006A		73870	10919	UTWM	7/15/2022	1/10/2023	FR
31499	L0006A		82500	10919	UTWM	7/15/2022	1/10/2023	FR
31500	L0006A		88260	10919	UTWM	7/15/2022	1/10/2023	FR
31501	L0006A		88840	10919	UTWM	7/15/2022	1/10/2023	FR
31502	L0006A		100120	10919	UTWM	7/15/2022	1/10/2023	FR
31503	L0006A		109830	10919	UTWM	7/15/2022	1/10/2023	FR
31504	L0006A		149930	10919	UTWM	7/15/2022	1/10/2023	FR
31505	L0006A		224170	10919	UTWM	7/15/2022	1/10/2023	FR
31506	L0006A		237600	10919	UTWM	7/15/2022	1/10/2023	FR
31507	L0006A		249190	10919	UTWM	7/15/2022	1/10/2023	FR
31508	L0006A		250670	10919	UTWM	7/15/2022	1/10/2023	FR
31509	L0006A		273430	10919	UTWM	7/15/2022	1/10/2023	FR

Table D-18: P. 46.a, c Identified Digs								
Dig ID	Line	Segment	Girth Weld	Tool Run ID	Tech-nology	Date of Discovery / Feature Added to Dig List *ODS1*	Repair / Mitigation Deadline *ODS2*	Date of Repair / Mitigation[1], *ODS3*
31510	L0006A	[redacted]	276150	10919	UTWM	7/15/2022	1/10/2023	FR
31511	L0006A		278260	10919	UTWM	7/15/2022	1/10/2023	FR
31512	L0006A		279820	10919	UTWM	7/15/2022	1/10/2023	FR
31513	L0006A		280000	10919	UTWM	7/15/2022	1/10/2023	FR
31514	L0006A		280790	10919	UTWM	7/15/2022	1/10/2023	FR
31515	L0006A		289430	10919	UTWM	7/15/2022	1/10/2023	FR
31516	L0006A		289630	10919	UTWM	7/15/2022	1/10/2023	FR
31517	L0006A		292570	10919	UTWM	7/15/2022	1/10/2023	FR
31518	L0006A		295080	10919	UTWM	7/15/2022	1/10/2023	FR
31519	L0006A		297120	10919	UTWM	7/15/2022	1/10/2023	FR
31520	L0006A		297910	10919	UTWM	7/15/2022	1/10/2023	FR
31521	L0006A		299420	10919	UTWM	7/15/2022	1/10/2023	FR
31522	L0006A		300920	10919	UTWM	7/15/2022	1/10/2023	FR
31523	L0006A		301880	10919	UTWM	7/15/2022	1/10/2023	FR
31524	L0006A		302160	10919	UTWM	7/15/2022	1/10/2023	FR
31525	L0006A		302190	10919	UTWM	7/15/2022	1/10/2023	FR
31526	L0006A		306470	10919	UTWM	7/15/2022	1/10/2023	FR
31527	L0006A		310450	10919	UTWM	7/15/2022	1/10/2023	FR
31528	L0006A		310810	10919	UTWM	7/15/2022	1/10/2023	FR
31593	L0006A		45130	12061	MFL	8/4/2022	8/4/2023	FR
31594	L0006A		45390	12061	MFL	8/4/2022	8/4/2023	FR
31595	L0006A		57830	12061	MFL	8/4/2022	8/4/2023	FR
31596	L0006A		64570	12061	MFL	8/4/2022	8/4/2023	FR
31597	L0006A		64830	12061	MFL	8/4/2022	8/4/2023	FR
31598	L0006A		101870	12061	MFL	8/4/2022	1/31/2023	FR
31599	L0006A		115000	12061	MFL	8/4/2022	1/31/2023	FR
31600	L0006A		123920	12061	MFL	8/4/2022	1/31/2023	FR
31601	L0006A		160140	12061	MFL	8/4/2022	1/31/2023	FR
31602	L0006A		165590	12061	MFL	8/4/2022	8/4/2023	FR
31603	L0006A		169990	12061	MFL	8/4/2022	8/4/2023	FR
31604	L0006A		174660	12061	MFL	8/4/2022	1/31/2023	FR
31605	L0006A		178850	12061	MFL	8/4/2022	8/4/2023	FR
31606	L0006A		184960	12061	MFL	8/4/2022	1/31/2023	FR
31607	L0006A		185580	12061	MFL	8/4/2022	8/4/2023	FR
31608	L0006A		187800	12061	MFL	8/4/2022	1/31/2023	FR
31609	L0006A		187850	12061	MFL	8/4/2022	1/31/2023	FR
31610	L0006A		188020	12061	MFL	8/4/2022	1/31/2023	FR
31611	L0006A		189830	12061	MFL	8/4/2022	8/4/2023	FR
31612	L0006A		190480	12061	MFL	8/4/2022	8/4/2023	FR
31613	L0006A		196210	12061	MFL	8/4/2022	8/4/2023	FR

Table D-18: P. 46.a, c Identified Digs								
Dig ID	**Line**	**Segment**	**Girth Weld**	**Tool Run ID**	**Tech-nology**	**Date of Discovery / Feature Added to Dig List** *ODS1*	**Repair / Mitigation Deadline** *ODS2*	**Date of Repair / Mitigation**[1], *ODS3*
31614	L0006A	[redacted]	200170	12061	MFL	8/4/2022	8/4/2023	FR
31615	L0006A		216570	12061	MFL	8/4/2022	8/4/2023	FR
31616	L0006A		220620	12061	MFL	8/4/2022	8/4/2023	FR
31617	L0006A		221100	12061	MFL	8/4/2022	8/4/2023	FR
31618	L0006A		222010	12061	MFL	8/4/2022	8/4/2023	FR
31619	L0006A		225660	12061	MFL	8/4/2022	8/4/2023	FR
31620	L0006A		225780	12061	MFL	8/4/2022	8/4/2023	FR
31621	L0006A		225860	12061	MFL	8/4/2022	8/4/2023	FR
31622	L0006A		230000	12061	MFL	8/4/2022	8/4/2023	FR
31623	L0006A		247400	12061	MFL	8/4/2022	1/31/2023	FR

TABLE NOTES:

[1] *"FR" indicates that this information is outside the reporting period of this IPTUR*

ODS1 Date of Discovery / Feature Added to Dig List: Share Drive - Assessment Sheet – Column JB "UPLOAD TO EDIG", PI Listing (Corrosion) – Column IV "Upload to Edig"

ODS2 Repair/Mitigation Deadline: eDig Report - Power BI Dashboard

ODS3 Repair / Mitigation Deadline: eDig Report - Power BI Dashboard, Added columns (NDE Assessed Date and Sleeve Post Repair Assessed Date) to report to track new interpretation dates for P40/77d

The following 2 pages are Table D-20: P. 46.b, d PPRs.

Table D-20: P. 46.b, d PPRs								
PR ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery** *ODS1*	**Repair / Mitigation Deadline[1]** *ODS2*	**PPR Imposition Date** *ODS3*	**Repair / Mitigation Date** *ODS4*	**PPR Removal Date[2]** *ODS5*
35714	L0004	[redacted]	48060	1/6/2022	1/6/2023	1/7/2022	7/22/2022	10/7/2022
35715	L0004		49080	1/6/2022	1/6/2023	1/7/2022	7/11/2022	10/7/2022
35716	L0004		49240	1/6/2022	1/6/2023	1/7/2022	7/23/2022	10/7/2022
36178	L0006A		18190	7/14/2022	7/14/2023	7/18/2022	FR	FR
36179	L0006A		73870	7/15/2022	1/10/2023	7/18/2022	FR	FR
36180	L0006A		73930	7/14/2022	7/14/2023	7/18/2022	FR	FR
36181	L0006A		74040	7/14/2022	7/14/2023	7/18/2022	FR	FR
36182	L0006A		80630	7/14/2022	7/14/2023	7/18/2022	FR	FR
36183	L0006A		82500	7/15/2022	1/10/2023	7/18/2022	FR	FR
36184	L0006A		88260	7/15/2022	1/10/2023	7/18/2022	FR	FR
36185	L0006A		95950	7/14/2022	7/14/2023	7/18/2022	FR	FR
36186	L0006A		96300	7/14/2022	7/14/2023	7/18/2022	FR	FR
36187	L0006A		96310	7/14/2022	7/14/2023	7/18/2022	FR	FR
36188	L0006A		100120	7/15/2022	1/10/2023	7/18/2022	FR	FR
36189	L0006A		109830	7/15/2022	1/10/2023	7/18/2022	FR	FR
36190	L0006A		149930	7/15/2022	1/10/2023	7/18/2022	FR	FR
36191	L0006A		155400	7/14/2022	7/14/2023	7/18/2022	FR	FR
36192	L0006A		249190	7/15/2022	1/10/2023	7/18/2022	FR	FR
36193	L0006A		250670	7/15/2022	1/10/2023	7/18/2022	FR	FR
36194	L0006A		273430	7/15/2022	1/10/2023	7/18/2022	FR	FR
36195	L0006A		278260	7/15/2022	1/10/2023	7/18/2022	FR	FR
36196	L0006A		279820	7/15/2022	1/10/2023	7/18/2022	FR	FR
36197	L0006A		280000	7/15/2022	1/10/2023	7/18/2022	FR	FR
36198	L0006A		289430	7/15/2022	1/10/2023	7/18/2022	FR	FR
36199	L0006A		289630	7/15/2022	1/10/2023	7/18/2022	FR	FR
36200	L0006A		292570	7/15/2022	1/10/2023	7/18/2022	FR	FR
36201	L0006A		300920	7/15/2022	1/10/2023	7/18/2022	FR	FR
36202	L0006A		301880	7/15/2022	1/10/2023	7/18/2022	FR	FR
36203	L0006A		302190	7/15/2022	1/10/2023	7/18/2022	FR	FR
36245	L0006A		45130	8/4/2022	8/4/2023	8/5/2022	FR	FR
36246	L0006A		57830	8/4/2022	8/4/2023	8/5/2022	FR	FR
36247	L0006A		64570	8/4/2022	8/4/2023	8/5/2022	FR	FR
36248	L0006A		64830	8/4/2022	8/4/2023	8/5/2022	FR	FR
36249	L0006A		101870	8/4/2022	1/31/2023	8/5/2022	FR	FR
36250	L0006A		123920	8/4/2022	1/31/2023	8/5/2022	FR	FR
36251	L0006A		160140	8/4/2022	1/31/2023	8/5/2022	FR	FR

Table D-20: P. 46.b, d PPRs								
PR ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery** *ODS1*	**Repair / Mitigation Deadline[1]** *ODS2*	**PPR Imposition Date** *ODS3*	**Repair / Mitigation Date** *ODS4*	**PPR Removal Date[2]** *ODS5*
36252	L0006A	[redacted]	165590	8/4/2022	8/4/2023	8/5/2022	FR	FR
36253	L0006A		169990	8/4/2022	8/4/2023	8/5/2022	FR	FR
36254	L0006A		174660	8/4/2022	1/31/2023	8/5/2022	FR	FR
36255	L0006A		178850	8/4/2022	8/4/2023	8/5/2022	FR	FR
36256	L0006A		184960	8/4/2022	1/31/2023	8/5/2022	FR	FR
36257	L0006A		185580	8/4/2022	8/4/2023	8/5/2022	FR	FR
36258	L0006A		187800	8/4/2022	1/31/2023	8/5/2022	FR	FR
36259	L0006A		187850	8/4/2022	1/31/2023	8/5/2022	FR	FR
36260	L0006A		188020	8/4/2022	1/31/2023	8/5/2022	FR	FR
36261	L0006A		189830	8/4/2022	8/4/2023	8/5/2022	FR	FR
36262	L0006A		196210	8/4/2022	8/4/2023	8/5/2022	FR	FR
36263	L0006A		200170	8/4/2022	8/4/2023	8/5/2022	FR	FR
36264	L0006A		216570	8/4/2022	8/4/2023	8/5/2022	FR	FR
36265	L0006A		220620	8/4/2022	8/4/2023	8/5/2022	FR	FR
36266	L0006A		221100	8/4/2022	8/4/2023	8/5/2022	FR	FR
36267	L0006A		222010	8/4/2022	8/4/2023	8/5/2022	FR	FR
36268	L0006A		225660	8/4/2022	8/4/2023	8/5/2022	FR	FR
36269	L0006A		225780	8/4/2022	8/4/2023	8/5/2022	FR	FR
36270	L0006A		230000	8/4/2022	8/4/2023	8/5/2022	FR	FR
36271	L0006A		247400	8/4/2022	1/31/2023	8/5/2022	FR	FR
36545	L0006A		162030	9/21/2022	9/21/2023	9/22/2022	FR	FR
36546	L0006A		290160	9/21/2022	3/20/2023	9/22/2022	FR	FR
36547	L0006A		291850	9/21/2022	3/20/2023	9/22/2022	FR	FR
36548	L0006A		299680	9/21/2022	3/20/2023	9/22/2022	FR	FR
36549	L0006A		309410	9/21/2022	3/20/2023	9/22/2022	FR	FR
36688	L0006A		270060	9/28/2022	10/28/2022	9/29/2022	10/13/2022	FR

TABLE NOTES:

[1] Repair/Mitigation Deadline was specified in Tables 1 to 5 of the Consent Decree

[2] PPR is removed after the Feature Requiring Pressure Restriction is repaired or mitigated. This PPR Removal Date can be before the Repair / Mitigation Date which is the repair and mitigation date of the entire dig package that may include other features not requiring pressure restriction. PPR is no longer required after the Feature Requiring Pressure Restriction is repaired.

ODS1 Date of Discovery: Share Drive - Assessment Sheet – Column JB "UPLOAD TO EDIG", PI Listing (Corrosion) – Column IV "Upload to Edig"

ODS2 Repair/Mitigation Deadline: eDig Report - Power BI Dashboard

ODS3 PPR Imposition Date: PPR Report

ODS4 Repair / Mitigation Deadline: eDig Report - Power BI Dashboard

ODS5 PPR Removal Date: PPR Report

The following 1 page is Table D-21: P. 46.e Alternate Plans and Alternate Pressure Restrictions.

Table D-21: P. 46.e Alternate Plans and Alternate Pressure Restrictions	
46.e. Alternate Plan or Alternate Interim Pressure Restrictions submitted from effective date to the end of this IPTUR reporting period:	12 of maximum 40
46.e. Cumulative Excavations of Joints	12 of maximum 200
46.e. Maximum number of contiguous joints for each Alternate Plans or Alternate Interim Pressure Restriction	1 of maximum 10

The following 1 page is Table D-22: P. 46.g Alternate Plan #.

Table D-22: P. 46.g Alternate Plan	
Alternate Plan Line	6A
Alternate Plan Tool Run	2022 NDT UCx Issue 1
Alternate Plan Joint	270060
46.I. (iv) Date Engineering Assessment was Completed OR the original feature repair/mitigation deadline	Engineering Assessment Completed: September 29, 2022
46.I.(vii) Alternate Plan Implementation Date	9/30/2022
46.I.(iv) Alternate Plan Reporting/Notification Date	10/5/2022
Notification was within 10 days of EA completion or 10 days before Original Feature Mitigation Deadline	Yes
Number of Features Requiring Excavation covered by the Alternate Plan	1
46.I(i) Alternate Plan Detailed Description: This Alternate Plan (AP) is prepared in support of the adoption and implementation of an alternate interim pressure restriction as provided in Paragraph 46.d of the Consent Decree (“CD”) and includes a completed Engineering Assessment (“EA”) and timelines for implementing the repair or mitigation of an interacting crack field/dent feature on the Line 6A Adams (AM) to Griffith (GT) at joint GW270060. The interaction of FID 5004094/785278 has been assessed by Finite Element Analysis (FEA), resulting in a recommended alternate interim pressure restriction of 408 psi in lieu of 80% of 60 day high. The feature is considered a Feature Requiring Excavation (FRE) under the CD and will be excavated, not to exceed a 30-day deadline of October 28, 2022. The Alternate Plan demonstrates operational safety of the feature until the proposed deadline. Enbridge proposes that the alternate interim pressure set forward will achieve a level of safety equal to or greater than the level of safety achieved through compliance with the requirements of Section VII.D.(V) applicable to the feature.	
46.I.(iii) Basis for selection of the Alternate Plan and alternate timetables Based on an engineering assessment, the AP recommended: a) implementation of an alternate interim pressure restriction of 408 psi in lieu of 80% of 60 day high; and, b) maintain the 30-day CD timeline of October 28, 2022.	
46.I(v) Detailed description of the analysis comparing the level of safety achieved by each such Alternate Plan with the level of safety that would be achieved through compliance with the requirements of Subsection VII.D.(V) The AP used ILI data, operational conditions, and Finite Element Analysis to determine that the alternate pressure met safety requirements until the feature was mitigated.	
46.I(vii) Dates on which Enbridge completed implementation of any component of the Alternate Plan On September 30, 2022 Enbridge implemented a alternate pressure restriction of 408 psi. On October 13, 2022 Enbridge repaired the feature using a pressure containment sleeve.	

The following 3 pages are the D-26: P. 50 Corrosion Features Requiring Excavation.

Table D-26: P. 50 Corrosion Features Requiring Excavation						
Dig ID	Line	Segment	Girth Weld	Date Features Added to Dig List	Repair / Mitigation Deadline ODS1	Date of Repair / Mitigation[1], ODS2
31096	L0004	[redacted]	48060	1/6/2022	1/6/2023	7/21/2022
31097	L0004		49080	1/6/2022	1/6/2023	7/11/2022
31098	L0004		49240	1/6/2022	1/6/2023	7/23/2022
31099	L0004		49280	1/6/2022	1/6/2023	7/30/2022
31100	L0004		49530	1/6/2022	1/6/2023	7/12/2022
31101	L0004		54210	1/6/2022	1/6/2023	7/30/2022
31472	L0006A		18190	7/14/2022	7/14/2023	FR
31473	L0006A		73930	7/14/2022	7/14/2023	FR
31474	L0006A		74040	7/14/2022	7/14/2023	FR
31475	L0006A		74790	7/14/2022	7/14/2023	FR
31476	L0006A		80630	7/14/2022	7/14/2023	FR
31477	L0006A		92550	7/14/2022	7/14/2023	FR
31478	L0006A		95950	7/14/2022	7/14/2023	FR
31479	L0006A		96300	7/14/2022	7/14/2023	FR
31480	L0006A		96310	7/14/2022	7/14/2023	FR
31481	L0006A		127040	7/14/2022	7/14/2023	FR
31482	L0006A		137980	7/14/2022	7/14/2023	FR
31483	L0006A		155400	7/14/2022	7/14/2023	FR
31484	L0006A		174640	7/14/2022	7/14/2023	FR
31485	L0006A		256721	7/14/2022	7/14/2023	FR
31486	L0006A		257540	7/14/2022	7/14/2023	FR
31487	L0006A		289800	7/14/2022	7/14/2023	FR
31488	L0006A		297480	7/14/2022	7/14/2023	FR
31490	L0006A		298810	7/14/2022	7/14/2023	FR
31491	L0006A		299720	7/14/2022	7/14/2023	FR
31493	L0006A		302470	7/14/2022	7/14/2023	FR
31494	L0006A		303050	7/14/2022	7/14/2023	FR
31496	L0006A		309480	7/14/2022	7/14/2023	FR
31498	L0006A		73870	7/15/2022	1/10/2023	FR
31499	L0006A		82500	7/15/2022	1/10/2023	FR
31500	L0006A		88260	7/15/2022	1/10/2023	FR
31501	L0006A		88840	7/15/2022	1/10/2023	FR
31502	L0006A		100120	7/15/2022	1/10/2023	FR
31503	L0006A		109830	7/15/2022	1/10/2023	FR
31504	L0006A		149930	7/15/2022	1/10/2023	FR
31505	L0006A		224170	7/15/2022	1/10/2023	FR
31506	L0006A		237600	7/15/2022	1/10/2023	FR
31507	L0006A		249190	7/15/2022	1/10/2023	FR
31508	L0006A		250670	7/15/2022	1/10/2023	FR
31509	L0006A		273430	7/15/2022	1/10/2023	FR

Table D-26: P. 50 Corrosion Features Requiring Excavation						
Dig ID	**Line**	**Segment**	**Girth Weld**	**Date Features Added to Dig List**	**Repair / Mitigation Deadline ODS1**	**Date of Repair / Mitigation[1], ODS2**
31510	L0006A	[redacted]	276150	7/15/2022	1/10/2023	FR
31511	L0006A		278260	7/15/2022	1/10/2023	FR
31512	L0006A		279820	7/15/2022	1/10/2023	FR
31513	L0006A		280000	7/15/2022	1/10/2023	FR
31514	L0006A		280790	7/15/2022	1/10/2023	FR
31515	L0006A		289430	7/15/2022	1/10/2023	FR
31516	L0006A		289630	7/15/2022	1/10/2023	FR
31517	L0006A		292570	7/15/2022	1/10/2023	FR
31518	L0006A		295080	7/15/2022	1/10/2023	FR
31519	L0006A		297120	7/15/2022	1/10/2023	FR
31520	L0006A		297910	7/15/2022	1/10/2023	FR
31521	L0006A		299420	7/15/2022	1/10/2023	FR
31522	L0006A		300920	7/15/2022	1/10/2023	FR
31523	L0006A		301880	7/15/2022	1/10/2023	FR
31524	L0006A		302160	7/15/2022	1/10/2023	FR
31525	L0006A		302190	7/15/2022	1/10/2023	FR
31526	L0006A		306470	7/15/2022	1/10/2023	FR
31527	L0006A		310450	7/15/2022	1/10/2023	FR
31528	L0006A		310810	7/15/2022	1/10/2023	FR
31593	L0006A		45130	8/4/2022	8/4/2023	FR
31594	L0006A		45390	8/4/2022	8/4/2023	FR
31595	L0006A		57830	8/4/2022	8/4/2023	FR
31596	L0006A		64570	8/4/2022	8/4/2023	FR
31597	L0006A		64830	8/4/2022	8/4/2023	FR
31598	L0006A		101870	8/4/2022	1/31/2023	FR
31599	L0006A		115000	8/4/2022	1/31/2023	FR
31600	L0006A		123920	8/4/2022	1/31/2023	FR
31601	L0006A		160140	8/4/2022	1/31/2023	FR
31602	L0006A		165590	8/4/2022	8/4/2023	FR
31603	L0006A		169990	8/4/2022	8/4/2023	FR
31604	L0006A		174660	8/4/2022	1/31/2023	FR
31605	L0006A		178850	8/4/2022	8/4/2023	FR
31606	L0006A		184960	8/4/2022	1/31/2023	FR
31607	L0006A		185580	8/4/2022	8/4/2023	FR
31608	L0006A		187800	8/4/2022	1/31/2023	FR
31609	L0006A		187850	8/4/2022	1/31/2023	FR
31610	L0006A		188020	8/4/2022	1/31/2023	FR
31611	L0006A		189830	8/4/2022	8/4/2023	FR
31612	L0006A		190480	8/4/2022	8/4/2023	FR
31613	L0006A		196210	8/4/2022	8/4/2023	FR

Table D-26: P. 50 Corrosion Features Requiring Excavation						
Dig ID	**Line**	**Segment**	**Girth Weld**	**Date Features Added to Dig List**	**Repair / Mitigation Deadline** [ODS1]	**Date of Repair / Mitigation**[1], [ODS2]
31614	L0006A	[redacted]	200170	8/4/2022	8/4/2023	FR
31615	L0006A		216570	8/4/2022	8/4/2023	FR
31616	L0006A		220620	8/4/2022	8/4/2023	FR
31617	L0006A		221100	8/4/2022	8/4/2023	FR
31618	L0006A		222010	8/4/2022	8/4/2023	FR
31619	L0006A		225660	8/4/2022	8/4/2023	FR
31620	L0006A		225780	8/4/2022	8/4/2023	FR
31621	L0006A		225860	8/4/2022	8/4/2023	FR
31622	L0006A		230000	8/4/2022	8/4/2023	FR
31623	L0006A		247400	8/4/2022	1/31/2023	FR

TABLE NOTES:

[1] "FR" indicates that this information is outside the reporting period of this IPTUR

[ODS1] Repair/Mitigation Deadline: eDig Report – Power BI Dashboard

[ODS1] Date of Repair / Mitigation: eDig Report - Power BI Dashboard, Added columns (NDE Assessed Date and Sleeve Post Repair Assessed Date) to report to track new interpretation dates for P40/77d

The following 3 pages are Table D-27: P. 52 Corrosion Feature Pressure Restrictions.

Table D-27: P. 52 Corrosion Feature Pressure Restrictions									
PR ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery** *ODS1*	**Repair / Mitigation Deadline[1]** *ODS2*	**PPR Set (psi)** *ODS3*	**PPR Imposition Date** *ODS4*	**Repair / Mitigation Date** *ODS5*	**PPR Removal Date[2]** *ODS6*
36178	L0006A	[redacted]	18190	7/14/2022	7/14/2023	614	7/18/2022	FR	FR
36179	L0006A		73870	7/15/2022	1/10/2023	616	7/18/2022	FR	FR
36180	L0006A		73930	7/14/2022	7/14/2023	581	7/18/2022	FR	FR
36181	L0006A		74040	7/14/2022	7/14/2023	613	7/18/2022	FR	FR
36182	L0006A		80630	7/14/2022	7/14/2023	591	7/18/2022	FR	FR
36183	L0006A		82500	7/15/2022	1/10/2023	602	7/18/2022	FR	FR
36184	L0006A		88260	7/15/2022	1/10/2023	616	7/18/2022	FR	FR
36185	L0006A		95950	7/14/2022	7/14/2023	597	7/18/2022	FR	FR
36186	L0006A		96300	7/14/2022	7/14/2023	586	7/18/2022	FR	FR
36187	L0006A		96310	7/14/2022	7/14/2023	574	7/18/2022	FR	FR
36188	L0006A		100120	7/15/2022	1/10/2023	614	7/18/2022	FR	FR
36189	L0006A		109830	7/15/2022	1/10/2023	606	7/18/2022	FR	FR
36190	L0006A		149930	7/15/2022	1/10/2023	617	7/18/2022	FR	FR
36191	L0006A		155400	7/14/2022	7/14/2023	614	7/18/2022	FR	FR
36192	L0006A		249190	7/15/2022	1/10/2023	606	7/18/2022	FR	FR
36193	L0006A		250670	7/15/2022	1/10/2023	609	7/18/2022	FR	FR
36194	L0006A		273430	7/15/2022	1/10/2023	617	7/18/2022	FR	FR
36195	L0006A		278260	7/15/2022	1/10/2023	616	7/18/2022	FR	FR
36196	L0006A		279820	7/15/2022	1/10/2023	605	7/18/2022	FR	FR
36197	L0006A		280000	7/15/2022	1/10/2023	602	7/18/2022	FR	FR
36198	L0006A		289430	7/15/2022	1/10/2023	614	7/18/2022	FR	FR
36199	L0006A		289630	7/15/2022	1/10/2023	611	7/18/2022	FR	FR

Table D-27: P. 52 Corrosion Feature Pressure Restrictions									
PR ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery** *ODS1*	**Repair / Mitigation Deadline[1]** *ODS2*	**PPR Set (psi)** *ODS3*	**PPR Imposition Date** *ODS4*	**Repair / Mitigation Date** *ODS5*	**PPR Removal Date[2]** *ODS6*
36200	L0006A	[redacted]	292570	7/15/2022	1/10/2023	605	7/18/2022	FR	FR
36201	L0006A		300920	7/15/2022	1/10/2023	614	7/18/2022	FR	FR
36202	L0006A		301880	7/15/2022	1/10/2023	612	7/18/2022	FR	FR
36203	L0006A		302190	7/15/2022	1/10/2023	599	7/18/2022	FR	FR
36245	L0006A		45130	8/4/2022	8/4/2023	616	8/5/2022	FR	FR
36246	L0006A		57830	8/4/2022	8/4/2023	616	8/5/2022	FR	FR
36247	L0006A		64570	8/4/2022	8/4/2023	599	8/5/2022	FR	FR
36248	L0006A		64830	8/4/2022	8/4/2023	617	8/5/2022	FR	FR
36249	L0006A		101870	8/4/2022	1/31/2023	596	8/5/2022	FR	FR
36250	L0006A		123920	8/4/2022	1/31/2023	608	8/5/2022	FR	FR
36251	L0006A		160140	8/4/2022	1/31/2023	617	8/5/2022	FR	FR
36252	L0006A		165590	8/4/2022	8/4/2023	610	8/5/2022	FR	FR
36253	L0006A		169990	8/4/2022	8/4/2023	608	8/5/2022	FR	FR
36254	L0006A		174660	8/4/2022	1/31/2023	604	8/5/2022	FR	FR
36255	L0006A		178850	8/4/2022	8/4/2023	608	8/5/2022	FR	FR
36256	L0006A		184960	8/4/2022	1/31/2023	604	8/5/2022	FR	FR
36257	L0006A		185580	8/4/2022	8/4/2023	600	8/5/2022	FR	FR
36258	L0006A		187800	8/4/2022	1/31/2023	588	8/5/2022	FR	FR
36259	L0006A		187850	8/4/2022	1/31/2023	586	8/5/2022	FR	FR
36260	L0006A		188020	8/4/2022	1/31/2023	560	8/5/2022	FR	FR
36261	L0006A		189830	8/4/2022	8/4/2023	592	8/5/2022	FR	FR
36262	L0006A		196210	8/4/2022	8/4/2023	595	8/5/2022	FR	FR

Table D-27: P. 52 Corrosion Feature Pressure Restrictions									
PR ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery** *ODS1*	**Repair / Mitigation Deadline[1]** *ODS2*	**PPR Set (psi)** *ODS3*	**PPR Imposition Date** *ODS4*	**Repair / Mitigation Date** *ODS5*	**PPR Removal Date[2]** *ODS6*
36263	L0006A	[redacted]	200170	8/4/2022	8/4/2023	593	8/5/2022	FR	FR
36264	L0006A		216570	8/4/2022	8/4/2023	601	8/5/2022	FR	FR
36265	L0006A		220620	8/4/2022	8/4/2023	610	8/5/2022	FR	FR
36266	L0006A		221100	8/4/2022	8/4/2023	594	8/5/2022	FR	FR
36267	L0006A		222010	8/4/2022	8/4/2023	615	8/5/2022	FR	FR
36268	L0006A		225660	8/4/2022	8/4/2023	591	8/5/2022	FR	FR
36269	L0006A		225780	8/4/2022	8/4/2023	610	8/5/2022	FR	FR
36270	L0006A		230000	8/4/2022	8/4/2023	617	8/5/2022	FR	FR
36271	L0006A		247400	8/4/2022	1/31/2023	607	8/5/2022	FR	FR
36545	L0006A		162030	9/21/2022	9/21/2023	606	9/21/2022	FR	FR
36546	L0006A		290160	9/21/2022	3/20/2023	609	9/21/2022	FR	FR
36547	L0006A		291850	9/21/2022	3/20/2023	615	9/21/2022	FR	FR
36548	L0006A		299680	9/21/2022	3/20/2023	595	9/21/2022	FR	FR
36549	L0006A		309410	9/21/2022	3/20/2023	590	9/21/2022	FR	FR

TABLE NOTES:

[1]Repair/ Mitigation Deadline was specified in Tables 1 to 5 of the Consent Decree

[2] PPR is removed after the Feature Requiring Pressure Restriction is repaired or mitigated. This PPR Removal Date can be before the Repair / Mitigation Date which is the repair and mitigation date of the entire dig package that may include other features not requiring pressure restriction. "FR" indicates that this information is outside the reporting period of this IPTUR

ODS1 Date of Discovery: Share Drive - Assessment Sheet – Column JB "UPLOAD TO EDIG", PI Listing (Corrosion) – Column IV "Upload to Edig"

ODS2 Repair / Mitigation Deadline: eDig Report - Power BI Dashboard

ODS3 PPR Set (psi): PPR Report

ODS4 PPR Imposition Date: PPR Report

ODS5 Repair / Mitigation Date: eDig Report - Power BI Dashboard, Added columns (NDE Assessed Date and Sleeve Post Repair Assessed Date) to report to track new interpretation dates for P40/77d

ODS6 PPR Removal Date: PPR Report

The following 1 page is Table D-31: P. 58 Interacting Features Requiring Excavation.

Table D-31: P. 58 Interacting Features Requiring Excavation										
Dig ID	**Line**	**Segment**	**Girth Weld**	**Tool**	**Report Received Date** *ODS1*	**One-Source Load Date**	**Date of Discovery / Feature Added to Dig List** *ODS2*	**Repair / Mitigation Deadline** *ODS3*	**Type of Inter-acting features (tool)** *ODS4*	**Date of Repair / Mitigation** *ODS5*
31799	L0006A	[redacted]	270060	Crack	9/27/2022[1]	9/27/2022	9/28/2022	10/28/2022	Dent	10/13/2022

TABLE NOTES:

[1] Priority Notification

ODS1 Report Received Date: Vendor ILI Report Email

ODS2 Date of Discovery / Feature Added to Dig List: Share Drive - Assessment Sheet – Column JB "UPLOAD TO EDIG", PI Listing (Corrosion) – Column IV "Upload to Edig"

ODS3 Repair / Mitigation Deadline: eDig Report - Power BI Dashboard

ODS4 Type of Inter-acting features (tool): Share Drive - Program Summary Document: Geometry: Summary of Feature Selection Features Identified Through Data Integration, Crack: Mitigation Selection (PI-38) and PI Listing Approval ILI Fitness-for-Service Evaluation and Remarks, Corrosion: Consent Decree Threat Integration Excavation Selection

ODS5 Date of Repair / Mitigation: eDig Report - Power BI Dashboard, Added columns (NDE Assessed Date and Sleeve Post Repair Assessed Date) to report to track new interpretation dates for P40/77d

The following 1 page is Table D-32: P. 59 Interacting Features Pressure Restrictions.

Table D-32: P. 59 Interacting Features Pressure Restrictions									
PR ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery** *ODS1*	**Repair / Mitigation Deadline**[1] *ODS2*	**PPR Set (psi)**	**PPR Imposition Date** *ODS3*	**Repair / Mitigation Date** *ODS4*	**PPR Removal Date**[2,3] *ODS5*
36688[1]	L0006A	[redacted]	270060	9/28/2022	10/28/2022	408	9/29/2022	10/13/2022	FR

TABLE NOTES:

[1] *AP12*

ODS1 Date of Discovery: Share Drive - Assessment Sheet – Column JB "UPLOAD TO EDIG", PI Listing (Corrosion) – Column IV "Upload to Edig"

ODS2 Repair / Mitigation Deadline: eDig Report - Power BI Dashboard

ODS3 PPR Imposition Date: PPR Report

ODS4 Repair / Mitigation Date: eDig Report - Power BI Dashboard, Added columns (NDE Assessed Date and Sleeve Post Repair Assessed Date) to report to track new interpretation dates for P40/77d

ODS5 PPR Removal Date: PPR Report

The following 1 page is Table D-33: P. 60 Remaining Life Calculations.

Table D-33: P. 60 Remaining Life Calculations					
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Type**	**Remaining Life Calculation Completion Date[ODS1]**
10895	04	[redacted]	DuDi UCM	Corrosion	9/21/2022
10879	04		DuDi UCM	Corrosion	8/4/2022
10879	04		DuDi UCM	Crack	9/1/2022
10902	05		UCc	Crack	6/2/2022
10901	05		MFL4	Corrosion	8/29/2022
10911	05		UCc	Crack	6/2/2022
12071	05		MFL4	Corrosion	8/29/2022
10919	06A		USWM+	Corrosion	7/14/2022
12046	06A		MFL4	Corrosion	9/21/2022
12061	06A		Vectra	Corrosion	8/4/2022
11028	62		MFL4	Corrosion	7/26/2022
11029	62		CD+	Crack	5/30/2022
11028	62		MFL4	Corrosion	7/26/2022
10296	93		UCx	Crack	9/20/2022
12054	93		MFL-A	Corrosion	9/22/2022
10301	93		MFL-A	Corrosion	8/17/2022
10298	93		UCx	Crack	9/29/2022
12056	93		MFL-A	Corrosion	9/1/2022

TABLE NOTE:

[ODS1] Remaining Life Calculation Date: PI Listing Approval Confirmation Email – Share Drive Documentation

The following 1 page is Table D-34: P. 63 Crack Feature Remaining Life Calculations.

Table D-34: P. 63 Crack Feature Remaining Life Calculations					
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Type**	**Remaining Life Calculation Completion Date** [ODS1]
10879	04	[redacted]	DuDi UCM	Crack	9/1/2022
10902	05		UCc	Crack	6/2/2022
10911	05		UCc	Crack	6/2/2022
11029	62		CD+	Crack	5/30/2022
10296	93		UCx	Crack	9/20/2022
10298	93		UCx	Crack	9/29/2022

TABLE NOTE:

[ODS1] *Remaining Life Calculation Date: PI Listing Approval Confirmation Email – Share Drive Documentation*

Section E

There are no tables associated with Section E.

Section F

The following 1 page is Table F-1: P. 77 OneSource NDE Updates.

Section F

Table F-1: P. 77 OneSource NDE Updates						
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Type**	**Last NDE Report Approved Date[1,2]**	**OneSource Load Date[ODS1]**
6679	L0004	[redacted]	UCMUTCD	Crack	8/30/2022	8/31/2022
6679	L0004		UCMUTWM	Corrosion	8/24/2022	8/30/2022

TABLE NOTE:

[1] The last NDE report approved date was the date the last CD FRE NDE report for that particular ILI program was approved.

[2] There may be instances where an NDE report reissue is required to correct clerical issues. In these instances, the Last NDE Report Approved Date is the approval date of the Initial NDE report.

[ODS1] OneSource Load Date: OneSource - BICONSENTDECREE NDEAssessment_V - NDEDataChangedDate

The following 1 page is Table F-2: P. 78.a OneSource ILI Updates.

Table F-2: P. 78.a OneSource ILI Updates						
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Type**	**Report Received Date**	**OneSource Upload Date** [ODS1]
10895	04	[redacted]	DuDi UCM	Corrosion	8/23/2022	8/26/2022
10879	04		DuDi UCM	Corrosion	7/5/2022	7/5/2022
10879	04		DuDi UCM	Corrosion	8/2/2022	8/2/2022[2]
10879	04		DuDi UCM	Crack	8/4/2022	8/10/2022
10901	05		MFL4	Corrosion	8/1/2022	8/4/2022
10901	05		MFL4	Geometry	8/1/2022	8/4/2022
12071	05		MFL4	Corrosion	8/4/2022	8/10/2022
12071	05		MFL4	Geometry	8/4/2022	8/10/2022
10919	06A		USWM+	Corrosion	6/14/2022	6/21/2022
12046	06A		MFL4	Corrosion	8/22/2022	8/22/2022
12046	06A		MFL4	Geometry	8/22/2022	8/22/2022
12061	06A		Vectra	Corrosion	7/7/2022	7/11/2022
11028	62		MFL4	Corrosion	6/27/2022	6/28/2022
11028	62		MFL4	Geometry	6/27/2022	6/28/2022
10296	93		UCx	Crack	8/22/2022	8/25/2022
12053	93		XGG	Geometry	6/7/2022	N/A[1]
12053	93		XGG	Geometry	8/9/2022	8/10/2022[2]
12054	93		MFL-A	Corrosion	7/6/2022	N/A[1]
12054	93		MFL-A	Corrosion	8/29/2022	8/30/2022
12054	93		MFL-A	Corrosion	9/12/2022	9/14/2022[2]
10301	93		MFL-A	Corrosion	7/19/2022	N/A[1]
10301	93		MFL-A	Corrosion	7/26/2022	8/4/2022
10301	93		MFL-A	Corrosion	8/11/2022	8/11/2022[2]
10301	93		MFL-A	Geometry	7/19/2022	N/A[1]
10301	93		MFL-A	Geometry	7/26/2022	8/4/2022[2]
10298	93		UCx	Crack	9/8/2022	9/14/2022
12055	93		XGG	Geometry	6/22/2022	6/23/2022
12055	93		XGG	Geometry	8/22/2022	8/29/2022[2]
12056	93		MFL-A	Corrosion	8/2/2022	N/A[1]
12056	93		MFL-A	Corrosion	8/22/2022	8/23/2022[2]

TABLE NOTE:

[1]Results from this issue did not pass through the quality-control procedures, was determined by Enbridge to be unreliable and could not be uploaded to OneSource.

[2]Reissue that passed through the quality-control procedures and deemed reliable.

[ODS1]OneSource Upload Date: OneSource - BICONSENTDECREE ILIReportIssues_V - OneSourceLoadDate

The following 1 page is Table F-3: P. 78.b Interacting Feature Reviews.

Table F-3: P. 78.b Interacting Feature Reviews									
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Type**	**Pull Date**	**Report Received Date**	**Interacting Feature Review**	**SQuAD and QuAD Completion Date**	**Issue #**
10895	04	[redacted]	DuDi UCM	Corrosion	5/25/2022	9/16/2022	9/21/2022	9/21/2022	2
10879	04		DuDi UCM	Corrosion	4/6/2022	7/5/2022	8/4/2022	8/4/2022	1
10879	04		DuDi UCM	Corrosion	4/6/2022	8/2/2022	8/4/2022	8/4/2022	2
10879	04		DuDi UCM	Crack	4/6/2022	8/4/2022	9/1/2022	N/A[1]	1
10901	05		MFL4	Corrosion	5/3/2022	8/1/2022	8/29/2022	8/29/2022	1
10901	05		MFL4	Geometry	5/3/2022	8/1/2022	8/24/2022	8/24/2022	1
10902	05		UCc	Crack	1/12/2022	5/12/2022	6/2/2022	N/A[1]	1
10911	05		UCc	Crack	1/11/2022	5/11/2022	6/2/2022	N/A[1]	1
12071	05		MFL4	Corrosion	5/6/2022	8/4/2022	8/29/2022	8/29/2022	1
12071	05		MFL4	Geometry	5/6/2022	8/4/2022	8/24/2022	8/24/2022	1
10919	06A		USWM+	Corrosion	3/16/2022	6/14/2022	7/14/2022	7/14/2022	1
12046	06A		MFL4	Corrosion	5/23/2022	8/22/2022	9/21/2022	9/21/2022	1
12046	06A		MFL4	Geometry	5/23/2022	8/22/2022	9/21/2022	9/21/2022	1
12061	06A		Vectra	Corrosion	4/28/2022	7/7/2022	8/4/2022	8/4/2022	1
11028	62		MFL4	Corrosion	5/4/2022	6/27/2022	7/26/2022	7/26/2022	1
11028	62		MFL4	Geometry	5/4/2022	6/27/2022	7/22/2022	7/22/2022	1
11029	62		CD+	Crack	3/4/2022	5/3/2022	5/30/2022	N/A[1]	1
12053	93		XGG	Geometry	3/8/2022	8/9/2022	8/31/2022	8/31/2022	2
10296	93		UCx	Crack	4/22/2022	8/22/2022	9/20/2022	N/A[1]	1
10301	93		MFL-A	Corrosion	4/19/2022	8/11/2022	8/17/2022	8/17/2022	3
10301	93		MFL-A	Geometry	4/19/2022	7/26/2022	8/17/2022	8/17/2022	2
12055	93		XGG	Geometry	3/24/2022	8/22/2022	9/16/2022	9/16/2022	2
12056	93		MFL-A	Corrosion	5/4/2022	8/22/2022	9/1/2022	9/1/2022	2
10298	93		UCx	Crack	5/11/2022	9/8/2022	9/29/2022	N/A[1]	1

TABLE NOTE:

[1] *SQuAD/QuAD is not applicable to the crack program*

Section G

The following 1 page is Table G-1: P. 93-94, 96-97 Temporary MBS Suspension.

Section G

Table G-1: P. 93-94, 96-97 Temporary MBS Suspension			
Reason for Instrumentation Outage	**Time Period to Restore MBS Segment to Operation (Requirement)**	**Number of Occurrences**	**Number of Occurrences Exceeding Time Period**
Instrumentation failure	10 days	11	0
Bypass of ILI Tool	4 hours	9	0
Scheduled maintenance or repairs	4 days	31	0

The following 7 pages are Table G-3: P. 112 Lakehead System Pipeline Incident Reporting.

Table G-3: P. 112 Lakehead System Pipeline Incident Reporting						
Incident Description	**Date and Time Notice Received**	**Date and Time Investigation Began**	**Date and time when preliminary Investigation complete**	**Information Provided with Notice**	**Conclusion and Findings of the Investigation**	**Lakehead Lines Affected**
[redacted]	06/02/2022 14:44 MST	06/02/2022 14:52 MST	06/02/2022 14:55 MST	[redacted]	[redacted]	Line 5
	06/02/2022 20:06 MST	06/02/2022 20:13 MST	06/02/2022 20:10 MST			Line 5
	06/15/2022 07:04 MST	06/15/2022 07:08 MST	06/15/2022 07:08 MST			Line 5

Table G-3: P. 112 Lakehead System Pipeline Incident Reporting						
Incident Description	**Date and Time Notice Received**	**Date and Time Investigation Began**	**Date and time when preliminary Investigation complete**	**Information Provided with Notice**	**Conclusion and Findings of the Investigation**	**Lakehead Lines Affected**
[redacted]	06/23/2022 00:08 MST	06/23/2022 00:23 MST	06/23/2022 00:12 MST	[redacted]	[redacted]	Line 6A Line14 Line 61
	07/10/2022 09:32 MST	07/10/2022 09:39 MST	07/10/2022 09:37 MST			Line 78

Table G-3: P. 112 Lakehead System Pipeline Incident Reporting						
Incident Description	**Date and Time Notice Received**	**Date and Time Investigation Began**	**Date and time when preliminary Investigation complete**	**Information Provided with Notice**	**Conclusion and Findings of the Investigation**	**Lakehead Lines Affected**
[redacted]	07/28/2022 12:15 MST	07/28/2022 12:22 MST	07/28/2022 12:27 MST	[redacted]	[redacted]	Line 1 Line 2 Line 4 Line 5 Line 14 Line 67 Line 93
	08/03/2022 11:00 MST	08/03/2022 11:02 MST	08/03/2022 11:03 MST			Line 5

Table G-3: P. 112 Lakehead System Pipeline Incident Reporting						
Incident Description	**Date and Time Notice Received**	**Date and Time Investigation Began**	**Date and time when preliminary Investigation complete**	**Information Provided with Notice**	**Conclusion and Findings of the Investigation**	**Lakehead Lines Affected**
[redacted]	08/03/2022 15:35 MST	08/03/2022 15:43 MST	08/03/2022 15:48 MST	[redacted]	[redacted]	Line 5 Line 78
[redacted]	08/04/2022 12:03 MST	08/04/2022 12:06 MST	08/04/2022 12:07 MST	[redacted]	[redacted]	Line 5

Table G-3: P. 112 Lakehead System Pipeline Incident Reporting						
Incident Description	**Date and Time Notice Received**	**Date and Time Investigation Began**	**Date and time when preliminary Investigation complete**	**Information Provided with Notice**	**Conclusion and Findings of the Investigation**	**Lakehead Lines Affected**
[redacted]	08/10/2022 11:55 MST	08/10/2022 11:58 MST	08/10/2022 12:01 MST	[redacted]	[redacted]	Line 5
[redacted]	08/11/2022 14:06 MST	08/11/2022 14:15 MST	08/11/2022 14:14 MST	[redacted]	[redacted]	Line 6A Line 14 Line 61

Table G-3: P. 112 Lakehead System Pipeline Incident Reporting						
Incident Description	**Date and Time Notice Received**	**Date and Time Investigation Began**	**Date and time when preliminary Investigation complete**	**Information Provided with Notice**	**Conclusion and Findings of the Investigation**	**Lakehead Lines Affected**
[redacted]	09/14/2022 07:33 MST	09/14/2022 07:46 MST	09/14/2022 07:48 MST	[redacted]	[redacted]	Line 1 Line 2 Line 4 Line 67 Line 93
[redacted]	09/22/2022 08:01 MST	09/22/2022 08:08 MST	09/22/2022 08:09 MST	[redacted]	[redacted]	Line 5

Table G-3: P. 112 Lakehead System Pipeline Incident Reporting						
Incident Description	**Date and Time Notice Received**	**Date and Time Investigation Began**	**Date and time when preliminary Investigation complete**	**Information Provided with Notice**	**Conclusion and Findings of the Investigation**	**Lakehead Lines Affected**
[redacted]	09/23/2022 17:05 MST	09/23/2022 17:10 MST	09/23/2022 17:14 MST	[redacted]	[redacted]	Line 5 Line 78
	10/13/2022 13:06 MST	10/13/2022 13:18 MST	10/13/2022 13:20 MST			Line 5

Section H

There are no tables associated with Section H.

Section I

There are no tables associated with Section I.

Section J

There are no tables associated with Section J.

Section IX

The following 1 page is Table IX-1: P. 144 Problems Anticipated, Consent Decree Interpretation Issues in Discussion by the Parties.

Section IX

Table IX-1: P. 144 Problems Anticipated, Consent Decree Interpretation Issues in Discussion by the Parties		
Section and Title	**Relevant Paragraph or Reference**	**Enbridge Position**
[Section D] Periodic In-Line Inspections, Circumferential Cracking	Paragraph 27, 28: “ILI tools that are most appropriate for accurately detecting, characterizing and sizing all Crack features.”	As the parties have discussed at length, Enbridge believes that the Consent Decree was not drafted to address circumferential cracking. Enbridge has identified difficulties encountered, from a technical perspective, of applying the Consent Decree to circumferential Cracking. Enbridge, the EPA, and the ITP continue to discuss ways to resolve this challenge.

The following 1 page is Table IX-2: TTX and FDE in IPTUR Reporting Period

Table IX-2: TTX and FDE in IPTUR Reporting Period			
Date	**Exercise Type**	**City**	**State**
May 26, 2022	FDE	Marysville	Michigan
June 8, 2022	TTX	Escanaba	Michigan
June 9, 2022	TTX	Wisconsin Rapids	Wisconsin
June 29, 2022	TTX	Marshall	Michigan
July 12, 2022	FDE	Saxon	Wisconsin
July 13, 2022	TTX	Ironwood	Michigan
July 14, 2022	FDE	Ironwood	Michigan
August 4, 2022	TTX	Griffith	Indiana
August 18, 2022	TTX	Cavalier	North Dakota
August 31, 2022	FDE	Grand Rapids	Minnesota
September 8, 2022	TTX	St. Ignace	Michigan
September 29, 2022	FDE	Portage	Indiana

The following 1 page is Table IX-3: Section H P. 174 Force Majeure Notifications

Table IX-3: Section H P. 174 Force Majeure Notifications	
Step	**Summary of Section H Action**
Step 1 Verbal Immediate	As soon as Enbridge is aware of an issue that will result in not meeting Consent Decree requirements then they must notify the EPA immediately. ***There were no verbal notifications during this reporting period.***
Step 2 notification within 5 Days of Knowing[1]	A notification is made to the EPA. ***There were no notifications during this reporting period.***
Step 3 Written Follow-up as required.	A letter was sent on July 11 to the EPA requesting to conduct the August and September 2022 TTX virtually. Approval was provided by the EPA on July 15, 2022. A letter was sent on September 14 to the EPA requesting to conduct the November 2022 COSs virtually. Approval was provided by the EPA on October 4, 2022.
Step 4 Enbridge Continues to Monitor the Situation	Enbridge staff have regular meetings to discuss and monitor the situation.
Step 5 Enbridge Identifies a Work Around, if Possible, and Notifies EPA[2]	For Section H, the events impacted by the COVID-19 Force Majeures include TTXs, Community Outreach Sessions.

TABLE NOTE:

[1]As of April 30, 2020 – This step is no longer required and is replaced by the 10-day written follow up (Step 3).

[2]In the event EPA is not in support of the proposed plan, Enbridge will revise and resubmit it within 7 days.

The following 1 page is Table IX-4: P. 145 List of Potential Non-Compliances.

Table IX-4: P. 145 List of Potential Non-Compliances	
Potential Non-Compliance	**Summary Location**
[Section D] Line 93 CR-KD 2022 XGG Geometry ILI report received one day late.	Section IX – Paragraph 145
[Section D] Line 93 GF-CR 2022 MFL-A Corrosion/Geometry, ILI reports received one day late.	Section IX – Paragraph 145
[Paragraph 20, Section D P. 38.b] L6A AP12 Overpressure	Section IX – Paragraph 145

The following 1 page is Table IX-5: P. 146 Discharges from a Lakehead System Pipeline.

Table IX-5: P. 146 Discharges from a Lakehead System Pipeline	
Spill Date (MM/DD/YYYY)	6/23/2022
National Response Center #	1339619
Spill Location	Livingston, Pontiac, IL
MP#/Facility Name	Flanagan Terminal[1]
Equipment or Line Number	Valve 201-V-2023
Cause of spill	Incorrect Operation
Spill Material	Crude Oil
Quantity of Spill	7 Barrel
Distance Spill Travelled	20 feet
Sheen, Sludge or Emulsion Observed	None
Name of Water that Spill Entered (if applicable)	Not Applicable
Water Quality Standard Exceeded/Violated	Not Applicable
Actions Taken or Planned to Address Spill	Incoming and outgoing lines at the Terminal were already shut down for the scheduled maintenance work. Pipeline maintenance crew was onsite with vac trucks to recover product. Contractor was mobilized with additional clean up and recovery equipment. Valve 201-V-2023 was repaired and all lines were returned to service.
Actions Taken or Planned to Prevent Future Spills and Schedule for Future Actions	Pipeline Maintenance team will review OMM Book 3 06-03-03 Drain-up and Line Fill prior to open system work commencing or in pre-job meetings and enforce as it pertains to the work they are conducting.
Environmental Impacts from Spill	Soil
Root Cause	Other Incorrect Operation

TABLE NOTES:

[1] Not a CD-reportable event but disclosed for reporting consistency with previous SARs.

The following 1 page is Table IX-6: P. 147 Update on Discharges from a Lakehead System Facility.

Table IX-6: P. 147 Update on Discharges from a Lakehead System Facility	
Spill Date (MM/DD/YYYY)	3/1/2022
National Response Center #	Not Applicable
Spill Location	Clearbrook, Clearwater, MN
MP#/Facility Name	Clearbrook Terminal[1]
Equipment or Line Number	Line 4 Unit 1 Pump
Cause of spill	*Equipment Failure*
Spill Material	Crude Oil
Quantity of Spill	52 Barrel
Distance Spill Travelled	Contained within the pump room building with the majority of the volume draining in the trench surrounding the pump base.
Sheen, Sludge or Emulsion Observed	None
Name of Water that Spill Entered (if applicable)	Not Applicable
Water Quality Standard Exceeded/Violated	Not Applicable
Actions Taken or Planned to Address Spill	Unit 1 pump is currently out of service for additional maintenance unrelated to this release. The failed seals will be replaced prior to the pump going back into service.
Actions Taken or Planned to Prevent Future Spills and Schedule for Future Actions	Failed pump seals were sent for a third-party failure analysis to aide in the investigation and identifying the cause. Once the final failure analysis is received, it will be determined if additional actions are required based on the findings.
Final Actions Taken or Planned to Prevent Future Spills and Schedule for Future Actions	*To prevent recurrence, the current mechanical seal type utilized on Unit 1 will be upgraded to a different seal type with a secondary containment bushing, as the secondary containment bushing will provide an added layer of protection in the event of a seal failure. Unit 1 pump case will also be modified to include seal leak drains and seal leak vents that would allow for API Plan 66A piping and instrumentation. The appropriate porting shall accommodate the upgraded mechanical seals with a secondary containment bushing.*
Environmental Impacts from Spill	None
Preliminary Root Cause	Under investigation
Final Root Cause	*Pump or Pump-related Equipment*

TABLE NOTE:

[1] *Not a CD-reportable event but disclosed for reporting consistency with previous SARs.*

[2] *Updates to the discharges reported in SAR10 are italicized.*

Appendix 2 – Lakehead Leak Alarm Report [108,110,111]

Reporting Period: May 23, 2022 to October 18, 2022

Lakehead Leak Alarm Reports

For use with Partial Termination. Lines 61, 62 and 93 were excluded.

- Summary of Alarms (SOA)
- Record of Alarms (ROA)
- Weekly List of Alarms (WLOA)
- Instrumentation Outage Report

Prepared by Pipeline Control

On October 19, 2022

For reporting period May 23, 2022 to October 18, 2022

Purpose of the Document

The following sections present four (4) reports from section **VII.G. LEAK DETECTION AND CONTROL ROOM OPERATIONS** of the Consent Decree.

The first three reports are for subsection **VII.G.V. Leak Detection Requirements for Control Room** of the decree. They list production MBS Leak Detection System (MBS) and Rupture Detection System (RDS) alarms in the Lakehead System:

1. The summary of alarms ("SOA") lists the total number of Alarms per pipeline and states whether or not Enbridge complied with the 10-Minute Rule in responding to Alarms. With respect to each non-compliance, it provides a reference to the post incident report which states the reason for the non-compliance and identifies the corrective action, if any, taken to prevent a recurrence of the non-compliance.
2. The record of alarms ("ROA") documents Unscheduled Shutdowns due to Alarms. Each record indicates an instance when the pipeline was shutdown with critical facts relating to the Alarm.
3. The weekly list of alarms ("WLOA") include Alarms broken down by pipeline, the type of Alarm, the total number of Alarms for the reporting period, the date of the Alarm, the time at which it began, and the time when the Alarm was cleared.

The fourth report is for subsection **VII.G.IV. Leak Detection Requirements for Pipelines** within the Lakehead System of the decree. The report lists instances when the outage exceeded time periods set forth in paragraph VII.G.IV.97 of the decree.

4. The instrumentation outage report documents two of the three "Reason for Instrumentation Outage" listed in paragraph VII.G.IV.97 of the decree:
    - *Instrumentation Failure*
    - *Scheduled Maintenance or repairs*
    - *Bypass ILI Tool* is documented separately.

Timestamps in the reports are in 24-hour Mountain Standard Time format.

For specific detailed requirements of the reports, please to refer to the Consent Decree.

Terms of Reference

Terms of Reference Table: Special Terms and Reference from the Consent Decree

The following section define terms copied from the Consent Decree for convenience. Please refer to the Consent Decree in case of any discrepancies.

Consent Decree Reference	Term	Definition
IV.10.dd	Lakehead System	The portion of the Mainline System within the United States that is comprised of fourteen pipelines – Lines 1, 2B, 3*, 4, 5, 6A, 6B, 10, 14, 61*, 62*, 64, 65, and 67 – and all New Lakehead Pipelines. *Note: Line 6B has been renamed to Line 78. 6B and 78 are equivalent and the same pipeline. Line 3 has been replaced by line 93*.* * Lines 61, 62 and 93 were excluded from this report as they are not in scope of partial termination.
IV.10.ii	Material Balance System or MBS Leak Detection System	The computational pipeline monitoring system used by Enbridge to detect leaks or ruptures in the Lakehead System.
IV.10.ggg	Shutdown	The operational period between (1) the initial cessation of pumping operations in a pipeline, or section of pipeline, through which oil has been actively flowing and (2) the point where the flow rate within the pipeline, or section of pipeline, is zero.
IV.10.iii	Startup	The operational period between (1) the commencement of pumping operations in a pipeline that had been previously shut down and (2) the point where oil in the pipeline achieves a Steady State.
VII.G.V.105	Alarm Response Team: CRO, LDA, STA	All Alarms shall be addressed by an Alarm Response Team, which shall be composed of the following individuals in the Control Room at the time that the Alarm occurs: 1. the Control Room operator (“CRO”) who is responsible for the pipeline that generates the alarm, 2. the leak detection analyst (“LD Analyst”), and 3. the senior technical advisor for that pipeline.

Terms of Reference Table: Special Terms referenced in these reports.

The following section define terms used by Enbridge for the purpose of these reports.

Consent Decree Reference	Term	Definition
VII.G.V.104	Alarm or Alarms	Alarm and Alarming Event are equivalent in these reports. An Alarming Event is an event with a single root cause but can generate one or more alarms. Enbridge documents alarms as events. In order to align with the information requested by the Consent Decree (such as root cause), Alarming Events are reported.
VII.G.V.108	Alarm Clearance	Alarm Clearance is the act of investigating whether an Alarm is truly a potential leak or a false alarm. The alarm clearance is a procedural act and not to be confused with the alarm status which is the binary state of in alarm state (ALM, often “1”) or returned to normal (RTN, often “0”).

I certify that for this reporting period, the information contained in the SOA, WLOA, and ROAs, is true and accurate, and Enbridge has complied with the 10-Minute Rule and other requirements of Subsection VII.G.(V).

Vice President, Pipeline Control

[redacted] [redacted] [redacted]

Name Signature Date

1. Summary of Alarms (“SOA”)

The records in this report each contain data that are referenced by the Consent Decree. The terms are explained in the following table.

Table 1a: Description of fields in this Report

Data	Description
Pipeline	Name (number) of the pipeline
Total Alarms	Total number of alarming events for reporting period
Total Non-Compliance	**(Alarming)** Number of times Enbridge did not comply with the 10-Minute Rule in responding to Alarms **(Non-Alarming)** Number of times Enbridge did not comply with the 10-Minute Rule in responding to potential leak or rupture from a source other than an Alarm
Reasons and Corrective Actions for each Non-Compliance	Reference to the Post Incident Report describing reason for the non-compliance and the corrective action, if any, taken to prevent a reoccurrence of the non-compliance. An empty reference indicates either zero non-compliance to the 10-minute rule or the Post Incident Report is not yet generated.

Table 1b: Summary of Alarms (Reporting Period: May 23, 2022 to October 18, 2022)

Pipeline	Total Alarms	Total Non-Compliance (Alarming)	Total Non-Compliance (Non-Alarming)	Reasons and Corrective Actions for each Non-Compliance
00	0	0	0	
01	6	0	0	
02	27	0	0	
03	0	0	0	
04	15	0	0	
05	18	0	0	
06A	25	0	0	
10	3	0	0	
14	15	0	0	
61*				
62*				

Pipeline	Total Alarms	Total Non-Compliance (Alarming)	Total Non-Compliance (Non-Alarming)	Reasons and Corrective Actions for each Non-Compliance
64	0	0	0	
65	0	0	0	
67	2	0	0	
78	9	0	0	
93*				

* Lines 61, 62 and 93 were excluded from this report as they are not in scope of partial termination.

2. Record of Alarm (“ROA”)

The records in this report each contain data that are referenced by the Consent Decree. The terms are explained in the following table.

Table 2a: Description of fields in this Report

Data	Description
Pipeline	Name (number) of the pipeline.
Alarming Event Start Time	Start of the Alarming Event that caused the alarm(s) to trigger. It is always the receipt time of the earliest alarm in an Alarming Event.
Alarm Received Time	Time that the alarm was received for each individual alarm within the Alarming Event. Each alarm is simultaneously received by all members of the alarm response team.
Alarm Assessed Time	Time that the alarm was assessed for each individual alarm within the Alarming Event. Each alarm is assessed by each independent member of the alarm response team; an alarm is considered assessed when all members of the alarm response team has assessed.
Root Cause	Cause and classification of the Alarm. An empty field indicates the root cause has not yet been documented.
CRO and STA Actions	Procedures executed by the control room operator (OP) and the senior technical advisor (STA) which define the positions (i.e. role) of the Alarm Recipients, the actions (or inactions) of the Alarm Response Team, and each fact considered in determining the cause of the Alarm. An empty field indicates the actions or procedures have not yet been documented.

Table 2a: Description of fields in this Report

LDA Actions	Procedures executed by the leak detection analyst (LDA) which define the positions (i.e. role) of the Alarm Recipients, the actions (or inactions) of the Alarm Response Team, and each fact considered in determining the cause of the Alarm. An empty field indicates the actions or procedures have not yet been documented.
Shutdown Commenced	Time the Unscheduled Shutdown commenced. An empty time indicates the Shutdown Commenced has not yet been documented.
Shutdown Completed	Time the Unscheduled Shutdown completed. An empty time indicates the Shutdown Completed has not yet been documented.
Justification for Resumption	Justification for resumption of pumping operations. An empty field indicates the Justification for Resumption has not yet been documented.
Startup Commenced	Time that pumping operations resumed. An empty time indicates the Startup Commenced has not yet been documented.
Were Procedures Followed	Certification of compliance with 10-Minute Rule. An empty field indicates the certification of compliance has not yet been documented.
Post Incident Report	Reference of Post-Incident Report if not in compliance with the 10-Minute Rule. An empty reference indicates the Post Incident Report is not needed or has not yet been documented.

Table 2b: Record of Alarm

Pipeline	01
Alarming Event Start Time	2022-06-01 19:28:26
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-06-01 19:28:26 2022-06-01 20:58:29 2022-06-01 19:39:56 2022-06-01 20:58:32
Root Cause	Instrument Error
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-06-01 19:37:34
Shutdown Completed	2022-06-01 19:52:12
Justification for Resumption	After shutdown, alarm deemed invalid following LDA investigation and CCO investigation identified no leak triggers CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2022-06-01 23:12:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	01
Alarming Event Start Time	2022-10-06 07:18:03
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-10-06 07:18:03 2022-10-06 07:42:29 2022-10-06 07:18:03 2022-10-06 07:42:32
Root Cause	Field Maintenance
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed invalid following LDA investigation and CCO investigation identified no leak triggers
Startup Commenced	2022-10-08 01:38:05
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	02
Alarming Event Start Time	2022-05-26 22:47:27
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-05-26 22:47:28 2022-05-26 22:52:09
Root Cause	Transient Condition
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-05-26 22:43:57 * * The line was in the process of shutting down when the alarm was generated. The 'Shutdown Commenced' is the time when the shutdown was initiated.
Shutdown Completed	2022-05-26 23:03:14
Justification for Resumption	Static Pressure Monitoring of System over 60 minutes and CCO investigation identified no additional leak triggers. Regional and CCO Admin approvals granted
Startup Commenced	2022-05-27 01:10:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	02
Alarming Event Start Time	2022-05-31 22:23:06
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-05-31 22:23:06 2022-05-31 22:33:04 2022-05-31 22:24:07 2022-05-31 22:33:06
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-05-31 22:33:40 * *Each alarm was assessed individually to rule out the possibility of a leak within 10 minutes of the first alarm. Shutdown was commenced immediately, not to exceed 60 seconds upon completion of the 10-minute timer. This is in accordance with the Ten-Minute Rule as explained to the ITP on Sept 2017 and Jan 2018.
Shutdown Completed	2022-05-31 22:43:42
Justification for Resumption	After shutdown, alarm deemed valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2022-06-01 00:30:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	02
Alarming Event Start Time	2022-06-05 04:31:35
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-06-05 04:31:36 2022-06-05 04:36:09
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers
Startup Commenced	2022-06-05 06:26:45
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	02
Alarming Event Start Time	2022-06-08 15:19:56
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-06-08 15:19:57 2022-06-08 15:34:06 2022-06-08 15:20:57 2022-06-08 15:34:03
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-06-08 15:29:56
Shutdown Completed	2022-06-08 15:43:44
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2022-06-08 17:57:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	02
Alarming Event Start Time	2022-06-20 01:17:45
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-06-20 01:17:45 2022-06-20 01:27:45 2022-06-20 01:18:15 2022-06-20 01:27:47
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-06-20 01:27:17
Shutdown Completed	2022-06-20 01:36:01
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2022-06-20 03:34:49
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	02
Alarming Event Start Time	2022-06-24 08:18:16
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-06-24 08:18:17 2022-06-24 08:20:57
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers
Startup Commenced	2022-06-24 08:45:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	02
Alarming Event Start Time	2022-07-09 11:06:55
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-07-09 11:06:55 2022-07-09 11:19:07 2022-07-09 11:08:25 2022-07-09 11:19:09
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-07-09 11:17:19 * *Each alarm was assessed individually to rule out the possibility of a leak within 10 minutes of the first alarm. Shutdown was commenced immediately, not to exceed 60 seconds upon completion of the 10-minute timer. This is in accordance with the Ten-Minute Rule as explained to the ITP on Sept 2017 and Jan 2018.
Shutdown Completed	2022-07-09 11:31:09
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2022-07-09 13:26:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	02
Alarming Event Start Time	2022-07-19 15:29:40
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-07-19 15:29:41 2022-07-19 15:37:34 2022-07-19 15:30:11 2022-07-19 15:37:38 2022-07-19 17:08:10 2022-07-19 17:13:43
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-07-19 15:38:03
Shutdown Completed	2022-07-19 15:52:55
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2022-07-19 19:10:40
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	02
Alarming Event Start Time	2022-08-10 12:20:25
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-08-10 12:20:26 2022-08-10 12:26:20
Root Cause	Transient Condition
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-08-10 12:17:02* * The line was in the process of shutting down when the alarm was generated. The 'Shutdown Commenced' is the time when the shutdown was initiated.
Shutdown Completed	2022-08-10 12:35:21
Justification for Resumption	Static Pressure Monitoring of System over 60 minutes and CCO investigation identified no additional leak triggers. Regional and CCO Admin approvals granted
Startup Commenced	2022-08-10 18:33:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	02
Alarming Event Start Time	2022-08-19 16:22:56
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-08-19 16:22:56 2022-08-19 16:32:42
Root Cause	Transient Condition
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-08-19 16:33:05 * *Each alarm was assessed individually to rule out the possibility of a leak within 10 minutes of the first alarm. Shutdown was commenced immediately, not to exceed 60 seconds upon completion of the 10-minute timer. This is in accordance with the Ten-Minute Rule as explained to the ITP on Sept 2017 and Jan 2018.
Shutdown Completed	2022-08-19 16:46:20
Justification for Resumption	Static Pressure Monitoring of System over 60 minutes and CCO investigation identified no additional leak triggers. Regional and CCO Admin approvals granted
Startup Commenced	2022-08-19 18:44:24
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	04
Alarming Event Start Time	2022-06-23 14:41:31
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-06-23 14:41:32 2022-06-23 15:00:53
Root Cause	LDS Error
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-06-23 14:20:56* * The line was in the process of shutting down when the alarm was generated. The 'Shutdown Commenced' is the time when the shutdown was initiated.
Shutdown Completed	2022-06-23 14:43:49
Justification for Resumption	After shutdown, alarm deemed invalid following LDA investigation and CCO investigation identified no leak triggers
Startup Commenced	2022-06-24 01:00:08
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	04
Alarming Event Start Time	2022-07-05 09:09:36
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-07-05 09:09:37 2022-07-05 09:16:51
Root Cause	Transient Condition
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-07-05 09:08:22* * The line was in the process of shutting down when the alarm was generated. The 'Shutdown Commenced' is the time when the shutdown was initiated.
Shutdown Completed	2022-07-05 09:27:47
Justification for Resumption	Static Pressure Monitoring of System over 60 minutes and CCO investigation identified no additional leak triggers. Regional and CCO Admin approvals granted
Startup Commenced	2022-07-05 11:27:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	04
Alarming Event Start Time	2022-09-07 07:53:30
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-09-07 07:53:31 2022-09-07 08:01:50
Root Cause	Transient Condition
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-09-07 07:53:48
Shutdown Completed	2022-09-07 08:23:42
Justification for Resumption	Static Pressure Monitoring of System over 60 minutes and CCO investigation identified no additional leak triggers. Regional and CCO Admin approvals granted
Startup Commenced	2022-09-07 10:30:02
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	04
Alarming Event Start Time	2022-09-07 08:04:29
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-09-07 08:04:30 2022-09-07 08:07:38
Root Cause	Transient Condition
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	Static Pressure Monitoring of System over 60 minutes and CCO investigation identified no additional leak triggers. Regional and CCO Admin approvals granted
Startup Commenced	2022-09-07 10:30:02
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	05
Alarming Event Start Time	2022-07-07 04:59:29
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-07-07 04:59:29 2022-07-07 05:17:54
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-07-07 05:09:25
Shutdown Completed	2022-07-07 05:20:23
Justification for Resumption	After shutdown, alarm deemed invalid following LDA investigation and CCO investigation identified no leak triggers
Startup Commenced	2022-07-07 06:05:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2022-06-21 23:57:18
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-06-21 23:57:18 2022-06-22 00:42:45 2022-06-21 23:57:18 2022-06-22 00:42:43
Root Cause	Instrument Error
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-06-22 00:08:19* * LDAM and SCADA automatically shut down the pipeline at the end of the 11th minute, in accordance with the 10-minute rule. There was a 1-second delay in automatically executing the shutdown.
Shutdown Completed	2022-06-22 00:27:06
Justification for Resumption	After shutdown, alarm deemed invalid following LDA investigation and CCO investigation identified no leak triggers
Startup Commenced	2022-06-22 01:20:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2022-09-13 08:28:31
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-09-13 08:28:32 2022-09-13 08:32:25
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers
Startup Commenced	2022-09-13 20:51:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2022-09-13 10:28:04
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-09-13 10:28:04 2022-09-13 10:34:20 2022-09-13 10:31:04 2022-09-13 10:40:02
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers
Startup Commenced	2022-09-13 20:51:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2022-09-13 12:28:41
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-09-13 12:28:42 2022-09-13 12:34:46 2022-09-13 12:31:10 2022-09-13 12:34:44 2022-09-13 12:31:41 2022-09-13 12:34:42
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers
Startup Commenced	2022-09-13 20:51:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2022-09-13 20:49:16
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-09-13 20:49:16 2022-09-13 20:57:13 2022-09-13 20:50:16 2022-09-13 20:57:26 2022-09-13 20:50:16 2022-09-13 20:57:50
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2022-09-13 20:59:05
Shutdown Completed	2022-09-13 21:20:07
Justification for Resumption	Visual inspection performed by field staff - Regional and CCO Admin approvals granted
Startup Commenced	2022-09-14 15:21:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2022-09-14 02:00:50
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-09-14 02:00:51 2022-09-14 02:06:44
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	Visual inspection performed by field staff - Regional and CCO Admin approvals granted
Startup Commenced	2022-09-14 15:21:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2022-09-14 03:31:25
MBS Alarm Received Time	2022-09-14 03:31:25
MBS Alarm Assessed Time	2022-09-14 04:24:22
MBS Alarm Received Time	2022-09-14 03:32:25
MBS Alarm Assessed Time	2022-09-14 04:24:27
MBS Alarm Received Time	2022-09-14 03:33:26
MBS Alarm Assessed Time	2022-09-14 04:24:30
MBS Alarm Received Time	2022-09-14 03:34:26
MBS Alarm Assessed Time	2022-09-14 04:24:32
MBS Alarm Received Time	2022-09-14 03:36:26
MBS Alarm Assessed Time	2022-09-14 04:24:35
MBS Alarm Received Time	2022-09-14 03:37:26
MBS Alarm Assessed Time	2022-09-14 04:24:38
MBS Alarm Received Time	2022-09-14 03:38:25
MBS Alarm Assessed Time	2022-09-14 04:24:40
MBS Alarm Received Time	2022-09-14 03:39:25
MBS Alarm Assessed Time	2022-09-14 04:24:44
MBS Alarm Received Time	2022-09-14 03:40:25
MBS Alarm Assessed Time	2022-09-14 04:24:46
MBS Alarm Received Time	2022-09-14 03:41:26
MBS Alarm Assessed Time	2022-09-14 04:24:49
MBS Alarm Received Time	2022-09-14 03:42:26
MBS Alarm Assessed Time	2022-09-14 04:24:51
MBS Alarm Received Time	2022-09-14 03:43:27
MBS Alarm Assessed Time	2022-09-14 04:24:54
MBS Alarm Received Time	2022-09-14 03:44:26
MBS Alarm Assessed Time	2022-09-14 04:24:56
MBS Alarm Received Time	2022-09-14 03:45:26
MBS Alarm Assessed Time	2022-09-14 04:25:00
MBS Alarm Received Time	2022-09-14 03:46:26
MBS Alarm Assessed Time	2022-09-14 04:25:03
MBS Alarm Received Time	2022-09-14 03:47:26
MBS Alarm Assessed Time	2022-09-14 04:25:05
MBS Alarm Received Time	2022-09-14 03:48:26
MBS Alarm Assessed Time	2022-09-14 04:25:07
MBS Alarm Received Time	2022-09-14 03:49:26
MBS Alarm Assessed Time	2022-09-14 04:25:09
MBS Alarm Received Time	2022-09-14 03:50:26
MBS Alarm Assessed Time	2022-09-14 04:25:11
MBS Alarm Received Time	2022-09-14 03:51:25
MBS Alarm Assessed Time	2022-09-14 04:25:13

MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-09-14 03:52:26 2022-09-14 04:25:15 2022-09-14 03:53:26 2022-09-14 04:25:17 2022-09-14 03:54:26 2022-09-14 04:25:20
Root Cause	LDS Error
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed invalid following LDA investigation and CCO investigation identified no leak triggers
Startup Commenced	2022-09-14 15:21:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2022-09-14 09:23:35
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-09-14 09:23:36 2022-09-14 09:28:19
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers Visual inspection performed by field staff - Regional and CCO Admin approvals granted
Startup Commenced	2022-09-14 15:21:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2022-09-14 13:05:11
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-09-14 13:05:12 2022-09-14 13:11:33
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers
Startup Commenced	2022-09-14 15:21:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2022-10-12 13:41:37
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-10-12 13:41:38 2022-10-12 13:44:43
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers
Startup Commenced	2022-10-13 05:47:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2022-10-12 18:30:14
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-10-12 18:30:15 2022-10-12 18:37:29
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers
Startup Commenced	2022-10-13 05:47:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	14
Alarming Event Start Time	2022-06-20 13:35:38
RDS Alarm Received Time **RDS Alarm Assessed Time**	2022-06-20 13:35:38 2022-06-20 15:05:59
Root Cause	Transient Condition
CRO and STA Actions	Rupture Detection Alarm - Pipeline
LDA Actions	LD - RDS - Rupture Alarm
Shutdown Commenced	2022-06-20 13:33:23 * * The line was in the process of shutting down when the alarm was generated. The 'Shutdown Commenced' is the time when the shutdown was initiated.
Shutdown Completed	2022-06-20 13:45:42
Justification for Resumption	Aerial Patrol Performed - Regional and CCO admin approvals granted After shutdown, alarm deemed invalid following LDA investigation and CCO investigation identified no leak triggers
Startup Commenced	2022-06-20 22:55:28
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	14
Alarming Event Start Time	2022-07-10 17:14:11
MBS Alarm Received Time **MBS Alarm Assessed Time**	2022-07-10 17:14:12 2022-07-10 17:30:21
Root Cause	Power Outage
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed invalid following LDA investigation and CCO investigation identified no leak triggers
Startup Commenced	2022-07-10 18:37:04
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	78
Alarming Event Start Time	2022-07-23 15:00:46
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-07-23 15:00:47 2022-07-23 15:06:29 2022-07-23 15:03:18 2022-07-23 15:07:09
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers
Startup Commenced	2022-07-24 02:00:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	78
Alarming Event Start Time	2022-07-31 17:23:43
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2022-07-31 17:23:44 2022-07-31 17:29:32 2022-07-31 17:25:14 2022-07-31 17:29:35
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Non-Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	After shutdown, alarm deemed valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers
Startup Commenced	2022-08-01 00:10:00
Were Procedures Followed	Yes
Post Incident Report	

3. Weekly List of Alarms ("WLOA")

The records in this report each contain data that are referenced by the Consent Decree. The terms are explained in the following table.

Table 3a: Description of fields in this Report

Data	Description
Week	ISO 8601 week date label to identify the week in the "weekly" list of alarms.
Pipeline	Name (number) of the pipeline.
Type	Type of alarm (AVB, MBS or RDS): • AVB are 24-hour MBS alarms • MBS are 5-minute, 20-minute, or 2-hour MBS alarms • RDS are Rupture Detection System alarms
Alarming Event Start Time	Start of the Alarming Event that caused the alarm(s) to trigger. It is always the receipt time of the earliest alarm in an Alarming Event.
Alarm Received Time	Time that the alarm was received for each individual alarm within the Alarming Event. Each alarm is simultaneously received by all members of the alarm response team.
Alarm Assessed Time	Time that the alarm was assessed for each individual alarm within the Alarming Event. Each alarm is assessed by each independent member of the alarm response team; an alarm is considered assessed when all members of the alarm response team has assessed.
Alarm Cleared Time	The date and time when the Alarm was cleared. An empty time indicates the Alarm has not yet been cleared as of the printing of this report.
Shutdown Required	Indication of whether this Alarm resulted in a shutdown.

Table 3b: Weekly List of Alarms

2022 Week 21: 10 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2022-05-23 14:31:05	MBS MBS	2022-05-23 14:31:06 2022-05-23 14:31:37	2022-05-23 14:40:44 2022-05-23 14:40:52	2022-05-23 14:40:44 2022-05-23 14:40:52	No
02	2022-05-26 22:47:27	MBS	2022-05-26 22:47:28	2022-05-26 22:52:09	2022-05-27 00:29:09	Yes
02	2022-05-28 12:06:13	MBS MBS	2022-05-28 12:06:14 2022-05-28 12:06:44	2022-05-28 12:10:49 2022-05-28 12:10:45	2022-05-28 12:10:49 2022-05-28 12:10:45	No
02	2022-05-28 15:55:15	MBS MBS	2022-05-28 15:55:16 2022-05-28 15:55:16	2022-05-28 16:02:29 2022-05-28 16:02:28	2022-05-28 16:02:29 2022-05-28 16:02:28	No
02	2022-05-28 18:35:19	MBS	2022-05-28 18:35:19	2022-05-28 18:44:05	2022-05-28 18:44:05	No
05	2022-05-23 09:05:04	MBS MBS MBS	2022-05-23 09:05:05 2022-05-23 09:05:05 2022-05-23 09:05:35	2022-05-23 09:06:43 2022-05-23 09:06:45 2022-05-23 09:06:45	2022-05-23 09:06:43 2022-05-23 09:06:45 2022-05-23 09:06:45	No
05	2022-05-24 15:29:27	MBS	2022-05-24 15:29:27	2022-05-24 15:33:57	2022-05-24 15:33:57	No
14	2022-05-25 07:26:29	MBS MBS	2022-05-25 07:26:30 2022-05-25 07:26:30	2022-05-25 07:29:37 2022-05-25 07:29:35	2022-05-25 07:29:37 2022-05-25 07:29:35	No
14	2022-05-25 22:44:30	MBS	2022-05-25 22:44:30	2022-05-25 22:48:59	2022-05-25 22:48:59	No
78	2022-05-24 08:34:19	MBS MBS MBS	2022-05-24 08:34:20 2022-05-24 08:34:20 2022-05-24 08:37:50	2022-05-24 08:42:22 2022-05-24 08:42:23 2022-05-24 08:42:25	2022-05-24 08:42:22 2022-05-24 08:42:23 2022-05-24 08:42:25	No

2022 Week 22: 4 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
01	2022-06-01 19:28:26	MBS MBS	2022-06-01 19:28:26 2022-06-01 19:39:56	2022-06-01 20:58:29 2022-06-01 20:58:32	2022-06-01 21:44:00 2022-06-01 21:44:00	Yes
02	2022-05-31 22:23:06	MBS MBS	2022-05-31 22:23:06 2022-05-31 22:24:07	2022-05-31 22:33:04 2022-05-31 22:33:06	2022-05-31 23:28:00 2022-05-31 23:28:00	Yes
02	2022-06-01 12:40:15	MBS MBS	2022-06-01 12:40:15 2022-06-01 12:40:15	2022-06-01 12:44:26 2022-06-01 12:44:28	2022-06-01 12:44:26 2022-06-01 12:44:28	No
02	2022-06-05 04:31:35	MBS	2022-06-05 04:31:36	2022-06-05 04:36:09	2022-06-05 04:50:29	Yes

2022 Week 23: 8 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2022-06-08 15:19:56	MBS MBS	2022-06-08 15:19:57 2022-06-08 15:20:57	2022-06-08 15:34:06 2022-06-08 15:34:03	2022-06-08 16:41:57 2022-06-08 16:41:57	Yes
04	2022-06-07 05:36:43	MBS	2022-06-07 05:36:43	2022-06-07 05:42:21	2022-06-07 05:42:21	No
05	2022-06-06 07:16:10	MBS	2022-06-06 07:16:11	2022-06-06 07:18:05	2022-06-06 07:18:05	No
05	2022-06-08 12:09:54	MBS MBS	2022-06-08 12:09:55 2022-06-08 12:10:25	2022-06-08 12:19:09 2022-06-08 12:19:11	2022-06-08 12:19:09 2022-06-08 12:19:11	No
05	2022-06-08 18:12:37	AVB	2022-06-08 18:12:38	2022-06-08 18:15:02	2022-06-08 18:15:02	No
05	2022-06-09 19:17:34	MBS	2022-06-09 19:17:35	2022-06-09 19:26:25	2022-06-09 19:26:25	No
05	2022-06-10 01:24:46	AVB	2022-06-10 01:24:46	2022-06-10 01:26:45	2022-06-10 01:26:45	No
05	2022-06-12 07:49:16	AVB	2022-06-12 07:49:17	2022-06-12 07:52:25	2022-06-12 07:52:25	No

2022 Week 24: 5 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2022-06-13 00:30:46	MBS	2022-06-13 00:30:47	2022-06-13 00:34:15	2022-06-13 00:34:15	No
02	2022-06-15 20:34:02	MBS MBS	2022-06-15 20:34:02 2022-06-15 20:35:03	2022-06-15 20:42:57 2022-06-15 20:42:58	2022-06-15 20:42:57 2022-06-15 20:42:58	No
06A	2022-06-16 05:18:25	MBS MBS	2022-06-16 05:18:26 2022-06-16 05:18:56	2022-06-16 05:22:34 2022-06-16 05:22:32	2022-06-16 05:22:34 2022-06-16 05:22:32	No
10	2022-06-15 10:53:52	MBS MBS MBS	2022-06-15 10:53:52 2022-06-15 10:54:21 2022-06-15 10:54:21	2022-06-15 10:58:26 2022-06-15 10:58:24 2022-06-15 10:58:22	2022-06-15 10:58:26 2022-06-15 10:58:24 2022-06-15 10:58:22	No
14	2022-06-19 21:59:53	MBS	2022-06-19 21:59:54	2022-06-19 22:08:21	2022-06-19 22:08:21	No

2022 Week 25: 14 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2022-06-20 01:17:45	MBS MBS	2022-06-20 01:17:45 2022-06-20 01:18:15	2022-06-20 01:27:45 2022-06-20 01:27:47	2022-06-20 02:36:37 2022-06-20 02:36:37	Yes
02	2022-06-22 15:38:06	MBS	2022-06-22 15:38:07	2022-06-22 15:41:07	2022-06-22 15:41:07	No
02	2022-06-23 05:35:00	MBS MBS	2022-06-23 05:35:00 2022-06-23 05:36:00	2022-06-23 05:39:23 2022-06-23 05:39:24	2022-06-23 05:39:23 2022-06-23 05:39:24	No
02	2022-06-23 18:42:16	MBS MBS	2022-06-23 18:42:16 2022-06-23 18:42:46	2022-06-23 18:46:25 2022-06-23 18:46:22	2022-06-23 18:46:25 2022-06-23 18:46:22	No
02	2022-06-24 08:18:16	MBS	2022-06-24 08:18:17	2022-06-24 08:20:57	2022-06-24 08:30:37	Yes
02	2022-06-24 08:45:17	MBS	2022-06-24 08:45:18	2022-06-24 08:49:19	2022-06-24 08:49:19	No
04	2022-06-23 14:41:31	MBS	2022-06-23 14:41:32	2022-06-23 15:00:53	2022-06-23 15:15:00	Yes
06A	2022-06-21 23:57:18	MBS MBS	2022-06-21 23:57:18 2022-06-21 23:57:18	2022-06-22 00:42:45 2022-06-22 00:42:43	2022-06-22 00:45:00 2022-06-22 00:45:00	Yes
10	2022-06-20 18:58:00	MBS	2022-06-20 18:58:00	2022-06-20 19:05:14	2022-06-20 19:05:14	No
10	2022-06-20 20:15:30	MBS	2022-06-20 20:15:31	2022-06-20 20:19:26	2022-06-20 20:19:26	No
14	2022-06-20 13:35:38	RDS	2022-06-20 13:35:38	2022-06-20 15:05:59	2022-06-20 21:33:43	Yes
14	2022-06-23 04:52:33	MBS MBS	2022-06-23 04:52:33 2022-06-23 04:52:33	2022-06-23 05:01:01 2022-06-23 05:00:59	2022-06-23 05:01:01 2022-06-23 05:00:59	No
67	2022-06-26 00:10:37	MBS	2022-06-26 00:10:38	2022-06-26 00:14:41	2022-06-26 00:14:47	No
78	2022-06-23 07:36:21	MBS	2022-06-23 07:36:22	2022-06-23 07:42:30	2022-06-23 07:42:30	No

2022 Week 26: 1 Alarming Event in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
01	2022-07-03 17:18:18	MBS	2022-07-03 17:18:18	2022-07-03 17:24:48	2022-07-03 17:24:48	No
		MBS	2022-07-03 17:18:18	2022-07-03 17:24:46	2022-07-03 17:24:46	

2022 Week 27: 7 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2022-07-09 11:06:55	MBS MBS	2022-07-09 11:06:55 2022-07-09 11:08:25	2022-07-09 11:19:07 2022-07-09 11:19:09	2022-07-09 12:22:00 2022-07-09 12:22:00	Yes
04	2022-07-05 09:09:36	MBS	2022-07-05 09:09:37	2022-07-05 09:16:51	2022-07-05 10:38:58	Yes
05	2022-07-07 04:59:29	MBS	2022-07-07 04:59:29	2022-07-07 05:17:54	2022-07-07 05:25:00	Yes
05	2022-07-07 06:35:33	AVB	2022-07-07 06:35:33	2022-07-07 06:38:29	2022-07-07 06:38:29	No
14	2022-07-08 08:33:48	MBS MBS MBS	2022-07-08 08:33:49 2022-07-08 08:33:49 2022-07-08 08:34:19	2022-07-08 08:40:04 2022-07-08 08:39:59 2022-07-08 08:39:55	2022-07-08 08:40:04 2022-07-08 08:39:59 2022-07-08 08:39:55	No
14	2022-07-10 17:14:11	MBS	2022-07-10 17:14:12	2022-07-10 17:30:21	2022-07-10 17:36:47	Yes
14	2022-07-10 21:27:54	MBS MBS	2022-07-10 21:27:54 2022-07-10 21:27:54	2022-07-10 21:35:44 2022-07-10 21:35:46	2022-07-10 21:35:44 2022-07-10 21:35:46	No

2022 Week 28: 1 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
14	2022-07-15 23:05:58	MBS	2022-07-15 23:05:58	2022-07-15 23:14:27	2022-07-15 23:14:27	No

2022 Week 29: 3 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2022-07-19 15:29:40	MBS MBS MBS	2022-07-19 15:29:41 2022-07-19 15:30:11 2022-07-19 17:08:10	2022-07-19 15:37:34 2022-07-19 15:37:38 2022-07-19 17:13:43	2022-07-19 16:42:00 2022-07-19 16:42:00 2022-07-19 16:42:00	Yes
67	2022-07-19 15:02:06	MBS MBS MBS	2022-07-19 15:02:06 2022-07-19 15:02:06 2022-07-19 15:02:06	2022-07-19 15:08:39 2022-07-19 15:08:41 2022-07-19 15:08:44	2022-07-19 15:08:39 2022-07-19 15:08:41 2022-07-19 15:08:44	No
78	2022-07-23 15:00:46	MBS MBS	2022-07-23 15:00:47 2022-07-23 15:03:18	2022-07-23 15:06:29 2022-07-23 15:07:09	2022-07-23 15:28:01 2022-07-23 15:28:01	Yes

2022 Week 30: 3 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
04	2022-07-26 00:35:16	MBS	2022-07-26 00:35:17	2022-07-26 00:43:26	2022-07-26 00:43:26	No
05	2022-07-26 05:17:31	MBS MBS	2022-07-26 05:17:31 2022-07-26 05:21:33	2022-07-26 05:25:37 2022-07-26 05:25:34	2022-07-26 05:25:37 2022-07-26 05:25:34	No
78	2022-07-31 17:23:43	MBS	2022-07-31 17:23:44 2022-07-31 17:25:14	2022-07-31 17:29:32 2022-07-31 17:29:35	2022-07-31 17:35:43 2022-07-31 17:35:43	Yes

2022 Week 31: 4 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2022-08-04 07:36:19	MBS MBS	2022-08-04 07:36:19 2022-08-04 07:36:49	2022-08-04 07:45:37 2022-08-04 07:45:38	2022-08-04 07:45:37 2022-08-04 07:45:38	No
06A	2022-08-02 09:59:32	MBS MBS	2022-08-02 09:59:32 2022-08-02 10:00:02	2022-08-02 10:04:18 2022-08-02 10:04:19	2022-08-02 10:04:18 2022-08-02 10:04:19	No
06A	2022-08-04 17:53:36	MBS MBS	2022-08-04 17:53:36 2022-08-04 17:54:06	2022-08-04 17:56:57 2022-08-04 17:56:59	2022-08-04 17:56:57 2022-08-04 17:56:59	No
78	2022-08-03 15:58:45	MBS	2022-08-03 15:58:46	2022-08-03 16:03:53	2022-08-03 16:03:53	No

2022 Week 32: 7 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2022-08-10 12:20:25	MBS	2022-08-10 12:20:26	2022-08-10 12:26:20	2022-08-10 14:06:00	Yes
04	2022-08-08 14:42:26	MBS	2022-08-08 14:42:27	2022-08-08 14:47:10	2022-08-08 14:47:10	No
04	2022-08-11 10:30:27	MBS	2022-08-11 10:30:27	2022-08-11 10:37:25	2022-08-11 10:37:25	No
05	2022-08-12 08:54:21	MBS	2022-08-12 08:54:21	2022-08-12 08:58:22	2022-08-12 08:58:22	No
		MBS	2022-08-12 08:54:51	2022-08-12 08:58:24	2022-08-12 08:58:24	
		MBS	2022-08-12 08:56:51	2022-08-12 08:58:25	2022-08-12 08:58:25	
		MBS	2022-08-12 08:56:51	2022-08-12 08:58:29	2022-08-12 08:58:29	
06A	2022-08-11 16:20:03	MBS	2022-08-11 16:20:03	2022-08-11 16:27:37	2022-08-11 16:27:37	No
14	2022-08-11 06:47:34	MBS	2022-08-11 06:47:34	2022-08-11 06:54:29	2022-08-11 06:54:29	No
		MBS	2022-08-11 06:47:34	2022-08-11 06:54:24	2022-08-11 06:54:24	
		MBS	2022-08-11 06:47:34	2022-08-11 06:54:26	2022-08-11 06:54:26	
		MBS	2022-08-11 06:48:04	2022-08-11 06:55:06	2022-08-11 06:55:06	
		MBS	2022-08-11 06:50:35	2022-08-11 06:54:22	2022-08-11 06:54:22	
14	2022-08-11 17:13:28	MBS	2022-08-11 17:13:29	2022-08-11 17:17:04	2022-08-11 17:17:04	No
		MBS	2022-08-11 17:13:29	2022-08-11 17:17:02	2022-08-11 17:17:02	

2022 Week 33: 4 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2022-08-19 16:22:56	MBS	2022-08-19 16:22:56	2022-08-19 16:32:42	2022-08-19 18:00:00	Yes
02	2022-08-19 23:50:11	MBS	2022-08-19 23:50:12	2022-08-19 23:54:14	2022-08-19 23:54:14	No
02	2022-08-21 23:03:11	MBS	2022-08-21 23:03:12	2022-08-21 23:09:11	2022-08-21 23:09:11	No
05	2022-08-16 11:13:23	MBS	2022-08-16 11:13:24	2022-08-16 11:18:05	2022-08-16 11:18:05	No
		MBS	2022-08-16 11:13:24	2022-08-16 11:18:01	2022-08-16 11:18:01	
		MBS	2022-08-16 11:14:23	2022-08-16 11:17:58	2022-08-16 11:17:58	

2022 Week 34: 0 Alarming Events in total

2022 Week 35: 5 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
06A	2022-08-31 12:31:27	MBS MBS	2022-08-31 12:31:28 2022-08-31 13:07:43	2022-08-31 12:31:45 2022-08-31 13:08:03	2022-08-31 12:31:45 2022-08-31 13:08:03	No
06A	2022-09-04 06:17:04	MBS MBS	2022-09-04 06:17:05 2022-09-04 06:19:05	2022-09-04 06:21:16 2022-09-04 06:21:12	2022-09-04 06:21:16 2022-09-04 06:21:12	No
06A	2022-09-04 06:32:05	MBS	2022-09-04 06:32:06	2022-09-04 06:34:59	2022-09-04 06:34:59	No
78	2022-08-31 12:31:28	MBS MBS	2022-08-31 12:31:28 2022-08-31 13:08:18	2022-08-31 12:31:51 2022-08-31 13:08:28	2022-08-31 12:31:51 2022-08-31 13:08:28	No
78	2022-09-01 19:03:38	MBS MBS	2022-09-01 19:03:39 2022-09-01 19:03:39	2022-09-01 19:06:52 2022-09-01 19:06:55	2022-09-01 19:06:52 2022-09-01 19:06:55	No

2022 Week 36: 6 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2022-09-06 15:32:01	MBS	2022-09-06 15:32:02	2022-09-06 15:35:31	2022-09-06 15:35:31	No
02	2022-09-07 19:57:31	MBS	2022-09-07 19:57:32	2022-09-07 20:03:27	2022-09-07 20:03:27	No
04	2022-09-07 07:53:30	MBS	2022-09-07 07:53:31	2022-09-07 08:01:50	2022-09-07 09:44:00	Yes
04	2022-09-07 08:04:29	MBS	2022-09-07 08:04:30	2022-09-07 08:07:38	2022-09-07 09:44:00	Yes
05	2022-09-08 09:24:51	MBS MBS	2022-09-08 09:24:52 2022-09-08 10:13:35	2022-09-08 09:25:00 2022-09-08 10:14:07	2022-09-08 09:25:00 2022-09-08 10:14:07	No
14	2022-09-08 09:18:47	MBS MBS	2022-09-08 09:18:48 2022-09-08 10:13:33	2022-09-08 09:19:00 2022-09-08 10:13:43	2022-09-08 09:19:00 2022-09-08 10:13:43	No

2022 Week 37: 13 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
01	2022-09-12 22:40:31	MBS	2022-09-12 22:40:31	2022-09-12 22:45:54	2022-09-12 22:45:54	No
		MBS	2022-09-12 22:41:02	2022-09-12 22:46:39	2022-09-12 22:46:39	
01	2022-09-12 22:55:32	MBS	2022-09-12 22:55:33	2022-09-12 22:59:38	2022-09-12 22:59:38	No
06A	2022-09-13 08:28:31	MBS	2022-09-13 08:28:32	2022-09-13 08:32:25	2022-09-13 09:28:49	Yes
06A	2022-09-13 10:28:04	MBS	2022-09-13 10:28:04	2022-09-13 10:34:20	2022-09-13 10:50:00	Yes
		MBS	2022-09-13 10:31:04	2022-09-13 10:40:02	2022-09-13 10:50:00	
06A	2022-09-13 12:28:41	MBS	2022-09-13 12:28:42	2022-09-13 12:34:46	2022-09-13 13:49:48	Yes
		MBS	2022-09-13 12:31:10	2022-09-13 12:34:44	2022-09-13 13:49:48	
		MBS	2022-09-13 12:31:41	2022-09-13 12:34:42	2022-09-13 13:49:48	
06A	2022-09-13 20:49:16	MBS	2022-09-13 20:49:16	2022-09-13 20:57:13	2022-09-14 15:21:50	Yes
		MBS	2022-09-13 20:50:16	2022-09-13 20:57:26	2022-09-14 15:21:50	
		MBS	2022-09-13 20:50:16	2022-09-13 20:57:50	2022-09-14 15:21:50	
06A	2022-09-14 02:00:50	MBS	2022-09-14 02:00:51	2022-09-14 02:06:44	2022-09-14 12:23:31	Yes

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
06A	2022-09-14 03:31:25	MBS	2022-09-14 03:31:25	2022-09-14 04:24:22	2022-09-14 04:50:54	Yes
		MBS	2022-09-14 03:32:25	2022-09-14 04:24:27	2022-09-14 04:50:54	
		MBS	2022-09-14 03:33:26	2022-09-14 04:24:30	2022-09-14 04:50:54	
		MBS	2022-09-14 03:34:26	2022-09-14 04:24:32	2022-09-14 04:50:54	
		MBS	2022-09-14 03:36:26	2022-09-14 04:24:35	2022-09-14 04:50:54	
		MBS	2022-09-14 03:37:26	2022-09-14 04:24:38	2022-09-14 04:50:54	
		MBS	2022-09-14 03:38:25	2022-09-14 04:24:40	2022-09-14 04:50:54	
		MBS	2022-09-14 03:39:25	2022-09-14 04:24:44	2022-09-14 04:50:54	
		MBS	2022-09-14 03:40:25	2022-09-14 04:24:46	2022-09-14 04:50:54	
		MBS	2022-09-14 03:41:26	2022-09-14 04:24:49	2022-09-14 04:50:54	
		MBS	2022-09-14 03:42:26	2022-09-14 04:24:51	2022-09-14 04:50:54	
		MBS	2022-09-14 03:43:27	2022-09-14 04:24:54	2022-09-14 04:50:54	
		MBS	2022-09-14 03:44:26	2022-09-14 04:24:56	2022-09-14 04:50:54	
		MBS	2022-09-14 03:45:26	2022-09-14 04:25:00	2022-09-14 04:50:54	
		MBS	2022-09-14 03:46:26	2022-09-14 04:25:03	2022-09-14 04:50:54	
		MBS	2022-09-14 03:47:26	2022-09-14 04:25:05	2022-09-14 04:50:54	
		MBS	2022-09-14 03:48:26	2022-09-14 04:25:07	2022-09-14 04:50:54	
		MBS	2022-09-14 03:49:26	2022-09-14 04:25:09	2022-09-14 04:50:54	
		MBS	2022-09-14 03:50:26	2022-09-14 04:25:11	2022-09-14 04:50:54	
		MBS	2022-09-14 03:51:25	2022-09-14 04:25:13	2022-09-14 04:50:54	
		MBS	2022-09-14 03:52:26	2022-09-14 04:25:15	2022-09-14 04:50:54	
		MBS	2022-09-14 03:53:26	2022-09-14 04:25:17	2022-09-14 04:50:54	
		MBS	2022-09-14 03:54:26	2022-09-14 04:25:20	2022-09-14 04:50:54	
06A	2022-09-14 09:23:35	MBS	2022-09-14 09:23:36	2022-09-14 09:28:19	2022-09-14 12:23:21	Yes
06A	2022-09-14 13:05:11	MBS	2022-09-14 13:05:12	2022-09-14 13:11:33	2022-09-14 12:23:40	Yes
06A	2022-09-14 15:39:15	MBS	2022-09-14 15:39:16	2022-09-14 15:45:55	2022-09-14 15:45:55	No
		MBS	2022-09-14 15:39:16	2022-09-14 15:45:58	2022-09-14 15:45:58	
14	2022-09-13 15:41:53	MBS	2022-09-13 15:41:53	2022-09-13 15:49:43	2022-09-13 15:49:43	No
		MBS	2022-09-13 15:43:53	2022-09-13 15:49:40	2022-09-13 15:49:40	
14	2022-09-13 17:02:53	MBS	2022-09-13 17:02:54	2022-09-13 17:05:27	2022-09-13 17:05:27	No

2022 Week 38: 5 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2022-09-25 12:08:27	MBS	2022-09-25 12:08:28	2022-09-25 12:15:13	2022-09-25 12:15:13	No
05	2022-09-23 19:58:26	MBS	2022-09-23 19:58:27	2022-09-23 20:02:02	2022-09-23 20:02:02	No
		MBS	2022-09-23 19:58:27	2022-09-23 20:02:06	2022-09-23 20:02:06	
06A	2022-09-20 12:01:43	AVB	2022-09-20 12:01:44	2022-09-20 12:03:54	2022-09-20 12:03:54	No
06A	2022-09-22 09:09:01	MBS	2022-09-22 09:09:02	2022-09-22 09:16:18	2022-09-22 09:16:18	No
		MBS	2022-09-22 09:10:02	2022-09-22 09:16:21	2022-09-22 09:16:21	
		MBS	2022-09-22 09:10:32	2022-09-22 09:16:24	2022-09-22 09:16:24	
14	2022-09-20 15:42:00	MBS	2022-09-20 15:42:01	2022-09-20 15:46:13	2022-09-20 15:46:13	No
		MBS	2022-09-20 15:42:01	2022-09-20 15:46:18	2022-09-20 15:46:18	
		MBS	2022-09-20 15:42:01	2022-09-20 15:46:16	2022-09-20 15:46:16	
		MBS	2022-09-20 15:42:01	2022-09-20 15:46:15	2022-09-20 15:46:15	
		MBS	2022-09-20 15:43:31	2022-09-20 15:46:20	2022-09-20 15:46:20	

2022 Week 39: 2 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
04	2022-09-28 23:16:51	MBS	2022-09-28 23:16:51	2022-09-28 23:21:57	2022-09-28 23:21:57	No
04	2022-09-30 21:08:20	MBS	2022-09-30 21:08:20	2022-09-30 21:13:25	2022-09-30 21:13:25	No

2022 Week 40: 8 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
01	2022-10-06 07:18:03	MBS MBS	2022-10-06 07:18:03 2022-10-06 07:18:03	2022-10-06 07:42:29 2022-10-06 07:42:32	2022-10-06 07:37:56 2022-10-06 07:37:56	Yes
04	2022-10-03 11:21:42	MBS MBS	2022-10-03 11:21:43 2022-10-03 11:22:43	2022-10-03 11:29:37 2022-10-03 11:29:39	2022-10-03 11:29:37 2022-10-03 11:29:39	No
04	2022-10-05 11:29:27	MBS MBS MBS	2022-10-05 11:29:28 2022-10-05 11:30:27 2022-10-05 11:31:26	2022-10-05 11:38:43 2022-10-05 11:38:45 2022-10-05 11:38:46	2022-10-05 11:38:43 2022-10-05 11:38:45 2022-10-05 11:38:46	No
04	2022-10-07 17:42:35	MBS MBS	2022-10-07 17:42:35 2022-10-07 17:48:36	2022-10-07 17:49:55 2022-10-07 17:50:07	2022-10-07 17:49:55 2022-10-07 17:50:07	No
06A	2022-10-04 12:08:44	MBS MBS	2022-10-04 12:08:44 2022-10-04 13:25:33	2022-10-04 12:09:10 2022-10-04 13:26:07	2022-10-04 12:09:10 2022-10-04 13:26:07	No
06A	2022-10-05 07:48:05	MBS MBS	2022-10-05 07:48:05 2022-10-05 07:51:36	2022-10-05 07:54:38 2022-10-05 07:54:36	2022-10-05 07:54:38 2022-10-05 07:54:36	No
06A	2022-10-06 09:25:14	MBS	2022-10-06 09:25:15	2022-10-06 09:28:45	2022-10-06 09:28:45	No
78	2022-10-04 12:11:53	MBS MBS	2022-10-04 12:11:53 2022-10-04 13:25:57	2022-10-04 12:12:17 2022-10-04 13:26:08	2022-10-04 12:12:17 2022-10-04 13:26:08	No

2022 Week 41: 8 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
01	2022-10-12 06:37:24	MBS	2022-10-12 06:37:25	2022-10-12 06:42:08	2022-10-12 06:42:08	No
		MBS	2022-10-12 06:37:25	2022-10-12 06:42:06	2022-10-12 06:42:06	
04	2022-10-13 18:44:41	MBS	2022-10-13 18:44:42	2022-10-13 18:49:14	2022-10-13 18:49:14	No
		MBS	2022-10-13 19:02:42	2022-10-13 19:06:42	2022-10-13 19:06:42	
04	2022-10-14 17:17:56	MBS	2022-10-14 17:17:57	2022-10-14 17:22:57	2022-10-14 17:22:57	No
05	2022-10-12 07:01:40	AVB	2022-10-12 07:01:41	2022-10-12 07:09:34	2022-10-12 07:09:34	No
		AVB	2022-10-12 07:01:41	2022-10-12 07:09:32	2022-10-12 07:09:32	
06A	2022-10-12 13:41:37	MBS	2022-10-12 13:41:38	2022-10-12 13:44:43	2022-10-12 14:00:17	Yes
06A	2022-10-12 18:30:14	MBS	2022-10-12 18:30:15	2022-10-12 18:37:29	2022-10-12 18:43:52	Yes
06A	2022-10-13 05:52:38	MBS	2022-10-13 05:52:38	2022-10-13 05:59:19	2022-10-13 05:59:19	No
		MBS	2022-10-13 05:52:38	2022-10-13 05:59:23	2022-10-13 05:59:23	
		MBS	2022-10-13 05:53:39	2022-10-13 06:02:34	2022-10-13 06:02:34	
		MBS	2022-10-13 06:00:41	2022-10-13 06:02:41	2022-10-13 06:02:41	
78	2022-10-11 11:23:56	MBS	2022-10-11 11:23:56	2022-10-11 11:25:58	2022-10-11 11:25:58	No
		MBS	2022-10-11 11:24:27	2022-10-11 11:26:00	2022-10-11 11:26:00	
78	2022-10-11 11:23:56	MBS	2022-10-11 11:23:56	2022-10-11 11:25:58	2022-10-11 11:25:58	No
		MBS	2022-10-11 11:24:27	2022-10-11 11:26:00	2022-10-11 11:26:00	

2022 Week 42: 2 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
05	2022-10-18 05:11:45	AVB	2022-10-18 05:11:45	2022-10-18 05:13:26	2022-10-18 05:13:26	No
		AVB	2022-10-18 05:11:45	2022-10-18 05:13:19	2022-10-18 05:13:19	
05	2022-10-18 19:42:06	MBS	2022-10-18 19:42:07	2022-10-18 19:47:37	2022-10-18 19:47:37	No

4. Instrumentation Outage Report

The records in this report each contain data that are referenced by the Consent Decree. The terms are explained in the following table.

Table 4a: Description of fields in this Report

Data	Description
Pipeline	Name (number) of the pipeline on which the instrument is located
Station	Location of the instrument
Outage Start	Date and time when the instrumentation outage began
Outage End	Date and time when the instrumentation outage was resolved
Root Cause	Reason for instrumentation outage (root cause analysis performed by the Leak Detection Analyst)

The records report instances when the outage exceeds time periods set forth in section VII.G.IV.97 of the decree.

Note Enbridge uses root cause descriptions to categorize the outage. The root cause has a finer granularity than the "Reason for Instrumentation Outage" listed in section VII.G.IV.97 of the decree, but is equivalent. The following table maps the fixed set of root causes that result in the "Reason for Instrumentation Outage" listed in section VII.G.IV.97 of the decree as well as their corresponding fixed set of actions to resolve each outage type.

Table 4b: Description of reasons for outage and actions taken to resolve it

Reason for Instrumentation Outage	Time Limit to Restore	Root Cause	Actions Taken to Resolve the Outage
Instrumentation Failure	10 days	Instrumentation Error	Fixed the Instrument
Instrumentation Failure	10 days	Communication Interruption	Restored Communications
Instrumentation Failure	10 days	Power Outage	Restored Power
Scheduled Maintenance or Repairs	4 days	Field Maintenance	Finished the Maintenance

Table 4c: Instrumentation Outage Report

Pipeline	Station	Outage Start	Outage End	Root Cause

Appendix 3 – PHMSA Reports from Lakehead Discharges [146] and Update on Discharges from Lakehead System Pipelines [147]

Reporting Period: May 23, 2022 to October 18, 2022

NOTICE: This report is required by 49 CFR Part 195. Failure to report can result in a civil penalty as provided in 49 USC 60122.		OMB NO: 2137-0047 EXPIRATION DATE: 3/31/2024
U.S Department of Transportation Pipeline and Hazardous Materials Safety Administration	**Original Report Date:**	07/21/2022
	No.	20220156 -36886 ---------- (DOT Use Only)

ACCIDENT REPORT - HAZARDOUS LIQUID AND CARBON DIOXIDE PIPELINE SYSTEMS

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0047. Public reporting for this collection of information is estimated to be approximately 12 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to the collection of information are mandatory. Send comments regarding this burden or any other aspect of this collection of information, including suggestions for reducing the burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

INSTRUCTIONS

Important: *Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at* http://www.phmsa.dot.gov/pipeline/library/forms .`

PART A - KEY REPORT INFORMATION

Report Type: *(select all that apply)*	**Original:**	**Supplemental:**	**Final:**
	Yes		Yes

Last Revision Date:	
1. Operator's OPS-issued Operator Identification Number (OPID):	11169
2. Name of Operator	ENBRIDGE ENERGY, LIMITED PARTNERSHIP
3. Address of Operator:	
3a. Street Address	5400 WESTHEIMER COURT
3b. City	HOUSTON
3c. State	Texas
3d. Zip Code	77056
4. Earliest local time *(24-hr clock)* and date an accident reporting criteria was met:	06/23/2022 14:20
4a. Time Zone for local time	Central
4b. Daylight Saving in effect?	Yes
5. Location of Accident:	
Latitude / Longitude	[redacted]
6. Commodity released: *(select only one, based on predominant volume released)*	Crude Oil
- Specify Commodity Subtype:	
- If "Other" Subtype, Describe:	

- If Biofuel/Alternative Fuel and Commodity Subtype is Ethanol Blend, then % Ethanol Blend:	
- If Biofuel/Alternative Fuel and Commodity Subtype is Biodiesel, then Biodiesel Blend e.g. B2, B20, B100	
7. Estimated volume of commodity released unintentionally (Barrels):	7.00
8. Estimated volume of intentional and/or controlled release/blowdown (Barrels):	
9. Estimated volume of commodity recovered (Barrels):	7.00
10. Were there fatalities?	No
- If Yes, specify the number in each category:	
10a. Operator employees	
10b. Contractor employees working for the Operator	
10c. Non-Operator emergency responders	
10d. Workers working on the right-of-way, but NOT associated with this Operator	
10e. General public	
10f. Total fatalities (sum of above)	0
11. Were there injuries requiring inpatient hospitalization?	No
- If Yes, specify the number in each category:	
11a. Operator employees	
11b. Contractor employees working for the Operator	
11c. Non-Operator emergency responders	
11d. Workers working on the right-of-way, but NOT associated with this Operator	
11e. General public	
11f. Total injuries (sum of above)	0
12. What was the Operator's initial indication of the Failure? *(select only one)*	Local Operating Personnel, including contractors
Other	
12a. If "Controller", "Local Operating Personnel, including contractors", "Air Patrol", or "Ground Patrol by Operator or its contractor" is selected in Question 12, specify the following: (select only one)	
	Operator employee
13. Local time Operator identified failure	06/23/2022 14:20
14. formerly C2 Part of system involved in Accident: *(select only one)*	Onshore Terminal/Tank Farm Equipment and Piping
15. formerly B1 *Auto-populated based on A14* Was the origin of the Accident onshore?	Yes
Yes (Complete Questions B3-B12)	
No *(Complete Questions B13-B15)*	
16. Operational Status at time Operator identified failure:	Normal Operation, includes pauses between batches and during maintenance
17. If Operational Status = Routine Start-Up or Normal Operation, was the pipeline/facility shut down due to the Accident?	No

Explain:	Scheduled shut down for maintenance activity
If Yes, complete Questions 17.a and 17.b: *(use local time, 24-hr clock)*	
17a. Local time and date of shutdown	
17b. Local time pipeline/facility restarted	
Still shut down*	
18. *If A12 = Notification from Emergency Responder, skip A18.a through A18.c.*	
18a. Did the operator communicate with Local, State, or Federal Emergency Responders about the accident?	No
If No, skip 18b. and 18c	
18b. Which party initiated communication about the accident?	
18c. Local time of initial Operator and Local/State/Federal Emergency Responder communication	
19. Local time Operator responders arrived on site	06/23/2022 14:20
20. Local time of confirmed discovery	06/23/2022 14:20
21a. Local time (24-hr clock) and date of initial operator report to the National Response Center :	06/23/2022 15:03
21b. Initial Operator National Response Center Report Number OR	1339619
21c. Additional NRC Report numbers submitted by the operator:	1339763
22. Did the commodity ignite?	No
If Yes, answer 22.a through d:	
22a. Local time of ignition	
22b. How was the fire extinguished?	
specify:	
22c. Estimated volume of commodity consumed by fire (barrels): (must be less than or equal to A7)	
22d. formerly A16. Did the commodity explode?	
23. If 14. is “Onshore Pipeline, Including Valve Sites” OR “Offshore Pipeline, Including Riser and Riser Bend”, answer A23a through f:	
23a. Initial action taken to control flow upstream of failure location	
- If Operational Control	
If Valve Closure, answer A23b and c:	
23b. Local time of valve closure	
23c. Type of upstream valve used to initially isolate release source:	
23d. Initial action taken to control flow downstream of failure location	
- If Operational Control	
If Valve Closure, answer A23.e and f:	
23e. Local time of valve closure	
23f. Type of downstream valve used to initially isolate release source	

24. If A6 = Crude Oil , Refined and/or Petroleum Product (non-HVL) which is a Liquid at Ambient Conditions, or Biofuel / Alternative Fuel (including ethanol blends) AND A15. is Onshore, answer questions A24a and c	
24a. Did the operator notify a "qualified individual" in the Onshore Oil Spill Response Plan?	Yes
If Yes, answer A24b.	
24b. Local time the "qualified individual" was notified.	06/23/2022 14:30
24c. Did the operator activate an Oil Spill Removal Organization (OSRO)?	Yes
If Yes, answer A24d and e:	
24d. Local time operator activated OSRO	06/23/2022 14:30
24e. Local time OSRO arrived on site	06/23/2022 14:30
25. Number of general public evacuated:	0
PART B - ADDITIONAL LOCATION INFORMATION	
1. Pipeline/Facility name:	Flanagan Terminal
2. Segment name/ID:	Valve 201-V-2023
If Yes, Complete Questions (2-12)	
If No, Complete Questions (13-15)	
- If Onshore:	
3. State:	Illinois
4. Zip Code:	61740
5. City	Livingston
6. County or Parish	Pontiac
7. Operator-designated location:	Milepost
8. Specify:	FN
9. Was this onshore Accident on Federal land?	No
10. Location of Accident:	Totally contained on Operator-controlled property
11. Area of Accident (as found):	Aboveground
Specify:	Typical aboveground facility piping or appurtenance
- If Other, Describe:	
11a. Depth-of-Cover (in):	
12. Did Accident occur in a crossing?	No
- If Yes, specify type below:	
- If Bridge crossing –	
Cased/ Uncased:	
- If Railroad crossing –	
Cased	
Uncased	
Bored/drilled	
- If Road crossing –	

Cased/ / Bored/drilled	
Uncased	
Bored/drilled	
- If Water crossing –	
Cased/ Uncased	
- Name of body of water, if commonly known:	
- Approx. water depth (ft) at the point of the accident:	
- Select:	
Is this water crossing 100 feet or more in length from high water mark to high water mark?	
- If Offshore:	
13. Approximate water depth (ft) at the point of the Accident:	
14. Origin of Accident:	
- In State waters - Specify:	
- State:	
- Area:	
- Block/Tract #:	
- Nearest County/Parish:	
- On the Outer Continental Shelf (OCS) :	
- Area:	
- Block/Tract #:	
15. Area of Accident:	
PART C - ADDITIONAL FACILITY INFORMATION	
1. Is the pipeline or facility:	Interstate
2. reserved	
3. Item involved in Accident:	Valve
- If Pipe, specify:	
If Pipe Body: Was this a puddle/spot weld?	
3a. Nominal Pipe Size:	
3b. Wall thickness (in):	
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
3d. Pipe specification:	
3e. Pipe Seam , specify:	
- If Other, Describe:	
3f. Pipe manufacturer:	
3g. Pipeline coating type at point of Accident, specify:	
- If Other, Describe:	
3h. Coating field applied?	
- If Weld, including heat-affected zone, specify	
- If Other, Describe:	

If Pipe Girth Weld is selected, complete items C3a through h above. Are any of the C3b though h values different on either side of the girth weld?	
If Yes, enter the different value(s) below:	
3i. Wall thickness (in):	
3j. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
3k. Pipe specification:	
Unknown	
3l. Pipe Seam	
- If Other, Describe:	
3m. Pipe manufacturer:	
Unknown	
3n. Pipeline coating type at point of Accident	
- If Other, Describe:	
3o. Coating field applied?	
- If Valve, specify:	
- Valve type	Auxiliary or Other Valve
- If Mainline, Valve Mainline type	
- If Other, Describe:	
3p. Mainline valve manufacturer:	
3q. Type of pump	
- If Other, Describe:	
3r. Type of Service	
- If Other, Describe:	
3s. Tubing material	
3t. Type of tubing	
3u. Specify	
- If Other, Describe:	
3v. Tank Type	
If 3v. = Pressurized:	
3v1. Tank Maximum Operating Pressure	
3v2. What is the set point of the primary pressure relief device on the tank	
3v3. Did the thermal or pressure relief valve activate?	
3v4. Was the MOP of the tank exceeded?	
If 3v = Atmospheric or Low Pressure:	
3v5. Safe-Fill-Level (in feet) at the time of the accident?	
3v6. Was the Safe Fill-Level exceeded?	
3v7. Year of most recent API Std 653 Out-of-Service Inspection	

3v8. API Std 653 In-Service Inspection	
4. Year item involved in Accident was installed:	2022
4a. Year item involved in Accident was manufactured:	2022
5. Material involved in Accident:	Carbon Steel
- If Material other than Carbon Steel, specify:	
6. Type of Accident Involved:	Other
- If Mechanical Puncture – Specify Approx. size:	
in. (axial) by	
in. (circumferential)	
- If Leak - Select Type:	
- If Other, Describe:	
- If Rupture - Select Orientation:	
- If Other, Describe:	
Approx. size: in. (widest opening) by	
in. (length circumferentially or axially)	
- If Other – Describe:	Disassembling flange
PART D - ADDITIONAL CONSEQUENCE INFORMATION	
1. Wildlife impact:	No
1a. If Yes, specify all that apply:	
- Fish/aquatic	
- Birds	
- Terrestrial	
2. Soil contamination:	Yes
3. Long term impact assessment performed or planned:	No
4. Anticipated remediation:	No
4a. If Yes, specify all that apply:	
- Surface water	
- Groundwater	
- Soil	
- Vegetation	
- Wildlife	
5. Water contamination:	No
5a. If Yes, specify all that apply:	
- Ocean/Seawater	
- Surface	
- Groundwater	
- Drinking water: *(Select one or both)*	
- Private Well	
- Public Water Intake	
5b. Estimated amount released in or reaching water (Barrels):	

5c. Name of body of water, if commonly known:	
6. At the location of this Accident, had the pipeline segment or facility been identified as one that "could affect" a High Consequence Area (HCA) as determined in the Operator's Integrity Management Program?	Yes
7. Did the released commodity reach or occur in one or more High Consequence Area (HCA)?	No
7a. If Yes, specify HCA type(s): *(Select all that apply)*	
- Commercially Navigable Waterway:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- High Population Area:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Other Populated Area	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Drinking Water	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Ecological	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
8. Estimated cost to Operator – effective 12-2012, changed to "Estimated Prop	
8a. Estimated cost of public and non-Operator private property damage paid/reimbursed by the Operator – effective 12-2012, "paid/reimbursed by the Operator" removed	[redacted]
8b. Estimated cost of commodity lost	
8c. Estimated cost of Operator's property damage & repairs	
8d. Estimated cost of emergency response	
8e. Estimated cost of environmental remediation	
8f. Estimated other costs	
Describe:	
8g. Total estimated property damage (sum of above)	
Injured Persons not included in A11 The number of persons injured, admitte emaining in the hospital for at least one overnight are reported in A11. ***If a person is included in A11, do not include th***	
9. Estimated number of persons with injuries requiring treatment in a medical facility but not requiring overnight in-patient hospitalization:	0

If a person is included in D9, do not include them in D10.	
10. Estimated number of persons with injuries requiring treatment by EMTs at the site of accident:	0
Buildings Affected	
11. Number of residential buildings affected (evacuated or required repair):	0
12. Number of business buildings affected (evacuated or required repair):	0
PART E - ADDITIONAL OPERATING INFORMATION	
1. Estimated pressure at the point and time of the Accident (psig):	.00
If C3. Is Tank/Vessel and C3v. is Atmospheric, do not answer E2. and E3	
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	275.00
2a. Limiting factor establishing MOP (select only one):	Component Design Pressure §195.406(a)(2)
describe:	
2b. Date MOP established	09/20/2021
2c. Was the MOP established in conjunction with a reversal of flow direction?	No
If E2c = Yes, E2d. What is the date of the most recent surge analysis performed at the point of the Accident?	
3. Describe the pressure on the system or facility relating to the Accident (psig):	Pressure did not exceed MOP
4. Was the system or facility relating to the Accident operating under an established pressure restriction with pressure limits below those normally allowed by the MOP?	No
- If Yes, Complete 4.a and 4.b below:	
4a. Did the pressure exceed this established pressure restriction?	
4b. Was this pressure restriction mandated by PHMSA or the State?	
If A14. is “Onshore Pipeline, Including Valve Sites” OR “Offshore Pipeline, Including Riser and Riser Bend”, complete E5 through E7	
5. Answer E5 only when both A23a and A23d are Valve Closure	
Length of segment initially isolated between valves (ft):	
6. Is the pipeline configured to accommodate internal inspection tools?	
- If No, Which physical features limit tool accommodation? (*select all that apply)*	
- Changes in line pipe diameter	
- Presence of unsuitable mainline valves	
- Tight or mitered pipe bends	
- Other passage restrictions (i.e. unbarred tee’s, projecting instrumentation, etc.)	

- Extra thick pipe wall (applicable only for magnetic flux leakage internal inspection tools)	
- Other -	
- If Other, Describe:	
7. For this pipeline, are there operational factors which significantly complicate the execution of an internal inspection tool run?	
- If Yes, Which operational factors complicate execution? (*select all that apply*)	
- Excessive debris or scale, wax, or other wall buildup	
- Low operating pressure(s)	
- Low flow or absence of flow	
- Incompatible commodity	
- Other -	
- If Other, Describe:	
8. Function of pipeline system:	> 20% SMYS Regulated Transmission
9. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Accident?	Yes
If Yes -	
9a. Was it operating at the time of the Accident?	Yes
9b. Was it fully functional at the time of the Accident?	Yes
9c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	No
9d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	No
10. Was a CPM leak detection system in place on the pipeline or facility involved in the Accident?	No
- If Yes:	
10a. Was it operating at the time of the Accident?	
10b. Was it fully functional at the time of the Accident?	
10c. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	
10d. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	
11. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contributing factor to the Accident?	No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: (provide an explanation for why the Operator did not investigate)

- If No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: *(provide an explanation for why the operator did not investigate)*	The release was due to incorrect disassembling of a flange connection during field work on an open system
- If Yes, specify investigation result(s): *(select all that apply)*	
- Investigation reviewed work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
- Investigation did NOT review work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
Provide an explanation for why not:	
- Investigation identified no control room issues	
- Investigation identified no controller issues	
- Investigation identified incorrect controller action or controller error	
- Investigation identified that fatigue may have affected the controller(s) involved or impacted the involved controller(s) response	
- Investigation identified incorrect procedures	
- Investigation identified incorrect control room equipment operation	
- Investigation identified maintenance activities that affected control room operations, procedures, and/or controller response	
- Investigation identified areas other than those above:	
Describe:	
PART F - DRUG & ALCOHOL TESTING INFORMATION	
1. As a result of this Accident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
1a. Specify how many were tested:	
1b. Specify how many failed:	
2. As a result of this Accident, were any Operator contractor employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
2a. Specify how many were tested:	
2b. Specify how many failed:	
PART G – APPARENT CAUSE	
Select only one box from PART G in shaded column on left representing the APPARENT Cause of the Accident, and answer the questions on the right. Describe secondary, contributing or root causes of the Accident in the narrative (PART H).	

Apparent Cause:	G7 - Incorrect Operation
G1 - Corrosion Failure - only one **sub-cause** can be picked from shaded left-hand column	
Corrosion Failure – Sub-Cause:	
- If External Corrosion:	
1. Results of visual examination:	
- If Other, Describe:	
2. Type of corrosion: *(select all that apply)*	
- Galvanic	
- Atmospheric	
- Stray Current	
- Microbiological	
- Selective Seam	
- Other:	
- If Other, Describe:	
2a. If 2 is Stray Current, specify	
2b. Describe the stray current source:	
3. The type(s) of corrosion selected in Question 2 is based on the following: *(select all that apply)*	
- Field examination	
- Determined by metallurgical analysis	
- Other:	
- If Other, Describe:	
4. Was the failed item buried or submerged?	
- If Yes :	
4a. Was failed item considered to be under cathodic protection at the time of the Accident?	
If Yes - Year protection started:	
4b. Was shielding, tenting, or disbonding of coating evident at the point of the Accident?	
4c. Has one or more Cathodic Protection Survey been conducted at the point of the Accident?	
If “Yes, CP Annual Survey” – Most recent year conducted:	
If “Yes, Close Interval Survey” – Most recent year conducted:	
If “Yes, Other CP Survey” – Most recent year conducted:	
Describe other CP survey	
- If No:	
4d. Was the failed item externally coated or painted?	
5. Was there observable damage to the coating or paint in the vicinity of the corrosion?	
- If Internal Corrosion:	
6. Results of visual examination:	
- Other:	
7. Type of corrosion *(select all that apply)*: -	

- Corrosive Commodity	
- Water drop-out/Acid	
- Microbiological	
- Erosion	
- Other:	
- If Other, Describe:	
8. The cause(s) of corrosion selected in Question 7 is based on the following *(select all that apply)*: -	
- Field examination	
- Determined by metallurgical analysis	
- Other:	
- If Other, Describe:	
9. Location of corrosion *(select all that apply)*: -	
- Low point in pipe	
- Elbow	
- Dead-Leg	
- Other:	
- If Other, Describe:	
10. Was the commodity treated with corrosion inhibitors or biocides?	
11. Was the interior coated or lined with protective coating?	
12. Were cleaning/dewatering pigs (or other operations) routinely utilized?	
13. Were corrosion coupons routinely utilized?	
G2 - Natural Force Damage - only one **sub-cause** can be picked from shaded left-handed column	
Natural Force Damage – Sub-Cause:	
- If Earth Movement, NOT due to Heavy Rains/Floods:	
1. Specify:	
- If Other, Describe:	
- If Heavy Rains/Floods:	
2. Specify:	
- If Other, Describe:	
- If Lightning:	
3. Specify:	
- If Temperature:	
4. Specify:	
- If Other, Describe:	
- If Other Natural Force Damage:	
5. Describe:	
Complete the following if any Natural Force Damage sub-cause is selected.	
6. Were the natural forces causing the Accident generated in conjunction with an extreme weather event?	
6a. If Yes, specify: *(select all that apply)*	
- Hurricane	
- Tropical Storm	

- Tornado	
- Other	
- If Other, Describe:	
G3 - Excavation Damage - only one **sub-cause** can be picked from shaded left-hand column	
Excavation Damage – Sub-Cause:	
- If Previous Damage due to Excavation Activity: Complete Questions 1-5 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
Complete the following if Excavation Damage by Third Party is selected as the sub-cause.	
1. Did the operator get prior notification of the excavation activity?	
1a. If Yes, Notification received from: *(select all that apply)* -	
- One-Call System	
- Excavator	
- Contractor	
- Landowner	
1b. Per the primary Accident Investigator results, did State law exempt the excavator from notifying the one-call center?	
If yes, answer 1c through 1e.	
1c. select one of the following:	
Describe	
1d. Exempting authority:	
1e. Exempting criteria:	
Complete the following mandatory CGA-DIRT Program questions if any Excavation Damage sub-cause is selected.	
2. Do you want PHMSA to upload the following information to CGA-DIRT (www.cga-dirt.com)?	
3. Right-of-Way where event occurred: *(select all that apply)* -	
- Public	
- If "Public", Specify:	
- Private	
- If "Private", Specify:	
- Pipeline Property/Easement	
- Power/Transmission Line	
- Railroad	
- Dedicated Public Utility Easement	
- Federal Land	
- Unknown/Other	
4 Was the facility part of a Joint Trench?	
5. Did this event involve a Cross Bore?	
6. Measured Depth from Grade	
Measured depth From Grade	
7. Type of excavator:	

8. Type of excavation equipment:	
9. Type of work performed:	
10. Was the One-Call Center notified?	
If No, skip to question 11	
10a. If Yes, specify ticket number:	
10b. If this is a State where more than a single One-Call Center exists, list the name of the One-Call Center notified:	
10 c. Was work area white lined?	
11. Type of Locator:	
12. Were facility locate marks visible in the area of excavation?	
13. Did the damage cause an interruption in service?	
13a. If Yes, specify duration of the interruption (hours)	
14. Description of the CGA-DIRT Root Cause *(select only the one predominant first level CGA-DIRT Root Cause and then, where available as a choice, the one predominant second level CGA-DIRT Root Cause as well):*	
Root Cause Category	
Root Cause Type	
(comment required)	
G4 - Other Outside Force Damage *- only one **sub-cause** can be selected from the shaded left-hand column*	
Other Outside Force Damage – Sub-Cause:	
- If Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation:	
1. Vehicle/Equipment operated by:	
If this sub-section is picked, please complete questions 5-11 below	
- If Damage by Boats, Barges, Drilling Rigs, or Other Maritime Equipment or Vessels Set Adrift or Which Have Otherwise Lost Their Mooring:	
2. Select one or more of the following IF an extreme weather event was a factor:	
- Hurricane	
- Tropical Storm	
- Tornado	
- Heavy Rains/Flood	
- Other	
- If Other, Describe:	
- If Previous Mechanical Damage NOT Related to Excavation: Complete Questions 3-7 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
- If Intentional Damage:	
3. Specify:	
- If Other, Describe:	
- If Other Outside Force Damage:	
4. Describe:	
Complete the following if Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation sub-cause is selected.	

5. Was the driver of the vehicle or equipment issued one or more citations related to the accident?	
If 5 is Yes, what was the nature of the citations (select all that apply)	
5a. Excessive Speed	
5b. Reckless Driving	
5c. Driving Under the Influence	
5e. Other	
If Other, Describe	
6. Was the driver under control of the vehicle at the time of the collision?	
7. Estimated speed of the vehicle at the time of impact (miles per hour)?	
- Unknown	
8. Type of vehicle? (select only one)	
9. Where did the vehicle travel from to hit the pipeline facility? (select only one)	
10. Shortest distance from answer in 9. to the damaged pipeline facility (in feet):	
11. At the time of the accident, were protections installed to protect the damaged pipeline facility from vehicular damage?	
If 11 is Yes, specify type of protection (select all that apply):	
11a. Bollards/Guard Posts	
11b. Barricades – include Jersey barriers and fences in instructions	
11c. Guard Rails	
If Other, Describe	
G5 - Material Failure of Pipe or Weld - only one **sub-cause** can be selected from the shaded left-hand column	
Use this section to report material failures ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is "Pipe" or "Weld."	
Material Failure of Pipe or Weld – Sub-Cause:	
1. The sub-cause shown above is based on the following: *(select all that apply)*	
- Field Examination	
- Determined by Metallurgical Analysis	
- Other Analysis	
- If "Other Analysis", Describe:	
- Sub-cause is Tentative or Suspected; Still Under Investigation (Supplemental Report required)	
-If Design-, Construction-, Installation- or Fabrication-related	
2. List contributing factors: *(select all that apply)*	
- Fatigue or Vibration-related	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	

- If Original Manufacturing-related (NOT girth weld or other welds formed in the field)	
- Fatigue or Vibration-related	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	
- If Environmental Cracking-related:	
3. Specify:	
- If Other - Describe:	
Complete the following if any Material Failure of Pipe or Weld sub-cause is selected.	
4. Additional factors: (*select all that apply*):	
- Dent	
- Gouge	
- Pipe Bend	
- Arc Burn	
- Crack	
- Lack of Fusion	
- Lamination	
- Buckle	
- Wrinkle	
- Misalignment	
- Burnt Steel	
- Other:	
- If Other, Describe:	
G6 – Equipment Failure - only one **sub-cause** can be selected from the shaded left-hand column	
Equipment Failure – Sub-Cause:	
- If Malfunction of Control/Relief Equipment:	
1. Specify: *(select all that apply)* -	
- Control Valve	
- Instrumentation	
- SCADA	
- Communications	
- Block Valve	
- Check Valve	
- Relief Valve	
- Power Failure	
- Stopple/Control Fitting	
- ESD System Failure	
- Other	
- If Other – Describe:	
- If Pump or Pump-related Equipment:	

2. Specify:	
- If Other – Describe:	
- If Threaded Connection/Coupling Failure:	
3. Specify:	
- If Other – Describe:	
- If Non-threaded Connection Failure:	
4. Specify:	
- If Other – Describe:	
- If Other Equipment Failure:	
5. Describe:	
Complete the following if any Equipment Failure sub-cause is selected.	
6. Additional factors that contributed to the equipment failure: *(select all that apply)*	
- Excessive vibration	
- Overpressurization	
- No support or loss of support	
- Manufacturing defect	
- Loss of electricity	
- Improper installation	
- Improper maintenance	
- Mismatched items (different manufacturer for tubing and tubing fittings)	
- Dissimilar metals	
- Breakdown of soft goods due to compatibility issues with transported commodity	
- Valve vault or valve can contributed to the release	
- Alarm/status failure	
- Misalignment	
- Thermal stress	
- Erosion/Abnormal Wear	
- Other	
- If Other, Describe:	
G7 - Incorrect Operation - only one **sub-cause** can be selected from the shaded left-hand column	
Incorrect Operation – Sub-Cause:	Other Incorrect Operation
- If Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow	
1. Specify:	
- If Other, Describe:	
- If Other Incorrect Operation	
2. Describe:	Incorrectly disassembled flange connection
Complete the following if any Incorrect Operation sub-cause is selected.	
3. Was this Accident related to *(select all that apply)*: -	

- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	Yes
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Accident?	Other maintenance
5. Was the task(s) that led to the Accident identified as a covered task in your Operator Qualification Program?	No
5a. If Yes, were the individuals performing the task(s) qualified for the task(s)?	
G8 - Other Accident Cause - only one **sub-cause** can be selected from the shaded left-hand column	
Other Accident Cause – Sub-Cause:	
- If Miscellaneous:	
1. Describe:	
- If Unknown:	
2. Specify:	
Mandatory comment field:	
PART J – COMPLETED INTEGRITY INSPECTIONS	
Complete the following if the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld and the "Cause" (from Part G) is:	
Corrosion (any subCause in Part G1); or	
Previous Damage due to Excavation Activity (subCause in Part G3); or	
Previous Mechanical Damage NOT Related to Excavation (subCause in Part G4); or	
Material Failure of Pipe or Weld (any subCause in Part G5)	
J1. Have internal inspection tools collected data at the point of the Accident?	
J1a. If Yes, for each tool and technology used provide the information below for the most recent and previous tool runs:	
Axial Magnetic Flux Leakage	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Attuned to Detect (select only one):	
Other Describe	
If Metal Loss, specify (select only one):	
Other Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Previous run Attuned to Detect (select only one):	
Other Describe	
If Metal Loss, specify (select only one):	
Other Describe	
Circumferential/Transverse Wave Magnetic Flux Leakage	
Most recent run Year:	

Most recent run Propulsion Method (select only one):	
Most recent run Resolution (select only one):	
Other Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Previous run Resolution (select only one):	
Other Describe	
Ultrasonic	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Attuned (select only one):	
Other Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Most recent run Attuned to (select only one)	
Other Describe	
If Attuned to Wall Measurement, most recent run Metal Loss Resolution (select only one):	
Other Describe	
Geometry/Deformation	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Resolution (select only one):	
Other Describe	
Most recent run Measurement Cups (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Other Describe	
Previous run Resolution (select only one):	
Other Describe	
Previous run Measurement Cups (select only one):	
Electromagnetic Acoustic Transducer (EMAT)	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Cathodic Protection Current Measurement (CPCM)	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Previous run Year:	

Previous run Propulsion Method (select only one):	
Other, specify tool	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Answer J1.b only when the cause i:	
Previous Damage due to Excavation Activity (subCause in Part G3); or	
Previous Mechanical Damage NOT Related to Excavation (subCause in Part G4)	
J1b. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained	
J2. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident? (initial post construction pressure test is NOT reported here)	
Most recent year tested:	
Test pressure (psig):	
J3. Has Direct Assessment been conducted on the pipeline segment?	
Most recent year conducted:	
Most recent year conducted:	
If J3 is Yes, J3a. For each type, indicate the year of the most recent assessment	
External Corrosion Direct Assessment (ECDA)	
Other, specify type	
J4. Has one or more non-destructive examination been conducted prior to the Accident at the point of the Accident since January 1, 2002?	
4a. If Yes, for each examination conducted, select type of non-destructive examination and indicate most recent year the examination was conducted:	
Radiography	
Guided Wave Ultrasonic	
Handheld Ultrasonic Tool	
Wet Magnetic Particle Test	
Dry Magnetic Particle Test	
Other	
- If Other, specify type	
PART K – CONTRIBUTING FACTORS	
The Apparent Cause of the accident is contained in Part G. Do not report the Apparent Cause again in this Part K. If Contributing Factors were identified during a root cause analysis, select all that apply below and explain each in the Narrative:	
External Corrosion	
External Corrosion, Galvanic	
External Corrosion, Atmospheric	
External Corrosion, Stray Current Induced	
External Corrosion, Microbiologically Induced	
External Corrosion, Selective Seam	

Internal Corrosion	
Internal Corrosion, Corrosive Commodity	
Internal Corrosion, Water drop-out/Acid	
Internal Corrosion, Microbiological	
Internal Corrosion, Erosion	
Natural Forces	
Earth Movement, NOT due to Heavy Rains/Floods	
Heavy Rains/Floods	
Lightning	
Temperature	
High Winds	
Tree/Vegetation Root	
Excavation Damage	
Excavation Damage by Operator (First Party)	
Excavation Damage by Operator's Contractor (Second Party)	
Excavation Damage by Third Party	
Previous Damage due to Excavation Activity	
Other Outside Force	
Nearby Industrial, Man-made, or Other Fire/Explosion	
Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation	
Damage by Boats, Barges, Drilling Rigs, or Other Adrift Maritime Equipment	
Routine or Normal Fishing or Other Maritime Activity NOT Engaged in Excavation	
Electrical Arcing from Other Equipment or Facility	
Previous Mechanical Damage NOT Related to Excavation	
Intentional Damage	
Pipe/Weld Failure	
Design-related	
Construction-related	
Installation-related	
Fabrication-related	
Original Manufacturing-related	
Environmental Cracking-related, Stress Corrosion Cracking	
Environmental Cracking-related, Sulfide Stress Cracking	
Environmental Cracking-related, Hydrogen Stress Cracking	
Environmental Cracking-related, Hard Spot	
Equipment Failure	
Malfunction of Control/Relief Equipment	

Pump or Pump-related Equipment	
Threaded Connection/Coupling Failure	
Non-threaded Connection Failure	
Defective or Loose Tubing or Fitting	
Failure of Equipment Body (except Compressor), Vessel Plate, or other Material	
Incorrect Operation	
Damage by Operator or Operator's Contractor NOT Excavation and NOT Vehicle/Equipment Damage	
Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow	
Valve Left or Placed in Wrong Position, but NOT Resulting in Overpressure	
Pipeline or Equipment Over pressured	
Equipment Not Installed Properly	
Wrong Equipment Specified or Installed	
Inadequate Procedure	
No procedure established	
Failure to follow procedures	

PART H - NARRATIVE DESCRIPTION OF THE ACCIDENT

On June 23, 2022 at approximately 2:20 PM CDT, while performing open system maintenance work, crews experienced a release of 7 barrels of crude oil within Manifold 201 at Flanagan Terminal due to a passing isolation valve. Incoming and outgoing lines at Flanagan Terminal were already shut down for scheduled maintenance activities. PLM crews were on-site with vac trucks to recover impacted soil. A contractor was also mobilized with additional clean up and recovery equipment. The NRC was notified on June 23, 2022 at 3:05 PM CDT (Report #1339619). A 48-hour NRC notification was made on June 25, 2022 at 12:11 PM CDT (Report #1339763).

The cause of the release was due to incorrectly disassembling a flange connection on Valve 201-V-2023. The valve was repaired, and all lines were returned to service. Approximately 12 yards of contaminated soil was removed from the release site.

PART I - PREPARER AND AUTHORIZED SIGNATURE

Preparer's Name	[redacted]
Preparer's Title	
Preparer's Telephone Number	
Preparer's E-mail Address	
Preparer's Facsimile Number	
Local Contact Name	
Local Contact Email	
Local Contact Phone	
Authorized Signer Name	[redacted]
Authorized Signer Title	
Authorized Signer Telephone Number	
Authorized Signer Email	
Date	

NOTICE: This report is required by 49 CFR Part 195. Failure to report can result in a civil penalty as provided in 49 USC 60122.		OMB NO: 2137-0047 EXPIRATION DATE: 3/31/2024
U.S Department of Transportation Pipeline and Hazardous Materials Safety Administration	**Original Report Date:**	03/30/2022
	No.	20220067 -36789 ---------- (DOT Use Only)

ACCIDENT REPORT - HAZARDOUS LIQUID AND CARBON DIOXIDE PIPELINE SYSTEMS

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0047. Public reporting for this collection of information is estimated to be approximately 12 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to the collection of information are mandatory. Send comments regarding this burden or any other aspect of this collection of information, including suggestions for reducing the burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

INSTRUCTIONS

Important: *Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at* http://www.phmsa.dot.gov/pipeline/library/forms .`

PART A - KEY REPORT INFORMATION

Report Type: *(select all that apply)*	**Original:**	**Supplemental:**	**Final:**
		Yes	Yes

Last Revision Date:	06/23/2022
1. Operator's OPS-issued Operator Identification Number (OPID):	11169
2. Name of Operator	ENBRIDGE ENERGY, LIMITED PARTNERSHIP
3. Address of Operator:	
3a. Street Address	5400 WESTHEIMER COURT
3b. City	HOUSTON
3c. State	Texas
3d. Zip Code	77056
4. Earliest local time *(24-hr clock)* and date an accident reporting criteria was met:	03/01/2022 22:54
4a. Time Zone for local time	Central
4b. Daylight Saving in effect?	No
5. Location of Accident:	
Latitude / Longitude	[redacted]
6. Commodity released: *(select only one, based on predominant volume released)*	Crude Oil
- Specify Commodity Subtype:	
- If "Other" Subtype, Describe:	

- If Biofuel/Alternative Fuel and Commodity Subtype is Ethanol Blend, then % Ethanol Blend:	
- If Biofuel/Alternative Fuel and Commodity Subtype is Biodiesel, then Biodiesel Blend e.g. B2, B20, B100	
7. Estimated volume of commodity released unintentionally (Barrels):	52.00
8. Estimated volume of intentional and/or controlled release/blowdown (Barrels):	
9. Estimated volume of commodity recovered (Barrels):	52.00
10. Were there fatalities?	No
- If Yes, specify the number in each category:	
10a. Operator employees	
10b. Contractor employees working for the Operator	
10c. Non-Operator emergency responders	
10d. Workers working on the right-of-way, but NOT associated with this Operator	
10e. General public	
10f. Total fatalities (sum of above)	0
11. Were there injuries requiring inpatient hospitalization?	No
- If Yes, specify the number in each category:	
11a. Operator employees	
11b. Contractor employees working for the Operator	
11c. Non-Operator emergency responders	
11d. Workers working on the right-of-way, but NOT associated with this Operator	
11e. General public	
11f. Total injuries (sum of above)	0
12. What was the Operator's initial indication of the Failure? *(select only one)*	SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume or pack calculations)
Other	
12a. If "Controller", "Local Operating Personnel, including contractors", "Air Patrol", or "Ground Patrol by Operator or its contractor" is selected in Question 12, specify the following: (select only one)	
13. Local time Operator identified failure	03/01/2022 22:54
14. formerly C2 Part of system involved in Accident: *(select only one)*	Onshore Terminal/Tank Farm Equipment and Piping
15. formerly B1 *Auto-populated based on A14* Was the origin of the Accident onshore?	Yes
Yes (Complete Questions B3-B12)	
No *(Complete Questions B13-B15)*	
16. Operational Status at time Operator identified failure:	Normal Operation, includes pauses between batches and during maintenance
17. If Operational Status = Routine Start-Up or Normal Operation, was the pipeline/facility shut down due to the Accident?	Yes

Explain:	
If Yes, complete Questions 17.a and 17.b: *(use local time, 24-hr clock)*	
17a. Local time and date of shutdown	03/01/2022 22:54
17b. Local time pipeline/facility restarted	03/02/2022 02:48
Still shut down*	
18. *If A12 = Notification from Emergency Responder, skip A18.a through A18.c.*	
18a. Did the operator communicate with Local, State, or Federal Emergency Responders about the accident?	No
If No, skip 18b. and 18c	
18b. Which party initiated communication about the accident?	
18c. Local time of initial Operator and Local/State/Federal Emergency Responder communication	
19. Local time Operator responders arrived on site	03/01/2022 23:00
20. Local time of confirmed discovery	03/01/2022 23:00
21a. Local time (24-hr clock) and date of initial operator report to the National Response Center :	
21b. Initial Operator National Response Center Report Number OR	NRC Notification Not Required
21c. Additional NRC Report numbers submitted by the operator:	
22. Did the commodity ignite?	No
If Yes, answer 22.a through d:	
22a. Local time of ignition	
22b. How was the fire extinguished?	
specify:	
22c. Estimated volume of commodity consumed by fire (barrels): (must be less than or equal to A7)	
22d. formerly A16. Did the commodity explode?	
23. If 14. is “Onshore Pipeline, Including Valve Sites” OR “Offshore Pipeline, Including Riser and Riser Bend”, answer A23a through f:	
23a. Initial action taken to control flow upstream of failure location	
- If Operational Control	
If Valve Closure, answer A23b and c:	
23b. Local time of valve closure	
23c. Type of upstream valve used to initially isolate release source:	
23d. Initial action taken to control flow downstream of failure location	
- If Operational Control	
If Valve Closure, answer A23.e and f:	
23e. Local time of valve closure	
23f. Type of downstream valve used to initially isolate release source	

24. If A6 = Crude Oil , Refined and/or Petroleum Product (non-HVL) which is a Liquid at Ambient Conditions, or Biofuel / Alternative Fuel (including ethanol blends) AND A15. is Onshore, answer questions A24a and c	
24a. Did the operator notify a "qualified individual" in the Onshore Oil Spill Response Plan?	No
If Yes, answer A24b.	
24b. Local time the "qualified individual" was notified.	
24c. Did the operator activate an Oil Spill Removal Organization (OSRO)?	No
If Yes, answer A24d and e:	
24d. Local time operator activated OSRO	
24e. Local time OSRO arrived on site	
25. Number of general public evacuated:	0
PART B - ADDITIONAL LOCATION INFORMATION	
1. Pipeline/Facility name:	Clearbrook Terminal
2. Segment name/ID:	Line 4 Unit 1 Pump
If Yes, Complete Questions (2-12)	
If No, Complete Questions (13-15)	
- If Onshore:	
3. State:	Minnesota
4. Zip Code:	56634
5. City	Clearbrook
6. County or Parish	Clearwater
7. Operator-designated location:	Milepost
8. Specify:	909
9. Was this onshore Accident on Federal land?	No
10. Location of Accident:	Totally contained on Operator-controlled property
11. Area of Accident (as found):	Aboveground
Specify:	Inside a building
- If Other, Describe:	
11a. Depth-of-Cover (in):	
12. Did Accident occur in a crossing?	No
- If Yes, specify type below:	
- If Bridge crossing –	
Cased/ Uncased:	
- If Railroad crossing –	
Cased	
Uncased	
Bored/drilled	
- If Road crossing –	

Cased/ / Bored/drilled	
Uncased	
Bored/drilled	
- If Water crossing –	
Cased/ Uncased	
- Name of body of water, if commonly known:	
- Approx. water depth (ft) at the point of the accident:	
- Select:	
Is this water crossing 100 feet or more in length from high water mark to high water mark?	
- If Offshore:	
13. Approximate water depth (ft) at the point of the Accident:	
14. Origin of Accident:	
- In State waters - Specify:	
- State:	
- Area:	
- Block/Tract #:	
- Nearest County/Parish:	
- On the Outer Continental Shelf (OCS) :	
- Area:	
- Block/Tract #:	
15. Area of Accident:	
PART C - ADDITIONAL FACILITY INFORMATION	
1. Is the pipeline or facility:	Interstate
2. reserved	
3. Item involved in Accident:	Pump
- If Pipe, specify:	
If Pipe Body: Was this a puddle/spot weld?	
3a. Nominal Pipe Size:	
3b. Wall thickness (in):	
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
3d. Pipe specification:	
3e. Pipe Seam , specify:	
- If Other, Describe:	
3f. Pipe manufacturer:	
3g. Pipeline coating type at point of Accident, specify:	
- If Other, Describe:	
3h. Coating field applied?	
- If Weld, including heat-affected zone, specify	
- If Other, Describe:	

If Pipe Girth Weld is selected, complete items C3a through h above. Are any of the C3b though h values different on either side of the girth weld?	
If Yes, enter the different value(s) below:	
3i. Wall thickness (in):	
3j. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
3k. Pipe specification:	
Unknown	
3l. Pipe Seam	
- If Other, Describe:	
3m. Pipe manufacturer:	
Unknown	
3n. Pipeline coating type at point of Accident	
- If Other, Describe:	
3o. Coating field applied?	
- If Valve, specify:	
- Valve type	
- If Mainline, Valve Mainline type	
- If Other, Describe:	
3p. Mainline valve manufacturer:	
3q. Type of pump	Centrifugal
- If Other, Describe:	
3r. Type of Service	Mainline
- If Other, Describe:	
3s. Tubing material	
3t. Type of tubing	
3u. Specify	
- If Other, Describe:	
3v. Tank Type	
If 3v. = Pressurized:	
3v1. Tank Maximum Operating Pressure	
3v2. What is the set point of the primary pressure relief device on the tank	
3v3. Did the thermal or pressure relief valve activate?	
3v4. Was the MOP of the tank exceeded?	
If 3v = Atmospheric or Low Pressure:	
3v5. Safe-Fill-Level (in feet) at the time of the accident?	
3v6. Was the Safe Fill-Level exceeded?	
3v7. Year of most recent API Std 653 Out-of-Service Inspection	

3v8. API Std 653 In-Service Inspection	
4. Year item involved in Accident was installed:	2021
4a. Year item involved in Accident was manufactured:	2021
5. Material involved in Accident:	Carbon Steel
- If Material other than Carbon Steel, specify:	
6. Type of Accident Involved:	Leak
- If Mechanical Puncture – Specify Approx. size:	
in. (axial) by	
in. (circumferential)	
- If Leak - Select Type:	Seal or Packing
- If Other, Describe:	
- If Rupture - Select Orientation:	
- If Other, Describe:	
Approx. size: in. (widest opening) by	
in. (length circumferentially or axially)	
- If Other – Describe:	
PART D - ADDITIONAL CONSEQUENCE INFORMATION	
1. Wildlife impact:	No
1a. If Yes, specify all that apply:	
- Fish/aquatic	
- Birds	
- Terrestrial	
2. Soil contamination:	No
3. Long term impact assessment performed or planned:	No
4. Anticipated remediation:	No
4a. If Yes, specify all that apply:	
- Surface water	
- Groundwater	
- Soil	
- Vegetation	
- Wildlife	
5. Water contamination:	No
5a. If Yes, specify all that apply:	
- Ocean/Seawater	
- Surface	
- Groundwater	
- Drinking water: *(Select one or both)*	
- Private Well	
- Public Water Intake	
5b. Estimated amount released in or reaching water (Barrels):	

5c. Name of body of water, if commonly known:	
6. At the location of this Accident, had the pipeline segment or facility been identified as one that "could affect" a High Consequence Area (HCA) as determined in the Operator's Integrity Management Program?	Yes
7. Did the released commodity reach or occur in one or more High Consequence Area (HCA)?	No
7a. If Yes, specify HCA type(s): *(Select all that apply)*	
- Commercially Navigable Waterway:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- High Population Area:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Other Populated Area	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Drinking Water	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Ecological	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
8. Estimated cost to Operator – effective 12-2012, changed to "Estimated Property Damage":	
8a. Estimated cost of public and non-Operator private property damage paid/reimbursed by the Operator – effective 12-2012, "paid/reimbursed by the Operator" removed	[redacted]
8b. Estimated cost of commodity lost	
8c. Estimated cost of Operator's property damage & repairs	
8d. Estimated cost of emergency response	
8e. Estimated cost of environmental remediation	
8f. Estimated other costs	
Describe:	
8g. Total estimated property damage (sum of above)	
Injured Persons not included in A11 The number of persons injured, admitted to a hospital, and remaining in the hospital for at least one overnight are reported in A11. ***If a person is included in A11, do not include them in D9.***	
9. Estimated number of persons with injuries requiring treatment in a medical facility but not requiring overnight in-patient hospitalization:	0

If a person is included in D9, do not include them in D10.	
10. Estimated number of persons with injuries requiring treatment by EMTs at the site of accident:	0
Buildings Affected	
11. Number of residential buildings affected (evacuated or required repair):	0
12. Number of business buildings affected (evacuated or required repair):	0
PART E - ADDITIONAL OPERATING INFORMATION	
1. Estimated pressure at the point and time of the Accident (psig):	136.00
If C3. Is Tank/Vessel and C3v. is Atmospheric, do not answer E2. and E3	
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	1,440.00
2a. Limiting factor establishing MOP (select only one):	Internal Design Pressure §195.406(a)(1)
describe:	
2b. Date MOP established	04/17/2002
2c. Was the MOP established in conjunction with a reversal of flow direction?	No
If E2c = Yes, E2d. What is the date of the most recent surge analysis performed at the point of the Accident?	
3. Describe the pressure on the system or facility relating to the Accident (psig):	Pressure did not exceed MOP
4. Was the system or facility relating to the Accident operating under an established pressure restriction with pressure limits below those normally allowed by the MOP?	No
- If Yes, Complete 4.a and 4.b below:	
4a. Did the pressure exceed this established pressure restriction?	
4b. Was this pressure restriction mandated by PHMSA or the State?	
If A14. is “Onshore Pipeline, Including Valve Sites” OR “Offshore Pipeline, Including Riser and Riser Bend”, complete E5 through E7	
5. Answer E5 only when both A23a and A23d are Valve Closure	
Length of segment initially isolated between valves (ft):	
6. Is the pipeline configured to accommodate internal inspection tools?	
- If No, Which physical features limit tool accommodation? (*select all that apply)*	
- Changes in line pipe diameter	
- Presence of unsuitable mainline valves	
- Tight or mitered pipe bends	
- Other passage restrictions (i.e. unbarred tee’s, projecting instrumentation, etc.)	

- Extra thick pipe wall (applicable only for magnetic flux leakage internal inspection tools)	
- Other -	
- If Other, Describe:	
7. For this pipeline, are there operational factors which significantly complicate the execution of an internal inspection tool run?	
- If Yes, Which operational factors complicate execution? (*select all that apply*)	
- Excessive debris or scale, wax, or other wall buildup	
- Low operating pressure(s)	
- Low flow or absence of flow	
- Incompatible commodity	
- Other -	
- If Other, Describe:	
8. Function of pipeline system:	> 20% SMYS Regulated Transmission
9. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Accident?	Yes
If Yes -	
9a. Was it operating at the time of the Accident?	Yes
9b. Was it fully functional at the time of the Accident?	Yes
9c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	Yes
9d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	Yes
10. Was a CPM leak detection system in place on the pipeline or facility involved in the Accident?	Yes
- If Yes:	
10a. Was it operating at the time of the Accident?	Yes
10b. Was it fully functional at the time of the Accident?	Yes
10c. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	No
10d. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	No
11. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contributing factor to the Accident?	No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: (provide an explanation for why the Operator did not investigate)

- If No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: *(provide an explanation for why the operator did not investigate)*	Lack of Control Center involvement. Unit 1 was not running at the time of the release.
- If Yes, specify investigation result(s): *(select all that apply)*	
- Investigation reviewed work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
- Investigation did NOT review work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
Provide an explanation for why not:	
- Investigation identified no control room issues	
- Investigation identified no controller issues	
- Investigation identified incorrect controller action or controller error	
- Investigation identified that fatigue may have affected the controller(s) involved or impacted the involved controller(s) response	
- Investigation identified incorrect procedures	
- Investigation identified incorrect control room equipment operation	
- Investigation identified maintenance activities that affected control room operations, procedures, and/or controller response	
- Investigation identified areas other than those above:	
Describe:	
PART F - DRUG & ALCOHOL TESTING INFORMATION	
1. As a result of this Accident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
1a. Specify how many were tested:	
1b. Specify how many failed:	
2. As a result of this Accident, were any Operator contractor employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
2a. Specify how many were tested:	
2b. Specify how many failed:	
PART G – APPARENT CAUSE	
Select only one box from PART G in shaded column on left representing the APPARENT Cause of the Accident, and answer the questions on the right. Describe secondary, contributing or root causes of the Accident in the narrative (PART H).	

Apparent Cause:	G6 - Equipment Failure
G1 - Corrosion Failure - only one **sub-cause** can be picked from shaded left-hand column	
Corrosion Failure – Sub-Cause:	
- If External Corrosion:	
1. Results of visual examination:	
- If Other, Describe:	
2. Type of corrosion: *(select all that apply)*	
- Galvanic	
- Atmospheric	
- Stray Current	
- Microbiological	
- Selective Seam	
- Other:	
- If Other, Describe:	
2a. If 2 is Stray Current, specify	
2b. Describe the stray current source:	
3. The type(s) of corrosion selected in Question 2 is based on the following: *(select all that apply)*	
- Field examination	
- Determined by metallurgical analysis	
- Other:	
- If Other, Describe:	
4. Was the failed item buried or submerged?	
- If Yes :	
4a. Was failed item considered to be under cathodic protection at the time of the Accident?	
If Yes - Year protection started:	
4b. Was shielding, tenting, or disbonding of coating evident at the point of the Accident?	
4c. Has one or more Cathodic Protection Survey been conducted at the point of the Accident?	
If "Yes, CP Annual Survey" – Most recent year conducted:	
If "Yes, Close Interval Survey" – Most recent year conducted:	
If "Yes, Other CP Survey" – Most recent year conducted:	
Describe other CP survey	
- If No:	
4d. Was the failed item externally coated or painted?	
5. Was there observable damage to the coating or paint in the vicinity of the corrosion?	
- If Internal Corrosion:	
6. Results of visual examination:	
- Other:	
7. Type of corrosion *(select all that apply)*: -	

- Corrosive Commodity	
- Water drop-out/Acid	
- Microbiological	
- Erosion	
- Other:	
- If Other, Describe:	
8. The cause(s) of corrosion selected in Question 7 is based on the following *(select all that apply)*: -	
- Field examination	
- Determined by metallurgical analysis	
- Other:	
- If Other, Describe:	
9. Location of corrosion *(select all that apply)*: -	
- Low point in pipe	
- Elbow	
- Dead-Leg	
- Other:	
- If Other, Describe:	
10. Was the commodity treated with corrosion inhibitors or biocides?	
11. Was the interior coated or lined with protective coating?	
12. Were cleaning/dewatering pigs (or other operations) routinely utilized?	
13. Were corrosion coupons routinely utilized?	
G2 - Natural Force Damage - only one **sub-cause** can be picked from shaded left-handed column	
Natural Force Damage – Sub-Cause:	
- If Earth Movement, NOT due to Heavy Rains/Floods:	
1. Specify:	
- If Other, Describe:	
- If Heavy Rains/Floods:	
2. Specify:	
- If Other, Describe:	
- If Lightning:	
3. Specify:	
- If Temperature:	
4. Specify:	
- If Other, Describe:	
- If Other Natural Force Damage:	
5. Describe:	
Complete the following if any Natural Force Damage sub-cause is selected.	
6. Were the natural forces causing the Accident generated in conjunction with an extreme weather event?	
6a. If Yes, specify: *(select all that apply)*	
- Hurricane	
- Tropical Storm	

- Tornado	
- Other	
- If Other, Describe:	
G3 - Excavation Damage - only one **sub-cause** can be picked from shaded left-hand column	
Excavation Damage – Sub-Cause:	
- If Previous Damage due to Excavation Activity: Complete Questions 1-5 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
Complete the following if Excavation Damage by Third Party is selected as the sub-cause.	
1. Did the operator get prior notification of the excavation activity?	
1a. If Yes, Notification received from: *(select all that apply)* -	
- One-Call System	
- Excavator	
- Contractor	
- Landowner	
1b. Per the primary Accident Investigator results, did State law exempt the excavator from notifying the one-call center?	
If yes, answer 1c through 1e.	
1c. select one of the following:	
Describe	
1d. Exempting authority:	
1e. Exempting criteria:	
Complete the following mandatory CGA-DIRT Program questions if any Excavation Damage sub-cause is selected.	
2. Do you want PHMSA to upload the following information to CGA-DIRT (www.cga-dirt.com)?	
3. Right-of-Way where event occurred: *(select all that apply)* -	
- Public	
- If "Public", Specify:	
- Private	
- If "Private", Specify:	
- Pipeline Property/Easement	
- Power/Transmission Line	
- Railroad	
- Dedicated Public Utility Easement	
- Federal Land	
- Unknown/Other	
4 Was the facility part of a Joint Trench?	
5. Did this event involve a Cross Bore?	
6. Measured Depth from Grade	
Measured depth From Grade	
7. Type of excavator:	

8. Type of excavation equipment:	
9. Type of work performed:	
10. Was the One-Call Center notified?	
If No, skip to question 11	
10a. If Yes, specify ticket number:	
10b. If this is a State where more than a single One-Call Center exists, list the name of the One-Call Center notified:	
10 c. Was work area white lined?	
11. Type of Locator:	
12. Were facility locate marks visible in the area of excavation?	
13. Did the damage cause an interruption in service?	
13a. If Yes, specify duration of the interruption (hours)	
14. Description of the CGA-DIRT Root Cause *(select only the one predominant first level CGA-DIRT Root Cause and then, where available as a choice, the one predominant second level CGA-DIRT Root Cause as well):*	
Root Cause Category	
Root Cause Type	
(comment required)	
G4 - Other Outside Force Damage *- only one **sub-cause** can be selected from the shaded left-hand column*	
Other Outside Force Damage – Sub-Cause:	
- If Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation:	
1. Vehicle/Equipment operated by:	
If this sub-section is picked, please complete questions 5-11 below	
- If Damage by Boats, Barges, Drilling Rigs, or Other Maritime Equipment or Vessels Set Adrift or Which Have Otherwise Lost Their Mooring:	
2. Select one or more of the following IF an extreme weather event was a factor:	
- Hurricane	
- Tropical Storm	
- Tornado	
- Heavy Rains/Flood	
- Other	
- If Other, Describe:	
- If Previous Mechanical Damage NOT Related to Excavation: Complete Questions 3-7 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
- If Intentional Damage:	
3. Specify:	
- If Other, Describe:	
- If Other Outside Force Damage:	
4. Describe:	
Complete the following if Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation sub-cause is selected.	

5. Was the driver of the vehicle or equipment issued one or more citations related to the accident?	
If 5 is Yes, what was the nature of the citations (select all that apply)	
5a. Excessive Speed	
5b. Reckless Driving	
5c. Driving Under the Influence	
5e. Other	
If Other, Describe	
6. Was the driver under control of the vehicle at the time of the collision?	
7. Estimated speed of the vehicle at the time of impact (miles per hour)?	
- Unknown	
8. Type of vehicle? (select only one)	
9. Where did the vehicle travel from to hit the pipeline facility? (select only one)	
10. Shortest distance from answer in 9. to the damaged pipeline facility (in feet):	
11. At the time of the accident, were protections installed to protect the damaged pipeline facility from vehicular damage?	
If 11 is Yes, specify type of protection (select all that apply):	
11a. Bollards/Guard Posts	
11b. Barricades – include Jersey barriers and fences in instructions	
11c. Guard Rails	
If Other, Describe	
G5 - Material Failure of Pipe or Weld - only one **sub-cause** can be selected from the shaded left-hand column	
Use this section to report material failures ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is "Pipe" or "Weld."	
Material Failure of Pipe or Weld – Sub-Cause:	
1. The sub-cause shown above is based on the following: *(select all that apply)*	
- Field Examination	
- Determined by Metallurgical Analysis	
- Other Analysis	
- If "Other Analysis", Describe:	
- Sub-cause is Tentative or Suspected; Still Under Investigation (Supplemental Report required)	
-If Design-, Construction-, Installation- or Fabrication-related	
2. List contributing factors: *(select all that apply)*	
- Fatigue or Vibration-related	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	

- If Original Manufacturing-related (NOT girth weld or other welds formed in the field)	
- Fatigue or Vibration-related	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	
- If Environmental Cracking-related:	
3. Specify:	
- If Other - Describe:	
Complete the following if any Material Failure of Pipe or Weld sub-cause is selected.	
4. Additional factors: (*select all that apply*):	
- Dent	
- Gouge	
- Pipe Bend	
- Arc Burn	
- Crack	
- Lack of Fusion	
- Lamination	
- Buckle	
- Wrinkle	
- Misalignment	
- Burnt Steel	
- Other:	
- If Other, Describe:	
G6 – Equipment Failure - only one **sub-cause** can be selected from the shaded left-hand column	
Equipment Failure – Sub-Cause:	Pump or Pump-related Equipment
- If Malfunction of Control/Relief Equipment:	
1. Specify: *(select all that apply)* -	
- Control Valve	
- Instrumentation	
- SCADA	
- Communications	
- Block Valve	
- Check Valve	
- Relief Valve	
- Power Failure	
- Stopple/Control Fitting	
- ESD System Failure	
- Other	
- If Other – Describe:	
- If Pump or Pump-related Equipment:	

2. Specify:	Seal/Packing Failure
- If Other – Describe:	
- If Threaded Connection/Coupling Failure:	
3. Specify:	
- If Other – Describe:	
- If Non-threaded Connection Failure:	
4. Specify:	
- If Other – Describe:	
- If Other Equipment Failure:	
5. Describe:	
Complete the following if any Equipment Failure sub-cause is selected.	
6. Additional factors that contributed to the equipment failure: *(select all that apply)*	
- Excessive vibration	Yes
- Overpressurization	
- No support or loss of support	
- Manufacturing defect	
- Loss of electricity	
- Improper installation	
- Improper maintenance	
- Mismatched items (different manufacturer for tubing and tubing fittings)	
- Dissimilar metals	
- Breakdown of soft goods due to compatibility issues with transported commodity	
- Valve vault or valve can contributed to the release	
- Alarm/status failure	
- Misalignment	
- Thermal stress	
- Erosion/Abnormal Wear	
- Other	
- If Other, Describe:	
G7 - Incorrect Operation - only one **sub-cause** can be selected from the shaded left-hand column	
Incorrect Operation – Sub-Cause:	
- If Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow	
1. Specify:	
- If Other, Describe:	
- If Other Incorrect Operation	
2. Describe:	
Complete the following if any Incorrect Operation sub-cause is selected.	
3. Was this Accident related to *(select all that apply)*: -	

- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Accident?	
5. Was the task(s) that led to the Accident identified as a covered task in your Operator Qualification Program?	
5a. If Yes, were the individuals performing the task(s) qualified for the task(s)?	
G8 - Other Accident Cause - only one **sub-cause** can be selected from the shaded left-hand column	
Other Accident Cause – Sub-Cause:	
- If Miscellaneous:	
1. Describe:	
- If Unknown:	
2. Specify:	
Mandatory comment field:	
PART J – COMPLETED INTEGRITY INSPECTIONS	
Complete the following if the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld and the "Cause" (from Part G) is:	
Corrosion (any subCause in Part G1); or	
Previous Damage due to Excavation Activity (subCause in Part G3); or	
Previous Mechanical Damage NOT Related to Excavation (subCause in Part G4); or	
Material Failure of Pipe or Weld (any subCause in Part G5)	
J1. Have internal inspection tools collected data at the point of the Accident?	
J1a. If Yes, for each tool and technology used provide the information below for the most recent and previous tool runs:	
Axial Magnetic Flux Leakage	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Attuned to Detect (select only one):	
Other Describe	
If Metal Loss, specify (select only one):	
Other Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Previous run Attuned to Detect (select only one):	
Other Describe	
If Metal Loss, specify (select only one):	
Other Describe	
Circumferential/Transverse Wave Magnetic Flux Leakage	
Most recent run Year:	

Most recent run Propulsion Method (select only one):	
Most recent run Resolution (select only one):	
Other Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Previous run Resolution (select only one):	
Other Describe	
Ultrasonic	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Attuned (select only one):	
Other Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Most recent run Attuned to (select only one)	
Other Describe	
If Attuned to Wall Measurement, most recent run Metal Loss Resolution (select only one):	
Other Describe	
Geometry/Deformation	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Resolution (select only one):	
Other Describe	
Most recent run Measurement Cups (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Other Describe	
Previous run Resolution (select only one):	
Other Describe	
Previous run Measurement Cups (select only one):	
Electromagnetic Acoustic Transducer (EMAT)	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Cathodic Protection Current Measurement (CPCM)	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Previous run Year:	

Previous run Propulsion Method (select only one):	
Other, specify tool	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Answer J1.b only when the cause i:	
Previous Damage due to Excavation Activity (subCause in Part G3); or	
Previous Mechanical Damage NOT Related to Excavation (subCause in Part G4)	
J1b. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained	
J2. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident? (initial post construction pressure test is NOT reported here)	
Most recent year tested:	
Test pressure (psig):	
J3. Has Direct Assessment been conducted on the pipeline segment?	
Most recent year conducted:	
Most recent year conducted:	
If J3 is Yes, J3a. For each type, indicate the year of the most recent assessment	
External Corrosion Direct Assessment (ECDA)	
Other, specify type	
J4. Has one or more non-destructive examination been conducted prior to the Accident at the point of the Accident since January 1, 2002?	
4a. If Yes, for each examination conducted, select type of non-destructive examination and indicate most recent year the examination was conducted:	
Radiography	
Guided Wave Ultrasonic	
Handheld Ultrasonic Tool	
Wet Magnetic Particle Test	
Dry Magnetic Particle Test	
Other	
- If Other, specify type	
PART K – CONTRIBUTING FACTORS	
The Apparent Cause of the accident is contained in Part G. Do not report the Apparent Cause again in this Part K. If Contributing Factors were identified during a root cause analysis, select all that apply below and explain each in the Narrative:	
External Corrosion	
External Corrosion, Galvanic	
External Corrosion, Atmospheric	
External Corrosion, Stray Current Induced	
External Corrosion, Microbiologically Induced	
External Corrosion, Selective Seam	

Internal Corrosion	
Internal Corrosion, Corrosive Commodity	
Internal Corrosion, Water drop-out/Acid	
Internal Corrosion, Microbiological	
Internal Corrosion, Erosion	
Natural Forces	
Earth Movement, NOT due to Heavy Rains/Floods	
Heavy Rains/Floods	
Lightning	
Temperature	
High Winds	
Tree/Vegetation Root	
Excavation Damage	
Excavation Damage by Operator (First Party)	
Excavation Damage by Operator's Contractor (Second Party)	
Excavation Damage by Third Party	
Previous Damage due to Excavation Activity	
Other Outside Force	
Nearby Industrial, Man-made, or Other Fire/Explosion	
Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation	
Damage by Boats, Barges, Drilling Rigs, or Other Adrift Maritime Equipment	
Routine or Normal Fishing or Other Maritime Activity NOT Engaged in Excavation	
Electrical Arcing from Other Equipment or Facility	
Previous Mechanical Damage NOT Related to Excavation	
Intentional Damage	
Pipe/Weld Failure	
Design-related	
Construction-related	
Installation-related	
Fabrication-related	
Original Manufacturing-related	
Environmental Cracking-related, Stress Corrosion Cracking	
Environmental Cracking-related, Sulfide Stress Cracking	
Environmental Cracking-related, Hydrogen Stress Cracking	
Environmental Cracking-related, Hard Spot	
Equipment Failure	
Malfunction of Control/Relief Equipment	

Pump or Pump-related Equipment	
Threaded Connection/Coupling Failure	
Non-threaded Connection Failure	
Defective or Loose Tubing or Fitting	
Failure of Equipment Body (except Compressor), Vessel Plate, or other Material	
Incorrect Operation	
Damage by Operator or Operator's Contractor NOT Excavation and NOT Vehicle/Equipment Damage	
Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow	
Valve Left or Placed in Wrong Position, but NOT Resulting in Overpressure	
Pipeline or Equipment Over pressured	
Equipment Not Installed Properly	
Wrong Equipment Specified or Installed	
Inadequate Procedure	
No procedure established	
Failure to follow procedures	

PART H - NARRATIVE DESCRIPTION OF THE ACCIDENT

On March 1, 2022 at approximately 10:54 PM CST, the Edmonton Control Center received a seal failure and a gas alarm from the Line 4 pump building at the Clearbrook Terminal. Line 4 was immediately shut down and the facility was isolated. At 11:00 PM CST technicians confirmed there was a release on Line 4 Unit 1 pump. Unit 1 was not operating at the time of the release. Approximately 52 barrels of crude oil was released with all product being contained to the pump building. The bulk of the volume drained into the trench surrounding the pump base. Grating was removed and the majority of the crude oil was vacuumed out for reinjections. The source of the release was identified as failed pump seals on Unit 1. Crude oil was cleaned up and clean up material was properly disposed. The pump was removed from service for additional repairs unrelated to the release.

As a result of the findings from the failure analysis and information gathered throughout the course of the investigation, it has been determined that the root cause of the release was due to a substantial check valve slamming event which caused a water hammer effect upstream of the Unit 2 check valve, ultimately leading to the failure of the Unit 1 mechanical seals. The primary ring and mating ring faces came into contact with one another as a result of the water hammer, leading to the fracture of the primary ring in each of the mechanical seals.

To prevent recurrence, the current mechanical seal type utilized on Unit 1 will be upgraded to a different seal type with a secondary containment bushing, as the secondary containment bushing will provide an added layer of protection in the event of a seal failure. Unit 1 pump case will also be modified to include seal leak drains and seal leak vents that would allow for API Plan 66A piping and instrumentation. The appropriate porting shall accommodate the upgraded mechanical seals with a secondary containment bushing. The porting is to be installed while Unit 1 undergoes a rebuild unrelated to the release.

PART I - PREPARER AND AUTHORIZED SIGNATURE

Preparer's Name	[redacted]
Preparer's Title	
Preparer's Telephone Number	
Preparer's E-mail Address	
Preparer's Facsimile Number	
Local Contact Name	
Local Contact Email	
Local Contact Phone	
Authorized Signer Name	[redacted]
Authorized Signer Title	

Authorized Signer Telephone Number	[redacted]
Authorized Signer Email	
Date	06/23/2022