Enbridge Semi-Annual Report May 23, 2020, to November 22, 2020

DJ# 90-5-1-1-10099

January **19**, 2021

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
ATC	American Transmission Company
AUV	Autonomous Underwater Vehicle
AVB	Automated Volume Balance
BIWP	Biota Investigation Work Plan
BIA	Bureau of Indian Affairs
COTP	Coast Guard of the Port
CCO	Control Centre Operations
CD	Consent Decree
CGR	Corrosion Growth Rate
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
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
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
GW	Girth Weld
HCA	High Consequence Area
HDD	Horizontal Directional Drill
ICP	Integrated Contingency Plan
ICS	Incident Command System
ILI	In-Line Inspection
ILIMRR	In-Line Inspection Minimum Reporting Requirements
IMT	Incident Management Team

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
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
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
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
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

Introduction

Enbridge[1] submits this seventh Semi-Annual Report (also referred to herein as "SAR" or "Report") in electronic form in accordance with 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 seventh SAR is submitted in accordance with Paragraph (or "P.") 143, which requires Enbridge to submit a SAR documenting Enbridge's compliance with the Consent Decree for the seventh reporting period dated May 23, 2020 to November 22, 2020 ("the reporting period"), no later than six months after the submittal of the sixth SAR. Enbridge's first SAR was submitted on January 18, 2018; the second on July 18, 2018; the third SAR on January 18, 2019; the fourth SAR on July 18, 2019; the fifth SAR on January 17, 2020; and the sixth on July 17, 2020. This seventh SAR is submitted on January 19, 2021, within six months of the sixth SAR. As per Paragraph 150 of the Consent Decree, this seventh 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 seventh SAR summarizes the requirements in Subsections VII.A-J of the Consent Decree that became due and/or were required to be complied with by Enbridge during the seventh reporting period. This Report is organized by Paragraph and Subparagraph number of the Consent Decree. This SAR addresses, on a Paragraph-by-Paragraph basis, each injunctive requirement of the Consent Decree that became due during the seventh reporting period or for which reporting is required.

In accordance with Paragraph 144, this SAR provides the information that is required to be submitted to the United States under Paragraphs 29, 31, 49, 96, and Subparagraph 110.c, which each have specific SAR requirements. In accordance with Paragraph 144, Enbridge shall discuss, Paragraph-by-Paragraph, such matters as completion of milestones, status of permit applications, operation and maintenance issues, reports to state agencies, number, 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 Reporting Period 7 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 SAR, and this SAR 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 SAR.

Enbridge has also enclosed appendices to this SAR, 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.

Summary of Activities

Table Intro-1 in Appendix 1 lists the Enbridge activities that are complete in accordance with P. 203(i) as implemented requirements of the Consent Decree.

[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]

As reported in the first SAR, the original Line 6B was permanently disconnected from the Enbridge system prior to the Effective Date of the Consent Decree and remains inoperable. This Consent Decree activity is complete. Enbridge continues to monitor Line 6B and will provide updates as warranted in future SARs. There is no update for this reporting period.

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

22.a [Replacement of Line 3 in the United States]

Enbridge vigorously pursued all avenues to complete the replacement of Line 3 as quickly as possible. As discussed in SARs 1 through 6, Enbridge obtained a Certificate of Need and Route Permit from the Minnesota Public Utilities Commission ("MPUC"), both of which were required before certain other state and federal approvals could be obtained. Prior to this report, the Certificate of Need and Route Permit were restored by the MPUC. Shortly before, in this reporting period, and shortly after the covered period:

- On May 1, 2020, the MPUC issued its order deeming the second revised EIS adequate and restored its grant of the Certificate of Need and Route Permit for the Line 3 Replacement Project.
- On May 21, 2020, various parties filed petitions for reconsideration with the MPUC contesting the adequacy of the second revised EIS, and the restoration of its grant of the Certificate of Need and the Route Permit.
- On June 1, 2020, Enbridge and various supporting parties filed responses to those filed petitions for reconsideration.
- On June 25, 2020, the MPUC held a hearing to address the petitions for reconsideration, denying each petition in turn.
- MPUC issued Enbridge its construction authorization for the project November 24, 2020.
- On December 4, 2020, the MPUC voted against a motion for a stay following an expedited hearing request from project opponents. The MPUC denied reconsideration of that decision on December 23, 2020. The status of primary permits and approvals for the Line 3 Replacement project are noted in **Table B-1** in Appendix 1. Additional detail is provided below on the permitting and construction plans.

Permitting:

Minnesota: The Minnesota Department of Natural Resource issued permits on November 12, 2020. On the same date, the Minnesota Pollution Control Agency issued all but one of the remaining authorizations for the project; the outstanding item was the Construction Stormwater Permit issued on November 30, 2020. Enbridge received the US Army Corps of Engineers permits for the replacement on November 23, 2020.

As of December 1, 2020, Enbridge received all necessary authorizations to begin construction for the replacement of the approximate 340.4-mile segment of Line 3 in Minnesota. Construction was initiated on December 1, 2020. Details on permits are below and in **Table B-1** in Appendix 1.

North Dakota: As reported in previous SARs, on May 7, 2014, Enbridge received approval to replace Line 3 in North Dakota from the North Dakota Public Service Commission ("NDPSC"). In that year, Enbridge replaced an approximate 15-mile segment of Original Line 3 that extends from the U.S.-Canada border to the first U.S. mainline valve. Enbridge replaced the remaining 12.3-mile segment of Line 3 in North Dakota between August and October 2020 following the required NDPSC construction notification per the PSC's certification process.

Wisconsin: As reported in previous SARs, the Original Line 3 extends approximately 14 miles in the State of Wisconsin. Enbridge received from federal, state, and local authorities all approvals and permits necessary for the replacement of that 14-mile segment. Enbridge initiated construction of the replacement in July 2017. Construction of that segment is complete and the replacement, known as "Segment 18," went into service on May 25, 2018.

Construction Plans:

Table B-2 in Appendix 1 identifies key dates regarding Enbridge's plans to construct the Line 3 replacement. As shown in the table and as indicated above, construction of the portion of the Line 3 replacement in the State of Wisconsin has already been completed and was placed into service on May 25, 2018. Construction of the remaining replacement segments in Minnesota commenced following the receipt of the permits and is underway described in **Table B-1**.

22.b [Line 3 Decommissioning]

Within 90 Days after the Original Line 3 is taken out of service (following the construction of the Line 3 replacement and placing the replacement into service), Enbridge will purge remaining oil from Original US Line 3 by running a cleaning pig through the line. Enbridge will complete final clean-out and decommissioning of Original US Line 3 will be complete within one year thereafter, in accordance with Subparagraph 22.b.

22.c [Original US Line 3 Maximum Operating Pressure ("MOP")]

Enbridge has limited the operating pressure of all Line 3 segments in accordance with MOP values specified at https://www.epa.gov/enbridge-spill-michigan/enbridge-revised-maximum-operating-pressure-values.

Enbridge has not increased operating pressures above the specified MOP values; therefore, hydrostatic pressure tests were neither required to be conducted nor needed to be provided to the EPA with associated procedures and results. Although not required by the Consent Decree, each month, Enbridge has been reporting to the ITP the maximum pressure compared to the maximum allowable pressure on Line 3. Enbridge has not exceeded the Line 3 MOP values submitted to the EPA.

22.d [Requirements for the Use of Original US Line 3]

Portions of Original US Line 3 remain in service as of December 31, 2017. As a result, in this reporting period, Enbridge implemented the additional requirements specified under Subparagraph 22.d, which pertain to the continued use of Original US Line 3.

(1) The In-Line Inspection ("ILI") of all portions of Original US Line 3 is scheduled on an annual basis, using the most appropriate tools for detecting, charactering, and sizing Crack Features, Corrosion Features, and Geometric Features. The ILI schedule is described in this SAR under Subsection VII.D: In-Line Inspection Based Spill Prevention Program.

Enbridge and the ITP and EPA have a difference in interpretation regarding this Paragraph in the Consent Decree. Enbridge, without agreeing that its initial interpretation was incorrect, has agreed to schedule all Line 3 runs in line with the EPA interpretation that each ILI will be scheduled within 365 days of the previous run with the exception of the final year of service.

During the period of this report, ILIs on Line 3 were completed for axial Crack, Corrosion, and Geometry features within 365 Days of the previous ILI completion as per Enbridge's commitment stated above. The pull date and required completion dates are provided in **Table D-1**.

(2) The identification, excavation and mitigation or repair of all Features Requiring Excavation ("FREs") are described in this SAR under Subsection VII.D: In-Line Inspection Based Spill Prevention Program.

(3) Enbridge conducted quarterly cleaning and biocide treatment of Original US Line 3 in 2020 as required in Subparagraph 22.d.(3) of the Consent Decree. During the current reporting period, Enbridge conducted quarterly biocide treatments on the Original US Line 3 as set forth in **Table B-3**.

The biocide treatment vendors and specific biocide chemicals used in the Line 3 GF-CR and CR-PW segments were adjusted for 2020 to address seasonal requirements. Two different biocides are being used for 2020. Spec-Aid 8Q5703, in which the active ingredient is Cocodiamine, is used when the biocide is exposed to winter conditions at the time of injection. Spec-Aid 8Q5700ULS, in which the active ingredient is Glutaraldehyde, is used when the biocide is exposed to other conditions at the time of injection. One biodispersant, Spec-Aid 8Q5701, is used in conjunction with each specific biocide. The biocide concentration requirement for each biocide remains unchanged at 500ppm.

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

The Original US Line 3 continues to operate. The following two portions of Line 3 have been replaced to date: (i) a 15.7-mile segment located in North Dakota, which was taken out of service in 2014; and (ii) the 14-mile Segment 18 located in Wisconsin, which was taken out of service in 2018. These two portions of the Original US Line 3 are not used for any operations, including to transport oil, gas, diluent or any hazardous substances. The 12.3 mile section constructed in North Dakota in 2020 has not been commissioned and the Original US Line 3 in this area is still operating.

23 [Line 10 Replacement Evaluation]

As reported in SAR4 this requirement is complete. On April 8, 2019, Enbridge received the ITP's Evaluation of Enbridge US Line 10 Submittals Report, identifying that "the Collective Information, taken as a whole, complies with the requirements of CD P. 23".

As previously reported to the EPA and ITP, on June 1, 2020, Enbridge closed on the sale of Line 10 to Kiantone Pipeline Corporation. Enbridge will continue to maintain responsibility for the operation of Line 10 during the term of the Consent Decree.

Section C – Hydrostatic Pressure Testing

No hydrostatic pressure tests were conducted pursuant to the terms of the Consent Decree during this reporting period (i.e., between May 23, 2020 and November 22, 2020). Therefore, the requirements specified in Paragraphs 24, 25, and 26 were not triggered and are not applicable to this SAR.

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.

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, in 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 P. 144 Problems Anticipated in Appendix 1.

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 SAR 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 currently required under Paragraphs 65 and 66 of the Consent Decree for all Lakehead System Pipelines, have been completed. The schedule for ILIs to detect crack features on Line 2 is 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"). Per the ILI Stipulation, Enbridge worked with ILI vendors to develop and test a new crack ILI tool to detect Line 2 cracking features, with a particular focus on crack features on or adjacent to the pipeline's long seam weld. The new crack ILI tool development and validation is complete, and Enbridge submitted its report to the ITP and EPA on November 22, 2019. The ITP submitted a Validation Report to EPA on July 9, 2020 that stated "the NGCT [Proton tool] Report meets the requirements established by the S&A" (Stipulation and Agreement).

Refer to **Table IX-1** in P. 144 Problems Anticipated in Appendix 1 for circumferential cracking details and the P. 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.

Incomplete or invalid ILI runs are reported in **Table D-2**. There were no incomplete or invalid ILI runs during this reporting period.

29 [12-Month ILI Schedule]

Table D-3 includes each Consent Decree ILI tool run that is scheduled to be initiated on any pipeline during the 12-month period after the reporting period covered by this SAR.

The Required Completion Dates shown in this table are consistent with 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.

30 [ILI Schedule Modification]

ILIs have been performed by Enbridge, as shown **Table D-1**. During this time period there were no failed or partially failed ILI runs that required a re-run as discussed in Subparagraph 28.c of this SAR.

Table D-4 outlines changes to Tool Runs associated with the previous 12-month Lakehead ILI schedule as reported in SAR6. 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.

Line 5 WNO-WMA MFL4 Geometry (Tool Run ID's 6667, 10076, 10240) and Line 5 ENO-EMA MFL4 Geometry (Tool Run ID's 6694, 10075, 10241)

Corrosion and geometry inspections were completed on the L5 WNO-WMA and Line 5 ENO-EMA segments following the discovery of disturbances/damage at EAP-9 and EP-17-1. Such inspections were completed in advance of the planned inspections on these segments in order to lift the Temporary Restraining Order (TRO) issued by the Michigan Circuit Court. As a result, Tool Run ID 10076 was added in advance of Tool Run ID 6667 and Tool Run ID 10075 was added in advance of Tool Run ID 6694.

Tool Run ID 6667 was replaced by Tool Run ID 10240 to meet the annual inspection interval requirements driven from the completion date of Tool Run ID 10076. Tool Run ID 6694 was replaced by Tool Run ID 10241 to meet the annual inspection interval requirements driven from the completion date of Tool Run ID 10075. Both Tool Run ID 10240 and 10241 are reported in **Table D-3**.

Line 3 New Planned Inspections Based on the Revised US In-Service Date (Tool Run ID's 10228, 10229, 10230, 10231)

As reported in P. 22.a, Enbridge acquired numerous permits throughout this covered period for the Line 3 Replacement Project. With the understanding that the in-service date ("ISD") for new Line 3 will be sometime in 2021, the ILI schedule for Line 3 was updated to reflect the change in the ISD as shown in Paragraph 29 **Table D-3** of this SAR. This change was presented to the ITP and EPA at a Technical meeting on October 22, 2020. As per P. 66 of the CD, ILI are not required to be conducted during the final 12 months that Original U.S. Line 3 is in operation. Enbridge acknowledges this but has tentatively scheduled Line 3 ILIs per **Table D-3** in the event there are delays with the ISD for new Line 3.

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. Per **Table D-5** 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.

Line 67 CR-PW GEMINI Corrosion (Tool Run ID 6504)

One MFL sensor head was intermittent from 10657 m (6.6 miles into the inspection) to the end of the inspection. The intermittent sensor occurred for a total distance of 295.3 km (183.5 miles). There were also 48 sensor heads that experienced lift-off intermittently throughout the inspection. Sensor lift-off can occur when internal debris or scale is present, in the proximity of welds, and in some cases as tools traverse pipeline fittings. The ILI vendor provided a revised tool specification for these areas as can be seen in the ILI report, as detection and sizing was degraded. Enbridge accepted this ILI with the revised tool specification because the revised specification was sufficient to complete the required integrity assessment. No measures are required to prevent reoccurrence.

(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. All Initial ILI Reports were received in accordance with the timelines outlined in Paragraph 32.a through c.

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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 ILIMRR, 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.
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

[2] *Enbridge has not applied CD 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.*

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. Each listed feature is then discussed in greater detail in this section. All priority features identified within this reporting period were reviewed in accordance with required timelines as per the Consent Decree, and repair or mitigation actions were taken if required as indicated in the table.

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 SAR identifies the timelines when FREs were identified and placed onto the Dig List during this SAR reporting period.

34.c [Resolution of Identified Data Quality Issues]

Enbridge identified quality concerns during its preliminary review of some Initial ILI Reports. Enbridge completed evaluations required to resolve all identified data quality concerns. In some cases, ILI vendors provided re-issued ILI reports to correct and improve the ILI reporting and data quality, as summarized in **Table D-11**. Details regarding data quality issues are reported below.

Line 2 CR-DR Proton (Tool Run ID 4506)

During the inspection there was one instance where the ILI tool (robot) speed exceeded the specified maximum speed for a very short distance. However, it was determined by the ILI vendor that there was no impact to the tool specification, as can be seen in the ILI report. Enbridge's Control Center attempts to ensure that line operation during pigging is kept at a value that ensures that the tool does not exceed the maximum speed, however, the correct speed cannot always be maintained. This is an anomaly and no corrective action is required. Enbridge accepted the ILI run because the data is of sufficient quality to complete the required analysis.

It was identified by the ITP that the ILI vendor had incorrectly reported the percent depth of some features based on the nominal and local wall thicknesses. The vendor had correctly reported the discrete depth of the features, but when the discrete depths were converted to a percent depth based on either the nominal or local wall thickness there was an error in the calculation. The discrete depth is the depth that is used for the fitness for purpose and fatigue life assessments, and the percent depth is not used for these assessments. As a result, this data quality issue has no impact to the assessment that was completed. The assessment was completed within required timelines as per the Consent Decree. The percent depth

discrepancies are not included as part of our ILI report data quality review and thus were not flagged as an issue to be resolved during the review because those values are not used by PI. Enbridge is working with the ILI vendor to determine the cause of the error with the feature percent depths.

Line 3 CR-PW UCMp Crack (Tool Run ID 6581)

One clockwise-oriented crack sensor had continuous coupling loss throughout the inspection. There were also 9 instances where the pendulum speed (rotation) of the tool could have had an impact on the discrimination capability of the tool. The ILI vendor concluded that there was no impact to the stated performance specification. Both coupling loss and excessive rotation can occur during an ILI run. No corrective action is required. Enbridge accepted the ILI run because the data is of sufficient quality to complete the required analysis.

Line 3 CR-PW MFL4 Corrosion (Tool Run ID 6606)

There were three metal loss features from this report with depths greater than 40% that were not previously reported in the 2018 and 2019 MFL inspection reports. Enbridge requested that a root cause analysis be performed to investigate these features. These missed features are in areas with rapid changes in the magnetic field values due to wall thickness transitions. To ensure that no other features like these were missed, all similar locations included in this inspection were manually reviewed in the 2020 inspection data. The manual review identified an additional seven external metal loss features with depths ≤ 30% in the transition areas. The Issue 2 report includes all the features from the Issue 1 report plus the newly identified seven external metal loss features. None of these additional external metal loss features were determined to be FREs.

Enbridge is working with the ILI vendor to perform a full investigation for all line segments to identify if there were other instances where features like these could have been missed.

Line 3 CR-PW MFL4 Geometry (Tool Run ID 10008 and 6605)

During this inspection (tool run ID 10008), there was a tool stoppage for two hours that lead to data loss. The event occurred at an absolute distance of 24.942 km (15.498 miles) and resulted in 5.8 m (19 feet) of data not being recorded due to the tool stoppage. The area of data loss was reviewed by the ILI vendor using the data from the previous 2019 ILI. The previous ILI did not show any geometry features in this location.

In addition to the tool stoppage, the following sensors became faulty after passing through a stopple; sensors 103, 22, 23, 132, 83, and 84. Sensor 135 did not respond correctly during the entire inspection. Due to loss of data due to damaged or faulty sensors, data from the partially successful Caliper inspection completed on May 7, 2020 (tool run ID 6605) was used to supplement this ILI report. The ILI vendor was able to confirm that no geometry features were missed by combining data from both ILIs and the vendor's stated specification was achieved.

Line 3 GF-CR DuoCD Crack (Tool Run ID 10001)

The Issue 1 ILI report contained the incorrect defect detection capabilities sheet. The Issue 2 ILI report corrected this by including the proper defect detection capabilities sheet. There were no changes to the ILI feature information between the Issue 1 and Issue 2 ILI reports.

Line 3 GF-CR MFL4 Geometry (Tool Run ID 10052)

There was one caliper sensor that did not respond during the entire inspection, and an additional 3 caliper sensors that became faulty during the inspection after passing through a stopple fitting. The detection and sizing specification of this inspection was not impacted.

Line 4 GF-DN MFL DuDi Corrosion (Tool Run ID 6607)

The Issue 1 ILI report was received on 5/26/2020. An Issue 2 ILI report was required for this inspection as the ILI vendor used the incorrect previous ILI inspection for the back-to-back run comparison. The ILI vendor initially used the 2012 corrosion inspection results for the back-to-back comparison instead of the most recent 2016 corrosion inspection. Enbridge identified this error and alerted the ILI vendor and requested a reissue of the ILI report. The Issue 2 report updated the back-to-back comparison using the most recent 2016 inspection data. The ILI vendor was reminded that the ILI MRR requires the use of the most recent ILI run in comparisons and no additional corrective actions were required.

The issue 2 ILI report was received on 7/14/2020 from the ILI vendor. It was noticed that the ILI vendor did not include a revision table in the Issue 2 ILI report stating why an Issue 2 was required. The ILI vendor re-issued the Issue 2 ILI report to include a revision table on 8/4/2020 with no other changes.

Line 4 WR-PW MFL4 Corrosion (Tool Run ID 6539)

The ILI vendor reported that the tool was collecting extra samples during the inspection while recording. The ILI vendor determined that the extra samples did not affect the integrity of the inspection data. The tool specification was not impacted, and Enbridge accepted the ILI report.

Line 5 ENO-EMA UCc Circumferential Crack (Tool Run ID 6563) and Line 5 WNO-WMA UCc Circumferential Crack (Tool Run ID 6560)

The ILI vendor identified that each ILI had one sensor with low signal amplitudes throughout the entire inspection. The ILI vendor considers this to be the same as continuous coupling loss. The ILI vendor concluded that there was no impact to the stated performance specification and Enbridge accepted the report. No further corrective action is required.

Line 5 PE-IR GEMINI Geometry (Tool Run ID 6609)

An Issue 2 report was required to address the clock positions of all caliper deformations. The Issue 1 report had incorrectly reported all the caliper deformation features' clock position as off by +8 degrees. The Issue 2 report adjusted the clock position of all the caliper deformation features and ensured all features were

properly reported as top or bottom side. Further details describing the data quality issues can be found in P. 144 [Section D] Line 5 PE-IR FRE Data Quality Issue.

Line 10 ENR-UT Eclipse Crack (Tool Run ID 6491) Line 67 CR-PW UC Crack (Tool Run ID 6503), and Line 78 GT-SK UC Crack (Tool Run ID 6416)

For each of these tool runs, there were several isolated locations where the pendulum speed exceeded the specified maximum tool rotation as reflected in the ILI report. There was no impact to the data quality detected by the ILI vendor and no corrective action is required.

Line 67 CR-PW GEMINI Geometry (Tool Run ID 6504)

Twelve caliper arms were damaged during this inspection and were unable to collect data. The ILI vendor determined that there was no damage to any other tool systems, and that a complete set of caliper data was collected. The ILI vendor also concluded that the inspection met the published ILI specification. No further corrective action is required.

In addition, four dents were identified with data quality concerns due to the ILI vendor having difficulty differentiating between ovalities and deformations. As per Section 13.3 of Enbridge's Minimum Reporting Requirements (MRR), the ILI vendor re-analyzed the features to reduce conservatism associated with feature boxing with the inclusion of pipe ovality. An Issue 2 ILI report was received from the ILI vendor that adjusted the feature boxing of these 4 dents. The data quality issue was addressed, and no further corrective action is required.

Line 67 CR-PW GEMINI Corrosion (Tool Run ID 6504)

One MFL sensor head operated intermittently from 10657 m (6.6 miles into the inspection) to the end of the inspection. The sensor operated intermittently for a total distance of 295.3 km (183.5 miles). There were also 48 sensor heads that experienced lift-off intermittently throughout the inspection. Sensor lift-off can occur when internal debris or scale is present, in the proximity of welds, and in some cases as tools traverse pipeline fittings. The ILI vendor provided a revised tool specification for these areas as can be seen in the ILI report, as detection and sizing was degraded. Enbridge accepted this ILI with the revised tool specification because the revised specification was sufficient to complete the required integrity assessment. This issue was also reported in Paragraph 31 above.

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 data reviews for the runs (see "Yes" in "Quality Evaluations Completed Within 180 Days" column), and data reviews were ongoing for the runs for which the 180 Day period was still open at the end of this reporting period (see "FR" in "Quality Evaluations Completed Within 180 Days" column). Additional details regarding data review for some listed runs can be found in Paragraph 34.c of this report.

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 identified in **Table D-13**. Details of these discrepancies are reported below.

Line 2 CR-DR Proton Crack (Tool Run ID 4506)

This is the baseline inspection with the Proton tool on this pipeline and it was noticed that there was an increase in the feature severity and density when compared to the previous 2012 UC and 2013 DuoCD inspections. The 2012 UC and 2013 DuoCD crack tools did not perform consistently, and therefore a hydrotest was chosen to verify the integrity of the pipeline in 2015. The previous tools were different technologies and were run several years prior to the hydrotest and this inspection. For these reasons, there is minimal value in comparing the current crack inspection with the previous crack ILIs. The differences in the feature severity and density between these inspections are explainable by the differences in tools and data quality, and do not warrant any additional actions due to data quality issues with the Line 2 CR-DR Proton inspection.

Line 3 CR-PW UCMp Crack (Tool Run ID 6581)

There was a decrease in the feature population and severity when compared to the previous 2019 DuoCD inspection. The change in feature population and severity can be attributed to using different ILI crack tools from different ILI vendors. The different crack tools have different detection thresholds from one another which explains the difference in feature population and severity.

Line 3 CR-PW MFL4 Geometry (Tool Run ID 10008)

There was an increase in the number of features reported from the previous 2019 MFL4 inspection. The features were visible in the previous inspection, but they were not reported due to being below the reporting threshold.

Line 3 GF-CR DuoCD Crack (Tool Run ID 10001)

There was an increase in the feature population when compared to the 2019 DuoCD inspection. The change in feature population can be attributed to features near the detection threshold being reported due to inspection variability.

Line 3 GF-CR MFL4 Geometry (Tool Run ID 10052)

There was an increase in the number of features reported from the previous 2019 MFL4 inspection. The features were visible in the previous inspection, but they were not reported due to being below the reporting threshold.

Line 4 FW-WR MFL DuDi Corrosion (Tool Run ID 6488)

There was an increase in the total number of features reported compared to the previous 2015 MFL3 inspection due to areas of low-level corrosion detected during the analysis. The majority of the changes are with respect to metal loss features below 10%. These changes in the quantity of shallow corrosion

features that are near the tool detection threshold and/or less than the tool tolerance is anticipated as part of typical ILI data variability.

Line 4 WR-PW MFL4 Corrosion (Tool Run ID 6539)

There was an increase in feature population due to increased tool capabilities between the 2015 MFL3 and 2020 MFL4 inspections.

Line 5 MA-BC GEMINI Geometry (Tool Run ID 6579)

There was an increase in the number of reported features between the 2017 and 2020 caliper inspections. This is expected due to the reduced reporting threshold of 0.5% OD implemented in 2020. The reporting threshold in 2017 was 2.0% OD. The majority of the differences between the two runs were for features between 0.5%OD and 2% OD.

Line 5 PE-IR GEMINI Geometry (Tool Run ID 6609)

In the 2020 GEMINI Caliper ILI report, there was an increase in the number of dents reported near the reporting threshold of 0.5% O.D. which were not reported in the 2019 GEOPIG report. The reported dent quantity discrepancies between the 2020 GEMINI and 2019 GEOPIG runs are attributed to tool sizing tolerance and the many small dents (possible ripples) on field bends that have been reported in the 2020 run that were not reported in the 2019 run.

Line 10 EB-ENR Eclipse Crack (Tool Run ID 6449) and Line 10 ENR-UT Eclipse Crack (Tool Run ID 6491)

There was an increase in the density of the reported ILI calls between the previous 2017 UC inspection for EB-ENR and the previous 2017 UCh inspection for ENR-UT. The difference is attributed to technology differences between ILI tools and different reporting thresholds and sizing/classification algorithms. This is the first inspection of this segment with the Eclipse technology.

Line 67 CR-PW UC Crack (Tool Run ID 6503)

There was a decrease in the number of features reported (2015: 17 features, 2020: 9 features) between the 2015 and 2020 crack inspections. This decrease is attributed to the experience and knowledge obtained by the ILI vendor between inspections to more accurately classify features.

Line 67 CR-PW GEMINI Corrosion (Tool Run ID 6504)

There was an increase in the total number of reported features when compared to the previous 2015 corrosion inspection. The increased feature population is due to improvements of sizing algorithms, detection capabilities, and reclassification of features.

Line 67 CR-PW GEMINI Geometry (Tool Run ID 6504)

There was a decrease in the number of ovality features reported compared to the previous 2015 Geometry inspection. The ovality feature population difference is due to improved caliper tool tolerance and possibly slight pipe shape changes as the pressure cycling severity from 2015 to 2020 has decreased.

Line 78 GT-SK UC Crack (Tool Run ID 6416)

There was an increase in the feature population from 3 features in the 2015 DuoCD inspection to 10 features in the current inspection. As this is a relatively new pipeline (2014), it is expected that the feature population should be low. The differences in the feature population are attributed to different tool specifications, detection thresholds, and sizing algorithms from different ILI vendors. The minimum detection length for the 2020 crack inspection also decreased from 45 mm in 2015 to 25 mm in the 2020 inspection, leading to more features being reported

34.f-g [Investigative Digs]

There were no investigative digs issued or completed during the SAR 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 and were referenced in the Compliance Registry Forms database which the ITP has access to.

With respect to Geometric and Intersecting or Interacting features, Enbridge applied the Fifth Modification analysis process to identify features requiring excavation 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 CD 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 SAR. Priority notification FREs are excluded from this table as they are included in Paragraph 33 **Table D-9** of this SAR. ILI tool runs that did not discover any FREs are excluded from this table.

38 [Dig List Actions]

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. In some cases, dig deadlines were extended per the provisions provided in Paragraph 49 such as when completing a dig in the winter is less detrimental to the environment or when a dig was particularly complex.

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. On October 29,2020, Enbridge submitted revisions to responses previously submitted in the SARs 1 through 6 with respect to Paragraph 38.b of the Consent Decree. Historically in these reports Enbridge referred only to discharge pressure but rather should have referenced using an operating limit pair.

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. 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 were no exceedances of the Consent Decree PPRs in this SAR reporting period

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

During the SAR7 reporting period, 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 SAR, 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 SAR.

During this SAR 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 SAR 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").

During the reporting period, Enbridge, EPA and the ITP discussed refinements to when excavations of FREs would be deemed "completed." The parties are nearing finalization of an interpretation to provide clarity around this issue. This item is included in **Table IX-1** in P. 144 Problems Anticipated in Appendix 1.

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.

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

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[3] 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 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.**

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 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.

In this reporting period, 3 digs were cancelled due to the reasons described below. Digs cancelled during this reporting period are summarized in **Table D-19.** In the assessment of Line 61 PE-FN 2019 MFL-A program, three features that met CD FRE dig criteria were added to the Dig List (Dig ID: 26627, 26628 and

26629) on 11/07/2019 based on the MOP on the EPA's website. However, based on the revised MOP which was approved in the Fifth Modification of the Consent Decree, the selected features in the digs listed above no longer met CD FRE dig criteria, and the 3 digs were cancelled on 09/28/2020 prior to the required repair deadline. These three digs were also reported in SAR6.

Where applicable, Enbridge established pressure restriction requirements and imposed PPRs in accordance with Consent Decree requirements[4] 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 did not submit any new Alternate Plans during the reporting period of this SAR. 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 SAR reporting period are provided in **Table D-21.**

46.f [Saturated Signal Crack Feature]

Enbridge did not submit an Alternate Plan or an alternate pressure restriction for any saturated signal crack feature within the reporting period for this SAR.

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

During the reporting period for this SAR, Enbridge did not submit any new Alternate Plans (**Table D-22** is not applicable).

46.h [Alternate Plans and Temporary Pressure Restrictions]

The target feature associated with Alternate Plan 3 was mitigated on August 26, 2020, in this reporting period.

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

During execution of the Horizontal Directional Drilling (HDD), for Alternate Plan 3, Enbridge experienced 2 drilling fluid releases to the surface (commonly known as frac outs). Both non-hazardous material releases were non-reportable to the regulatory authorities as they did not meet any reporting criteria under environmental legislation.

No new Alternate Plan was submitted within the reporting period for this SAR. During the implementation of Alternate Plans 3, 4 and 5, Enbridge complied with applicable laws and regulations, with the sole exception noted below.

On August 19, 2020 Enbridge received two Violation Notices from the Illinois EPA for not submitting monthly Discharge Monitoring Reports under two National Pollutant Discharge Elimination Systems permits associated with Alternate Plans 3 (MP 405) and 4 (MP 384). The notices were for a number of months wherein Enbridge did not discharge any volume under the permits but did not submit a report of 'no

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

discharge' using the electronic system. The 'no discharge' monthly reports have since been filed with the EPA and the issue is resolved.

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

Enbridge has implemented each proposed Alternate Plan and each proposed alternate interim pressure restriction and timetable in accordance with the timetable for implementation of such Alternate Plan or alternate interim pressure restriction as set forth in the applicable notification submitted pursuant to Paragraph 46.g.(2). Adjustments to Alternate Plan timelines were communicated to the EPA and ITP via quarterly Alternate Plan Update meetings.

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.

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

Alternate Plan updates during this report period have been summarized in **Table D-23.** During this reporting period, the target feature in Alternate Plan3 was mitigated with an HDD replacement on August 26, 2020. As previously reported in SAR6, the target feature in Alternate Plan 4 was mitigated on May 12, 2020.

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. The crack features that meet the above criteria are summarized in **Table D-24** and PPRs of crack FREs are listed in **Table D-25.**

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[5]. For more information about these interacting features, see Paragraph 59 in this SAR. These features are not included in **Table D-24** and **Table D-25**, but they are detailed in Paragraph 58 and 59.

Table D-25 lists the pressure restrictions imposed due to these criteria as applicable to this SAR.

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 P. 144 Problems Anticipated in Appendix 1.

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

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, Enbridge did not extend the dig deadline for any FRE's from 180 Days to 365 Days based on environmental considerations per 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 of the Consent Decree.[6] For more information about these interacting features, see Paragraph 59 in this SAR. These features are not included in **Table D-26.**

The details for Dig deadline extension requests related to four corrosion features are reported in Paragraph 144 [Section D] Dig Deadline Extension Request for Two CD digs for four features on L67 CR-PW – P. 50 of this SAR.

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 SAR. 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.

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

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, and Weld Anomaly A/B FREs identified, as referenced in **Table D-28**.

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 and Seam Weld anomaly A/B features, as referenced in **Table D-29**, 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 as identified in **Table D-30**. 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.

57 [Dent and other Geometric Feature Pressure Restrictions]

Enbridge establishes 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 SAR) 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.[7] Enbridge excavated and repaired all such intersecting/interacting features that met the dig selection criteria set forth in Table 5 of the Consent Decree Fifth Modification, within the applicable timeframes identified in columns 2 and 3 of Table 5. Enbridge also established PRs as provided in Table 5 and Paragraph 59 of the Consent Decree. For more information, see the discussion in the following Paragraph (Paragraph 59) of this SAR. **Table D-31** lists the intersecting/interacting features that were identified for excavation.

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

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

ILI tool. Historical Consent Decree geometric ILI reports have been revisited by the ILI vendors to report all deformations down to the tool tolerance of the geometric ILI tool that were not previously reported. The details associated with the assessment of these Catch Up ILI reports was provided in SAR6.

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 SAR. 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 limited 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**. Within two days after determining that any dent had an indication of cracking, metal loss or a stress riser, Enbridge limited operating pressure at the location of such feature to not more than 80 percent of the highest actual operating pressure at the location of the feature over the last 60 days.

Pressure restrictions can be removed upon completion of feature repair. Pressure restriction removal is a safety critical process that is completed at Enbridge's discretion and there is no requirement to remove a pressure restriction within a certain period after a feature is repaired.

(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 SAR, 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.

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 SAR. Crack inspections for Line 2 are governed by the Stipulation filed with the Court on May 2, 2018. Under the Stipulation, crack inspections on Line 2 were due in 2020 and have been completed as required in the Stipulation.

Since the new Proton UC (NGCT) ILI tool collects such a large volume of data, the L2 GF-CR segment requires two passes of the ILI tool in order to inspect the entire segment. The tool is run initially to gather the data from the start of the pipeline segment to the approximate midpoint. The tool is then run again, with the recording starting from the approximate midpoint of the segment and continuing until the end of the segment. This is a new tool for Enbridge and the use of two passes for a single line segment is unique to this segment of the Lakehead system. Initially Enbridge was scheduling the segment as a single ILI with two separate passes and was determining the reinspection interval for the entire segment based on the shortest reinspection interval between the two passes. Enbridge has decided to consider each of the two ILI passes as individual ILI runs, with unique assessments and reinspection intervals, to avoid any confusion or discrepancies going forward. Enbridge has conservatively decreased the reinspection interval for each of the two passes to less than the maximum allowed, in order to run the ILI tool at a higher frequency to increase our understanding of this new tool's capabilities. The reinspection intervals for the two Line 2 GF-CR segment passes have been adjusted to 3 years as a result.

The details for difficulties encountered related to the reinspection interval determination on another line segment is reported in Paragraph 144 [Section D] Remaining Life Calculations on L78 SK-RW GE MFL a – P. 65 of this SAR.

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

Other than crack inspections for Line 2, Enbridge determined the interval between successive crack, corrosion and Geometry ILIs. The maximum interval between successive ILIs does not exceed 5 years for all Lakehead pipeline segments. The 12-month ILI schedule is included in Paragraph 29 **Table D-3** of this SAR and the ILI runs completed during the reporting period of this SAR are included in Paragraph 28 **Table D-1**. Crack inspections for Line 2 are governed by the Stipulation filed with the Court on May 2, 2018. Under the Stipulation, crack inspections on Line 2 were due in 2020 and have been completed or planned as required in the Stipulation.

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.

68 [Span Management Program and Anchor Strike Mitigation]

Protection from Currents and Ice

Enbridge operates and maintains the Dual Pipelines to ensure that neither ice nor currents impair the integrity of either pipeline. The Dual Pipelines are continuously submerged at a depth below the surface of the Straits where ice floes do not form and they are buried near the shoreline areas, which eliminates the potential for impairment of the integrity of the Dual Pipelines caused by ice. As a precaution, Enbridge also monitors the ice data published on the United States Coast Guard ("USCG") website and performs routine surveys of the shoreline areas to ensure ice does not impair the Dual Pipelines.

Independent studies completed by Dynamic Risk Assessment Systems, Inc. (final report published on State of Michigan website at https://mipetroleumpipelines.com/document/alternatives-analysis-straits-pipeline-final-report) have confirmed that there is no risk to the Dual Pipelines from ice on the deeper portions of the pipelines and the burial medium protects the pipelines from ice in the shallow portions. Burial conditions are further confirmed through periodic visual inspections using Remote Operated Vehicle ("ROV") and Autonomous Underwater Vehicle ("AUV") surveys. These inspections are conducted bi-annually.

Management of Spans

Enbridge operates and maintains the Dual Pipelines to ensure the pipelines are well-supported in areas where the pipeline is suspended above the lake bed ("spans"), in accordance with Paragraph 68.

Span Inspections

Per the Consent Decree Paragraph 68.f requirements, Enbridge performs periodic visual inspections of the Dual Pipelines to assure that span lengths do not exceed prescribed thresholds. Such visual inspections

are conducted at least every twenty-four (24) months, in accordance with the maximum interval prescribed in Consent Decree Paragraph 68.f.

The results of the 2016 and 2018 visual inspections were reported in SAR1 and SAR3, respectively. In accordance with the requirements of the Consent Decree Subparagraph 68.f, Enbridge resumed its periodic underwater visual inspections in the 2020 work season to verify continued compliance with criteria of Subparagraph 68.b of the Third Modification of the Consent Decree.

Enbridge initiated its span survey visual inspection data collection on May 4, 2020, in advance of reporting period 7, using ROV for screw anchor pre-installation site inspections. As reported in SAR6, span information collected during anchor installation activities is retained and included as part of the aggregated span survey data.

In accordance with the requirements of Subparagraph 68.f, Enbridge initiated its dedicated inspection of the Dual Pipelines at the Straits of Mackinac using an AUV on July 21, 2020 and completed the AUV inspection on July 29, 2020. The dedicated ROV inspection commenced on July 16, 2020 and finished August 1, 2020. Enbridge's marine contractor, Ballard Marine Construction ("Ballard"), conducted its review of collected data, report drafting, and report revision from August 2020 through October 2020. Ballard finalized its findings from all inspections and installations in its final report submitted to EPA on December 22, 2020.

While Enbridge's contractor deployed the ROV unit on August 1, 2020, all data required for assembly of the span survey tables was collected via AUV by July 29, 2020. The use of the AUV satisfied the EPA-approved May 16, 2018 Screw Anchor Work Plan, which requires that, "[a]s part of the biennial scope of work, Enbridge completes a sonar based survey utilizing an Autonomous Underwater Vehicle (AUV)". Alternatively, the ROV is predominantly used "to verify the GPS coordinates of both existing anchors as well as a new anchor installation location".

The Ballard Report primarily addressed whether unsupported spans of more than 75 feet had developed in the Straits since the last visual inspection in 2018. As set forth in the Ballard Report, screw anchors had been installed in accordance with Consent Decree Third Modification Paragraph 68.b. criteria, resulting in no unsupported spans outside of Consent Decree criteria and no new span growth beyond 75-feet in length.

Following receipt of the Ballard Report, Enbridge analyzed data collected by Ballard to determine whether spans have developed that would require installation of additional anchors to comply with the Third Modification of the Decree. Enbridge's analysis shows that no additional anchors are required under the Third Modification.

By the end of the 7th reporting period, Enbridge had conducted its 2020 dedicated survey of spans using both ROV and AUV pursuant to Consent Decree Paragraph 68.f. This included the collection of span information associated with installation of fourteen (14) screw anchors. This includes thirteen (13) screw anchors that were planned to be installed in reporting period 7 as well as one replacement anchor installed as a result of discovery of a damaged screw anchor at site EP-17-1[8] during the reporting period 7. Please refer to **Table E-1** for information on screw anchor installation year and location.

[8] *On June 18, 2020 ongoing inspection and maintenance work on the East Line revealed a damaged pipeline support denoted as EP- 17-1. The installed pipeline support had been moved off of its vertical axis and the support saddle bolts had been bent in a north-northeast to south-southwest direction. EP-17-1 had been installed as part of the SAWP on June 18, 2018. Enbridge removed the damaged anchor on July 13, 2020 and installed a new anchor (EP-17-1R) on October 3, 2020.* *(Footnote continues on next page.)*

Screw Anchor Installations

In prior SARs, Enbridge has provided details about the progress and timing of its work to comply with the Subparagraph 68.b. screw anchor installation requirements. As of September 20, 2019, that paragraph of the Consent Decree has been modified through the Third Modification, which was approved by the Court on that day.

Prior to starting the 2020 work season, on April 14, 2020 Enbridge held a kickoff meeting with stakeholders, contractors, and ITP. During this meeting ITP was informed that the Enbridge contractor would be working under a pandemic protocol, in response to the worldwide outbreak of COVID-19 in late 2019, which would enhance safety precautions and limit personnel and the level of contact between personnel on the work barge. To meet the Consent Decree requirement for independent verification of work associated with the installation of the screw anchors in accordance with the approved 2018 SAWP and the Third Modification, ITP proposed a daily set of communications to be implemented between the ITP, Enbridge, and its barge contractor (Ballard). Prior to the start of reporting period 7, on May 12, 2020, Enbridge and ITP agreed to a revised version of the ITP 2020 SAWP Barge Communication Protocol. The protocol was in use from the May 4, 2020 start of the project execution, through the duration of reporting period 7's screw anchor installation activities that ended October 6, 2020 with installation of replacement anchor EP-17-1.

Also ahead of the start of reporting period 7, on May 1, 2020, ITP requested that Enbridge supply additional information regarding its planned excavation activities, including dredging. On May 12, 2020, Enbridge provided ITP the Ballard Excavation Protocol. ITP responded with a request for additional detail describing excavation activity types on May 13, 2020. Within reporting period 7, on May 27, 2020 Enbridge provided descriptions of the various types of excavation activities, similar to what had been provided to USACE in Enbridge's permit application. The ITP identified that sufficient detail had been provided in correspondence to Enbridge sent May 28, 2020.

As previously reported in SAR5 and SAR6, via prior years' installation activities, Enbridge had installed sixty (60) anchors of a total seventy-three (73) planned span inspection analysis anchors by the end of reporting period 6. Enbridge's 2020 work season started on May 4, 2020, and by the end of reporting period 6, on May 22, 2020, Enbridge had installed seven (7) of the carried-over twenty (20) screw anchors, leaving thirteen (13) screw anchors that would be installed within reporting period 7. From May 23, 2020 through August 8, 2020, Enbridge installed all thirteen (13) of the remaining anchors.

All anchors were installed per the requirements set forth in the Third Modification of the Consent Decree, with location deviations at sites: WAP-21, EAP-6, EAP-12, and EAP-28. Modification to the locations were completed in consultation with the ITP and Enbridge's marine contractor, as outlined in the SAWP. Please refer to the 2020 SAWP Final Report that was submitted December 3, 2020 to EPA, just outside of the reporting period 7, for details on the justification for installation location deviations.

Further, as reported in SAR6, on May 21, 2020, on approach to EAP-9 using ROV for pre-installation inspection, Enbridge identified an area of disturbed coating on the pipeline that required repair. Enbridge notified the ITP and EPA of required repairs on May 26, 2020. Enbridge completed the repairs of the coating at this location on June 16, 2020.

Details of Enbridge's investigation into the EAP-9 coating damage and the EP-17-1 anchor damage have been shared with EPA and ITP and are summarized in Enbridge's Investigation of Disturbances to Line 5 in the Straits of Mackinac Discovered in May and June of 2020, as updated on August 21, 2020.

Enbridge will continue with coating repair activities relating to screw anchor installations through the 2021 work season and further update EPA and ITP on its progress in the SAR8 reporting.

Screw Anchor Report

Prior to the start of the reporting period, Enbridge submitted its SAWP 2019 Interim Report to EPA on January 22, 2020 via correspondence from Steptoe. EPA asked ITP to provide a Task 2 review of the 2019 SAWP Interim Report on June 9, 2020. Within the September 4, 2020 ITP Report on SAR6, ITP identified Enbridge's reporting on SAWP as meeting Consent Decree requirements.

As Enbridge completed the SAWP screw anchor installation activities within reporting period 7, Enbridge shared a copy of the as-builts prepared for its EGLE permit WRP015016 with ITP via email correspondence on October 14, 2020.

Pursuant to the Consent Decree P. 68.e. requirements, but outside of the reporting period, Enbridge submitted its 2020 SAWP Final Report, summarizing the anchor installation activities since the Consent Decree's effective date. Enbridge will provide reporting on the ITP's evaluation of the 2020 SAWP Final Report in SAR8.

Protection from Vessel Anchor Strikes

Enbridge operates and maintains the Dual Pipelines to reduce the risk of a vessel's anchor puncturing, dragging or otherwise damaging the pipelines. Prior to and since the effective date of the Consent Decree, Enbridge has led and supported a number of initiatives aimed at reducing the risk of a vessel anchor strike within the Straits.

Enbridge Coordinated System: In satisfaction of Paragraph 68.b, Enbridge has implemented the "Coordinated System" to reduce the risk of a vessel's anchor puncturing, dragging or otherwise damaging the Line 5 Dual Pipelines. The Coordinated System is specifically designed to monitor, observe, and communicate with vessels of significant size to identify any vessel activity that may pose an anchor strike risk to the Line 5 Dual Pipelines and to resolve such risk, or if such risk cannot be resolved, to direct the shutdown of the Pipelines. As reported in SAR6, the Coordinated System is implemented through the "Protocols" by the Enbridge Straits Maritime Operations Center ("ESMOC"). The specific components of the Coordinated System, as implemented through the Protocols, are discussed in detail in SAR6.

Enbridge's Coordinated System has been fully operational since May 1, 2020 and certain components of the Coordinated System have been in place since 2019, as reported in SAR6. During the SAR7 reporting period, Enbridge has continuously operated the Coordinated System.

Within the SAR7 reporting period, Enbridge implemented the following enhancements to its Coordinated System Protocols:

- On June 27, 2020, Enbridge modified the Protocols to require the ESMOC to hail large transiting vessels via radio to ask the vessel to confirm that their vessel's anchors are secured. Previously, this radio hail was completed only when a visual observation could not be successfully completed (e.g., due to weather).
- On June 27, 2020, Enbridge modified the Protocols to require (under Protocol 10) the stationing of a patrol boat over the Line 5 Dual Pipelines to monitor all vessel traffic in proximity to the Pipelines, including small and medium sized vessels that generally lack anchors of sufficient size to pose a threat to the Dual Pipelines. That patrol boat operates 24 hours per day, 7 days per week, weather permitting.

- On October 13, 2020, Enbridge modified the Protocols to require the ESMOC to conduct a radio hail every time that any large vessel subject to the protocols transits the Straits. This improvement adds yet another important layer of safety, requiring cooperation with, and confirmation by, transiting vessels to ensure anchors are secured and not capable of accidental deployment while the vessel crosses the Line 5 Dual Pipelines.
- On October 13, 2020 Enbridge modified the Protocols (specifically, Protocol 10) to make clear that the patrol boat is to monitor all small, medium and large vessels to identify any potential risks to the Dual Pipelines based on the size of the vessel, its horsepower, and the length of cable/chain typically on that type of vessel. The patrol boat may approach the vessels, contact the vessel via radio, or contact the USCG in an effort to resolve any vessel activity that could adversely impact the safe operation of the Line 5 Dual Pipelines. If the vessel activity at issue cannot be resolved and the safe operation of the Line 5 Dual Pipelines remains at risk, the patrol boat must immediately contact the Enbridge Control Center to direct the shutdown of the Line 5 Dual Pipelines.

EPA and ITP were provided with a copy of the revised Protocols on July 8, 2020 and October 29, 2020. During the SAR7 reporting period, Enbridge engaged with the EPA and ITP during bi-monthly meetings concerning Enbridge's efforts to reduce the risk of a vessel's anchor puncturing, dragging or otherwise damaging the Line 5 Dual Pipelines.

Effectiveness of Coordinated System: The Coordinated System's ability to reduce anchor strike risk to the Line 5 Dual Pipelines, is confirmed by the: (1) August 2020 qualitative assessment prepared by Nash Maritime Consulting ("Nash Report"); (2) the updated C-FER Technologies' ("C-FER") Evaluation; and (3) the 180-Day Effectiveness Review Report.

- Nash Report: In August 2020, Enbridge provided EPA and ITP with a copy of the Nash Report, which concludes that "[t]he Coordinated System comprehensively and effectively addresses the specified risks of an anchor strike to the Line 5 pipeline crossings using a layered approach." That Report further recognizes that "[t]he measures currently being implemented by Enbridge in the Straits serve to significantly reduce the risk of strike from a large anchor from a vessel transiting the Straits that could potentially damage the Line 5 pipelines, including both intentional anchoring, as well as an unintentional strike by a deployed anchor unknown to the vessel." Thus, "[c]ombined with preexisting USCG measures and National Oceanic and Atmospheric Administration charts highlighting submerged pipeline and cable crossings and hazard, Enbridge's Coordinated System provides substantial notice to transiting vessels of the existence of Line 5 crossings of the Straits, and serves to prevent an anchor strike from a large vessel's anchor within the limits available to a private entity (non-regulatory body)."
- C-FER Evaluation: The effectiveness of the Coordinated System is further evidenced by the updated C-FER Evaluation, which concludes that the Coordinated System, as modified on October 13, 2020, reduces the risk of the annual failure rate caused by a vessel's anchor intentionally or unintentionally striking the Line 5 Dual Pipelines by 99.5% "when compared to that without any preventative measures in place." The updated Evaluation assessed draft Coordinated System Protocols requiring a "check anchor" radio hail for each observed vessel that were being considered at the time the Evaluation was prepared and that are now in place. The Evaluation recognizes that the Coordinated System, as currently implemented by Enbridge, achieves an increased reduction in risk as compared to the previously-analyzed *Guardian:protect* system, which C-FER determined in its June 2018 report would provide an 88% reduction in risk assuming that *Guardian:protect* was modified to transmit a "check anchor" type of message. The Coordinated System therefore exceeds C-FER's prior estimates of risk reduction, and far exceeds the broad and generic requirement of risk reduction of Paragraph 68.a.

- 180-Day Effectiveness Review: On October 28, 2020, Enbridge submitted to EPA and ITP a 180-Day effectiveness review report of Enbridge's Coordinated System ("180-Day Report"). That 180-Day Report describes the Coordinated System and improvements made by Enbridge (as described above) to enhance the system to monitor, observe, and communicate with vessels of significant size to identify any vessel activity that may pose an anchor strike risk to the Line 5 Dual Pipelines.

  The 180-Day Report: (1) assessed the ESMOC's compliance with the Protocols that implement the Coordinated System; and (2) determined whether the Coordinated System was effective in preventing a vessel anchor of significant size from coming into contact with the Line 5 Dual Pipelines over the studied 180-day period (collectively referred to as "Performance Indicators").

  The 180-Day Report confirms that the Coordinated System operated as intended over the 180-day review period to reduce the risk of anchor strike to the Line 5 Dual Pipelines. The ESMOC complied with the Protocols, as implemented on May 1 and modified on June 27 and October 13, to monitor and observe all vessels of significant size that could pose an anchor strike risk to the Line 5 Dual Pipelines. The ESMOC also conducted 24-hour patrol boat observations (weather permitting) to observe all vessels in proximity to the Line 5 Dual Pipelines. Operation of the Coordinated System since May 1, 2020 resulted in no monitored/observed vessels coming into contact with the Line 5 Dual Pipelines. The Performance Indicators were thus achieved.

  On November 24, 2020, the ITP issued information requests concerning Enbridge's 180-Day Report and the revised Protocols. Enbridge addressed the ITP's information requests during the bi-monthly anchor strike meeting held on December 4, 2020, and has provided the ITP with any outstanding information requested.

Contractor Anchoring Guidelines: Enbridge's report concerning its *Investigation of Disturbances to Line 5 in the Straits of Mackinac Discovered in May and June of 2020*, as updated on August 21, 2020, explains in detail Enbridge's investigation into the disturbances/damage discovered at the EAP-9 and EP-17-1 screw anchor support locations. That "Investigation Report" indicates that the evidence associated with the EAP-9 and EP-17-1 events supports a conclusion that the identified disturbances/damages may have been caused by a small to moderately-sized vessel dragging a cable or anchor in proximity to the Line 5 Dual Pipelines. The Investigation Report further concludes that the disturbances/damage were not the result of a large vessel dragging its anchor through the shipping channel; accordingly, the vessel activity at issue was not subject to the Coordinated System. The Investigation Report identifies 5 vessels as possible causes of the disturbances/damage, including 4 vessels contracted by Enbridge. The Investigation Report provides a discussion of pre-existing Enbridge prevention measures, a root cause analysis, and enhanced measures implemented in mid-2020 to further reduce the risk of vessel activities disturbing or damaging the Line 5 Dual Pipelines.

One enhanced measure identified in the Investigation Report is the development, in conjunction with a maritime expert, of uniform anchoring requirements for all vessels that are contracted by Enbridge to conduct maintenance activities in proximity to the Line 5 Dual Pipelines. Such contractor anchoring requirements were finalized and implemented by Enbridge on November 30, 2020; EPA and ITP were provided with a copy of the requirements on December 1, 2020. The purpose of the anchoring requirements is to specify the minimum standard of care for all towing, anchoring deployments, and anchor lifting activities that are conducted by Enbridge contractors, including the level of information that must be provided to Enbridge before any such activities may commence. The anchoring requirements will be implemented for all vessel work contracted by Enbridge, including when such activities resume in 2021. The anchoring requirements will substantially mitigate the risk of any potential Enbridge contractor event.

69.a [Biota Investigation]

As reported in SARs1 through 4, Enbridge considers this item complete.

69.b [Biota Investigation Work Plan]

Enbridge's compliance with Paragraph 69.b was previously reported in Enbridge's first SAR.

69.c [Biota Work Plan Implementation]

As reported in SARs 1 through 4, Enbridge considers this item complete. Enbridge implemented the BIWP in accordance with the schedule approved by EPA, and in accordance with Subparagraph 69.c, Enbridge submitted a final report to EPA on March 29, 2018, summarizing the results of the Biota Investigation. Enbridge provided responses to subsequent ITP information requests related to the Biota Investigation and subsequently, on March 11, 2019, Enbridge submitted revisions to the BIWP report to the EPA addressing the ITP's recommendations. On March 12, 2019, the ITP recommended to the EPA that they approve Enbridge's submitted revisions. As of the end of this reporting period the EPA has not provided a response to the ITP's recommendation.

70 [In-Line Inspections of the Dual Pipelines]

Enbridge's compliance with Paragraph 70 was previously reported in the first SAR. Enbridge considers this requirement to be complete; however, Enbridge will provide relevant updates, if any, in future SARs.

71 [Investigation and Repair of Axially-aligned Features]

Enbridge's compliance with Paragraph 71 was previously reported in SAR1. Enbridge considers this requirement to be complete; however, Enbridge will provide relevant updates, if any, 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 Covered Period.

73 [Quarterly Inspections Using Acoustic Leak Detection Tool]

During the SAR7 reporting period and as shown in **Table E-2**, Enbridge conducted inspections on each of the Dual Pipelines using an acoustic ILI tool that is capable of detecting sounds associated with small leaks as the tool travels through the pipelines, as shown in the following table.

The acoustic inspections of the Dual Pipelines conducted during this reporting period did not identify any auditory signals that are indicative of small leaks on the Dual Pipelines.

Section F – Data Integration

74 [Feature Integration Database]

Enbridge has operated and maintained 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 – 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. Enbridge's discussions with EPA concerning the parties' interpretation of Paragraph 77 remain ongoing. Although Enbridge disagrees that the CD was intended to incorporate excavations that are not governed by the CD, Enbridge is prepared to agree 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, on

a going-forward basis. The parties are nearing finalization of an interpretation to provide clarity around this issue. This item is included in **Table IX-1** in P. 144 Problems Anticipated in Appendix 1.

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 SAR reporting period are listed in **Table F-2**.

Line 3 GF-CR 2020 DuoCD (Tool Run ID 10001)

The Issue 1 ILI report was received on 10/13/2020 and uploaded to OneSource on the same day, within 29 days after receiving the report in compliance with P.78.a of the Consent Decree. Due to non-material Data Quality issues, an Issue 2 ILI report was requested. The Issue 2 ILI report was received on 10/26/2020 and was uploaded to OneSource on the same day.

Subsequently, the ILI Analyst identified that there were no changes to the ILI feature information between the Issue 1 and Issue 2 ILI reports and requested that the Issue 2 ILI report be removed from OneSource. On 11/4/2020, both the Issue 2 and the Issue 1 ILI reports were removed from OneSource.

On 11/16/2020, the ILI Analyst identified that the Issue 1 ILI report had been inadvertently removed from OneSource and proceeded to re-upload the Issue 1 ILI report to OneSource. The Issue 1 ILI report OneSource Load Date has been corrected in OneSource to match the actual original upload date of 10/13/2020.

Line 4 GF-DN 2020 MFL DuDi (Tool Run ID 6607)

The Issue 1 ILI Report provided to Enbridge on 5/26/2020 was uploaded to OneSource on 5/27/2020. Enbridge identified Data Quality issues associated with the Issue 1 ILI report. An Issue 2 report was provided to correct the Data Quality Issues. There were no changes to the ILI feature information between the Issue 1 and Issue 2 ILI reports, therefore the Issue 2 report was not uploaded to OneSource as there were no changes to the ILI feature information.

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]

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

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

81-83 [Create and Submit ALD Mackinac Report]

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

(III) Requirements for New Lakehead Pipelines and Replacement Segments

84 [Applicability]

The New US Line 3 is considered a "New Lakehead Pipeline" as defined in Paragraph 84.a. Design requirements set forth in Subsection VII.G.(III) were applied to Enbridge's mainline leak detection equipment standard, which was followed in the design engineering phase of the Line 3 Replacement project ("L3R").

In March 2020, Enbridge provided the ITP the complete input data for the US components of the new Line 3, a sample calculation for one segment, and the API 1149 result output generated from the Enbridge tool. In May 2020, Enbridge submitted process instrumentation diagrams to the ITP that indicate the location of flowmeters, pressure transmitters, and temperature transmitters. In July 2020, Enbridge provided to the ITP copies of purchase orders ("PO") for flow meters, pressure transmitters, and temperature transmitters. The PO outlines the model and specifications of each instrumentation. As of this reporting period, ITP review of the information provided to date is still in-progress.

Other than the ongoing L3R project, there were no other Replacement Segments or New Lakehead Pipeline projects executed during this reporting period.

85 [Installation of Flowmeters]

The L3R project designed the New US Line 3 to include flow meters which will be installed at all locations where oil (a) enters into the pipeline, (b) leaves the pipeline, or (c) passes through a pump station. Once the flowmeters are installed, they will be commissioned in the field and to the Supervisory Control and Data Acquisition ("SCADA") system and integrated into MBS and Rupture Detection System ("RDS"), to continuously monitor flow data under all conditions, including during Startup and Shutdown.

As required by Paragraph 89.a, Enbridge conducted the API 1149 MBS Leak Detection performance estimation based on L3R project design available at the time. The inputs for the estimation are confirmed to be accurate for this reporting period. Based on the results of the API 1149 calculation, additional flow meters are not required on segments that are expected to hold volumes of oil exceeding 45,000 cubic meters ("m^3"). Details on MBS segmentation and API 1149 performance estimation are available in Paragraphs 88 through 89 below.

Enbridge will perform the requirements specified in Paragraph 90 to demonstrate compliance with Leak Detection sensitivity design and construction within the timing specified therein.

86 [Installation of Flowmeters on Pipelines that Utilize In-line Batch Interface Tools]

The New US Line 3 has been designed to operate without the use of batch interface tools for the purpose of physically separating products in the pipeline; therefore, the requirement set forth under this Paragraph will not be applicable to L3R project.

87 [Installation of Other Instrumentation]

The L3R project has designed the New US Line 3 to include installation of the following instrumentation:

- Pressure transducer/transmitter will be installed at locations and segments as required by Paragraph 87.a.
- Skin-based temperature transducer/transmitter will be installed at locations and valve segments as required by Paragraph 87.b.

Once the instrumentation is installed on the new US Line 3, they will be commissioned in the field, to the SCADA system, and integrated into the Material Balance System (MBS) and the Rupture Detection System (RDS) to continuously provide real-time pressure and temperature data, including during Startup and Shutdown periods.

88 [Establishment of Material Balance System ("MBS") Segments]

Enbridge's definition of "MBS Segment" aligns with the definition in Paragraph 88.

The New US Line 3 will have MBS segments that are expected to have volumes of oil exceeding 45,000 m^3. Enbridge has conducted API 1149 calculations to estimate the sensitivity performance of the MBS Leak Detection System on the New US Line 3 during periods when fluid in the segment is in a steady state. The API 1149 calculation conducted was based on L3R project design available at the time, which remains accurate for this reporting period. As mentioned above, the complete input data used for the API 1149 calculation and an example calculation was provided to the ITP on March 11, 2020 for verification.

At this time, the established MBS segments remain as designed, based on the results of the API 1149 calculation, which demonstrated compliance with the leak detection sensitivity requirements in Paragraph 89 below.

89 [Leak Detection Sensitivity Requirements]

Enbridge used the criteria set forth in API Publication 1149, November 1993 ("Pipeline Variable Uncertainties and Their Effects on Leak Detectability") to estimate the ability of the MBS Leak Detection System to achieve each of the targets during periods when the fluid in the MBS Segment is in Steady State. The API 1149 calculation conducted was based on L3R project design available at the time, which remains accurate for this reporting period. The API 1149 calculation results demonstrated that MBS Leak Detection System would achieve each of the targets set forth in the Leak Detection Design and Construction Target for New US Line 3 table under this Paragraph of the Consent Decree. Complete input data used for the API 1149 calculation and an example calculation was provided to the ITP on March 11, 2020 for verification.

Paragraph 89.b is not applicable for this reporting period as there were no Replacement Segments or New Lakehead Pipelines other than the L3R project.

90 [Demonstration of Compliance with Leak Detection Sensitivity Design and Construction Requirements]

There is nothing to report on this Paragraph until the construction of the New US Line 3 is complete and initial line fill is commenced. Once the New US Line 3 is constructed and commissioned, Enbridge will prepare and coordinate the planning and execution of testing.

There are no Replacement Segments or New Lakehead Pipelines for this reporting period other than the L3R project.

91 [Establishment and Optimization of Alarm Thresholds]

There is nothing to report on this Paragraph until the construction of the New US Line 3 is complete and commissioned into the pipeline control and leak detection systems. Also, other than the L3R project, there are no Replacement Segments or New Lakehead Pipelines for this reporting period.

Once the New US Line 3 is constructed and commissioned, Enbridge will undertake the appropriate steps to ensure that requirements set forth in this Paragraph are met.

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

92 [Operation of MBS Leak Detection System]

Enbridge maintains continuous and uninterrupted leak detection capability at all times on active Lakehead System Pipelines, including during periods of start-up and shutdown, except as exempted under Paragraph 93. Enbridge's continuous and uninterrupted leak detection capability is achieved through several measures including architectural, procedural, and quality controls. Since the Effective Date of the Consent Decree, leak detection alarm thresholds for steady state operations have been met and continue to meet the minimum alarm thresholds set forth in the table at Subparagraph 91.a, with the exception of four lines that did not meet 24-hour alarm thresholds.

Due to a significant change in operations the 24-hour alarm thresholds for Lines 1, 5, and 10 fell below the 95% confidence level during lower flow conditions. This is a similar event to Line 78 that was reported in SAR6, which required re-optimization per Subparagraph 103.g. The same exercise will be undertaken for the three lines. Refer to Paragraphs 103 and 144 for details about this event.

93 [Temporary Suspension of MBS Leak Detection Capabilities]

Enbridge continues to track the three categories of temporary MBS suspension that are specified in Subparagraphs 93.a-c. Ultrasonic flowmeter maintenance and flowmeter outage workflows are monitored to track and coordinate planned (i.e., scheduled maintenance or repairs) and unplanned (i.e., unexpected failures beyond Enbridge's control) outages from start to finish. The ILI tool run procedure also ensures tracking of station flowmeter bypasses when in-line tools are being run, consistent with Paragraph 93.

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]

Enbridge's overlapping volume balance algorithm automatically establishes and maintains leak detection capability in the event of a temporary loss or suspension of MBS leak detection capability within one or

more MBS segments due to intermediate flow meter (i.e., flow meters not located in either injection or delivery) outage. The overlapping volume balance algorithm continues to maintain leak detection capability in overlapping MBS segments impacted by the outage until the leak detection capability is restored in all MBS segments.

95 [Alternative Leak Detection Requirements]

Enbridge implements and maintains an API RP 1130[9]-compliant alternative leak detection ("ALD") procedure in the event of any outage of MBS leak detection capability occurring as a result of the circumstances described in Subparagraphs 95.a and 95.b. Enbridge continuously operates the ALD method until the flowmeter outage is resolved and the MBS segments are restored to operation. Enbridge provided additional information to the ITP on September 20, 2019 following the SAR4 review. ITP has reviewed the information provided and found this paragraph to be meeting the requirements with the additional information.

96 [Reporting of MBS Outages]

Enbridge ensures that it restores leak detection capability as soon as practicable following any outage in an MBS segment even though the overlapping section continues to provide leak detection capability. This is achieved by following and continually improving Enbridge procedures and processes to track and manage planned and unplanned flow meter outages and ILI tool runs.

97 [Reporting Requirements]

Refer to **Table G-1** for a table identifying the number of occurrences by type where MBS was temporarily suspended.

98 [Tolling Requirements]

In accordance with Paragraph 98, Enbridge tolls the 4-hour time period for restoring the MBS segment to operation (as specified in and allowed under the table at Paragraph 97 in the CD) during any occurrence of an unplanned shutdown during the in-line tool run. The tolling period applied by Enbridge begins when the pipeline is shut down and ends when pipeline operation is resumed. To comply with this Paragraph, Enbridge tracks station flowmeter bypasses when in-line tools are being run. There were no events in this reporting period.

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

Table G-2 outlines one project that triggered the requirements of Paragraph 99, and the required pressure and temperature transmitters were installed in this reporting period. This project was determined to trigger Paragraph 99 according to the guidance outlined in the July 2018 Enbridge interpretation document entitled "Interpretation of Consent Decree Paragraphs 99, 100, 124". The valve was being replaced and therefore was fully excavated, as were the pressure transmitter and temperature transmitter locations on the upstream and downstream sides of the valve. As agreed during the March 13, 2019 meeting with the ITP, the updated Paragraph 99 Project Logbook will be provided within two weeks after release of SAR7.

[9] *API RP 1130 – American Petroleum Institute Recommended Practice for Computational Pipeline Monitoring for Liquids*

100 [Requirements for Valve Excavation]

During this reporting period, no projects or excavations were applicable per the criteria defined in this paragraph.

101 [Transient-State Sensitivity Analysis]

Enbridge performed the transient-state sensitivity analysis required under Paragraph 101 on November 19, 2017, which was within 180 days of Effective Date as reported in SAR1. Enbridge considers this to be complete and no further reporting is required for this SAR and in future SARs.

102 [Rupture Detection System Alarm]

The intent of the Rupture Detection System ("RDS") is to focus on detecting large releases with a quick onset. Enbridge continuously operates the RDS on all Lakehead System Pipelines during both Steady-State and Transient State conditions. The RDS is integrated with Enbridge's SCADA system and MBS Leak Detection System.

As reported in SAR5, Enbridge, EPA, and ITP agreed to establish a solution to address the concern in Subparagraph 102.a, as it relates to clause (c) "an abnormal increase in the flow rate". On December 10, 2019, Enbridge successfully completed the implementation of the Rupture Flow-based Solution ("RFBS") on all Lakehead pipelines. The implementation includes adding a new alarm assessment of "Rupture" in the Leak Detection Alarm Manager ("LDAM") when both the flow-based algorithm and MBS leak alarm are triggered. A formal report detailing the design, procedure enhancements, testing, and implementation was developed and submitted to the ITP on April 24, 2020. This was followed by a presentation to the ITP on RFBS summary and key messages on May 14, 2020. On July 27, 2020, Enbridge responded to additional information requests from ITP's review of the final report.

After the two events of incorrect assessments during the early stages of RFBS implementation (as reported in SAR6), Enbridge identified and implemented visual enhancements and additional training to mitigate the risk of re-occurrence of the same or similar event. Visual enhancements include: (i) annunciation of an MBS rupture alarm to the Leak Detection Analyst ("LDA") via Leak Detection Alarm Manager ("LDAM") simultaneously with the leak alarm; and (ii) using the word 'RUPTURE' on the LDA's MBS display to indicate rupture status. Additional training materials were developed and a one-on-one training for each LDA was conducted by an LD Assessment and Support (LDAS) Subject Matter Expert. These enhancements were completed between May and June 2020. On October 8, 2020, Enbridge conducted a tabletop exercise with the ITP to demonstrate how the enhanced RFBS works end to end using one of the aforementioned events.

On November 3, 2020, Enbridge obtained ITP's 'Evaluation of the Rupture Flow-Based Solution and Related Reports,' outlining their expert review and assessment of all related materials (i.e., deliverables as required by CD, proposed plans, reports, information request and action item responses, discussions, and meetings). ITP concluded that the RFBS implementation meets the intent of the CD by fulfilling the requirements of Subparagraph 102.a.(c) to monitor for and detect an abnormal increase in the flow rate, and further, the ITP found that the combination of RDS and RFBS meet the entirety of the rupture detection requirements in Paragraph 102. On November 3 and 4, 2020, the ITP conducted virtual face to face interviews with each member of the Alarm Response Team ("ART"), Shift Supervisor, Control Centre Manager On-call, and Control Centre Operations Engineer. The interviews were intended to verify that the individuals are able to demonstrate an understanding of the CD requirements applicable to their roles, and a knowledge of Enbridge policy, procedure and practice as these programs apply to fulfilling CD

requirements. One of the focuses of this interview activity was the implementation of RFBS and control room response upon occurrence of an RFBS rupture alarm. Resulting from this exercise, the ITP provided Enbridge a 'Briefing Paper – November 3-4, 2020 PCSLD/CCO Interviews Report,' on November 17, 2020 outlining their assessment of the interview activity. The ITP found that interview results demonstrated an effective understanding of the CD requirements applicable to each role and a strong working knowledge of Enbridge policy, procedure, and practice as it applies to fulfilling CD requirements.

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

Enbridge implemented the 24-hour volume balance alarm, also known as the Automated Volume Balance or "AVB" alarm on the Lakehead system. AVB operates with MBS and was integrated with Enbridge's SCADA system in advance of the 270-day deadline specified in Paragraph 103, and has since continuously monitored, tracked, and modeled the volume of oil for each MBS Segment over any rolling 24-hour period. AVB operates continuously to alarm, if it cannot detect, or otherwise account for, 3 percent (or within the set threshold per optimization study[10]) of oil pumped or injected into the MBS Segment over any rolling 24-hour period. When an AVB alarm occurs, each member of the Alarm Response Team ("ART") is notified in accordance with Paragraphs 106 and 107 and executes the appropriate procedures in accordance with Paragraphs 108 and 109.

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

Enbridge conducted and completed a 24-hour Alarm optimization study on February 13, 2019, to optimize the alarm thresholds for each active pipeline that is part of the Lakehead system. Enbridge submitted the results of the study to the EPA on April 12, 2019 for review and approval. The report set forth the results of the study and proposed alarm thresholds, which are within the 3% sensitivity requirement. Enbridge has implemented and continuously maintains the new thresholds for each Lakehead pipeline, except for those segments affected by the operational issue described in Paragraph 144, [Section G] August 24, 2020 Optimization of 24-hour alarm thresholds due to lower flow rates on Lines 1, 5, 10 – P. 103.

On April 17, 2020, Enbridge obtained the ITP's evaluation of the 24-Hour Alarm and Related Reports for Alarm Threshold Optimization and Testing which found that the proposed thresholds were appropriate and they were supported by the facts and best engineering judgment. As such, the ITP recommended the EPA to approve the proposed Alarm thresholds.

103.d ["24-hour" Alarm Optimization Study within one year of Initial Linefill of New US Line 3 or any other New Lakehead Pipeline or Replacement Segment]

This requirement does not apply at this time as the New US Line 3 has not yet completed construction and linefill.

103.e [Simulated testing of the 24-hour alarm optimized threshold on two separate MBS segments]

As reported in SAR5, this requirement was completed and submitted to the EPA and ITP within the required timeframe. The report produced from this test was utilized by the ITP as part their evaluation of the 24-Hour alarm.

[10] *2019.04.12 Enbridge 24-Hour Alarm Threshold Optimization Study Results – per P.103.c*

103.f [Submission of proposed plan and schedule for unsuccessful testing]

The testing as required by Paragraph 103.e was successful; therefore, the corrective action plan and schedule required by this Subparagraph is not required.

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

Enbridge continuously complies with the optimized thresholds on each Lakehead pipeline in accordance with the study completed per Subparagraph c. Enbridge has not seen a significant increase of false alarms that could trigger relaxing of the optimized alarm thresholds. However, during the review of the Q2 2020 performance testing, it was discovered that three Lakehead lines - Lines 1, 5, and 10 fell below the 95% confidence level for their optimized leak sizes. A technical analysis was performed and subsequently completed on August 24, 2020, confirming that the issue was caused by a decrease in flow rate during the Q1-Q2 2020 periods. These rates were lower than the rates used in the original 24-Hour alarm optimization study (per P.103c). Refer to Paragraph 144, [Section G] August 24, 2020 Optimization of 24-hour alarm thresholds due to lower flow rates on Lines 1, 5, 10 – P. 103, describing the details of re-optimization of these lines as required by Subparagraph 103.g(5).

Also, during the technical analysis, Line 14/64 and Line 65 were found to have been experiencing flow meter issues that were causing unnecessary imbalances impacting sensitivity performance in affected segments. Corrective actions were put in place to resolve the issues. Refer to the Paragraph 144 discussion regarding [Section G] August 24, 2020 Instrumentation Problems Encountered on Lines 14/64 and 65 – P. 103 describing the details of this problem and the actions being taken to resolve the issue.

In regard to the previously reported Line 78 re-optimization in SAR6, Enbridge has since implemented the re-optimized thresholds, and submitted to the ITP and EPA the Line 78 24-Hour Alarm Re-optimization[11] report on July 21, 2020, in accordance with Subparagraph 103c. The report is under evaluation by the ITP at the time of this SAR.

(V) Leak Detection Requirements for Control Room

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 leak detection system and by the RDS.

105 [Alarm Response Team]

Enbridge established and implemented an Alarm Response Team (“ART”) within 180 days of the Effective Date of the Consent Decree as reported in SAR1. All alarms that occurred in the SAR7 reporting period were addressed by the ART.

[11] *Line 78 AVB Reoptimization.pdf*

106 [Remote Notification of Alarm Response Team]

Enbridge implemented the remote notification system that is specified under Paragraph 106 within 180 days after the Effective Date of the Consent Decree as reported in SAR1. Remote notification capabilities were in place for all alarms that occurred in the SAR7 reporting period as required by this paragraph.

107 [Audible and Visual Alarms]

Enbridge implemented the audible and visual alarms required under Paragraph 107 within 180 days after the Effective Date of the Consent Decree as reported in SAR1. Audible and visual alarm capabilities have remained compliant with the requirements of this paragraph through the SAR7 reporting period.

108.a-f [Alarm Clearance Procedures]

Enbridge implemented the Alarm Clearance procedures required under Paragraph 108.a-f within 180 days of the Effective Date of the Consent Decree as reported in SAR1. Alarm Clearance procedures have been employed and adhered to throughout the SAR7 reporting period as described below.

108.a [Alarm Clearance Requirements]

The requirements of Subparagraph 108.a are incorporated into Enbridge's procedures to ensure that all alarms remain active unless and until: (1) the appropriate ART member(s) accounts for any cumulative imbalances (in which case the team member may invalidate the alarm); (2) all of the ART members independently rule out the possibility of a leak; or (3) the pipeline is shutdown.

108.b [Alarm Clearing Restrictions]

Enbridge procedures prohibit the ART from resolving or clearing an alarm through a manual, one-time adjustment to any alarm system or the inputs into any alarm systems. As per Subparagraph 108.b, Enbridge procedures require that all leak alarms be analyzed until an investigation has been completed and an alarm is terminated in accordance with the requirements of Subparagraph 108.a.

108.c [Confirmation of Leak Detection System Functioning]

Enbridge implemented procedures to require the LDA to analyze and determine whether the leak detection system that generated the alarm is functioning properly. This process consists of determining whether any leak alarms have been caused by data errors input into the leak detection systems, system malfunctions, or other factors that could lead to an invalid leak alarm.

108.d [Independent Alarm Investigation]

Enbridge requires the CRO, in conjunction with the STA, to complete an investigation of the alarm, which is an investigation that is completed independently from the investigation that was conducted by the LDA. This analysis is conducted in conjunction with the Ten-Minute Rule to ensure that a final decision to invalidate the alarm is made within ten minutes after the alarm is generated. If a final decision to invalidate the alarm is not made within the ten-minute period following the alarm, the pipeline is shutdown. The final decision is made by the CRO, with the concurrence of the STA.

108.e [ART Procedures for Column Separation]

ART members are required to employ Enbridge column separation procedures when determining the cause of an alarm. Enbridge procedures accordingly mandate that a determination that an alarm was caused by Column Separation is not a permissible basis for clearing an Alarm unless the ART follows the procedures specified in Subparagraphs 109.b and 109.c.

108.f [Electronic Records of Alarm Response]

Enbridge implemented an electronic record keeping system for managing ART response information. All ART member responses are recorded and are documented as required by this Paragraph (see Appendix 2: Lakehead Leak Alarm Report). Each record – which is created at the end of each shift by each ART member choosing from specified alarm categories that are identified on an electronic menu – includes details of the alarm event including the type of alarm, reasons for clearing the alarm, and the procedures executed by members of the ART. Review of leak alarms are required by all incoming ART members during a shift change (i.e. subsequent shift). All records of alarms are retained for a minimum of five years.

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

Within 50 days after the Effective Date of the Consent Decree, Enbridge implemented all the procedures specified in Subparagraphs 109.a-d, as explained in SAR1. Unscheduled Shutdown procedures have been employed and adhered to throughout the SAR7 reporting period as described below.

109.a [Ten-Minute Rule]

Enbridge implemented operating procedures that require the CRO to shut down and sectionalize the pipeline immediately without further consultation or notification if the ART is unable to rule out the possibility of a leak or rupture within ten minutes of the start of an alarm.

109.b [Column Separation – Running Pipeline]

Enbridge implemented column separation procedures that require the CRO to shut down and sectionalize a running pipeline if within ten minutes from the start of the alarm the column separation continues or the appropriate ART members have not: (1) determined the cause of the column separation, (2) accounted for any cumulative imbalances that triggered the alarm, and (3) ruled out a possibility of a leak or rupture. The procedures are not applicable where the alarm is caused by column separation that occurs during or after the shutdown of the pipeline, consistent with Paragraph 109.c.

109.c [Column Separation – Pipeline Shutdown]

Enbridge has implemented column separation procedures in accordance with Paragraph 109.c and appropriate alarm clearance procedures caused by column separation. Specifically, the calculation of the amount of time needed to fill the column separation and obtaining appropriate authority review and approval prior to restart in accordance with the table provided in this Subparagraph. Upon restart of any pipeline where the column fill time is exceeded, the CRO is immediately required to shut down and sectionalize the line. Upon shutdown, steps to investigate and verify the condition of the pipeline will be taken as required by this Paragraph.

109.d [Confirmed Leak Rule]

Enbridge implemented confirmed leak procedures, which require the CRO to immediately shut down and sectionalize the pipeline in the event that the ART determines that an Alarm is a confirmed leak or rupture, as defined under Subparagraphs 109.d.1-4. Unless a leak is ruled out, the CRO will shut down within ten minutes if leak conditions are observed upstream or downstream at a given location from SCADA data.

109.e [Shutdown and Restart Record]

Enbridge is compliant with this Paragraph and has not observed any instances where pipeline operations were resumed without meeting the requirements of this Subparagraph.

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

110.a [Weekly List of Alarms]

In accordance with Subparagraph 110.a, Enbridge prepares an electronic weekly list of alarms ("WLOA") as part of the Lakehead Leak Alarm Report. That WLOA is provided in Appendix 2. The WLOA includes the pipeline, the type of alarm, date of the alarm, the time at which the alarm began, and the time when the alarm was cleared.

110.b [Record of Alarms]

Enbridge complies with this requirement by preparing an electronic Record of Alarms ("ROA") when an unscheduled shutdown occurs. The ROA includes critical facts relating to the Alarm, such as the positions of the Alarm Recipients (i.e., CRO, STA, LDA), the time that the alarm was received, the actions of the ART, when the shutdown commenced, when the shutdown was completed, the root cause, the type of alarm, the procedures executed to determine the cause of the alarm, the justification for resumption of pumping operations, and the time that pumping operations resumed.

110.c [Alarm Submittal to EPA]

Enbridge complies with this requirement by including the WLOAs and ROAs occurring during the reporting period for all Lakehead System Pipelines as part of the Lakehead Alarm Report, enclosed hereto as Appendix 2. The Lakehead Leak Alarm Report also includes the Summary of Alarms ("SOA") noting the pipeline, the total number of alarms and the alarms that did not comply with Enbridge's Ten-Minute Rule. During this reporting period, Enbridge has complied with the Ten-Minute Rule and other requirements in Subsection VII.G. (V) when responding to leak detection system alarms. Therefore, no corrective actions needed to be taken.

110.d [Certification of Reporting Period]

To certify compliance for the reporting period of 180 days after the first SAR, the Vice-President, Pipeline Control has signed the Lakehead Leak Alarm Reports. This includes the information contained in the SOA, WLOA and ROA, which warrants that the information contained therein is true and accurate and that Enbridge has complied with the Ten-Minute Rule and other requirements of this subsection VII.G.(V), except for any non-compliances specifically listed in the SOA, which is none for this reporting period.

111 [Unscheduled Shutdown Procedures in Response to Other Events]

Enbridge has implemented procedural controls that ensure that all emergency phone calls received by the Control Center concerning a potential leak or rupture from a source other than an alarm are investigated within ten minutes of receipt of the call. In the event that the investigation uncovers evidence consistent with a leak or rupture by a Lakehead System pipeline, the CRO for the pipeline is required to immediately and without further consultation or notification to shut down and sectionalize the pipeline. Further, in addition to the requirements of the Consent Decree, Enbridge procedures independently require that while the investigation is required to be conducted as expeditiously as possible, if the investigation is not completed in ten minutes or if a potential leak is identified, the CRO will commence an emergency shutdown and sectionalize the affected pipeline or pipelines. Enbridge is compliant with this Paragraph and has not observed any instances where pipeline operations deviated from the requirements of this Paragraph.

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 SAR: 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 on the Lakehead System within the reporting period of more than one barrel. Enbridge had no confirmed pipeline leaks or ruptures of any harmful quantity that reached the waters of the United States or adjoining shorelines.

During the reporting period, two releases occurred on the Lakehead System that triggered PHMSA reporting requirements. Of these two releases, one met reporting criteria for being 9 gallons and the other release met reporting criteria for the estimated cost of property damage being [redacted]. 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.

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]

Planning is currently underway for the Stockbridge, Michigan Agreed Exercise, which is scheduled to occur on July 14-16, 2021. For each agreed exercise, Enbridge conducts three planning meetings in accordance

with Subparagraph 115.e(1). As part of its Exercise Program, Enbridge conducts additional exercise meetings where appropriate, such as a Concept and Objectives meeting and/or Master Scenario Events List meeting. Enbridge also conducts periodic touchpoint meetings via Microsoft Teams to respond to and address any questions that may arise between the times that the face-to-face meetings are held. Additional information regarding each of these Agreed Exercises is provided below.

Cass Lake Agreed Exercise

Details about the Cass Lake Agreed Exercise were reported in SAR1, SAR2, SAR3, and SAR4; this activity is complete.

Des Plaines Agreed Exercise

Details about the Des Plaines Agreed Exercise were reported in SAR2, SAR3 and SAR4; this activity is complete.

Wisconsin River Agreed Exercise

Details about the Wisconsin River Agreed Exercise were reported in SAR3, SAR4, SAR5; this activity is complete.

Stockbridge Agreed Exercise

In accordance with Subparagraph 115.b(4), Enbridge originally scheduled the Stockbridge Agreed Exercise to occur on September 22 and 23, 2020. Due to the COVID-19 pandemic and at the request of the EPA, the Stockbridge Exercise has been rescheduled to July 2021. Planning for the Stockbridge Agreed Exercise was initiated in July 2019 via the Concepts and Objectives meeting and in accordance with Subparagraph 115.e(1), the Initial Planning Meeting was conducted on November 5, 2019, more than 10 months before the Stockbridge Agreed Exercise. In accordance with Subparagraph 115.e(3), Enbridge coordinated with the planning participants during the Initial Planning Meeting to develop the objectives, scenario, and participant list for the Stockbridge Agreed Exercise. The specific dates of the planning meetings are as follows:

Concept and Objectives on June 19, 2019;

Initial Planning Meeting on November 5, 2019;

Midterm Planning Meeting on March 2, 2020;

Master Scenario Events List meeting conducted virtually on May 13, 2020, due to COVID-19; and,

Final Planning Meeting on May 5, 2021.

Based on input provided by the initial planning meeting attendees, Enbridge prepared a draft exercise plan for the Stockbridge Agreed Exercise, which included the scope, objectives, scenario, and participant list for the exercise. In accordance with Subparagraph 115.e(4), Enbridge submitted the Draft Stockbridge Exercise Plan to EPA on December 5, 2019 and re-submitted a revised draft exercise plan on April 6, 2020 and on October 29, 2020.

Information about problems encountered or anticipated in implementing Consent Decree Requirements due to the COVID-19 pandemic is further discussed in Paragraph 144 under the heading [Section H] Stockbridge Agreed Exercise - P. 115.

ENBRIDGE

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:

Pardeeville, WI on June 11, 2020

Rapid River, MI on July 29, 2020

Floodwood, MN on August 11, 2020

Naperville, IL on August 12, 2020

Morris, IL on September 30, 2020

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

Deer River, MN on July 16, 2020

Rapid River, MI on July 28, 2020

Niles, MI on August 4, 2020

Cavalier, ND on August 5, 2020

Naperville, IL on August 11, 2020

Homer Glen, IL on August 13, 2020

Cloquet, MN on August 27, 2020

Marshfield, WI on October 20, 2020

Ottawa, IL on November 5, 2020

Superior, WI on November 10, 2020

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, and Coordination with Government Planners.

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; and

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 115.b, an after-action review and discussion was held after each of the Field Exercises, as explained in response to Subparagraph 116.a above. Specific details for each exercise are summarized in the following sections.

Pardeeville, WI (Superior) on June 11, 2020

This exercise was attended by 11 Enbridge employees and 5 external participants. The exercise took place on Swan Lake. The objectives of this field exercise were as follows:

> **Objective 1**: Demonstrate the ability to deploy on-water containment and mitigation (recovery) tactics by the end of the exercise.
>
> **Objective 2**: Test containment and recovery tactics.
>
> **Objective 3**: Utilize the Incident Command System to manage equipment deployment.

Equipment used included: Boom, anchors, Emergency Response ("ER") trailers, boats, paravane, life jackets, 'Exercise in Progress' signs, and facemasks.

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

The two boat crews worked well together. Both crews worked as a team and used clear communication to execute the tactic effectively.

There were no equipment issues during the exercise. The boats ran well, and the proper equipment was on board. Radios worked throughout the exercise. The boats were well organized which allowed the boom to be deployed rapidly.

- Safety was emphasized and maintained throughout the exercise. Social distancing was utilized due to the COVID-19 pandemic. Boat crews wore face coverings during the exercise.
- External participants mentioned that they were impressed with the exercise.

Areas for Improvement included:

- Paravanes may help to provide stability during towing. LP Emergency Management will provide additional information on paravanes to help evaluate the need for a purchase. Local Oil Spill Removal Organizations ("OSROs") may also be able to provide paravanes in the event of an emergency. This will be confirmed by LP Emergency Management.
- Additional boat operator and boat handling training would be beneficial for all employees.
- The exercise included one dual-engine boat and one single-engine boat. While the tactic was executed effectively, using equally powered boats may help with towing and maneuverability.

The items identified under the "Areas for Improvement" category were reviewed and addressed prior to the next Field Deployment Exercise as they improve the response capabilities of the Midwest Region Field Response team in both field exercises and the unlikely event of a release.

Rapid River, MI (Great Lakes) on July 29, 2020

This exercise was attended by 12 Enbridge employees and 7 external participants. The exercise tested the tactical strategy of control point GLRCP0533 on the Whitefish River. The objectives of the field exercise were:

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

Objective 2: Test GLRCP0533 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 participants about Enbridge's Response capabilities.

Equipment used included: boom and anchors, a skimmer, and boats provided by the Escanaba, Michigan pipeline maintenance crew.

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

- The Field Response Team ("FRT") was familiar with the control point ("CP") and deployment strategy. They utilized the e-mapping data plan to prepare their approach for the equipment deployment. Early preparation by the FRT ensured textbook boom deployment.
- The FRT was comprised of individuals from three separate Pipeline Maintenance ("PLM") crews. Their training and professionalism allowed the FRT to work together seamlessly and successfully execute the CP strategy.
- The roles and responsibilities of all participants were clearly understood. Proper PPE and general safety considerations were maintained throughout the deployment.
- Equipment, trucks, trailers, etc. were set up in such a manner conducive to strategy execution.

Areas of improvement included:

- There are limited land-based anchor point tie-off locations at this CP. It is recommended to identify and procure anchor systems to accommodate varying ground conditions.

- It was determined that more than 100-feet of boom (is needed for shoreline protection/collection point.
- Communications could be improved among the FRT crew on the work boat as the windshield acts as a barrier to verbal communication. It is recommended to fabricate a hinge to allow the windshield to be lowered while the boom is being set to improve communications among the crew.
- The skimmer was not maintaining a level pitch within the collection point. It is recommended to attach floats to the sides to counterbalance the equipment while in the water.

The items identified under the "Areas of Improvement" category were reviewed prior to the next Field Deployment Exercise as they improve the response capabilities of the Great Lakes Region Field Response team in both field exercises and the unlikely event of a discharge from the pipelines within the Lakehead System.

Floodwood, MN (Superior) on August 11, 2020

This exercise was attended by 25 Enbridge employees and 7 external participants. The exercise took place on St. Louis River. The objectives of this field exercise were as follows:

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

Objective 2: Test containment and recovery tactics.

Objective 3: Utilize the Incident Command System to manage equipment deployment.

Equipment used included: Boom, skimmer, rope, ER trailers, boats, paravane, life jackets, "Exercise in Progress" signs, and facemasks.

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

- The location was a great spot to use trees for anchoring.
- The location and access were practical which allowed to complete task safely, efficiently and effectively.
- There was plenty of room to decontaminate equipment.

Areas for improvement included:

- All seasons life jackets where not ideal with the heat. Enbridge will consider using inflatable life jackets for summer exercises/responses.
- Communication could have been improved with the use of radios.
- The river was shallow and of limited width. Using smaller resources such as smaller boats (john boat) may be preferable to an engine boat under the river conditions.

The items identified under the "Areas for Improvement" category will be reviewed and addressed prior to the next Field Deployment Exercise as they improve the response capabilities of the Midwest Region Field Response team in both field exercises and the unlikely event of a release.

Naperville, IL (Great Lakes) on August 12, 2020

This exercise was attended by 11 Enbridge employees and 4 external participants. The exercise tested the tactical strategy of control point GLRCP0105 on the DuPage River. The objectives of the field exercise were:

> **Objective 1:** Demonstrate the ability to deploy on-water containment and mitigation (recovery) tactics.
>
> **Objective 2:** Test GLRCP0105 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 participants about Enbridge's response capabilities.

Equipment used included: boom and anchors, drum skimmer, capstan winch, and boats from the Griffith, Indiana pipeline maintenance facility.

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

- The FRT was familiar with the CP and deployment strategy. The FRT surveyed the area and made preparations prior to the deployment. Their prep work ensured they utilized appropriately rated rope that yielded accurate boom placement.
- The FRT was comprised of individuals from more than one PLM crew. Their training and professionalism allowed the FRT to work together seamlessly and successfully execute the CP strategy.
- The use of the winch worked really well to place the anchors for the boom. The automatic pulling of lines saved personnel from potential injury.

Areas of improvement included:

- Due to varying river conditions, it was identified that a shallow draft vessel would be ideally suited to operate on this watercourse.
- The 40 HP motor used on the boom deployment boat is underpowered. A larger motor with more power is needed to pull hundreds of feet of boom while fighting current.
- Shoreline maintenance would have allowed for better placement of shoreside equipment. Weed whips to remove/cut shoreline growth and debris removal prior to deployment would have aided setting/positioning of the boom and anchors.

The items identified under the "Areas of Improvement" category will be reviewed and addressed prior to the next Field Deployment Exercise. These items drive improvement of the response capabilities of the Great Lakes Region Field Response team in both field exercises and the unlikely event of a discharge from the pipelines within the Lakehead System.

Morris, IL (South West) on September 30, 2020

This exercise was attended by 14 Enbridge employees and 9 external participants. The exercise took place on the Illinois River. 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: Utilize the Incident Command System to manage equipment deployment.

Objective 3: Test line 14 containment and recovery tactics.

Objective 4: Inform participants about Enbridge's response capabilities.

Equipment used included: boats, anchors, river boom, skimmers and skimmer power units, fast-tanks and capstan winches all supplied by the Flanagan Field Response Team.

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

- The Sarca-style anchor worked extremely well and was easy to deploy. During the deployment, the anchor was set on the first try and held the boom at the correct angle.
- Boat operators did a great job despite high winds. The wind was strong enough to cause the boom to move upstream against the current. This created a significant challenge in positioning the boom, however the team was able to overcome this issue.
- The Capstan winch was a critical tool for securing the proper angle of the boom. This tool also reduces the amount of manual labor required to secure the boom and therefore reduces likelihood of personal injury.

Areas of improvement included:

- Communications is a common area for improvement during field exercises. The Operations Section Chief should assign communications responsibilities and ensure these responsibilities are understood by all members involved in field work. During this drill, several radios were unusable because they were not charged. The functionality of radios should be tested prior to future exercises.
- The efficiency of the check-in process could be improved. A person trained in the Incident Action Plan (IAP) mobile check in process should be incorporated into the next field exercise.
- A list of items needed for future deployments was developed. These items include strong magnets for hanging ICS forms on trailers, additional laminated ICS forms, a cleaner for tools due to disinfection requirements (COVID-19 mitigation), radio chargers, air horn, boat whistles, battery maintainer (trickle charger), oars, and life jackets.

The items identified under the "Areas of Improvement" category will be reviewed and addressed prior to the next Field Deployment Exercise. These items drive improvement of the response capabilities of the South West Region Field Response team in both field exercises and the unlikely event of a discharge from the pipelines within the Lakehead System.

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

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 included in the following sections.

Deer River, MN (Superior) on July 16, 2020

The exercise was attended by 7 members of Enbridge, and 8 external participants. Discussion points included:

- When setting up unified command, entities such as Chippewa National Forest and Leech Lake Band of Ojibwe should be considered.
- Depending on the time of year, this area could have many tourists, so finding resources such as lodging could be more difficult and therefore identifying resources in nearby cities maybe beneficial. However, it is important to work with locals to try and obtain resources locally first.
- Ensure that the Incident Command Structure has a branch for investigations to support the investigation process.

Rapid River, MI (Great Lakes) on July 28, 2020

The exercise was attended by 8 members of Enbridge and 9 external participants. Discussion points included:

- Potential locations for Incident Command Posts and equipment staging in the local area should be pursued and captured in local emergency response plans. However, using a virtual platform provides an alternate Incident Command Post and allows the execution of ICS roles in a remote context while maintaining social distancing.
- The county emergency manager outlined local emergency response capabilities.
- Tribal and cultural considerations should be emphasized in a response and it is recommended to update training components to trigger those considerations.

Niles, MI (Great Lakes) on August 4, 2020

The exercise was attended by 5 Enbridge members and 22 external participants. Discussion points included:

- Local and extended response actions from a wide range of perspectives; and great representation from local responders, fire departments, and OSROs.
- The discussion facilitated understanding of local resources and identified previously unknown capabilities.
- The scenario was effective at illustrating potential impacts to an important waterway.
- Identified jet boats would be the ideal platform to use during a response, due to varying water depth in the river. Use of jet boats would require additional notifications (i.e. Buchanan hydro-electric dam, inhabited island)
- The local fire department no longer has available boom however the department is willing to assist in the deployment of boom during an emergency response.
- Using Microsoft Teams is a tool to facilitate the discussion but should not replace in-person interactions amongst stakeholders.

Cavalier, ND (Superior) on August 5, 2020

The exercise was attended by 9 members of Enbridge, and 6 external participants. Discussion points included:

- The *North Dakota Department of Environmental Quality* information may need to be updated in the Field Emergency Response Plan.
- Due to the rural location, Grand Forks may be the best option for the command post, lodging, and communication needs.
- Providing information to the public early may reduce the likelihood of protesters in North Dakota.
- Enbridge may be required to bring in resources for livestock that rely on water from the river.

Naperville, IL (Great Lakes) on August 11, 2020

The exercise was attended by 8 Enbridge members and 3 external participants. Discussion points included:

- Demonstration of the Control Points and e-mapping of Enbridge assets was well received. OSROs enjoyed the extent of information that would guide their actions in a response
- The Naperville Office of Emergency Management acknowledged that they should have circulated the invitation internally more aggressively; encouraged junior members to participate so that they can build relationships and garner experience from the training sessions.
- The EPA would like to see trajectory modeling to validate the level of response indicated in the timeline presented in the module.
- The OSROs have the capability to provide a time motion study; would need the scenario 3 to4 days in advance (SITMAN does not outline all components of the scenario).

Homer Glen, IL (Great Lakes) on August 13, 2020

The exercise was attended by 3 Enbridge members and 6 external participants. Discussion points included:

- There was good participation from all attendees with well-rounded representation from a variety of first responders/emergency management officials.
- Partner agencies portrayed their own roles/responsibilities but demonstrated the inter-agency cross training and relationships that would be relevant during a response.
- There was educational information sharing among the group.
- The scenario should showcase area maps, highlight trajectories and leading edge of oil slick on the water surface.
- It is important to coordinate email notifications earlier in the planning process. This complication arose from COVID-19 restrictions for in-person meetings.
- Attendance and participation at the exercise was impacted by a real-life incident (localized major storm) which affected the regional power grid.

Cloquet, MN (Superior) on August 27, 2020

The exercise was attended by 7 members of Enbridge, and 6 external participants. Discussion Points Included:

- Local fire departments in this area cannot force residents to evacuate but they can help with evacuation notifications.
- Fond du Lac Band of Lake Superior Chippewa owns many properties that could be used as staging areas. Black Bear Casino is also a potential staging area.
- Access to this watercourse may be difficult. Portions of Otter Creek run through a state park. Evacuating civilians from the state park may also be a challenge.
- Ensure that the nearby dams are notified to shut down flows and/or put out protective measures.
- Start working on a waste management plan early in the response.

Marshfield, WI (Superior) on October 20, 2020

The exercise was attended by 12 members of Enbridge, and 1 external participant. Discussion points included:

- Marshfield has a number of good locations for staging and the incident command post such as: airport, baseball fields, golf course, etc. The National Guard parking lot would be too small for operations and should not be used for either.
- There are other private surrounding companies such as Flint Hills Resources, TC Energy, etc., that could be included for any future exercises.
- The community is large enough for an ongoing response.

Ottawa, IL (South West) on November 5, 2020

This exercise was attended by 18 Enbridge employees and 6 external participants. Discussion points included:

- Enbridge team members showed a good understanding of the initial response priorities and objectives.
- Enbridge operations personnel are demonstrating a better understanding of tactics through continued training and exercises.
- There was good participation and discussion from the group and the team appreciated the Ottawa Fire Chief's participation in the exercise.
- The group liked the question and answer format of the exercise, especially for new Enbridge personnel. The group feels this format provides an effective learning experience.
- The Ottawa Fire Department has the ability to use reverse 911 to contact residents via cell phone and landline. They also utilize Nixel for mass community notifications.
- External response plans such as the United States Coast Guard Contingency Plan and the EPA Region 5 Geographic Response Plan should be considered during exercises and responses.
- Volunteers should be managed per the Integrated Contingency Plan Core Section 2.4.5 Volunteer Plan.

Superior, WI (Superior) on November 10, 2020

This Exercise was attended by 25 Enbridge employees and 15 external participants. Discussion points included:

- The Enbridge team demonstrated a good understanding of the initial response and priorities.
- Enbridge FRT showed knowledge of response, containment and recovery objectives.
- Enbridge Incident Management Team ("IMT") showed understanding of roles and responsibilities throughout exercise.
- Great participation from all external participants and insight from EPA and PHMSA representatives.
- There may be instances where water from the downstream harbor pushes back into the Nemadji River slowing the flow rate.
- The EPA GIS viewer may help with the identification of water intakes and environmentally sensitive areas.

- The National Weather Service can play a key role in long-term response planning.
- Communications between responding agencies in Minnesota and Wisconsin may be a challenge. More robust communications plans should be developed early.

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 invitations for the scheduled 2020 Table Top and Field Exercises on December 17, 2019, to community, state and local first responders listed in CD Appendix C, as well as first responders located within 5 miles of the exercise scenario, resulting in a total of 487 invitations mailed.

The invitations provided recipients with more than four weeks prior notice of the exercise date when the exercise was to be conducted. 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 for their interested exercises, in addition to being provided a contact telephone number and e-mail address. During the reporting period 15 registrations were submitted to the online system with zero telephone and two e-mail requests for additional information received and responded to.

Three improvements were made to the exercise registration program during the reporting period. First, three EPA Region 5 planners were added to the annual invitation list. Second, county and regional state-level emergency management offices were added to the annual invitation list. Third, the registration report generated by the external-facing website was updated in November to display additional registrant details which enabled Enbridge to directly communicate with registrants.

Due to COVID-19 impacts, the postcard mailings (which were a supplemental effort not required by the CD) were 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.

The 2021 exercise dates and locations were posted on the website on November 10, 2020 with the annual mailing to take place in December 2020.

116.e [Community Outreach Sessions]

During this reporting period, Enbridge continued to comply with Subparagraph 116.e of the Consent Decree regarding the required Community Outreach Session.

Enbridge conducted the following Community Outreach sessions during this reporting period:

- Marshall, MI on June 1, 2020
- Kalamazoo, MI on June 2, 2020
- Minong, WI on July 14, 2020
- Medford, WI on July 15, 2020
- Marshfield, WI on July 21, 2020
- Portage, WI on July 22, 2020

- Crystal Lake, IL on August 25, 2020
- Ottawa, IL on August 26, 2020
- Crete, IL on August 27, 2020
- Marysville, MI on October 20, 2020
- Howell, MI on October 21, 2020
- Ortonville, MI on October 22, 2020
- Manteno, IL on October 27, 2020
- Chesterton, IN, October 28, 2020
- Niles, MI on October 29, 2020

For the community outreach sessions identified above a total of 57,757 invitations were sent to landowners, elected officials, the general public, and community leaders. Additionally, meetings were advertised in 24 publications within or near virtual host communities, there were targeted digital campaigns on Facebook that ran two weeks prior to each meeting and additional outreach was completed via phone calls encouraging stakeholder attendance. The general public was invited to attend through a series of advertisements placed for two weeks leading up to each event in 24 local newspapers. There was a total of 241 documented external attendees at these fifteen sessions.

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

Typically, each Community Outreach session is conducted in an open-house format with manned booths that provided attendees with valuable information on pipeline operations, product information, safety, preventative maintenance, integrity, emergency response, public awareness, damage prevention/right-of-way, and Enbridge's involvement in local communities. Due to COVID-19 restrictions, all of these sessions were held virtually. During the virtual presentation, attendees were provided an Enbridge website address where they could obtain a copy of the presentation and additional digital reading materials which included information such as:

- Potential hazards of different crude oils transported by the Lakehead System;
- The location of Enbridge pipelines in proximity to the communities where the sessions were conducted;
- How Enbridge's pipelines are marked;
- How the community should respond in the event of a spill;
- How the community can obtain information in the event of a spill from Enbridge and government agencies; and
- How the community can report spills to Enbridge, EPA, and the National Response Center.

The digital reading materials shared during the virtual community sessions are included in Appendix 3. All digital reading materials were shared as download links during the presentations, to the virtual attendees.

At each virtual Community Outreach Session Enbridge solicited feedback from attendees through an online poll. After each session, there was a post session debrief with the Enbridge teams to review the poll results. The overwhelming majority of the feedback received during the reporting period, whether through the poll

or follow-up conversations, was positive. Attendees stated they appreciated having access to Enbridge and to the information provided.

117 [Control Point Plans]

In accordance with Subparagraph 117.a and b, Enbridge has updated and maintained the information for the Control Point locations set forth in Appendix D of the Consent Decree.

The Control Point information was submitted to the EPA on May 21, 2020 by Enbridge and was provided in the electronic formats specified in Subparagraph 117.e. Information about Subparagraph 117 c, d, f and g have been addressed in previous SARS reports. This activity is complete.

118 [Response Time]

Enbridge completed a review of personnel and equipment available to respond to an oil spill in the times allotted in the ICPs in accordance with Paragraph 118.a and b on May 6, 2020, Enbridge electronically submitted a draft report to the EPA on May 12, 2020 which is within 180 days of completion of the review in accordance with Paragraph 118.c. The EPA reviewed the draft report and submitted their comments to Enbridge on August 10, 2020. Enbridge met with the EPA on October 14, 2020 to discuss Enbridge's proposed responses to the EPA's comments. As per Sub-paragraph 119 e., Enbridge submitted the final report to the EPA on October 22, 2020, which is within 90 days of having received the EPA's comments. The letter of transmittal accompanying the report outlined the actions Enbridge would take as a result of the findings of the final report. Enbridge also provided electronic copies of the report to Sub-Area committees, USCG, PHMSA and Enbridge OSROs. This activity is complete.

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 that were held during this reporting period, virtually, due to COVID-19 restrictions:

- Northwest Indian Sub-Area Committee August 25, 2020
    - A variety of topics were discussed including supporting an incident virtually and the benefits of using Microsoft Teams. The EPA provided a tour of the virtual Incident Command Post they developed. An additional topic was an overview of PHMSA's role in a response.
- Duluth/Houghton Sub-Area Committee September 15, 2020
    - The meeting kicked off with a presentation from the Minnesota Pollution Control Agency on their Natural Resource Damage Assessment program. The focus of the program is to return natural resource loss due to pollution. Restoration of these natural resources is also addressed. The USCG then presented a case study involving the release of marine grade fuel from a large vessel. There was also a brief discussion on the impacts of COVID-19 restrictions related to initial response actions.

- Duluth/Houghton Sub-Area Committee, Western Lake Superior Area Maritime Security Committee meeting October 28, 2020
    - The meeting started with a presentation by USCG on Cyber Security in the Marine Transportation System. The presentation went through ways to manage cyber risk. They also discussed further cyber security training and addressed FAQ. The second part of the meeting was a review of the lessons learned from the previous meetings security TTX. All discussion points and lessons learned were addressed and recommendations were made.
- Buffalo Area Committee, Eastern Great Lakes Area Committee Meeting, November 19, 2020
    - The meeting hosted 26 participants; comprised of federal, state, and local government as well as industry. The USCG facilitated the meeting and highlighted their pollution response cases for 2020. In total, they responded to 196 pollution incidents, of which 8 were funded with OSTLF (Oil Spill Liability Trust Fund) dollars.

Enbridge also attended the fall Regional Response Team meeting held on October 20, 2020. This meeting was held virtually due to COVID-19 restrictions. This meeting fell outside of the Sub-Area planning meetings.

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

Enbridge was invited and attended the following field exercises and other training events during this reporting period:

- Virtual Inter-Tribal Environmental Council conference (Clean Air Forum) July 30, 2020 (advertised through the Chicago Sub Area Committee)

  The Forum included various topics on air quality including information about Low-cost Air Sensors: “EPA Update, National Air Toxics Assessment Map Tool Demonstration” and “Quality Review and Exchange System for Tribes: Online Air Data Management and Reporting Tool”.
- Virtual National Oceanic and Atmospheric Administration Training July 23, 2020 (advertised through Chicago Sub-Area Committee)

  The seminar addressed the process of managing marine debris. The seminar also included discussion around jurisdiction and funding when it comes to the government’s response to marine debris following a natural disaster.
- Virtual National Oceanic and Atmospheric Administration Training July 30, 2020 (advertised through Chicago Sub-Area Committee)

  The seminar addressed Tri-State Oiled Wildlife Response and discussed impacts on wildlife due to oil contamination.
- Duluth/Houghton Sub Area Committee, Virtual Marine Safety Unit Duluth, Area Maritime Security Training and Exercise Program Table-Top Exercise September 16, 2020

  The Table- Top exercise was based out of the Duluth harbor. The scenario was a cruise ship off boarding passengers and screening for COVID-19. During offboarding, a dirty bomb (explosive device containing radioactive material) was set off, killing and injuring several people. There were members of several Law Enforcement agencies and Fire agencies from the area discussing responses. There were also members of National Weather Service, various hospitals, and other stakeholders that may be involved or affected. Discussions wrapped around expected response and capabilities of all stakeholders as well as conversations on

maintaining the Public Information Officer and Joint Information Center in a unified way across all stakeholders.

- Sault Ste. Marie Sub Area Committee September 16 and 17, 2020, Table-Top Exercise

  This TTX scenario was regarding a diesel fuel spill at the US Oil facility in Rogers City, MI. The volume was approximately 3 million gallons into their "pond", which is a sequestered section for vessels to fuel on Lake Huron. The discussions varied, as individuals were broken off into tables (separate MS Team channels within the overall group). One group discussed notifications, immediate replay of one's actions and extended actions. It was relayed that Enbridge has a significant cache of equipment in the Straits that could be made available to assist in mitigation/recovery efforts.

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

No Sub-Area Committee or Area Committee for the Lakehead System has made written recommendations to Enbridge regarding its emergency preparedness plans and implementation thus, Enbridge had no obligation under Subparagraph 119.c to respond and/or revise its emergency preparedness plans or implementation during this reporting period.

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.

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, as explained in the first SAR. Enbridge considers this activity complete.

119.h [Emergency Response Equipment]

Enbridge continues to maintain, in good working order, its prepositioned emergency response equipment and materials. The letter of transmittal accompanying the Paragraph 119 Response Time Report included the following action to be taken by Enbridge:

- Enbridge will move a trailer with some equipment to Ladysmith. The Northwest Wisconsin area is identified as the only area of the pipeline corridor with a drive time response in the 3 – 4-hour band using the conservative alternative methodology.

In order to improve response times, Enbridge moved a trailer and inventory to Sheldon, WI (Lady Smith, WI area). This addresses and closes off the commitment made in the Response Time Letter of Transmittal dated October 22, 2020. Enbridge will report on this equipment movement in a separate letter by the end of the year per the P. 119.h requirements.

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/. Enbridge considers this activity complete.

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119.j [Inland Spill Response Guide to EPA]

EPA requested a copy of the "Inland Spill Response Guide" on November 1, 2018, and Enbridge fulfilled this request on November 2, 2018. Enbridge considers this activity 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;

  During this reporting period, two new Emergency Response Specialists were hired as members of the emergency department and were trained within 90 days as required under the Consent Decree.

- Any person designated as Vice President of U.S. Operations, or in an equivalent capacity: ICS 402 training; and

  During this reporting period, [redacted] designated as Vice President of U.S. Operations took the required ICS 402 training on June 16, 2020, within 90 days as required by the Consent Decree.

- 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.

Changes to the Incident Management Team lists due to retirements, change of employment, etc. will result in additional training being conducted for any replacement IMT personnel and Enbridge will track those training dates. Furthermore, changes to the Incident Management Team list due to employee departures will be finalized on December 4th. As these changes fall outside the reporting period for SAR7 the changes will be reflected in the SAR8 report.

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]

The Consent Decree requires that Enbridge install 14 remotely-controlled valves over the term of the Decree. During this reporting period, the final two valves were successfully installed and commissioned on Line 6A at milepost ("MP") 80 and MP 198, per **Table I-1**. The valves installed in 2020 are located within the MP ranges specified under Paragraph 122.

123. [Enbridge Computer Modeling for Valve Locations]

Enbridge identified the optimal locations for the 14 valves listed in Paragraph 122 by employing our Intelligent Valve Placement ("IVP") methodology to meet the requirements of Paragraph 123. The details of this methodology have been explained in past SARs, information requests, and a live demonstration to the ITP. Enbridge considers Paragraph 123 to be complete and no further reporting is required in this SAR, nor in future SARs.

124. [Valve Design and Closure]

Prior to requisition of the valves for installation in 2017, Enbridge subject matter experts examined each step of the valve closure process including initiating of command, communication of command to the remote facility, energizing of the actuator, and mechanical process to fully close and seal the valve. Considerations were made for each of these steps leading up to the start of mechanical closure and subtracted from the total allowable command-to-sealed requirement, and the valves were specified on the Purchase Order to the manufacturer to close within that remaining time. Enbridge also specified on the Inspection and Test Plan that a valve closure timing test will be completed on at least one valve of each size to verify actuator open and close time. Shop timing tests have now been successfully completed on valves of each size for this program. During dry commissioning of the 2020 valves in September 2020, field timing tests were conducted, and both valves fully closed and sealed within three minutes of the operator engaging the valve-closure mechanism, complying with the Consent Decree requirement.

During this SAR reporting period, Enbridge has completed the following milestones:

- Installation of two valves on Line 6A at MP 80 and 198, both on July 14.
- Successful commissioning of both Line 6A valves at MP 80 and 198 on September 29.
- Completion of 2019 as-built drawings.
- Final site restoration completed, and environmental permits for 2019 sites L6A MP 458 and L14 MP 412 were closed.

- Permit close-out was requested for the environmental permit for 2019 site L14 MP 430.

On-going monitoring will commence at the 2020 sites in the spring of 2021, until vegetation recovers, and environmental permits can be closed out.

Section J – Independent Third Party Consent Decree Compliance Verification

As reported in the first SAR dated January 2018 and the second SAR dated July 2018 Enbridge retained O.B. Harris, LLC as the ITP on January 11, 2017 to conduct a comprehensive verification of Enbridge's compliance with the requirements set forth in Section VII (Injunctive Measures), except for subsection VII.H (Spill Response & Preparedness) which Paragraph 125 excludes from the verification activities that are required to be performed by the ITP. Therefore, Enbridge's obligations under Paragraphs 125, 127-132.a and 134 have been satisfied. Enbridge will continue to report on required updates and/or changes to this injunctive measure in future SARs.

126. [ITP Access to Enbridge Lakehead System]

Enbridge continues to provide the ITP with full access to all facilities that are part of Enbridge's Lakehead System, including any personnel, documents and databases to allow them to fully perform all activities and services required by the requirements of the Consent Decree.

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

In accordance with Paragraph 132, Enbridge continues to support the ITP in providing them additional information and responding to their requests to assist the ITP in completing the tasks required by Subparagraphs 132.b, c, d and e.

133.b [Enbridge Response to ITP Verification Report]

The agreement between Enbridge and the ITP requires, as per Subparagraph 133.a, that the ITP prepare a written verification report that sets forth the findings, conclusions and recommendations, if any, as to each of the requirements of Section VII of the Consent Decree, excluding Subsection VII.H (Spill Response and Preparedness). There is nothing additional to report in this covered period. If there are further developments related to this Paragraph, Enbridge will provide an update in future SARs.

134.l [General Requirements – ITP Annual Certification]

On January 3, 2020, the ITP provided its annual certification to the United States, verifying that it complies with the General Requirements of Subparagraphs 134.g-k.

135. [Enbridge Enforcement of the Agreement]

As reported in the first, second, third, fourth, fifth, and sixth SARs, Enbridge is prepared to enforce the terms of its written agreement with the ITP if needed to ensure compliance with Section VII.J of the Consent Decree, but to date has not been required to take such action.

136. [ITP Replacement]

This Paragraph of the Consent Decree addresses replacement of the ITP, which is an issue that has not arisen since the Effective Date.

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 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 Enbridge has resolved or is working to resolve with the ITP and EPA. Enbridge is proceeding using the 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 reporting period 7. Each of these are discussed in more detail in the sections below and are referenced in the applicable injunctive paragraph.

- [Section D] Line 5 PE-IR FRE Data Quality Issue – P. 34.c.
- [Section D] Dig Deadline Extension of Two CD Digs for Four Features from L67 CR-PW – P. 50
- [Section D] Remaining Life Calculations on L78 SK-RW GE MFL – P. 65
- [Section D] Circumferential Cracking Engineering Assessment Process - Various Paragraphs

- [Section G] August 24, 2020 Optimization of 24-hour alarm thresholds due to lower flow rates on Lines 1, 5, 10 – P. 103
- [Section G] August 24, 2020 Instrumentation Problems Encountered on Lines 14/64 and 65 – P. 103
- [Section H] Stockbridge Agreed Exercise – P. 115
- [Section H] COVID-19 Restriction Impacts to FDE, TTX, Community Outreach, and Coordination with Government Planners - Various Paragraphs

[Section D] Line 5 PE-IR FRE Data Quality Issue – P. 34.c.

On 06/22/2020, the ITP informed Enbridge about a data quality issue on DNT 1426 (GW 229310) from the Line 5 PE-IR 2020 GEMINICAL ILI Issue 1 report received on 04/21/2020.

In response to the ITP's request for information, Enbridge identified that the "GEOMETRIC ANOMALY ORIENTATION" designation of "BOTTOM SIDE" did not match the MSP orientation for this feature. Enbridge contacted the ILI vendor to understand why the feature was not identified within the report as "TOPSIDE", although the MSP was above the 8 o'clock or 240 degree position. The ILI vendor identified two contributing issues. The first issue identified determined that the ILI vendor was using the center point of a deformation to identify if it was top side or bottom side feature versus the most severe point ("MSP") as is required per Enbridge's Minimum Reporting Requirements ("MRR"). The second issue identified that there was a manual analyst error during the pipe tally preparation that resulted in inaccurate orientations for all deformations in this program.

An Issue 2 report was received on 07/06/2020 from the ILI vendor that addressed these two errors and provided the correct feature orientations. The Issue 2 ILI report confirmed DNT 1426 to be a bottom-side dent and thus not a CD FRE. The Issue 2 ILI report was assessed, and no unrepaired features met Consent Decree excavation criterion. The program was approved on 07/18/2020, within 180 Days of the ILI Pull Date, and the corresponding evidence files have been uploaded to the Shared Drive for ITP review.

In regards to the first issue identified, Enbridge is working with the ILI vendor to perform a full investigation for all line segments to identify if there were other instances where the ILI vendor incorrectly classified the feature as a bottom-side feature and not a top-side feature, due to the feature center point being used instead of the MSP to determine the feature orientation. Enbridge is also working with the ILI vendor to ensure that this MRR requirement is being followed and to prevent this error from being repeated in the future.

In regard to the second issue identified, the Root Cause Analysis determined that the manual analyst pipe tally preparation errors affected only this program and additional measures have been put in place to ensure that these errors do not occur in the future.

[Section D] Dig Deadline Extension Request for Two CD Digs for Four Features on L67 CR-PW – P. 50

In this reporting period, Enbridge, the ITP and EPA are discussing a modification to the MOP values incorporated into the CD through Paragraph 10.s for Line 67 as described below under "MOP Modification Discussions." Enbridge has identified that two digs remediating the four features can be cancelled if the correct MOP, as determined through the MOP verification project, are used for the calculations rather than the Consent Decree values. Enbridge has provided the revised calculations to the ITP and EPA that demonstrate that the Safety Factor values will be within acceptable limits if the MOP Verification project

MOP values are used. The FREs are currently on hold on the dig list as discussions regarding the modification are ongoing.

[Section D] Remaining Life Calculations on L78 SK-RW 2018 GE MFL – P. 65

The ITP recently identified that the Line 78 SK-RW 2018 GE MFL program appeared to have a reinspection interval discrepancy. A reinspection interval of 3.9 years was initially calculated during the SAR2 reporting period within the required timelines of the Consent Decree. Enbridge subsequently identified a calculation error that resulted in an overly conservative reinspection interval being reported at that time. Enbridge has corrected the error modifying the reinspection interval to 4.9 years and has initiated an investigation to identify if there are any other instances of similar calculation discrepancies. The inspection deadlines have been adjusted accordingly and no inspection deadlines were missed due to this discrepancy.

[Section D] Circumferential Cracking Engineering Assessment Process – Various Paragraphs

In earlier reporting periods Enbridge and the ITP identified a difference in interpretation regarding how and whether circumferential crack ILI, which historically has not been used on the Lakehead system, was intended to be incorporated within the Consent Decree. However, Enbridge and the ITP do agree that the use of this technology is based on the level of risk to the Lakehead system and that technical assessment processes within the Consent Decree are not suitable to analyze circumferential crack features. As a result, Enbridge agreed to provide the ITP a total of three Engineering Assessments related to circumferential cracking features. Two of these Engineering Assessments provide technical analysis of eleven circumferential crack features detected by circumferential crack ILI on two lines, and one Engineering Assessment that details the level of risk of circumferential crack hazards on the Lakehead system as a whole and the Enbridge approach to managing this threat.

On April 9, 2020 (Line 10) and May 5, 2020 (Line 6A), Enbridge provided the ITP two Engineering Assessments for eleven circumferential crack features. On August 6, 2020, Enbridge provided the ITP with the Engineering Assessment of Circumferential Crack Management on the Lakehead System. An updated version of the same was provided to the ITP on August 28, 2020. The parties agreed to retain a third party engineering consultant, selected by the ITP, to complete an evaluation of all three circumferential crack Engineering Assessments.

[Section G] August 24, 2020 Optimization of 24-hour alarm thresholds due to lower flow rates on Lines 1, 5, 10 – P. 103

During the execution of the Q2 2020[12] sensitivity performance testing of the 24-Hour alarm, it was discovered that three Lakehead lines – Lines 1, 5, and 10 fell below the 95% confidence level for the leak sensitivity detection threshold of 2.2%, 2.7%, and 2.6% of nominal flow respectively.

On August 24, 2020, Enbridge performed and completed a thorough technical analysis, which identified the root cause of the issue. It was determined that the lines were operating at a flow rate near the lower bound or lower than the range observed and used during the 24-Hour Alarm Optimization Study[13] ("study").

Table IX-2: Line 1,5,10 Flow Rates outlines the flow rates the subject pipelines were operated at during the Q1 through Q2 2020 periods versus the range of flow rates the pipelines were operated at during the study and what was used in the study testing period. This change in flow rates is considered as a "significant

[12] *Q2 2020 performance testing covers Q1 to Q2 operating periods*

[13] *2019.04.12 Enbridge 24-Hour Alarm Threshold Optimization Study Results – per P. 103.c*

change in pipeline operation" as extensive flow at this minimum rate was not observed during the optimization study data set. As indicated in the study, this change in operation is considered significant, triggering the need for re-optimization of these lines.

Enbridge is currently performing a new optimization study for these lines to lower the threshold[14] in order to meet the sensitivity requirement under persistent lower flow rate conditions. This re-optimization will be carried out in accordance with Subparagraph 103.g(3) and to meet the sensitivity requirements per Subparagraph 103.g(4). Subparagraph 103.g(5) will not be applicable for this event as neither the sensitivity is relaxed, nor a temporary sensitivity is established. However, Enbridge will undertake further discussions with the ITP when the optimization study is complete, and a report of the optimization results is submitted.

[Section G] August 24, 2020 Instrumentation Problems Encountered on Lines 14/64 and 65 – P. 103

During the execution of the Q2 2020 sensitivity performance testing of the 24-Hour alarm, it was discovered that specific sections on two Lakehead lines – Lines 14/64 and 65 fell below the 95% confidence level for the leak sensitivity detection threshold of 2.2% and 2.3% of nominal flow respectively. However, it is important to note that in both cases the overall 24-hour alarm remained active and effective. The affected segment on Line 14/64, BL-MK (Burlington-Mokena) and the overlapping segment remained active and capable of detecting a leak of 2.2% with a confidence level of 86% and 87% respectively. The affected segment on Line 65, XP-DN (Manitou-Donaldson) and the overlapping segment remained active and capable of detecting a leak of 2.3% with a confidence level of 84% and 95% respectively.

On August 24, 2020, Enbridge performed and completed a thorough technical analysis, which identified the root cause of the issue. It was found that Lines 14/64 and 65 were experiencing flow meter issues on specific sections driving the sensitivity of those sections to fall below the 95% confidence level. The findings from the technical analysis and the corrective actions performed are detailed below.

Line 14/64:

Line 14/64 has two branches in the last section of the line and is capable of delivering to Mokena (MK) or Griffith (GT). The section BL-MK (Burlington-Mokena) balances the upstream BL meter against both delivery meters. All three meters were aligned during the optimization study, but the GT delivery meter demonstrated variance relative to the BL and MK meters during the Q2 2020 testing periods. This resulted in positive offsets in the 24-hour volume balance. This slightly desensitized the section during these periods, as the total leak volume would have to overcome the positive offset before reaching the leak alarm threshold. This degradation of the 24-hour alarm was resolved with a model update on July 17, 2020.

The affected flow meter was further investigated, and a temporary change was applied to the meter in August. The Control Systems group then applied a permanent change to replace the transducer in September.

Line 65:

The Line 65 performance issue was the result of intermittent issues in the Manitou (XP) flow meter. One of the transducers was failing intermittently, causing offsets in the flow measurement of up to 1.5%. Periods in which this offset caused the XP meter to read lower resulted in positive offsets in

[14] The term "threshold" in this context refers to the Enbridge definition, which is the flow range of when the alarm is triggered. "Threshold" per CD definition is synonymous to "sensitivity", as per Enbridge definition and CD's intent.

the 24-hour volume balance. This desensitized the section during these periods, as the total leak volume would have to overcome the positive offset before reaching the leak alarm threshold.

The issue in the XP flow meter has been investigated and a corrective action plan is in place to perform parameter and configuration changes, as well as a transducer replacement. The plan will be executed starting at the beginning of December and is in progress at the time of this report.

[Section H] Spill Response and Preparedness

The information below outlines problems encountered or anticipated in implementing Consent Decree requirements for Section H – Spill Response and Preparedness, due to COVID-19.

[Section H] Stockbridge Agreed Exercise - P. 115

Due to the COVID-19 pandemic and at the EPA's request, the Stockbridge Exercise required under P. 115 of the Consent Decree was postponed. The COVID-19 pandemic is an event beyond the control of Enbridge that prevented travel and face-to-face gatherings and therefore qualified as a Force Majeure event under Paragraphs 174 and 175 of the Consent Decree.

Following postponement of the September 14 and 15, 2020 exercise date, Enbridge reached out to exercise stakeholders for feedback on alternate dates and formats for the exercise. Stakeholders supported rescheduling the exercise for July 2021 and the majority agreed that the on-going pandemic may make face-to-face interactions unsafe and alternate formats for conducting the exercise, such as a hybrid exercise, should be considered. Enbridge, the EPA and stakeholders agree a face-to-face exercise is preferable to a partially virtual exercise.

The Exercise postponement required Enbridge to revise the Stockbridge Exercise Plan to reflect the new date and included the option to conduct a part of it virtually, subject to the support of the EPA and stakeholders. The revised plan was submitted to the EPA on October 29, 2020. **Table IX-3** summarizes the meeting and exercise activities in the State of Michigan, related to the Stockbridge Agreed Exercise. Additional touchpoint meetings are scheduled.

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

The scheduling and format of several spill response and preparedness activities were impacted by COVID-19 restrictions. Several Field Deployment Exercises were postponed but were completed face-to-face following all applicable safety protocols. A number of TTXs were rescheduled and all TTXs were completed virtually. The EPA was notified of all changes per the Force Majeure notification process and approval for these changes were granted by the EPA. **Table IX-4** summarizes the TTXs and FDEs that occurred in this reporting period. Coordination with Government Planners, as required by Paragraph 119 of the Consent Decree, including meetings and training were held virtually.

Force Majeure Notifications were submitted to the EPA in this reporting period for Community Outreach Sessions as Enbridge could not conduct 15 sessions during the twelve month period between May 2019 and May 2020. However, Enbridge conducted 15 sessions in the calendar year ending December 31, 2020 and therefore met the requirement under Paragraph 116.c. **Table IX-5** summarizes the Community Outreach events that were to occur within this reporting period and have been re-scheduled. The Force Majeure notification process from Enbridge to the EPA is detailed in **Table IX-6**.

Reports to State Agencies

[Section E] Protection From Anchor Strikes – Updates to State of Michigan

On May 21, 2020, just prior to the start of the reporting period, Enbridge sent a letter to the State of Michigan Department of Environment, Great Lakes, and Energy (EGLE) and Department of Natural Resources (DNR), regarding Enbridge's further efforts to reduce the risk of a vessel anchor striking the Line 5 Dual Pipelines at the Straits of Mackinac. The letter communicated that beyond the requirements under its Second Agreement with the State, that were satisfied by Enbridge providing the State $200,000 to be used for the acquisition and installation of video cameras at the Straits, Enbridge had implemented a coordinated system to reduce the risk of a vessel's anchor puncturing, dragging or otherwise damaging the Line 5 Dual Pipelines. The letter also notified the State of Enbridge Straits Maritime Operations Center ("ESMOC") in Mackinaw City that acts as the nerve center for Enbridge's suite of marine traffic safety systems in the Straits.

On November 6, 2020, Enbridge issued an update letter to the State of Michigan EGLE and DNR departments outlining further measures to reduce the risk of a vessel anchors striking Line 5 Dual Pipelines, collectively referred to as Enbridge's Maritime Pipeline Protection Program or EMP3. The letter also informed the State of Enbridge's plans to implement anchoring requirements that would be applicable to all of its contractors working in the Straits. With the letter, Enbridge also shared its recent independent expert report that determined the implemented measures as part of the EMP3, reduced by 99.5% the risk of failure of the Dual Pipelines resulting from an anchor strike.

In its correspondences, Enbridge invited input from the State on the implemented risk mitigation measures, however, Enbridge received no feedback from the State agencies regarding the implemented EMP3 within the reporting period.

Any significant changes or issues since the previous SAR

Any significant changes or issues since the previous SAR are addressed in the following summaries.

Consent Decree Penalty Letter from EPA and DOJ (Department of Justice)

On May 8, 2020 Enbridge received a Demand for Payment of the second and third set of Stipulated Penalties pursuant to Paragraphs 164.e, 167 and 168 for violations of the Consent Decree. The letter is public record. The second Stipulated Penalty, in the amount of $3,697,150 USD, was remitted to the federal government on June 5, 2020. The third Stipulated Penalty, in the amount of $3,075,000 USD, was remitted to the federal government on August 27, 2020.

Implementation of Fifth Modification of the Consent Decree for Geometric and Intersecting or Interacting Features

The Fifth Modification of the Consent Decree was approved on August 12, 2020. Enbridge is applying the Fifth Modification processes for geometric and intersecting or interacting features, specifically the analysis process including Semi-Quantitative (SQuAD) and Quantitative analysis (QuAD) per Appendix G and H to identify features requiring excavation and to set pressure restrictions for these features.

Line 4 Cass Lake Discharge – MOP Discrepancy

Enbridge discovered a discrepancy between the MOP Verification Project ("Project") MOP value and the Consent Decree Established MOP on Line 4 at the Cass Lake discharge. The Project MOP considers many factors including CD Established MOP, pipe properties, and hydrotest records. A CD Established MOP was not provided at the discharge Milepost because the exact location was not confirmed at the time the CD Established MOPs were published. The discrepancy was discovered as a result of the work done on the Project. Enbridge confirmed that there are no FREs at this location.

Established MOP Modification Discussions

In 2015, Enbridge began an MOP Verification Project to verify the accuracy of information used in determining the MOP values previously established by the company, including the MOP values incorporated into the Consent Decree through Paragraph 10.s of the Consent Decree. As a result of its MOP Validation Project, Enbridge determined that a number of MOP values on the Lakehead Pipelines required updating. If revised information is considered, MOP values at a number of locations on the Lakehead System would be different than the values established pursuant to Paragraph 10.s of the Consent Decree. If features are identified at these locations, there is the possibility that if the corrected MOP is considered, the features may no longer meet excavation criteria under the CD.

In this reporting period, Enbridge, the ITP and EPA/DOJ are discussing a modification to the MOP values incorporated into the CD through Paragraph 10.s to correct the values based on the outcomes from the MOP Validation Project. Discussions are ongoing.

145. [Non-Compliance]

There were no potential non-compliances identified during the SAR7 reporting period; see also **Table IX-7**. As noted in prior sections, Enbridge, the ITP and EPA/DOJ have different interpretations regarding how to implement certain sections of the CD. Discussions are ongoing in a number of these areas.

146. [Discharges from a Lakehead System Pipeline]

Table IX-8 in Appendix 1 identifies no discharge from a Lakehead System Pipeline of one or more barrels of oil that occurred during the reporting period for this SAR. There were no 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 SAR reporting period. No such reports are needed as of this reporting period and are therefore not provided in a separate Appendix.

147. [Update on Discharges from a Lakehead System Pipeline reported in SAR6, May 2020]

There was one discharge from a Lakehead System Pipeline reported in SAR6. **Table IX-9** in Appendix 1 provide updates on the information reported in SAR6 for this discharge.

148. [Copies of all Post Incident Reports in SAR7]

There were no discharges of one or more barrels of oil or any that reached a waterbody that occurred during the reporting period for this SAR.

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 [redacted],

FOR DEFENDANTS:

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

[redacted] Executive Vice President and President,

Appendix 1 SAR7 Sections A-J and IX Tables

Reporting Period: May 23, 2020 to November 22, 2020

Introduction

The following 3 pages are Table Intro-1: Implemented Requirements per P. 203(i).

Introduction

Table Intro-1: Implemented Requirements per P. 203(i)			
CD Section and Paragraph	**Short description**	**Reported in**	**Enbridge status**
Section A P. 21	No operation of original US Line 6B	SAR1	Complete
Section B P. 23	Line 10 evaluation	SAR1-SAR4	Complete
Section D ILI Stipulation	Stipulation and Agreement Regarding Assessment and Payment of Stipulated Penalties Relating to Timeliness of Certain In-Line Inspection	SAR2-SAR7	Complete
Section D P. 46	Completion of Alternate Plans AP01, AP02, AP03, AP04	AP01 – SAR2 AP02 – SAR2 AP03 – SAR7 AP06 – SAR6	Complete
Section E P. 69.a; 69.b; 69.c	Biota Investigation Work Plan, report, and implementation	SAR1-SAR4	Complete
Section E P. 70.a; 70.b	Line 5 ILI corrosion, circumferential crack, and geometric features	SAR1	Complete
Section E P. 71.a; 71.b	Line 5 ILI axially-aligned crack features or hydrotest	SAR1	Complete
Section E P. 72.a; 72.b	If cracks identified pursuant to P. 70, investigate and report	SAR1	Complete
Section F P. 77.a-c	Updated OneSource within 365 days of CD Effective Date per requirements	SAR1	Complete
Section G P. 79.a-c; 80.a-d	Assessment of Alternative Leak Detection Technologies and report	SAR1	Complete
Section G P. 81-83	Report on Feasibility of Installing External Leak Detection System at the Straits of Mackinac	SAR1-SAR2	Complete

Table Intro-1: Implemented Requirements per P. 203(i)			
CD Section and Paragraph	**Short description**	**Reported in**	**Enbridge status**
Section G P. 101	Transient-State Sensitivity Analysis	SAR1	Complete
Section G P. 102.a-d, 103, 103.c, 103.e-f, 105, 106, 107, 109, 109.a-c	These paragraphs are all designated complete in the Power BI Metrics	Keeping this row as a placeholder for Vienna's comments	Delete this row after RA reviews
Section G P. 103	"24-hour" Alarm within 270 days of Effective Date	SAR2	Complete
Section G P. 103.e-f	"24-hour" Alarm testing and results	SAR5	Complete
Section H P. 115.b(1), 115.b(2), 115.b(3)	Cass Lake, Des Plaines, and Wisconsin River Agreed Exercises	SAR1-SAR6	Complete
Section H P. 115.d	Invitations to the Agreed Exercises no later than 10 months prior to the Exercises	SAR5	Complete
Section H P. 117.b(1)-(4)	Control Point (CP) details	SAR6	Complete
Section H P. 117.c	Straits of Mackinac CPs	SAR3	Complete
Section H P. 117.d and 117.e	CPs for the Agreed Exercises no later than 6 months prior to the Exercise and in the format required by the CD	SAR5	Complete
Section H P. 118.a-e	Review of Response Times report and distribution EPA, Sub-Area Committees, USCG, PHMSA, and Enbridge OSROs	SAR6 and SAR7	Complete
Section H P. 119.e	Redacted Lakehead System Integrated Contingency Plans (ICPs) and Straits of Mackinac Tactical Response Plan to Area and Sub-Area Committees	SAR1	Complete

Table Intro-1: Implemented Requirements per P. 203(i)			
CD Section and Paragraph	**Short description**	**Reported in**	**Enbridge status**
Section H P. 119.f	Unredacted electronic copies of the Lakehead ICPs	SAR1	Complete
Section H P. 119.g	Lakehead System map of prepositioned emergency response equipment and complete inventory to EPA, Area Committees, and Sub-Area Committees	SAR1	Complete
Section I P. 122-124	New Remotely Controlled Valves	SAR7	Complete
Section J P. 125	Retain ITP	SAR1	Complete
Section J P. 127.a-e	ITP candidates and eligibility terms	SAR1	Complete
Section J P. 129	EPA approves ITP	SAR1	Complete
Section J P. 131	Enbridge provides agreement to the ITP	SAR1	Complete
Section J P. 132.a	Initial Planning Meeting with Region 5 in Chicago	SAR1	Complete
Section J P. 133.b	Enbridge provides response to ITP's Verification Report	SAR4	Complete

Section A

There are no tables associated with Section A.

Section B

The following 7 pages are Table B-1: Permits/Approvals Required for Line 3 Replacement Project (U.S.).

Section B

Table B-1: Permits/Approvals Required for Line 3 Replacement Project (U.S.)			
Unit of Government	**Type of Application**	**Reason Required**	**Permit Status**
U.S. Army Corps of Engineers (“USACE”) – St. Paul District	Section 404/10 Individual Permit	Authorizes discharge of dredged and fill material into waters of the United States, including wetlands, and crossing of navigable waters of the United States; USACE has engaged Tribes through its regulatory process	MN: Received WI: Received
	Section 408 Authorization	Authorizes crossing of USACE civil works projects	Received
State Historic Preservation Office (“SHPO”)	National Historic Preservation Act (“NHPA”) Section 106 Clearance	Ensures adequate consideration of impacts to significant cultural resources but especially National Register of Historic Places (“NRHP”)-eligible within the lead federal agency Area of Potential Effect (“APE”). SHPOs and Tribal Historic Preservation Offices are engaged through the USACE Section 404/10 process	MN: Consultation Complete ND: Consultation Complete WI: Consultation Complete
U.S. Fish & Wildlife Service (“USFWS”)	Section 7 Endangered Species Act (“ESA”) Consultation (federal threatened or endangered species)	Establishes conservation measures and authorizes, as needed, take of ESA-listed species; the USFWS is engaged through the USACE Section 10/404 process	MN: Consultations Complete ND: Consultation Complete WI: Consultation Complete
	Bald Eagle Nest Disturbance Permit	Allows for disturbance of a known bald eagle nest in proximity to construction activities	ND: Permit Received MN: Permit Received

Table B-1: Permits/Approvals Required for Line 3 Replacement Project (U.S.)			
Unit of Government	**Type of Application**	**Reason Required**	**Permit Status**
Bureau of Indian Affairs ("BIA")	Grant of Right-of - Way	Enbridge applied for easement approval to cross the Fond du Lac Reservation along the routing authorized by the MPUC's Route Permit order	Easement granted May 1, 2020[1]
Fond du Lac Band of Lake Superior Chippewa ("FdL")	Section 401 Water Quality Certification ("WQC")	Section 401 WQC required to issue the USACE Section 404/10 Permit	Received
	Standard Wetland Activity Permit	Authorizes impacts to wetlands and waterbodies within the external boundaries of the Reservation	Received
	Land Use Permit	Authorizes permitted uses in zoning districts within the Reservation	Received
Minnesota Public Utilities Commission ("MPUC")	Certificate of Need	Determines need for the pipeline, including questions of size, type and timing	Previously issued, then deemed ineffective pending completion of the remand process to update EIS to include spill analysis required by Minnesota Court of Appeals' June 3, 2019 decision. Following completion of spill modeling, the MPUC deemed the second revised EIS adequate and restored the Certificate of Need by vote on Feb. 3, 2020 and by order issued on May 1, 2020. Construction authorization issued Nov. 24, 2020

Table B-1: Permits/Approvals Required for Line 3 Replacement Project (U.S.)			
Unit of Government	**Type of Application**	**Reason Required**	**Permit Status**
Minnesota Public Utilities Commission ("MPUC")	Route Permit	Authorizes construction of the pipeline along a specific route, subject to certain conditions	Previously issued, then deemed ineffective pending completion of the remand process to update the EIS to include spill analysis required by Minnesota Court of Appeals' June 3, 2019 decision. Following completion of spill modeling, the MPUC deemed the second revised EIS adequate and restored the Route Permit by vote on Feb. 3, 2020 and by order issued on May 1, 2020. Construction authorization issued Nov. 24, 2020
Minnesota Department of Natural Resources ("MDNR")	License to Cross Public Waters	50-year license that allows for crossing of public waters with proposed utility	Received
	Work in Public Waters Permit	Authorizes in-water activities in public waters located on private lands	Received
	License to Cross Public Lands	50-year license that allows for crossing of public lands with proposed utility	Received
	Short-term Leases	Authorizes activities such as construction dewatering, water appropriation, and discharge on MDNR-managed lands	Received
	Access Roads Leases	Authorizes use of MDNR- managed access roads during construction and/or operation	Received
	Endangered Species Permit	Outlines plans for avoidance, minimization, and mitigation of take of state-listed flora species and authorizes take of individuals	Received

Table B-1: Permits/Approvals Required for Line 3 Replacement Project (U.S.)			
Unit of Government	**Type of Application**	**Reason Required**	**Permit Status**
Minnesota Department of Natural Resources ("MDNR")	Gully 30 Calcareous Fen Management Plan ("FMP") Authorization	Outlines the site-specific construction, restoration, and monitoring requirements for this wetland crossing	Received
	Individual Water Appropriation Permit for Construction Dewatering	Authorizes withdrawal of groundwater associated with dewatering of trench and excavations	Received
	Individual Water Appropriation Permit for HDD/Hydrostatic Testing	Authorizes withdrawal and use of water from surf ace sources to support horizontal directional drills ("HDDs"), hydrostatic testing, and dust suppression	Received
	Individual Water Appropriation Permit for Dust Suppression	Authorizes withdrawal and use of water from sources to support fugitive dust control	Received
	Individual Water Appropriation Permit for Construction Dewatering at Gully 30 Calcareous Fen	Authorizes withdrawal of groundwater associated with dewatering of excavations at the Gully 30 Calcareous Fen in accordance with the FMP	Received
Minnesota Pollution Control Agency ("MPCA")	Section 401 WQC and Antidegradation Assessment	Section 401 WQC required to issue the USACE Section 404/10 Permit	Received
	Clearbrook Terminal Air Quality Permit – Capped Emissions Permit	Authorizes construction and operation at the modified Clearbrook Terminal	Received

Table B-1: Permits/Approvals Required for Line 3 Replacement Project (U.S.)			
Unit of Government	**Type of Application**	**Reason Required**	**Permit Status**
Minnesota Pollution Control Agency ("MPCA")	National Pollutant Discharge Elimination System ("NPDES") Industrial Hydrostatic Discharge Permit and Antidegradation Analysis	Authorizes discharge of water from hydrostatic testing activities	Received
	NPDES Construction Stormwater General Permit	Authorizes ground disturbance with approved protection measures to manage soil erosion and stormwater discharge on construction site; and removal of water that may accumulate in pipeline trench	Received
Minnesota Department of Agriculture ("MDA")	Agricultural Protection Plan ("APP")	Establishes measures for agricultural protection	Approved by MDA
Minnesota Department of Transportation ("MnDOT")	Road Crossing Permits	Authorizes crossings of state jurisdictional roadways	Received
	Temporary access/entrance	Authorizes access to private lands during construction from state land	Received
Red Lake, Two Rivers, and Middle-Snake Watershed Districts	Watershed District Permits	Authorizes crossing of legal drains and ditches within watershed	Received
Mississippi Headwaters Board	Compatibility Evaluation	Submittal ensures project crossings align with Minnesota Statutes 116C.57 subd.2c	Consultation Complete

Table B-1: Permits/Approvals Required for Line 3 Replacement Project (U.S.)			
Unit of Government	**Type of Application**	**Reason Required**	**Permit Status**
Minnesota Department of Drinking Water Supply Management Areas ("DWSMAs")	Notification of crossing of DWSMAs	To ensure appropriate protective measures are implemented	Consultation Complete
North Dakota State Water Commission ("NDSWC")	Sovereign Lands Permit	Authorizes crossing of state Sovereign Lands and navigable waters	Received
North Dakota Department of Health ("NDDH")	Section 401 WQC	Section 401 WQC required to issue the USACE Section 404/10 Permit	Received
	Construction Stormwater General Permit	Coverage under General Permit NDR10-0000 authorizes ground disturbance with approved protection measures to manage soil erosion and stormwater discharge on construction site	Received
	Temporary Dewatering / Hydrostatic Discharge Permit	Coverage under General Permit NDG-0700000 authorizes for temporary dewatering and hydrostatic test discharge activities	Received
Pembina County	Pembina County Floodplain Permit	Authorizes crossing of Pembina County floodplains	Received
North Dakota Game and Fish ("NDGF")	Duncklee Wildlife Management Area ("WMA") Consultation	Consult with NDGF to identify special seeding or restoration measures on WMA	Consultations Complete

Table B-1: Permits/Approvals Required for Line 3 Replacement Project (U.S.)			
Unit of Government	**Type of Application**	**Reason Required**	**Permit Status**
Wisconsin Department of Natural Resources ("WDNR")	Chapter 30 Wetland Individual Permit / NR 103 Wetland Permit / WQC	Authorizes impacts to wetlands and waterbodies; Section 401 WQC required to issue the USACE Section 404/10 Permit	Received
	Protected Species Consultation and Incidental Take Permit	Outlines plans for avoidance, minimization, and mitigation of take of state-listed flora and fauna species and authorizes take of individual flora species	Received
	Superior Terminal Air Permit	Authorizes construction and operation at the modified Superior Terminal	Received
Wisconsin Coastal Management Program ("WCMP")	Consistency Review	Authorizes activities within the Coastal Management Zone	Received
City of Superior	Land Disturbing Permit – Pipeline and Superior Terminal	Authorizes ground disturbance with approved protection measures to manage soil erosion and stormwater discharge on construction site	Received
City of Superior	Post- Construction Stormwater Management – Pipeline	To establish long-term, post construction runoff management requirements	Received

TABLE NOTE:

[1] This Grant of a Right-of-Way certificate extends and modifies an existing easement for Enbridge Energy pipeline numbers 1, 2, 3, 4, and 67, and Southern Lights Line 13, as well as the repair of Line 4 within the exterior boundaries of the Fond du Lac Reservation in Carlton and St. Louis Counties, Minnesota. Enbridge submitted cultural resources survey data, valuation appraisals, and allotment easement consents to BIA in support of the application.

The following 1 page is Table B-2: Line 3 Construction Milestone Schedule.

Table B-2: Line 3 Construction Milestone Schedule		
Line 3 Milestone	**Status**	**Notes**
Mainline Design Reports	Completed before Q3, 2015	
Facilities Design	Completed Q1 2017	Design was updated to account for route modifications, changes to external codes and regulations, etc.
Procurement for major items – pipe, valves, transformers, etc.	Complete	
Line 3 Construction – Segment 18 Wisconsin	Completed Q1 2018	
Segment 18 Tie-in	May 25, 2018	Commissioning of pipe segment completed May 25, 2018.
Superior Terminal Construction	Substantially complete	
Execution of Mainline and Facilities Construction Contracts	Complete	
Line 3 Construction Start – North Dakota	August 2020	Complete October 2020 Note that a segment of Line 3 near the U.S.-Canada border in North Dakota was replaced prior to 2020.
Line 3 Construction Start – Minnesota	Dec. 1, 2020	In receipt of all authorizations for construction
Line 3 Construction Complete	TBD	Projected 2021

The following 1 page is Table B-3: P. 22.d(3) Original US Line 3 Biocide Treatments.

Table B-3: P. 22.d(3) Original US Line 3 Biocide Treatments		
Segment	**Type of Tool Run**	**Completion Date (MM/DD/YYYY)**
Gretna to Clearbrook	Biocide treatment	06/20/2020
Clearbrook to Superior	Biocide Treatment	06/22/2020
Gretna to Clearbrook	Biocide Treatment	08/27/2020
Clearbrook to Superior	Biocide Treatment	09/03/2020
Gretna to Clearbrook	Biocide Treatment	11/03/2020
Clearbrook to Superior	Biocide treatment	11/06/2020

TABLE NOTE:

All Original US Line 3 Biocide Treatments to date meet the requirements set forth in Subparagraph 22.d.(3) of the Consent Decree

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 10.m

Table D-1: P. 28.a-b ILI Runs Completed During this Reporting Period						
Tool Run ID	**Line**	**Segment**	**Tool**	**Pull Date**	**Threat Monitored**	**Required Completion Date**
4507	02	[redacted]	Proton	7/22/2020	Crack	9/21/2020
10008	03		MFL4	6/1/2020	Geometry	6/2/2020
10001	03		DUO CD	6/15/2020	Crack	7/20/2020
6486	04		DuDi UCM	7/30/2020	Corrosion	2/27/2023
6486	04		DuDi UCM	7/30/2020	Crack	8/27/2020
10075 [1]	05		MFL4	8/24/2020	Corrosion	1/13/2021
10075 [1]	05		MFL4	8/24/2020	Geometry	1/13/2021
6593	05		CD+	11/11/2020	Crack	4/20/2022
10076 [1]	05		MFL4	7/1/2020	Corrosion	1/19/2021
10076 [1]	05		MFL4	7/1/2020	Geometry	1/19/2021
6578	06A		GeoPig	10/22/2020	Geometry	3/9/2022
6443	14		MFL4	6/19/2020	Corrosion	1/27/2021
6443	14		MFL4	6/19/2020	Geometry	1/6/2021
6498	14		MFL4	11/2/2020	Corrosion	1/15/2021
6498	14		MFL4	11/2/2020	Geometry	1/15/2021
6553	14		Eclipse	11/5/2020	Crack	1/19/2021
6555	65		CD+	11/20/2020	Crack	4/6/2021

TABLE NOTE:

[1] Corrosion and Geometry inspections were completed on the L5 WNO-WMA and L5 ENO-EMA segments following the discovery of disturbances/damage at EAP-9 and EP-17-1. Such inspections were completed in advance of the planned inspections on these segments in order to lift the Temporary Restraining Order (TRO) issued by the Michigan Circuit Court. As a result, Tool Run ID 10076 was added in advance of Tool Run ID 6667 and Tool Run ID 10075 was added in advance of Tool Run ID 6694.

Tool Run ID 6667 was replaced by Tool Run ID 10240 to meet the annual inspection interval requirements driven from the completion date of Tool Run ID 10076. Tool Run ID 6694 was replaced by Tool Run ID 10241 to meet the annual inspection interval requirements driven from the completion date of Tool Run ID 10075. Both Tool Run ID 10240 and 10241 are reported in Table D-3.

The following 1 page is Table D-2: P. 28.c Incomplete or Invalid ILIs and Rerun Dates.

Table D-2: P. 28.c Incomplete or Invalid ILIs and Rerun Dates								
Tool Run ID	**Line**	**Segment**	**Tool**	**Inspection Deadline**	**Pull Date**	**Date of DQA Notification**	**Rerun Tool Run ID**	**Rerun Date**
N/A[1]								

TABLE NOTES:

[1]There are no incomplete or invalid ILIs to report in this SAR period

The following 2 pages are Table D-3: P. 29 12-Month Lakehead ILI Schedule (May 23, 2020 – May 22, 2021).

Table D-3: P. 29 12-Month Lakehead ILI Schedule (November 23, 2020 – November 22, 2021)					
Run ID	**Line**	**Segment**	**Tool**	**Threat Monitored**	**Required Completion Date[1]**
10228	03	[redacted]	UCMp	Crack	3/23/2021[3]
10229	03		MFL4	Corrosion	5/7/2021[3]
10229	03		MFL4	Geometry	6/1/2021[3]
10230	03		DUO CD	Crack	6/15/2021[3]
10231	03		MFL4	Corrosion	5/24/2021[3]
10231	03		MFL4	Geometry	5/24/2021[3]
6729	04		MFL DuDi	Corrosion	2/5/2021
6674	04		DuDi UCM	Corrosion	2/5/2021
6738	04		MFL DuDi	Corrosion	2/6/2023
6679	04		DuDi UCM	Corrosion	12/7/2021
6679	04		DuDi UCM	Crack	9/21/2021
6736	04		Deformation	Geometry	4/6/2021
6737	04		MFL DuDi	Corrosion	3/29/2021
6739	04		Deformation	Geometry	4/5/2021
6740	04		MFL DuDi	Corrosion	5/5/2021
6693	05		UCc	Crack	2/4/2021
10241	05		MFL4	Corrosion	8/24/2021
10241	05		MFL4	Geometry	8/24/2021
6743	05		GEMINI	Corrosion	4/11/2022
6743	05		GEMINI	Geometry	4/11/2022
6666	05		UCc	Crack	2/8/2021
10240	05		MFL4	Corrosion	7/1/2021
10240	05		MFL4	Geometry	7/1/2021
6662	06A		UMP	Corrosion	8/30/2021
6668	10		GEMINI	Corrosion	6/4/2021
6668	10		GEMINI	Geometry	6/4/2021
6691	10		UMP	Corrosion	6/28/2021
6692	10		MFL4	Corrosion	7/12/2021
6692	10		MFL4	Geometry	5/17/2021
6728	10		USWM	Corrosion	5/14/2021
6719	10		MFL4	Corrosion	5/14/2021
6718	10		UCh	Crack	5/14/2021
6719	10		MFL4	Geometry	5/14/2021

Table D-3: P. 29 12-Month Lakehead ILI Schedule (November 23, 2020 – November 22, 2021)					
Run ID	**Line**	**Segment**	**Tool**	**Threat Monitored**	**Required Completion Date[1]**
6742	14	[redacted]	Eclipse	Crack	7/26/2021
6725	62		CD+	Crack	12/31/2021[2]
6735	62		GEMINI	Corrosion	12/31/2021[2]
6735	62		GEMINI	Geometry	12/31/2021[2]
6744	65		GEMINI	Corrosion	5/3/2021
6744	65		GEMINI	Geometry	5/3/2021

TABLE NOTE:

[1] ILI tools will be scheduled/run prior to the Required Completion Date. The Required Completion Dates comply with all applicable laws and regulations in addition to the Consent Decree requirements and requirements found in the "Stipulation and Agreement Regarding Assessment and Payment of Stipulated Penalties Relating to Timeliness of Certain In-Line Inspection" filed with the Court on May 2, 2018

[2] Dependent upon actual ISD of Line 62, which is currently idle

[3] These L3 ILI runs are tentatively scheduled because an ILI is not required in the final year of service

The following 1 page is Table D-4: P. 30 Changes to Previous 12-Month ILI Schedule (November 23, 2019 to November 22, 2020).

Table D-4: P. 30 Changes to Previous 12-Month ILI Schedule (May 23, 2020 to May 22, 2021)							
Original Run ID	**Revised Run ID**	**Line**	**Segment Name**	**Tool**	**Threat Monitored**	**Required Completion Date**	**Schedule Revision Comments**
10230	N/A	03	[redacted]	DUO CD	Crack	6/15/2021	New Planned Inspection based on the revised L3 US In-Service Date[1]
10231	N/A	03		MFL4	Corrosion	5/24/2021	
10231	N/A	03		MFL4	Geometry	5/24/2021	
10228	N/A	03		UCMp	Crack	3/23/2021	
10229	N/A	03		MFL4	Corrosion	5/7/2021	
10229	N/A	03		MFL4	Geometry	6/1/2021	
10076	N/A	05		MFL4	Corrosion	1/19/2021	As indicated in Paragraph 30, Tool Run ID 10076 was added in advance of Tool Run ID 6667 and Tool Run ID 10075 was added in advance of Tool Run ID 6694. Tool Run ID 6667 was replaced by Tool Run ID 10240 to meet the annual inspection interval requirements driven from the completion date of Tool Run ID 10076. Tool Run ID 6694 was replaced by Tool Run ID 10241 to meet the annual inspection interval requirements driven from the completion date of Tool Run ID 10075. Both Tool Run ID 10240 and 10241 are reported in Table D-3
10076	N/A	05		MFL4	Geometry	1/19/2021	
10075	N/A	05		MFL4	Corrosion	1/13/2021	
10075	N/A	05		MFL4	Geometry	1/13/2021	
6667	10240	05		MFL4	Corrosion	7/1/2021	
6667	10240	05		MFL4	Geometry	7/1/2021	
6694	10241	05		MFL4	Corrosion	8/24/2021	
6694	10241	05		MFL4	Geometry	8/24/2021	

TABLE NOTE:

[1] These L3 ILI runs are tentatively scheduled because an ILI is not required in the final year of service

The following 1 page is Table D-5: P. 31 Incomplete or Invalid ILIs and Rerun Dates.

Table D-5: P. 31 Incomplete or Invalid ILIs and Rerun Dates								
Tool Run ID	**Line**	**Segment**	**Tool**	**Inspection Deadline**	**Pull Date**	**Date of DQA Notification**	**Rerun Tool Run ID**	**Rerun Date**
N/A[1]								

TABLE NOTES:

[1]There are no incomplete or invalid ILIs to report in this SAR period

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[1]							
Tool Run ID	**Line**	**Segment**	**Tool**	**Inspection Deadline**	**Pull Date**	**ILI Tool Run Accepted?**	**Further Action Required?**
6504	67	[redacted]	GEMINI	6/3/2020	5/14/2020	Yes	No

TABLE NOTE:

[1] Table includes ILIs that occurred in SAR6. The Data Quality Review and ILI assessment for these ILIs occurred in SAR7

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	**Line**	**Segment**	**Tool**	**Report Type**	**Report Due Date**	**Report Received Date**	**Report Received On Time?**
4506	02	[redacted]	Proton	Crack	9/4/2020	8/28/2020	Yes
4507	02		Proton	Crack	11/19/2020	11/19/2020	Yes
10008	03		MFL4	Geometry	8/5/2020	8/5/2020	Yes
6581	03		UCMp	Corrosion	6/22/2020	6/22/2020	Yes
6581	03		UCMp	Crack	7/21/2020	7/21/2020	Yes
6606	03		MFL4	Corrosion	8/5/2020	8/5/2020	Yes
10001	03		DUO CD	Crack	10/13/2020	10/13/2020	Yes
10052	03		MFL4	Corrosion	8/20/2020	8/20/2020	Yes
10052	03		MFL4	Geometry	8/20/2020	8/20/2020	Yes
6582	04		MFL DuDi	Corrosion	6/9/2020	6/9/2020	Yes
6486	04		DuDi UCM	Corrosion	10/28/2020	10/28/2020	Yes
6607	04		MFL DuDi	Corrosion	5/26/2020	5/26/2020	Yes
6539	04		MFL4	Corrosion	5/27/2020	5/27/2020	Yes
10075	05		MFL4	Corrosion	11/23/2020	10/8/2020	Yes
10075	05		MFL4	Geometry	11/23/2020	10/8/2020	Yes
6563	05		UCc	Crack	6/4/2020	6/4/2020	Yes
6579	05		GEMINI	Corrosion	6/2/2020	6/2/2020	Yes
6579	05		GEMINI	Geometry	6/2/2020	6/2/2020	Yes
10076	05		MFL4	Corrosion	9/29/2020	8/28/2020	Yes
10076	05		MFL4	Geometry	9/29/2020	8/28/2020	Yes
6560	05		UCc	Crack	6/8/2020	6/8/2020	Yes
6449	10		Eclipse	Crack	9/8/2020	9/8/2020	Yes
6491	10		Eclipse	Crack	9/9/2020	9/9/2020	Yes
6443	14		MFL4	Corrosion	9/17/2020	9/17/2020	Yes
6443	14		MFL4	Geometry	9/17/2020	9/17/2020	Yes
6503	67		UC	Crack	9/18/2020	9/18/2020	Yes
6504	67		GEMINI	Corrosion	8/12/2020	8/12/2020	Yes
6504	67		GEMINI	Geometry	8/12/2020	8/12/2020	Yes
6416	78		UC	Crack	8/19/2020	8/19/2020	Yes

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**	**Date Priority Notification Reviewed (Valid PN)**	**Date of Discovery/ Date Features Added to Dig List**	**Pres-sure Restric-tion Requir-ed?**	**Date Pressure Restrict-ion Imposed[1]**	**Repair/ Mitigation Deadline**	**Date of Repair/ Mitigation**
10001	03	[redacted]	DuoCD	106130	8/11/2020	8/13/2020	8/17/2020	Yes	N/A[1]	9/17/2020	8/18/2020

TABLE NOTE:

[1] The PPR Removal Date is the same as the scheduled PPR Imposition Date as the feature was repaired prior to the scheduled imposition of the PPR

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**	**Report Type**	**Date Preliminary Review Required**	**Date Preliminary Review Completed[1]**	**Review Complet-ed on Time?**	**Data Quality Concerns?**
4506	02	[redacted]	Proton	8/28/2020	Crack	9/28/2020	9/24/2020	Yes	Yes
10008	03		MFL4	8/5/2020	Geometry	9/4/2020	9/1/2020	Yes	Yes
6581	03		UCMp	6/22/2020	Corrosion	7/22/2020	7/16/2020	Yes	No
6581	03		UCMp	7/21/2020	Crack	8/20/2020	8/18/2020	Yes	Yes
6606	03		MFL4	8/5/2020	Corrosion	9/4/2020	9/3/2020	Yes	Yes
10001	03		DUO CD	10/13/2020	Crack	11/12/2020	11/10/2020	Yes	Yes
10052	03		MFL4	8/20/2020	Corrosion	9/21/2020	9/18/2020	Yes	No
10052	03		MFL4	8/20/2020	Geometry	9/21/2020	9/17/2020	Yes	Yes
6582	04		MFL DuDi	6/9/2020	Corrosion	7/9/2020	6/29/2020	Yes	No
6488	04		MFL DuDi	5/11/2020	Corrosion	6/10/2020	6/4/2020	Yes	No
6607	04		MFL DuDi	5/26/2020	Corrosion	6/25/2020	6/22/2020	Yes	Yes
6539	04		MFL4	5/27/2020	Corrosion	6/26/2020	6/16/2020	Yes	Yes
10075	05		MFL4	10/8/2020	Corrosion	11/9/2020	11/5/2020	Yes	No
10075	05		MFL4	10/8/2020	Geometry	11/9/2020	11/4/2020	Yes	No
6563	05		UCc	6/4/2020	Crack	7/6/2020	6/30/2020	Yes	Yes
6579	05		GEMINI	6/2/2020	Geometry	7/2/2020	6/23/2020	Yes	No
6579	05		GEMINI	6/2/2020	Corrosion	7/2/2020	6/29/2020	Yes	No
10076	05		MFL4	8/28/2020	Corrosion	9/28/2020	9/22/2020	Yes	No
10076	05		MFL4	8/28/2020	Geometry	9/28/2020	9/23/2020	Yes	No

Table D-10: P. 34.a Preliminary Review of Initial ILI Reports									
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Received Date**	**Report Type**	**Date Preliminary Review Required**	**Date Preliminary Review Completed[1]**	**Review Complet-ed on Time?**	**Data Quality Concerns?**
6560	05	[redacted]	UCc	6/8/2020	Crack	7/8/2020	6/30/2020	Yes	Yes
6449	10		Eclipse	9/8/2020	Crack	10/8/2020	10/5/2020	Yes	No
6491	10		Eclipse	9/9/2020	Crack	10/9/2020	10/5/2020	Yes	Yes
6443	14		MFL4	9/17/2020	Corrosion	10/19/2020	10/13/2020	Yes	No
6443	14		MFL4	9/17/2020	Geometry	10/19/2020	10/16/2020	Yes	No
6503	67		UC	9/18/2020	Crack	10/19/2020	10/13/2020	Yes	Yes
6504	67		GEMINI	8/12/2020	Geometry	9/11/2020	9/8/2020	Yes	Yes
6504	67		GEMINI	8/12/2020	Corrosion	9/11/2020	9/8/2020	Yes	Yes
6416	78		UC	8/19/2020	Crack	9/18/2020	9/15/2020	Yes	Yes
6418	78		CD+	5/15/2020	Crack	6/15/2020	6/15/2020	Yes	No

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**	**Date Preliminary Review of Initial ILI Report Required**	**Date Preliminary Review of Initial ILI Report Completed**	**Data Quality Concerns Identified and Resolved**
4506	02	[redacted]	Proton	Crack	8/28/2020	9/28/2020	9/24/2020	Yes
6606	03		MFL4	Corrosion	8/5/2020	9/4/2020	9/3/2020	Yes
10008	03		MFL4	Geometry	8/5/2020	9/4/2020	9/1/2020	Yes
10052	03		MFL4	Geometry	8/20/2020	9/21/2020	9/17/2020	Yes
10001	03		DUO CD	Crack	10/13/2020	11/12/2020	11/10/2020	Yes
6581	03		UCMp	Crack	7/21/2020	8/20/2020	8/18/2020	Yes
6607	04		MFL DuDi	Corrosion	5/26/2020	6/25/2020	6/22/2020	Yes
6539	04		MFL4	Corrosion	5/27/2020	6/26/2020	6/16/2020	Yes
6563	05		UCc	Crack	6/4/2020	7/6/2020	6/30/2020	Yes
6560	05		UCc	Crack	6/8/2020	7/8/2020	6/30/2020	Yes
6609[1]	05		GEMINI	Geometry	4/21/2020	5/21/2020	5/21/2020	Yes
6491	10		Eclipse	Crack	9/9/2020	10/9/2020	10/5/2020	Yes
6503	67		UC	Crack	9/18/2020	10/19/2020	10/13/2020	Yes
6504	67		GEMINI	Corrosion	8/12/2020	9/11/2020	9/8/2020	Yes
6504	67		GEMINI	Geometry	8/12/2020	9/11/2020	9/8/2020	Yes
6416	78		UC	Crack	8/19/2020	9/18/2020	9/15/2020	Yes

TABLE NOTE:

[1] The preliminary data quality review of this report was completed on 5/21/2020 during the SAR6 time period and was reported in SAR6. During the SAR7 time period a data quality issue was identified with this ILI report. Refer to P144 [Section D] Line 5 PE-IR FRE Data Quality Issue for further detail.

The following 2 pages are 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**	**Report Type**	**Deadline to Complete All ILI Data Quality Evaluations**	**Quality Evaluations Completed Within 180 Days?[1]**
4506	02	[redacted]	Proton	5/7/2020	Crack	11/3/2020	Yes
10008	03		MFL4	6/1/2020	Geometry	11/30/2020	Yes
6581	03		UCMp	3/23/2020	Corrosion	9/21/2020	Yes
6581	03		UCMp	3/23/2020	Crack	9/21/2020	Yes
6606	03		MFL4	5/7/2020	Corrosion	11/3/2020	Yes
6606	03		MFL4	5/7/2020	Corrosion (Issue 2)	11/3/2020	Yes
10001	03		DUO CD	6/15/2020	Crack (Issue 1)	12/14/2020	Yes
10001	03		DUO CD	6/15/2020	Crack (Issue 2)	12/14/2020	See Note 2
10052	03		MFL4	5/22/2020	Corrosion	11/18/2020	Yes
10052	03		MFL4	5/22/2020	Geometry	11/18/2020	Yes
6582	04		MFL DuDi	3/11/2020	Corrosion	9/8/2020	Yes
6488	04		MFL DuDi	2/11/2020	Corrosion	8/10/2020	Yes
6607	04		MFL DuDi	2/26/2020	Corrosion (Issue 1)	8/24/2020	Yes
6607	04		MFL DuDi	2/26/2020	Corrosion (Issue 2)	8/24/2020	See Note 3
6539	04		MFL4	2/27/2020	Corrosion	8/25/2020	Yes
10075	05		MFL4	8/24/2020	Corrosion	2/22/2021	Yes
10075	05		MFL4	8/24/2020	Geometry	2/22/2021	Yes
6563	05		UCc	2/5/2020	Crack	8/3/2020	Yes
6579	05		GEMINI	3/4/2020	Corrosion	8/31/2020	Yes
6579	05		GEMINI	3/4/2020	Geometry	8/31/2020	Yes
6609	05		GEMINI	1/22/2020	Geometry (Issue 2)	7/20/2020	Yes
10076	05		MFL4	7/1/2020	Corrosion	12/28/2020	Yes
10076	05		MFL4	7/1/2020	Geometry	12/28/2020	Yes
6560	05		UCc	2/7/2020	Crack	8/5/2020	Yes

Table D-12: P. 34.d Data Quality Evaluation Timelines							
Tool Run ID	**Line**	**Segment**	**Tool**	**Pull Date**	**Report Type**	**Deadline to Complete All ILI Data Quality Evaluations**	**Quality Evaluations Completed Within 180 Days?[1]**
6449	10	[redacted]	Eclipse	5/11/2020	Crack	11/9/2020	Yes
6491	10		Eclipse	5/12/2020	Crack	11/9/2020	Yes
6443	14		MFL4	6/19/2020	Corrosion	12/16/2020	Yes
6443	14		MFL4	6/19/2020	Geometry	12/16/2020	Yes
6503	67		UC	5/21/2020	Crack	11/17/2020	Yes
6504	67		GEMINI	5/14/2020	Corrosion	11/10/2020	Yes
6504	67		GEMINI	5/14/2020	Geometry	11/10/2020	Yes
6504	67		GEMINI	5/14/2020	Geometry (Issue 2)	11/10/2020	Yes
6416	78		UC	4/21/2020	Crack	10/19/2020	Yes
6418	78		CD+	1/16/2020	Crack	7/14/2020	Yes

TABLE NOTE:

[1] "FR" indicates that this information is outside the reporting period of this SAR and will be included in a future SAR

[2] An incorrect Defect Detection Capabilities sheet was listed in Issue 1 of the ILI report. An Issue 2 ILI report was received to correct the discrepancy. The program was approved based on the Issue 1 ILI report as feature related information was not affected. Data Quality Evaluations related to both Issue 1 and 2 ILI reports were completed within 180 Days of the ILI tool pull date.

[3] The ILI vendor used the incorrect previous ILI inspection for the back-to-back comparison instead of the most recent 2016 corrosion inspection. An Issue 2 ILI report was received to correct the discrepancy. The program was approved based on the Issue 1 ILI report as feature related information included in the ILI Report was not affected. Data Quality Evaluations related to both Issue 1 and 2 ILI reports were completed within 180 Days of the ILI tool pull date.

The following 2 pages are 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?**
4506	02	[redacted]	Proton	Crack	Yes	Yes	No
6581	03		UCMp	Corrosion	No	No	No
6581	03		UCMp	Crack	Yes	Yes	No
10008	03		MFL4	Geometry	No	Yes	No
6606	03		MFL4	Corrosion	No	No	No
6606	03		MFL4	Corrosion	No	No	No
10001	03		DUO CD	Crack	No	Yes	No
10052	03		MFL4	Corrosion	No	No	No
10052	03		MFL4	Geometry	No	Yes	No
6582	04		MFL DuDi	Corrosion	No	No	No
6488	04		MFL DuDi	Corrosion	No	Yes	No
6607	04		MFL DuDi	Corrosion	No	No	No
6607	04		MFL DuDi	Corrosion (Issue 2)	No	No	No
6539	04		MFL4	Corrosion	No	Yes	No
6563	05		UCc	Crack	No	No	No
10075	05		MFL4	Corrosion	No	No	No
10075	05		MFL4	Geometry	No	No	No
6579	05		GEMINI	Corrosion	No	No	No
6579	05		GEMINI	Geometry	No	Yes	No
6609	05		GEMINI	Geometry	No	Yes	No
6560	05		UCc	Crack	No	No	No
10076	05		MFL4	Corrosion	No	No	No
10076	05		MFL4	Geometry	No	No	No

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?**
6449	10	[redacted]	Eclipse	Crack	No	Yes	No
6491	10		Eclipse	Crack	No	Yes	No
6443	14		MFL4	Corrosion	No	No	No
6443	14		MFL4	Geometry	No	No	No
6503	67		UC	Crack	No	Yes	No
6504	67		GEMINI	Corrosion	No	Yes	No
6504	67		GEMINI	Geometry	No	Yes	No
6504	67		GEMINI	Geometry (Issue 2)	No	Yes	No
6416	78		UC	Crack	No	Yes	No
6418	78		CD+	Crack	No	No	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**	**Burst Pressure Calculation Date**	**Remaining Life Calculation Date**	**Other Features Identified Date**	**SQuAD and QuAD Completion date**	**Number of Features Identified**	**Date All Features Added to Dig List**	**Within 180 Days of Tool Pull Date?**	**Within 5 Days of Calculations?**
4506	L0002	[redacted]	PROTON	Crack	5/7/2020	9/24/2020	9/24/2020	9/24/2020	N/A[3]	4	9/24/2020	Yes	Yes
6581	L0003		UCMPUTWM	Corrosion	3/23/2020	7/16/2020	7/16/2020	7/16/2020	7/16/2020	1	7/16/2020	Yes	Yes
6606	L0003		MFL4MFL	Corrosion	5/7/2020	9/3/2020	9/3/2020	9/3/2020	9/1/2020	18	9/3/2020	Yes	Yes
10001	L0003		DUOCD	Crack	6/15/2020	11/10/2020	11/10/2020	11/10/2020	N/A[3]	4	11/10/2020	Yes	Yes
10052	L0003		MFL4MFL	Corrosion	5/22/2020	9/18/2020	9/18/2020	9/18/2020	9/17/2020	2	9/17/2020[1]	Yes	Yes
10052	L0003		MFL4CAL	Interacting	5/22/2020	9/17/2020	9/17/2020	9/17/2020	9/17/2020	1	9/17/2020	Yes	Yes
6488	L0004		MFLDUDI	Corrosion	2/11/2020	6/4/2020	6/4/2020	6/4/2020	N/A[4]	1	6/4/2020	Yes	Yes
6607	L0004		MFLDUDI	Corrosion	2/26/2020	6/22/2020	6/22/2020	6/22/2020	N/A[4]	32	6/22/2020	Yes	Yes
6579	L0005		GEMINICAL	Interacting	3/4/2020	6/23/2020	6/23/2020	6/23/2020	6/23/2020	1	6/23/2020	Yes	Yes
6609	L0005		GEMINICAL	Geometry	1/22/2020	5/21/2020	5/21/2020	5/21/2020	7/18/2020	1	5/25/2020[2]	Yes	Yes
6504	L0067		GEMINIMFL	Corrosion	5/14/2020	9/8/2020	9/8/2020	9/8/2020	N/A[4]	4	9/8/2020	Yes	Yes

TABLE NOTE:

[1] Assessment sheet shows it was uploaded on 9/17/2020 to eDig. But PI Listing Approval Confirmation email was sent on 9/18/2020, and OnePlan shows 9/18/2020

[2] Reported in SAR6 Paragraph 37. See SAR6 P. 144 for details regarding the Date All Features Added to Dig List

[3] SQuAD/QuAD not applicable to crack program

[4] No new, unrepaired interacting feature

The following 5 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	Seg-ment	Girth Weld	Tool Run ID	Date of Repair / Mitigation[1]	Crack Features	Corrosion Features	Axial Grooving Features	Interacting Features	Geometry Features
28391	L0002	[redacted]	9760	4506	11/5/2020	1	0	0	0	0
28392	L0002		13190	4506	11/6/2020	2	0	0	0	0
28393	L0002		62670	4506	FR	1	0	0	0	0
27867	L0002		60210	6367	7/24/2020	1	0	0	0	0
24805[2]	L0003		58670	3829	FR	0	1	0	0	0
28194	L0003		153620	6581	FR	0	1	0	0	0
28334	L0003		56760	6606	9/28/2020	0	1	0	0	0
28335	L0003		57050	6606	10/1/2020	0	1	0	0	0
28336	L0003		57690	6606	11/4/2020	0	1	0	0	0
28337	L0003		57700	6606	11/3/2020	0	2	0	0	0
28338	L0003		58690	6606	FR	0	1	0	0	0
28339	L0003		58940	6606	10/28/2020	0	1	0	0	0
28340	L0003		59780	6606	FR	0	1	0	0	0
28341	L0003		59790	6606	FR	0	1	0	0	0
28342	L0003		59810	6606	FR	0	1	0	0	0
28343	L0003		59830	6606	FR	0	1	0	0	0
28344	L0003		60030	6606	11/12/2020	0	1	0	0	0
28345	L0003		60190	6606	11/10/2020	0	1	0	0	0
28346	L0003		136280	6606	FR	0	1	0	0	0
28347	L0003		142250	6606	11/3/2020	0	1	0	0	0
28348	L0003		142340	6606	11/4/2020	0	1	0	0	0
28349	L0003		232320	6606	11/20/2020	0	1	0	0	0
28350	L0003		238870	6606	11/19/2020	0	1	0	0	0
28379	L0003		163170	10052	9/18/2020	0	0	0	1	0
28388	L0003		42040	10052	10/27/2020	0	1	0	0	0
28389	L0003		129850	10052	11/3/2020	0	1	0	0	0
28926	L0003		71850	10001	FR	1	0	0	0	0

Table D-15: P. 39.a-b FREs Repaired and Planned for Repair										
Dig ID	Line	Seg-ment	Girth Weld	Tool Run ID	Date of Repair / Mitigation[1]	Crack Features	Corrosion Features	Axial Grooving Features	Interacting Features	Geometry Features
28929	L0003	[redacted]	117440	10001	FR	1	0	0	0	0
28932	L0003		153080	10001	FR	1	0	0	0	0
28933	L0003		156430	10001	FR	1	0	0	0	0
26794	L0003		63870	6393	7/18/2020	1	0	0	0	0
26795	L0003		71070	6393	6/26/2020	1	0	0	0	0
26796	L0003		148910	6393	6/16/2020	1	0	0	0	0
26797	L0003		150860	6393	6/13/2020	1	0	0	0	0
26798	L0003		151090	6393	6/11/2020	2	0	0	0	0
26799	L0003		152170	6393	7/8/2020	1	0	0	0	0
26800	L0003		152330	6393	6/27/2020	1	0	0	0	0
26801	L0003		152460	6393	6/23/2020	1	0	0	0	0
26802	L0003		153550	6393	7/16/2020	1	0	0	0	0
26803	L0003		155980	6393	7/15/2020	1	0	0	0	0
26804	L0003		160430	6393	7/21/2020	1	0	0	0	0
26805	L0003		160810	6393	7/25/2020	1	0	0	0	0
26806	L0003		171730	6393	10/9/2020	1	0	0	0	0
27910	L0004		29830	6487	FR	0	1	0	0	0
27911	L0004		30950	6487	8/20/2020	0	3	0	0	0
27912	L0004		33090	6487	8/1/2020	0	1	0	0	0
27913	L0004		34440	6487	FR	0	1	0	0	0
27914	L0004		37340	6487	FR	0	4	0	0	0
27915	L0004		42920	6487	FR	0	2	0	0	0
27916	L0004		46160	6487	FR	0	1	0	0	0
28039	L0004		18910	6488	FR	0	1	0	0	0
28129	L0004		45510	6607	9/1/2020	0	1	0	0	0
28130	L0004		46130	6607	9/19/2020	0	1	0	0	0
28131	L0004		46360	6607	9/15/2020	0	1	0	0	0

Table D-15: P. 39.a-b FREs Repaired and Planned for Repair										
Dig ID	Line	Seg-ment	Girth Weld	Tool Run ID	Date of Repair / Mitigation[1]	Crack Features	Corrosion Features	Axial Grooving Features	Interacting Features	Geometry Features
28132	L0004	[redacted]	47670	6607	9/22/2020	0	1	0	0	0
28133	L0004		48450	6607	9/30/2020	0	1	0	0	0
28134	L0004		48510	6607	10/1/2020	0	1	0	0	0
28135	L0004		49560	6607	10/16/2020	0	1	0	0	0
28136	L0004		49600	6607	10/7/2020	0	1	0	0	0
28137	L0004		49640	6607	10/10/2020	0	1	0	0	0
28138	L0004		50230	6607	9/10/2020	0	1	0	0	0
28139	L0004		50260	6607	9/10/2020	0	1	0	0	0
28140	L0004		51010	6607	9/12/2020	0	1	0	0	0
28141	L0004		51120	6607	9/19/2020	0	1	0	0	0
28142	L0004		51450	6607	9/2/2020	0	1	0	0	0
28143	L0004		51510	6607	9/15/2020	0	1	0	0	0
28144	L0004		51530	6607	9/29/2020	0	1	0	0	0
28145	L0004		52450	6607	10/5/2020	0	1	0	0	0
28146	L0004		53250	6607	9/16/2020	0	1	0	0	0
28147	L0004		53300	6607	8/18/2020	0	1	0	0	0
28148	L0004		53820	6607	9/17/2020	0	1	0	0	0
28149	L0004		54110	6607	10/15/2020	0	1	0	0	0
28150	L0004		54640	6607	10/6/2020	0	2	0	0	0
28151	L0004		55270	6607	9/29/2020	0	2	0	0	0
28152	L0004		55520	6607	10/19/2020	0	1	0	0	0
28153	L0004		56370	6607	10/29/2020	0	2	0	0	0
28154	L0004		57170	6607	10/13/2020	0	1	0	0	0
28155	L0004		57190	6607	10/15/2020	0	1	0	0	0
28156	L0004		57200	6607	10/22/2020	0	1	0	0	0
28157	L0004		57210	6607	10/16/2020	0	1	0	0	0
27869	L0005		21	6636	6/1/2020	0	1	0	0	0

Table D-15: P. 39.a-b FREs Repaired and Planned for Repair										
Dig ID	**Line**	**Seg-ment**	**Girth Weld**	**Tool Run ID**	**Date of Repair / Mitigation[1]**	**Crack Features**	**Corrosion Features**	**Axial Grooving Features**	**Interacting Features**	**Geometry Features**
27069	L0005	[redacted]	105210	4537	6/2/2020	1	0	0	0	0
27071	L0005		161650	4537	6/13/2020	1	0	0	0	0
28161	L0005		56860	6579	6/24/2020	0	0	0	1	0
27917	L0005		142170	6609	6/24/2020	0	0	0	0	1
23941	L0006A		256490	4334	8/26/2020[3]	0	1	0	0	0
27307	L0006A		17600	4674	7/14/2020	0	1	0	0	0
27308	L0006A		62050	4674	7/9/2020	0	1	0	0	0
27309	L0006A		67480	4674	6/13/2020	0	1	0	0	0
27310	L0006A		95750	4674	7/27/2020	0	1	0	0	0
27311	L0006A		100340	4674	7/14/2020	0	1	0	0	0
27312	L0006A		108890	4674	7/8/2020	0	1	0	0	0
27313	L0006A		113560	4674	6/24/2020	0	1	0	0	0
27314	L0006A		163560	4674	7/20/2020	0	1	0	0	0
27315	L0006A		218990	4674	7/14/2020	0	1	0	0	0
27317	L0006A		252690	4674	6/19/2020	0	1	0	0	0
27318	L0006A		255180	4674	7/24/2020	0	1	0	0	0
27319	L0006A		265470	4674	5/30/2020	0	1	0	0	0
27320	L0006A		266950	4674	6/8/2020	0	1	0	0	0
27321	L0006A		267020	4674	6/11/2020	0	1	0	0	0
27322	L0006A		271950	4674	6/5/2020	0	1	0	0	0
27324	L0006A		287530	4674	6/20/2020	0	1	0	0	0
27325	L0006A		290110	4674	6/8/2020	0	1	0	0	0
27326	L0006A		290200	4674	6/10/2020	0	1	0	0	0
27328	L0006A		297890	4674	6/11/2020	0	1	0	0	0
27329	L0006A		298490	4674	5/28/2020	0	1	0	0	0
27330	L0006A		299670	4674	6/21/2020	0	1	0	0	0
27332	L0006A		301370	4674	7/7/2020	0	1	0	0	0

Table D-15: P. 39.a-b FREs Repaired and Planned for Repair										
Dig ID	**Line**	**Seg-ment**	**Girth Weld**	**Tool Run ID**	**Date of Repair / Mitigation[1]**	**Crack Features**	**Corrosion Features**	**Axial Grooving Features**	**Interacting Features**	**Geometry Features**
27333	L0006A	[redacted]	302440	4674	5/23/2020	0	1	0	0	0
27334	L0006A		319530	4674	6/21/2020	0	1	0	0	0
26864	L0006A		710	4544	5/28/2020	0	1	0	0	0
26867	L0006A		163060	4544	6/15/2020	0	1	0	0	0
26870	L0006A		186660	4544	7/25/2020	0	2	0	0	0
27264	L0006A		64280	4676	FR	1	0	0	0	0
27265	L0006A		65420	4676	FR	1	0	0	0	0
27266	L0006A		107770	4676	8/7/2020	1	0	0	0	0
27269	L0006A		168660	4676	6/3/2020	1	0	0	0	0
27270	L0006A		169690	4676	5/28/2020	1	0	0	0	0
27271	L0006A		169920	4676	6/6/2020	1	0	0	0	0
27272	L0006A		179400	4676	5/29/2020	1	0	0	0	0
27273	L0006A		194800	4676	6/12/2020	1	0	0	0	0
27274	L0006A		206970	4676	6/23/2020	1	0	0	0	0
27275	L0006A		222140	4676	7/10/2020	1	0	0	0	0
26627	L0061		73610	6546	N/A[4]	0	1	0	0	0
26628	L0061		90360	6546	N/A[4]	0	1	0	0	0
26629	L0061		250590	6546	N/A[4]	0	1	0	0	0
28360	L0067		53660	6504	FR	0	2	0	0	0
28361	L0067		53700	6504	FR	0	2	0	0	0
Total: 143						**35**	**105**	**0**	**2**	**1**

TABLE NOTE:

[1] "FR" indicates that this information is outside the reporting period of this SAR and will be included in a future SAR

[2] Dig Repair/Mitigation Deadline was requested to be extended, which was reported in SAR5

[3] The target feature was mitigated in the HDD project of Alternate Plan 3. The Tie-in Date was 08/26/2020.

[4] Digs were Cancelled on 09/28/2020 .

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**	**Analysis of Field Data/Statistical Analysis Date[1,2]**
6367	L0002	[redacted]	PROTON	UTCD&PHASED ARRAY	8/14/2020	9/9/2020
6393	L0003		DUOCD	PHASEDARRAY	10/28/2020	FR
10052	L0003		MFL4CAL	CALIPER	10/7/2020	10/26/2020
6636	L0005		MFL4MFL	MFL	6/29/2020	7/28/2020
6579	L0005		GEMINICAL	CALIPER	7/17/2020	8/14/2020
4537	L0005		UCX	UTCD	7/9/2020	8/10/2020
6609	L0005		GEMINICAL	CALIPER	7/23/2020	8/14/2020
4334	L0006A		GEMINIMFL	MFL (Issue 2)	6/11/2020	7/6/2020
4674	L0006A		USWM+	UTWM (Issue 2)	8/28/2020	9/4/2020
4544	L0006A		VECTRA	MFL	8/13/2020	9/4/2020

TABLE NOTE:

[1] Enbridge and the ITP and EPA are working towards a mutual interpretation of the timing for Paragraph 40. For the purposes of this SAR the Stantec trending date is used to be consistent with previous SAR reporting

[2] "FR" indicates that this information is outside the reporting period of this SAR and will be included in a future SAR.

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**	**Date Preliminary Review Completed**	**Data Quality Concerns?**	**Calculation Deadline (1)**	**Calculation Deadline (2)**	**Burst Pressure Calculation Date**	**Remaining Life Calculation Date**
4506	02	[redacted]	Proton	Crack	5/7/2020	9/24/2020	Yes	11/18/2020	10/29/2020	9/24/2020	9/24/2020
10008	03		MFL4	Geometry	6/1/2020	9/1/2020	Yes	10/26/2020	11/23/2020	9/1/2020	9/1/2020
6581	03		UCMp	Corrosion	3/23/2020	7/16/2020	No	9/9/2020	9/14/2020	7/16/2020	7/16/2020
6581	03		UCMp	Crack	3/23/2020	8/18/2020	Yes	10/9/2020	9/14/2020	8/18/2020	8/18/2020
6606	03		MFL4	Corrosion	5/7/2020	9/3/2020	Yes	10/26/2020	10/29/2020	9/3/2020	9/3/2020
10001	03		DUO CD	Crack	6/15/2020	11/10/2020	Yes	1/4/2021	12/7/2020	11/10/2020	11/10/2020
10052	03		MFL4	Corrosion	5/22/2020	9/18/2020	No	11/9/2020	11/13/2020	9/18/2020	9/18/2020
10052	03		MFL4	Geometry	5/22/2020	9/17/2020	Yes	11/9/2020	11/13/2020	9/17/2020	9/17/2020
6582	04		MFL DuDi	Corrosion	3/11/2020	6/29/2020	No	8/24/2020	9/2/2020	6/29/2020	6/29/2020
6488	04		MFL DuDi	Corrosion	2/11/2020	6/4/2020	No	7/30/2020	8/4/2020	6/4/2020	6/4/2020
6607	04		MFL DuDi	Corrosion	2/26/2020	6/22/2020	Yes	8/14/2020	8/19/2020	6/22/2020	6/22/2020
6539	04		MFL4	Corrosion	2/27/2020	6/16/2020	Yes	8/10/2020	8/20/2020	6/16/2020	6/16/2020
10075	05		MFL4	Corrosion	8/24/2020	11/5/2020	No	12/28/2020	2/16/2021	11/5/2020	11/5/2020
10075	05		MFL4	Geometry	8/24/2020	11/4/2020	No	12/28/2020	2/16/2021	11/4/2020	11/4/2020
6563	05		UCc	Crack	2/5/2020	6/30/2020	Yes	8/24/2020	7/29/2020	6/30/2020	6/30/2020
6579	05		GEMINI	Corrosion	3/4/2020	6/29/2020	No	8/24/2020	8/26/2020	6/29/2020	6/29/2020
6579	05		GEMINI	Geometry	3/4/2020	6/23/2020	No	8/18/2020	8/26/2020	6/23/2020	6/23/2020
10076	05		MFL4	Corrosion	7/1/2020	9/22/2020	No	11/17/2020	12/23/2020	9/22/2020	9/22/2020
10076	05		MFL4	Geometry	7/1/2020	9/23/2020	No	11/17/2020	12/23/2020	9/23/2020	9/23/2020

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**	**Date Preliminary Review Completed**	**Data Quality Concerns ?**	**Calculation Deadline (1)**	**Calculation Deadline (2)**	**Burst Pressure Calculation Date**	**Remaining Life Calculation Date**
6560	05	[redacted]	UCc	Crack	2/7/2020	6/30/2020	Yes	8/24/2020	7/31/2020	6/30/2020	6/30/2020
6449	10		Eclipse	Crack	5/11/2020	10/5/2020	No	11/30/2020	11/2/2020	10/5/2020	10/5/2020
6491	10		Eclipse	Crack	5/12/2020	10/5/2020	Yes	11/30/2020	11/3/2020	10/5/2020	10/5/2020
6443	14		MFL4	Corrosion	6/19/2020	10/13/2020	No	12/7/2020	12/11/2020	10/13/2020	10/13/2020
6443	14		MFL4	Geometry	6/19/2020	10/16/2020	No	12/7/2020	12/11/2020	10/16/2020	10/16/2020
6503	67		UC	Crack	5/21/2020	10/13/2020	Yes	12/7/2020	11/12/2020	10/13/2020	10/13/2020
6504	67		GEMINI	Corrosion	5/14/2020	9/8/2020	Yes	11/2/2020	11/5/2020	9/8/2020	9/8/2020
6504	67		GEMINI	Geometry	5/14/2020	9/8/2020	Yes	11/2/2020	11/5/2020	9/8/2020	9/8/2020
6416	78		UC	Crack	4/21/2020	9/15/2020	Yes	11/9/2020	10/13/2020	9/15/2020	9/15/2020
6418	78		CD+	Crack	1/16/2020	6/15/2020	No	8/7/2020	7/9/2020	6/15/2020	6/15/2020

The following 7 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**	**Repair / Mitigation Deadline**	**Date of Repair / Mitigation[1]**
28391	L0002	[redacted]	9760	4506	UTCD&P HASEDA RRAY	9/24/2020	9/24/2021	11/5/2020
28392	L0002		13190	4506	UTCD&P HASEDA RRAY	9/24/2020	9/24/2021	11/6/2020
28393	L0002		62670	4506	UTCD&P HASEDA RRAY	9/24/2020	9/24/2021	FR
27867	L0002		60210	6367	UTCD&P HASEDA RRAY	5/5/2020	11/2/2020	7/24/2020
24805	L0003		58670	3829	MFL	12/10/2018	4/17/2032[2]	FR
28194	L0003		153620	6581	UTWM	7/16/2020	1/12/2021	FR
28334	L0003		56760	6606	MFL	9/3/2020	3/2/2021	9/28/2020
28335	L0003		57050	6606	MFL	9/3/2020	3/2/2021	10/1/2020
28336	L0003		57690	6606	MFL	9/3/2020	3/2/2021	11/4/2020
28337	L0003		57700	6606	MFL	9/3/2020	3/2/2021	11/3/2020
28338	L0003		58690	6606	MFL	9/3/2020	3/2/2021	FR
28339	L0003		58940	6606	MFL	9/3/2020	3/2/2021	10/28/2020
28340	L0003		59780	6606	MFL	9/3/2020	3/2/2021	FR
28341	L0003		59790	6606	MFL	9/3/2020	3/2/2021	FR
28342	L0003		59810	6606	MFL	9/3/2020	3/2/2021	FR
28343	L0003		59830	6606	MFL	9/3/2020	3/2/2021	FR
28344	L0003		60030	6606	MFL	9/3/2020	3/2/2021	11/12/2020
28345	L0003		60190	6606	MFL	9/3/2020	3/2/2021	11/10/2020
28346	L0003		136280	6606	MFL	9/3/2020	3/2/2021	FR
28347	L0003		142250	6606	MFL	9/3/2020	3/2/2021	11/3/2020
28348	L0003		142340	6606	MFL	9/3/2020	3/2/2021	11/4/2020

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**	**Repair / Mitigation Deadline**	**Date of Repair / Mitigation[1]**
28349	L0003	[redacted]	232320	6606	MFL	9/3/2020	3/2/2021	11/20/2020
28350	L0003		238870	6606	MFL	9/3/2020	3/2/2021	11/19/2020
26794	L0003		63870	6393	PHASED ARRAY	12/12/2019	12/11/2020	7/18/2020
26795	L0003		71070	6393	PHASED ARRAY	12/12/2019	12/11/2020	6/26/2020
26796	L0003		148910	6393	PHASED ARRAY	12/12/2019	12/11/2020	6/16/2020
26797	L0003		150860	6393	PHASED ARRAY	12/12/2019	12/11/2020	6/13/2020
26798	L0003		151090	6393	PHASED ARRAY	12/12/2019	12/11/2020	6/11/2020
26799	L0003		152170	6393	PHASED ARRAY	12/12/2019	12/11/2020	7/8/2020
26800	L0003		152330	6393	PHASED ARRAY	12/12/2019	12/11/2020	6/27/2020
26801	L0003		152460	6393	PHASED ARRAY	12/12/2019	12/11/2020	6/23/2020
26802	L0003		153550	6393	PHASED ARRAY	12/12/2019	12/11/2020	7/16/2020
26803	L0003		155980	6393	PHASED ARRAY	12/12/2019	12/11/2020	7/15/2020
26804	L0003		160430	6393	PHASED ARRAY	12/12/2019	12/11/2020	7/21/2020
26805	L0003		160810	6393	PHASED ARRAY	12/12/2019	12/11/2020	7/25/2020
26806	L0003		171730	6393	PHASED ARRAY	12/12/2019	12/11/2020	10/9/2020
28379	L0003		163170	10052	CALIPER	9/17/2020	10/19/2020	9/18/2020
28388	L0003		42040	10052	MFL	9/17/2020[3]	3/15/2021	10/27/2020

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**	**Repair / Mitigation Deadline**	**Date of Repair / Mitigation[1]**
28389	L0003	[redacted]	129850	10052	MFL	9/17/2020[3]	3/15/2021	11/3/2020
28926	L0003		71850	10001	PHASED ARRAY	11/10/2020	11/10/2021	FR
28929	L0003		117440	10001	PHASED ARRAY	11/10/2020	11/10/2021	FR
28932	L0003		153080	10001	PHASED ARRAY	11/10/2020	11/10/2021	FR
28933	L0003		156430	10001	PHASED ARRAY	11/10/2020	11/10/2021	FR
27910	L0004		29830	6487	MFL	5/22/2020	5/18/2021	FR
27911	L0004		30950	6487	MFL	5/22/2020	5/18/2021	8/20/2020
27912	L0004		33090	6487	MFL	5/22/2020	5/18/2021	8/1/2020
27913	L0004		34440	6487	MFL	5/22/2020	5/18/2021	FR
27914	L0004		37340	6487	MFL	5/22/2020	5/18/2021	FR
27915	L0004		42920	6487	MFL	5/22/2020	5/18/2021	FR
27916	L0004		46160	6487	MFL	5/22/2020	5/18/2021	FR
28039	L0004		18910	6488	MFL	6/4/2020	6/4/2021	FR
28129	L0004		45510	6607	MFL	6/22/2020	6/21/2021	9/1/2020
28130	L0004		46130	6607	MFL	6/22/2020	6/21/2021	9/19/2020
28131	L0004		46360	6607	MFL	6/22/2020	6/21/2021	9/15/2020
28132	L0004		47670	6607	MFL	6/22/2020	6/21/2021	9/22/2020
28133	L0004		48450	6607	MFL	6/22/2020	6/21/2021	9/30/2020
28134	L0004		48510	6607	MFL	6/22/2020	6/21/2021	10/1/2020
28135	L0004		49560	6607	MFL	6/22/2020	6/21/2021	10/16/2020
28136	L0004		49600	6607	MFL	6/22/2020	6/21/2021	10/7/2020
28137	L0004		49640	6607	MFL	6/22/2020	6/21/2021	10/10/2020

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**	**Repair / Mitigation Deadline**	**Date of Repair / Mitigation[1]**
28138	L0004	[redacted]	50230	6607	MFL	6/22/2020	6/21/2021	9/10/2020
28139	L0004		50260	6607	MFL	6/22/2020	6/21/2021	9/10/2020
28140	L0004		51010	6607	MFL	6/22/2020	6/21/2021	9/12/2020
28141	L0004		51120	6607	MFL	6/22/2020	6/21/2021	9/19/2020
28142	L0004		51450	6607	MFL	6/22/2020	6/21/2021	9/2/2020
28143	L0004		51510	6607	MFL	6/22/2020	6/21/2021	9/15/2020
28144	L0004		51530	6607	MFL	6/22/2020	6/21/2021	9/29/2020
28145	L0004		52450	6607	MFL	6/22/2020	6/21/2021	10/5/2020
28146	L0004		53250	6607	MFL	6/22/2020	6/21/2021	9/16/2020
28147	L0004		53300	6607	MFL	6/22/2020	6/21/2021	8/18/2020
28148	L0004		53820	6607	MFL	6/22/2020	6/21/2021	9/17/2020
28149	L0004		54110	6607	MFL	6/22/2020	6/21/2021	10/15/2020
28150	L0004		54640	6607	MFL	6/22/2020	6/21/2021	10/6/2020
28151	L0004		55270	6607	MFL	6/22/2020	6/21/2021	9/29/2020
28152	L0004		55520	6607	MFL	6/22/2020	6/21/2021	10/19/2020
28153	L0004		56370	6607	MFL	6/22/2020	6/21/2021	10/29/2020
28154	L0004		57170	6607	MFL	6/22/2020	6/21/2021	10/13/2020
28155	L0004		57190	6607	MFL	6/22/2020	6/21/2021	10/15/2020
28156	L0004		57200	6607	MFL	6/22/2020	6/21/2021	10/22/2020
28157	L0004		57210	6607	MFL	6/22/2020	6/21/2021	10/16/2020
27869	L0005		21	6636	MFL	5/11/2020	5/11/2021	6/1/2020
27069	L0005		105210	4537	UTCD	12/30/2019	6/29/2020	6/2/2020
27071	L0005		161650	4537	UTCD	12/30/2019	12/29/2020	6/13/2020
28161	L0005		56860	6579	CALIPER	6/23/2020	7/23/2020	6/24/2020

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**	**Repair / Mitigation Deadline**	**Date of Repair / Mitigation[1]**
27917	L0005	[redacted]	142170	6609	CALIPER	5/25/2020[4]	11/17/2020	6/24/2020
23941	L0006A		256490	4334	MFL	5/11/2018	5/20/2024	8/26/2020[5]
27307	L0006A		17600	4674	UTWM	1/28/2020	1/27/2021	7/14/2020
27308	L0006A		62050	4674	UTWM	1/28/2020	1/27/2021	7/9/2020
27309	L0006A		67480	4674	UTWM	1/28/2020	7/27/2020	6/13/2020
27310	L0006A		95750	4674	UTWM	1/28/2020	1/27/2021	7/27/2020
27311	L0006A		100340	4674	UTWM	1/28/2020	7/27/2020	7/14/2020
27312	L0006A		108890	4674	UTWM	1/28/2020	7/27/2020	7/8/2020
27313	L0006A		113560	4674	UTWM	1/28/2020	7/27/2020	6/24/2020
27314	L0006A		163560	4674	UTWM	1/28/2020	1/27/2021	7/20/2020
27315	L0006A		218990	4674	UTWM	1/28/2020	7/27/2020	7/14/2020
27317	L0006A		252690	4674	UTWM	1/28/2020	7/27/2020	6/19/2020
27318	L0006A		255180	4674	UTWM	1/28/2020	7/27/2020	7/24/2020
27319	L0006A		265470	4674	UTWM	1/28/2020	7/27/2020	5/30/2020
27320	L0006A		266950	4674	UTWM	1/28/2020	7/27/2020	6/8/2020
27321	L0006A		267020	4674	UTWM	1/28/2020	7/27/2020	6/11/2020
27322	L0006A		271950	4674	UTWM	1/28/2020	7/27/2020	6/5/2020
27324	L0006A		287530	4674	UTWM	1/28/2020	7/27/2020	6/20/2020
27325	L0006A		290110	4674	UTWM	1/28/2020	7/27/2020	6/8/2020
27326	L0006A		290200	4674	UTWM	1/28/2020	7/27/2020	6/10/2020
27328	L0006A		297890	4674	UTWM	1/28/2020	7/27/2020	6/11/2020
27329	L0006A		298490	4674	UTWM	1/28/2020	7/27/2020	5/28/2020
27330	L0006A		299670	4674	UTWM	1/28/2020	7/27/2020	6/21/2020
27332	L0006A		301370	4674	UTWM	1/28/2020	7/27/2020	7/7/2020
27333	L0006A		302440	4674	UTWM	1/28/2020	7/27/2020	5/23/2020

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**	**Repair / Mitigation Deadline**	**Date of Repair / Mitigation[1]**
27334	L0006A	[redacted]	319530	4674	UTWM	1/28/2020	7/27/2020	6/21/2020
26864	L0006A		710	4544	MFL	12/16/2019	6/15/2020	5/28/2020
26867	L0006A		163060	4544	MFL	12/16/2019	12/15/2020	6/15/2020
26870	L0006A		186660	4544	MFL	12/16/2019	12/15/2020	7/25/2020
27264	L0006A		64280	4676	PHASED ARRAY	1/24/2020	1/25/2021	FR
27265	L0006A		65420	4676	PHASED ARRAY	1/24/2020	1/25/2021	FR
27266	L0006A		107770	4676	PHASED ARRAY	1/24/2020	1/25/2021	8/7/2020
27269	L0006A		168660	4676	PHASED ARRAY	1/24/2020	7/22/2020	6/3/2020
27270	L0006A		169690	4676	PHASED ARRAY	1/24/2020	7/22/2020	5/28/2020
27271	L0006A		169920	4676	PHASED ARRAY	1/24/2020	7/22/2020	6/6/2020
27272	L0006A		179400	4676	PHASED ARRAY	1/24/2020	7/22/2020	5/29/2020
27273	L0006A		194800	4676	PHASED ARRAY	1/24/2020	7/22/2020	6/12/2020
27274	L0006A		206970	4676	PHASED ARRAY	1/24/2020	7/22/2020	6/23/2020
27275	L0006A		222140	4676	PHASED ARRAY	1/24/2020	7/22/2020	7/10/2020
26627	L0061		73610	6546	MFL	10/7/2019	11/2/2020	N/A[6]
26628	L0061		90360	6546	MFL	10/7/2019	11/2/2020	N/A[6]
26629	L0061		250590	6546	MFL	10/7/2019	11/2/2020	N/A[6]
28360	L0067		53660	6504	MFL	9/8/2020	3/8/2021	FR
28361	L0067		53700	6504	MFL	9/8/2020	3/8/2021	FR

TABLE NOTES:

[1] "FR" indicates that this information is outside the reporting period of this SAR and will be included in a future SAR.
[2] Dig Repair/Mitigation Deadline was requested to be extended, which was reported in SAR5
[3] Two digs were uploaded into eDig on 09/17/2020 and approved on 09/18/2020
[4] Dig was approved on 05/21/2020, but dig was uploaded into eDig on 05/25/2020, which was reported in SAR-6
[5] The target feature was mitigated in the HDD project of Alternate Plan 3. The Tie-in Date was 08/26/2020. As this feature was mitigated with an HDD replacement, there is no corresponding NDE report for this feature
[6] Digs were Cancelled on 09/28/2020.

The following 1 page is Table D-19: P. 46.a, c Identified Digs.

Table D-19: P. 46.a Cancelled Digs						
Dig ID	**Line**	**Segment**	**Girth Weld**	**Tool Run ID**	**Technology**	**Reason for Dig Cancellation**
26627	L0061	[redacted]	73610	6546	MFL	Based on the revised MOP which was approved in the 5th CD Modification, the indicated features no longer meets dig criteria.
26628	L0061		90360	6546	MFL	
26629	L0061		250590	6546	MFL	

The following 3 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**	**Repair / Mitigation Deadline[1]**	**PPR Imposition Date**	**Repair / Mitigation Date**	**PPR Removal Date[2]**
31460	L0002	[redacted]	60210	5/5/2020	11/2/2020	5/7/2020	7/24/2020	FR
30479	L0003		171730	12/12/2019	12/11/2020	12/13/2019	10/9/2020	FR
33837	L0003		163170	9/17/2020	10/19/2020	Table Note 3	9/18/2020	9/18/2020
31461	L0004		29830	5/22/2020	5/18/2021	5/22/2020	FR	FR
31462	L0004		30950	5/22/2020	5/18/2021	5/22/2020	8/20/2020	FR
31463	L0004		33090	5/22/2020	5/18/2021	5/22/2020	8/1/2020	FR
31464	L0004		34440	5/22/2020	5/18/2021	5/22/2020	FR	FR
31465	L0004		37340	5/22/2020	5/18/2021	5/22/2020	FR	FR
31466	L0004		42920	5/22/2020	5/18/2021	5/22/2020	FR	FR
31467	L0004		46160	5/22/2020	5/18/2021	5/22/2020	FR	FR
31486	L0004		18910	6/4/2020	6/4/2021	6/5/2020	FR	FR
31487	L0004		46130	6/22/2020	6/21/2021	6/24/2020	9/19/2020	FR
31488	L0004		48450	6/22/2020	6/21/2021	6/24/2020	9/30/2020	FR
31489	L0004		48510	6/22/2020	6/21/2021	6/24/2020	10/3/2020	FR
31490	L0004		49560	6/22/2020	6/21/2021	6/24/2020	10/16/2020	FR
31491	L0004		49600	6/22/2020	6/21/2021	6/24/2020	10/7/2020	FR
31492	L0004		49640	6/22/2020	6/21/2021	6/24/2020	10/10/2020	FR
31493	L0004		50230	6/22/2020	6/21/2021	6/24/2020	9/10/2020	FR
31494	L0004		50260	6/22/2020	6/21/2021	6/24/2020	9/10/2020	FR
31495	L0004		51010	6/22/2020	6/21/2021	6/24/2020	9/12/2020	FR
31496	L0004		51120	6/22/2020	6/21/2021	6/24/2020	9/19/2020	FR
31497	L0004		51450	6/22/2020	6/21/2021	6/24/2020	9/2/2020	FR
31498	L0004		51530	6/22/2020	6/21/2021	6/24/2020	9/29/2020	FR
31499	L0004		52450	6/22/2020	6/21/2021	6/24/2020	10/5/2020	FR
31500	L0004		53250	6/22/2020	6/21/2021	6/24/2020	9/16/2020	FR
31501	L0004		53300	6/22/2020	6/21/2021	6/24/2020	8/18/2020	FR
31502	L0004		53820	6/22/2020	6/21/2021	6/24/2020	9/17/2020	FR
31503	L0004		54110	6/22/2020	6/21/2021	6/24/2020	10/15/2020	FR
31504	L0004		54640	6/22/2020	6/21/2021	6/24/2020	10/6/2020	FR
31505	L0004		55270	6/22/2020	6/21/2021	6/24/2020	9/29/2020	FR
31506	L0004		56370	6/22/2020	6/21/2021	6/24/2020	10/29/2020	FR

Table D-20: P. 46.b. d PPRs								
PR ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery**	**Repair / Mitigation Deadline[1]**	**PPR Imposition Date**	**Repair / Mitigation Date**	**PPR Removal Date[2]**
30484	L0005	[redacted]	7010	12/30/2019	6/29/2020	12/30/2019	5/18/2020	7/23/2020
30485	L0005		7090	12/30/2019	6/29/2020	12/30/2019	5/16/2020	7/23/2020
30486	L0005		05210	12/30/2019	6/29/2020	12/30/2019	6/2/2020	9/3/2020
30487	L0005		53710	12/30/2019	6/29/2020	12/30/2019	5/14/2020	7/23/2020
31507	L0005		6860	6/23/2020	7/23/2020	Table Note 3	6/24/2020	6/25/2020
28133	L0006A		26360	7/6/2018	8/1/2026	7/6/2018	5/12/2020	7/22/2020[4]
30695	L0006A		00340	1/28/2020	7/27/2020	1/29/2020	7/14/2020	9/1/2020
30696	L0006A		08890	1/28/2020	7/27/2020	1/29/2020	7/8/2020	FR
30697	L0006A		13560	1/28/2020	7/27/2020	1/29/2020	6/24/2020	FR
30698	L0006A		63560	1/28/2020	1/27/2021	1/29/2020	7/20/2020	9/1/2020
30699	L0006A		52690	1/28/2020	7/27/2020	1/29/2020	6/19/2020	9/1/2020
30700	L0006A		55180	1/28/2020	7/27/2020	1/29/2020	7/24/2020	FR
30701	L0006A		73270	1/28/2020	7/27/2020	1/29/2020	5/21/2020	9/1/2020
30702	L0006A		87530	1/28/2020	7/27/2020	1/29/2020	6/20/2020	9/1/2020
30703	L0006A		90200	1/28/2020	7/27/2020	1/29/2020	6/10/2020	9/1/2020
30704	L0006A		91890	1/28/2020	7/27/2020	1/29/2020	5/22/2020	FR
30705	L0006A		97890	1/28/2020	7/27/2020	1/29/2020	6/11/2020	FR
30706	L0006A		99670	1/28/2020	7/27/2020	1/29/2020	6/21/2020	9/1/2020
30708	L0006A		01370	1/28/2020	7/27/2020	1/29/2020	7/7/2020	9/1/2020
30709	L0006A		02440	1/28/2020	7/27/2020	1/29/2020	5/23/2020	9/1/2020
30710	L0006A		19530	1/28/2020	7/27/2020	1/29/2020	6/21/2020	9/1/2020
30947	L0006A		56490	5/11/2018	5/20/2024	3/23/2020	8/26/2020[5]	FR
30683	L0006A		4280	1/24/2020	1/25/2021	1/27/2020	FR	FR
30684	L0006A		5420	1/24/2020	1/25/2021	1/27/2020	FR	FR
30686	L0006A		67150	1/24/2020	7/22/2020	1/27/2020	5/14/2020	7/22/2020
30687	L0006A		68660	1/24/2020	7/22/2020	1/27/2020	6/3/2020	8/18/2020
30688	L0006A		69690	1/24/2020	7/22/2020	1/27/2020	5/28/2020	8/18/2020
30689	L0006A		69920	1/24/2020	7/22/2020	1/27/2020	6/6/2020	8/18/2020
30690	L0006A		79400	1/24/2020	7/22/2020	1/27/2020	5/29/2020	8/18/2020
30691	L0006A		94800	1/24/2020	7/22/2020	1/27/2020	6/12/2020	8/18/2020
30692	L0006A		06970	1/24/2020	7/22/2020	1/27/2020	6/23/2020	8/18/2020

Table D-20: P. 46.b. d PPRs								
PR ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery**	**Repair / Mitigation Deadline[1]**	**PPR Imposition Date**	**Repair / Mitigation Date**	**PPR Removal Date[2]**
30693	L0006A	[redacted]	222140	1/24/2020	7/22/2020	1/27/2020	7/10/2020	8/18/2020
30694	L0006A		248000	1/24/2020	7/22/2020	1/27/2020	5/16/2020	7/22/2020
30398	L0061		73610	10/7/2019	11/2/2020	10/9/2019	NA[6]	NA
30399	L0061		90360	10/7/2019	11/2/2020	10/9/2019	NA[6]	NA
30400	L0061		250590	10/7/2019	11/2/2020	10/9/2019	NA[6]	NA
33833	L0067		53660	9/8/2020	3/8/2021	9/9/2020	FR	FR
33834	L0067		53700	9/8/2020	3/8/2021	9/9/2020	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. PPR is no longer required after the Feature Requiring Pressure Restriction is repaired.

[3] The PPR Removal Date is the same as the scheduled PPR Imposition Date as the feature was repaired prior to the scheduled imposition of the PPR

[4] The target feature for Alternate Plan 4 was mitigated in SAR6 period and its PPR was removed in SAR 7 period

[5] The target feature was mitigated in the HDD project of Alternate Plan 3. The Tie-in Date was 08/26/2020.

[6] Digs were cancelled on 09/29/2020. The PPR's associated with these digs are in the process of being removed

The following 1 page is Table D-21: P. 46.e, 46.l 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 SAR reporting period:	5 of maximum 40
46.e. Cumulative Excavations of Joints	5 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 #
N/A[1]

TABLE NOTES:

[1]There were no Alternate Plans proposed in this reporting period.

The following 1 page is Table D-23: P. 46.l Previous Alternate Plan Status Update.

Table D-23: P. 46.l Previous Alternate Plan Status Update	
Alternate Plan #3	09/03/2020 AP#3 Quarterly Update: • HDD tie-in date was 08/26/2020, and the target feature has been mitigated. • Enbridge had all permits and easements in place by May 7, 2020 10/16/2020 Update: • Completion of AP#3 was communicated in a letter to EPA
Alternate Plan #4	05/12/2020 Update: • As reported in SAR6, the target feature was mitigated on this date. 10/16/2020 Update: • Completion of AP #4 was communicated in a letter to EPA
Alternate Plan #5	06/04/2020 Q2 Alternate Plan Quarterly Update the AP # 5 status: • 30-day report analysis: 2020 MFL tool was pulled on 05/07/2020. • The target feature depth was reported as 50%, same as 2019 ILI reported depth. No growth is observed (2020 vs. 2019). 09/03/2020 AP#5 Quarterly Update with ITP: • All permits received and construction in Minnesota underway as of December 2, 2020. • Enbridge met with LLBO on 08/12/2020. LLBO is comfortable with L3RP remaining the repair option for the AP5 feature. Pull Through is the contingency. (Q3 2020 AP meeting)

The following 2 pages are Table D-24: P. 47 Crack Features Requiring Excavation Table.

Table D-24: P. 47 Crack Features Requiring Excavation						
Dig ID	**Line**	**Segment**	**Girth Weld**	**Date Features Added to Dig List**	**Repair / Mitigation Deadline**	**Date of Repair / Mitigation[1]**
28391	L0002	[redacted]	9760	9/24/2020	9/24/2021	11/5/2020
28392	L0002		13190	9/24/2020	9/24/2021	11/6/2020
28393	L0002		62670	9/24/2020	9/24/2021	FR
27867	L0002		60210	5/5/2020	11/2/2020	7/24/2020
26794	L0003		63870	12/12/2019	12/11/2020	7/18/2020
26795	L0003		71070	12/12/2019	12/11/2020	6/26/2020
26796	L0003		148910	12/12/2019	12/11/2020	6/16/2020
26797	L0003		150860	12/12/2019	12/11/2020	6/13/2020
26798	L0003		151090	12/12/2019	12/11/2020	6/11/2020
26799	L0003		152170	12/12/2019	12/11/2020	7/8/2020
26800	L0003		152330	12/12/2019	12/11/2020	6/27/2020
26801	L0003		152460	12/12/2019	12/11/2020	6/23/2020
26802	L0003		153550	12/12/2019	12/11/2020	7/16/2020
26803	L0003		155980	12/12/2019	12/11/2020	7/15/2020
26804	L0003		160430	12/12/2019	12/11/2020	7/21/2020
26805	L0003		160810	12/12/2019	12/11/2020	7/25/2020
26806	L0003		171730	12/12/2019	12/11/2020	10/9/2020
28926	L0003		71850	11/10/2020	11/10/2021	FR
28929	L0003		117440	11/10/2020	11/10/2021	FR
28932	L0003		153080	11/10/2020	11/10/2021	FR
28933	L0003		156430	11/10/2020	11/10/2021	FR
27069	L0005		105210	12/30/2019	6/29/2020	6/2/2020
27071	L0005		161650	12/30/2019	12/29/2020	6/13/2020
27264	L0006A		64280	1/24/2020	1/25/2021	FR
27265	L0006A		65420	1/24/2020	1/25/2021	FR
27266	L0006A		107770	1/24/2020	1/25/2021	8/7/2020
27269	L0006A		168660	1/24/2020	7/22/2020	6/3/2020
27270	L0006A		169690	1/24/2020	7/22/2020	5/28/2020
27271	L0006A		169920	1/24/2020	7/22/2020	6/6/2020
27272	L0006A		179400	1/24/2020	7/22/2020	5/29/2020
27273	L0006A		194800	1/24/2020	7/22/2020	6/12/2020
27274	L0006A		206970	1/24/2020	7/22/2020	6/23/2020

Table D-24: P. 47 Crack Features Requiring Excavation						
Dig ID	**Line**	**Segment**	**Girth Weld**	**Date Features Added to Dig List**	**Repair / Mitigation Deadline**	**Date of Repair / Mitigation[1]**
27275	L0006A	[redacted]	222140	1/24/2020	7/22/2020	7/10/2020

TABLE NOTE:

[1] "FR" indicates that this information is outside the reporting period of this SAR and will be included in a future SAR

The following 1 page is the D-25: P. 47 Crack Feature Pressure Restrictions Table.

Table D-25: P. 47 Crack Feature Pressure Restrictions									
PR ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery**	**Repair / Mitigation Deadline (specified in Tables 1 to 5 of the Consent Decree)**	**PPR Set (psi)**	**PPR Imposition Date**	**Repair / Mitigation Date[2]**	**PPR Removal Date[1, 2]**
31460	L0002	[redacted]	60210	5/5/2020	11/2/2020	789	5/7/2020	7/24/2020	FR
30479	L0003		171730	12/12/2019	12/11/2020	444	12/13/2019	10/9/2020	FR
30484	L0005		47010	12/30/2019	6/29/2020	680	12/30/2019	5/18/2020	7/23/2020
30485	L0005		47090	12/30/2019	6/29/2020	663	12/30/2019	5/16/2020	7/23/2020
30486	L0005		105210	12/30/2019	6/29/2020	696	12/30/2019	6/2/2020	9/3/2020
30487	L0005		153710	12/30/2019	6/29/2020	682	12/30/2019	5/14/2020	7/23/2020
30683	L0006A		64280	1/24/2020	1/25/2021	603	1/27/2020	FR	FR
30684	L0006A		65420	1/24/2020	1/25/2021	617	1/27/2020	FR	FR
30686	L0006A		167150	1/24/2020	7/22/2020	591	1/27/2020	5/14/2020	7/22/2020
30687	L0006A		168660	1/24/2020	7/22/2020	616	1/27/2020	6/3/2020	8/18/2020
30688	L0006A		169690	1/24/2020	7/22/2020	603	1/27/2020	5/28/2020	8/18/2020
30689	L0006A		169920	1/24/2020	7/22/2020	607	1/27/2020	6/6/2020	8/18/2020
30690	L0006A		179400	1/24/2020	7/22/2020	604	1/27/2020	5/29/2020	8/18/2020
30691	L0006A		194800	1/24/2020	7/22/2020	597	1/27/2020	6/12/2020	8/18/2020
30692	L0006A		206970	1/24/2020	7/22/2020	551	1/27/2020	6/23/2020	8/18/2020
30693	L0006A		222140	1/24/2020	7/22/2020	606	1/27/2020	7/10/2020	8/18/2020
30694	L0006A		248000	1/24/2020	7/22/2020	600	1/27/2020	5/16/2020	7/22/2020

TABLE NOTES:

[1]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.

[2] "FR" indicates that this information is outside the reporting period of this SAR and will be included in a future SAR

The following 4 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**	**Date of Repair / Mitigation[1]**
24805	L0003	[redacted]	58670	12/10/2018	4/17/2032[2]	FR
28194	L0003		153620	7/16/2020	1/12/2021	FR
28334	L0003		56760	9/3/2020	3/2/2021	9/28/2020
28335	L0003		57050	9/3/2020	3/2/2021	10/1/2020
28336	L0003		57690	9/3/2020	3/2/2021	11/4/2020
28337	L0003		57700	9/3/2020	3/2/2021	11/3/2020
28338	L0003		58690	9/3/2020	3/2/2021	FR
28339	L0003		58940	9/3/2020	3/2/2021	10/28/2020
28340	L0003		59780	9/3/2020	3/2/2021	FR
28341	L0003		59790	9/3/2020	3/2/2021	FR
28342	L0003		59810	9/3/2020	3/2/2021	FR
28343	L0003		59830	9/3/2020	3/2/2021	FR
28344	L0003		60030	9/3/2020	3/2/2021	11/12/2020
28345	L0003		60190	9/3/2020	3/2/2021	11/10/2020
28346	L0003		136280	9/3/2020	3/2/2021	FR
28347	L0003		142250	9/3/2020	3/2/2021	11/3/2020
28348	L0003		142340	9/3/2020	3/2/2021	11/4/2020
28349	L0003		232320	9/3/2020	3/2/2021	11/20/2020
28350	L0003		238870	9/3/2020	3/2/2021	11/19/2020
28388	L0003		42040	9/17/2020[3]	3/13/2021	10/27/2020
28389	L0003		129850	9/17/2020[3]	3/13/2021	11/3/2020
27910	L0004		29830	5/22/2020	5/18/2021	FR
27911	L0004		30950	5/22/2020	5/18/2021	8/20/2020
27912	L0004		33090	5/22/2020	5/18/2021	8/1/2020
27913	L0004		34440	5/22/2020	5/18/2021	FR
27914	L0004		37340	5/22/2020	5/18/2021	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**	**Date of Repair / Mitigation[1]**
27915	L0004	[redacted]	42920	5/22/2020	5/18/2021	FR
27916	L0004		46160	5/22/2020	5/18/2021	FR
28039	L0004		18910	6/4/2020	6/4/2021	FR
28129	L0004		45510	6/22/2020	6/19/2021	9/1/2020
28130	L0004		46130	6/22/2020	6/19/2021	9/19/2020
28131	L0004		46360	6/22/2020	6/19/2021	9/15/2020
28132	L0004		47670	6/22/2020	6/19/2021	9/22/2020
28133	L0004		48450	6/22/2020	6/19/2021	9/30/2020
28134	L0004		48510	6/22/2020	6/19/2021	10/1/2020
28135	L0004		49560	6/22/2020	6/19/2021	10/16/2020
28136	L0004		49600	6/22/2020	6/19/2021	10/7/2020
28137	L0004		49640	6/22/2020	6/19/2021	10/10/2020
28138	L0004		50230	6/22/2020	6/19/2021	9/10/2020
28139	L0004		50260	6/22/2020	6/19/2021	9/10/2020
28140	L0004		51010	6/22/2020	6/19/2021	9/12/2020
28141	L0004		51120	6/22/2020	6/19/2021	9/19/2020
28142	L0004		51450	6/22/2020	6/19/2021	9/2/2020
28143	L0004		51510	6/22/2020	6/19/2021	9/15/2020
28144	L0004		51530	6/22/2020	6/19/2021	9/29/2020
28145	L0004		52450	6/22/2020	6/19/2021	10/5/2020
28146	L0004		53250	6/22/2020	6/19/2021	9/16/2020
28147	L0004		53300	6/22/2020	6/19/2021	8/18/2020
28148	L0004		53820	6/22/2020	6/19/2021	9/17/2020
28149	L0004		54110	6/22/2020	6/19/2021	10/15/2020
28150	L0004		54640	6/22/2020	6/19/2021	10/6/2020
28151	L0004		55270	6/22/2020	6/19/2021	9/29/2020

Table D-26: P. 50 Corrosion Features Requiring Excavation						
Dig ID	**Line**	**Segment**	**Girth Weld**	**Date Features Added to Dig List**	**Repair / Mitigation Deadline**	**Date of Repair / Mitigation[1]**
28152	L0004	[redacted]	55520	6/22/2020	6/19/2021	10/19/2020
28153	L0004		56370	6/22/2020	6/19/2021	10/29/2020
28154	L0004		57170	6/22/2020	6/19/2021	10/13/2020
28155	L0004		57190	6/22/2020	6/19/2021	10/15/2020
28156	L0004		57200	6/22/2020	6/19/2021	10/22/2020
28157	L0004		57210	6/22/2020	6/19/2021	10/16/2020
27869	L0005		21	5/11/2020	5/11/2021	6/1/2020
23941	L0006A		256490	5/11/2018	5/20/2024	8/26/2020[4]
27307	L0006A		17600	1/28/2020	1/27/2021	7/14/2020
27308	L0006A		62050	1/28/2020	1/27/2021	7/9/2020
27309	L0006A		67480	1/28/2020	7/26/2020	6/13/2020
27310	L0006A		95750	1/28/2020	1/27/2021	7/27/2020
27311	L0006A		100340	1/28/2020	7/26/2020	7/14/2020
27312	L0006A		108890	1/28/2020	7/26/2020	7/8/2020
27313	L0006A		113560	1/28/2020	7/26/2020	6/24/2020
27314	L0006A		163560	1/28/2020	1/27/2021	7/20/2020
27315	L0006A		218990	1/28/2020	7/26/2020	7/14/2020
27317	L0006A		252690	1/28/2020	7/26/2020	6/19/2020
27318	L0006A		255180	1/28/2020	7/26/2020	7/24/2020
27319	L0006A		265470	1/28/2020	7/26/2020	5/30/2020
27320	L0006A		266950	1/28/2020	7/26/2020	6/8/2020
27321	L0006A		267020	1/28/2020	7/26/2020	6/11/2020
27322	L0006A		271950	1/28/2020	7/26/2020	6/5/2020
27324	L0006A		287530	1/28/2020	7/26/2020	6/20/2020
27325	L0006A		290110	1/28/2020	7/26/2020	6/8/2020
27326	L0006A		290200	1/28/2020	7/26/2020	6/10/2020

Table D-26: P. 50 Corrosion Features Requiring Excavation						
Dig ID	**Line**	**Segment**	**Girth Weld**	**Date Features Added to Dig List**	**Repair / Mitigation Deadline**	**Date of Repair / Mitigation[1]**
27328	L0006A	[redacted]	297890	1/28/2020	7/26/2020	6/11/2020
27329	L0006A		298490	1/28/2020	7/26/2020	5/28/2020
27330	L0006A		299670	1/28/2020	7/26/2020	6/21/2020
27332	L0006A		301370	1/28/2020	7/26/2020	7/7/2020
27333	L0006A		302440	1/28/2020	7/26/2020	5/23/2020
27334	L0006A		319530	1/28/2020	7/26/2020	6/21/2020
26864	L0006A		710	12/16/2019	6/13/2020	5/28/2020
26867	L0006A		163060	12/16/2019	12/15/2020	6/15/2020
26870	L0006A		186660	12/16/2019	12/15/2020	7/25/2020
28360	L0067		53660	9/8/2020	3/7/2021	FR
28361	L0067		53700	9/8/2020	3/7/2021	FR
26627	L0061		73610	10/7/2019	11/1/2020	N/A[5]
26628	L0061		90360	10/7/2019	11/1/2020	N/A[5]
26629	L0061		250590	10/7/2019	11/1/2020	N/A[5]

TABLE NOTE:

[1]"FR" indicates that this information is outside the reporting period of this SAR and will be included in a future SAR.
[2] Dig Repair/Mitigation Deadline was requested to be extended, which was reported in SAR5
[3] Two digs were uploaded into eDig on 09/17/2020 and approved on 09/18/2020
[4] Target feature was mitigated in the HDD project of Alternate Plan 3. The Tie-in Date was 08/26/2020.
[5] Digs were Cancelled on 09/28/2020.

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**	**Repair / Mitigation Deadline[1]**	**PPR Set (psi)**	**PPR Imposition Date**	**Repair / Mitigation Date**	**PPR Removal Date[2]**
31461	L0004	[redacted]	29830	5/22/2020	5/18/2021	607	5/22/2020	FR	FR
31462	L0004		30950	5/22/2020	5/18/2021	614	5/22/2020	8/20/2020	FR
31463	L0004		33090	5/22/2020	5/18/2021	617	5/22/2020	8/1/2020	FR
31464	L0004		34440	5/22/2020	5/18/2021	622	5/22/2020	FR	FR
31465	L0004		37340	5/22/2020	5/18/2021	609	5/22/2020	FR	FR
31466	L0004		42920	5/22/2020	5/18/2021	619	5/22/2020	FR	FR
31467	L0004		46160	5/22/2020	5/18/2021	604	5/22/2020	FR	FR
31486	L0004		18910	6/4/2020	6/4/2021	622	6/5/2020	FR	FR
31487	L0004		46130	6/22/2020	6/21/2021	604	6/24/2020	9/19/2020	FR
31488	L0004		48450	6/22/2020	6/21/2021	623	6/24/2020	9/30/2020	FR
31489	L0004		48510	6/22/2020	6/21/2021	601	6/24/2020	10/3/2020	FR
31490	L0004		49560	6/22/2020	6/21/2021	619	6/24/2020	10/16/2020	FR
31491	L0004		49600	6/22/2020	6/21/2021	622	6/24/2020	10/7/2020	FR
31492	L0004		49640	6/22/2020	6/21/2021	629	6/24/2020	10/10/2020	FR
31493	L0004		50230	6/22/2020	6/21/2021	620	6/24/2020	9/10/2020	FR
31494	L0004		50260	6/22/2020	6/21/2021	602	6/24/2020	9/10/2020	FR
31495	L0004		51010	6/22/2020	6/21/2021	599	6/24/2020	9/12/2020	FR
31496	L0004		51120	6/22/2020	6/21/2021	607	6/24/2020	9/19/2020	FR
31497	L0004		51450	6/22/2020	6/21/2021	617	6/24/2020	9/2/2020	FR
31498	L0004		51530	6/22/2020	6/21/2021	628	6/24/2020	9/29/2020	FR
31499	L0004		52450	6/22/2020	6/21/2021	613	6/24/2020	10/5/2020	FR
31500	L0004		53250	6/22/2020	6/21/2021	629	6/24/2020	9/16/2020	FR
31501	L0004		53300	6/22/2020	6/21/2021	606	6/24/2020	8/18/2020	FR

Table D-27: P. 52 Corrosion Feature Pressure Restrictions									
PR ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery**	**Repair / Mitigation Deadline[1]**	**PPR Set (psi)**	**PPR Imposition Date**	**Repair / Mitigation Date**	**PPR Removal Date[2]**
31502	L0004	[redacted]	53820	6/22/2020	6/21/2021	613	6/24/2020	9/17/2020	FR
31503	L0004		54110	6/22/2020	6/21/2021	622	6/24/2020	10/15/2020	FR
31504	L0004		54640	6/22/2020	6/21/2021	625	6/24/2020	10/6/2020	FR
31505	L0004		55270	6/22/2020	6/21/2021	627	6/24/2020	9/29/2020	FR
31506	L0004		56370	6/22/2020	6/21/2021	619	6/24/2020	10/29/2020	FR
28133	L0006A		226360	7/6/2018	8/1/2026	554	7/6/2018	5/12/2020	7/22/2020[3]
30695	L0006A		100340	1/28/2020	7/27/2020	597	1/29/2020	7/14/2020	9/1/2020
30696	L0006A		108890	1/28/2020	7/27/2020	617	1/29/2020	7/8/2020	FR
30697	L0006A		113560	1/28/2020	7/27/2020	613	1/29/2020	6/24/2020	FR
30698	L0006A		163560	1/28/2020	1/27/2021	594	1/29/2020	7/20/2020	9/1/2020
30699	L0006A		252690	1/28/2020	7/27/2020	604	1/29/2020	6/19/2020	9/1/2020
30700	L0006A		255180	1/28/2020	7/27/2020	584	1/29/2020	7/24/2020	FR
30701	L0006A		273270	1/28/2020	7/27/2020	610	1/29/2020	5/21/2020	9/1/2020
30702	L0006A		287530	1/28/2020	7/27/2020	617	1/29/2020	6/20/2020	9/1/2020
30703	L0006A		290200	1/28/2020	7/27/2020	588	1/29/2020	6/10/2020	9/1/2020
30704	L0006A		291890	1/28/2020	7/27/2020	614	1/29/2020	5/22/2020	FR
30705	L0006A		297890	1/28/2020	7/27/2020	609	1/29/2020	6/11/2020	FR
30706	L0006A		299670	1/28/2020	7/27/2020	617	1/29/2020	6/21/2020	9/1/2020
30708	L0006A		301370	1/28/2020	7/27/2020	614	1/29/2020	7/7/2020	9/1/2020
30709	L0006A		302440	1/28/2020	7/27/2020	614	1/29/2020	5/23/2020	9/1/2020
30710	L0006A		319530	1/28/2020	7/27/2020	615	1/29/2020	6/21/2020	9/1/2020
30947	L0006A		256490	5/11/2018	5/20/2024	618	3/23/2020	8/26/2020[4]	FR
30398	L0061		73610	10/7/2019	11/2/2020	1153	10/9/2019	N/A[5]	NA

Table D-27: P. 52 Corrosion Feature Pressure Restrictions									
PR ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery**	**Repair / Mitigation Deadline[1]**	**PPR Set (psi)**	**PPR Imposition Date**	**Repair / Mitigation Date**	**PPR Removal Date[2]**
30399	L0061	[redacted]	90360	10/7/2019	11/2/2020	1137	10/9/2019	N/A[5]	NA
30400	L0061		250590	10/7/2019	11/2/2020	1156	10/9/2019	N/A[5]	NA
33833	L0067		53660	9/8/2020	3/8/2021	1257	9/9/2020	FR	FR
33834	L0067		53700	9/8/2020	3/8/2021	1255	9/9/2020	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 SAR and will be included in a future SAR.

[3] Alternate Plan 4 target joint. The target feature was mitigated in SAR-6 period and PPR was removed in SAR-7

[4] Target feature was mitigated in the HDD project of Alternate Plan 3. The Tie-in Date was 08/26/2020. PPR has not been removed in SAR-7

[5] Digs were cancelled on 09/29/2020. PPR will be removed

The following 1 page is Table D-28: P. 53 Digs for Axial Slotting, Axial Grooving, Selective Seam Corrosion and Seam Weld anomaly A/B Features Table.

Table D-28: P. 53 Digs for Axial Slotting, Axial Grooving, Selective Seam Corrosion and Seam Weld anomaly A/B Features						
Dig ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery / Feature Added to Dig List**	**Repair / Mitigation Deadline**	**Date of Repair / Mitigation**
N/A[1]						

TABLE NOTES:

[1] This table is blank for this SAR period

The following 1 page is Table D-29: P. 54 Axial Slotting, Axial Grooving, and Selective Seam Corrosion, and Weld Anomaly A/B Feature Pressure Restrictions.

Table D-29: P. 54 Axial Slotting, Axial Grooving, and Selective Seam Corrosion, and Weld Anomaly A/B Feature Pressure Restrictions									
PR ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery**	**Repair / Mitigation Deadline**	**PPR Set (psi)**	**PPR Imposition Date**	**Repair / Mitigation Date**	**PPR Removal Date**
NA[1]									

TABLE NOTES:

[1] There are no features of this type to report in this SAR period

The following 1 page is Table D-30: P. 56 Geometry features Mitigation Timelines Table.

Table D-30: P. 56 Geometry features Mitigation Timelines						
Dig ID	**Line**	**Segment**	**Girth Weld**	**Date of Discovery / Feature Added to Dig List**	**Repair / Mitigation Deadline**	**Date of Repair / Mitigation[1]**
27917	L0005	[redacted]	142170	5/25/2020[2]	11/17/2020	6/24/2020

TABLE NOTE:

[1] "FR" indicates that this information is outside the reporting period of this SAR and will be included in a future SAR.

[2] Dig was approved on 05/21/2020, but dig was uploaded into eDig on 05/25/2020, which was explained in SAR 6

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**	**One-Source Load Date**	**Date of Discovery / Feature Added to Dig List**	**Repair / Mitigation Deadline**	**Type of Inter-acting features (tool)**	**Date of Repair / Mitigation[1]**
28379	L0003	[redacted]	163170	CALIPER	8/20/2020	8/21/2020	9/17/2020	10/19/2020	crack	9/18/2020
28161	L0005		56860	CALIPER	6/2/2020	6/5/2020	6/23/2020	7/23/2020	corrosion	6/24/2020

TABLE NOTES:

[1] "FR" indicates that this information is outside the reporting period of this SAR and will be included in a future SAR.

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**	**Repair / Mitigation Deadline[1]**	**PPR Set (psi)**	**PPR Imposition Date**	**Repair / Mitigation Date**	**PPR Removal Date[2,3]**
33837	L0003	[redacted]	163170	9/17/2020	10/19/2020	280	Table Note 4	9/18/2020	9/18/2020
31507	L0005		56860	6/23/2020	7/23/2020	476	Table Note 4	6/24/2020	6/25/2020

TABLE NOTES:

[1] Specified in Tables 1 to 5 of the Consent Decree and Exhibit 1 – Fifth Modification of Consent Decree.

[2] PPR is removed after the Feature requiring Pressure Restriction is repaired or mitigated. The PPR Removal Date may be before the Repair / Mitigation Date because that date is the repair and mitigation date of the entire dig package that may include other features not requiring pressure restriction.

[3] "FR" indicates that this information is outside the reporting period of this SAR and will be included in a future SAR.

[4] The PPR Removal Date is the same as the scheduled PPR Imposition Date as the feature was repaired prior to the scheduled imposition of the PPR

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**
4506	02	[redacted]	Proton	Crack	9/24/2020
6581	03		UCMp	Corrosion	7/16/2020
6581	03		UCMp	Crack	8/18/2020
6606	03		MFL4	Corrosion	9/3/2020
10001	03		DUO CD	Crack	11/10/2020
10052	03		MFL4	Corrosion	9/18/2020
6582	04		MFL DuDi	Corrosion	6/29/2020
6488	04		MFL DuDi	Corrosion	6/4/2020
6607	04		MFL DuDi	Corrosion	6/22/2020
6539	04		MFL4	Corrosion	6/16/2020
10075	05		MFL4	Corrosion	11/5/2020
6563	05		UCc	Crack	6/30/2020
6579	05		GEMINI	Corrosion	6/29/2020
10076	05		MFL4	Corrosion	9/22/2020
6560	05		UCc	Crack	6/30/2020
6449	10		Eclipse	Crack	10/5/2020
6491	10		Eclipse	Crack	10/5/2020
6443	14		MFL4	Corrosion	10/13/2020
6503	67		UC	Crack	10/13/2020
6504	67		GEMINI	Corrosion	9/8/2020
6416	78		UC	Crack	9/15/2020
6418	78		CD+	Crack	6/15/2020

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**
4506	02	[redacted]	Proton	Crack	9/24/2020
6581	03		UCMp	Crack	8/18/2020
10001	03		DUO CD	Crack	11/10/2020
6563	05		UCc	Crack	6/30/2020
6560	05		UCc	Crack	6/30/2020
6449	10		Eclipse	Crack	10/5/2020
6491	10		Eclipse	Crack	10/5/2020
6503	67		UC	Crack	10/13/2020
6416	78		UC	Crack	9/15/2020
6418	78		CD+	Crack	6/15/2020

Section E

The following 2 pages are Table E-1: P. 68 Consent Decree Screw Anchor Installation Summary.

Section E

Table E-1: P. 68 Consent Decree Screw Anchor Installation Summary				
Location	**Installed**	**Installation Year**	**Long.**	**Lat.**
EP-17-1	Y	2018	[redacted]	
EP-17-2	Y	2018		
EP-17-3	Y	2018		
EP-17-4	Y	2018		
EP-17-5	Y	2018		
WP-17-1	Y	2018		
WP-17-2	Y	2018		
WP-17-3	Y	2018		
WP-17-4	Y	2018		
WP-17-5	Y	2018		
WP-17-6	Y	2018		
WP-17-7	Y	2018		
WP-17-8	Y	2018		
WP-17-9	Y	2018		
WP-17-10	Y	2018		
WP-17-11	Y	2018		
WP-17-12	Y	2018		
WP-17-13	Y	2020		
WP-17-14	Y	2020		
WP-17-15	Y	2018		
WP-17-16	Y	2018		
WP-17-17	Y	2019		
EAP-1	Y	2019		
EAP-2	Y	2020		
EAP-3	Y	2020		
EAP-4	Y	2020		
EAP-5	Y	2019		
EAP-6	Y	2020		
EAP-7	Y	2020		
EAP-8	Y	2020		
EAP-9	Y	2020		
EAP-10	Y	2020		
EAP-11	Y	2020		
EAP-12	Y	2020		
EAP-13	Y	2019		
EAP-14	Y	2019		
EAP-15	Y	2019		
EAP-16	Y	2019		
EAP-17	Y	2019		
EAP-18	Y	2019		
EAP-19	Y	2019		
EAP-20	Y	2019		

Table E-1: P. 68 Consent Decree Screw Anchor Installation Summary				
Location	**Installed**	**Installation Year**	**Long.**	**Lat.**
EAP-21	Y	2019	[redacted]	
EAP-22	Y	2019		
EAP-23	Y	2019		
EAP-24	Y	2019		
EAP-25	Y	2020		
EAP-26	Y	2019		
EAP-27	Y	2019		
EAP-28	Y	2020		
EAP-29	Y	2020		
EAP-30	Y	2019		
WAP-1	Y	2019		
WAP-2	Y	2019		
WAP-3	Y	2020		
WAP-4	Y	2020		
WAP-5	Y	2019		
WAP-6	Y	2020		
WAP-7	Y	2019		
WAP-8	Y	2019		
WAP-9	Y	2019		
WAP-10	Y	2019		
WAP-11	Y	2019		
WAP-12	Y	2020		
WAP-13	Y	2019		
WAP-14	Y	2019		
WAP-15	Y	2019		
WAP-16	Y	2019		
WAP-17	Y	2019		
WAP-18	Y	2019		
WAP-19	Y	2019		
WAP-20	Y	2019		
WAP-21	Y	2020		

The following 1 page is Table E-2: P. 73 Acoustic Leak Detection.

Table E-2: P. 73 Acoustic Leak Detection		
Segment	**Quarter**	**Leak Detection Tool Run Date**
Dual Pipelines (West and East)	Q2 2020	05/28/2020
Dual Pipelines (West and East)	Q3 2020	09/24/2020

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**	**Seg-ment**	**Tool**	**Report Type**	**Last NDE Report Approved Date[1]**	**OneSource Load Date**
6367	02	[redacted]	PROTON	UTCD&PHASEDARRAY	9/14/2020	9/21/2020
6368	02		PROTON	UTCD&PHASEDARRAY	9/8/2020	9/14/2020
6393	03		DUOCD	PHASEDARRAY	10/28/2020	11/5/2020
6636	05		MFL4MFL	MFL	6/29/2020	7/6/2020
4537	05		UCX	UTCD	7/20/2020	7/27/2020[2]
6579	05		GEMINICAL	CALIPER	7/17/2020	7/20/2020
6609	05		GEMINICAL	CALIPER	7/23/2020	7/27/2020
4334	06A		GEMINICAL	CALIPER (Issue 9)	10/22/2020	10/27/2020
4804	06A		DUOCD	PHASEDARRAY	5/20/2020	5/25/2020
4334	06A		GEMINIMFL	MFL (Issue 2)	6/11/2020	6/15/2020
4674	06A		USWM+	UTWM	8/28/2020	9/1/2020
4544	06A		VECTRA	MFL	8/13/2020	8/17/2020
4613	64		UC	UTCD	8/31/2020	9/8/2020

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] The last NDE report uploaded to OneSource for this program was from pipe joint 105200. This dig was not an FRE but was created due to the excavation extents of the target joint 105210 extending onto this pipe joint.

The following 2 pages are 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 Load Date**
4506	02	[redacted]	Proton	Crack	8/28/2020	8/31/2020
4507	02		Proton	Crack	11/19/2020	11/23/2020
10008	03		MFL4	Geometry	8/5/2020	8/6/2020
6581	03		UCMp	Corrosion	6/22/2020	6/22/2020
6581	03		UCMp	Crack	7/21/2020	7/21/2020
6606	03		MFL4	Corrosion	8/5/2020	8/6/2020
6606	03		MFL4	Corrosion	10/14/2020	10/15/2020
10001	03		DUO CD	Crack	10/13/2020	10/13/2020[1]
10001	03		DUO CD	Crack (Issue 2)	10/26/2020	N/A[2]
10052	03		MFL4	Corrosion	8/20/2020	8/21/2020
10052	03		MFL4	Geometry	8/20/2020	8/21/2020
6582	04		MFL DuDi	Corrosion	6/9/2020	6/10/2020
6486	04		DuDi UCM	Corrosion	10/28/2020	10/29/2020
6607	04		MFL DuDi	Corrosion	5/26/2020	5/27/2020
6607	04		MFL DuDi	Corrosion (Issue 2)	7/14/2020	N/A[2]
6539	04		MFL4	Corrosion	5/27/2020	5/29/2020
10075	05		MFL4	Corrosion	10/8/2020	10/13/2020
10075	05		MFL4	Geometry	10/8/2020	10/13/2020
6563	05		UCc	Crack	6/4/2020	6/8/2020
6579	05		GEMINI	Corrosion	6/2/2020	6/5/2020
6579	05		GEMINI	Geometry	6/2/2020	6/5/2020
6609	05		GEMINI	Geometry	7/6/2020	7/7/2020
10076	05		MFL4	Corrosion	8/28/2020	8/31/2020
10076	05		MFL4	Geometry	8/28/2020	8/31/2020
6560	05		UCc	Crack	6/8/2020	6/8/2020
6449	10		Eclipse	Crack	9/8/2020	9/10/2020
6491	10		Eclipse	Crack	9/9/2020	9/10/2020
6443	14		MFL4	Corrosion	9/17/2020	9/18/2020
6443	14		MFL4	Geometry	9/17/2020	9/17/2020
6503	67		UC	Crack	9/18/2020	9/18/2020
6504	67		GEMINI	Corrosion	8/12/2020	8/12/2020

Table F-2: P. 78.a OneSource ILI Updates						
Tool Run ID	**Line**	**Segment**	**Tool**	**Report Type**	**Report Received Date**	**OneSource Load Date**
6504	67	[redacted]	GEMINI	Geometry	10/5/2020	10/8/2020
6504	67		GEMINI	Geometry	8/12/2020	8/12/2020
6416	78		UC	Crack	8/19/2020	8/24/2020

TABLE NOTE:

[1] See Paragraph P. 78.a Line 3 GF-CR 2020 DuoCD (Tool Run ID 10001) for further details.

[2] The Issue 1 ILI Report identified Data Quality Issues. An Issue 2 report was provided to correct the Data Quality Issues. There were no changes to the ILI feature information between the Issue 1 and Issue 2 ILI reports, therefore the Issue 2 report was not uploaded to OneSource as there were no changes to the ILI feature information.

The following 2 pages are 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 #**
4506	02	[redacted]	Proton	Crack	5/7/2020	8/28/2020	9/24/2020	N/A[1]	1
6581	03		UCMp	Corrosion	3/23/2020	6/22/2020	7/16/2020	7/16/2020	1
6581	03		UCMp	Crack	3/23/2020	7/21/2020	8/18/2020	N/A[1]	1
6606	03		MFL4	Corrosion	5/7/2020	8/5/2020	9/3/2020	9/1/2020	1
6606	03		MFL4	Corrosion	5/7/2020	10/14/2020	10/29/2020	N/A[2]	2
10008	03		MFL4	Geometry	6/1/2020	8/5/2020	9/1/2020	9/1/2020	1
10052	03		MFL4	Corrosion	5/22/2020	8/20/2020	9/18/2020	9/17/2020	1
10052	03		MFL4	Geometry	5/22/2020	8/20/2020	9/17/2020	9/17/2020	1
10001	03		DUO CD	Crack	6/15/2020	10/13/2020	11/10/2020[3]	N/A[1]	1
6582	04		MFL DuDi	Corrosion	3/11/2020	6/9/2020	6/29/2020	N/A[2]	1
6488	04		MFL DuDi	Corrosion	2/11/2020	5/11/2020	6/4/2020	N/A[2]	1
6607	04		MFL DuDi	Corrosion	2/26/2020	5/26/2020	6/22/2020[4]	N/A[2]	1
6539	04		MFL4	Corrosion	2/27/2020	5/27/2020	6/16/2020	N/A[2]	1
6563	05		UCc	Crack	2/5/2020	6/4/2020	6/30/2020	N/A[1]	1
10075	05		MFL4	Corrosion	8/24/2020	10/8/2020	11/5/2020	N/A[2]	1
10075	05		MFL4	Geometry	8/24/2020	10/8/2020	11/4/2020	N/A[2]	1
6579	05		GEMINI	Corrosion	3/4/2020	6/2/2020	6/29/2020	6/23/2020	1
6579	05		GEMINI	Geometry	3/4/2020	6/2/2020	6/23/2020	6/23/2020	1
6609	05		GEMINI	Geometry	1/22/2020	7/6/2020	7/18/2020	7/18/2020	2
6560	05		UCc	Crack	2/7/2020	6/8/2020	6/30/2020	N/A[1]	1

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 #**
10076	05	[redacted]	MFL4	Corrosion	7/1/2020	8/28/2020	9/22/2020	N/A[2]	1
10076	05		MFL4	Geometry	7/1/2020	8/28/2020	9/23/2020	N/A[2]	1
6449	10		Eclipse	Crack	5/11/2020	9/8/2020	10/5/2020	N/A[1]	1
6491	10		Eclipse	Crack	5/12/2020	9/9/2020	10/5/2020	N/A[1]	1
6443	14		MFL4	Corrosion	6/19/2020	9/17/2020	10/13/2020	N/A[2]	1
6443	14		MFL4	Geometry	6/19/2020	9/17/2020	10/16/2020	N/A[2]	1
6504	67		GEMINI	Corrosion	5/14/2020	8/12/2020	9/8/2020	N/A[2]	1
6504	67		GEMINI	Geometry	5/14/2020	8/12/2020	9/8/2020	N/A[2]	1
6504	67		GEMINI	Geometry	5/14/2020	10/5/2020	10/16/2020	N/A[2]	2
6503	67		UC	Crack	5/21/2020	9/18/2020	10/13/2020	N/A[1]	1
6416	78		UC	Crack	4/21/2020	8/19/2020	9/15/2020	N/A[1]	1
6418	78		CD+	Crack	1/16/2020	5/15/2020	6/15/2020	N/A[1]	1

TABLE NOTE:

[1] SQuAD/QuAD not applicable to crack program

[2] No new, unrepaired interacting feature

[3] An incorrect Defect Detection Capabilities sheet was listed in Issue 1 of the ILI report. An Issue 2 ILI report was received to correct the discrepancy. The program was approved based on the Issue 1 ILI report as feature related information was not affected. Data Quality Evaluations related to both Issue 1 and 2 ILI reports were completed within 180 Days of the ILI tool pull date

[4] The ILI vendor used the incorrect previous ILI inspection for the back-to-back comparison instead of the most recent 2016 corrosion inspection. An Issue 2 ILI report was received to correct the discrepancy. The program was approved based on the Issue 1 ILI report as feature related information included in the ILI Report was not affected. Data Quality Evaluations related to both Issue 1 and 2 ILI reports were completed within 180 Days of the ILI tool pull date

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	14	0
Bypass of ILI Tool	4 hours	15	0
Scheduled maintenance or repairs	4 days	38	0

The following 1 page is Table G-2: P. 99 Projects.

Table G-2: P. 99 Projects				
Line	**Milepost**	**Valve Tag No.**	**Installation Date**	**Triggers Paragraph 99?**
5	[redacted]	E1735.06-5-V-1	June 2020	Yes. Valve was fully excavated, as were PT/TT locations on the upstream and downstream sides of the valve. PTs were installed on both sides of the valve; TT was installed on upstream side.

The following 4 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]	05/27/2020 08:10 MST	05/27/2020 08:15 MST	05/27/2020 08:15 MST	[redacted]	[redacted]	Line 61
	05/29/2020 14:09 MST	05/29/2020 14:14 MST	05/29/2020 14:17 MST			Line 01
	07/01/2020 19:53 MST	07/01/2020 19:59 MST	07/01/2020 20:00 MST			Line 05

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]	07/14/2020 06:20 MST	07/14/2020 06:33 MST	07/14/2020 06:33 MST	[redacted]	[redacted]	Line 05
	07/16/2020 12:45 MST	07/16/2020 12:53 MST	07/16/2020 12:57 MST			Line 01 Line 02 Line 03 Line 04 Line 67
	08/10/2020 16:13 MST	08/10/2020 16:18 MST	08/10/2020 16:21 MST			Line 06A

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]	08/11/2020 07:14 MST	08/11/2020 07:20 MST	08/11/2020 07:21 MST	[redacted]	[redacted]	Line 01 Line 2B Line 03 Line 04 Line 67
	08/12/2020 07:01 MST	08/12/2020 07:09 MST	08/12/2020 07:13 MST			Line 05 Line 78
	08/13/2020 18:36 MST	08/13/2020 18:41 MST	08/13/2020 18:43 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]	08/20/2020 04:52 MST	08/20/2020 04:55 MST	08/20/2020 04:59 MST	[redacted]	[redacted]	Line 06A Line 62 Line 64 Line 78
	11/06/2020 08:04 MST	11/06/2020 08:11 MST	11/06/2020 08:11 MST			Line 78
	11/11/2020 08:06 MST	11/11/2020 08:13 MST	11/11/2020 08:15 MST			Line 78

Section H

There are no tables associated with Section H.

Section I

The following 1 page is Table I-1: P. 121-122 Planned Valve Installation Program Overview.

Section I

Table I-1: P. 121-122 Valve Installation Program Overview		
Year	**Quantity and Line Number**	**Milepost Number**
2017 (Complete)	4 sites, Line 5	1473, 1487, 1601, 1715
2018 (Complete)	4 sites, Line 5	1416, 1518, 1429, 1621
2019 (Complete)	2 sites, Line 6A 2 sites, Line 14	427, 458 412, 430
2020 (Complete)	2 sites, Line 6A	80, 198

Section J

There are no tables associated with Section J.

Section IX

The following 2 pages are 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 B] Replacement of Line 3	Paragraph 22.d(1); interpretation of "on an annual basis" from "On an annual basis with the exception of the final year of service for the Original US Line 3, Enbridge shall complete valid ILIs of all portions of Original US Line 3…"	The parties did not initially agree on whether an "annual basis" referred to a calendar year or any 12-month period. Enbridge interpreted "on an annual basis" to refer to a calendar year. EPA disagreed with this position. Enbridge, without agreeing that its initial interpretation was incorrect, has agreed to schedule all L3 runs in line with the EPA interpretation going forward, with the exception of the final year of service.
[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 as written to circumferential Cracking. Enbridge, the EPA, and the ITP continue to discuss ways to resolve this challenge. Enbridge created a system-wide Engineering Assessment regarding circumferential cracking which was reviewed by a Third Party Consultant chosen by the ITP.
[Section D] FRE completed	Paragraph 40, 77.d	FRE Completion is the NDE approval date. This is chosen because the NDE QA/QC process can result in revisions to the NDE data, additional NDE data being provided and ultimately, rarely, re-excavation of the site. It appears likely that the parties will agree on a mutually accepted interpretation going forward and thus resolve this issue.

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] HCA Determination	Paragraph 50, 53, 55, 58	HCA status and resulting remediation timing is evaluated when a feature is placed on the dig list. Remediation timing associated with HCA status is not revisited after a feature has been placed on the dig list. As of December 17, 2020 (outside this reporting period), the parties have resolved this issue. Additional reviews are not required should HCA status change after digs are issued.
[Section F] Update of OneSource Database, "all field investigations"	Paragraph 77.d	Although Enbridge does not believe that Paragraph 77 of the Consent Decree was intended to incorporate digs that are outside of Consent Decree requirements, Enbridge is willing to agree that NDE reports from all integrity dig excavations issued from Consent Decree ILI programs, including Consent Decree FRE, investigative digs and Non-Consent Decree digs, would be uploaded into OneSource within 60 days after completing the last field investigation related to an ILI. It appears likely that the parties will agree on a mutually accepted interpretation going forward and thus resolve this issue.
[Section G] Rupture Detection System Alarm	Paragraph 102.a	Enbridge maintains that it has met the requirements in Paragraph 102.a and that flow rate is not a mandatory input. It currently appears that this issue may be resolved based on information already provided to EPA and the ITP.

The following 1 page is Table IX-2: Line 1, 5, 10 Flow Rates.

Table IX-2: Line 1, 5, 10 Flow Rates			
Lakehead Pipeline	**Operating flow rate range during optimization study (m^3/hr)**	**Flow rate used in optimization study testing period (m^3/hr)**	**Minimum flow rate line was operated at in Q1-Q2 2020 (m^3/hr)**
1	1,000 – 1,400	1,350	825
5	2,200 – 3,800	2,800	2,000
10	400 – 500	440	375

The following 1 page is Table IX-3: P. 115 Stockbridge Agreed Exercise Activities.

Table IX-3: Paragraph 115 Stockbridge Agreed Exercise Activities			
Date	**Planned Exercise Activity**	**City**	**State**
06/19/19	Concept and Objectives Meeting	Chicago	Illinois
11/05/19	Initial Planning Meeting	Lansing	Michigan
3/2/20	Midterm Planning Meeting	Lansing	Michigan
05/13/20	Stockbridge Master Scenario Events List (MSEL) Meeting (Virtual)		
05/05/2021	Stockbridge Final Planning Meeting	Lansing	Michigan
07/14/21 – 07/15/21	Stockbridge Exercise	Lansing	Michigan
07/16/21	Stockbridge After Action Meeting	Lansing	Michigan

The following 1 page is Table IX-4: TTX and FDE in SAR7 Reporting Period.

Table IX-4: TTX and FDE in SAR7 Reporting Period					
Date	**Exercise Type**	**City**	**State**	**Virtual / Face to Face**	**Rescheduled**
June 11	FDE	Pardeeville	Wisconsin	Face to Face	No
July 16	TTX	Deer River	Minnesota	Virtual	No
July 28	TTX	Rapid River	Michigan	Virtual	Yes, from May 19th
July 29	FDE	Rapid River	Michigan	Face to Face	Yes, from May 20th
August 4	TTX	Niles	Michigan	Virtual	Yes, from March 25th
August 5	TTX	Cavalier	North Dakota	Virtual	No
August 11	TTX	Naperville	Illinois	Virtual	No
August 11	FDE	Floodwood	Minnesota	Face to Face	Yes, from May 26th
August 12	FDE	Naperville	Illinois	Face to Face	No
August 13	TTX	Homer Glen	Illinois	Virtual	Yes, from March 18th
August 27	TTX	Cloquet	Minnesota	Virtual	Yes, from April 22nd
September 30	FDE	Morris	Illinois	Face to face	Yes, from June 3rd
October 20	TTX	Marshfield	Wisconsin	Virtual	No
November 5	TTX	Ottawa	Illinois	Virtual	No
November 10	TTX	Superior	Wisconsin	Virtual	Yes, from November 11th.

The following 1 page is Table IX-5: P. 116 Rescheduled Community Outreach Sessions.

Table IX-5: Paragraph 116 Rescheduled Community Outreach Sessions			
Original Date	**Re-Scheduled Date**	**Community Outreach Sessions**	**State**
04/14/20	07/14/20	Midwest Region - Minong (Washburn County)	Wisconsin
04/15/20	07/15/20	Midwest Region - Medford (Taylor County)	Wisconsin
04/28/20	07/21/20	Midwest Region-Marshfield (Wood County)	Wisconsin
04/29/20	07/22/20	Midwest Region - Portage (Columbia County)	Wisconsin
05/05/20	06/01/20	Great Lakes Region - Marshall (Calhoun County)	Michigan
05/06/20	06/02/20	Great Lakes Region - Kalamazoo (Kalamazoo County)	Michigan
05/19/20	08/25/20	Great Lakes Region - Crystal Lake (McHenry County)	Illinois
05/20/20	08/26/20	Great Lakes Region - Ottawa (LaSalle County)	Illinois
05/21/20	08/27/20	Great Lakes Region - Crete (Will County)	Illinois
06/23/20*	10/27/20	Great Lakes Region - Manteno (Kankakee County)	Illinois
06/24/20*	10/28/20	Great Lakes Region - /Chesterton (Porter County)	Indiana
06/25/20*	10/29/20	Great Lakes Region - Niles (St. Joseph County, IN)	Indiana

TABLE NOTE:

Community Outreach Sessions originally scheduled for June but rescheduled and completed in October still meet the requirements of the Consent Decree and therefore no Force Majeure Notification was required.

All Community Outreach Sessions in the reporting period were completed via Tele-Town Hall.

There were an additional three community engagement events in the Great Lakes region that occurred in October that were not rescheduled. These included: Marysville (10/20/20), Howell (10/21/20) and Ortonville (10/22/20).

The following 2 pages are Table IX-6: Section H P. 174 Force Majeure Notifications.

Table IX-6: Section H Paragraph 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. • In our case, Emergency Management notified the EPA verbally of changes to planned Consent Decree requirements, via Legal. • *First Verbal Notification*: The first verbal notification on March 12th included re-scheduling of March and April TTX (P.116) and April Community Outreach (P.116) • *Second Verbal Notification*; A second verbal notification on April 7th was provided for the re-scheduling of the May Community Outreach (P.116). • *Third Verbal Notification;* A third verbal notification to the EPA occurred on April 24 notifying them of the virtual format of the MSEL meeting and notifying them of the re-scheduled May TTX and FDE meetings. • *Fourth Verbal notification:* Verbal notification May 12th was made regarding the June 3rd Field Deployment exercise in Morris. • *Fifth Verbal Notification:* Verbal notification on July 13th regarding request for virtual TTX on July 16th. • *Sixth Verbal Notification*: Verbal notification on July 20th regarding July 28th TTX request to be held virtually
Step 2 Written notification within 5 Days of Knowing As of April 30, 2020 – This step is no longer required and is replaced by the 10 day written follow up (Step 3).	A written notification is made to the EPA. • *First Written Notification*: In our case Enbridge submitted a written notification letter on March 13th via Legal. This notified the EPA of the re-scheduling of the March and April TTX (P.116) and the re-scheduling of the April Community Outreach (P.116). • *Second Written Notification*: a written notification was submitted April 10th regarding the May Community Engagement re-scheduling to date.
Step 3 Written Follow up within 10 Days of the initial Written Notification	A follow up written notification is made to the EPA by legal following the initial written notification. • *First Written Notification*: In our case, Enbridge followed up with a letter on March 23rd. This notified the EPA of the re-scheduling of the March and April TTX (P.116) and the re-scheduling of the April Community Outreach (P.116). • *Second Written Notification*: the written notification was submitted April 10th regarding the May Community Outreach re-scheduling satisfies the 10 day follow up. • *Third Written Notification*: a written notification was submitted notifying the EPA on May 4th of the virtual format of the MSEL

Table IX-6: Section H Paragraph 174 Force Majeure Notifications	
Step	**Summary of Section H Action**
	meeting and providing notification of the re-scheduled May TTX and FDE meetings. • *Fourth Written Notification:* a written notification was submitted on May 22nd notifying the EPA of the re-scheduled June 3rd FDE in Morris to September 30th. • *Fifth Written Notification;* A written notification was submitted on July 14th notifying the EPA of the request for a virtual TTX on July 16th. • *Sixth Written Notification:* A written notification was submitted on July 17th notifying the EPA of the request for a virtual TTX on July 28th. • *Seventh Written Notification:* A Force Majeure letter was submitted to the EPA on July 16th regarding the re-scheduled Stockbridge exercise and noting that the final exercise plan will not be submitted on July 23rd. • *Eight Written Notification*: A written notification was submitted on July 23rd notifying the EPA of the request for all virtual TTX in August. A procedure outlining the virtual TTX was submitted. This notification also notified the EPA that the August 19th final planning meeting is converted to a virtual touchpoint meeting. • *Ninth Written Notification*: A written notification was submitted on September 10th notifying the EPA of the request for all virtual TTX that are remaining in 2020.
Note: every time Enbridge is aware of any Consent Decree obligations it is unable to meet, then Steps 1, 2 and 3 are repeated	
Step 4 Enbridge Continues to Monitor the Situation	• For Section H, Enbridge staff coordinate every Monday for an update and conduct a review meeting every Wednesday.
Step 5 Enbridge Identifies a Work Around if Possible and Notifies EPA	• For Section H, the events impacted are TTX, FDE, Community Outreach and likely future FSE planning meetings for Stockbridge. Note, to date Enbridge has notified and been approved by the EPA to host six Community Outreach sessions virtually as well as hosted the MSEL meeting virtually. • On April 30, during the legal meeting, the EPA gave verbal approval to hold the Great Lakes Region - Kalamazoo (Kalamazoo County), and the Great Lakes Region - Marshall (Calhoun County) via tele-town hall in June. Written approval was received June 11th to host the April Community Outreach Sessions as tele-town hall meetings in July.
Step 6 EPA Policy Termination	This step is initiated by the EPA, Enbridge will have 7 days to come up with an updated plan to meet our Consent Decree obligations. Enbridge will meet those obligations as per the submitted plan.

The following 1 page is Table IX-7: P. 145 List of Potential Non-Compliances.

Table IX-7: P. 145 List of Potential Non-Compliances	
Potential Non-Compliance	**Summary Location**
No Potential Non-Compliances to Report	

The following 1 page is Table IX-8: P. 146 Discharges from a Lakehead System Pipeline.

Table IX-8: P. 146 Discharges from a Lakehead System Pipeline	
Spill Date (MM/DD/YYYY)	NA[1]
National Response Center #	
Spill Location	
MP#/Facility Name	
Equipment or Line Number	
Cause of spill	
Spill Material	
Quantity of Spill	
Distance Spill Travelled	
Sheen, Sludge or Emulsion Observed	
Name of Water that Spill Entered (if applicable)	
Water Quality Standard Exceeded/Violated	
Actions Taken or Planned to Address Spill	
Actions Taken or Planned to Prevent Future Spills and Schedule for Future Actions	
Environmental Impacts from Spill	
Root Cause	

TABLE NOTE:

[1]There were no discharges of one or more barrels of oil or any that reached a waterbody that occurred during the reporting period for this SAR.

The following 1 page is Table IX-9: P. 147 Updated Discharges from a Lakehead System Pipeline.

Table IX-9: P. 147 Update on Discharges from a Lakehead System Pipeline	
Spill Date (MM/DD/YYYY)	4/30/2020
National Response Center #	Not Required
Spill Location	Griffith, Lake County, IN
MP#/Facility Name	Griffith Terminal
Equipment or Line Number	Tank 71 Floating Roof
Cause of spill	Natural Force Damage
Spill Material	Crude Oil
Quantity of Spill	2.52 Barrels
Distance Spill Travelled	Contained to tank roof
Sheen, Sludge or Emulsion Observed	Not Applicable
Name of Water that Spill Entered (if applicable)	Not Applicable
Water Quality Standard Exceeded/Violated	Not Applicable
Actions Taken or Planned to Address Spill	The tank was isolated and locked out while a triple filter system was installed on the roof drain to safely drain water from the roof. After cleanup was complete, Tank 71 was returned to service.
Actions Taken or Planned to Prevent Future Spills and Schedule for Future Actions	No further actions warranted.
Final Actions Taken or Planned to Prevent Future Spills and Schedule for Future Actions	*Enbridge updated the roof drain status daily log at Griffith Terminal to include a requirement for staff to check tank roofs for significant volumes of accumulated stormwater/meltwater daily. Where significant volumes are present, staff are to remove the water prior to the start of any forecasted weather events that could result in additional accumulation.* *No further action warranted.*
Environmental Impacts from Spill	Not Applicable
Preliminary Root Cause	Heavy rains
Final Root Cause	*No change*

TABLE NOTE:

[1] *Updates to the discharges reported in SAR6 are italicized*

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

Reporting Period: May 23, 2020 to November 22, 2020

Lakehead Leak Alarm Reports

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

Prepared by Pipeline Control

On November 27, 2020

For reporting period May 23, 2020 to November 22, 2020

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.*
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, 2020 to November 22, 2020)

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	5	0	0	
02	6	0	0	
03	12	0	0	
04	7	0	0	
05	16	0	0	
06A	24	0	0	
10	2	0	0	
14	18	0	0	
61	10	0	0	
62	0	0	0	

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	6	0	0	
67	8	0	0	
78	31	0	0	

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	03
Alarming Event Start Time	2020-06-04 14:10:13
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2020-06-04 14:10:13 2020-06-04 14:48:11 2020-06-04 14:10:13 2020-06-04 14:48:14
Root Cause	LD Error
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - 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	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2020-06-04 17:08:50
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	03
Alarming Event Start Time	2020-07-05 10:26:14^ ^Assessed as flow-based rupture event
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-07-05 10:26:14 2020-07-05 10:28:50
Root Cause	Transient Condition
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2020-07-05 10:27:56
Shutdown Completed	2020-07-05 10:51:41
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted Visual inspection performed by field staff - Regional and CCO Admin approvals granted
Startup Commenced	2020-07-05 15:23:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	03
Alarming Event Start Time	2020-07-06 05:57:15
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2020-07-06 05:57:15 2020-07-06 06:07:34 2020-07-06 05:57:15 2020-07-06 06:07:30
Root Cause	Transient Condition
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2020-07-06 05:52:57** **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	2020-07-06 06:20:00
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	2020-07-06 08:30:33
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	04
Alarming Event Start Time	2020-05-25 13:34:12
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2020-05-25 13:34:12 2020-05-25 14:42:43 2020-05-25 13:34:12 2020-05-25 14:48:41
Root Cause	Transient Condition
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2020-05-25 13:32:01** **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	2020-05-25 14:30:49
Justification for Resumption	After shutdown, alarm deemed invalid following LDA investigation and CCO investigation identified no leak triggers
Startup Commenced	2020-05-25 22:20:04
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	04
Alarming Event Start Time	2020-06-04 13:58:14
RDS Alarm Received Time **RDS Alarm Assessed Time** **RDS Alarm Received Time** **RDS Alarm Assessed Time**	2020-06-04 13:58:16 2020-06-04 14:48:35 2020-06-04 14:00:24 2020-06-04 14:48:28
Root Cause	SCADA Data Failure
CRO and STA Actions	Rupture Detection Alarm - Pipeline
LDA Actions	
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2020-06-04 18:03:55
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	05
Alarming Event Start Time	2020-07-26 22:27:05
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-07-26 22:27:06 2020-07-26 23:36:45
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2020-07-26 22:30:48
Shutdown Completed	2020-07-26 22:47:11
Justification for Resumption	After shutdown, alarm deemed invalid following LDA investigation and CCO investigation identified no leak triggers
Startup Commenced	2020-07-27 00:20:52
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	05
Alarming Event Start Time	2020-10-20 06:45:19
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2020-10-20 06:45:19 2020-10-20 08:09:58 2020-10-20 06:45:48 2020-10-20 08:10:01
Root Cause	Field Maintenance
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2020-10-20 06:55:29* *Each alarm was assessed individually to rule out the possibility of a leak within 10 minutes of the alarm in the event. 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	2020-10-20 07:11:59
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	2020-10-20 09:30:17
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	05
Alarming Event Start Time	2020-11-18 07:57:57
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-11-18 07:57:57 2020-11-18 08:06:13
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 valid following LDA investigation. Column separation investigated by CCO with no unexplained leak triggers
Startup Commenced	2020-11-18 22:00:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2020-07-14 17:05:36
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-07-14 17:05:36 2020-07-14 17:10:34
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	2020-07-15 21:17:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2020-08-10 19:34:21
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-08-10 19:34:22 2020-08-10 19:43:07
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	2020-08-10 20:30:35
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2020-08-25 13:36:42
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-08-25 13:36:43 2020-08-25 13:46:14
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	2020-08-26 21:00:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2020-08-25 16:46:23
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2020-08-25 16:46:23 2020-08-25 16:49:32 2020-08-25 16:46:23 2020-08-25 16:49:34
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	2020-08-26 21:00:53
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2020-08-26 02:00:06
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-08-26 02:00:07 2020-08-26 02:06:18
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	2020-08-26 15:12:01
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2020-08-26 05:22:01
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-08-26 05:22:01 2020-08-26 05:28:07
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	2020-08-26 10:14:37
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2020-09-10 02:33:33
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-09-10 02:33:33 2020-09-10 02:39:39
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	2020-09-10 10:00:34
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	06A
Alarming Event Start Time	2020-09-29 15:08:24
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-09-29 15:08:25 2020-09-29 15:12:06
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	2020-09-30 07:14:23
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	14
Alarming Event Start Time	2020-06-04 14:02:38
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-06-04 14:02:39 2020-06-04 14:45:56
Root Cause	LD 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	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2020-06-04 18:08:51
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	14
Alarming Event Start Time	2020-07-02 14:00:33
RDS Alarm Received Time **RDS Alarm Assessed Time**	2020-07-02 14:00:33 2020-07-02 14:21:42
Root Cause	Transient Condition
CRO and STA Actions	Rupture Detection Alarm - Pipeline
LDA Actions	LD - RDS - Rupture Alarm
Shutdown Commenced	2020-07-02 14:00:33
Shutdown Completed	2020-07-02 14:23:13
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2020-07-02 17:30:25
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	14
Alarming Event Start Time	2020-07-13 13:08:39
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2020-07-13 13:08:39 2020-07-13 14:45:23 2020-07-13 13:13:09 2020-07-13 14:45:24
Root Cause	Batch Misalignment
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2020-07-13 13:19:15* *Each alarm was assessed individually to rule out the possibility of a leak within 10 minutes of the alarm in the event. 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	2020-07-13 13:32:51
Justification for Resumption	After shutdown, alarm deemed invalid following LDA investigation and CCO investigation identified no leak triggers
Startup Commenced	2020-07-13 15:45:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	14
Alarming Event Start Time	2020-07-30 15:23:41
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2020-07-30 15:23:41 2020-07-30 16:12:06 2020-07-30 15:27:41 2020-07-30 16:12:07
Root Cause	Fluid Loss^^ ^^Bypassing measurement into a relief system
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2020-07-30 15:28:58
Shutdown Completed	2020-07-30 15:48:38
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2020-07-31 18:32:22
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	61
Alarming Event Start Time	2020-05-25 12:40:28
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-05-25 12:40:28 2020-05-25 13:29:29
Root Cause	Instrument Error
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2020-05-25 12:50:03
Shutdown Completed	2020-05-25 13:07:09
Justification for Resumption	After shutdown, alarm deemed invalid following LDA investigation and CCO investigation identified no leak triggers
Startup Commenced	2020-05-25 15:45:12
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	61
Alarming Event Start Time	2020-06-04 13:58:42
RDS Alarm Received Time **RDS Alarm Assessed Time** **RDS Alarm Received Time** **RDS Alarm Assessed Time** **RDS Alarm Received Time** **RDS Alarm Assessed Time**	2020-06-04 13:58:42 2020-06-04 14:49:13 2020-06-04 13:58:45 2020-06-04 14:49:15 2020-06-04 14:00:26 2020-06-04 14:49:26
Root Cause	SCADA Data Failure
CRO and STA Actions	Rupture Detection Alarm - Pipeline
LDA Actions	
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2020-06-04 17:52:20
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	61
Alarming Event Start Time	2020-08-26 03:13:44
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2020-08-26 03:13:45 2020-08-26 05:54:33 2020-08-26 03:15:45 2020-08-26 05:54:29 2020-08-26 03:16:15 2020-08-26 05:54:25
Root Cause	SCADA Data Failure
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	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2020-08-26 11:37:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	65
Alarming Event Start Time	2020-09-03 02:37:17
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2020-09-03 02:37:17 2020-09-03 02:45:14 2020-09-03 02:43:17 2020-09-03 02:45:40
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	2020-09-03 06:38:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	67
Alarming Event Start Time	2020-06-04 13:58:37
RDS Alarm Received Time **RDS Alarm Assessed Time** **RDS Alarm Received Time** **RDS Alarm Assessed Time**	2020-06-04 13:58:38 2020-06-04 14:49:09 2020-06-04 14:00:14 2020-06-04 14:49:22
Root Cause	SCADA Data Failure
CRO and STA Actions	Rupture Detection Alarm - Pipeline
LDA Actions	
Shutdown Commenced	Not Applicable - pipeline was already Shutdown and Sectionalized
Shutdown Completed	Not Applicable - pipeline was already Shutdown and Sectionalized
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2020-06-04 17:47:11
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	67
Alarming Event Start Time	2020-08-26 03:03:24
MBS Alarm Received Time **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time** **MBS Alarm Received Time** **MBS Alarm Assessed Time**	2020-08-26 03:03:25 2020-08-26 09:25:06 2020-08-26 03:03:25 2020-08-26 09:25:01 2020-08-26 03:04:56 2020-08-26 09:24:25
Root Cause	SCADA Data Failure
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2020-08-26 02:55:45** **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	2020-08-26 05:00:55
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2020-08-26 10:47:00
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	78
Alarming Event Start Time	2020-06-22 20:21:15
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-06-22 20:21:16 2020-06-22 20:30:55
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-06-22 20:21:16 2020-06-22 20:31:03
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-06-22 20:21:45 2020-06-22 20:31:13
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-06-22 20:21:45 2020-06-22 20:31:30
Root Cause	Column Separation
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2020-06-22 20:21:16
Shutdown Completed	2020-06-22 20:41:15
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	—
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	78
Alarming Event Start Time	2020-07-06 17:18:01
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-07-06 17:18:01 2020-07-06 17:26:21
Root Cause	Transient Condition
CRO and STA Actions	LDAM - Leak Detection System (LDS) Alarm - Flowing Pipeline
LDA Actions	LD - MBS - Leak Alarm
Shutdown Commenced	2020-07-06 17:17:41** **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	2020-07-06 17:35:13
Justification for Resumption	CCO investigation identified no leak triggers - Regional and CCO admin approvals granted
Startup Commenced	2020-07-07 07:30:37
Were Procedures Followed	Yes
Post Incident Report	

Pipeline	78
Alarming Event Start Time	2020-10-03 01:57:08
MBS Alarm Received Time **MBS Alarm Assessed Time**	2020-10-03 01:57:09 2020-10-03 02:01:35
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	2020-10-03 03:23:51
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

2020 Week 22: 5 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
03	2020-05-27 11:23:33	AVB	2020-05-27 11:23:33	2020-05-27 11:24:00	2020-05-27 11:24:00	No
		AVB	2020-05-27 11:24:33	2020-05-27 11:24:56	2020-05-27 11:24:56	
04	2020-05-25 13:34:12	MBS	2020-05-25 13:34:12	2020-05-25 14:42:43	2020-05-25 17:00:12	Yes
		MBS	2020-05-25 13:34:12	2020-05-25 14:48:41	2020-05-25 17:00:12	
61	2020-05-25 12:40:28	MBS	2020-05-25 12:40:28	2020-05-25 13:29:29	2020-05-25 14:01:33	Yes
78	2020-05-25 15:39:57	MBS	2020-05-25 15:39:57	2020-05-25 15:45:31	2020-05-25 15:45:31	No
78	2020-05-27 08:10:17	MBS	2020-05-27 08:10:17	2020-05-27 08:18:36	2020-05-27 08:18:36	No
		MBS	2020-05-27 08:10:17	2020-05-27 08:18:30	2020-05-27 08:18:30	
		MBS	2020-05-27 08:13:46	2020-05-27 08:18:38	2020-05-27 08:18:38	
		MBS	2020-05-27 08:17:17	2020-05-27 08:18:41	2020-05-27 08:18:41	

2020 Week 23: 14 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
01	2020-06-07 16:04:02	MBS	2020-06-07 16:04:02	2020-06-07 16:09:51	2020-06-07 16:09:51	No
02	2020-06-03 10:51:00	MBS	2020-06-03 10:51:01	2020-06-03 10:54:28	2020-06-03 10:54:28	No
		MBS	2020-06-03 10:51:01	2020-06-03 10:54:23	2020-06-03 10:54:23	
		MBS	2020-06-03 10:51:01	2020-06-03 10:54:26	2020-06-03 10:54:26	
02	2020-06-04 21:37:57	MBS	2020-06-04 21:37:58	2020-06-04 21:45:34	2020-06-04 21:45:34	No
		MBS	2020-06-04 21:37:58	2020-06-04 21:45:32	2020-06-04 21:45:32	
03	2020-06-04 14:10:13	MBS	2020-06-04 14:10:13	2020-06-04 14:48:11	2020-06-04 17:01:21	Yes
		MBS	2020-06-04 14:10:13	2020-06-04 14:48:14	2020-06-04 17:01:21	
04	2020-06-04 13:58:14	RDS	2020-06-04 13:58:16	2020-06-04 14:48:35	2020-06-04 17:18:28	Yes
		RDS	2020-06-04 14:00:24	2020-06-04 14:48:28	2020-06-04 17:18:28	
14	2020-06-03 12:56:18	MBS	2020-06-03 12:56:19	2020-06-03 12:58:56	2020-06-03 12:58:56	No
		MBS	2020-06-03 12:56:19	2020-06-03 12:58:53	2020-06-03 12:58:53	
		MBS	2020-06-03 12:56:19	2020-06-03 12:58:57	2020-06-03 12:58:57	
14	2020-06-04 10:15:02	MBS	2020-06-04 10:15:03	2020-06-04 10:17:36	2020-06-04 10:17:36	No
		MBS	2020-06-04 10:15:03	2020-06-04 10:17:41	2020-06-04 10:17:41	
		MBS	2020-06-04 10:15:03	2020-06-04 10:17:38	2020-06-04 10:17:38	
14	2020-06-04 14:02:38	MBS	2020-06-04 14:02:39	2020-06-04 14:45:56	2020-06-04 17:48:21	Yes
14	2020-06-04 18:04:28	MBS	2020-06-04 18:04:28	2020-06-04 18:10:45	2020-06-04 18:10:45	No
		MBS	2020-06-04 18:04:28	2020-06-04 18:10:47	2020-06-04 18:10:47	
61	2020-06-04 13:58:42	RDS	2020-06-04 13:58:42	2020-06-04 14:49:13	2020-06-04 16:25:36	Yes
		RDS	2020-06-04 13:58:45	2020-06-04 14:49:15	2020-06-04 16:25:36	
		RDS	2020-06-04 14:00:26	2020-06-04 14:49:26	2020-06-04 16:25:36	
61	2020-06-07 22:26:10	MBS	2020-06-07 22:26:11	2020-06-07 22:28:24	2020-06-07 22:28:24	No
		MBS	2020-06-07 22:26:11	2020-06-07 22:28:22	2020-06-07 22:28:22	
		MBS	2020-06-07 22:26:11	2020-06-07 22:28:27	2020-06-07 22:28:27	

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
67	2020-06-04 13:58:37	RDS	2020-06-04 13:58:38	2020-06-04 14:49:09	2020-06-04 16:59:01	Yes
		RDS	2020-06-04 14:00:14	2020-06-04 14:49:22	2020-06-04 16:59:01	
67	2020-06-06 18:59:47	MBS	2020-06-06 18:59:48	2020-06-06 19:01:48	2020-06-06 19:01:48	No
78	2020-06-04 07:02:10	AVB	2020-06-04 07:02:10	2020-06-04 07:08:46	2020-06-04 07:08:46	No

2020 Week 24: 2 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
61	2020-06-10 20:05:51	MBS	2020-06-10 20:05:52	2020-06-10 20:09:34	2020-06-10 20:09:34	No
65	2020-06-09 07:44:38	MBS	2020-06-09 07:44:38	2020-06-09 07:51:36	2020-06-09 07:51:36	No

2020 Week 25: 1 Alarming Event in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
05	2020-06-20 14:52:41	MBS	2020-06-20 14:52:42	2020-06-20 14:59:26	2020-06-20 14:59:26	No
		MBS	2020-06-20 14:55:42	2020-06-20 14:59:29	2020-06-20 14:59:29	
		MBS	2020-06-20 14:56:12	2020-06-20 14:59:31	2020-06-20 14:59:31	

2020 Week 26: 5 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
03	2020-06-22 08:49:41	MBS	2020-06-22 08:49:41	2020-06-22 08:53:40	2020-06-22 08:53:40	No
		MBS	2020-06-22 08:49:41	2020-06-22 08:53:46	2020-06-22 08:53:46	
		MBS	2020-06-22 08:49:41	2020-06-22 08:53:43	2020-06-22 08:53:43	
67	2020-06-23 03:14:52	MBS	2020-06-23 03:14:52	2020-06-23 03:23:26	2020-06-23 03:23:26	No
		MBS	2020-06-23 03:15:52	2020-06-23 03:23:32	2020-06-23 03:23:32	
		MBS	2020-06-23 03:17:52	2020-06-23 03:23:39	2020-06-23 03:23:39	
67	2020-06-24 04:08:04	MBS	2020-06-24 04:08:05	2020-06-24 04:10:28	2020-06-24 04:10:28	No
78	2020-06-22 20:21:15	MBS	2020-06-22 20:21:16	2020-06-22 20:30:55	2020-06-22 21:24:47	Yes
		MBS	2020-06-22 20:21:16	2020-06-22 20:31:03	2020-06-22 21:24:47	
		MBS	2020-06-22 20:21:45	2020-06-22 20:31:13	2020-06-22 21:24:47	
		MBS	2020-06-22 20:21:45	2020-06-22 20:31:30	2020-06-22 21:24:47	
78	2020-06-22 21:48:49	MBS	2020-06-22 21:48:50	2020-06-22 21:54:36	2020-06-22 21:54:36	No
		MBS	2020-06-22 21:49:20	2020-06-22 21:54:32	2020-06-22 21:54:32	

2020 Week 27: 10 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2020-07-02 17:28:23	MBS	2020-07-02 17:28:23	2020-07-02 17:30:49	2020-07-02 17:30:49	No
03	2020-06-30 21:00:49	MBS	2020-06-30 21:00:50	2020-06-30 21:08:59	2020-06-30 21:08:59	No
		MBS	2020-06-30 21:04:20	2020-06-30 21:09:00	2020-06-30 21:09:00	
03	2020-07-05 10:26:14	MBS	2020-07-05 10:26:14	2020-07-05 10:28:50	2020-07-05 14:13:00	Yes
03	2020-07-05 11:56:46	MBS	2020-07-05 11:56:47	2020-07-05 12:00:12	2020-07-05 12:00:12	No
		MBS	2020-07-05 11:56:47	2020-07-05 12:00:07	2020-07-05 12:00:07	
		MBS	2020-07-05 11:56:47	2020-07-05 12:00:10	2020-07-05 12:00:10	
		MBS	2020-07-05 11:59:17	2020-07-05 12:00:26	2020-07-05 12:00:26	
		MBS	2020-07-05 11:59:17	2020-07-05 12:00:21	2020-07-05 12:00:21	
		MBS	2020-07-05 11:59:17	2020-07-05 12:00:23	2020-07-05 12:00:23	
05	2020-07-01 13:49:53	MBS	2020-07-01 13:49:54	2020-07-01 13:59:01	2020-07-01 13:59:01	No
05	2020-07-01 15:48:57	MBS	2020-07-01 15:48:58	2020-07-01 15:53:25	2020-07-01 15:53:25	No
		MBS	2020-07-01 15:50:28	2020-07-01 15:53:27	2020-07-01 15:53:27	
05	2020-07-01 16:08:27	MBS	2020-07-01 16:08:28	2020-07-01 16:13:02	2020-07-01 16:13:02	No
		MBS	2020-07-01 16:08:28	2020-07-01 16:13:04	2020-07-01 16:13:04	
14	2020-07-02 14:00:33	RDS	2020-07-02 14:00:33	2020-07-02 14:21:42	2020-07-02 16:47:07	Yes
14	2020-07-02 19:38:02	MBS	2020-07-02 19:38:02	2020-07-02 19:42:38	2020-07-02 19:42:38	No
		MBS	2020-07-02 19:38:02	2020-07-02 19:42:40	2020-07-02 19:42:40	
78	2020-07-02 15:08:04	AVB	2020-07-02 15:08:04	2020-07-02 15:12:09	2020-07-02 15:12:09	No

2020 Week 28: 13 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
03	2020-07-06 05:57:15	MBS MBS	2020-07-06 05:57:15 2020-07-06 05:57:15	2020-07-06 06:07:34 2020-07-06 06:07:30	2020-07-06 07:41:21 2020-07-06 07:41:21	Yes
06A	2020-07-06 09:32:41	MBS MBS	2020-07-06 09:32:42 2020-07-06 09:32:42	2020-07-06 09:38:43 2020-07-06 09:38:45	2020-07-06 09:38:43 2020-07-06 09:38:45	No
10	2020-07-07 07:09:59	MBS	2020-07-07 07:10:00	2020-07-07 07:12:57	2020-07-07 07:12:57	No
65	2020-07-09 08:52:41	MBS	2020-07-09 08:52:42	2020-07-09 08:59:13	2020-07-09 08:59:13	No
78	2020-07-06 17:18:01	MBS	2020-07-06 17:18:01	2020-07-06 17:26:21	2020-07-06 18:50:00	Yes
78	2020-07-08 18:25:02	MBS MBS	2020-07-08 18:25:02 2020-07-08 18:25:02	2020-07-08 18:28:30 2020-07-08 18:28:16	2020-07-08 18:28:30 2020-07-08 18:28:16	No
78	2020-07-11 20:55:48	MBS	2020-07-11 20:55:48	2020-07-11 21:03:20	2020-07-11 21:03:20	No
78	2020-07-11 21:14:18	MBS	2020-07-11 21:14:19	2020-07-11 21:21:23	2020-07-11 21:21:23	No
78	2020-07-11 23:52:22	MBS	2020-07-11 23:52:22	2020-07-11 23:56:59	2020-07-11 23:56:59	No
78	2020-07-11 23:56:23	AVB	2020-07-11 23:56:23	2020-07-11 23:57:59	2020-07-11 23:57:59	No
78	2020-07-12 02:30:58	MBS	2020-07-12 02:30:59	2020-07-12 02:34:52	2020-07-12 02:34:52	No
78	2020-07-12 16:17:57	MBS	2020-07-12 16:17:58	2020-07-12 16:23:46	2020-07-12 16:23:46	No
78	2020-07-12 16:24:27	AVB	2020-07-12 16:24:28	2020-07-12 16:25:15	2020-07-12 16:25:15	No

2020 Week 29: 11 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
01	2020-07-14 06:27:15	MBS	2020-07-14 06:27:16	2020-07-14 06:32:37	2020-07-14 06:32:37	No
		MBS	2020-07-14 06:27:46	2020-07-14 06:32:39	2020-07-14 06:32:39	
02	2020-07-14 14:47:31	MBS	2020-07-14 14:47:32	2020-07-14 14:53:00	2020-07-14 14:53:00	No
03	2020-07-13 12:55:48	MBS	2020-07-13 12:55:48	2020-07-13 13:00:35	2020-07-13 13:00:35	No
		MBS	2020-07-13 12:59:48	2020-07-13 13:03:07	2020-07-13 13:03:07	
		MBS	2020-07-13 13:02:47	2020-07-13 13:05:05	2020-07-13 13:05:05	
06A	2020-07-14 10:08:57	MBS	2020-07-14 10:08:57	2020-07-14 10:16:25	2020-07-14 10:16:25	No
		MBS	2020-07-14 10:09:57	2020-07-14 10:16:26	2020-07-14 10:16:26	
06A	2020-07-14 17:05:36	MBS	2020-07-14 17:05:36	2020-07-14 17:10:34	2020-07-14 17:17:29	Yes
06A	2020-07-15 21:27:19	MBS	2020-07-15 21:27:19	2020-07-15 21:34:49	2020-07-15 21:34:49	No
		MBS	2020-07-15 21:32:19	2020-07-15 21:34:57	2020-07-15 21:34:57	
		MBS	2020-07-15 21:32:19	2020-07-15 21:34:59	2020-07-15 21:34:59	
06A	2020-07-15 22:07:49	MBS	2020-07-15 22:07:50	2020-07-15 22:12:12	2020-07-15 22:12:12	No
06A	2020-07-16 22:34:16	MBS	2020-07-16 22:34:17	2020-07-16 22:38:01	2020-07-16 22:38:01	No
06A	2020-07-17 03:38:51	MBS	2020-07-17 03:38:52	2020-07-17 03:43:13	2020-07-17 03:43:13	No
		MBS	2020-07-17 03:39:22	2020-07-17 03:43:14	2020-07-17 03:43:14	
14	2020-07-13 13:08:39	MBS	2020-07-13 13:08:39	2020-07-13 14:45:23	2020-07-13 15:15:00	Yes
		MBS	2020-07-13 13:13:09	2020-07-13 14:45:24	2020-07-13 15:15:00	
78	2020-07-13 08:16:26	AVB	2020-07-13 08:16:27	2020-07-13 08:19:03	2020-07-13 08:19:03	No

2020 Week 30: 6 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2020-07-24 20:05:22	MBS MBS	2020-07-24 20:05:23 2020-07-24 20:06:53	2020-07-24 20:10:24 2020-07-24 20:10:26	2020-07-24 20:10:24 2020-07-24 20:10:26	No
03	2020-07-26 01:01:56	AVB	2020-07-26 01:01:57	2020-07-26 01:05:29	2020-07-26 01:05:29	No
04	2020-07-20 14:00:38	MBS	2020-07-20 14:00:38	2020-07-20 14:07:53	2020-07-20 14:07:53	No
05	2020-07-22 08:01:22	MBS	2020-07-22 08:01:23	2020-07-22 08:10:48	2020-07-22 08:10:48	No
05	2020-07-26 22:27:05	MBS	2020-07-26 22:27:06	2020-07-26 23:36:45	2020-07-26 23:37:03	Yes
61	2020-07-26 13:19:55	MBS MBS	2020-07-26 13:19:56 2020-07-26 13:19:56	2020-07-26 13:25:42 2020-07-26 13:25:40	2020-07-26 13:25:42 2020-07-26 13:25:40	No

2020 Week 31: 5 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
02	2020-07-28 07:31:31	MBS	2020-07-28 07:31:32	2020-07-28 07:35:26	2020-07-28 07:35:26	No
14	2020-07-30 15:23:41	MBS MBS	2020-07-30 15:23:41 2020-07-30 15:27:41	2020-07-30 16:12:06 2020-07-30 16:12:07	2020-07-31 18:21:09 2020-07-31 18:21:09	Yes
14	2020-07-31 18:58:53	MBS MBS MBS	2020-07-31 18:58:53 2020-07-31 18:58:53 2020-07-31 18:59:24	2020-07-31 19:03:03 2020-07-31 19:03:06 2020-07-31 19:03:08	2020-07-31 19:03:03 2020-07-31 19:03:06 2020-07-31 19:03:08	No
78	2020-07-28 20:01:58	AVB	2020-07-28 20:01:58	2020-07-28 20:05:28	2020-07-28 20:05:28	No
78	2020-08-01 15:00:46	MBS MBS	2020-08-01 15:00:46 2020-08-01 15:01:17	2020-08-01 15:05:21 2020-08-01 15:05:19	2020-08-01 15:05:21 2020-08-01 15:05:19	No

2020 Week 32: 6 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
01	2020-08-08 00:12:04	MBS	2020-08-08 00:12:04	2020-08-08 00:15:56	2020-08-08 00:15:56	No
14	2020-08-04 20:16:03	MBS	2020-08-04 20:16:03	2020-08-04 20:20:47	2020-08-04 20:20:47	No
14	2020-08-05 05:23:17	MBS	2020-08-05 05:23:17	2020-08-05 05:28:52	2020-08-05 05:28:52	No
78	2020-08-04 04:46:53	MBS	2020-08-04 04:46:53	2020-08-04 04:53:36	2020-08-04 04:53:36	No
78	2020-08-04 04:59:52	AVB	2020-08-04 04:59:52	2020-08-04 05:00:47	2020-08-04 05:00:47	No
78	2020-08-09 00:43:57	MBS	2020-08-09 00:43:57	2020-08-09 00:51:00	2020-08-09 00:51:00	No

2020 Week 33: 7 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
05	2020-08-10 10:03:39	MBS MBS	2020-08-10 10:03:39 2020-08-10 10:04:40	2020-08-10 10:10:23 2020-08-10 10:10:20	2020-08-10 10:10:23 2020-08-10 10:10:20	No
05	2020-08-16 17:18:24	MBS	2020-08-16 17:18:24	2020-08-16 17:26:04	2020-08-16 17:26:04	No
06A	2020-08-10 19:34:21	MBS	2020-08-10 19:34:22	2020-08-10 19:43:07	2020-08-10 20:10:26	Yes
14	2020-08-11 03:42:08	MBS	2020-08-11 03:42:09	2020-08-11 03:49:21	2020-08-11 03:49:21	No
14	2020-08-16 05:26:34	MBS	2020-08-16 05:26:34	2020-08-16 05:32:46	2020-08-16 05:32:46	No
67	2020-08-13 11:35:07	MBS MBS	2020-08-13 11:35:08 2020-08-13 11:35:08	2020-08-13 11:43:58 2020-08-13 11:43:55	2020-08-13 11:43:58 2020-08-13 11:43:55	No
78	2020-08-12 08:42:15	MBS MBS	2020-08-12 08:42:15 2020-08-12 08:44:15	2020-08-12 08:49:48 2020-08-12 08:49:51	2020-08-12 08:49:48 2020-08-12 08:49:51	No

2020 Week 34: 6 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
03	2020-08-19 18:39:29	MBS MBS	2020-08-19 18:39:29 2020-08-19 18:39:29	2020-08-19 18:43:35 2020-08-19 18:43:33	2020-08-19 18:43:35 2020-08-19 18:43:33	No
14	2020-08-19 19:58:17	MBS MBS	2020-08-19 19:58:18 2020-08-19 19:58:48	2020-08-19 20:05:06 2020-08-19 20:05:08	2020-08-19 20:05:06 2020-08-19 20:05:08	No
61	2020-08-20 15:38:18	MBS	2020-08-20 15:38:18	2020-08-20 15:43:01	2020-08-20 15:43:01	No
61	2020-08-20 23:10:27	MBS	2020-08-20 23:10:28	2020-08-20 23:16:37	2020-08-20 23:16:37	No
65	2020-08-19 23:32:57	MBS MBS	2020-08-19 23:32:58 2020-08-19 23:32:58	2020-08-19 23:37:55 2020-08-19 23:37:57	2020-08-19 23:37:55 2020-08-19 23:37:57	No
65	2020-08-19 23:47:58	MBS MBS	2020-08-19 23:47:59 2020-08-19 23:52:29	2020-08-19 23:53:06 2020-08-19 23:53:18	2020-08-19 23:53:06 2020-08-19 23:53:18	No

2020 Week 35: 9 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
06A	2020-08-25 13:36:42	MBS	2020-08-25 13:36:43	2020-08-25 13:46:14	2020-08-25 14:13:33	Yes
06A	2020-08-25 16:46:23	MBS	2020-08-25 16:46:23	2020-08-25 16:49:32	2020-08-25 16:56:47	Yes
		MBS	2020-08-25 16:46:23	2020-08-25 16:49:34	2020-08-25 16:56:47	
06A	2020-08-26 02:00:06	MBS	2020-08-26 02:00:07	2020-08-26 02:06:18	2020-08-26 15:11:55	Yes
06A	2020-08-26 05:22:01	MBS	2020-08-26 05:22:01	2020-08-26 05:28:07	2020-08-26 10:14:24	Yes
06A	2020-08-27 05:27:13	MBS	2020-08-27 05:27:13	2020-08-27 05:33:05	2020-08-27 05:33:05	No
		MBS	2020-08-27 05:27:13	2020-08-27 05:33:06	2020-08-27 05:33:06	
		MBS	2020-08-27 05:27:43	2020-08-27 05:33:08	2020-08-27 05:33:08	
06A	2020-08-27 05:34:43	MBS	2020-08-27 05:34:43	2020-08-27 05:37:56	2020-08-27 05:37:56	No
		MBS	2020-08-27 05:35:13	2020-08-27 05:37:58	2020-08-27 05:37:58	
61	2020-08-26 03:13:44	MBS	2020-08-26 03:13:45	2020-08-26 05:54:33	2020-08-26 09:56:41	Yes
		MBS	2020-08-26 03:15:45	2020-08-26 05:54:29	2020-08-26 09:56:41	
		MBS	2020-08-26 03:16:15	2020-08-26 05:54:25	2020-08-26 09:56:41	
67	2020-08-24 13:51:32	MBS	2020-08-24 13:51:33	2020-08-24 13:58:47	2020-08-24 13:58:47	No
67	2020-08-26 03:03:24	MBS	2020-08-26 03:03:25	2020-08-26 09:25:06	2020-08-26 10:27:30	Yes
		MBS	2020-08-26 03:03:25	2020-08-26 09:25:01	2020-08-26 10:27:30	
		MBS	2020-08-26 03:04:56	2020-08-26 09:24:25	2020-08-26 10:27:30	

2020 Week 36: 6 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
01	2020-09-01 21:35:06	MBS MBS	2020-09-01 21:35:07 2020-09-01 21:37:07	2020-09-01 21:39:35 2020-09-01 21:39:37	2020-09-01 21:39:35 2020-09-01 21:39:37	No
03	2020-09-03 09:14:25	MBS MBS	2020-09-03 09:14:26 2020-09-03 09:14:26	2020-09-03 09:17:48 2020-09-03 09:17:45	2020-09-03 09:17:48 2020-09-03 09:17:45	No
04	2020-08-31 04:25:49	MBS MBS	2020-08-31 04:25:50 2020-08-31 04:25:50	2020-08-31 04:29:39 2020-08-31 04:29:36	2020-08-31 04:29:39 2020-08-31 04:29:36	No
65	2020-09-03 02:37:17	MBS MBS	2020-09-03 02:37:17 2020-09-03 02:43:17	2020-09-03 02:45:14 2020-09-03 02:45:40	2020-09-03 06:29:00 2020-09-03 06:29:00	Yes
78	2020-09-02 03:06:50	MBS	2020-09-02 03:06:50	2020-09-02 03:12:03	2020-09-02 03:12:03	No
78	2020-09-04 08:18:31	MBS	2020-09-04 08:18:32	2020-09-04 08:25:00	2020-09-04 08:25:00	No

2020 Week 37: 4 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
04	2020-09-07 17:28:15	MBS MBS	2020-09-07 17:28:16 2020-09-07 17:28:46	2020-09-07 17:32:00 2020-09-07 17:31:58	2020-09-07 17:32:00 2020-09-07 17:31:58	No
06A	2020-09-08 09:54:19	MBS	2020-09-08 09:54:20	2020-09-08 09:59:23	2020-09-08 09:59:23	No
06A	2020-09-10 02:33:33	MBS	2020-09-10 02:33:33	2020-09-10 02:39:39	2020-09-10 02:54:13	Yes
06A	2020-09-10 10:09:48	MBS	2020-09-10 10:09:48	2020-09-10 10:16:47	2020-09-10 10:16:47	No

2020 Week 38: 3 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
04	2020-09-14 22:54:16	MBS	2020-09-14 22:54:16	2020-09-14 23:01:55	2020-09-14 23:01:55	No
05	2020-09-18 07:48:38	MBS	2020-09-18 07:48:39	2020-09-18 07:52:00	2020-09-18 07:52:00	No
14	2020-09-18 09:02:07	MBS	2020-09-18 09:02:07	2020-09-18 09:12:00	2020-09-18 09:12:00	No
		MBS	2020-09-18 09:02:07	2020-09-18 09:11:56	2020-09-18 09:11:56	
		MBS	2020-09-18 09:02:07	2020-09-18 09:11:58	2020-09-18 09:11:58	

2020 Week 39: 2 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
78	2020-09-22 10:13:11	MBS	2020-09-22 10:13:11	2020-09-22 10:17:52	2020-09-22 10:17:52	No
		MBS	2020-09-22 10:15:12	2020-09-22 10:17:50	2020-09-22 10:17:50	
78	2020-09-25 01:46:07	MBS	2020-09-25 01:46:08	2020-09-25 01:48:56	2020-09-25 01:48:56	No

2020 Week 40: 6 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
06A	2020-09-29 15:08:24	MBS	2020-09-29 15:08:25	2020-09-29 15:12:06	2020-09-29 15:29:30	Yes
06A	2020-09-30 07:29:22	MBS	2020-09-30 07:29:22	2020-09-30 07:36:12	2020-09-30 07:36:12	No
		MBS	2020-09-30 07:29:22	2020-09-30 07:36:14	2020-09-30 07:36:14	
		MBS	2020-09-30 07:29:53	2020-09-30 07:36:17	2020-09-30 07:36:17	
14	2020-09-29 14:56:28	MBS	2020-09-29 14:56:28	2020-09-29 15:02:46	2020-09-29 15:02:46	No
		MBS	2020-09-29 15:03:29	2020-09-29 15:04:23	2020-09-29 15:04:23	
14	2020-09-29 19:16:38	MBS	2020-09-29 19:16:38	2020-09-29 19:22:12	2020-09-29 19:22:12	No
78	2020-09-30 09:09:56	MBS	2020-09-30 09:09:57	2020-09-30 09:15:01	2020-09-30 09:15:01	No
78	2020-10-03 01:57:08	MBS	2020-10-03 01:57:09	2020-10-03 02:01:35	2020-10-03 02:13:44	Yes

2020 Week 41: 4 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
06A	2020-10-11 07:24:33	MBS	2020-10-11 07:24:34	2020-10-11 07:28:44	2020-10-11 07:28:44	No
61	2020-10-08 13:01:52	MBS	2020-10-08 13:01:53	2020-10-08 13:10:24	2020-10-08 13:10:24	No
		MBS	2020-10-08 13:03:23	2020-10-08 13:10:26	2020-10-08 13:10:26	
78	2020-10-05 06:17:20	MBS	2020-10-05 06:17:20	2020-10-05 06:20:56	2020-10-05 06:20:56	No
		MBS	2020-10-05 06:17:20	2020-10-05 06:20:53	2020-10-05 06:20:53	
78	2020-10-09 12:58:24	MBS	2020-10-09 12:58:24	2020-10-09 13:04:24	2020-10-09 13:04:24	No

2020 Week 42: 3 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
06A	2020-10-14 10:47:22	MBS	2020-10-14 10:47:23	2020-10-14 10:52:22	2020-10-14 10:52:22	No
		MBS	2020-10-14 10:47:23	2020-10-14 10:52:24	2020-10-14 10:52:24	
		MBS	2020-10-14 10:48:53	2020-10-14 10:52:21	2020-10-14 10:52:21	
10	2020-10-13 04:18:26	MBS	2020-10-13 04:18:27	2020-10-13 04:25:29	2020-10-13 04:25:29	No
67	2020-10-18 06:38:16	MBS	2020-10-18 06:38:16	2020-10-18 06:41:20	2020-10-18 06:41:20	No
		MBS	2020-10-18 08:19:34	2020-10-18 08:22:27	2020-10-18 08:22:27	
		MBS	2020-10-18 08:20:04	2020-10-18 08:22:17	2020-10-18 08:22:17	
		MBS	2020-10-18 08:20:34	2020-10-18 08:22:17	2020-10-18 08:22:17	

2020 Week 43: 2 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
01	2020-10-20 05:58:07	MBS	2020-10-20 05:58:07	2020-10-20 06:01:06	2020-10-20 06:01:06	No
05	2020-10-20 06:45:19	MBS	2020-10-20 06:45:19	2020-10-20 08:09:58	2020-10-20 08:36:55	Yes
		MBS	2020-10-20 06:45:48	2020-10-20 08:10:01	2020-10-20 08:36:55	

2020 Week 44: 2 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
14	2020-10-27 11:58:49	MBS	2020-10-27 11:58:49	2020-10-27 12:06:33	2020-10-27 12:06:33	No
		MBS	2020-10-27 12:17:21	2020-10-27 12:21:42	2020-10-27 12:21:42	
65	2020-10-28 13:24:47	MBS	2020-10-28 13:24:48	2020-10-28 13:30:59	2020-10-28 13:30:59	No

2020 Week 45: 4 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
03	2020-11-06 08:15:02	MBS	2020-11-06 08:15:02	2020-11-06 08:21:04	2020-11-06 08:21:04	No
		MBS	2020-11-06 08:15:02	2020-11-06 08:21:05	2020-11-06 08:21:05	
		MBS	2020-11-06 08:39:02	2020-11-06 08:41:20	2020-11-06 08:41:20	
		MBS	2020-11-06 08:39:02	2020-11-06 08:41:18	2020-11-06 08:41:18	
04	2020-11-05 07:26:21	MBS	2020-11-05 07:26:22	2020-11-05 07:31:13	2020-11-05 07:31:13	No
		MBS	2020-11-05 07:26:22	2020-11-05 07:31:16	2020-11-05 07:31:16	
		MBS	2020-11-05 07:27:23	2020-11-05 07:31:18	2020-11-05 07:31:18	
05	2020-11-06 11:42:37	MBS	2020-11-06 11:42:38	2020-11-06 11:46:29	2020-11-06 11:46:29	No
		MBS	2020-11-06 11:43:09	2020-11-06 11:46:30	2020-11-06 11:46:30	
		MBS	2020-11-06 11:43:09	2020-11-06 11:46:32	2020-11-06 11:46:32	
61	2020-11-04 09:13:35	MBS	2020-11-04 09:13:35	2020-11-04 09:18:49	2020-11-04 09:18:49	No

2020 Week 46: 5 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
05	2020-11-12 07:24:08	MBS	2020-11-12 07:24:08	2020-11-12 07:27:26	2020-11-12 07:27:26	No
		MBS	2020-11-12 07:24:08	2020-11-12 07:27:28	2020-11-12 07:27:28	
		MBS	2020-11-12 07:24:39	2020-11-12 07:27:24	2020-11-12 07:27:24	
06A	2020-11-14 19:12:05	MBS	2020-11-14 19:12:05	2020-11-14 19:17:28	2020-11-14 19:17:28	No
		MBS	2020-11-14 19:12:36	2020-11-14 19:17:31	2020-11-14 19:17:31	
06A	2020-11-15 10:26:32	MBS	2020-11-15 10:26:33	2020-11-15 10:31:33	2020-11-15 10:31:33	No
06A	2020-11-15 14:49:07	MBS	2020-11-15 14:49:08	2020-11-15 14:55:05	2020-11-15 14:55:05	No
		MBS	2020-11-15 14:49:38	2020-11-15 14:55:08	2020-11-15 14:55:08	
78	2020-11-13 09:10:37	MBS	2020-11-13 09:10:38	2020-11-13 09:14:35	2020-11-13 09:14:35	No
		MBS	2020-11-13 09:10:38	2020-11-13 09:14:40	2020-11-13 09:14:40	
		MBS	2020-11-13 09:13:38	2020-11-13 09:14:42	2020-11-13 09:14:42	

2020 Week 47: 4 Alarming Events in total

Pipeline	Alarming Event Start Time	Type	Alarm Received Time	Alarm Assessed Time	Alarm Cleared Time	Shutdown Required
05	2020-11-16 13:52:23	MBS	2020-11-16 13:52:24	2020-11-16 14:00:14	2020-11-16 14:00:14	No
		MBS	2020-11-16 13:53:24	2020-11-16 14:00:16	2020-11-16 14:00:16	
05	2020-11-16 14:27:25	MBS	2020-11-16 14:27:25	2020-11-16 14:28:32	2020-11-16 14:28:32	No
05	2020-11-18 07:57:57	MBS	2020-11-18 07:57:57	2020-11-18 08:06:13	2020-11-18 08:26:03	Yes
05	2020-11-18 19:45:26	MBS	2020-11-18 19:45:26	2020-11-18 19:53:23	2020-11-18 19:53:23	No
		MBS	2020-11-18 19:46:26	2020-11-18 19:53:25	2020-11-18 19:53:25	
		MBS	2020-11-18 19:46:26	2020-11-18 19:53:26	2020-11-18 19:53:26	

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

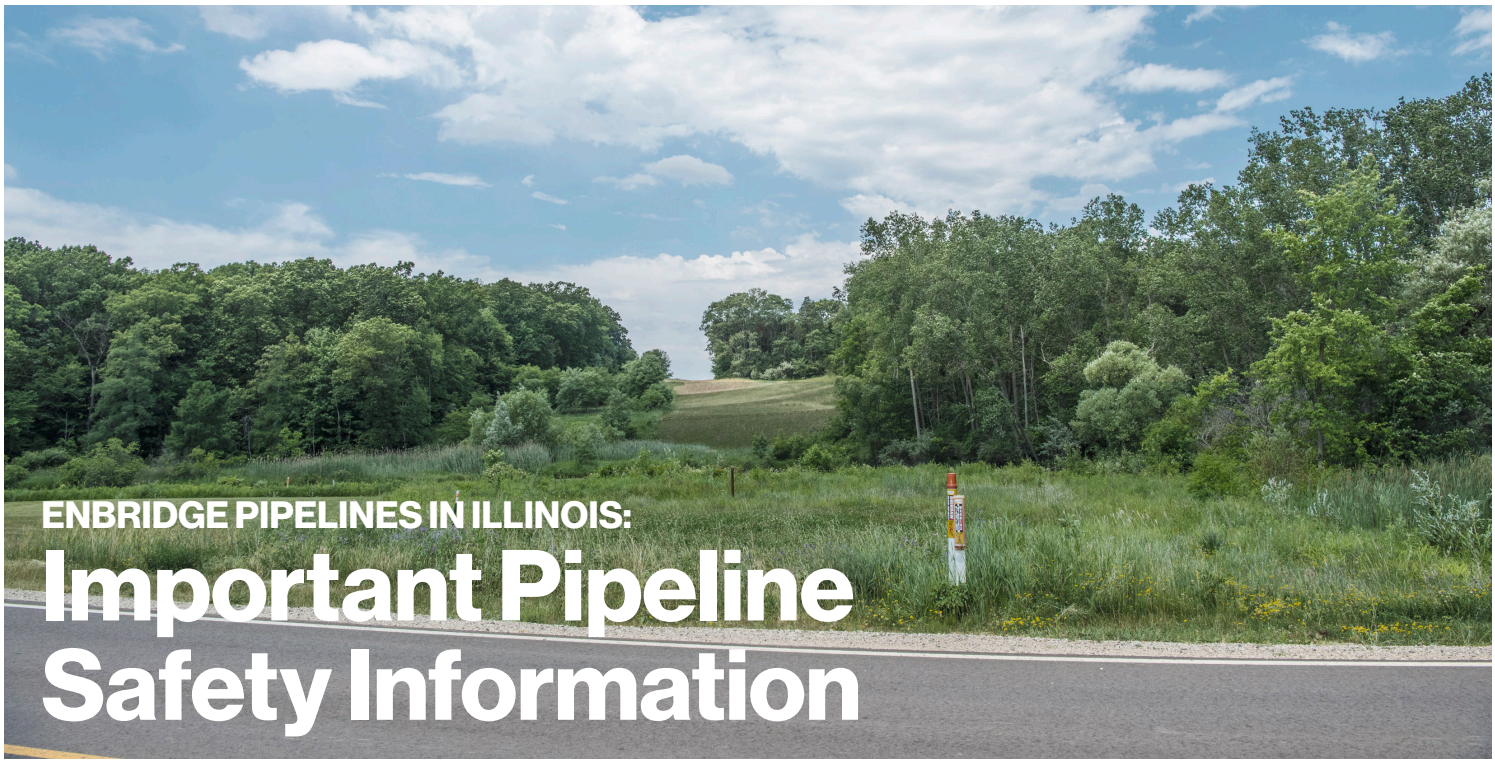
Reason for Instrumentation Outage	Time Limit to Restore	Root Cause	Actions Taken to Resolve the Outage
Instrumentation Failure	10 days	Instrumentation Error	Fixed the Instrument
Instrumentation Failure	10 days	Communication Interruption	Restored Communications
Instrumentation Failure	10 days	Power Outage	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 – Spill Response and Preparedness Additional Information [116]

Reporting Period: May 23, 2020 to November 22, 2020



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Illinois is located within EPA Region 5:

U.S. EPA - Region 5
77 W. Jackson Boulevard
Chicago, IL 60604-3590

312-353-2318 (in Region 5 only)

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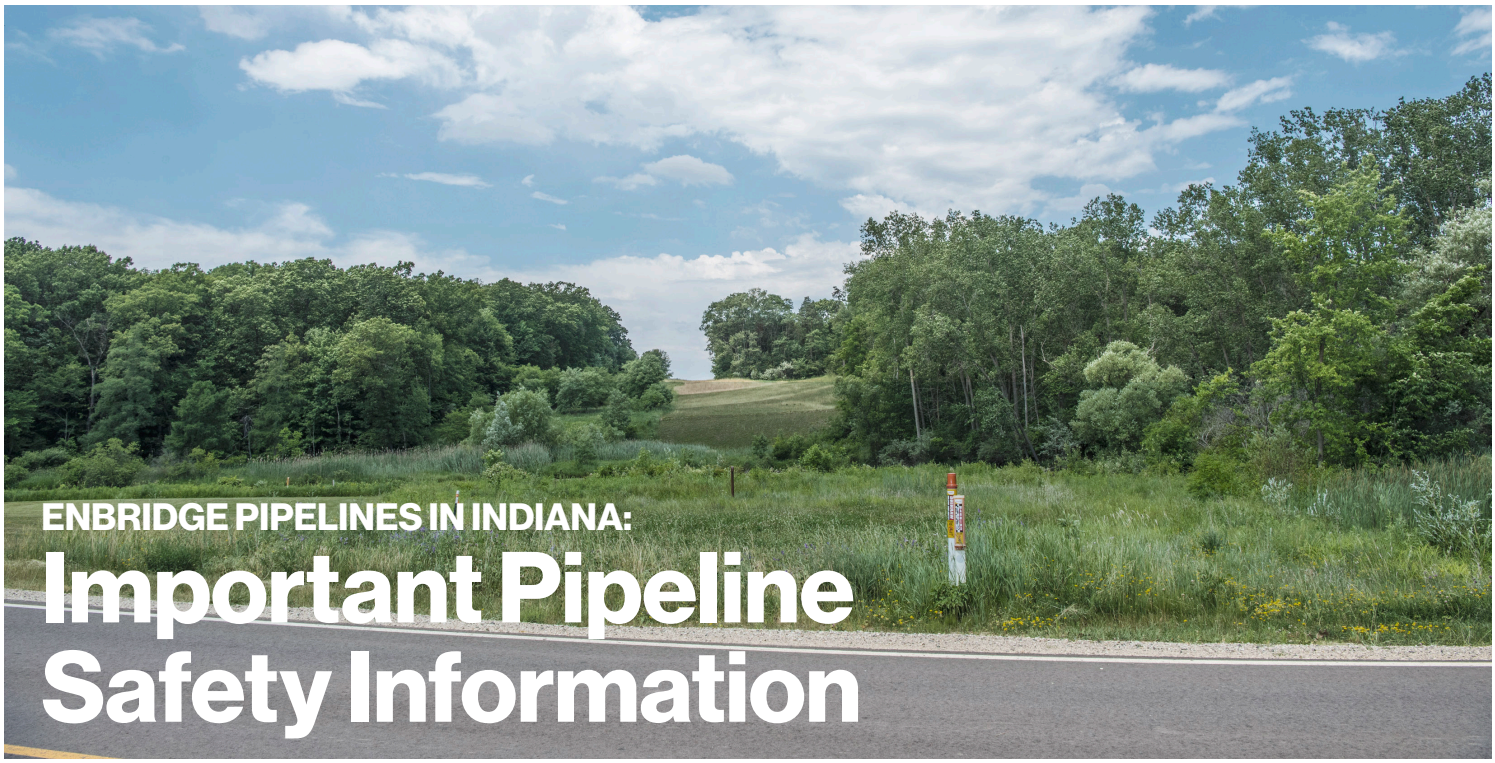

ENBRIDGE PIPELINES IN INDIANA:

Important Pipeline Safety Information

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What are the characteristics and hazards of the products being transported by Enbridge?

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How do I know where Enbridge pipelines are located?

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Indiana is located within EPA Region 5:

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77 W. Jackson Boulevard
Chicago, IL 60604-3590

312-353-2318 (in Region 5 only)

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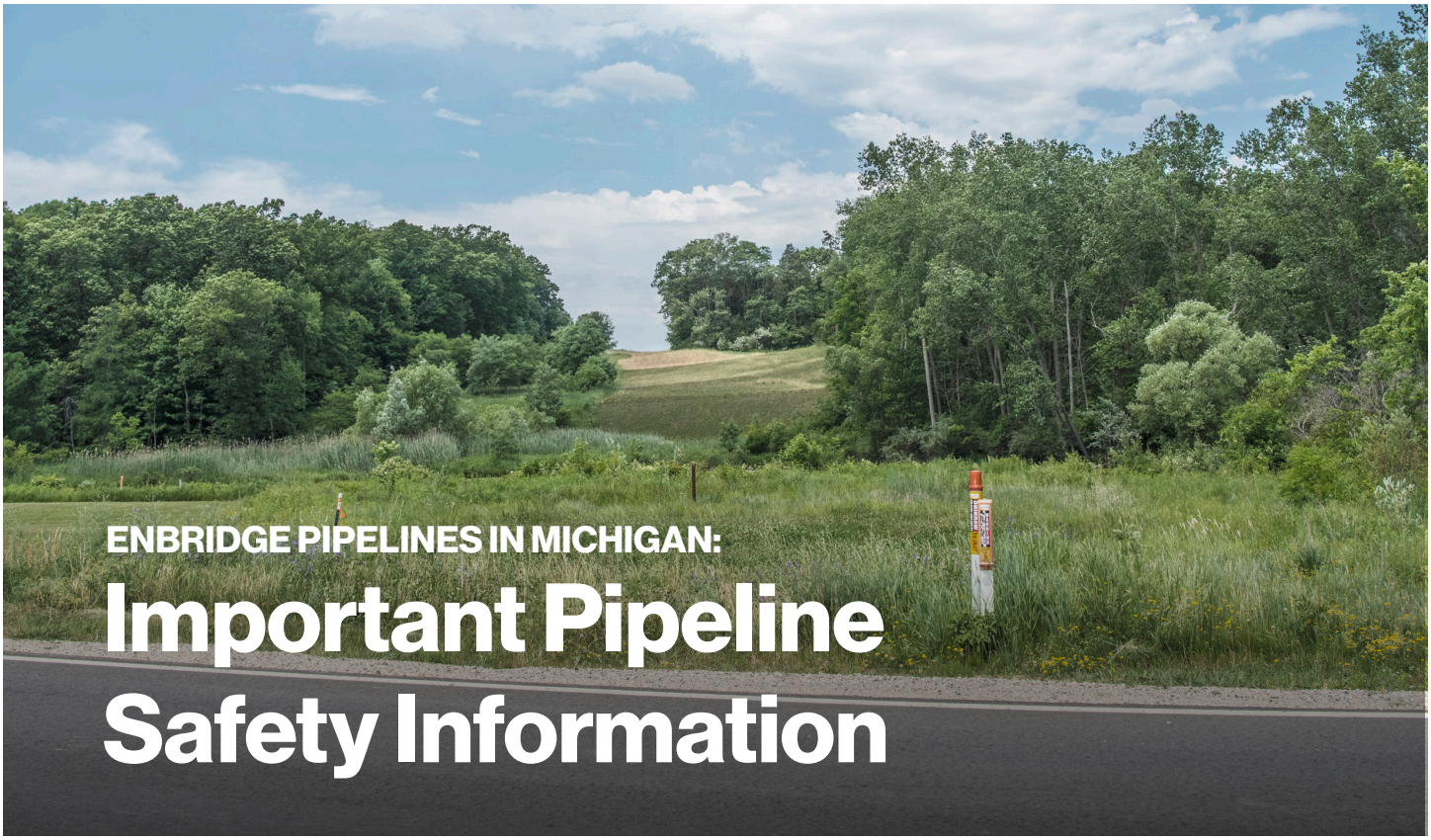

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Natural Gas Liquids (NGLs) include propane, butane, ethane, and occasionally some other petroleum products like natural gasoline, also known as condensate. NGLs are used by various industries to produce materials such as plastics, refrigerants and tires. NGLs are colorless and will have a steam-like cloud or frost appearance on the ground and have an odor similar to gasoline. NGLs are liquids when inside the pipeline or storage tank but become gaseous if released into the atmosphere. NGLs are heavier than air and stay close to the ground in low-lying areas.

Crude oil and NGLs can be flammable and vapors may ignite when an ignition source is present. Many compounds in crude oil and NGLs can be harmful if they enter the human body through inhalation, ingestion or skin absorption. Exposure to these compounds may cause skin irritation, dizziness, headache or even loss of consciousness. Suffocation may occur if vapors displace the oxygen in an enclosed area.

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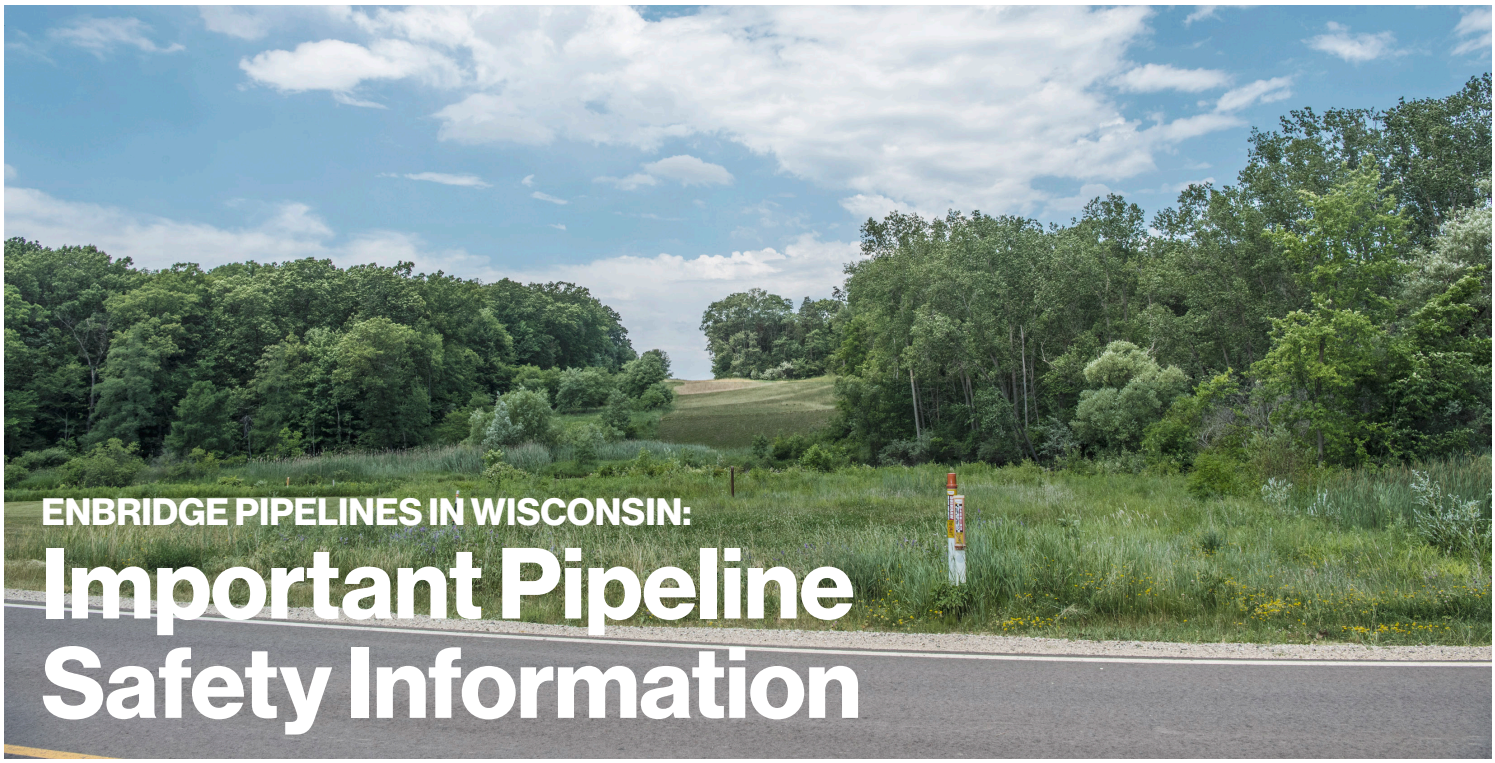

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