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EXECUTIVE SUMMARY

a. Incident location; map of the area, indicating the affected pipeline, actual failure site, and site/s without failure but oil to surface, and integrity dig sites with results

Please refer to Appendix 1: Pipeline Row, Failure Location, Containment Area and Appendix 2: Area Map for maps illustrating the area immediately surrounding the failure site on the 20" Rainbow pipeline located near MP188 and a detailed map illustrating the pipeline right-of-way, failure location and containment area, respectively.

Based on the 2011 corrosion inspection in-line inspection (ILI) results on the Cadotte to Utikuma segment (received days following the reported failure), Plains performed two corrosion excavations located approximately 25 kilometres downstream of the failure site. In the vicinity of one of these corrosion sites, a full encirclement sleeve was also excavated for inspection and assessment. Subsequently, one end of the existing sleeve was repaired with a sleeve-on-sleeve fitting. The excavation, inspection, repair, and backfill activities were observed by ERCB field staff.

b. Occurrence date and time/Duration of the incident

Plains began experiencing abnormal operating conditions on the Rainbow Pipeline on April 28, 2011 at 18:32. Numerous alarms were logged between 18:35 and 2:43, at which time the pipeline was shutdown. The SCADA system worked as designed; however, due to operator error, the pipeline was restarted three times throughout the incident. The failure, and subsequent release, was confirmed by Plains' field operations personnel at 07:51 on April 29, 2011. Please refer to Appendix 4: Chronology and summary of events including detailed timeline of operator actions following first alarm below, and Section 3: Description of the incident for details on response.

c. Contractor information

During the initial response in the days following April 29, 2011, a variety of contractors were engaged on short notice to respond immediately to the release site. The goal was to establish access, affect repairs to the pipeline, establish containment of the free product and begin construction of the infrastructure that would be required to execute the long-term activities that will be pursued. All contractors and vendors were initially sourced on site by the Emergency Response Team and specifically by the Logistics Team under the direction of the Incident Commander and the On Scene Commander. The selection of vendors was based on multiple criteria such as:

- I. Availability
- II. Qualifications to execute the require work



- III. Local contractors so as to engage the surrounding communities
- IV. Contractors with whom Plains Midstream has experience

Three critical contractors were selected due to their technical expertise and their experience with Plains. SWAT was hired to direct and lead all cleanup activities as they are recognized experts in their field, having participated in, and led, numerous release cleanups throughout Western Canada. Trojan Safety was engaged to provide Health, Safety, and Security services for the site. This included coordinating any other contractors who provided similar services. Additionally, Petro-line was engaged to effect the repairs to the pipeline itself.

By the middle of May 2011, containment had been established, recovery operations were well under way and much of the infrastructure construction activities had been completed. At that time, Plains streamlined the vendors on site by removing those whose activities were complete (primarily infrastructure construction related) and focusing on employing local contractors and contractors with necessary expertise. Plains worked with SWAT to establish a cleanup plan that clearly identified manpower and equipment required to effectively remediate the site. The result was a balance of Plains' traditional contractors, local contractors and contractors with required, specialized experience and equipment. Throughout the project to this date, all contractors have been coordinated, monitored and supervised by Plains personnel and construction supervisors.

A summary of the contractors utilized on the MP188 project is provided in Appendix 3: MP 188 Contractors.

d. Chronology and summary of events including detailed timeline of operator actions following first alarm

Please refer to Appendix 4: Chronology and summary of events. Please note that this information was provided to the ERCB on May 10, 2011.

e. Type and volume of lost production

Type: Light Sweet Crude Oil
Volume: 4,500 m³ (estimated)

RECOMMENDATIONS

a. Actions to improve existing operations



Please refer to Appendix 39 Letter to ERCB re Rainbow seeking leave to resume operation final, which outlines steps to reduce the Consequence of Similar Failure.

b. Actions to prevent future occurrences

Please refer to Appendix 39 Letter to ERCB re Rainbow seeking leave to resume operation final, which outlines steps to reduce the Consequence of Similar Failure.

c. Actions to inform affected public of outcomes and findings

Please refer to Appendix 21 PMC Communication Plan – May 12, 2011.

BACKGROUND TO THE INCIDENT

a. Operator history in the area

Plains acquired the Rainbow Pipeline in 2008. Long term operators of the Rainbow Pipeline System remain employed by Plains.

b. Details of any previous incidents, pipeline repair/replacement or pipeline exposure/excavations within the last 5 years including any system shut downs

Plains is not aware of any similar events.

c. Detailed description of pipeline design and construction including dates of construction if different projects

The pipe was designed to API 5L X52 and manufactured by Stelco using submerged arc welding process. The pipe was originally coated with Plicoflex primer and PVC-butyl tape. The pipeline was constructed in 1966/67 and came into service in 1967.

d. Summary and Assessment of Conditions and Events Immediately Preceding the Incident

Please refer to the following, as provided to the ERCB on May 10, 2011:

- Appendix 8: Rainbow Station SCADA Logs
- Appendix 9: Kemp Station SCADA Logs
- Appendix 10: Cadotte Station SCADA Logs
- Appendix 11: Evi Terminal SCADA Logs

- Appendix 12: Utikuma Terminal SCADA Logs
- Appendix 13: Utikuma Station SCADA Logs
- Appendix 14: Nipisi Terminal SCADA Logs
- Appendix 15: PLM Alarm Log
- Appendix 16: Simsuite Alarms
- Appendix 17: Rainbow Station Flow Pressures

e. 1 Copy Only of the Site-Specific Emergency Response Plan(s) (ERP) if in effect or the Corporate Emergency Response Plan, with comment on how well the plan(s) worked or where improvements could be made

Hard copies of Plains' Western District Emergency Response Plan (ERP) had been submitted to the following ERCB offices: Calgary (EPA); High Level Field Centre; Grande Prairie Field Centre; St. Albert Field Centre; Red Deer Field Centre; Midnapore Field Centre; and Medicine Hat Field Centre. An additional electronic copy of the Western District Emergency Response Plan and the Rainbow Pipeline site specific section are provided on two CD's; attached in Appendix 41.

The ERP served to guide a strong and efficient response to the incident. Immediately upon confirmation of the release, the ERP was invoked and resources mobilized. An Incident Command Centre was established, Corporate Crisis Centre was manned and roles and responsibilities were assigned and communication structures established. On the morning of April 29, 2011, the following regulators and stakeholders were notified as soon as reasonably possible:

- Energy Resources Conservation Board (ERCB)
- Sustainable Resources and Development (SRD)
- Alberta Environment
- Environment Canada
- Woodland Cree First Nation
- Lubicon Lake Indian Nation
- Northern Sunrise County

Also on the morning of April 29, 2011, Plains mobilized response equipment and teams. Despite the challenging field conditions, recovery operations were initiated and expanded as access to the release footprint was improved.

The ERP functioned well, Plains' response was rapid, effective, safe, and well organized. Future improvements to the ERP are expected in the following areas:

- Crisis communications planning
- First Nations call down lists

DESCRIPTION OF THE INCIDENT

a. Summary of the Event

On April 29, 2011 an estimated 4,500 m³ of crude oil was confirmed released from the Rainbow pipeline at MP188 located southeast of the Plains Evi Terminal. The released crude oil flowed approximately 800 metres down slope from the break point, both on and off of the right-of-way, and pooled at the base of the slope in a group of connected beaver ponds. The release footprint is an area of approximately 8.3 hectares. The terrain surrounding the release is boreal mixed-wood forest and muskeg (marsh and boggy wetlands).

Plains' Emergency Response Plan (ERP) was initiated (Level 1 Emergency); activating the corporate emergency response centre and mobilizing an incident command post to the release location. Access to the release site required extensive efforts to clear brush along former forest cut lines and the laying of thousands of rig mats to stabilize the ground for equipment access. A sizeable release response effort was mobilized and clean-up efforts are still ongoing. The release response efforts involve many internal resources, external third-party consultants and contractors.

Oil recovery from the ponds and right-of-way has progressed well with approximately 50% of the estimated release volume recovered (most of the free oil). Remediation efforts are 100% complete on the first of three ponds that were oil covered. Remediation of the second pond area is approximately 50% complete and the third pond area is approximately 75% complete. Oil-impacted soils have been excavated and approximately 30,000 m³ of soil is stockpiled and awaiting soil treatment, or removal and disposal. Additional localized impacted subsoils remain in-situ and will be excavated in due course. Plains will attempt to complete remediation activities this year (weather permitting), with reclamation activities to be completed next year. Ongoing monitoring of the site is expected for years to come.

The release attracted considerable media interest requiring the corporate communications plan to be implemented. Plains continues to work closely with regulatory agencies (ERCB, AENV and ASRD) and local First Nations communities (Lubicon Lake Indian Nation, Woodland Cree First Nation, and Cadotte Métis) to address stakeholder concerns and ensure that remediation and reclamation efforts meet with regulatory approval.

b. Details of Internal and External Notification

Internal Notification:

At 07:30 on April 29, 2011, an internal notification was sent via Plains' Incident Notification System (PINS) to predetermined corporate and field personnel (please refer to Appendix 18: Incident # 2011-00194). Plains immediately initiated its Corporate ERP; a command centre



in Plains' Calgary offices and the Incident Command Structure (ICS) was set up. An initial conference call was held between the Corporate Command Centre in Calgary and On-scene Responders at 08:47. Subsequent internal conference calls and/or update calls were held between Corporate and field personnel approximately every half hour between 09:22 and 21:44 on April 29, 2011. Please refer to Appendix 19: MP188 Debrief Conference Call Dates and Times for a log of all (formal) internal communications. Plains' on-site commander continues to send internal update emails.

External Notification:

On the morning of April 29, 2011, the following regulators and stakeholders were notified as soon as reasonably possible:

- Energy Resources Conservation Board (ERCB)
- Sustainable Resources and Development (SRD)
- Alberta Environment
- Environment Canada
- Woodland Cree First Nation
- Lubicon Lake Indian Nation
- Northern Sunrise County

Please refer to Appendix 20: External Notification Timeline for details surrounding external communications between April 29, 2011 and May 12, 2011. Please note that this timeline was provided as part of Plains' communications plan submitted to the ERCB on May 9, 2011.

Plains has since been carrying out the communication activities as outlined in community communication plan submitted to the ERCB on May 12, 2011, please refer to Appendix 21: PMC Communication Plan - May 12, 2011.

c. Response and Control Measures

On April 29, 2011, Helicopters were put into the air, one from Slave Lake and one from Peace River, with field operators aboard to fly the line once there was enough daylight (6:10 am and 6:30 am, respectively). Once oil was confirmed on ground, Plains' ERP was initiated and an Incident Command Structure was setup in Calgary and in the field. Onsite Command post was set up at Evi Terminal, Incident Command Centre was established in Olds District Office and Crisis Centre was set up in Calgary office. Remote manual block valves were closed, by helicopter access, at MP167 and MP212. The electric-operated block valve at MP109 was closed earlier, once the line was shutdown. Work to secure equipment and gain access commenced immediately.

d. Details of any monitoring programs (air, water, soils), including their results



As part of the clean-up efforts, Plains has prepared a variety of plans including: Air Monitoring Plan, Waste Management Plan, Surface and Groundwater Monitoring Plan, Soil Containment and Remediation Plan. Each of these plans include the specifics of the various monitoring programs that are underway at the site. All above referenced plans have been submitted and approved by AENV.

i. Air Monitoring

Details of the air monitoring activities are included in the Air Monitoring Plan (Appendix 22: Air Monitoring Plan)

- April 30, 2011 (as soon as access was gained to the release footprint) - a mobile air monitoring unit was positioned at the release site.
- May 2, 2011 - an air monitoring unit was positioned at the community of Little Buffalo in response to a reported odour concern.
- May 8, 2011 - an air monitoring unit was positioned at the community of Marten Lake at the request of ASERT/ERCB.

Monitoring by each unit consisted of SO₂, H₂S, total hydrocarbons, wind speed and direction. All monitoring results to date have been and continue to be submitted daily to AENV.

ii. Water Monitoring

As part of containment verification efforts, a water monitoring program was initiated. The program strategy addresses three possible modes for oil or dissolved phase hydrocarbon migration and includes visual inspections; surface water sample collection and testing; groundwater well installation, sampling and testing; and sand point installation, sampling and testing. The monitoring program (Surface and Groundwater Monitoring Plan; June 7, 2011) has been presented as a plan and accepted by AENV. Collected water quality data is reported to AENV as it becomes available. A summary of the plan is provided below.

iii. Inspections

Inspections of the release footprint are conducted regularly to ensure containment. To date, there has been no evidence of oil to be beyond the known release footprint and the containment afforded by the beaver dams.

iv. Surface Water

Surface water sampling locations were established in selected areas representative of surface water flow. A total of eight water sampling locations have been sampled. While water samples have been collected, no moving surface water has been observed. Surface water sample results show that containment is secure. As no



moving surface water has been observed, the surface water locations are no longer sampled on a regular basis.

v. Sand Points

Sand points were installed in areas where the superficial organic layer that overlays the mineral soil at depth, could act as a migration pathway. A total of seven sand points were installed. Test results for water samples collected from the sand points do not suggest contaminant migration. Sand points continue to be monitored and sampled on a regular basis.

vi. Groundwater Wells

A total of 14 groundwater wells have been installed. The wells have been screened at various depths to cover the three depth intervals of concern (groundwater table @ 2-5m bgl, shallow sand layer @ 1.5 m bgl, and at depth @ 6-7.5 m bgl to assess the DUA). Water levels in the groundwater wells have been measured and show the wells to be very slow to recover. As yet, groundwater conditions have not reached equilibrium and groundwater samples have not been collected. Water levels in the groundwater wells will continue to be monitored and samples will be collected and tested as soon as conditions are appropriate. There is no indication of oil migration noted in the groundwater wells.

vii. Soil Monitoring

At this time there is not a formal soil monitoring program in place for the site. A closure sampling plan will be prepared and submitted to AENV in due course.

e. Security and safety measures for the site and potentially affected area

At the onset of the release, Plains hired the services of HSE Safety Services to control accessibility to the site. As of today, Trojan Safety Services has been contracted to: provide manpower and security at all gates and entrances to site, ensure that all vehicles entering/exiting the site sign in, control traffic, spot vehicles, provide medic services and communicate activities to the command centre, Plains personnel and contracted supervisory staff.

Currently three Trojan employees are on site to man the gates at the north end, and at the second check point gate (located south of the first gate by approximately 3.5 kilometres). A second security contractor (Little Bear Contract Security Services) was brought to site on July 5, 2011 to provide additional support. In addition to manning the gates, the north



entrance (near highway 986) is also equipped with a metal traffic arm, which will close off the road if the security threat becomes elevated. During the initial emergency response, to ensure a safe work site, the arm was used to control media and other interested parties trying to gain unauthorized access to the site.

An additional Trojan Security member is at the North cutline access to site while another is situated inside the gates at the entrance to construction activities to assist with traffic control, monitoring, sign in, and to provide medic services. During the evening shift, a security person is stationed at the command centre because local trappers have a trap line in the area and require access to the road.

There was an additional security person assigned to the south access road for one month, but has since been removed, as the other gates are gathering the information required and the number of on-site personnel has decreased.

Trojan supplies three full-time managers and assistants who manage the day-to-day operations of their personnel and liaise with Plains' supervisors, crews and inspectors on site.

Key Security Activities:

- Audit site personnel signed in to hazard assessment to ensure everyone on site is accounted for.
- Communicate issues and concerns to gates and command centre.
- Control and coordination traffic as road access is narrow and activity levels vary.
- Provide assistance during safety stand-downs, at muster locations which include head count and crowd control.

f. Safety Stand-down Follow up

There were four instances from April 29, 2011 to date that resulted in the need for safety stand-downs:

i. Distress Call – As a result of a distress call received May 11, 2011, the following occurred:

- Muster locations initiated
- Headcount
- Swept area (ground and aerial)
- Evacuated site
- Work shut down for the remainder of the day

This evacuation and subsequent headcount was not accurate when compared to actual personnel on site. This was due to the fact that Harvest Energy operators were working



in the area, passing through our gates and signing in. Additionally, integrity dig crews not working within the controlled area were signing in.

Corrective Action: Second gate was put in place 3.5 kilometres south of the North gate access. Increased manpower and implemented more controls at each access to site.

ii. Fire – As a result of a fire that came very close to the site on May 15, 2011, the following occurred:

- Evacuated site
- Muster location initiated
- Headcount with all accounted for
- Work shut down until evacuation order lifted
- Calgary corporate response team initiated and continuously liaised with Operations Lead, EH&S Lead, Corporate Services Lead, Communications Lead, and Business Continuity Lead.
- Regional Emergency Operations Centre (REOC) established where Northern Sunrise County, Sustainable Resources and Development (SRD), ERCB and Plains personnel gathered and managed communication until evacuation order lifted.

iii. Suspicion Occurrences – Plains’ supervisors suspected that workers on site were under the influence of drugs or alcohol. The following actions were taken:

- Workers were reported to their supervisors who managed the issues, including raising awareness and prohibiting alcohol or drugs from site.
- Increase discussion at safety and tailgate meetings of zero tolerance for drugs and alcohol on site, at work.
- Anyone suspected of being under the influence was removed from site.

iv. High Risk Work – Work ongoing under and around power lines. Initially the power shut down, but reactivated during work activities in the area. The following topics and controls were discussed:

- Do not become complacent, stay alert to the dangers, always.
- Use a Cat to push piles under power lines.
- Use the 220 small hoes brought onto site
- Meet to review hazard assessment, safe work permits, using reliable spotters, and communication expectations.

g. Use of contractors including specific areas of responsibilities (i.e. environmental cleanup, waste disposal)



Please refer to the contractors description within the Executive Summary section of this document.

h. Communications program and media involvement, including an assessment of their effectiveness, what worked well, and where improvements can be made

See Appendix 23: Communications Program and Media Involvement.

i. Actual (root cause) or suspected cause, the rationale used to determine the cause

Please refer to Appendix 39: Letter to ERCB re Rainbow seeking leave to resume operation final, and Appendix 24: Acuren Failure Report.

j. How repair activities were planned and performed

All activities associated with pipe replacement at the failure site were performed by qualified personnel using appropriate materials in accordance with documented procedures. Records associated with these activities were submitted to the ERCB on May 10, 2011 as part of the response to the ERCB's Information Request, as summarized below:

- Appendix 25: Stoppling Procedure
- Appendices 26 and 27: Non-destructive examination (NDE) reports of carrier pipe for lamination and of welds associated with both stopple fittings
- Appendix 28: Mill Test report for replacement pipe
- Appendix 29: Pressure recorder calibration certificate
- Appendix 30: Pressure test records of replacement pipe
- Appendix 31: Welder performance qualification card for both experienced welders
- Appendix 32: Contractor's welding procedure specification used for pipe replacement
- Appendix 33: NDE report of carrier pipe before pipe cut-out (check for lamination)
- Appendix 34: NDE report of tie-in welds

POTENTIAL IMPACTS AND STEPS TAKEN DURING THE INCIDENT TO MONITOR AND MINIMIZE EFFECTS

a. Public

Plains has worked to minimize impacts on local communities, and remains in regular contact with community leaders to understand potential community concerns.



Air monitoring was established at nearby communities to assess potential air quality impacts. Air monitoring results to date, show no impacts at the two off-site monitoring locations.

While the local communities have been inconvenienced by increased traffic on the highway at shift start and end times, signage on the highway was placed to inform motorists of the increased truck traffic in the area.

The trapper for the impacted area was notified of the release. While security and checkpoints are maintained on the access road to the clean-up site, trappers are given free access to their lines in the vicinity (outside of the release footprint).

There has been a positive impact to the local community through the retention of resources and services.

b. Workers

Potential impacts to workers (have been managed through awareness, personnel protective equipment and oversight. Daily tailgate meetings review potential safety concerns including weather related. The site had been previously shut down due to unsafe conditions resulting from the continuous rainfalls. The required personnel protective equipment (i.e. respirators, tyvek coveralls, rubber boots, gloves, goggles, air monitors) are provided for workers at the site. Spent personnel protective equipment is collected and disposed of appropriate in accordance with the waste management plan.

Throughout the response, Plains has endeavoured to hire qualified local contractors and have encouraged our contractors to hire qualified local community members, where possible. Overall, there has been a positive impact for workers through the employment offered during clean-up activities. Plains remains committed to engaging qualified local businesses and workers.

i. Employee Education, Training and Competency

Employees undergo a rigorous hiring practice which is based on the duties and responsibilities of the job or position. Each employee hired by Plains will go through a pre-qualification process, participate in a company health and safety orientation, take online- and facility-based core safety training, participate in Plains' progression system to establish competency parameters, and are provided with on-the-job training where there is minimal experience with Plains or Industry. See Appendix 35: ESMS Training Information excerpt which forms part of Plains' Environment Safety Management System, for more detailed information.



ii. Contractor Management

All contractors receive a Site Specific and Plains Contractors orientation, which is provided by Trojan at the North access gate. The training covers:

- 1.0 Introduction
- 2.0 Safety Orientation
- 3.0 Safety Responsibilities
- 4.0 Compliance with Standards
 - 4.1 Safety Regulations and Standards
 - 4.2 WHIMIS/Right-To-Know Legislation
- 5.0 General Safety Rules
 - 5.1 Signs
 - 5.2 Vehicles
 - 5.3 Smoking
 - 5.4 Substance Abuse
 - 5.5 Horseplay and Fighting
 - 5.6 Cameras and Communication Equipment
 - 5.7 Security and Authorized Personnel
 - 5.8 Refusal to Perform Unsafe Work
- 6.0 Characteristics of Pumped Products
- 7.0 Personal Protective Equipment
 - 7.1 Personal Gas Monitors
- 8.0 Safe Work Procedures
 - 8.1 Safe Work Permit
 - 8.2 Gas Testing
 - 8.3 Safety/Fire Watch
 - 8.4 Hot Work
 - 8.5 Tanks
 - 8.6 Excavations-Trenching and Shoring
 - 8.7 Electrical Safety
 - 8.8 Lockout/Tagout
 - 8.9 Tools and Equipment
 - 8.10 Ladders and Scaffolding
 - 8.11 Compressed Gas
 - 8.12 Welding
 - 8.13 Housekeeping and Material Storage
 - 8.14 Characteristics of NGL's/LPG's
- 9.0 Response to Incidents
 - 9.1 Personal Injuries
 - 9.2 Incident/Accident Reporting
 - 9.3 Site Emergencies and Evacuation Procedures



- Contractors are all required to have industry training and tickets are verified on site.
- Plains provides onsite (task-specific safety training), and initiates monitor and patrol activities (Construction Inspectors and EH&S Advisor).

iii. Site & Personnel Safety and Management

- Daily tailgate meetings are held in the morning with all crews at various locations throughout the site.
- Issuing permits – Safe Work Permits (SWP) and hazard assessment are completed for every team (based on task). One full-time Plains employee is assigned to issue permits and all are closed off by Plains construction Inspector.
- High risk work – Safe Work Permits and hazard assessments, are issued for any worked deemed high risk (working under or near live power lines, working near pipelines). A safety meeting is conducted before the work begins with all affected contractors which is lead by Plains safety inspector. Some of the controls initiated include:
 - a) Using a Cat to push piles under power lines
 - b) Using 220 small hoes brought onto site
 - c) Using competent and responsible spotters
 - d) Communicating through meetings and increasing awareness
- Road controls – mile markers, goal posts, warning power line signs, and men working signs, have been erected throughout the site and along the highway 986. Trucks traveling on the road use radio controls to message their way into and out of site at each mile marker.
- First Aid – First aid medics and trailers are located at various locations around the work site, satisfying the requirements of Alberta Occupational Health & Safety as it relates to hazards, site location and number of personnel on site.
- Decontamination Unit – a decontamination trailer was on site, but removed as of July 5, 2011 as hazards have been mitigated since the inception of the release, and manpower has declined. A shower and wash unit has been brought in to replace the decontamination trailer.

c. Environment

i. Soil and Vegetation

Soil and vegetation within the release footprint has been oil impacted. The visually stained soil/vegetation has been collected and stockpiled on site. Trenches have been excavated around the stockpiles and fluids that drain from the piles are collected and disposed of appropriately. Vegetation outside of the release footprint does not appear to be impacted.



Access to the site was gained by brushing former forest cut line routes and brushing a former reclaimed well site. These areas will be reclaimed upon the conclusion of clean-up activities.

ii. Pond Water Quality

Water quality in the ponds has been impacted, as has the aquatic life. Once the oil clean up operations conclude on the ponds, the water quality will be assessed.

iii. Air

The air quality during the early days of the release would have been impacted through the volatilization of the light hydrocarbon compounds present in the light sweet crude oil that was released. The air monitoring units have confirmed that air quality outside of the release footprint had not been impacted.

d. Animals

As of July 6, 2011, the following animals had been impacted:

- 11 Beavers
- 10 Frogs
- 28 Ducks
- 50 Small Birds (shoreline and song)
- 3 Mice

All wildlife found or captured are retained and handed over to Alberta Fish & Wildlife.

i. Wildlife Deterrents and Control Measures

- ECO Web Fencing supplier and installer – fence materials were brought to site, and installed around the entire parameter of the release footprint as soon as roads were established.
- ECO runs two shifts so personnel are monitoring/repairing the fence day and night.
- ECO and SWAT conduct wildlife count, recovery and report findings to supervisors.
- Streamers, birdcalls and distracters placed around pond areas.
- Safety meetings and daily toolbox meetings have a focus on watching for and reporting wildlife findings.
- Contractors and Plains personnel received bear awareness safety training from Alberta Fish & Wildlife (on site) due to the presence of bears near the working area.
- Alberta Fish & Wildlife brought bear traps to site, removing four bears from locations in and around construction activities.



A copy of or sufficient detail respecting appropriate maintenance and operating programs related to the pipeline (e.g., SCADA systems, pipeline corrosion program, ESD valve operating conditions, maintenance programs including excavation and back filling, and employee certifications).

a. SCADA Systems:

Plains operates the Telvent OASyS DNA 7.5 SCADA System and maintains an agreement with Televent for all updates and releases to be provided, along with technical support.

Plains' SCADA system is operated and manned 24 hours a day, 7 days a week out of Plains' Control Centre in Olds, Alberta.

b. Pipeline Corrosion Program

With respect to pipeline corrosion program, Plains notes that this failure was not associated with corrosion.

Please refer to Appendix 40: Asset Integrity Management Plan (25-May-09), which includes a section on Pipeline Risk Management – Corrosion Assessment, Investigation, and Mitigation.

c. ESD Valve Operating Conditions:

Automatic ESD's take up to 5 minutes to close; manual ESD's can take up to 4 hours, depending on access conditions.

d. Excavation and Backfill procedures:

The Excavation and Backfill procedures were provided to the ERCB on May 24, 2011 in response to the ERCB's Information Request #2; please refer to Appendix 36: Excavating Procedures, and Appendix 37: Pipeline Backfill Procedure.

e. Employee Certifications:

Employees hired by Plains will go through a pre-qualification process, participate in a company health and safety orientation, take online- and facility-based core safety training, participate in Plains' progression system to establish competency parameters, and are provided with on-the-job training where there is minimal experience with Plains or Industry. Please refer to Appendix 35: 3.3 Training, Awareness and Competency Programs which forms part of Plains' Environment Safety Management System.



All third-party analyses and any engineering reports of any pipeline or equipment failures (e.g., metallurgical reports, weld failures), if applicable. A copy of the report determining failure cause and/or mechanism from the lab analysis.

Please refer to Appendix 24: Acuren Failure Report, prepared by Acuren Group Inc. on May 19, 2011.

Plains has contracted DNV to provide a third-party Engineering Assessment Report, as indicated in a June 22, 2011 letter to the ERCB. Both the draft report, expected to be available by July 11, 2011, and the final report will be provided to the ERCB's Technical Operations Department as they become available.

Address how confirmation of long-term integrity on the failed subject pipeline will be achieved and include a copy any engineering reports or assessments. In addition, consider other pipelines within the system to ensure that long-term integrity will be achieved.

Please refer to Appendix 39: Letter to ERCB re Rainbow seeking leave to resume operation final; as noted above, the DNV report will be provided to the ERCB once it is issued.

PERSONNEL STATEMENTS

Please refer to Appendix 38: MP188 Incident Report - Operation Statements.

CONCLUSION

a. How the knowledge gained from this incident will be shared with other operators

The findings from this incident remain under review.

b. Timeline to implement actions, including measurement points that will be used to ensure that actions are followed up, resulting in lasting improvement

The findings from this incident remain under review.



APPENDICES

Appendix 1: Pipeline Row, Failure Location, Containment Area
Appendix 2: Area Map
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