

IN THE PROVINCIAL COURT OF ALBERTA  
CRIMINAL DIVISION

Between:

HER MAJESTY THE QUEEN

and

PLAINS MIDSTREAM CANADA ULC

Agreed Statement of Facts

**Overview**

1. On April 28, 2011 shortly before 19:32, Plains Midstream Canada ULC's Rainbow pipeline failed near Peace River, Alberta. The release point was a remote, low marshy area approximately 100 kilometres away from Peace River and approximately 10 kilometres from the Lubicon Cree community of Little Buffalo. Ultimately, 4,500 cubic metres or 28,000 barrels of crude oil released into the low marshy muskeg filled area adjacent to the release point.

**Charge**

2. On Information 130466493P1, Plains Midstream Canada ULC stands charged that:

Count 2: On or between the 28<sup>th</sup> day of April, 2011, and the 29<sup>th</sup> day of April, 2011, at or near Peace River in the Province of Alberta being a person

responsible for a substance that is released into the environment that may cause, is causing or has caused an adverse effect, as soon as that person became aware or ought to have become aware of the release, did fail to take all reasonable measures to repair, remedy and confine the effects of the substance contrary to section 112(1)(a)(i) of the *Environmental Protection and Enhancement Act* and did thereby commit an offence contrary to s. 227(j) of the *Environmental Protection and Enhancement Act*.

### **Plains Midstream Canada ULC**

3. Plains Midstream Canada ULC ("Plains") is a Canadian company, headquartered and managed in Calgary. Plains is the Canadian subsidiary of Plains All American Pipeline L.P. Plains employs over 1,250 people in Canada. Plains' business includes crude oil transportation, gathering, marketing, terminalling and storage as well as marketing and storage of liquefied petroleum gas and other petroleum products. Plains' crude oil assets, primarily located within Alberta, Saskatchewan and Manitoba, include approximately 8,500 kilometres of active gathering and mainline pipeline systems, 4.5 million barrels of total storage capacity, and 24 truck terminals. Plains' liquefied petroleum gas assets include approximately 22 million barrels of useable storage capacity, 23 storage facilities, 18 rail terminals, 8 fractionation facilities, 6 pipeline terminals, 4 straddle plants and 2 gas processing plants.
4. The numerous facilities owned by Plains are of different vintages. The Rainbow pipeline was built in 1966 and 1967. Plains acquired the Rainbow pipeline in 2008.

### **The Rainbow Failure**

5. Sometime shortly before 19:32 on April 28, 2011, a 30 year old weld that connected two pieces of pipe within the Rainbow pipeline catastrophically failed.
6. When the weld was introduced to the pipeline, the welding process that the prior owner of the pipeline had used to affix the two pipes together was flawed. As a result, the weld contained "hydrogen cracks" within it. The hydrogen cracks caused the weld to be weaker than planned. Such hydrogen cracks can be difficult to detect.
7. The hydrogen cracks alone were likely insufficient to cause the failure. Here, the swampy land through which the pipeline travelled may have provided insufficient

support for the pipeline. Further, a right of way passed over the pipeline near the release point. Vehicles and traffic, both from Plains and other sources, would have travelled over the pipeline putting further stress on the pipeline. Freeze thaw cycles and other mechanisms might also have put further stress on the pipeline. Over time, pressure was exerted upon the weakened weld due to lack of support. The pressure might have been subtly exerted over the pipeline over a very lengthy period of time or it might have been more sudden. The nature of the pressure on the pipeline is difficult to ascertain and likely contributed to the failure.

8. At 19:32 on April 28, 2011, Plains' two computer leak detection systems (Pipe Line Management ("PLM") and SimSuite) immediately noted that a pressure control valve had closed. Low flow conditions in the pipeline were also detected. An operator at Plains' Olds control centre immediately dispatched Plains personnel to start testing the valve because the operator was concerned that some of the readings might be due to faulty equipment. The testing was initially done by the responsible employee using remote systems, and an employee was ultimately dispatched to drive to where the valve was located for an in person inspection.
9. At 20:22, in response to 5 PLM alarms and 1 leak detection alarm from SimSuite, the Olds operator shut down the north end of the Rainbow pipeline. In effect, the Olds operator stopped adding oil to the system upstream of where the leak had occurred.
10. Between 20:57 and 22:19, the Olds operator restarted the pipeline 3 times. Oil was introduced back into the pipeline upstream of the release point. 8 PLM alarms were detected during this period. The operator acknowledged the alarms on the computer system.
11. Somewhat abnormal flow rates during restart are to be expected to some degree. The Rainbow pipeline went through various elevation changes. When restarting the pipeline, sufficient pressure to push the oil through the pipeline between pumping stations where the elevation rose would be necessary to resume normal operations. The flow rate would be expected to be low at times as pressure built up to a level sufficient to push the oil to the next pump station. However, the flow rates, given the ruptured pipeline, were exceptionally low at this time.
12. At 23:30, the Plains employee arrived at the location of the control valve and was able to do a visual check. The pipeline was restarted a fourth time. The valve

appeared fully functional. The computer systems showed that the flow rates in the pipeline were still highly abnormal. Between 22:19 and 23:57, 5 more PLM alarms were detected along with a single SimSuite warning as opposed to leak alarm.

13. At 01:45 on April 29, 2011, the Olds operator contacted his supervisor at home for the first time. The content of this conversation is very difficult to ascertain as no recording or notes were made regarding it. The Olds operator appears to have only spoken about the PLM alarms without mentioning the SimSuite warning that had alarmed early in the incident. At the time, the pipeline was still running after the third restart. Based on the information provided, the supervisor instructed the Olds operator to see if enough pressure would build to allow the flow rate to normalize. Based upon what the operator advised the supervisor, the supervisor believed that insufficient pressure was building in the line to push the oil to one of the pumping stations.
14. At 02:03, SimSuite gave a warning alarm. At 03:43, SimSuite gave a red alert alarm. Thereafter, at 03:50, the Olds operator shut down the pipeline.

#### **The Effects of the Rainbow Failure**

15. The Rainbow failure resulted in the second largest oil spill in Alberta history. The marshy ground adjacent to the release site was a natural low spot and the oil pooled where it spilled. Further, a beaver dam was present that stopped the vast majority (and probably all) of the oil from escaping from the low spot. Cleaning up the area was a huge and expensive undertaking due to the volume of oil. However, the extent of the damage was geographically small even if the damage to the area was significant. Alberta Environment and Sustainable Resource Development reports that the clean-up of the area has been completed.
16. The senior Alberta Energy Regulator chemist manager in charge of supervising (she previously worked at Alberta Environment and Sustainable Resource Development where she undertook this work prior to accepting new employment with the Alberta Energy Regulator) the chemistry based parts of the Rainbow release reports that Plains' efforts to rehabilitate the release site were successful. She notes that she had received over 600 "green" chemistry samples from the release site and that frogs and some other invertebrates had been found at the release site in the year following the release.

17. Following the spill, a school in Little Buffalo was closed for a few days. Residents in Little Buffalo complained of odours in the area. No information exists to show if anyone in the area was at risk of any harm or suffered any health effects. Little Buffalo residents also had concerns about how the release would affect the wildlife in their area, but no information exists that quantitatively proves any such effect. Air quality testing at the time of the incident did not reveal the presence of any air quality issues. The Rainbow release appears to have resulted in relatively little effect to humans due to the remoteness of the release point.

### **Relevant Details Regarding the Rainbow Pipeline and Failure**

18. Plains had few written policies regarding leak detection on the Rainbow pipeline. Plains had a policy whereby control room operators were trained on the job. Control room operators sat with senior operators for 3 – 6 months learning how to operate Plains pipelines.
19. The Olds operator, who had 5 years of experience (3 years of which were with Plains), followed the contents of a flow chart detailing how to deal with leaks. Plains' written policy dictated that the flow chart be followed. At the top of the flow chart, the flow chart stated that the intent was that the flow chart be used for small volume leaks. The flow chart also states that operators should report shortages greater than 25 cubic metres per hour to the team lead and measurement advisor. Here, the leak detection readings showed that the leak volume readings were approximately 20 times the 25 cubic metre per hour amount identified on the flow chart. The operator did not immediately report the incident to his supervisor, the team lead or the measurement advisor. The flow chart also states that operators have authority to shut in the pipeline if the leak detection systems indicate a leak.
20. At many points in Plains' written policies, further written policies were contemplated. Those written policies had not yet been developed at the time of the incident. An expert hired by Plains in 2009 did indicate that Plains required more standard operating procedure policies, but the expert did not make recommendations that Plains change its monitoring systems or training.
21. Prior to assuming a leak, operators were instructed to try to determine if other reasons existed for abnormal readings because the Rainbow pipeline had numerous inputs and outputs. However, operators were trained that if they were in doubt they were to assume a leak, contact a supervisor and consider shutting in the pipeline.

22. Plains' operators, including the Olds operator, had received training on the SimSuite computer system. That training included a Powerpoint presentation given 2 days prior to the incident. The Powerpoint presentation included a few slides showing how a catastrophic leak might be displayed in the form of alarms and other SimSuite readings. In fact, one of the slides demonstrating a leak requiring a shut-in was virtually the same reading which would have appeared on the Olds operator's instruments.
23. The hydrogen cracks in the weld were old. In 1990, following a large pipeline failure, the National Energy Board ("NEB") had instructed all pipeline operators under its jurisdiction to test for any hydrogen cracks in the welds on their pipelines. The Rainbow pipeline does not and did not fall within the jurisdiction of the NEB. Generally speaking, testing for hydrogen cracking in welds is difficult. Prior owners of the pipeline did do maintenance including looking for such welds. That maintenance included a significant inspection and cleaning of the pipeline in 1996. Further, after Plains purchased the pipeline, Plains tested over 500 spots on the pipeline. Nonetheless, the hydrogen cracking in the pipeline was never discovered.

#### **Agreements**

24. The parties agree:
  - a. Plains Midstream Canada ULC will plead guilty to Count 2 (s. 112(1)(a)(i) *Environmental Protection and Enhancement Act*) on Information 130466493P1. All remaining charges on the Information will be withdrawn upon the Court pronouncing sentence upon Plains Midstream Canada ULC.
  - b. The facts contained within this Agreed Statement of Facts are fully admitted and acknowledged by Plains Midstream Canada ULC and will solely form the facts to be considered by the Judge pronouncing sentence upon Plains Midstream Canada ULC.
  - c. Plains Midstream Canada ULC agrees to be sentenced on all the facts pursuant to s. 725(1)(c) of the *Criminal Code of Canada*.
  - d. The parties will jointly submit that Plains Midstream Canada ULC should receive a fine of \$450,000.00 for Count 2 on Information 130466493P1.

- e. This Agreed Statement of Facts may be filed and relied upon even if signed in counterpart or by facsimile copies of the signatures of any person or both.

CONSENTED TO WITH RESPECT TO FORM AND SUBSTANCE THIS 3 day of June, 2014.

Alberta Crown Prosecution Service

Per:

  
\_\_\_\_\_  
Craig A. Kallaf  
Solicitor for the Alberta Crown Prosecution Service,  
Specialized Prosecutions Branch

Bennett Jones LLP

Per:

  
\_\_\_\_\_  
Grant N. Stapon, Q.C.  
Solicitor and Agent for Plains  
Midstream Canada ULC

Plains Midstream Canada ULC

Per:

  
\_\_\_\_\_  
Sterling Koch  
Vice President, HSE & Regulatory

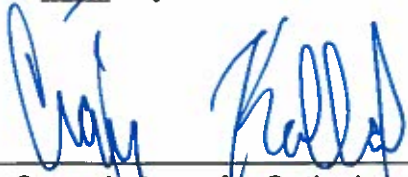
**AFFIDAVIT OF EXECUTION**

CANADA  
PROVINCE OF ALBERTA  
TO WIT:

I, GRANT N. STAPON, Q.C., of the City of Calgary, in the Province of Alberta, MAKE OATH AND SAY THAT:

1. I was personally present and did see STERLING KOCH named in the within instrument who is personally known to me to be the person named therein, duly sign and execute the same for the purposes named therein.
  
2. The same was executed at the City of Red Deer, in the Province of Alberta, and that I am the subscribing witness thereto.
  
3. I know the said STERLING KOCH and he is in my belief of the full age of eighteen years.

SWORN BEFORE ME at Red Deer,  
in the Province of Alberta,  
this 3 day of June, 2014.

  
\_\_\_\_\_  
A Commissioner for Oaths in and  
for the Province of Alberta

  
Craig A. Keller  
Barrister & Solicitor

  
\_\_\_\_\_  
GRANT N. STAPON, Q.C.



**AFFIDAVIT VERIFYING CORPORATE SIGNING AUTHORITY**

CANADA  
PROVINCE OF ALBERTA  
TO WIT:

I, STERLING KOCH, of the City of Calgary, in the Province of Alberta, MAKE OATH  
AND SAY THAT:

1. I am the Vice President, HSE & Regulatory and an officer of Plains Midstream Canada ULC named in the within Agreed Statement of Facts.
2. I am authorized by the Corporation to execute the Agreed Statement of Facts without affixing a corporate seal.

SWORN BEFORE ME at Red Deer,  
in the Province of Alberta,  
this 3 day of June, 2014.



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A Commissioner for Oaths in and  
for the Province of Alberta

*GRANT STARR  
Barrister & Solicitor*

  
\_\_\_\_\_  
STERLING KOCH