STATISTICAL SUMMARY

PIPELINE TRANSPORTATION OCCURRENCES IN 2019

Canada

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Statistical summary: Pipeline transportation occurrences in 2019

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Statistical Summary
Pipeline Transportation Occurrences in 2019

This document covers federally regulated pipelines only. Any non-federally regulated pipeline data reported to the Transportation Safety Board of Canada (TSB) are not included in this report.

The TSB gathers and uses these data during the course of its investigations to analyze safety deficiencies and identify risks in the Canadian pipeline transportation system.

It should be noted that certain characteristics of the data constrain statistical analysis and identification of emerging trends. These include the small totals of accidents and incidents, the large variability in the data from year to year, and changes to regulations and definitions over time. The reader is cautioned to keep these limitations in mind when viewing this summary to avoid drawing conclusions that cannot be supported by statistical analysis.

The 2019 data were collected according to the reporting requirements described in the TSB Regulations in force during that calendar year.[1]

The statistics presented here reflect the TSB Pipeline Occurrence Database System (PODS) at 19 February 2020. Since the occurrence data are constantly being updated in the live database as additional information becomes available, the statistics may change slightly over time.

Also, as many occurrences are not formally investigated, information regarding some of the reported occurrences recorded in the database may not have been verified by the TSB.

[1] On 12 December 2018, amendments to the *Transportation Safety Board Regulations* were published in the *Canada Gazette*, Part II. The amendments were made to reorganize and update some of the pipeline occurrence reporting provisions to ensure consistency and clarity. In addition, minor discrepancies between the English and French texts were addressed.

The pipeline system

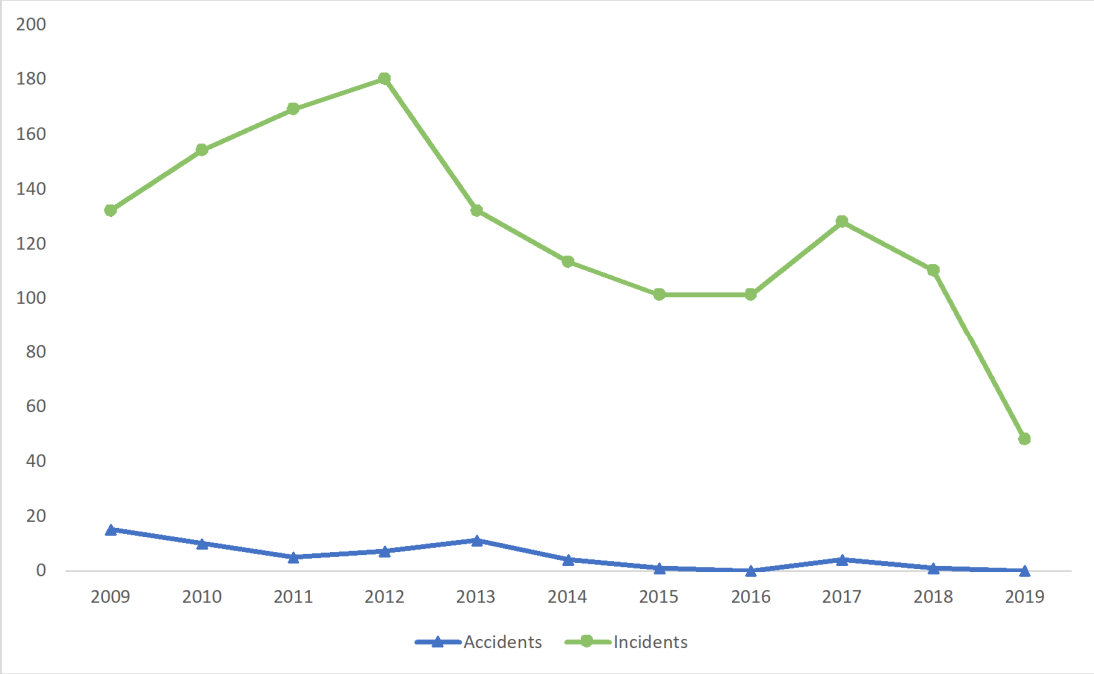
In 2019, in the federally-regulated pipeline system, 40 companies transported 240 million cubic metres[2] of oil through approximately 18 200 km of oil pipelines (including 19 companies that transported both oil and gas). Also in 2019, 83 companies transported over 180 billion cubic metres of gas through approximately 51 600 km of gas pipelines (including 19 companies that transported both oil and gas). A further 1115 km of pipelines carried other commodities and substances. Altogether, this represents approximately 18.9 exajoules (EJ) of energy content transported.[3]

Pipeline transportation occurrences

In 2019, there were 48 pipeline transportation occurrences reported to the TSB (Table 1 and Figure 1), none of which were accidents. This number is below the average number of occurrences for the previous 10 years; fluctuations to the reported numbers over this period may result from various factors, including changes to regulations and definitions. On average, from 2009 to 2018, 132 occurrences were reported each year (126 incidents and 6 accidents per year).

There were no accidents, serious injuries, or fatalities arising directly from the operation of any federally-regulated pipeline in 2019. Indeed, there have been no fatal accidents on a federally regulated pipeline system directly resulting from the operation of a pipeline since the inception of the TSB in 1990.

Figure 1. Pipeline accidents and incidents reported to the TSB (according to reporting requirements in effect at the time), 2009 to 2019



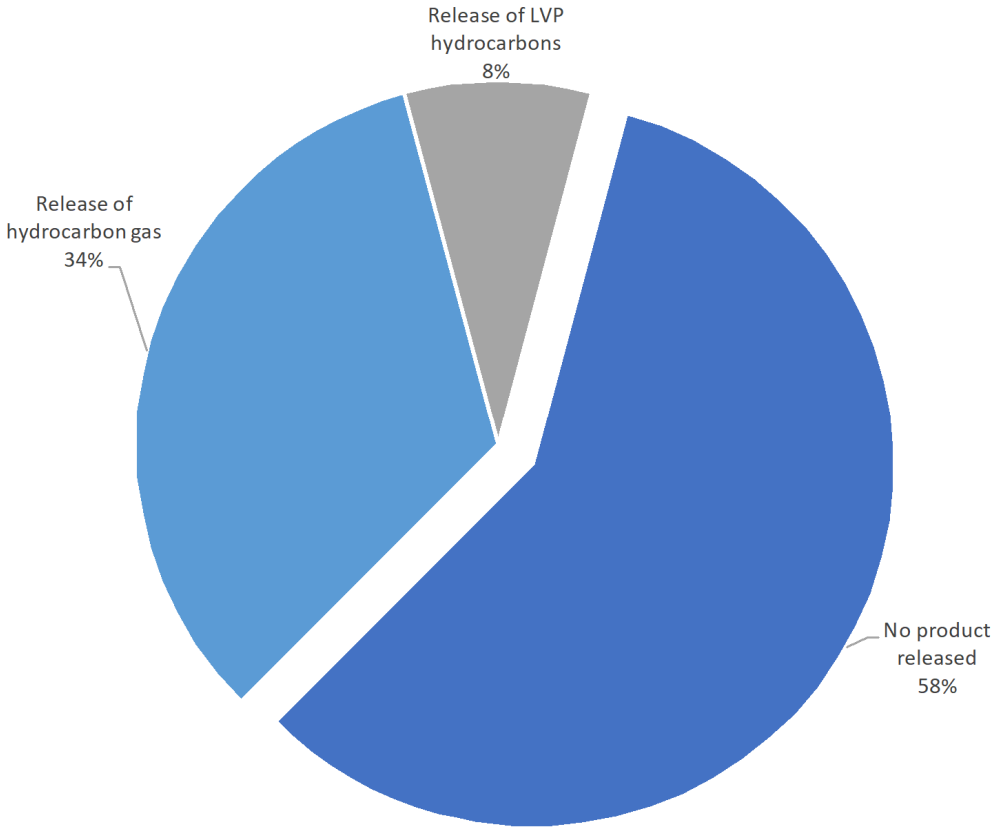
2 One cubic metre (m^3) is equivalent to 1000 litres.

3 The size of the federally regulated pipeline system, the number of companies, and the volumes of product transported were provided by the Canada Energy Regulator (CER), formerly known as the National Energy Board.

Release of product

Of 48 occurrences in 2019, 20 involved a release of product (Table 5), far lower than the average of 96 per year over the previous 10 years. The products released in the 20 incidents were as follows: 16 hydrocarbon gas (15 were sweet natural gas and 1 was sour or acid gas) and 4 low vapour pressure (LVP) hydrocarbons. It is worth noting that 28 occurrences in 2019 did not involve a release of product, slightly below the average number of occurrences without release over the past 10 years (36).

Figure 2. Percentages of occurrences with and without release of product, by type of product released, 2019



Event type

In 2019, 13 incidents (27% of 48 total incidents) involved "geotechnical, hydrotechnical or environmental activity," for example, slope movements or river erosion that exposed a length of pipe (Table 1). This was a significant decrease from 44 reports of this type in 2018 but still above the average of 7 such events per year over the previous 10 years. These fluctuations might be related to variations in enforcement and company inspection and reporting practices, as well as changes to weather patterns. Only 5 of 48 incidents involved "operation of the pipeline beyond limits," well below the average of 14.5 incidents of this type over the previous 10 years. There were 7 reports of pipelines being contacted by an object in 2019, compared with the average of 5 reports per year during the previous 10 years. "Release from line pipe body" was noted in only 1 occurrence in 2019, compared with 7 such occurrences the previous year

and the average of 5 per year during the previous 10 years—indeed, this was the lowest figure for this event type in at least 10 years of data.

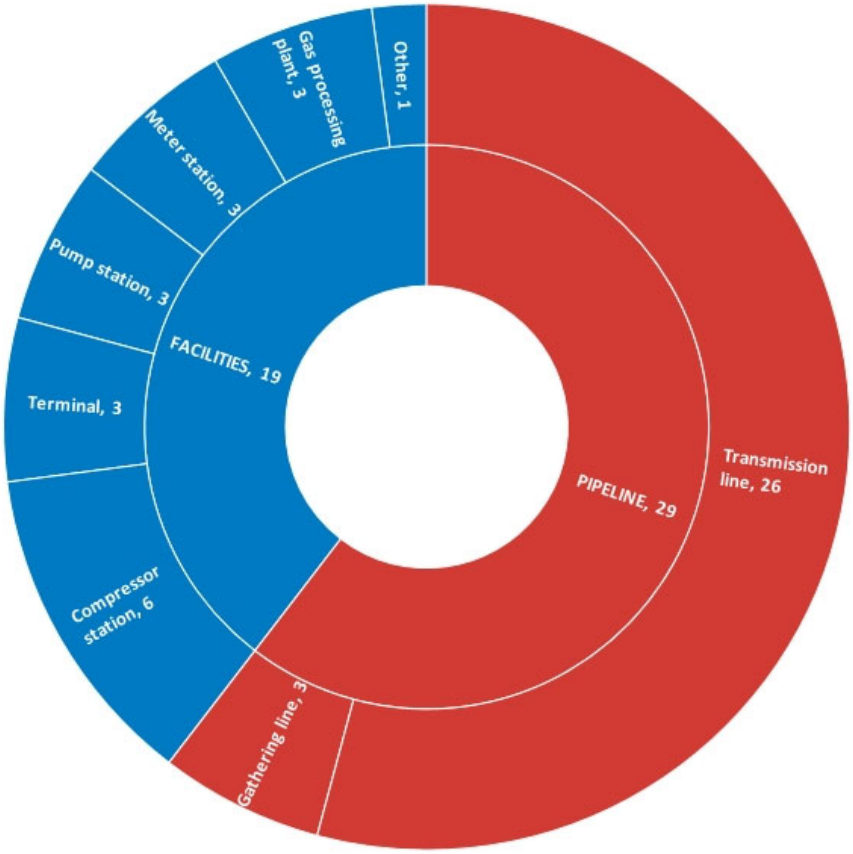
Geography

The largest number of occurrences in 2019 (19 out of 48) took place in Alberta (Table 2). British Columbia had 12 occurrences, Ontario had 6, and Quebec had 4. The Northwest Territories saw pipeline occurrences (3) for the first time since 2016; Manitoba and Saskatchewan also had occurrences (2 each).

Facilities

In the 10-year period 2009–2018, there were 850 occurrences (67%) at facilities and 412 (33%) at locations along pipeline (Table 3). However, in 2019 more than half (60%) of the occurrences (29 of 48) occurred at locations along pipeline. This is due in part to the number of reports of geotechnical, hydrotechnical, or other environmental activity that affected sections of pipeline during the year. Of the 19 incidents at facilities in 2019, 6 occurred at compressor stations, 3 were at gas processing plants, 3 at meter stations, 3 at pump stations, 3 at terminals, and 1 at another facility.

Figure 3. Location of occurrences in 2019

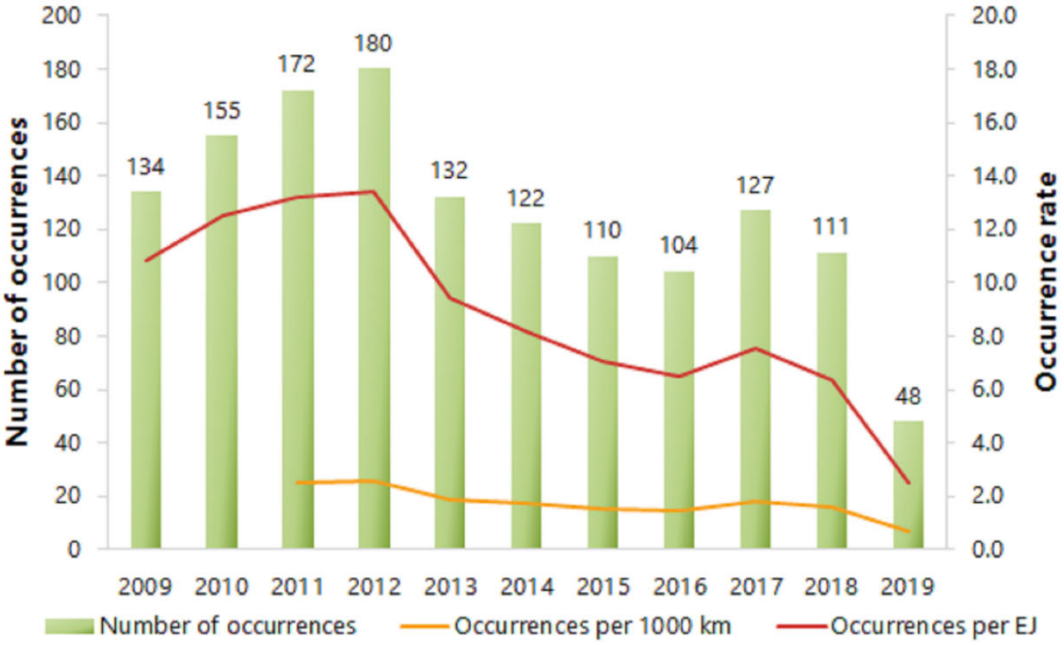


Pipeline occurrence rate

An occurrence rate of 0.7 occurrences per 1000 km of operating pipeline was calculated for 2019 based on the 48 occurrences reported and the 70 860 km of federally regulated pipelines that were operational in Canada according to the Canada Energy Regulator (CER) during the same year (Table 4 and Figure 4). This occurrence rate is down from 1.6 in 2018, and below the average of 1.8 in the period 2011 to 2018.

An occurrence rate can also be calculated using EJ of energy as a denominator (Table 4 and Figure 4). In 2019, the equivalent of 18.9 EJ of energy was transported in federally regulated pipelines. This translates to a rate of 2.5 occurrences per EJ in 2019, a figure which is less than half the 2018 rate of 6.3, and scarcely one-quarter of the 2009–2018 average of 9.0 occurrences per EJ.

Figure 4. TSB reportable occurrences (according to reporting requirements in effect at the time) and occurrence rates, 2009 to 2019



Data tables

Table 1. Pipeline occurrences, by event type, 2009 to 2019

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total number of occurrences	**132**	**154**	**169**	**180**	**132**	**113**	**101**	**101**	**128**	**110**	**48**
Total number of occurrences with product release	**104**	**135**	**149**	**156**	**107**	**94**	**60**	**41**	**75**	**41**	**20**
Total number of fatalities	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total number of serious injuries	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**
Accidents	**15**	**10**	**5**	**7**	**11**	**4**	**1**	**0**	**4**	**1**	**0**
Product released	**10**	**7**	**4**	**3**	**7**	**2**	**1**	**0**	**4**	**1**	**0**
Release of hydrocarbon gas	6	3	2	3	5	2	1	0	0	1	0
Release of HVP hydrocarbons[1]	0	0	0	0	0	0	0	0	1	0	0
Release of LVP hydrocarbons[2, 3]	2	3	2	0	2	0	0	0	2	0	0
Release of other product	2	1	0	0	0	0	0	0	1	0	0
Release from line pipe body	6	0	2	1	2	2	1	0	1	1	0
Fire	11	6	3	6	8	3	0	0	0	1	0
Explosion	2	0	1	1	1	1	0	0	0	1	0
Rupture	4	0	1	1	2	2	1	0	1	1	0
Pipeline contacted by an object	1	1	1	1	1	0	0	0	2	0	0
Operation beyond limits	0	0	0	0	0	0	0	0	0	0	0
Geotechnical/Hydrotechnical/Environmental activity	0	0	0	0	0	0	0	0	0	0	0
Incidents	**117**	**144**	**164**	**173**	**121**	**109**	**100**	**101**	**124**	**109**	**48**
Product released	**94**	**128**	**145**	**153**	**100**	**92**	**59**	**41**	**71**	**40**	**20**
Release of hydrocarbon gas	42	56	59	67	47	31	30	35	47	35	16
Release of HVP hydrocarbons[1]	1	2	5	2	5	7	8	4	10	1	0
Release of LVP hydrocarbons[2, 3]	35	61	72	78	35	36	4	1	3	4	4
Release of other product	16	9	9	6	13	18	17	1	11	0	0
Release from line pipe body	3	5	8	2	8	3	5	5	2	7	1
Fire	0	2	10	6	1	3	5	5	8	4	3
Explosion	1	1	0	0	0	0	1	0	1	1	0
Pipeline contacted by an object	10	2	1	4	3	6	7	8	4	8	7
Operation beyond limits	5	13	5	6	15	7	27	34	20	13	5
Geotechnical/Hydrotechnical/Environmental activity	2	0	0	1	2	1	0	3	18	44	13
Unauthorized third-party activity affects pipeline structural integrity	2	0	0	0	0	0	4	4	0	0	0

Data extracted 19 February 2020

[1] HVP means high vapour pressure as defined in Canadian Standards Association Standard Z662.

[2] LVP means low vapour pressure as defined in Canadian Standards Association Standard Z662.

[3] As of July 2014, the minimum reporting threshold for releases of low vapour pressure hydrocarbons was established at 1.5 m^3

Table 2. Pipeline occurrences, by province or territory, 2009 to 2019

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Accidents	**15**	**10**	**5**	**7**	**11**	**4**	**1**	**0**	**4**	**1**	**0**
Newfoundland and Labrador	0	0	0	0	0	0	0	0	0	0	0
Prince Edward Island	0	0	0	0	0	0	0	0	0	0	0
Nova Scotia	0	0	0	0	0	0	0	0	0	0	0
New Brunswick	0	0	0	0	0	0	0	0	0	0	0
Quebec	0	0	0	0	0	0	0	0	0	0	0
Ontario	5	1	2	2	2	0	0	0	0	0	0
Manitoba	0	1	0	0	0	1	0	0	0	0	0
Saskatchewan	2	1	1	1	1	0	0	0	1	0	0
Alberta	4	4	1	2	6	1	1	0	2	0	0
British Columbia	4	3	0	2	2	1	0	0	1	1	0
Yukon	0	0	0	0	0	0	0	0	0	0	0
Northwest Territories	0	0	1	0	0	1	0	0	0	0	0
Nunavut	0	0	0	0	0	0	0	0	0	0	0
Incidents	**117**	**144**	**164**	**173**	**121**	**109**	**100**	**101**	**124**	**109**	**48**
Newfoundland and Labrador	0	0	0	0	0	0	0	0	0	0	0
Prince Edward Island	0	0	0	0	0	0	0	0	0	0	0
Nova Scotia	0	1	4	2	3	1	2	3	0	2	0
New Brunswick	4	6	13	19	16	9	3	5	4	2	0
Quebec	4	2	2	1	3	1	8	7	4	1	4
Ontario	21	20	22	22	11	14	14	18	15	19	6
Manitoba	9	14	11	10	12	8	9	2	3	3	2
Saskatchewan	13	38	35	45	18	17	5	6	11	4	2
Alberta	35	49	54	45	35	32	27	37	36	31	19
British Columbia	26	13	11	18	17	27	30	22	51	47	12
Yukon	0	0	0	0	0	0	0	0	0	0	0
Northwest Territories	5	1	12	11	6	0	2	1	0	0	3
Nunavut	0	0	0	0	0	0	0	0	0	0	0
Total occurrences	**132**	**154**	**169**	**180**	**132**	**113**	**101**	**101**	**128**	**110**	**48**

Data extracted 19 February 2020

Table 3. Pipeline occurrences, by facility type or pipeline type, 2009 to 2019

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Accidents	**15**	**10**	**5**	**7**	**11**	**4**	**1**	**0**	**4**	**1**	**0**
Facilities	**8**	**9**	**3**	**6**	**8**	**1**	**0**	**0**	**2**	**0**	**0**
Compressor station	3	5	0	3	4	1	0	0	0	0	0
Gas processing plant	3	0	0	0	2	0	0	0	1	0	0
Meter station	1	1	2	1	0	0	0	0	0	0	0
Pump station	1	1	0	2	1	0	0	0	0	0	0
Storage facility	0	0	0	0	0	0	0	0	0	0	0
Terminal	0	2	1	0	1	0	0	0	1	0	0
Receipt / Delivery facility	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
Pipeline	**7**	**1**	**2**	**1**	**3**	**3**	**1**	**0**	**2**	**1**	**0**
Gathering line	1	1	0	1	0	0	0	0	0	0	0
Transmission line	6	0	2	0	3	3	1	0	2	1	0
Incidents	**117**	**144**	**164**	**173**	**121**	**109**	**100**	**101**	**124**	**109**	**48**
Facilities	**91**	**104**	**126**	**132**	**86**	**88**	**67**	**48**	**67**	**41**	**19**
Compressor station	32	26	22	31	15	14	11	12	23	18	6
Gas processing plant	8	5	3	6	11	21	21	3	20	7	3
Meter station	12	19	18	17	19	9	7	16	7	6	3
Pump station	26	30	48	37	19	22	17	9	10	4	3
Storage facility	0	0	1	1	0	0	0	0	1	0	0
Terminal	13	21	27	35	19	18	10	5	6	6	3
Receipt / Delivery facility	0	1	1	0	1	1	0	0	0	0	0
Other	0	2	6	5	2	3	1	3	0	0	1
Pipeline	**26**	**40**	**38**	**41**	**35**	**21**	**33**	**53**	**57**	**68**	**29**
Gathering line	9	7	7	8	2	2	5	3	8	11	3
Transmission line	17	33	31	33	33	19	28	50	49	57	26
Total occurrences	**132**	**154**	**169**	**180**	**132**	**113**	**101**	**101**	**128**	**110**	**48**

Data extracted 19 February 2020

Table 4. Pipeline occurrence rates, 2009 to 2019

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Accidents	15	10	5	7	11	4	1	0	4	1	0
Incidents	117	144	164	173	121	109	100	101	124	109	48
Total number of occurrences	132	154	169	180	132	113	101	101	128	110	48
Total length of operating pipelines[1] (x1000 km)			68.7	69.7	70.8	70.7	70.8	71.0	70.7	70.6	70.9
Accidents per 1000 km of operating pipelines			0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0	0.0
Incidents per 1000 km of operating pipelines			2.4	2.5	1.7	1.5	1.4	1.4	1.8	1.5	0.7
Occurrences per 1000 km of operating pipelines			2.5	2.6	1.9	1.6	1.4	1.4	1.8	1.6	0.7
Total exajoules of energy transported[1] (EJ)	12.4	12.4	13.1	13.4	14.0	15.0	15.6	16.1	16.9	17.4	18.9
Accidents per EJ	1.2	0.8	0.4	0.5	0.8	0.3	0.1	0.0	0.2	0.1	0.0
Incidents per EJ	9.4	11.6	12.5	12.9	8.6	7.3	6.4	6.3	7.3	6.3	2.5
Occurrences per EJ	10.6	12.4	12.9	13.4	9.4	7.5	6.5	6.3	7.6	6.3	2.5

Data extracted 19 February 2020

[1] Source: Canada Energy Regulator (CER)

Table 5. Pipeline occurrences with product release, by type of product, 2009 to 2019

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Hydrocarbon gas	**48**	**59**	**61**	**70**	**52**	**33**	**31**	**35**	**47**	**36**	**16**
Gas - sour or acid	8	2	3	5	3	3	10	2	7	6	1
Natural gas	40	57	58	65	49	30	21	33	40	30	15
HVP hydrocarbons	**1**	**2**	**5**	**2**	**5**	**7**	**8**	**4**	**11**	**1**	**0**
Natural gas liquids / Liquefied petroleum gas	1	2	5	2	5	7	8	4	11	1	0
LVP hydrocarbons[1]	**37**	**64**	**74**	**78**	**37**	**36**	**4**	**1**	**5**	**4**	**4**
Condensate	1	2	0	0	3	4	0	0	1	0	0
Condensate - sour	0	0	0	0	0	0	0	0	0	0	0
Crude oil	33	58	74	77	33	32	3	1	4	3	4
Crude oil - sour	0	0	0	0	1	0	1	0	0	0	0
Refined products	3	4	0	1	0	0	0	0	0	1	0
Other products[2]	**18**	**10**	**9**	**6**	**13**	**18**	**17**	**1**	**12**	**0**	**0**
Other - unspecified	17	10	9	6	13	18	16	1	0	0	0
Other - gas	0	0	0	0	0	0	1	0	1	0	0
Other - liquid	1	0	0	0	0	0	0	0	11	0	0
Total occurrences	**104**	**135**	**149**	**156**	**107**	**94**	**60**	**41**	**75**	**41**	**20**

Data extracted 19 February 2020

[1] As of July 2014, the minimum reporting threshold for releases of low vapour pressure hydrocarbons was established at 1.5 m^3.

[2] As of January 2017, "other products" are specified to be either liquid or gas.

Table 6. Pipeline occurrences with product release by quantity released, 2009 to 2019

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Hydrocarbon gas	**48**	**59**	**61**	**70**	**52**	**33**	**31**	**35**	**47**	**36**	**16**
100 m^3 or less	45	59	54	69	48	26	20	24	20	15	10
101 to 30 000 m^3	0	0	5	0	3	5	7	10	25	17	4
30 001 to 100 000 m^3	1	0	0	0	0	0	3	1	1	1	1
100 001 to 10 000 000 m^3	0	0	1	1	0	1	0	0	1	2	1
1 00 001 to 10 000 000 m^3	2	0	1	0	0	1	1	0	0	1	0
Greater than 10 000 000 m^3	0	0	0	0	1	0	0	0	0	0	0
HVP hydrocarbons	**1**	**2**	**5**	**2**	**5**	**7**	**8**	**4**	**11**	**1**	**0**
8 m^3 or less	1	2	4	2	5	7	8	4	10	1	0
9 to 25 m^3	0	0	0	0	0	0	0	0	1	0	0
26 to 100 m^3	0	0	1	0	0	0	0	0	0	0	0
101 to 1000 m^3	0	0	0	0	0	0	0	0	0	0	0
1001 to 10 000 m^3	0	0	0	0	0	0	0	0	0	0	0
Greater than 10,000 m^3	0	0	0	0	0	0	0	0	0	0	0
LVP hydrocarbons[1]	**37**	**64**	**74**	**78**	**37**	**36**	**4**	**1**	**5**	**4**	**4**
1.5 m^3 or less	30	60	67	76	34	29	0	0	0	2	0
1.6 to 8 m^3	5	0	6	1	2	4	2	1	1	2	3
9 to 25 m^3	0	2	0	0	1	2	1	0	2	0	1
26 to 100 m^3	0	1	0	1	0	0	1	0	1	0	0
101 to 1000 m^3	2	1	1	0	0	1	0	0	0	0	0
1001 to 10 000 m^3	0	0	0	0	0	0	0	0	1	0	0
Greater than 10 000 m^3	0	0	0	0	0	0	0	0	0	0	0
Other products	**18**	**10**	**9**	**6**	**13**	**18**	**17**	**1**	**12**	**0**	**0**
8 m^3 or less	18	9	9	6	13	15	14	0	12	0	0
9 to 25 m^3	0	0	0	0	0	2	2	0	0	0	0
26 to 100 m^3	0	1	0	0	0	1	0	0	0	0	0
101 to 1000 m^3	0	0	0	0	0	0	1	1	0	0	0
1001 to 10 000 m^3	0	0	0	0	0	0	0	0	0	0	0
Greater than 10 000 m^3	0	0	0	0	0	0	0	0	0	0	0
Total occurrences	**104**	**135**	**149**	**156**	**107**	**94**	**60**	**41**	**75**	**41**	**20**

Data extracted 19 February 2020

[1] As of July 2014, the minimum reporting threshold for releases of low vapour pressure hydrocarbons was established at 1.5 m^3.

Table 7. Pipeline occurrences, by province or territory and type of product released, 2009 to 2019

	No release of product		Release of hydrocarbon gas		Release of HVP hydrocarbons		Release of LVP hydrocarbons[1]		Release of other product	
Province or territory	2009-2018 average	2019	2009-2018 average	2019	2009-2018 average	2019	2009-2018 average	2019	2009-2018 average	2019
Newfoundland and Labrador	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Prince Edward Island	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Nova Scotia	0.1	0	1.6	0	0.0	0	0.0	0	0.1	0
New Brunswick	0.0	0	7.8	0	0.0	0	0.0	0	0.3	0
Quebec	2.4	2	0.4	2	0.0	0	0.5	0	0.0	0
Ontario	7.7	4	7.4	2	0.4	0	2.6	0	0.7	0
Manitoba	1.3	1	1.6	0	0.6	0	4.4	1	0.4	0
Saskatchewan	1.9	1	2.8	1	1.9	0	12.8	0	0.5	0
Alberta	13.8	10	14.8	6	0.8	0	10.5	3	0.3	0
British Columbia	8.2	8	10.7	4	0.5	0	0.8	0	7.4	0
Yukon	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Northwest Territories	0.4	2	0.1	1	0.4	0	2.4	0	0.7	0
Nunavut	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Total occurrences	**35.8**	**28**	**47.2**	**16**	**4.6**	**0**	**34.0**	**4**	**10.4**	**0**

Data extracted 19 February 2020

[1] As of July 2014, the minimum reporting threshold for releases of low vapour pressure hydrocarbons was established at 1.5 m^3.

Definitions

Before 1 July 2014

Before 1 July 2014 (under the previous TSB Regulations), pipeline transportation accidents and incidents were defined as follows:

Pipeline accidents

Reportable commodity pipeline accident means an accident resulting directly from the operation of a commodity pipeline, where

a) a person sustains a serious injury or is killed as a result of being exposed to
   i) a fire, ignition or explosion, or
   ii) a commodity released from the commodity pipeline, or
b) the commodity pipeline
   i) sustains damage affecting the safe operation of the commodity pipeline as a result of being contacted by another object or as a result of a disturbance of its supporting environment,
   ii) causes or sustains an explosion, or a fire or ignition that is not associated with normal operating circumstances, or
   iii) sustains damage resulting in the release of any commodity.

Pipeline incidents

Reportable commodity pipeline incident means an incident resulting directly from the operation of a commodity pipeline, where

a) an uncontained and uncontrolled release of a commodity occurs,
b) the commodity pipeline is operated beyond design limits,
c) the commodity pipeline causes an obstruction to a ship or to a surface vehicle owing to a disturbance of its supporting environment,
d) any abnormality reduces the structural integrity of the commodity pipeline below design limits,
e) any activity in the immediate vicinity of the commodity pipeline poses a threat to the structural integrity of the commodity pipeline, or
f) the commodity pipeline, or a portion thereof, sustains a precautionary or emergency shut-down for reasons that relate to or create a hazard to the safe transportation of a commodity;

Since 1 July 2014

On 1 July 2014, new reporting provisions of the TSB Regulations came into effect; additional clarifications came into effect on 1 January 2019 with respect to these regulations. According to section 4(1) of the TSB Regulations, the operator of a pipeline must report the following pipeline occurrences to the Board if they result directly from the operation of the pipeline:

4 (1) The operator of a pipeline must report the following pipeline occurrences to the Board if they result directly from the operation of the pipeline:

a) a person is killed or sustains a serious injury;
b) the safe operation of the pipeline is affected by
    i) damage sustained when another object came into contact with it, or
    ii) a fire or explosion or an ignition that is not associated with normal pipeline operations;
c) an event or an operational malfunction results in
    i) an unintended or uncontrolled release of gas,
    ii) an unintended or uncontrolled release of HVP hydrocarbons,
    iii) an unintended or uncontained release of LVP hydrocarbons in excess of 1.5 m^3, or
    iv) an unintended or uncontrolled release of a commodity other than gas, HVP hydrocarbons or LVP hydrocarbons;
d) there is a release of a commodity from the line pipe body;
e) the pipeline is operated beyond design limits or any operating restrictions imposed by the Canada Energy Regulator;
f) the pipeline restricts the safe operation of any mode of transportation;
g) an unauthorized third party activity within the safety zone poses a threat to the safe operation of the pipeline;
h) a geotechnical, hydraulic or environmental activity poses a threat to the safe operation of the pipeline;
i) the operation of a portion of the pipeline is interrupted as a result of a situation or condition that poses a threat to any person, property or the environment; or
j) an unintended fire or explosion has occurred that poses a threat to any person, property or the environment.

Pipeline accidents

A pipeline accident is an occurrence resulting directly from the operation of a pipeline that results in:
a) a loss of human life or a serious injury;
b) a rupture; (i.e., an instantaneous release that immediately impacts the operation of a pipeline segment such that the pressure of the segment cannot be maintained)
c) a fire, ignition or explosion that poses a threat to the safety of any person, property or the environment;
d) an unintended or uncontained release of commodity that results in a significant adverse effect on people or the environment; (i.e. a release of any chemical or physical substance at a concentration or volume sufficient to cause an irreversible, long-term, or continuous change to the ambient environment in a manner that causes harm to human life, wildlife, or vegetation)

Pipeline Incidents

A pipeline incident is:
a) an occurrence in which:
    (i) the pipeline sustains damage that affects the safe operation of the pipeline as a result of another object coming into contact with it;
    (ii) an unauthorized third party activity affects the structural integrity of the pipeline;
    (iii) a geotechnical, hydrotechnical or environmental activity poses a threat to the safe operation of the pipeline.
b) an occurrence resulting directly from the operation of a pipeline in which:

(i) there is a fire, ignition or explosion that affects the safe operation of the pipeline;
(ii) there is an occurrence that results in
    (A) an unintended or uncontrolled release of hydrocarbon gas,
    (B) an unintended or uncontrolled release of HVP hydrocarbons,
    (C) an unintended or uncontrolled release of LVP hydrocarbons in excess of 1.5 m^3, or
    (D) an unintended or uncontrolled release of a commodity other than hydrocarbon gas, HVP hydrocarbons or LVP hydrocarbons;
(iii) there is a release of a commodity from the line pipe body;
(iv) the pipeline is operated beyond design limits or any operating restrictions imposed by the Canada Energy Regulator;
(v) the pipeline restricts the safe operation of any mode of transportation.