Alberta Energy Regulator

Upstream Petroleum Industry Flaring and Venting Report

Industry Performance for Year Ending December 31, 2018

October 2019



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Executive Summary

The Alberta Energy Regulator (AER) annually publishes *ST60B: Upstream Petroleum Industry Flaring and Venting Report* to fulfil the commitment it made in *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting* to make flaring and venting data accessible.

The report's primary focus is on solution gas flaring and venting from crude oil and crude bitumen production operations. The report includes flared and vented volumes that have to be reported to the AER from in situ bitumen facilities, gas batteries, well testing, gas plants, gas gathering systems, and natural gas transmission lines. Also included are emissions from glycol dehydrators, surface casing vent flows (SCVFs), and gas migration (GM). The report does not include flared and vented volumes from bitumen upgraders and oil sands mine operations.

The data used to compile the report are obtained from Canada's Petroleum Information Network (Petrinex) and the AER.

Key statistics from 2018:[*]

- Crude bitumen production increased by 2.1 per cent to 92 million cubic metres (10^6 m^3).
- Crude oil production increased by 9.8 per cent to 28 10^6 m^3.
- Solution gas produced from crude bitumen batteries increased by 9.0 per cent to 3.3 billion cubic metres (10^9 m^3).
- Solution gas produced from crude oil batteries increased by 10.9 per cent to 18.4 10^9 m^3.
- Solution gas conservation increased to 97.4 per cent from 97.1 per cent in 2017.
- Solution gas flared from crude bitumen and crude oil batteries was 399 10^6 m^3, up from 382 10^6 m^3 in 2017, a 4.4 per cent increase.
  - Total solution gas flared represented 1.1 million tonnes of carbon dioxide equivalent (10^6 tCO_2e) of greenhouse gas (GHG) emissions.
  - Flaring from crude bitumen batteries was 107 10^6 m^3, down from 130 10^6 m^3 in 2017, a 17.8 per cent decrease.
  - Flaring from crude oil batteries was 292 10^6 m^3, up from 252 10^6 m^3 in 2017, a 15.8 per cent increase.
- Solution gas vented from crude bitumen and crude oil batteries was 169 10^6 m^3, down from 186 10^6 m^3 in 2017, a 9.1 per cent decrease.
  - Total solution gas vented represented 2.4 10^6 tCO_2e of GHG emissions.
  - Venting from crude bitumen batteries was 74 10^6 m^3, down from 81 10^6 m^3 in 2017, a 7.5 per cent decrease.

[*] Some totals and per cent changes may not be exact due to rounding.

  - Venting from crude oil batteries was 95 10^6 m^3, down from 106 10^6 m^3 in 2017, a 10.4 per cent decrease.
- Flaring and venting from other sources
  - Gas batteries
    - Flaring – 49 10^6 m^3, down from 57 10^6 m^3 in 2017, a 14.3 per cent decrease
    - Venting – 8 10^6 m^3, down from 9 10^6 m^3 in 2017, a 12.4 per cent decrease
  - Well testing
    - Flaring – 76 10^6 m^3, down from 93 10^6 m^3 in 2017, an 18.3 per cent decrease
    - Venting – 4 10^6 m^3, down from 9 10^6 m^3 in 2017, a 52.6 per cent decrease
  - Gas plants
    - Flaring – 145 10^6 m^3, up from 137 10^6 m^3 in 2017, a 5.9 per cent increase
    - Venting – 3 10^6 m^3, the same as in 2017
  - Gas gathering systems
    - Flaring – 76 10^6 m^3, up from 64 10^6 m^3 in 2017, an 18.3 per cent increase
    - Venting – 6 10^6 m^3, the same as in 2017
  - Transmission lines
    - Flaring – 2 10^6 m^3, down from 6 10^6 m^3 in 2017, a 68.8 per cent decrease
    - Venting – 2 10^6 m^3, down from 11 10^6 m^3 in 2017, an 80.9 per cent decrease
- Emissions from glycol dehydrators
  - 1400 glycol dehydrators were operating in 2018, down from 1528 in 2017, an 8.4 per cent decrease.
  - Total benzene emissions were 285 tonnes in 2018, down from 399 tonnes in 2017, a 28.6 per cent decrease.
- Emissions from SCVFs and GM
  - There were 10 128 wells with either SCVFs or GM in 2018, down from 10 291 wells in 2017, a 1.6 per cent decrease.
  - Total natural gas emissions from SCVF and GM wells were 65 10^6 m^3 in 2018, down from 83 10^6 m^3 in 2017, a 21.7 per cent decrease.

For questions about this report, email the AER Emissions Compliance Team at EmissionsCompliance@aer.ca or call the Customer Contact Centre at 403-297-8311 or toll free at 1-855-297-8311.

1 Introduction

The Alberta Energy Regulator (AER), as the province's single energy regulator, ensures the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle. Under this mandate, the AER is responsible for disseminating energy-related information, including on flaring and venting.

The AER worked with the consensus-based, multistakeholder Flaring and Venting Project Team of the Clean Air Strategic Alliance (CASA) to develop flaring and venting management recommendations for the Province of Alberta. The recommendations included determining flaring and venting baselines, flaring reduction targets, and operational requirements for the upstream oil and gas industry. The AER adopted the recommendations put forward by CASA and incorporated them into the 1999 edition of *Guide 60: Upstream Petroleum Industry Flaring Guide* (subsequently known as *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting*). The AER will continue to work with CASA, industry, and other stakeholders to reduce the volume of solution gas flared and vented in Alberta.

ST60B: Upstream Petroleum Industry Flaring and Venting Report, published annually, fulfils the AER's commitment to report flaring and venting volumes, as set out in *Directive 060*.

The report's primary focus is on solution gas flaring and venting from crude oil and crude bitumen production operations. The report includes flared and vented volumes that have to be reported to the AER from in situ bitumen facilities, gas batteries, well testing, gas plants, gas gathering systems, and natural gas transmission lines. Also included are emissions from glycol dehydrators and from surface casing vent flows (SCVFs) and gas migration (GM). The report does not include flared and vented volumes from bitumen upgraders and oil sands mine operations.

The data used to compile the report are from Canada's Petroleum Information Network (Petrinex) and the AER.

For this report:

- Crude bitumen is oil that is produced within the AER-designated oil sands areas[1] and that has a density of 920 kilograms per cubic metre (kg/m^3) or more.
- Crude oil is all other crude oil production in the province, including oil with a density of 920 kg/m^3 or more produced outside the designated oil sands areas.
- All reported flared volumes include gas that was incinerated, unless otherwise stated.
- Venting is the noncombusted release of gas to the atmosphere.

[1] See *ST98: Alberta Energy Outlook*, figure R3.1, available on the AER website, www.aer.ca.

- Gas conservation is the recovery of solution gas to use as fuel for production facilities, to sell, to inject for enhanced recovery from oil or condensate pools, or to generate power, among other uses. It is calculated as follows:

$$\text{Conservation} = \frac{[\text{Volume of gas produced} - (\text{Volume of gas flared} + \text{Volume of gas vented})]}{\text{Volume of gas produced}}$$

- Greenhouse gas (GHG) emissions are expressed in tonnes of carbon dioxide equivalent (tCO_2e).[2] The GHG emission factors used to quantify emissions from flaring and venting vary depending on the type of production as set out below:[3]
  - Crude oil[4]
    - Vented gas GHG emission factor = 12.5 tCO_2e per thousand cubic metres (10^3 m^3) of gas
    - Flared gas GHG emission factor = 2.9 tCO_2e per 10^3 m^3 of gas
  - Crude bitumen within the Peace River area[5]
    - Vented gas GHG emission factor = 15.9 tCO_2e per 10^3 m^3 of gas
    - Flared gas GHG emission factor = 2.5 tCO_2e per 10^3 m^3 of gas
  - Crude bitumen outside the Peace River area[6]
    - Vented gas GHG emission factor = 16.2 tCO_2e per 10^3 m^3 of gas
    - Flared gas GHG emission factor = 2.5 tCO_2e per 10^3 m^3 of gas

For information on flaring, incinerating, and venting requirements, see *Directive 060*. For questions about this report, email the AER Emissions Compliance Team at EmissionsCompliance@aer.ca or call the Customer Contact Centre at 403-297-8311 or toll free at 1-855-297-8311.

[2] tCO_2e is a way of expressing the global warming potential (GWP) of a greenhouse gas relative to carbon dioxide. Since every greenhouse gas has a different capacity to absorb and trap heat in the atmosphere, carbon dioxide is used as a frame of reference for easy comparison. The GWP of other gases can be calculated and converted into the equivalent amount of carbon dioxide. For example, one tonne of methane, which is a major component in venting, has 25 times more GWP than carbon dioxide over 100 years (Government of Alberta, *Carbon Offset Emission Factors Handbook* [2015], https://open.alberta.ca/publications/2368-9528, table 1).

[3] Flaring is assumed to have a 95 per cent conversion efficiency.

[4] Solution gas from crude oil production is assumed to have a methane content of 53 per cent by mass.

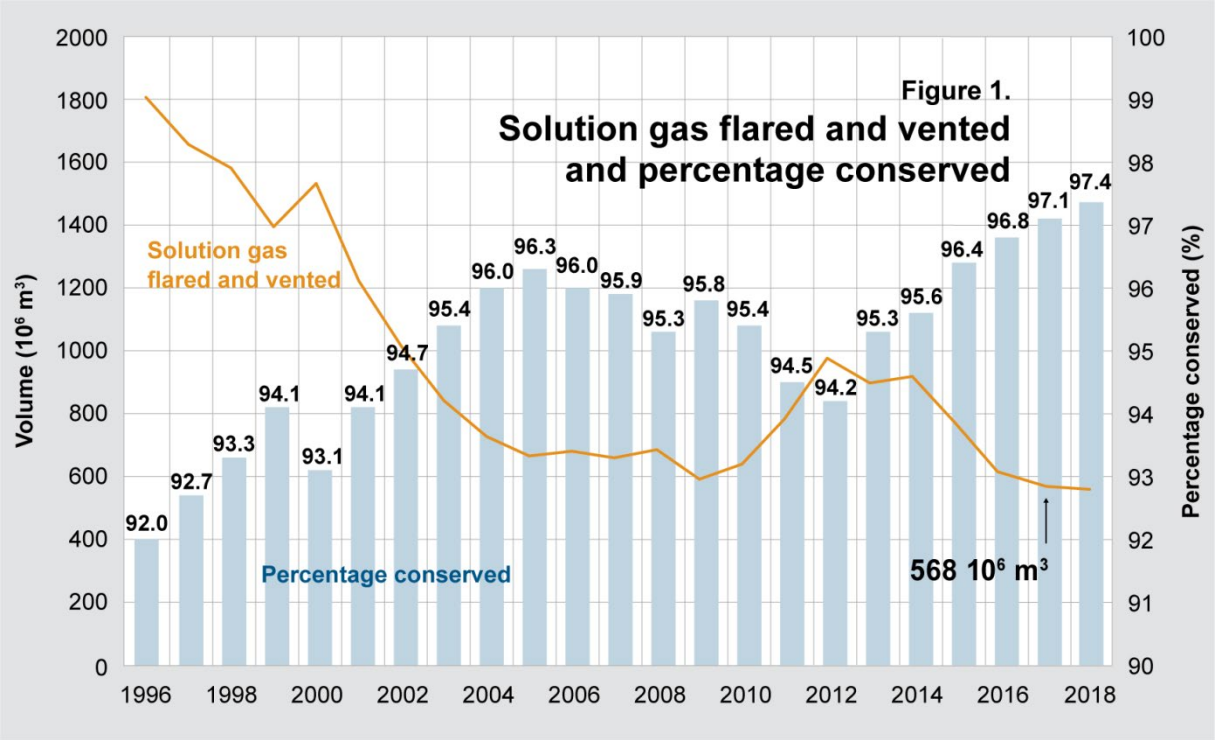
[5] For a map of the Peace River area, see *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting*, figure 10, available on the AER website, www.aer.ca. Solution gas from crude bitumen production within the Peace River area is assumed to have a methane content of 89 per cent by mass.

[6] Solution gas from crude bitumen production outside the Peace River area is assumed to have a methane content of 94 per cent by mass.

2 Solution Gas Conserved, Flared, and Vented, 1996–2018

Industry conserved 97.4 per cent of solution gas in 2018, compared with 97.1 per cent in 2017 (see figure 1). Data from all crude oil and crude bitumen batteries were used in calculating the percentage of solution gas conserved.

The combined volume of flared and vented solution gas decreased 0.1 per cent to 568 million cubic metres (10^6 m^3) in 2018 from 569 10^6 m^3 in 2017.[7] The total volume of gas flared and vented at crude oil and crude bitumen batteries represented 3.5 10^6 tCO_2e.

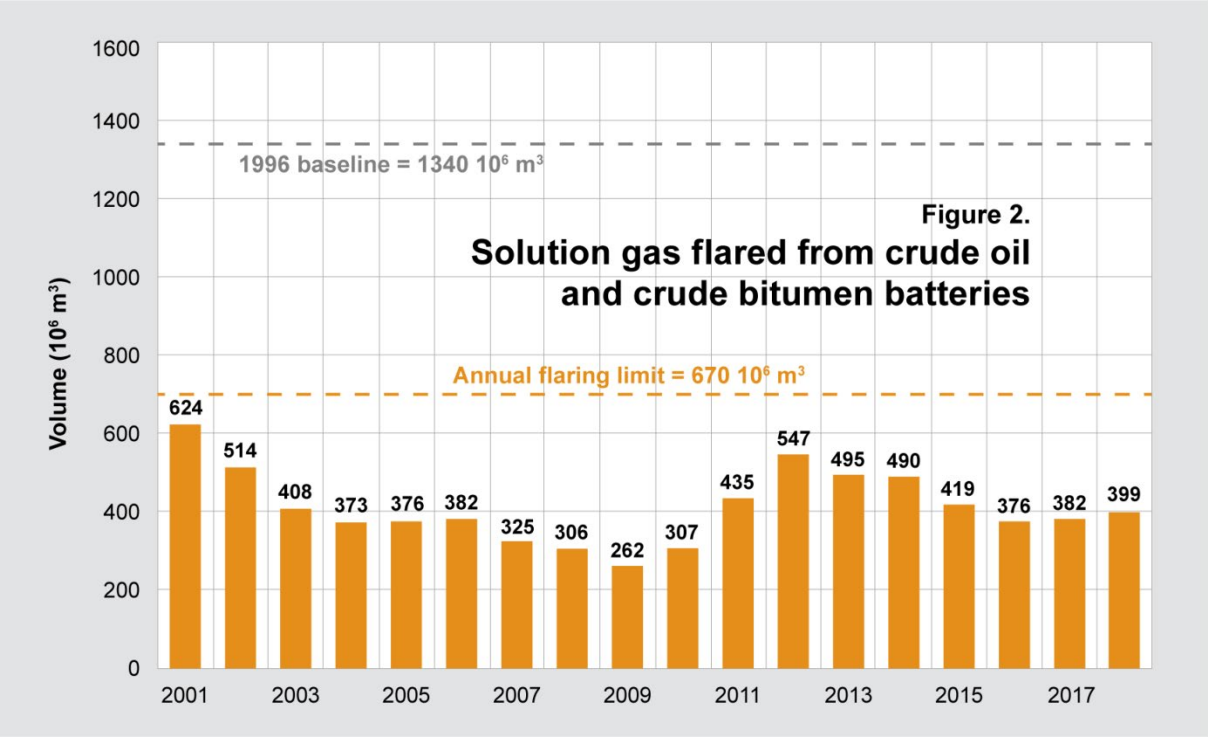


[7] Gas volumes in this report have been rounded to the nearest 10^6 m^3.

3 Solution Gas Flaring and Venting Performance

In 2018, 399 10^6 m^3, or 1.1 10^6 tCO_2e, of gas was flared and 169 10^6 m^3, or 2.4 10^6 tCO_2e, was vented. The flared volumes were 70.2 per cent less than the 1996 flaring baseline of 1340 10^6 m^3 and 4.4 per cent higher than 2017 volumes (see figure 2). Flaring was also below the provincial annual flaring limit of 670 10^6 m^3 set out in *Directive 060*. The vented volumes were 76.0 per cent less than the 2000 venting baseline of 704 10^6 m^3 and 9.1 per cent less than the 2017 volumes (see figure 3).

The years 1996 and 2000 were selected as the baseline years for solution gas flaring and venting, respectively, since data from these years were the most recent available to the CASA Flaring and Venting Project Team.



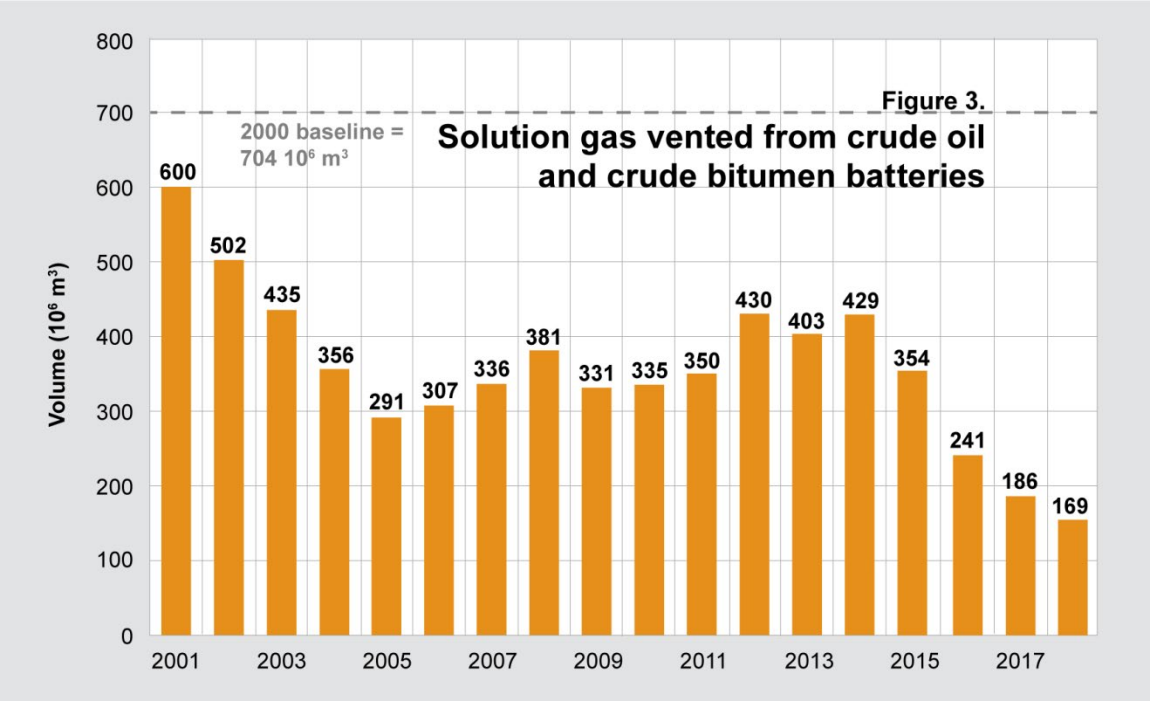


Table 1 shows oil and bitumen production and solution gas flaring, venting, production, and conservation for crude oil and crude bitumen batteries. Comparing the 2017 and 2018 data, it can be seen that in 2018

- crude oil production and crude bitumen production increased;
- total gas production increased;
- total solution gas flared increased and total solution gas vented decreased;
- solution gas conservation increased for both crude oil and crude bitumen production; and
- for crude oil batteries, venting decreased while flaring increased, which is more desirable since flaring contributes less to GHG emissions than venting.

Table 1. Flaring and venting from crude oil and crude bitumen batteries, 2017–2018

	Crude bitumen batteries (10^6 m^3)			Crude oil batteries (10^6 m^3)			Crude oil & crude bitumen batteries (10^6 m^3)		
	2017	2018	% change	2017	2018	% change	2017	2018	% change
Crude oil or bitumen produced	90	92	2.1	26	28	9.8	116	120	3.8
Solution gas produced	2 984	3 252	9.0	16 584	18 398	10.9	19 567	21 650	10.6
Solution gas flared	130	107	−17.8	252	292	15.8	382	399	4.4
Solution gas vented	81	74	−7.5	106	95	−10.4	186	169	−9.1
Solution gas conserved	92.9%	94.4%	1.5	97.8%	97.9%	0.1	97.1%	97.4%	0.3

Table 2 shows the total number of batteries operating in 2018 and the number of batteries flaring, venting, or conserving gas. The number of batteries operating in 2018 decreased compared with 2017.

Table 2. Number of crude oil and crude bitumen batteries flaring or venting, 2017–2018

	Crude bitumen batteries (10^6 m^3)			Crude oil batteries (10^6 m^3)			Crude oil & crude bitumen batteries (10^6 m^3)		
	2017	**2018**	**% change**	**2017**	**2018**	**% change**	**2017**	**2018**	**% change**
Number of batteries flaring gas[a]	166	150	−9.6	1 641	1 703	3.8	1 807	1 853	2.5
Number of batteries venting gas[a]	2 350	2 205	−6.2	4 583	4 554	−0.6	6 933	6 759	−2.5
Number of batteries conserving gas[a,b]	1 408	1 443	2.5	4 719	4 706	−0.3	6 127	6 149	0.4
Total number of batteries	**3 299**	**3 200**	**−3.0**	**9 421**	**9 286**	**−1.4**	**12 720**	**12 486**	**−1.8**

[a] A battery can flare, vent, or conserve or do a combination of these activities.

[b] Batteries with annual gas conservation of at least 90.0 per cent.

Discussion

Directive 060, starting with the edition that went into effect on January 31, 2007, requires that all solution gas flares or vents releasing more than 900 m^3/day must be economically evaluated to see if gas conservation is viable. If the net present value (NPV) of gas conservation at a crude oil battery is found to be greater than negative $55 000, the well or battery must not be produced until the gas is conserved. At crude bitumen batteries, as soon as gas flow rates exceed an average of 900 m^3/day for any consecutive three-month period within a rolling six-month window, operators have up to six months to conserve the solution gas if the NPV of gas conservation is greater than negative $55 000.

Low natural gas prices and higher pipeline and compressor costs in 2018 continued to challenge the economic viability of conservation.

On September 27, 2018, *Directive 084: Requirements for Hydrocarbon Emission Controls and Gas Conservation in the Peace River Area* went into effect. Licensees of crude oil and crude bitumen wells and facilities in the Peace River area were required to meet more stringent requirements for gas conservation and flaring than required by *Directive 060*. The operational changes as a result of the *Directive 084* requirements increased gas conservation and decreased flaring in the Peace River area.

The decrease in flaring from crude bitumen batteries in Alberta in 2018 compared with 2017 can be primarily attributed to a decrease in the number of crude bitumen batteries operating and an increase in gas conservation. For crude oil batteries, the increase in flaring and decrease in venting in 2018 compared with 2017, with gas conservation improving minimally, suggests that an increasing portion of gas is being flared rather than vented.

Crude bitumen batteries accounted for 182 10^6 m^3, or 32.0 per cent, of the total solution gas flared and vented in 2018, with 41.0 per cent of this volume being vented. Crude bitumen generally has lower gas-to-oil ratios and solution gas production volumes than crude oil, which means that solution gas is less likely to be combusted.

The reduction in total vented gas volumes in 2018 compared with 2017 can be mainly attributed to the AER continuing to work with operators to enhance compliance with venting requirements.

This report covers two types of crude bitumen operations: nonthermal operations (e.g., cold heavy oil production) and thermal operations (e.g., steam-assisted gravity drainage or cyclical steam stimulation). Thermal operations generally have less flaring and venting than nonthermal operations because the produced gas is more economical to conserve. Table 3 shows the volume of flaring and venting for nonthermal operations (3158 batteries) and thermal operations (42 batteries) in 2018.

Table 3. Flaring and venting at nonthermal and thermal operations (10^6 m^3), 2018

	Nonthermal operations	Thermal operations	Total
Crude bitumen produced	11	81	92
Solution gas produced	1 226	2 026	3 252
Solution gas flared	95	12	107
Solution gas vented	71	3	74
% of solution gas conserved	**86.4%**	**99.3%**	**94.4%**

Although conserving gas is more challenging for nonthermal operations than for thermal operations, the oil and gas industry is constructively using a large portion of produced solution gas from nonthermal operations as fuel to run pump motors and tank heaters. Unfortunately, conserving the remaining small volume of gas is more economically challenging.

4 Flaring from All Upstream Oil and Gas Sources, 2000–2018

The total flared volume from all upstream oil and gas sources in 2018 was 747 10^6 m^3, an increase of 1.0 per cent from 2017 (see figure 4). The data in table 4 were used to prepare figure 4.

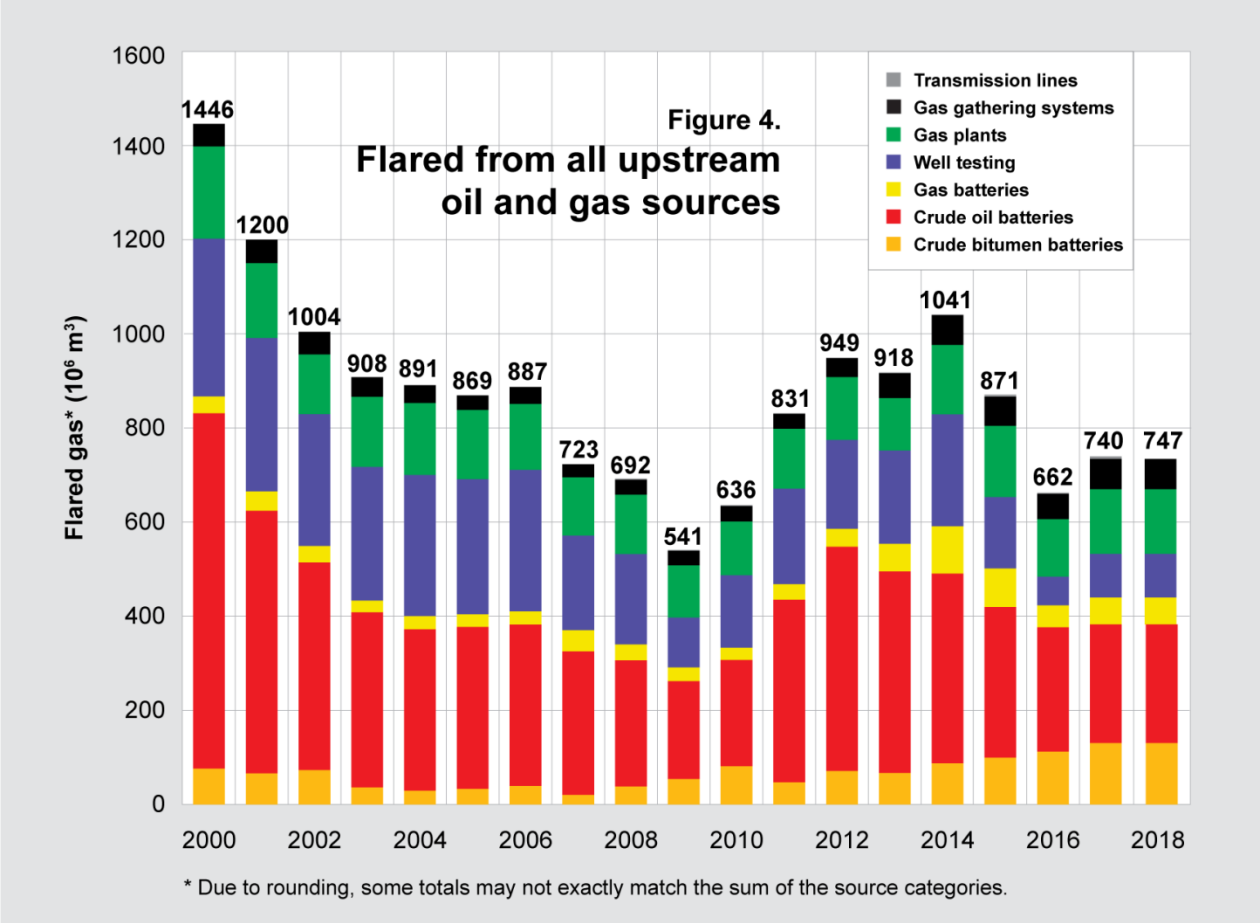


Table 4. Flaring from all upstream oil and gas sources (10^6 m^3)

Year	Crude bitumen batteries	Crude oil batteries	Gas batteries	Well testing	Gas plants[a]	Gas gathering systems[a]	Transmission lines[b]	Total flared
2000	76	755	36	335	196	48	-	1446
2001	66	558	41	326	159	50	-	1200
2002	73	441	35	280	127	48	-	1004
2003	36	372	25	284	149	42	-	908
2004	29	343	28	300	153	38	-	891
2005	33	344	27	287	147	31	-	869
2006	39	343	28	301	140	36	-	887
2007	20	305	45	201	124	28	-	723
2008	38	268	34	192	126	32	2	692
2009	54	208	29	106	111	31	2	541
2010	81	226	26	154	114	33	2	636
2011	47	388	33	203	127	32	1	831
2012	70.8	476.7	37.9	189.0	133.6	40.1	1.1	949

Year	Crude bitumen batteries	Crude oil batteries	Gas batteries	Well testing	Gas plants[a]	Gas gathering systems[a]	Transmission lines[b]	Total flared
2013	66.6	428.6	58.5	198.4	111.1	52.9	2.0	918
2014	87.4	403.0	100.5	237.7	147.8	63.5	0.6	1041
2015	99.3	320.0	82.0	151.7	151.4	62.1	4.2	871
2016	112.2	264.0	46.6	61.2	122.2	53.6	2.4	662
2017	130.4	252.0	57.3	92.7	137.3	64.3	5.7	740
2018	107.2	292.0	49.1	75.7	145.4	76.1	1.8	747
2018 vs. 2017 change	−17.8%	15.8%	−14.3%	−18.3%	5.9%	18.3%	−68.8%	1.0%

Note: Due to rounding, some totals may not exactly match the sum of the source categories. An additional decimal place has been added to the volumes for 2012 onwards to more accurately reflect the changes.

[a] The figures for gas plants and gas gathering systems include both flared *and* vented volumes for the years 2000 to 2006.

[b] Transmission line data are voluntarily reported to the AER. The AER does not regulate these lines. Flaring from transmission lines was not tracked by the AER until 2008.

Table 4 shows that flaring from crude oil batteries, gas plants, and gas gathering systems increased in 2018 compared with 2017, while flaring from crude bitumen batteries, gas batteries, well testing, and transmission lines decreased in 2018.

Discussion

Gas Batteries

In 2018, flared gas volumes from gas batteries was 49 10^6 m^3, a decrease of 14.3 per cent from 2017. The flaring decrease is mainly due to the decrease in the number of horizontal multistage hydraulically fractured gas wells drilled in 2018 compared with 2017 (table 5). These types of wells take longer to clean out to meet pipeline specifications for transporting the gas, so flare volumes are higher and flaring duration is longer than for vertical wells that are not hydraulically fractured. The flared volume during this cleanup period is reported as gas battery flaring, not as well test flaring.

Well Testing

In 2018, 907 well tests were done, compared with 1046 tests in 2017. Flaring or venting occurred during 714 (79 per cent) of the well tests in 2018, compared with during 867 (83 per cent) of the tests in 2017.

An AER review of 61 well tests done in 2018 showed that 8 per cent of the flared gas was reported incorrectly. The volume of flared gas reported has improved in accuracy because in 2017, 37 per cent of the flared gas was reported incorrectly based on a review of 37 well tests. In some situations, the reported flare volumes during well testing included some nonhydrocarbon gas, such as carbon dioxide and nitrogen from fracturing operations. In other situations, gas that was pipelined (i.e., conserved) by testing in line was incorrectly included in the flared gas volumes. The AER subtracted these gas volumes from the reported flared volumes to get the actual hydrocarbon gas that was flared during these well tests. This adjustment was only made for the 61 well tests reviewed, and the volumes were not prorated for the entire well test dataset.

The average volume of gas flared per test in 2018 was 83.4 10^3 m^3, compared with 88.6 10^3 m^3 per test in 2017, a decrease of 5.8 per cent (see table 5). There were also 259 fewer horizontal multistage fractured gas wells drilled in 2018 compared with 2017.

Table 5. Average volume of gas flared per well test and number of wells drilled by type

Year	Volume flared per well test (10^3 m^3)	Number of horizontal multistage fractured gas wells	Number of horizontal multistage fractured oil wells	Total number of wells drilled
2005	34.6	-	-	20 189
2006	40.8	-	-	18 878
2007	40.1	-	-	14 723
2008	45.6	93	53	12 914
2009	39.3	160	120	6 392
2010	63.5	350	778	8 946
2011	83.2	645	1 645	9 303
2012	102.3	530	1 839	8 143
2013	109.8	626	1 612	7 812
2014	140.6	846	1 506	7 543
2015	125.2	662	573	3 411
2016	99.9	512	419	2 638
2017	88.6	858	910	4 895
2018	83.4	599	1 004	5 095

Directive 060 requires that operators seek alternatives to well test flaring. Operators are required to test in line when it is both economically viable and safe to do so. Testing in line can mean either connecting to an existing gas gathering system directly or laying a temporary surface pipeline to connect a well to a remote gas gathering system. By either method, the gas from the well test is conserved.

Table 6 shows the gas flared from well tests for the 25 companies with the most well tests in 2018 and the average volume of gas flared per test.

Table 6. Well test flaring, 2018; ranked by number of well tests conducted

Company	Number of well tests	Gas flared (10^6 m^3)	Average gas flared per test (10^3 m^3)
Seven Generations Energy Ltd.	147	1.8	12.0
Tourmaline Oil Corp.	107	5.3	49.6
Encana Corporation	61	0.7	11.6
Shell Canada Limited	45	2.8	62.5
Torxen Energy Ltd.	43	1.1	25.2
Birchcliff Energy Ltd.	31	1.4	43.6
Repsol Oil & Gas Canada Inc.	28	3.3	117.4
Murphy Oil Company Ltd.	28	2.3	82.0
Modern Resources Inc.	25	0.6	24.0
Cenovus Energy Inc.	24	5.1	211.5
NuVista Energy Ltd.	21	0.1	6.7
TAQA North Ltd.	20	6.1	306.5
Bonavista Energy Corporation	20	2.2	111.7
Canadian Natural Resources Limited	19	1.0	53.2
Advantage Oil & Gas Ltd.	18	1.3	75.0
Torxen Resources Ltd.	16	1.2	72.5
Kelt Exploration Ltd.	15	0.2	14.5
Velvet Energy Ltd.	14	3.0	211.4
Aspenleaf Energy Limited	13	1.2	94.3
ORLEN Upstream Canada Ltd.	13	1.7	134.2
Paramount Resources Ltd.	12	0.8	66.2
Husky Oil Operations Limited	12	4.1	339.9
Delphi Energy Corp.	12	3.8	320.3
Athabasca Oil Corporation	11	1.7	153.8
Pipestone Energy Corp.	10	5.4	535.9
Total	**765**	**58.2**	
% of total well tests	**84.3%**	**76.9%**	

Gas Plants

All gas plant subtypes contribute to this report, including sweet gas, acid gas flare, acid gas injection, sulphur recovery, straddle, and fractionation.

Of the 1151 gas plants operating in 2018, only 361 reported flared gas volumes. The total volume of gas flared was 145 10^6 m^3, which is a 5.9 per cent increase from 2017. Table 7 shows the top 30 gas plants that flared in 2018 by volume, representing 62.2 per cent of flaring from all gas plants. It also shows the percentage of the total gas received at each plant that is flared.

Table 7. Top 30 flaring gas plants in 2018

Gas plant	Location[a]	Operator name	Gas flared (10^6 m^3)	Gas flared as a percentage of plant gas receipts (%)
ABGP0001901	10-11-020-01W4M	Plains Midstream Canada ULC	15.1	0.15
ABGP0094954	08-11-060-03W6M	Pembina Gas Services Ltd.	4.8	0.19
ABGP0001129	13-26-067-05W6M	Canadian Natural Resources Limited	4.5	0.47
ABGP0118855	08-13-063-05W6M	Pembina Gas Services Ltd.	4.4	0.24
ABGP0001147	11-18-074-12W6M	Veresen Midstream General Partner Inc.	4.1	0.11
ABGP0001060	09-27-031-04W5M	AltaGas Ltd.	3.9	0.13
ABGP0001004	02-05-044-01W5M	Keyera Energy Ltd.	3.6	0.15
ABGP0001662	12-35-034-06W5M	Shell Canada Energy	3.4	0.35
ABGP0001056	02-20-004-30W4M	Shell Canada Energy	3.2	0.32
ABGP0001350	01-08-070-11W6M	Cenovus Energy Inc.	3.2	0.18
ABGP0001107	01-12-062-20W5M	Semcams Midstream Ulc	3.1	0.19
ABGP0001058	08-09-064-19W5M	Paramount Resources Ltd.	3.1	0.39
ABGP0001892	04-08-075-07W6M	Encana Corporation	2.8	0.15
ABGP0001506	01-01-078-10W6M	Canadian Natural Resources Limited	2.8	0.21
ABGP0107835	05-02-076-12W6M	Advantage Oil & Gas Ltd.	2.5	0.09
ABGP0001740	04-25-062-06W6M	Pembina Gas Services Ltd.	2.4	0.12
ABGP0001113	09-06-063-25W5M	Keyera Energy Ltd.	2.3	0.10
ABGP0001902	04-12-020-01W4M	Plains Midstream Canada ULC	2.2	0.01
ABGP0149088	03-18-084-17W5M	Baytex Energy Ltd.	2.1	3.61
ABGP0145129	14-28-062-20W5M	Pembina Gas Services Ltd.	1.9	0.29
ABGP0001623	06-08-062-03W6M	Strath Resources Ltd.	1.9	0.36
ABGP0140439	10-29-063-23W5M	Encana Corporation	1.8	0.34
ABGP0001042	10-10-065-02W6M	Canadian Natural Resources Limited	1.6	0.29
ABGP0148152	03-16-060-02W6M	Jupiter Resources Inc.	1.6	0.61
ABGP0001084	04-11-053-18W5M	Repsol Oil & Gas Canada Inc.	1.5	0.08
ABGP0001133	11-35-037-09W5M	Keyera Energy Ltd.	1.4	0.08
ABGP0001482	04-31-048-12W5M	Tidewater Midstream and Infrastructure Ltd.	1.4	0.15
ABGP0001520	06-19-073-08W6M	NuVista Energy Ltd.	1.3	0.14
ABGP0132407	05-31-062-24W5M	Encana Corporation	1.3	0.36
ABGP0001169	15-03-081-04W6M	Canadian Natural Resources Limited	1.3	0.28
Total			**90.5**	
% of total gas plant flaring			**62.2%**	

[a] Legal Subdivision, Section, Township, Range, West of the *n*th Meridian.

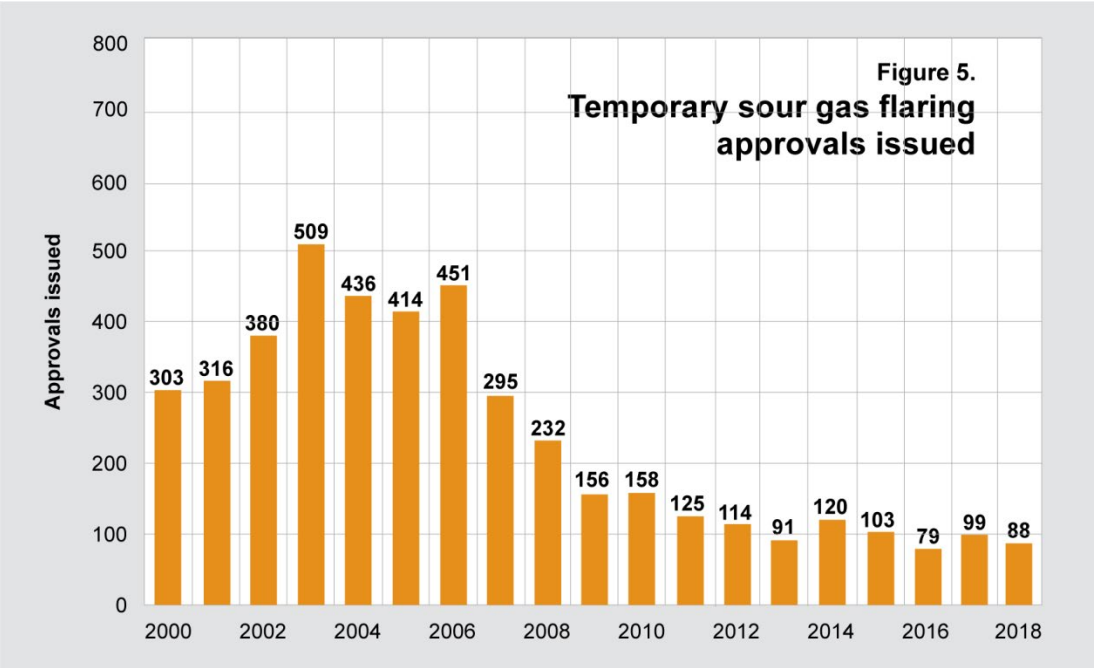
Gas Gathering Systems

In 2018, 50 per cent of the total volume flared from gas gathering systems came from 8 of the 5970 systems.

Sour Gas or Sour Oil Well Testing

In cases of sour gas or sour oil well testing, if the gas to be flared contains more than 5 per cent hydrogen sulphide (H_2S), an approval for temporary sour gas flaring is required. The approval process involves a detailed review of the applicant's air quality dispersion modelling to ensure that the Alberta ambient air quality objectives set by Alberta Environment and Parks will not be exceeded. The application for a sour gas flaring approval may also include plans on how any predicted exceedances of the objectives will be mitigated. When the AER is satisfied that the objectives will be met, and that levels of all other parameters (such as flared volumes and sulphur emissions) are justified and minimized, a temporary sour gas flaring approval may be issued.

In 2018, the AER issued 88 temporary sour gas flaring approvals, a decrease from the 99 issued in 2017 (figure 5).



The reason for the decreasing trend in sour gas flaring approvals since 2006 may be twofold. First, market conditions for natural gas have not been as favourable in recent years, which may have resulted in upstream oil and gas licensees rebalancing their capital and operating budgets. Second, with the release of a revised edition of *Directive 060* at the end of January 2007, a new allowance to flare small volumes of gas containing H_2S volumes in excess of 5 per cent without a sour gas flaring approval was introduced. Under this allowance, companies are still required to notify the AER and public at least 24 hours before flaring operations and to conduct dispersion modelling if the H_2S concentration of the gas to be flared is in excess of 1 per cent.

5 Venting from All Upstream Oil and Gas Sources, 2000–2018

Figure 6 shows vented volumes broken down by source for 2000 to 2018. The data in table 8 were used to prepare figure 6. As indicated in the table, the total volume vented from all upstream oil and gas sources in 2018 was 193 10^6 m^3, a decrease of 14.4 per cent from 2017.

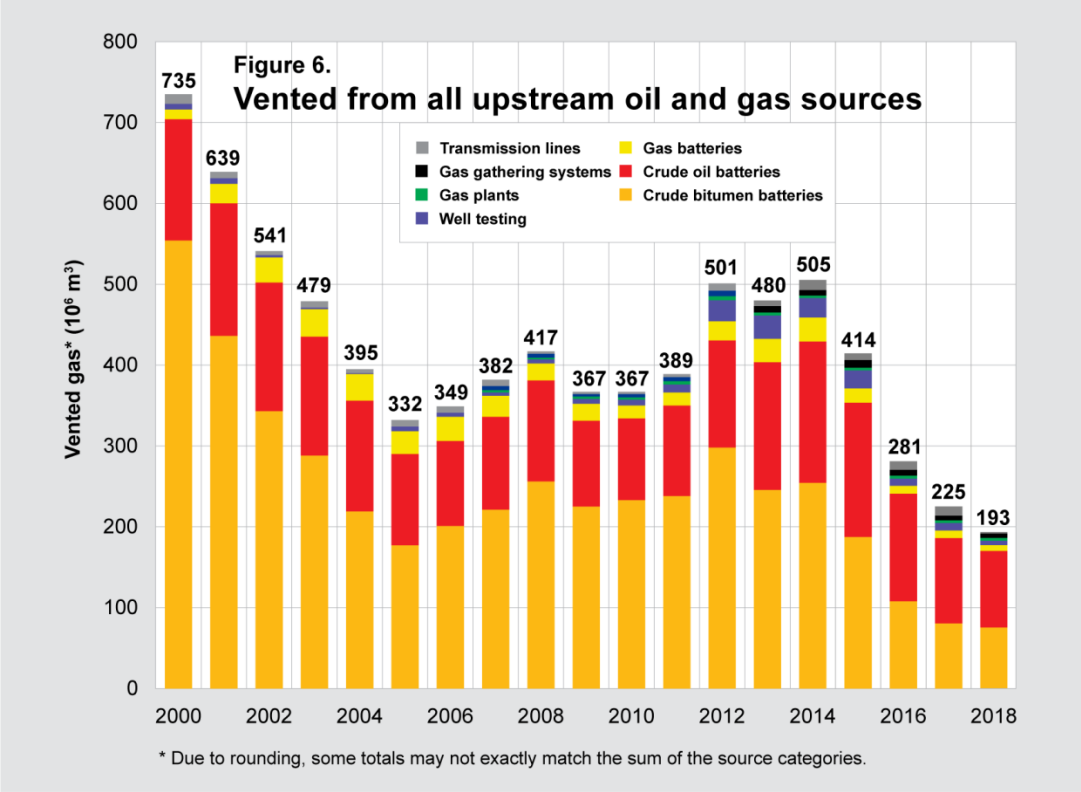


Table 8. Venting from upstream oil and gas sources (10^6 m^3)

Year	Crude bitumen batteries	Crude oil batteries	Gas batteries	Well testing	Gas plants	Gas gathering systems	Transmission lines[a]	Total vented
2000	554	150	12	7	0	0	12	735
2001	436	164	24	7	0	0	8	639
2002	343	159	31	3	0	0	5	541
2003	288	147	34	2	0	0	8	479
2004	219	137	33	1	0	0	5	395
2005	177	113	28	6	0	0	8	332
2006	201	105	30	5	0	0	8	349
2007	221	115	26	4	3	5	8	382
2008	256	125	21	5	2	5	3	417
2009	225	106	21	6	3	3	3	367
2010	233	101	16	7	3	4	3	367
2011	238	112	16	10	4	5	4	389
2012	298.0	132.4	23.7	26.0	5.1	6.8	9.0	501
2013	245.5	157.9	29.0	28.8	3.7	8.0	7.0	480
2014	254.2	174.8	29.7	24.1	3.1	6.8	12.7	505
2015	187.3	166.2	17.6	22.2	3.4	9.4	8.4	414
2016	107.7	133.1	9.8	8.9	3.7	7.2	10.6	281
2017	80.5	105.5	9.3	9.3	3.2	6.0	11.3	225
2018	74.5	94.6	8.1	4.4	3.3	5.7	2.1	193
2018 vs. 2017 change	−7.5%	−10.4%	−12.4%	−52.6%	1.2%	−4.2%	−80.9%	−14.4%

Note: Due to rounding, some totals may not exactly match the sum of the source categories. An additional decimal place has been added to the volumes for 2012 onwards to more accurately reflect the percentage changes.

[a] Transmission line data are voluntarily reported to the AER. The AER does not regulate these lines.

Table 8 shows a decrease in venting in 2018 compared with 2017 from all sources except gas plants.

Discussion

Although the AER currently does not collect data on greenhouse gas emissions, it is concerned about the impact that these gases can have on the environment. Accordingly, *Directive 060* requires that gas vented at a rate exceeding 500 m^3 per day and that is uneconomic to conserve must be burned.

The most significant source of venting in terms of highest volume per well is crude bitumen batteries, where solution gas is vented from the production casing annulus at a large number of individual wells. However, from 2016 to 2018, crude oil batteries exceeded crude bitumen batteries for the highest total venting volumes from all upstream oil and gas sources. Small volumes of solution gas are also vented from treaters and stock tanks at crude oil and crude bitumen batteries. Venting during well testing is primarily from shallow, sweet, low-deliverability gas wells, including coalbed methane wells.

In *ST60B-2004: Upstream Petroleum Industry Flaring and Venting Report, 2003*, the AER made commitments to identify and set out conservation measures aimed at reducing the volumes of solution gas

vented from crude bitumen operations. In 2018, venting from crude bitumen batteries was 74 10^6 m^3, 66.0 per cent lower than the venting baseline from 2004 and 7.5 per cent lower than in 2017.

Crude bitumen production grew by 2.1 per cent to 92 10^6 m^3 in 2018 compared with 2017 despite a decrease of 99 crude bitumen batteries operating. Gas conservation from crude bitumen batteries increased to 94.4 per cent in 2018 from 92.9 per cent in 2017. Since 2014, there has been a substantial decrease in venting from crude bitumen operations mainly due to increased gas conservation. Greater compliance with venting requirements from 2016 to 2018 also contributed to decreased venting.

In 2018, venting from crude oil batteries decreased by 10.4 per cent to 95 10^6 m^3 compared with 2017. Crude oil production grew by 9.8 per cent to 28 10^6 m^3 despite 135 fewer crude oil batteries operating. Gas conservation from crude oil batteries increased to 97.9 per cent in 2018, from 97.8 per cent in 2017.

6 Emissions from Glycol Dehydrators

Companies are required to meet the benzene emission requirements for glycol dehydrators (dehydration and refrigeration) set out in *Directive 039: Revised Program to Reduce Benzene Emissions from Glycol Dehydrators*. Under *Directive 039*, licensees must complete and submit to the AER an annual dehydrator inventory list that details the emissions from all their glycol dehydrators.

In 2018, 1400 glycol dehydrators processed 170.8 billion cubic metres of gas. Table 9 shows that 285 tonnes of benzene were emitted after engineering controls[8] in 2018 compared with 1248 tonnes in 2008—a 77.2 per cent reduction. This can mainly be attributed to a decrease in the number of glycol dehydrators operating and to licensees complying with the emissions reduction requirements in *Directive 039*. The overall effectiveness of controls in reducing emissions has also increased since 2008, indicating that controls were used more often or were more efficient at reducing emissions.

Table 9. Benzene emissions from operating glycol dehydrators

Year	Number of dehydrators[a]	Volume of gas processed (10^6 m^3)	Benzene emissions before controls (tonnes)	Benzene emissions after controls (tonnes)	Overall control efficiency (%)[b]
2008	2 396	159 417	3 011	1 248	58.6
2009	2 236	153 323	2 750	1 093	60.3
2010	2 107	134 681	2 365	989	58.2
2011	2 006	137 790	2 286	849	62.9
2012	1 985	148 334	2 228	794	64.4
2013	1 905	142 110	2 757	777	71.8
2014	1 886	146 036	2 640	746	71.7
2015	1 778	153 486	2 376	609	74.4
2016	1 646	151 825	2 307	501	78.3
2017	1 528	152 397	2 008	399	80.1
2018	1 400	170 768	1 996	285	85.7

Note: Benzene amounts have been rounded to the nearest tonne.

[a] Benzene occurs in varying concentrations in natural gas streams throughout the province, and some locations may not have any benzene. All operating dehydrators are included, regardless of the concentration of benzene in the gas stream.

[b] The control efficiency is the total benzene emissions before controls minus the total benzene emissions after controls divided by the total benzene emissions before controls.

Table 10 lists the top 30 companies by the number of glycol dehydrators in 2018. The companies in the table account for 71.6 per cent of the total number of operating glycol dehydrators and 72.2 per cent of the benzene emissions after controls.

[8] Controls are methods for reducing benzene emissions. Condenser systems, incinerators, flare stacks, and burners are examples of engineering controls.

Table 10. Top 30 companies in terms of the number of operating glycol dehydrators in 2018

Company	Number of dehydrators	Benzene emissions before controls (tonnes)	Benzene emissions after controls (tonnes)
Canadian Natural Resources Limited	269	258	52
Ember Resources Inc.	53	4	4
TAQA North Ltd.	46	68	12
Tourmaline Oil Corp.	46	163	8
Cenovus Energy Inc.	41	75	15
Husky Oil Operations Limited	38	45	7
Bonavista Energy Corporation	37	102	14
Paramount Resources Ltd.	36	208	11
Long Run Exploration Ltd.	33	35	10
Tidewater Midstream and Infrastructure Ltd.	28	10	4
Lynx Energy ULC	28	2	2
Seven Generations Energy Ltd.	26	133	13
Canlin Energy Corporation	24	9	3
Keyera Energy Ltd.	24	42	4
Repsol Oil & Gas Canada Inc.	22	78	3
Peyto Exploration & Development Corp.	21	27	3
Obsidian Energy Ltd.	21	4	4
Bellatrix Exploration Ltd.	20	63	6
NAL Resources Limited	19	26	8
Torxen Energy Ltd.	19	6	6
AlphaBow Energy Ltd.	18	5	4
Harvest Operations Corp.	17	44	6
Baytex Energy Ltd.	17	25	2
International Petroleum Corp.	17	0	0
ATCO Energy Solutions Ltd.	16	2	0
Rockpoint Gas Storage Canada Ltd.	15	8	0
Pine Cliff Energy Ltd.	14	2	2
Tamarack Acquisition Corp.	13	8	2
AltaGas Ltd.	12	9	2
City of Medicine Hat	12	1	1
Total	**1002**	**1463**[a]	**206**[a]
% of total glycol dehydrators	**71.6%**	**73.3%**	**72.2%**

[a] Due to rounding, the totals do not exactly match the sum of the source categories.

Glycol is the most commonly used desiccant for the dehydration process, but it has a high affinity for water and benzene. Benzene emissions mainly result from the glycol regeneration process, where the water is separated from the glycol through boiling. The AER requires that benzene emissions are managed to ensure that the Alberta ambient air quality objectives are not exceeded.

7 Emissions from Surface Casing Vent Flows and Gas Migration

A surface casing vent flow (SCVF) is the flow of gas, liquid, or both out of the surface casing or casing annulus of a well. Gas migration (GM) is the flow of detectable gas at the surface outside of the outermost casing string.

In 2003, the AER issued *Interim Directive 2003-01: 1) Isolation Packer Testing, Reporting, and Repair Requirements; 2) Surface Casing Venting Flow/Gas Migration Testing, Reporting, and Repair Requirements; 3) Casing Failure Reporting and Repair Requirements*, which requires companies to electronically report emissions from SCVFs and GM. Over the years, the AER has worked with licensees to ensure proper reporting of SCVFs and GM.

Table 11 shows that in 2018, there were 10 128 unrepaired wells with SCVFs or GM that emitted a total of 65 10^6 m^3 of natural gas.

Table 11. Emissions from SCVFs and GM at unrepaired wells

Year	Number of wells with SCVFs, GM, or both[a]	Annual natural gas emission (10^6 m^3)[b,c,d]
2000	4 404	53
2001	4 557	55
2002	5 197	70
2003	5 663	84
2004	6 052	86
2005	6 479	94
2006	7 337	95
2007	7 880	100
2008	8 495	104
2009	8 762	98
2010	8 926	95
2011	9 318	92
2012	9 563	88
2013	9 624	89
2014	9 982	84
2015	10 247	86
2016	9 972	81
2017	10 291	83
2018	10 128	65

[a] For wells that have SCVF flow rates that are too small to measure and wells where a GM flow rate cannot be determined, a flow rate of 1 m^3/day was used.

[b] The flow rates reported are from a single point in time and are extrapolated to determine annual emissions. Flow rates for SCVFs and GM can fluctuate significantly over a period of time.

[c] Typically, the methane content of natural gas in SCVFs and GM is between 95 and 99 per cent.

[d] If no emissions type (e.g. natural gas, saline water, or nonsaline water) is provided, an SCVF or GM is assumed to be natural gas and have a flow rate equal to the average of all other reported natural gas SCVFs or GM.

The age, construction, and operation of a well affect the rates of SCVFs or GM. As a result, these SCVF or GM rates differ throughout the well's life cycle. Table 12 shows the percentage of wells with an SCVF or GM in 2018, both repaired and unrepaired, based on the status of the well. For all wells that were not abandoned, 7.2 per cent had a reported SCVF or GM.

Table 12. Percentage of wells with an SCVF, GM, or both by well status in 2018

Well status	Number of wells	Number of wells that reported SCVFs or GM	Percentage of wells with SCVFs, GM, or both (%)
New drills[a]	1 450	14	1.0
Active[b]	174 413	9 242	5.3
Inactive[c]	89 515	9 958	11.1
Total	**265 378**	**19 214**	**7.2**

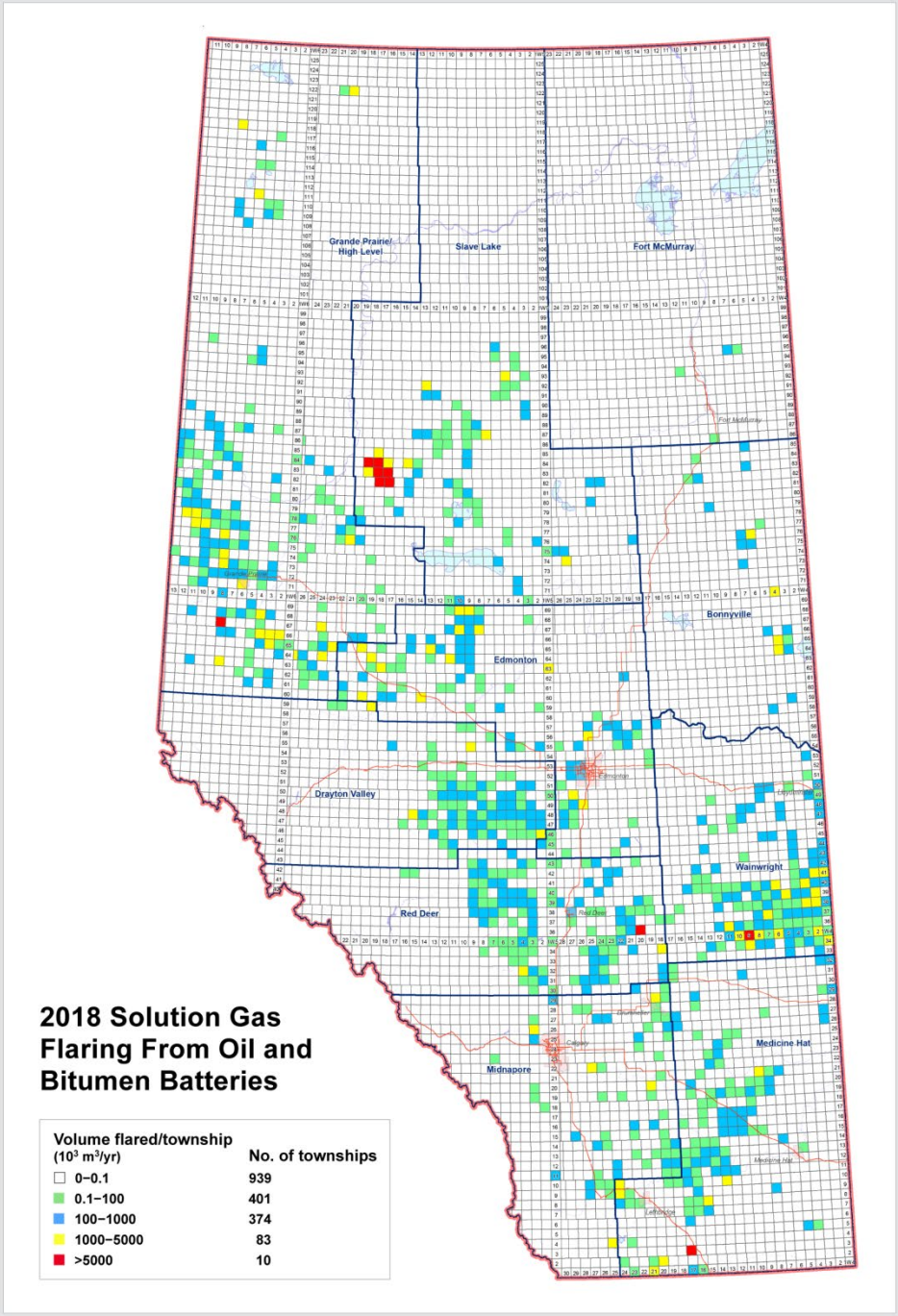
[a] New drills are wells that have been recently drilled and for which licensees are required to test and report any SCVF or GM.

[b] Active wells are those that are currently producing or injecting and reporting volumetric activity on Petrinex.

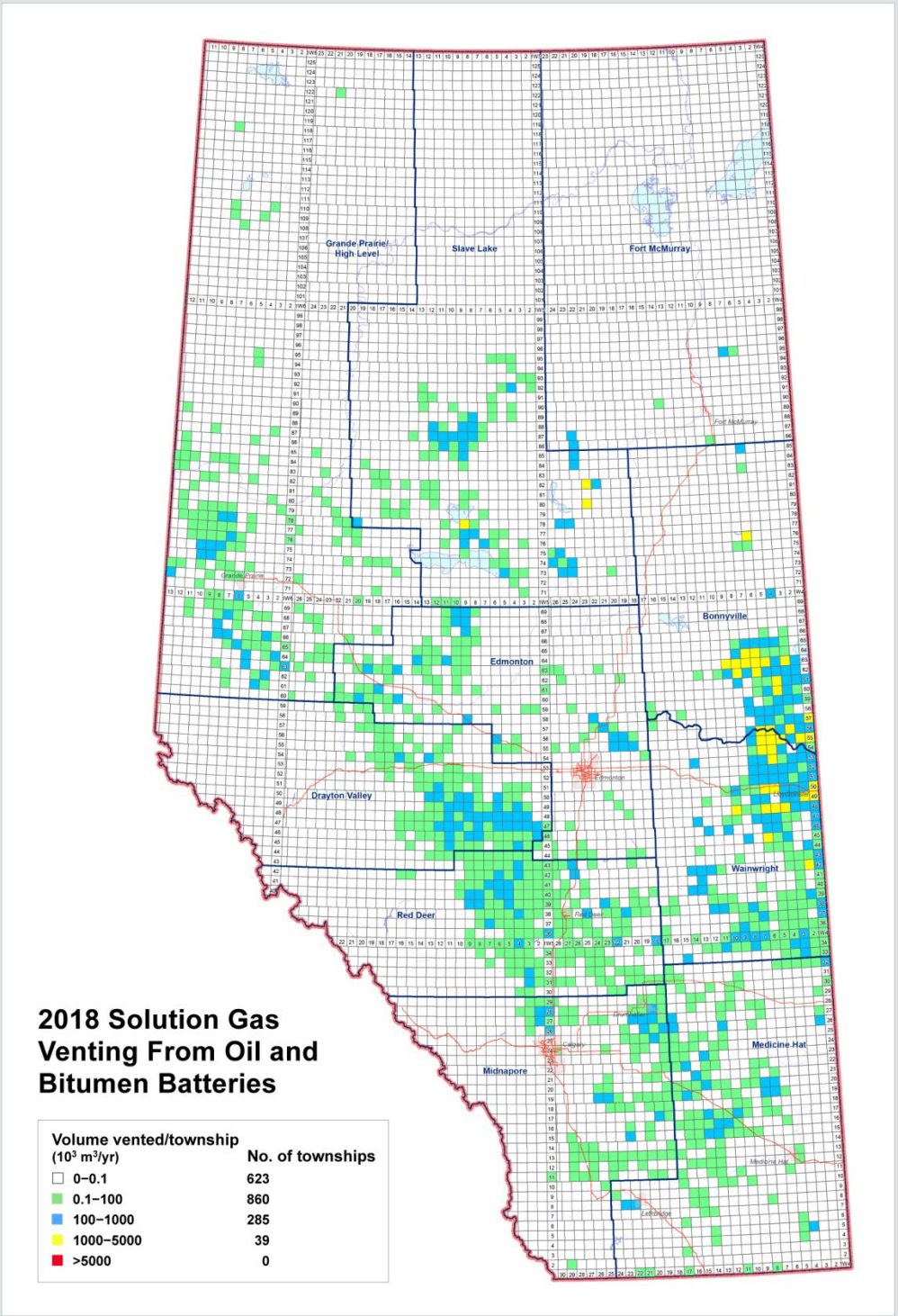
[c] Under *Directive 013: Suspension Requirements for Wells*, inactive wells are those that have not reported any volumetric activity for either 6 or 12 months, depending on the well's risk classification. However, the number of inactive wells shown in this table also includes wells that are not covered by *Directive 013*, such as observation wells and training wells.

8 Provincial Solution Gas Flaring and Venting Maps

The following maps of the province depict solution gas flaring and venting by township.



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9 Solution Gas Emissions Ranking of Operators for 2018

The AER has ranked companies based on volumes from operated crude oil and crude bitumen batteries of (1) solution gas production, (2) vented solution gas, and (3) flared plus vented solution gas. The tables that follow provide information on individual companies. The second column in the tables shows the percentage of solution gas conserved by an operator. The operator's performance can be compared with the provincial average of 97.4 per cent solution gas conservation.

In this section, all crude oil and crude bitumen batteries have been included except for batteries that had an experimental well reporting fluid production in a month. The information on experimental wells remains confidential. This exclusion of data from experimental wells is the reason for variances between the values in the preceding sections of this report and the values contained in the ranking tables in this section.

Note that it is possible for an operator to flare or vent a significant volume of solution gas due to the magnitude of the company's operations and still have a high percentage of gas conserved.

Companies are ranked province-wide and within each AER field centre area[9] based on the solution gas flared plus vented from their operating facilities in 2018. The following describes the fields that appear in the ranking tables:

Company: Name of company operating crude oil and crude bitumen batteries.

Gas cons: Percentage of solution gas conserved.

Gas cons change: Percentage change in gas conservation from the previous year. Blanks represent companies that did not report in 2017 due to mergers, name changes, acquisitions, etc.

Gas flared + vented (1000 m^3): Solution gas flared plus vented from operated crude oil and crude bitumen batteries.

Gas flared + vented rank: The company's ranking compared with other companies based on the volume of solution gas flared plus vented.

Gas flared (1000 m^3): Solution gas flared from operated crude oil and crude bitumen batteries.

Flare rank: The company's ranking compared with other companies based on the volume of solution gas flared.

Gas vented (1000 m^3): Solution gas vented from operated crude oil and crude bitumen batteries.

Vent rank: The company's ranking compared with other companies based on the volume of solution gas vented.

[9] In 2017, the areas covered by the AER field centres changed. The new boundaries can be found online at www.aer.ca > Providing Information > About the AER > Contact Us > Regional Maps and Contacts.

Oil prod (m^3): Volume of crude oil and crude bitumen produced from operated crude oil and crude bitumen batteries.

Sol'n gas prod (1000 m^3): Volume of solution gas produced from operated crude oil and crude bitumen batteries.

Sol'n gas rank: The company's ranking compared with other companies based on the volume of solution gas produced.

GHG emissions (tCO_2e): The total GHG emissions based on flared and vented gas volumes.

GHG emissions rank: The company's ranking compared with other companies based on the GHG emissions.

Operators with the Largest Solution Gas Produced Volumes in 2018[1]
Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas cons change	Gas flared + vented (1000 m^3)	Gas flared + vented rank	Gas flared (1000 m^3)	Flare rank	Gas vented (1000 m^3)	Vent rank	Oil prod (m^3)	Sol'n gas prod (1000 m^3)	Sol'n gas rank
Canadian Natural Resources Limited	96.7%	0.5%	79,057	1	23,191	3	55,866	1	14,641,185	2,413,735	**1**
Husky Oil Operations Limited	98.7%	0.7%	19,834	4	4,367	19	15,467	3	5,592,653	1,471,490	**2**
Hammerhead Resources Inc.	99.5%	0.8%	4,849	23	4,811	13	38	143	513,304	981,029	**3**
Cenovus Energy Inc.	98.9%	0.3%	10,233	10	7,448	9	2,785	11	21,400,634	908,875	**4**
Birchcliff Energy Ltd.	99.8%	0.0%	1,257	76	1,257	69	0	258	283,064	750,236	**5**
ARC Resources Ltd.	99.3%	0.2%	4,579	27	3,665	24	914	28	843,369	648,283	**6**
Exshaw Oil Corp.	100.0%	0.0%	123	195	123	165	0	258	426,226	620,942	**7**
Whitecap Resources Inc.	97.8%	-1.1%	12,595	8	11,466	6	1,129	22	913,771	583,935	**8**
NAL Resources Limited	99.8%	0.1%	1,383	72	821	87	563	36	375,840	568,928	**9**
Paramount Resources Ltd.	98.3%	5.4%	8,422	14	8,192	8	230	66	450,926	488,457	**10**
Torxen Energy Ltd.	99.1%	0.2%	3,923	33	882	83	3,041	9	840,055	453,101	**11**
Obsidian Energy Ltd.	86.2%	1.2%	61,776	2	59,534	1	2,242	12	1,183,214	446,067	**12**
Imperial Oil Resources Limited	99.3%	0.1%	3,072	42	2,675	37	397	51	8,568,235	437,182	**13**
Tamarack Acquisition Corp.	97.8%	0.7%	8,757	13	4,395	18	4,362	6	773,397	390,840	**14**
AlphaBow Energy Ltd.	99.8%	N/A	676	104	265	132	411	50	131,909	387,899	**15**
MEG Energy Corp.	100.0%	0.0%	87	206	87	176	0	258	4,742,042	372,583	**16**
Baytex Energy Ltd.	90.9%	6.2%	33,853	3	31,775	2	2,079	13	1,112,271	370,455	**17**
Kelt Exploration Ltd.	99.6%	-0.1%	1,454	70	1,432	64	21	162	315,864	339,503	**18**
Velvet Energy Ltd.	99.3%	-0.1%	2,145	58	1,928	51	217	71	247,731	305,145	**19**
Bonterra Energy Corp.	98.7%	-0.2%	3,313	39	2,646	38	667	32	454,609	263,718	**20**
Yangarra Resources Corp.	99.1%	0.4%	2,283	55	1,283	68	1,000	25	244,031	262,964	**21**
Surge Energy Inc.	96.3%	-0.6%	9,662	12	6,423	10	3,239	7	642,773	258,428	**22**
Ridgeback Resources Inc.	98.1%	-0.2%	4,872	22	3,926	23	947	27	382,744	258,242	**23**
Devon Canada Corporation	93.0%	-0.6%	17,596	6	1,204	71	16,392	2	6,850,574	253,105	**24**
TAQA North Ltd.	97.4%	-0.8%	6,547	15	4,559	15	1,988	14	240,533	251,927	**25**
Subtotal			**302,345**		**188,355**		**113,995**		**72,170,954**	**14,487,069**	
% of Provincial Total			**53.2%**		**47.2%**		**67.5%**		**61.3%**	**67.1%**	

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Operators with the Largest Solution Gas Vented Volumes in 2018[1]
Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas cons change	Gas flared + vented (1000 m^3)	Gas flared + vented rank	Gas flared (1000 m^3)	Flare rank	Gas vented (1000 m^3)	Vent rank	Oil prod (m^3)	Sol'n gas prod (1000 m^3)
Canadian Natural Resources Limited	96.7%	0.5%	79,057	1	23,191	3	55,866	**1**	14,641,185	2,413,735
Devon Canada Corporation	93.0%	-0.6%	17,596	6	1,204	71	16,392	**2**	6,850,574	253,105
Husky Oil Operations Limited	98.7%	0.7%	19,834	4	4,367	19	15,467	**3**	5,592,653	1,471,490
Cardinal Energy Ltd.	95.0%	0.3%	9,825	11	4,133	21	5,693	**4**	864,620	197,903
Gear Energy Ltd.	92.1%	2.0%	5,340	17	-	245	5,340	**5**	209,560	67,817
Tamarack Acquisition Corp.	97.8%	0.7%	8,757	13	4,395	18	4,362	**6**	773,397	390,840
Surge Energy Inc.	96.3%	-0.6%	9,662	12	6,423	10	3,239	**7**	642,773	258,428
West Lake Energy Corp.	77.2%	-6.0%	14,216	7	11,101	7	3,115	**8**	519,509	62,342
Torxen Energy Ltd.	99.1%	0.2%	3,923	33	882	83	3,041	**9**	840,055	453,101
Prairie Provident Resources Canada Ltd.	95.3%	-0.9%	4,296	30	1,464	63	2,833	**10**	222,008	90,451
Cenovus Energy Inc.	98.9%	0.3%	10,233	10	7,448	9	2,785	**11**	21,400,634	908,875
Obsidian Energy Ltd.	86.2%	1.2%	61,776	2	59,534	1	2,242	**12**	1,183,214	446,067
Baytex Energy Ltd.	90.9%	6.2%	33,853	3	31,775	2	2,079	**13**	1,112,271	370,455
TAQA North Ltd.	97.4%	-0.8%	6,547	15	4,559	15	1,988	**14**	240,533	251,927
InPlay Oil Corp.	92.4%	-1.8%	4,899	20	3,113	33	1,786	**15**	127,339	64,352
Repsol Oil & Gas Canada Inc.	89.3%	6.8%	3,229	40	1,493	60	1,736	**16**	485,242	30,054
Harvest Operations Corp.	96.1%	0.4%	4,702	26	3,127	32	1,575	**17**	498,696	120,343
Karve Energy Inc.	83.4%	8.6%	19,787	5	18,344	4	1,443	**18**	336,990	119,459
Journey Energy Inc.	98.0%	-1.0%	4,726	25	3,329	31	1,397	**19**	246,517	237,398
Crew Energy Inc.	82.9%	-2.1%	1,231	78	-	245	1,231	**20**	48,400	7,187
Spur Petroleum Ltd.	71.6%	-18.7%	4,506	28	3,357	30	1,149	**21**	335,290	15,862
Whitecap Resources Inc.	97.8%	-1.1%	12,595	8	11,466	6	1,129	**22**	913,771	583,935
IPC Alberta Ltd.	93.4%	N/A	2,118	59	994	78	1,124	**23**	370,829	31,975
Rife Resources Ltd.	70.3%	-22.8%	1,108	81	-	245	1,108	**24**	30,048	3,726
Yangarra Resources Corp.	99.1%	0.4%	2,283	55	1,283	68	1,000	**25**	244,031	262,964
Subtotal			**346,098**		**206,982**		**139,120**		**58,730,139**	**9,113,791**
% of Provincial Total			**61.0%**		**51.9%**		**82.4%**		**49.9%**	**42.2%**

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Provincial Ranking of Operators – 2018 Flared + Vented Volume[1]
Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas cons change	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)	GHG emissions (tCO_2e)	GHG emissions rank
Canadian Natural Resources Limited	96.7%	0.5%	79,057	**1**	23,191	3	55,866	1	14,641,185	2,413,735	939,429	1
Obsidian Energy Ltd.	86.2%	1.2%	61,776	**2**	59,534	1	2,242	12	1,183,214	446,067	179,013	4
Baytex Energy Ltd.	90.9%	6.2%	33,853	**3**	31,775	2	2,079	13	1,112,271	370,455	109,482	5
Husky Oil Operations Limited	98.7%	0.7%	19,834	**4**	4,367	19	15,467	3	5,592,653	1,471,490	219,361	3
Karve Energy Inc.	83.4%	8.6%	19,787	**5**	18,344	4	1,443	18	336,990	119,459	71,042	8
Devon Canada Corporation	93.0%	-0.6%	17,596	**6**	1,204	71	16,392	2	6,850,574	253,105	256,539	2
West Lake Energy Corp.	77.2%	-6.0%	14,216	**7**	11,101	7	3,115	8	519,509	62,342	76,300	7
Whitecap Resources Inc.	97.8%	-1.1%	12,595	**8**	11,466	6	1,129	22	913,771	583,935	47,248	13
Crescent Point Energy Corp.	89.7%	-3.1%	12,207	**9**	11,732	5	475	45	448,605	118,076	39,835	15
Cenovus Energy Inc.	98.9%	0.3%	10,233	**10**	7,448	9	2,785	11	21,400,634	908,875	60,624	11
Cardinal Energy Ltd.	95.0%	0.3%	9,825	**11**	4,133	21	5,693	4	864,620	197,903	83,187	6
Surge Energy Inc.	96.3%	-0.6%	9,662	**12**	6,423	10	3,239	7	642,773	258,428	59,091	12
Tamarack Acquisition Corp.	97.8%	0.7%	8,757	**13**	4,395	18	4,362	6	773,397	390,840	67,290	10
Paramount Resources Ltd.	98.3%	5.4%	8,422	**14**	8,192	8	230	66	450,926	488,457	26,544	22
TAQA North Ltd.	97.4%	-0.8%	6,547	**15**	4,559	15	1,988	14	240,533	251,927	38,083	17
TORC Oil & Gas Ltd.	95.3%	0.4%	5,390	**16**	4,503	17	887	29	203,679	115,628	24,110	24
Gear Energy Ltd.	92.1%	2.0%	5,340	**17**	-	245	5,340	5	209,560	67,817	70,079	9
SanLing Energy Ltd.	82.4%	1.9%	5,039	**18**	4,555	16	484	44	77,310	28,699	19,215	28
Bearspaw Petroleum Ltd.	33.7%	3.7%	4,938	**19**	4,932	11	6	201	42,807	7,452	14,322	38
InPlay Oil Corp.	92.4%	-1.8%	4,899	**20**	3,113	33	1,786	15	127,339	64,352	31,349	18
Aspenleaf Energy Limited	84.4%	-0.6%	4,895	**21**	4,749	14	146	87	261,598	31,403	15,545	35
Ridgeback Resources Inc.	98.1%	-0.2%	4,872	**22**	3,926	23	947	27	382,744	258,242	23,189	25
Hammerhead Resources Inc.	99.5%	0.8%	4,849	**23**	4,811	13	38	143	513,304	981,029	14,371	37
Granite Oil Corp.	97.5%	0.9%	4,845	**24**	4,845	12	-	258	114,753	197,476	13,994	40
Journey Energy Inc.	98.0%	-1.0%	4,726	**25**	3,329	31	1,397	19	246,517	237,398	27,101	20
Harvest Operations Corp.	96.1%	0.4%	4,702	**26**	3,127	32	1,575	17	498,696	120,343	28,664	19
ARC Resources Ltd.	99.3%	0.2%	4,579	**27**	3,665	24	914	28	843,369	648,283	22,023	26
Spur Petroleum Ltd.	71.6%	-18.7%	4,506	**28**	3,357	30	1,149	21	335,290	15,862	26,749	21
Mancal Energy Inc.	92.8%	-0.2%	4,432	**29**	4,150	20	282	61	137,845	61,560	15,513	36
Prairie Provident Resources Canada Ltd.	95.3%	-0.9%	4,296	**30**	1,464	63	2,833	10	222,008	90,451	39,825	16
Mount Bastion Oil & Gas Corp.	78.0%	-9.1%	4,058	**31**	3,399	29	659	33	288,455	18,432	18,061	30
Rockeast Energy Corp.	8.1%	6.5%	4,041	**32**	4,041	22	-	258	54,268	4,398	11,670	47
Torxen Energy Ltd.	99.1%	0.2%	3,923	**33**	882	83	3,041	9	840,055	453,101	40,607	14
Long Run Exploration Ltd.	98.4%	-0.1%	3,806	**34**	2,832	36	974	26	316,107	243,798	20,373	27
Rifle Shot Oil Corp.	62.9%	-5.8%	3,795	**35**	3,584	28	211	73	232,671	10,235	12,990	43
Steelhead Petroleum Ltd.	65.1%	N/A	3,742	**36**	3,607	27	135	90	27,026	10,732	12,112	46
Pengrowth Energy Corporation	57.7%	-4.6%	3,663	**37**	3,663	25	-	258	969,084	8,668	10,523	55
Cabot Energy Inc.	3.3%	-11.1%	3,610	**38**	3,610	26	-	252	41,717	3,733	10,426	56
Bonterra Energy Corp.	98.7%	-0.2%	3,313	**39**	2,646	38	667	32	454,609	263,718	15,987	34
Repsol Oil & Gas Canada Inc.	89.3%	6.8%	3,229	**40**	1,493	60	1,736	16	485,242	30,054	26,044	23

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Company	Gas cons	Gas cons change	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)	GHG emissions (tCO_2e)	GHG emissions rank
ORLEN Upstream Canada Ltd.	98.4%	-0.2%	3,148	**41**	2,948	34	200	74	79,131	202,034	11,013	50
Imperial Oil Resources Limited	99.3%	0.1%	3,072	**42**	2,675	37	397	51	8,568,235	437,182	13,236	42
Executive Adventures 2008 Inc.	5.3%	4.6%	2,962	**43**	2,924	35	38	144	9,905	3,128	8,918	60
Modern Resources Inc.	95.1%	-4.4%	2,875	**44**	2,264	43	611	35	80,028	58,891	14,185	39
North 40 Resources Ltd.	90.0%	-2.4%	2,715	**45**	2,387	41	328	56	63,436	27,153	11,001	51
Acquisition Oil Corp.	54.2%	N/A	2,700	**46**	2,213	44	487	43	50,549	5,898	12,486	44
Little Rock Resources Ltd.	66.2%	2.1%	2,523	**47**	2,495	39	28	152	33,303	7,470	7,560	68
Cleo Energy Corp.	58.2%	-4.3%	2,425	**48**	2,418	40	7	198	65,508	5,799	7,072	71
Razor Energy Corp.	95.7%	0.1%	2,410	**49**	2,039	48	371	55	147,431	56,246	10,533	54
Canuck North Resources Ltd.	0.0%	0.0%	2,402	**50**	1,946	50	456	48	4,639	2,402	11,329	48
NEP Canada ULC	98.6%	1.9%	2,369	**51**	2,369	42	-	258	460,590	171,166	6,843	73
Insignia Energy Ltd.	95.2%	0.1%	2,334	**52**	2,109	46	224	70	66,243	48,866	8,901	61
Rolling Hills Energy Ltd.	96.7%	-1.7%	2,322	**53**	1,850	53	472	46	104,432	69,687	11,255	49
Gain Energy Ltd.	98.0%	0.5%	2,321	**54**	2,164	45	157	84	69,300	118,382	8,216	65
Yangarra Resources Corp.	99.1%	0.4%	2,283	**55**	1,283	68	1,000	25	244,031	262,964	16,220	33
Deltastream Energy Corporation	81.6%	0.2%	2,263	**56**	1,759	55	504	42	130,919	12,264	12,228	45
Highwood Oil Company Ltd.	28.9%	N/A	2,226	**57**	1,840	54	386	54	70,291	3,133	10,140	58
Velvet Energy Ltd.	99.3%	-0.1%	2,145	**58**	1,928	51	217	71	247,731	305,145	8,287	63
IPC Alberta Ltd.	93.4%	N/A	2,118	**59**	994	78	1,124	23	370,829	31,975	16,935	32
Gryphon Petroleum Corp.	0.0%	-1.0%	2,089	**60**	2,089	47	-	258	19,258	2,089	6,034	75
Enercapita Energy Ltd.	98.2%	-0.4%	2,019	**61**	1,488	61	531	40	217,729	113,514	10,948	52
Summerland Energy Inc.	83.8%	-2.8%	1,997	**62**	1,996	49	-	252	117,325	12,327	5,767	77
Cuda Energy Inc.	0.0%	0.0%	1,910	**63**	1,910	52	-	258	2,314	1,910	5,516	78
Battle River Energy Ltd.	88.9%	N/A	1,866	**64**	1,749	56	117	95	71,985	16,841	6,512	74
Murphy Oil Company Ltd.	95.4%	-3.5%	1,721	**65**	1,721	57	-	258	63,641	37,510	4,971	79
Drakkar Energy Ltd.	41.0%	21.6%	1,688	**66**	1,688	58	-	258	5,678	2,859	4,874	80
High Ground Energy Inc.	98.3%	-0.4%	1,687	**67**	1,363	66	324	57	98,035	101,997	8,241	64
Nine Ring Energy Development Inc.	2.5%	2.5%	1,494	**68**	1,494	59	-	258	1,227	1,532	4,314	85
Flow-Back Oil & Gas Ltd.	17.3%	-26.9%	1,484	**69**	1,484	62	-	258	725	1,794	4,285	86
Kelt Exploration Ltd.	99.6%	-0.1%	1,454	**70**	1,432	64	21	162	315,864	339,503	4,401	83
Strategic Oil & Gas Ltd.	96.5%	0.4%	1,419	**71**	1,413	65	6	204	82,607	40,188	4,150	87
NAL Resources Limited	99.8%	0.1%	1,383	**72**	821	87	563	36	375,840	568,928	9,411	59
Cor4 Oil Corp.	96.8%	1.2%	1,345	**73**	1,336	67	9	190	196,233	42,506	3,973	88
BlackPearl Resources Inc.	76.3%	3.5%	1,332	**74**	574	95	758	30	121,748	5,616	13,432	41
Bonavista Energy Corporation	99.0%	-0.4%	1,272	**75**	522	100	750	31	71,940	133,671	10,898	53
Birchcliff Energy Ltd.	99.8%	0.0%	1,257	**76**	1,257	69	-	258	283,064	750,236	3,630	94
Changhua Energy Canada Ltd.	0.0%	0.0%	1,247	**77**	1,247	70	-	258	2,600	1,247	3,601	95
Crew Energy Inc.	82.9%	-2.1%	1,231	**78**	-	245	1,231	20	48,400	7,187	18,383	29
Dark Warrior Resources Ltd.	31.1%	-25.3%	1,181	**79**	1,087	73	94	103	12,389	1,714	4,321	84
Halo Exploration Ltd.	0.0%	N/A	1,152	**80**	1,152	72	-	258	948	1,152	3,328	99

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Company	Gas cons	Gas cons change	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)	GHG emissions (tCO_2e)	GHG emissions rank
Rife Resources Ltd.	70.3%	-22.8%	1,108	**81**	-	245	1,108	24	30,048	3,726	17,706	31
Vantage Point Resources Inc.	90.8%	N/A	1,053	**82**	1,008	77	45	136	25,694	11,407	3,472	98
Sinopec Daylight Energy Ltd.	98.9%	-0.2%	1,050	**83**	501	102	549	38	197,285	96,428	8,316	62
Bow River Energy Ltd.	80.0%	-7.1%	1,046	**84**	1,040	74	6	200	85,267	5,222	3,082	102
N7 Energy Ltd.	0.0%	0.0%	1,031	**85**	1,031	75	-	258	21,671	1,031	2,978	105
Hemisphere Energy Corporation	81.4%	-1.3%	1,030	**86**	1,030	76	-	258	62,206	5,535	2,974	106
Artis Exploration Ltd.	95.0%	17.9%	992	**87**	992	79	-	258	159,299	19,765	2,866	108
Caltex Resources Ltd.	93.1%	5.2%	987	**88**	525	99	463	47	303,715	14,352	7,307	70
Rising Star Resources Ltd.	98.6%	2.5%	940	**89**	932	80	8	196	87,539	66,398	2,793	111
Strath Resources Ltd.	98.1%	0.5%	933	**90**	397	113	537	39	17,067	50,309	7,861	66
Ascensun Oil and Gas Ltd.	11.2%	-0.4%	908	**91**	908	81	-	258	12,544	1,023	2,624	117
Enhance Energy Inc.	93.4%	-4.3%	908	**92**	906	82	2	225	51,029	13,841	2,643	115
Tangle Creek Energy Ltd.	99.4%	0.1%	889	**93**	434	109	454	49	199,008	150,930	6,941	72
Blackspur Oil Corp.	99.0%	0.4%	869	**94**	868	84	1	234	157,061	90,478	2,522	120
Osum Production Corp.	92.8%	-0.4%	861	**95**	861	85	-	258	643,072	11,950	2,192	134
Vermilion Energy Inc.	99.4%	0.0%	860	**96**	356	119	505	41	243,226	135,151	7,343	69
Baccalieu Energy Inc.	99.3%	0.0%	854	**97**	304	125	551	37	155,648	131,085	7,769	67
Ikkuma Resources Corp.	91.6%	88.1%	838	**98**	838	86	-	258	16,239	10,017	2,422	126
Canamax Energy Ltd.	97.7%	1.3%	838	**99**	816	88	21	161	134,929	36,722	2,625	116
Longshore Resources Ltd.	98.8%	1.8%	823	**100**	779	89	43	139	89,760	66,316	2,794	110
Inception Exploration Ltd.	98.7%	0.8%	762	**101**	762	90	-	258	43,654	58,845	2,202	133
CNOOC Petroleum North America ULC	98.2%	N/A	753	**102**	131	160	622	34	2,577,113	42,111	10,394	57
Anegada Oil Corp.	98.8%	0.3%	699	**103**	591	94	109	98	117,559	60,254	3,064	103
AlphaBow Energy Ltd.	99.8%	N/A	676	**104**	265	132	411	50	131,909	387,899	5,908	76
Bernum Petroleum Ltd.	92.5%	0.8%	674	**105**	645	91	29	150	27,753	9,010	2,225	131
Huron Resources Corp.	85.7%	11.2%	640	**106**	640	92	-	258	18,878	4,466	1,848	141
ConocoPhillips Canada Resources Corp.	99.2%	-0.4%	607	**107**	538	96	69	115	7,989,075	74,929	2,491	123
Enerplus Corporation	98.9%	-0.7%	605	**108**	517	101	88	106	407,328	57,228	2,588	118
Traverse Energy Ltd.	95.4%	-0.7%	599	**109**	531	98	68	117	12,998	12,945	2,381	129
Prospera Energy Inc.	28.4%	N/A	593	**110**	593	93	-	258	2,968	827	1,712	145
Goldenkey Oil Inc.	75.7%	4.2%	570	**111**	481	105	90	105	9,977	2,351	2,509	121
Point Bar Resources Inc.	82.5%	5.4%	532	**112**	532	97	-	258	23,348	3,044	1,538	151
Coastal Resources Limited	67.2%	-20.9%	524	**113**	484	104	40	141	10,550	1,601	1,898	139
Jupiter Resources Inc.	99.4%	-0.2%	520	**114**	495	103	25	157	52,731	80,291	1,741	144
C Group Energy Inc.	86.4%	-5.4%	515	**115**	466	106	49	131	10,520	3,782	1,960	138
Axiom Oil and Gas Inc.	97.2%	-0.9%	499	**116**	362	118	137	89	28,990	18,121	2,760	113
New Star Energy Ltd.	99.5%	0.1%	483	**117**	432	110	51	129	34,241	95,390	1,881	140
Cedar Creek Energy Ltd.	97.7%	-0.8%	462	**118**	462	107	-	258	34,905	20,121	1,334	160
Marquee Energy Ltd.	99.0%	-0.4%	461	**119**	396	114	65	120	74,873	46,215	1,962	137
LGX Oil + Gas Inc.	34.0%	-2.4%	461	**120**	461	108	-	243	6,680	699	1,336	159

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Company	Gas cons	Gas cons change	Gas flared + vented (1000 m^3)	Gas flared + vented rank	Gas flared (1000 m^3)	Flare rank	Gas vented (1000 m^3)	Vent rank	Oil prod (m^3)	Sol'n gas prod (1000 m^3)	GHG emissions (tCO_2e)	GHG emissions rank
Signalta Resources Limited	85.8%	-4.0%	458	**121**	234	135	225	69	6,414	3,217	3,487	97
ACCEL Canada Holdings Limited	99.2%	0.7%	447	**122**	278	130	170	81	253,118	58,735	2,924	107
Topanga Resources Ltd.	8.8%	-30.1%	447	**123**	428	111	19	169	2,299	490	1,473	154
Boulder Energy Ltd.	99.8%	0.7%	441	**124**	324	123	117	94	173,960	177,544	2,405	128
HESC Energy Corporation	87.2%	-12.7%	429	**125**	162	149	267	64	6,719	3,345	3,811	92
Forge Oil & Gas Limited	83.8%	-6.4%	427	**126**	337	122	90	104	6,803	2,636	2,100	135
Response Energy Corporation	88.9%	6.9%	410	**127**	143	153	268	63	10,399	3,686	3,760	93
Venturion Oil Limited	96.6%	4.3%	409	**128**	221	138	188	77	166,260	11,921	2,986	104
City Of Medicine Hat	30.9%	15.0%	402	**129**	120	166	282	60	9,597	582	3,878	90
Teine Energy Ltd.	28.6%	N/A	397	**130**	397	112	-	258	7,319	556	1,146	170
Shield Energy Ltd.	97.5%	1.3%	395	**131**	340	121	55	127	23,122	15,676	1,669	146
Grizzly Resources Ltd.	0.0%	0.0%	389	**132**	-	245	389	52	54,108	389	4,873	81
Entrada Resources Inc.	99.3%	-0.6%	386	**133**	-	245	386	53	88,061	54,125	4,827	82
Procyon Energy Corp.	62.6%	-32.8%	383	**134**	382	115	1	238	1,354	1,024	1,116	171
Zargon Oil & Gas Ltd.	96.3%	1.8%	375	**135**	366	116	9	191	74,656	10,104	1,170	169
Fort Calgary Resources Ltd.	58.9%	-0.1%	374	**136**	145	152	229	67	3,610	909	3,283	100
Rally Canada Resources Ltd.	84.0%	-13.6%	365	**137**	365	117	-	258	14,352	2,275	1,054	174
Novus Energy Inc.	89.7%	-2.2%	363	**138**	348	120	16	175	3,172	3,521	1,198	167
Bellatrix Exploration Ltd.	99.8%	-0.1%	360	**139**	263	133	98	102	24,972	201,679	1,983	136
Vesta Energy Ltd.	99.5%	1.2%	352	**140**	193	144	159	83	478,809	72,510	2,543	119
Pismo Energy Ltd.	86.0%	1.4%	331	**141**	60	192	271	62	13,437	2,368	3,566	96
Bering Exploration Company ULC	95.4%	2.6%	329	**142**	138	158	191	76	24,979	7,148	2,788	112
ExxonMobil Canada Energy	99.5%	-0.4%	320	**143**	273	131	47	133	56,381	65,592	1,380	158
RKSmith Energy Corp.	0.0%	0.0%	312	**144**	-	245	312	58	218	312	3,901	89
Connacher Oil And Gas Limited	98.1%	-0.2%	310	**145**	310	124	-	258	643,974	16,655	789	191
Ember Resources Inc.	86.3%	-2.7%	308	**146**	-	245	308	59	10,698	2,254	3,857	91
New North Resources Ltd.	81.3%	11.8%	305	**147**	282	127	23	159	5,233	1,632	1,098	172
Sun Century Petroleum Corporation	71.9%	25.6%	302	**148**	299	126	3	217	6,132	1,072	898	179
Sitka Exploration Ltd.	99.3%	-0.1%	299	**149**	131	161	168	82	39,874	45,122	2,484	124
Relentless Resources Ltd.	87.0%	-7.1%	279	**150**	279	128	-	258	4,052	2,149	806	187
Panam Energy Services Ltd.	25.4%	-12.2%	279	**151**	279	129	-	258	437	374	806	188
Trident Exploration (Alberta) Corp.	98.4%	-0.6%	259	**152**	179	146	80	110	20,684	16,169	1,518	152
Perpetual Operating Corp.	98.2%	1.2%	255	**153**	-	245	255	65	62,656	14,274	3,188	101
Ohana Resources Inc.	79.2%	-16.1%	242	**154**	230	136	12	182	13,038	1,165	815	185
High Point Oil Inc.	0.0%	N/A	240	**155**	212	140	28	153	4,349	240	963	177
Barnwell of Canada Limited	98.6%	3.8%	238	**156**	161	150	77	111	23,396	16,426	1,429	155
97837 Resources Ltd.	4.1%	-24.0%	237	**157**	237	134	-	258	472	247	685	195
Point Loma Resources Ltd.	98.9%	0.9%	233	**158**	59	194	174	79	10,379	21,256	2,351	130
Thoroughbred Energy Ltd.	41.3%	31.3%	228	**159**	-	245	228	68	5,166	389	2,855	109
Westhill Resources Limited	81.7%	-13.1%	227	**160**	227	137	-	258	91	1,243	656	197

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Keyera Energy Ltd.	99.8%	-0.2%	224	**161**	159	151	65	122	48,744	127,415	1,269	163
Tidewater Midstream and Infrastructure Ltd.	99.7%	-0.3%	224	**162**	41	202	183	78	22,679	66,111	2,410	127
Prairie Storm Energy Corp.	99.7%	0.3%	222	**163**	119	167	103	100	51,340	77,912	1,628	147
Avalon Energy Ltd.	50.1%	-4.8%	219	**164**	202	141	17	172	5,542	439	797	189
Westdrum Energy Ltd.	72.2%	-1.2%	216	**165**	-	245	216	72	1,663	778	2,706	114
Shanpet Resources Ltd.	73.6%	-2.0%	215	**166**	215	139	-	258	1,199	816	622	202
Athabasca Oil Corporation	98.9%	-0.9%	205	**167**	201	142	4	209	1,623,766	18,666	583	205
Corval Energy Ltd.	94.6%	1.1%	205	**168**	142	154	62	124	6,006	3,804	1,192	168
TransGlobe Energy Corporation	99.2%	0.0%	201	**169**	6	227	195	75	32,552	26,531	2,460	125
Grandview Exploration Inc.	53.5%	-3.0%	195	**170**	195	143	-	258	2,760	420	564	208
SILVERLEAF RESOURCES INC.	88.0%	N/A	195	**171**	166	148	29	151	4,055	1,627	838	183
Tykewest Limited	56.7%	-24.0%	195	**171**	180	145	15	176	2,532	450	709	192
Sifton Petroleum Inc.	98.0%	-1.3%	194	**173**	117	168	76	113	33,138	9,481	1,294	162
Westbrick Energy Ltd.	99.7%	0.2%	189	**174**	15	215	174	80	31,869	71,161	2,217	132
Manitok Energy Inc.	99.8%	0.0%	184	**175**	139	157	45	136	56,721	82,541	964	176
Crestwynd Exploration Ltd.	61.2%	33.9%	181	**176**	99	173	82	108	6,258	465	1,309	161
Houston Oil & Gas Ltd.	98.2%	1.5%	179	**177**	103	172	77	112	6,762	9,915	1,258	165
Aeraden Energy Corp.	83.5%	-6.2%	179	**178**	170	147	9	194	4,576	1,082	598	204
Firenze Energy Ltd.	94.0%	-3.7%	174	**179**	60	193	114	96	25,993	2,916	1,604	149
Certus Oil And Gas Inc.	98.7%	2.7%	167	**180**	85	178	81	109	24,593	13,283	1,263	164
Prosper Petroleum Ltd.	24.1%	12.7%	157	**181**	-	245	157	85	5,739	207	2,498	122
Hard Rock Resources Ltd.	95.4%	3.4%	155	**182**	142	154	13	180	1,559	3,404	574	206
Outlier Resources Ltd.	99.5%	4.8%	149	**183**	46	195	103	99	13,132	29,444	1,421	156
Dark Energy Ltd.	37.5%	-1.5%	147	**184**	-	245	147	86	3,620	235	1,834	142
Convega Energy Ltd.	75.1%	-14.6%	143	**185**	142	156	1	237	2,326	576	424	212
Sphere Energy Corp.	95.0%	-1.1%	141	**186**	16	213	125	91	3,944	2,798	1,612	148
Raimount Energy Corp.	95.1%	-3.0%	139	**187**	-	245	139	88	2,030	2,835	1,745	143
Glenogle Energy Inc.	99.8%	0.0%	137	**188**	137	159	-	258	42,931	75,755	395	216
Clampett Energy Ltd.	25.2%	4.1%	135	**189**	75	182	60	125	1,411	180	964	175
Petrus Resources Corp.	99.7%	0.0%	129	**190**	129	162	-	258	31,652	48,624	373	218
Mojek Resources Inc.	93.0%	N/A	129	**191**	129	163	-	252	3,753	1,836	372	219
Alexander Oilfield Services Ltd.	67.2%	-0.5%	126	**192**	126	164	-	258	973	385	365	220
Kairos Resources (2011) Ltd.	62.9%	-25.9%	124	**193**	-	245	124	92	806	335	1,554	150
Cequence Energy Ltd.	99.8%	0.4%	123	**194**	88	175	35	145	59,730	50,633	692	194
Exshaw Oil Corp.	100.0%	0.0%	123	**195**	123	165	-	258	426,226	620,942	354	221
Taku Gas Limited	23.4%	-35.8%	120	**196**	-	245	120	93	4,596	157	1,507	153
NVP Exploration Inc.	96.9%	96.9%	117	**197**	86	177	31	149	7,399	3,741	631	201
Iberdrola Canada Energy Services Ltd.	99.9%	0.0%	113	**198**	-	245	113	97	3,815	87,717	1,408	157
Supreme Energy Inc.	97.2%	-1.7%	110	**199**	110	169	-	258	6,117	3,851	316	226
Insch Commodity Ltd.	23.5%	-69.0%	109	**200**	109	170	-	258	1,108	142	315	227

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Shanghai Energy Corporation	99.7%	N/A	104	**201**	104	171	-	258	5,873	37,523	300	229
Ribbon Creek Resources Inc.	96.2%	-2.5%	102	**202**	81	180	20	163	2,882	2,639	487	211
Ridal Resource Ltd.	32.0%	-0.9%	100	**203**	-	245	100	101	1,248	147	1,247	166
Suncor Energy Inc.	99.7%	1.4%	89	**204**	42	200	47	134	13,920,178	33,670	862	181
Greenfire Hangingstone Operating Corporation	-876.7%	N/A	88	**205**	88	174	-	258	2,257	9	224	241
MEG Energy Corp.	100.0%	0.0%	87	**206**	87	176	-	258	4,742,042	372,583	223	244
XTO Energy Canada	99.2%	1.0%	87	**207**	-	245	87	107	12,336	10,349	1,089	173
SOUTHERN ENERGY CORP.	29.7%	N/A	83	**208**	73	185	10	187	2,752	119	339	224
Dirham Oil (2000) Inc.	0.0%	0.0%	82	**209**	82	179	-	258	204	82	237	239
Taber Water Disposal Inc.	28.0%	28.0%	82	**210**	65	190	16	173	3,413	113	394	217
Direct Oil & Gas Inc.	98.6%	-0.5%	81	**211**	81	181	-	258	11,057	5,708	233	240
Joli Fou Petroleums Ltd	35.5%	14.3%	81	**212**	72	186	8	195	1,746	125	314	228
Red Angus Energy Inc.	58.8%	N/A	79	**213**	10	221	69	116	1,316	192	888	180
Wolf Coulee Resources Inc.	98.8%	-0.1%	76	**214**	74	183	2	224	6,061	6,209	241	238
OAN Resources Ltd.	80.3%	N/A	75	**215**	-	245	75	114	4,657	381	939	178
Notine Holdings Inc.	98.8%	-0.8%	75	**216**	69	187	6	203	1,918	6,213	270	231
Canadian Oil & Gas International Inc.	97.8%	-0.7%	74	**217**	30	207	45	138	5,245	3,427	646	199
Vital Energy Inc.	56.6%	-43.4%	74	**218**	74	184	-	258	1,784	170	213	245
DEL Canada GP Ltd.	99.0%	N/A	71	**219**	67	188	4	210	25,463	7,311	244	237
Tallahassee Exploration Inc.	92.1%	-7.9%	68	**220**	-	245	68	117	909	858	846	182
Encana Corporation	99.9%	1.9%	68	**220**	24	209	43	140	29,901	47,661	611	203
Kaisen Energy Corp.	96.2%	7.1%	66	**222**	19	211	48	132	6,437	1,749	649	198
Clearview Resources Ltd.	99.6%	0.6%	66	**223**	-	245	66	119	27,494	18,790	829	184
Lance Exploration Corp.	4.9%	-5.5%	66	**224**	66	189	-	258	174	69	189	248
Lynx Energy ULC	98.9%	N/A	65	**225**	-	245	65	121	8,593	5,829	815	186
Shell Canada Energy	99.7%	0.5%	65	**226**	15	216	50	130	13,817	21,652	670	196
Pine Cliff Energy Ltd.	98.7%	-0.8%	64	**227**	42	201	23	159	3,093	4,880	404	213
Silver Blaze Energy Ltd.	46.7%	-42.7%	64	**228**	-	245	64	123	256	119	795	190
Beaver Lake Resources Corporation	0.0%	0.0%	60	**229**	60	191	-	258	737	60	173	251
Derrick Petroleum Ltd.	82.5%	-3.3%	56	**230**	-	245	56	126	780	317	697	193
Wilcox Energy Corp.	44.4%	2.8%	52	**231**	2	237	51	128	674	94	638	200
Canlin Resources Partnership	99.7%	0.5%	49	**232**	46	196	3	215	81,709	19,462	171	254
Blackch Canada Ulc	0.0%	N/A	45	**233**	44	199	1	234	570	45	143	257
Broadview Energy Ltd.	98.8%	-0.3%	45	**234**	-	245	45	135	15,114	3,829	566	207
Ghost River Resources Inc.	96.8%	-2.1%	45	**235**	45	197	-	258	6,294	1,414	129	261
Hitic Energy Ltd.	99.7%	1.9%	45	**236**	45	198	-	258	50,622	17,136	129	262
ACCEL Energy Canada Limited	99.9%	0.0%	43	**237**	5	230	38	142	158,593	65,307	493	210
Surat Energy Inc.	0.0%	0.0%	43	**238**	33	204	9	189	834	43	212	246
White Owl Energy Services Ltd.	86.9%	13.1%	34	**239**	34	203	-	258	2,541	260	98	266
Barcomp Petroleum Ltd.	0.0%	0.0%	32	**240**	-	245	32	146	5,806	32	524	209

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Top Oil Production Ltd.	98.3%	1.2%	32	**241**	-	245	32	147	4,587	1,888	399	214
Shackleton Exploration Ltd.	99.9%	0.2%	32	**242**	-	243	32	148	37,845	40,267	396	215
Sutton Energy Ltd.	58.8%	58.8%	31	**243**	31	205	-	258	719	75	90	267
Elcano Exploration Inc.	28.4%	28.4%	30	**244**	30	206	-	258	773	42	87	268
Kicking Horse Oil & Gas Ltd.	99.8%	0.0%	28	**245**	-	240	27	154	1,832	12,400	344	222
Tyrannex Energy Ltd.	0.0%	N/A	28	**246**	28	208	-	258	33	28	80	270
Long Term Asset Management Inc.	98.4%	12.8%	27	**247**	-	245	27	155	1,657	1,676	342	223
Golden Spike Energy Inc.	39.9%	2.9%	27	**248**	-	245	27	156	255	45	338	225
Altura Energy Inc.	99.8%	11.2%	23	**249**	23	210	-	258	47,716	13,527	67	275
611890 Alberta Inc.	0.0%	0.0%	23	**250**	-	245	23	158	2,556	23	289	230
Edalis Energy Inc.	97.4%	-1.3%	20	**251**	-	245	20	163	1,787	760	252	232
Primrose Drilling Ventures Ltd.	0.0%	0.0%	20	**252**	-	245	20	165	453	20	250	234
TimberRock Energy Corp.	92.4%	0.8%	20	**252**	-	245	20	165	524	265	250	233
Sandpoint Resources Inc.	0.0%	0.0%	20	**254**	-	245	20	167	1,639	20	247	236
Sogar Resources Ltd.	98.8%	-0.2%	20	**254**	-	245	20	167	710	1,607	247	235
935821 Alberta Ltd.	0.0%	0.0%	18	**256**	-	244	18	170	1,143	18	223	242
Tallahassee Resources Inc.	0.0%	0.0%	18	**257**	-	245	18	170	420	18	223	243
KinMerc Oil & Gas Inc.	91.1%	-2.0%	17	**258**	4	232	13	179	13,741	196	179	249
Japan Canada Oil Sands Limited	99.7%	24.1%	16	**259**	16	212	-	258	1,083,627	5,121	42	284
Aeneid Exploration Inc.	98.9%	0.4%	16	**260**	-	245	16	174	17,433	1,446	202	247
Pulse Oil Operating Corp.	96.1%	-3.9%	16	**261**	16	214	-	258	4,955	405	46	280
Questfire Energy Corp.	99.9%	1.6%	15	**262**	12	219	3	214	4,209	11,585	75	272
Iron Bridge Resources Inc.	100.0%	0.0%	15	**263**	7	224	8	197	15,819	82,669	117	264
Indra Oil & Gas Ltd.	0.0%	0.0%	14	**264**	3	236	11	184	331	14	147	256
Range 3 Inc.	40.3%	7.7%	14	**265**	-	245	14	177	42	23	174	250
Norwegian Petroleum Inc.	81.1%	-9.7%	14	**266**	-	245	14	178	155	73	171	253
Alberta Petroleum Energy Limited	41.1%	8.9%	13	**267**	13	217	-	258	1,054	22	37	285
Persta Resources Inc.	89.7%	-5.0%	13	**268**	13	218	-	258	4,506	121	36	287
Croverro Energy Ltd.	0.0%	0.0%	12	**269**	-	245	12	181	472	12	153	255
Kam's Sand Coating Ltd.	0.0%	-0.5%	12	**270**	12	219	-	258	197	12	35	289
Petrocapita GP I Ltd.	91.8%	-3.7%	11	**271**	-	245	11	183	15,409	137	141	258
Jast Energy Ltd.	82.3%	0.9%	11	**272**	8	223	3	215	1,660	63	62	277
HBC Energy Ltd.	0.0%	0.0%	11	**273**	-	245	11	185	371	11	136	259
Kasten Energy Inc.	98.9%	17.0%	11	**274**	-	245	11	186	12,991	991	173	252
G. Herman Group Inc.	99.7%	0.3%	10	**275**	10	222	-	248	1,466	3,821	31	293
Rustum Petroleums Limited	0.0%	0.0%	10	**276**	-	245	10	188	1,571	10	124	263
Incipient Exploration Ltd.	99.5%	0.0%	9	**277**	-	245	9	192	2,413	1,937	136	260
Eclipse Resources Ltd.	99.7%	0.0%	9	**278**	4	235	5	205	8,545	3,072	78	271
Black Crane Energy Corp.	99.3%	99.3%	9	**279**	-	245	9	193	1,319	1,270	110	265
RON Resources Ltd.	99.0%	30.0%	9	**280**	7	225	1	232	2,112	868	37	286

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Marlboro Energy Ltd.	99.7%	15.0%	7	**281**	6	226	1	241	11,726	2,150	26	296
Long Lake Energy Ltd.	92.4%	1.5%	7	**282**	-	245	7	199	225	87	83	269
Cortona Energy Ltd.	98.0%	10.1%	6	**283**	2	238	5	207	11,613	321	64	276
Crazy Hill Resources Ltd.	69.4%	-23.8%	6	**284**	-	245	6	202	138	19	71	273
Unit 18 Corp.	98.7%	-1.3%	5	**285**	-	245	5	205	13,302	402	68	274
Sequoia Resources Corp.	99.2%	-0.6%	5	**286**	4	231	1	240	1,400	620	22	300
Rampart Oil Inc.	100.0%	0.0%	5	**287**	5	228	-	258	141,023	10,915	14	305
Delphi Energy Corp.	91.3%	-5.7%	5	**288**	5	229	-	258	263	54	14	306
Pennine Petroleum Corporation	98.4%	0.2%	5	**289**	-	245	5	208	582	285	58	278
545279 Alberta Limited	0.0%	-17.3%	4	**290**	-	245	4	210	159	4	50	279
Winslow Resources Inc.	99.9%	-0.1%	4	**291**	4	233	-	258	1,520	4,113	11	308
Eagle Energy Inc.	99.8%	1.1%	4	**292**	4	234	-	258	98,835	2,288	11	309
Perisson Petroleum Corporation	81.1%	N/A	4	**293**	-	245	4	212	2,042	19	45	281
Band Energy Resources Ltd.	30.0%	-9.6%	4	**294**	-	245	4	213	271	5	44	282
Tri-Ment Corporation Ltd.	30.0%	-3.3%	3	**295**	-	245	3	218	25	4	35	288
PetroChina Canada Ltd.	99.7%	-0.3%	3	**296**	-	245	3	219	424,600	850	44	283
Deckland Inc.	99.4%	6.9%	3	**296**	-	245	3	219	749	420	34	290
The Locke Stock & Barrel Company Ltd.	0.0%	0.0%	3	**298**	-	245	3	221	484	3	33	291
Questerre Energy Corporation	0.0%	0.0%	3	**299**	-	245	3	222	304	3	31	292
Arrow Point Oil & Gas Ltd.	89.7%	46.1%	2	**300**	-	245	2	223	412	23	30	294
Scavenger Energy GP Inc.	91.6%	-6.7%	2	**301**	-	245	2	225	419	25	26	295
Roswell Petroleum Corporation	0.0%	0.0%	2	**302**	-	245	2	227	488	2	25	297
Just Freehold Energy Corp.	99.8%	-0.2%	2	**303**	-	245	2	228	937	873	24	299
Sahara Energy Ltd.	0.0%	0.0%	2	**303**	-	245	2	228	539	2	24	298
Dire Resources Ltd.	92.8%	-7.2%	2	**305**	-	245	2	230	588	24	21	301
NuVista Energy Ltd.	99.9%	6.8%	2	**306**	-	240	1	234	2,916	3,029	16	304
Eastnell Resources Ltd.	0.0%	-1.6%	2	**307**	-	245	2	231	34	2	19	302
Tower Ridge Enterprises Corp.	96.3%	15.5%	1	**308**	-	245	1	232	540	35	16	303
Muddy Petroleum Company Ltd.	76.9%	-21.0%	1	**309**	1	239	-	247	67	5	6	312
Writers Oil & Gas Limited	0.0%	0.0%	1	**310**	-	245	1	239	26	1	11	307
Energy Express Canada Corp.	99.9%	0.6%	1	**311**	-	245	1	242	4,446	810	8	310
Vulture Energy Ltd.	95.5%	8.9%	1	**312**	-	242	-	248	305	11	3	315
Check Energy Ltd.	89.7%	-10.3%	0	**313**	-	245	-	243	5,907	4	6	311
Corinthian Oil Corp.	99.9%	0.2%	0	**313**	-	245	-	243	1,479	548	5	313
Gunnarr Resources Inc.	98.5%	2.1%	0	**313**	-	245	-	243	856	26	5	313
Tori Resources Inc.	100.0%	0.9%	0	**316**	-	245	-	248	4,189	473	3	316
Lockwood Resources Ltd.	0.0%	0.0%	0	**316**	-	245	-	248	292	-	3	316
1852797 Alberta ULC	99.7%	99.7%	0	**318**	-	245	-	252	1,308	38	1	318
Blue Star Energy Inc.	99.5%	-0.5%	0	**318**	-	245	-	252	496	21	1	318
Tayson Resources Inc.	0.0%	N/A	0	**318**	-	245	-	252	48	-	1	318

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Company	Gas cons	Gas cons change	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)	GHG emissions (tCO_2e)	GHG emissions rank
Quattro Exploration and Production Ltd.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Spartan Energy Corp.	0.0%	-100.0%	-	**321**	-	245	-	258	-	-	0	321
Turnstone Energy Inc.	100.0%	N/A	-	**321**	-	245	-	258	247	34	0	321
Success Energy Ltd.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Lexin Resources Ltd.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Crimson Oil & Gas Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	3,481	137	0	321
Regnum Energy Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	1,648	83	0	321
Reber Exploration Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	150	2	0	321
Pocahontas Petroleum Ltd.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Stout Energy Inc.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Peyto Exploration & Development Corp.	100.0%	0.0%	-	**321**	-	245	-	258	464	937	0	321
Accurate Energy Solutions Ltd.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Windtalker Energy Corp.	100.0%	12.6%	-	**321**	-	245	-	258	17,385	255	0	321
Ferrybank Resources Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	575	84	0	321
Logic Energy Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	9,085	6,337	0	321
Tourmaline Oil Corp.	100.0%	0.3%	-	**321**	-	245	-	258	159,576	137,188	0	321
Kaiser Exploration Ltd.	100.0%	18.4%	-	**321**	-	245	-	258	68	233	0	321
Benjaka Exploration Inc.	0.0%	-100.0%	-	**321**	-	245	-	258	-	-	0	321
Rimfire Energy Inc.	100.0%	0.0%	-	**321**	-	245	-	258	973	1,454	0	321
Sojourn Energy Inc.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Grand Rapids Petroleum Ltd.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Canstone Energy Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	-	485	0	321
Rockbridge Energy Alberta Inc.	0.0%	-100.0%	-	**321**	-	245	-	258	-	-	0	321
Enerstar Petroleum Corp.	100.0%	N/A	-	**321**	-	245	-	258	1,097	15	0	321
Gibson Energy ULC	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Petronas Energy Canada Ltd.	0.0%	N/A	-	**321**	-	245	-	258	-	-	0	321
Glencoe Resources Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	-	67	0	321
Sunshine Oilsands Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	94,112	282	0	321
Koch Oil Sands Operating ULC	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
DCP Oil Corp.	100.0%	N/A	-	**321**	-	245	-	258	3,046	3,432	0	321
Luxur Resources Inc.	100.0%	0.0%	-	**321**	-	245	-	258	2	-	0	321
Adanac Oil & Gas Limited	100.0%	0.0%	-	**321**	-	245	-	258	1,361	991	0	321
Anterra Energy Inc.	0.0%	-92.5%	-	**321**	-	245	-	258	-	-	0	321
Ish Energy Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	62	172	0	321
Malak Energy Inc.	100.0%	0.0%	-	**321**	-	245	-	258	400	64	0	321
Border Petroleum Limited	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Wildcat Rentals Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	1,162	4	0	321
Tri-Energy Resources Ltd.	100.0%	N/A	-	**321**	-	245	-	258	812	513	0	321
Big Lake Energy Ltd.	0.0%	0.0%	-	**321**	-	245	-	258	28	-	0	321
PetroFrontier Corp.	100.0%	0.0%	-	**321**	-	245	-	258	6,452	110	0	321

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Company	Gas cons	Gas cons change	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)	GHG emissions (tCO_2e)	GHG emissions rank
Sarg Oils Ltd.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Corse Energy Corp.	100.0%	0.0%	-	**321**	-	245	-	258	109	469	0	321
Wescan Energy Corp.	100.0%	0.0%	-	**321**	-	245	-	258	5,056	2,501	0	321
Land Petroleum International Inc.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Scollard Energy Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	47	51	0	321
Knowledge Energy Inc.	100.0%	0.0%	-	**321**	-	245	-	258	4,662	4,663	0	321
ConocoPhillips Canada (BRC) Partnership	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Zeal Energy Inc.	100.0%	0.0%	-	**321**	-	245	-	258	2,265	221	0	321
Seven Generations Energy Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	1,348	1,212	0	321
Kanati Energy Incorporated	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
ConocoPhillips Canada Energy Partnership	0.0%	-99.2%	-	**321**	-	245	-	258	-	-	0	321
Hutton Energy Ltd.	100.0%	100.0%	-	**321**	-	245	-	258	73	7	0	321
Shale Petroleum Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	239	2,535	0	321
Success Resources Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	1,857	3,470	0	321
Tantalus Energy Corp.	100.0%	0.1%	-	**321**	-	245	-	258	342	159	0	321
Northern Utilities (Sask.) Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	264	1	0	321
Frontier Energy Inc.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Cote Resources Ltd.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Harvard International Resources Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	700	1,782	0	321
Canyon Oil & Gas Corporation	100.0%	0.0%	-	**321**	-	245	-	258	45	438	0	321
Mato Inc.	100.0%	0.0%	-	**321**	-	245	-	258	338	1,237	0	321
Pembina NGL Corporation	0.0%	N/A	-	**321**	-	245	-	258	-	-	0	321
1506928 Alberta Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	629	13	0	321
BDJ Energy Inc.	100.0%	3.1%	-	**321**	-	245	-	258	14,219	2,356	0	321
979968 Alberta Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	476	1,423	0	321
Innes Oilfield Services Ltd.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Mooncor Energy Inc.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Komstar Resources Ltd.	0.0%	N/A	-	**321**	-	245	-	258	-	-	0	321
Signa Oilfield Canada Inc.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Forent Energy Ltd.	0.0%	-96.2%	-	**321**	-	245	-	258	-	-	0	321
TWP50 Resources Ltd.	0.0%	N/A	-	**321**	-	245	-	258	1	-	0	321
Red Wing Oil Inc.	0.0%	N/A	-	**321**	-	245	-	258	-	-	0	321
Petro Buyers Inc.	100.0%	0.0%	-	**321**	-	245	-	258	-	136	0	321
1288131 Alberta Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	621	281	0	321
Freehold Royalties Ltd.	0.0%	-97.8%	-	**321**	-	245	-	258	-	-	0	321
Brahma Resources Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	633	66	0	321
Green Valley Energy Ltd.	0.0%	N/A	-	**321**	-	245	-	258	-	-	0	321
Centennial Petroleum Company Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	283	1,031	0	321
Advantage Oil & Gas Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	75	189	0	321
ZNX Energy Ltd.	100.0%	0.0%	-	**321**	-	245	-	258	1,498	1,689	0	321

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Company	Gas cons	Gas cons change	Gas flared + vented (1000 m^3)	Gas flared + vented rank	Gas flared (1000 m^3)	Flare rank	Gas vented (1000 m^3)	Vent rank	Oil prod (m^3)	Sol'n gas prod (1000 m^3)	GHG emissions (tCO_2e)	GHG emissions rank
Sino-Western Petroleum Inc.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Highvale Operating Corp.	0.0%	-58.3%	-	**321**	-	245	-	258	-	-	0	321
Chronos Resources Ltd.	0.0%	N/A	-	**321**	-	245	-	258	-	-	0	321
Silver Bay Resources Ltd.	0.0%	0.0%	-	**321**	-	245	-	258	-	-	0	321
Approach Energy Inc.	0.0%	N/A	-	**321**	-	245	-	258	-	-	0	321
Hillsdale Drilling Ltd.	0.0%	-98.2%	-	**321**	-	245	-	258	224	-	0	321
Whitehall Energy Ltd.	100.0%	2.7%	-	**321**	-	245	-	258	2,499	359	0	321
Ener T Corporation	100.0%	10.0%	-	**321**	-	245	-	258	5,908	54	0	321
Provincial Totals	**97.4%**		**567,805**		**399,006**		**168,820**		**117,701,088**	**21,605,370**	**3,499,127**	

[1] Caution is required when comparing with last year's report due to mergers, acquisitions, and divestments.

Field Centre Ranking of Operators – 2018 Flared + Vented Volume[1]
Bonnyville Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Canadian Natural Resources Limited	93.3%	28,271	1	777	6	27,494	1	6,362,411	422,615
Devon Canada Corporation	94.2%	13,492	2	778	5	12,714	2	6,716,790	232,397
Cenovus Energy Inc.	99.1%	4,912	3	3,312	1	1,600	3	21,072,716	571,980
Imperial Oil Resources Limited	99.3%	3,072	4	2,675	2	397	9	8,568,235	437,182
Husky Oil Operations Limited	96.1%	1,352	5	1,270	3	83	11	1,303,128	34,554
West Lake Energy Corp.	67.7%	1,305	6	-	17	1,305	4	54,840	4,043
Osum Production Corp.	92.8%	861	7	861	4	-	19	643,072	11,950
CNOOC Petroleum North America ULC	98.2%	753	8	131	12	622	7	2,577,113	42,111
Gear Energy Ltd.	81.7%	667	9	-	17	667	5	6,602	3,637
BlackPearl Resources Inc.	54.7%	653	10	-	17	653	6	35,215	1,443
ConocoPhillips Canada Resources Corp.	99.2%	607	11	538	7	69	12	7,989,075	74,929
Baytex Energy Ltd.	79.7%	446	12	-	17	446	8	31,712	2,195
Harvest Operations Corp.	59.8%	416	13	406	8	10	17	76,105	1,036
Connacher Oil And Gas Limited	98.1%	310	14	310	9	-	19	643,974	16,655
Pengrowth Energy Corporation	96.7%	165	15	165	10	-	19	949,358	5,056
Athabasca Oil Corporation	98.6%	163	16	163	11	-	19	1,098,248	11,546
Spur Petroleum Ltd.	92.5%	93	17	-	17	93	10	27,834	1,238
Greenfire Hangingstone Operating Corporation	-876.7%	88	18	88	13	-	19	2,257	9
MEG Energy Corp.	100.0%	87	19	87	14	-	19	4,742,042	372,583
Caltex Resources Ltd.	0.0%	35	20	-	17	35	13	154	35
Bernum Petroleum Ltd.	99.6%	29	21	-	16	29	14	18,921	8,249
Japan Canada Oil Sands Limited	99.7%	16	22	16	15	-	19	1,083,627	5,121
Deltastream Energy Corporation	84.1%	12	23	-	17	12	15	11,145	74
Kasten Energy Inc.	98.7%	11	24	-	17	11	16	11,879	799
Check Energy Ltd.	89.7%	0	25	-	17	-	18	5,907	4
PetroFrontier Corp.	100.0%	-	26	-	17	-	19	6,452	110
Bellatrix Exploration Ltd.	0.0%	-	26	-	17	-	19	-	-
Rife Resources Ltd.	100.0%	-	26	-	17	-	19	4	-
Windtalker Energy Corp.	100.0%	-	26	-	17	-	19	17,385	255
Canlin Resources Partnership	0.0%	-	26	-	17	-	19	-	-

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Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
XTO Energy Canada	0.0%	-	26	-	17	-	19	-	-
Totals for Bonnyville	**97.4%**	**57,818**		**11,577**		**46,240**		**64,056,201**	**2,261,806**

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Field Centre Ranking of Operators – 2018 Flared + Vented Volume[1]
Drayton Valley Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Bonterra Energy Corp.	98.7%	3,204	1	2,595	1	610	8	450,609	247,827
Obsidian Energy Ltd.	98.3%	2,593	2	721	8	1,872	1	389,218	153,977
Whitecap Resources Inc.	98.7%	2,256	3	1,279	3	977	2	326,646	167,612
TORC Oil & Gas Ltd.	97.6%	2,070	4	1,276	4	793	6	90,860	86,072
Crescent Point Energy Corp.	56.4%	1,832	5	1,832	2	-	53	11,451	4,203
Ridgeback Resources Inc.	99.2%	1,646	6	972	7	674	7	292,902	218,516
ARC Resources Ltd.	98.9%	1,479	7	676	9	803	5	459,832	135,048
InPlay Oil Corp.	93.9%	1,402	8	483	11	919	3	56,506	23,049
Journey Energy Inc.	99.0%	1,292	9	465	13	827	4	60,825	133,432
Changhua Energy Canada Ltd.	0.0%	1,247	10	1,247	5	-	53	2,600	1,247
Baytex Energy Ltd.	91.0%	1,217	11	1,205	6	11	34	27,986	13,442
Sinopec Daylight Energy Ltd.	98.6%	1,025	12	478	12	546	9	186,181	73,749
Cenovus Energy Inc.	99.2%	821	13	485	10	336	12	48,249	99,469
Vermilion Energy Inc.	99.5%	653	14	161	23	492	10	191,140	127,116
Baccalieu Energy Inc.	99.1%	518	15	119	25	399	11	111,857	60,246
New Star Energy Ltd.	99.5%	483	16	432	14	51	25	34,241	95,390
Boulder Energy Ltd.	99.8%	441	17	324	16	117	16	173,960	177,544
Tamarack Acquisition Corp.	99.8%	432	18	304	17	128	15	106,316	177,013
Teine Energy Ltd.	28.6%	397	19	397	15	-	53	7,319	556
TAQA North Ltd.	99.2%	323	20	59	34	264	13	17,304	39,793
Bellatrix Exploration Ltd.	99.6%	286	21	190	21	96	19	12,324	80,206
97837 Resources Ltd.	4.1%	237	22	237	18	-	53	472	247
Long Run Exploration Ltd.	99.8%	221	23	189	22	31	28	8,576	92,155
SanLing Energy Ltd.	11.2%	218	24	208	20	11	36	1,232	246
Shanpet Resources Ltd.	5.3%	215	25	215	19	-	53	161	227
C Group Energy Inc.	86.8%	197	26	148	24	49	26	3,791	1,493
Sifton Petroleum Inc.	97.2%	191	27	117	26	74	21	29,737	6,789
Westbrick Energy Ltd.	99.7%	189	28	15	36	174	14	30,470	70,967
Tangle Creek Energy Ltd.	99.6%	114	29	3	40	111	18	12,541	29,952
Iberdrola Canada Energy Services Ltd.	99.9%	113	30	-	43	113	17	3,815	87,717

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Company	Gas cons	Gas flared + vented ($1000 m^3$)	Gas flared + vented rank	Gas flared ($1000 m^3$)	Flare rank	Gas vented ($1000 m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000 m^3$)
Insch Commodity Ltd.	23.5%	109	31	109	27	-	53	1,108	142
Mancal Energy Inc.	98.5%	102	32	101	28	-	51	5,214	6,949
Keyera Energy Ltd.	99.9%	96	33	96	29	-	53	39,974	114,323
Bonavista Energy Corporation	99.4%	84	34	-	43	84	20	8,155	13,413
Joli Fou Petroleums Ltd	35.5%	81	35	72	30	8	37	1,746	125
Notine Holdings Inc.	98.8%	75	36	69	31	6	40	1,918	6,213
Tallahassee Exploration Inc.	92.1%	68	37	-	43	68	22	909	858
Repsol Oil & Gas Canada Inc.	98.8%	63	38	60	32	3	44	4,396	5,140
Point Loma Resources Ltd.	99.5%	59	39	59	33	-	53	5,720	12,166
Derrick Petroleum Ltd.	82.5%	56	40	-	43	56	23	780	317
Velvet Energy Ltd.	99.7%	55	41	-	43	55	24	6,206	20,482
Wilcox Energy Corp.	41.9%	35	42	-	43	35	27	324	60
ORLEN Upstream Canada Ltd.	99.7%	27	43	6	37	21	30	2,876	9,360
Pismo Energy Ltd.	98.7%	21	44	-	43	21	29	3,400	1,574
Gear Energy Ltd.	99.8%	17	45	-	43	17	31	8,376	9,329
Pulse Oil Operating Corp.	96.1%	16	46	16	35	-	53	4,955	405
Paramount Resources Ltd.	99.2%	14	47	-	43	14	32	702	1,651
XTO Energy Canada	99.1%	12	48	-	43	12	33	729	1,284
HBC Energy Ltd.	0.0%	11	49	-	43	11	35	371	11
Eclipse Resources Ltd.	99.7%	9	50	4	39	5	41	8,545	3,072
Harvest Operations Corp.	99.8%	8	51	-	43	8	38	2,757	4,805
Crazy Hill Resources Ltd.	69.4%	6	52	-	43	6	39	138	19
Blackspur Oil Corp.	100.0%	5	53	5	38	-	53	39,028	36,125
Gain Energy Ltd.	99.5%	5	54	-	43	5	42	2,067	957
Houston Oil & Gas Ltd.	99.9%	4	55	-	43	4	43	2,027	4,855
Arrow Point Oil & Gas Ltd.	89.7%	2	56	-	43	2	45	412	23
AlphaBow Energy Ltd.	100.0%	2	57	-	42	2	46	3,106	15,660
Rife Resources Ltd.	99.7%	2	58	-	43	2	47	269	653
Muddy Petroleum Company Ltd.	76.9%	1	59	1	41	-	49	67	5
Zargon Oil & Gas Ltd.	99.3%	1	60	-	43	1	48	874	96
Response Energy Corporation	99.9%	0	61	-	43	-	49	1,399	478
Canadian Natural Resources Limited	100.0%	0	62	-	43	-	51	50	630
ConocoPhillips Canada (BRC) Partnership	0.0%	-	63	-	43	-	53	-	-
Adanac Oil & Gas Limited	100.0%	-	63	-	43	-	53	1,361	991
Clearview Resources Ltd.	100.0%	-	63	-	43	-	53	2,095	6,974

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Company	Gas cons	Gas flared + vented ($1000 m^3$)	Gas flared + vented rank	Gas flared ($1000 m^3$)	Flare rank	Gas vented ($1000 m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000 m^3$)
Hitic Energy Ltd.	100.0%	-	63	-	43	-	53	12,061	7,767
Tourmaline Oil Corp.	100.0%	-	63	-	43	-	53	3,985	17,508
Anterra Energy Inc.	0.0%	-	63	-	43	-	53	-	-
Rimfire Energy Inc.	100.0%	-	63	-	43	-	53	436	1,139
KinMerc Oil & Gas Inc.	100.0%	-	63	-	43	-	53	224	2
Husky Oil Operations Limited	100.0%	-	63	-	43	-	53	559	625
Signalta Resources Limited	100.0%	-	63	-	43	-	53	721	1,088
Benjaka Exploration Inc.	0.0%	-	63	-	43	-	53	-	-
Petro Buyers Inc.	100.0%	-	63	-	43	-	53	-	136
Perpetual Operating Corp.	100.0%	-	63	-	43	-	53	833	4,344
Petrus Resources Corp.	100.0%	-	63	-	43	-	53	23,134	42,341
Freehold Royalties Ltd.	0.0%	-	63	-	43	-	53	-	-
Procyon Energy Corp.	100.0%	-	63	-	43	-	53	813	548
Canlin Resources Partnership	100.0%	-	63	-	43	-	53	1,227	96
Pine Cliff Energy Ltd.	0.0%	-	63	-	43	-	53	-	-
Sino-Western Petroleum Inc.	0.0%	-	63	-	43	-	53	-	-
Highvale Operating Corp.	0.0%	-	63	-	43	-	53	-	-
Surge Energy Inc.	100.0%	-	63	-	43	-	53	4,453	1,267
Delphi Energy Corp.	0.0%	-	63	-	43	-	53	-	-
Kaiser Exploration Ltd.	0.0%	-	63	-	43	-	53	-	-
CNOOC Petroleum North America ULC	0.0%	-	63	-	43	-	53	-	-
Encana Corporation	0.0%	-	63	-	43	-	53	-	-
Ish Energy Ltd.	100.0%	-	63	-	43	-	53	-	47
Centennial Petroleum Company Ltd.	100.0%	-	63	-	43	-	53	283	1,031
Tidewater Midstream and Infrastructure Ltd.	100.0%	-	63	-	43	-	53	4,320	64,906
Ikkuma Resources Corp.	100.0%	-	63	-	43	-	53	4,081	5,874
Incipient Exploration Ltd.	100.0%	-	63	-	43	-	53	754	1,928
Prairie Provident Resources Canada Ltd.	0.0%	-	63	-	43	-	53	-	-
New North Resources Ltd.	0.0%	-	63	-	43	-	53	-	-
Totals for Drayton Valley	**99.0%**	**28,352**		**17,430**		**10,924**		**3,369,059**	**2,835,092**

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Field Centre Ranking of Operators – 2018 Flared + Vented Volume[1]
Edmonton Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Crescent Point Energy Corp.	90.5%	7,004	1	6,646	1	358	5	300,708	73,909
Aspenleaf Energy Limited	84.4%	4,895	2	4,749	2	146	11	261,598	31,403
Ridgeback Resources Inc.	87.6%	3,121	3	2,953	3	167	10	87,023	25,066
Paramount Resources Ltd.	99.0%	2,591	4	2,493	5	98	16	298,933	270,173
Spur Petroleum Ltd.	19.3%	2,581	5	2,529	4	53	26	20,842	3,198
Canadian Natural Resources Limited	96.2%	2,533	6	2,448	6	85	19	246,068	66,032
Journey Energy Inc.	85.8%	2,472	7	2,380	7	91	17	57,993	17,372
Razor Energy Corp.	95.7%	2,410	8	2,039	9	371	4	147,431	56,246
NEP Canada ULC	98.6%	2,369	9	2,369	8	-	62	460,590	171,166
Acquisition Oil Corp.	21.6%	1,989	10	1,518	13	471	3	31,179	2,537
Tamarack Acquisition Corp.	80.1%	1,900	11	110	40	1,790	1	65,302	9,553
Murphy Oil Company Ltd.	95.3%	1,721	12	1,721	10	-	62	61,621	36,593
Canuck North Resources Ltd.	0.0%	1,709	13	1,709	11	-	62	2,196	1,709
Baytex Energy Ltd.	57.3%	1,587	14	1,528	12	59	25	28,954	3,713
InPlay Oil Corp.	0.0%	1,427	15	1,427	14	-	62	4,812	1,427
Long Run Exploration Ltd.	97.9%	1,133	16	617	18	516	2	155,724	54,599
Mancal Energy Inc.	84.8%	1,007	17	979	15	29	33	36,572	6,625
Tangle Creek Energy Ltd.	98.9%	775	18	432	23	343	6	135,362	71,702
ORLEN Upstream Canada Ltd.	96.5%	664	19	658	16	6	46	21,650	18,797
TORC Oil & Gas Ltd.	97.5%	663	20	579	19	85	18	95,906	26,835
N7 Energy Ltd.	0.0%	654	21	654	17	-	62	19,246	654
Point Bar Resources Inc.	82.5%	532	22	532	20	-	62	23,348	3,044
Coastal Resources Limited	4.3%	486	23	484	21	2	50	6,467	508
Cedar Creek Energy Ltd.	97.7%	462	24	462	22	-	62	34,905	20,121
Bonavista Energy Corporation	97.3%	392	25	331	24	61	24	10,486	14,404
Cenovus Energy Inc.	96.4%	364	26	181	33	183	8	56,125	10,160
ACCEL Canada Holdings Limited	99.4%	326	27	218	30	108	14	246,240	57,426
C Group Energy Inc.	3.3%	318	28	318	25	-	62	5,776	329
Forge Oil & Gas Limited	85.2%	262	29	262	26	-	62	1,501	1,770
Enercapita Energy Ltd.	96.8%	253	30	226	29	27	35	9,819	7,896

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Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Ohana Resources Inc.	79.2%	242	31	230	27	12	42	13,038	1,165
Response Energy Corporation	85.8%	238	32	67	43	171	9	5,130	1,680
Westhill Resources Limited	81.7%	227	33	227	28	-	62	91	1,243
Rifle Shot Oil Corp.	96.8%	212	34	2	63	211	7	55,810	6,635
Zargon Oil & Gas Ltd.	7.2%	204	35	197	32	8	45	1,647	220
Surge Energy Inc.	89.3%	200	36	200	31	-	62	9,053	1,873
Crestwynd Exploration Ltd.	61.2%	181	37	99	41	82	20	6,258	465
Harvest Operations Corp.	97.8%	175	38	175	34	-	62	10,222	7,897
HESC Energy Corporation	93.4%	162	39	162	35	-	62	5,389	2,474
Novus Energy Inc.	19.0%	158	40	158	36	-	62	1,021	195
Outlier Resources Ltd.	99.3%	149	41	46	45	103	15	8,220	22,255
Dark Energy Ltd.	37.6%	146	42	-	66	146	12	3,549	234
Point Loma Resources Ltd.	0.0%	132	43	-	66	132	13	264	132
Petrus Resources Corp.	0.0%	129	44	129	37	-	62	2,412	129
Halo Exploration Ltd.	0.0%	119	45	119	38	-	62	454	119
Repsol Oil & Gas Canada Inc.	34.8%	118	46	115	39	4	48	1,113	182
Procyon Energy Corp.	49.1%	97	47	96	42	1	55	328	190
AlphaBow Energy Ltd.	21.4%	74	48	-	66	74	21	518	94
Clearview Resources Ltd.	99.2%	65	49	-	66	65	22	14,994	8,633
Cardinal Energy Ltd.	87.7%	63	50	-	66	63	23	750	513
Beaver Lake Resources Corporation	0.0%	60	51	60	44	-	62	737	60
Shell Canada Energy	96.2%	50	52	-	66	50	27	3,805	1,325
Enerplus Corporation	99.2%	50	53	5	58	44	29	13,596	6,469
NAL Resources Limited	97.8%	49	54	-	66	49	28	2,052	2,237
Bonterra Energy Corp.	85.7%	46	55	46	46	-	62	1,455	320
Hitic Energy Ltd.	99.4%	45	56	45	47	-	62	24,572	6,999
ACCEL Energy Canada Limited	99.9%	43	57	5	61	38	30	158,593	65,307
Surat Energy Inc.	0.0%	43	58	33	50	9	44	834	43
Enhance Energy Inc.	92.7%	41	59	41	48	-	62	6,399	561
Vesta Energy Ltd.	95.2%	34	60	34	49	-	62	858	702
Shackleton Exploration Ltd.	99.9%	31	61	-	66	31	31	37,518	39,727
TAQA North Ltd.	99.6%	31	62	-	66	31	32	2,406	7,055
Red Angus Energy Inc.	66.4%	28	63	-	66	28	34	538	85
Rolling Hills Energy Ltd.	65.1%	28	63	6	57	23	37	1,875	81
Axiom Oil and Gas Inc.	99.7%	28	65	5	59	23	36	8,461	8,169

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Company	Gas cons	Gas flared + vented (1000 m^3)	Gas flared + vented rank	Gas flared (1000 m^3)	Flare rank	Gas vented (1000 m^3)	Vent rank	Oil prod (m^3)	Sol'n gas prod (1000 m^3)
Tyrannex Energy Ltd.	0.0%	28	66	28	51	-	62	20	28
Trident Exploration (Alberta) Corp.	99.3%	26	67	22	54	4	47	4,831	3,799
NVP Exploration Inc.	99.2%	26	68	26	52	-	62	7,247	3,348
Altura Energy Inc.	99.8%	23	69	23	53	-	62	47,716	13,527
Primrose Drilling Ventures Ltd.	0.0%	20	70	-	66	20	38	453	20
New North Resources Ltd.	0.0%	15	71	-	66	15	39	208	15
Canlin Resources Partnership	99.4%	14	72	11	56	3	49	3,677	2,192
XTO Energy Canada	99.6%	14	73	-	66	14	40	978	3,578
Norwegian Petroleum Inc.	81.1%	14	73	-	66	14	40	155	73
Ember Resources Inc.	92.7%	12	75	-	66	12	42	139	166
Athabasca Oil Corporation	99.8%	12	76	12	55	-	62	3,425	6,076
Delphi Energy Corp.	82.7%	5	77	5	60	-	62	263	27
Indra Oil & Gas Ltd.	0.0%	3	78	3	62	-	62	48	3
Whitecap Resources Inc.	0.0%	2	79	-	66	2	51	882	2
Highwood Oil Company Ltd.	38.7%	2	80	-	66	2	52	124	3
Dire Resources Ltd.	92.8%	2	81	-	66	2	53	588	24
Eastnell Resources Ltd.	0.0%	2	82	-	66	2	54	34	2
Energy Express Canada Corp.	99.8%	1	83	-	66	1	56	3,928	380
Vulture Energy Ltd.	95.5%	1	84	-	65	-	59	305	11
Tykewest Limited	96.6%	1	84	-	66	1	57	49	15
Sun Century Petroleum Corporation	98.9%	0	86	-	66	-	58	311	37
Rally Canada Resources Ltd.	99.9%	0	86	-	64	-	62	6,769	556
Lockwood Resources Ltd.	0.0%	0	88	-	66	-	59	292	-
Sequoia Resources Corp.	99.9%	0	89	-	66	-	61	602	70
Dark Warrior Resources Ltd.	0.0%	-	90	-	66	-	62	-	-
Inception Exploration Ltd.	100.0%	-	90	-	66	-	62	482	1,685
Border Petroleum Limited	0.0%	-	90	-	66	-	62	-	-
Vermilion Energy Inc.	100.0%	-	90	-	66	-	62	13,668	4,197
Velvet Energy Ltd.	0.0%	-	90	-	66	-	62	-	-
Quattro Exploration and Production Ltd.	0.0%	-	90	-	66	-	62	-	-
Kaisen Energy Corp.	0.0%	-	90	-	66	-	62	3	-
SanLing Energy Ltd.	0.0%	-	90	-	66	-	62	-	-
Ish Energy Ltd.	100.0%	-	90	-	66	-	62	62	126
Scollard Energy Ltd.	0.0%	-	90	-	66	-	62	-	-
Success Energy Ltd.	0.0%	-	90	-	66	-	62	-	-

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Company	Gas cons	Gas flared + vented (1000 m^3)	Gas flared + vented rank	Gas flared (1000 m^3)	Flare rank	Gas vented (1000 m^3)	Vent rank	Oil prod (m^3)	Sol'n gas prod (1000 m^3)
Tori Resources Inc.	100.0%	-	90	-	66	-	62	2	446
G. Herman Group Inc.	100.0%	-	90	-	66	-	62	33	210
Gear Energy Ltd.	0.0%	-	90	-	66	-	62	-	-
Longshore Resources Ltd.	0.0%	-	90	-	66	-	62	-	-
Husky Oil Operations Limited	100.0%	-	90	-	66	-	62	690	3,570
Malak Energy Inc.	100.0%	-	90	-	66	-	62	400	64
ARC Resources Ltd.	0.0%	-	90	-	66	-	62	-	-
Obsidian Energy Ltd.	0.0%	-	90	-	66	-	62	-	-
KinMerc Oil & Gas Inc.	100.0%	-	90	-	66	-	62	985	4
Land Petroleum International Inc.	0.0%	-	90	-	66	-	62	-	-
Hillsdale Drilling Ltd.	0.0%	-	90	-	66	-	62	224	-
Barnwell of Canada Limited	0.0%	-	90	-	66	-	62	-	-
Sinopec Daylight Energy Ltd.	0.0%	-	90	-	66	-	62	-	-
Tidewater Midstream and Infrastructure Ltd.	0.0%	-	90	-	66	-	62	-	-
Sino-Western Petroleum Inc.	0.0%	-	90	-	66	-	62	-	-
West Lake Energy Corp.	100.0%	-	90	-	66	-	62	997	356
Totals for Edmonton	**96.0%**	**52,517**		**45,984**		**6,539**		**3,438,927**	**1,305,045**

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Field Centre Ranking of Operators – 2018 Flared + Vented Volume[1]
Fort McMurray Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Canadian Natural Resources Limited	96.8%	612	1	-	4	612	1	366,766	19,417
Husky Oil Operations Limited	95.8%	409	2	151	1	258	2	2,898,655	9,706
Suncor Energy Inc.	99.7%	89	3	42	2	47	3	13,920,178	33,670
Athabasca Oil Corporation	97.1%	30	4	26	3	4	4	522,093	1,044
PetroChina Canada Ltd.	99.7%	3	5	-	4	3	5	424,600	850
Sunshine Oilsands Ltd.	100.0%	-	6	-	4	-	6	94,112	282
Totals for Fort McMurray	**98.2%**	**1,142**		**219**		**924**		**18,226,404**	**64,969**

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Field Centre Ranking of Operators – 2018 Flared + Vented Volume[1]
Grande Prairie Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Whitecap Resources Inc.	94.7%	9,371	1	9,340	1	32	33	332,111	175,246
Canadian Natural Resources Limited	99.3%	7,541	2	6,536	2	1,006	2	1,072,669	1,046,759
TAQA North Ltd.	92.1%	4,901	3	3,845	4	1,056	1	81,912	62,392
Hammerhead Resources Inc.	99.5%	4,849	4	4,811	3	38	29	513,304	981,029
Paramount Resources Ltd.	97.3%	3,632	5	3,573	6	58	22	110,541	134,494
Cabot Energy Inc.	3.3%	3,610	6	3,610	5	-	58	41,717	3,733
Surge Energy Inc.	98.4%	2,991	7	2,470	8	521	5	206,844	182,491
Executive Adventures 2008 Inc.	5.3%	2,962	8	2,924	7	38	30	9,905	3,128
Modern Resources Inc.	95.1%	2,875	9	2,264	10	611	3	80,028	58,891
Husky Oil Operations Limited	99.8%	2,606	10	2,335	9	271	9	360,121	1,236,304
Insignia Energy Ltd.	95.2%	2,334	11	2,109	11	224	11	66,243	48,866
Gain Energy Ltd.	98.0%	2,172	12	2,072	12	99	17	54,215	106,085
Mancal Energy Inc.	95.5%	2,042	13	1,835	14	207	12	71,323	45,867
Velvet Energy Ltd.	99.3%	1,904	14	1,862	13	42	28	236,789	278,769
ARC Resources Ltd.	99.6%	1,856	15	1,812	15	44	25	360,971	510,659
Drakkar Energy Ltd.	41.0%	1,688	16	1,688	16	-	61	5,678	2,859
Enercapita Energy Ltd.	98.5%	1,537	17	1,262	22	275	8	205,641	105,312
Nine Ring Energy Development Inc.	2.5%	1,494	18	1,494	17	-	61	1,227	1,532
Flow-Back Oil & Gas Ltd.	17.3%	1,484	19	1,484	18	-	61	725	1,794
Kelt Exploration Ltd.	99.6%	1,454	20	1,432	19	21	39	315,864	339,503
Strategic Oil & Gas Ltd.	96.5%	1,387	21	1,381	20	6	46	81,966	40,061
Long Run Exploration Ltd.	98.6%	1,297	22	1,271	21	26	36	136,634	92,327
Birchcliff Energy Ltd.	99.8%	1,257	23	1,257	23	-	61	283,064	750,236
SanLing Energy Ltd.	14.4%	1,174	24	927	26	247	10	7,211	1,371
Cenovus Energy Inc.	98.6%	1,102	25	622	32	480	6	59,632	79,168
Halo Exploration Ltd.	0.0%	1,034	26	1,034	24	-	61	494	1,034
Rising Star Resources Ltd.	98.6%	940	27	932	25	8	44	87,539	66,398
Strath Resources Ltd.	98.1%	933	28	397	36	537	4	17,067	50,309
Ikkuma Resources Corp.	10.9%	838	29	838	27	-	61	1,160	941
Canamax Energy Ltd.	97.7%	838	30	816	28	21	38	134,929	36,722

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Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Longshore Resources Ltd.	98.8%	823	31	779	29	43	26	89,760	66,316
Inception Exploration Ltd.	98.7%	762	32	762	30	-	61	43,172	57,160
Acquisition Oil Corp.	78.9%	711	33	695	31	16	42	19,370	3,361
Anegada Oil Corp.	98.8%	699	34	591	34	109	16	117,559	60,254
Prospera Energy Inc.	15.7%	593	35	593	33	-	61	527	703
Jupiter Resources Inc.	99.4%	520	36	495	35	25	37	52,731	80,291
Harvest Operations Corp.	98.8%	451	37	388	37	62	18	111,048	38,102
Shield Energy Ltd.	97.5%	395	38	340	39	55	23	23,122	15,676
Grizzly Resources Ltd.	0.0%	389	39	-	77	389	7	54,108	389
N7 Energy Ltd.	0.0%	377	40	377	38	-	61	2,425	377
Cardinal Energy Ltd.	99.2%	374	41	325	40	49	24	67,847	44,902
Procyon Energy Corp.	0.0%	286	42	286	41	-	61	212	286
Panam Energy Services Ltd.	25.4%	279	43	279	42	-	61	437	374
Goldenkey Oil Inc.	1.4%	262	44	262	43	-	61	2,276	266
Tidewater Midstream and Infrastructure Ltd.	81.4%	224	45	41	58	183	13	18,359	1,205
Tykewest Limited	47.1%	185	46	180	44	5	47	2,079	350
Bering Exploration Company ULC	0.0%	180	47	39	59	141	14	2,973	180
Obsidian Energy Ltd.	86.8%	172	48	146	47	27	35	7,706	1,306
Venturion Oil Limited	92.7%	164	49	164	45	-	61	19,698	2,241
ORLEN Upstream Canada Ltd.	79.7%	158	50	149	46	10	43	6,037	778
Raimount Energy Corp.	95.1%	139	51	-	77	139	15	2,030	2,835
Glenogle Energy Inc.	99.8%	137	52	137	48	-	61	42,931	75,755
Clampett Energy Ltd.	25.2%	135	53	75	55	60	21	1,411	180
Mojek Resources Inc.	93.0%	129	54	129	49	-	58	3,753	1,836
Cequence Energy Ltd.	99.8%	123	55	88	51	35	31	59,730	50,633
Exshaw Oil Corp.	100.0%	123	55	123	50	-	61	426,226	620,942
ACCEL Canada Holdings Limited	90.8%	121	57	60	56	61	20	6,878	1,309
Ribbon Creek Resources Inc.	96.2%	102	58	81	53	20	40	2,882	2,639
Dirham Oil (2000) Inc.	0.0%	82	59	82	52	-	61	204	82
Direct Oil & Gas Inc.	98.6%	81	60	81	54	-	61	11,057	5,708
Encana Corporation	99.9%	68	61	24	63	43	27	29,556	46,563
XTO Energy Canada	98.9%	61	62	-	77	61	19	10,630	5,487
Blackch Canada Ulc	0.0%	45	63	44	57	1	52	570	45
Enerplus Corporation	99.9%	35	64	35	60	-	61	46,752	40,963
White Owl Energy Services Ltd.	86.9%	34	65	34	61	-	61	2,541	260

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Company	Gas cons	Gas flared + vented ($1000 m^3$)	Gas flared + vented rank	Gas flared ($1000 m^3$)	Flare rank	Gas vented ($1000 m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000 m^3$)
Red Angus Energy Inc.	49.3%	34	66	-	77	34	32	439	66
Sutton Energy Ltd.	58.8%	31	67	31	62	-	61	719	75
Kicking Horse Oil & Gas Ltd.	99.8%	28	68	-	75	27	34	1,832	12,400
Sinopec Daylight Energy Ltd.	99.9%	25	69	23	64	2	50	10,679	22,375
Tallahassee Resources Inc.	0.0%	18	70	-	77	18	41	420	18
Iron Bridge Resources Inc.	100.0%	15	71	7	68	8	45	15,819	82,669
Shell Canada Energy	99.9%	15	72	15	65	-	61	10,012	20,326
Barnwell of Canada Limited	94.8%	12	73	12	66	-	61	1,388	234
Kam's Sand Coating Ltd.	0.0%	12	74	12	67	-	61	197	12
Firenze Energy Ltd.	96.4%	9	75	7	69	3	49	4,767	257
Huron Resources Corp.	0.0%	5	76	5	70	-	61	4	5
Winslow Resources Inc.	99.9%	4	77	4	71	-	61	1,520	4,113
Eagle Energy Inc.	99.8%	4	78	4	72	-	61	98,835	2,288
Canadian Oil & Gas International Inc.	96.1%	3	79	-	77	3	48	305	84
NAL Resources Limited	100.0%	3	80	3	73	-	61	47,760	102,497
Scavenger Energy GP Inc.	91.6%	2	81	-	77	2	51	419	25
NuVista Energy Ltd.	99.9%	2	82	-	75	1	52	2,916	3,029
Clearview Resources Ltd.	0.0%	1	83	-	77	1	52	253	1
Point Loma Resources Ltd.	99.7%	1	84	-	77	1	55	505	405
Taku Gas Limited	0.0%	1	85	-	77	1	56	656	1
Response Energy Corporation	99.8%	1	86	-	77	1	57	288	554
Summerland Energy Inc.	100.0%	1	87	1	74	-	58	3,338	2,907
Advantage Oil & Gas Ltd.	100.0%	-	88	-	77	-	61	75	189
Lexin Resources Ltd.	0.0%	-	88	-	77	-	61	-	-
Baytex Energy Ltd.	100.0%	-	88	-	77	-	61	7,286	1,347
Athabasca Oil Corporation	0.0%	-	88	-	77	-	61	-	-
Devon Canada Corporation	0.0%	-	88	-	77	-	61	-	-
Knowledge Energy Inc.	100.0%	-	88	-	77	-	61	1,737	4,629
Petronas Energy Canada Ltd.	0.0%	-	88	-	77	-	61	-	-
Reber Exploration Ltd.	100.0%	-	88	-	77	-	61	150	2
Relentless Resources Ltd.	100.0%	-	88	-	77	-	61	7	182
Long Term Asset Management Inc.	0.0%	-	88	-	77	-	61	-	-
Tourmaline Oil Corp.	100.0%	-	88	-	77	-	61	155,591	119,681
BDJ Energy Inc.	100.0%	-	88	-	77	-	61	14,219	2,356
Delphi Energy Corp.	100.0%	-	88	-	77	-	61	-	27

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Company	Gas cons	Gas flared + vented ($1000 m^3$)	Gas flared + vented rank	Gas flared ($1000 m^3$)	Flare rank	Gas vented ($1000 m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000 m^3$)
Novus Energy Inc.	100.0%	-	88	-	77	-	61	364	327
Tyrannex Energy Ltd.	0.0%	-	88	-	77	-	61	13	-
Ridgeback Resources Inc.	0.0%	-	88	-	77	-	61	-	-
AlphaBow Energy Ltd.	100.0%	-	88	-	77	-	61	663	78
Tangle Creek Energy Ltd.	100.0%	-	88	-	77	-	61	51,105	49,277
Steelhead Petroleum Ltd.	0.0%	-	88	-	77	-	61	-	-
Hitic Energy Ltd.	100.0%	-	88	-	77	-	61	13,989	2,370
Murphy Oil Company Ltd.	100.0%	-	88	-	77	-	61	2,020	918
Hutton Energy Ltd.	100.0%	-	88	-	77	-	61	73	7
Seven Generations Energy Ltd.	100.0%	-	88	-	77	-	61	1,348	1,212
Manitok Energy Inc.	0.0%	-	88	-	77	-	61	-	-
Glencoe Resources Ltd.	0.0%	-	88	-	77	-	61	-	-
Rimfire Energy Inc.	100.0%	-	88	-	77	-	61	537	315
Peyto Exploration & Development Corp.	100.0%	-	88	-	77	-	61	464	937
Totals for Grande Prairie	**99.0%**	**83,741**		**76,241**		**7,504**		**6,678,833**	**8,112,229**

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Field Centre Ranking of Operators – 2018 Flared + Vented Volume[1]
Medicine Hat Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Canadian Natural Resources Limited	97.4%	4,949	1	3,854	2	1,096	3	942,616	190,676
Granite Oil Corp.	97.5%	4,845	2	4,845	1	-	55	114,753	197,476
Rockeast Energy Corp.	0.0%	2,895	3	2,895	3	-	55	6,033	2,895
Torxen Energy Ltd.	99.1%	2,329	4	616	19	1,713	1	626,821	251,594
IPC Alberta Ltd.	93.4%	2,118	5	994	15	1,124	2	370,829	31,975
Gryphon Petroleum Corp.	0.0%	2,089	6	2,089	4	-	55	19,258	2,089
Cardinal Energy Ltd.	97.2%	1,940	7	999	13	941	4	220,826	69,324
SanLing Energy Ltd.	88.2%	1,905	8	1,831	5	74	12	45,773	16,183
Tamarack Acquisition Corp.	89.0%	1,800	9	1,391	8	408	5	73,179	16,380
TORC Oil & Gas Ltd.	0.0%	1,728	10	1,728	6	-	55	13,162	1,728
North 40 Resources Ltd.	93.2%	1,682	11	1,431	7	250	8	54,754	24,685
Cor4 Oil Corp.	96.8%	1,345	12	1,336	9	9	35	196,233	42,506
ARC Resources Ltd.	51.7%	1,244	13	1,177	10	67	13	22,566	2,576
Little Rock Resources Ltd.	79.7%	1,108	14	1,080	11	28	22	16,600	5,456
Hemisphere Energy Corporation	81.4%	1,030	15	1,030	12	-	55	62,206	5,535
Vantage Point Resources Inc.	25.6%	1,016	16	995	14	21	25	14,996	1,365
Ascensun Oil and Gas Ltd.	11.2%	908	17	908	16	-	55	12,544	1,023
Blackspur Oil Corp.	98.3%	851	18	850	17	1	46	116,298	51,438
Baytex Energy Ltd.	98.0%	844	19	739	18	104	11	49,307	42,562
Journey Energy Inc.	98.6%	778	20	440	23	337	6	104,627	57,071
TAQA North Ltd.	89.2%	557	21	553	20	4	38	41,140	5,141
Crescent Point Energy Corp.	34.9%	476	22	473	21	4	40	5,756	732
LGX Oil + Gas Inc.	34.0%	461	23	461	22	-	51	6,680	699
Prairie Provident Resources Canada Ltd.	98.4%	430	24	369	24	61	15	57,205	27,293
City Of Medicine Hat	30.9%	402	25	120	31	282	7	9,597	582
BlackPearl Resources Inc.	33.5%	364	26	259	26	105	10	3,837	548
New North Resources Ltd.	20.7%	288	27	282	25	6	36	3,665	363
Traverse Energy Ltd.	94.8%	277	28	238	27	39	17	7,223	5,310
Obsidian Energy Ltd.	98.6%	218	29	97	34	121	9	29,076	15,584
Avalon Energy Ltd.	41.2%	203	30	202	28	1	47	5,461	345

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Company	Gas cons	Gas flared + vented ($1000 m^3$)	Gas flared + vented rank	Gas flared ($1000 m^3$)	Flare rank	Gas vented ($1000 m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000 m^3$)
Convega Energy Ltd.	75.1%	143	31	142	29	1	47	2,326	576
Houston Oil & Gas Ltd.	42.0%	135	32	103	32	32	19	1,232	232
Manitok Energy Inc.	6.9%	125	33	121	30	4	39	1,814	134
Marquee Energy Ltd.	99.7%	115	34	52	38	64	14	54,618	34,874
Zargon Oil & Gas Ltd.	95.1%	102	35	102	33	-	55	19,409	2,067
SOUTHERN ENERGY CORP.	29.7%	83	36	73	35	10	33	2,752	119
Taber Water Disposal Inc.	28.0%	82	37	65	37	16	29	3,413	113
Lance Exploration Corp.	4.9%	66	38	66	36	-	55	174	69
Broadview Energy Ltd.	94.1%	45	39	-	46	45	16	1,830	764
Enerplus Corporation	99.4%	36	40	3	43	33	18	219,209	5,883
Strategic Oil & Gas Ltd.	74.9%	32	41	32	39	-	55	641	127
Novus Energy Inc.	52.3%	32	42	31	40	1	49	472	66
Corval Energy Ltd.	99.0%	31	43	-	46	31	20	3,607	3,083
AlphaBow Energy Ltd.	99.0%	29	44	-	44	29	21	3,518	2,974
Thoroughbred Energy Ltd.	83.7%	27	45	-	46	27	23	2,068	164
Point Loma Resources Ltd.	96.3%	26	46	-	46	26	24	1,014	694
Sandpoint Resources Inc.	0.0%	20	47	-	46	20	26	1,639	20
935821 Alberta Ltd.	0.0%	18	48	-	44	18	27	1,143	18
Ridal Resource Ltd.	0.0%	17	49	-	46	17	28	172	17
Alberta Petroleum Energy Limited	41.1%	13	50	13	41	-	55	1,054	22
Edalis Energy Inc.	26.3%	12	51	-	46	12	30	443	17
Signalta Resources Limited	97.7%	12	52	-	46	12	31	726	533
Indra Oil & Gas Ltd.	0.0%	11	53	-	46	11	32	283	11
Venturion Oil Limited	98.3%	11	54	11	42	-	55	532	632
Harvest Operations Corp.	99.8%	9	55	-	46	9	34	65,398	5,761
Enercapita Energy Ltd.	0.0%	5	56	-	46	5	37	413	5
Band Energy Resources Ltd.	30.0%	4	57	-	46	4	40	271	5
Aeneid Exploration Inc.	0.0%	3	58	-	46	3	42	261	3
Deckland Inc.	99.4%	3	59	-	46	3	43	749	420
Questerre Energy Corporation	0.0%	3	60	-	46	3	44	304	3
Tower Ridge Enterprises Corp.	96.3%	1	61	-	46	1	45	540	35
Writers Oil & Gas Limited	0.0%	1	62	-	46	1	50	26	1
Corinthian Oil Corp.	99.9%	0	63	-	46	-	51	1,479	548
Tykewest Limited	98.0%	0	64	-	46	-	53	77	15
Tayson Resources Inc.	0.0%	0	65	-	46	-	54	48	-

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
1506928 Alberta Ltd.	100.0%	-	66	-	46	-	55	629	13
Canlin Resources Partnership	0.0%	-	66	-	46	-	55	-	-
Steelhead Petroleum Ltd.	0.0%	-	66	-	46	-	55	-	-
Scollard Energy Ltd.	100.0%	-	66	-	46	-	55	-	2
Raimount Energy Corp.	0.0%	-	66	-	46	-	55	-	-
Petrocapita GP I Ltd.	0.0%	-	66	-	46	-	55	-	-
Enerstar Petroleum Corp.	100.0%	-	66	-	46	-	55	1,097	15
Canadian Oil & Gas International Inc.	0.0%	-	66	-	46	-	55	10	-
Sarg Oils Ltd.	0.0%	-	66	-	46	-	55	-	-
Komstar Resources Ltd.	0.0%	-	66	-	46	-	55	-	-
Silver Bay Resources Ltd.	0.0%	-	66	-	46	-	55	-	-
Cenovus Energy Inc.	0.0%	-	66	-	46	-	55	-	-
Frontier Energy Inc.	0.0%	-	66	-	46	-	55	-	-
Ridgeback Resources Inc.	0.0%	-	66	-	46	-	55	-	-
1288131 Alberta Ltd.	100.0%	-	66	-	46	-	55	621	281
Lexin Resources Ltd.	0.0%	-	66	-	46	-	55	-	-
Rockbridge Energy Alberta Inc.	0.0%	-	66	-	46	-	55	-	-
Relentless Resources Ltd.	100.0%	-	66	-	46	-	55	3,226	1,090
Success Resources Ltd.	100.0%	-	66	-	46	-	55	1,857	3,470
Bonavista Energy Corporation	100.0%	-	66	-	46	-	55	299	117
Surge Energy Inc.	0.0%	-	66	-	46	-	55	-	-
Anterra Energy Inc.	0.0%	-	66	-	46	-	55	-	-
Incipient Exploration Ltd.	0.0%	-	66	-	46	-	55	-	-
Luxur Resources Inc.	100.0%	-	66	-	46	-	55	2	-
Response Energy Corporation	0.0%	-	66	-	46	-	55	11	-
Sun Century Petroleum Corporation	0.0%	-	66	-	46	-	55	-	-
Regnum Energy Ltd.	100.0%	-	66	-	46	-	55	1,648	83
Totals for Medicine Hat	**96.3%**	**42,329**		**35,096**		**7,234**		**3,656,076**	**1,136,210**

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Field Centre Ranking of Operators – 2018 Flared + Vented Volume[1]
Midnapore Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Bearspaw Petroleum Ltd.	18.1%	1,936	1	1,934	1	2	42	9,289	2,363
Cuda Energy Inc.	0.0%	1,910	2	1,910	2	-	51	2,314	1,910
Tamarack Acquisition Corp.	62.0%	1,849	3	1,790	3	59	15	6,755	4,870
SanLing Energy Ltd.	73.3%	1,615	4	1,571	4	45	17	16,013	6,058
Torxen Energy Ltd.	99.2%	1,593	5	266	13	1,328	1	213,235	201,506
Little Rock Resources Ltd.	29.7%	1,415	6	1,415	5	-	51	16,703	2,014
ORLEN Upstream Canada Ltd.	84.5%	1,279	7	1,274	6	5	34	3,237	8,242
North 40 Resources Ltd.	58.1%	1,033	8	955	7	78	12	8,682	2,468
TORC Oil & Gas Ltd.	6.4%	929	9	920	8	9	29	3,750	993
Canadian Natural Resources Limited	98.4%	909	10	235	14	673	2	80,659	58,533
Crescent Point Energy Corp.	98.4%	520	11	468	9	52	16	108,801	32,549
Bonavista Energy Corporation	98.8%	462	12	-	38	462	3	22,676	37,185
Whitecap Resources Inc.	0.0%	322	13	321	10	-	49	2,584	322
Surge Energy Inc.	2.0%	286	14	286	11	-	51	1,101	292
NAL Resources Limited	99.7%	284	15	268	12	17	25	83,345	94,269
Signalta Resources Limited	32.8%	270	16	158	17	112	9	2,997	401
Prairie Provident Resources Canada Ltd.	99.5%	230	17	-	38	230	4	17,245	49,889
TAQA North Ltd.	99.3%	213	18	3	32	210	5	32,151	29,823
Thoroughbred Energy Ltd.	10.4%	201	19	-	38	201	6	3,098	225
SILVERLEAF RESOURCES INC.	46.6%	187	20	166	15	21	23	1,466	350
Corval Energy Ltd.	75.9%	174	21	142	18	32	20	2,399	721
Husky Oil Operations Limited	99.7%	171	22	131	19	40	19	64,900	55,697
Bernum Petroleum Ltd.	38.5%	166	23	166	16	-	51	364	269
Journey Energy Inc.	99.2%	163	24	43	25	120	8	12,941	20,602
Sphere Energy Corp.	95.0%	141	25	16	26	125	7	3,944	2,798
Axiom Oil and Gas Inc.	2.5%	107	26	-	38	107	10	291	110
Traverse Energy Ltd.	98.6%	93	27	70	21	24	22	4,309	6,833
Ridal Resource Ltd.	36.1%	83	28	-	38	83	11	1,077	130
Wolf Coulee Resources Inc.	98.8%	76	29	74	20	2	41	6,061	6,209
Lynx Energy ULC	98.9%	65	30	-	38	65	13	8,593	5,829

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Silver Blaze Energy Ltd.	46.8%	63	31	-	38	63	14	254	118
Marquee Energy Ltd.	99.4%	61	32	59	22	2	44	18,091	10,484
Baytex Energy Ltd.	97.8%	46	33	46	23	-	51	6,892	2,058
Zargon Oil & Gas Ltd.	99.1%	45	34	45	24	-	51	33,054	5,309
Houston Oil & Gas Ltd.	99.2%	41	35	-	38	41	18	3,504	4,829
Long Term Asset Management Inc.	98.4%	27	36	-	38	27	21	1,657	1,676
Cardinal Energy Ltd.	99.1%	18	37	1	37	18	24	2,364	1,917
Wilcox Energy Corp.	48.7%	18	38	2	34	16	27	350	34
Avalon Energy Ltd.	82.9%	16	39	-	38	16	26	81	94
Manitok Energy Inc.	100.0%	13	40	13	27	-	50	22,782	35,113
Blackspur Oil Corp.	99.5%	13	41	13	27	-	51	1,735	2,916
Huron Resources Corp.	6.5%	13	42	13	29	-	51	36	14
Firenze Energy Ltd.	99.0%	12	43	2	35	11	28	19,793	1,240
Red Angus Energy Inc.	62.3%	10	44	10	30	-	51	31	27
Black Crane Energy Corp.	30.1%	9	45	-	38	9	30	177	12
Edalis Energy Inc.	99.0%	8	46	-	38	8	31	1,344	744
Cortona Energy Ltd.	98.0%	6	47	2	36	5	35	11,613	321
Coastal Resources Limited	99.3%	5	48	-	38	5	32	821	801
Hard Rock Resources Ltd.	0.0%	5	49	-	38	5	33	402	5
AlphaBow Energy Ltd.	100.0%	5	50	3	33	2	40	1,516	24,090
Rampart Oil Inc.	100.0%	5	51	5	31	-	51	141,023	10,915
545279 Alberta Limited	0.0%	4	52	-	38	4	36	159	4
Questfire Energy Corp.	99.4%	3	53	-	38	3	37	100	494
Jast Energy Ltd.	87.1%	3	54	-	38	3	38	253	24
The Locke Stock & Barrel Company Ltd.	0.0%	3	55	-	38	3	39	484	3
Westdrum Energy Ltd.	99.0%	2	56	-	38	2	43	237	180
Harvest Operations Corp.	99.9%	2	57	-	38	2	45	1,809	1,827
TimberRock Energy Corp.	99.4%	1	58	-	38	1	46	451	221
Spur Petroleum Ltd.	99.9%	1	59	-	38	1	47	3,682	1,217
Trident Exploration (Alberta) Corp.	99.7%	1	59	-	38	1	47	129	365
979968 Alberta Ltd.	100.0%	-	61	-	38	-	51	476	1,423
Anterra Energy Inc.	0.0%	-	61	-	38	-	51	-	-
TransGlobe Energy Corporation	100.0%	-	61	-	38	-	51	73	1,293
Kaiser Exploration Ltd.	0.0%	-	61	-	38	-	51	-	-
Pine Cliff Energy Ltd.	100.0%	-	61	-	38	-	51	210	623

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
LGX Oil + Gas Inc.	0.0%	-	61	-	38	-	51	-	-
Harvard International Resources Ltd.	100.0%	-	61	-	38	-	51	700	1,782
Indra Oil & Gas Ltd.	0.0%	-	61	-	38	-	51	-	-
Rockeast Energy Corp.	100.0%	-	61	-	38	-	51	112	13
Topanga Resources Ltd.	0.0%	-	61	-	38	-	51	-	-
XTO Energy Canada	0.0%	-	61	-	38	-	51	-	-
ConocoPhillips Canada Energy Partnership	0.0%	-	61	-	38	-	51	-	-
Obsidian Energy Ltd.	0.0%	-	61	-	38	-	51	-	-
HESC Energy Corporation	0.0%	-	61	-	38	-	51	-	-
Clearview Resources Ltd.	0.0%	-	61	-	38	-	51	-	-
Goldenkey Oil Inc.	0.0%	-	61	-	38	-	51	-	-
Lexin Resources Ltd.	0.0%	-	61	-	38	-	51	-	-
Pocahontas Petroleum Ltd.	0.0%	-	61	-	38	-	51	-	-
Enerplus Corporation	0.0%	-	61	-	38	-	51	-	-
Shanpet Resources Ltd.	0.0%	-	61	-	38	-	51	756	-
Logic Energy Ltd.	100.0%	-	61	-	38	-	51	5,297	5,884
Pembina NGL Corporation	0.0%	-	61	-	38	-	51	-	-
Tri-Energy Resources Ltd.	100.0%	-	61	-	38	-	51	812	513
Ember Resources Inc.	100.0%	-	61	-	38	-	51	1,895	346
Cenovus Energy Inc.	0.0%	-	61	-	38	-	51	-	-
New North Resources Ltd.	100.0%	-	61	-	38	-	51	861	486
Approach Energy Inc.	0.0%	-	61	-	38	-	51	-	-
Encana Corporation	100.0%	-	61	-	38	-	51	345	1,098
Sun Century Petroleum Corporation	0.0%	-	61	-	38	-	51	-	-
Totals for Midnapore	**97.5%**	**19,141**		**14,796**		**4,350**		**1,027,341**	**753,973**

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Field Centre Ranking of Operators – 2018 Flared + Vented Volume[1]
Red Deer Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Pengrowth Energy Corporation	3.2%	3,498	1	3,498	1	-	79	19,726	3,612
Bearspaw Petroleum Ltd.	41.0%	3,002	2	2,998	2	4	60	33,518	5,089
Yangarra Resources Corp.	99.1%	2,283	3	1,283	5	1,000	1	244,031	262,964
Paramount Resources Ltd.	97.3%	2,186	4	2,126	3	60	35	40,750	82,139
InPlay Oil Corp.	94.9%	1,940	5	1,204	6	736	2	63,762	38,172
Crescent Point Energy Corp.	68.3%	1,862	6	1,829	4	34	42	16,086	5,877
Tamarack Acquisition Corp.	98.0%	1,283	7	623	11	660	3	124,229	65,376
NAL Resources Limited	99.7%	1,047	8	551	13	497	4	242,684	369,925
ORLEN Upstream Canada Ltd.	99.4%	1,020	9	861	9	159	17	45,330	164,858
Artis Exploration Ltd.	95.0%	992	10	992	7	-	79	159,299	19,765
Canadian Natural Resources Limited	99.5%	904	11	780	10	123	21	141,406	182,652
Enhance Energy Inc.	93.5%	867	12	865	8	2	66	44,630	13,279
Surge Energy Inc.	95.8%	671	13	399	16	273	9	14,489	16,041
Whitecap Resources Inc.	99.7%	644	14	527	14	117	23	251,549	240,752
Huron Resources Corp.	86.0%	622	15	622	12	-	79	18,839	4,447
Cenovus Energy Inc.	99.7%	507	16	416	15	91	28	132,908	145,306
TAQA North Ltd.	99.5%	499	17	79	41	419	5	60,962	107,472
Entrada Resources Inc.	99.3%	386	18	-	66	386	6	88,061	54,125
Axiom Oil and Gas Inc.	96.3%	364	19	357	18	6	58	20,238	9,842
Rally Canada Resources Ltd.	77.7%	359	20	359	17	-	79	6,952	1,609
Mancal Energy Inc.	47.1%	338	21	294	20	44	40	8,644	638
Baccalieu Energy Inc.	99.5%	337	22	185	28	152	18	43,791	70,839
Bonavista Energy Corporation	99.5%	335	23	191	27	144	19	30,323	68,553
Repsol Oil & Gas Canada Inc.	0.0%	325	24	325	19	-	79	1,693	325
ExxonMobil Canada Energy	99.5%	320	25	273	23	47	38	56,381	65,592
Vesta Energy Ltd.	99.6%	318	26	159	29	159	16	477,951	71,809
RKSmith Energy Corp.	0.0%	312	27	-	66	312	7	218	312
Sitka Exploration Ltd.	99.3%	299	28	131	33	168	14	39,874	45,122
Ember Resources Inc.	83.0%	296	29	-	66	296	8	8,664	1,742
Marquee Energy Ltd.	48.9%	285	30	285	21	-	79	2,053	557

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Company	Gas cons	Gas flared + vented (1000 m^3)	Gas flared + vented rank	Gas flared (1000 m^3)	Flare rank	Gas vented (1000 m^3)	Vent rank	Oil prod (m^3)	Sol'n gas prod (1000 m^3)
Relentless Resources Ltd.	68.2%	279	31	279	22	-	79	819	877
HESC Energy Corporation	69.3%	267	32	-	66	267	10	1,330	871
High Point Oil Inc.	0.0%	240	33	212	25	28	43	4,349	240
Trident Exploration (Alberta) Corp.	97.9%	232	34	157	30	75	32	15,708	11,096
AlphaBow Energy Ltd.	99.9%	230	35	27	53	204	11	43,597	338,559
Traverse Energy Ltd.	71.5%	229	36	224	24	5	59	1,465	802
Barnwell of Canada Limited	98.6%	226	37	149	31	77	31	22,008	16,192
Prairie Storm Energy Corp.	99.7%	222	38	119	35	103	25	51,340	77,912
TransGlobe Energy Corporation	99.2%	201	39	6	58	195	12	32,479	25,238
Grandview Exploration Inc.	53.5%	195	40	195	26	-	79	2,760	420
Velvet Energy Ltd.	96.9%	186	41	66	48	120	22	4,736	5,894
Harvest Operations Corp.	99.4%	184	42	-	66	184	13	19,182	32,274
Signalta Resources Limited	85.2%	177	43	76	42	101	27	1,971	1,195
Husky Oil Operations Limited	99.0%	168	44	-	63	168	15	6,271	17,272
Certus Oil And Gas Inc.	98.7%	167	45	85	40	81	30	24,593	13,283
Forge Oil & Gas Limited	81.0%	165	46	75	44	90	29	5,302	866
Firenze Energy Ltd.	89.2%	153	47	52	50	101	26	1,433	1,419
Hard Rock Resources Ltd.	95.6%	150	48	142	32	8	57	1,157	3,399
Gain Energy Ltd.	98.7%	145	49	92	39	53	37	13,018	11,341
Obsidian Energy Ltd.	99.9%	144	50	74	45	70	33	245,001	131,519
Keyera Energy Ltd.	99.0%	128	51	63	49	65	34	8,770	13,091
Gear Energy Ltd.	99.2%	127	52	-	66	127	20	42,916	15,947
Alexander Oilfield Services Ltd.	67.2%	126	53	126	34	-	79	973	385
Baytex Energy Ltd.	96.9%	114	54	106	37	8	55	3,935	3,670
Supreme Energy Inc.	97.2%	110	55	110	36	-	79	6,117	3,851
Ridgeback Resources Inc.	99.3%	106	56	-	65	106	24	2,819	14,660
Shanghai Energy Corporation	99.7%	104	57	104	38	-	79	5,873	37,523
Response Energy Corporation	90.9%	79	58	75	43	4	61	1,589	875
Bellatrix Exploration Ltd.	99.9%	74	59	73	46	2	67	12,648	121,472
DEL Canada GP Ltd.	98.7%	69	60	67	47	2	69	24,010	5,361
Pine Cliff Energy Ltd.	98.5%	64	61	42	51	23	47	2,884	4,257
Bonterra Energy Corp.	99.6%	63	62	6	58	57	36	2,544	15,571
Canadian Oil & Gas International Inc.	98.0%	48	63	22	54	26	45	2,602	2,414
Manitok Energy Inc.	99.9%	46	64	5	60	41	41	32,125	47,293
Westdrum Energy Ltd.	82.1%	45	65	-	66	45	39	367	252

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Company	Gas cons	Gas flared + vented (1000 m^3)	Gas flared + vented rank	Gas flared (1000 m^3)	Flare rank	Gas vented (1000 m^3)	Vent rank	Oil prod (m^3)	Sol'n gas prod (1000 m^3)
Vantage Point Resources Inc.	99.6%	37	66	13	55	24	46	10,698	10,042
Canlin Resources Partnership	99.8%	35	67	35	52	-	79	76,805	17,173
Golden Spike Energy Inc.	39.9%	27	68	-	66	27	44	255	45
Journey Energy Inc.	99.8%	22	69	-	66	22	48	10,132	8,921
Sogar Resources Ltd.	98.8%	20	70	-	66	20	49	710	1,607
TimberRock Energy Corp.	57.5%	19	71	-	66	19	50	74	44
Point Loma Resources Ltd.	99.8%	16	72	-	66	16	51	2,876	7,859
Range 3 Inc.	40.3%	14	73	-	66	14	52	42	23
Vermilion Energy Inc.	98.9%	13	74	-	66	13	53	671	1,170
Questfire Energy Corp.	99.9%	12	75	12	56	-	79	3,919	11,065
G. Herman Group Inc.	99.7%	10	76	10	57	-	79	1,405	3,610
Tykewest Limited	87.3%	9	77	-	66	9	54	327	71
SILVERLEAF RESOURCES INC.	99.4%	8	78	-	66	8	56	2,589	1,276
Sequoia Resources Corp.	99.1%	5	79	4	61	1	73	797	550
Long Run Exploration Ltd.	99.8%	4	80	-	66	4	62	963	1,629
Tri-Ment Corporation Ltd.	30.0%	3	81	-	66	3	63	25	4
Sifton Petroleum Inc.	99.9%	3	81	-	66	3	63	3,402	2,692
Coastal Resources Limited	93.5%	3	83	1	62	2	69	433	40
Rife Resources Ltd.	99.6%	2	84	-	66	2	65	5,927	583
Just Freehold Energy Corp.	99.8%	2	85	-	66	2	68	937	873
New North Resources Ltd.	99.8%	1	86	-	66	1	71	500	768
Sun Century Petroleum Corporation	96.9%	1	87	-	66	1	72	191	26
Silver Blaze Energy Ltd.	37.5%	1	88	-	66	1	74	2	1
Shackleton Exploration Ltd.	99.9%	1	88	-	64	-	75	328	540
Tori Resources Inc.	99.3%	0	90	-	66	-	76	4,187	27
Black Crane Energy Corp.	100.0%	0	90	-	66	-	76	1,142	1,258
Blue Star Energy Inc.	99.5%	0	92	-	66	-	78	496	21
Clearview Resources Ltd.	100.0%	-	93	-	66	-	79	10,152	3,182
Mato Inc.	100.0%	-	93	-	66	-	79	338	1,237
Kaiser Exploration Ltd.	100.0%	-	93	-	66	-	79	68	233
Scollard Energy Ltd.	100.0%	-	93	-	66	-	79	47	49
Chronos Resources Ltd.	0.0%	-	93	-	66	-	79	-	-
Ikkuma Resources Corp.	100.0%	-	93	-	66	-	79	10,998	3,202
Tantalus Energy Corp.	100.0%	-	93	-	66	-	79	342	159
Rockbridge Energy Alberta Inc.	0.0%	-	93	-	66	-	79	-	-

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Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Kanati Energy Incorporated	0.0%	-	93	-	66	-	79	-	-
Glencoe Resources Ltd.	100.0%	-	93	-	66	-	79	-	67
Forent Energy Ltd.	0.0%	-	93	-	66	-	79	-	-
Westbrick Energy Ltd.	100.0%	-	93	-	66	-	79	1,399	194
Corse Energy Corp.	100.0%	-	93	-	66	-	79	109	469
Shale Petroleum Ltd.	100.0%	-	93	-	66	-	79	239	2,535
Sinopec Daylight Energy Ltd.	100.0%	-	93	-	66	-	79	426	303
C Group Energy Inc.	100.0%	-	93	-	66	-	79	954	1,960
Canyon Oil & Gas Corporation	100.0%	-	93	-	66	-	79	45	438
Advantage Oil & Gas Ltd.	0.0%	-	93	-	66	-	79	-	-
Shanpet Resources Ltd.	100.0%	-	93	-	66	-	79	282	589
Gibson Energy ULC	0.0%	-	93	-	66	-	79	-	-
Goldenkey Oil Inc.	100.0%	-	93	-	66	-	79	1,753	1,417
Canstone Energy Ltd.	100.0%	-	93	-	66	-	79	-	485
ZNX Energy Ltd.	100.0%	-	93	-	66	-	79	1,498	1,689
Incipient Exploration Ltd.	0.0%	-	93	-	66	-	79	-	-
Summerland Energy Inc.	100.0%	-	93	-	66	-	79	4,671	2,937
KinMerc Oil & Gas Inc.	100.0%	-	93	-	66	-	79	309	1
Highwood Oil Company Ltd.	0.0%	-	93	-	66	-	79	-	-
Outlier Resources Ltd.	100.0%	-	93	-	66	-	79	281	1,213
Ferrybank Resources Ltd.	100.0%	-	93	-	66	-	79	575	84
Enerplus Corporation	100.0%	-	93	-	66	-	79	44	461
TWP50 Resources Ltd.	0.0%	-	93	-	66	-	79	1	-
Caltex Resources Ltd.	100.0%	-	93	-	66	-	79	1,367	1,159
Green Valley Energy Ltd.	0.0%	-	93	-	66	-	79	-	-
Energy Express Canada Corp.	100.0%	-	93	-	66	-	79	518	430
Petrus Resources Corp.	100.0%	-	93	-	66	-	79	6,106	6,154
Totals for Red Deer	**98.9%**	**33,622**		**25,116**		**8,517**		**3,260,087**	**3,198,647**

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Field Centre Ranking of Operators – 2018 Flared + Vented Volume[1]
Slave Lake Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Obsidian Energy Ltd.	55.8%	58,503	1	58,497	1	7	22	497,939	132,446
Baytex Energy Ltd.	90.6%	27,630	2	27,630	2	-	28	877,116	293,986
Canadian Natural Resources Limited	94.5%	14,092	3	7,115	3	6,976	1	4,397,419	255,772
Mount Bastion Oil & Gas Corp.	78.0%	4,058	4	3,399	4	659	6	288,455	18,432
Cenovus Energy Inc.	9.5%	2,528	5	2,432	5	96	13	31,004	2,793
Highwood Oil Company Ltd.	28.9%	2,224	6	1,840	7	384	8	70,167	3,130
Prairie Provident Resources Canada Ltd.	77.4%	2,195	7	191	16	2,004	3	119,192	9,711
Surge Energy Inc.	62.3%	2,171	8	-	21	2,171	2	34,341	5,763
Harvest Operations Corp.	73.6%	2,158	9	1,296	9	862	5	101,523	8,160
Deltastream Energy Corporation	81.4%	2,048	10	1,629	8	418	7	108,416	11,032
Summerland Energy Inc.	69.2%	1,996	11	1,996	6	-	28	109,316	6,483
Cardinal Energy Ltd.	97.9%	1,322	12	1,114	10	209	9	288,972	64,320
Mancal Energy Inc.	36.3%	944	13	941	11	3	24	16,091	1,481
Spur Petroleum Ltd.	86.0%	922	14	-	21	922	4	271,868	6,599
Long Run Exploration Ltd.	2.6%	519	15	348	13	171	10	7,799	533
Bernum Petroleum Ltd.	2.7%	480	16	480	12	-	28	8,468	493
BlackPearl Resources Inc.	91.3%	314	17	314	14	-	28	82,696	3,626
Vermilion Energy Inc.	92.7%	195	18	195	15	-	28	37,747	2,668
Prosper Petroleum Ltd.	24.1%	157	19	-	21	157	11	5,739	207
Goldenkey Oil Inc.	45.0%	139	20	139	17	-	28	5,383	253
Husky Oil Operations Limited	99.6%	139	21	-	21	139	12	111,813	32,957
Enercapita Energy Ltd.	0.0%	88	22	-	21	88	14	1,325	88
OAN Resources Ltd.	80.3%	75	23	-	21	75	15	4,657	381
Crescent Point Energy Corp.	66.6%	48	24	22	18	26	17	611	144
Coastal Resources Limited	88.0%	30	25	-	21	30	16	2,829	252
KinMerc Oil & Gas Inc.	90.8%	17	26	4	20	13	18	12,224	190
Aeneid Exploration Inc.	99.1%	13	27	-	21	13	19	17,172	1,443
Persta Resources Inc.	89.7%	13	28	13	19	-	28	4,506	121
Rustum Petroleums Limited	0.0%	10	29	-	21	10	20	1,571	10
Red Angus Energy Inc.	51.4%	7	30	-	21	7	21	309	14

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Company	Gas cons	Gas flared + vented ($1000 m^3$)	Gas flared + vented rank	Gas flared ($1000 m^3$)	Flare rank	Gas vented ($1000 m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000 m^3$)
Long Lake Energy Ltd.	92.4%	7	31	-	21	7	23	225	87
Dark Energy Ltd.	0.0%	1	32	-	21	1	25	71	1
G. Herman Group Inc.	0.0%	0	33	-	21	-	26	28	-
1852797 Alberta ULC	99.7%	0	34	-	21	-	27	1,308	38
Perpetual Operating Corp.	100.0%	-	35	-	21	-	28	222	8
Questfire Energy Corp.	100.0%	-	35	-	21	-	28	190	26
Crimson Oil & Gas Ltd.	100.0%	-	35	-	21	-	28	3,481	137
Accurate Energy Solutions Ltd.	0.0%	-	35	-	21	-	28	-	-
Bering Exploration Company ULC	100.0%	-	35	-	21	-	28	384	8
Cote Resources Ltd.	0.0%	-	35	-	21	-	28	-	-
Stout Energy Inc.	0.0%	-	35	-	21	-	28	-	-
Tallahassee Exploration Inc.	0.0%	-	35	-	21	-	28	-	-
Koch Oil Sands Operating ULC	0.0%	-	35	-	21	-	28	-	-
Spartan Energy Corp.	0.0%	-	35	-	21	-	28	-	-
Prospera Energy Inc.	100.0%	-	35	-	21	-	28	2,441	125
Border Petroleum Limited	0.0%	-	35	-	21	-	28	-	-
Whitehall Energy Ltd.	100.0%	-	35	-	21	-	28	2,499	359
XTO Energy Canada	0.0%	-	35	-	21	-	28	-	-
Totals for Slave Lake	**85.5%**	**125,040**		**109,595**		**15,448**		**7,527,517**	**864,277**

[1] Caution is required when comparing with last year's report due to corporate mergers, acquisitions, and divestments.

Field Centre Ranking of Operators – 2018 Flared + Vented Volume[1]
Wainwright Crude Oil and Crude Bitumen Batteries for Alberta
Run Date: Apr 6, 2019

Company	Gas cons	Gas flared + vented ($1000\ m^3$)	Gas flared + vented rank	Gas flared ($1000\ m^3$)	Flare rank	Gas vented ($1000\ m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000\ m^3$)
Karve Energy Inc.	83.4%	19,787	1	18,344	1	1,443	9	336,990	119,459
Canadian Natural Resources Limited	88.7%	19,247	2	1,446	10	17,801	1	1,031,122	170,650
Husky Oil Operations Limited	81.4%	14,990	3	481	21	14,510	2	846,517	80,806
West Lake Energy Corp.	77.7%	12,911	4	11,101	2	1,810	6	463,672	57,944
Cardinal Energy Ltd.	63.9%	6,108	5	1,694	9	4,414	4	283,862	16,927
Gear Energy Ltd.	88.4%	4,529	6	-	52	4,529	3	151,667	38,903
Devon Canada Corporation	80.2%	4,104	7	426	25	3,678	5	133,784	20,708
Steelhead Petroleum Ltd.	65.1%	3,742	8	3,607	3	135	28	27,026	10,732
Rifle Shot Oil Corp.	0.5%	3,583	9	3,583	4	-	69	176,861	3,601
Surge Energy Inc.	93.4%	3,343	10	3,068	5	275	19	372,493	50,701
Repsol Oil & Gas Canada Inc.	88.8%	2,723	11	993	15	1,730	7	478,040	24,408
Cleo Energy Corp.	58.2%	2,425	12	2,418	6	7	54	65,508	5,799
Rolling Hills Energy Ltd.	96.7%	2,294	13	1,844	7	450	15	102,557	69,606
Baytex Energy Ltd.	73.7%	1,971	14	520	20	1,450	8	79,082	7,482
Battle River Energy Ltd.	88.9%	1,866	15	1,749	8	117	32	71,985	16,841
High Ground Energy Inc.	98.3%	1,687	16	1,363	11	324	18	98,035	101,997
Tamarack Acquisition Corp.	98.7%	1,494	17	178	30	1,317	10	397,617	117,649
Prairie Provident Resources Canada Ltd.	59.5%	1,442	18	904	16	538	13	28,366	3,559
Harvest Operations Corp.	93.7%	1,300	19	862	17	439	16	110,653	20,482
Crew Energy Inc.	82.9%	1,231	20	-	52	1,231	11	48,400	7,187
Dark Warrior Resources Ltd.	31.1%	1,181	21	1,087	13	94	35	12,389	1,714
Rockeast Energy Corp.	23.1%	1,145	22	1,145	12	-	69	48,124	1,489
Rife Resources Ltd.	55.7%	1,104	23	-	52	1,104	12	23,848	2,491
Bow River Energy Ltd.	80.0%	1,046	24	1,040	14	6	55	85,267	5,222
Caltex Resources Ltd.	92.8%	952	25	525	19	427	17	302,195	13,158
Spur Petroleum Ltd.	74.8%	908	26	829	18	80	38	11,063	3,611
Canuck North Resources Ltd.	0.0%	693	27	237	28	456	14	2,444	693
Long Run Exploration Ltd.	75.2%	633	28	406	26	227	23	6,411	2,556
Enerplus Corporation	86.0%	484	29	474	22	10	51	127,728	3,453
Crescent Point Energy Corp.	29.8%	465	30	463	23	3	60	5,192	663

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Company	Gas cons	Gas flared + vented ($1000 m^3$)	Gas flared + vented rank	Gas flared ($1000 m^3$)	Flare rank	Gas vented ($1000 m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000 m^3$)
Topanga Resources Ltd.	8.8%	447	31	428	24	19	46	2,299	490
Fort Calgary Resources Ltd.	58.9%	374	32	145	33	229	22	3,610	909
AlphaBow Energy Ltd.	94.8%	335	33	235	29	100	34	78,990	6,444
Pismo Energy Ltd.	61.0%	310	34	60	39	250	21	10,037	795
Sun Century Petroleum Corporation	70.3%	300	35	299	27	2	64	5,630	1,010
Perpetual Operating Corp.	97.4%	255	36	-	52	255	20	61,601	9,923
Venturion Oil Limited	97.4%	233	37	46	40	188	24	146,030	9,047
Deltastream Energy Corporation	82.4%	203	38	130	34	73	39	11,359	1,158
Aeraden Energy Corp.	83.5%	179	39	170	31	9	53	4,576	1,082
Novus Energy Inc.	94.1%	174	40	159	32	15	48	1,316	2,933
Westdrum Energy Ltd.	51.2%	169	41	-	52	169	25	1,059	347
Goldenkey Oil Inc.	59.3%	169	42	79	36	90	37	565	414
Bering Exploration Company ULC	97.9%	149	43	99	35	50	40	21,622	6,960
Obsidian Energy Ltd.	98.7%	146	44	-	52	146	26	14,274	11,235
Enercapita Energy Ltd.	35.7%	137	45	-	52	137	27	532	212
InPlay Oil Corp.	92.3%	131	46	-	52	131	29	2,258	1,704
SanLing Energy Ltd.	97.4%	127	47	19	46	108	33	7,080	4,840
Kairos Resources (2011) Ltd.	62.9%	124	48	-	52	124	30	806	335
Taku Gas Limited	23.5%	119	49	-	52	119	31	3,940	156
Response Energy Corporation	7.1%	91	50	-	52	91	36	1,982	98
NVP Exploration Inc.	76.9%	91	51	60	38	31	44	152	393
Vital Energy Inc.	56.6%	74	52	74	37	-	69	1,784	170
Kaisen Energy Corp.	96.2%	66	53	19	45	48	41	6,434	1,749
Ghost River Resources Inc.	96.8%	45	54	45	41	-	69	6,294	1,414
Barcomp Petroleum Ltd.	0.0%	32	55	-	52	32	42	5,806	32
Top Oil Production Ltd.	98.3%	32	56	-	52	32	43	4,587	1,888
Elcano Exploration Inc.	28.4%	30	57	30	42	-	69	773	42
TAQA North Ltd.	90.7%	23	58	19	44	4	58	4,659	251
Canadian Oil & Gas International Inc.	97.5%	23	59	8	47	15	47	2,327	929
611890 Alberta Inc.	0.0%	23	60	-	52	23	45	2,556	23
Zargon Oil & Gas Ltd.	99.1%	23	61	22	43	1	66	19,672	2,413
Croverro Energy Ltd.	0.0%	12	62	-	52	12	49	472	12
Petrocapita GP I Ltd.	91.8%	11	63	-	52	11	50	15,409	137
Incipient Exploration Ltd.	0.0%	9	64	-	52	9	52	1,659	9
RON Resources Ltd.	99.0%	9	65	7	49	1	65	2,112	868

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Company	Gas cons	Gas flared + vented ($1000 m^3$)	Gas flared + vented rank	Gas flared ($1000 m^3$)	Flare rank	Gas vented ($1000 m^3$)	Vent rank	Oil prod (m^3)	Sol'n gas prod ($1000 m^3$)
Jast Energy Ltd.	79.3%	8	66	8	47	-	69	1,406	39
Marlboro Energy Ltd.	99.7%	7	67	6	50	1	67	11,726	2,150
Unit 18 Corp.	98.7%	5	68	-	52	5	56	13,302	402
Rally Canada Resources Ltd.	95.4%	5	69	5	51	-	69	631	110
Pennine Petroleum Corporation	98.4%	5	70	-	52	5	57	582	285
Perisson Petroleum Corporation	81.1%	4	71	-	52	4	59	2,042	19
DEL Canada GP Ltd.	99.9%	2	72	-	52	2	61	1,452	1,950
Roswell Petroleum Corporation	0.0%	2	73	-	52	2	62	488	2
Sahara Energy Ltd.	0.0%	2	74	-	52	2	63	539	2
Gunnarr Resources Inc.	98.5%	0	75	-	52	-	68	856	26
Trident Exploration (Alberta) Corp.	100.0%	-	76	-	52	-	69	16	909
Mooncor Energy Inc.	0.0%	-	76	-	52	-	69	-	-
Northern Utilities (Sask.) Ltd.	100.0%	-	76	-	52	-	69	264	1
Red Wing Oil Inc.	0.0%	-	76	-	52	-	69	-	-
Logic Energy Ltd.	100.0%	-	76	-	52	-	69	3,788	454
Highwood Oil Company Ltd.	0.0%	-	76	-	52	-	69	-	-
Ener T Corporation	100.0%	-	76	-	52	-	69	5,908	54
DCP Oil Corp.	100.0%	-	76	-	52	-	69	3,046	3,432
Wescan Energy Corp.	100.0%	-	76	-	52	-	69	5,056	2,501
Sojourn Energy Inc.	0.0%	-	76	-	52	-	69	-	-
Turnstone Energy Inc.	100.0%	-	76	-	52	-	69	247	34
Cenovus Energy Inc.	0.0%	-	76	-	52	-	69	-	-
Knowledge Energy Inc.	100.0%	-	76	-	52	-	69	2,924	34
Brahma Resources Ltd.	100.0%	-	76	-	52	-	69	633	66
Kasten Energy Inc.	100.0%	-	76	-	52	-	69	1,113	192
Wildcat Rentals Ltd.	100.0%	-	76	-	52	-	69	1,162	4
Broadview Energy Ltd.	100.0%	-	76	-	52	-	69	13,283	3,065
Outlier Resources Ltd.	100.0%	-	76	-	52	-	69	4,630	5,976
Marquee Energy Ltd.	100.0%	-	76	-	52	-	69	111	301
Zeal Energy Inc.	100.0%	-	76	-	52	-	69	2,265	221
Pembina NGL Corporation	0.0%	-	76	-	52	-	69	-	-
Signa Oilfield Canada Inc.	0.0%	-	76	-	52	-	69	-	-
Encana Corporation	0.0%	-	76	-	52	-	69	-	-
Grand Rapids Petroleum Ltd.	0.0%	-	76	-	52	-	69	-	-
Forent Energy Ltd.	0.0%	-	76	-	52	-	69	-	-

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Company	Gas cons	Gas flared + vented (1000 m^3)	Gas flared + vented rank	Gas flared (1000 m^3)	Flare rank	Gas vented (1000 m^3)	Vent rank	Oil prod (m^3)	Sol'n gas prod (1000 m^3)
Innes Oilfield Services Ltd.	0.0%	-	76	-	52	-	69	-	-
Big Lake Energy Ltd.	0.0%	-	76	-	52	-	69	28	-
Totals for Wainwright	**88.4%**	**124,102**		**62,959**		**61,150**		**6,460,658**	**1,073,142**

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