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CT-2021-002

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CT-2021-002

OTTAWA, ONT.

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THE COMPETITION TRIBUNAL

IN THE MATTER OF the *Competition Act*, R.S.C. 1985, c. C-34, as amended;

AND IN THE MATTER OF the acquisition by Secure Energy Services Inc. of all of the issued and outstanding shares of Tervita Corporation;

AND IN THE MATTER OF an application by the Commissioner of Competition for one or more orders pursuant to section 92 of the *Competition Act*.

BETWEEN:

THE COMMISSIONER OF COMPETITION

Applicant

– and –

SECURE ENERGY SERVICES INC.

Respondent

**AFFIDAVIT OF RORY JOHNSTON
(AFFIRMED FEBRUARY 24, 2022)**

1. My name is Rory Johnston. I am the author of the Commodity Context newsletter and am currently employed by Melancthon Capital, a family investment office operating under the business name Price Street.
2. My area of expertise is global commodity markets with a focus in the North American energy industry and been researching the sector for a decade. I spent 6 years covering and eventually leading commodity market research in Scotiabank's

Economics Department, where I oversaw Scotiabank’s commodity price forecasts, sat on Scotiabank’s credit committee for commodity-related exposures, advised Scotiabank executives and clients on commodity market developments, and communicated Scotiabank’s commodity market views to media, industry, and other external audiences. Since leaving Scotiabank in January 2020, I have assisted in public and private investment portfolio strategy with Price Street, a family investment office, and in June 2021 began publishing Commodity Context, an independent commodity market research newsletter, to help assess ongoing developments in global commodities markets.

- 3. I have been asked by the Commissioner of Competition to prepare a report providing my opinion on the levels of oil production in the Western Canadian Sedimentary Basin in the next 2-3 years, 5 years, and 10 years.
- 4. I attach as Exhibit “A” to this affidavit my report setting out my opinion.
- 5. I attach as Exhibit “B” to this affidavit my curriculum vitae.
- 6. I attach as Exhibit “C” to this affidavit my Acknowledgement of Expert Witness.

Affirmed remotely by Rory Johnston at the)
 City of Toronto in the Province of Ontario,)
 before me in the City of Ottawa in the Province)
 of Ontario on February 24, 2022 in accordance)
 with O. Reg. 431/20, Administering Oath or)
 Declaration Remotely.)

 Commissioner for Taking Affidavits
 Mally Kelly

 Rory Johnston



A handwritten signature in blue ink, appearing to be 'M. Johnson', is written over a horizontal line.

**This is Exhibit A to the Affidavit of
Rory Johnson
Affirmed on February 24, 2022**

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EXPERT REPORT OF RORY JOHNSTON

February 25, 2022

Table of Contents

I. Assignment.....	1
II. Summary of Opinion.....	1
III. Overview.....	2
IV. Factors Affecting Growth of Oil Production in the WCSB	4
a) No Resource Availability Constraint.....	4
b) Price Is the Biggest Driver	5
c) Tertiary Factors.....	5
V. Canadian Oil Supply Cost Trends.....	5
VI. Assumptions	7
a) Price.....	7
c) Differential and Egress.....	7
VII. Canadian Oil Production Forecast Comparison	8
IX. Conclusion.....	10

Assignment

1. I have been asked by the Competition Bureau (“Bureau”) to provide my expert opinion on the outlook for oil production in the Western Canadian Sedimentary Basin (“WCSB”) over the next decade. Specifically, I have been asked to provide my opinion on the levels of oil production in the WCSB over a period of 2-3 years, 5 years, and 10 years.

Summary

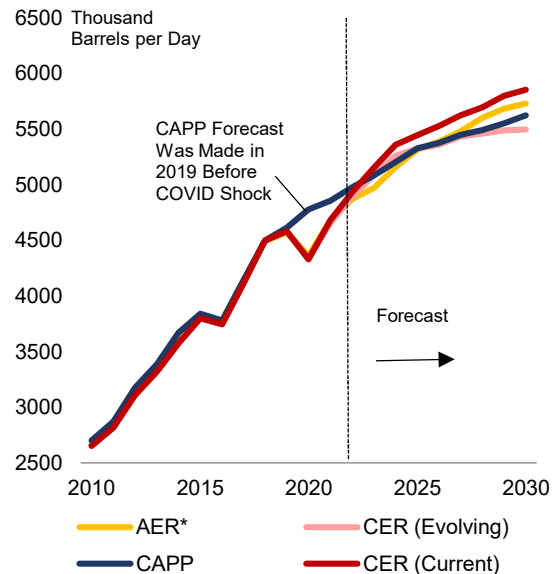
2. The focus of this report is oil production in the WCSB.
3. After assessing a range of production Forecasts from three major regulatory and industry bodies—namely the Alberta Energy Regulator (“AER”), the Canadian Energy Regulator (“CER”), and the Canadian Association of Petroleum Producers (“CAPP”)¹, my opinion is that it is highly unlikely that WCSB oil production will peak before 2030.
4. There is broad agreement amongst the assessed Forecasts from the CER, AER, and CAPP that production will continue to gradually increase through the end of 2030; only one scenario that foresees extremely low oil prices, which are highly unlikely in my opinion, sees WCSB oil production peak in the early 2030s. Indeed, given the relatively low prices assumed by the Forecasts even in their base case outlooks, in my opinion there is a higher probability that oil production in the WCSB exceeds rather than undershoots the average of the base case forecasts under consideration.
5. In this report I first provide an overview and then discuss the methodology for comparing production Forecasts. Following the methodology, I outline the primary factors that will determine the pace of WCSB oil production over the coming decade. I then examine production cost trends to provide a sense of the economic viability of production growth at various price levels. Subsequently, I outline core assumptions made by the various Forecasts and then compare the Forecasts between sources and scenarios. At the end of my report, I provide my concluding comments.
6. I reserve the right to revise my opinion if new information or data become available in the future.

¹ These Forecasts from these three regulatory and industry bodies are the public outlooks most commonly referenced and relied upon by the Canadian oil industry.

Overview

7. Canada is the world's fourth-largest crude oil producer and holds the third-largest proven reserves of crude oil². The broad WCSB producing region is concentrated in Alberta and Saskatchewan but includes some output from British Columbia and Manitoba. Oil in the WCSB includes reservoirs of conventional oil, extracted via traditional drilling and pumping methods, and the oil sands, from which bitumen is extracted through in-situ³ (i.e., underground) or surface mining methods.⁴ Production has risen steadily for decades before accelerating materially in the 2010s.
8. Between 1990 and 2009, Canadian crude oil production growth averaged roughly 50 thousand barrels per day ("kbpd") annually. Following an influx of investment associated with the "peak oil" supply sufficiency fears⁵ and price rallies of the mid-2000s, the growth rate of Canadian oil production soared more than three-fold to 170 kbpd between 2010 and 2019.⁶
9. Oil production growth in Canada and many other regions temporarily flatlined when faced with the combination of the COVID-19 negative demand shock⁷, resultant collapse in global oil prices, and acute forward uncertainty (hereafter "COVID shock"). Regardless, the WCSB continued to set all-time high production records during the peak producing winter months⁸.

Chart 1: Total WCSB Liquids Production Outlook Comparison



Sources: CER Forecast 2021, AER Forecast 2021, CAPP Forecast 2019.

Note: *AER Forecast only covers oil production in Alberta and has been combined with non-Albertan production from CER and CAPP for comparison. More information in Methodology section.

² Natural Resources Canada, Crude Oil Industry Overview. Accessed from: <https://www.nrcan.gc.ca/our-natural-resources/energy-sources-distribution/clean-fossil-fuels/crude-oil-industry-overview/18078>

³ Alberta Energy Regulator, In Situ Recovery. Accessed from: <https://www.aer.ca/providing-information/by-topic/oil-sands/in-situ-recovery>

⁴ Alberta Energy Regulator, Oil Sands Mining. Accessed from: <https://www.aer.ca/providing-information/by-topic/oil-sands/oil-sands-mining>

⁵ Bardi, Ugo. Energy Research & Social Science. Peak oil, 20 years later: Failed prediction or useful insight? Accessed from: <https://www.sciencedirect.com/science/article/pii/S2214629618303207>

⁶ Historical Canadian oil production data is split between two Statistics Canada tables. The first is for the period between 1985 and 2016 and can be found here: <https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=2510001401>; the second is for the period between 2016 and present, which can be found here: <https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=2510006301>

⁷ The IEA estimates that at the peak of the initial COVID-related mobility restrictions, oil demand fell by 20% versus pre-COVID levels. See: <https://www.iea.org/reports/global-energy-review-2021/economic-impacts-of-covid-19>

⁸ Production levels showing those new records in 2020 and 2021 can be accessed here: https://static.aer.ca/prd/documents/sts/st3/Oil_2020.pdf and https://static.aer.ca/prd/documents/sts/st3/Oil_current.pdf

10. Based on Forecasts in Table 1, and my analysis, it is my opinion that over the next decade, WCSB oil production growth is expected to begin accelerating again as the market gains more post-COVID certainty. However, it is unlikely

Table 1: WCSB Total Liquids Production Outlook Comparison

All Scenarios Show Growth Continuing Through 2030

(kbpd)	2010	2015	2020**	2025	2030
CER (Current)	2,650	3,799	4,330	5,449	5,856
AER	2,665	3,808	4,359	5,315	5,734
CAPP**	2,699	3,840	4,777	5,326	5,625
CER (Evolving)	2,650	3,798	4,333	5,323	5,500
Average**	2,666	3,811	4,340**	5,353	5,679

** CAPP forecast made in 2019 before COVID shock and was removed from 2020 average calculation

Sources: CAPP Forecast 2019, CER Forecast 2021, AER Forecast 2021.

to reach the heady pace of the 2010-2019 investment boom. Growth in the coming decade will predominantly come from incremental “brownfield” expansions of existing facilities rather than the construction of new “greenfield” projects like those that characterized the prior investment impulse⁹. In my opinion, this will yield average annual growth of around 100 kbpd over the coming decade, as illustrated in Chart 1 above. In a pessimistic scenario where market, political, or idiosyncratic factors turn out to be less favourable than those assumed in these Forecasts, it is my opinion that WCSB liquids production would plateau in the early-2030s followed by a gradual decline rather than a material and earlier falloff in basin output.

Methodology and Source Notes

11. My opinion is informed by the published Canadian oil production forecasts from AER, CER, and CAPP. The publication of these four (4) scenarios across three (3) Forecasts spans a period of 3 years (CAPP in 2019¹⁰, AER in 2021¹¹, and CER in 2021¹²) which is why the histories diverge slightly around that time; however, all three forecasting bodies present similar medium- and longer-term outlooks for the WCSB production.

12. It is important to note that the most recent forecasts from CAPP were published in 2019, prior to the COVID shock to global oil markets; as such, CAPP’s forecasts are slightly higher than the CER and AER in the initial forecast years given lower realized production in 2020 and 2021. However, it is my opinion that over the medium-term (3-5 years) these effects will fade as assumed project timelines between the three Forecasts converge.¹³

⁹ J. Peter Findlay, The Future of the Canadian Oil Sands: Growth potential of a unique resource amidst regulation, egress, cost, and price uncertainty. Accessed from: <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2016/02/The-Future-of-the-Canadian-Oil-Sands-WPM-64.pdf>

¹⁰ Canadian Association of Oil Producers, 2019, Crude Oil Forecast, Markets, and Transportation. Accessed from: <https://www.capp.ca/resources/crude-oil-forecast/> [CAPP Forecast].

¹¹ Alberta Energy Regulator (AER), June 2021, ST98: Alberta Energy Outlook. Accessed from: <https://www.aer.ca/providing-information/data-and-reports/statistical-reports/st98> [AER Forecast].

¹² Canada Energy Regulator (CER), 2021, Canada’s Energy Future 2021. Accessed from: <https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2021/index.html> [CER Forecast].

¹³ These Forecasts typically work on incremental growth from a base year. Given that CAPP’s 2020 base was much higher than actually occurred due to the COVID shock, it starts that growth from a higher point; however, the forecasts from the AER and CER both have steeper growth and eventually converge with the higher outlook from CAPP.

13. 2020 is the latest full calendar year for which production data was available for the AER and CER Forecasts, published in 2021; as such, it will be treated as the base year against which production growth will be assessed.
14. The other important consideration relates to the CER Forecast which provides two different scenarios. The “Current Policies” scenario takes existing climate legislation and regulatory frameworks and assumes they remain stable through the forecast horizon (e.g., Canadian carbon taxes advance along their current schedule¹⁴), whereas the “Evolving Policies” scenario assumes ever-tighter climate policies both in Canada and around the world¹⁵—the biggest difference between the scenarios as they pertain to Canadian production forecasts relates to the lower assumed price of oil¹⁶ given lowered global demand assumptions.
15. The outlooks from the CER, AER, and CAPP were chosen because they are the public industry forecasts that are, in my opinion, most commonly used by both the oil industry itself as well as analysts of the industry to benchmark future base case expectations.
16. Below I describe the similarities and differences between the outlooks and assumptions in the three forecasts. It is important to note that the AER Forecast only covers oil production in Alberta. To arrive at an approximation of the AER’s outlook for the entire WCSB, I used the average of the CER’s Current Policies scenario and the CAPP’s Forecast and combined it with the AER’s outlook for Alberta conventional and oil sands production.
17. All production and price data, both historical and forecast, are taken directly from the named source unless otherwise specified.¹⁷ This is especially important to note with the CER’s price forecasts, which are expressed in real 2020 dollars—this explains why the histories don’t line up in the price chart.

Factors Affecting Growth of Oil Production in the WCSB

18. In my opinion, the following factors are relevant in analyzing the growth of oil production in the WCSB.
 - a. Significant oil reserves: Growth of oil production will not be constrained by resource availability in the WCSB. With 171 billion barrels of proven oil reserves¹⁸, there is

¹⁴ Government of Canada, Update to the Pan-Canadian Approach to Carbon Pollution Pricing 2023-2030, accessed via: <https://www.canada.ca/en/environment-climate-change/services/climate-change/pricing-pollution-how-it-will-work/carbon-pollution-pricing-federal-benchmark-information/federal-benchmark-2023-2030.html>

¹⁵ Canadian Energy Regulator, Canada Energy Future 2021, Page 2, Accessed from: <https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2021/canada-energy-futures-2021.pdf>

¹⁶ The current policies scenario assumes a flat Western Texas Intermediate (“WTI”) price of \$66 per barrel (real 2020 dollars) vs the evolving scenario that assumes prices fall to \$48.50 per barrel (real 2020 dollars) by 2030.

¹⁷ WTI futures curve was derived from annual Bloomberg fair price calendar year quotes accurate as of February 21, 2022. Current futures data for comparison can be accessed from: <https://www.cmegroup.com/markets/energy/crude-oil/light-sweet-crude.quotes.html>

¹⁸ Natural Resources Canada. Oil Resources. Accessed from: <https://www.nrcan.gc.ca/energy/energy-sources-distribution/crude-oil/oil-resources/18085>

ample resource for growth given sufficiently attractive market economics, enabling regulatory environment, and egress capacity from the WCSB to consuming regions like the United States and overseas markets, as described in the following paragraphs.

- b. **Price Is the Biggest Driver:** The global price of crude oil is the single-largest determinant of the WCSB's growth prospects over the next decade. The price of oil is a difficult variable to accurately forecast in the best of times. This challenge is exacerbated by significant historic price fluctuations over the past two years.¹⁹ With WTI prices in the \$90-100 per barrel range at time of writing²⁰, in my opinion the most likely scenario sees oil prices ease over the coming year and resettle in the \$70-80 per barrel range over the next 5 years—which is higher than the assumed price outlooks of the scenarios considered in this report. This is higher than what was typically considered sustainable in the pre-COVID oil market; however, it is possible that prices will remain far higher than that range if the previously rapid pace of US shale production fails to rematerialize²¹.
- c. **Tertiary Factors:** Additional factors that will affect the pace of growth include (i) the availability of pipelines and alternative egress, (ii) the industry's disposition toward long-cycle sources of supply like the oil sands, and (iii) the strictness of domestic Greenhouse Gas ("GHG") emissions policies coupled with industry efforts to abate those emissions (i.e., Carbon Capture, Utilization, and Sequestration ("CCUS")). I further describe these factors below.²²

19. I consider these factors where appropriate in my analysis below.

Canadian Oil Supply Cost Trends

20. The operating costs associated with oil production are important when considering the long-term production outlook because they inform the effective sensitivity of the WCSB's oil production to global oil prices.

¹⁹ The oil market is still in shock after going through its worst-ever bust after closing at a negative price for the first time in history on April 20, 2020 and a historic boom where global Brent Crude prices reached \$100 per barrel for the first time in more than 7 years.

²⁰ Energy Information Administration, Open Datta, Cushing, OK WTI Spot Price FOB Daily. Accessed from: <https://www.eia.gov/opendata/qb.php?sdid=PET.RWTC.D>

²¹ Prior to the COVID-19 pandemic, US tight oil (i.e., shale) producers demonstrated a willingness to grow production by millions of barrels per day each year with prices far lower than they are today but in the process made 100s of billions of dollars in investments that failed to return; today, the US shale producers seem far less willing to grow at all costs, which means that in all cases all else equal oil prices are going to be sustainably higher than what was considered realistic prior to the pandemic.

²² Another tertiary factor could include access to capital considering a broad trend amongst international producers and financial institutions to divest from oil sands financing on ESG grounds, though increasingly these companies appear likely to be able to drive incremental growth from generous operational cashflow given the high price environment, in my opinion.

21. Operating costs, as assessed by the Alberta Government's Treasury Board and Finance in 2019²³, for both mining and in-situ projects fell materially following the oil price collapse of 2014—from C\$34.9 per barrel in 2014 to C\$27 per barrel in 2018 for mining, and from C\$18.1 per barrel in 2014 to \$10.9 per barrel in 2018 for in-situ production
22. While some of that cost reduction was due to the lower price of natural gas and thus vulnerable to commodity price volatility like we are currently seeing, the bulk of cost reductions (84% in mining, 56% for in-situ) were related to broader supporting supply chain issues including those related to labour, services contracting and equipment rentals, and supplies and materials. These supply chain costs are far more enduring than commodity price inputs and reflect the general easing of the exceptionally tight Alberta labour and services market that resulted from the acute influx of investment dollars from the mid-2000s through the mid-2010s.²⁴
23. The capital expenditures required to sustain ongoing oil sands production (i.e., "sustaining capex") declined similarly: from C\$9 per barrel in 2015 to C\$4.6 per barrel in 2018 for in-situ projects and from C\$6 per barrel to C\$3.8 per barrel for mining projects. The breakeven price of new construction today has declined substantially from 2013 when it had risen to more than \$80 per barrel, though it still remains relatively high by global standards at around \$50-55 per barrel (factoring for a 10% rate of return hurdle).²⁵
24. Breakeven production costs for conventional crude oil in Alberta, factoring for a 10% rate of return as assessed by the AER²⁶, range from C\$35.41-86.40 per barrel. However, Montney horizontal oil wells are an especially high-cost outlier; removing Montney horizontal oil wells²⁷ from the sample lowers the range to C\$35.41-63.07 per barrel and costs fall further for that sample to C\$33.29-49.75 per barrel if you assume a multi-well pad with 4 wells, which better reflects the type of conventional investments that we will see over the coming years, in my opinion.
25. Considering the material cost declines witnessed in oil sands production, in my opinion it is reasonable to expect steady incremental growth in WCSB oil production through the end of 2030. My opinion would hold even with oil prices in the \$50-70 per barrel range, much lower than the current price levels above \$90 per barrel.

²³ Alberta Treasury Board and Finance, July 5, 2019, Economic Spotlight: Oil Sands Industry Adjusts to Lower Oil Prices, Accessed from: <https://open.alberta.ca/dataset/13ab3f73-6e4e-4aac-b56b-bff3880aa65/resource/e5c850e9-d479-494c-9343-284320d10ac7/download/2019-06-economic-spotlight.pdf>

²⁴ ibid

²⁵ ibid

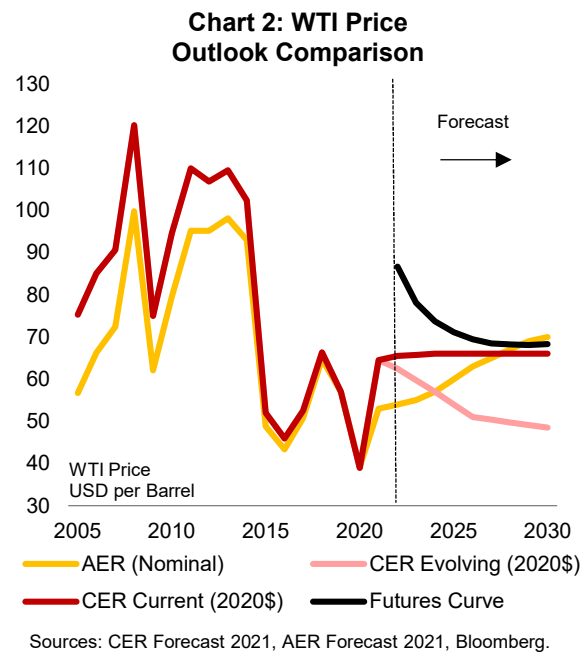
²⁶ Alberta Energy Regulator, Crude Oil Supply Costs. Accessed from: <https://www.aer.ca/providing-information/data-and-reports/statistical-reports/st98/crude-oil/supply-costs>

²⁷ In my opinion this is a reasonable adjustment to make given that future Montney production is expected to be dominated by natural gas liquids rather than crude oil. See: <https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2018-natural-gas-liquids/index.html?=&wbdisable=true>

Assumptions

26. The forecasts I have analyzed all rely on a series of assumptions; I have expanded on the two most important assumptions below. All assumptions are imperfect but explicitly stated assumptions as found in many of these forecasts allow a better understanding of the presumed relationship between variables—for example, investment and price. This allows an observer to increase or decrease the expected production outcome if a major variable, for example price, was to materially shift from the scenario assumption.

27. Price: As can be seen in Chart 2, the AER Forecast's 2020 base case assumed that WTI prices would remain below \$60 per barrel until 2025 and then below \$70/ per barrel until 2030. The CER Forecast holds prices flat at \$66 per barrel (2020 dollars) in its Current Policies scenario, while in its Evolving Policies scenario the price falls steadily from \$66 to \$48.50 per barrel (2020 dollars) by 2030. While the CAPP Forecast does not explicitly state what price it assumes, in my opinion it is reasonable to assume that it is similar to the CER Forecast's Current Policies scenario of \$66 per barrel (2020 dollars) given the similar production growth outlook between CAPP's forecast and the CER's Current Policies scenario. WTI prices that remain flat in the mid-\$60s per barrel through 2030 would provide steady returns according to the Alberta Treasury Board cost estimates discussed above and are ample reason for steady production expansion well into the future, which is exactly what three of the four scenarios show. The CER's Evolving Policies scenario shows production growth mostly coming to an end by 2030 but recall that this scenario assumes oil prices fall to less than half of current levels by 2030, a highly unlikely commodity price outcome in my opinion. The reasonably steady pace of growth would not over-stress service sector supply chains and cause cost inflation, in my opinion. These forecasts, the higher of which was \$66 per barrel in 2022, are far below current spot prices which have traded as high as \$95 per barrel already in 2022. The CAPP Forecast does not report on the price assumption for WTI.



28. Differential and Egress: Oil prices are quoted based on different benchmarks that reflect both quality-related and geography-related attributes. West Texas Intermediate (“WTI”) is a benchmark representing light sweet oil produced in Cushing, Oklahoma, while Western Canadian Select (“WCS”) represents a heavier, sour stream of diluted bitumen priced in Hardisty, Alberta. Since WCS is heavier and further from transportation to main markets, WCS is priced at a discount to WTI.²⁸ The WCS differential has been an economic headwind

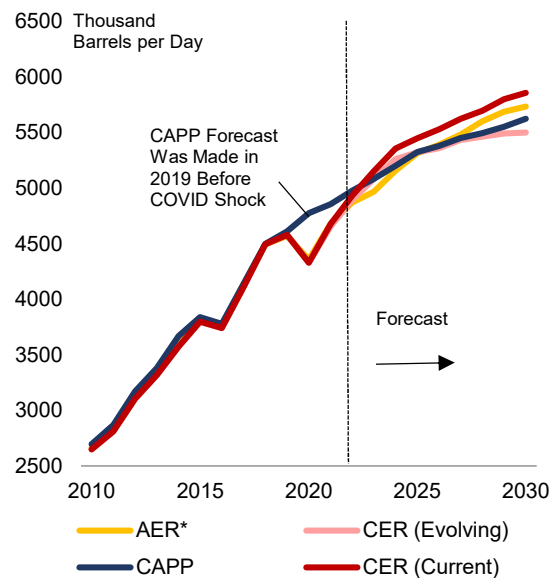
²⁸ Alberta Energy, Not All Oil Is Equal: Explaining the Differences. Accessed from: <https://open.alberta.ca/dataset/5e6f425a-e1c7-441a-9aa0-64890e4ecade/resource/b7080f88-f748-45f0-8294-81d32a7a834c/download/13-Explaining-oil-price-differentials-formatted.pdf>

for the WCSB industry over the past decade due to the acute mismatch between the pace of WCSB production growth and the pace of pipeline capacity growth. High profile battles over pipeline construction have been a feature of the WCSB oil industry for much of the past decade. The CER Forecast assumes the price differential between the WTI and WCS crude benchmarks to be flat at \$12.50 per barrel, which means that the CER outlooks do not factor for any material pipeline capacity issues or egress constraints over the next decade. The AER Forecast assumes longer-term differentials above \$20 per barrel in their outlook, which appears to factor in oil-by-rail services necessary to transport the margin WCSB barrel to market. The CAPP Forecast does not report on the price differential between WTI and WCS. In my opinion, the combination of now-slower oil production growth relative to 2010-2019, the start up of two new pipelines (Line 3, Trans Mountain Expansion Project), and continued debottlenecking of the Enbridge Mainline will provide adequate pipeline capacity and reduce the likelihood that we see another acute WCS-WTI differential blowout like the one last experienced in late-2018²⁹.

Oil Production Forecast Comparison

29. As I explained above, this report focuses on four (4) scenarios across three (3) major Forecasts: the CAPP Forecast, the CER Forecast, and the AER Forecast.
30. All four scenarios project growth averaging between 85-131 kbpd annual growth between 2021 and 2030 as seen in Chart 3 and growth is driven predominantly by in-situ oil sands expansion while activity in both oil sands mining and conventional production is seen plateauing after a few more years of growth.
31. In 2019 before the COVID shock threw markets into temporary disarray, oil production in the WCSB was approximately 4.7 million barrels per day (“MMbpd”).³⁰ Out of the total production, 3 MMbpd (67%) was oil sands production, of which 52% was produced in-situ and 48% was extracted via surface mining. The balance of WCSB oil production consisted of ~1 MMbpd (23%) conventional crude oil and 0.43 MMbpd (10%) of ultra-light condensate, which is typically used to dilute bitumen into more marketable heavy crude blends.

Chart 3: Total WCSB Liquids Production Outlook Comparison



Sources: CER Forecast 2021, AER Forecast 2021, CAPP Forecast 2019.

Note: *AER Forecast only covers oil production in Alberta and has been combined with non-Albertan production from CER and CAPP for comparison. More information in Methodology section.

²⁹ Healing, Dan. The Canadian Press. Canadian oil price discounts costing economy billions of dollars. Accessed from: <https://globalnews.ca/news/4652854/canadian-oil-price-discounts-capp-october-2018/>

³⁰ Historical Canadian oil production data is split between two Statistics Canada tables. The first is for the period between 1985 and 2016 and can be found here: <https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=2510001401>; the second is for the period between 2016 and present, which can be found here: <https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=2510006301>

32. Across the major reference cases, by 2025 in-situ bitumen production is expected to reach 1902-2014 kbpd and by 2030 reach 2245-2286 kbpd (Chart 4); bitumen mining output is expected to reach 1711-1725 kbpd in 2025 and 1753-1783 in 2030 (Chart 5); and conventional production is expected to reach 1594-1821 in 2025 and 1597-1810 kbpd in 2030 (Chart 6)³¹ In my opinion, this represents a reasonably high degree of forecast agreement, particularly regarding oil sands outlook, between these organizations given the complexity of inputs involved.

33. As an example of the impact of CER’s “Evolving Policies” scenario assumption of lower global oil prices on the production outlook, the CER’s expectation for oil sands mining output is lower relative to the “Current Policies” scenario by 70 kbpd and in-situ output by 121 kbpd by 2030. However, it is important to note that even in the CER’s evolving policies scenario total oilsands production doesn’t peak until 2032, after which production gradually declines—averaging annual reductions of 51 kbpd over the next 18 years of the forecast to 2050.³²

34. The combination of years of lower oil prices and industry preference shifting away from longer-cycle investments³³ like those in the oil

Chart 4: In-Situ Bitumen Production Outlook Comparison

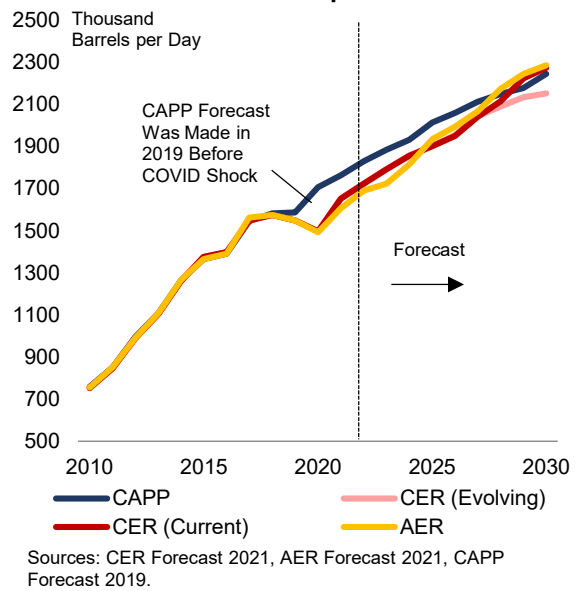
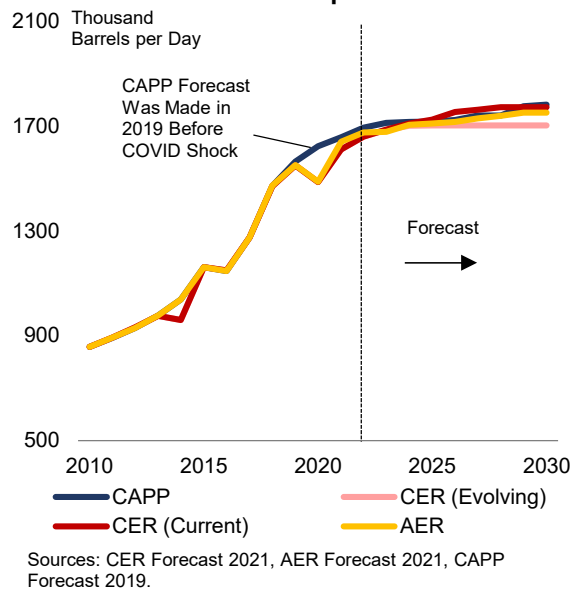


Chart 5: Mined Bitumen Production Outlook Comparison



³¹ CER Forecast, AER Forecast, CAPP Forecast.

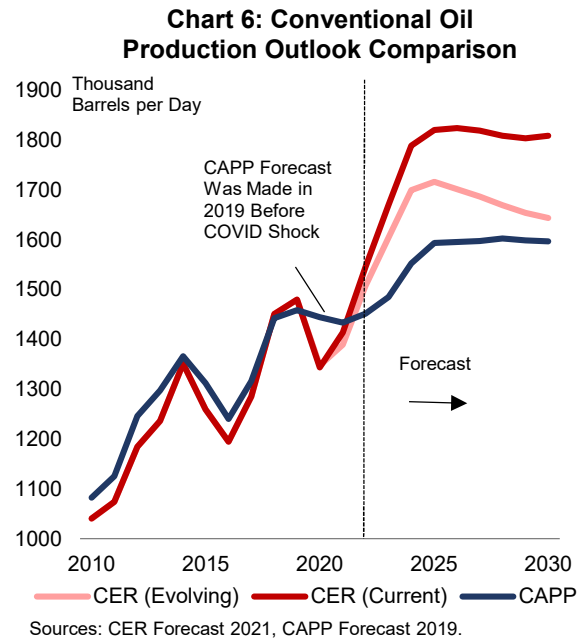
³² CER Forecast.

³³ Eckhouse, Gabe. Geoforum, 2021. United States hydraulic fracturing’s short-cycle revolution and the global oil industry’s uncertain future. Accessed from: <https://www.sciencedirect.com/science/article/pii/S0016718521002062>

sands have substantially reduced the pace of Western Canadian oil production growth. However, while the oil market is still digesting the COVID shock the outlook and futures pricing continues to improve³⁴.

Conclusion

35. In my opinion, oil production in the WCSB will continue to grow through at least the next decade. Of the four Forecast scenarios analyzed in this report, only one Forecast sees a production peak of any kind and even that occurs after 2030.³⁵ The Forecasts that explicitly state price assumptions (CER and AER) use oil price assumptions that are well below current market levels, and there are increasing signs, in my opinion, that prices may assume a structurally higher path coming out of the COVID-19 shock given a slowing of US shale responsiveness. While a lower price outlook is still possible it seems to be a reasonably low probability given my current understanding of the oil market. Risks remain tilted to the upside of longer-term oil price forecasts in the flat \$66 per barrel range like that used by the CER's Current Policies scenario or the low-but-gradually rising to \$70 per barrel forecasts used by the AER.



³⁴ Given the rise in crude prices, the upward shift in the forward curve, and the material gains in the equity prices of the dominant WCSB producers.

³⁵ The CER's "Evolving Policies" scenario maintains an extremely pessimistic low-price outlook, and even with this scenario, WCSB production only peaks in 2032 (outside the scope of this investigation) before gradually declining thereafter.

A handwritten signature in blue ink, appearing to be 'Rory Johnston', is written over a horizontal line.

**This is Exhibit B to the Affidavit of
Rory Johnston
Affirmed on February 24, 2022**

RORY JOHNSTON

Toronto, Ontario | (416) 844-4133 | rjohnston@pricestreet.ca

SUMMARY

Rory Johnston is a researcher and widely quoted expert in global commodities markets, specializing in the North American energy industry. He is currently working on a variety of research and investment projects including [Commodity Context](#), an independent commodity market research platform, as well as both public market portfolio and private equity strategy at Price Street, a family office. Rory previously led commodity economics research at a major, resource-focused Canadian bank where he advised executives and clients, sat on the bank's credit committee for commodity-related sectors, and oversaw the bank's official commodity price forecasts.

SKILLS

- Macroeconomic and energy sector modelling
- Data Management
 - Python Development
 - Pandas
 - PostgreSQL
 - Web Scraping (BeautifulSoup & Selenium)
 - Machine Learning (Tensor Flow & Keras)
- Data Visualization
 - Matplotlib
 - Cartopy
 - Tableau
- Media Communication
 - Featured in the Financial Times, BNN, Globe and Mail, Wall Street Journal, CBC, Financial Post, etc.

EDUCATION

Munk School of Global Affairs,
University of Toronto
Toronto, Ontario
Master of Global Affairs, Global
Capital Markets Stream, 2014

Queen's University
Kingston, Ontario
Bachelor of Arts (Hons.),
Political Studies, 2012

EMPLOYMENT EXPERIENCE

Founder, Commodity Context
Toronto, Ontario | June 2021–Present

- Publishing independent, chart-forward commodity market research, including price and fundamental analysis, model creation and communication, and scenario building
- Building innovative, open- or primary-sourced databases and analytical suites on key commodities to support unique analysis and market commentary
- Engaging regularly with local and global media to explain ongoing commodity markets trends

Managing Director & Market Economist, Price Street
Toronto, Ontario | January 2020–Present

- Supporting public equities portfolio strategy and managing external cross-asset fund managers
- Managing portfolio of oil and gas-related public equities
- Providing research and data services for private companies within the portfolio, focused on the natural language processing technology and controlled environment (i.e., vertical) agriculture
- Maintaining economic outlooks and briefing colleagues on ongoing market developments to support short- and long-term strategic decision-making on key investment activities

Lecturer
Munk School of Global Affairs and Public Policy, University of Toronto
Toronto, Ontario | January 2022–Present.

- Global Markets Capstone, second year graduate program required consulting project

Commodity Economist, Scotiabank
Toronto, Ontario | May 2014–January 2020

- Managed commodity price harmonization & forecasting through Scotiabank's operations
- Published the Scotiabank Commodity Price Index as well as quarterly price outlooks and reports on issues of public or market importance in the commodity sector
- Advised Scotiabank executives and clients on risks to commodity prices as well as macroeconomic risks likely to emerge from the commodity sector
- Served as Scotiabank's primary external spokesperson for communicating official bank commodity price forecasts to media, industry conferences, and other external audiences.
- Sat on Scotiabank's Senior Credit Committee for commodity-related sectors, providing a commodity-price perspective to sector lending limits and idiosyncratic credit discussions.
- Managed departmental participation in Enterprise Stress Testing operations

RORY JOHNSTON

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SELECTED PUBLICATIONS, PRESENTATIONS, AND MEDIA

- New markets boost Canada's oil exports, BNN, Jan 13, 2022 (video [link](#))
- Baby, It Ain't Cold Outside—Yet, Commodity Context, December 14, 2021 ([link](#))
- Outlook 2022: Canadian Oilpatch Set for “Cashflow Sweet Spot”, Financial Post, December 21, 2021 (video [link](#))
- US Shale Patch's Lackluster Recovery is a Problem for the Post-COVID Oil Market, Commodity Context, November 30, 2021 ([link](#))
- OPEC isn't nimble and responding to quick breaks like this are difficult, BNN, November 26, 2021 (video [link](#))
- Sorry, Biden: Lower Oil Prices Today Would be a Pyrrhic Victory, Commodity Context, November 18, 2021 ([link](#))
- Widening WCS differential is split into two parts, transport & quality, BNN, November 11, 2021 (video [link](#))
- Canadian Crude Discount Rising Anew, Commodity Context, November 10, 2021 ([link](#))
- Winter NatGas Inventories: Choose Your Temperature Adventure, Commodity Context, November 3, 2021 ([link](#))
- Natural Gas Inventories Lower Than They Appear, Commodity Context, October 19, 2021 ([link](#))
- Fly, You Fools: Oil's Uneven Demand Recovery, Commodity Context, October 6, 2021 ([link](#))
- Canadian Crude in Context, NOIA Conference, St John's, Newfoundland & Labrador, September 21, 2021
- The Great Steel Smelt Up, Commodity Context, September 17, 2021 ([link](#))
- Hot Gas Summer, Commodity Context, August 12, 2021 ([link](#))
- OPEC+ Controls the Oil Market For Better or Worse, Commodity Context, July 8, 2021 ([link](#))
- Scotiabank Commodity Price Index, Scotiabank, 45 editions, April 2016–January 2020 (e.g., [here](#) and [here](#))
- Scotiabank Quarterly Commodities Outlook, Scotiabank, 14 editions, July 2016–January 2020 (e.g., [here](#) and [here](#))
- Canadian Oil Production Outlook, presentation to OPEC Technical Committee, Vienna, Austria, Nov 26, 2019.
- Line 3 Delay Further Complicates Western Canadian Oil's Near-Term Takeaway Outlook, Scotiabank, March 3, 2019 ([link](#))
- Alberta Government Cuts Provincial Oil Output, Scotiabank, December 3, 2018 ([link](#))
- Shut In? Assessing the Merits of Government Supply Intervention in the Alberta Oil Industry, Scotiabank, Nov 21, 2018 ([link](#))
- Trans Mountain Storm Clouds Darken Outlook for Canadian Oil Market Access, Scotiabank, August 31, 2018 ([link](#))
- Pipeline Approval Delays: the Costs of Inaction, Scotiabank, Feb 20, 2018 ([link](#))

A handwritten signature in blue ink, appearing to read "Rory Johnston", is written over a horizontal black line.

**This is Exhibit C to the Affidavit of
Rory Johnston
Affirmed on February 24, 2022**

CT-2021-002

THE COMPETITION TRIBUNAL

IN THE MATTER OF the *Competition Act*, R.S.C. 1985, c. C-34, as amended;

AND IN THE MATTER OF the acquisition by Secure Energy Services Inc. of all of the issued and outstanding shares of Tervita Corporation;

AND IN THE MATTER OF an application by the Commissioner of Competition for one or more orders pursuant to section 92 of the *Competition Act*.

BETWEEN:

THE COMMISSIONER OF COMPETITION

Applicant

– and –

SECURE ENERGY SERVICES INC.

Respondent

ACKNOWLEDGEMENT OF EXPERT WITNESS

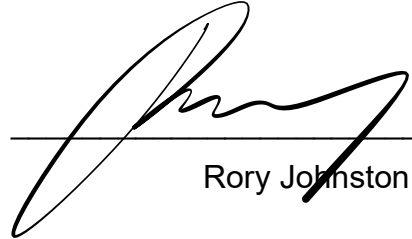
I, Rory Johnston, acknowledge that I will comply with the Competition Tribunal's code of conduct for expert witnesses which is described below:

1. An expert witness who provides a report for use as evidence has duty to assist the Tribunal impartially on matters relevant to his or her area of expertise.

2. This duty overrides any duty to a party to the proceeding, including to person retaining the expert witness. An expert is to be independent and objective. An expert is not an advocate for a party.

February 24, 2022

Date



Rory Johnston