



NORTH AMERICAN OIL FULL CYCLE COST

OCTOBER 2024

SUMMARY

This report includes an analysis of full cycle costs of new oil wells drilled during the period Q1 2022 through to Q3 2024 for major growth basins in both the US and Canada, and an updated resource cost curve.

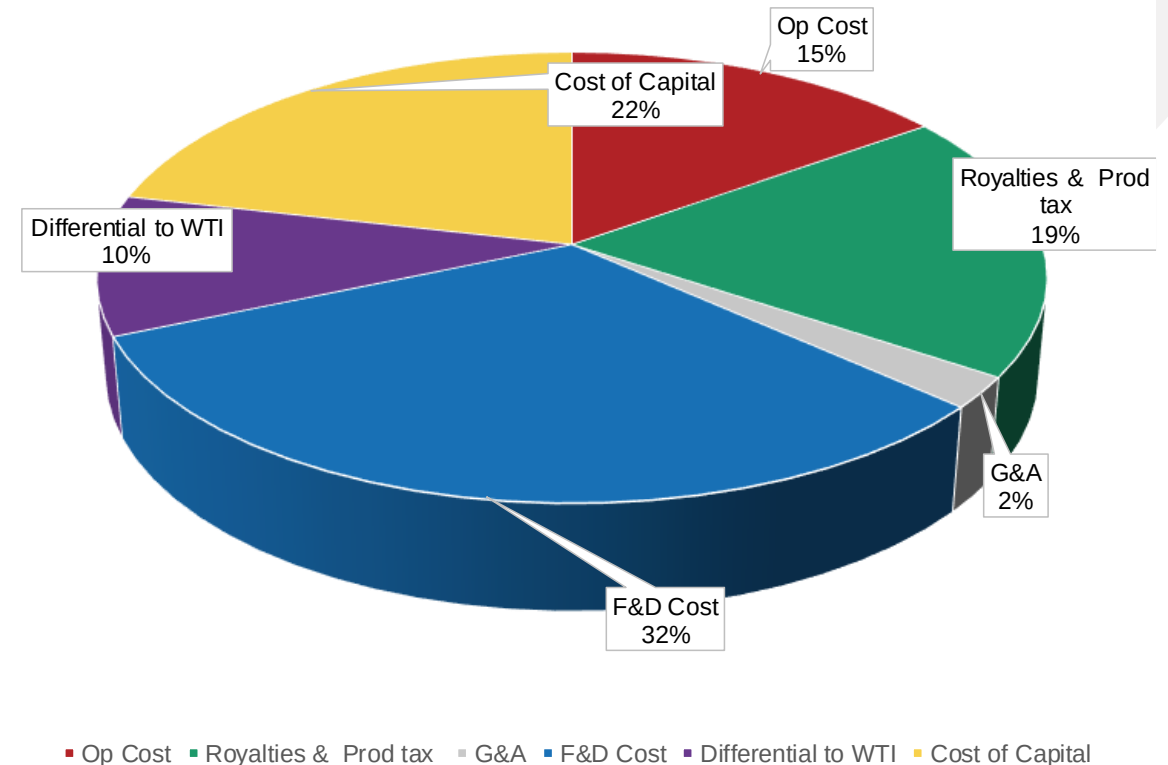
- Full-cycle cost of oil produced from US Tight Oil wells drilled during Q1 2022 through to Q3 2024 ranges from USD \$48.50/Bbl in the Permian Delaware to USD \$69.80 in Permian Central. The Permian Basin has the lowest full-cycle costs for Tight Oil wells.
- Full-cycle cost of oil produced from Permian basin wells drilled during 2018 through Q1 2021 was USD \$49/Bbl including an inflation adjustment.
- Minimum full-cycle cost for the highest productivity Tight Oil wells is slightly below USD \$40/Bbl, with remaining resources available at this cost level only 2,000 MMBbl (Permian).
- Total remaining resources for the four major US Tight Oil basins (Permian, Williston, Niobrara, and Eagle Ford) is estimated at 117,300 MMBbl; 94,900 MMBbl (or 81%) of this remaining resource has a full cycle cost at or below USD \$60/Bbl.
- Total remaining resources with initial productivity at or above 1,800 Bbl/d in Tight Oil basins was 46,000 MMBbl.
- Western Canada Tight and Conventional oil has 16,000 MMBbl of resource with full cycle cost at or below USD \$60/Bbl. Oil Sands are not included.
- Total North American resource life is 26.9 years at full cycle costs of USD \$50/Bbl or less and 37.9 years at full cycle costs of USD \$60/Bbl or less.
- Total US oil reserves were 48,300 MMBbl at year-end 2022. “Reserves” are quantities of oil that are already discovered, recoverable, and commercial, while “Resources” are an estimate of the potential amount of oil and lease condensate that can be produced.



FULL CYCLE COST COMPONENTS

- **Producer Return or Cost of Capital** – Calculated based on rate of return (15%) before income tax; equivalent to cost of capital. Individual producers' actual rates of return may be higher or lower depending on commodity price.
- **Basis Differential** – Differential between the oil price at the point of sale (in the producing basin) and West Texas Intermediate (WTI) for Oil or Henry Hub for Natural Gas.
- **Operating Cost** – Lifting and field processing costs. The cost is calculated based on information reported by producers and Inccorrys proprietary data. In most cases, producers report total operating cost per project. It is then divided by total resources for the project. Operating cost is generally very similar for different basins. Operating cost per unit of production increases if initial productivity decreases.
- **Royalties & Production Taxes** – Taxes for government and royalties for freehold owners and others. Taxes include severance, conservation, and other taxes and are different for different jurisdictions.
- **Overhead** – Includes all general and administrative (G&A) expenditures (head office); these costs are necessary expenses for doing business. Producers usually report overhead for the whole operation rather than a particular project.
- **Finding & Development (F&D)** – Capital costs calculated based on producers' disclosure and proprietary Inccorrys data. F&D cost includes:
 - Drilling
 - Completion including casing, cementing, fracking
 - Land and seismic
 - Tie-in, facilities, and other incremental infrastructure costs
 - Dry hole rate is included in the F&D cost calculation. Average dry hole rate is assumed to be 3% for unconventional basins.

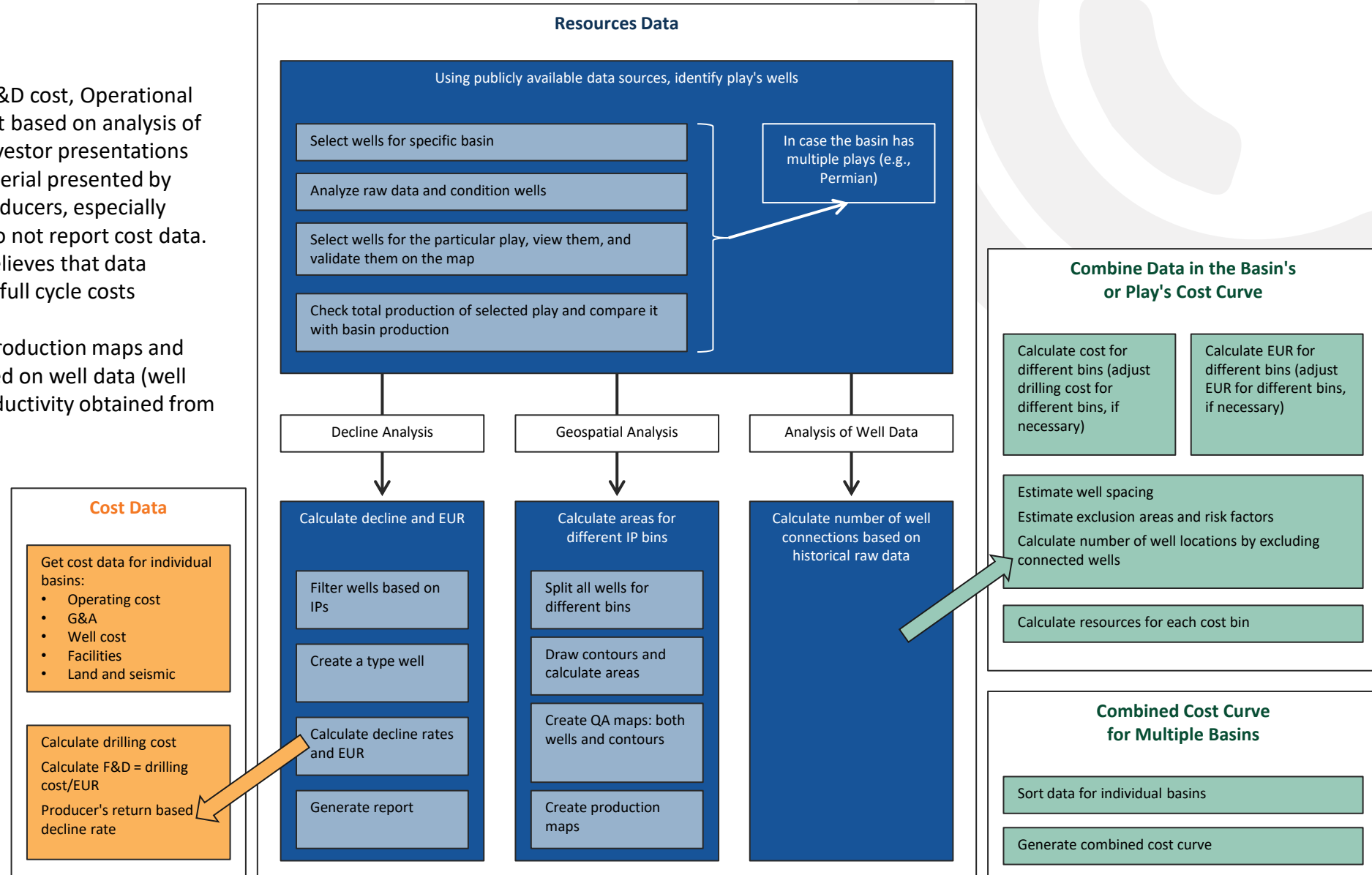
Full Cycle Cost – Crude Oil



INCORRYS COST ANALYSIS METHODOLOGY

Main Assumptions:

- Incorrys estimated F&D cost, Operational cost, and Capital Cost based on analysis of 275 projects from investor presentations and other public material presented by producers. Many producers, especially private companies do not report cost data. However, Incorrys believes that data collected represents full cycle costs accurately.
- Incorrys generates production maps and calculates areas based on well data (well coordinates and productivity obtained from public databases).



US CRUDE OIL FULL CYCLE COST

This chart shows full cycle costs for the most productive US oil basins in USD\$/Bbl together with a map showing initial productivity (IP) 'sweet spots' (red):

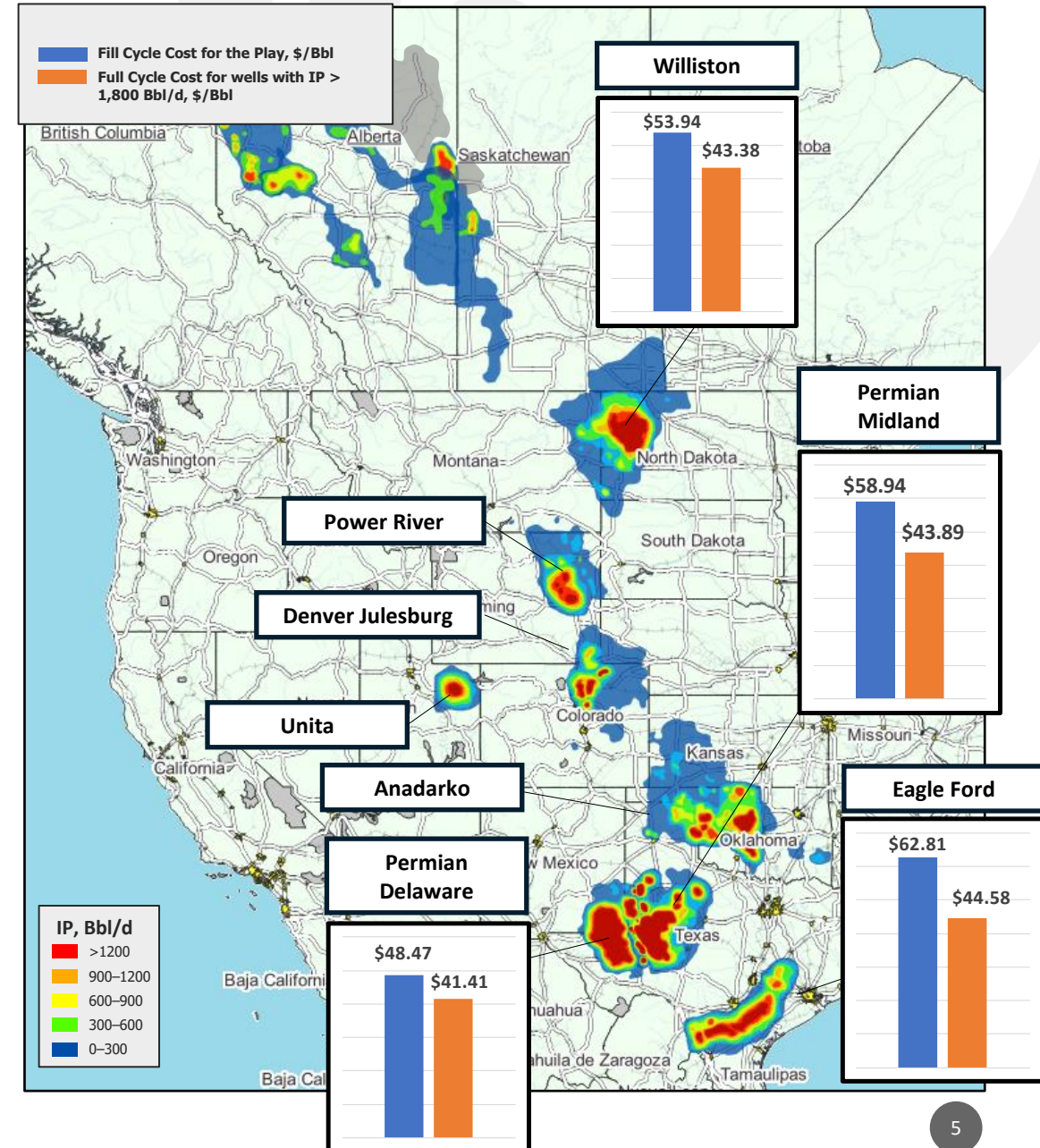
- Permian (Delaware, Midland and Central)
- Eagle Ford
- Williston (Bakken Shale)

Producers allocate capital to projects earning the highest return(s). The lowest cost areas therefore generally see expanded production, to the extent pipeline capacity is available to transport oil produced. Pipeline egress is also necessary to transport associated gas. As a result, even though low-cost resource is available in some areas, production growth may be limited until transportation capacity is built.

Producers drilling oil wells during the period Q1 2022 through to Q3 2024 were able to earn positive returns in cost bins other than the lowest cost areas, or sweet spots, due to attractive WTI pricing at the time, and ability to lock-in forward pricing on financial and physical markets.

The lowest full cycle cost over the period analyzed is in the Permian Delaware at \$48.47/Bbl followed by Williston at \$53.95 /Bbl and Permian Midland at \$58.95/Bbl. Full cycle cost in Denver Julesburg is \$62.16/Bbl and in Power River is \$76.89/Bbl.

Full cycle cost in sweet spots with initial productivity > 1,800 Bbl/d is lower. Full cycle cost in this cost bin for Permian Delaware is \$41.41/Bbl, for Williston \$43.38/Bbl, and for Eagle Ford \$44.58/Bbl (wells with IP > 1,800 Bbl/d).

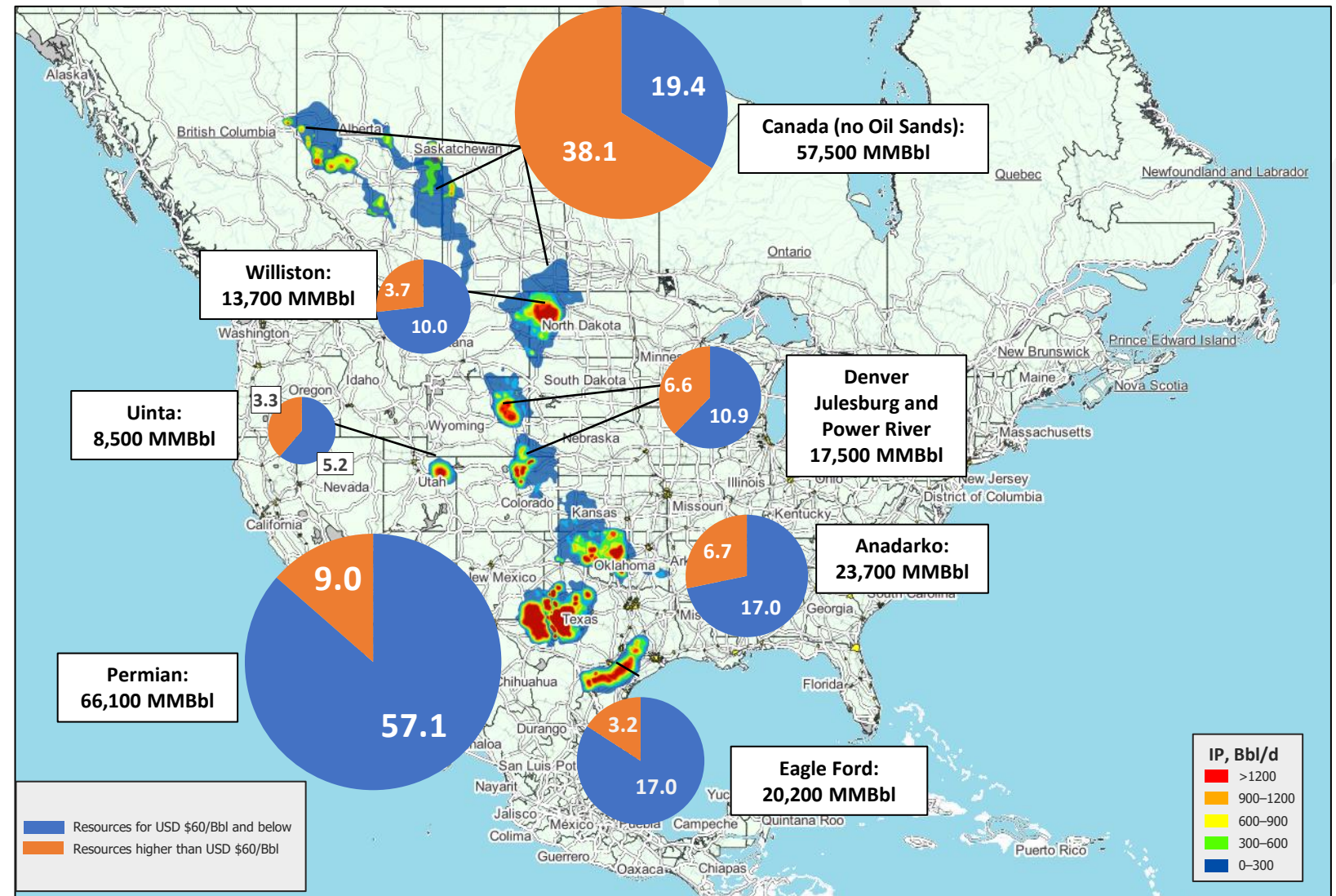


NORTH AMERICAN OIL RESOURCES

This chart shows Incorrlys' assessment of North American remaining oil and lease condensate resources in major producing basins.

- Total remaining resources for four major US Tight Oil basins (Permian, Williston, Niobrara, and Eagle Ford) is estimated at 117,300 MMBbl, 81% at full cycle costs of USD \$60/Bbl and below.
- Permian has the largest resource at 66,100 MMBbl, 86% at full cycle costs of USD \$60/Bbl and below. Williston resources are 13,700 MMBbl, 73% at full cycle costs of USD \$60/Bbl and below. Eagle Ford resources are 20,200 MMBbl, 84% at full cycle costs of USD \$60/Bbl and below.
- Total remaining oil and lease condensate resources (without Oil Sands) in Western Canada is 57,500 MMBbl, 34% at full cycle costs of USD \$60/Bbl and below. Western Canada has a significantly smaller resource with costs below \$60/Bbl, as wells in Western Canada, on average, are less productive.
- Total US oil reserves are 48,300 MMBbl as at year-end 2022*. "Reserves" are quantities of oil that are already discovered, recoverable, and commercial.
- "Resources" are an estimate of the amount of oil and lease condensate with the potential of being produced.

*Source: [U.S. Crude Oil and Natural Gas Proved Reserves, Year-end 2022](#)



NORTH AMERICAN OIL RESOURCE LIFE

This chart shows resource life in years for major US producing basins for full cycle cost below USD \$50/Bbl and USD \$60/Bbl.

Resource life is calculated as resources divided by 2023 production.

Resource life is different from reserves life, which is lower.

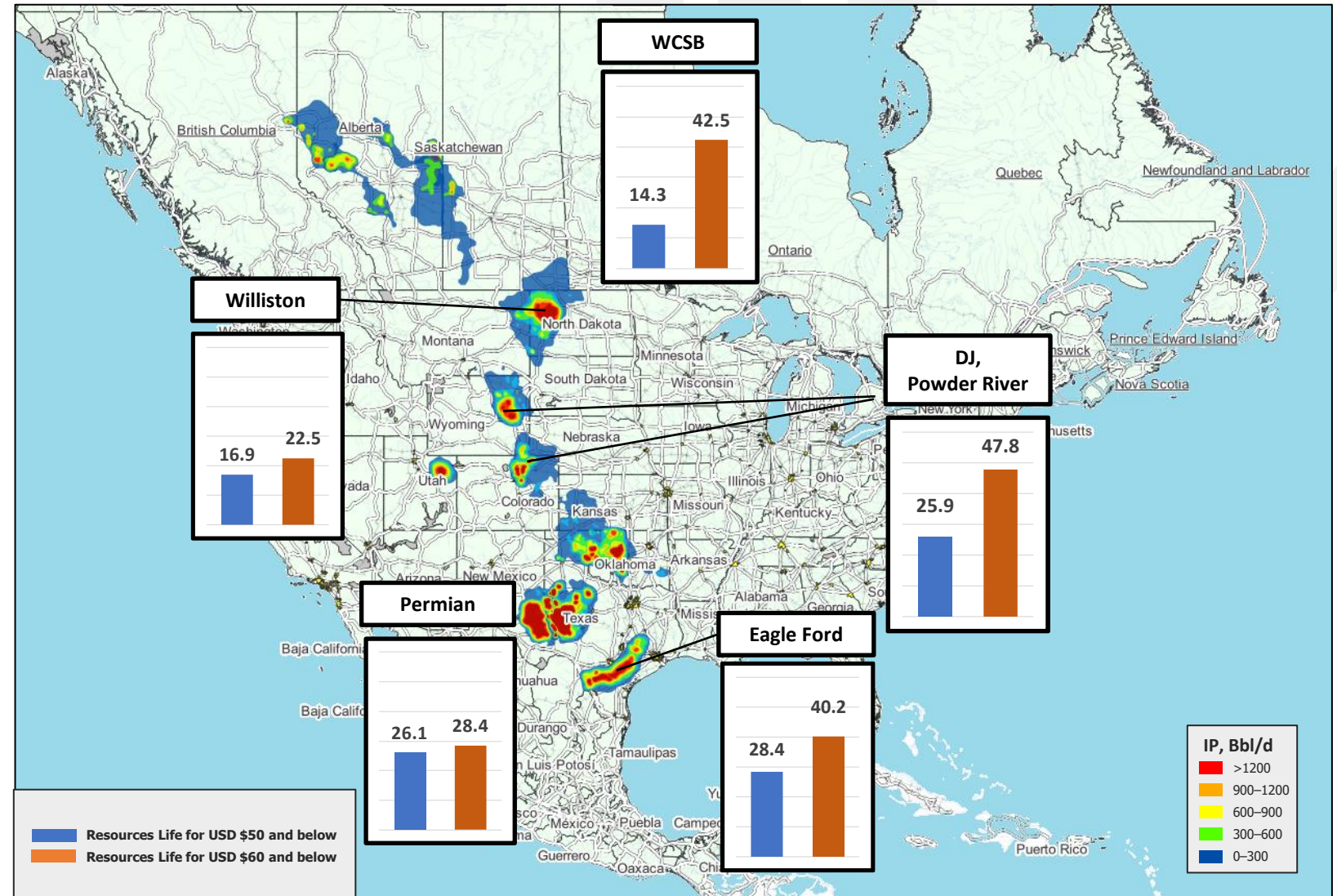
Actual resource life could vary from Incorrlys' results for several reasons:

- Higher oil prices may sustain drilling in lower productivity areas of a play or basin;
- Access to new pipeline capacity for oil or associated gas could also impact the rate of production from a basin or play.

The US Permian has the lowest resource life compared to other US Tight oil basins at 26.1 years for a cost of USD\$60/Bbl and below.

Canadian resource life is 42.5 years for a cost of USD\$60/Bbl and below.

Total North American resource life is 38 years at costs of USD\$60/Bbl and below, and 27 years at costs of USD\$50 and below.



NORTH AMERICAN OIL RESOURCE COST CURVE

The chart shows North American Oil and Lease Condensate full cycle cost vs. resources for all major producing basins in US (Permian, Williston, Niobrara, Eagle Ford, Anadarko and Unita), as well as Canadian plays - exclusive of Oil Sands.

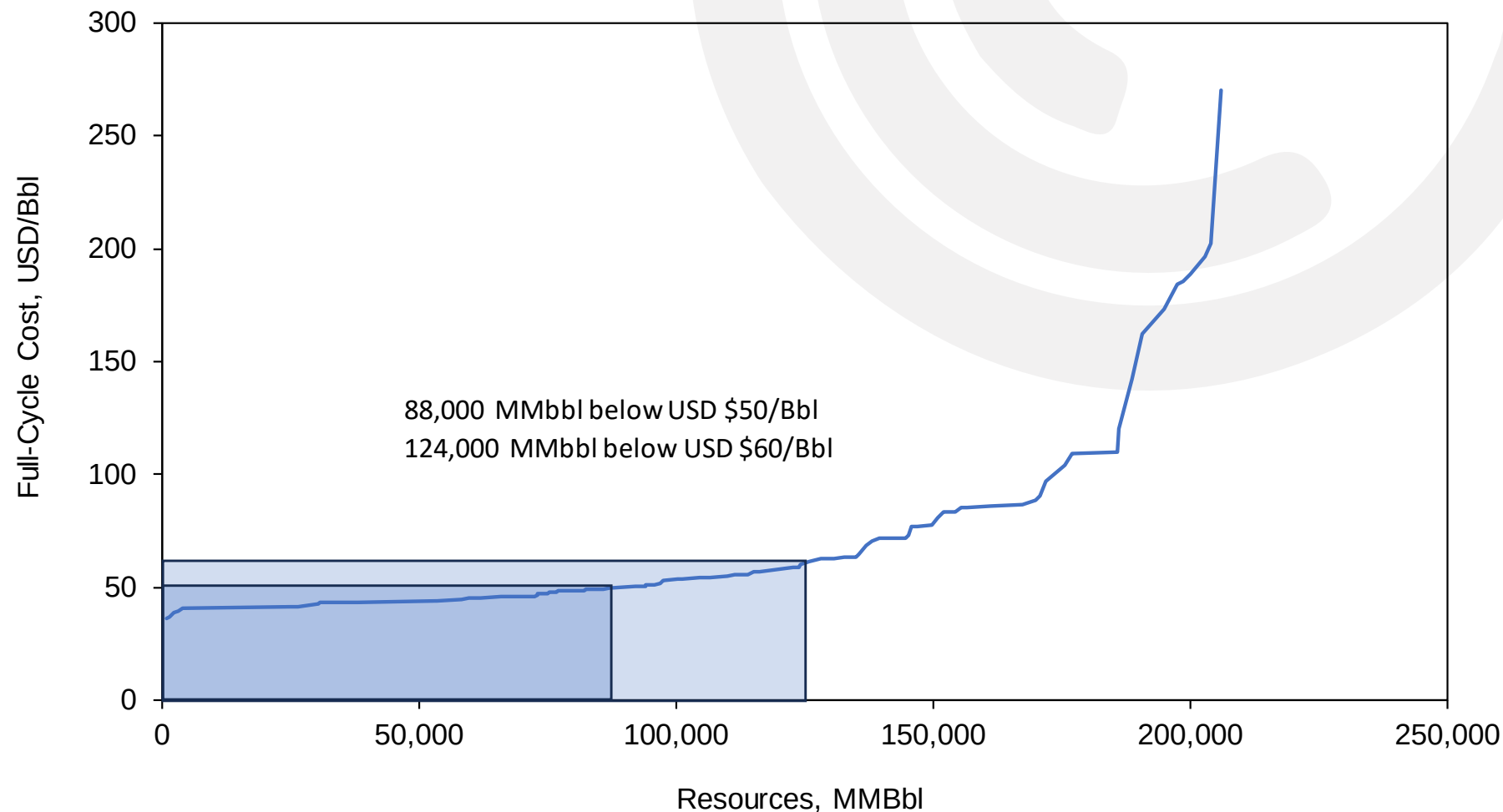
Alaska, Gulf of Mexico, Appalachian, South Texas, Canada East Offshore* and California are also excluded as they are not growth basins.

Each US basin has 7 data points associated with 7 well productivity ranges (from 0 to 300 Bbl/d, from 300 to 600 Bbl/d, etc.).

Incorrys estimates resources and full cycle cost for each data point in each basin.

Each Canadian play has up to 5 data points associated with 5 well productivity ranges.

The resource cost curve has 106 data points in total.



The resource cost curve shows North America has 88,000 MMBbl of oil and condensate potential with full cycle cost less than USD\$50/Bbl and 124,000 MMBbl with full cycle cost at or below USD\$60/Bbl.

WESTERN CANADA RESOURCE COST CURVE (NO OIL SANDS)

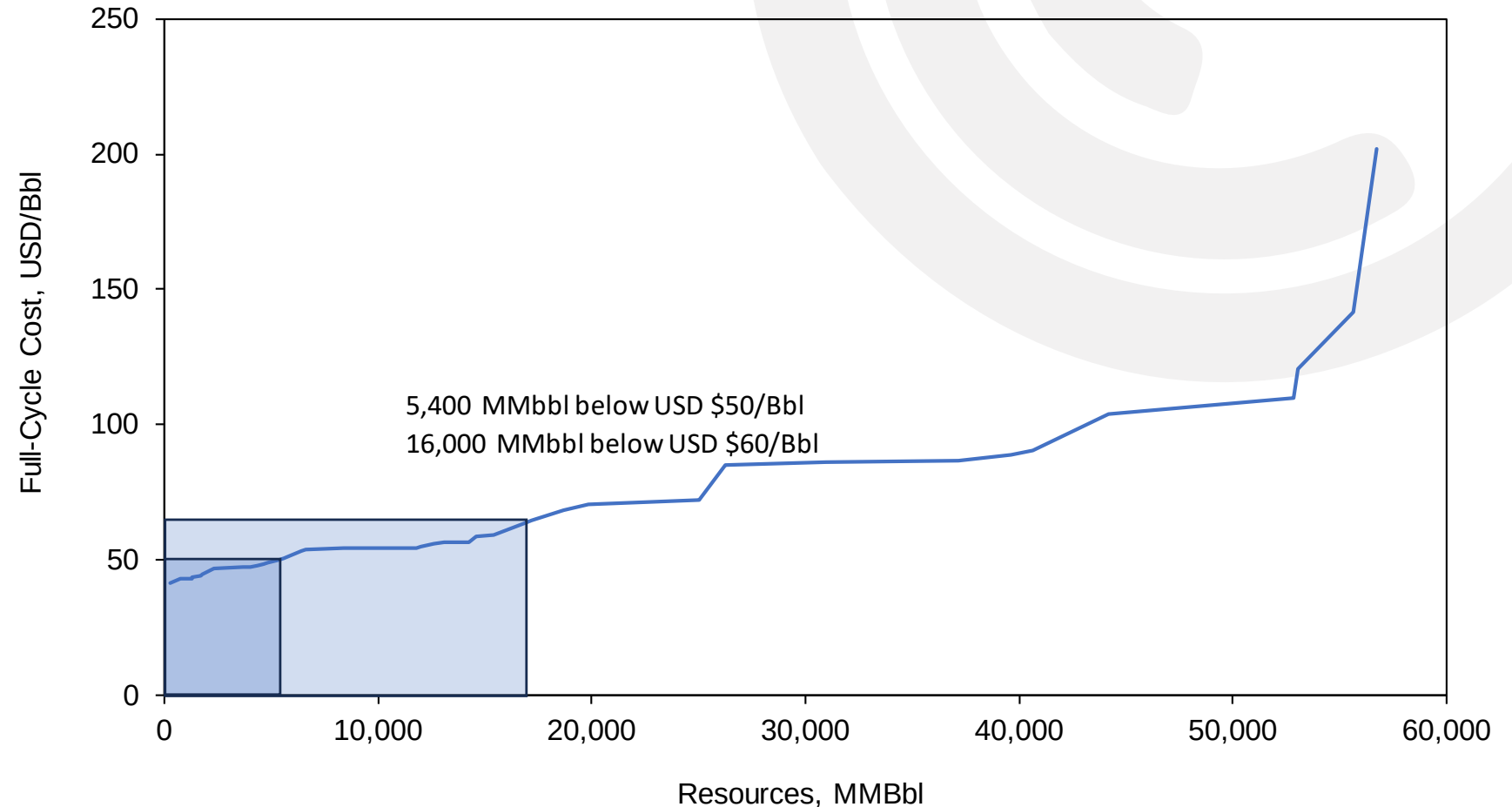
This chart shows the Canadian Oil and Lease Condensate resource cost curve estimating full cycle cost vs. resources for all major producing Western Canadian plays (conventional and Tight Oi) - excluding Oil Sands and Canada East Offshore.

Each Canadian play has up to 5 data points associated with 5 well productivity ranges (from 0 to 300 Bbl/d, from 300 to 600 Bbl/d, etc.).

Incorr's estimated resources and full cycle costs for each data point in each basin. For example, Clearwater has 496 MMBbl of resources available at a full cycle cost of USD\$43.60/Bbl and below.

The Canadian resource cost curve has 42 data points in total.

The resource curve helps to estimate how much resource is available at various full cycle cost levels.



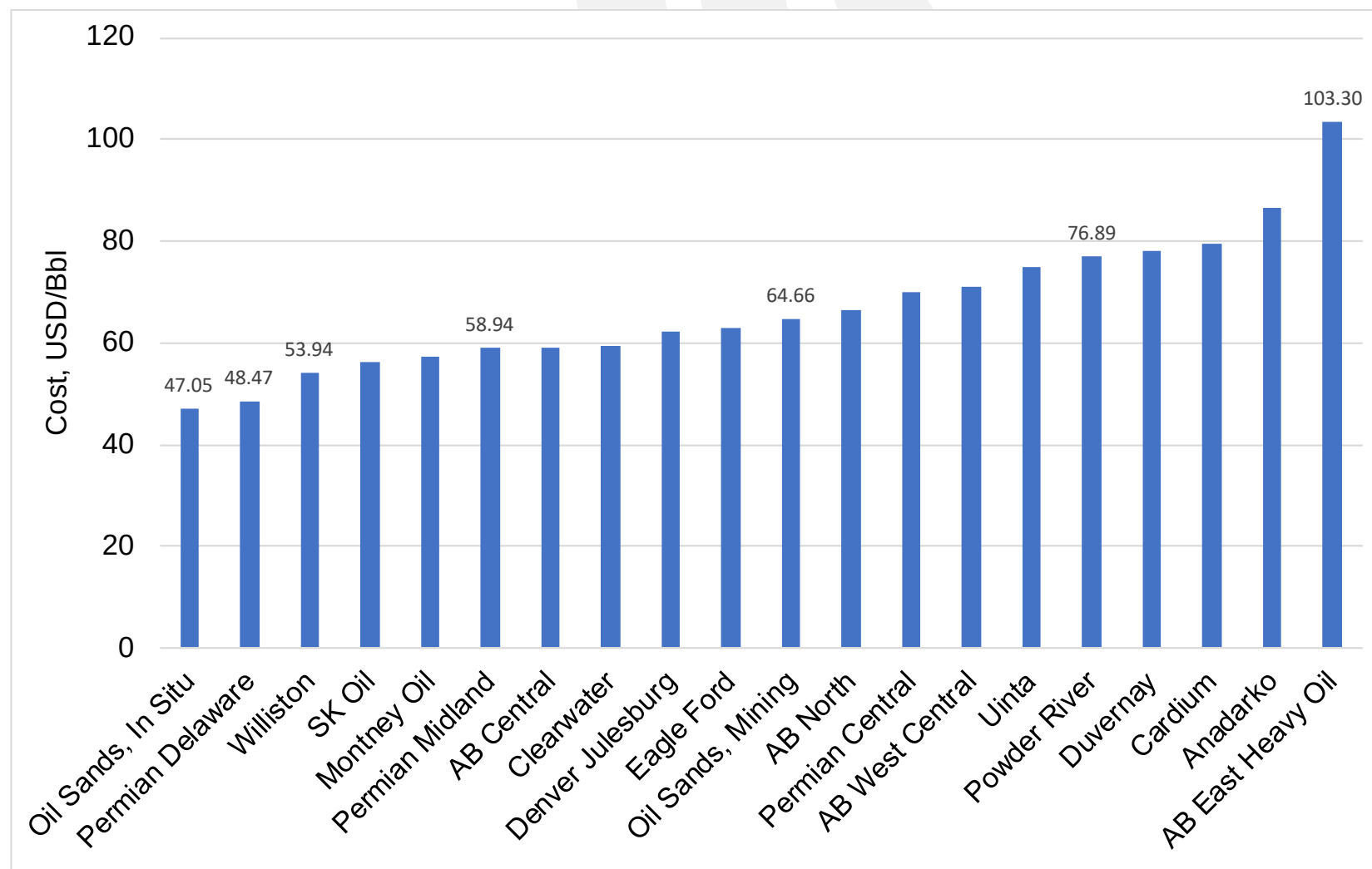
According to this resource curve Western Canada has 5.400 MMBbl with full cycle cost less than USD\$50/Bbl and 16,000 MMBbl with full cycle cost at or below USD\$60/Bbl.

FULL CYCLE COST OF NORTH AMERICAN OIL

Chart shows full cycle costs of North American oil and lease condensate over the period Q1 2022 through Q3 2024. Includes all major producing basins in the US (Permian, Williston, Niobrara, Eagle Ford, Anadarko and Uinta), as well as Canadian plays (oil sands also included).

- Full-cycle cost for the highest productivity Tight Oil wells is slightly below USD \$40/Bbl, and remaining resources associated with this cost level is 2,000 MMBbl (Permian).
- Canadian Oil sands (In Situ) full cycle cost is compatible with full cycle cost of US Tight Oil basins, although Oil Sands production growth is constrained by the lack of pipeline takeaway capacity.
- Apart from Canada Oil Sands, Permian Delaware has the lowest full cycle cost over the analysis period at USD\$48.50/Bbl), followed by Williston at USD\$54.00/Bbl).
- Canadian Oil sands (mining) has full cycle cost of USD \$64.70.
- Major US Tight Oil basins have full cycle costs between USD \$48.50/Bbl (Permian) and USD \$76.90/Bbl (Powder River).

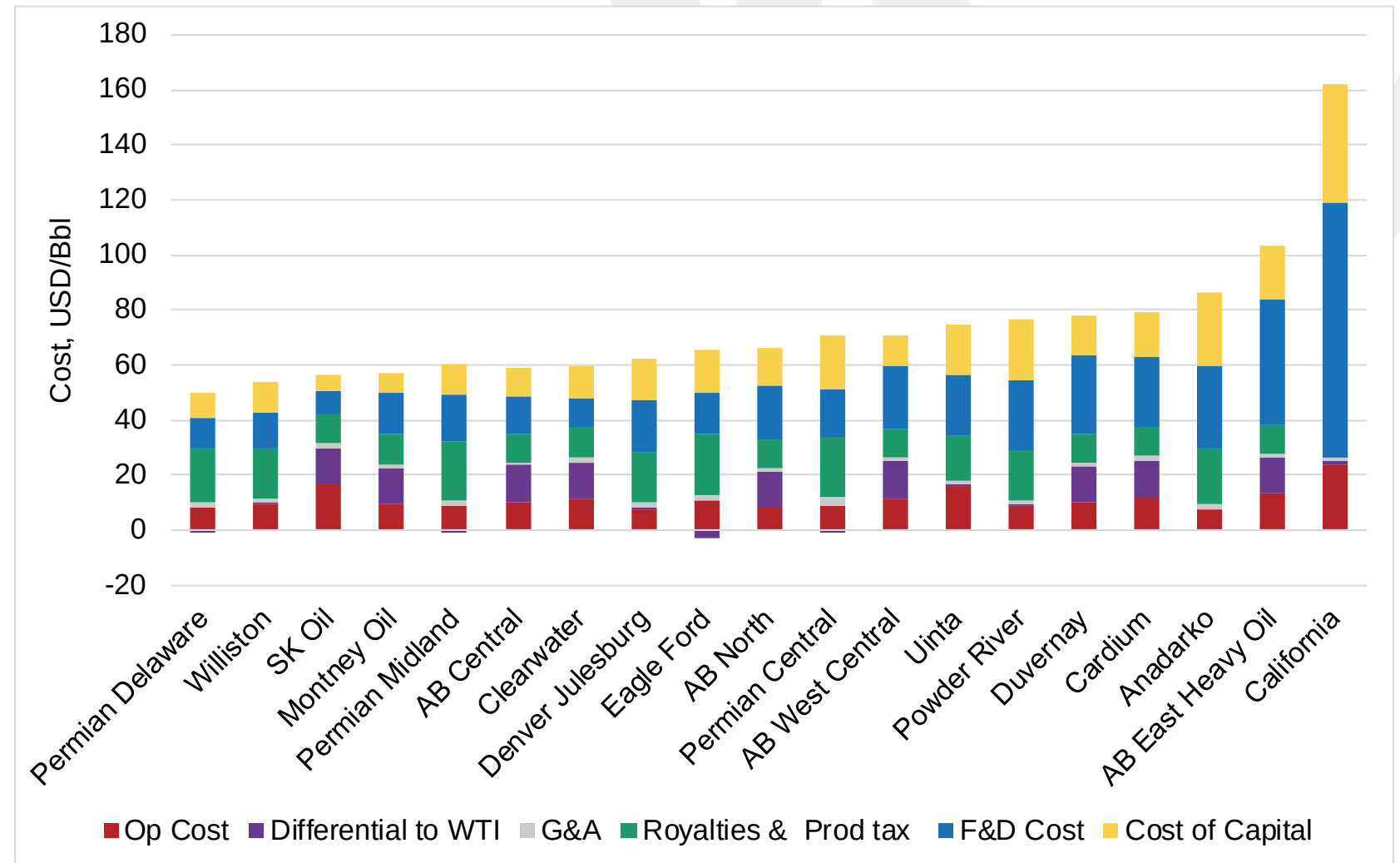
* Full cycle cost of oil sands are calculated using a slightly different methodology. Cost of diluent is included in G&A component of full cycle cost. Sustaining cost and upfront capital cost are calculated separately. Oil Sands costs differ significantly for different projects. Projects approaching payout date are considered representative and included in the analysis



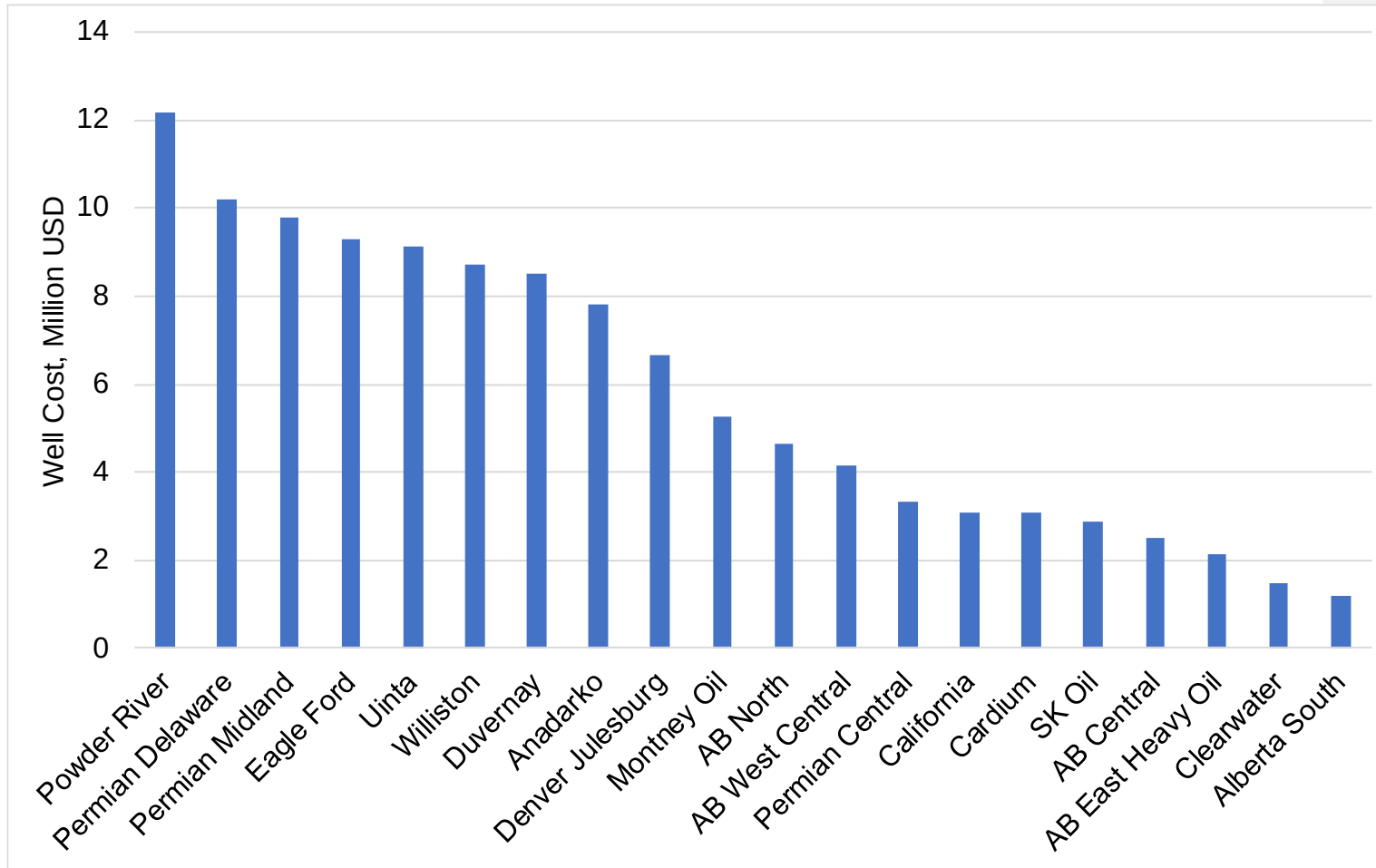
NORTH AMERICAN OIL FULL CYCLE COST BREAKDOWN BASED ON AVERAGE WELL PRODUCTIVITY

The chart shows full cycle costs of North American oil and lease condensate by component(s)* for wells drilled from Q1 2022 through Q3 2024. The chart includes all major producing basins in the US (Permian, Williston, Niobrara, Eagle Ford, Anadarko and Uinta), as well as Canadian plays. Oil Sands are not included. California is included for comparison.

- Canadian plays have the widest basis differential to WTI at USD \$13.18/Bbl. This puts Canadian basins at a significant disadvantage compared to US basins. The Eagle Ford has a positive differential to WTI at USD -2.80/Bbl. Basis differential in Permian basin is also positive at USD -\$1.23/Bbl.
- Canada has lowest royalties and taxes at USD \$10.60/Bbl. Permian Central and Midland have the highest taxes at USD \$21.70/Bbl.
- Canadian plays have the highest F&D, which contributes to overall higher full cycle costs compared to US basins. While well costs for Canadian plays is compatible with wells with similar depths in the US, Canadian wells have lower initial productivity and EUR.



WELL COSTS BY PLAY / BASIN

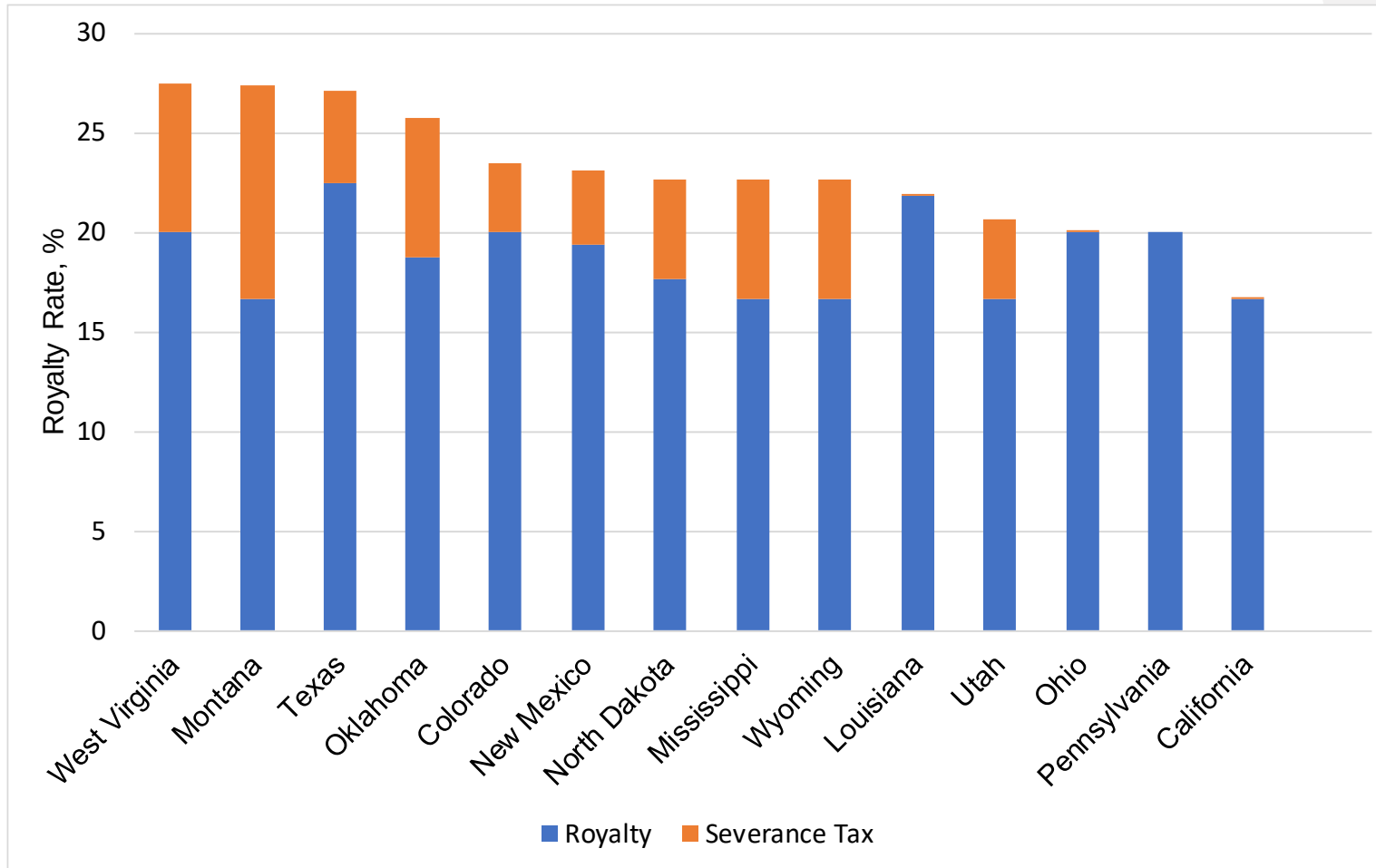


Includes Drilling and Completion (except Tie-in).

This chart shows the Cost per Well (in Million\$ USD) across different oil basins and plays over the period Q1 2022 through Q3 2024. The well cost includes drilling and completion (fracking, casing, cementing, etc.) costs, but does not include cost of land and tie in costs. Well cost is used to calculate Finding and Development (F&D) cost. In many cases, low well cost does not translate to lower F&D cost, as lower cost wells can also be less productive (i.e. Canadian conventional plays). At the same time, well costs in US Tight oil plays can be more expensive because of depth, length of lateral and significant number of stages. But these wells are usually more productive. Producers constantly seek to reduce well costs as it is one of the major factors contributing to reduction of full cycle cost.

- Powder River has the highest cost per well, exceeding USD \$12M/well. Permian Delaware, Permian Midland, Eagle Ford have costs between USD \$9M to \$10M/well.
- Uinta, Williston, and Anadarko range around USD \$8M to \$9M/well. Denver Julesburg and California show slightly lower costs, approximately USD \$3M to \$6.5M/well.
- Montney Oil and Duvernay are in the USD \$5M to \$8.5M/well range. Permian Central, AB West Central, and SK Oil fall between USD \$3M to \$4M/well.
- AB Central and Alberta South show the lowest costs, around USD \$2M/well and lower.

US ROYALTY RATES AND SEVERANCE TAX (OIL) BY STATE



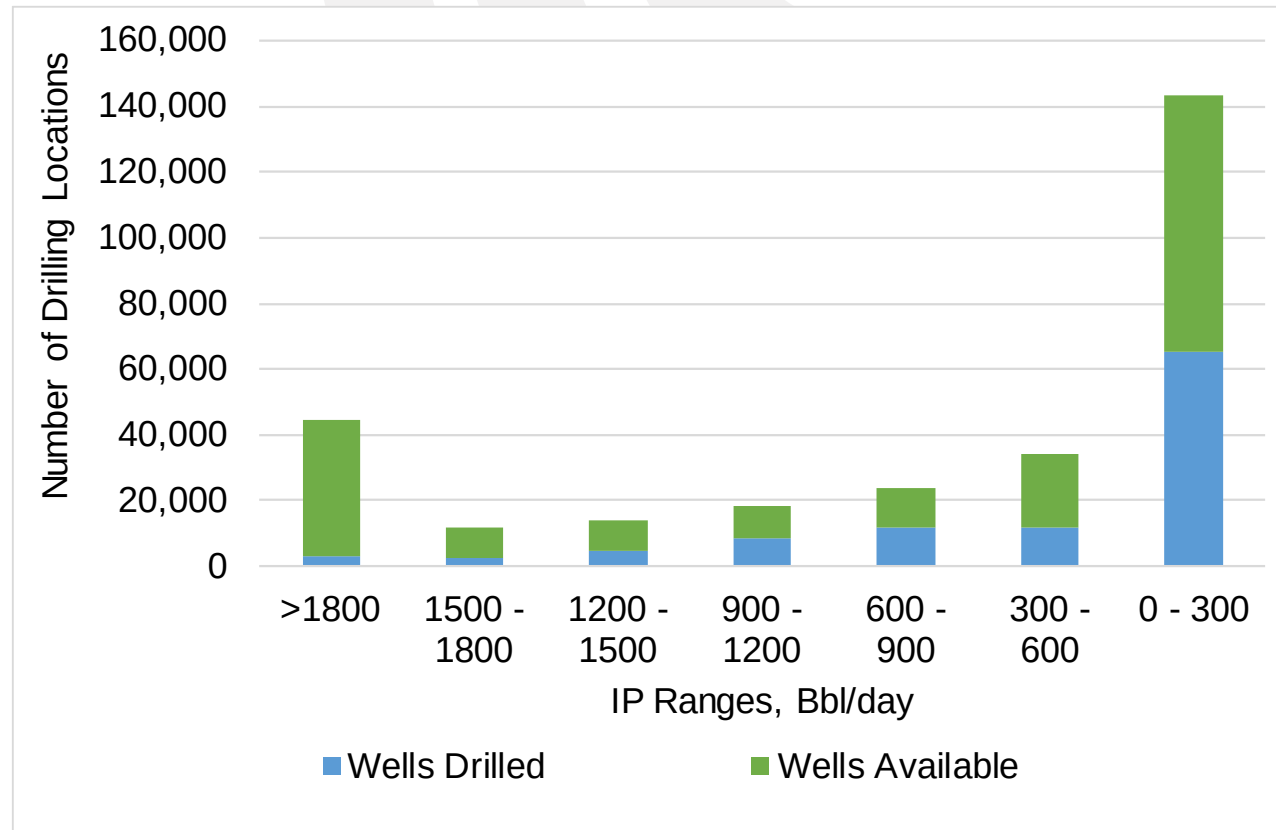
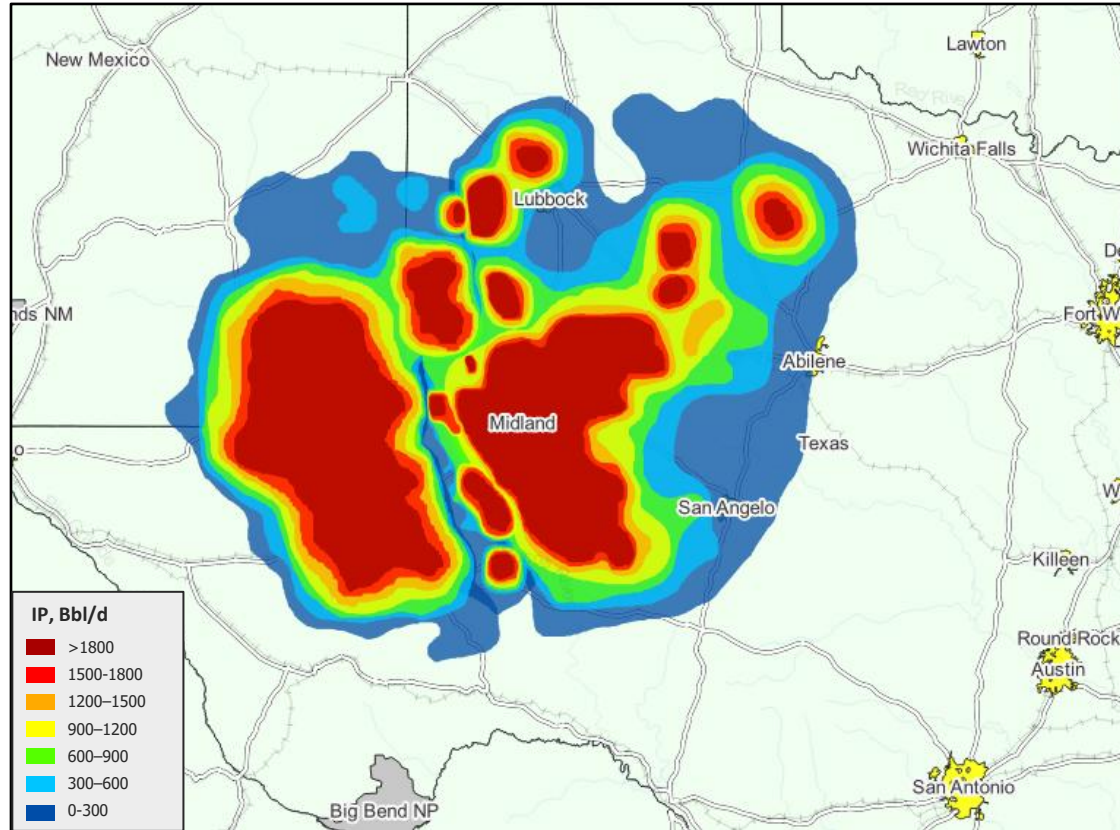
This chart shows royalty rates and severance taxes* across different U.S. states. These rates are used to calculate full cycle cost for oil and lease condensate. The rates are an average because, in each individual case, the actual rates can be different.

- West Virginia and Montana have the highest total taxation rates, both nearing 30%, with a significant contribution from severance tax.
- Texas and Oklahoma have totals around 25-27%, with a relatively higher severance tax component.
- Colorado, New Mexico, and North Dakota show combined royalty and severance tax around 20-22%.
- Ohio, Pennsylvania and California have the lowest total rates (~15-17%) as they don't have severance taxes.
- The chart does not include ad valorem taxes which can be imposed in certain jurisdictions.

* Royalties are paid by oil and gas producers to mineral rights owners. Severance Tax is imposed by states on producers. In addition, there may be ad-valorem taxes imposed by local authorities.

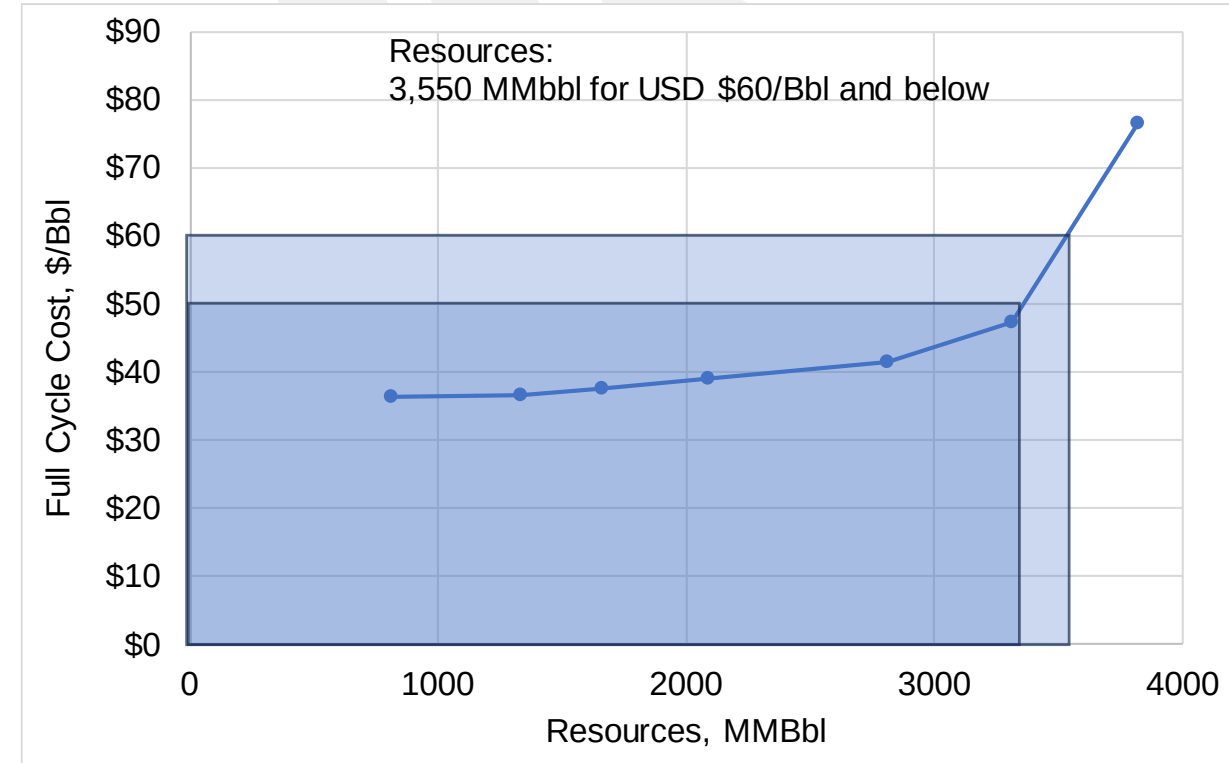
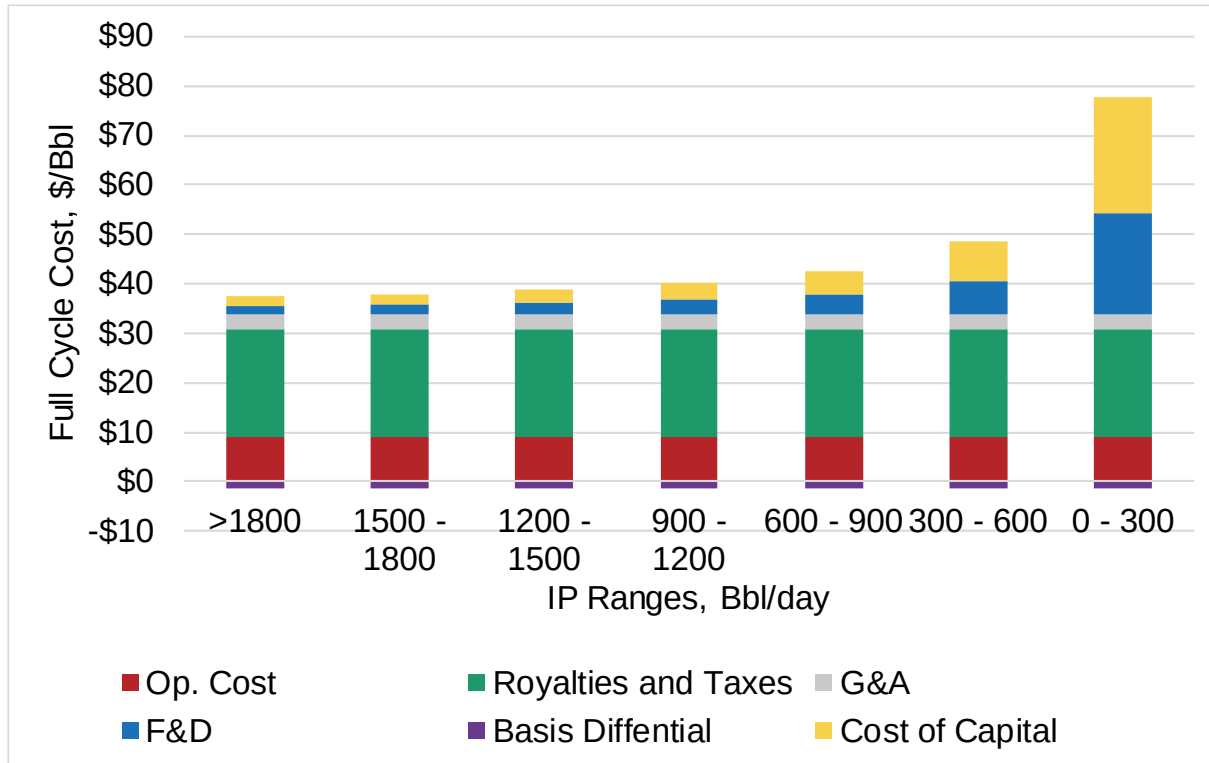
PERMIAN OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



The Permian Basin, located in west Texas and southeast New Mexico, is the most prolific US oil basin. Incorrays estimates that the Permian has over 145,000 drilling locations with initial productivity above 300 Bbl/d and over 140,000 drilling locations with initial productivity below 300 Bbl/d.

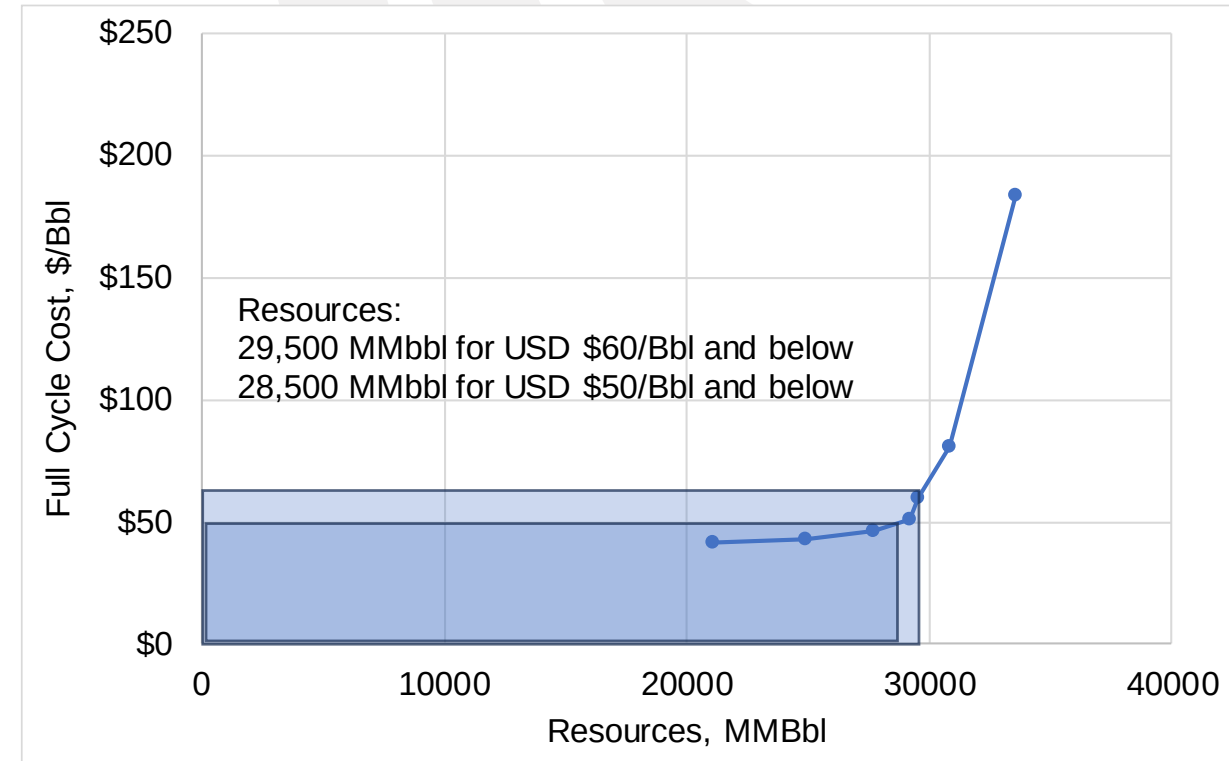
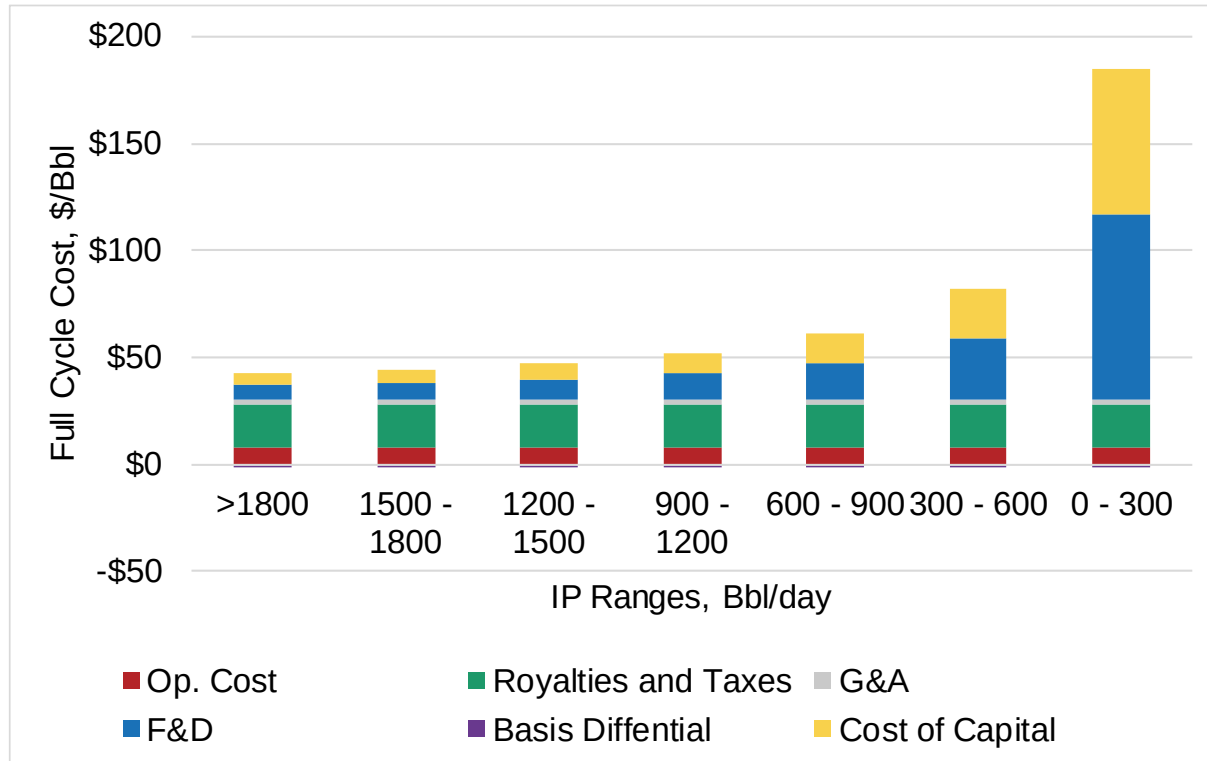
PERMIAN CENTRAL FULL CYCLE OIL COST



Permian Central oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$36.25/Bbl for wells with an Initial Productivity (IP) greater than 1800 Bbl/d to a high of USD \$76.60/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs are USD \$9.10/Bbl while royalties & taxes and overhead are USD \$24.82/Bbl. F&D costs range from USD \$1.64-\$20.24/Bbl and the 15% producer return ranges from USD \$1.92-\$23.67/Bbl. The assumed WTI differential is USD \$-1.23/Bbl.

Incorrys analysis shows 3,300 MMBbl of oil resource available below USD \$50/Bbl and 3,550 MMBbl available below USD \$60/Bbl. Current production (2023) was almost 65 MBbl/d (23.7 MMBbl/yr).

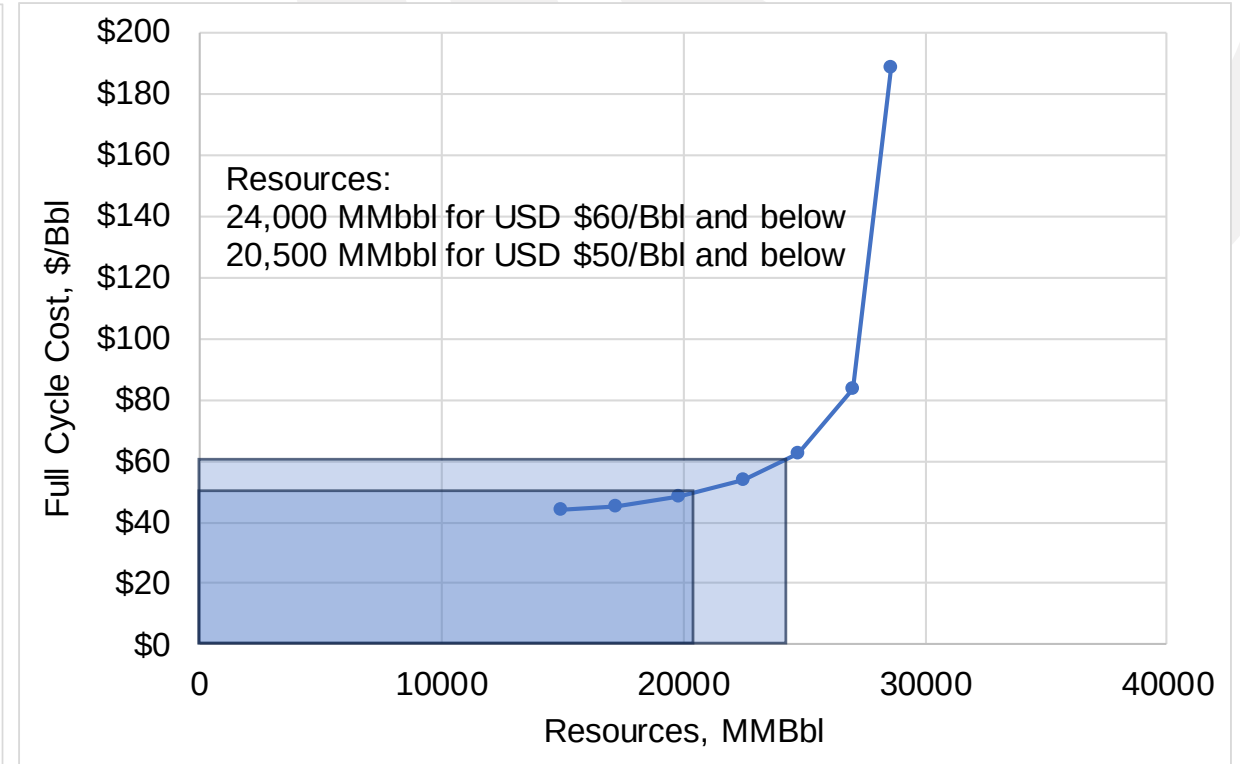
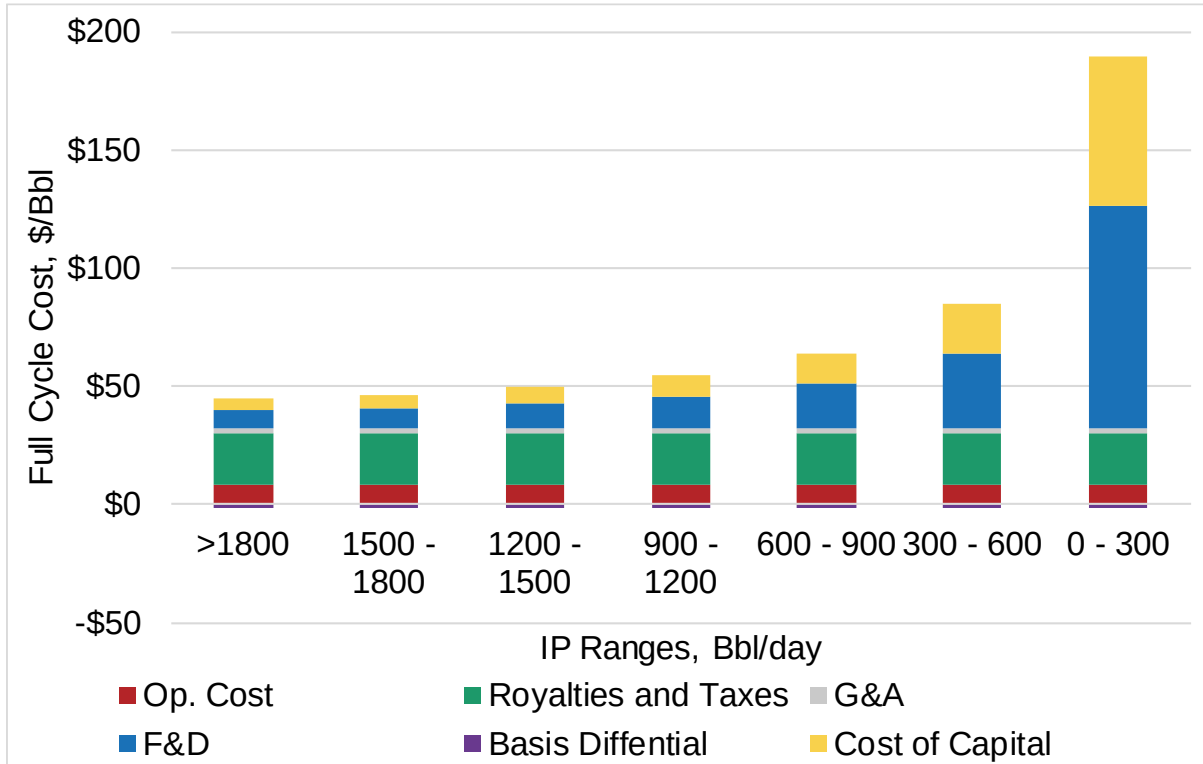
PERMIAN DELAWARE FULL CYCLE OIL COST



Permian Delaware oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$41.41/Bbl for wells with an Initial Productivity (IP) greater than 1800 Bbl/d to a high of USD \$183.94/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs are USD \$8.24/Bbl while royalties & taxes and overhead are USD \$21.82/Bbl. F&D costs range from USD \$7.02-\$86.60/Bbl and the 15% producer return ranges from USD \$5.56-\$68.51/Bbl. The assumed WTI differential is USD \$-1.23/Bbl.

Incorrys analysis shows 28,500 MMBbl of oil resource available below USD \$50/Bbl and 29,500 MMBbl available below USD \$60/Bbl. Current production (2023) was about 2,930 MBbl/d (1,100 MMBbl/yr).

PERMIAN MIDLAND FULL CYCLE OIL COST

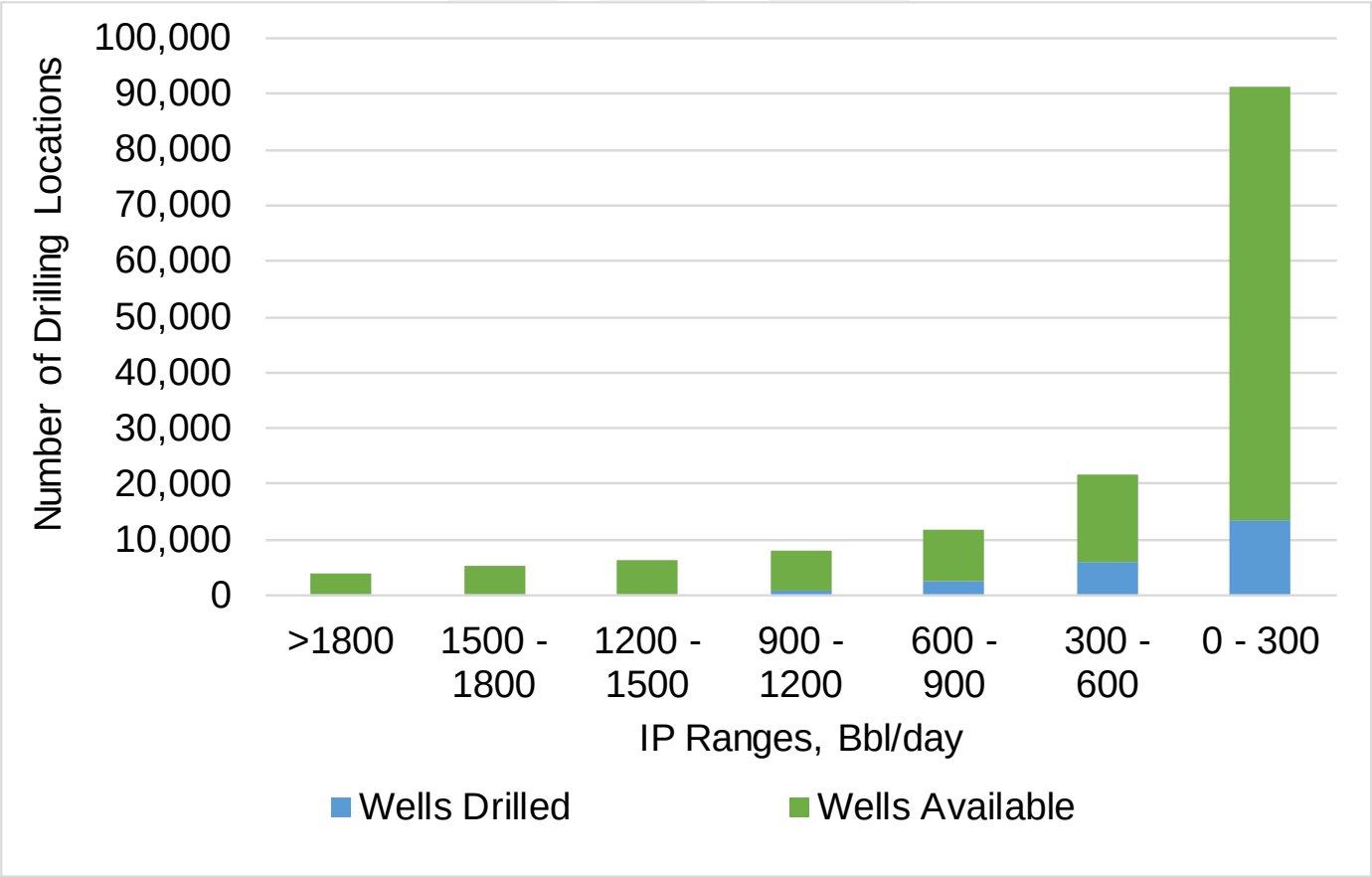
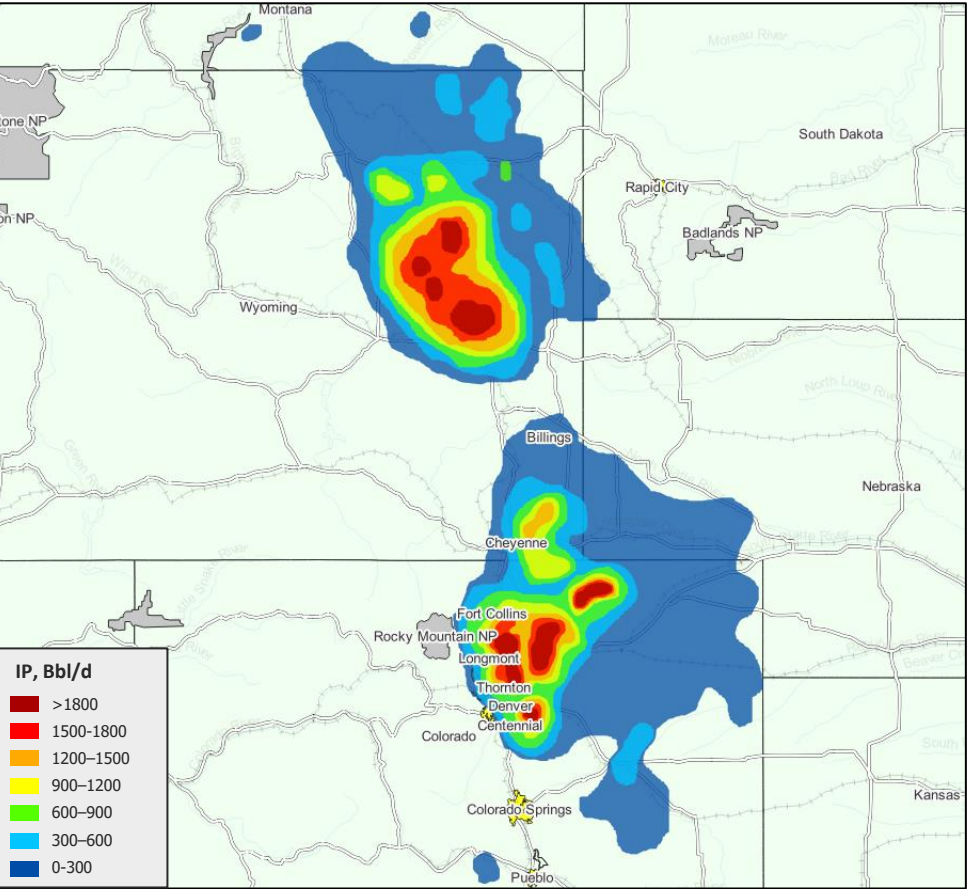


Permian Midland oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$43.86/Bbl for wells with an Initial Productivity (IP) greater than 1800 Bbl/d to a high of USD \$188.52/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs are USD \$8.77/Bbl while royalties & taxes and overhead are USD \$23.55/Bbl. F&D costs range from USD \$7.67-\$94.60/Bbl and the 15% producer return ranges from USD \$5.09-\$62.83/Bbl. The assumed WTI differential is USD \$-1.23/Bbl.

Incorrys analysis shows 20,500 MMBbl of oil resource available below USD \$50/Bbl and 24,000 MMBbl available below USD \$60/Bbl. Current production (2023) was 2,500 MBbl/d (900 MMBbl/yr).

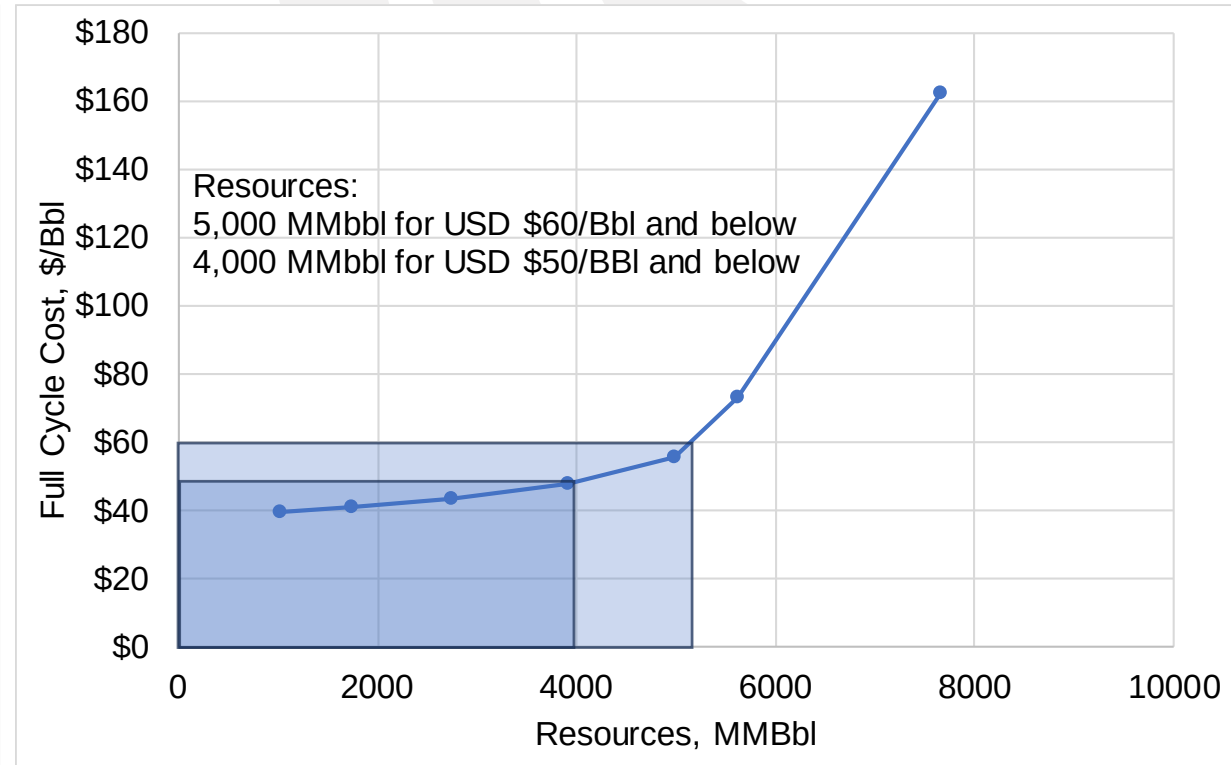
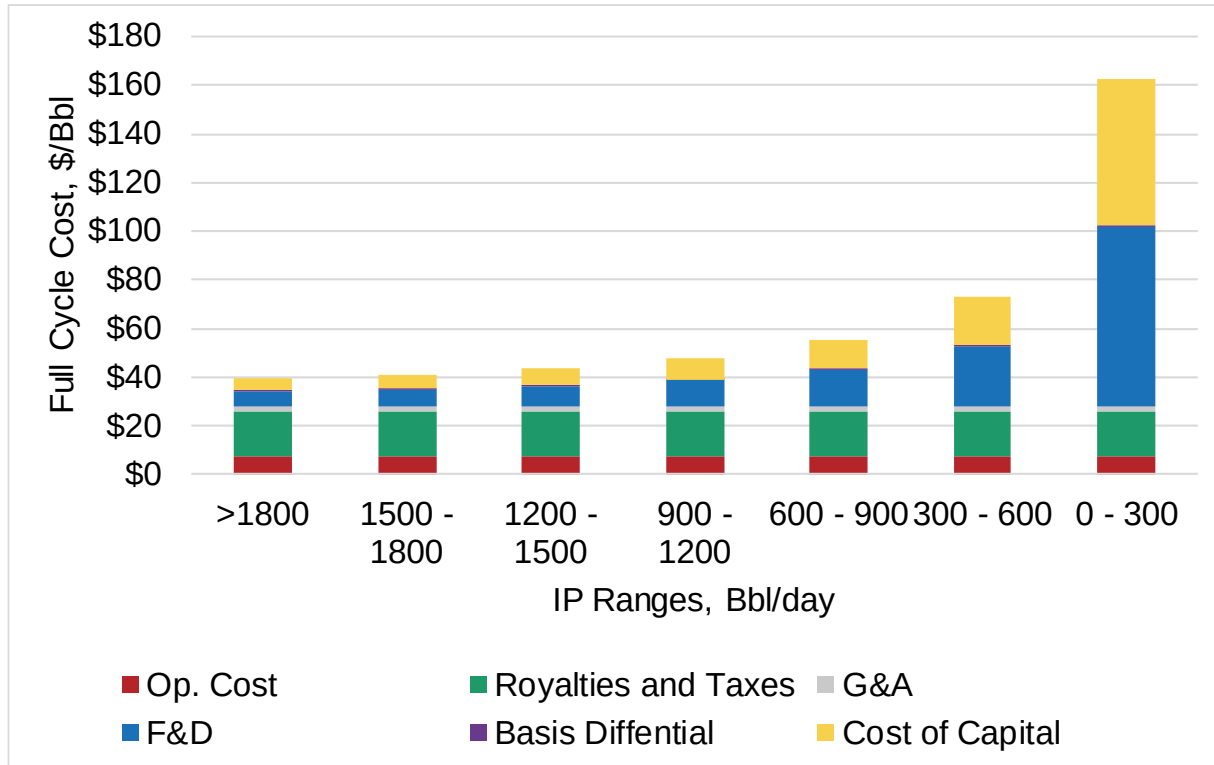
DJ AND POWDER RIVER OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Denver-Julesburg (DJ) and Powder River are located in northeastern Colorado and eastern Wyoming extending into parts of Nebraska, South Dakota and Montana. Inccorrys estimates that DJ and Powder River have 57,000 drilling locations with initial productivity above 300 Bbl/d and over 91,000 drilling locations with initial productivity below 300 Bbl/d.

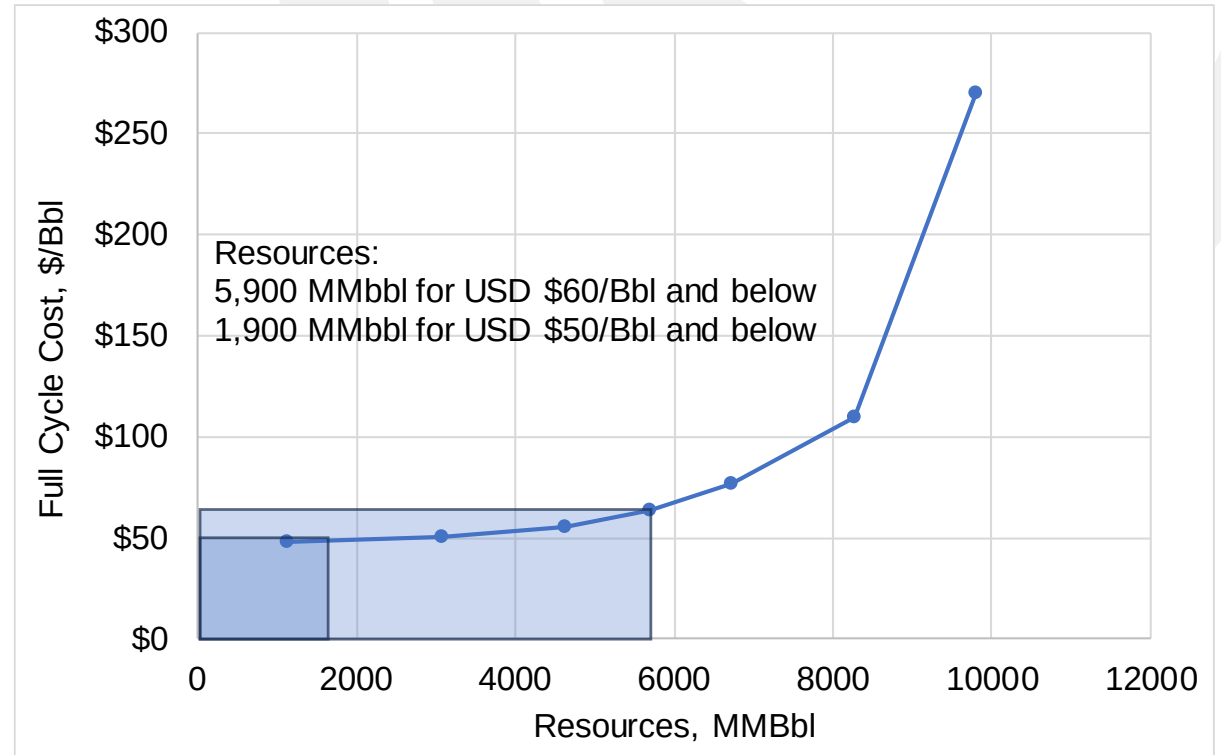
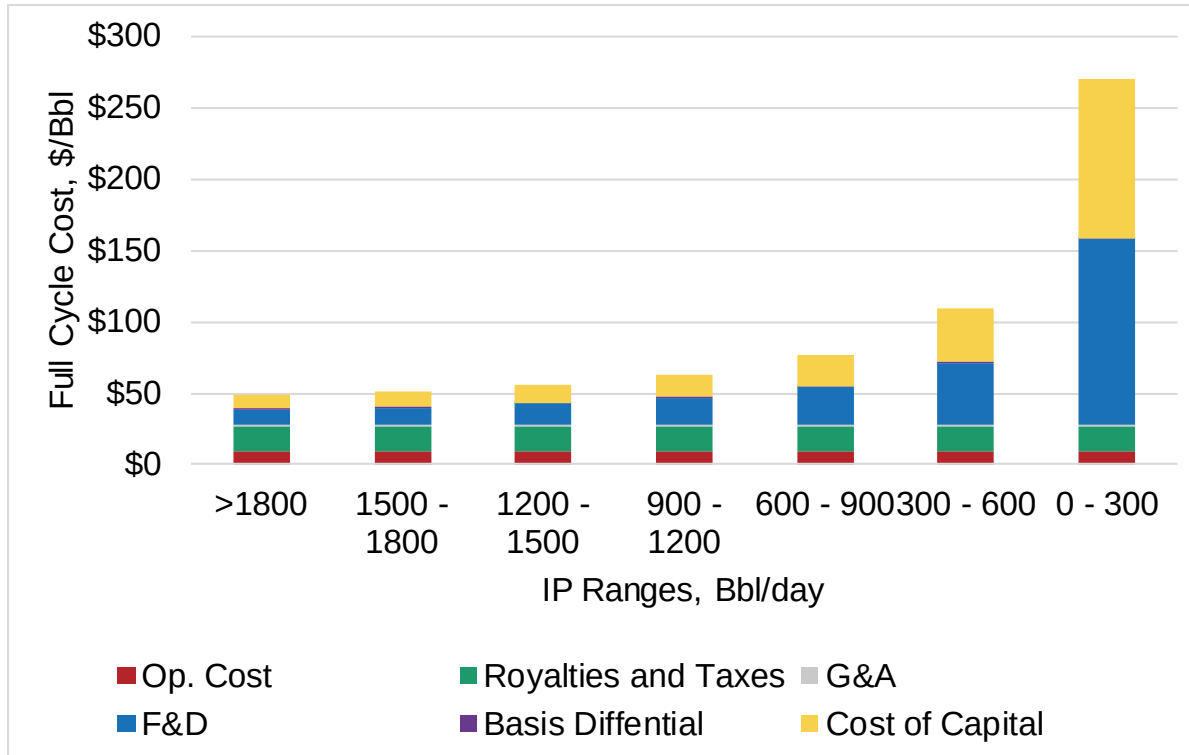
DENVER-JULESBURG (DJ) FULL CYCLE OIL COST



Denver-Julesburg (DJ) oil full-cycle costs at West Texas Intermediate (WTI) equivalent reaches USD \$162.35/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs USD \$7.81/Bbl while royalties & taxes and overhead are USD \$20.46/Bbl. F&D costs range from USD \$5.97-\$73.69/Bbl and the 15% producer return ranges from USD \$4.86-\$59.93/Bbl. The assumed WTI differential is USD \$0.46/Bbl.

Incorrys analysis shows 4,000 MMBbl of oil resource available below USD \$50/Bbl and 5,000 MMBbl available below USD \$60/Bbl. Current production (2023) was 470 MBbl/d (172 MMBbl/yr).

POWDER RIVER FULL CYCLE OIL COST

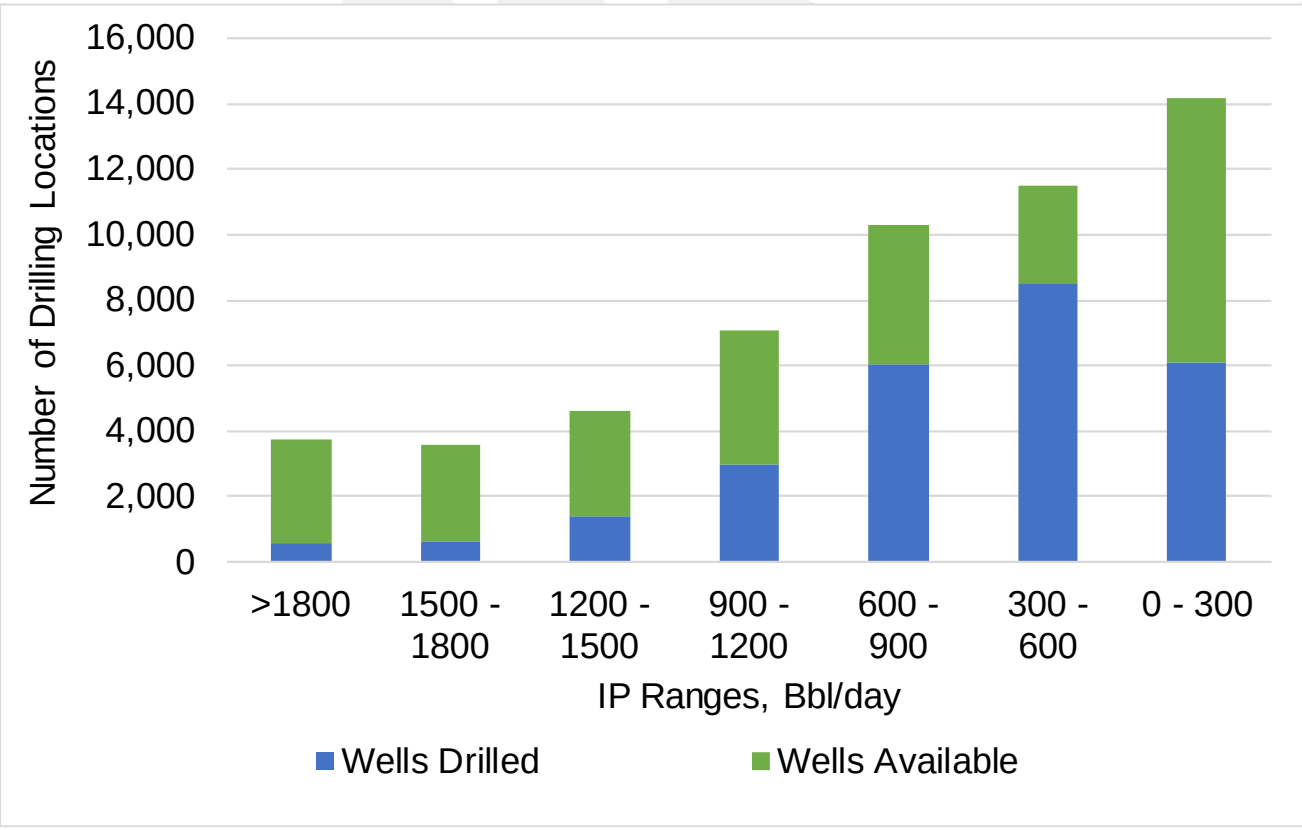
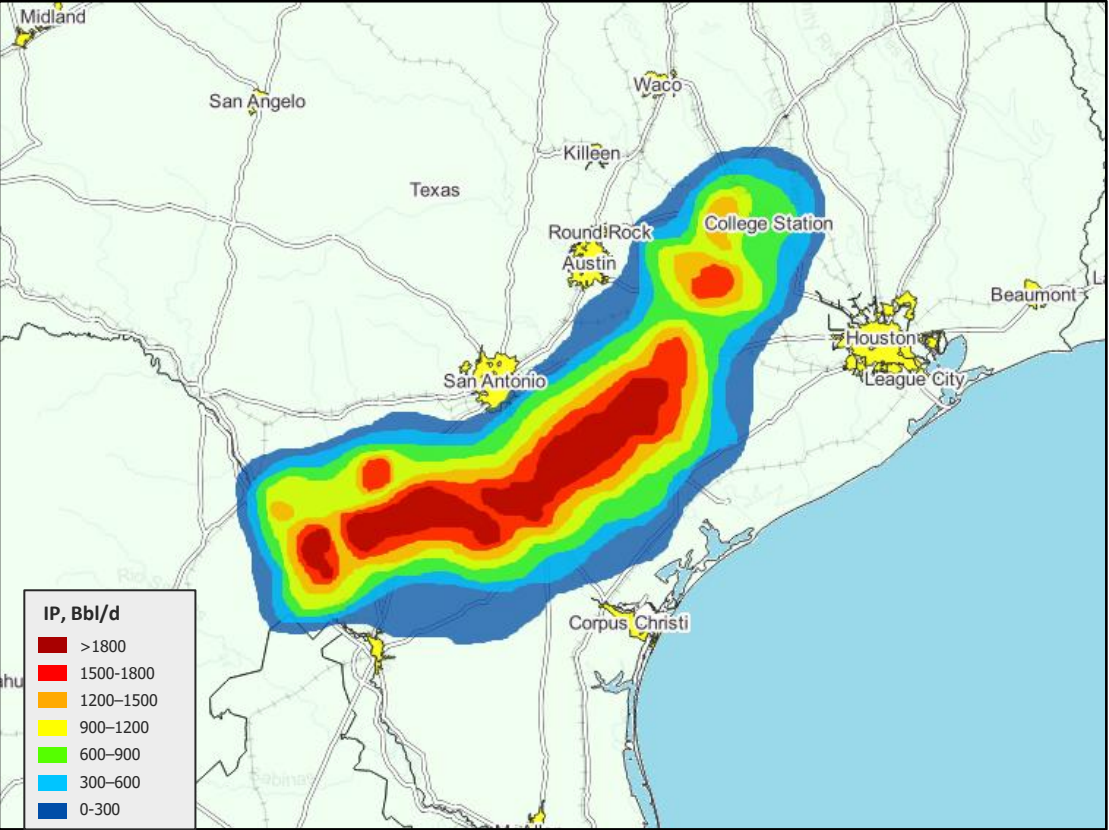


Powder River oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$48.36/Bbl for wells with an Initial Productivity (IP) greater than 1800 Bbl/d to a high of USD \$270.34/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs are USD \$8.96/Bbl, while royalties & taxes and overhead are USD \$19.35/Bbl. F&D costs range from USD \$10.51-\$129.57/Bbl and the 15% producer return ranges from USD \$9.08-\$112.00/Bbl. The assumed WTI differential is USD \$0.46/Bbl.

Incorrys analysis shows 1,900 MMBbl of oil resource available below USD \$50/Bbl and 5,900 MMBbl available below USD \$60/Bbl. Current production (2023) was 155 MBbl/d (56.6 MMBbl/yr).

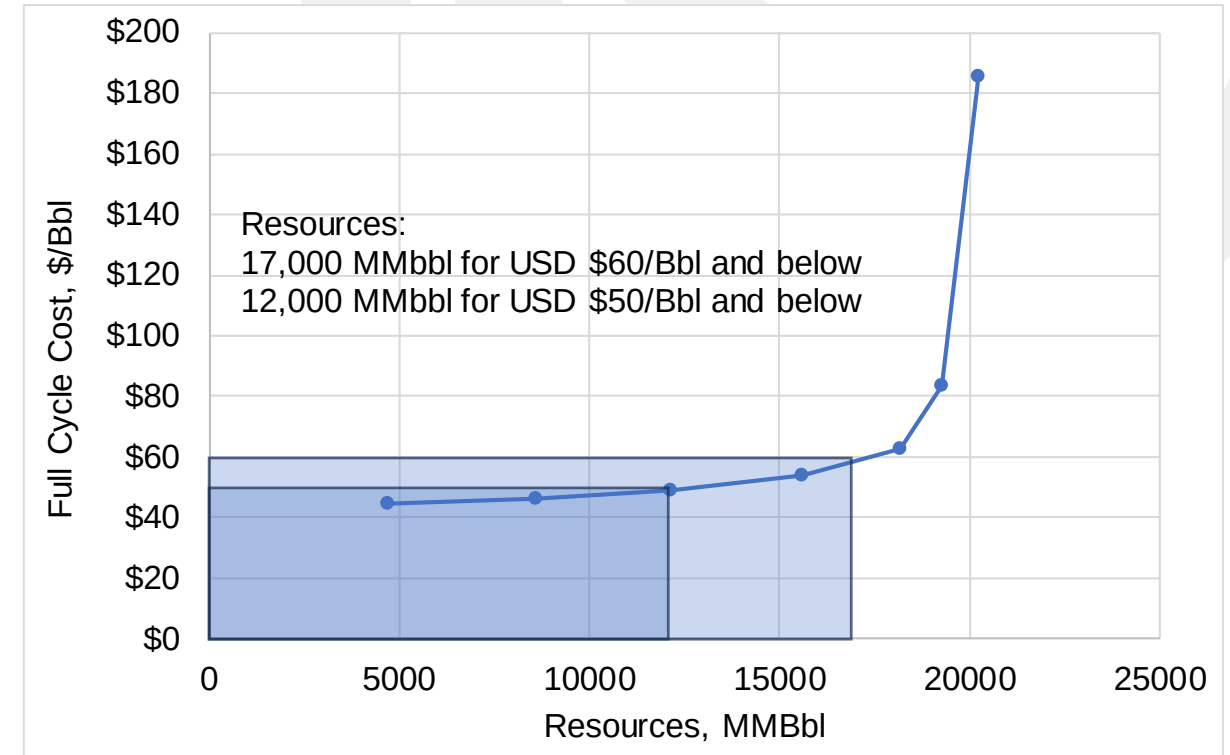
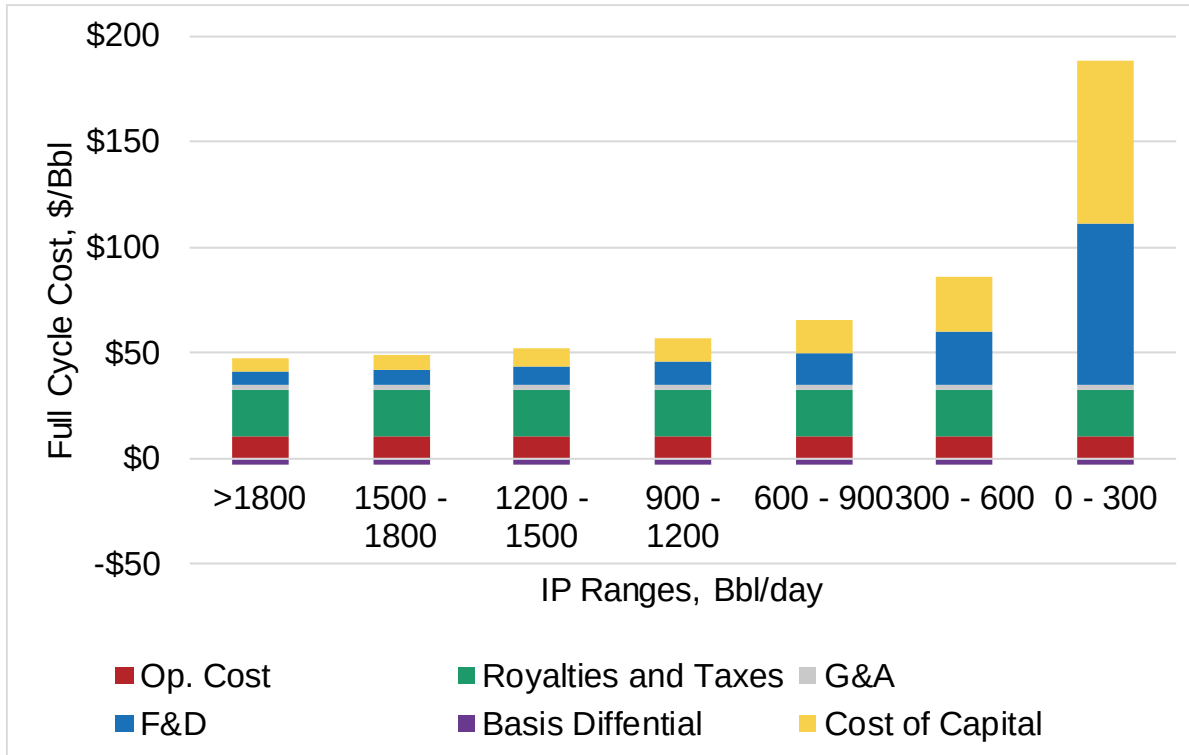
EAGLE FORD OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Eagle Ford is located in Texas. Incorrays estimates that Eagle Ford has almost 41,000 drilling locations with initial productivity above 300 Bbl/d and just over 14,000 drilling locations with initial productivity below 300 Bbl/d.

EAGLE FORD FULL CYCLE OIL COST

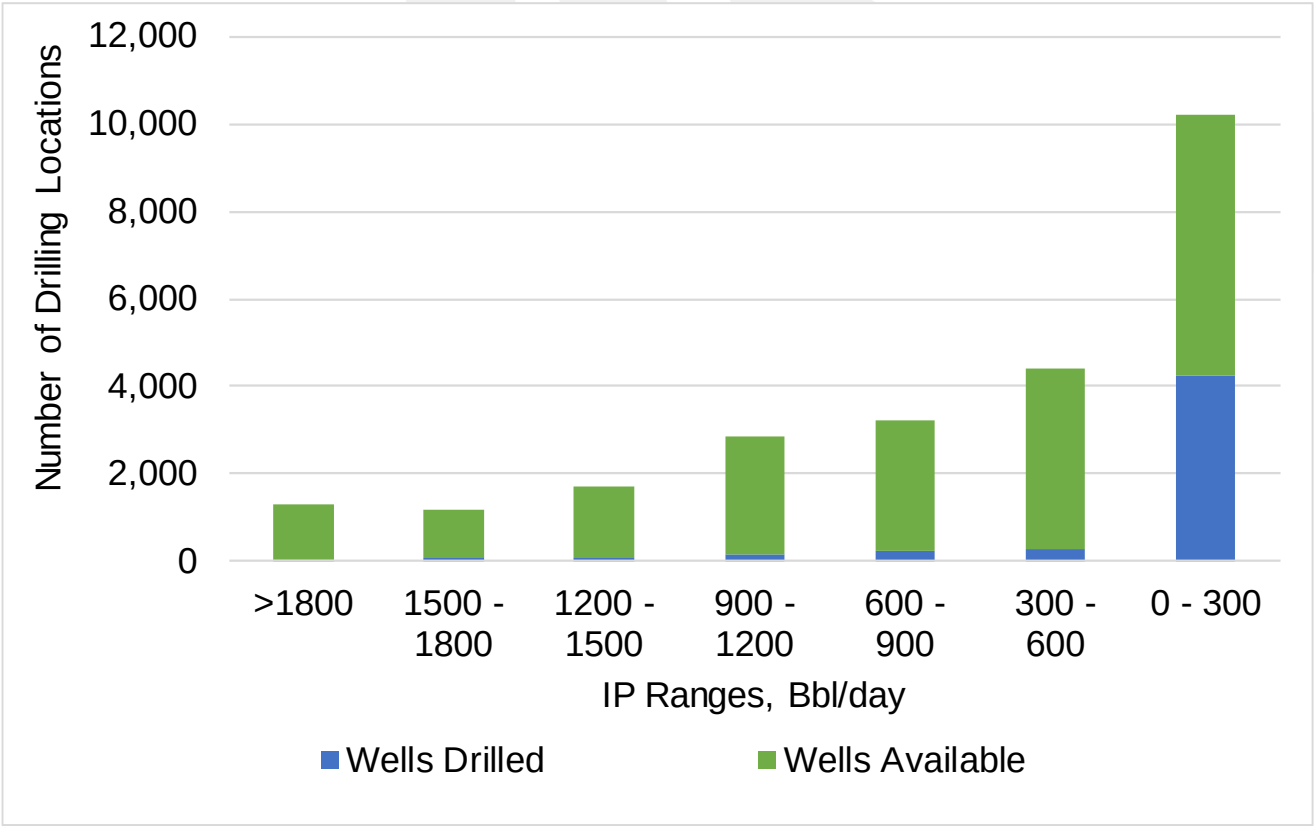
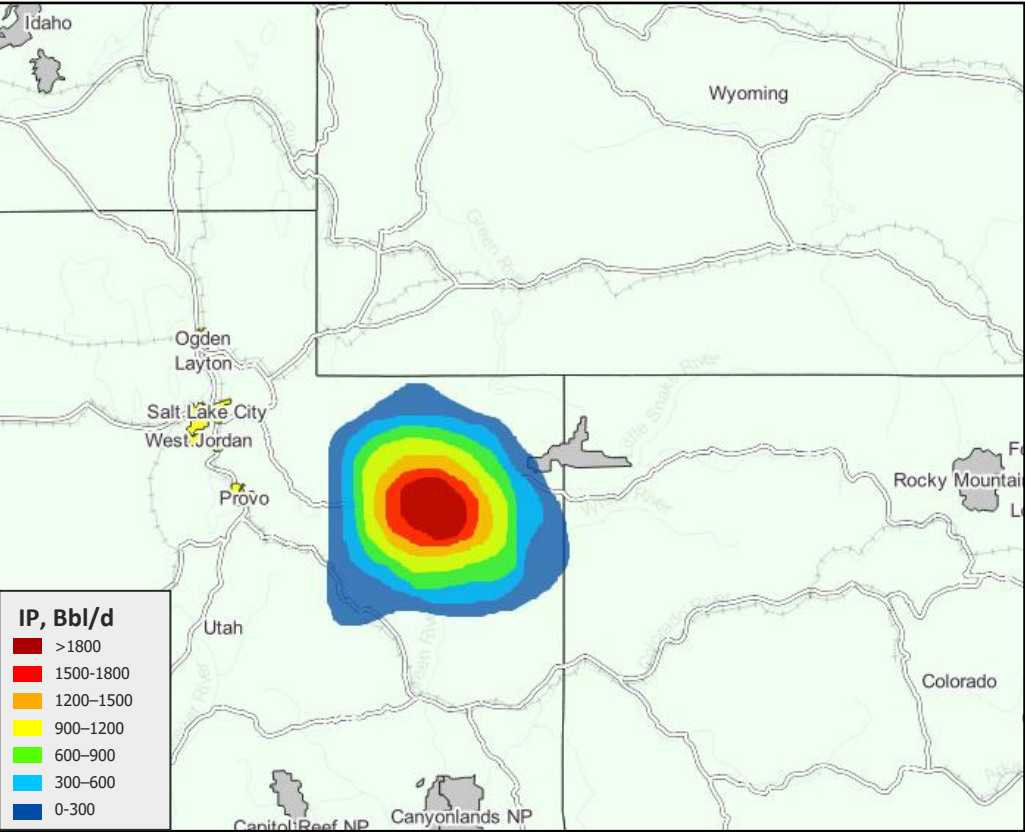


Eagle Ford oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$44.58/Bbl for wells with an Initial Productivity (IP) greater than 1800 Bbl/d to a high of USD \$185.82/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs are USD \$10.85/Bbl while royalties & taxes and overhead are USD \$24.07/Bbl. F&D costs range from USD \$6.21-\$76.64/Bbl and the 15% producer return ranges from USD \$6.25-\$77.06/Bbl. The assumed WTI differential is USD \$ -2.80/Bbl.

Incorrays analysis shows 12,000 MMBbl of oil resource available below USD \$50/Bbl and 17,000 MMBbl available below USD \$60/Bbl. Current production (2023) was almost 1,160 MBbl/d (423 MMBbl/yr).

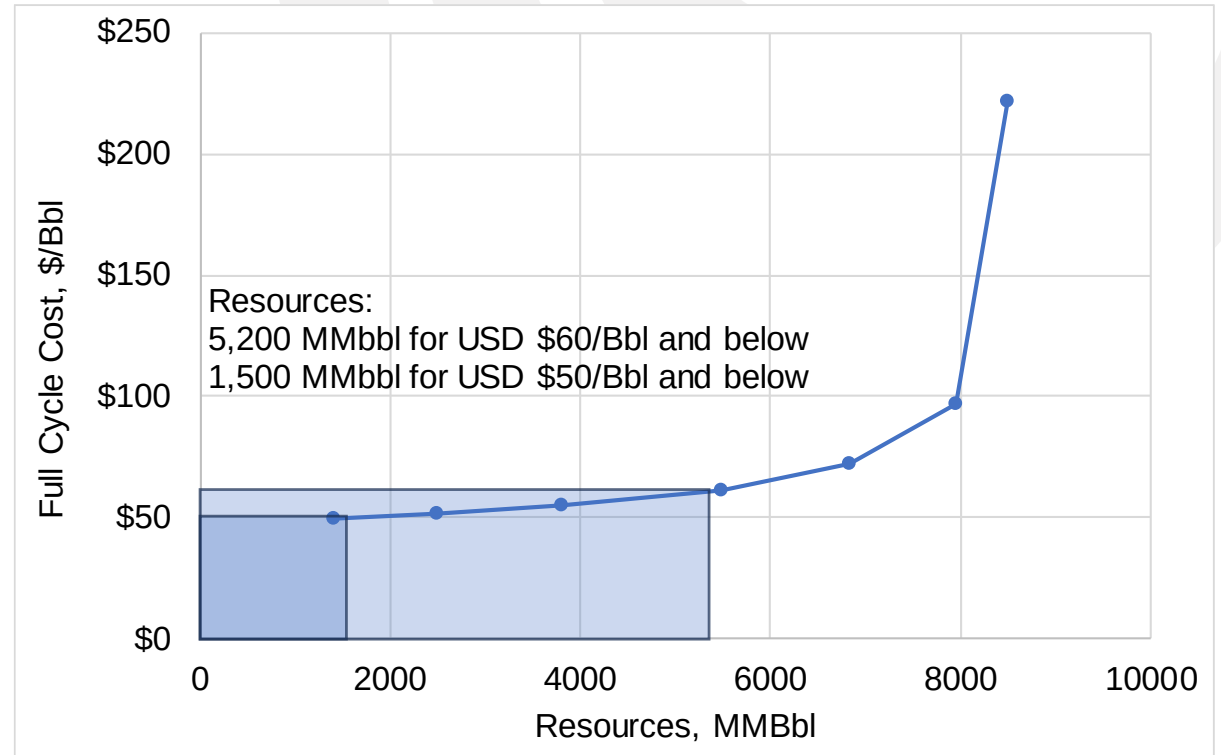
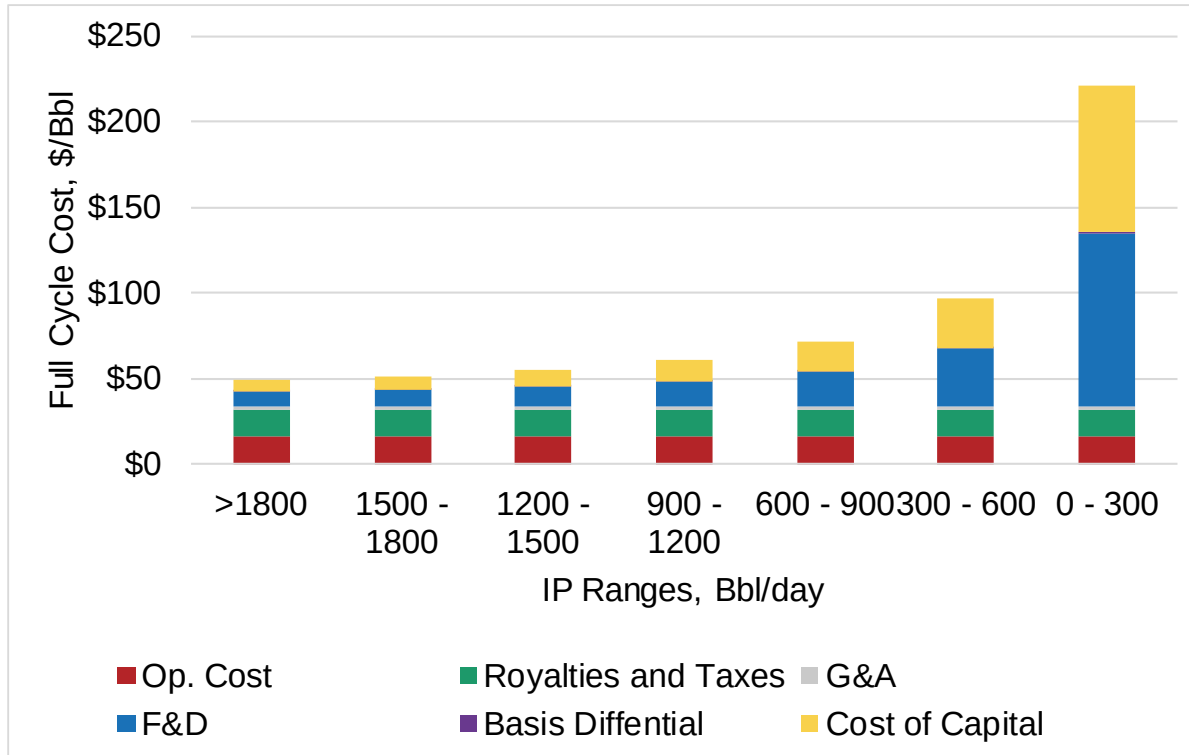
UINTA OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Uinta is located in Utah. Incorrays estimates that Uinta has almost 15,000 drilling locations with initial productivity above 300 Bbl/d and just over 10,000 drilling locations with initial productivity below 300 Bbl/d.

UINTA FULL CYCLE OIL COST

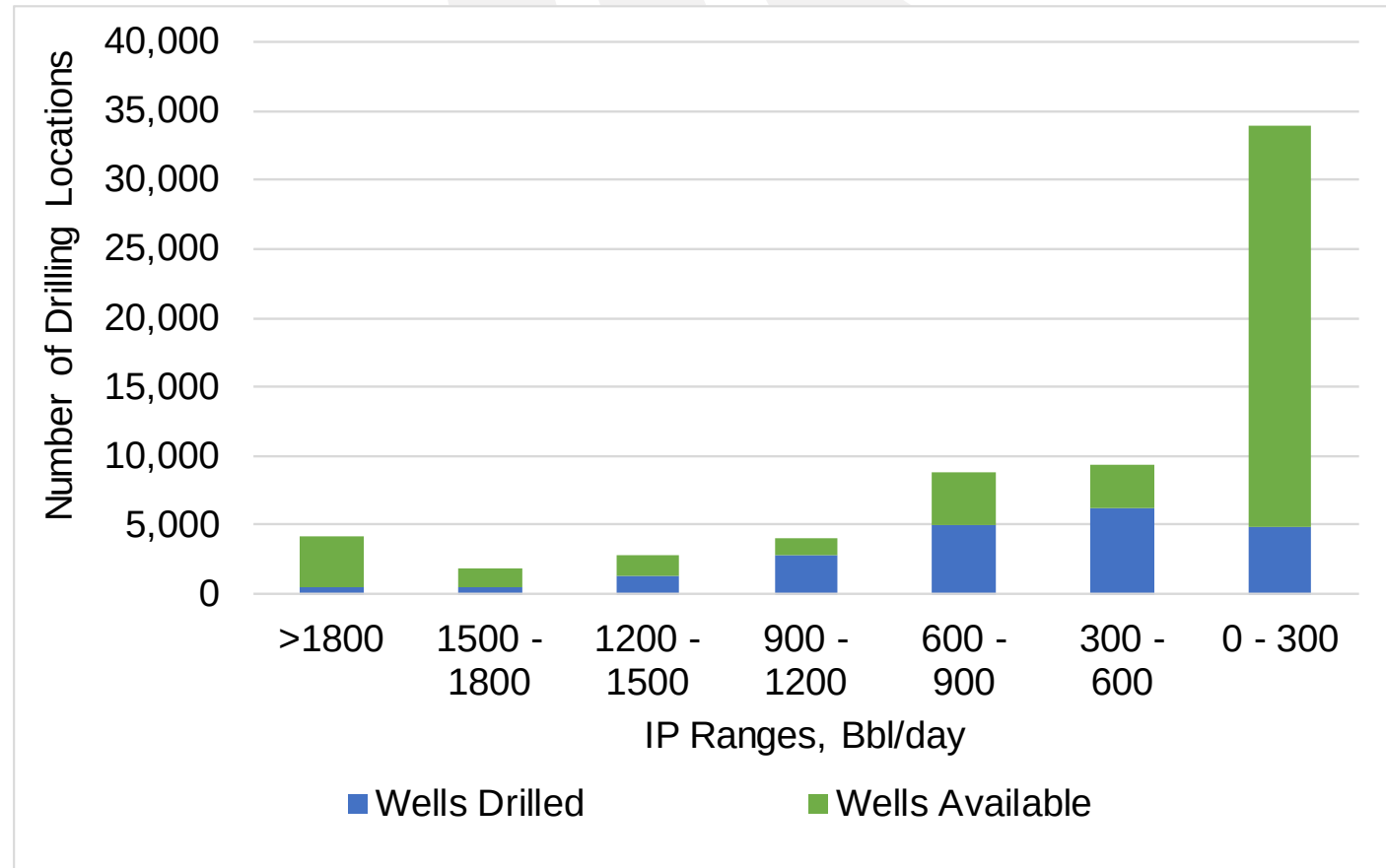
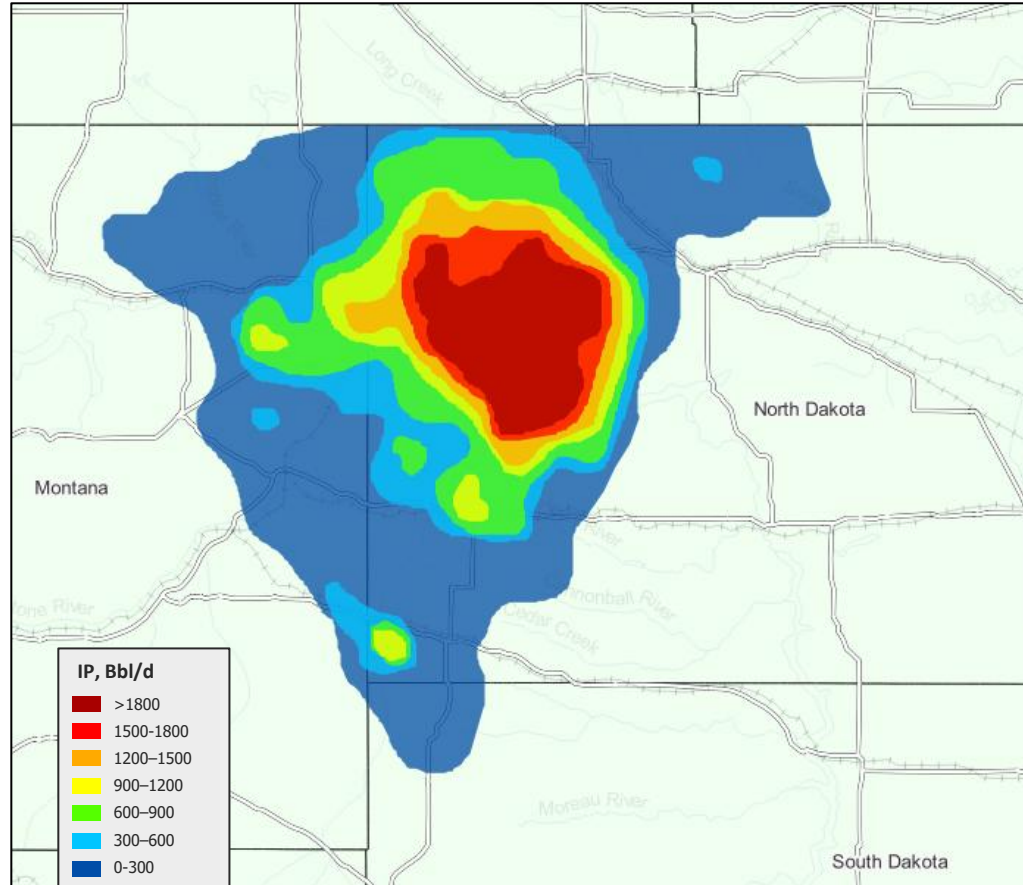


Uinta oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$49.69/Bbl for wells with an Initial Productivity (IP) greater than 1800 Bbl/d to a high of USD \$221.63/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs are USD \$16.03/Bbl while royalties & taxes and overhead are USD \$18.02/Bbl. F&D costs range from USD \$8.21-\$101.23/Bbl and the 15% producer return ranges from USD \$6.96-\$85.89/Bbl. The assumed WTI differential is USD \$0.46/Bbl.

Incorrys analysis shows 1,500 MMBbl of oil resource available below USD \$50/Bbl and 5,200 MMBbl available below USD \$60/Bbl. Current production (2023) was 130 MBbl/d (47.5 MMBbl/yr).

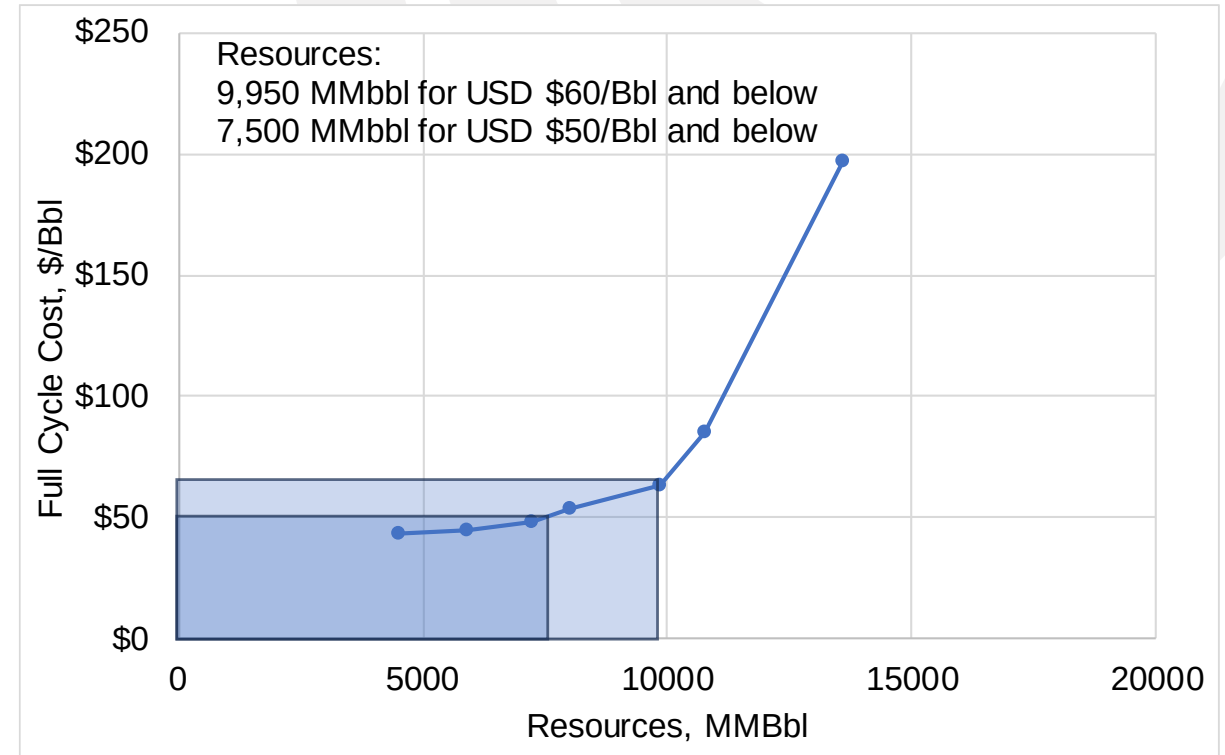
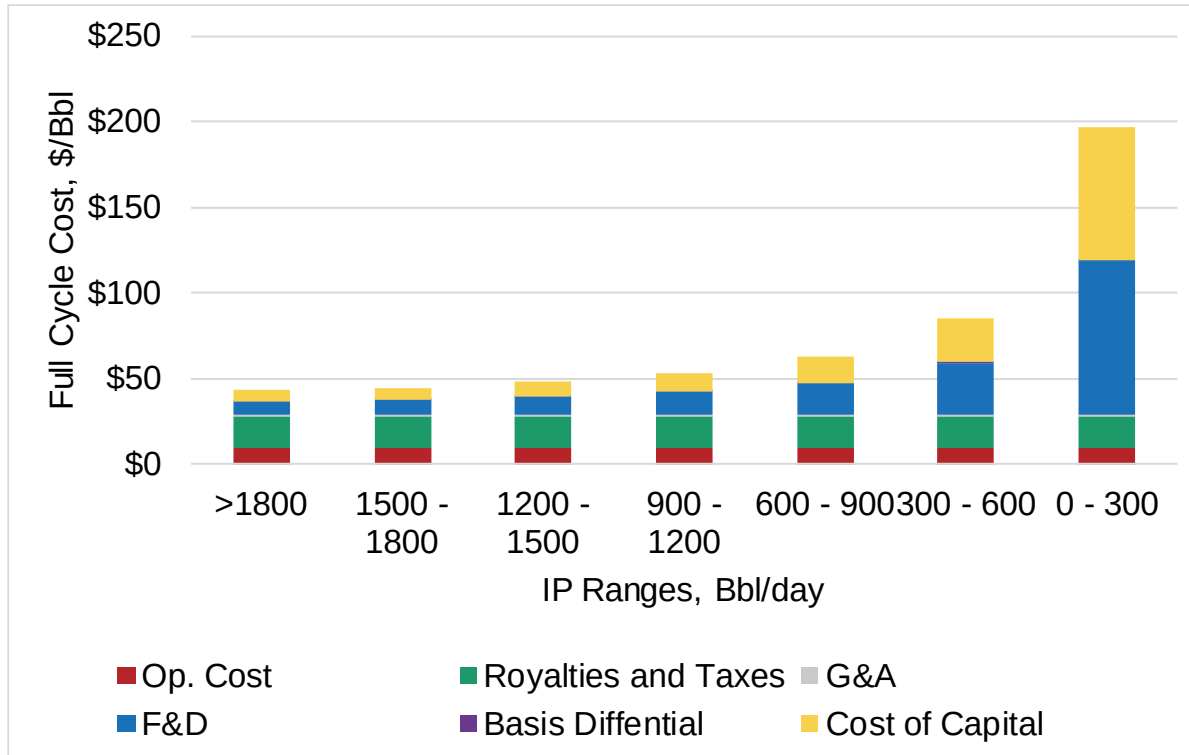
WILLISTON OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Williston is located in North Dakota and Montana. Inccorrys estimates that Williston has almost 31,000 drilling locations with initial productivity above 300 Bbl/d and 34,000 drilling locations with initial productivity below 300 Bbl/d.

WILLISTON FULL CYCLE OIL COST

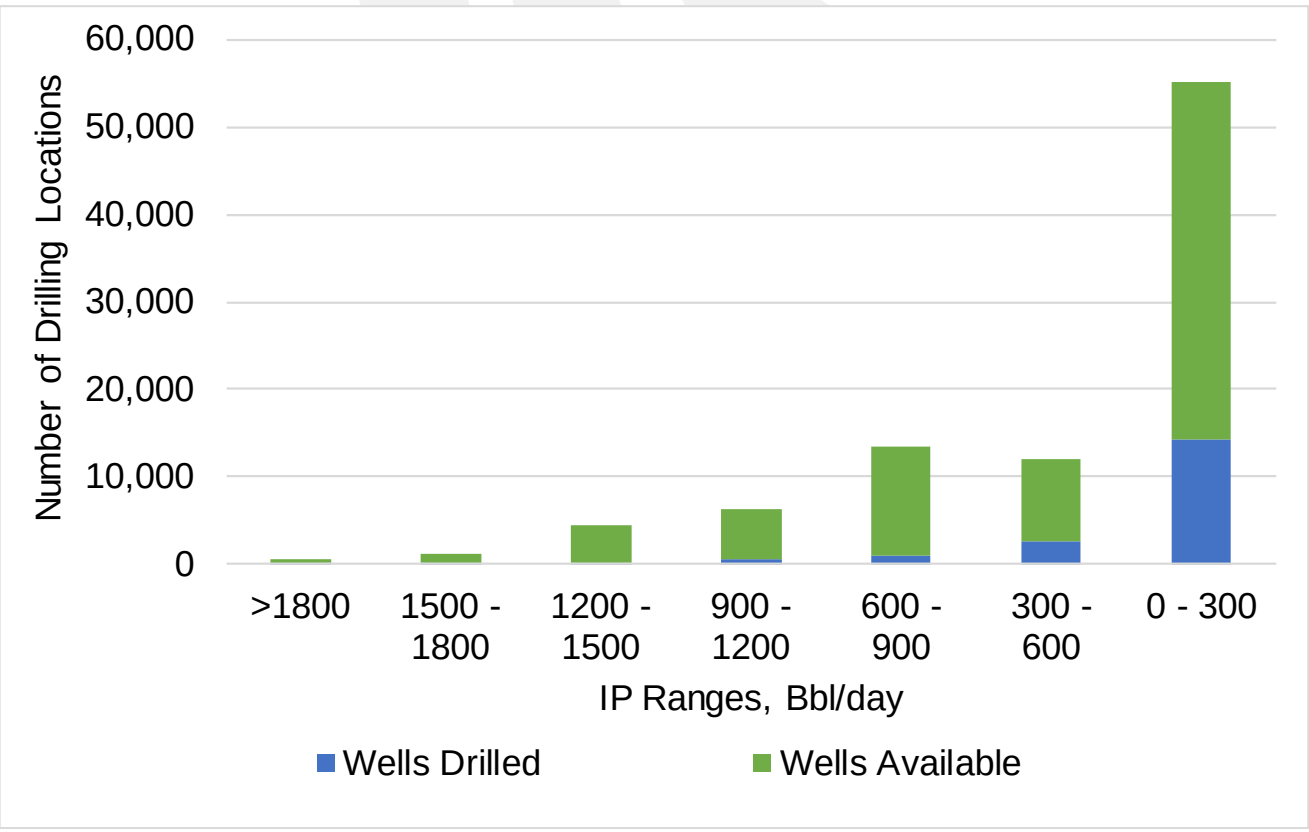
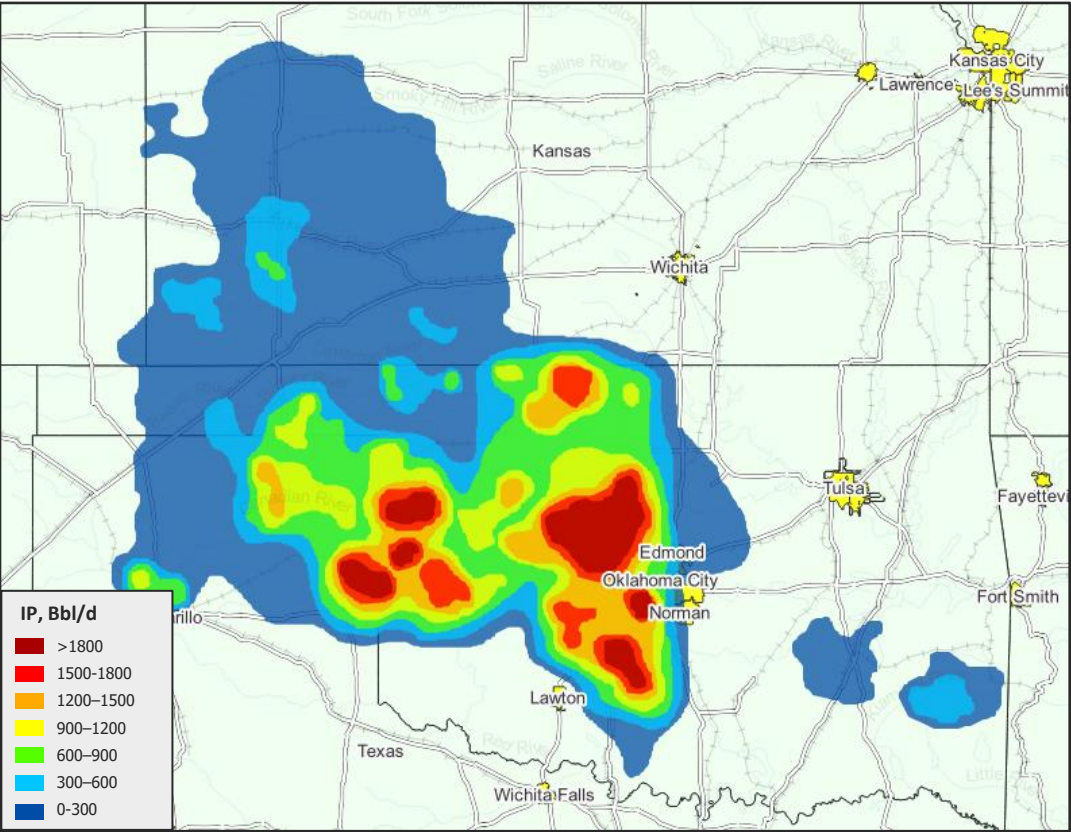


Williston oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$43.38/Bbl for wells with an Initial Productivity (IP) greater than 1800 Bbl/d to a high of USD \$196.73/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs USD \$9.73/Bbl while royalties & taxes and overhead are USD \$19.66/Bbl. F&D costs range from USD \$7.29-\$89.88/Bbl and the 15% producer return ranges from USD \$6.24-\$77.00/Bbl. The assumed WTI differential is USD \$0.46/Bbl.

Incorrys analysis shows 7,500 MMBbl of oil resource available below USD \$50/Bbl and almost 10,000 MMBbl available below USD \$60/Bbl. Current production (2023) was 1,215 MBbl/d (444 MMBbl/yr).

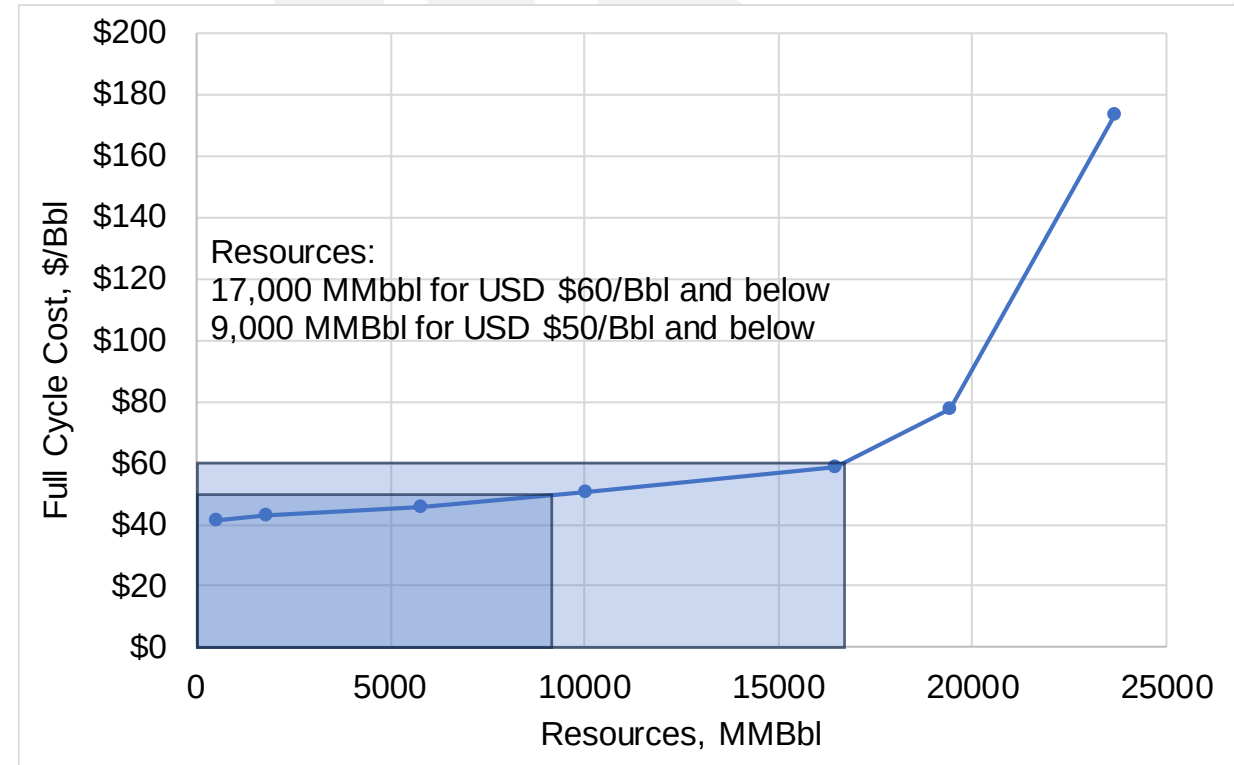
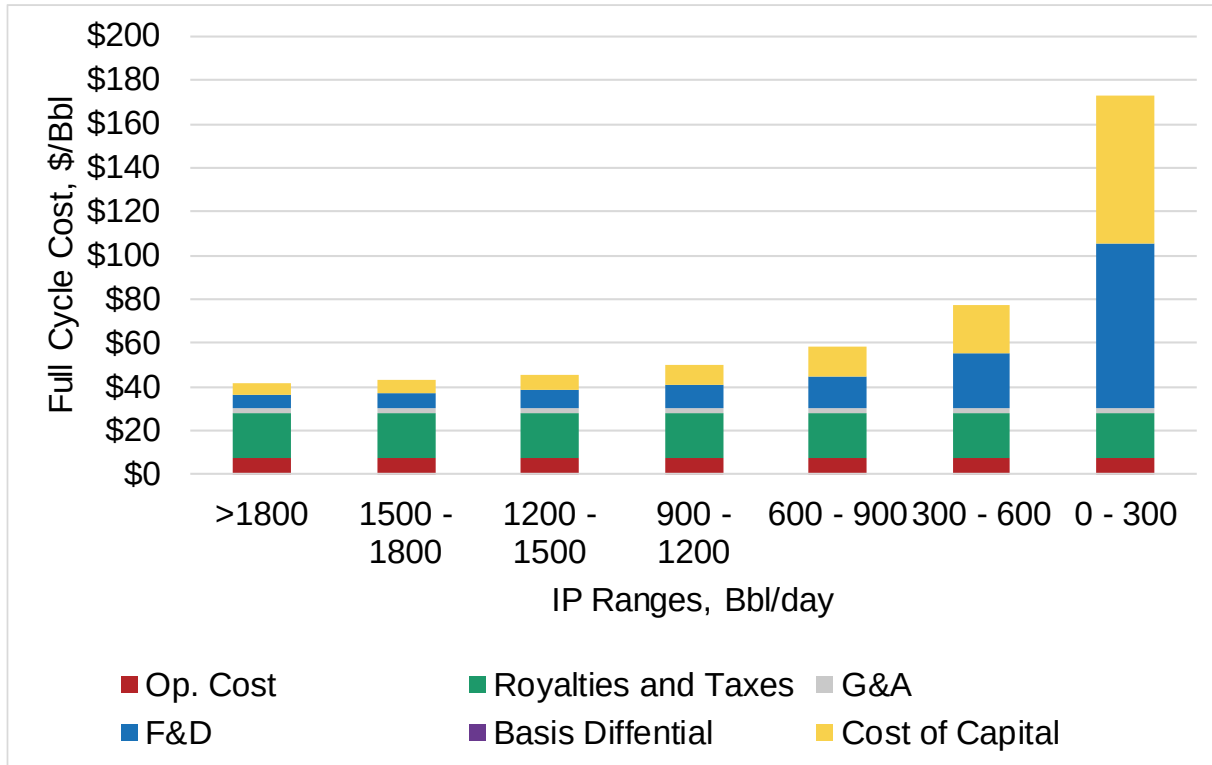
ANADARKO OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Anadarko is located in Oklahoma and Kansas. Inccorrys estimates that Anadarko has about 38,000 drilling locations with initial productivity above 300 Bbl/d and 55,000 drilling locations with initial productivity below 300 Bbl/d.

ANADARKO FULL CYCLE OIL COST

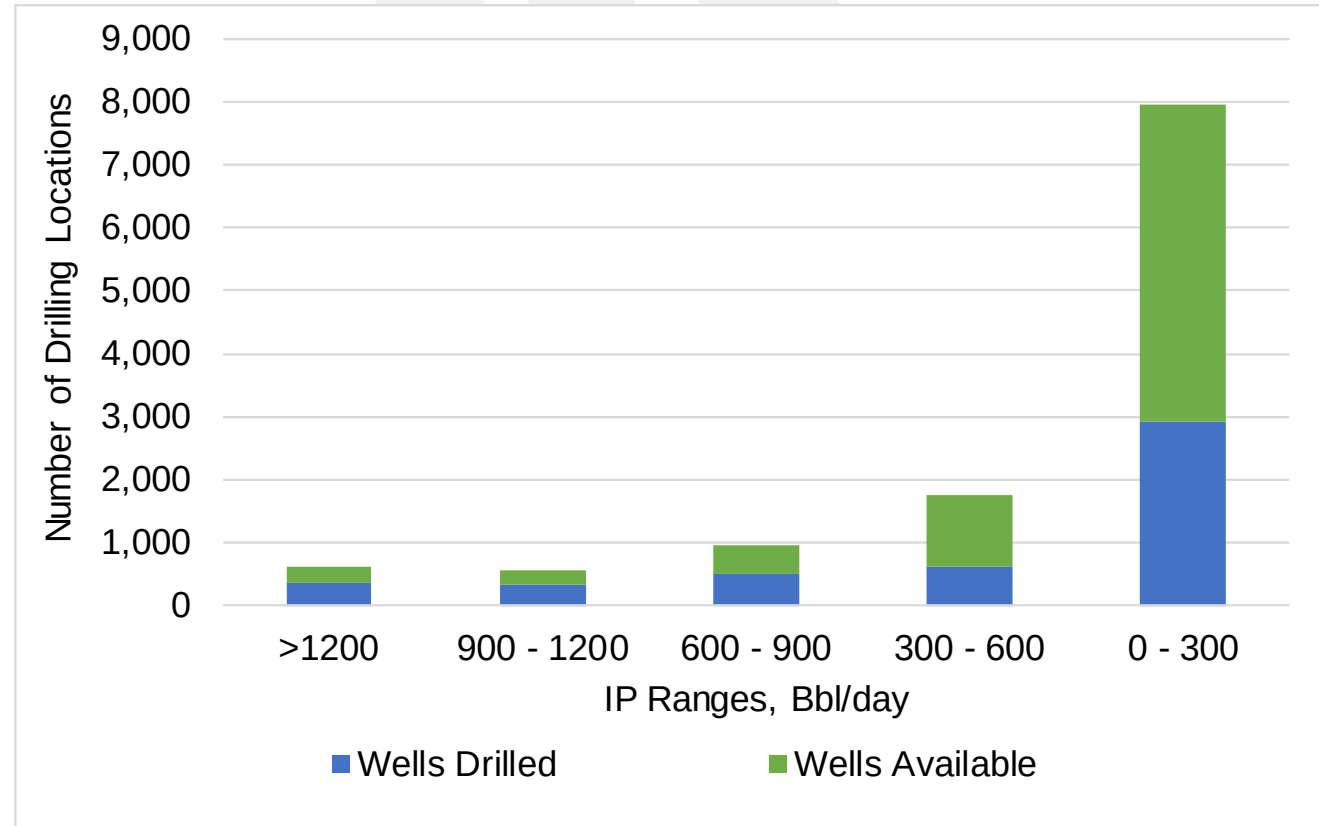
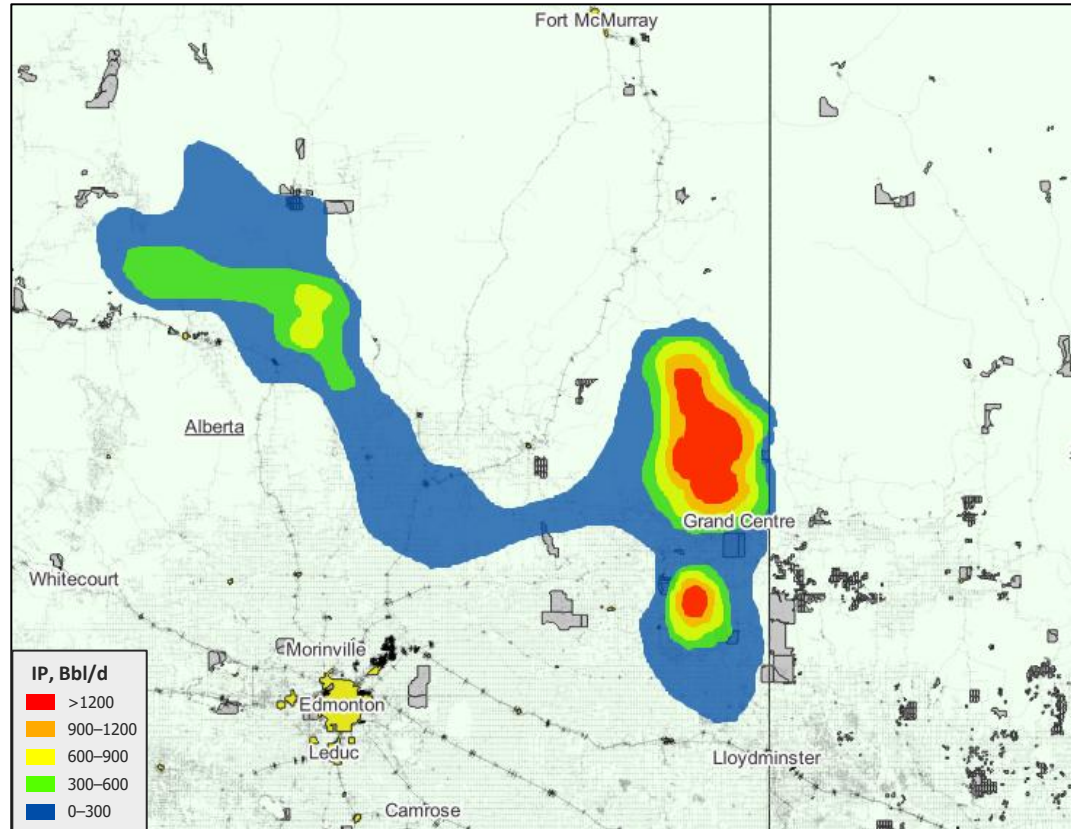


Anadarko oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$41.59/Bbl for wells with an Initial Productivity (IP) greater than 1800 Bbl/d to a high of USD \$173.27/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs USD \$7.50/Bbl while royalties & taxes and overhead are USD \$22.47/Bbl. F&D costs range from USD \$6.11-\$75.35/Bbl and the 15% producer return ranges from USD \$5.51-\$67.96/Bbl. The assumed WTI differential is USD \$0.00/Bbl.

Incorrys analysis shows 9,000 MMBbl of oil resource available below USD \$50/Bbl and 17,000 MMBbl available below USD \$60/Bbl. Current production (2023) was 190 MBbl/d (69.4 MMBbl/yr).

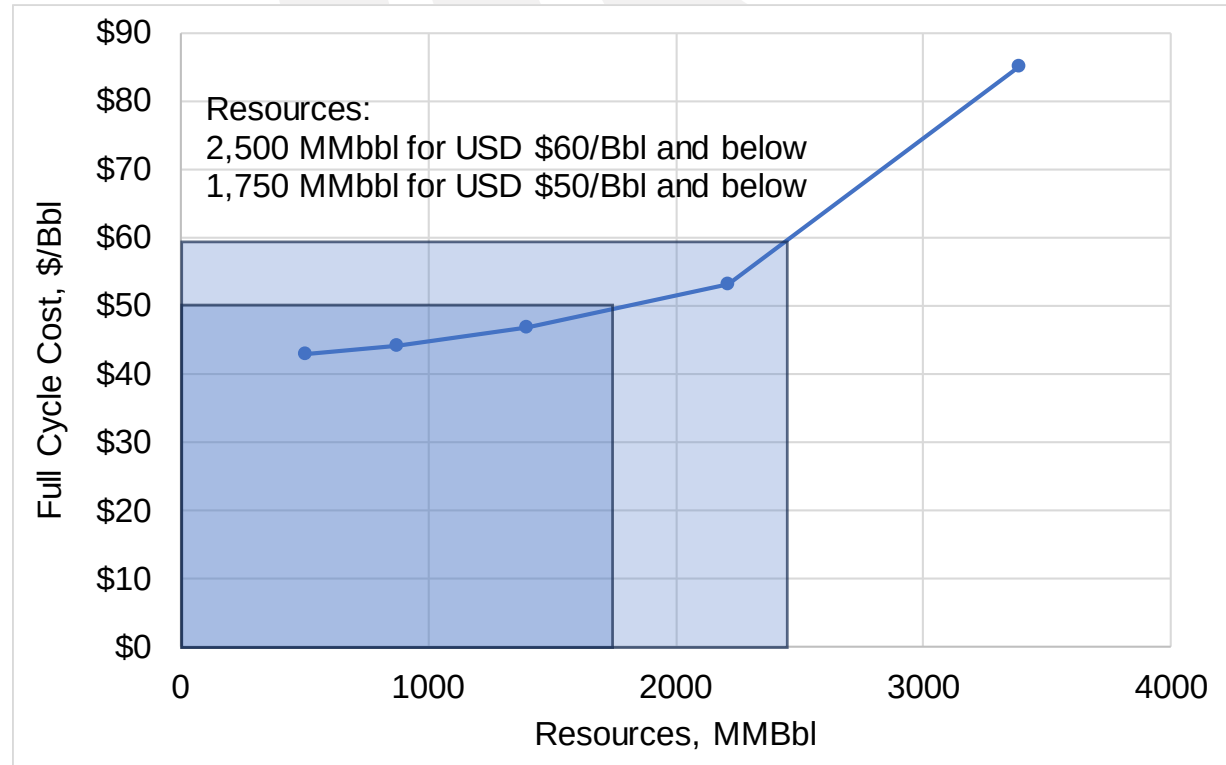
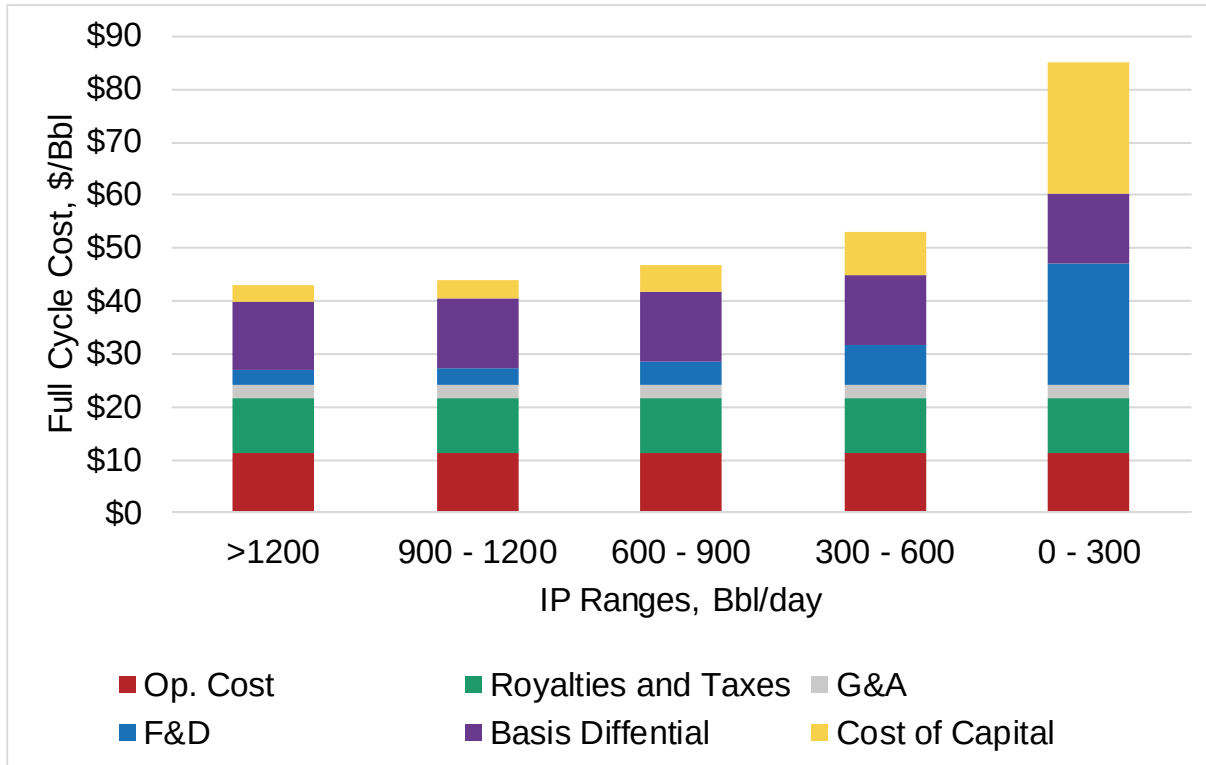
CLEARWATER OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Clearwater, located in eastern and north-central Alberta, is the fastest growing oil play in Western Canada. Currently most production of crude oil and lease condensate in Western Canada, not including oil sands, is coming from the Clearwater. Inccorrys estimates that Clearwater has almost 3,900 drilling locations with initial productivity above 300 Bbl/d and over 8,000 drilling locations with initial productivity below 300 Bbl/d.

CLEARWATER FULL CYCLE OIL COST

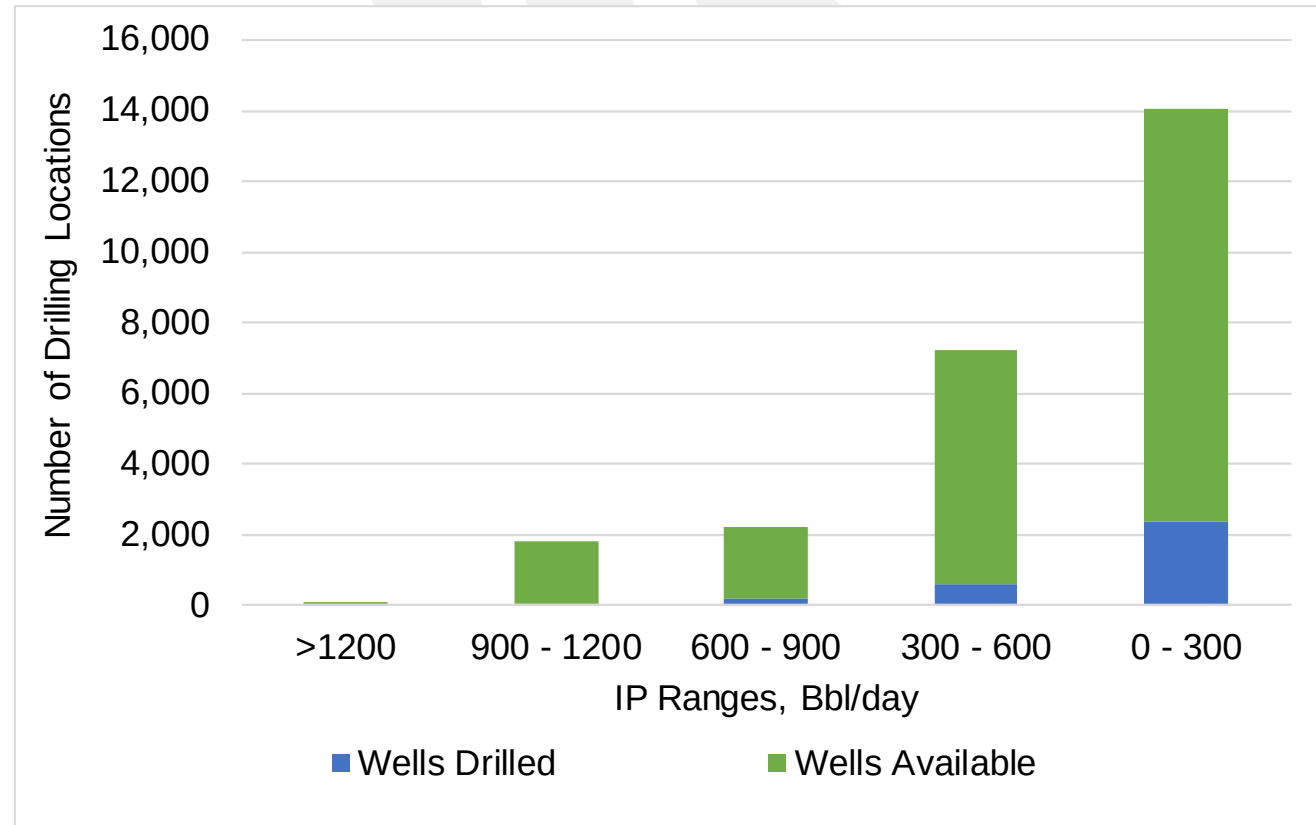
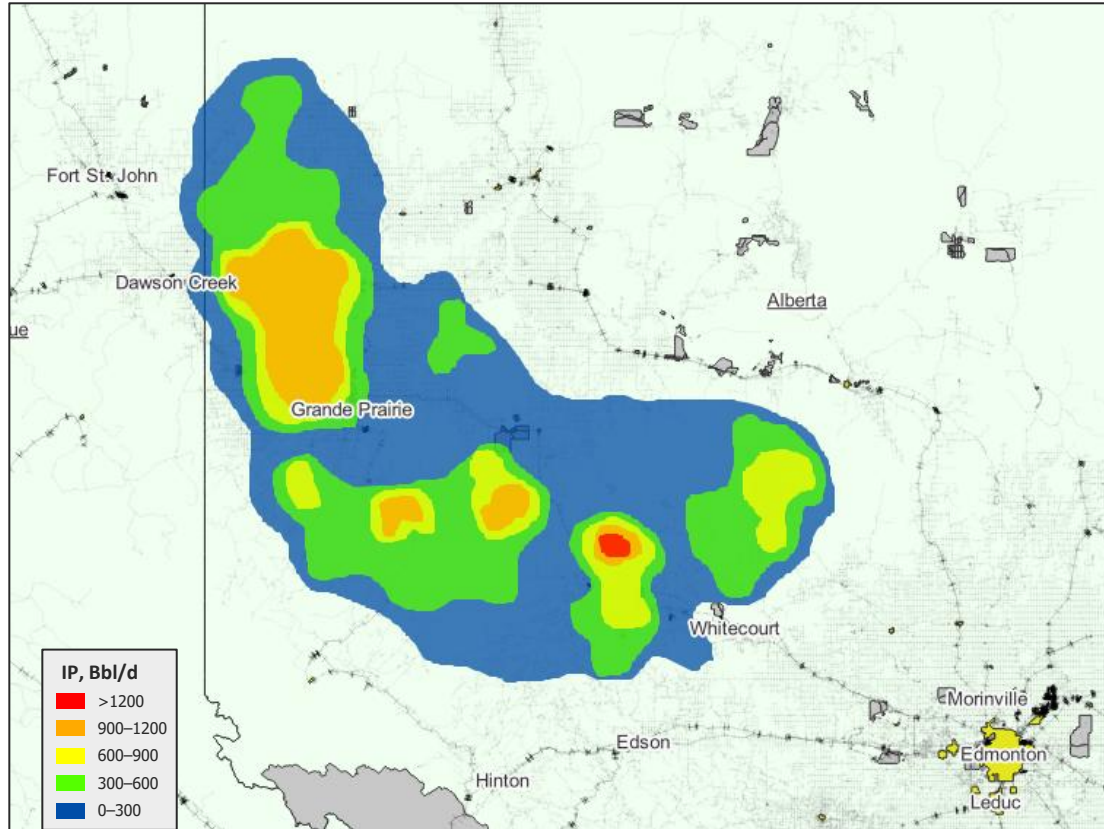


Clearwater oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$43.02/Bbl for wells with an Initial Productivity (IP) greater than 1200 Bbl/d to a high of USD \$85.04/Bbl for wells with an IP under 300 Bbl/d. Average Operating costs are USD \$11.21/Bbl, while royalties & taxes and overhead are USD \$12.91/Bbl. F&D costs range from USD \$2.74-\$22.87/Bbl and the 15% producer return ranges from USD \$2.98-\$24.87/Bbl. The assumed WTI differential is USD \$13.18/Bbl.

Incorrys analysis shows 1,750 MMBbl of oil resource available below USD \$50/Bbl and 2,500 MMBbl available below USD \$60/Bbl. Current production (2023) was 300 MBbl/d (110 MMBbl/yr).

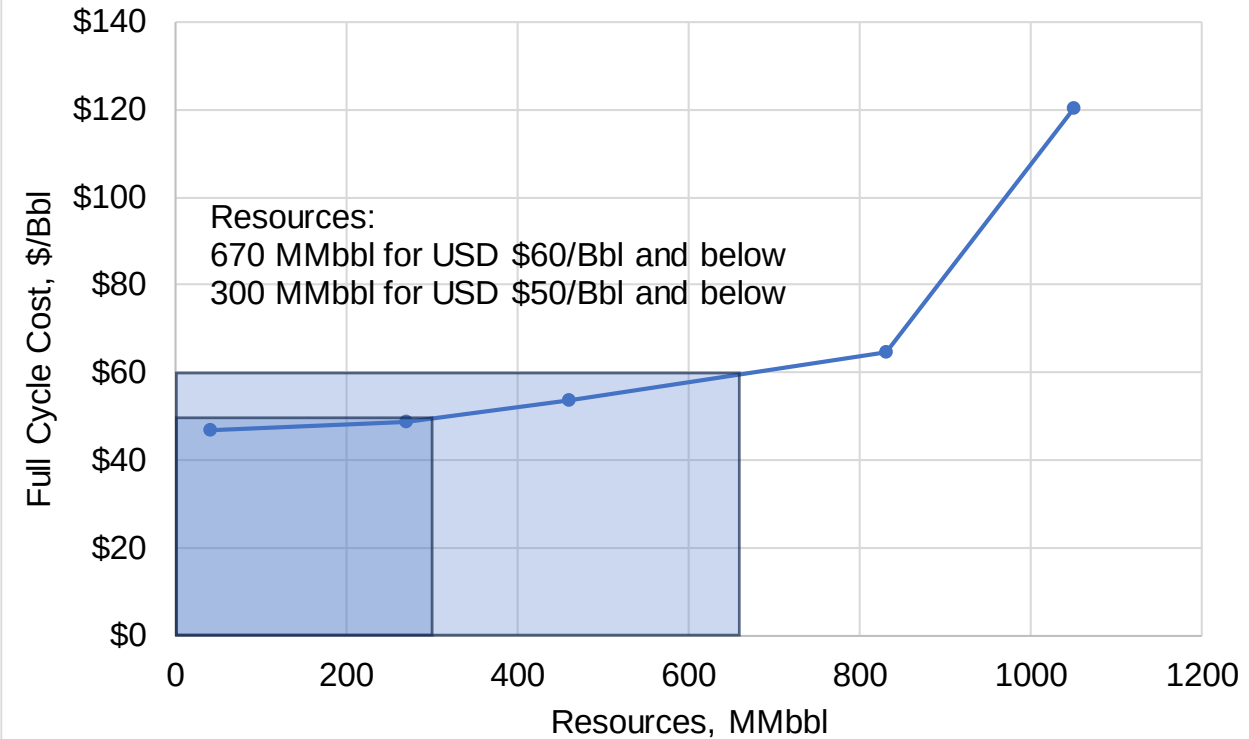
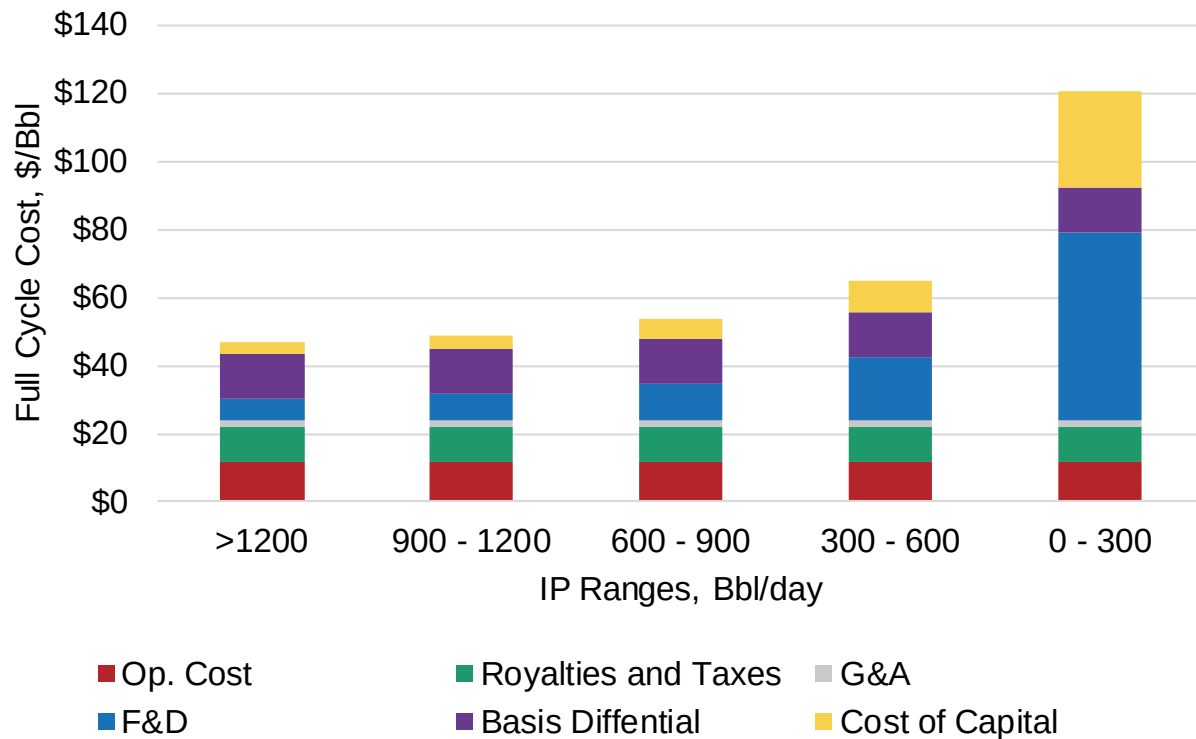
ALBERTA WEST CENTRAL OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Alberta West Central oil play is located northwest of Edmonton from Whitecourt to Grande Prairie. The area includes Swan Hills, Slave Point, Beaverhill Lake, and other formations. Wells targeting Montney, Duvernay, and Cardium are not included. Inccorrys estimates that Alberta West Central has almost 11,300 drilling locations with initial productivity above 300 Bbl/d and 14,000 drilling locations with initial productivity below 300 Bbl/d.

ALBERTA WEST CENTRAL FULL CYCLE OIL COST

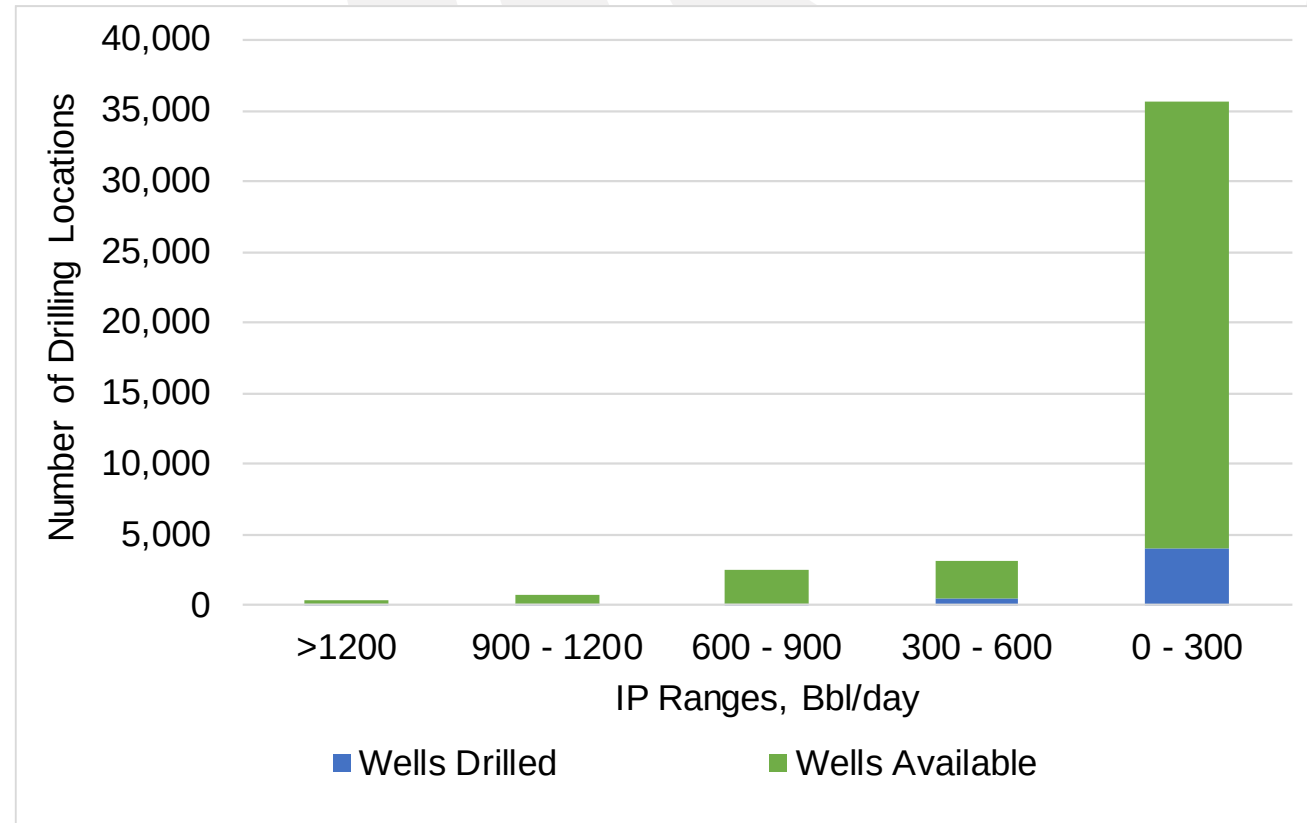
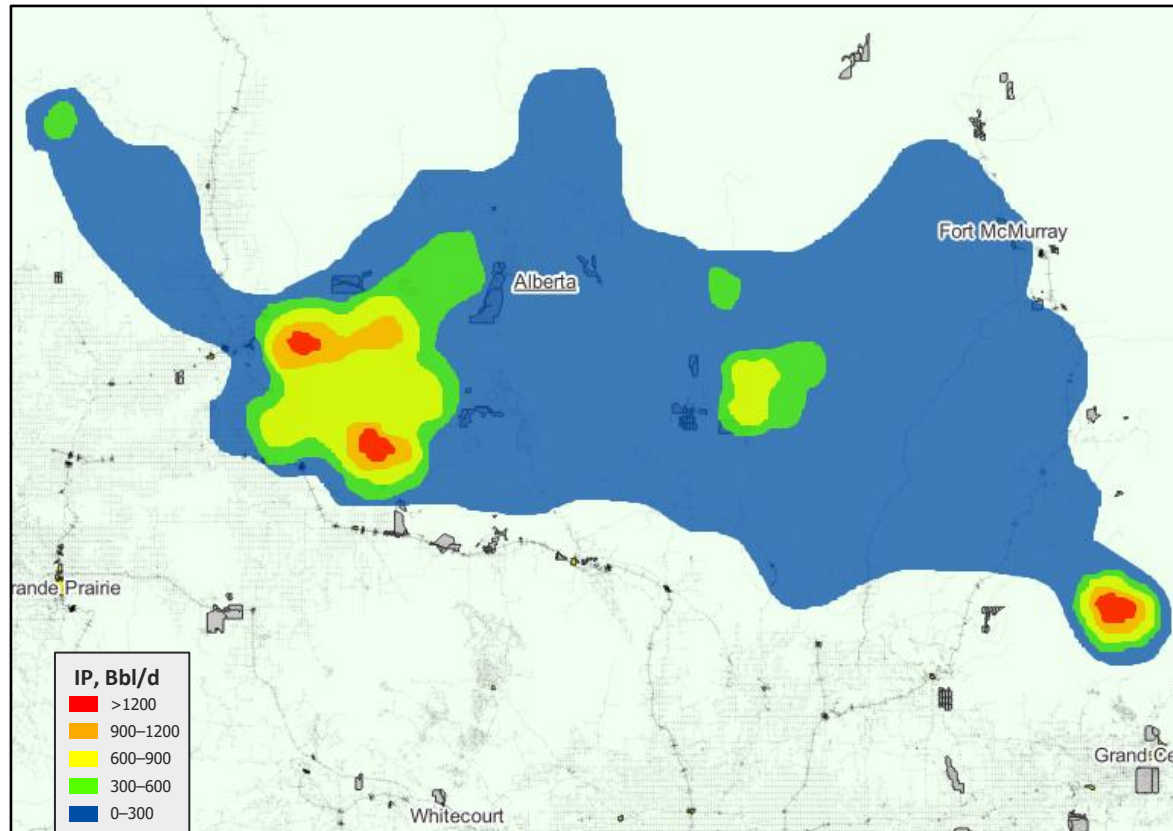


Alberta West Central oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$47.01/Bbl for wells with an Initial Productivity (IP) greater than 1200 Bbl/d to a high of USD \$120.54/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs are USD \$11.70/Bbl while royalties & taxes and overhead are USD \$12.10/Bbl. F&D costs range from USD \$6.66-\$55.50/Bbl and the 15% producer return ranges from USD \$3.37-\$28.06/Bbl. The assumed WTI differential is USD \$13.18/Bbl.

Incorrys analysis shows 300 MMbbl of oil resource available below USD \$50/Bbl and 670 MMbbl available below USD \$60/Bbl. Current production (2023) was 63 MBbl/d (23 MMbbl/yr).

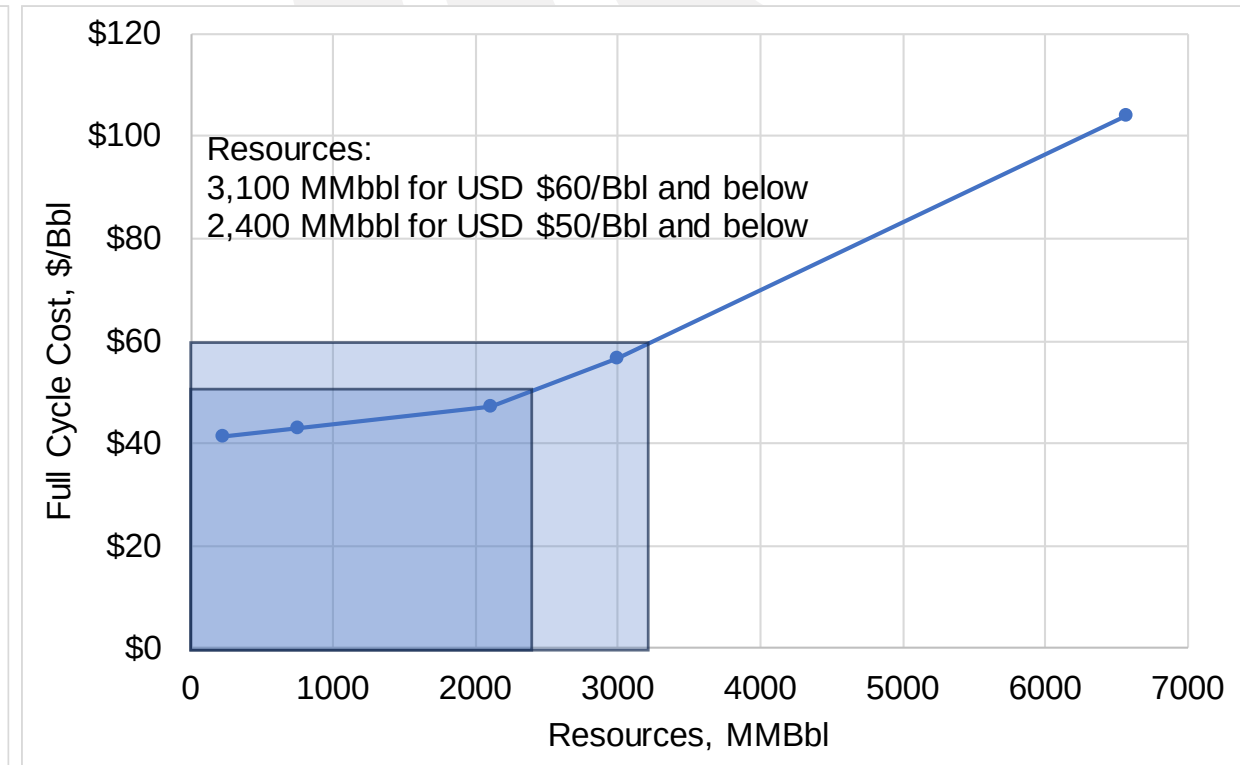
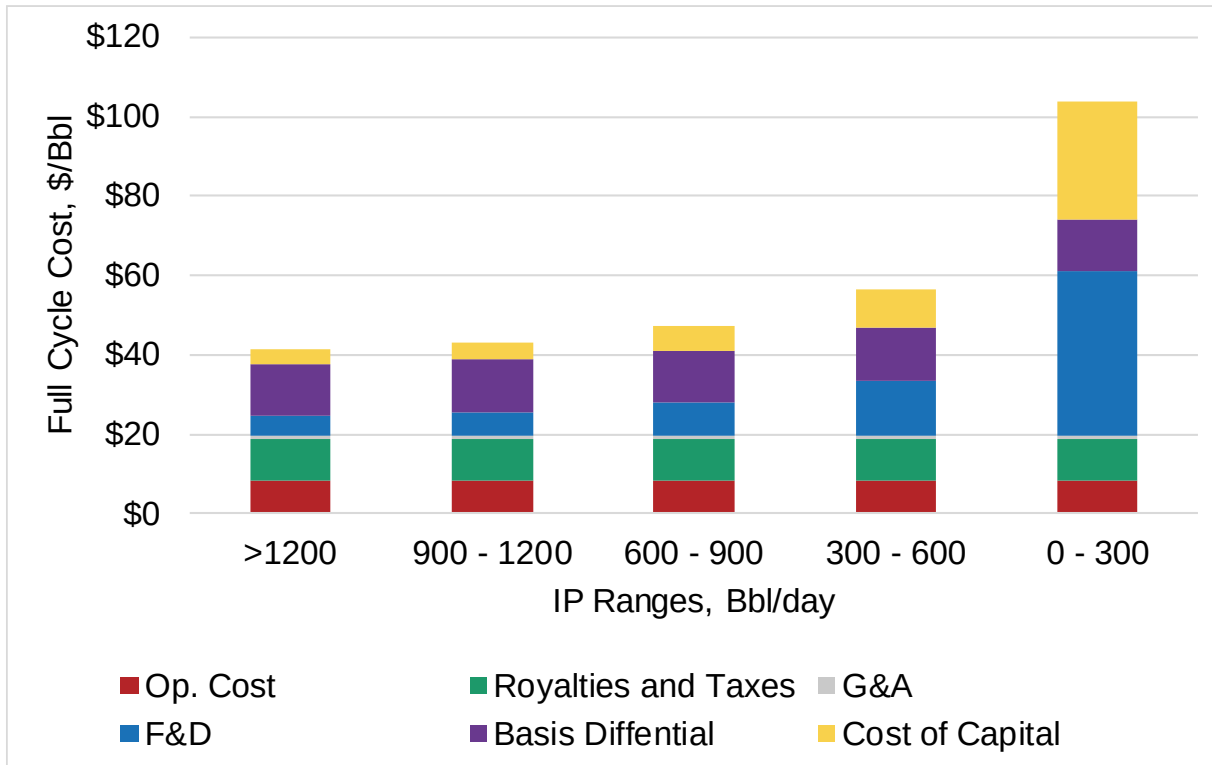
ALBERTA NORTH OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Alberta North producing area is north of Whitecourt, including wells in the Wabiskaw-McMurray, Pekisko, Keg River, Upper Grand Rapids, Bluesky-Getting, and other formations. Wells producing bitumen are not included. Inccorrys estimates that Alberta North has about 6,600 drilling locations with productivity greater than 300 Bbl/d and almost 36,000 drilling locations with productivity below 300 Bbl/d.

ALBERTA NORTH FULL CYCLE OIL COST

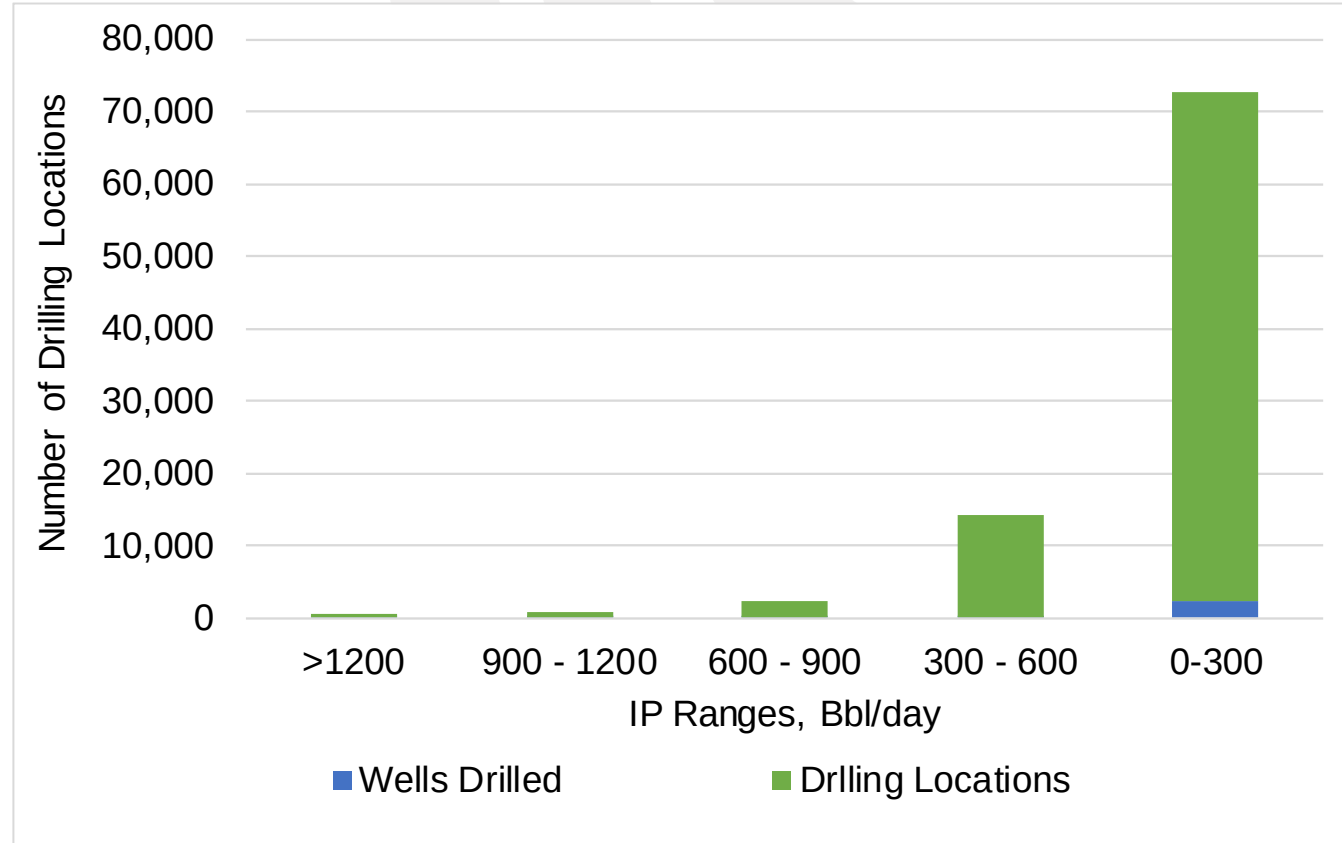
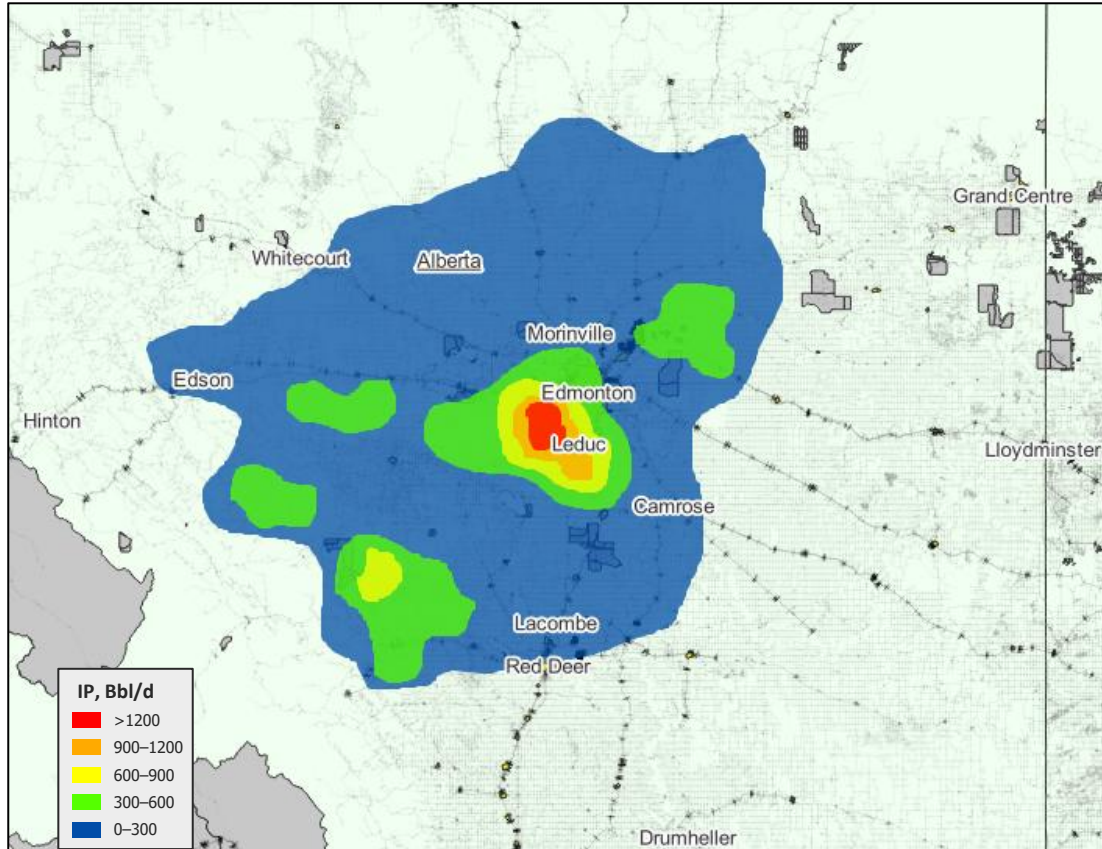


Alberta North oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$41.48/Bbl for wells with an Initial Productivity (IP) greater than 1200 Bbl/d to a high of USD \$104.06/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs USD \$8.26/Bbl while royalties & taxes and overhead are USD \$11.51/Bbl. F&D costs range from USD \$4.95-\$41.26/Bbl and the 15% producer return ranges from USD \$3.58-\$29.86/Bbl. The assumed WTI differential is USD \$13.18/Bbl.

Incorrys analysis shows that there is 2,400 MMBbl of oil resource available below USD \$50/Bbl and 3,100 MMBbl available below USD \$60/Bbl. Current production (2023) was 90 MBbl/d (33 MMBbl/yr).

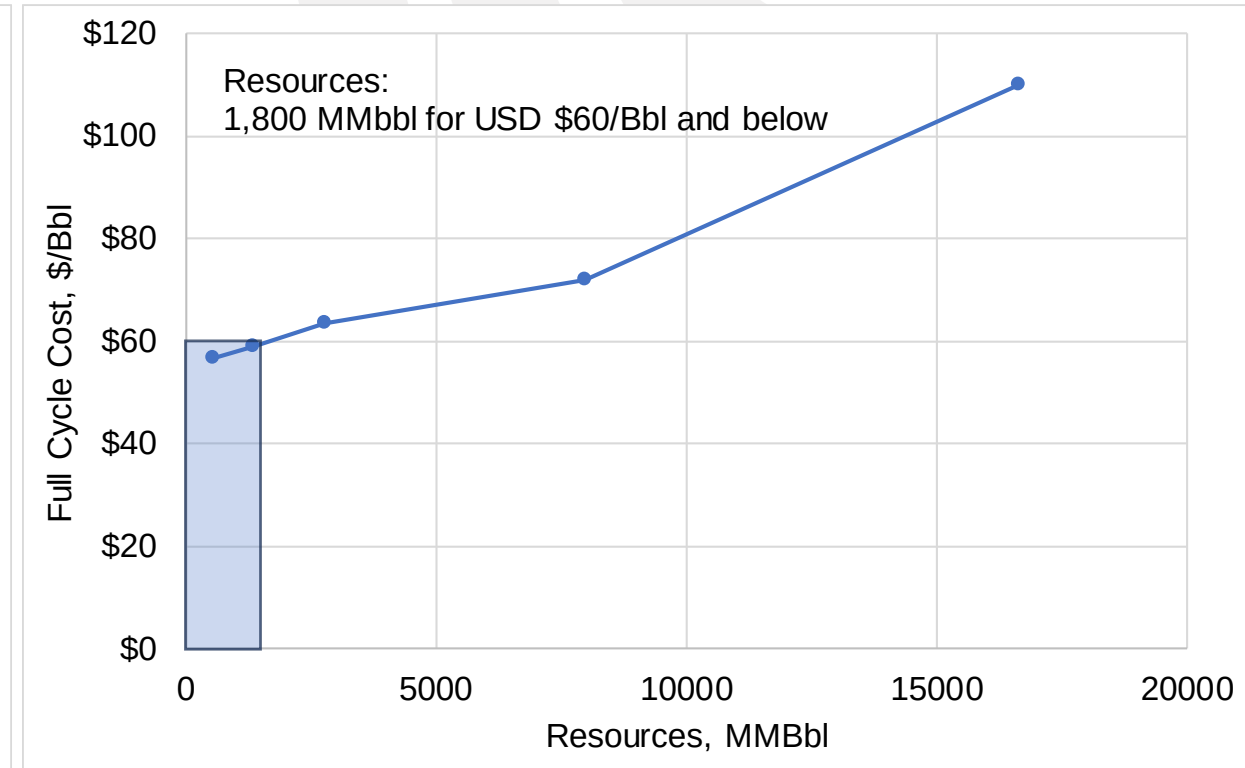
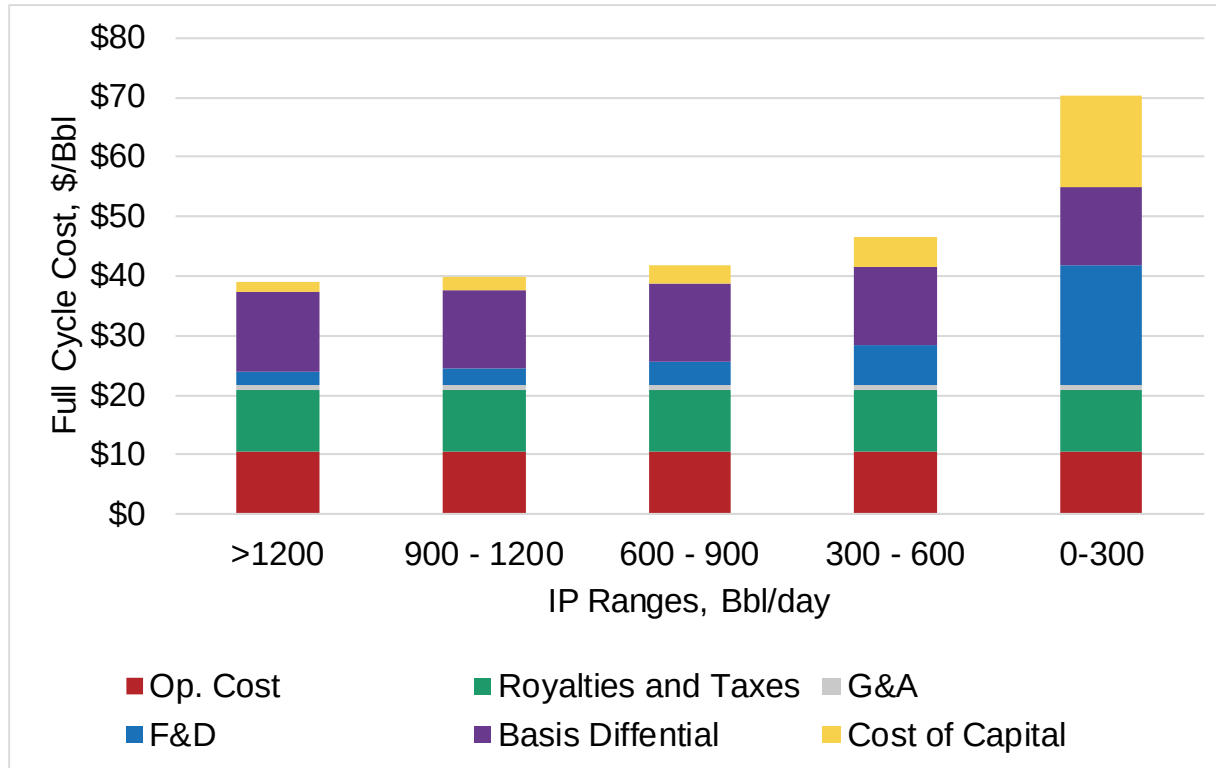
ALBERTA CENTRAL OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Alberta Central wells are located around Leduc Alberta and near Edmonton. Wells targeting the Montney, Duvernay, and Clearwater are not included. Incorrays estimates that Alberta Central has over 18,000 drilling locations with productivity greater than 300 Bbl/d and almost 73,000 drilling locations with productivity below 300 Bbl/d. Wells producing bitumen and Clearwater wells, located in the same geographical area, are not included.

ALBERTA CENTRAL OIL

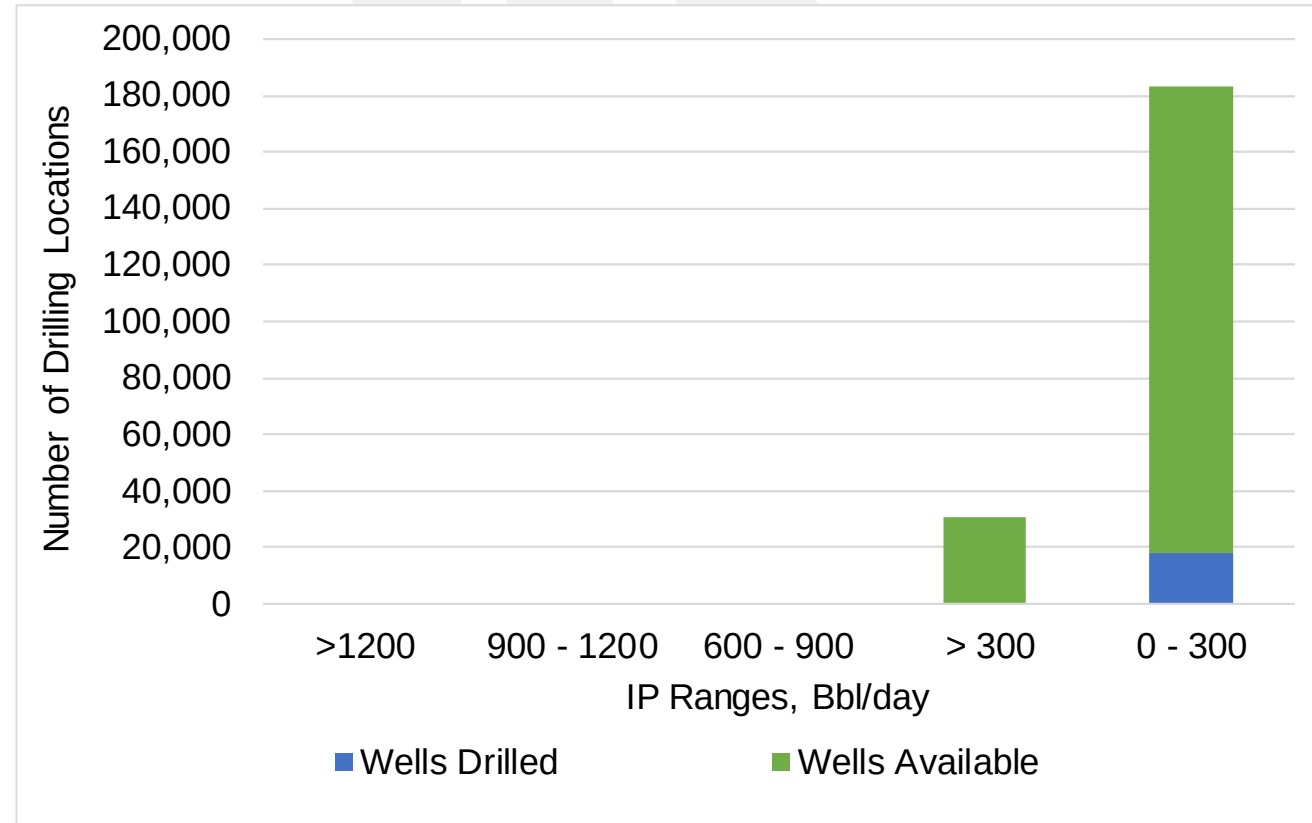
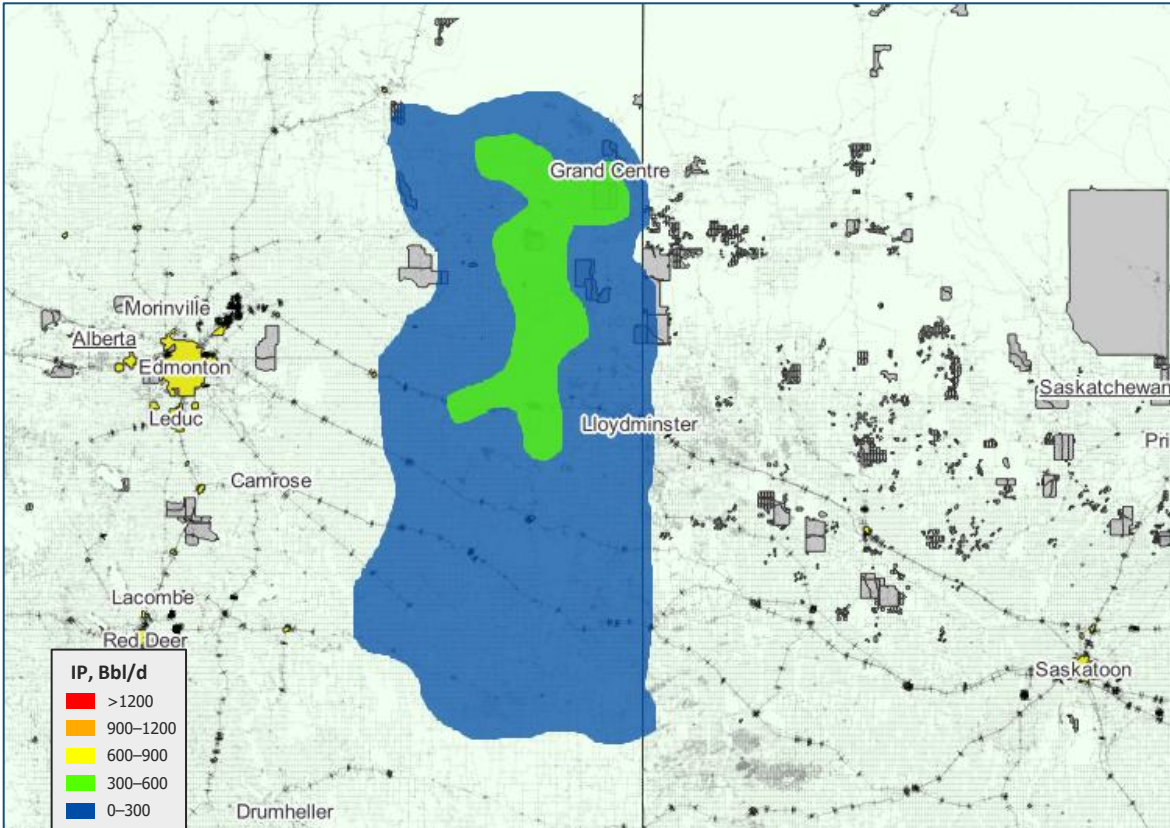


Alberta Central oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$39.07/Bbl for wells with an Initial Productivity (IP) greater than 1200 Bbl/d to a high of USD \$70.44/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs are USD \$10.47/Bbl while royalties & taxes and overhead are USD \$11.15/Bbl. F&D costs range from USD \$2.43-\$20.27/Bbl and the 15% producer return ranges from USD \$1.84-\$15.37/Bbl. The assumed WTI differential is USD \$13.18/Bbl.

Incorrys analysis shows that there is no oil resource available below USD \$50/Bbl and 1,800 MMBbl available below USD \$60/Bbl. Current production (2023) was 30 MBbl/d (11 MMBbl/yr).

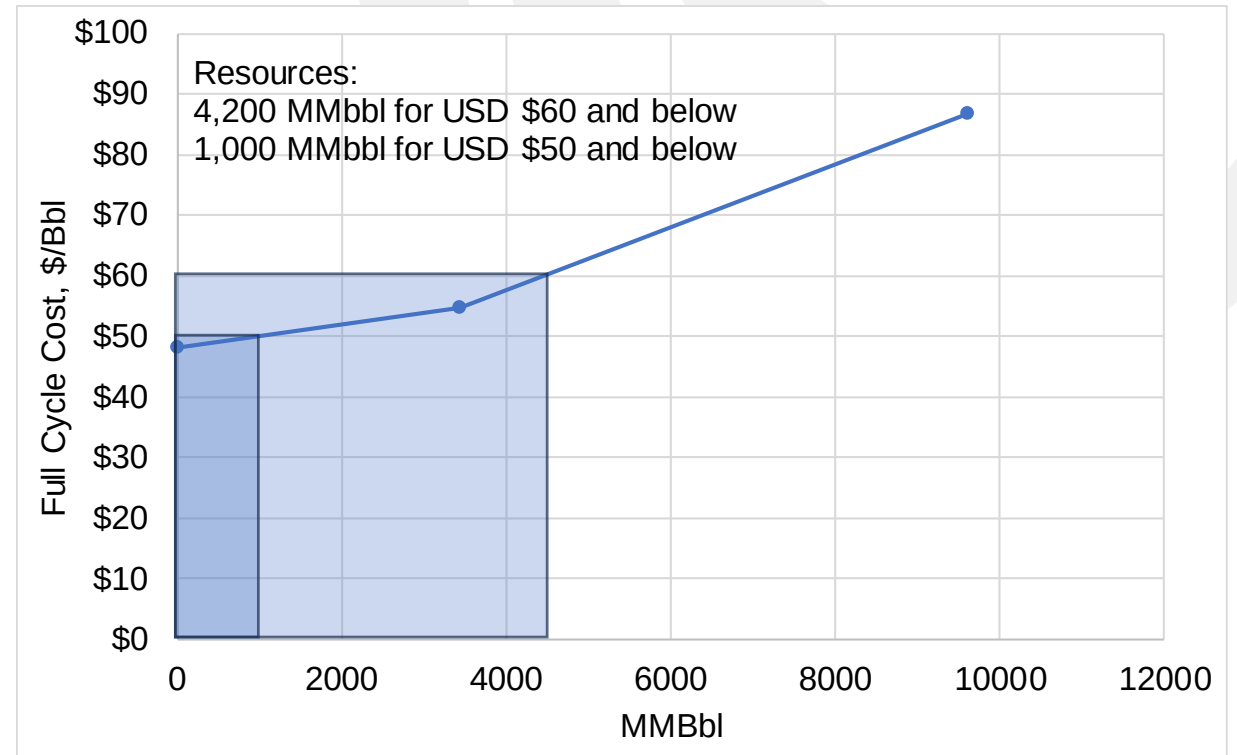
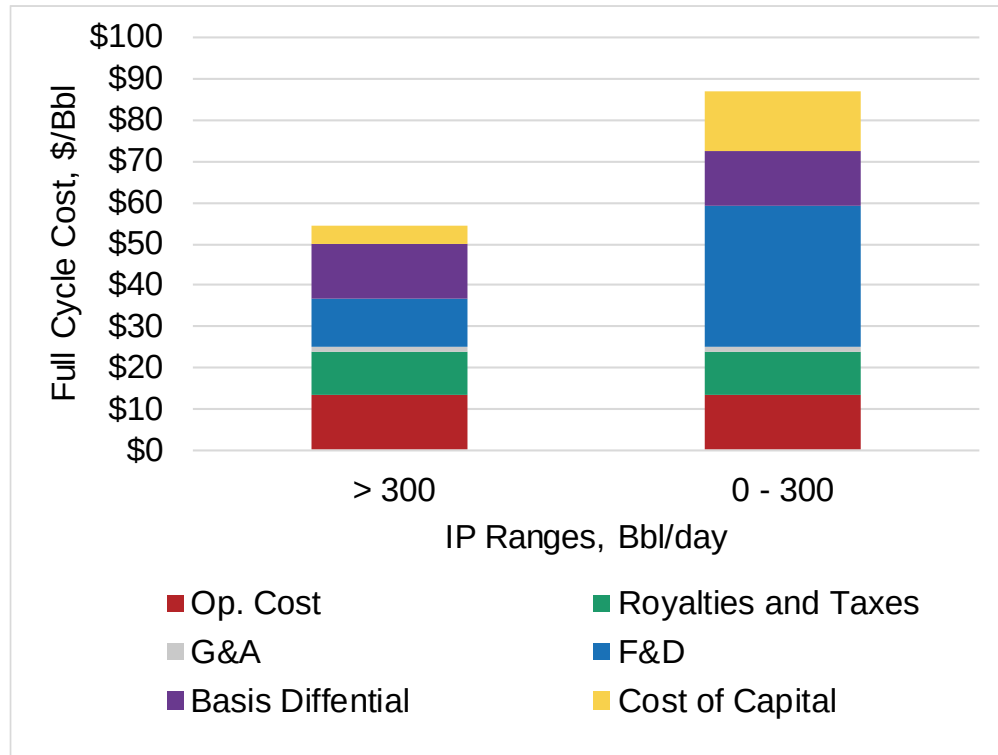
ALBERTA EAST HEAVY OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Alberta East Heavy wells are located in eastern Alberta. Wells classified as bitumen are not included although many heavy oil wells in this area are developed using thermal methods. Incorrays estimates that Alberta Central has over 30,500 drilling locations with productivity greater than 300 Bbl/d and over 183,000 drilling locations with productivity below 300 Bbl/d.

ALBERTA EAST HEAVY FULL CYCLE OIL COST

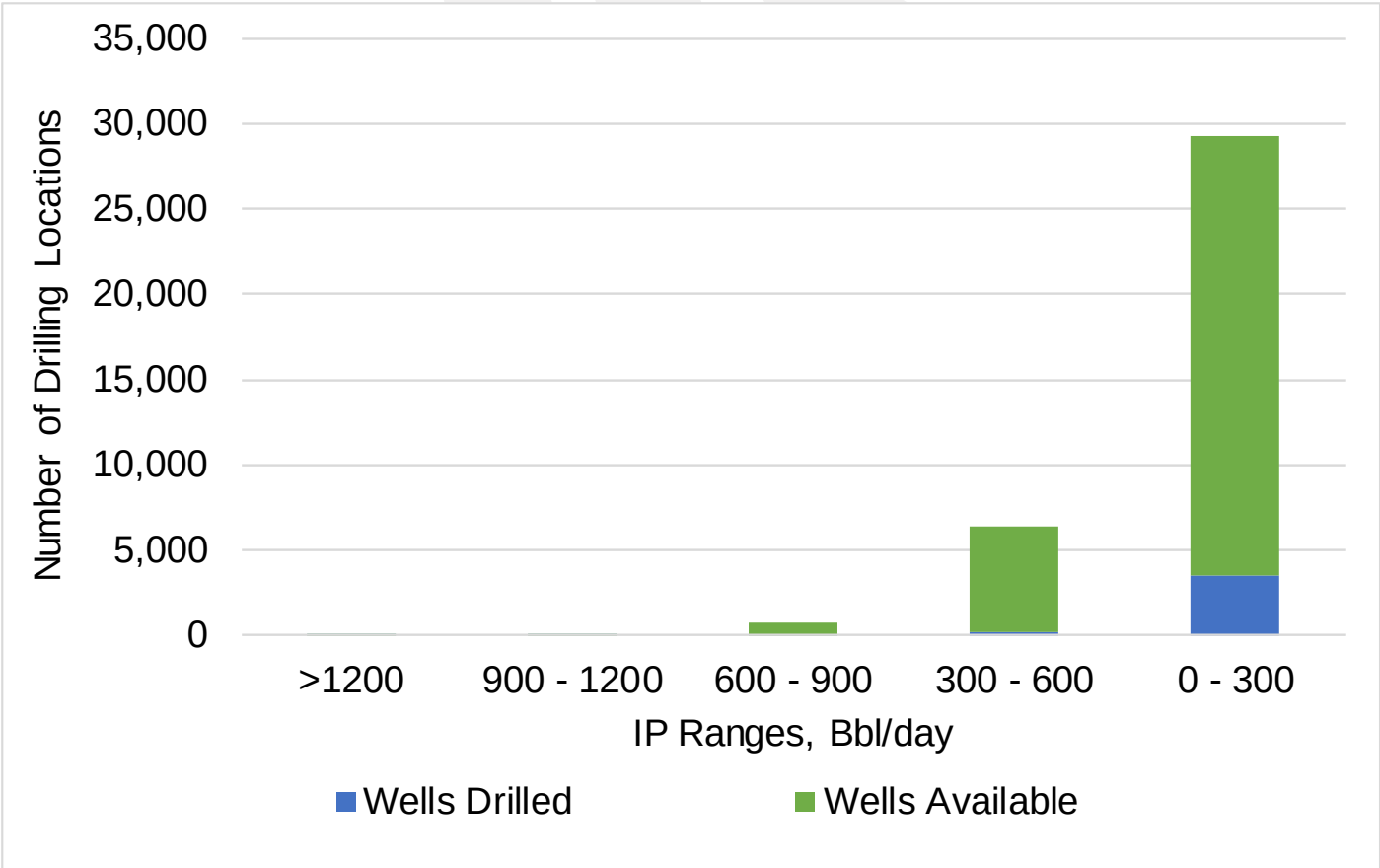
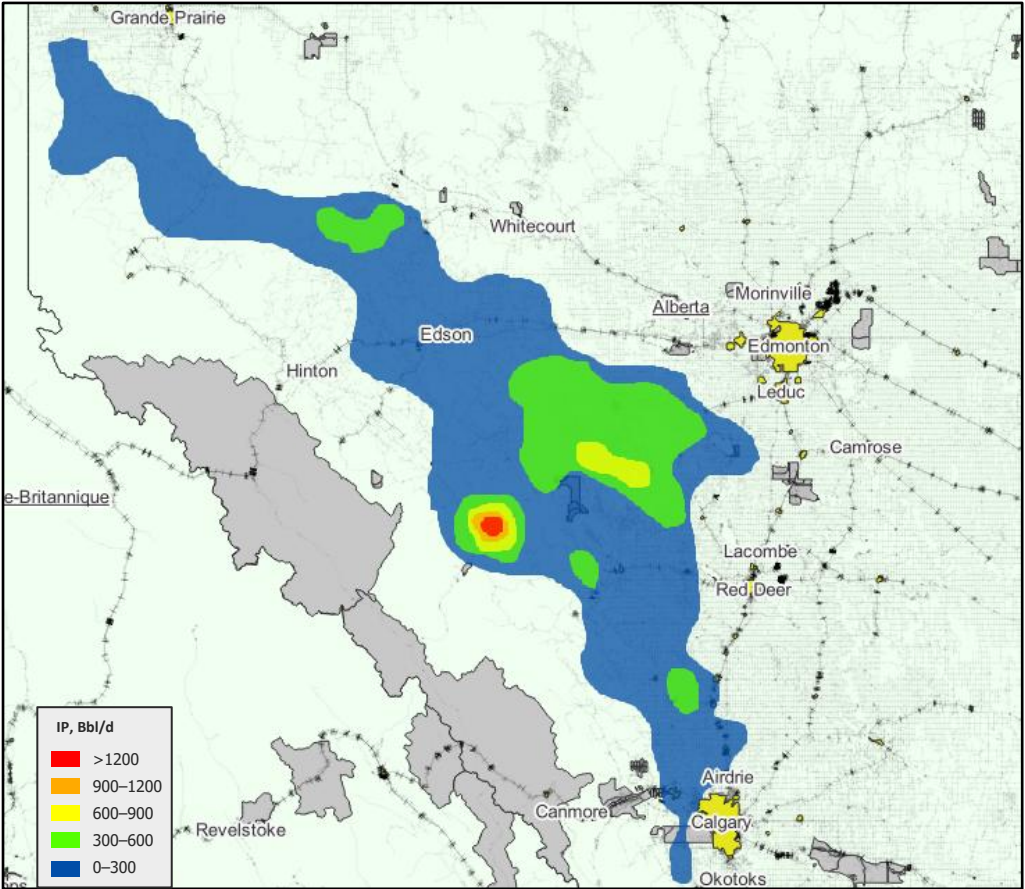


Alberta East Heavy oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$54.59/Bbl for wells with an Initial Productivity (IP) greater than 300 Bbl/d to a high of USD \$86.91/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs USD \$13.28/Bbl while royalties & taxes and overhead are USD \$11.97/Bbl. F&D costs range from USD \$11.39-\$34.17/Bbl and the 15% producer return ranges from USD \$4.77-\$14.31/Bbl. The assumed WTI differential is USD \$13.18/Bbl.

Incorrys analysis shows that there is 1,000 MMBbl of oil resource available below USD \$50/Bbl and 4,200 MMBbl available below USD \$60/Bbl. Current production (2023) was 61 MBbl/d (22.3 MMBbl/yr).

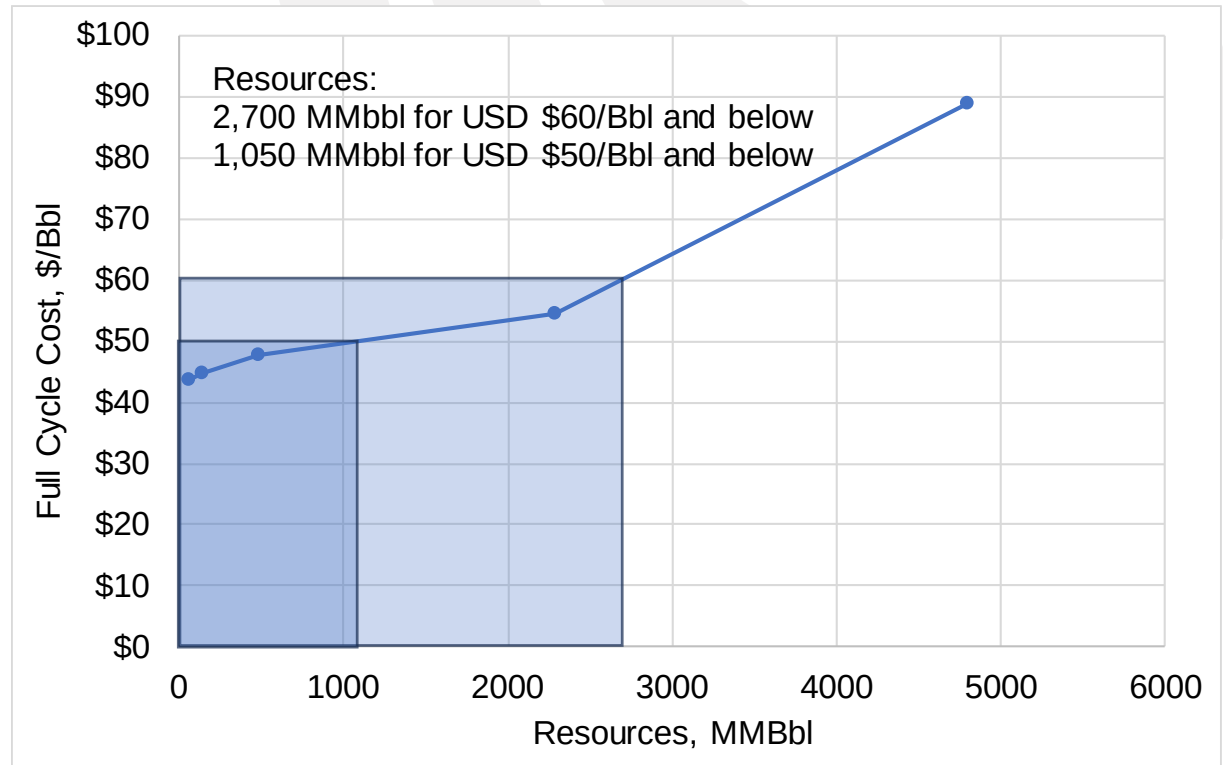
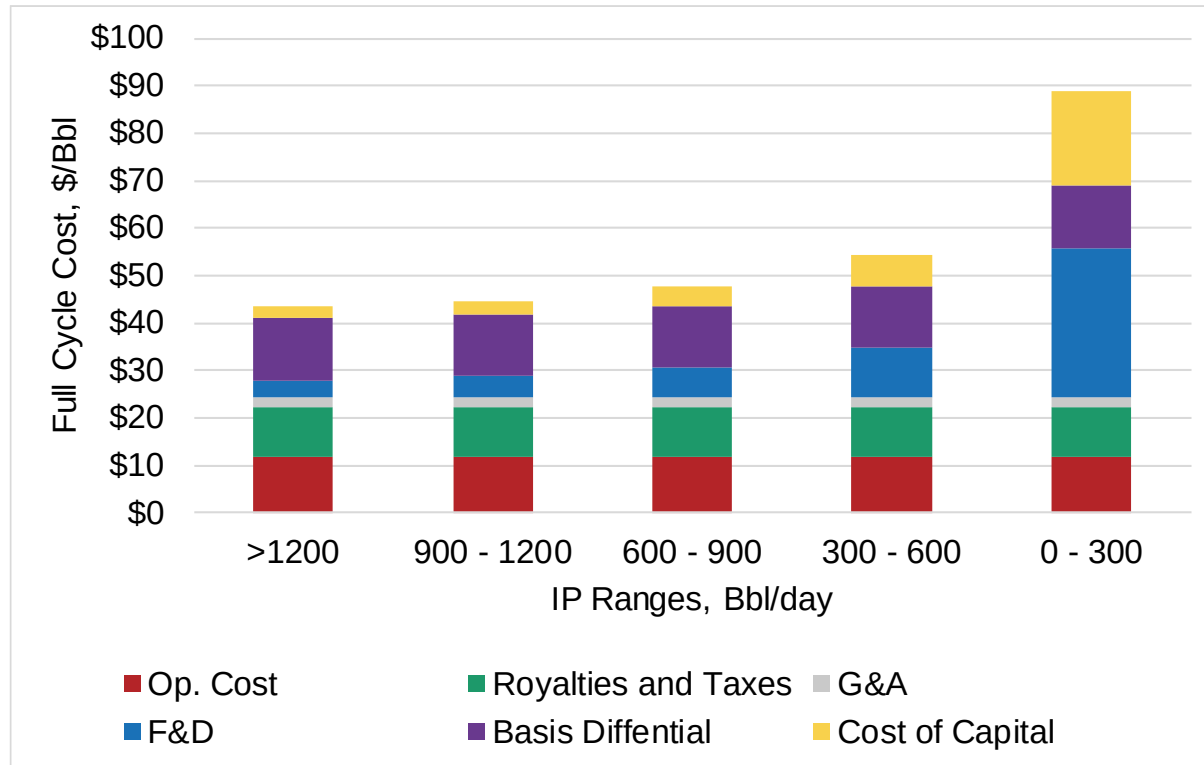
CARDIUM OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Cardium wells are located southwest of Edmonton extending as far north as Grande Prairie and south as Calgary. Incorrays estimates that Cardium has 7,300 drilling locations with productivity greater than 300 Bbl/d and over 29,000 drilling locations with productivity below 300 Bbl/d.

CARDIUM FULL CYCLE OIL COST

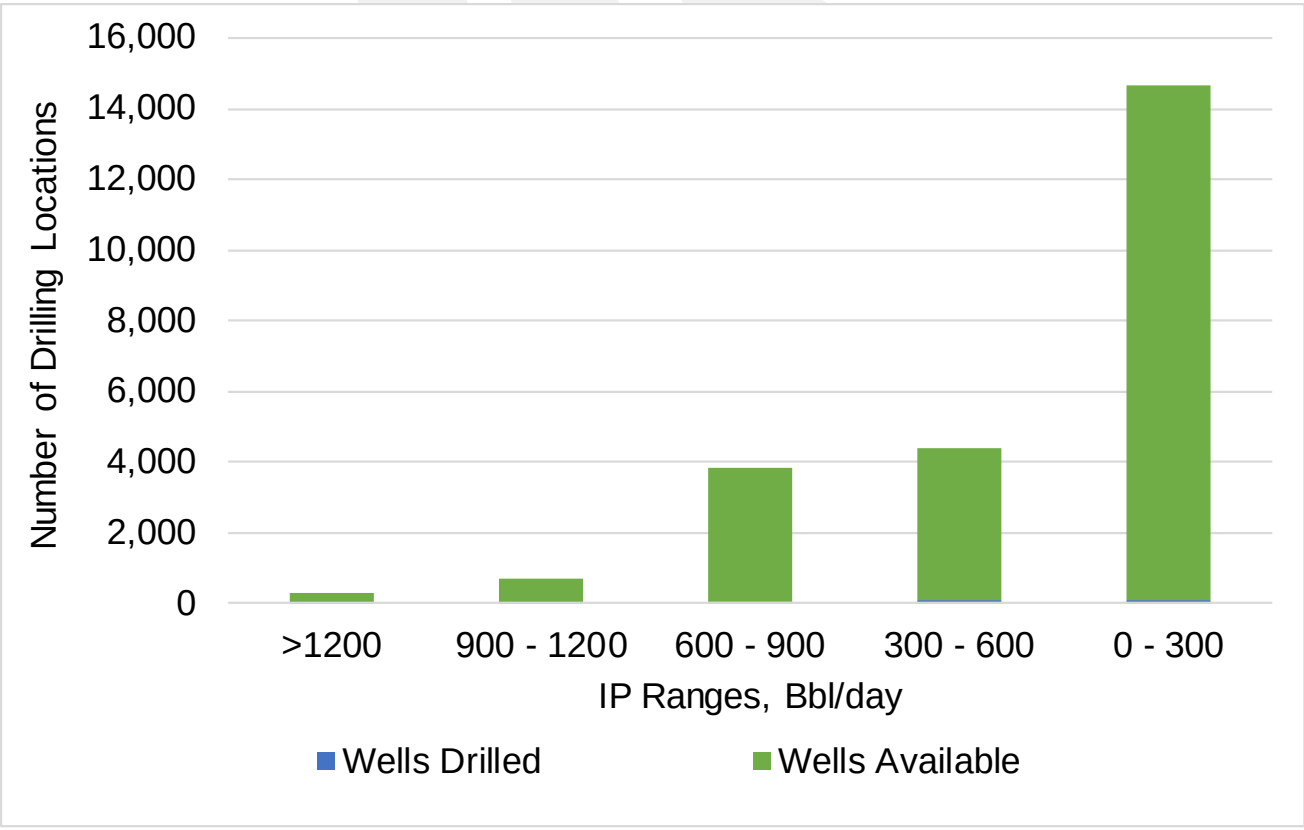
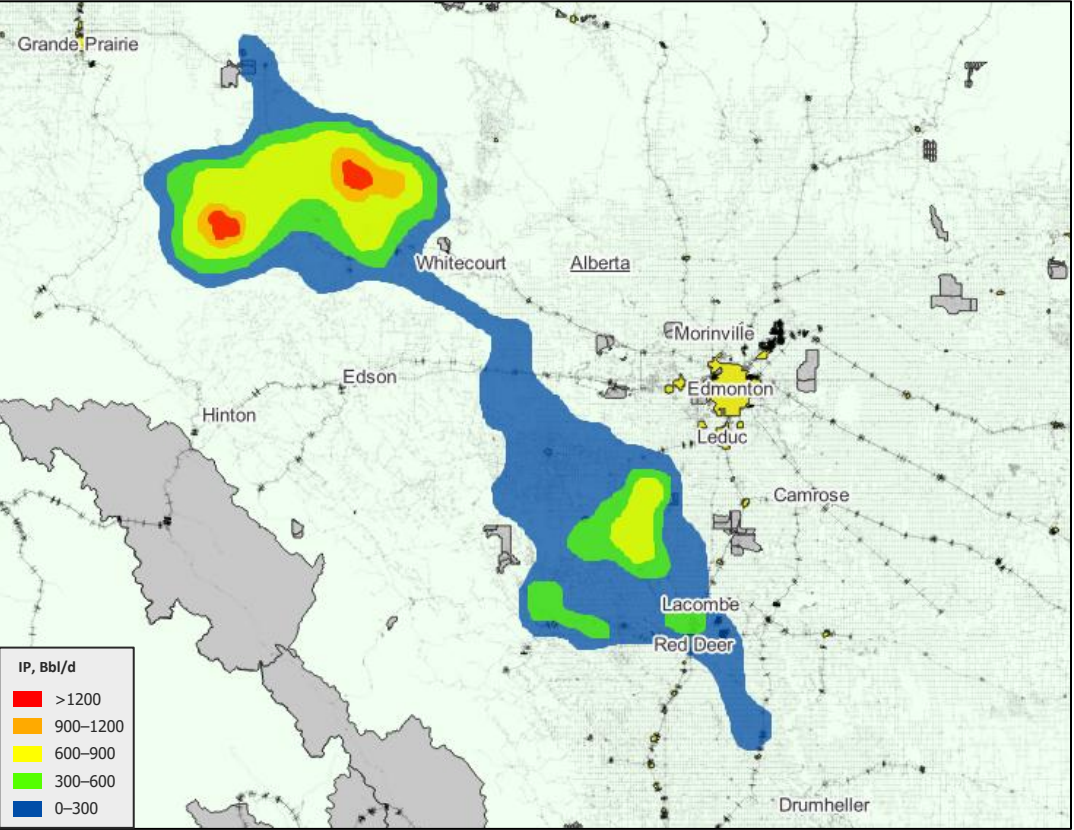


Cardium oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$43.58/Bbl for wells with an Initial Productivity (IP) greater than 1200 Bbl/d to a high of USD \$88.79/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs are USD \$11.90/Bbl while royalties & taxes and overhead are USD \$12.34/Bbl. F&D costs range from USD \$3.78-\$31.47/Bbl and the 15% producer return ranges from USD \$2.39-\$19.91/Bbl. The assumed WTI differential is USD \$13.18/Bbl.

Incorrys analysis shows just over 1,000 MMBbl of oil resource available below USD \$50/Bbl and 2,700 MMBbl available below USD \$60/Bbl. Current production (2023) was 36 MBbl/d (13.1 MMBbl/yr).

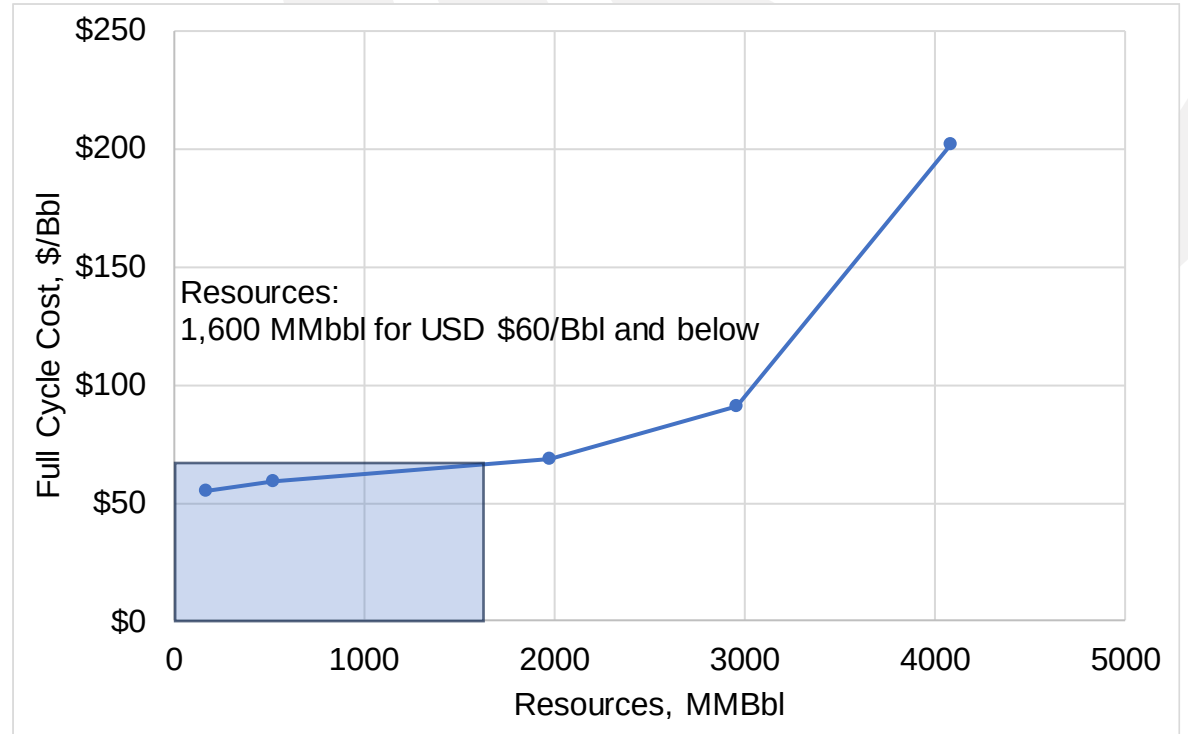
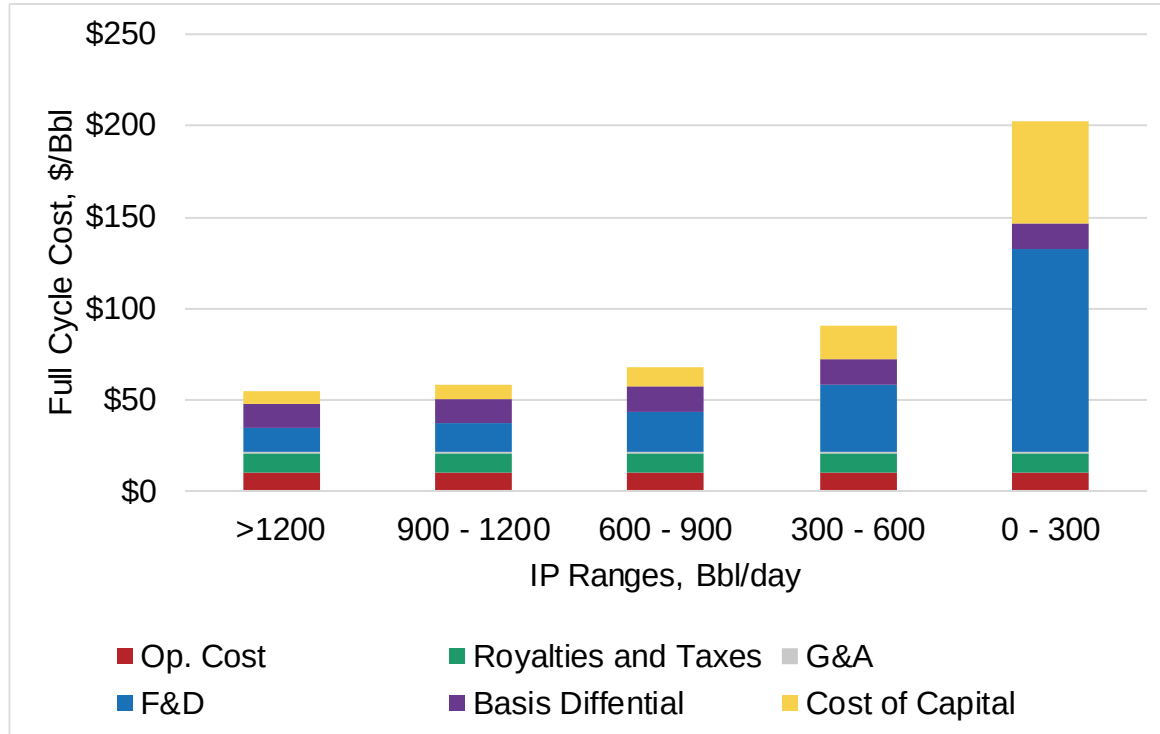
DUVERNAY OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Duvernay wells are located southeast of Grande Prairie extending on a northwest to southeast trend as far south as Edmonton and Red Deer. Incorrays estimates that Duvernay has over 9,000 drilling locations with productivity greater than 300 Bbl/d and almost 14,700 drilling locations with productivity below 300 Bbl/d.

DUVERNAY FULL CYCLE OIL COST

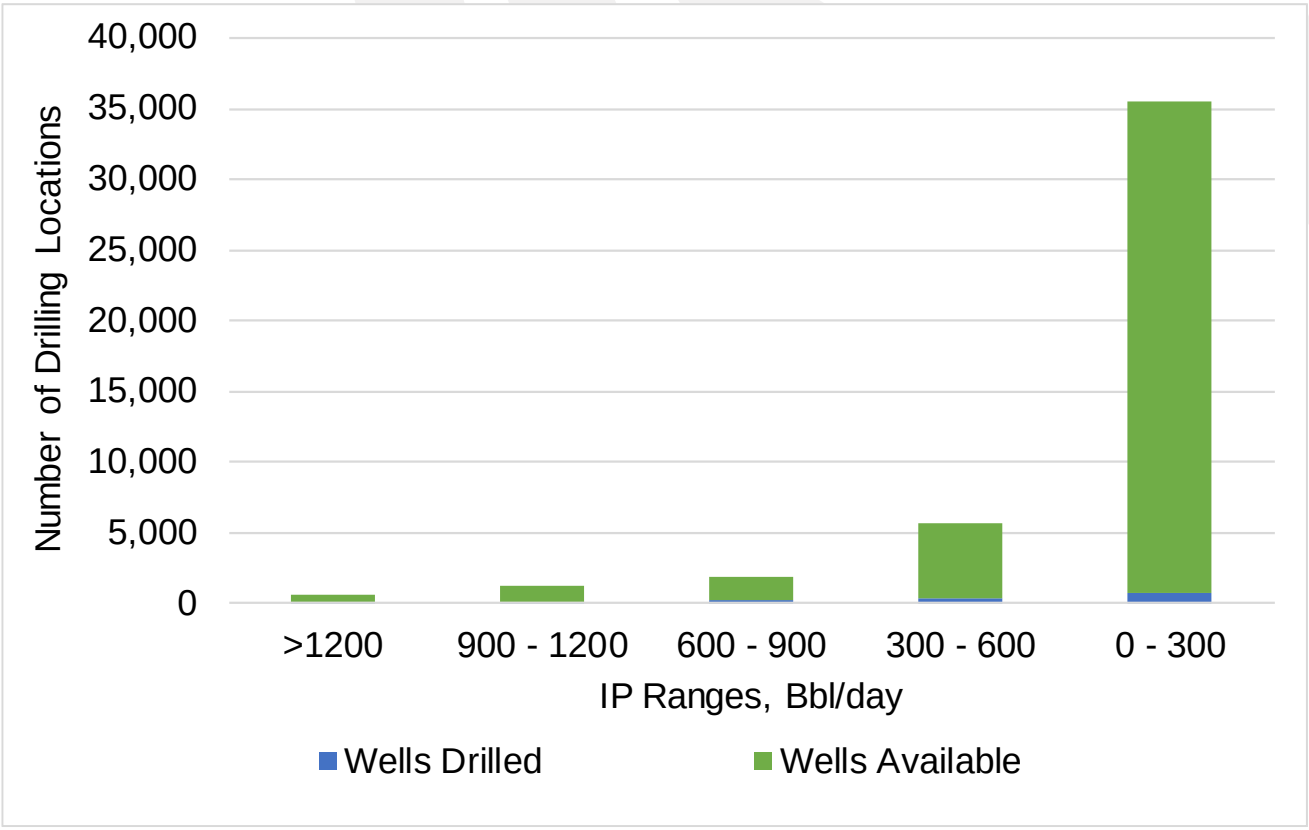
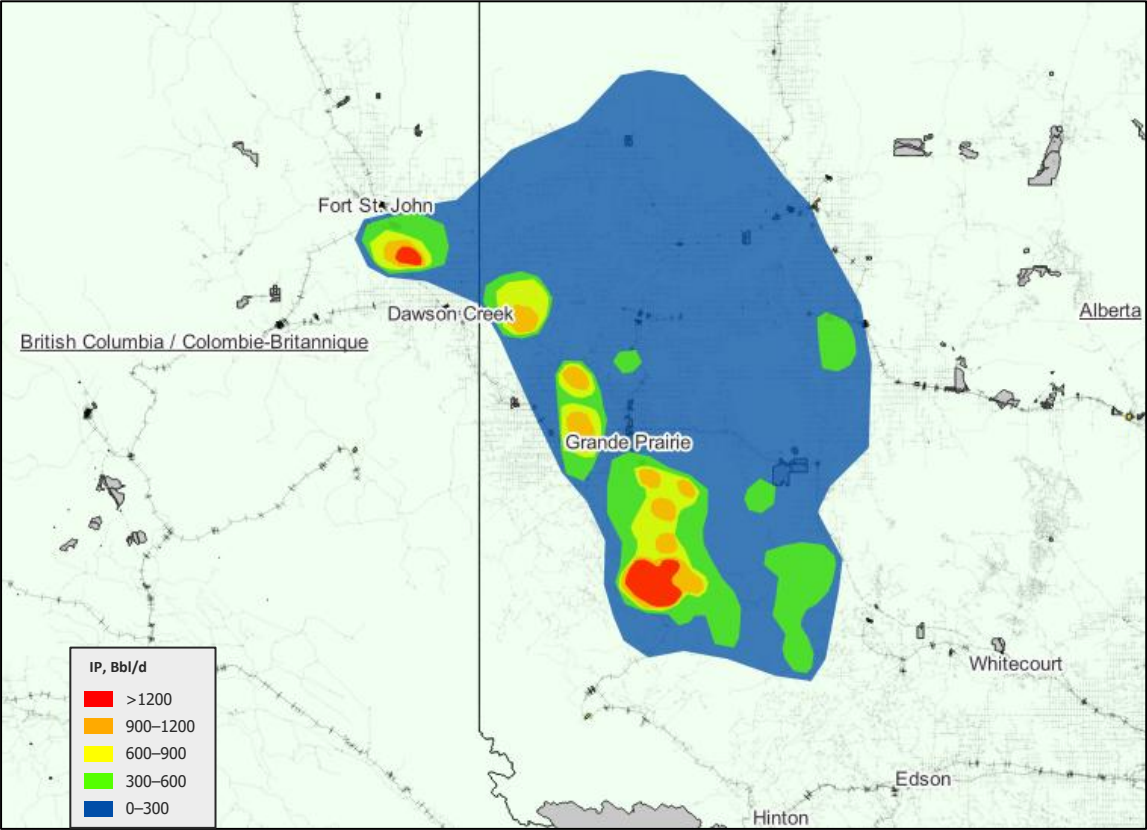


Duvernay oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$55.04/Bbl for wells with an Initial Productivity (IP) greater than 1200 Bbl/d to a high of USD \$202.17/Bbl for wells with an IP of under 300 Bbl/d. Average Operating costs USD \$10.14/Bbl while royalties & taxes and overhead are USD \$11.66/Bbl. F&D costs range from USD \$13.35-\$111.22/Bbl and the 15% producer return ranges from USD \$6.72-\$55.97/Bbl. The assumed WTI differential is USD \$13.18/Bbl.

Incorrys analysis shows that there no oil resource available below USD \$50/Bbl and 1,600 MMBbl available below USD \$60/Bbl. Current production (2023) was 5 MBbl/d (1.8 MMBbl/yr).

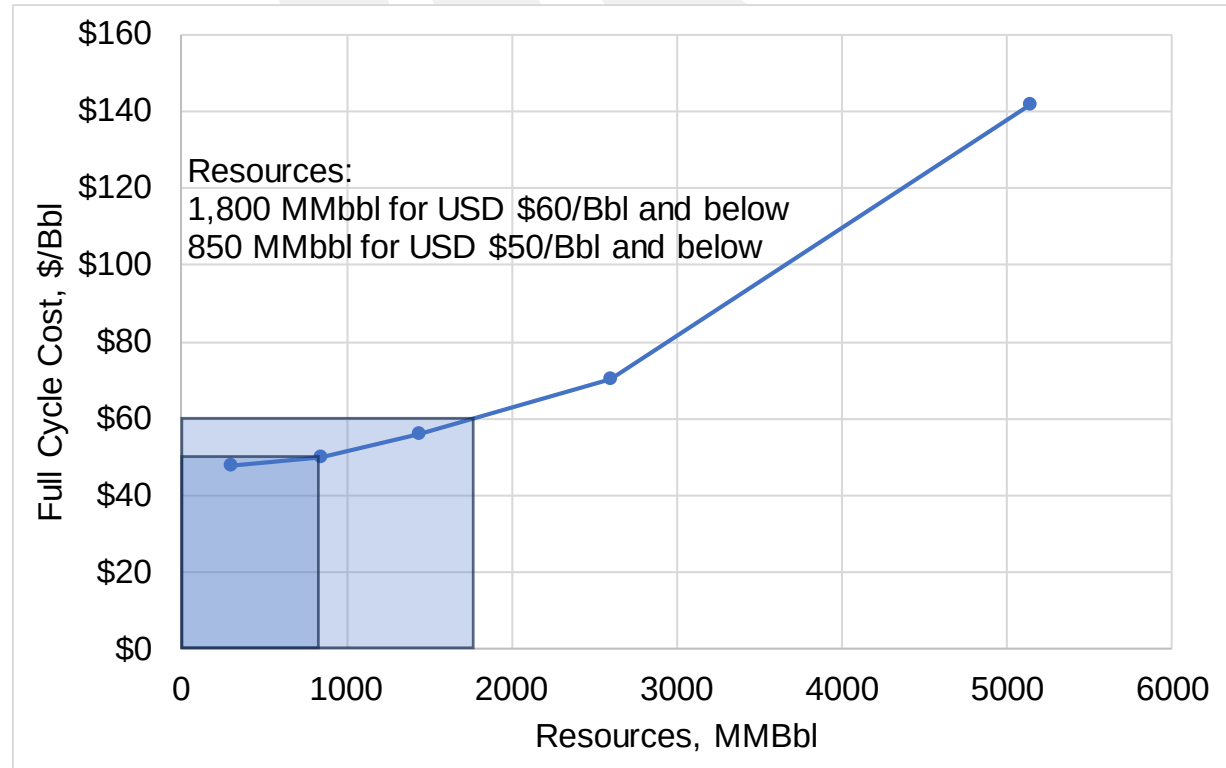
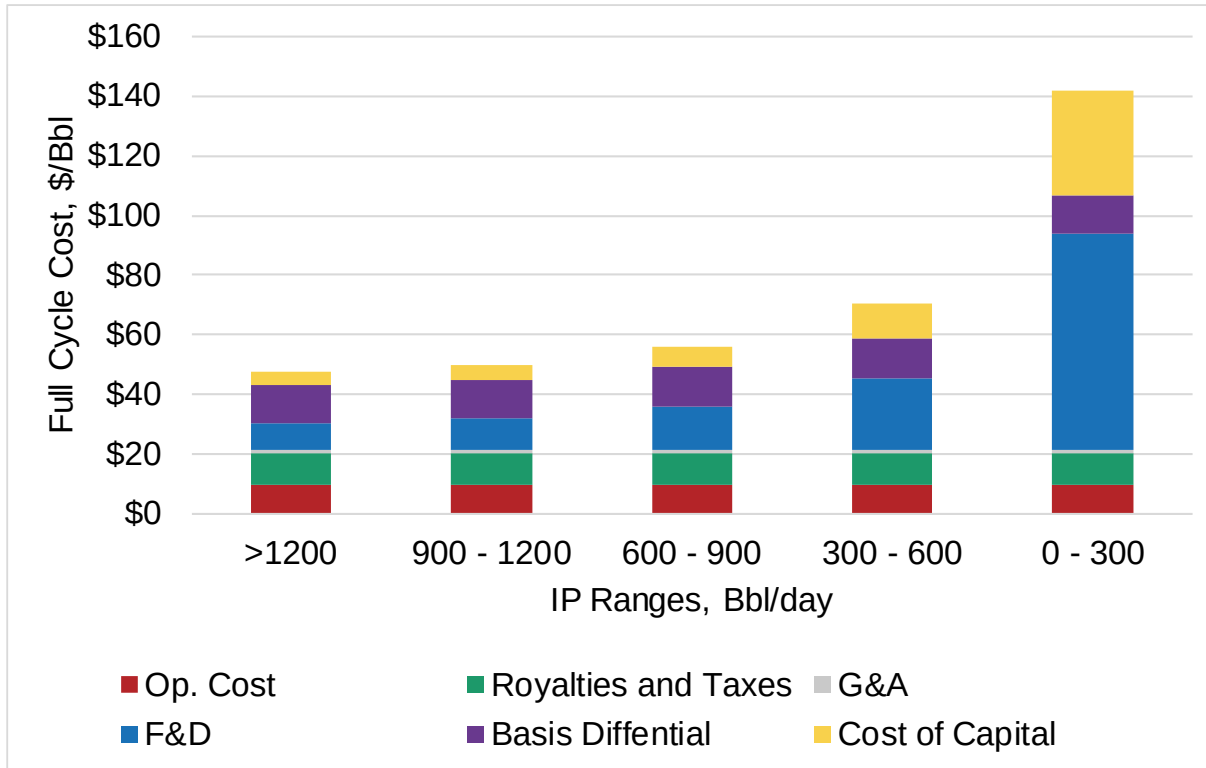
MONTNEY OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Montney oil wells are located from south of Grande Prairie north and west to Dawson creek and extending into BC south of Ft. St. John. Incorrays estimates that the Montney has over 9,000 drilling locations with productivity greater than 300 Bbl/d and 35,500 drilling locations with productivity below 300 Bbl/d.

MONTNEY FULL CYCLE OIL COST

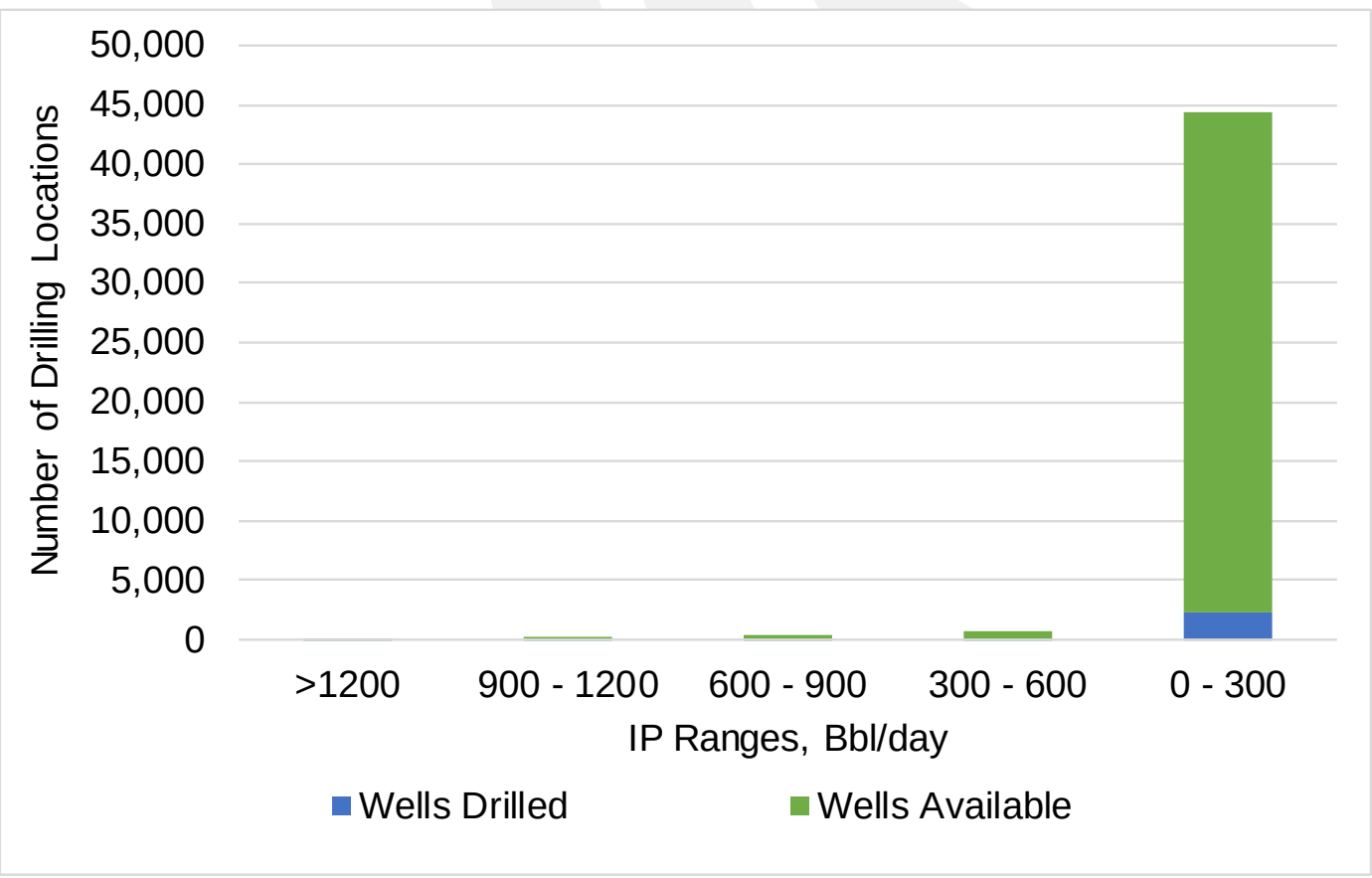
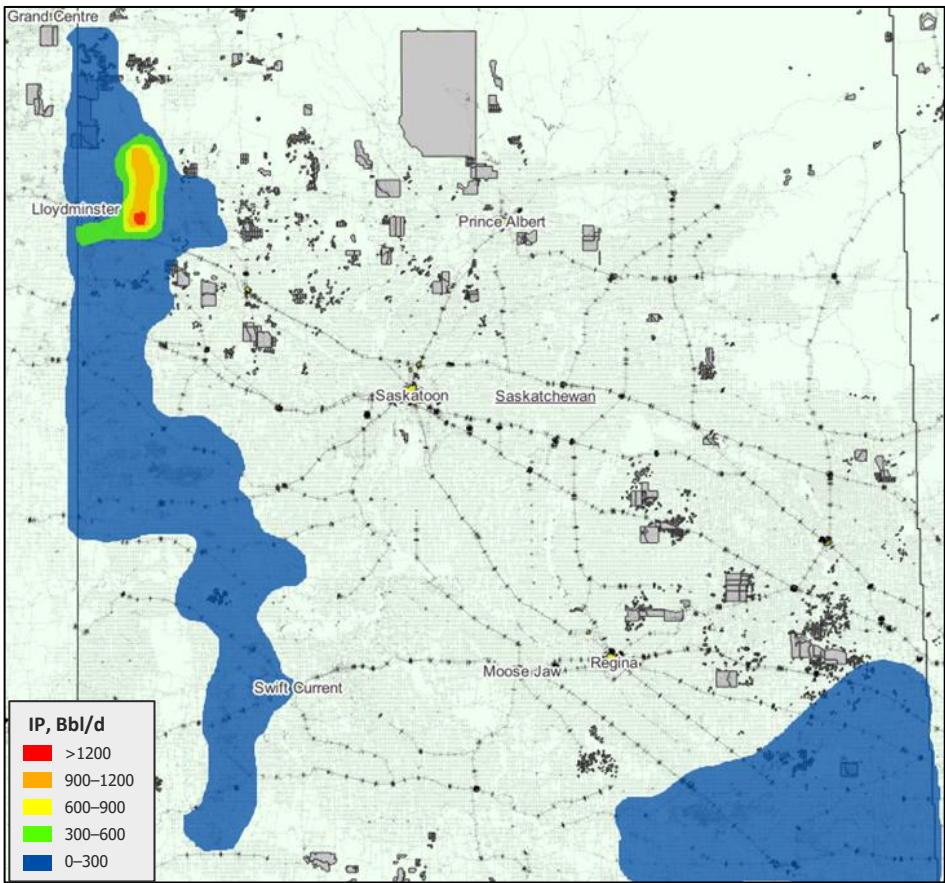


Montney oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$47.56/Bbl for wells with an Initial Productivity (IP) greater than 1200 Bbl/d to a high of USD \$141.90/Bbl for wells with an IP under 300 Bbl/d. Average Operating costs are USD \$9.59/Bbl while royalties & taxes and overhead are USD \$11.92/Bbl. F&D costs range from USD \$8.66-\$72.18/Bbl and the 15% producer return ranges from USD \$4.20-\$35.02/Bbl. The assumed WTI differential is USD \$13.18/Bbl.

Incorrys analysis shows 850 MMBbl of oil resource available below USD \$50/Bbl and 1,800 MMBbl available below USD \$60/Bbl. Current production (2023) was 51 MBbl/d (18.6 MMBbl/yr).

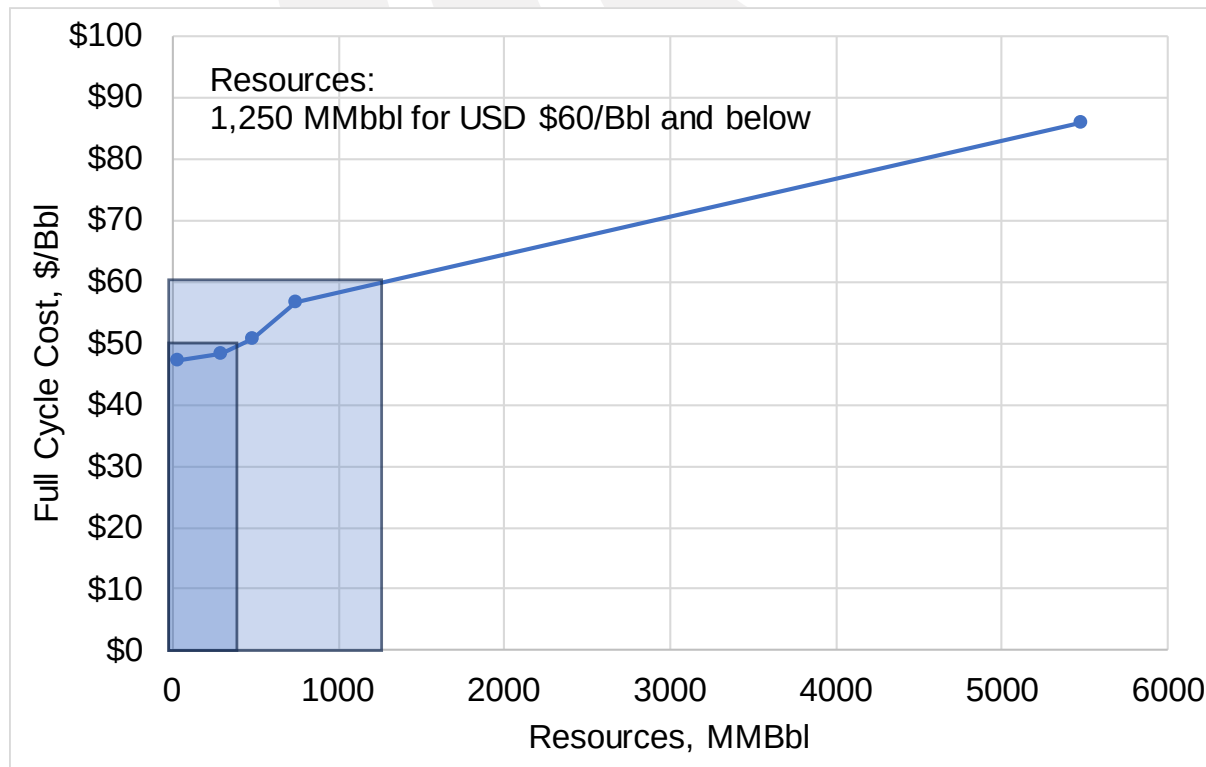
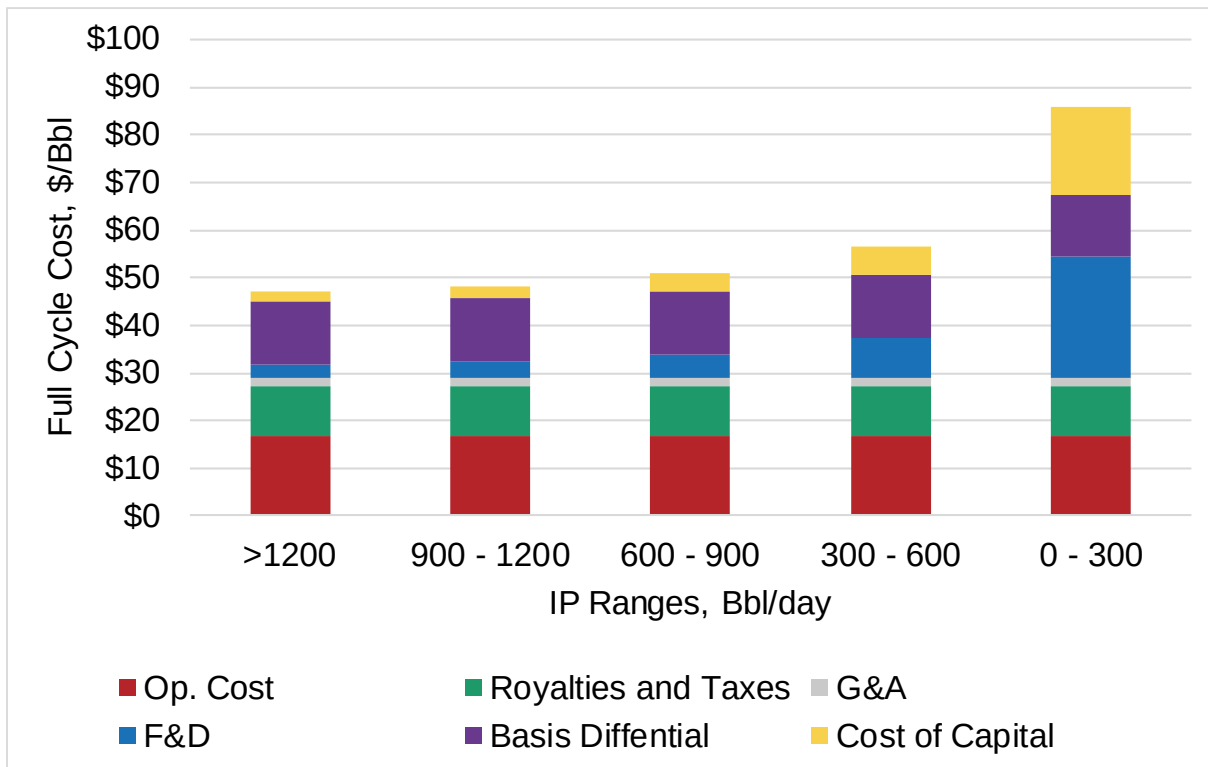
SASKATCHEWAN OIL INITIAL PRODUCTIVITY (IP) MAP

New well 30 days initial productivity



Saskatchewan oil production includes heavy oil and conventional oil in the western portion of Saskatchewan and Bakken formation production in the southeast of the province. Incorrys estimates that Saskatchewan has only about 1,500 drilling locations with productivity greater than 300 Bbl/d, and almost 45,000 drilling locations with productivity below 300 Bbl/d.

SASKATCHEWAN FULL CYCLE OIL COST



Saskatchewan oil full-cycle costs at West Texas Intermediate (WTI) equivalent range from a low of USD \$47.28/Bbl for wells with an Initial Productivity (IP) greater than 1200 Bbl/d to a high of USD \$86.00/Bbl for wells with an IP under 300 Bbl/d. Average Operating costs are USD \$16.71/Bbl while royalties & taxes and overhead are USD \$12.11/Bbl. F&D costs range from USD \$3.06-\$25.53/Bbl and the 15% producer return ranges from USD \$2.22-\$18.47/Bbl. The assumed WTI differential is USD \$13.18/Bbl.

Incorrys analysis shows 300 MMBbl of oil resource available below USD \$50/Bbl and 1,250 MMBbl available below USD \$60/Bbl. Total current Saskatchewan oil production from all formations including lease condensate is around 460 MBbl/d (167 MMBbl/yr).



THANK YOU !



SALES@INCORRYS.COM



[HTTP://WWW.INCORRYS.COM/](http://www.incorrys.com/)