



NI 43-101 TECHNICAL REPORT:  
RESOURCE ASSESSMENT OF THE FOX  
CREEK WEST LITHIUM PROJECT IN WEST  
ALBERTA, CANADA FOR INDIGO  
EXPLORATION INC.

*(As of October 1, 2023)*

---

## Digital Report Notification

This report has been prepared in a fully digital, auditable, and legally compliant format using a PDF/A standard (ISO 19005-1, 2 or 3).

The report has also been signed by Sproule professionals using independently verifiable digital signatures for authentication purposes.

For more information regarding digital reports and digital signatures and their verification please visit: [Sproule Digital Signatures](#).

**Prepared for:** Indigo Exploration Inc.

Project No.: 27171.115451

Distribution: Indigo Exploration Inc. (Digital copy)  
Sproule (Full digital copy retained)

Editor: JLD

Exclusivity: This report has been prepared for the exclusive use of Indigo Exploration Inc. and can only be relied upon by Indigo Exploration Inc. It may not be reproduced, distributed, or made available to any other company or person, regulatory body, or organization without the knowledge and written consent of Sproule, and without the complete contents of the report being made available to that party.

---

## Table of Contents

<b>1.</b>	<b>Summary</b> .....	<b>13</b>
1.1	Property Description .....	13
1.2	Geology.....	13
1.3	Status of Exploration .....	14
1.4	Development and Operations .....	15
1.5	Water Treatment and Lithium Extraction Agreement .....	15
1.6	Mineral Resource and Reserves.....	15
1.7	Conclusions and Recommendations .....	15
1.7.1	Conclusion .....	15
1.7.2	Recommendations .....	16
<b>2.</b>	<b>Introduction</b> .....	<b>16</b>
2.1	Issuer .....	16
2.2	Terms of Reference.....	17
2.3	Information Sources and Software.....	17
2.4	Personal Property Inspection.....	17
2.5	Abbreviations and Acronyms .....	18
<b>3.</b>	<b>Reliance on Other Experts</b> .....	<b>19</b>
<b>4.</b>	<b>Property Location and Description</b> .....	<b>19</b>
4.1	Property Description and Location.....	19
4.2	Tenure History and Mineral Permit Maintenance .....	21
4.3	Surface Rights.....	22
4.4	Water Treatment and Lithium Extraction Agreement .....	22
4.5	Royalties and Agreements.....	23
4.6	Environmental Liabilities, Permitting and Significant Factors .....	23
<b>5.</b>	<b>Accessibility, Climate, Local Resources, Infrastructure and Physiography</b> .....	<b>23</b>
5.1	Accessibility.....	23
5.2	Site Topography, Elevation, Vegetation, and Wildlife.....	25
5.3	Climate .....	25
5.4	Local Resources and Infrastructure .....	25
<b>6.</b>	<b>History</b> .....	<b>26</b>
6.1	Oil and Gas Exploration and Development.....	26
6.2	Drill Cores .....	27
6.3	Drill Stem Tests (DST) and Other Relevant Pressure Transient Tests.....	27
6.4	Production .....	28
6.5	Disposal .....	28
6.6	Historical Analysis .....	29
<b>7.</b>	<b>Geological Setting and Mineralization</b> .....	<b>29</b>
7.1	Regional Geology .....	30
7.1.1	Precambrian Basement .....	30
7.1.2	Phanerozoic Strata .....	30
7.1.3	Beaverhill Lake Group and Wabamun Formation Stratigraphy.....	31
7.1.4	Quaternary Geology .....	32
7.1.5	Structural History .....	32
7.1.6	Mineralization .....	33
7.2	Property Geology.....	35
7.2.1	Paleogeography of the Fox Creek Area .....	35
7.2.2	Stratigraphic Cross-Section.....	36
7.2.3	Reservoir Quality .....	40

<b>8.</b>	<b>Deposit Types</b> .....	<b>41</b>
<b>9.</b>	<b>Exploration</b> .....	<b>42</b>
<b>10.</b>	<b>Drilling</b> .....	<b>42</b>
<b>11.</b>	<b>Sample Preparation, Analyses and Security</b> .....	<b>42</b>
<b>12.</b>	<b>Data Verification</b> .....	<b>43</b>
<b>13.</b>	<b>Mineral Processing and Metallurgical Testing</b> .....	<b>44</b>
<b>14.</b>	<b>Mineral Resources Estimate</b> .....	<b>44</b>
14.1	Geomodel Inputs .....	44
14.2	Geomodel Outputs .....	45
14.2.1	Formation Isochore and Structure .....	45
14.2.2	Reservoir Attributes.....	45
14.2.3	Calculating Volumes from a Geomodel .....	45
14.3	Lithium Brine Concentration .....	46
14.4	Markets and Pricing.....	47
14.5	Reasonable Prospects .....	49
14.5.1	Aquifer Deposition .....	50
14.5.2	Aquifer Reservoir Quality .....	50
14.5.3	Aquifer Pore Volume.....	50
14.5.4	Aquifer Flow Capability .....	50
14.6	Mineral Resource Classification .....	52
14.6.1	Inferred Mineral Resource Estimate .....	52
14.6.2	In-Place Resource Estimate.....	52
<b>15.</b>	<b>Mineral Reserve Estimates</b> .....	<b>54</b>
<b>16.</b>	<b>Mining Method</b> .....	<b>54</b>
<b>17.</b>	<b>Recovery Method</b> .....	<b>55</b>
<b>18.</b>	<b>Project Infrastructure</b> .....	<b>55</b>
<b>19.</b>	<b>Market Studies and Contracts</b> .....	<b>55</b>
<b>20.</b>	<b>Environmental Studies, Permitting and Social or Community Impact</b> .....	<b>55</b>
<b>21.</b>	<b>Capital and Operating Costs</b> .....	<b>55</b>
<b>22.</b>	<b>Economic Analysis</b> .....	<b>55</b>
<b>23.</b>	<b>Adjacent Properties</b> .....	<b>55</b>
<b>24.</b>	<b>Other Relevant Data and Information</b> .....	<b>55</b>
<b>25.</b>	<b>Interpretation and Conclusions</b> .....	<b>56</b>
25.1	Qualified Person Statement.....	56
25.2	Resource Estimation Conclusions .....	56
25.3	Risks and Uncertainties .....	56
<b>26.</b>	<b>Recommendations</b> .....	<b>57</b>
	<b>References</b> .....	<b>59</b>
	<b>Appendix A – Land Schedule</b> .....	<b>64</b>
	<b>Appendix B – Geological Maps</b> .....	<b>65</b>
	<b>Appendix C – AGAT Laboratories Brine Sampling and QC Procedure</b> .....	<b>69</b>

## Table of Figures

Figure 2-1 15-29 Well Site .....	17
Figure 4-1 Indigo’s Alberta Lithium Brines Project Areas .....	19
Figure 4-2 Indigo’s Fox Creek Lithium Brines Project Areas.....	20
Figure 4-3 Indigo’s Fox Creek West Lithium Brines Project Area .....	21
Figure 5-1 Access Routes to Fox Creek West Property .....	24
Figure 5-2 Elevation of Fox Creek West Property Area (topographic-map.com).....	25
Figure 6-1 Area Map with Well Penetrations (BHL) and Wells used for Geomodelling .....	26
Figure 6-2 Core Permeability-Porosity Crossplot for the Beaverhill Lake Group.....	27
Figure 6-3 Water Injection in the Beaverhill Lake Group .....	28
Figure 7-1 Company Permit Areas and Extent of Li-rich formation water in west-central Alberta (after Eccles and Berhane, 2011) .....	34
Figure 7-2 Structural Elements of the Western Canadian Sedimentary Basin (Wright et al., 1994) .....	35
Figure 7-3 Paleogeography of the Alberta Basin during the Beaverhill Lake Group deposition. ...	36
Figure 7-4 NW-SE Cross-section of Fox Creek West Property.....	37
Figure 7-5 NE-SW Cross-section of Fox Creek West Property.....	38
Figure 7-6 Wireline logs of a well within the Fox Creek Property to illustrate the petrophysical nature of the Wabamun (a) Formation and Beaverhill Lake Group (b). .....	39
Figure 7-7 Cross-section of the Wabamun Formation (green) and Beaverhill Lake Group strata (magenta + deep blue) across the Fox Creek West Property. ....	40
Figure 14-1 Summary of Regional Demand for Lithium Electric Vehicle Batteries.....	47
Figure 14-2 Key Lithium Demand Markets .....	48
Figure 14-3 Lithium Output of Global Projects.....	48
Figure 14-4 Summary of Lithium Supply and Demand for 2023-2033 .....	49
Figure 14-5 Regional Production from the Beaverhill Lake Group.....	51
Figure 14-6 Regional Production from the Wabamun Formation.....	51
Figure B-1 Wabamun Formation Isochore.....	65
Figure B-2 Beaverhill Lake Group Isochore .....	66
Figure B-3 Beaverhill Lake Group – Regressive Tract (Waterways Formation) Isochore.....	67
Figure B-4 Beaverhill Lake Group – Transgressive Tract (Swan Hills Formation) Isochore .....	68

## Table of Tables

Table 2-1 Abbreviations and Acronyms .....	18
Table 4-1 List of All Indigo's Metallic and Industrial Mineral Permits granted by Alberta Department of Energy .....	20
Table 6-1 Summary of Historical Lithium Samples .....	29
Table 14-1 Summary of Available Lithium Samples in and around the Fox Creek West Property	46
Table 14-2 Inferred Resources Volumetric Summary .....	54
Table 26-1 Summary of Exploration Program Costs.....	58
Table A-1 Land Schedule .....	64

## Certification

### Report Preparation

This report entitled “NI 43-101 Technical Report: Resource Assessment of the Fox Creek West Lithium Project in West Alberta, Canada for Indigo Exploration Inc. (As of October 1, 2023)” was prepared by and is authenticated by the following Qualified Persons:

Meghan Klein, P. Eng  
Sproule Associates Limited  
Responsible for Sections 1-5 except 1.3, 6.4, 6.5, 6.6, 8-11, 13, 14.3, 14.4, 14.5.4, 14.5.5, 14.6, 15-26, Appendices A, and C.

Alexey Romanov, P. Geo.  
Sproule Associates Limited  
Responsible for Sections 1.3, 6.1, 6.2, 6.3, 7, 12, 14.1, 14.2, 14.5.1, 14.5.2, 14.5.3, 25, and Appendix B.

## **Responsible Member Validation**

This report has been reviewed and validated in accordance with the Professional Practice Management Plan of Sproule by the following Responsible Member of Sproule Associates Limited (APEGA Permit #: 00417).

## Certificate of Qualified Person

As co-author of the Technical Report entitled “NI 43-101 Technical Report: Resource Assessment of the Fox Creek West Lithium Project in West Alberta, Canada for Indigo Exploration Inc. (As of October 1, 2023)” (the Technical Report):

I, **Meghan Klein**, P.Eng. hereby state that:

- 1) I am a Professional Engineer employed by Sproule, with its head office located at 900, 140 – 4th Avenue SW, Calgary, Alberta Canada.
- 2) I graduated in 2005 from the University of Waterloo with a Bachelor of Applied Science degree in Geological Engineering.
- 3) I am a certified Professional Engineer registered with the Associated of Professional Engineers and Geoscientists of Alberta (APEGA), member #84981.
- 4) I have read and acknowledge the definition and responsibilities of a Qualified Person (QP) as set out in the National Instrument 43-101 (NI 43-101) and certify that by means of my education, registered professional designation and past work experience, I fulfill the requirements mandated to be a Qualified Person for purposes of NI 43-101.
- 5) I have approximately one year of experience in working on project management, reservoir engineering, and economic analysis of mineral extraction (Lithium) from subsurface brines. In addition, I have over 16 years of experience in the evaluation of subsurface oil and gas reservoirs, including estimation of in-place volumes, fluid flow through the reservoir, and forecasting of production, all of which are directly analogous to the estimation of brine volumes in-place and the quantification of the minerals contained within and extracted from those brines.
- 6) I am responsible for Sections 1-5 except 1.3, 6.4, 6.5, 6.6, 8-11, 13, 14.3, 14.4, 14.5.4, 14.5.5, 14.6, 15-26, Appendices A, and C of the Technical Report entitled “NI 43-101 Technical Report: Resource Assessment of the Fox Creek West Lithium Project in West Alberta, Canada for Indigo Exploration Inc. (As of October 1, 2023)”.
- 7) I certify, as of the effective date of the Technical Report to the best of my knowledge, information, judgement, and belief, that all technical and scientific information disclosed within the Technical Report is not misleading.
- 8) I am independent of the issuer, Indigo Exploration Inc., and the Fox Creek West Lithium Project as outlined in section of 1.5 of NI 43-101 rules and policies.

- 9) I am independent of and have no previous involvement with the Fox Creek West Lithium Project prior to the Technical Report.
- 10) I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in accordance with that instrument and form.
- 11) I completed a field site visit of the Fox Creek West Lithium Project on October 16, 2023.
- 12) I consent to the public filing of this Technical Report with the TSX Venture Exchange (or any other stock exchange) under its applicable policies and forms for regulatory purposes by the Issuer and I acknowledge that the Technical Report will become part of the Issuer's public record.

Effective Date: October 1, 2023

Signing Date: November 16, 2023

Calgary, Alberta, Canada

Signature: \_\_\_\_\_  
Meghan Klein, P.Eng.

## Certificate of Qualified Person

As co-author of the technical report entitled “NI 43-101 Technical Report: Resource Assessment of the Fox Creek West Lithium Project in West Alberta, Canada for Indigo Exploration Inc. (As of October 1, 2023)” (the “Technical Report”):

I, **Alexey Romanov**, P.Geo., hereby state that:

- 1) I am a professional geoscientist employed by Sproule, with its head office located at 900, 140 – 4th Avenue SW, Calgary, Alberta Canada.
- 2) I graduated in 2003 from the Kazan State University, Russia, with a Master of Science degree in Petroleum Geology.
- 3) I am a certified Professional Geoscientist registered with The Association of Professional Engineers and Geoscientists of Alberta (APEGA), member #112313.
- 4) I have read and acknowledge the definition and responsibilities of a qualified person (QP) as set out in the National Instrument 43-101 (NI 43-101) and certify that by means of my education, registered professional designation and past work experience, I fulfill the requirements mandated to be a qualified person for purposes of NI 43-101.
- 5) I have approximately one year of experience in evaluation of subsurface lithium-brine reservoirs, including reservoir characterization, petrophysical analysis, and estimation of in-place lithium-brine volumes. I have 19 years of experience in the evaluation of subsurface oil and gas reservoirs, including reservoir characterization, petrophysical analysis, and estimation of in-place volumes, all of which are directly analogous to the estimation of brine volumes in-place and the quantification of the minerals contained within and extracted from those brines.
- 6) I am responsible for Sections and/or portions of 1.3, 6.1, 6.2, 6.3, 7, 12, 14.1, 14.2, 14.5.1, 14.5.2, 14.5.3, 25, and Appendix B of the technical report entitled “NI 43-101 Technical Report: Resource Assessment of the Fox Creek West Lithium Project in West Alberta, Canada for Indigo Exploration Inc. (As of October 1, 2023)”.
- 7) I certify, as of the effective date of the Technical Report to the best of my knowledge, information, judgement, and belief, that all technical and scientific information disclosed within the Technical Report is not misleading.
- 8) I am independent of the issuer, Indigo Exploration Inc., and the Fox Creek West Lithium Project as outlined in section of 1.5 of NI 43-101 rules and policies.

- 9) I am independent of and have no previous involvement with the Fox Creek West Lithium Project prior to the Technical Report.
- 10) I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in accordance with that instrument and form.
- 11) I have not completed a field site visit of the Fox Creek West Lithium Project.
- 12) I consent to the public filing of this Technical Report with the TSX Venture Exchange (or any other stock exchange) under its applicable policies and forms for regulatory purposes by the Issuer and I acknowledge that the Technical Report will become part of the Issuer's public record.

Effective Date: October 1, 2023

Signing Date: November 16, 2023

Calgary, Alberta, Canada

Signature: \_\_\_\_\_  
Alexey Romanov, P.Geol.

## Certificate of Qualified Person

As a Responsible Member of APEGA on behalf of Sproule for the technical report entitled “NI 43-101 Technical Report: Resource Assessment of the Fox Creek West Lithium Project in West Alberta, Canada for Indigo Exploration Inc. (As of October 1, 2023)” (the Technical Report):

I, **Douglas Ashton**, P.Eng. hereby state that:

- 1) I am a Professional Engineer employed by Sproule, with its head office located at 900, 140 – 4th Avenue SW, Calgary, Alberta Canada.
- 2) I graduated in 1992 from the University of Calgary with a Bachelor of Science Engineering degree in Chemical Engineering.
- 3) I am a certified Professional Engineer registered with The Association of Professional Engineers and Geoscientists of Alberta (APEGA), member #53958.
- 4) I have read and acknowledge the definition and responsibilities of a Qualified Person (QP) as set out in the National Instrument 43-101 (NI 43-101) and certify that by means of my education, registered professional designation and past work experience, I fulfill the requirements mandated to be a Qualified Person for purposes of NI 43-101.
- 5) I have approximately three years of experience in working on project management, reservoir engineering, and economic analysis of mineral extraction (Bromine and Lithium) from subsurface brines. In addition, I have over thirty years of experience in the evaluation of subsurface oil and gas reservoirs, including estimation of in-place volumes, fluid flow through the reservoir, and forecasting of production, all of which is directly analogous to the estimation of brine volumes in-place, production of the brine, and the quantification of the minerals contained within and extracted from those brines.
- 6) As a Responsible Member of APEGA on behalf of Sproule, in accordance with the Professional Practice Management Plan of Sproule, I am responsible for reviewing and validating the technical report entitled “NI 43-101 Technical Report: Resource Assessment of the Fox Creek West Lithium Project in West Alberta, Canada for Indigo Exploration Inc. (As of October 1, 2023)” with the effective date of October 1, 2023. I have reviewed and validated the report in accordance with the Professional Practice Management Plan of Sproule as a Responsible Member of Sproule Associates Limited (APEGA Permit #: P-00417).
- 7) I certify, as of the effective date of the Technical Report to the best of my knowledge, information, judgement, and belief, that all technical and scientific information disclosed within the Technical Report is not misleading.

- 8) I am independent of the issuer, Indigo Exploration Inc., and the Fox Creek West Lithium Project as outlined in section of 1.5 of NI 43-101 rules and policies.
- 9) I have not been involved in the Fox Creek West Lithium Project prior to this technical report.
- 10) I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in accordance with that instrument and form.
- 11) I have not completed a field site visit of the Fox Creek West Lithium Project.
- 12) I consent to the public filing of this Technical Report with the TSX Venture Exchange (or any other stock exchange) under its applicable policies and forms for regulatory purposes by the Issuer and I acknowledge that the Technical Report will become part of the Issuer's public record.

Effective Date: October 1, 2023

Signing Date: November 16, 2023

Calgary, Alberta, Canada

Signature: \_\_\_\_\_  
Doug Ashton, P.Eng.

## 1. Summary

Indigo Exploration Inc. (“Indigo” or the “Company”), an emerging lithium brine explorer, is a publicly trading company with a Vancouver, BC head office. The company is listed on the Toronto Venture Exchange, as well as the OTC and Frankfurt markets (TSXV: IXI | OTCQB: IXIXF | FSE: INEN). Qualified Persons, Meghan Klein, P. Eng, Alexey Romanov, P. Geo and Douglas Ashton, P.Eng. were retained by Indigo to prepare a technical report on the Resource Assessment of the Fox Creek West Lithium Project in conformity to National Instrument 43-101 (NI 43-101) standards (the “Technical Report” or the “Report”).

### 1.1 Property Description

Indigo’s Alberta Lithium Brines Project consists of 18 Metallic and Industrial Mineral (MIM) Permits that overlie Devonian-aged deposits of central Alberta, including the Wabamun, Winterburn, Swan Hills Formation of the Beaverhill Lake Group, Nisku and Leduc Carbonate Aquifers (Table 4-1). The Alberta Lithium Brines Project in its entirety contains 148,058 hectares (ha) and is subdivided into three sub-project areas: Fox Creek, Leduc/Legal, and Peace River Arch.

The Fox Creek Project covers an area of 114,522 hectares and is further sub-divided into the Fox Creek East (45,568 hectares), Fox Creek West (59,738 hectares) and Fox Creek Central (9,216 hectares) areas. The Fox Creek West is located approximately 150 km from Grande Prairie, AB, near the hamlet of Little Smoky which is approximately 50 km northwest of Fox Creek on Highway 43. The Fox Creek West Property is accessed by Simonette Road off Highway 43 between Fox Creek and Little Smokey.

This technical report refers to the specific permit area called Fox Creek West within the Fox Creek Area. The Fox Creek West Project targets the Devonian-aged reefs and carbonate platforms, including the Wabamun and the Swan Hills Formation of the Beaverhill Lake Group (BHL) and the overlying Waterways Formation of the Beaverhill Lake Group.

All permits are held 100% by Indigo and are valid and compliant with the Government of Alberta and the Alberta Department of Energy.

### 1.2 Geology

The Fox Creek Property area of the Western Canada Sedimentary Basin (WCSB) represents the northeastern extent of the Swan Hills Reef Complex. In this area, the Devonian carbonates, evaporites and siliciclastic sediments of the Beaverhill Lake Group were deposited in a shallow inland sea. Post BHL deposition, the Late Devonian dolomitic limestones, calcareous dolomites and interbedded evaporites of the Wabamun were deposited in a shallow sea on a broad carbonate ramp.

The WCSB begins at the eastern edge of the Canadian Cordillera and consists of two major sedimentary basins, the Alberta Basin, and the Williston Basin. The Fox Creek West permits are located within the Alberta Basin. The Alberta Basin is a northwest-trending trough. This trough runs parallel to the Cordilleran Fold and Thrust Belt.

The geologic theory on lithium brine concentration within formation waters is an active area of research. Speculation exists as to the source of the lithium, for the lithium-enriched brines of the Swan Hills and Wabamun formations. (Eccles et Al., 2012). One proposed method of deposition involves saline waters, in contact with the felsic minerals of the granitic basement rocks that migrate up through deep-seated faults. The upward migrating saline basement waters eventually come in contact with dolomitized carbonates and evaporitic sequences of the Devonian. This interaction is suspected to help increase lithium concentration. The small nature of the lithium ion allows for super concentration while potential interaction with released magnesium ions during dolomitization causes a release of lithium from the associated evaporites. Ultimately the source of the lithium concentrations remains unknown. The migrating fluids are eventually trapped by the overlying shales.

The main lithium accumulations on and surrounding the Fox Creek West permits occur within brines contained within dolomitized reefs of the Devonian aged Swan Hills reef complexes with a secondary accumulation occurring at a higher elevation in the Wabamun Formation.

Indigo's permits are located at the reef margins or zero edge of the Beaverhill Lake Group. The zero edge is defined as the point at which the reef margin slope is indistinguishable from the platform slope. Located at the reef's margin are boundstones and forereef bioclastic limestones. The dolomitization of boundstones and bioclastic limestones lead to development of vuggy and moldic secondary porosity. These represent the high porosity and permeability areas of reef deposits.

The geological focus of this Technical Report is on the aquifer within the Late Devonian dolomitized reef of the Wabamun Formation and the Swan Hills and Waterways formations of the Beaverhill Lake Group.

### **1.3 Status of Exploration**

Historical work conducted within and around the current boundaries of the Fox Creek West Property include Devonian-aged reefs, including the Wabamun, Woodbend, and the Swan Hills Formation of the Beaverhill Lake Group aquifer brine assay testing. Work conducted by the Alberta Government in 2010 documented 4 brine analyses from separate wells with lithium concentrations between 73 and 118 mg/L Li in the Wabamun, Woodbend, Nisku and the Swan Hills Formation of the Beaverhill Lake Group aquifers adjacent to the Fox Creek West Property.

In 2023, Indigo conducted a brine sampling program to verify historical lithium brine analytical results. A total of two well sites were sampled on Fox Creek West. A total of 12 brine samples (six one-litre jugs collected from each well), including Quality Assurance – Quality Control samples, were collected from the two wells for mineral assay testing as part of Indigo's sampling program. The brine was analyzed at two independent, accredited commercial laboratories that include AGAT Laboratories in Calgary and Edmonton, AB (primary lab) and Bureau Veritas Laboratories in Edmonton, AB (secondary check lab). In a comparison between historical (industry and government of Alberta) and Indigo analytical lithium data, the Indigo test results showed lower lithium concentrations than seen from historical samples. The lower Indigo values are likely due to the fact that the wells were sampled days after the wells were restarted after a period of one month shutdown due to extensive wildfires in the region and that due to the low water cuts, samples were extracted from stock tanks. Therefore, these tests were determined to be not suitable for mineral processing test work.

The Qualified Persons have reviewed the historical and Indigo-collected geochemical programs, concluding that the method of sample collection, preparation, security, and analytical techniques of the historical and Indigo's brine sampling work are reasonable and sufficient for the exploration of deep-seated, confined aquifer Li-brine deposits. The Qualified Person is not aware of any significant issues or inconsistencies that would cause one to question the validity of using the combined historical and Indigo's assay data files within the mineral resource estimation process presented in this technical report.

## **1.4 Development and Operations**

Indigo has completed an in-depth review and analysis of available data from historic petroleum operations conducted in the project area including detailed geologic mapping and petrophysical analysis, which has been incorporated into a geomodel of the Wabamun Formation and Beaverhill Lake Group.

## **1.5 Water Treatment and Lithium Extraction Agreement**

Indigo has Brine Sampling Agreements with petroleum companies in Fox Creek East and Leduc/Legal property areas to sample produced water from the operator's active wells within the boundaries of property. The operator of the two wells sampled at Fox Creek West did not require a sample agreement. The only request was to have a field operator on site during the collection of the sample. Indigo is currently pursuing a Brine Sample Agreement with other operators in and around the Fox Creek West property to further examine the potential for economic lithium concentrations.

## **1.6 Mineral Resource and Reserves**

The Inferred Mineral Resource Estimate, expressed as a mass of lithium carbonate equivalent, is 599 million m<sup>3</sup> of brine at 72 mg/L, totaling over 231 thousand tonnes of LCE using a conversion factor from elemental lithium of 5.323. The Inferred Mineral Resource estimate for the Fox Creek West is based on the total volume of water in the effective porosity, and the estimated lithium concentration.

The resource is classified as Inferred because geological evidence is sufficient to imply but not verify geological, grade, or aquifer quality continuity. It is reasonably expected that the majority of the Inferred Mineral Resource Estimate could be upgraded to Indicated or Measured Mineral Resources with continued exploration.

## **1.7 Conclusions and Recommendations**

### **1.7.1 Conclusion**

The Inferred Mineral Resources estimate of the Fox Creek West property includes approximately 599 million m<sup>3</sup> of brine with an estimated average associated lithium concentration of 73 mg/L. Total

lithium tonnage is estimated to be 231,097 tonnes of LCE from the Wabamun Formation and Beaverhill Lake Group.

The Wabamun Formation and Swan Hills Formation are suitable reservoirs to produce the volumes at appropriate rates required for a potential future lithium enriched brine extraction development project based on historical production from regional petroleum wells. Contribution from the Waterways Formation may occur at lower rates.

Grande Prairie, Alberta will serve as the resource hub for the Fox Creek West project providing general services, industrial materials, and qualified personnel required for future exploration and production operations required for subsurface lithium-enriched brine exploration and development.

## 1.7.2 Recommendations

A multiphase exploration and testing program is recommended to continue to delineate the Wabamun and Beaverhill Lake Group formations' reservoir quality and lithium brine concentrations across the project.

Future operations and associated technical analysis should include, but not be limited to:

- Drill additional wells to increase understanding of the reservoir petrophysical properties, lithium concentration, and reservoir flow characteristics.
- Perform isolated flow tests and lithium concentration analysis within Wabamun Formation and Beaverhill Lake Group stratigraphic intervals across a broader area within the Fox Creek West property utilizing existing wellbores, where possible.
- Collect geotechnical data including drill cutting samples, and open-hole logs within the Wabamun and Beaverhill Lake Group formations.
- Conduct petrophysical analysis on all new wellbores utilizing the existing petrophysical methodology.
- Collect core samples and integrate with petrophysical analysis, for open-hole log calibration.
- Integrate all new technical information into the existing geomodel to delineate the Wabamun and Beaverhill Lake Group aquifers.
- Conduct reservoir simulation modeling to estimate individual wellbore flow capabilities aiding in forecasting ultimate recovery.

## 2. Introduction

### 2.1 Issuer

Indigo, an emerging lithium explorer, is a publicly trading company with a Vancouver, B.C. headquarters. The company is listed on the Toronto Venture Exchange, as well as the OTC and Frankfurt markets (TSXV: IXI | OTCQB: IXIXF | FSE: INEN).

## 2.2 Terms of Reference

Qualified Persons from Sproule were retained by Indigo to prepare a technical report on the Resource Assessment of the Fox Creek West Lithium Project in conformity to National Instrument 43-101 (NI 43-101) standards (the “Technical Report” or the “Report”). This Report has been prepared for Indigo by independent contractors.

## 2.3 Information Sources and Software

The Report is based upon information and data collected by Indigo, and data collected, compiled and validated by the authors. Mineral rights and land ownership information was provided by Indigo which also available and can be verified at the Government of Alberta website. A portion of the information contained within the Report was derived from the following:

- Indigo-supplied maps, logs, laboratory analyses, third-party reports and field sample data;
- Publicly available well logs, well reports, core analyses, production data;
- Published literature – specific sources of information are listed in Section 27 and are acknowledged where referenced in the Report text.

## 2.4 Personal Property Inspection

An inspection of the Fox Creek West property was conducted by Meghan Klein on October 16, 2023. Guided by Indigo’s representative, Ms. Klein visited the 15-29-064-23W5 well, planned as a future lithium concentration test site, and the surrounding area. The field visit allowed for a review of the surface lease, wellhead, equipment, and surrounding area (Figure 2-1). All identifiable surface infrastructure was validated with government approved survey and wellbore license documentation. Additionally, public data, required by the AER, was also reviewed to corroborate operations completed at the site.



Figure 2-1 15-29 Well Site

## 2.5 Abbreviations and Acronyms

Table 2-1 Abbreviations and Acronyms

Abbreviation	Description	Abbreviation	Description
3D	Three-dimensional	LHM	Lithium Hydroxide Monohydrate
AE	Alberta Energy	LLR	Licensee Liability Rating
AER	Alberta Energy Regulator	m	Meter
AEPA	Alberta Environment and Protected Areas	M	Thousands
APEGA	The Association of Professional Engineers and GeoScientists of Alberta	MM	Million
AWCSB	Atlas of the Western Canadian Sedimentary Basin	Masl	Meters Above Sea-Level
AGAT	AGAT Laboratories	m <sup>3</sup>	Cubic Metre
bbl	Barrels	MMbbl	Millions of Barrels
Bbbl	Billion Barrels	mKB	Meters Below Kelly Bushing
bbl/d	Barrels per Day	mL	Milliliter
BHP	Bottom-Hole Pressure	mD	Millidarcy
Bureau	Bureau Veritas Laboratories	mg/L	Milligram per Litre
CAD	Canadian Dollars	mm	Millimeters
Cal-Dly	Calendar Daily	MWD	Measurements While Drilling
CIM	Canadian Institute of Mining	MWIP	Maximum Wellhead Injection Pressure
		NAD83	North American Datum of 1983
CPF	Centralized Processing Facility	NI 43-101	National Instrument 43-101
		OGCA	The Oil and Gas Conservation Act
CST	Central Standard Time	PE	Photoelectric
Dfb	Warm-Summer Humid Continental Climate	P.Eng	Professional Engineer
DLE	Direct Lithium Extraction	P.Geo	Professional Geoscientist
DLS	Dominion Land Survey	P.Geoph	Professional Geophysicist
DST	Drill Stem Test	ppm	Parts Per Million
g/cm <sup>3</sup>	Grams Per Cubic Centimetre	QC	Quality Control
g/mol	Grams Per Mol	QP	Qualified Person
ha	Hectares	ROP	Rate of Penetration
HNO <sub>3</sub>	Nitric Acid	Rw	Formation of Water Resistivity
HWY	Highway	Rwa	Apparent Water Resistivity
H <sub>2</sub> S	Hydrogen Sulfide	TSX-V	Toronto Stock Exchange-Venture
ICP-MS	Inductively Coupled Plasma Mass Spectrometry	Tcf	Trillion Cubic Feet Gas
ICP-EOS	Inductively Coupled Plasma Optical Emission Spectroscopy	TD	Total Depth
IEC	International Electrotechnical Commission	TDS	Total Dissolved Solids
Indigo	Indigo Exploration Inc.	US EPA	United States Environmental Protection Agency
ISO	International Standards Organization	WCSB	Western Canadian Sedimentary Basin
KB	Kelly Bushing	WOB	Weight on Bit
km	Kilometres	YOP	Fox Creek Airport (CYOP)
L	Litre	µm	Micrometre
LAS	Log ASCII Standard		
Li <sub>2</sub> CO <sub>3</sub>	Lithium Carbonate		
LCE	Lithium Carbonate Equivalent		

### 3. Reliance on Other Experts

No other experts, other than those detailed herein, were used in the preparation of this report.

### 4. Property Location and Description

#### 4.1 Property Description and Location

Indigo's Alberta Lithium Brines Project is located in central Alberta between Camrose to the southeast and Peace River to the northwest (Figure 4-1). Indigo's Alberta Lithium Brines Project consists of 18 Metallic and Industrial Mineral Permits (Table 4-1) granted by Alberta Department of Energy that cover the Devonian-aged deposits of central Alberta, including the Wabamun, Winterburn, Swan Hills Formation of the Beaverhill Lake Group, Nisku and Leduc Carbonate Aquifers. All permits are held 100% by Indigo. The property is subdivided into three sub-project areas, Fox Creek, Leduc/Legal, and Peace River Arch areas shown in Figure 4-2. The total area of all Indigo's permits is 147,904 hectares (147.9 km<sup>2</sup> or 365,479 acres).

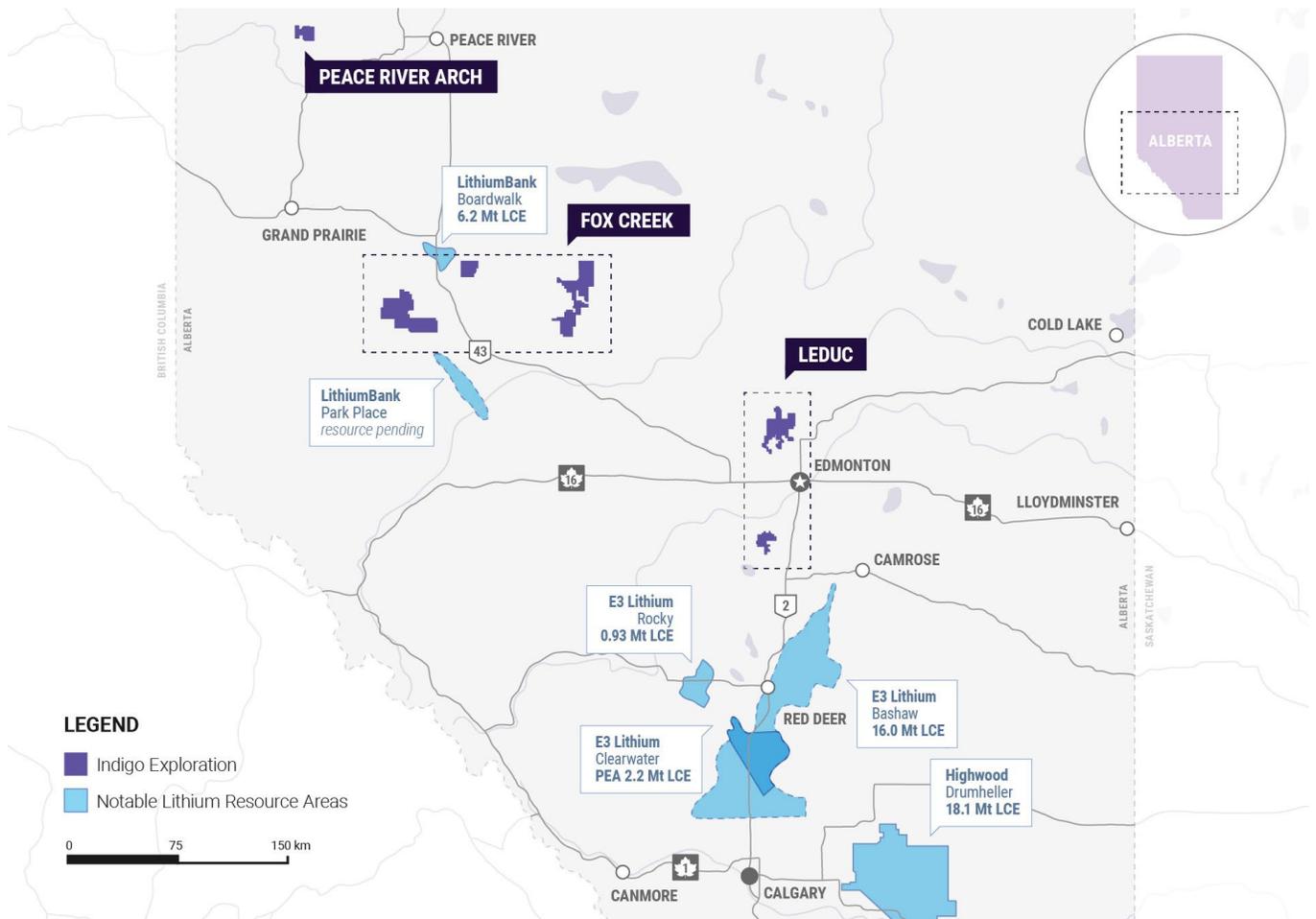
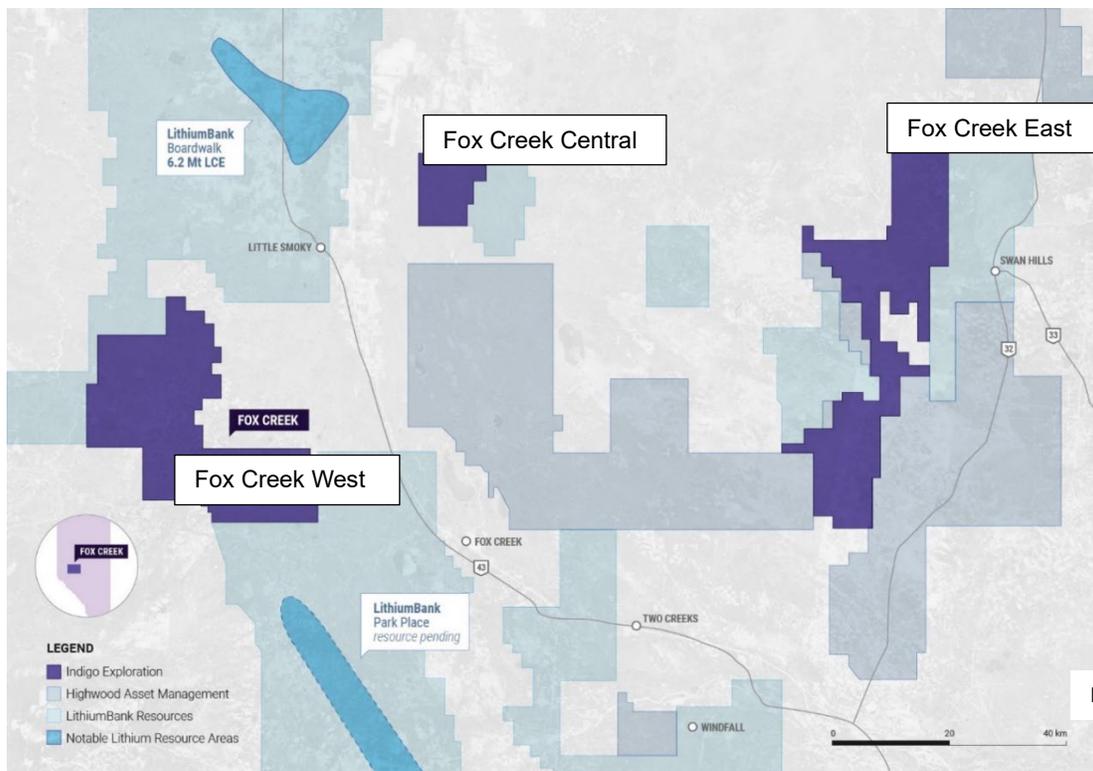


Figure 4-1 Indigo's Alberta Lithium Brines Project Areas

**Table 4-1 List of All Indigo’s Metallic and Industrial Mineral Permits granted by Alberta Department of Energy**

Participate Name	Serial Number	Term Date	Expiry Date		Location	Mineral Agreement Detailed Report #	Application #	Hectares
Indigo Exploration Inc.	9322100214	2022-10-13	2036-10-13	Permit 8	Fox Creek West	093 9322100214	4450889	9,216.0
Indigo Exploration Inc.	9322100215	2022-10-13	2036-10-13	Permit 9	Fox Creek West	093 9322100215	4450965	9,216.0
Indigo Exploration Inc.	9322100216	2022-10-13	2036-10-13	Permit 10	Fox Creek West	093 9322100216	4450974	9,216.0
Indigo Exploration Inc.	9322120214	2022-12-14	2036-12-14	Permit 11	Fox Creek West	093 9322120214	4472095	5,376.0
Indigo Exploration Inc.	9322120215	2022-12-14	2036-12-14	Permit 12	Fox Creek West	093 9322120215	4472096	9,216.0
Indigo Exploration Inc.	9322120217	2022-12-14	2036-12-14	Permit 13	Fox Creek West	093 9322120217	4472097	8,704.0
Indigo Exploration Inc.	9322120218	2022-12-14	2036-12-14	Permit 15	Fox Creek West	093 9322120218	4472099	8,793.7
Indigo Exploration Inc.	9322100209	2022-10-13	2036-10-13	Permit 3	Fox Creek East	093 9322100209	4449335	9,216.0
Indigo Exploration Inc.	9322100212	2022-10-13	2036-10-13	Permit 6	Fox Creek East	093 9322100212	4450846	9,216.0
Indigo Exploration Inc.	9322100213	2022-10-13	2036-10-13	Permit 7	Fox Creek East	093 9322100213	4450860	9,216.0
Indigo Exploration Inc.	9322120216	2022-12-14	2036-12-14	Permit 14	Fox Creek East	093 9322120216	4472098	8,704.0
Indigo Exploration Inc.	9322120219	2022-12-14	2036-12-14	Permit 16	Fox Creek East	093 9322120219	4472100	9,216.0
Indigo Exploration Inc.	9322100208	2022-10-13	2036-10-13	Permit 2	Fox Creek Central	093 9322100208	4449331	9,216.0
Indigo Exploration Inc.	9322100210	2022-10-13	2036-10-13	Permit 1	Leduc	093 9322100210	4449326	5,440.0
Indigo Exploration Inc.	9322120220	2022-12-14	2036-12-14	Permit 17	Legal - south	093 9322120220	4472101	8,884.0
Indigo Exploration Inc.	9322120221	2022-12-14	2036-12-14	Permit 18	Legal - north	093 9322120221	4472102	9,051.6
Indigo Exploration Inc.	9322100211	2022-10-13	2036-10-13	Permit 5	Peace River Arch - west	093 9322100211	4449345	8,768.0
Indigo Exploration Inc.	9322100207	2022-08-26	2036-08-26	permit 4	Peace River Arch -east	093 9322100207	4449336	1,280.0
								147,945.3

The Fox Creek Project covers an area of 114,522 hectares and is further sub-divided into the Fox Creek East (45,568 hectares), Fox Creek West (59,738 hectares) and Fox Creek Central (9,216 hectares) areas.



**Figure 4-2 Indigo’s Fox Creek Lithium Brines Project Areas**

The Fox Creek West Property shown in Figure 4-3 covers an area of 59,738 hectares and targets the Devonian-aged reefs, including the Wabamun and the Swan Hills Formation of the Beaverhill Lake Group.

Indigo's mineral of interest (lithium) within the Fox Creek West Property is hosted in the confined Devonian aquifer at depths of between 2,338 m and 3,051 m TVD. Indigo does not currently own any subsurface reservoir leases or deep subsurface well(s) or equipment that is capable of pumping brine from these depths to the surface for testing.

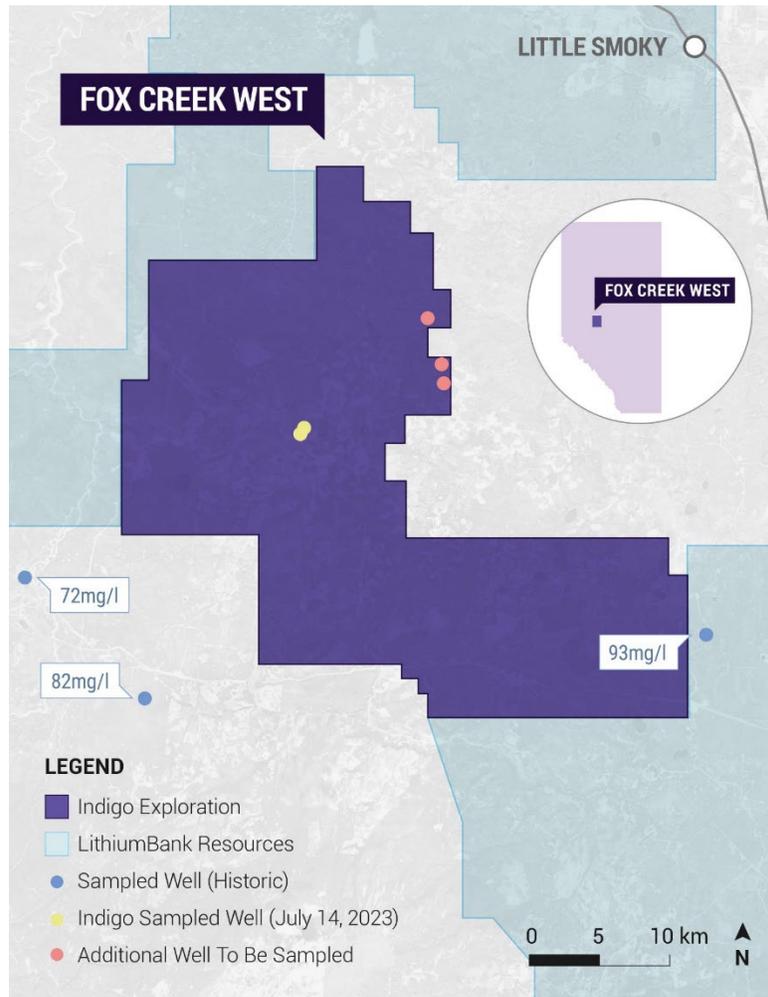


Figure 4-3 Indigo's Fox Creek West Lithium Brines Project Area

## 4.2 Tenure History and Mineral Permit Maintenance

Currently Alberta Metallic and Industrial Mineral Permits grant an explorer the exclusive right to explore for metallic and industrial minerals for seven consecutive two-year terms (total of fourteen years), subject to traditional biannual assessment work. Work requirements for maintenance of permits in good standing are CAD 5.00/ha for the first two-year term, CAD 10.00/ha for each of the second and third terms, and CAD 15.00/ha for each the fourth, fifth, sixth and seventh terms.

The statutes also provide for conversion of Permits to Metallic Minerals Leases once a mineral deposit has been identified. Leases are granted for a renewable term of 15 years and require annual payments of CAD 3.50/ha for rent to maintain them in good standing. There are no work requirements for the maintenance of leases and they confer rights to minerals. Complete terms and conditions for mineral exploration permitting and work can be found in the Alberta Mines and Minerals Act and Regulations (Metallic and Industrial Minerals Tenure Regulation 145/2005, Metallic and Industrial Minerals Exploration Regulation 213/98). These and other acts and regulations, with respect to mineral exploration and mining, can be found in the Laws Online section of the Government of Alberta Queen's Printer website.

The Government of Alberta is revising its regulations and policies with respect to brine-hosted mineral deposits. A draft directive (Directive 056) has been released for stakeholder feedback. The directive contains the requirements for licence applications to construct or operate facilities, pipelines, or wells as part of energy development for the oil and gas, geothermal, and mineral industries and has been expanded to include geothermal and brine-hosted mineral development.

### **4.3 Surface Rights**

At this exploration stage, Indigo is dependent on petroleum companies that own wells in the permit area to provide permission for access to acquire brine for test purposes from their wells. The petroleum company's permits and licenses associated with their lease which include surface rights, land use, road permits, water permits, rigs, pipelines, processing facilities, injection wells and reservoir rights, etc., have been granted exclusively by the Alberta government to the petroleum company.

Upon consent from the petroleum company, the collection of the brine is conducted under protocols, rules and guidance of each. Indigo's brine sampling methodology does not require additional permits, or surface and access approval beyond the actual Alberta Metallic and Industrial Mineral Permit.

If Indigo were to re-enter a suspended well or drill a deep exploration or brine production well, the Company would be required to comply with well license application requirements as administered by the AER who regulates various acts and the regulations focused on energy exploration and production in Alberta.

### **4.4 Water Treatment and Lithium Extraction Agreement**

Indigo has Brine Sampling Agreements with petroleum companies in Fox Creek East and Leduc/Legal property areas to sample produced water from the operator's active wells within the boundaries of property. The operator of the two wells sampled at Fox Creek West did not require a sample agreement. The only request was to have a field operator on site during the collection of the sample. Indigo is currently pursuing a Brine Sample Agreement with other operators in and around the Fox Creek West property to further examine the potential for economic lithium concentrations.

## **4.5 Royalties and Agreements**

Indigo owns 100% of the permits that make up the Fox Creek West Property (Table 4-1). Alberta Metallic and Industrial Mineral Permits at the Fox Creek West Property were acquired directly via on-line staking from the Government of Alberta. Consequently, there are no back-in rights, payments, or other agreements and encumbrances to which the Property is subject.

The Department of Energy administers royalty rates associated with any lithium production in Alberta. The permits are subject to a 1% of gross mine-mouth revenue before payout. After payout, there is a further royalty in the amount of the greater of 1% of gross mine-mouth revenue and 12% of net revenue.

## **4.6 Environmental Liabilities, Permitting and Significant Factors**

The author has not documented environmental liabilities as they pertain to the oil and gas leases and licenses and petroleum production, which are owned and operated by petroleum companies under the conditions of their lease. Environmental aspects of oil and gas are regulated by the AER in accordance with the Environmental Protection and Enhancement Act, Public Lands Act, and the Water Act. Alberta's Liability Management Framework includes a series of mechanisms and requirements to improve and expedite oil and gas reclamation efforts. Environmental licenses, factors, and issues – as they pertain to minerals exploration – are administered by Alberta Environment and Parks (AEP). The author has not documented any liabilities associated with minerals-related environmental guidelines.

To the best of the QPs knowledge, there are no other significant factors that may affect access, title or right or ability to perform exploration work at the Fox Creek West Property.

## **5. Accessibility, Climate, Local Resources, Infrastructure and Physiography**

### **5.1 Accessibility**

The Fox Creek West property is accessible by air and ground transportation (Figure 5-1). There are international airports in Calgary (YYC) and Edmonton (YEG). Grande Prairie (YQU) hosts a regional airport.

Major and secondary provincial highways, and all-weather roads developed to support oil/gas infrastructure occur throughout the permit areas, many serviced year round due to petroleum activities in the area. The City of Grande Prairie (population of 67,669) is located at the junction of Alberta Provincial Highway (“Hwy”) 43 and Highway 2. Hwy 2 is the main corridor between Edmonton and Calgary that extends north from Edmonton to Peace River and the back south to Grande Prairie. Hwy 43 links Grande Prairie directly to Edmonton in a southeasterly direction and travels directly to the east of the Fox Creek Property. Further access to the properties is provided by secondary one- or two-lane all-weather roads, and numerous all weather and dry weather gravel roads. The resource area can be accessed most of the year, except during the period known as “Spring Break Up” when warming temperatures thaw the frozen ground and make travelling the access roads challenging. Mineral test work and drilling of wells in the area is limited to approximately 9-10 months of the year. Two rail lines (Canadian Pacific Railway and the Canadian National Railway) are present throughout the area and connect to the major centers of Edmonton

and Calgary. These railways extend to the north and south of the resource area and then to all of North America.

The closest air access is a public airport located 3.5 km south of the Town of Valleyview, located at the junction of Alberta Provincial Highway 43 and Highway 49 (Figure 5-1). Highway 43 runs north-south through the Fox Creek West Property.

Accommodation, food, fuel, and supplies are best obtained in Valleyview, Grande Prairie, Whitecourt and Fox Creek, AB. Larger urban areas include the City of Grande Prairie, AB, and Town of Whitecourt, AB, which are located 160 km northwest and 130 km southeast, respectively, from Valleyview.

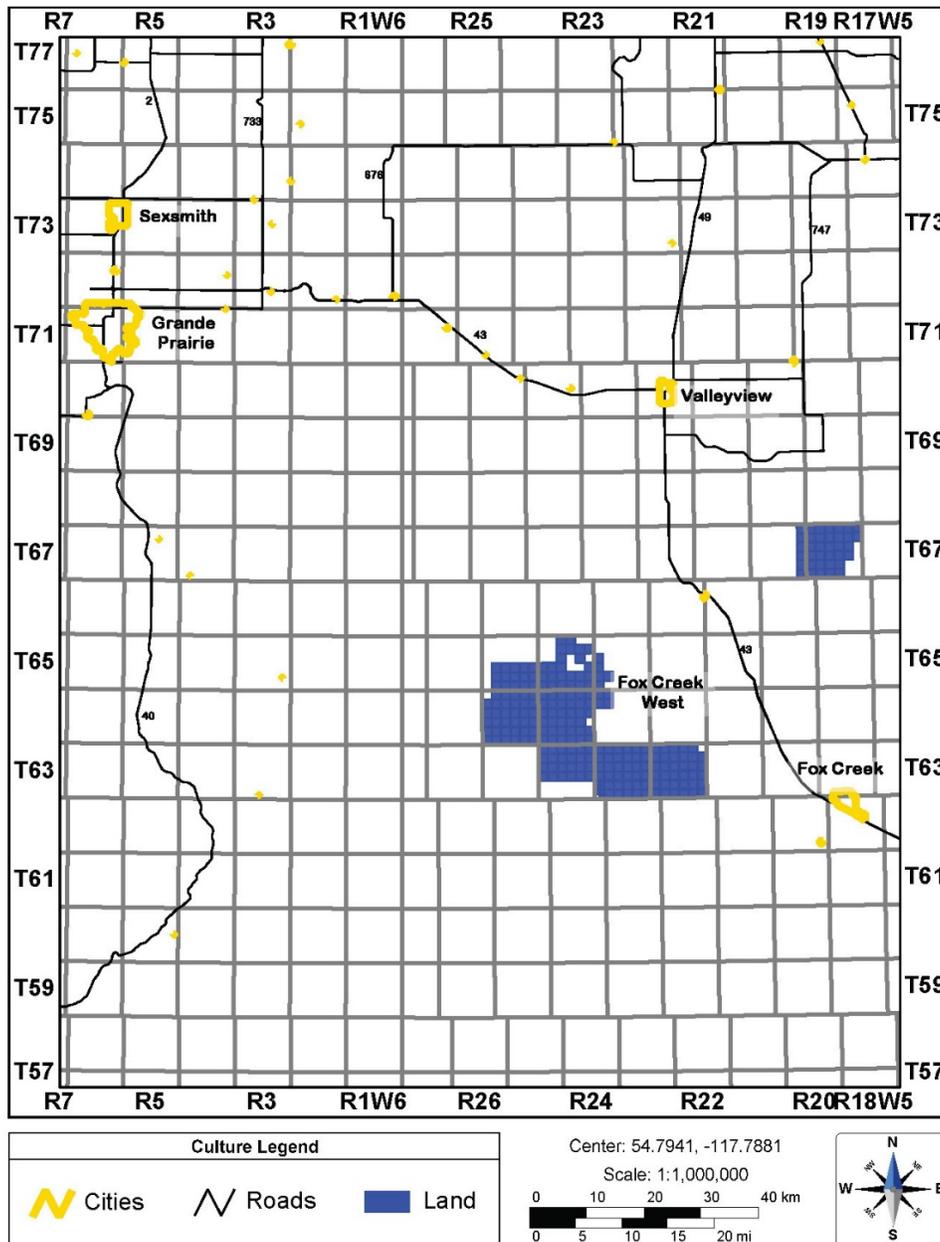


Figure 5-1 Access Routes to Fox Creek West Property

## 5.2 Site Topography, Elevation, Vegetation, and Wildlife

The Fox Creek West Property is dominated by hilly topography prevalent in the west-central region of Alberta. Elevation in the property is between 700 m and 900 m above sea level (asl), with lower elevations seen to the northeast towards Valleyview, and higher elevations to the southwest towards the Rocky Mountains (Figure 5-2). The property is located within a forest region containing partial wetland environments.

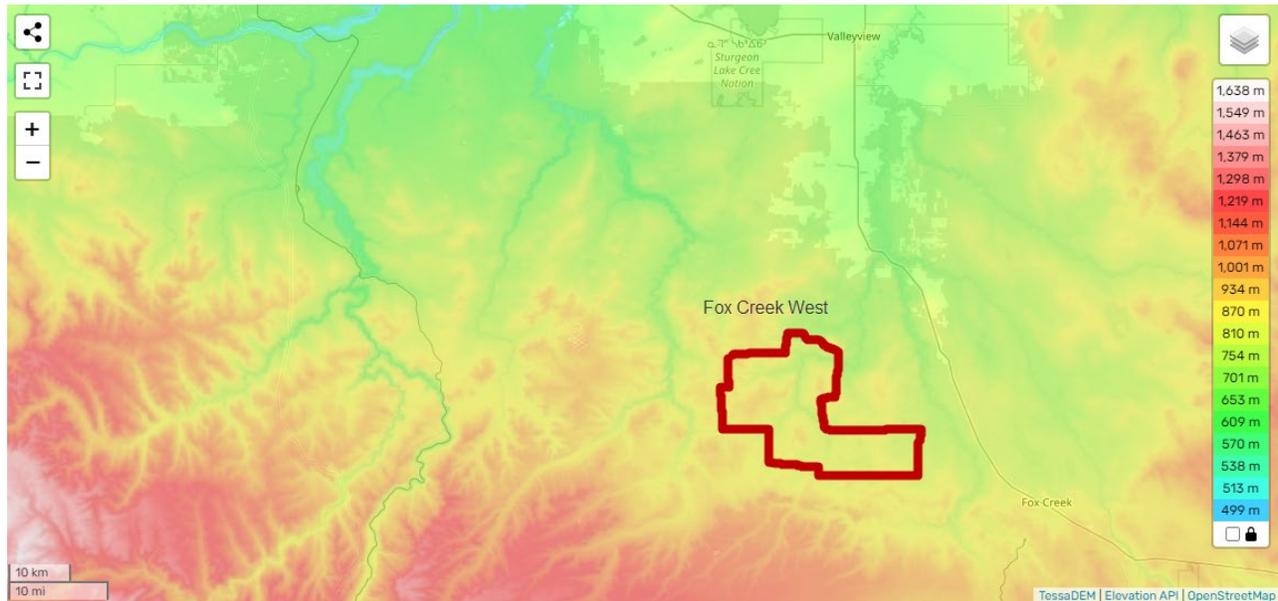


Figure 5-2 Elevation of Fox Creek West Property Area (topographic-map.com)

## 5.3 Climate

Valleyview is classified as a humid continental climate (Köppen climate classification Dfb), with cool summer nights and long, cold winters. Annual temperatures range from -40 °C in January to 30 °C in July and August with average temperatures above 0 °C between April and October (Environment Canada, 2011).

Precipitation as either rain or snow ranges from 14 mm to over 100 mm, with most precipitation occurring as rain in June and July (Environment Canada, 2011).

With an active petroleum industry in the area operating year round, it is reasonable to expect Indigo will have access to brine year round, with exploration and/or development activities generally occurring outside of the Spring Breakup period.

## 5.4 Local Resources and Infrastructure

Indigo's Fox Creek West Property is positioned near the Sturgeon Lake Oilfield, discovered in 1952. This oilfield continues producing hydrocarbons today, accessed by significant infrastructure such as primary and secondary highways and power lines in the region to support the Town of Valleyview. Within the Fox Creek West Property, existing petroleum operations provide

infrastructure such as access roads and power lines. Indigo benefits from this infrastructure as there is sufficient power and access to the area for lithium development.

The Town of Valleyview recorded a population of 1,863 living in 747 of its 833 total private dwellings (Statistics Canada, 2021).

With significant petroleum production in the area with existing facilities, power and expertise in the region, the Fox Creek West Property falls under Alberta's robust legislation and regulations for energy operations. Processing of lithium brine could be combined with existing petroleum facilities with the appropriate agreements between lithium owners and petroleum companies.

## 6. History

This section reviews historical exploration completed by energy and mineral companies in the region of the Fox Creek West Property. Indigo has not completed any exploration activities to date.

### 6.1 Oil and Gas Exploration and Development

Oil and gas well data in the Fox Creek West Property area was obtained from Accumap™, an energy industry data software program. Figure 6-1 shows the distribution of oil and gas wells in the Fox Creek West Property and surrounding area and highlights, in green, those wells that were used to target the Devonian petroleum system, which includes the Beaverhill Lake Group and the Wabamun Formation. The remaining non-Devonian wells in the region target mostly the shallower Triassic and Cretaceous strata, the aquifers of which, are not known to contain elevated levels of lithium (see Section 6.2).

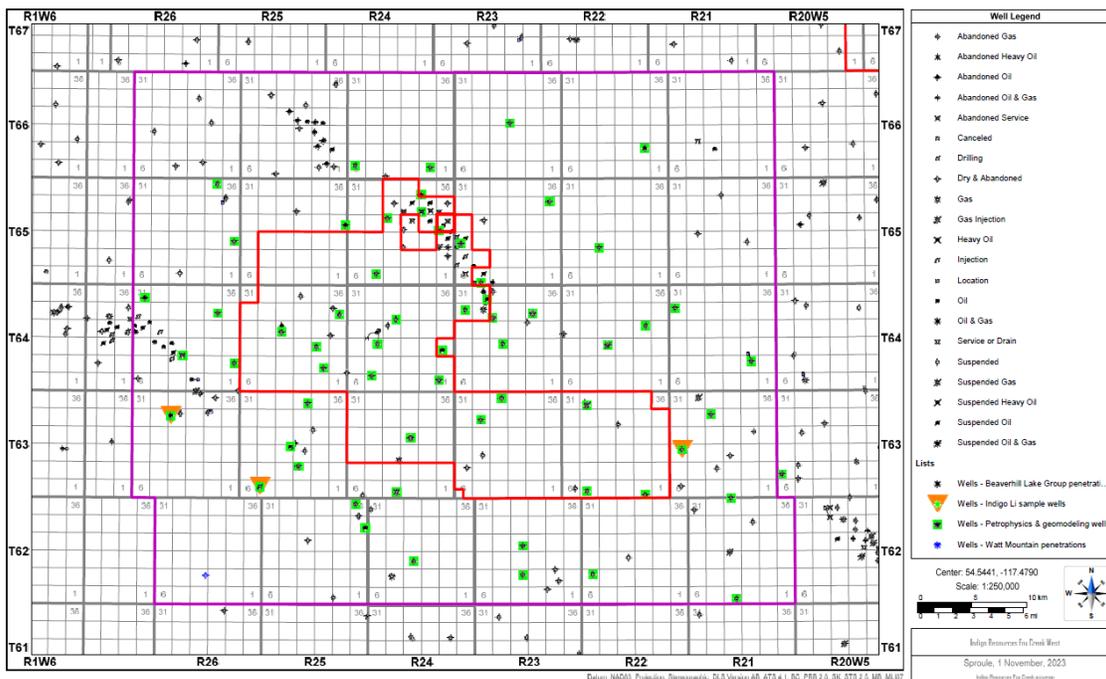


Figure 6-1 Area Map with Well Penetrations (BHL) and Wells used for Geomodelling

## 6.2 Drill Cores

The area in and adjacent to the Fox Creek West Property has only one well (00/02-10-063-26W5/00) with limited Wabamun core analysis, which had an average core porosity of 2.5 percent.

Within the area of interest, the Beaverhill Lake Group has 70 wells with core analysis, with 3,457 data points. Only 12 wells with Beaverhill Lake Group core analysis were analysed in the petrophysical study due to the core bias toward the productive hydrocarbon pools and the poor convergence of cored wells with those with full penetration of the Swan Hills Formation, suitable well log suites, and log quality. The larger dataset shows the similar bimodal distribution of grain density due to the presence of limestone and dolomite and a clear trend of increasing porosity with increasing grain density (more dolomitic). Due to the substantial thickness of the Swan Hills Formation, and variable distribution of dolomitic intervals, many of the core intervals are somewhat random, and sampling for core analysis is commonly biased against limestone intervals. The average core porosity exceeding 3 percent cut-off is 6.9 percent.

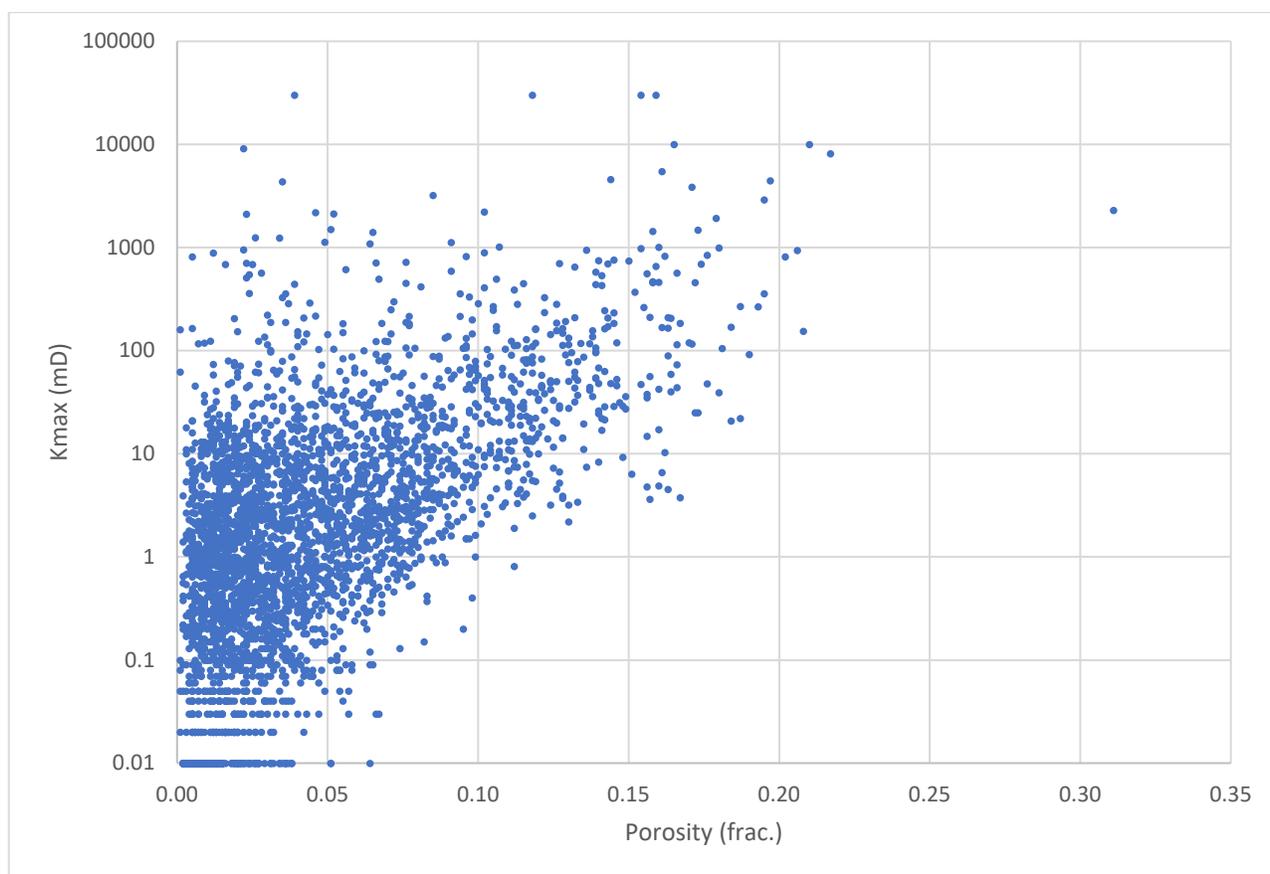


Figure 6-2 Core Permeability-Porosity Crossplot for the Beaverhill Lake Group

## 6.3 Drill Stem Tests (DST) and Other Relevant Pressure Transient Tests

Drill Stem Tests (DST) and other pressure transient tests are standard petroleum industry formation tests used to evaluate certain reservoir characteristics such as bottom-hole pressure (BHP), fluid content, and permeability. These tests are only completed on select wellbores and zones due to the

associated cost. A DST is a downhole test that can measure flow capability by measuring permeability and pressure from a specific depth interval.

In the area in and around the Fox Creek permits there are 74 DSTs in the Swan Hills Formation and 26 in the Wabamun Formation. The majority of the Swan Hills DSTs are within 3 southeast-northwest trending oil and gas producing reefs near the property.

Three wells within the permit area were found to have DSTs within the Wabamun Formation with shut-in pressures ranging from ~27,000 kPa to ~30,000 kPa. Four wells on the Fox Creek West land and not within the hydrocarbon producing trend have successful DSTs covering the Beaverhill Lake Group. Three of the four wells had straddle tests covering portions of overlying or underlying zones. The lone well with the DST isolated over the Beaverhill Lake Group had shut-in pressure of ~21,000 kPa, with the other wells ranging from ~12,000 kPa to ~34,000 kPa.

## 6.4 Production

There is minimal historical production from the Wabamun Formation in the region as the formation has little petroleum production. Production from the Wabamun Formation in the Fox Creek West property commenced in Feb 1974. To date 5.4 thousand m<sup>3</sup> of water has been produced from the Wabamun Formation in the property.

Production from the Beaverhill Lake Group from the Fox Creek West property commenced in May 1963. To date, 2.8 million m<sup>3</sup> of water has been produced from the Beaverhill Lake Group in the property.

## 6.5 Disposal

There is no historical water disposal into the Wabamun Formation in the region. Water disposal/injection into the Beaverhill Lake Group commenced in April 1968, shown in Figure 6-3. There has been 4.4 million m<sup>3</sup> of water injected into the Beaverhill Lake Group to-date.

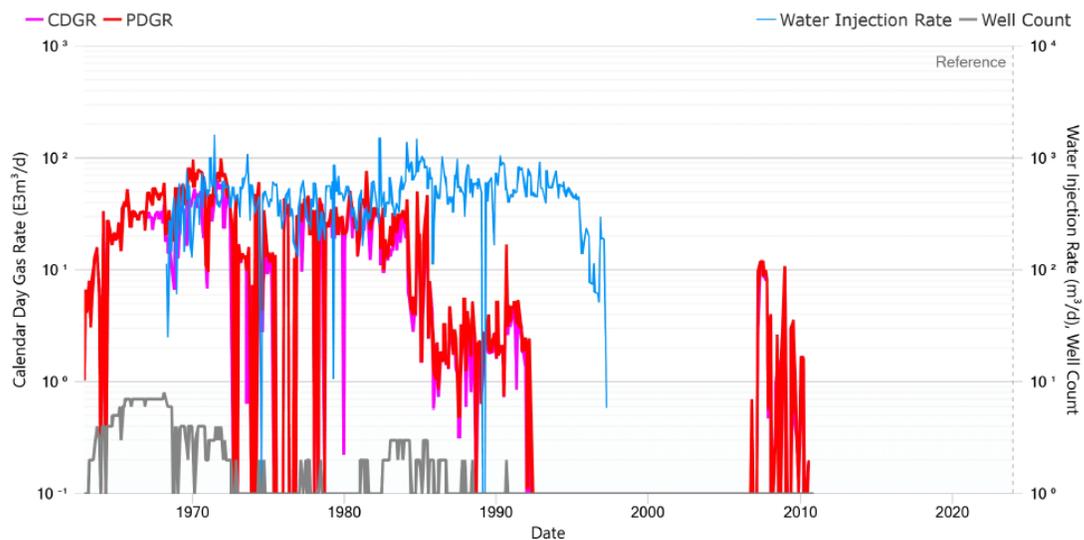


Figure 6-3 Water Injection in the Beaverhill Lake Group

## 6.6 Historical Analysis

A total of one historical lithium assay occurs within the boundaries of the Fox Creek West Property. The analytical results of the historical analyses include:

- Beaverhill Lake Group sample with a lithium concentration of 37 mg/L.

The QP also reviewed historical lithium geochemical values that occur in the vicinity of the Fox Creek West Property. The analytical results of the historical analyses include:

- Two Beaverhill Lake Group samples with lithium concentrations of 76 and 93 mg/L, with an average value of 84.5 mg/L.
- Six Wabamun Formation samples with lithium concentrations between 39 and 115 mg/L, with an average value of 83.3 mg/L.

Historical samples are summarized in detail in Table 6-1.

*Table 6-1 Summary of Historical Lithium Samples*

Well	Formation	Li Concentration (mg/L)	Source
00/06-08-074-03W6/0	Wamanun	39	Eccles and Jean 2010
00/12-28-063-26W5/0	Wamanun	72	Eccles and Jean 2010
00/14-24-067-19W5/0	Wamanun	84	Eccles and Jean 2010
00/07-35-078-24W5/0	Wamanun	94	Eccles and Jean 2010
00/11-09-079-22W5/0	Wamanun	95	Eccles and Jean 2010
00/04-28-074-02W6/0	Wamanun	115	Eccles and Jean 2010
00/10-22-065-24W5/0	BHL	37	Eccles and Jean 2010
00/07-31-061-21W5/0	BHL	76	Eccles and Jean 2010
00/10-18-063-21W5/0	BHL	93	Eccles and Jean 2010

## 7. Geological Setting and Mineralization

The Fox Creek Property area of the Western Canada Sedimentary Basin (WCSB) represents the northeastern extent of the Swan Hills Reef Complex. In this area, the Devonian carbonates, evaporites and siliciclastic sediments of the Beaverhill Lake Group (BHL) were deposited in a shallow inland sea. Post BHL deposition, the Upper Devonian Woodbend and Winterburn group carbonates, shales, and silts were deposited, followed by Late Devonian dolomitic limestones, calcareous dolomites and interbedded evaporites of the Wabamun were deposited in a shallow sea on a broad carbonate ramp.

## 7.1 Regional Geology

During the Devonian a shallow northwest to southeast sea was bordered by Peace River Arch to the northwest and by the West Alberta Ridge to the southwest. The exposed terrain created the conditions for a shallow saline sea that was isolated from the ancestral Pacific to the west (Potma et al. 2001) and provided a depositional environment conducive to reef growth and the deposition of carbonate sediments.

### 7.1.1 Precambrian Basement

The Fox Creek West permit lies within the southwestern portion of the Western Canadian Sedimentary Basin. The WCSB forms a wedge of Phanerozoic strata overlying the Precambrian basement. The permit is located at the intersection of two basement terranes: the Chinchaga Terrane and the Wabamun Domain.

The Chinchaga Terrane is between 1.8 and 2.4 billion years (Ga) old and is a portion of the Buffalo Head Craton of the North American continental mass. (Ross et al., 1991, 1998). The Wabamun Domain is a tectonic wedge along the Snowbird Tectonic Zone to the south (Ross et al., 1991) and is also 1.8 and 2.4 billion years (Ga) old.

There are no Precambrian penetrations within the Fox Creek West permit, but sparse regional well control indicates that the Precambrian is dipping to the southwest at depths from 3650 to 4000 metres within the property.

### 7.1.2 Phanerozoic Strata

The WCSB consists of a thick stratigraphic sequence with strata with clastic rocks in the Paleocene and Cretaceous and Mississippian to Devonian consisting of carbonate, sandstones and evaporites (e.g., Green et al., 1970; Glass, 1990; Wright et al., 1994).

Below the base of the Beaverhill Lake Group, the Elk Point Group is comprised of restricted marine carbonate and evaporites that gradationally overlies the Watt Mountain Formation (Oldale et al., 1994). The Upper Elk Point Group includes the Fort Vermillion, Muskeg and Watt Mountain formations. These formations represent a base (Hitchon, 1990) to the overlying Swan Hills reef complex.

The Swan Hills reefs are characterized by multiple cycles of reef growth including backstepping reef complexes and isolated reefs created by the rapid sea level rise at the time. The Waterways Formation provides a top seal to the Swan Hills reefs (Oldale et al., 1994). Together, the Waterways and Swan Hills formations form the Beaverhill Lake Group.

Above the Beaverhill Lake Group the Wabamun Group is underlain by the Winterburn Group and unconformably overlain by the early Mississippian Exshaw shale. The Exshaw shale is overlain by limestones and interbedded siliciclastics of the Banff Group (Halbertsma, 1994). The limestone and dolostones of the Rundle Group conformably overlie the Banff Group.

There are very little Permian strata overlying the Fox Creek West carbonate lithium targets and what exists consists of a thin deposit of the Belloy Formation that unconformably overlies the Rundle Group and is unconformably overlain by the Triassic Montney Formation followed by the Doig, Halfway, and Charlie Lake formations (Henderson et al., 1994).

The Triassic includes mainly fine-grained argillaceous silt and sandstones. The overlying Jurassic is primarily shale with some sandstone (Edwards et al., 1994).

The overlying Mesozoic strata consists of cyclical deposits of marine and nonmarine sandstone, shale, siltstone, and mudstone due to a fluctuating sea level. The Lower Cretaceous strata comprise a major clastic wedge on the Foreland basin (Leckie et al., 1994).

The uppermost bedrock units consist primarily of sand and siltstones that are interbedded with mudstone and coal seams. Finally, the Paskapoo Formation marks the top of the stratigraphy across the much of southwestern Alberta. It is an aquifer consisting of sandstone, siltstone, and mudstone (Dawson et al., 1994).

### **7.1.3 Beaverhill Lake Group and Wabamun Formation Stratigraphy**

#### **Beaverhill Lake Group**

The Swan Hills Formation is a carbonate platform and reef build up that is part of the Beaverhill Lake Group. These back stepping reefs were deposited during the Devonian, late Givetian to early Frasnian time. Further cyclical development repeated with the deposition of the Cooking Lake carbonate platform providing the relative structural highs and a favorable environment for the growth of the buildups of the Swan Hills Formation. The Swan Hills Formation overlies the thin Fort Vermilion Formation evaporites or the Watt Mountain Formation in absence of the Fort Vermilion. The Swan Hills Formation is overlain by the calcareous mudstones interbedded with carbonates of the Waterways Formation. Together, the Swan Hills and Waterways formations make up the Beaverhill Lake Group.

The depositional pattern of the Swan Hills platform is associated with topographical highs in the Watt Mountain Formation (Jansa and Fischbuch, 1974), and to basement rooted faults created by the tectonics associated with the West Alberta Ridge (Corlett et al., 2018 and references therein). The Givetian to early Frasnian was a period of rapid sea level rise and due to this the Swan Hills carbonate platform is a backstepping reef (Wendte et al., 1992; Hauck, 2014; Wendte and Uyeno, 2005).

The Swan Hills Formation platforms occur in western Alberta from Township 81 to 24, Range 09 West of the 6th Meridian to Range 02 West of the 5th Meridian. The formation thins toward the deformed belt and is referred to as the Flume Formation where it is exposed or outcrops in the Rocky Mountain. To the north the Slave Point Formation is equivalent to the lower Swan Hills Formation (Leavitt and Fischbuch, 1968). The Slave Point Formation is also present in west central Alberta. In this locality it is a thin basinal equivalent of the Swan Hills Formation. In its thickest areas of deposition, the Swan Hills Formation approaches 150 metres thick (Fong, 1959).

The Swan Hills Formation is primarily a limestone, with some intermittent dolomitization of the limestone reservoir. The Dunham classification of the Swan Hills Formation identifies it mainly as lagoonal mudstones to wackestones, reef margin boundstones, and forereef bioclastic limestones. (e.g., Dunham et al., 1962).

The top and base of the Swan Hills Formation are picked from wireline logs, as shown in Figure 7-6. The shales of the Waterways Formation which overlies the Swan Hills has a much higher radioactivity and gamma ray log API reading and the shales and evaporites of the underlying Fort Vermillion show a higher gamma log response, than the relatively low gamma response exhibited by limestones. The zones of interest in the Swan Hills Formation include the high-energy deposits such as packstones and grainstones with higher than average porosity and low readings on the gamma ray log.

## **Wabamun Formation**

The Wabamun thickens from its thinnest point in Saskatchewan to over 200 metres in northwest Alberta. The lithofacies of the Wabamun in north and west-central Alberta consist primarily of dolomites, limestones and evaporites. The principal members are the Stettler, which reaches a maximum thickness in Alberta of 250 metres, and the Big Valley Formation, which maintains a uniform thickness of 15 to 20 metres over most of Alberta. Bioturbated wackestones, peloidal packstones and grainstones, which were deposited on a large, semi-restricted shelf, cover most of northern and central Alberta. These are the reservoir targets for potential elevated lithium concentrations.

Wabamun sedimentation in the WCSB represents an overall lowering of the sea level with final sea level transgression during Big Valley deposition. The Wabamun was laid down in a shallowing sea environment to the southeast across Alberta into Saskatchewan.

The Wabamun Formation is primarily a dolomitized limestone with anhydrite interbeds at the base of the formation. The Dunham classification of the Wabamun Formation in the Fox Creek West permit area identifies it mainly as bioturbated wackestones, peloidal packstones and grainstones.

The top and base of the Wabamun Formation are picked from wireline logs, as shown in Figure 7-6. The shales of the Exshaw Formation which overlies the Wabamun has a much higher radioactivity and gamma API log and evaporites of the underlying upper Winterburn Group show a higher gamma log response, than the relatively low gamma response exhibited by limestones. The zones of interest in the Wabamun reservoir include the high-energy deposits such as packstones and grainstones with higher than average porosity and low readings on the gamma ray log.

### **7.1.4 Quaternary Geology**

Glacial advances during the Pleistocene by the Laurentide Ice Sheet resulted in the deposition of ground moraine and glacial till sediments in south-central Alberta (Dufresne et al., 1996). The Fox Creek West permit is overlain by drift of variable thickness, ranging from a discontinuous veneer to just over 15 metres (Pawlowicz and Fenton, 1995).

### **7.1.5 Structural History**

The Fox Creek West permits are located within the Alberta Basin of the WCSB. The Alberta Basin is located east of the Rocky Mountains and north of the Bow Island Arch. The permits are not within the deformed area. However, deep-seated faults connected to the Precambrian basement and the Snowbird Tectonic Zone have been theorized to have at least partial control on the distribution of reefs. Many of the Devonian reef complexes are underlain by or are proximal to basement faults.

These deep-seated faults were active around the time of reef deposition and may play a role in lithium brine deposition and concentration (e.g., Bloy and Hadley, 1989; Dufresne et al., 1996).

## 7.1.6 Mineralization

Most subsurface saline water reservoirs in the WCSB do not contain economic concentrations of lithium. The potential for the accumulation of lithium-enriched brines in the Devonian petroleum system of Alberta was initially identified by Alberta Geologic Survey. Initial reservoirs of interest were the reef complexes of the Woodbend and Winterburn groups. Subsequent work confirmed the presence of elevated lithium in reservoirs associated with the Devonian reef complexes.

The main lithium accumulations on and surrounding the Fox Creek West permits occur within brines contained within dolomitized reefs of the Devonian aged Swan Hills reef complexes with a secondary accumulation occurring at a higher elevation in the Wabamun Formation.

The geologic theory on lithium brine concentration within formation waters is an active area of research. Speculation exists as to the source of the lithium, for the lithium-enriched brines of the Swan Hills and Wabamun formations. (Eccles et al., 2012). One proposed method of deposition involves saline waters, in contact with the felsic minerals of the granitic basement rocks that migrate up through deep-seated faults. The upward migration of saline basement waters eventually come in contact with dolomitized carbonates and evaporitic sequences of the Devonian. This interaction is suspected to help with concentration. The small nature of the lithium ion allows for super concentration while potential interaction with released magnesium ions during dolomitization causes a release of lithium from the associated evaporites. But ultimately the source of the lithium concentrations remains unknown. The migrating fluids are eventually trapped by the overlying shales (Eccles and Berhane, 2011).

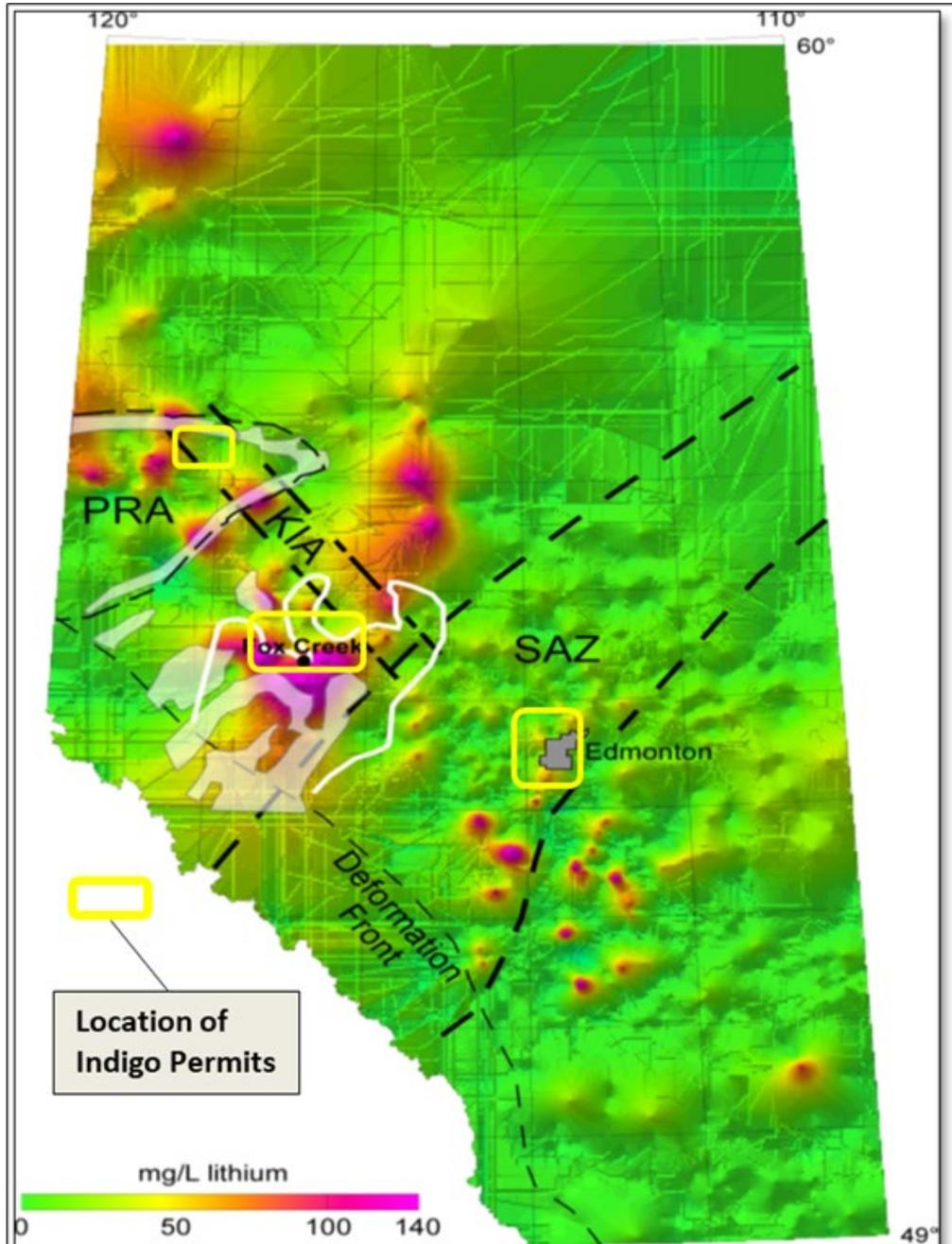


Figure 7-1 Company Permit Areas and Extent of Li-rich formation water in west-central Alberta (after Eccles and Berhane, 2011)

## 7.2 Property Geology

### 7.2.1 Paleogeography of the Fox Creek Area

The WCSB begins at the eastern edge of the Canadian Cordillera. The WCSB consists of two major sedimentary basins, the Alberta Basin, and the Williston Basin. The Fox Creek West permits are located within the Alberta Basin. The Alberta Basin is a northwest-trending trough parallel to the Cordilleran Fold and Thrust Belt as shown in Figure 7-2.

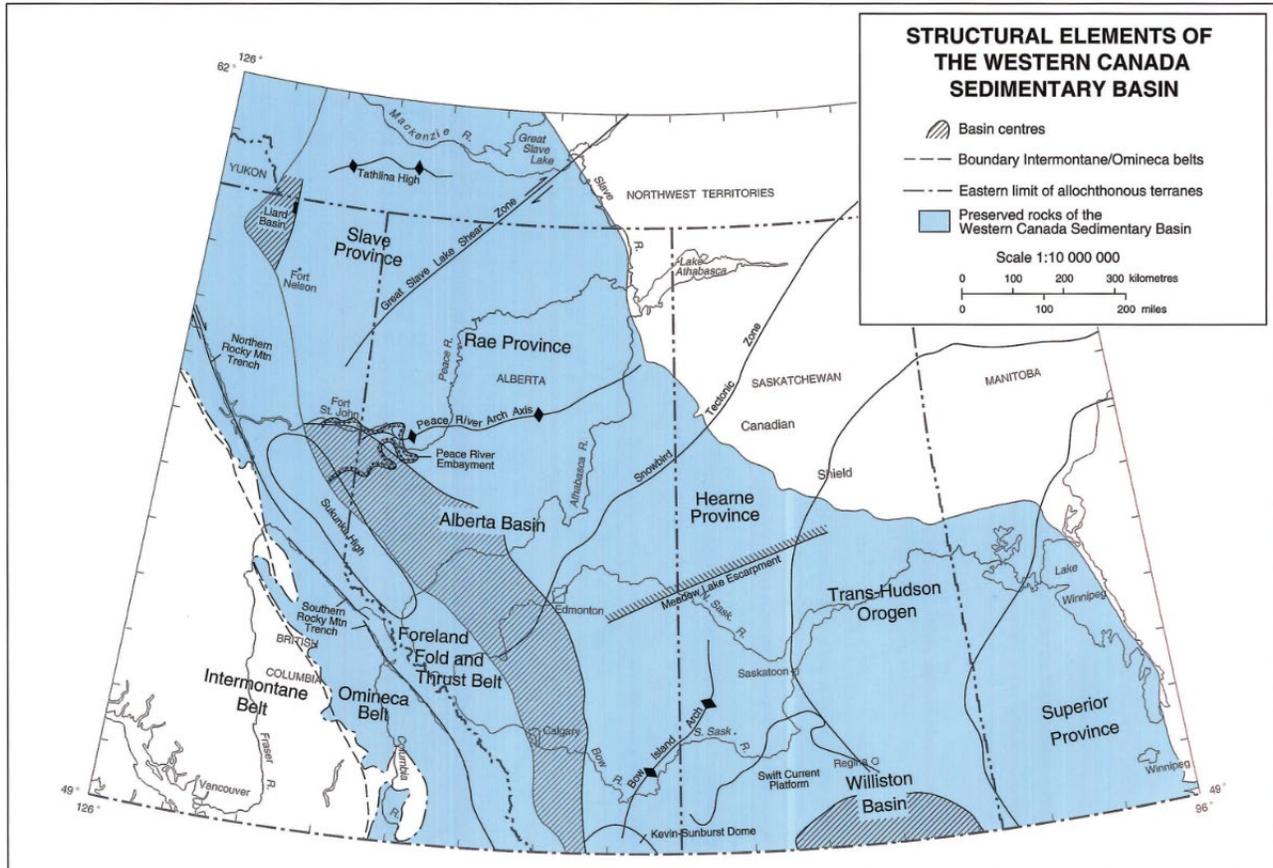


Figure 7-2 Structural Elements of the Western Canadian Sedimentary Basin (Wright et al., 1994)

The Fox Creek West permit covers Townships 63 to 65 and Ranges 23 to 25 West of the 5th Meridian (Figure 5-1). A total of 140 wells in and around (T62-66 R21-26W5) the resource area penetrate the full stratigraphic section of the Swan Hills reservoir. With the Wabamun Formation higher in the stratigraphic column than the Beaverhill Lake Group, all wells that penetrate the Swan Hills also penetrate the Wabamun.

Indigo's permits are located at the reef margins of the Beaverhill Lake Group. The zero edge is defined as the point at which the reef margin slope is indistinguishable from the platform slope. Located at the reef's margin are boundstones, and forereef bioclastic limestones. The dolomitization of boundstones and bioclastic limestones lead to vuggy and moldic secondary porosity. These represent the high porosity and permeability areas of reef deposits as shown in Figure 7-3.

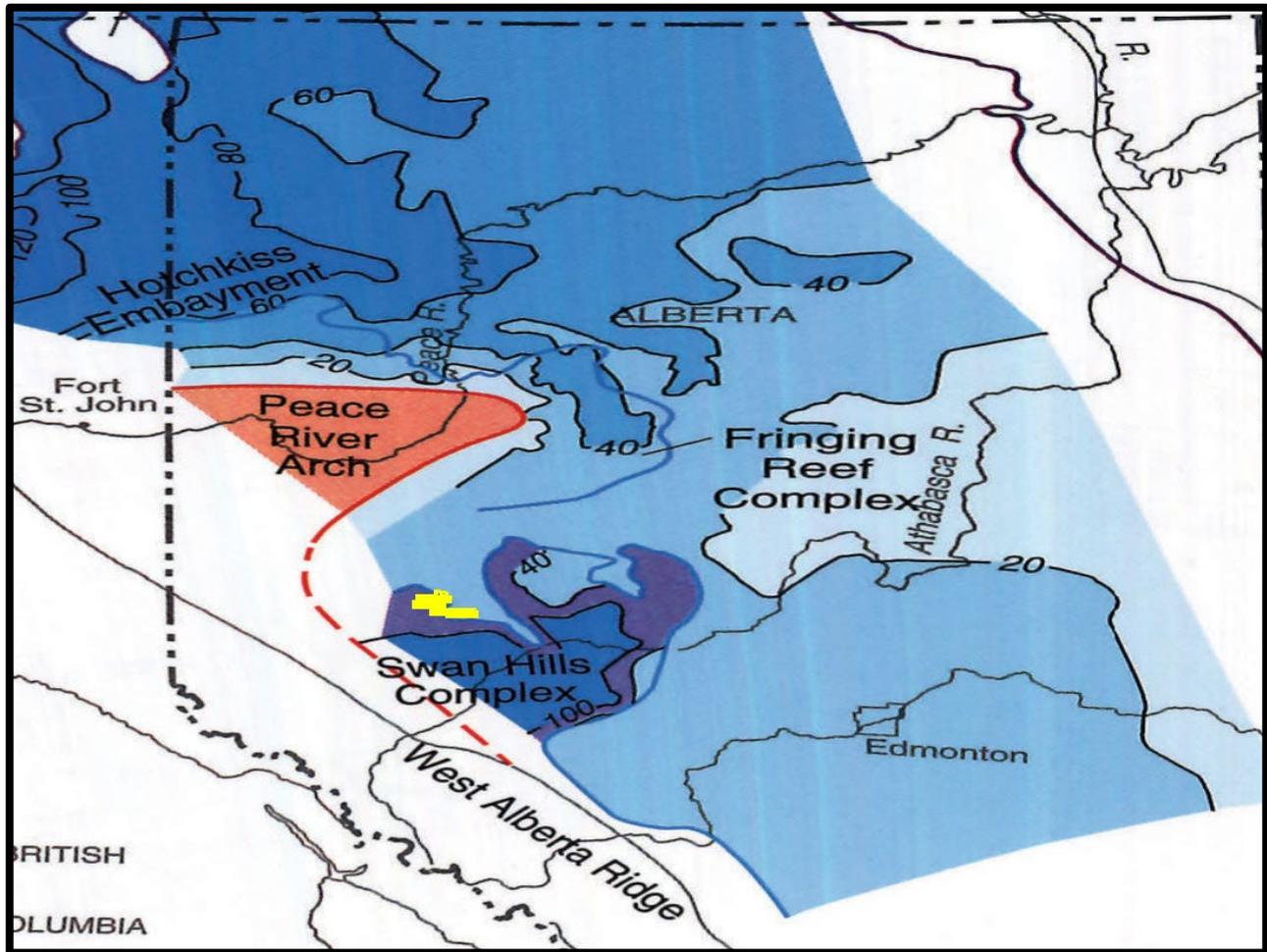


Figure 7-3 Paleogeography of the Alberta Basin during the Beaverhill Lake Group deposition.

## 7.2.2 Stratigraphic Cross-Section

Cross-Section A-A' (Figure 7-4) across the Fox Creek West permit demonstrates the reservoir continuity of the Beaverhill Lake Group and Wabamun Formation across the property from the northwest to southeast.

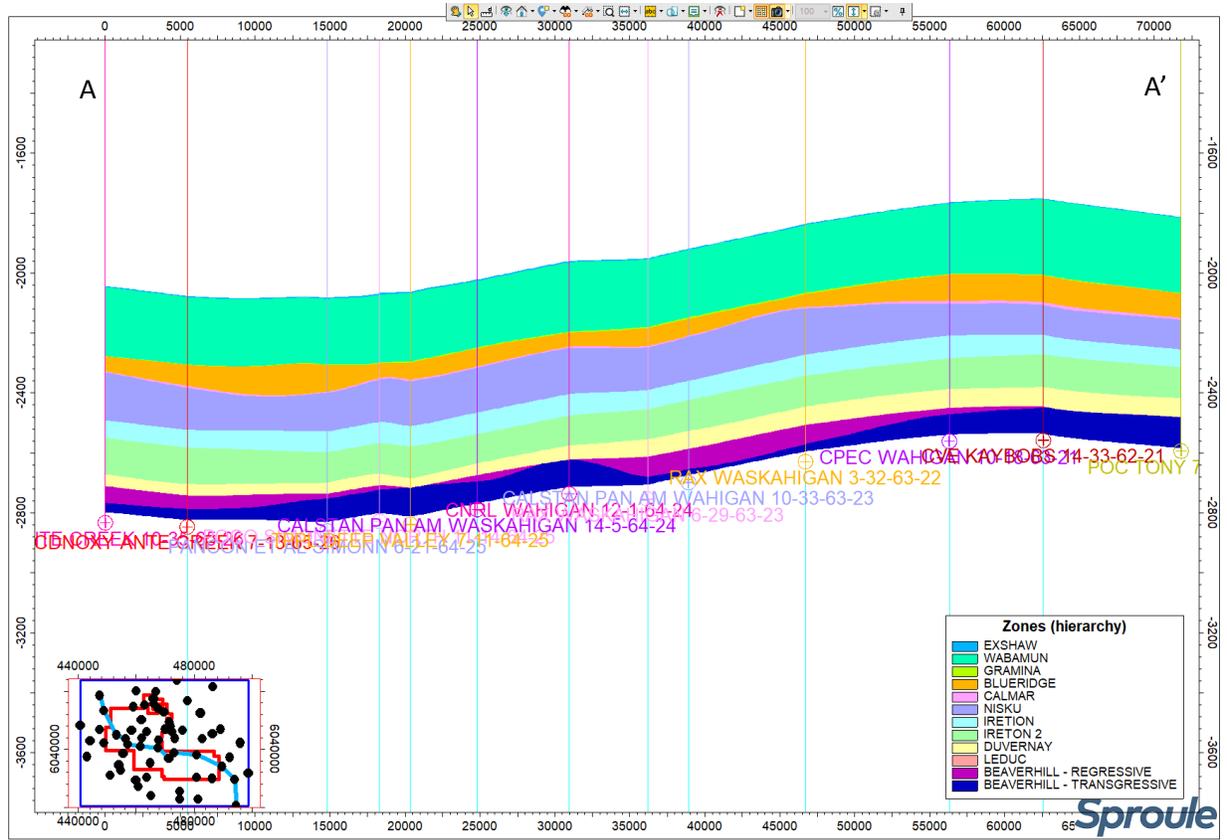


Figure 7-4 NW-SE Cross-section of Fox Creek West Property

While Cross-Section B-B' (Figure 7-5) demonstrates the reservoir continuity from northeast to southwest.

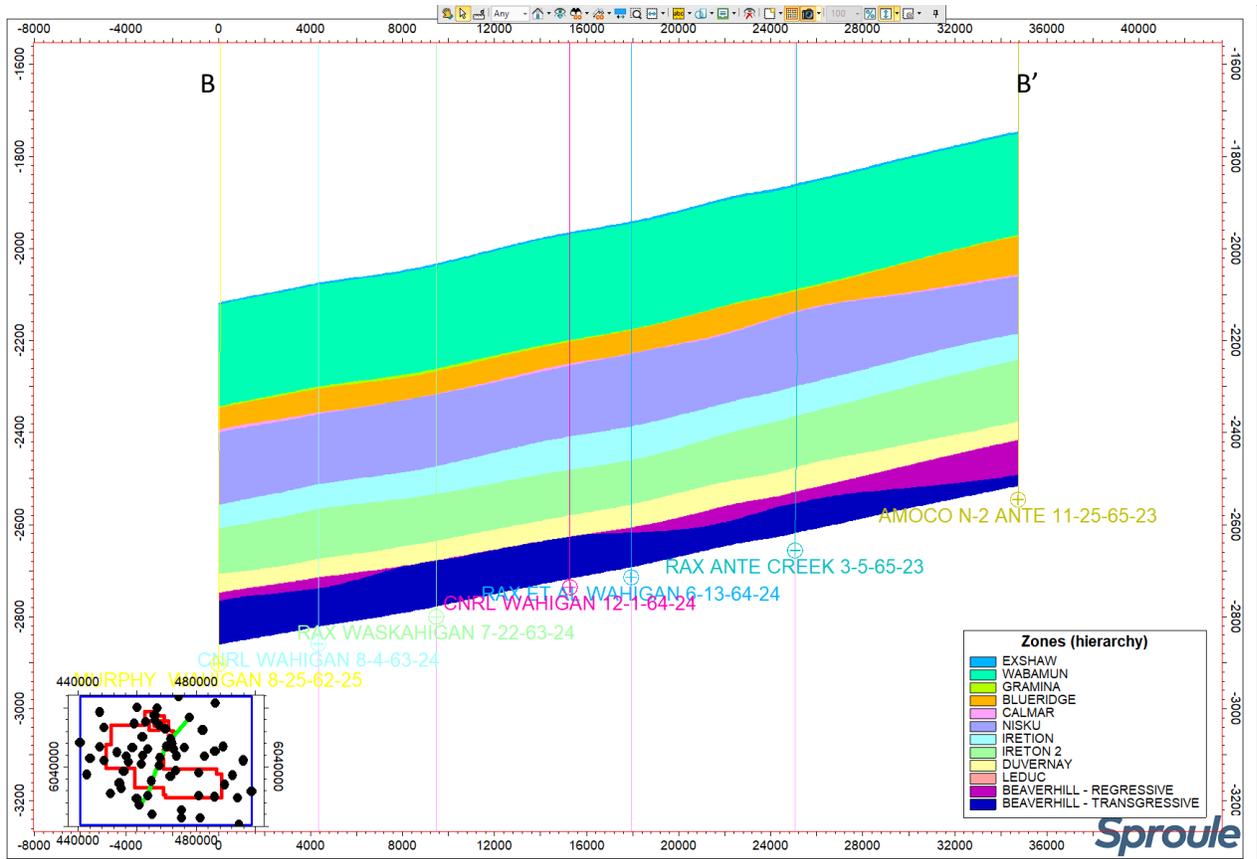


Figure 7-5 NE-SW Cross-section of Fox Creek West Property

The well penetrations that create these cross sections highlight the thickness of the Swan Hills reef and Wabamun Formation. The cross sections also show the low permeability basinal deposits of the Waterways Formation creating traps and seals for hydrocarbon pools and lithium resource brine in the Swan Hills and the Exshaw shale creating a top seal for the Wabamun and the evaporites of the Winterburn Group underlying.

The Swan Hills and Wabamun formations were partially dolomitized during the burial stage. During dolomitization, a limestone is chemically transformed to dolostone through the dissolution of calcium carbonate and replacement of calcium ion by a magnesium ion. This creates the precipitation of dolomite (Allan and Wiggins, 1993). Dolomitization leads to secondary porosity and the smaller ionic radius of magnesium, versus calcium, creates a volume reduction and can lead to enhanced porosity and permeability in the reservoir (Reeder, 1983). Figure 7-6 shows a type log for the Beaverhill Group and Wabamun Formation. Figure 7-7 provides a 3D of the stratigraphy in the Fox Creek West property.

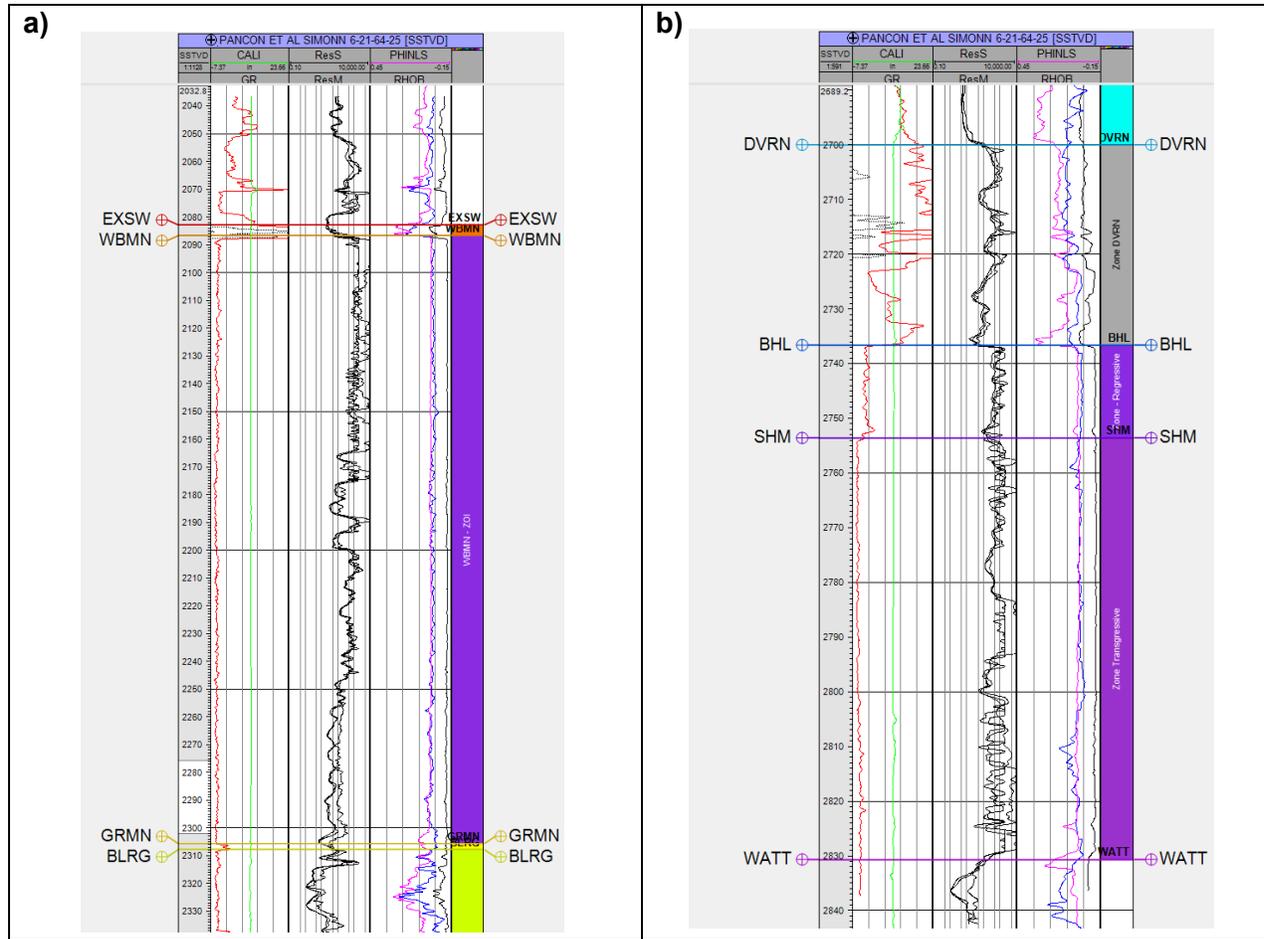


Figure 7-6 Wireline logs of a well within the Fox Creek Property to illustrate the petrophysical nature of the Wabamun (a) Formation and Beaverhill Lake Group (b).

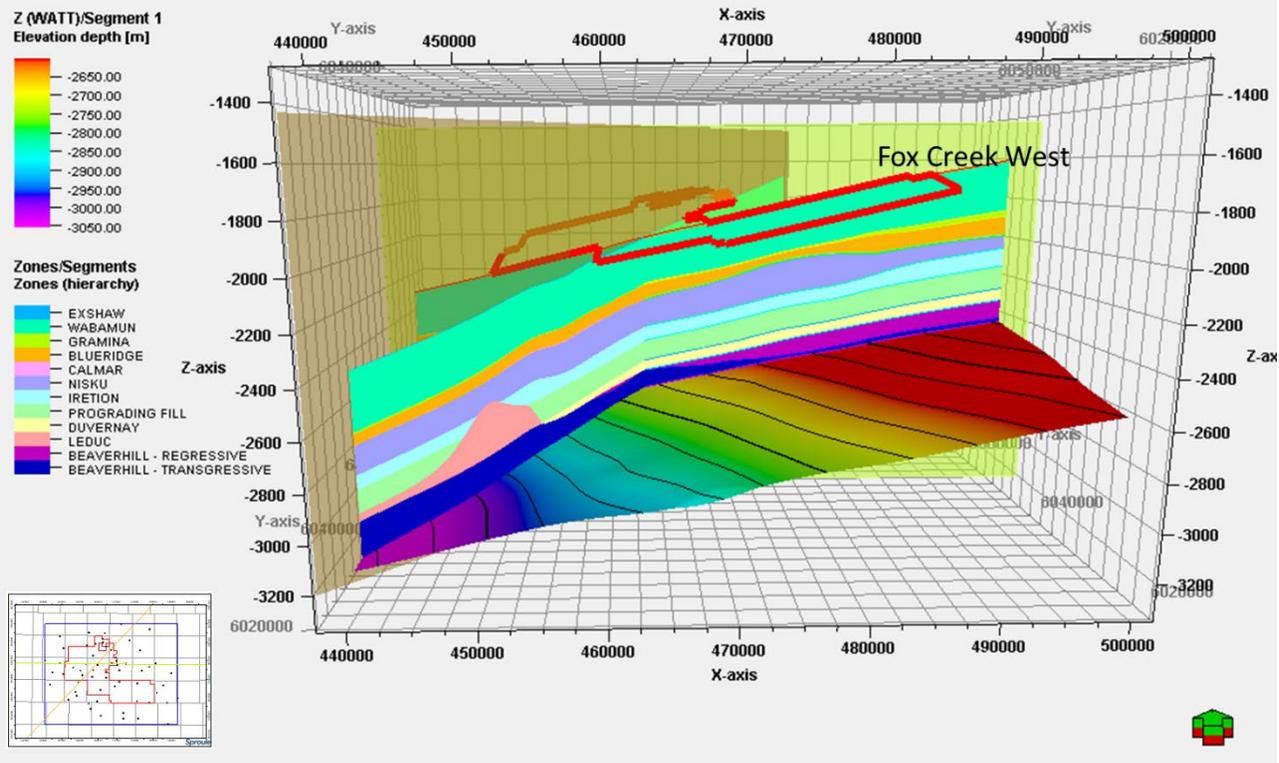


Figure 7-7 Cross-section of the Wabamun Formation (green) and Beaverhill Lake Group strata (magenta + deep blue) across the Fox Creek West Property.

## 7.2.3 Reservoir Quality

Examination of the public records and well log data the Swan Hills Formation has porosity ranging from 3-15% with the best porosity found in the grainstones and boundstones. These facies are found along the margins of platforms or buildups (Wendte and Stoakes, 1982; Viau, 1987; Wendte, 1992). The available public core data indicate that the reservoirs that have been dolomitized are predominant to the southwest, near the margins of the Swan Hills shelf (Walls and Burrowes, 1990). Permeability ranges from 26 mD to 673 mD with the best permeability found in the grainstones and boundstones. The characteristics indicate that the Swan Hills Formation has significant pore volume space to hold hydrocarbons or other fluids in west-central Alberta. The overlying Waterways Formation may contain a limited pore volume space. Available public data on fluid production also show that there is the ability to flow large volumes of fluids to surface, either hydrocarbons or formation waters from the zones of interest.

There are 31 wells within the permit area which have production from the Swan Hills Formation, with most from the southeast-northwest trending Ante Creek North Beaverhill Lake A Pool. Within the permit and adjacent area there are 62 wells with Swan Hills Formation production totalling 7,895 thousand m<sup>3</sup> oil and 3,637.8 million m<sup>3</sup> gas, with water injection into 19 wells totalling 21.8 million m<sup>3</sup> water.

When examining the public data with respect to the Wabamun Formation and well log data with respect to the Wabamun Formation the porosity is on average 8.7% in the Central Alberta Basin. As with the Swan Hills Formation, the best porosity is found in the bioturbated wackestones, peloidal

packstones and grainstones, which were deposited on a large, semi-restricted shelf, cover most of northern and central Alberta (Halbertsma, 1994). Permeability averages 100 mD (Weides et al., 2013). The Wabamun Formation is being investigated for carbon capture and storage and has demonstrated it has significant pore volume space to hold hydrocarbons or other fluids (Canadian Discovery, 2023).

There are two wells within the permit area which produced from the Wabamun, with modest cumulative production of 4.3 and 1.1 thousand m<sup>3</sup> oil. Maximum production from an additional 10 Wabamun oil and gas wells in the area adjacent to the permit area were 27.2 thousand m<sup>3</sup> oil and 583.7 million m<sup>3</sup> gas, respectively. Available public data on fluid production also show that there is the ability to flow large volumes of fluids to surface, whether it be hydrocarbons or formation waters.

## 8. Deposit Types

In 2021, the USGS global lithium resources were about 89 million tons and consisting to of hard rock deposits of spodumene, hectorite, and pegmatites and lithium-rich brines produced from salar, also known as salt flats or playas. Recently interest has been found in examining the economics of lithium rich brines produced from oil field brines (USGS, 2022). Currently lithium brine deposits are commercially produced in Argentina, Chile, China, and the USA.

Oil field lithium brines are typically lower in grade when compared to salar and clay lithium brine deposits that are being commercially produced. However, the salar production sites rely on solar evaporation of surface ponds that require extensive land use. They also require a long lead time for evaporation and separation to occur. The recent advancement of Direct Lithium Extraction technologies is beginning to make oilfield lithium brines economically viable even at the lower concentrations (Landers, 2023).

The source of lithium in oilfield waters remains unknown (Eccles and Berhane, 2011). The most accepted explanation proposed for Li-rich oilfield brines include the recycling of earlier salar deposits, the mixing with pre-existing subsurface brines, weathering of felsic volcanic or granitic basement rocks, or brines mixing with lithium enriched fluids associated with hydrothermal volcanic activity (e.g., Garrett, 2004). To date, none of the hypotheses has fully explained the higher levels of concentration that have been identified versus the expected concentrations from the modelled hypotheses (Eccles and Berhane, 2011).

Reviewing the literature there are competing theories that have been tested. In an investigation of Li-isotope and elemental data from Li-rich oil-field brines in Israel, it was postulated that these brines evolved from seawater after going through a process of mineral reactions, evaporation, and dilution. (Chan et al., 2002).

Oilfield brines collected from the Nisku and Leduc Formation in Alberta, Canada have been suggested they are the result of preferential dissolution of Li-enriched late-stage evaporite minerals, likely from the middle Devonian Prairie Evaporite Formation. The brine was then diluted by mixing with meteoric found in Devonian carbonate reservoirs (Huff, 2019).

A final theory on the source of the lithium enriched oilfield brines is related to the magnesium rich fluids that are responsible for the dolomitization of limestone reservoirs. This process has been observed in the Wabamun and Swan Hills formations. The deep basinal brines rich in magnesium are believed to have migrated from the Prairie Evaporite into regional reservoirs by migrating

through large faults (Stacey, 2021).

Ultimately, the source of lithium in oil-field waters remains unknown and remains a topic of interest (Eccles and Berhan, 2011).

## **9. Exploration**

The Company has not done any of their own exploration to-date. There are many wells in the area that have been drilled by petroleum companies that enable reasonable geological modelling to be completed.

## **10. Drilling**

This section is not applicable for this report.

## **11. Sample Preparation, Analyses and Security**

The Indigo's samples were taken by AGAT Laboratories (AGAT) and followed AGAT's quality control process. The QP of record reviewed AGAT's sample procedures and deemed them to be reasonable. AGAT's quality control process is included in Appendix C.

The following section outlines at a high-level procedure followed by AGAT for collecting fluid samples. The sampling methodology for the historical lithium samples is unknown.

### **11.1 Sample Collection and Preparation**

Fluid samples were collected at 00/07-20-064-24W5/2 and 00/08-20-064-24W5/0 for analysis. The fluid sampling point and system were purged with a sufficient amount of air and fluid to clean the system. Samples were collected into clean, clear plastic containers which were labelled with relevant information including well location, and date and time.

### **11.2 Sample Analyses and Security**

Beaverhill Lake Group reservoir fluid samples were collected from the holding tank by AGAT and transported to AGAT labs by AGAT personnel.

Routine fluid analysis was performed on all collected samples. Test results from the Beaverhill Lake Group wellbore samples returned lithium concentration from 22 - 24 mg/L.

### **11.3 Chain of Custody**

A complete chain of custody from the sample point to the laboratories was managed by AGAT.

The samples were taken directly to the laboratory. All samples were analyzed at commercial and accredited labs. AGAT labs comply with the data quality objectives of the industry, Canadian Regulators, United States Environmental Protection Agency (US EPA), and the International Standards Organization (ISO), International Electrotechnical Commission (IEC) standards defined in ISO/IEC 17025.

## 12. Data Verification

A detailed data review and verification process of all technical information provided within this technical report was completed by Sproule. Key data associated with geology, production/injection and associated fluid composition were examined to ensure accuracy and eliminate errors in addition to potential personal bias. Detailed data verification included but was not limited to:

- Mineral Rights Review – all Indigo held rights were reviewed based on each individual mines and minerals permits/lease type(s). Each individual lease and/or permit was validated via review of Indigo’s corporate mineral land reporting system. Parameters relating to gross lease area, working interest in addition to associated royalties, annual rentals, lease term and associated work commitments were all verified.
- Stratigraphy and Formation Tops – Sproule validated the selected wellbores public data picks via construction of multiple stratigraphic and structural cross-section created across the project area. Individual stratigraphic intervals were correlated relative to the defined detailed project Type Log to ensure all formation/zones were accurately picked. Subsequently, individual computer derived isopach and structure contour maps were generated to eliminate potential bias. Maps were reviewed attempting to identify localized anomalies “bulls-eyes” associated with potential errors in user tops and/or associated with incorrect reference datum elevations. Any identified anomalies were documented and subsequent cross-checked for validity.
- Production, Injection and Disposal – all information pertaining to production, injection, and disposal was acquired from public data accessed via AccuMap™. Individual completion zones for each associated well were validated to ensure that all zones contributing to flow and or disposal were limited within the defined stratigraphic interval(s) of interest.
- Lithium Exploration and Tests – a series of multi-variable queries were conducted via AccuMap™ in the Fox Creek West area to identify sources of exploration and/or development data pertaining to lithium. Queries relating to new licenses and or drilling of wells targeting the formations of interest yielded no recent operations focused on lithium exploration across the project area. Existing lithium concentration tests documented within the report were accessed from public data searches or publicly disclosed technical reports of offsetting operators. Sample procedures, and security measures are unknown for data taken from public sources, while sample procedures for offsetting operators are documented within their respective technical reports. Sproule has concluded that the accuracy and validity of these samples are sufficient for the purposes of this technical report.
- Petrophysics – Prior to conducting independent petrophysical interpretation, Sproule reviewed individual wellbore digital log ASCII standard (LAS) to ensure accurate readings were obtained and not influenced by variables relating to hole conditions and/or logging procedures.

It is the opinion of Sproule that the technical information provided within this report meets the minimum requirements for validation of the NI 43-101 technical report.

### **13. Mineral Processing and Metallurgical Testing**

No mineral processing or metallurgical testing has been done by Indigo at this time.

### **14. Mineral Resources Estimate**

#### **14.1 Geomodel Inputs**

The Fox Creek West geological model was constructed using the available public data in the area of interest. The public data used in the project, such as formation tops, core data, lithium concentrations, raster and digital (LAS) well logs were retrieved from IHS Accumap™ database.

Approximately 136 wells within the permit area and the adjacent area were reviewed for depth of penetration, well log suites, visual log quality and borehole condition. These objective and subjective observations were posted and an even distribution of wells were selected over the area which ideally penetrated the Watt Mountain, have well logs over the full Wabamun to Watt Mountain interval, good log and borehole quality. There are clear issues with borehole and log quality, and distribution of porosity logs, so adjustments were made in the selection process in order to get the required areal distribution of wells. Sixty-four wells were selected and key surfaces from the top Wabamun to top Gilwood were correlated on a grid of cross-sections within IHS Acculogs™. Tops were exported for use in petrophysical analysis.

The available LAS files were loaded into PRIZM module of Geographix™ software and unified mnemonics LAS files were exported and loaded into Petrel™. Within the Petrel 3D environment, the tops were fine-tuned and re-exported for petrophysical analysis.

Petrophysical analysis conducted in PRIZM was focused on estimation of volume of shale, effective porosity and water saturation in the studied aquifers. Methodology and attributes of the petrophysical analysis is described below:

#### Quality control of the loaded logs

Log data belonging to the sixty wells were classified into three categories, good, medium and low-quality data. Logs that were acquired from the late 1970's to recent that are not affected by bad borehole condition were classified as good quality. Thirty-nine wells were identified to have good quality logs. Seven wells that were older than the 1970's were classified as of medium quality because they had reasonable resistivity and sonic logs. Fifteen low quality wells were mainly from 1960's wells that did not have reasonable quality sonic logs.

#### Estimation of Volume of Shale, Effective Porosity and Water Saturation.

Sproule conducted a petrophysical analysis of the 60 wells in the study area using PRIZM petrophysical software focusing on Wabamun, Nisku and Beaverhill lake formations. The volume of shale was computed using gamma ray log. The apparent porosity was computed using the neutron porosity and bulk density log cross plot where available and from sonic log in the rest of the wells. The effective porosity (PHIE) was calculated by correcting the apparent porosity for the estimated

volume of shale within the formation. Water saturation was interpreted using the Modified-Simandoux equation. The cementation factor (m) and the saturation exponent (n) are 2.0 and 2.0. The formation water resistivity values for Wabamun and Beaverhill Lake Group intervals are 0.085 ohm-metres and 0.06 ohm-metres, respectively, approximated at surface temperature and corrected to the formation temperature using a temperature gradient of 0.018 °C/m. These were approximated using the information from the RwCatalog published by the Canadian Well Logging Society.

#### Interpretation of petrophysical cut-offs

The analysed formations are tight carbonates with low shale content and hence the volume of shale cut-off is taken as 30% and the porosity cut-off as 3% to differentiate the reservoir and non-reservoir intervals. Water saturation cut-off of 50% is to identify possible hydrocarbon-bearing sections at the time the wells were drilled.

Petrophysical logs were integrated within the geomodel providing a more accurate assessment of the Wabamun and Beaverhill Lake Group reservoir characteristics which is not achievable through standard raw open-hole logs. Selection of an appropriate grid size for construction of the geomodel was specifically determined based on areal extent of the project area and associated petrophysical well control. Ultimately, a 107-million-cell model, with 200 m by 200 m cell size, was selected as optimal for the project. Future detailed reservoir simulation models will be conducted utilizing the geomodel as the basis.

## 14.2 Geomodel Outputs

### 14.2.1 Formation Isochore and Structure

The Fox Creek West area has reasonable well coverage, penetrating the Devonian carbonate section of interest. The depth structure surfaces were generated based on the interpreted well tops using deterministic interpolation. Quality of the interpolation was confirmed by reviewing interval thickness variation using cross-sections and maps. A total of 61 wells were used for structural modelling.

### 14.2.2 Reservoir Attributes

The volume of shale, effective porosity and water saturation were modelled in the 3D grid for the Wabamun Formation and Beaverhill Lake Group. A total of 46 wells were used to populate the model with petrophysical interpretation. To determine the net reservoir volume, petrophysical cut-offs of 3% effective porosity and 30% of volume of shale were used. The water saturation cut-off of 50% was used to differentiate between possibly water and possibly hydrocarbon bearing intervals.

### 14.2.3 Calculating Volumes from a Geomodel

A geomodel is a representation of the subsurface geology of the reservoir in three-dimensional space. It divides the large-scale reservoir into a grid of small cells to increase the resolution of subsurface sampling and each 3D cell is representing a small, localized volume of rock. The size of the cells can range from a few meters to several hundred meters depending on the level of detail

required for the specific study. For this study, the resolution was defined as 200 m x 200 m spatially and 0.5 m vertically for the Fox Creek West property.

To calculate the reservoir volume from a geomodel, the first step is to estimate the volume of each cell in the grid. This is done by multiplying the cell length, width, and height (or thickness) to estimate the volume. Next, the local values of volume of shale, porosity and water saturation are estimated for each cell. These values provide information on the amount of pore space and the percentage of that space that is filled with water, respectively. If the petrophysical parameters pass the cut-off criteria, then the pore volume and water volume of each cell can be calculated by multiplying the cell volume by the local porosity value and water saturation value. The total pore and water volumes of the reservoir can be obtained by summing the pore and water volumes of all cells in the grid. This provides an estimation of the total volume of the reservoir and the volume of water that is available for extraction. Due to the uncertainty in water saturation interpretation, two volumetric scenarios were calculated. A more conservative Low Estimate was based on the populated log-derived water saturation property. A more optimistic High Estimate assumed that all pore volume is occupied with water, i.e.  $S_w = 100\%$ . The reported Best Estimate is a geometric average of the Low and High Estimates. Due to the presence of hydrocarbon producing pools in the area, the hydrocarbon pore volume from the AER pool cards, was subtracted from the Best Estimate water pore volume.

### 14.3 Lithium Brine Concentration

A total of six samples of Lithium measurements, including public (four samples) and private (two samples) data, were used to estimate the lithium concentration across the Fox Creek West property, shown in Table 14-1. Four additional Wabamun Formation measurements and one additional Beaverhill Lake Group measurement from public data were reviewed and excluded as they were determined to be too far away from the Fox Creek West property.

*Table 14-1 Summary of Available Lithium Samples in and around the Fox Creek West Property*

	<b>Wabamun Formation</b>	<b>Beaverhill Lake Group</b>	<b>Total</b>
Historical Public Samples	6	3	8
Indigo Lithium Samples	0	2	2
Total Samples	6	5	11
Number of Sample Points	2	4	6
<b>Min Li Concentration (mg/L)</b>	<b>72</b>	<b>22</b>	<b>20</b>
<b>Max Li Concentration (mg/L)</b>	<b>84</b>	<b>93</b>	<b>93</b>
<b>Avg Li Concentration (mg/L)</b>	<b>78</b>	<b>48</b>	<b>58</b>

## 14.4 Markets and Pricing

Lithium will play a central role in facilitating the energy transition and enabling countries to attain net zero targets. Key demand segments including electronic vehicles (EV's), grid scale storage, and electronic devices anticipate sustained growth over the following decades. Growth is expected for EV markets in China, Europe, and the US over the long term. Geopolitical risks will incentivize North America to continue to prioritize developing a robust supply chain. Infrastructure limitations, such as distribution line expansions for rapid EV growth, may partially limit EV uptake and consequently lithium demand. The IEA suggests that by 2030, over 60% of vehicles sold globally will be EV's. By 2030, over 350 million EV's are anticipated to be on the road. Battery chemistry significantly influences the demand of lithium hydroxide versus lithium carbonate. New battery chemistries based on sodium-ion may additionally disrupt lithium demand. Currently, the most popular chemistries include Lithium Iron Phosphate (LFP) and Lithium Nickel Manganese Oxide (NMC). NMC remained the dominant chemistry type over 2022, followed by LFP. NMC retains a lead in market share given the higher energy density and generally reduce cost given this technology is further along the experience curve. A summary of regional demand for Lithium EV Batteries is shown in Figure 14-1.

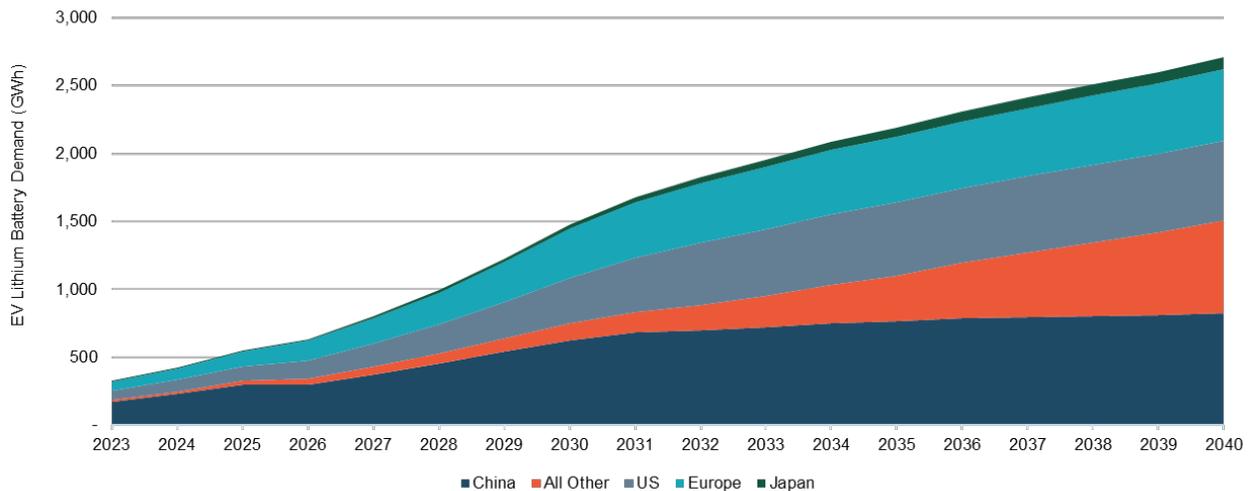
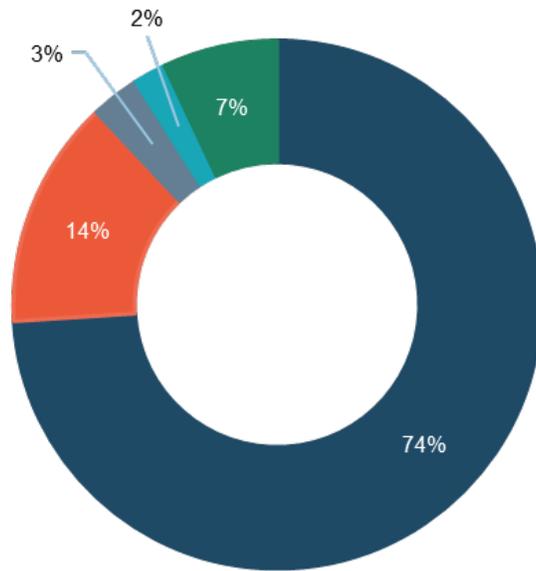


Figure 14-1 Summary of Regional Demand for Lithium Electric Vehicle Batteries

Lithium hydroxide is anticipated to be in greater demand than lithium carbonate in the coming years, driven by the continued growth of NMC batteries relative to LFP, which is most commonly utilized in China. Additional key demand markets for lithium are shown in Figure 14-2.



- Batteries
- Ceramics and Glass
- Lubricating Greases
- Continuous Casting Fluxes
- Others

Figure 14-2 Key Lithium Demand Markets

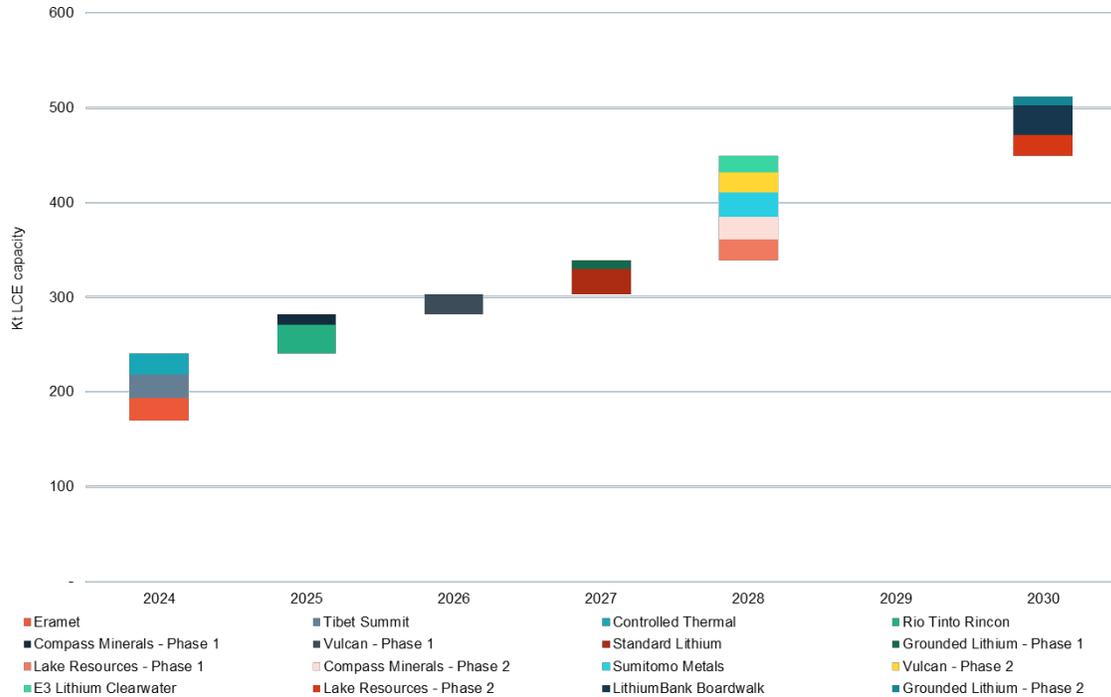


Figure 14-3 Lithium Output of Global Projects

Lithium production is currently dominated by China, Australia, Argentina, and Chile. Despite this geographically concentrated production, geopolitical risk has created a preference for domestically sourced lithium production, incentivizing new projects and government subsidies which will have a strong impact on supply growth (especially within North America). The emergence of lithium brine extraction through Direct Lithium Extraction (DLE) will greatly enable supply growth and will add material volumes to global lithium output, summarized in Figure 14-3.

A strong uptick in DLE production capacity in 2024 will alleviate lithium supply deficit and should push the market into excess lithium supply. Additional capacity after 2024 will come from multiple markets, also supported by spodumene production. There is potential for a lithium oversupply from 2026 through to 2029 driven by the implementation of several commercial scale projects, however, by 2030, an undersupply is forecast as shown in Figure 14-4.

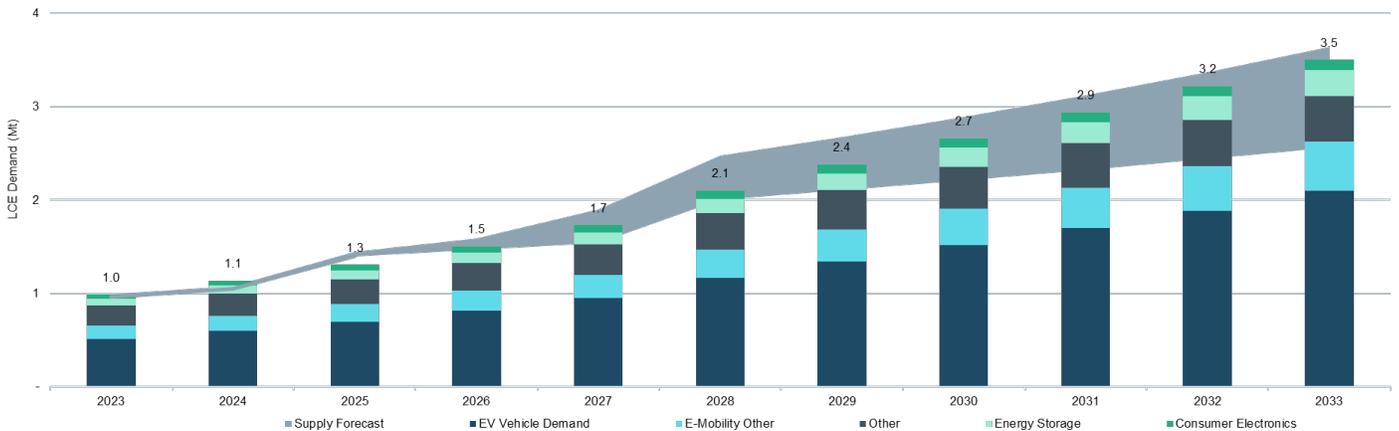


Figure 14-4 Summary of Lithium Supply and Demand for 2023-2033

Over the course of 2022 and early 2023, lithium markets displayed extreme volatility driven primarily by supply chain and logistics constraints. The lithium prices in 2022 near \$80,000 per tonne of lithium carbonate do not reflect a balanced and functioning market. Sproule believes that the market may be undersupplied as incremental demand outstrips supply towards 2030, though incremental resource development will persist as long as project IRR's remain attractive and contain lithium prices. Full cycle costs will serve as a floor on lithium prices. These full cycle costs will increase as project developers are forced to move up their cost curve and target higher cost projects. Inflation will additionally drive-up full cycle costs, ranging from 15% to 25% higher by the end of the decade. Sproule's long term price forecast for lithium reflects a modest undersupply towards the end of the decade as EV demand outpaces the current anticipated supply of lithium.

## 14.5 Reasonable Prospects

Critical variables with influence on the economic extraction of lithium-brine from the Wabamun and Beaverhill Lake Group formations in the Fox Creek West property include aquifer reservoir extent, reservoir flow capability, brine lithium-concentration, ownership, and extraction technology.

## **14.5.1 Aquifer Deposition**

The Devonian Swan Hills reef complex developed along the western edge of the basin during the transgressive phase as a series of shallowing -upwards reefal cycles growing on the carbonate platform of the Slave Point Formation. A relative sea level rise drowned the previous reefal cycle and initiated a new one. As a result of episodic pulses of relative sea-level rise, the Swan Hills complex backsteps in a westward direction. Porosity development is associated with the high-energy reef margin facies of each shallowing-upward cycle and localised dolomitization.

The time equivalent Waterways Formation represents the regressive phase of each cycle and downlaps onto the Swan Hills reef complex and infills inter reef areas. Intermittent carbonate stringers have porosity development and may act as an aquitard with restricted connectivity. Combined thickness for the Swan Hills and Waterways formation is quite consistent across the project area, however, the individual isopach values vary reflecting the relationship between the transgressive and regressive sequences during the reef complex development. Tight deepwater mudstones of Duvernay Formation act a top seal.

The Devonian Wabamun sequence was deposited in an overall regressive environment interrupted by several transgressive pulses. In the area of Fox Creek West project, Wabamun Formation has quite consistent thickness of 220 to 240 m and is capped by the Devonian Exshaw Formation acting a top seal for the aquifer.

## **14.5.2 Aquifer Reservoir Quality**

Evidence of the aquifer quality is in the core sample analysis, detailed in section 6.3. Core samples indicate an average core porosity exceeding 3 percent.

## **14.5.3 Aquifer Pore Volume**

Detailed pore volume estimate for the Beaverhill Lake Group and Wabamun Formation is discussed in Section 14.2.3 “Calculating Volumes from a Geomodel” followed by detailed modeling and estimation of lithium in place in sections 14.2.3 and 14.3 “Lithium Brine Concentration”.

## **14.5.4 Aquifer Flow Capability**

The flow capability of the Beaverhill Lake Group is supported by historic petroleum production in the Fox Creek West Property from 25 wells, shown in Figure 14-5.

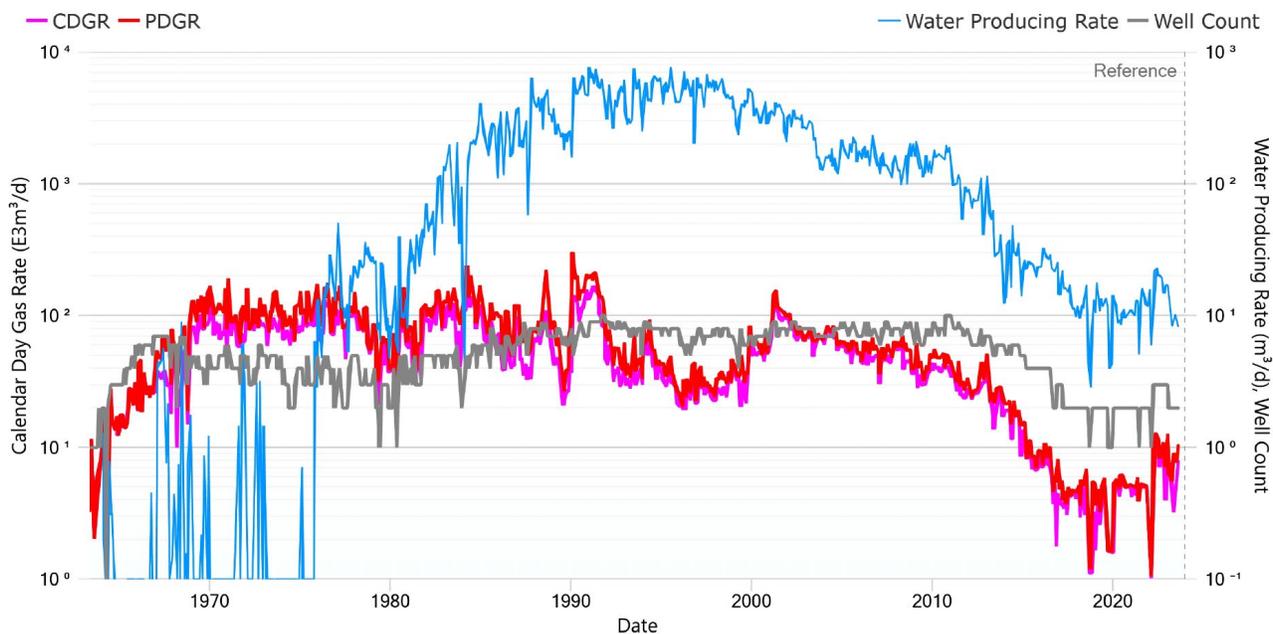


Figure 14-5 Regional Production from the Beaverhill Lake Group

The flow capability of the Wabamun Formation is supported by historic petroleum production in the Fox Creek West Property from 2 wells, shown in Figure 14-6.

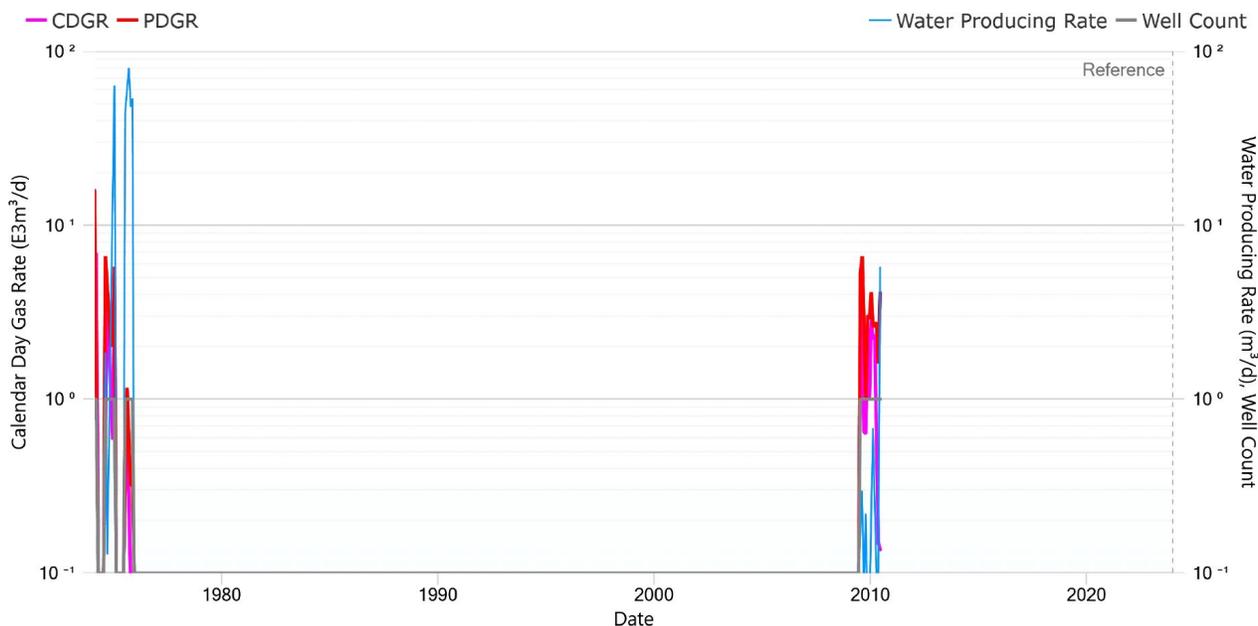


Figure 14-6 Regional Production from the Wabamun Formation

## **14.5.5 Brine Fluid Composition**

The source of elevated lithium concentrations in the Fox Creek West property was discussed in detail in Section 7.3, with lithium sampling discussed in Section 14.3. All formations show prospective lithium concentrations. Wabamun Formation lithium concentrations range from 72-84 mg/L and Beaverhill Lake Group lithium concentrations range from 22-93 mg/L. Particularly high lithium concentrations have been measured in the Beaverhill Lake Group in the south-east portion of the field. Historical brine production in the area has been associated with oil and gas production.

## **14.6 Mineral Resource Classification**

A volumetric methodology was utilized to determine lithium in-place volumes across the project area. The in-place volume estimated across the Fox Creek West property area was derived utilizing the Petrel geomodel platform described in Sections 14.0, 14.1 and 14.2 of this report. Several reservoir parameters drive the volumetric estimation process and contribute to in-place volume accuracy. All reservoir parameters except for lithium concentration were characterized, managed, and extracted using the 3D geological model.

### **14.6.1 Inferred Mineral Resource Estimate**

The Inferred Mineral Resources, by definition, constitute that part of a Mineral Resource for which quantity and grade, or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity and has the lowest level of confidence of the three resources categories.

For volumes estimated using a geological model built using reservoir geometry and property data from existing wells, the major uncertainties in the calculated volume are related to the reservoir properties at lease/permit locations not yet supported by actual well data. The uncertainties in reservoir properties are directly related to the distance of the respective lease/permit locations from existing well control.

Sproule is of the opinion that there is sufficient well control, petrophysical analysis and geological understanding of the Wabamun and Beaverhill Lake Group formations to build a robust geomodel to extract brine volumes over the Fox Creek West property area. Though there is a paucity of available water samples to map lithium concentration across the project area, Sproule is of the opinion that the available water samples for the Beaverhill Lake Group formations is sufficient to imply a variable lithium concentration across the project area. Lithium concentration data for the Wabamun Formation is limited and therefore a constant lithium concentration has been utilized for the zone. As such, Sproule believes the criteria for Inferred Mineral Resources has been met, but that further resolution is required to elevate the project to a higher resource level.

### **14.6.2 In-Place Resource Estimate**

To estimate a lithium Inferred Mineral Resource across the Fox Creek West property area, a volumetric analysis based on bulk rock volume, petrophysical properties, and lithium concentration data has been used to define the initial estimates of reservoir in-place volumes. It is reasonable to expect that most of the Inferred Mineral Resource volume estimated can be moved into Indicated

and Measured Resources as exploration activities, fluid testing, geomodel enhancements and additional statistical modeling resolve and manage the uncertainties in the geological and fluid parameters associated with the project.

Lithium in-place volume can be calculated using the following formula (Collins, 1976):

$$\text{Lithium In-place volume} = A \times T \times \phi \times (1 - S_w) \times C$$

A = area of the aquifer

T = thickness of aquifer interval being measured

$\phi$  = porosity of the aquifer

$S_w$  = irreducible water saturation in aquifer

C = concentration of lithium in brine

To improve the quality of the in-place volume estimate properties extracted from the 3D geocellular model, rather than average reservoir properties, the formulas below were used to estimate in-place volumes. The following properties were calculated and extracted directly from the geomodel based on information distributed from well logs and stored in each model cell:

- Bulk rock volume = (reservoir area) x (reservoir thickness)
- Net rock volume = (bulk rock volume) x (reservoir net-to-gross)
- Reservoir pore volume = (net rock volume) x (effective porosity)
- Brine pore volume = (reservoir pore volume) x (water saturation)

The primary geological parameters driving volume uncertainty are reservoir thickness, reservoir porosity, and lithium concentration. Since a geospatial technique was used to populate the geomodel, the model parameter uncertainty increases with distance from known well locations where the model input data was measured. Generally, the lease/permit polygons are in townships with well control or offset townships with well control. The only exception to this is for concentration data. Roughly 50 percent of the townships containing leases/permits are within a 6 mile radius of where the water samples were obtained (1 out of 2 for the Wabamun Formation, 4 out of 4 for the Beaverhill Lake Group formations). As concentration data was limited, a single lithium concentration was used for each formation for the estimation of lithium in-place volumes. Modeled geological parameters are as follows:

- **Area:** as the volumes were extracted by lease/permit polygons, the area is the summation of all the lease/permit polygons that define Indigo's land base within the Fox Creek West property area.
- **Thickness:** the height of the reservoir (base to top surface) determined by interpolating the 61 well logs from wells in and around the Fox Creek West property area.
- **Net-to-gross:** is the fraction of reservoir volume occupied by brine bearing rock and is determined using 61 well logs from wells in and around the Fox Creek West property area.
- **Effective porosity:** the ratio of the volume of total interconnected pore space in the rock vs the total volume of the rock and is determined using 61 well logs from wells in and around the Fox Creek West property area.

- **Lithium concentration:** estimated from nearby public and proprietary lithium concentration tests (2 from the Wabamun Formation and 4 from the Beaverhill Lake Group formations).

The 3D geomodel was used to extract brine pore volume by individual Indigo acquired permit/lease polygons for the entire Wabamun Formation and Beaverhill Lake Group stratigraphic intervals, thus the estimate only represents the volume owned by Indigo. The lithium concentration was estimated based on nearby Lithium concentration test results available in the public domain. The Lithium in place was then estimated by multiplying the water in-place by the lithium concentration within the cells in the geomodel. As lithium is not sold in its' elemental state, the in-place mass of elemental lithium (Li) was converted into a mass of lithium carbonate equivalent (LCE) based on the following formula:

*Conversion from Li to LCE = Molar mass of Lithium Carbonate ( $Li_2CO_3$ ) / Molar mass of Lithium / 2*

The molar mass of lithium (6.94 g/mol) and lithium carbonate (73.89 g/mol) were utilized in the above-mentioned formula, rounded to two decimal places. The conversion factor of 5.323 was utilized for the Li to LCE conversion. The calculated total inferred resource volume is documented in Table 14-2.

*Table 14-2 Inferred Resources Volumetric Summary*

	<b>Wabamun</b>	<b>Beaverhill Lake-East<sup>1</sup></b>	<b>Beaverhill Lake-West<sup>2</sup></b>	<b>Total</b>
Water In Place (e <sup>6</sup> m <sup>3</sup> )	421	82	97	599
Average Lithium Concentration (mg/L)	78	93	31	72
Lithium In Place (Tonnes)	32,833	7,585	2,997	43,415
LCE In Place (Tonnes)	174,773	40,373	15,952	231,097

1. East area includes T63 R23 and east half of T63 R22.

2. West area excludes T63 R23 and east half of T63 R22.

As of the effective date of this technical report, Inferred Mineral Resources, estimated in accordance with NI 43-101 and using CIM definition standards (2014), and CIM (2012, 2019) and OSC (2011) guidance, and documented in Table 14-2, are considered too uncertain based on current known geological attributes across the Fox Creek West property to be defined as reserves. The mineral resources documented in this Technical Report do not demonstrate the economic viability necessary to be classified as mineral reserves at this time.

## 15. Mineral Reserve Estimates

This section is not applicable for this report.

## 16. Mining Method

This section is not applicable for this report.

## **17. Recovery Method**

Indigo intends to utilize direct lithium extraction (DLE) processes to produce battery-grade lithium. Various DLE processes utilizing advanced sorption technology are currently being tested by several companies in Western Canada, and have been utilized in other lithium-brine producing countries. Indigo has not yet started investigating the specific extraction process that may be utilized in the Fox Creek West property.

## **18. Project Infrastructure**

This section is not applicable for this report.

## **19. Market Studies and Contracts**

This section is not applicable for this report.

## **20. Environmental Studies, Permitting and Social or Community Impact**

This section is not applicable for this report.

## **21. Capital and Operating Costs**

This section is not applicable for this report.

## **22. Economic Analysis**

This section is not applicable for this report.

## **23. Adjacent Properties**

As of the effective date of this report, no known information pertaining to direct lithium exploration and/or development in the Wabamun Formation or Beaverhill Lake Group exists adjacent to the Fox Creek West property. Exploration for lithium exists in the region with LithiumBank's Boardwalk property targeting Leduc aquifer lithium brine, located approximately 50 km to the north-east.

## **24. Other Relevant Data and Information**

As of the issue date of this report, no additional data or material information is known to the QP's of record across the Fox Creek West property.

## **25. Interpretation and Conclusions**

### **25.1 Qualified Person Statement**

The multi-disciplinary team of Qualified Persons that includes engineers, geologists, and petrophysicists that have relevant experience in the geology, resource estimation, and fluid extraction within the Western Canadian Sedimentary Basin are in collective agreement that Indigo's proposed Fox Creek West Lithium Project has reasonable prospects for eventual economic extraction of Lithium from the brine contained in the Wabamun and Beaverhill Lake Group formations.

It is the Qualified Persons opinion that the exploration data gathered to-date provides a reasonable assessment of the Wabamun and Beaverhill Lake Group formations in terms of brine in-place volumes (confirmed by detailed geological and petrophysical analysis and the construction of a 3D geomodel), associated lithium concentrations (confirmed by analysis of brine within the project area, and area mapping of lithium concentration) and expected brine production rates (confirmed by existing wells within the project area).

### **25.2 Resource Estimation Conclusions**

The Inferred Mineral Resources estimate of the Fox Creek West Lithium Project, estimated in accordance with NI 43-101 and CIM definition standards (2014), and CIM (2012, 2019) and OSC (2011) guidance, includes approximately 599 million m<sup>3</sup> of brine with an estimated average associated lithium concentration of 72 mg/L. Total lithium carbonate equivalent tonnage is estimated to be 231,097 tonnes of LCE from the Devonian aged Wabamun and Beaverhill Lake Group formations. The Wabamun and Swan Hills formations are suitable candidates to deliver the necessary volumes and associated production rates required for a potential future subsurface lithium enriched brine extraction development project at the Fox Creek West property. Contribution from the Waterways Formation may occur at lower rates. This is based on the historical production of wells producing from the Wabamun and Beaverhill Lake Group formations, previously drilled by the oil and gas industry. Detailed calculation methodologies are shown in section 14.6.2.

Grande Prairie, Alberta will serve as the resource hub for the Fox Creek West Property with all general services available in addition to key industrial materials and qualified personnel associated with drilling, completion, testing, and production operations required for subsurface brine exploration and development.

Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the mineral resource will be converted into a mineral reserve.

### **25.3 Risks and Uncertainties**

The ability to extract the brine from Wabamun and Beaverhill Lake Group formations is dependent upon Indigo successfully constructing brine processing facilities and continuing their access to wells in the region through agreements with petroleum companies in the area. Due to the long history of oil and gas operations in the region this is not expected to be a significant risk.

The estimates contained within this report confirm that there are sufficient lithium resources within the boundaries of the Indigo land position to establish a project that has reasonable prospects for eventual economic extraction.

While there are currently several petroleum wells producing water from the Wabamun and Beaverhill Lake Group formations in the area, these are not expected to impact the ability of Indigo to implement the Fox Creek West Lithium Project. Some risk could apply should the petroleum company wish to shut-in a well that may be used by Indigo as a brine well. Indigo has identified several options that will be available including purchasing the well or renting the wellbore.

Direct Lithium Extraction technology has been tested but is still at a development stage. While laboratory tests and demonstration pilot plants created by peers are showing success, the recovery of high purity (battery-grade) lithium from subsurface brines has not yet been demonstrated at a commercial scale.

An additional long-term risk is associated with re-injection of the spent brine. If spent brine is disposed into the Wabamun and Beaverhill Lake Group formations it will eventually dilute the lithium concentration at producing wells, requiring additional production wells to be drilled further away from disposal operations.

## **26. Recommendations**

A multiphase exploration and testing program is recommended to continue to delineate the Wabamun and Beaverhill Lake Group formations' reservoir quality and lithium brine concentrations across the project.

Future operations and associated technical analysis should include, but not limited to:

- Drill additional wells to increase understanding of the reservoir petrophysical properties, lithium concentration, and reservoir flow characteristics in the Wabamun Formation and Beaverhill Lake Group.
- Perform isolated flow tests and lithium concentration analysis within Wabamun Formation and Beaverhill Lake Group stratigraphic intervals across a broader area within the Fox Creek West property utilizing existing wellbores, where possible.
- Collect geotechnical data including drill cutting samples, and open-hole logs within the Wabamun and Beaverhill Lake Group formations.
- Conduct petrophysical analysis on all new wellbores utilizing the existing petrophysical methodology.
- Collect core samples and integrate with petrophysical analysis, for open-hole log calibration.
- Integrate all new technical information into the existing geomodel to delineate the Wabamun and Beaverhill Lake Group aquifers.
- Conduct reservoir simulation modeling to estimate individual wellbore flow capabilities aiding in forecasting ultimate recovery.

The total cost to conduct the multiphase exploration program is estimated at CAD \$540,000 as documented in Table 26-1. All operations are contingent upon results obtained, and subject to change at any point in time. Changes may include, but not be limited to, the addition/subtraction of various operations defined to delineate the lithium resource potential across the Fox Creek West property.

*Table 26-1 Summary of Exploration Program Costs*

<b>Description</b>	<b>Cost (CAD)</b>
Swab wells in Wabamun and Beaverhill Lake Group formations - understand concentrations at various intervals	\$5,000
Continued Brine Assay sampling and analysis	\$30,000
Recomplete Wells to flow test wells	\$150,000
Conduct Reservoir Simulator Modelling	\$30,000
Integrate new technical work into existing geomodel	\$10,000
Integration of Pilot Plant results with Reservoir Analysis	\$15,000
Complete Engineering Studies to Create process flowsheet for Commercial production	\$100,000
Prepare Preliminary Economic Assessment	\$150,000
Contingencies	\$50,000
<b>Total</b>	<b>\$540,000</b>

## References

Alberta Geological Survey (2019): Alberta Table of Formations; Alberta Energy Regulator, < Available on May 15, 2023 at: [https://ags.aer.ca/publications/Table\\_of\\_Formations\\_2019.html](https://ags.aer.ca/publications/Table_of_Formations_2019.html)>.

Allan, J.R. and Wiggins, W.D. (1993): Dolomite Reservoirs: Geochemical Techniques for Evaluating Origin and Distribution

Amurawaiye, Olugbemi (Mac), (2004): The origin of dolomite in the Devonian Wabamun carbonates, Pine Creek Field, west-central Alberta, MSc Thesis, University of Windsor, Electronic Theses and Dissertations. 4135, 122p.

Bloy, G.R. and Hadley, M.G. (1989): The development of porosity in carbonate reservoirs; Canadian Society of Petroleum Geologists, Continuing education Short Course.

Canadian Discovery (2023): Deep CO<sub>2</sub> Storage Opportunities in Alberta. <https://cdl.canadiandiscovery.com/campaigns/deep-co2-storage-opportunities-alberta>

Chan, L. H., Starinsky, A., and Katz, A. (2002): The behavior of lithium and its isotopes in oilfield brines: evidence from the Heletz-Kokhav field, Israel. *Geochimica et Cosmochimica Acta*, 66(4), 615-623.

Chatellier, Jean-Yves D. (1992): Structurally controlled diagenesis of a carbonate ramp (Banff Formation, Alberta, Canada), *Sedimentary Geology*, Volume 79, Issues 1–4, Pages 77-90, ISSN 0037-0738, [https://doi.org/10.1016/0037-0738\(92\)90005-C](https://doi.org/10.1016/0037-0738(92)90005-C).

Collins, A. G. (1976): Lithium abundance in oilfield waters; Lithium Resources and Requirements by the Year 2000, U.S. Geol. Survey Prof. Paper 1005, p. 116–123.

Corlett, H., Schultz, R., Branscombe, P., Hauck, T., Haug, K., MacCormack, K., and Shipman, T. (2018): Subsurface faults inferred from reflection seismic, earthquakes, and sedimentological relationships: Implications for induced seismicity in Alberta, Canada. *Marine and Petroleum Geology*, 93, 135-144.

Dawson, F. M., Evans, C. G., Marsh, R., & Richardson, R. (1994): Uppermost Cretaceous and Tertiary strata of the Western Canada Sedimentary Basin. In: *Geological Atlas of the Western Canada Sedimentary Basin*. G.D. Mossop and I. Shetson (compilers), Canadian Society of Petroleum Geologists and Alberta Research Council, p. 387–406.

Dene Tha' First Nation Lands and Environment Department (2011): Dene Tha' Traditional Land Use, Concerns and Mitigation Measures with Respect to TCPL's Proposed Northwest System Expansion Projects, British Columbia Portion, 60 p., < Available on September 8, 2022 at: [https://docs2.cerrec.gc.ca/leng/lisapi.dll/fetch/2000/90464/90550/554112/666941/685859/692432/764980/B36-6\\_-\\_Attachment\\_2-2\\_-\\_Nov\\_25-11\\_DTFN\\_TLUS\\_BC\\_Portion\\_1of2\\_A2I9Y1.pdf?nodeid=764987&vernum=-2](https://docs2.cerrec.gc.ca/leng/lisapi.dll/fetch/2000/90464/90550/554112/666941/685859/692432/764980/B36-6_-_Attachment_2-2_-_Nov_25-11_DTFN_TLUS_BC_Portion_1of2_A2I9Y1.pdf?nodeid=764987&vernum=-2) >.

Dravis, J.J. and Muir, I.D. (1993): Deep-burial brecciation in the Devonian Upper Elk Point Group, Rainbow Basin, Alberta, western Canada. In: R.D. Fritz, J.L. Wilson and D.A. Yurewicz (eds.), *Paleokarst Related Hydrocarbon Reservoirs*; Society of Economic Paleontologists and Mineralogists, Core Workshop 18, p. 119-166.

Dufresne, M.B., Eccles, D.R., McKinstry, B., Schmitt, D.R., Fenton, M.M., Pawlowicz, J.G. and Edwards, W.A.D. (1996): The Diamond Potential of Alberta; Alberta Geological Survey, Bulletin No. 63, 158 pp.

Dunham, R.J., (1962). Classification of carbonate rocks according to depositional texture. In: Ham, W.E. (Ed.), Classification of Carbonate Rocks. American Association of Petroleum Geologists, Memoir 1, Tulsa, OK, 108–121.

Eccles, R., Dufresne, M., McMillan, K., Touw, J., and Clissold, R.J., (2012): Maiden Li-K-B-Br-Ca-Mg-Na

Resource Estimate Report on Lithium-Enriched Formation Water, Fox Creek Property, Swan Hills Area, West-Central Alberta.

Eccles, D.R. and Jean, G.M. (2010): Lithium groundwater and formation-water geochemical data; Energy Resources Conservation Board, ERCB/AGS, Digital Dataset 2010-0001 (tabular data, tab delimited format). < Available on May 15, 2023 at: <https://ags.aer.ca/publication/dig-2010-0001>>.

Eccles, D.R. and Berhane, H. (2011): Geological introduction to lithium-rich formation water with emphasis on the Fox Creek area of west-central Alberta (NTS 83F and 83K); Energy Resources Conservation Board, AER/AGS Open File Report 2011-10, 22 p.

Eccles, D.R., Berhane, H., and Huff, G.F. (2011): Geological considerations for lithium-rich Devonian oilfield waters in the Swan Hills area of west-central Alberta. In: G.J. Simandl and D.V. Lefebure (editors), International Workshop Geology of Rare Metals, Extended Abstracts Volume, November 9-10, 2010, Victoria, Canada British Columbia Geological Survey, Open File 2010-10, p. 51-54.

Environment Canada (2011): Canadian Climate Normals 1981-2010 Station Data - Valleyview RS; Environment Canada. Government of Canada, < Available on 25 September 2020 at: [https://climate.weather.gc.ca/climate\\_normals/index\\_e.html](https://climate.weather.gc.ca/climate_normals/index_e.html) >.

Edwards, D. E., Barclay, J. E., Gibson, D. W., Kvill, G. E., Halton, E. (1994): Triassic Strata of the Western Canada Sedimentary Basin. In: Geological Atlas of the Western Canada Sedimentary Basin. G.D. Mossop and I. Shetson (compilers), Canadian Society of Petroleum Geologists and Alberta Research Council, p. 159-275.

Fischbuch, N. R. (1968): Stratigraphy, Devonian Swan Hills reef complexes of central Alberta. Bulletin of Canadian Petroleum Geology, 16(4), 444-587.

Fong, G. (1959): Type section Swan Hills Member of the Beaverhill Lake Formation. Bulletin of Canadian Petroleum Geology, 7(5), 95-108.

Fong G. (1959): Geology of Devonian Beaverhill Lake Formation, Swan Hills Area, Alberta: ABSTRACT. AAPG Bulletin, 43 (5): 1097. doi: <https://doi.org/10.1306/0BDA5D3E-16BD-11D7-8645000102C1865>

Garrett, D.E., (2004): Handbook of Lithium and Natural Calcium Chloride: Their Deposits, Processing

Uses and Properties. Elsevier Academic Press. 488 p.

Glass, D.J. (1990): *Lexicon of Canadian Stratigraphy, Volume 4; Western Canada, including Eastern British Columbia, Alberta, Saskatchewan, and Southern Manitoba*; Canadian Society of Petroleum Geologists.

Green, R., Mellon, G.B. and Carrigy, M.A. (1970): *Bedrock Geology of Northern Alberta*; Alberta Research Council, Unnumbered Map (scale 1:500,000).

Halbertsma, H. L. (1994): *Devonian Wabamun Group of the Western Canada Sedimentary Basin*. In: *Geological Atlas of the Western Canada Sedimentary Basin*. G.D. Mossop and I. Shetson (compilers), Canadian Society of Petroleum Geologists and Alberta Research Council, p. 203-220.

Henderson, C.M., Richards, B.C., Barclay, J.E. (1994): *Permian Strata of the Western Canada Sedimentary Basin*. In: *Geological Atlas of the Western Canada Sedimentary Basin*. G.D. Mossop and I. Shetson (compilers), Canadian Society of Petroleum Geologists and Alberta Research Council, p. 251-258.

Hitchon, B. (1990). *Hydrochemistry of the Peace River Arch area, Alberta and British Columbia*. Alberta Research Council Open File Report 1990-18.

Hitchon, B., Bachu, S., Underschultz, J.R., Yuan, L.P. (1995): *Industrial Mineral Potential of Alberta Formation Waters*; Bulletin 62, Alberta Geological Survey, 64 p.

Hitchon, B. (1990): *Hydrochemistry of the Peace River Arch area, Alberta and British Columbia*. Alberta

Research Council Open File report 1990-18.

Huff, G.F. (2019): *Origin and Li-Enrichment of Selected Oilfield Brines in the Alberta Basin, Canada*; in AER/AGS Open File Report 2019-01, 26 p.

Jansa, L.F. and Fischbuch, N.R. (1974): *Evolution of a Middle to Upper Devonian sequence from a clastic coastal-deltaic complex into overlying carbonate reef complexes and banks, Sturgeon Mitsue area, Alberta*. Geological Survey of Canada Bulletin, 234.

James, D.P. and Leckie, D.A. (1988): *Sequences, Stratigraphy, Sedimentology: Surface and Subsurface*. Can. Soc. Pet. Geol. Mem. 15, 586 p.

Kuznetsov, V.G. and Zhuravleva, L.M. (2018): *Reef formations in the west Canada Basin and their oil and gas potential*; *Lithology and Mineral Resources*, v. 53, p. 236–251.

Landers, Jay (2023). *New methods could extract large lithium stores from brine*. American Society of Civil Engineers. <https://www.asce.org/publications-and-news/civil-engineering-source/civil-engineering-magazine/article/2023/10/new-methods-could-extract-large-lithium-stores-from-brine>

Langton, J.R. and Chin, G.E. (1968): *Rainbow Member facies and related reservoir properties, Rainbow Lake, Alberta*; *Bulleting of Canadian Petroleum Geology*, v. 16, p. 104-143.

Last, G.J. (1967): *Development of the Rainbow area*; *Journal Volume: 875-21-K*; Conference: API Production Division Rocky Mountain District meeting, Billings, MT, USA, 17 April 1967, < Available on May 15, 2023 at: <https://www.osti.gov/biblio/6261913> >.

Leavitt, E.M. and Fischbuch, N.R. (1968): *Devonian nomenclatural changes, Swan Hills area, Alberta, Canada*; Canadian Society of Petroleum Geologists (CSPG), *Bulletin of Canadian Petroleum Geology*, vol. 16, no. 3 (September), pp. 288-297.

Leckie, D. A., Bhattacharya, J. P., Bloch, J., Gilboy, C. F., & Norris, B. (1994): Cretaceous Colorado/Alberta group of the Western Canada Sedimentary Basin. In: Geological Atlas of the Western Canada Sedimentary Basin. G.D. Mossop and I. Shetsen (compilers), Canadian Society of Petroleum Geologists and Alberta Research Council, p. 335-352.

Lyster, S., Lopez, G.P. and Poulette, S. (2022): Geochemistry data of lithium-bearing groundwater in the Alberta Basin compiled from multiple sources (tabular data, tab-delimited format); Alberta Energy Regulator / Alberta Geological Survey, AER/AGS Digital Data 2021-0021.

Meijer Drees, N.C. (1994): Devonian Elk Point Group of the Western Canada Sedimentary Basin; in Geological Atlas of the Western Canada Sedimentary Basin, G.D. Mossop and I. Shetsen (comp.), Canadian Society of Petroleum Geologists and Alberta Research Council, p. 129–147.

McCulloch, R.C., Langton, J.R., and Spivak, A. (1969): Simulation of high relief reservoirs, Rainbow Field, Alberta, Canada; Journal of Petroleum Geology, p. 1399-1408.

Muir, I.D., and Dravis, J.J. (1992): Burial porosity development in middle Devonian Keg River reservoirs, Lithoprobe Alberta Basement Transects Workshop, Report 28, p. 102-103.

Oldale, H. S., and Munday, R. J. (1994): Devonian Beaverhill Lake Group of the Western Canada Sedimentary Basin. In: Geological Atlas of the Western Canada Sedimentary Basin. G.D. Mossop and I. Shetsen (compilers), Canadian Society of Petroleum Geologists and Alberta Research Council, p. 149-163.

Pawlowicz, J.J. and Fenton, M.M. (1995): Bedrock topography of Alberta; Alberta Geological Survey, Energy and Utilities Board, Map 226, scale 1:2,000,000.

Potma, K., Weissenberger, J. A., Wong, P. K., and Gilhooly, M. G. (2001): Toward a sequence stratigraphic framework for the Frasnian of the Western Canada Basin. Bulletin of Canadian Petroleum Geology, 49(1), 37-85.

Reeder, R. J. (1983): TEM as a Tool in Study of Carbonate Crystal Chemistry. AAPG Bulletin, 67(3), 538-539.

Reeder, R. J. (1983): Carbonates: Mineralogy and Chemistry, Berlin, Boston: De Gruyter. <https://doi.org/10.1515/9781501508134>

Ross, G. M., Parrish, R. R., Villeneuve, M. E., and Bowring, S. A. (1991): Geophysics and geochronology of the crystalline basement of the Alberta Basin, western Canada. Canadian Journal of Earth Sciences, 28(4), 512-522.

Ross, G.M., Theriault, R. and Villeneuve, M. (1998): Buffalo Head Terrane and Buffalo Head Craton; What's the difference and does it matter; Calgary Mineral Exploration Group, 7th Annual Calgary Mining Forum, p. 19-20.

Saller, A. H., Lounsbury, K., and Birchard, M. (2001): Facies control on dolomitization and porosity in the Devonian Swan Hills Formation in the Rosevear area, west-central Alberta. Bulletin of Canadian Petroleum Geology, 49(4), 458-471.

Statista (2022): Demand for lithium worldwide in 2020, with a forecast for 2025 and 2030, by application; Statista Chemicals & Resources, Mining, Metals & Minerals, < Available on May 15, 2023 at: <https://www.statista.com/statistics/1220158/global-lithium-demand-volume-by-application/> >.

Statistics Canada (2021): Census Profile, 2023 Census of Population, < Available on November 14, 2023 at: Profile table, Census Profile, 2021 Census of Population - Valleyview, Town (T) [Census subdivision], Alberta (statcan.gc.ca) >Trading Economics (2023): Lithium, <Available on May 10, 2023 at: <https://tradingeconomics.com/commodity/lithium> >.

U.S. Geological Survey (2022), Mineral commodity summaries 2022: U.S. Geological Survey, 202 p. <https://doi.org/10.3133/mcs2022>

Viau, C.A. (1987): The Swan Hills Formation and the Beaverhill Lake Group at Swan Hills Field and adjacent areas, central Alberta, Canada. Devonian Lithofacies and Reservoir Styles in Alberta: 13th CSPG Core Conference and Display, 1987. 201–239.

Walls, R.A. and Burrowes, O.G. (1985): The role of cementation in the diagenetic history of Devonian reefs. In: Carbonate Cements. N. Schneidermann and P.M. Harris (eds.). Society of Economic Paleontologists and Mineralogists Special Publication 36, p. 185-220.

Walls, R.A. and Burrowes, O.G. (1990): Diagenesis and reservoir development in Devonian limestone and dolostone reefs of western Canada. In: The Development of Porosity in Carbonate Reservoirs. G.R. Bloy and M.G. Hadley (comps.). Canadian Society of Petroleum Geologists, Continuing Education Short Course Notes, section 5, p. 17.

Weides, S., Moeck, I., Majorowicz, J., Palombi, D., and Grobe, M. (2013): Geothermal exploration of Paleozoic formations in Central Alberta. Canadian Journal of Earth Sciences. 50(5): 519-534.

Weissenberger, J. A.W.; Potma, K. (2001): The Devonian of western Canada — aspects of a petroleum system: Introduction. Bulletin of Canadian Petroleum Geology, 49 (1): 1–6.

Wendte, J.C. (1992): Overview of the Devonian of the Western Canada Sedimentary Basin. In: J.C. Wendte, F.A. Stoakes, and C.V. Campbell (Eds.), Devonian–Early Mississippian Carbonates of the Western Canada Sedimentary Basin: A Sequence Stratigraphic Framework, SEPM Short Course Notes 28.

Wendte J.C., Uyeno, T. (2005): Sequence stratigraphy and evolution of Middle to Upper Devonian Beaverhill Lake strata, south-central Alberta. Bulletin of Canadian Petroleum Geology, 53 (3): 250–354.

Wendte, J.C., Stoakes, F. A., and Campbell, C. V. (1992): Devonian-Early Mississippian carbonates of the Western Canada Sedimentary Basin: a sequence stratigraphic framework. SEPM Society for Sedimentary Geology.

Wright, G. N., McMechan, M. E., Potter, D. E. G. (1994): Structure and architecture of the Western Canada Sedimentary Basin. In: Geological Atlas of the Western Canada Sedimentary Basin. G.D. Mossop and I. Shetson (compilers), Canadian Society of Petroleum Geologists and Alberta Research Council, p. 25-40.

## Appendix A – Land Schedule

Table A-1 Land Schedule

Participate Name	Serial Number	Term Date	Expiry Date		Location	Mineral Agreement Detailed Report #	Application #	Hectares
Indigo Exploration Inc.	9322100214	2022-10-13	2036-10-13	Permit 8	Fox Creek West	093 9322100214	4450889	9,216.0
Indigo Exploration Inc.	9322100215	2022-10-13	2036-10-13	Permit 9	Fox Creek West	093 9322100215	4450965	9,216.0
Indigo Exploration Inc.	9322100216	2022-10-13	2036-10-13	Permit 10	Fox Creek West	093 9322100216	4450974	9,216.0
Indigo Exploration Inc.	9322120214	2022-12-14	2036-12-14	Permit 11	Fox Creek West	093 9322120214	4472095	5,376.0
Indigo Exploration Inc.	9322120215	2022-12-14	2036-12-14	Permit 12	Fox Creek West	093 9322120215	4472096	9,216.0
Indigo Exploration Inc.	9322120217	2022-12-14	2036-12-14	Permit 13	Fox Creek West	093 9322120217	4472097	8,704.0
Indigo Exploration Inc.	9322120218	2022-12-14	2036-12-14	Permit 15	Fox Creek West	093 9322120218	4472099	8,793.7
Indigo Exploration Inc.	9322100209	2022-10-13	2036-10-13	Permit 3	Fox Creek East	093 9322100209	4449335	9,216.0
Indigo Exploration Inc.	9322100212	2022-10-13	2036-10-13	Permit 6	Fox Creek East	093 9322100212	4450846	9,216.0
Indigo Exploration Inc.	9322100213	2022-10-13	2036-10-13	Permit 7	Fox Creek East	093 9322100213	4450860	9,216.0
Indigo Exploration Inc.	9322120216	2022-12-14	2036-12-14	Permit 14	Fox Creek East	093 9322120216	4472098	8,704.0
Indigo Exploration Inc.	9322120219	2022-12-14	2036-12-14	Permit 16	Fox Creek East	093 9322120219	4472100	9,216.0
Indigo Exploration Inc.	9322100208	2022-10-13	2036-10-13	Permit 2	Fox Creek Central	093 9322100208	4449331	9,216.0
Indigo Exploration Inc.	9322100210	2022-10-13	2036-10-13	Permit 1	Leduc	093 9322100210	4449326	5,440.0
Indigo Exploration Inc.	9322120220	2022-12-14	2036-12-14	Permit 17	Legal - south	093 9322120220	4472101	8,884.0
Indigo Exploration Inc.	9322120221	2022-12-14	2036-12-14	Permit 18	Legal - north	093 9322120221	4472102	9,051.6
Indigo Exploration Inc.	9322100211	2022-10-13	2036-10-13	Permit 5	Peace River Arch - west	093 9322100211	4449345	8,768.0
Indigo Exploration Inc.	9322100207	2022-08-26	2036-08-26	permit 4	Peace River Arch -east	093 9322100207	4449336	1,280.0
								147,945.3

## Appendix B – Geological Maps

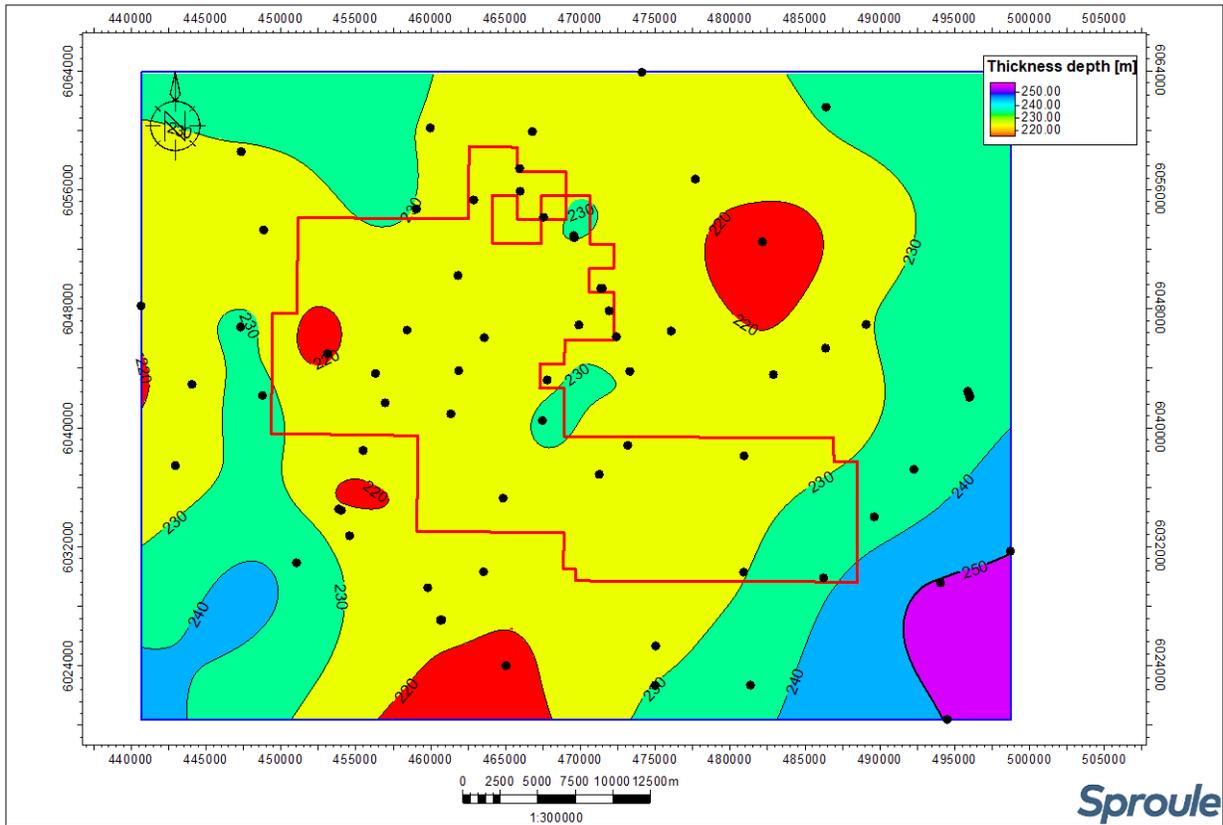


Figure B-1 Wabamun Formation Isochore

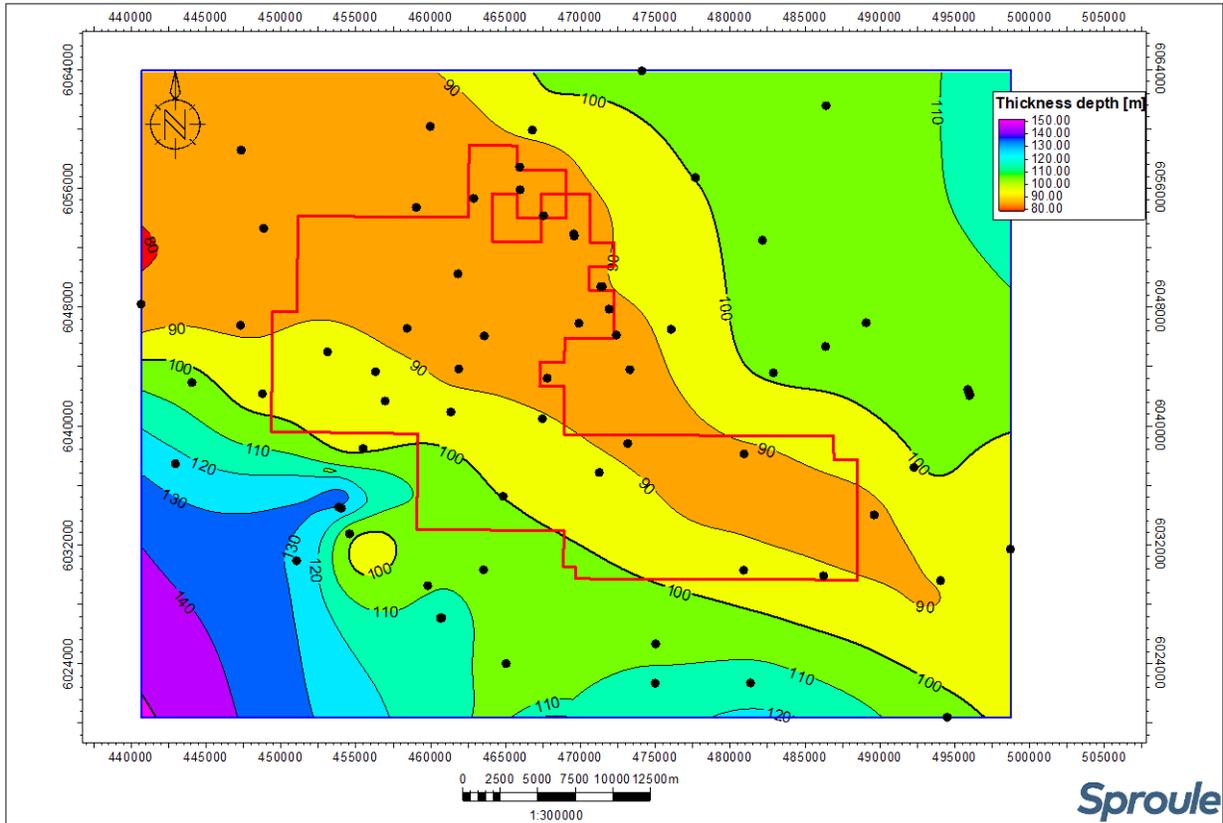


Figure B-2 Beaverhill Lake Group Isochore

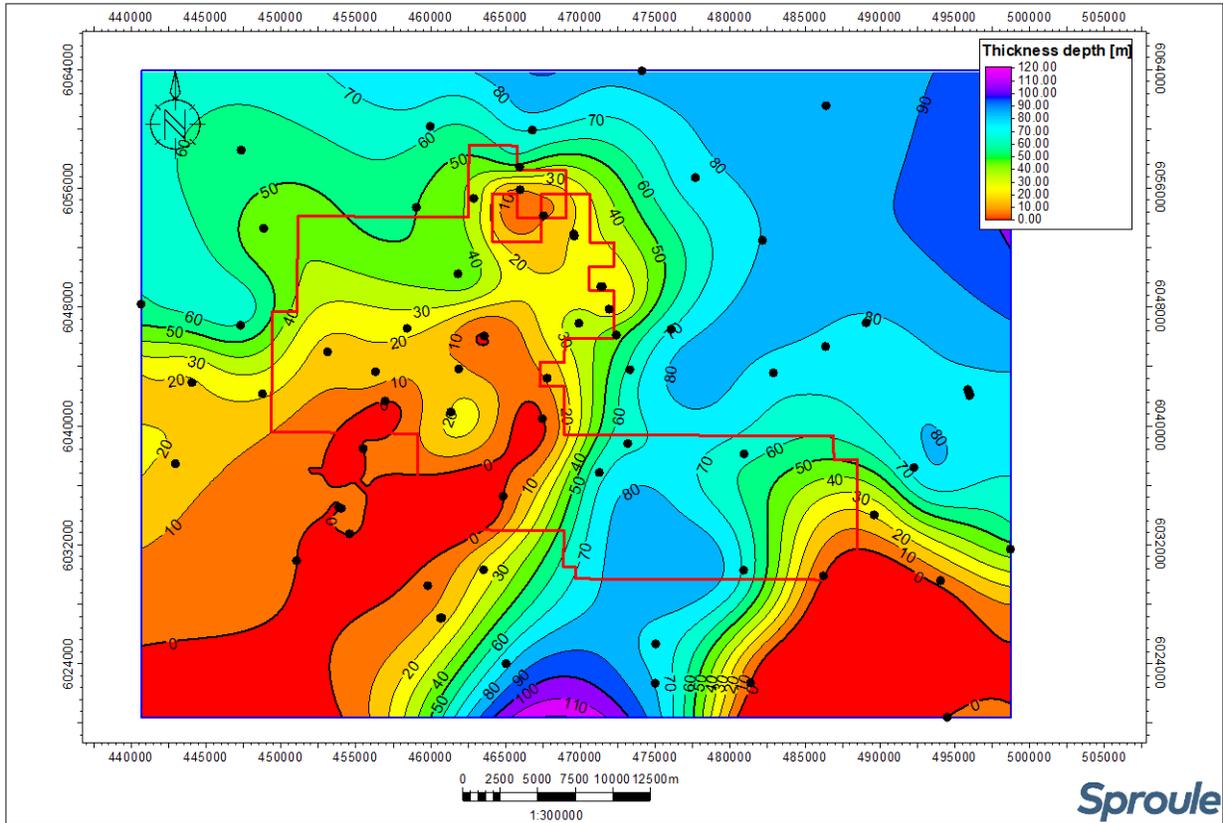


Figure B-3 Beaverhill Lake Group – Regressive Tract (Waterways Formation) Isochore

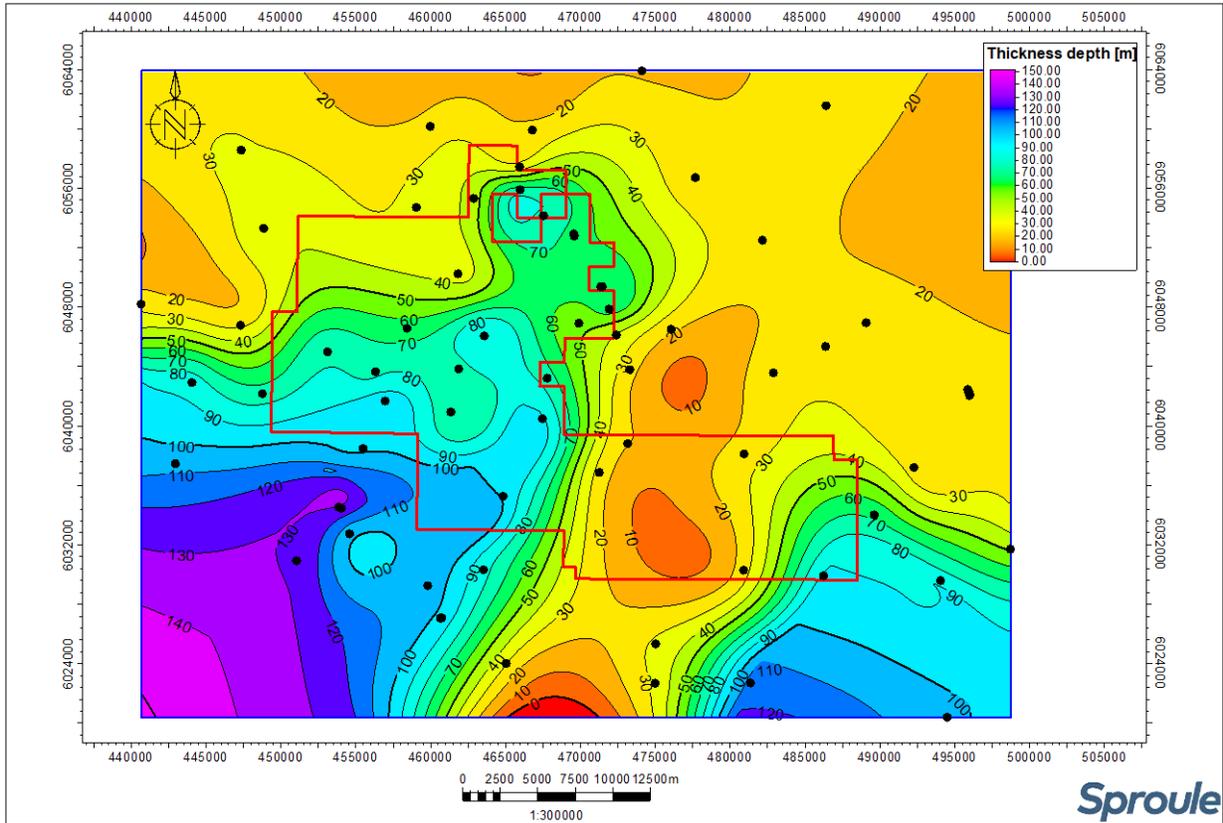


Figure B-4 Beaverhill Lake Group – Transgressive Tract (Swan Hills Formation) Isochore

## Appendix C – AGAT Laboratories Brine Sampling and QC Procedure



## **Atmospheric Sampling of Water for Brine Project**

1. Select a sample point from which a representative sample can be obtained. Special criteria is to be followed prior to any sample collection.
  - Wells aren't to be sampled within a 5km radius of other samples or water flood/injection wells.
  - No well comingling. If samples are to be taken off a separator, care needs to be taken to confirm that there are no other wells in test.
  - Well has been on production for at least 24hrs prior to sampling.
  - No treatments done within 24hrs.
2. Once all sample point selection parameters are met, connect a short line fixed with a purge/vent valve to the sample source. Avoid connecting to any drains or sight glasses for most representative sample.
3. Purge the sample line thoroughly with source liquid to displace air and vent a sufficient amount of liquid to clean the sample point and sampling system.
4. Collect sample into clean atmospheric container made of HDPE plastic. If water cut is sufficiently high (70%+), collect in to 3 1L plastic jugs. Additional samples may need to be taken to collect enough volume for the scope of testing. A minimum of 2L of brine needs to be collected. Be sure to record temperature on sample labels.
5. Close all sample point valves.
6. Depressurize sampling manifold by purging remaining source material still in sample line into pail. Leave valves on the sample manifold open as you disconnect from sample point.
7. Record all information onto the sample tag as completely and accurately as possible and attach tag to sample container.

## **Quality Control for Laboratory Data**

AGAT Laboratories has established quality control procedures for monitoring the validity of tests undertaken. The resulting data are recorded in such a way that trends are detectable and, where practicable, statistical techniques are applied to the reviewing of the results. This monitoring plan and review includes, but are not limited to the following:

- Regular use of certified materials and internal quality control using secondary reference materials
- Use of instrumentation that has been calibrated to provide traceable results
- Routine checks of measuring and testing equipment
- Use of check/working standards with control charts to determine statistical deviation
- Replicate sample checks on instrumentation to verify measurement results
- Correlation of results for difference characteristics of a sample
- Final physical review of all reported results



- Regular participation in proficiency testing samples

Results are submitted only if all previous review has deemed the results to be acceptable based on AGAT Laboratories internal quality control guidelines. If any data is found to be outside pre-defined criteria, planned action is taken to correct the problem and prevent incorrect results from being reported.