Smackover Lithium

NI 43-101 Technical Report: Maiden Inferred Resource Estimate for Standard Lithium Ltd.'s Franklin Project

Located in Hopkins, Franklin, and Titus Counties, Texas, United States

Date and Report Details

Effective Date: September 24, 2025
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Cautionary Note Regarding Forward-Looking Information

Information contained in this report and the documents referred to herein which are not statements of historical facts, may be “forward-looking information” for the purposes of Canadian Securities laws. Such forward looking information involves risks, uncertainties and other factors that could cause actual results, performance, prospects and opportunities to differ materially from those expressed or implied by such forward looking information. The words “expect”, “target”, “estimate”, “may”, “anticipate”, “should”, “will”, and similar expressions identify forward-looking information.

These forward-looking statements relate to, among other things, resource estimates, grades and recoveries, exploration and development plans, recovery processes and methods, receipt of government approvals and licences, tax and royalty rates, and other expected costs.

Forward-looking information is necessarily based upon a number of estimates and assumptions that, while considered reasonable, are inherently subject to significant political, business, economic and competitive uncertainties and contingencies. There may be factors that cause results, assumptions, performance, achievements, prospects or opportunities in future periods not to be as anticipated, estimated or intended.

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1.0. EXECUTIVE SUMMARY

1.1. Issuer and Purpose

This Technical Report has been commissioned by, and completed for, Standard Lithium Ltd. (Standard Lithium, or the Company); a public company with its corporate headquarters in Vancouver, B.C. Standard Lithium is focused on unlocking the lithium, bromide and potassium potential from world class brine reservoirs in United States. As such, the intent of this Technical Report is to provide a geological introduction and maiden inferred resource estimate for one of Standard Lithium's U.S. lithium-brine projects, the Franklin lithium-brine project in East Texas, U.S. (the Franklin Project).

Smackover Lithium is a Joint Venture (JV) between Standard Lithium and Equinor (Equinor). Formed in May 2024, Smackover Lithium is developing two Direct Lithium Extraction (DLE) projects, one of which is the basis of this Technical Report, the Franklin Project. Standard Lithium owns a 55% interest and Equinor holds the remaining 45% interest in the two Projects, with Standard Lithium maintaining operatorship.

1.2. Property Description and Ownership

The centre of the Franklin Project is located approximately 5.2 kilometres (km) (3.2 miles) south of the City of Mt. Vernon in Franklin County, northeastern Texas, United States. The Franklin Project lies within Hopkins, Franklin, and Titus counties (Figure 1.1).

Standard Lithium has obtained a total of 617 separate brine and brine-sourced mineral leases from private mineral owners within the Project area of 32,455 hectares (ha) (80,199 acres), consisting of 18,732 gross brine mineral ha (46,287 acres) and 14,346 net brine mineral ha (35,450 acres). The mineral resource estimates presented in this Technical Report correspond to Smackover Lithium's gross brine mineral holdings.

1.3. Geology and Mineralization

The Franklin Project lithium deposit is a confined brine aquifer deposit in the form of a lithium-, bromide-, and potassium-bearing brine contained within the porosity of the Smackover Formation (Smackover) within the Franklin Project. The Smackover Formation in northeastern Texas is commonly subdivided into three intervals: the Upper Smackover (predominantly an oolitic limestone with common dolomite replacement), the Middle Smackover (a burrowed pellet packstone), and the Lower Smackover (a dark, dense limestone). The lithium-bromide-potassium brine resource, as reported, is contained within the Upper Smackover and Middle Smackover Formation which underlie the entire Franklin Project area. The Lower Smackover Formation does not contribute to the resource estimates in this report but is a future target for exploration.

The structural top of the Upper Smackover in the Franklin Project area generally dips from north-northwest to south-southeast and varies in depth from approximately 2,865 metres (9,400 feet) subsea to approximately 3,810 metres (12,500 feet) subsea. Brine has never been extracted commercially from the Smackover Formation in east Texas, except as a by-product of hydrocarbon production.

The volumes of in-place lithium, bromide, and potassium are proportional to the product of the brine-saturated pore volume and the respective concentration, both of which are known with reasonable accuracy, based on the drilling, logging, coring, and sampling data obtained throughout the Project area. The data used to estimate and model the resource were gathered from the three project-specific wells described in Section 1.4 along with 100 existing and suspended oil and gas production and exploration wells in and around the Franklin Project area. Two-dimensional seismic data were combined with well log data to assess the top of the Smackover Formation structure and to identify faults.

1.4. Exploration Status

Standard Lithium conducted a 2023 exploration program at the Franklin Project. The exploration program consisted of:

1. Conducting a historical geological compilation and subsurface review of the Smackover Formation stratigraphy using 2D seismic data, oil and gas well logs; and,
2. Completing three exploration wells to collect well logs and analyse core and brine samples.

Geotechnical and geochemical analyses for the three exploration wells were conducted by an independent, accredited commercial laboratories (Intertek Westport Technology Center located in Houston, Texas and Western Environmental Testing Laboratory [WETLAB] in Sparks, Nevada). The average porosity and permeability from the 158 core samples collected from the two cored 2023 exploration wells in the Upper Smackover Formation were 14% and 17 millidarcies (mD), respectively. The brine sample analytical laboratory results yielded an average of 4,321 milligrams per litre (mg/L) bromide, 671 mg/L lithium, and 13,586 mg/L potassium for the Upper Smackover and 4,600 mg/L bromide, 626 mg/L lithium, and 12,400 mg/L potassium for the Middle Smackover in the brine samples collected from the three 2023 exploration wells.

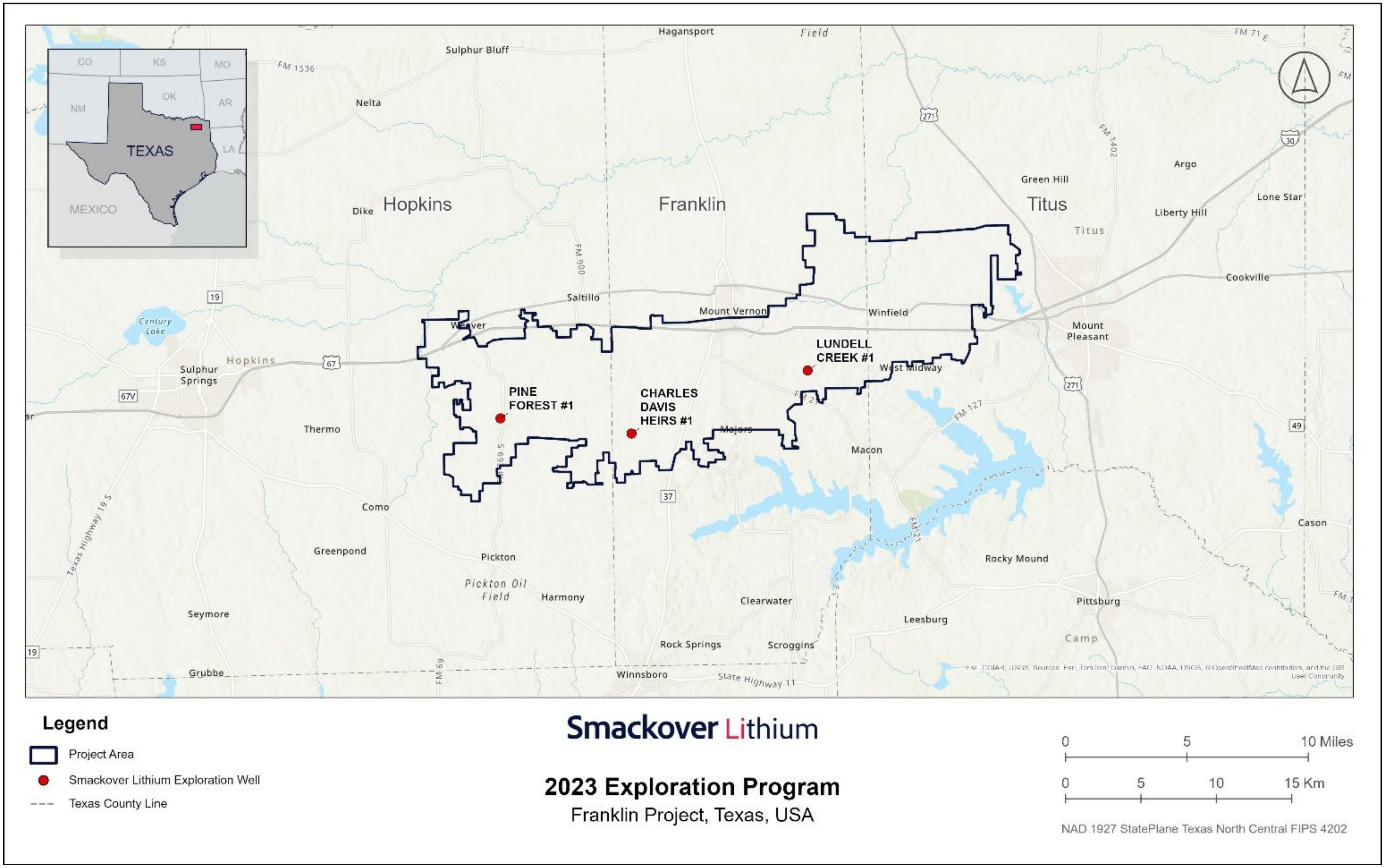


Figure 1.1: Franklin Project Area and Locations of 2023 Exploration Wells

1.5. Recovery Method and Mineral Processing

Standard Lithium has operated a lithium demonstration plant, exclusively processing Smackover brine, since May 2020 (the Demonstration Plant). This has provided a valuable source of knowledge in regard to the behavior of the brine, direct testing of various flowsheet elements, and providing a test bed for operator training. The Demonstration Plant is located near El Dorado, Arkansas, about 273 km (170 miles) east of the Franklin Project and it is the Company's intent to continue to use the information obtained from the Demonstration Plant to aid in flowsheet development, optimize lithium extraction and lithium chloride purification, and to develop operations capability.

The potential development plan considered for the Franklin Project includes pumping brine from the Smackover and, via production wells, extracting lithium, bromide and potassium from the brine, converting it to saleable products, and then reinjecting the lithium-bromide-potassium depleted brine via injection wells to maintain pressure in the reservoir and to sweep additional brine to the production wells.

Brine from the supply wells will be routed to a production facility by a network of underground pipelines. The brine entering the production facility will be pre-treated and then processed by DLE. The lithium chloride extracted by the DLE is subsequently purified and concentrated using industry-proven and commercially established processes prior to conversion to lithium carbonate. After lithium extraction, the lithium-depleted effluent brine will be returned to the resource area by a pipeline system to a network of brine injection wells.

In Arkansas bromine has been produced from Smackover brine for many decades. Production of potash from potassium rich brines is a well proven process. The bromine would be recovered ahead of the lithium, and the potash would be recovered from the spent lithium brine before reinjection back into the Smackover Formation.

1.6. Mineral Resource Estimate

The lithium, bromide, and potassium resources present in the Upper Smackover and Middle Smackover were estimated based on the 18,732 ha (46,287 acres) gross Smackover Lithium brine and brine minerals leased within the 32,455 ha (80,199 acre) Franklin Project area. The Inferred Resource value corresponds to an estimate of 2,638,000 metric tonnes of elemental bromide, 406,000 metric tonnes of elemental lithium, and 8,070,000 metric tonnes of elemental potassium. These values are equivalent to 2,159,000 metric tonnes of lithium carbonate equivalent using a conversion factor of 5.323 kilograms (kg) of Lithium Carbonate Equivalent (LCE) per kg of lithium and 15,414,000 tonnes of potash (potassium chloride) using a conversion factor of 1.91 kg of potash per kg of potassium. These resources are contained within 0.61 km^3 of brine volume and are presented in more detail in Table 1.1. The reported Inferred Mineral Resources are considered too speculative from a geological perspective to have the economic considerations applied to them that would allow them to be categorized as Mineral Reserves.

Table 1.1: Franklin Project Inferred Resource Estimates (1, 2, 3, 4, 6, 7)

Resource Category	Units	Inferred	Inferred	Inferred
Smackover Formation		Upper Smackover	Middle Smackover	Total Smackover
Gross Aquifer Volume	km^3	7.69	7.98	15.67
Net Aquifer Volume	km^3	3.10	0.37	3.47
Average Porosity	%	18.1%	12.4%	17.5%
Brine Volume	km^3	0.56	0.05	0.61
Average Lithium Concentration	mg/L	671	626	668
Lithium Resource	000 tonnes	377	29	406
LCE[5]	000 tonnes	2,005	153	2,159
Average Bromide Concentration	mg/L	4,321	4,600	4,343
Bromide Resource	000 tonnes	2,426	212	2,638
Average Potassium Concentration	mg/L	13,356	12,400	13,286
Potassium Resource	000 tonnes	7,500	570	8,070
Potassium Chloride (Potash)[5]	000 tonnes	14,324	1,089	15,414

Notes:

1. 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. The estimate of mineral resources may be materially affected by geology, environment, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
2. Numbers may not add up due to rounding to the nearest 1,000 unit.
3. The resource estimate was completed and reported using a cutoff of 6% porosity (net aquifer) and 100 mg/L lithium and 1,000 mg/L for bromide and potassium.
4. The inferred resource estimate was developed and classified in accordance with guidelines established by the Canadian Institute of Mining and Metallurgy. The associated Technical Report was completed in accordance with the Canadian Securities Administration's National Instrument 43-101 and all associated documents and amendments. As per these guidelines, the resource was estimated in terms of metallic (or elemental) lithium, bromide, and potassium. The effective date of the mineral resource estimate is September 24, 2025.
5. In order to describe the resource in terms of "industry standard" lithium has been converted to LCE by a conversion factor of 5.323 and potassium converted to potash (KCl) by a conversion factor of 1.91.
6. The lithium, bromide, and potassium resources present in the Upper Smackover and Middle Smackover were estimated based on the 18,732 ha (46,287 acres) gross Smackover Lithium leased acreage within the 32,455 ha (80,199 acre) Franklin Project area.
7. The average mineral concentration values used in this analysis are the weighted average values presented in Section 9.3.

1.7. Qualified Person's Conclusions and Recommendations

1.7.1. Exploration Conclusions and Recommendations

Standard Lithium successfully executed a three-well exploration program that significantly improved the geologic description of the target Smackover Formation. The program addressed the three key factors that determine the quality of the resource: the total volume of brine based on core and log porosity data, the brine's lithium concentration based on the analysis of multiple brine samples from the wells, and the productivity of the formation based on the core permeability data collected. Qualified Person (QP) Robert Williams reviewed all aspects of the exploration program, including selection of the well locations; designing the coring, logging, and sampling programs; attending the coring and sampling of the wells; and analyzing the resulting data. In the opinion of QP Robert Williams, the resulting data and analyses support the inferred resource classification estimates present at the Franklin Project.

The recommended next steps for Standard Lithium to mature the Franklin Project to a higher level of resource classification and project definition are to:

- Collect brine samples from select zones in the 2023 exploration program wells.
- Conduct fall off tests (pressure transient analysis) on one or more of the 2023 exploration program wells.
- Drill two additional exploration wells targeting the Upper, Middle, and Lower Smackover Formation in areas not tested by the 2023 data gathering programs to provide:
  - Geologic data;
  - Lithium, bromide, and potassium concentrations;
  - Long-term production test information to estimate well rates, the number of wells needed, facility rates, and the completion plans for those wells;
  - Information regarding the potential extent of a Lower Smackover development target; and,
  - Information regarding the benefit of well stimulation to well productivity.
- Monitor the test wells for salt precipitation, evaluate the potential effect of salt precipitation on production operations, and identify remediation options.
- Update the geological model.
- Revise and adjust the resource classification.
- Develop a reservoir simulation model in support of development of an optimized well plan and brine production profile.
- Incorporate all data obtained in the simulation model input geologic description and prepare a potential Franklin Project development concept and plan, including brine flow rate, well count, and well configuration.

Estimated costs are presented in Table 1.2.

Table 1.2: Recommended Works for Geology and Mineral Resource Estimates

Recommended Works	Estimated Cost (US$M)
2023 well re-entry program brine sampling and production testing	5.0
Drill two additional exploration wells	12.0
Update geological model and develop reservoir simulation model	1.0
Total	**18.0**

1.7.2. Mineral Processing Conclusions and Recommendations

Because continuous start-to-finish DLE without the use of evaporation ponds is not yet commercially proven, test work becomes especially critical to mitigate process and scale-up risks. The test work needs to be conducted over a reasonable period of time and at a suitable scale-up factor. The Demonstration Plant operation has achieved both these objectives. In addition, the equipment operated in the Demonstration Plant has shown reliability in terms of having the required availabilities for stable process operation. The process control and chemical analysis applied in the Demonstration Plant have provided a solid foundation for reliable results.

The DLE process has been run over three years, demonstrating consistency of results and its applicability for the Franklin Project.

It can be concluded that the Franklin Project brine is similar to the South West Arkansas (SWA) Project brine from a metallurgical perspective and that the differences in concentrations of the major constituents are relatively small. In turn it can also be concluded that the potential lithium process flowsheet for the Franklin Project will be similar to that for the SWA Project. From a metallurgical testing perspective, the QP has concluded that Standard Lithium is in a position to proceed to the next phase of the Franklin Project. Please note that although the SWA brine is similar, it is not fully representative of the brine for the Franklin Project.

The QP also recommends the following steps for Standard Lithium to increase knowledge of the Franklin Project brine processing:

- DLE characterisation of the Franklin Project brine.
- The testing of DLE pre-treatment steps on Franklin Project brine.
- Laboratory scale testing of the DLE eluate, derived from Franklin Project brine, for the purification, concentration and lithium carbonate production steps.

Estimated costs are presented in Table 1.3.

Table 1.3: Recommended Works for Metallurgy and Mineral Processing

Recommended Works	Estimated Cost (US$M)
DLE characterization and laboratory scale testing	1.5
Total	**1.5**

2.0. INTRODUCTION

2.1. Issuer and Purpose

This Technical Report has been commissioned by, and completed for, Standard Lithium Ltd. (Standard Lithium, or the Company); a public company with its corporate headquarters in Vancouver, British Columbia. Standard Lithium is focused on unlocking the lithium potential from brine in the United States, as well as other constituents such as bromide and potassium.

Smackover Lithium is a Joint Venture (JV) between Standard Lithium and Equinor (Equinor). Formed in May 2024, Smackover Lithium is developing multiple DLE projects, one of which is the basis of this Technical Report, the Franklin Project. Standard Lithium owns a 55% interest and Equinor holds the remaining 45% interest in the Projects, with Standard Lithium maintaining operatorship.

The intent of this Technical Report is to provide a geologic introduction and maiden inferred resource estimate within the Franklin Project area in accordance with the Canadian Securities Administration's (CSA's) National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* (NI 43-101). The mineral resource has been estimated using the CIM "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines", dated November 29, 2019, the CIM "Definition Standards for Mineral Resources and Mineral Reserves" amended and adopted May 10, 2014, and the "CIM Leading Practice Guidelines for Sedimentary Basin and Geothermal Brine-Hosted Lithium Mineral Resources and Mineral Reserves Estimation" (May 2025 Draft) (the CIM Leading Practice Guidelines). The effective date of this Technical Report is September 24, 2025.

The Franklin Project area is being assessed by Standard Lithium (as part of the Smackover Lithium JV) for its lithium-bromide-potassium brine potential. The brine is situated within aquifers of the Late Jurassic Smackover Formation, which, throughout the region, have produced hydrocarbons since the 1960's. Brine from the Smackover Formation has not been produced in East Texas to extract minerals other than hydrocarbons, to the best of the author's knowledge.

Standard Lithium has obtained a total of 617 separate brine and brine-sourced mineral leases from private mineral owners within the Project area of 32,455 ha (80,199 acres), consisting of 18,732 gross brine mineral ha (46,287 acres) and 14,346 net brine mineral ha (35,450 acres). Additional leases have been acquired since the effective date of this Technical Report, and it is expected that additional leasing activities in and around the Franklin Project area will continue by Smackover Lithium for the foreseeable future. The mineral resource estimate presented in this Technical Report corresponds to the Smackover Lithium gross brine mineral lease holdings. The authors of this Technical Report have not reviewed the 617 leases owned by Standard Lithium. The legal and survey validation of the leases is not in their expertise, and they are relying on the statements of Standard Lithium and its legal and land personnel. Through personal communication with Standard Lithium, the authors have no reason to question the validity or the good-standing of the mineral brine lease holdings. The authors of the Technical Report believe that Standard Lithium owns the minerals conveyed by its leases for as long as the leases remain in force based on the statements of legal and land personnel of Standard Lithium. The minerals that will be the focus of the resource estimation are lithium, bromide (when in solution), and potassium.

The centre of the Franklin Project is located approximately 5.2 km (3.2 miles) south of the City of Mt. Vernon in Franklin County, Texas, United States (Figure 2.1).

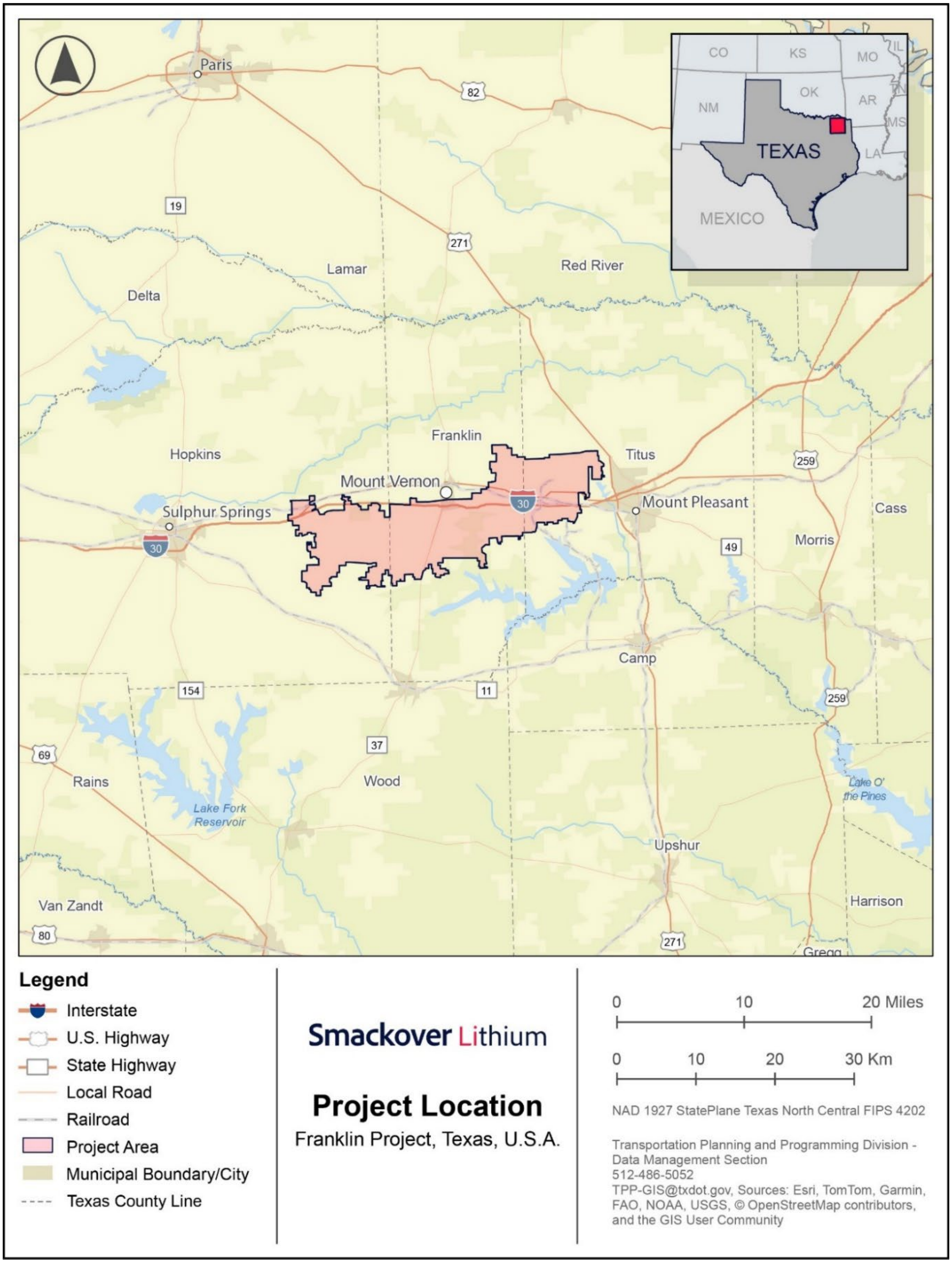


Figure 2.1: Franklin Project Area Discussed in this Technical Report

2.2. Technical Report Authors and Personal Inspection Summary

Table 2.1 presents the list of QPs for the Technical Report and the sections they are responsible.

Table 2.1: Qualified Persons and their Responsibilities

Author	Company	Section(s)
Abinash Moharana, RM-SME	WSP USA Inc.	1.1, 2, 3, 5, 27
Marek Dworzanowski, EUR ING, CEng	N/A	1.5, 1.7.2, 12.4, 13, 25.4, 25.5.3, 26.2
Randal M. Brush, P.E.	Haas & Cobb Petroleum Consultants	1.2, 1.6, 4, 10, 14.2, 14.3, 23, 24, 25.1, 25.3, 25.5.1, 27
Robert E. Williams, P.G., CPG	Haas & Cobb Petroleum Consultants	1.3, 1.4, 1.7.1, 6, 7, 8, 9, 11, 12.1, 12.2, 12.3, 14.1, 25.2, 25.5.2, 26.1, 27

Notes:
1. N/A denotes not applicable.
2. Marek Dworzanowski operates as an independent contractor.

Sections 15 – 22 are not applicable given the stage of the Franklin Project, and no QP is responsible for authoring those sections of the Technical Report.

In accordance with the CSA's NI 43-101, this lithium-bromide-potassium brine Maiden Inferred Resource Estimate (MIRE) has been prepared by a multi-disciplinary team that includes geologists, reservoir engineers, chemical and process engineers with relevant experience in the brine confined aquifer type deposits, Smackover Formation geology, and brine processing.

Mr. Abinash Moharana has not visited the Franklin Project site given that this is a greenfield project and that the information stated in his Sections (2.0, 3.0, 5.0, 27) was able to be verified by external research.

Mr. Marek Dworzanowski has not visited the Franklin Project site given that no metallurgical test work has been conducted thus far. Mr. Marek Dworanowski has visited the Standard Lithium Demonstration Plant in El Dorado, AR on November 14-15, 2022, to inspect the DLE equipment in service and verify the process conditions and technology and visited again November 11-12, 2024, to inspect the SWA project DLE pilot plant in Mission Creek, AR and the commercial scale DLE column operation in the Standard Lithium Demonstration Plant in El Dorado, AR.

Mr. Randal Brush visited the Franklin Project site on February 22, 2023, to collect sample Cobb #5 from the Charles Davis Heirs 1 well, and visited again on July 24, 2023, to inspect the three exploration program wells.

Mr. Robert E. Williams visited the Franklin Project site January 27, 2023, February 22, 2023, and July 7 to 13, 2023, and observed the sampling of the Charles Davis Heirs 1 well.

All authors are independent of Standard Lithium (and Smackover Lithium) and are QPs as defined by the NI 43-101 "Standards of Disclosure for Mineral Projects".

2.3. Sources of Information

This Technical Report is based, in part, on internal company technical reports, maps, company letters, memoranda, public disclosure, and public information.

This Technical Report is a compilation of publicly available information, as well as information obtained from the 2023 East Texas exploration program. The 2023 exploration program included drilling three wells and gathering and analyzing the log data, core samples, pressure data, and brine samples from the wells.

References in this Technical Report are made to publicly available reports that were written prior to implementation of NI 43-101, including government geological publications. All reports are cited in Section 27.0, References.

Government reports include those that provide:

- Texas policy and regulation: Texas Water Code §27.036 Section 16 TAC §3.82 (see Section 4.2); and,
- USGS Produced water geochemistry database (USGS 2023) (see Section 6.1.2).

Miscellaneous journal articles were used to set the geological setting of east Texas (e.g., Bishop, 1967; Alkin and Graves, 1969; Bishop, 1971a and b; Buffler et al., 1981; Moore and Druckman, 1981; Moore, 1984; Harris and Dodman, 1987; Troell and Robinson, 1987; Salvador, 1991a and b; Kopaska-Merkel et al., 1992; Moldovanyi and Walter, 1992; Zimmerman, 1992; Heydari and Baria, 2005; Mancini et al., 2008).

Brine geochemical data collected in 2023 were analysed at the independent and accredited laboratory, Western Environmental Testing Laboratory (WETLAB) in Sparks, Nevada. Historical Smackover Formation brine geochemical data from a peer reviewed journal were also used (Moldovanyi and Walter, 1992 and Blondes et al., 2018).

Historical well log data, oil, gas, and brine production data, and well status information used to create the layered geologic model were obtained from TGS and IHS (now S&P Global), two companies that supply well log and well status information to the petroleum and bromide industry.

The geotechnical data from core samples were analysed in the 2023 exploration program by an independent laboratory and engineering firm, Intertek Westport Technology Center, in Houston, Texas.

The laboratories and engineering firms are independent and certified third-party consultants and/or include certified Professional Geologists or Engineers. The geochemical laboratories for the brine samples collected in 2023 cite National and State accreditation (e.g., ISO/IEC 17025:2005; 2009 TNI Environmental Testing Laboratory Standard; DoD Environmental Laboratory Accreditation Program (DoD ELAP); ISO/IEC Guide 25-1990; NAC 445A). Historical brine analytical data originated from a peer reviewed journal (American Association of Petroleum Geologist Bulletin) and is considered a reputable source of information (Moldovanyi and Walter, 1992).

2.4. Terms of Reference

With respect to units of measure and currency, unless otherwise stated, this Technical Report uses:

- Abbreviated shorthand consistent with the International System of Units (International Bureau of Weights and Measures, 2006);
- Geographic coordinates projected in the State Plane Coordinate System, North Central Zone of Texas (FIPS 4202), based on the North American Datum of 1927 (NAD 1927).

- Currency in U.S. Dollars (US$), unless otherwise specified (e.g., Canadian dollars, CDN$, Euros, €); and
- Key well field dimensions such as well depth, reservoir depth, and casing sizes will be presented using standard oil field units as the primary unit of measure with SI units in brackets.

Table 2.2 describes the various abbreviations used in this Technical Report.

Table 2.2: Key Acronyms and Definitions

Acronym	Definition
ASTM	American Society for Testing and Materials
CDN$	Canadian Dollars
CSA	Canadian Securities Administration
DLE	Direct Lithium Extraction
DoD ELAP	DoD Environmental Laboratory Accreditation Program
EPA	Environmental Protection Agency
€	Euro
ha	hectare
ICP-OES	Inductively Coupled Plasma Optical Emission Spectroscopy
IBC	Intermediate Bulk Container
JV	Joint Venture
kg	kilograms
km	kilometres
LCE	Lithium Carbonate Equivalent
MIRE	Maiden Inferred Resource Estimate
mD	millidarcies
mg/L	milligrams per litre
NEPA	National Environmental Policy Act
NI 43-101	National Instrument 43-101
NAD	North American Datum
QP	Qualified Person
RRC	Railroad Commission of Texas
RPD	Relative Percentage Difference
SWA	South West Arkansas
Standard Lithium Ltd.	Standard Lithium, or the Company
SM	Standard Methods
TCEQ	Texas Commission on Environmental Quality
TLS	Texas Lone Star Property
the Franklin Project	the Franklin lithium-bromide-potassium-brine project in East Texas, U.S.
US$	U.S. Dollars
USACE	United States Army Corps of Engineers
WETLAB	Western Environmental Testing Laboratory in Sparks, Nevada

3.0. RELIANCE ON OTHER EXPERTS

The authors are not qualified to provide an opinion or comment on issues related to legal agreements. They have relied entirely on background information and details regarding the nature and extent of Standard Lithium's land titles. The authors have not reviewed the approximately 617 mineral leases owned by Standard Lithium to obtain mineral rights. The legal and survey validation of the leases and brine rights is not in their expertise, and they are relying entirely on Standard Lithium's landmen and lawyers (email correspondence with Standard Lithium's landman dated 20 August 2025).

4.0. PROPERTY DESCRIPTION AND LOCATION

The author has not reviewed the 617 separate brine and brine-sourced mineral leases held by Standard Lithium. The legal and survey validation is not within the author's expertise, and the author is relying on Standard Lithium's land personnel and lawyers to review as further discussed in Section 3 of the Technical Report. Based on personal communication with Standard Lithium regarding the leasing process and acquired leases, the author has no reason to question the validity or good-standing of the Standard Lithium brine and brine-sourced mineral leases.

4.1. Property Description and Location

The Franklin Project area encompasses a nearly east-west trend approximately 13 km (8 miles) north to south and 55 km (34 miles) east to west. The area is contained in east Hopkins, Franklin, and west Titus Counties. The centre of the Franklin Project is located approximately 5.2 km (3.2 miles) south of the City of Mt. Vernon in Franklin County, Texas, United States. Coordinates for the centre of the Franklin Project are:

- Latitude 33.1505171 and Longitude -95.2242208; or
- Universal Transverse Mercator 2,696,523 ft Easting, 547,408 ft Northing, State Plane Zone 4202 (Texas North Central), NAD 1927 (Figure 4.1).

Standard Lithium has obtained a total of 617 separate brine and brine-sourced mineral leases from private mineral owners within the Project area of 32,455 ha (80,199 acres), consisting of 18,732 gross brine mineral ha (46,287 acres) and 14,346 net brine mineral ha (35,450 acres).

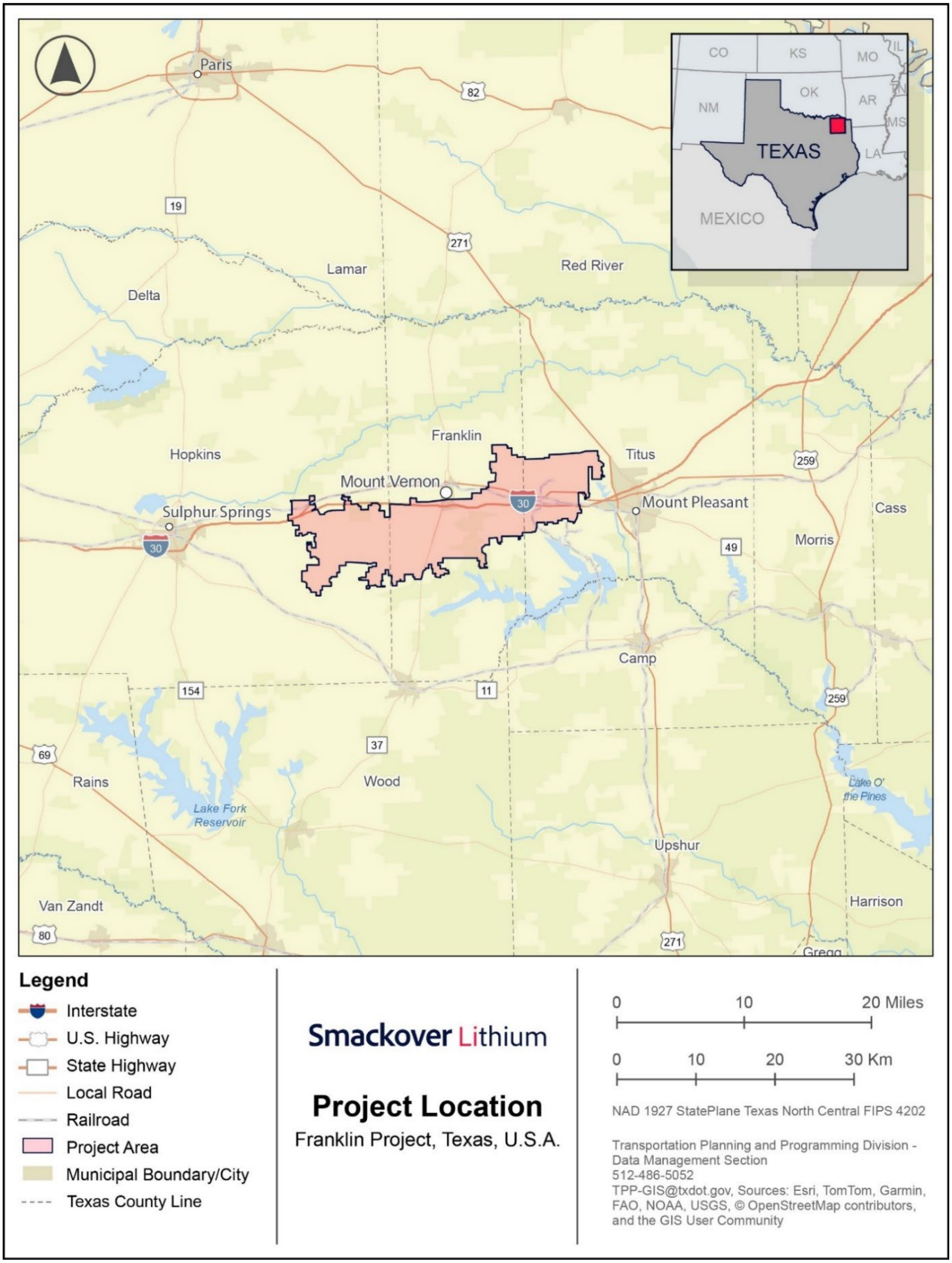


Figure 4.1: Project Location Map

4.2. Brine and Brine-Sourced Mineral Production Legislation

Adoption of new Section 16 TAC §3.82 on January 29, 2025, implements the requirements of Senate Bill 1186 (88th Legislature, Regular Session, 2023), which amended Texas Water Code §27.036 to clarify the Railroad Commission of Texas' (RRC) jurisdiction over brine mining under state law. The bill clarified the RRC's authority to permit and regulate brine production projects by:

- Amending the definition of "brine mining" to include Class V brine mining, in which naturallyoccurring brine is produced from the subsurface for the extraction of minerals and then reinjected into the same formation from which it was produced after mineral extraction;
- Instructing the RRC to adopt rules to regulate Class V brine mining, in addition to its existing rules for Class III brine mining;
- Instructing the RRC to seek delegation of primary enforcement authority over Class V reinjection wells under the federal Safe Drinking Water Act (42 U.S.C. §§ 300f, et seq.) to its underground injection control program; and,
- Prohibiting the drilling of Class V injection wells without a valid RRC permit.

Additional details for brine production projects are available in the new Section 16 TAC §3.82.

Within the Franklin Project, Standard Lithium Ltd. acquired the rights to produce lithium, bromide, potassium, and other dissolved salts in the brine from brine and brine-sourced mineral owners.

4.3. Summary of Brine and Brine-Sourced Mineral Leases

4.3.1. Summary of Leases

In 2023, Standard Lithium implemented a brine mineral leasing program and acquired a total of 617 separate brine mineral lease holdings as of the effective date of this Technical Report (September 24, 2025). In general, each lease has a 5-year primary term, with two 5-year extensions, and payments are either made yearly or for each 5-year term. Standard Lithium obtains brine leases from landowners who own both the surface of the land and at least some share of the minerals, and it obtains brine-sourced mineral leases from landowners who own severed mineral interests.

The Franklin Project brine and brine-sourced mineral leases have yet to be developed for commercial production of brine minerals. Once the Project is in production, those leases within an established production unit will be held by production, or otherwise maintained by applicable lease provisions, and no additional primary term extensions will be necessary.

4.3.2. Brine and Brine-Sourced Mineral Brine Right Distribution on Individual Leases

In some instances, the area encompassed by an individual lease may be very small, less than one acre, or much larger, up to several hundred acres. The percentage of mineral ownership may also vary for a brine or brine-sourced mineral lease. In some instances, the undivided interest in minerals conveyed by a lease may be small (i.e., less than 10%) or a full 100% interest. The Franklin Project area is 32,455 ha (80,199 acres) with 18,732 ha (46,287 acres), or 57.7% of the total area, gross brine and brine-sourced mineral ownership (Figure 4.2).

The lithium, bromide, and potassium resources present in the Upper Smackover and Middle Smackover were estimated based on the 18,732 ha (46,287 acres) gross Smackover Lithium leased acreage within the 32,455 ha (80,199 acre) Franklin Project area.

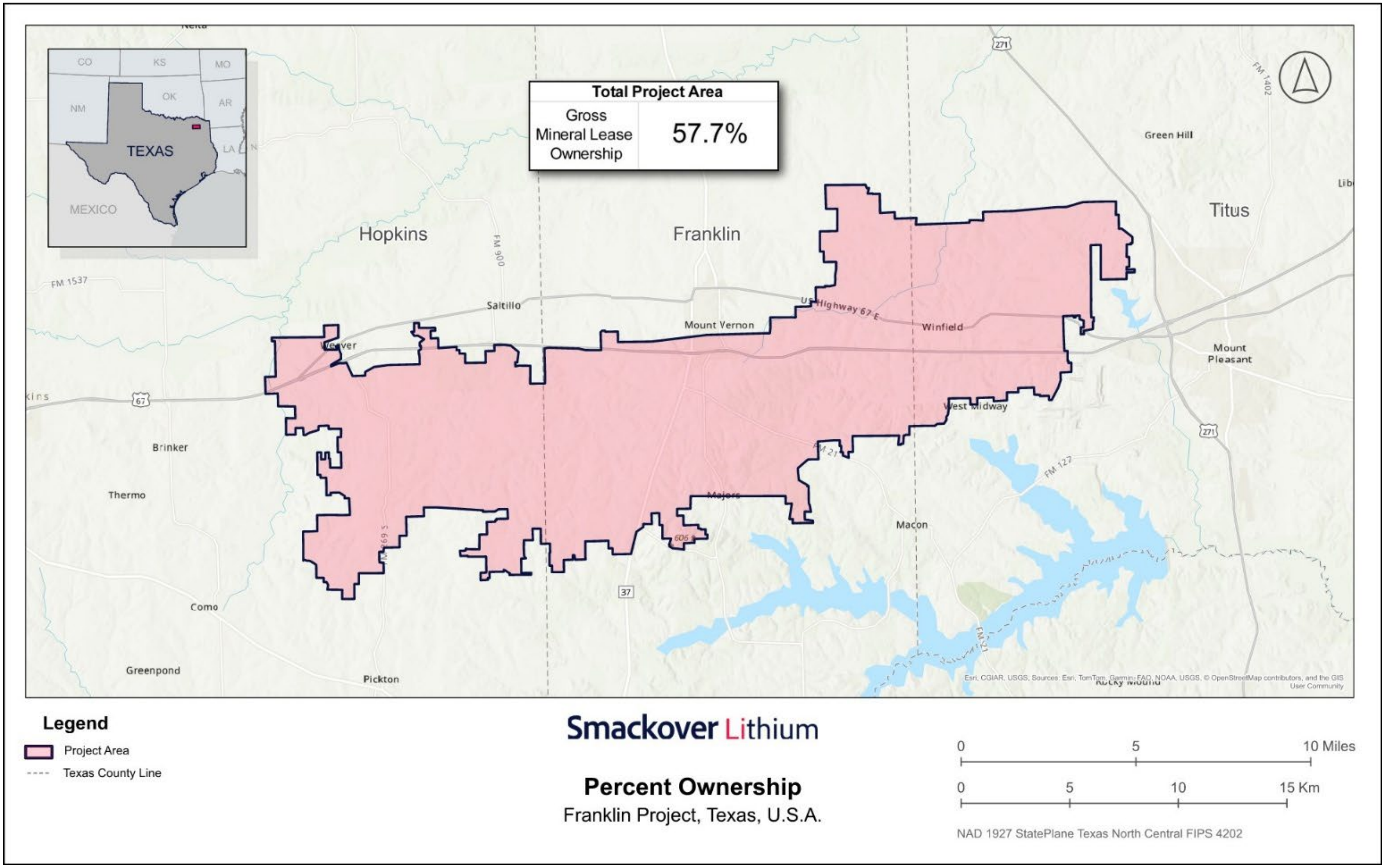


Figure 4.2: Franklin Project Brine Mineral Lease Ownership Summary

4.4. Surface and Mineral Rights in Texas

In Texas, case law has established the distinction between surface and minerals. The Texas courts apply one of two tests, depending on when the minerals were severed from the surface. For severances that occurred before June 8, 1983, Texas courts apply the “surface destruction test”, under which valuable substances are considered minerals if reasonable use of the surface to extract them would not destroy or deplete the surface (Reed v. Wylie, 1980). For severances that occurred after June 8, 1983, Texas courts apply the “ordinary and natural meaning” test, under which minerals include “all substances within the ordinary and natural meaning of that word, whether their presence of value is known at the time of severance”, except for building stone, limestone, caliche, surface shale, water, sand, gravel, and near-surface lignite, iron, and coal (Moser v. U.S. Steel Corp., 1984). Brine-sourced lithium, bromide and potassium extracted by DLE or other technology or process is a mineral under either test. The processes leave the surface of the land mostly untouched, satisfying the surface destruction test. And lithium is ordinarily and naturally considered to be a mineral, including by the U.S. federal government, which has listed it as a “critical mineral” for years (Final List of Critical Minerals, 2018).

In Texas, a mineral interest owner has the inherent right to develop the minerals, which includes the right to lease the minerals to others for development. A company that desires to develop the mineral resources in an area must either purchase mineral interests outright or secure mineral leases from the mineral owners. Under Texas law, mineral leases are typically structured as fee simple determinable conveyances, meaning they convey actual ownership of the minerals to the leaseholder for as long as the lease endures. The lease’s provisions describe how and when it terminates, as well as the duties the leaseholder owes to the party that granted the lease in the meantime. This structure allows the leaseholder to stand in the shoes of the mineral owners during the exploration and extraction of the minerals covered by the lease.

With respect to surface rights, Texas law allows the severance of the surface estate from the mineral estate by proper grant or reservation, thereby creating separate estates. Under Texas law, the mineral estate is dominant over the surface, meaning the mineral owner has the implied right to use as much of the surface as is reasonably necessary to extract the minerals. As a result, ordinarily, a mineral leaseholder in Texas has the implied right to make whatever use of the surface is reasonably necessary to extract the minerals. However, this right can be disclaimed by the applicable lease. Particularly in situations where the landowner granting the lease owns both surface and minerals rights, the landowner may insist on including a clause in the lease that prohibits surface use without further negotiation. Additionally, even where surface use is not disclaimed by a mineral lease, conflicts that might otherwise arise between mineral leaseholders and severed surface owners over the reasonableness of planned surface use can be avoided by entering into Surface Use Agreements that clearly identify the scope of surface use rights.

In the State of Texas, when a person sells a piece of property, the mineral rights that person owned automatically transfer with the surface rights, unless otherwise stated in the deed.

4.5. Potential Future Royalty Payments to Lessors

Royalty rates are determined by the terms of the lease agreements between mineral owners and their leaseholders, which are frequently treated as confidential in the brine fields of East Texas, and such leases are not regulated by the Railroad Commission of Texas. Therefore, there are currently no known royalties, back-in rights, payments or other agreements and encumbrances to which the Franklin Project is subject.

4.6. Property Environmental Liabilities and Permitting

Several Federal and State permits and approvals are required for brine production in Texas, for example:

- Clean Water Act Section 404 permitting through the United States Army Corps of Engineers (USACE);
- Air emissions permitting through the Texas Commission on Environmental Quality (TCEQ);
- Water discharge permitting through the TCEQ;
- Well drilling and operating permits through the Railroad Commission of Texas;
- Underground Injection Control permitting through the RRC; and,
- Public water supply permitting through the TCEQ.

Currently, there is no brine production occurring on the Franklin Project for the express purpose of brine mineral extraction. Brine is produced from the Smackover Formation adjacent to the Project area as a normal part of oil and gas extraction operations, but any brine produced is removed and disposed of as per normal oilfield activities.

4.7. Risks and Uncertainties

As with any development project, there exist potential risks and uncertainties. Standard Lithium will attempt to reduce risk/uncertainty through effective project management, engaging technical experts, and developing contingency plans.

The following risks and uncertainties have been identified at this stage of project development:

- This could be the first brine production project that the RRC permits and could result in project delays.
- Several Texas attorneys have written articles stating that there is uncertainty in Texas law over whether brine-sourced lithium is part of the surface or mineral estate before concluding that lithium is most likely part of the mineral estate. While agreeing that no Texas court has ruled on the exact issue yet, Standard Lithium's Texas counsel does not believe the degree of uncertainty these authors have expressed is reasonable in light of the overwhelming weight of the existing case law. Nevertheless, Standard Lithium's Texas counsel agrees there is some risk that one or more lower court decisions might confuse the issue before being corrected by higher courts on appeal.

5.0. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

5.1. Accessibility

The Franklin Project area spans across west Hopkins, Franklin, and east Titus counties. The largest nearby city is Sulphur Springs. Sulphur Springs is the County Seat of Hopkins County and has a population of approximately 16,185 as of 2023. The combined population of Hopkins, Franklin, and Titus Counties is estimated at approximately 78,386 based on census data from 2020 (U.S. Census Bureau, 2025).

The largest cities in the region are Dallas, TX and Texarkana, TX. Dallas is approximately 152 km (94 miles) west-southwest and has a population of 1.3 million, and Texarkana (TX-AR Metro Area) is approximately 115 km (72 miles) east-northeast with a population of 147,000.

5.1.1. Airport Access

The nearest airport is Sulphur Springs Municipal Airport, located in the northwestern area of the Franklin Project, in Hopkins County.

The nearest commercial airport is Texarkana Regional Airport, approximately 115 km (72 miles) east-northeast east. Dallas-Ft. Worth International Airport is approximately 193 km (120 miles) west-southwest.

5.1.2. Rail Access

There is existing rail access parallel to Interstate 30, approximately 16 km (10 miles) north.

5.1.3. Road Access

The area has an extensive all-season secondary road network. Access is provided by U.S. and Texas state highways. Interstate 30 links the cities of Sulphur Springs, Mt. Vernon, and Mt. Pleasant, running west-to-east (Figure 5.1). Texas State Highways 37, 67, 271, and several improved county roads provide access to every leased tract of the Project area.

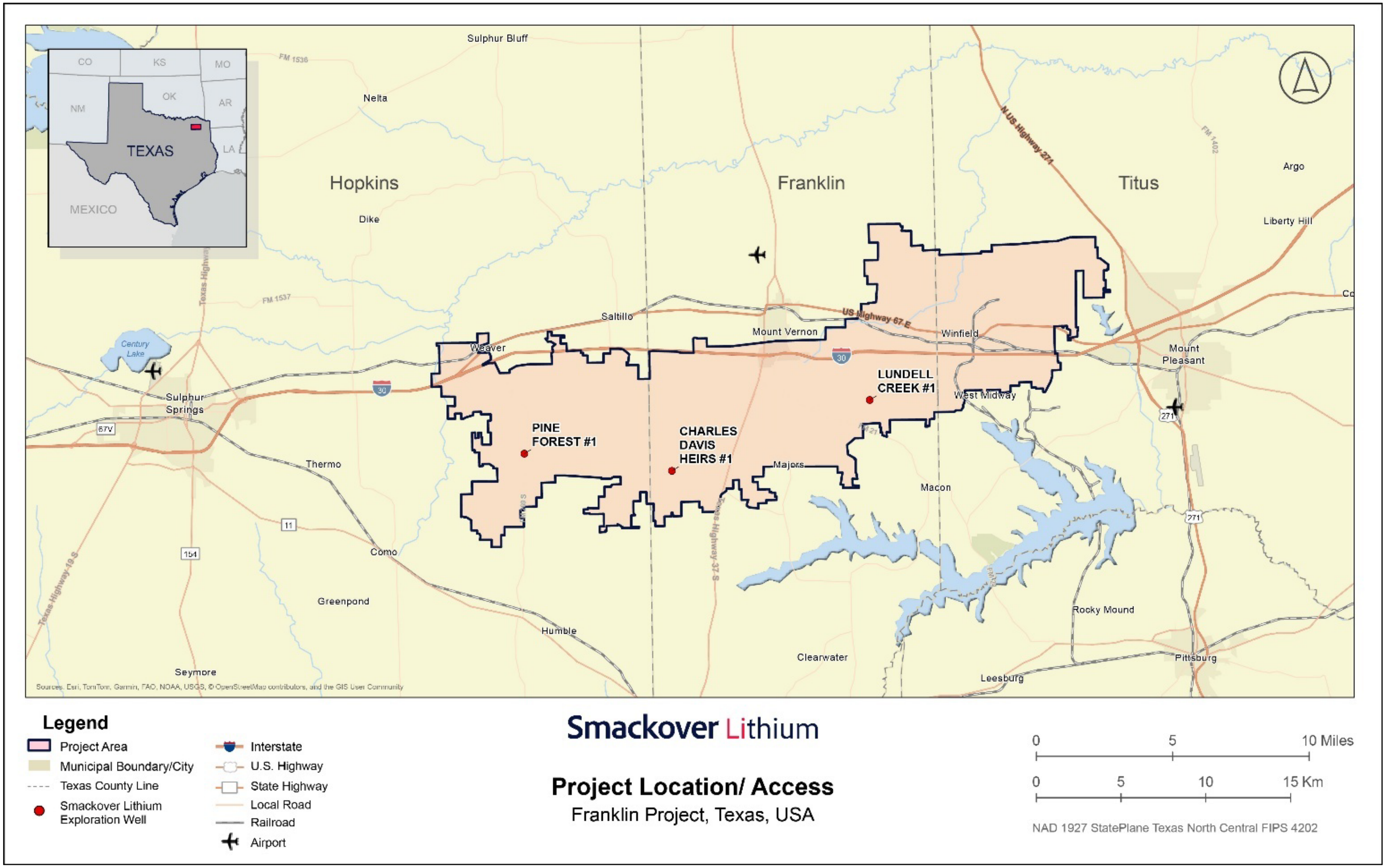
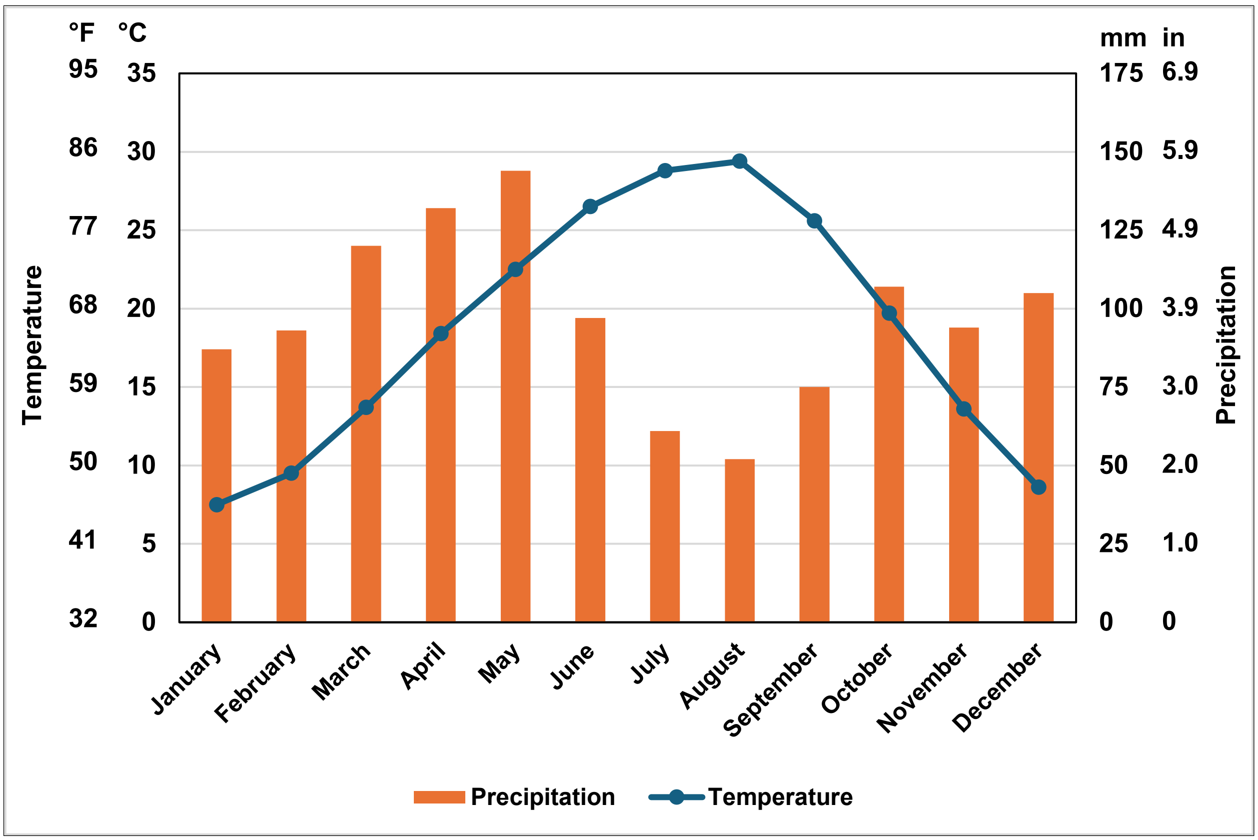


Figure 5.1: Franklin Project Area with Cities/Towns, Access Routes, Highways, and Railways

5.2. Climate

The Franklin Project area climate is generally humid with an average temperature and precipitation of 25ºC (77ºF) and 113.7 cm, respectively (44.8 inches), respectively, as shown in Figure 5.2. Annual rainfall is distributed throughout the year. The wettest month of the year is May with an average rainfall of 146 mm (5.7 inches). The warmest month of the year is August with an average temperature of 29.4ºC (84.9ºF), while the coldest month of the year is January with an average temperature of 7.5ºC (45.6ºF).

The mild and humid climate as well as the moderate seasonal variations of the Franklin Project area is not expected to impede year-round exploration activities and allow consistent access and operational flexibility throughout the year.



Source: http://en.climate-data.org/north-america/united-states-of-america/texas/sulphur-springs-16639/

Figure 5.2: Average Temperature and Precipitation in Sulphur Springs, Texas

5.3. Local Resources and Infrastructure

Oil and gas extraction-related infrastructure is present across the Franklin Project area, particularly to the north and south. This infrastructure consists of wellheads, collection facilities for various fluids, tank batteries, gas processing plants and associated pipelines, and cleared easements. Much of the infrastructure is sporadically in use by smaller operators, and the operation thereof can be cyclical depending on hydrocarbon market conditions.

5.4. Topography, Elevation, and Vegetation

Hopkins, Franklin, and Titus counties have a total area of 3,931 km^2 (1,513 square miles), of which 3,781 km^2 is land-based (1,457 square miles) and 150 km^2 is water-based (56 square miles).

The terrain consists of rolling hills, with prairies and mixed hardwood and pine forests. Cattle ranching, dairy, and chicken operations are major forms of agriculture (www.franklin.agrilife.org). The region is sparsely populated by rural private residences. The West Gulf Coastal Plain covers the southeastern portions of the state along the border of Louisiana. This lowland area of Texas is characterized by pine forests and farmlands. Natural resources include natural gas, petroleum deposits, and lignite resources. The lowest point in the state is at sea level found along the Gulf Coast, 400 km (250 miles) to the south. The maximum elevation on the project site is 170 meters (560 feet) above sea level, and the minimum elevation is 113 meters (372 feet) above sea level.

6.0. HISTORY

6.1. Exploration and Development History

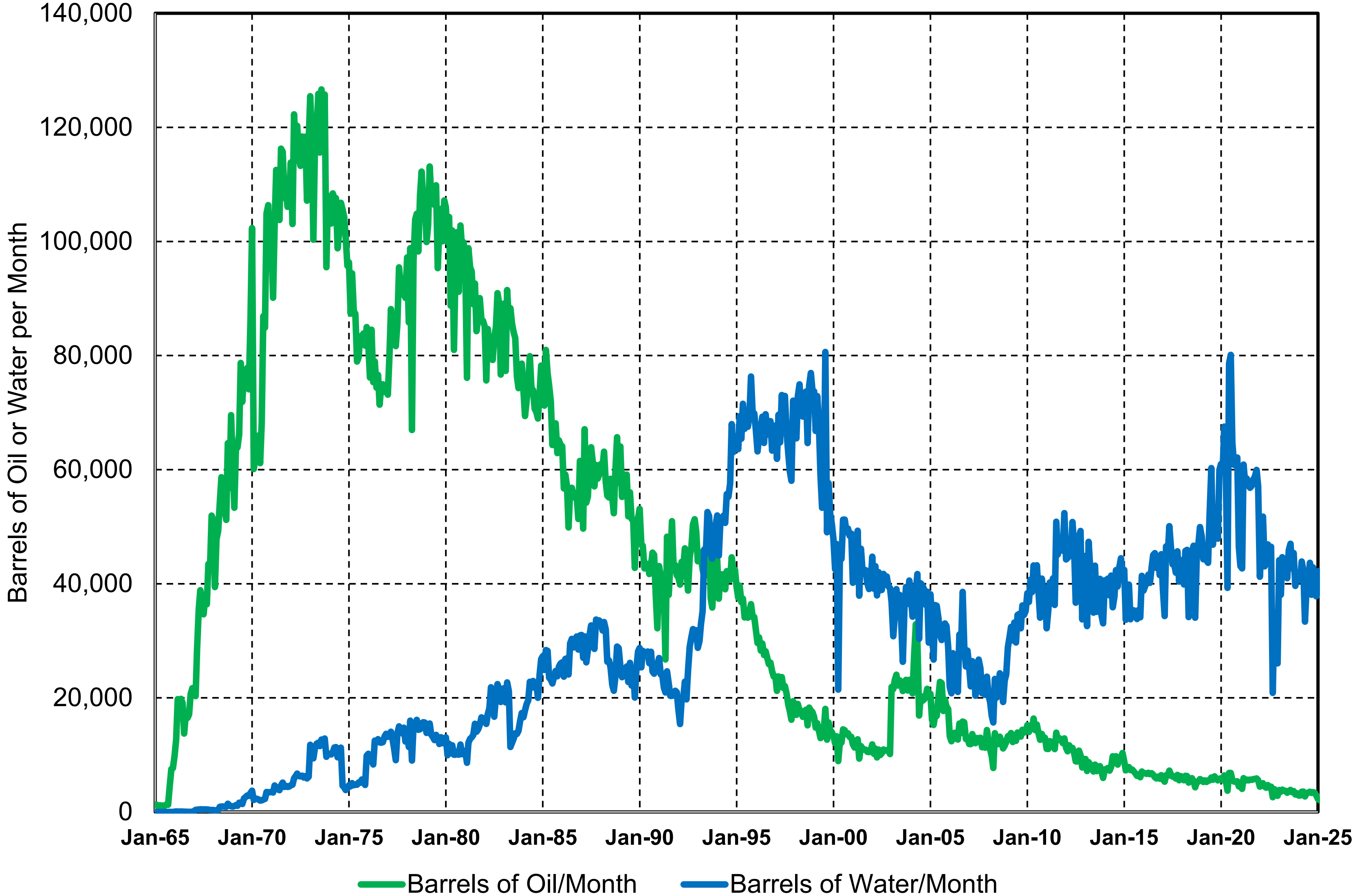
6.1.1. Introduction to Brine Production

Brine production as anything other than a by-product of oil and gas production was formerly recognized in Texas only in the context of Class III Brine Mining Injection Wells under 16 Tex. Admin. Code § 3.81, which regulates injection of fluid to dissolve subsurface salt formations and then extract the salts from the resulting artificial brines. The addition of new 16 Tex. Admin. Code § 3.82 governs wells that extract brine from naturally occurring aquifers and the reinjection of fluids, post-extraction of brine-sourced, non-hydrocarbon minerals. Currently, no industrial brine production exists in Texas under rule §3.82. Language is centered around lithium extraction but includes all other minerals.

However, in the neighboring state of Arkansas, brine production from the Smackover Formation in southern Arkansas has a long history of recovering bromide as its chief product, a direct analog to the recovery of lithium and potassium from brine. Bromine, one of two elements that are liquid at room temperature, is found principally as a dissolved ionic species (bromide) in seawater, evaporitic (salt) lakes, and underground brine.

Some historical production of bromide occurred from ocean water, but since 1969, all U.S. bromide has been produced from subsurface brine in southern Arkansas. The first commercial recovery of bromide from brine in Arkansas occurred in 1957 in Union County. Since then, bromide production in Union County by LANXESS Corporation (Lanxess) and in Columbia County by Albemarle Corporation has been continuous via a process in which the bromide-bearing brine is removed from the Smackover aquifer using production wells, the bromide is recovered through an exchange reaction with chlorine in surface facilities, and the bromide-free brine (effluent brine) is returned into the production formation via Class V injection wells that are regulated by the Arkansas Oil and Gas Commission.

In the Franklin Project area, brine is a byproduct of oil and gas production. While there is no commercial brine production in east Texas, Figure 6.1 depicts the history of oil and water (brine) production from the Smackover Formation in the three-county area where the Franklin Project is located. Over the last 30 years, brine production has become greater than oil production as these legacy oil and gas fields slowly water-out. Recently, brine production has been about 40,000 barrels per month (S&P Global, 2025).



Source: S&P Global, 2025

Figure 6.1: Recent East Texas Oil and Water Production

6.1.2. Regional Assessment of the Smackover Formation Brine's Lithium Potential

The discussion presented in this section includes data extending beyond the boundary of the Franklin Project. Regional properties have verified lithium-brine mineralization within the Smackover Formation. Accordingly, this discussion of lithium-brine information regionally is not necessarily indicative of the mineralization on the Franklin Project. Brine aquifers have different characteristics than traditional mineral deposits, such as precious and base metal deposits. Any given aquifer can have enormous sub-surface dimensions; therefore, the scale of the Smackover Formation brine aquifer (i.e., the nature and extent of the lithium-brine potential of the Smackover Formation), is important background information.

The USGS National Produced Waters Geochemical Database v3.0, contains geochemical information collected from wells across the United States. The database includes 115,718 produced water samples that were collected between 1905 and 2023 (Blondes et al., 2023). In addition to the major element data, the database contains trace elements, isotope and time-series data that provide spatial coverage from specific formations and/or aquifers. Quality control of the database must be performed by culling the data based on geochemical criteria (Blondes et al., 2023). For this sub-section, and because the adjacent property information is disclaimed as being not necessarily indicative of the mineralization on the Franklin Project area, QP Williams has not filtered any data and has included lithium-brine results directly from the USGS National Produced Waters Geochemical Database.

Figure 6.2 shows that lithium-enriched brine, specific to the database-searched: "Smackover," "Upper Smackover," or "Reynolds Member of the Smackover" (another term for the Upper Smackover), occurs throughout eastern Texas and within Hopkins, Franklin, and Titus Counties. The highest recorded lithium-brine in this USGS-compiled database occurs within Cass County at a concentration of 473 mg/L. The map also shows the bromide and potassium concentrations in the area.

Moldovanyi and Walter (1992), whose brine geochemical data are included in the USGS National Produced Waters Geochemical Database, conducted a regional brine chemical study where Smackover Formation brine samples were collected and analysed from 87 wells, which were producing from 45 Smackover Formation oil and natural gas reservoirs in southwest Arkansas, east Texas, and northern Louisiana. The study allowed these authors to hypothesize/conclude the following points with respect to the regional distribution of the elevated Smackover Formation lithium-brine:

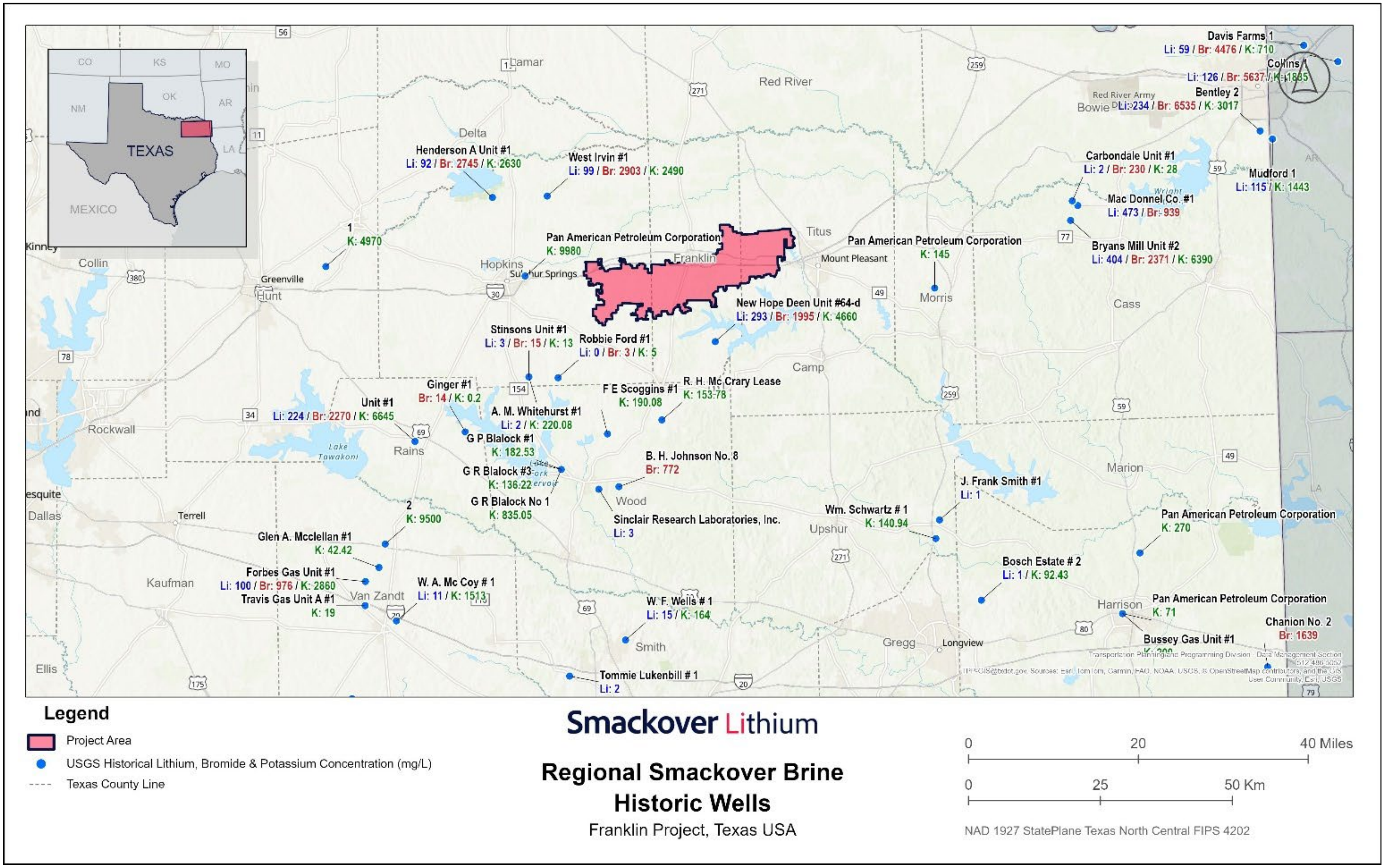
- Boron (B) and alkali metal lithium (Li), potassium (K), and rubidium (Rb) concentrations in the Smackover Formation water exhibit coherent geochemical relations across the east Texas shelf.
- In general, the concentration of these elements is greater and more heterogeneous in hydrogen sulfide (H_2S)-rich brine than in H_2S-free brine.
- Regional concentration gradients in H_2S, B, Li, K, and Rb suggest fluids enriched in these elements may have migrated into the Smackover Formation reservoirs from large-scale circulation of deep-seated waters along fault segments in the region.

With respect to the Franklin Project, the Collins (1974) dataset includes six brine analyses within the same counties as the Project area, as shown in Figure 6.2. Based on these data, lithium-brine values range from <1 mg/L (Robbie Ford #1) to 293 mg/L (New Hope Deen Unit #64), with an average of 97 mg/L lithium.

Bromide concentrations from five wells in the three Project counties ranged from 3 mg/L to 2,903 mg/L with an average of 1,532 mg/L bromide, and potassium concentrations in the three Franklin Project counties varied from 5 mg/L to 9,980 mg/L with an average of 3,296 mg/L potassium.

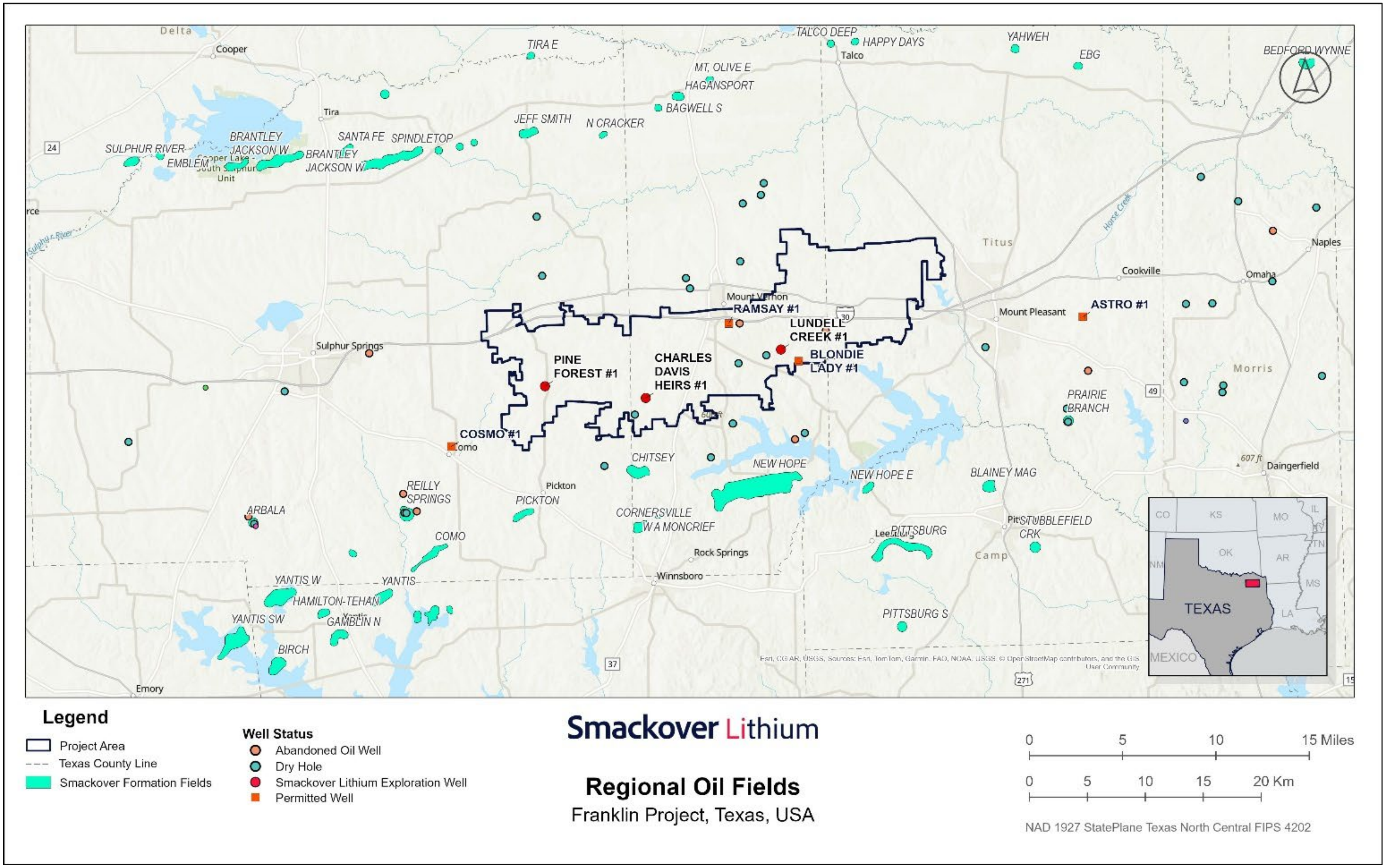
6.1.3. Franklin Project Historical Infrastructure Summary

Several Smackover Formation former or operating oil fields are located adjacent to the Franklin Project including New Hope, Chitsey, W.A. Moncrief, and Riley Springs fields to the south and Mt. Olive, Hagansport, Bagwell, Spindletop, and Brantley-Jackson fields to the north (RRC, 2016). Figure 6.3 shows the locations of these oil fields relative to the Franklin Project, along with wells drilled for oil and gas in the area, and the Smackover Lithium exploration program wells. Currently, only the Brantley Jackson and New Hope fields are operating; the other fields are inactive.



Source: Collins, 1974

Figure 6.2: Historic Smackover Formation Lithium, Bromide, and Potassium Brine Values Derived within, and nearby, the Franklin Project



Source: Geomap Company, Executive Reference Map 320 – Ark-La-Tex Region, 30th Edition, 2020

Figure 6.3: Regional Oil Fields

6.2. Prior Ownership and Ownership Changes

No prior production of brine as a feedstock for mineral extraction has occurred on the Franklin Project area.

6.3. Historical Mineral Resource and Mineral Reserve Estimate

This is the first Mineral Resource estimate for the Franklin Project. The QP is not aware of any brine production for mineral extraction surrounding the Franklin Project area.

7.0. GEOLOGICAL SETTING AND MINERALIZATION

7.1. Regional Geology

7.1.1. Gulf Coast Tectono-Depositional Framework

Deposition of the Late Jurassic Smackover Formation is directly linked to the evolution of the Gulf of Mexico. The central Gulf Coast region is the site of Triassic-Jurassic rifting, which is associated with the opening of the Gulf of Mexico and a divergent margin basin characterized by extensional rift tectonics and wrench faulting (Pilger 1981; Van Siclen 1984; Salvador 1987; Winker and Buffler 1988; Buffler 1991). The history of the interior salt basins in the central and eastern Gulf of Mexico includes a phase of crustal extension and thinning, a phase of rifting and sea-floor spreading and a phase of thermal subsidence (Nunn 1984; Mancini et al. 2008).

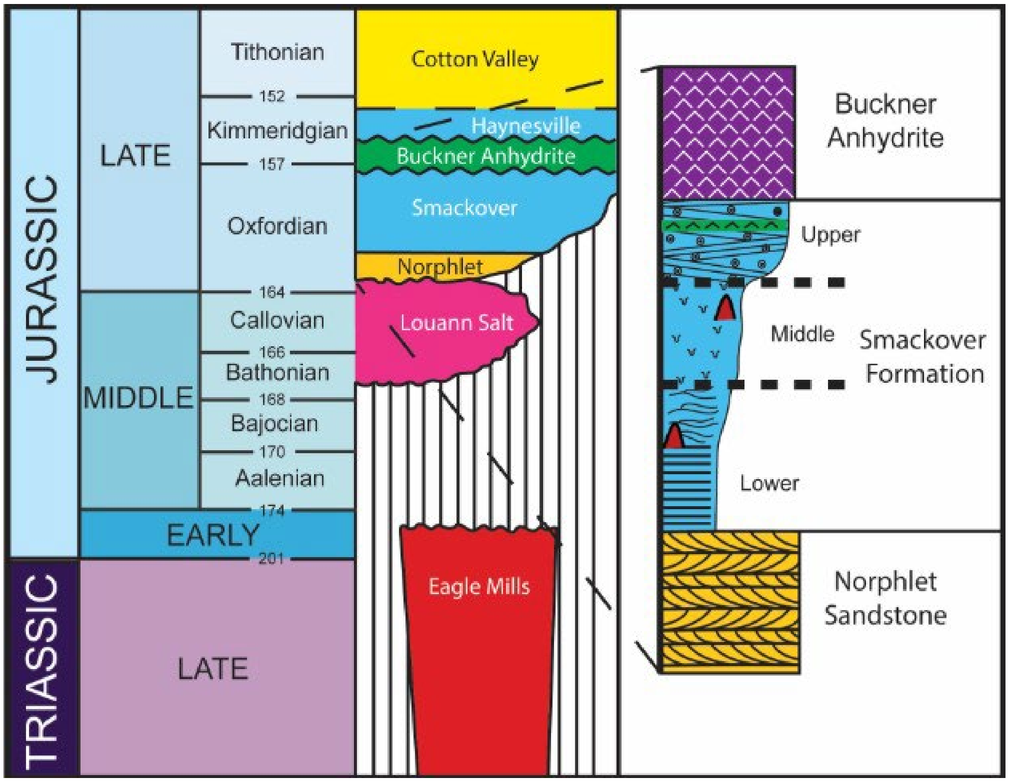
A proposed model for the evolution of the Gulf of Mexico and related basin and arch formation in Mississippi, North Louisiana, Arkansas, and East Texas includes the following:

- Late Triassic-Early Jurassic rifting developed pronounced half-grabens bounded by listric normal faults. This phase was accompanied by widespread doming, rifting, and filling of the rift basin(s) with volcanic and non-marine siliciclastic sedimentary (red beds) rocks as North America separated from Africa-South America (Buffler et al. 1981; Salvador 1991a; Sawyer et al. 1991; Marton and Buffler 2016).
- Middle Jurassic rifting, crustal attenuation and the formation of transitional crust is characterized by the evolution of a pattern of alternating basement highs and lows as the Gulf area broke up into a series of separate arches/uplifts and subsiding basins, some of the latter becoming isolated and filling with thick sequences of evaporite.
- Late Jurassic sea-floor spreading and oceanic crust formation in the deep central Gulf of Mexico is characterized by a regional marine transgression related to crustal cooling and subsidence (Sawyer et al. 1991). Subsidence continued into the Early Cretaceous with a ramping up of a carbonate platform and deposition of shallow to deep-water sedimentary rocks along the margins of the basins.

Evolution of the Gulf Coast region ended with a prominent period of igneous activity and global sea-level fall during the Late Cretaceous (mid-Cenomanian), that produced a major lowering of sea level in the region and resulted in the exposure of the shallow Cretaceous platform margin that rimmed the Gulf (Salvador, 1991b). This event is defined by a Gulf-wide unconformity that is most pronounced in the northern Gulf of Mexico area.

7.1.2. Triassic Jurassic Stratigraphy

During rifting phases, evolving grabens were filled with the earliest Late Triassic-Early Jurassic red-bed sedimentary sequences of the Eagle Mills Formation, as shown in Figure 7.1. This unit comprises a variety of terrestrial sedimentary rocks, including red, reddish-brown, purplish and greenish-grey coloured shale, mudstone, siltstone, and lesser amounts of sandstone and conglomerate. The Late Triassic-Early Jurassic age is based on the study of remnant plants and radiometric dating of intrusive material (Scott et al. 1961; Baldwin and Adams 1971).



Source: Schemper, Loucks, and Fu, 2022

Figure 7.1: Stratigraphic Column of the Late Triassic to Late Jurassic Formations of the Northern Gulf Coast

From central-north Louisiana to east Texas, rifting and continental crustal attenuation resulted in a period of non-deposition, as evidenced by a 40-million-year hiatus of the depositional record. Late Middle Jurassic (Bathonian–Callovian) depositional units include evaporite, red clastic and basal conglomerate of the Werner Anhydrite (Hazzard et al., 1947). The Werner-Louann sequence unconformably overlies the Eagle Mills Formation, or older 'basement' rocks, and forms the basal unit(s) for the overlying Late Jurassic Louark Group, which includes the Norphlet, Smackover, and Haynesville-Buckner formations (Figure 7.1). More notably, continued basin-wide restriction resulted in deposition of a thick succession of the Louann Salt during the Callovian, which is over 3,050 m (10,007 ft) thick in some places (Salvador 1990; Zimmerman, 1992). The Louann Salt has been estimated to cover as much as 466,000 km^2 (180,000 square mile) in the Gulf of Mexico region (Hazzard et al., 1947).

The Mexia-Talco fault system is approximately parallel to the regional strike of the Smackover Formation deposition and was active during the Jurassic; likely from salt tectonics in the underlying Louann Formation (Bishop 1973; Troell and Robinson 1987). The present up-dip limit of the Louann Salt is generally marked by the Mexia-Talco fault system, a feature believed to have been produced during the Late Jurassic by downdip gravity sliding of the Louann Salt based upon the work in Arkansas and Louisiana (Figure 7.2, Troell and Robinson, 1987).

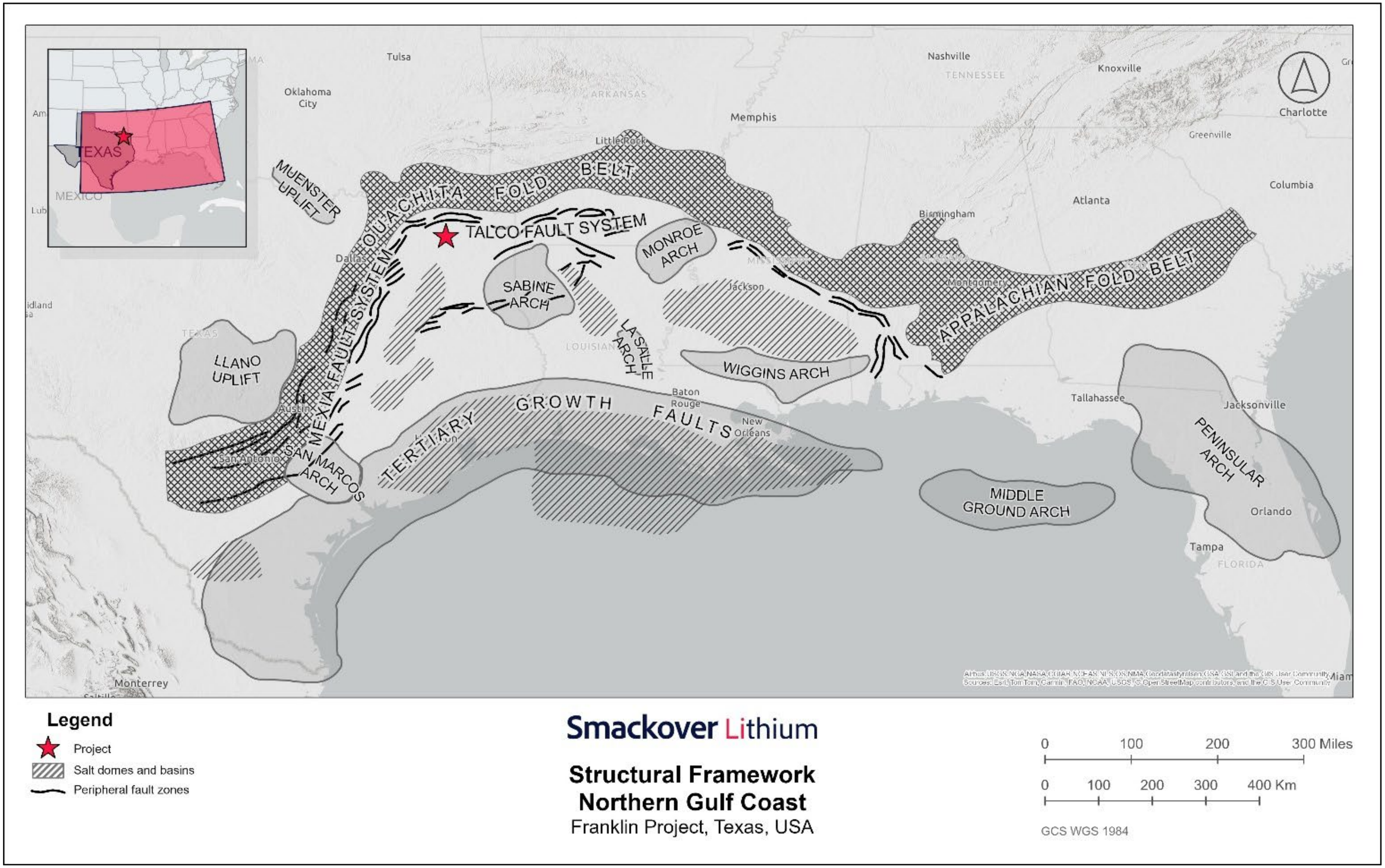
The Late Jurassic Norphlet Formation unconformably overlies the Louann Salt, and older units, near the margins of the basin (Hazzard et al., 1947; Bishop ,1967). The Norphlet Formation was deposited during a regional sea-level low, attains a maximum thickness of approximately 45 m (148 ft), and is comprised of alluvial-fan sandstone and conglomerate, channel and interdune red-bed and aeolian sandstone.

Marine deposition resumed during the late Oxfordian, as the Late Jurassic seas transgressed, initiating the deposition of the Smackover Formation, which conformably overlies the Norphlet Formation.

The Smackover Formation carbonate rocks are succeeded by mixed evaporite, siliciclastic, and dolomite of the Buckner Formation.

The Buckner Formation consists of evaporitic deposits and associated red-beds reflecting a depositional environment that is less marine, or shallower-water marine, than those of the underlying Smackover Formation (Salvador, 1987). The Buckner Formation is made up of intercalated 2-6 m (7-20 ft) thick salt/anhydrite and marine limestone and extends from the Florida Panhandle to South Texas (Mann, 1988).

Overlying the Buckner Formation is the Haynesville Formation.



Source: Troell and Robinson, 1987

Figure 7.2: Structural Framework, Northern Gulf Coast

7.2. Local Geology

7.2.1. The Smackover Formation

The Late Jurassic evaporite and sedimentary strata that form the integral geological units in this Technical Report, were deposited across much of the Gulf Coast basin as part of a seaward-dipping wedge of sediment that accumulated in differentially subsiding basins on the passive margin of the North American continent. These units include formations of the Louark Group: 1) the major lithium and bromide brine and hydrocarbon reservoir/aquifer known as the Smackover Formation; and 2), the Smackover Formation's overlying and underlying aquitards, the Buckner Anhydrite Member of the Haynesville Formation and the Louann Salts.

The Smackover Formation is up to 365 m (1,198 ft) thick with an upper ooidal/oncolitic packstone and grainstone shoaling upward cycle facies that is nearly 100 m (328 ft) thick (Dickinson 1968; Moore and Druckman, 1981). The Smackover Formation has been interpreted as a low-gradient slope (<1°) homoclinal ramp succession, due to its series of strike-oriented, relatively narrow depositional lithofacies belts across Texas, Arkansas, Louisiana, and Mississippi (Ahr, 1973; Bishop, 1968; Handford and Baria, 2007). Figure 7.3 presents a regional map of the Smackover lithofacies belts in the U.S. Gulf Coast Basin. These belts include evaporite and redbed sequences in the north that change basin-ward into ooidal (inner-ramp beaches and shoals) peloidal-facies belt (mid-outer ramp) and laminated mudstone (basin).

The Smackover Formation is Upper Jurassic in age and was named after the Smackover Field, Union County, Arkansas, which first produced oil in 1922 (Schneider, 1924). The Smackover Formation extends from the panhandle of Florida through Alabama, Mississippi, Louisiana, and Texas to Mexico.

Stratigraphically, the Smackover Formation is bounded on the top by the Buckner Formation and on the bottom by the Norphlet Formation (Figure 7.1). The Smackover Formation is overlain by the Buckner Formation, which in Texas is dominated by red shale in the upper part and anhydrite in the lower part above the Smackover carbonates, and, because of its low permeability, acts as a geologic seal which traps oil and gas, and inhibits vertical brine movement. The Smackover Formation is underlain by the clastic section of the Norphlet Formation. The Norphlet Formation is comprised of red and grey clays with varying amounts of intercalated sands and occasional gravels.

As shown in Figure 7.1, the Smackover Formation in eastern Texas has been subdivided into three intervals, the Upper Smackover, the Middle Smackover, and the Lower Smackover. The Upper Smackover is heterogeneous in both magnitude and type of porosity development. Dolomite is the main rock type. There are three distinctive rock types in the Upper Smackover with variations of each:

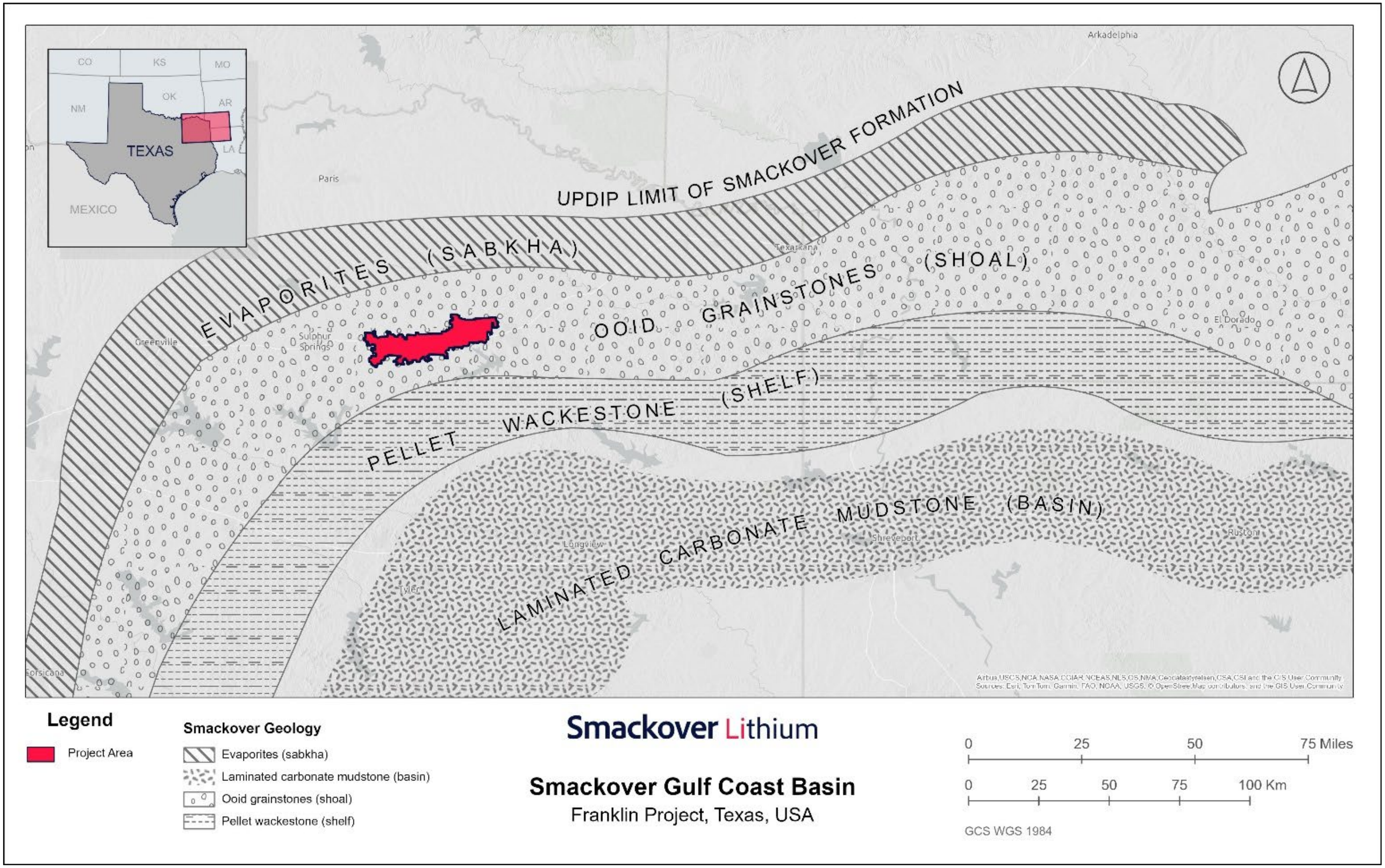
1. Oomoldic dolomite: These dolomites are the result of complete dolomitization and leaching of oolite lime grainstones originally deposited in a high energy bar carbonate environment. This rock type generally constitutes the best quality reservoir rock in the east Texas Smackover trend.

2. Sucrosic dolomite: This rock type is the result of what was probably deposited as a lime mudstone.

3. Oolitic limestone: This type of limestone is the result of partial leaching of oolitic grainstones followed by the substantial calcite cementation which filled most of the intergranular pore space.

The Middle Smackover is a burrowed pellet packstone. Dolomitization is prevalent except in low permeability micritic intervals where limestone is preserved. The Lower Smackover (which does not contribute to the resource estimates in this report but could be a future target for exploration) is largely composed of dark, dense limestone with argillaceous bands (Imlay, 1940). As will be discussed later, the Lower Smackover has been found to contain porous and permeable intervals. The entire Smackover Formation has been dolomitized to varying degrees.

As described in more detail in Section 14.0, the QP has subdivided the Upper and Middle Smackover Intervals into eight layers based on geologic characteristics and lateral correlations. The upper five layers comprise the Upper Smackover while the lower three layers comprise the Middle Smackover. To quantify the amount of porous and permeable Smackover Formation present within the Franklin Project area, the available core data and log data were evaluated to determine the reservoir's structure, porosity, gross layer thickness, net pay thickness (that portion of the gross layer thickness expected to be productive because it exceeded a 6.0% minimum porosity value) and net pay thickness to gross layer thickness ratio (equal to the fraction of the layer at a given location that was estimated to be productive) for each layer at each well location. Some wells did not drill deep enough to penetrate all layers, so only those penetrated layers with data were used in the mapping effort at those locations.



Source: Budd and Loucks, 1981

Figure 7.3: Facies Map of the Smackover Formation, Northern Gulf Coast Basin

7.3. Property Geology

The focus of this resource assessment and Technical Report is the Upper and Middle Smackover Formation underlying the Franklin Project. The Smackover brine reservoir is continuous across and beyond the Franklin Project area. The lithium, potassium, and bromide concentrations exhibited in the Smackover Formation brine vary throughout the Franklin Project area, as described in Section 9.0. The top of the Smackover in the Franklin Project area generally dips from north-northeast to south-southwest (Figure 7.4) and varies in depth from approximately 2,865 metres (9,400 feet) subsea to approximately 3,658 metres (12,000 feet) subsea. As shown on Figure 7.2, there is a major east-west fault system north of the Franklin Project (the Talco Fault) and four more northeast-southwest faults along the southern edge of the Franklin Project in the Louann Salt tectonic zone (see Figure 7.4).

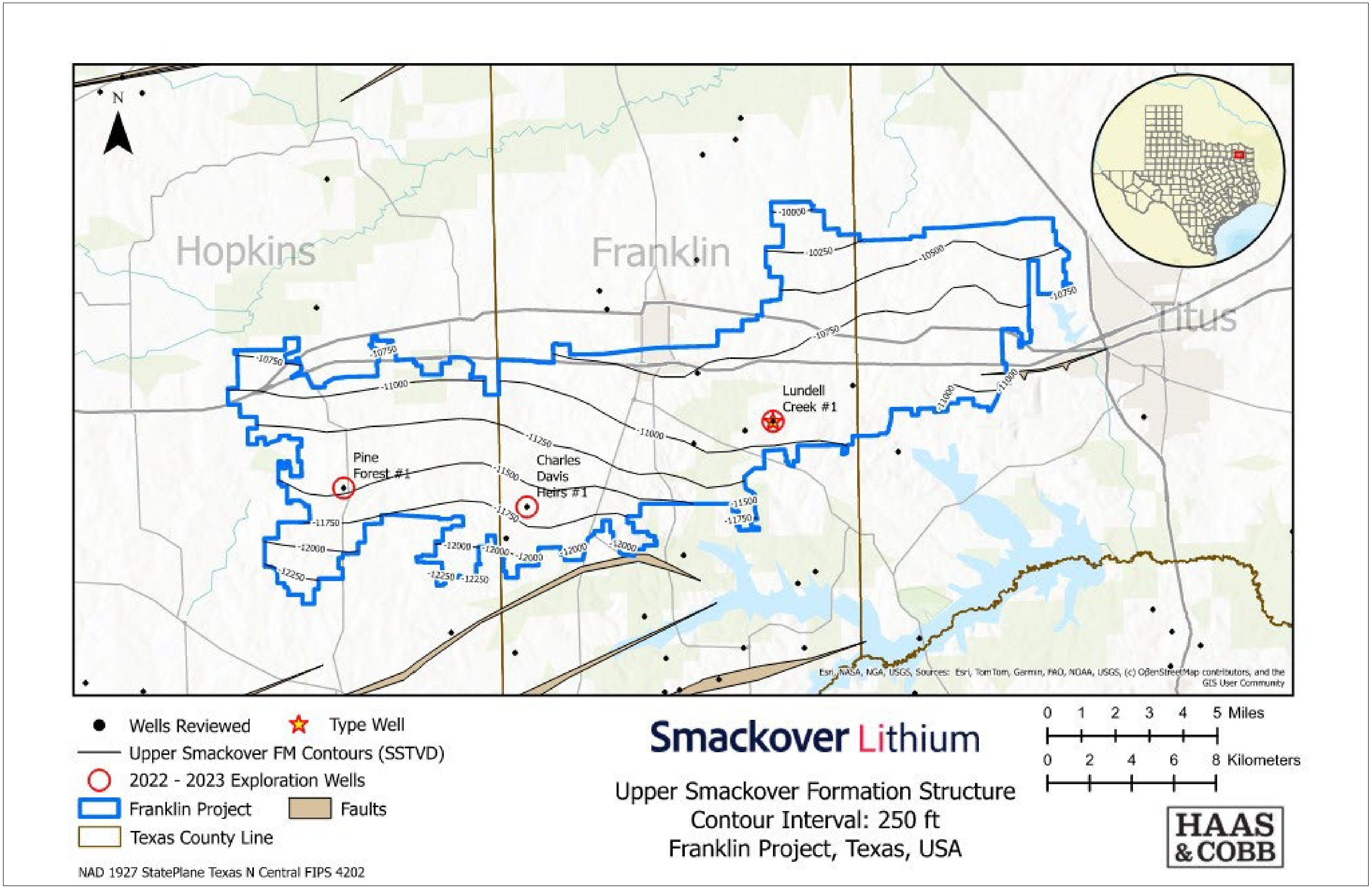


Figure 7.4: Smackover Formation Structure Map

The Upper Smackover Formation is overlain by the Buckner Formation, which in Texas is dominated by red shale in the upper part and anhydrite in the lower part above the Smackover carbonates, and, due to its low permeability, acts as a geologic seal which traps oil and gas and inhibits vertical brine movement. The dense, low-permeability carbonate of the Lower Smackover is underlain by the clastic section of the Norphlet Formation. The Norphlet Formation is comprised of red and grey clays with varying amounts of intercalated sands and occasional gravels. The relationship between the Smackover Formation, the Buckner Formation, and the Norphlet Formation is shown in Figure 7.5 as a cross-section through the Standard Lithium exploration wells.

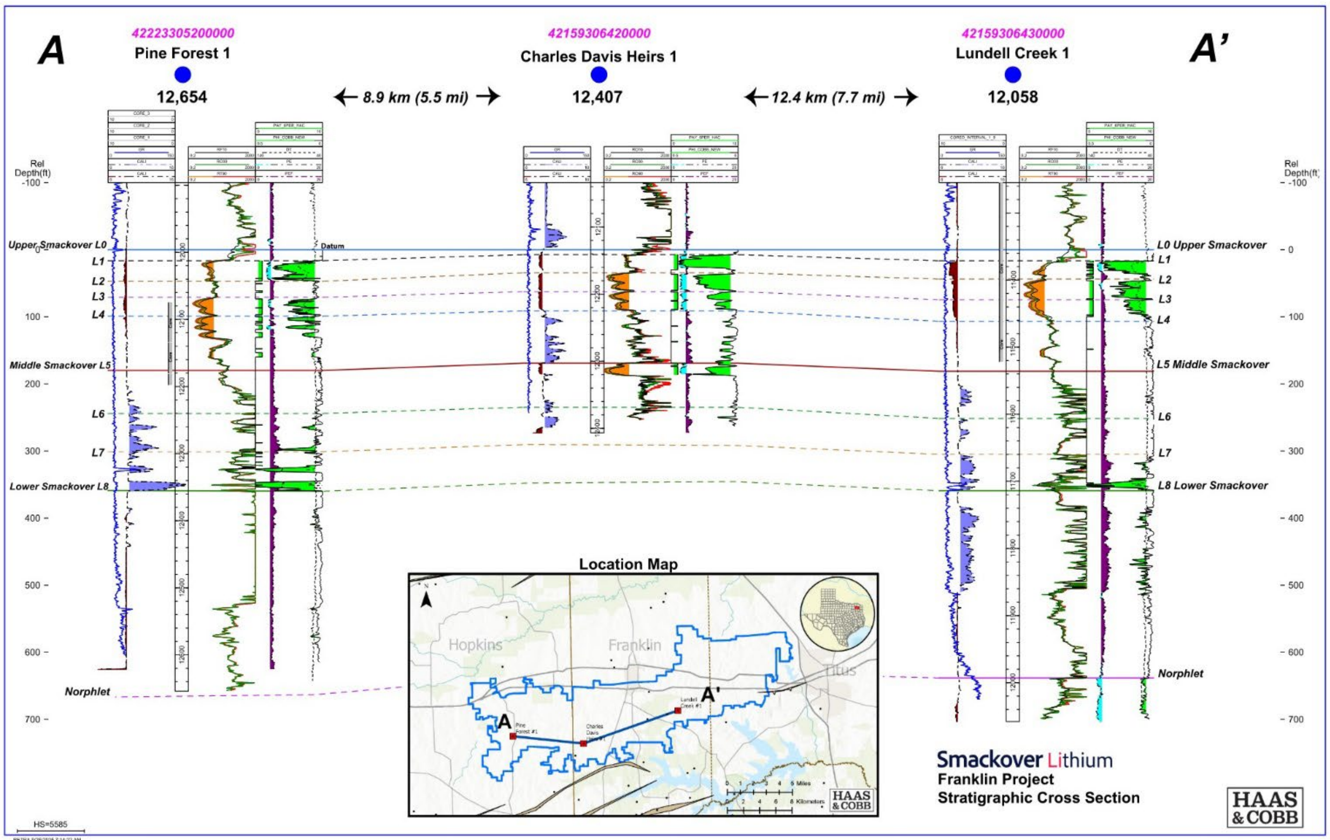


Figure 7.5: Exploration Program Wells Cross Section

8.0. DEPOSIT TYPES

Lithium is extracted today from either mineral deposits (often from pegmatite deposits containing the lithium-rich mineral spodumene) or brine deposits, while bromide is usually extracted from brine, and potassium from either brine or evaporite deposits. Brine deposits can either be unconfined in salars, where chemical constituents have been concentrated by the surface evaporation of water (found in arid regions of countries such as in Bolivia, Chile, Argentina, and China) or confined in underground brine-bearing formations. The Franklin Project deposit is a confined brine aquifer deposit in the form of a lithium-potassium-bromide bearing brine contained within the porosity of the Smackover Formation within the Franklin Project boundaries. The Smackover Formation in east Texas has proven to be a source of oil and gas, with lithium, potassium, and bromide now attractive development targets. As noted in Section 6.1, Smackover Formation brine production for the purpose of bromide recovery is extensive in Arkansas' Union and Columbia counties to the east of the Franklin Project.

The volume of in-place lithium, bromide, or potassium is proportional to the product of the brine-saturated pore volume in the Franklin Project and the chosen mineral's concentration, each of which have been estimated with reasonable accuracy based on the drilling, logging, coring, and sampling data obtained throughout the Franklin Project. The geological model for the Smackover Formation is described in detail in Sections 10.0 and 14.0, and the lithium, bromide, and potassium concentration distributions are described in Section 9.0. The geologic characteristics of the reservoir and its lithium, bromide, and potassium content estimates are based on the whole of the available geologic data set and the results of brine sampling in the Upper and Middle Smackover. This comprehensive data set provides a reasonable basis upon which to estimate the resource.

9.0. EXPLORATION

9.1. Subsurface Data Review

From late 2022 to mid 2023, Standard Lithium: 1) conducted a review of subsurface data as supplied by third-party well and 2-D surface seismic information suppliers; 2) analysed porosity and permeability from available core; and 3) completed three exploration wells that collected core, well log, and brine data. These programs are discussed in the sections that follow.

9.2. Stratigraphic Surface Interpretation and Definition of the Smackover Formation

During the preparation of this Technical Report, subsurface well log information for existing wells was obtained from TGS and IHS, two companies that allows users to access raster and digital well logs gathered by various well logging companies for oil and gas operators in the area, using industry-standard logging tools and procedures. These data, combined with the well log and core data gathered as part of the three-well Standard Lithium exploration program, were used to define the Upper Smackover Formation type section and to formulate the upper and lower stratigraphic surfaces of the Upper Smackover and Middle Smackover Formations for the geologic model used in this Technical Report. The newly acquired core data was also analyzed for correlation to the well log data, and for indication of reservoir quality. This information is presented in Subsections 14.1, 14.2, and 14.3, and summarized here as the work was part of Standard Lithium's 2022-2023 exploration at the Franklin Project.

In addition to the information from the well logs, 400 km (250 miles) of 2D seismic data was interpreted by Hill Geophysical Consulting to construct the top of the Upper Smackover Formation structure map (Figure 7.4). This work was completed in collaboration with the author who has reviewed the work and accepts responsibility for the subsurface geological information. Industry standard methods for interpreting the data included loading well locations, rasters, and digital logs into a Petra™ workstation and picking the key geologic formation tops. Seismic reflectors, where they existed, were interpreted for the top of the Smackover Formation. The time-depth relationship was established using the Kingdom™ software program's depth conversion. Review of the time-depth conversion showed no issues, and the resulting structure maps fit all well data.

9.3. Brine Sampling Program

In 2023, Standard Lithium gathered a total of 14 brine samples in the Franklin Project Area from the following three new wells:

- Charles Davis Heirs 1;
- Lundell Creek 1; and
- Pine Forest 1.

Two additional brine samples were collected by the QP at the Charles Davis Heirs 1 well in February 2023 as confirmation samples and submitted independently to the laboratory. All 16 brine samples were analysed by Western Environmental Testing Laboratory (WETLAB), 475 E Greg Street, Suite 119, Sparks, Nevada 89431, an independent laboratory certified by both Florida and Nevada for the analysis of lithium and potassium concentrations in brine using the EPA 200.7 analytical methodology and bromide using the EPA 300.0 analytical methodology.

The samples were gathered in accordance with the procedures outlined in Section 11.0, and the results were confirmed through analysis of duplicate samples gathered by Standard Lithium (Section 11.3) and the independent samples gathered by the QP (Section 12.1). The resulting lithium, bromide, and potassium concentration values provide a reasonable and consistent description of the concentration of these constituents within the Smackover Formation within the Franklin Project.

The resulting average lithium, bromide, and potassium concentration values were then combined with the drilling data described in Section 10.0 to prepare the layered geologic model and resulting Resource estimates described in Section 14.0.

Table 9.1 summarizes the lithium, bromide, and potassium concentration data used in this Technical Report. Each well's test values were averaged by tested interval to obtain each interval's average concentration value for that well. For the Charles Davis Heirs 1 well, which had multiple tested intervals, the well's average lithium, bromide, and potassium concentration values were calculated based on each test interval's fraction of the total estimated Upper Smackover porosity-thickness (using a 6.0% porosity cutoff) for the well, resulting in the Porosity Feet-Weighted Upper Smackover concentration values. The three wells' Upper Smackover concentration values were then averaged and used in the Upper Smackover resource assessment, as described in Section 14.0. In the same way, the Middle Smackover average concentration values from the Charles Davis Heirs 1 well were used in the Middle Smackover resource assessment. Figure 9.1 is a map showing the well locations and their concentration values.

These concentration data have been used as a basis for the resource assessment (Section 14.0). No brine constituent historical data were available on the Franklin Project area.

Table 9.1: Franklin Project Lithium, Bromide, and Potassium Concentration Data

Well Name	Smackover Layer	Test Zone	Perforation Depths (ft)	Porosity-Thickness, Pore-Ft	WET Lab Sample Number	Bromide mg/L	Lithium mg/L	Potassium mg/L
Pine Forest 1	Upper	2 (Primary)	12,069-12,095		23100112-001	4,800	739	14,900
Pine Forest 1	Upper	2 (Duplicate)	12,069-12,095		23100112-003	4,800	806	16,800
Pine Forest 1	**Upper**	**2 (Arithmetic Average)**	**12,069-12,095**			**4,800**	**773**	**15,850**
Charles Davis Heirs 1	Upper	1 (Feb. 2023) Primary	12,142-12,161	6.91	23030146-001	4,200	634	13,200
Charles Davis Heirs 1	Upper	1 (Feb. 2023) Duplicate	12,142-12,161	6.91	23030146-003	4,400	594	12,500
Charles Davis Heirs 1	Upper	1 Primary (No acid)	12,142-12,161	6.91	23090373-001	4,800	605	12,400
Charles Davis Heirs 1	Upper	1 Duplicate (No acid)	12,142-12,161	6.91	23090373-002	4,700	608	12,300
Charles Davis Heirs 1	**Upper**	**1 Arithmetic Average**	**12,142-12,161**	**6.91**		**4,525**	**610**	**12,600**
Charles Davis Heirs 1	Upper	2&3 (Primary)	12,171-12,222	9.99	23020600-004	4,200	572	11,100
Charles Davis Heirs 1	Upper	2&3 (Duplicate)	12,171-12,222	9.99	23020600-005	4,300	583	11,300
Charles Davis Heirs 1	Upper	2&3 (Haas & Cobb)	12,171-12,222	9.99	23030200-005	4,500	630	12,700
Charles Davis Heirs 1	**Upper**	**2&3 (arithmetic average)**	**12,171-12,222**	**9.99**		**4,333**	**595**	**11,700**
Charles Davis Heirs 1	**Upper**	**1-3 (Pore-ft Wtd. Avg.)**	**12,142-12,319**	**16.90**		**4,412**	**601**	**12,068**
Lundell Creek 1	Upper	2 (Primary)	11,400-11,427		23090483-001	3,700	613	12,300
Lundell Creek 1	Upper	2 (Duplicate)	11,400-11,427		23090483-002	3,800	663	12,000
Lundell Creek 1	**Upper**	**2 (Arithmetic average)**	**11,400-11,427**			**3,750**	**638**	**12,150**
Average 3 Wells	**Upper**	**Arithmetic Average**				**4,321**	**671**	**13,356**
Charles Davis Heirs 1	Middle	4 (Primary)	12,303-12,319	2.92	23020600-001	4,400	621	12,100
Charles Davis Heirs 1	Middle	4 (secondary)	12,303-12,319	2.92	23020600-002	4,600	612	11,900
Charles Davis Heirs 1	Middle	4 (Haas & Cobb)	12,303-12,319	2.92	23030200-006	4,800	644	13,200
Charles Davis Heirs 1	**Middle**	**4 (Arithmetic average)**	**12,303-12,319**	**2.92**		**4,600**	**626**	**12,400**

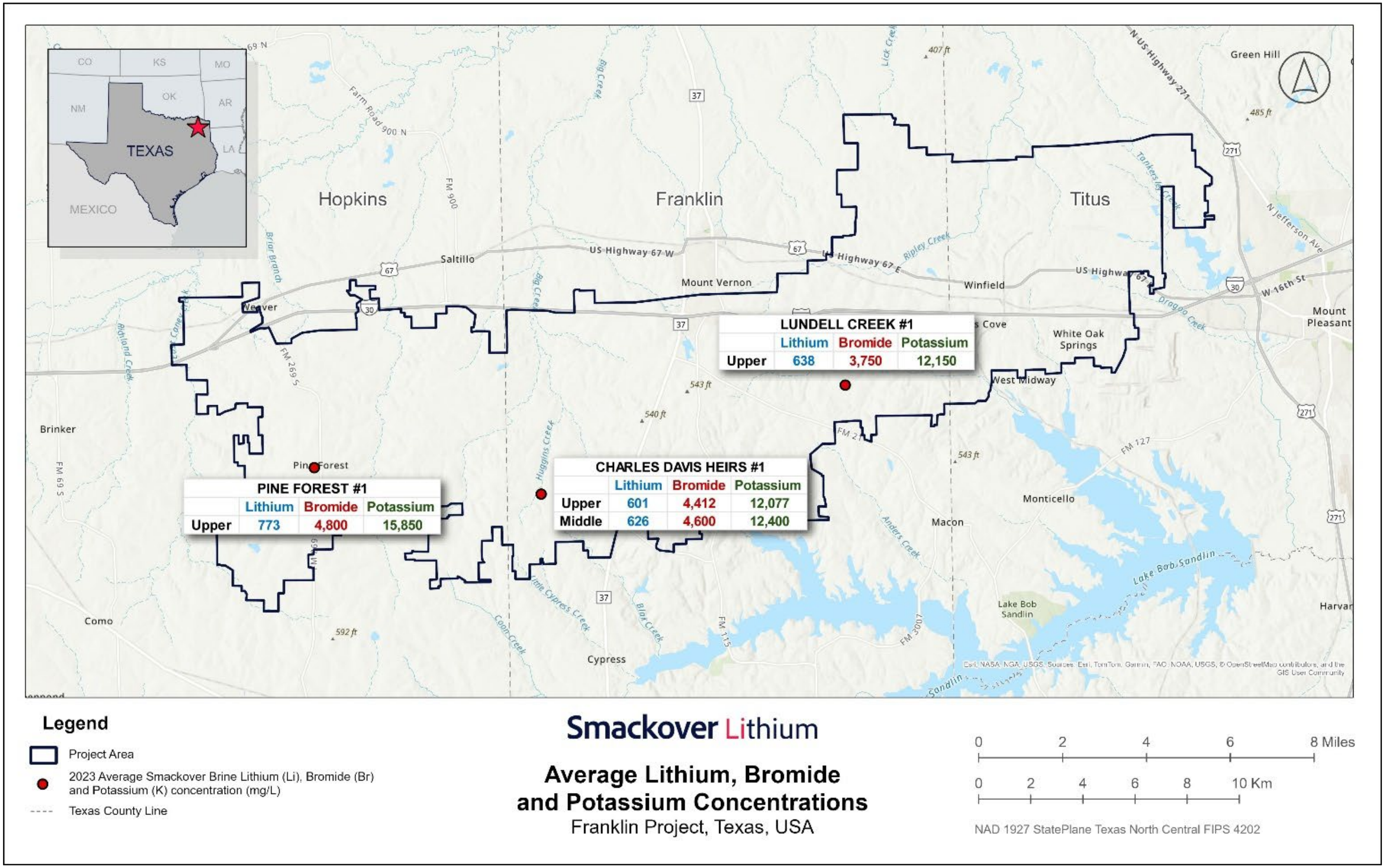


Figure 9.1: Franklin Project Lithium, Bromide and Potassium Concentration Data

9.4. Exploration Results and Interpretation

9.4.1. Subsurface Data Review and Stratigraphic Interpretation

The seismic, well log and core data were of sufficient quantity and quality to permit the reasonable interpretation of the configuration and volume of the Upper Smackover and Middle Smackover Formation. The well logs obtained by service companies for prior operators were provided to the QP by TGS and IHS, industry-recognized historic data warehouses for this type of information. The creation of this geologic model based on this data will be described in more detail in Section 14.0.

9.4.2. Brine Sampling

The brine sampling methods and quality control procedures are described in Section 11.0, with the QP's independent analysis of two duplicates samples described in Section 12.0. Application of those procedures resulted high-quality samples, with a documented chain of custody and no observed contamination or unexplained variability in results. The samples were found to be representative, and no bias issues were observed, either in the duplicate samples gathered by Standard Lithium or between the independent duplicate samples gathered by the QP and the Standard Lithium samples.

Once the samples were found to be representative, the by-zone averages of the 2022-2023 lithium, bromide, and potassium concentration data gathered by Standard Lithium (Table 9.1, Figure 9.1) were used in conjunction with the geologic model volumetric results to estimate the mineral resources reported in section 14.0. Generally high lithium, bromide, and potassium concentrations were measured by these three wells.

10.0. DRILLING

10.1. Drilling Methods

The layered geologic model as described in Section 14.0 is based on the well logs and core data obtained from 103 wells drilled in the area that penetrated the top of Smackover geologic marker. Other than the three wells drilled as part of the 2022-2023 Standard Lithium exploration program, described in Section 10.2, below, all of these wells were drilled by operators exploring the area for hydrocarbons. Table 10.1 provides a breakdown of the types of data gathered from the wells. Figure 10.1 depicts the area and identifies the locations where these data were collected in the Upper Smackover while Figure 10.2 provides the same information for the data collected in the Middle Smackover. Both Figures highlight the three wells comprising the Standard Lithium exploration program.

Table 10.1: Types of Well Data

Well Data	Wells Inside Franklin Project	Wells Outside Franklin Project	Total Wells
Wells reviewed	8	95	103
Wells that penetrated top of Smackover marker	8	95	103
Wells that penetrated Middle Smackover marker	8	36	44
Wells that penetrated Lower Smackover marker	4	18	22
Digital Logs	8	44	52
Raster Logs	6	93	99
Porosity Logs	6	25	31
Core Data	2	0	2

Two categories of geologic data were obtained from the wells drilled in the Geologic Study Area that includes the Franklin Project: well logs (either raster or digital) and core data. The well logs (obtained from TGS and IHS for the 100 historic wells, from Standard Lithium's logging contractor Halliburton for the three Exploration Program wells) provided a combination of structural data and porosity data. The core data provided porosity and permeability data. The structural data were obtained from 103 wells with log data that included at least the top of Smackover Formation, the log porosity data (density porosity, sonic porosity, and neutron porosity logs) were obtained from 31 wells, and the core porosity and permeability data were obtained from two wells. The historic logs were collected for a number of different operators by contractors using industry-standard procedures. The contractors are typically experienced in their respective specialties.

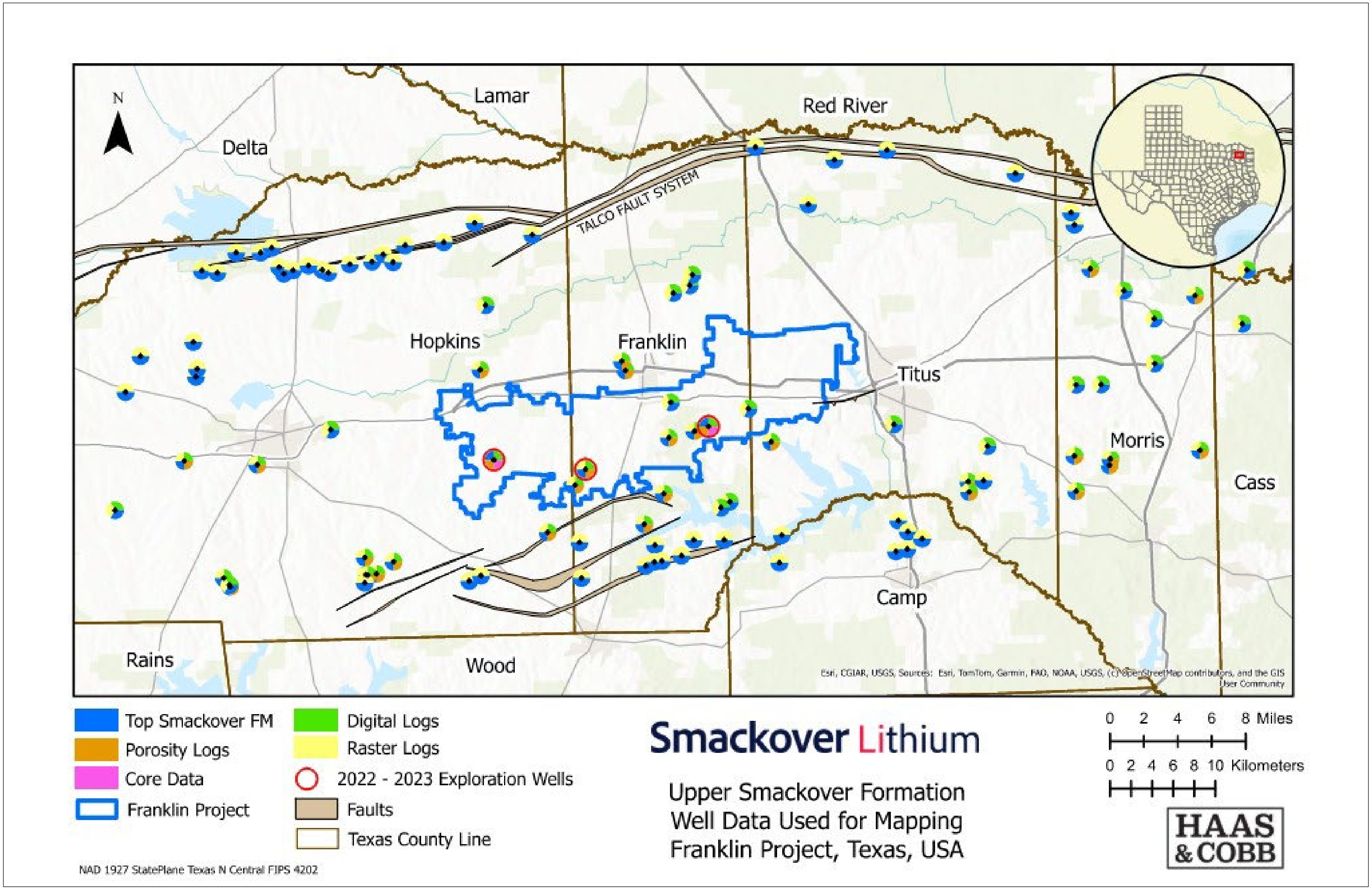


Figure 10.1: Upper Smackover Formation Well Data Source

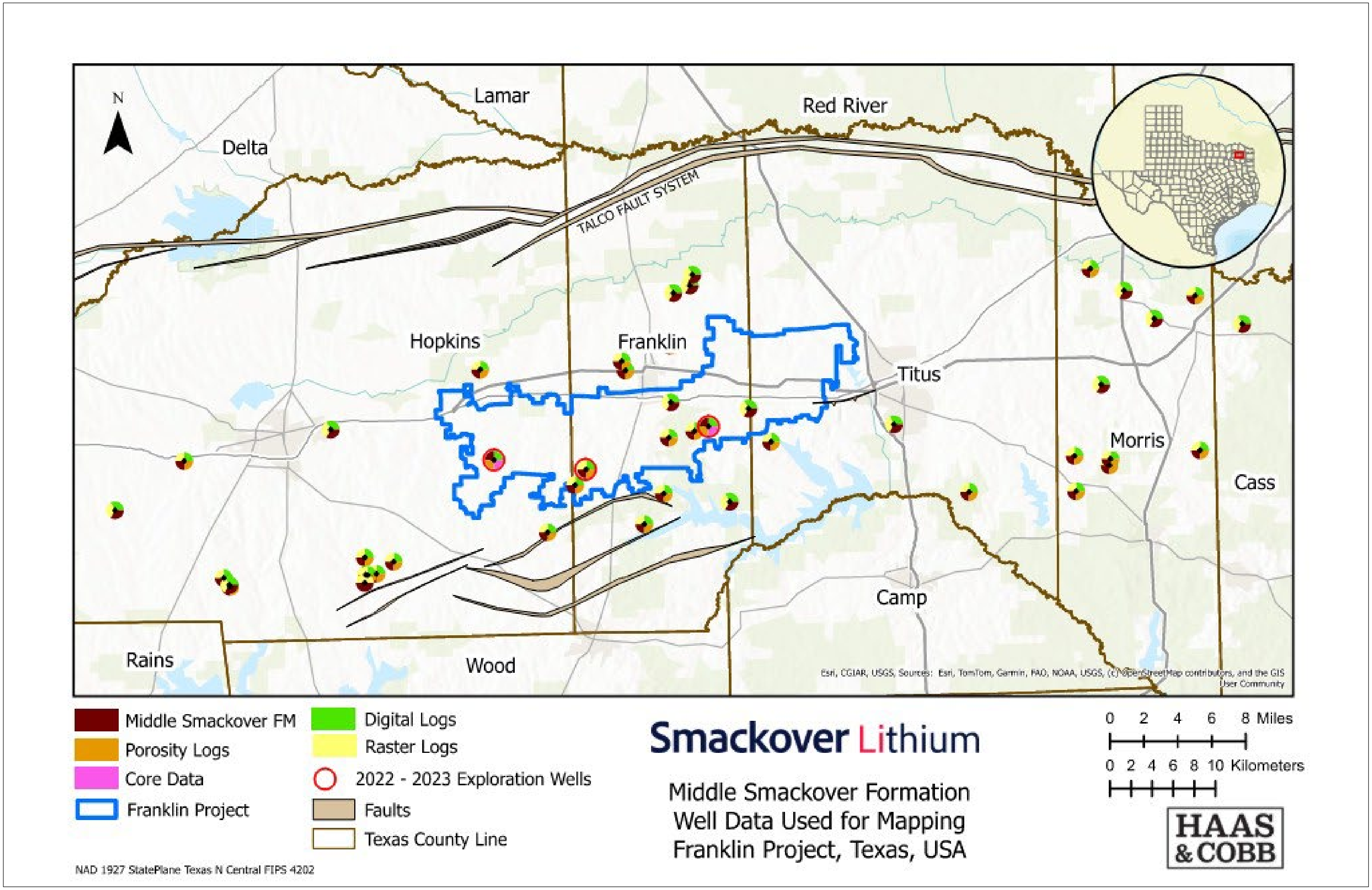


Figure 10.2: Middle Smackover Formation Well Data Source

The well log data were used to establish correlations for structural control, to identify zone boundaries, to define gross interval thickness for each Smackover layer, to identify net pay intervals, and to estimate the porosity values for those net pay intervals. The well log data included varying combinations of the following logs to include spontaneous potential (SP), gamma ray (GR), resistivity (EL, ISFL, DIL, etc.), MicroLog, and various porosity logs (acoustic, neutron, and density). The by-layer gross thickness values obtained from the logs were used to establish the overall geologic framework for the Upper and Middle Smackover and to constrain net reservoir thickness through the use of net to gross thickness maps. The primary source of log porosity data, the density porosity logs, were calibrated using the core porosity values, supplemented with the sonic porosity and neutron porosity logs, thereby reducing systematic error or bias in the resulting porosity value estimates.

The east-to-west fault system present to the south of the Franklin Project was identified using seismic data and that interpretation was evaluated and confirmed by the QP.

The resulting layered geologic model, discussed in Section 14.0, formed the basis for the geologic description of the brine-containing reservoir used for resource estimates.

10.2. Standard Lithium Exploration Program

From December 2022 to July 2023, Standard Lithium conducted a three-well exploration program at the Franklin Project. This program included drilling three all-new wells (Charles Davis Heirs 1, Pine Forest 1, and Lundell Creek 1). These three well locations were chosen to enhance the description of the geologic properties and lithium, bromide, and potassium concentrations within the Project. Figure 10.3 depicts the locations of those three wells.

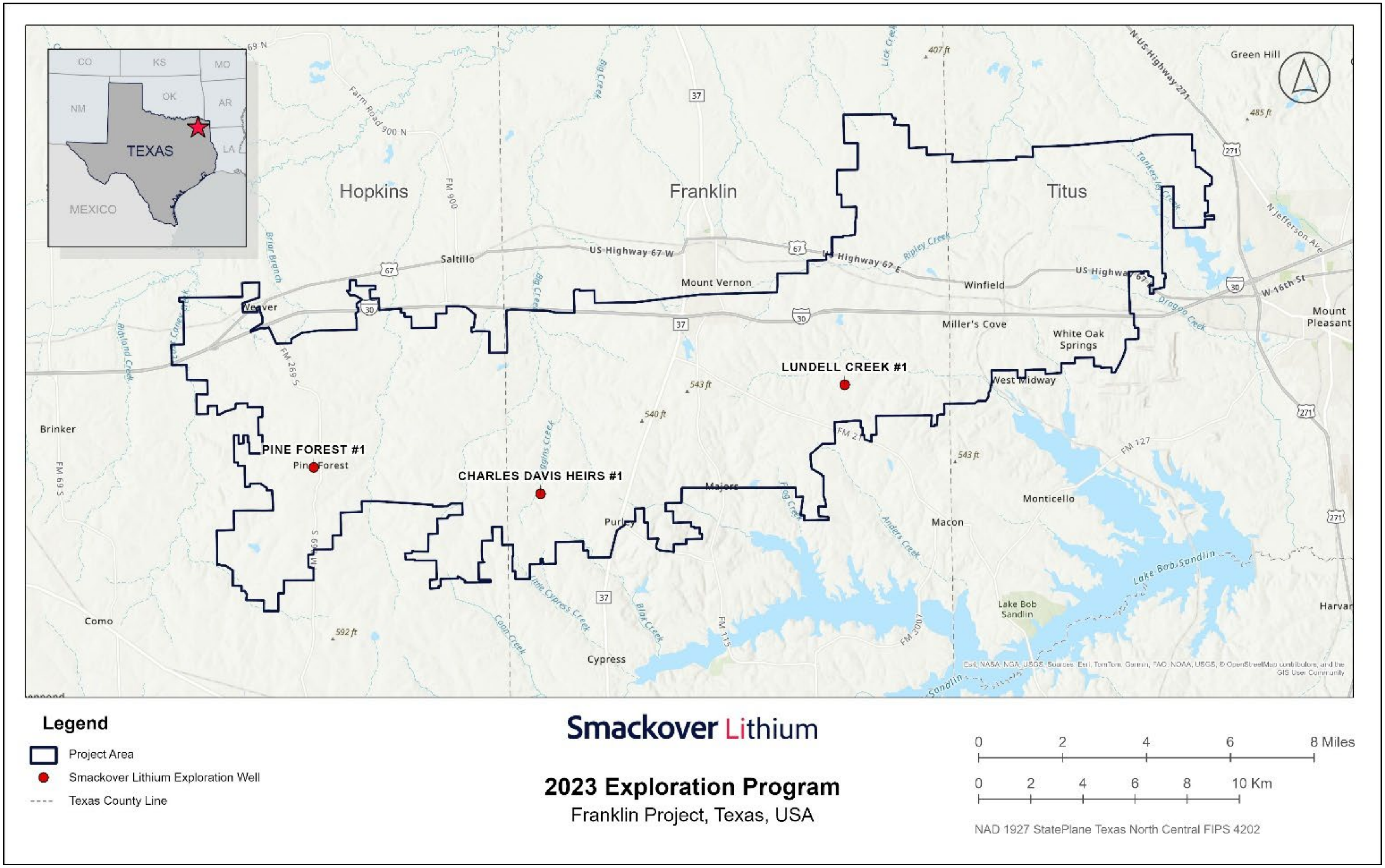


Figure 10.3: Franklin Project Exploration Program

Each of the three wells collected well log data that were used to identify the zones in each well over which production tests were completed and brine samples collected during the exploration program. Both whole core and sidewall coring programs were conducted in the Pine Forest 1 and Lundell Creek 1 wells. Table 10.2 summarizes actions taken at each well as part of the exploration program, including the well depths, sampling targets, amount of whole core, number of rotary sidewall cores, and the brine volumes obtained. Each well successfully tested the high-porosity interval in the Upper Smackover which is considered the Franklin Project's main pay zone. Additional productive pay was encountered and successfully tested at various depths in the Middle Smackover. During each production test, the physical and chemical characteristics of the brine were monitored. Once those characteristics stabilized, samples were taken and shipped to the outside laboratory, WETLAB, for compositional analysis.

Table 10.2: Well Actions Taken During Exploration Program

Well	Actions	Measured Depth Feet	Interval Where Whole Core Collected, Measured Depth Feet	Total Interval Cored Feet	Amount of Core Recovered Feet	Number of Rotary Side Wall Core Samples Collected	Smackover Zones Sampled for Brine	Total Volume of Brine Produced bbls
Charles Davis Heirs 1	New Well	12,525	N/A	N/A	N/A	N/A	4 Total: 3 Upper, 1 Middle	1,233
Pine Forest 1	New Well	12,650	12,075 - 12,193	118.2	54.2	14	1 Upper	302
Lundell Creek 1	New Well	12,052	11,056 -11,521	464.9	371.8	N/A	1 Upper	415

Figure 10.4 presents as a type well (a well with log characteristics typical of the Project area) the Lundell Creek 1 well log, indicating the primary well log data, the cored interval (grey bar), those intervals with conductive brines (shaded orange where the log resistivity "RO90" is less than 6.0 ohm-m) and the intervals meeting the 6.0% porosity net pay cutoff (shaded green where log porosity, "Phi_Cobb_New" is greater than 6.0%). The data gathering conducted at each well is described in the following sections.

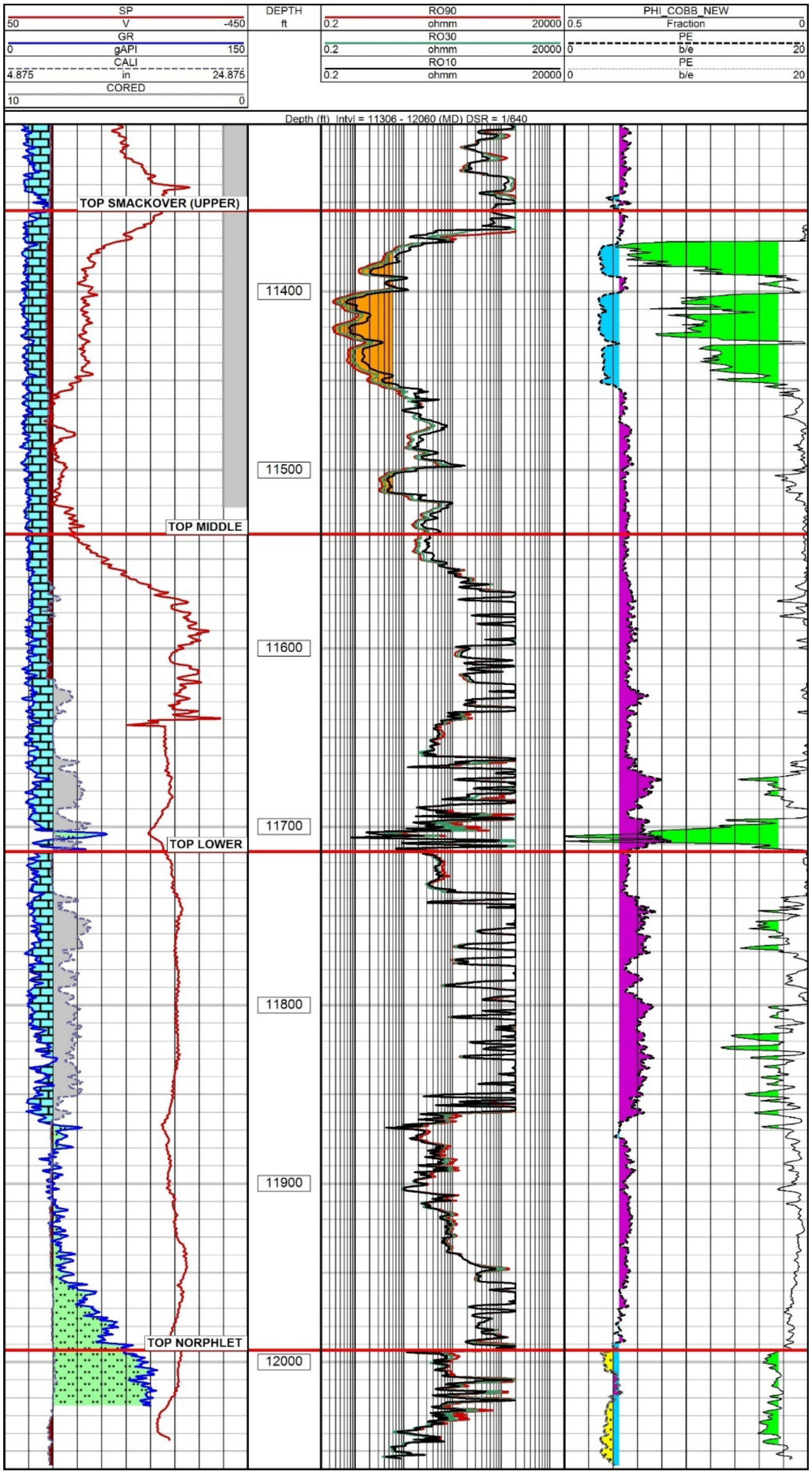


Figure 10.4: Lundell Creek 1 Type Well

10.2.1. Charles Davis Heirs 1 New Well

The Charles Davis Heirs 1 well was drilled in December 2022 and successfully cased and completed in the Upper and Middle Smackover Formations in March 2023. Test intervals were chosen based on the combination of porosity values exceeding 6.0% (indicative of net pay) or resistivity values less than 6.0 ohm-metres, indicating the presence of conductive brine. The same criteria were applied to the remaining two wells. Three intervals were sequentially perforated and tested, one in the Middle Smackover followed by two in the Upper Smackover. The well was sampled in June 2023. The Upper Smackover Formation was successfully acidized and resampled again, which provided additional well productivity information.

10.2.2. Pine Forest 1 New Well

The Pine Forest 1 well was drilled into the Lower Smackover with core recovered in portions of the Upper and Middle Smackover. The well was cased, and the Upper Smackover was successfully perforated and brine samples collected.

10.2.3. Lundell Creek 1 New Well

The Lundell Creek 1 well was drilled into the Norphlet, with whole core recovered in the Upper and Middle Smackover. The high-porosity main pay target of the Upper Smackover was successfully sampled. Results from the deeper zones were not obtained in time for this report. Therefore, the Upper Smackover main pay target lithium, bromide, and potassium concentration values were used in the preparation of this Technical Report.

10.3. Drilling Results Uncertainty

The core and log data obtained from the Standard Lithium exploration program and from the prior wells drilled in the study area meet normal industry standards for accuracy and reliability. Improvements to the accuracy of the Franklin Project resource evaluation may result from gathering additional data in areas currently lacking well logs, cores, and brine samples.

11.0. SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1. Sample Procedure and Implementation

Robert Williams, QP participated in the 2023 brine sampling programs at the Charles Davis Heirs 1 well, carefully observing the procedures, completing the sample log, and monitoring the WETLAB analysis confirmations for the samples. The samples were collected in a consistent and secure manner, with a clear chain of custody from the sample collection point to the shipment to the laboratory.

11.2. Sample Preparation, Analyses, and Security

11.2.1. Brine Sample Collection

Brine samples were collected from the three Franklin Project new wells (Section 9.0). A critical step to sampling brine for geochemical analysis is to ensure that the brine collected is considered a "fresh" representative of the Upper or Middle Smackover Formation.

During the 2023 sampling programs conducted by Standard Lithium, the sample collection methodology included:

- Well logs were obtained once each well was drilled and the test intervals were identified.
- For each test interval, a cast iron bridge plug was set above the prior test interval (except for the first test), the test interval was perforated, a pressure gauge was set, and the swabbing assembly was run in the well, including a packer assembly immediately above the perforated zone to isolate the testing horizon. New production tubing was also installed in the well. All the work was completed by a workover rig.
- After the test interval was perforated, brine was removed from the well by swabbing the production tubing. Swabbing involves lowering swab cups on steel wireline inside the production tubing from above the perforations. Once the wireline and swab cups were lowered to the desired depth through a fluid column of approximately 300 m (1,000 feet), they were raised, and the entire 300 m (1,000 feet) column of brine was brought to wellhead, conveyed through a piping system to a three-stage fluid/gas separator, and then to a tank for storage. The volume of fluid removed from the well was measured with flow metres and calculated based upon the volume measured at regular intervals in the onsite storage tank.
- Field-measured parameters were collected and analysed onsite by a Standard Lithium representative to assess brine density, electrical conductivity, pH, and temperature from brine on every swab run. Field measured parameters were compared to known values of the Smackover Formation. For example, the formation has a brine density of about 1.23 grams/cubic centimetre (10.2 lbs/gallon). Swabbing of the well continued until field-measured parameters and Standard Lithium El Dorado Lab results indicated constituent concentrations had stabilised.
- Brine established to be from the Smackover Formation (based on density, electrical conductivity, and pH) was collected by filling two 1,000 L (250 US gallon) Intermediate Bulk Containers (IBCs) from a valve installed at the three-stage separator. Safety protocols were exercised on site due to the possibility of hydrogen sulfide (H_2S) gas content associated with the produced Smackover Formation fluids. A new 4-litre carboy container was filled from the IBC to allow oil and brine to separate if oil was present. In every instance, the absence of oil in the carboys confirmed the high brine-to-oil ratio.
- The physical attributes of the brine sample were recorded (e.g., colour, smell, contaminants, etc.). The sampling process was completed by recording any comments that might be significant to the sampling site, the sample collection, or the sample itself.
- New laboratory-supplied sample containers with screw-on caps were labelled using Standard Lithium's label procedure that includes recording the sample identification, date and time of sample collection, and sampler's initials.

- Three sample containers were collected from the 4-liter carboy container by Standard Lithium: 1-liter plastic, 500 ml plastic preserved with nitric acid (HNO_3) and 250 ml glass preserved with phosphoric acid (H_3PO_4) for geochemical analysis at WETLAB, an independent laboratory.
- The sample containers were checked to verify that all sample label information was correct, and the sample container was properly closed. All sample containers were then stored in coolers for shipping to the independent laboratory.

11.2.2. Security

Coolers holding the sample containers were taken from the field to a secured location to double check the sample identification and make sure all containers were in good condition prior to shipment to the laboratory. Chain of Custody forms for the laboratory were filled out and included with the sample cooler. The cooler was taped closed and hand-delivered to the local courier company (Fed-Ex in El Dorado, AR) for delivery to the WETLAB laboratory in Sparks, NV. The laboratory was instructed to confirm receipt of the samples and provide a statement pertaining to the condition of the samples upon receipt. The samples were then coded into the respective laboratory's sample stream for analysis.

11.2.3. Analytical Methodology

Standard Lithium has prepared its own internal analytical protocols for the independent laboratories to follow. These include the following analytical work (with the associated American Society for Testing and Materials (ASTM), Standard Methods (SM) and Environmental Protection Agency (EPA) international and national method code): "Expanded Lithium Brine Analytical Suite":

- General chemistry: density, pH, temperature, carbonate, bicarbonate, total dissolved solids, total organic carbon (ASTM 1963, SM 4500-H+B, SM 2550B, SM 2320B, SM 2540C and SM 5310B)
- Anions by Ion Chromatography: chloride, sulfate, bromide, fluoride (EPA 300.0)
- Sample preparation: trace metal digestion (EPA 200.2)
- Trace metals by Inductively Coupled Plasma Optical Emission Spectroscopy (ICP- OES): Li, Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Ga, Fe, Pb, Mg, Mn, Mo, Ni, P, K, Sc, Se, Si, SiO_2, Ag, Na, Sr, Sn, Ti, V, and Zn (EPA 200.7)

WETLAB completed these analyses using the following corresponding methods: sample preparation by EPA 200.2; density by gravimetric; pH by SM 4500-H+B; temperature at pH by SM 2550B, carbonate and bicarbonate by SM 2320B; chloride and sulfate by EPA 300.0; total dissolved solids by SM 2540C; anions by ion chromatography by EPA 300.0; trace metal digestion by EPA 200.2; and trace metals by ICP-OES by EPA 200.7.

11.3. Quality Control / Quality Assurance

11.3.1. Field Duplicate Samples

A field duplicate sample was collected for every sampling event. The field duplicate sample was taken at the same time as the original sample (i.e., back-to-back samples from the brine sample spigot). Random identifiers were given to the duplicate sample and duplicate field samples were never in sequential order so that they were randomly presented to the laboratory.

A total of six primary and six duplicate brine samples were collected from the three newly completed wells. The Charles David Heirs 1 well had four sets of samples from three completion zones. The lithium, bromide, and potassium results comparison for the duplicate sample analyses are presented in Table 11.1 The duplicate sample

Relative Percentage Difference (RPD) for WETLAB was 0.0% to 12.8%. The QP considers RPD less than 20% to be acceptable.

Table 11.1: Comparison of Field Duplicate Samples from the 2023 Sampling Program

Well Name	Test Zone	Smackover Zone Sampled	Constituent	Primary Sample	Duplicate Sample	RPD[1] Percentage
				mg/L	mg/L	
Charles Davis Heirs 1	1	Upper	Lithium	634	594	6.3%
			Bromide	4,200	4,400	4.8%
			Potassium	13,200	12,500	5.3%
Charles Davis Heirs 1	1 (No acid)	Upper	Lithium	605	608	0.5%
			Bromide	4,800	4,700	2.1%
			Potassium	12,400	12,300	0.8%
Charles Davis Heirs 1	2 & 3	Upper	Lithium	572	583	1.9%
			Bromide	4,200	4,300	2.4%
			Potassium	11,100	11,300	1.8%
Charles Davis Heirs 1	4	Middle	Lithium	621	612	1.4%
			Bromide	4,400	4,600	4.5%
			Potassium	12,100	11,900	1.7%
Pine Forest 1	2	Upper	Lithium	739	806	9.1%
			Bromide	4,800	4,800	0.0%
			Potassium	14,900	16,800	12.8%
Lundell Creek 1	2	Upper	Lithium	613	663	8.2%
			Bromide	3,700	3,800	2.7%
			Potassium	12,300	12,000	2.4%

Note: 1. RPD denotes relative percentage difference between the duplicate sample and the primary sample.

11.4. Other Data: Core Reports and Well Log Data

Core reports include pertinent information on Upper and Middle Smackover Formations core measurements conducted by independent engineering consultant Intertek Westport Technology Center in Houston, TX. These reports included core measurements that included porosity (%) and permeability (mD) from the Franklin Project.

Well log data used in this report were obtained from logs gathered by industry-recognized service providers using industry-accepted procedures. The 100 historic wells' logs were acquired onsite by industry-accepted service companies and obtained for this study from two data warehouse firms, TGS and HIS, and the three Exploration Program wells' logs were obtained from Standard Lithium's logging contractor, Halliburton.

11.5. Qualified Person Statement on the Adequacy of Sample Preparation, Security, and Analytical Procedures

The analytical brine and core report data were prepared by independent and accredited third-party companies. The resulting quantitative data are used to make inferences on the brine analytical values and hydrogeological characteristics of the Upper and Middle Smackover Formations. The analytical methods carried out by the laboratories are standard and routine in the field of lithium, bromide, and potassium brine geochemical analytical and petrophysical core characterization test work.

The QP has reviewed the adequacy of the sample preparation, security, and analytical procedures and found no significant issues or inconsistencies that would cause one to question the validity of the data. The QA/QC protocol adopted by Standard Lithium helped the QP to evaluate and validate the laboratory data as discussed in Section 12.0.

The well log data used to derive Smackover porosity and net pay values were gathered by industry-recognized service companies using industry-accepted procedures.

12.0. DATA VERIFICATION

12.1. Verification of Lithium, Bromide, and Potassium Concentration Data

Robert Williams, QP verified the lithium, bromide, and potassium concentration data four different ways:

- Reviewed the choice of analytical laboratory
- Reviewed the overall scatter in each well's lithium, bromide, and potassium concentration data
- Compared concentration results between samples independently taken and verified by the QP to those by Standard Lithium
- Compared concentration results of the primary and duplicate sample concentrations

The four evaluations confirmed the choice of WETLAB, the consistency of the data, the close match between the independently gathered samples and those of Standard Lithium, and the reasonable match between primary and duplicate sample concentrations. These four evaluations are described in more detail below.

In 2021, Standard Lithium conducted an extensive comparison test of four laboratories known for brine analysis. That study's results indicate that WETLAB is the appropriate choice for the range of lithium concentrations encountered in this Technical Report. The QP has reviewed the supporting documentation of that study and agrees with its conclusions. As a result, the WETLAB-reported lithium, bromide, and potassium concentration data are used throughout this Technical Report.

To verify the Standard Lithium test results, two zones in the same well were independently sampled by the QP, who independently followed the sampling procedures outlined in Section 11.0. Table 12.1 summarizes the results of that verification. The small relative percentage difference values, 4.5% to 13.4%, between the QP's samples and the Standard Lithium samples confirms the consistency of the Standard Lithium report concentrations with the independently gathered samples in the well sampling dataset.

Table 12.1: Comparison of Verification Samples from the 2023 Sampling Program

Well Name	Test Zone	Smackover Zone Sampled	Constituent	Primary Sample	Duplicate Sample	QP Sample	RPD[1] percentage
				mg/L	mg/L	mg/L	
Charles Davis Heirs 1	2 & 3	Upper	Lithium	572	583	630	9.10%
			Bromide	4,200	4,300	4,500	5.90%
			Potassium	11,100	11,300	12,700	13.40%
	4	Middle	Lithium	621	612	644	4.50%
			Bromide	4,400	4,600	4,800	6.70%
			Potassium	12,100	11,900	13,200	10.00%

Note: 1: RPD denotes relative percentage difference of the QP's verification sample relative to the average of the primary and duplicate samples

12.2. Verification of Well Logs and Core Data

The well log and core data used to create the geologic model meets the standard of reliability required by this report. This data was taken by independent vendors in a manner meeting industry standards, consistent with the identical data collection procedures used in dozens of projects evaluated by the QPs. Importantly, this data was obtained for a purpose unrelated to the estimation of lithium, bromide and potassium resource evaluations. Therefore, it was not subject to any biases related to that estimation process.

12.3. Qualified Person's Opinion on Concentration Data, Well Logs and Core Data

The data from each of the eight wells in the Franklin Project and 95 wells outside of the Franklin Project, including the data from the three Standard Lithium wells, have been reviewed and the data was found suitable for this evaluation.

The location of the different sources of data is summarized in Table 10.1 and depicted in Figure 10.1 and Figure 10.2. The lithium, bromide, and potassium concentrations, well log, core, and test data used in the preparation of this Technical Report meet the highest standards for the evaluation of the brine deposit. Any limitations present in the data are the unavoidable limitations present in all field measurements. Standard Lithium and the petroleum companies have exerted industry-standard efforts in gathering high-quality data on and around the Franklin Project. Standard Lithium's data gathering program has been thorough and directly results in a high-quality database for use in this evaluation of the Franklin Project's lithium, bromide, and potassium resources.

12.4. Metallurgy and Mineral Processing Data Verification

Given that no metallurgical test work has been conducted thus far, there are no comments regarding metallurgical data verification.

13.0. MINERAL PROCESSING AND METALLURGICAL TESTING

13.1. Introduction

Standard Lithium is developing multiple lithium brine projects in the USA (in joint ventures with Equinor as Smackover Lithium). Each project is based on extracting lithium from lithium rich brine derived from the Smackover Formation. The projects are based in Arkansas and Texas. The main project in Arkansas is well advanced in terms of metallurgical testing. The first project in Texas, which is the subject of this Technical Report and referred to as the Franklin Project, is in its early stages and thus far no metallurgical testing has been conducted.

13.2. Standard Lithium Projects Brine Composition Comparison

Standard Lithium has operated a lithium Demonstration Plant, exclusively processing Smackover brine, since May 2020. This has provided a valuable source of knowledge regarding the behavior of the brine, direct testing of various flowsheet elements, and providing a test bed for operator training. In addition, the Demonstration Plant has facilitated the ability to produce lithium chloride samples along with brine samples from various stages of the flowsheet to support bench scale metallurgical testing, mini-pilot plant testing and vendor testing in support of equipment design and process guarantees. The Demonstration Plant is located near El Dorado, Arkansas, about 273 km (170 miles) east of the Franklin Project and it is the Company's intent to continue to use the information obtained from the Demonstration Plant to aid in flowsheet development, optimize lithium extraction and lithium chloride purification, and to develop operations capability.

In addition to the work at the Demonstration Plant, a separate DLE pilot test program was conducted for the South West Arkansas (SWA) Project. A dedicated, temporary DLE Pilot Plant was constructed at the Mission Creek Resources Dorcheat gas plant in Q4 2024 adjacent to the South West Arkansas (SWA) brine lease area. Brine from a brine lease well was extracted over several months in Q4 2024 and Q1 2025 and processed through the SWA Project Pilot Plant for three months to validate performance.

Table 13.1 presents a brine composition comparison between the Franklin Project (the subject of this MIRE), the SWA Project, and the Demonstration Plant.

The Franklin Project and SWA Project brines are similar in terms of their major elemental constituents. In the Franklin Project brine sodium and potassium are higher in concentration with magnesium and calcium being lower in concentration when compared to the SWA Project brine. Please note that although the SWA Project brine is similar, it is not fully representative of the brine for the Franklin Project.

Table 13.1: Brine Composition Comparison

Element	Franklin Project Feed Brine Composition	Demonstration Plant Feed Brine Composition	Pilot Plant (SWA Project) Feed Brine Composition
	mg/L	mg/L	mg/L
Lithium	668	237	476
Sodium	94,560	61,136	79,200
Calcium	32,760	31,793	38,400
Magnesium	1,735	2,682	2,810
Potassium	13,286	2,385	7,670
Strontium	2,522	1,932	2,480
Boron	486	189	334
Silicon	29	10	8
Chlorides	210,000	175,000	189,000
Bromides	4,343	< 360	5,300

Notes: 1. Franklin Project composition presented is based on average sample data collected in the 2023 exploration program and tested by WETLAB.
2. Demonstration Plant composition presented is based on average sample data collected from May 4 to June 30, 2023, to reflect the period when strontium (Sr) was regularly measured. The results from the on-site laboratory have been regularly validated by independent testing by WETLAB. Demonstration Plant feed brine samples were collected downstream of Lanxess' bromine extraction facility which is reflected in the low bromide concentration.
3. SWA Pilot Plant composition is based on average sample data collected from the IPC-1 well during October 2024 through January 2025. The results from the laboratory have been regularly validated by independent testing by WETLAB.

13.3. Expected Process Flowsheet

Based on the similarity of the Franklin Project and the SWA Project brine compositions, the SWA Project lithium process flowsheet is likely to be applicable to the Franklin Project. In other words, the use of DLE technology followed by standard purification, concentration, and lithium carbonate production steps.

Figure 13.1 presents a Lithium process block flow diagram applicable to the Franklin Project.

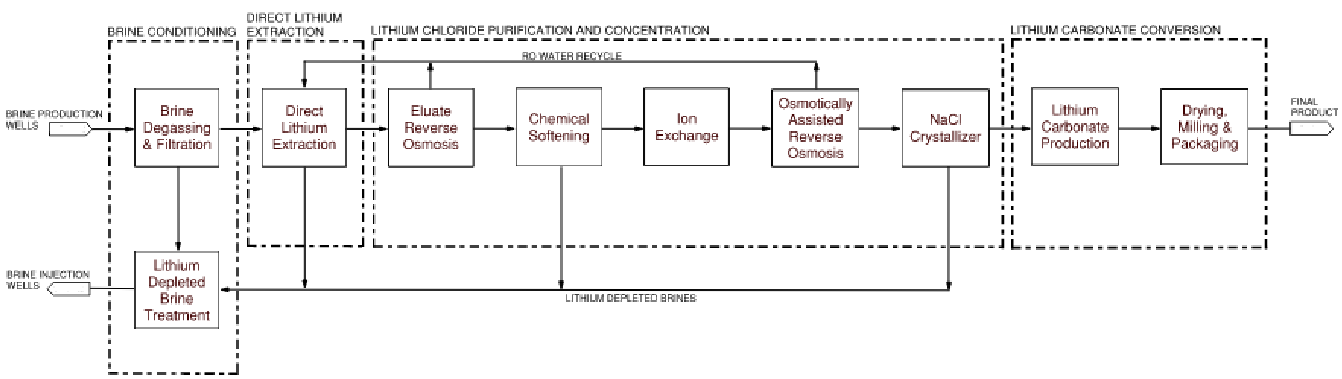


Figure 13.1: Lithium Process Block Flow Diagram for the Franklin Project

The following specific process aspects related to Franklin Project brine can be highlighted:

- A higher lithium concentration will improve lithium recovery.
- The higher sodium and potassium concentrations will require a greater sodium chloride crystallisation capacity.
- The lower calcium and magnesium concentrations will result in reduced reagent consumption for the chemical softening step.

13.4. Metallurgical Testing

The following metallurgical testing steps are recommended for the Franklin Project:

- DLE characterization of the Franklin Project brine. This will indicate potential lithium recovery and degree of impurity rejection for sodium, potassium, calcium, magnesium, and boron. It will also indicate the associated water usage for the DLE technology.
- The testing of DLE pre-treatment steps on Franklin Project brine will involve hydrogen sulphide removal (if applicable), iron precipitation, and suspended solids filtration.
- A sufficient volume of DLE eluate should be produced from the Franklin Project brine to allow laboratory scale testing of the purification, concentration, and lithium carbonate production steps.

13.5. Deleterious Elements

Outside of sodium, potassium, calcium, magnesium, strontium, boron, silicon, chlorides, and bromides, the initial full chemical analysis of Franklin Project brine has not indicated the presence of deleterious elements in concentrations of concern other than iron. This is the same as the SWA Project brine, which means the iron removal steps applied to the SWA Project brine could likely be applied to the Franklin Project brine, as well.

13.6. Potential Production of Bromine and Potash

The data presented in Table 13.1 show high concentrations of bromide and potassium in the Franklin Project brine. This means that there is potential for the production of bromine and potash by-products. In Arkansas, bromine has been produced from Smackover brine for many decades. Production of potash from potassium rich brines is a well proven process. The bromine would be recovered ahead of the lithium, and the potash would be recovered from the spent lithium brine before reinjection back into the Smackover Formation.

At the brine supply wellhead(s), a 3-phase separator will separate gas and oil from the brine and then the brine is treated to remove most of the dissolved hydrogen sulphide by vacuum degassing. These steps are also required for lithium brine pretreatment. The degassed brine is fed into a bromine tower where it is reacted with elemental chlorine and steam, converting bromides in the brine to elemental bromine. Bromine extracted from the brine is recovered from the top of the bromine tower and bromide-depleted brine discharges from the bottom of the bromine tower. Before this bromide-depleted brine can proceed to lithium extraction, it is first pre-treated with sodium bisulfite to reduce the free chlorine to chloride and free bromine to bromide in the brine and then it is partially neutralized with anhydrous ammonia. Figure 13.2 presents a bromine extraction-from-brine process block flow diagram.

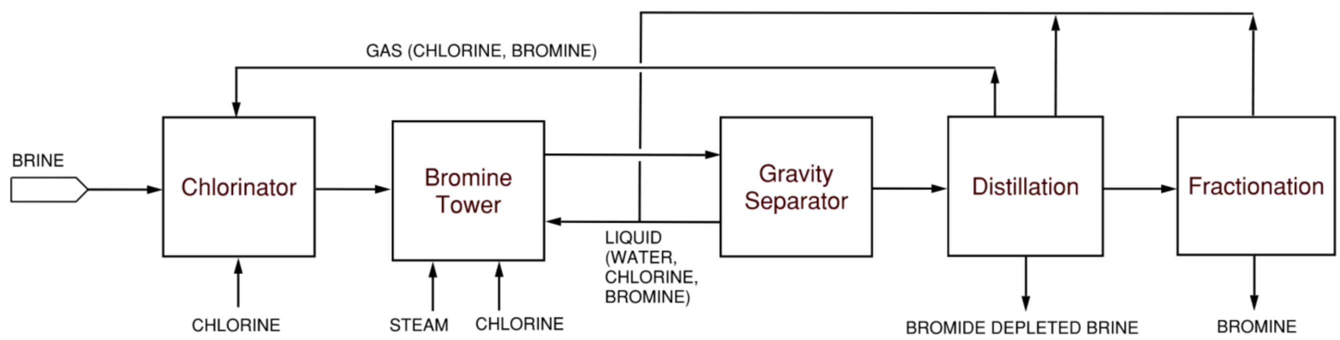


Figure 13.2: Bromine Extraction from Brine Process Block Flow Diagram

The now neutralized bromide-depleted brine then proceeds through the filtration unit upstream of the lithium extraction, DLE process. The lithium barren brine that leaves the DLE process then proceeds to potash removal.

The now bromide and lithium barren brine would require evaporation and then crystallization of the contained sodium and potassium salts. These salts would then be wet milled before proceeding to a flotation circuit for the recovery of a potash concentrate. This process is practised in Chile where the evaporation and crystallisation are done in solar evaporation ponds at high altitude. This will not be possible in East Texas. Therefore, whilst the recovery of potash is technically feasible, the economic feasibility will need to be determined for the Franklin Project.

The potash recovery process block flow diagram is shown in Figure 13.3.

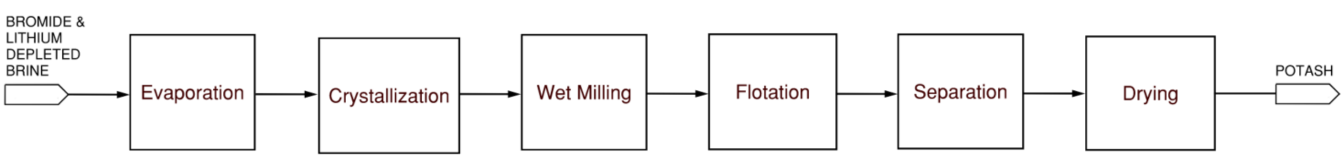


Figure 13.3: Potash Recovery Process Block Flow Diagram

13.7. Comments on Mineral Processing and Metallurgical Testing

The QP considers that the Franklin Project brine is sufficiently similar to the SWA Project brine from a metallurgical perspective and that the differences in concentrations of the major constituents are relatively small. This in turn means that the potential lithium process flowsheet for the Franklin Project will likely be similar to that for the SWA Project.

Potential metallurgical risks considered include:

- Variability of feed brine composition will cause operational control problems, leading to not achieving battery production specifications
- Performance of the DLE technology not meeting lithium recovery and impurity rejection targets
- Sub-optimal operation of reinjection due to unexpected variability in the properties of the spent lithium brine
- Health and safety risks around the removal and handling of hydrogen sulphide (if applicable).

- Health and safety risks around the delivery, storage, mixing and distribution of reagents – hydrogen peroxide (explosion risk), caustic soda (caustic burns) and hydrochloric acid (toxic fumes and acid burns).

The QP considers that from a metallurgical perspective, the Franklin Project is ready to proceed to the next phase of project development. As soon as enough representative Franklin Project brine is available, the recommended metallurgical testing should commence.

14.0. MINERAL RESOURCE ESTIMATES

This Section describes the preparation of the lithium, bromide, and potassium resource estimates for the Franklin Project, based on the volume of porous rock as estimated by the geologic model and the estimated lithium, bromide, and potassium concentrations present in the brines stored within the Upper and Middle Smackover Formations on the Property.

This resource estimate has been prepared in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves (CIM, 2014). Mineral Resources are sub-divided, in order of increasing geological confidence, into inferred, indicated, and measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.

An Inferred Mineral Resource is 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.

An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.

A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.

The estimation of resources in this report have been carried out in accordance with NI 43-101 and have been estimated using the CIM “Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines” (19 November 2019), CIM “Definition Standards for Mineral Resources and Mineral Reserves” (amended and adopted 10 May 2014), and the “CIM Leading Practice Guidelines for Sedimentary Basin and Geothermal Brine-Hosted Lithium Mineral Resources and Mineral Reserves Estimation” (May 2025 Draft) (the CIM Leading Practice Guidelines). The CIM Leading Practice Guidelines have been applied to the specific conditions present at this Property.

The Franklin Project’s brine accumulation exists in a well-defined porous geologic formation at depth, the Smackover Formation. This extensive brine accumulation is bounded vertically by impermeable formations and laterally by the Franklin Project boundaries.

This report’s resource estimates were prepared using a detailed layered geologic model that fully captures the factors that affect the content and quality of brine and the associated lithium, bromide, and potassium in the Smackover Formation aquifer.

14.1. Key Assumptions, Parameters, and Methods Used to Estimate the Mineral Resources

To understand and quantify the Smackover Formations' structure, geometry, and the location of the porous and permeable zones within the formation, a multi-layer geologic model of the Franklin Project was constructed as the basis of the resource estimates in this Technical Report using industry-standard software and procedures. Beginning with the structural understanding of the overall Smackover Formation developed through analysis of the well data and 2D seismic data, the next level of detail was added to the geologic description by separating the Smackover Formation into eight separate layers and evaluating the geologic characteristics of each layer. This geologic mapping effort covered the Franklin Project and the surrounding area as depicted in Figure 10.1. The procedures followed in creating this multi-layer geologic model relate to well log and core data analysis, net pay estimation, the mapping procedures, and the estimation of in-place brine volumes.

The following steps were carried out to construct the multi-layer geologic model:

1) The Smackover Formation was divided into eight layers, with five in the Upper Smackover zone and three in the Middle Smackover zone, based on their distinct geologic characteristics. The zone and layer picks were recorded for each of the 8 well logs within the Franklin Project and 95 well logs outside the Franklin Project, to the extent allowed by the depth encountered for each well. These divisions are identified in the Exploration Wells Cross Section, Figure 7.5. The calibrated log porosity curve, PHI_COBB_NEW, is shaded green to indicate the intervals meeting the 6.0% porosity net pay cutoff.

2) Core data, obtained from whole cores and from rotary sidewall cores taken in two wells within the Franklin Project (203 whole core samples, 158 from the Upper Smackover), is the starting point for quantifying the amount of porous Smackover Formation in the Franklin Project. The core data from the 2023 Standard Lithium exploration program wells was compiled and reviewed. This evaluation indicated that there is a large fraction of the core data with moderate to high permeability values (between 0.5 and 550 mD), which is important in a brine displacement process such as that used at the Franklin Project to recover the target lithium, bromide, and potassium.

3) The core data was also evaluated to understand the overall permeability and porosity characteristics of the Upper Smackover Formation. The average porosity and permeability from the 158 core samples collected from the two cored 2023 exploration wells in the Upper Smackover Formation were 14% and 17 millidarcies (mD), respectively (note that no minimum porosity cutoff was applied to the data in calculating the average core values).

4) The Smackover Formation core porosity data was compared to the well log porosity data and a calibration function relating the log porosity data to the core porosity data (which is considered the most accurate measure of porosity) was created (Figure 14.1). Each porosity well log was then calibrated using that equation. A close relationship was found to exist between the core porosity values and the calibrated log porosity values.

5) Consistent with the use of the most accurate data available, for those wells with both log and core porosity data, the core porosity data was used whenever available, with the calibrated log porosity curve (the PhiND_COBB_CC curve) used elsewhere. This resulting calibrated best estimate of formation porosity is labeled the "PHI_COBB_NEW" curve on Figure 7.5. This porosity curve was used in the final selection of net pay exceeding a 6.0 % porosity cutoff.

6) A 6.0% minimum porosity cutoff was applied to each well's "Phi_Cobb_New" values. This cutoff value corresponds to approximately a 0.5 mD permeability, the minimum permeability expected to contain mobile brine.

7) The resulting net pay intervals were evaluated to determine, for each of the eight layers, the net pay thickness (the productive thickness of the layer exceeding the minimum porosity cutoff), the average porosity for that net pay interval, and the ratio of net pay thickness to gross thickness. Gross thickness values were also estimated for wells with only resistivity logs (which permitted layer boundary selection), but net pay thickness was only calculated when porosity data was available.

8) An example of net pay identification is shown in Figure 7.5. The layer picks result in the gross pay values, the application of the 6.0% porosity cutoff results in the net pay values (the green shading on the porosity log and the green pay flags), the ratio of net pay and gross pay values for each layer provides the net to gross ratio, and the average porosity over each layer's net pay intervals results in the average porosity of the net pay for that layer.

9) Each of the 8 wells within the Franklin Project and 95 wells outside the Franklin Project had their geologic data (location, wireline well logs) imported into Petra® Software. Available digital porosity data were imported into PowerLog ® Software database, calibrated to core porosity, and exported for inclusion in the Petra® Software. The top of Smackover Formation depths picks, along with the by-layer gross thickness, net to gross ratio, and porosity data were evaluated using the Petra® Software.

10) A mapping grid with 76.2 m by 76.2 m (250 ft by 250 ft) cell size was used, and the well geologic data was contoured using two Petra gridding options:

    a. The *Highly Connected Features* option applied a least-squares gridding algorithm that is well-suited to both structure maps and the smoothly- changing petrophysical data present here. The "grid flexing" option, appropriate for this type of well-behaved data, was used to regularize the maps' contour lines.

    b. The *Directional Bias* option was used, with a direction of 95 degrees. This directional bias was applied to capture the regional strike direction of the Smackover Formation, corresponding to the orientation of the oolite bars as they were deposited.

11) Following the gridding and contouring process, bounding limits were applied to the gross thickness, porosity, and net thickness to gross thickness ratio grids. The gross thickness, porosity, and net thickness to gross thickness grids were constrained to between 95% of the minimum observed value and 105% of the maximum observed value to prevent the mapping algorithm from extrapolating to unreasonable values. Additionally, porosity values were limited to no lower than the 6.0% cutoff for net pay. The net thickness to gross thickness ratio grids were further constrained between 0.0 and 1.0, corresponding to the physical limits of that ratio.

12) The net pay grid for each of the individual layers was calculated by multiplying the gross thickness grid by the net thickness to gross thickness grid. Similarly, the pore-thickness grids for each layer were calculated by multiplying the calculated net pay grids by that layer's porosity grids.

13) The resulting layer grids for structure, porosity, gross pay, and net pay were then summed as appropriate to create maps of gross pay, net to gross ratio, net pay, average porosity, and pore-thickness for the Upper Smackover and the Middle Smackover zones.

Figure 10.1 depicts the locations of the 8 wells within the Franklin Project and 95 wells outside the Franklin Project that penetrated the top of the Upper Smackover, thereby containing structure, porosity, or core data relevant to the description of one or more of the eight geologic layers. Figure 7.4 presents the structure map for the top of the Smackover Formation. Figure 14.2 is a stratigraphic porosity cross section through the three exploration program wells. It uses as a datum the top of Upper Smackover, and illustrates the thick, continuous nature of the high-porosity net pay (shaded in green, yellow, orange, or red) Upper Smackover Formation, in comparison to the thinner, less- continuous Middle Smackover Formation net pay.

The net porosity-thickness (also known as Phi-H) maps for the Upper and Middle Smackover zones are presented in Figure 14.3 and Figure 14.4, respectively. Net porosity thickness is a direct indicator of the amount of brine below any location on the Franklin Project. The greater the mapped pore-feet, the greater the volume of brine. Each porosity-thickness map is multiplied by the lithium, bromide, or potassium concentration map, then integrated over the Franklin Project area to obtain the in-place lithium, bromide, and potassium resource estimates for each mineral.

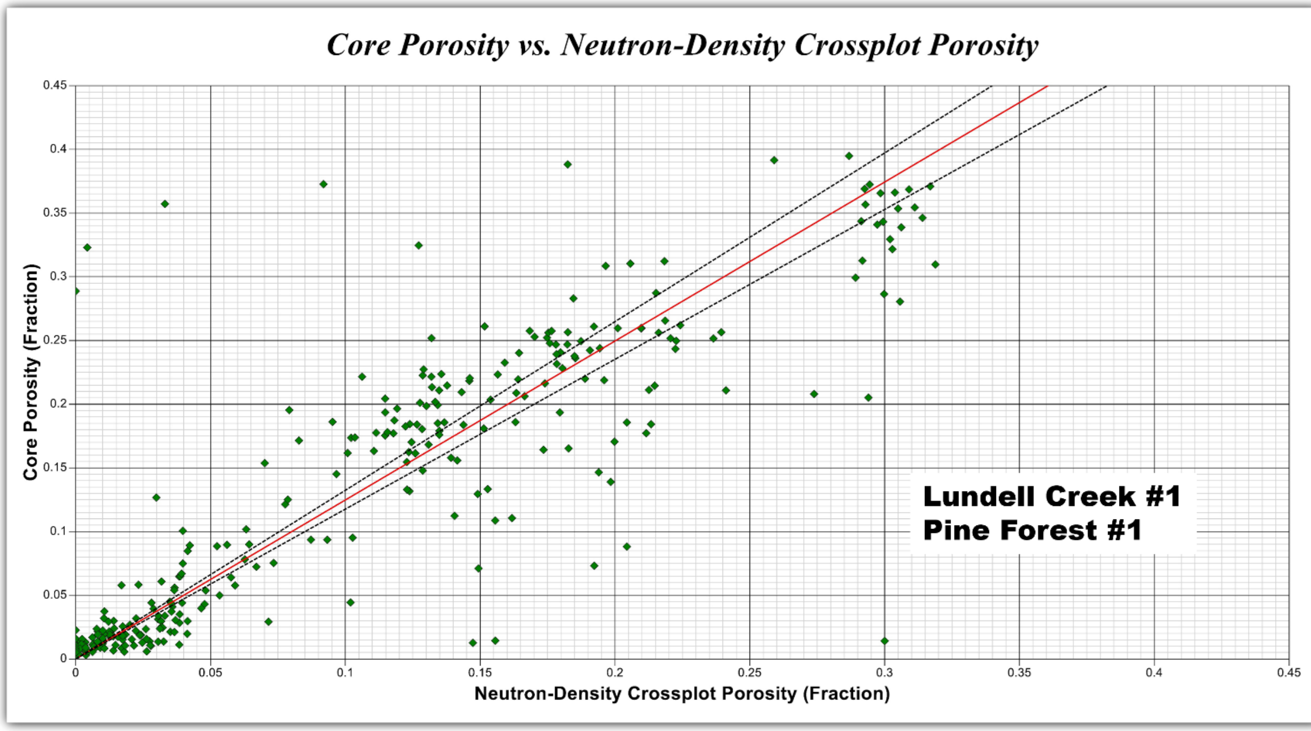


Figure 14.1: Porosity Log Calibration to Core Data Plot

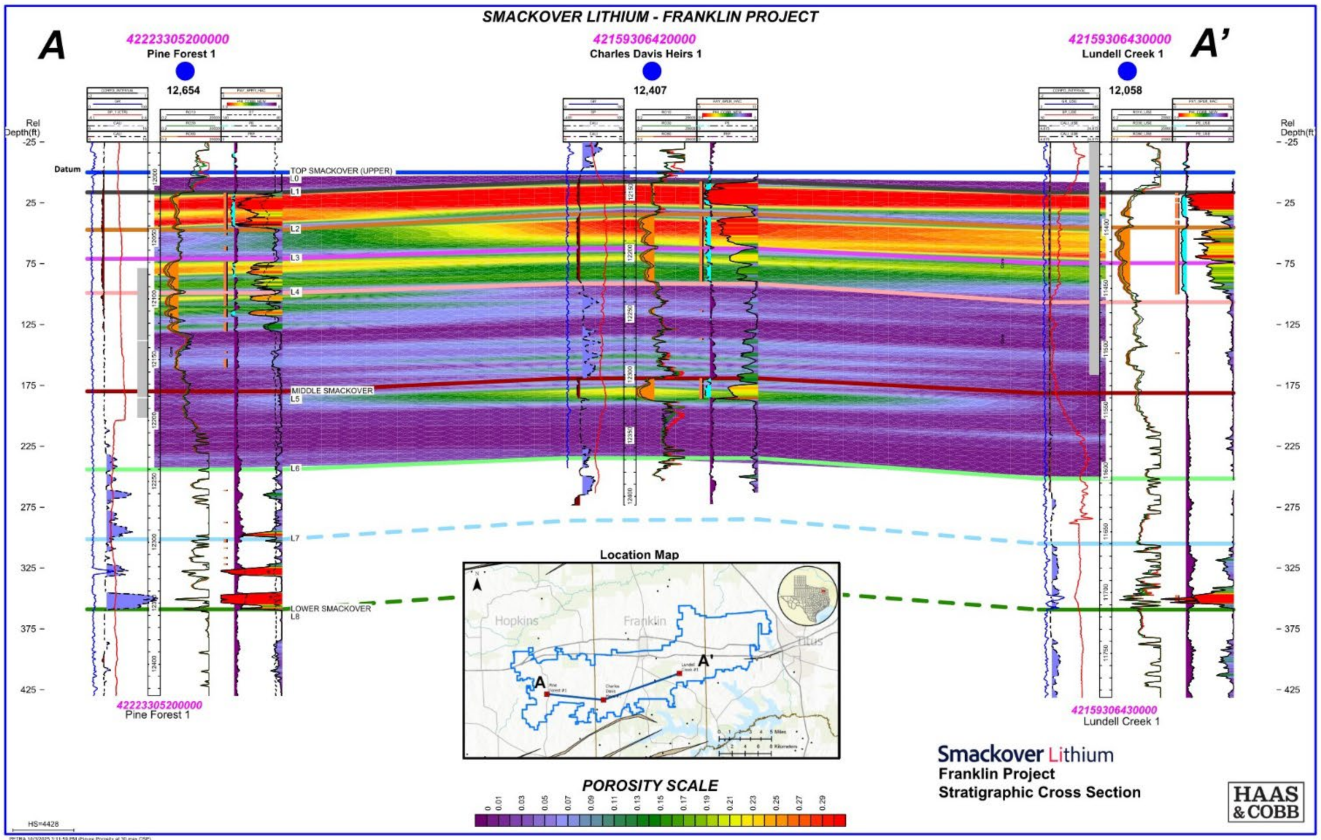


Figure 14.2: Stratigraphic Porosity Cross Section, Exploration Program Wells

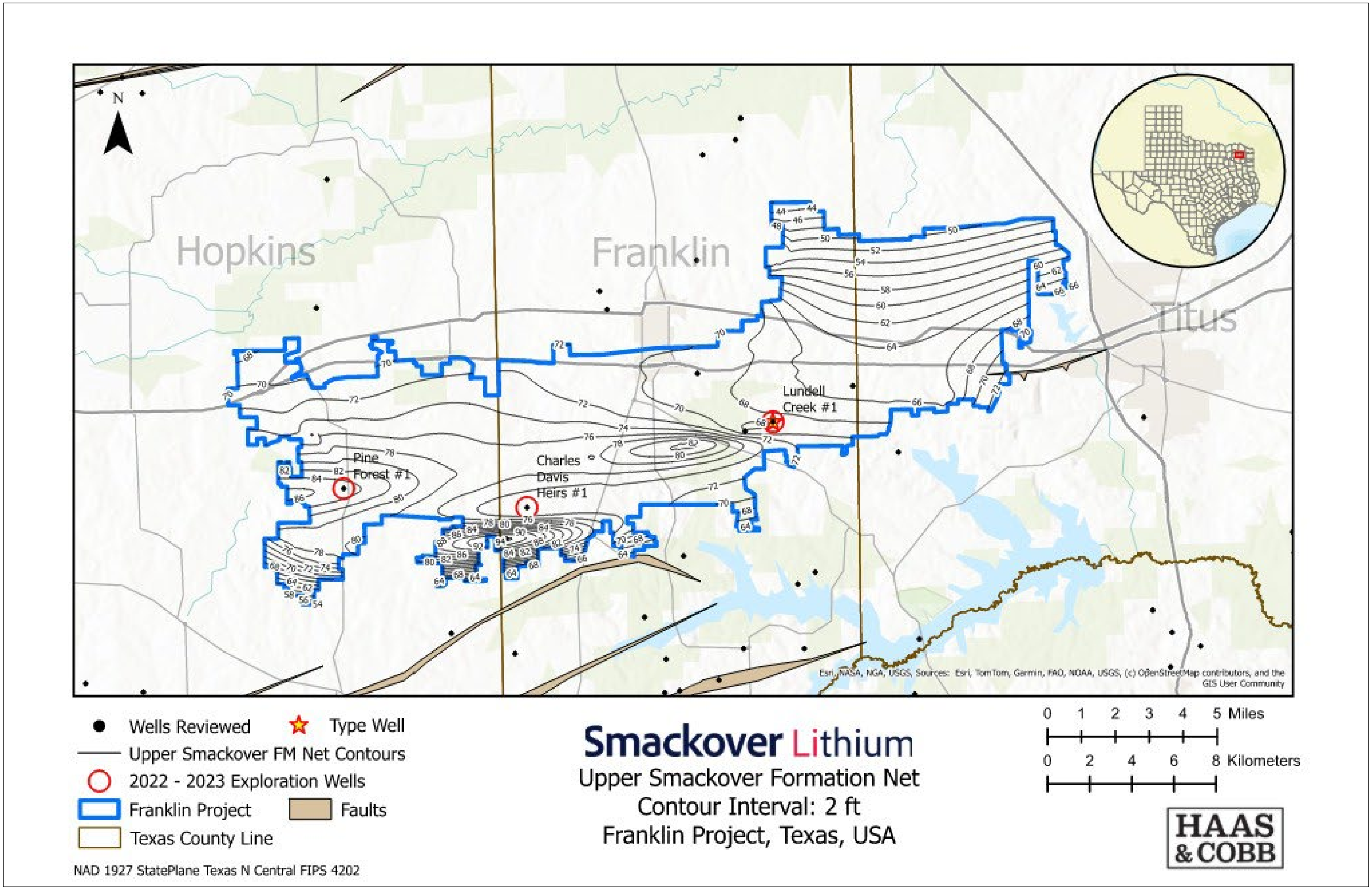


Figure 14.3: Total Upper Smackover Formation Net Porosity – Thickness

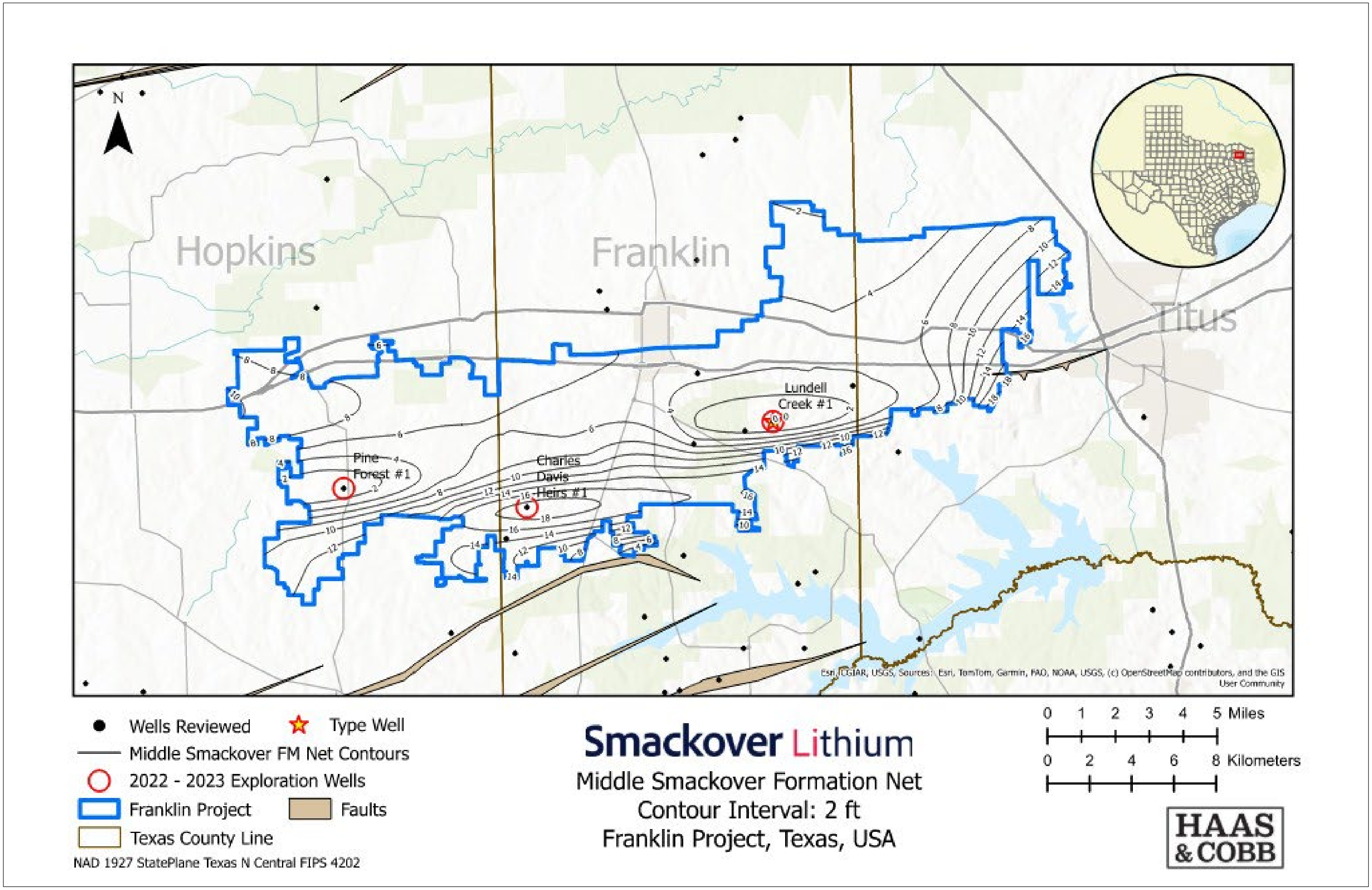


Figure 14.4: Total Middle Smackover Formation Net Porosity - Thickness

14.2. Lithium, Bromide, and Potassium Resource Estimates

To obtain the in-place lithium, bromide, and potassium resource estimates for Upper Smackover and Middle Smackover zones the corresponding net porosity-thickness map (Figure 14.3 and Figure 14.4) has been multiplied by the lithium, bromide, or potassium concentration values. The lithium, bromide, and potassium resources present in the Upper Smackover and Middle Smackover were estimated based on the 18,732 ha (46,287 acres) gross Smackover Lithium leased acreage within the 32,455 ha (80,199 acre) Franklin Project area. The resulting estimated average geologic properties and average lithium, bromide, and potassium concentrations for the gross Smackover Lithium leased acreage are presented in Table 14.1. Conversion factors of 5.323 kg of LCE per kg of lithium and 1.91 kg of potash (potassium chloride) per kg of potassium were used to estimate the volume of commercial product. These resources are contained within 0.61 km^3 of brine volume.

The lithium, bromide, and potassium resource estimates presented in Table 14.1, effective September 24, 2025, do not consider a minimum lithium concentration cutoff because the entirety of the Franklin Project exceeds the normally used 100 mg/L cutoff value, which is still considered an appropriate cutoff point for assessing project viability. No cutoffs were applied to bromide or potassium, given their similarly high values. In addition, it is important to note that 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. The estimate of mineral resources may be materially affected by geology, environment, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. The reported Inferred Mineral Resources are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves.

Table 14.1: Franklin Project Inferred Resource Estimates [1, 2, 3, 4, 6, 7]

Resource Category	Units	Inferred	Inferred	Inferred
Smackover Formation		Upper Smackover	Middle Smackover	Total Smackover
Gross Aquifer Volume	km^3	7.69	7.98	15.67
Net Aquifer Volume	km^3	3.10	0.37	3.47
Average Porosity	%	18.1%	12.4%	17.5%
Brine Volume	km^3	0.56	0.05	0.61
Average Lithium Concentration	mg/L	671	626	668
Lithium Resource	000 tonnes	377	29	406
LCE[5]	000 tonnes	2,005	153	2,159
Average Bromide Concentration	mg/L	4,321	4,600	4,343
Bromide Resource	000 tonnes	2,426	212	2,638
Average Potassium Concentration	mg/L	13,356	12,400	13,286
Potassium Resource	000 tonnes	7,500	570	8,070
Potassium Chloride (Potash)[5]	000 tonnes	14,324	1,089	15,414

Notes:

1. 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. The estimate of mineral resources may be materially affected by geology, environment, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
2. Numbers may not add up due to rounding to the nearest 1,000 unit.
3. The resource estimate was completed and reported using a cutoff of 6% porosity (net aquifer) and 100 mg/L lithium and 1,000 mg/L for bromide and potassium.
4. The inferred resource estimate was developed and classified in accordance with guidelines established by the Canadian Institute of Mining and Metallurgy. The associated Technical Report was completed in accordance with the Canadian Securities Administration's National Instrument 43-101 and all associated documents and amendments. As per these guidelines, the resource was estimated in terms of metallic (or elemental) lithium, bromide, and potassium. The effective date of the mineral resource estimate is September 24, 2025.
5. In order to describe the resource in terms of "industry standard" lithium has been converted to LCE by a conversion factor of 5.323 and potassium converted to potash (KCl) by a conversion factor of 1.91.
6. The lithium, bromide, and potassium resources present in the Upper Smackover and Middle Smackover were estimated based on the 18,732 ha (46,287 acres) gross Smackover Lithium leased acreage within the 32,455 ha (80,199 acre) Franklin Project area.
7. The average mineral concentration values used in this analysis are the weighted average values presented in Section 9.3.

14.3. Qualified Person's Conclusions and Recommendations

The resource category associated with the Upper Smackover and Middle Smackover Formation has been classified as an Inferred Resource in this Technical Report. This classification is based on the large amount of geologic and sample composition data collected within the Franklin Project by the 2023 exploration program. This body of data has clearly demonstrated the presence, volume, and quality (permeability) of the porous reservoir, and the high lithium, bromide, and potassium content of the associated brine. The test program has demonstrated the ability of the Upper Smackover intervals to produce that brine.

The entirety of the Franklin Project exceeds the 100 mg/L minimum lithium concentration cutoff value appropriate for this project, exhibits similar bromide concentrations to active bromide projects to the east in southern Arkansas, and significant potassium concentrations. The resource estimates have been determined on the basis of 100% of the Upper and Middle Smackover within Standard Lithium's gross leased acreage in the Franklin Project area.

At present, the QP is not aware of any legal, political, environmental, socio-economic, or other risks that could materially affect the potential development of the mineral resources.

15.0. MINERAL RESERVE ESTIMATES

This Section 15.0 is not required because the Franklin Project is not an advanced stage property.

16.0. MINING METHODS

This Section 16.0 is not required because the Franklin Project is not an advanced stage property.

17.0. RECOVERY METHODS

This Section 17.0 is not required because the Franklin Project is not an advanced stage property.

18.0. PROJECT INFRASTRUCTURE

This Section 18.0 is not required because the Franklin Project is not an advanced stage property.

19.0. MARKET STUDIES AND CONTRACTS

This Section 19.0 is not required because the Franklin Project is not an advanced stage property.

20.0. ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

This Section 20.0 is not required because the Franklin Project is not an advanced stage property.

21.0. CAPITAL AND OPERATING COSTS

This Section 21.0 is not required because the Franklin Project is not an advanced stage property.

22.0. ECONOMIC ANALYSIS

This Section 22.0 is not required because the Franklin Project is not an advanced stage property.

23.0. ADJACENT PROPERTIES

A number of oil and gas production fields exist in and around the Franklin Project area. There are no publicly disclosed brine production projects in that area.

The authors have not verified the information associated with adjacent properties, and the information associated with these adjacent properties may not be indicative of mineralization that may exist on, or the potential for similar development at, the Franklin Project.

24.0. OTHER RELEVANT DATA AND INFORMATION

It is the opinion of the QPs that all material information has been stated in the above Sections of the Technical Report.

25.0. INTERPRETATION AND CONCLUSIONS

25.1. Mineral Tenure

The Franklin Project brine and brine-sourced mineral leases have yet to be developed for commercial production of brine minerals. Once the Project is in production, those leases within an established production unit will be held by production, or otherwise maintained by applicable lease provisions, and no additional primary term extensions will be necessary.

25.2. Exploration Work

Standard Lithium successfully executed a three-well exploration program that significantly improved the geologic description of the target Smackover Formation. The program addressed the three key factors that determine the quality of the resource: the total volume of brine based on core and log porosity data, the brine's lithium, bromide and potassium concentrations based on the analysis of multiple brine samples from the wells, and the productivity of the formation based on the core permeability data collected. In the opinion of the QP, the resulting data and analyses support the inferred resource classification estimates present at the Franklin Project.

25.3. Geology and Mineral Resource Estimates

The volumes of in-place lithium, bromide, and potassium are proportional to the product of the brine-saturated pore volume and the respective concentration, both of which are known with reasonable accuracy, based on the drilling, logging, coring, and sampling data obtained throughout the Project area. The data used to estimate and model the resource were gathered from the three project-specific wells along with 100 existing and suspended oil and gas production and exploration wells in and around the Franklin Project area. Two-dimensional seismic data were combined with well log data to assess the top of the Smackover Formation structure and to identify faults.

Geotechnical and geochemical analyses for the three exploration wells were conducted by independent, accredited commercial laboratories (Intertek Westport Technology Center located in Houston, Texas and Western Environmental Testing Laboratory [WETLAB] in Sparks, Nevada). The average porosity and permeability from the 158 core samples collected from the two cored 2023 exploration wells in the Upper Smackover Formation were 14% and 17 mD, respectively. The brine sample analytical laboratory results yielded an average of 4,321 mg/L bromide, 671 mg/L lithium, and 13,586 mg/L potassium for the Upper Smackover and 4,600 mg/L bromide, 626 mg/L lithium, and 12,400 mg/L potassium for the Middle Smackover in the brine samples collected from the three 2023 exploration wells.

The lithium, bromide, and potassium resources present in the Upper Smackover and Middle Smackover were estimated based on the 18,732 ha (46,287 acres) gross Smackover Lithium leased acreage within the 32,455 ha (80,199 acre) Franklin Project area. The Inferred Resource value corresponds to an estimate of 2,638,000 metric tonnes of elemental bromide, 406,000 metric tonnes of elemental lithium, and 8,070,000 metric tonnes of elemental potassium. These values are equivalent to 2,159,000 metric tonnes of LCE using a conversion factor of 5.323 kg of LCE per kg of lithium and 15,414,000 tonnes of potash (potassium chloride) using a conversion factor of 1.91 kg of potash per kg of potassium. These resources are contained within 0.61 km^3 of brine volume.

At present, the QP is not aware of any legal, political, environmental, or other risks that could materially affect the potential development of the mineral resources.

25.4. Metallurgy and Mineral Processing Conclusions

The mineral processing QP concludes that the Franklin Project brine is similar to the SWA brine from a metallurgical perspective and that the differences in concentrations of the major constituents are relatively small. This leads to the inference that the potential lithium process flowsheet for the Franklin Project will likely be similar to that for the SWA project. The QP also concludes that from a metallurgical perspective, the Franklin Project is ready to proceed to the next phase of the project.

25.5. Project Risks

The project risks identified, along with an assessment of their potential impacts, are presented in the subsections below.

25.5.1. Mineral Tenure Risks

This could be the first brine production project that the RRC permits and could result in Project delays. Also, several Texas lawyers have written articles arguing that Texas law is not clear about whether brine-sourced lithium is part of the mineral or surface estate in Texas, before concluding that it is most likely a mineral. Standard Lithium's Texas counsel has opined that the conclusion that brine-sourced lithium is a mineral is inescapable under Texas law; accordingly, this possibility is seen as low risk.

25.5.2. Geologic Risks

Potential geologic risks include unexpected reservoir heterogeneity, which could include:

- Variations in net pay that would reduce the volume of resources subject to recovery;
- Insufficient productivity resulting from lower-than-expected formation permeability;
- Discontinuity of the porous formation resulting in a smaller brine volume accessible from the project wells; and,
- Unexpected faulting resulting in barriers to flow.

These risks will be addressed during the subsequent data gathering programs and can also be addressed through adjustments to the injection and production well configuration if these factors are encountered during the project development. It should be noted that all reservoirs are heterogeneous, and that this report fully incorporates the observed heterogeneity in its analysis and conclusions. Also, the Smackover Formation in the Franklin Project area is similar to that underlying the successful brine recovery projects to the east of the Project area, although such projects are not necessarily indicative of the mineralization at the Project.

25.5.3. Metallurgical Risks

The potential metallurgical risks to the Franklin Project include:

- Variability of feed brine composition will cause operational control problems, leading to not achieving battery production specification;
- Performance of the DLE technology not meeting lithium recovery and impurity rejection targets;
- Sub-optimal operation of reinjection due to unexpected variability in the properties of the spent lithium brine;
- Health and safety risks around the removal and handling of hydrogen sulphide; and,

- Health and safety risks around the delivery, storage, mixing and distribution of reagents – hydrogen peroxide (explosion risk), caustic soda (caustic burns) and hydrochloric acid (toxic fumes and acid burns).

26.0. RECOMMENDATIONS

26.1. Geology and Mineral Resource Estimates

The recommended next steps for Standard Lithium to elevate the Franklin Project to a higher level of resource classification and project definition are to:

- Collect brine sample from all available zones in the 2023 exploration program wells.
- Conduct production tests or pressure transient tests on one or more of the 2023 exploration program wells.
- Drill two additional exploration test wells (US$6 million each) targeting the Upper, Middle, and Lower Smackover in areas not tested by the 2023 data gathering programs to provide:
    - Geologic data;
    - Lithium, bromide, and potassium concentrations;
    - Long-term production test information to estimate well rates, the number of wells needed, facility rates, and the completion plans for those wells;
    - Information regarding the potential extent of a Lower Smackover development target; and,
    - Information regarding the benefit of well stimulation to well productivity.
- Monitor the test wells for salt precipitation, evaluate the potential effect of salt precipitation on production operations, and identify remediation options.
- Update the geologic model.
- Revise and adjust the categories of the resource estimates.
- Develop a reservoir simulation model in support of development of an optimized well plan and brine production profile.
- Incorporate all data obtained in the simulation model input geologic description and prepare a potential Franklin Project development concept and plan, including brine flow rate, well count, and well configuration.

The QP recommends Standard Lithium approach accomplishing these tasks over a two-year period. Estimated costs are presented in Table 26.1.

Table 26.1: Recommended Works for Geology and Mineral Resource Estimates

Recommended Works	Estimated Cost (US$M)
2023 well re-entry program brine sampling and production testing	5.0
Drill two additional exploration wells	12.0
Update geological model and develop reservoir simulation model	1.0
Total	**18.0**

26.2. Metallurgy and Mineral Processing

The following metallurgical testing steps are recommended for the Franklin Project:

- DLE characterization of the Franklin Project brine;
- The testing of DLE pre-treatment steps on Franklin Project brine;
- Laboratory scale testing of the DLE eluate (derived from the Franklin Project brine) for the purification, concentration and lithium carbonate production steps; and,
- Additional testing as required to assess the extraction of bromide and/or potash from the brine resource.

The first step has commenced and the results from this will dictate the approach to the second and third steps. It is envisaged that the recommended steps will require 12 to 18 months. Estimated costs are presented in Table 26.2.

Table 26.2: Recommended Works for Metallurgy and Mineral Processing

Recommended Works	Estimated Cost (US$M)
DLE characterization and laboratory scale testing	1.5
Total	**1.5**

27.0. REFERENCES

Ahr, W. M., (1973). The carbonate ramp: an alternative to the shelf model: Gulf Coast Association of Geological Societies Transactions, v. 23.

Alkin, R.H. and Graves, R.W. (1969): Reynolds oolite of Southern Arkansas; The American Association of Petroleum Geologists, Bulletin v. 53, no. 9, p. 1909-1922.

Baldwin, O.C., and Adams, J.A., (1971). K40/Ar40 ages of the alkalic igneous rocks of the Balcones trend of Texas: Texas Journal of Science, v. 22, p. 223–231

Bishop, 1967. Petrology of Upper Smackover Limestone in North Haynesville Field, Claiborne Parish, Louisiana, American Association of Petroleum Geologists Bulletin Vol. 52, No. 1

Bishop, W. F. (1968): Petrology of Upper Smackover limestone in North Haynesville field, Claiborne Parish, Louisiana. American Association of Petroleum Geologists Bulletin, v. 52, p. 92–128.

Bishop, W. F. (1971a): Geology of a Smackover stratigraphic trap. American Association of Petroleum Geologists Bulletin, v. 55, p. 51–63.

Bishop, W. F. (1971b): Geology of upper member of Buckner Formation, Haynesville Field area, Claiborne Parish, Louisiana. American Association of Petroleum Geologists Bulletin, v. 55, p. 566–580.

Bishop, W. F. (1973): Late Jurassic contemporaneous faults in north Louisiana and south Texas. American Association of Petroleum Geologists Bulletin, v. 57, p. 566–580.

Blondes, M.S., Gans, K.D., Engle, M.A., Kharaka, Y.K., Reidy, M.E., Saraswathula, V., Thordsen, J.J., Rowan, E.L., and Morrissey, E.A., 2018. U.S. Geological Survey National Produced Waters Geochemical Database (ver. 2.3, January 2018): U.S. Geological Survey data release, https://doi.org/10.5066/F7J964W8.

Blondes, M.S., Knierim, K.J., Croke, M.R., Freeman, P.A., Doolan, C., Herzberg, A.S., and Shelton, J.L., 2023, U.S. Geological Survey National Produced Waters Geochemical Database (ver. 3.0, December 2023): U.S. Geological Survey data release, https://doi.org/10.5066/P9DSRCZJ

Budd, D. A., and R. G. Loucks, (1981), Smackover and lower Buckner formations, South Texas: Depositional systems on a Jurassic carbonate ramp: Bureau of Economic Geology Report of Investigation 112, 38 p.

Buffler, R.T. (1991): Early evolution of the Gulf of Mexico basin; In: D. Goldthwaite, (ed.), An Introduction to Central Gulf Coast Geology, New Orleans: New Orleans Geological Society, p. 1-15.

Buffler, R.T., Shaub, F.J., Huerta, R., Ibrahim, A.B.K. and Watkins, J.S. (1981): A model for the early evolution of the Gulf of Mexico; Oceanologica Acta, No. SP, p 129- 136.

Canadian Institute of Mining, Metallurgy and Petroleum, 2003. "Best Practice Guidelines for Potash,"; https://mrmr.cim.org/en/best-practices/estimation-of-mineral- resources-mineral-reserves/

Canadian Institute of Mining, Metallurgy and Petroleum, 2012. "CIM Best Practice Guidelines for Resource and Reserve Estimation for Lithium Brines"; https://mrmr.cim.org/media/1041/best-practice-guidelines-for-reporting-of-lithium-brine- resources-and-reserves.pdf

Canadian Institute of Mining, Metallurgy and Petroleum, 2014. "CIM Definition Standards for Mineral Resources & Mineral Reserves"; https://mrmr.cim.org/media/1128/cim-definition-standards_2014.pdf

Canadian Institute of Mining, Metallurgy and Petroleum, 2019. CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines, prepared by the Canadian Institute of Mining, Metallurgy, and Petroleum, CIM Mineral Resources & Mineral Reserve Committee, Westmount, QC, Canada. https://mrmr.cim.org/media/1146/cim-mrmr-bp-guidelines_2019_may2022.pdf

Collins, A.G. (1974). Geochemistry of Liquids, gases, and Rocks from the Smackover Formation. U.S. Bureau of Mines report of Investigations

Dickinson, K.A. (1968); Upper Jurassic stratigraphy of some adjacent parts of Arkansas, Louisiana and Texas; U.S. Geol. Survey Prof. Paper, 594E.

Final List of Critical Minerals 2018, 83 F.R. 23295-23296 (May 18, 2018). https://www.govinfo.gov/app/details/FR-2018-05-18/2018-10667/summary

Forgotson, James M. (1954). Regional Stratigraphic Analysis of Cotton Valley Group of Upper Gulf Coastal Plain. AAPG Bulletin.

Handford and Baria (2007). Geometry and seismic geomorphology of carbonate shoreface clinoforms, Jurassic Smackover Formation, north Louisiana. Geological Society, London, Special Publications. Vol. 277.

Harris, P. M. and Dodman, C. A. (1987): Jurassic evaporites of the U.S. Gulf Coast: the Smackover-Buckner contact; Society of Economic Paleontologists and Mineralogists, Depositional and Diagenetic Spectra of Evaporites (CW3), p. 174–192.

Hazzard, R.T., Spooner, W.C., and Blanpied, B.W., (1947). Notes on the stratigraphy of the formations which underlie the Smackover Limestone in south Arkansas, northeast Texas and north Louisiana, in Shreveport Geological Society Reference Report, v. 2.

Heydari, E. and Baria, L. (2005): A microbial Smackover Formation and the dual reservoir–seal system at the Little Cedar Creek Field in Conecuh County of Alabama; Gulf Coast Association of Geological Societies Transactions, v. 55, p. 294-320.

Hunt, B. W. (2013). *Regional Norphlet facies correlation, analysis and implications for paleostructure and provenance, eastern Gulf of Mexico*. The University of Alabama.

Imlay, R.W. (1940). Lower Cretaceous and Jurassic Formations of Southern Arkansas and their Oil and Gas Possibilities. Office of the State Geologist Arkansas. Information Circular IC-12.

International Bureau of Weights and Measures (BIPM), (2006). *The international system of units (SI)* (8th ed.). BIPM

Kopaska-Merkel, D.C., Mann, S.D. and Tew, B.H. (1992): Geological setting, petrophysical characteristics, and regional heterogeneity patterns of the Smackover in southwest Alabama; Geological Survey of Alabama, Contract No. DE-FG22-89BC14425, 215 p.

Mancini, E.A., Aharon, P., Goddard, D.A., Horn, M. and Barnaby, R. (2008): Basin analysis and petroleum system characterization and modelling, interior salt basins, central and eastern Gulf of Mexico, Part 3: tectonic / depositional history, resource assessment; Adapted from Final Report, issued June 30, 2008, for period May 1, 2003 to April 30, 2008, prepared for U.S. Department of Energy, for DOE Award Number DE- FC26-03NT15395 and available at Texas A&M University (http://berg- hughes.tamu.edu/research/sedimentary-basin-analysis-studies).

Mann, S. D. (1988). Subaqueous evaporites of the Buckner Member, Haynesville Formation, northeastern Mobile County, Alabama.

Marton, G., & Buffler, R. T. (2016). Jurassic–Cretaceous tectonic evolution of the southeastern Gulf of Mexico, constrains on the style and timing of Gulf of Mexico rift–drift development. In *AAPG/SEG International Conference & Exhibition*.

Moldovanyi, E.P. and L.M. Walter, 1992. Regional trends in water chemistry, Smackover Formation, southwest Arkansas: Geochemical and physical controls; The American Association of Petroleum Geologists, Bulletin, v. 76, no. 6., p. 864-894.

Moore, C.H. and Druckman (1981): Burial diagenesis and porosity evolution, Upper Jurassic Smackover, Arkansas and Louisiana; The American Association of Petroleum Geologists, 1981, p. 597-628.

Moore, C. H. (1984): The upper Smackover of the Gulf rim: depositional systems, diagenesis, porosity evolution and hydrocarbon production; In: W. P. S. Ventress, D. G. Bebout, B. F. Perkins, and C. H. Moore (eds.), The Jurassic of the Gulf rim: Gulf Coast Section SEPM, 3rd Annual Research Symposium, Program and Abstracts, p. 283–307.

Moser v. U.S. Steel Corp., 676 S.W.2d 99, 101–08 (Tex. 1984)

Nunn, J. A. (1984). Subsidence and temperature histories for Jurassic sediments in the northern Gulf Coast: a thermal-mechanical model.

Pilger Jr, R. H. (1981). The opening of the Gulf of Mexico: Implications for the tectonic evolution of the northern Gulf Coast.

Railroad Commission of Texas, 16 Tex. Admin. Code § 3.81.

Railroad Commission of Texas, 16 Tex. Admin. Code § 3.82.

Reed v. Wylie, 597 S.W.2d 743, 747 (Tex. 1980)

Relating to the regulation by the Railroad Commission of Texas of brine mining. SB1186. 88th Legislature. (2023). https://legiscan.com/TX/text/SB1186/id/2809037

S&P Global (2025). Products & Solutions Upstream Oil & Gas Consulting. https://www.spglobal.com/commodity-insights/en/products-solutions/consulting/upstream-oil-gas

Salvador, A. (1987): Late Triassic-Jurassic paleography and origin of Gulf of Mexico basin; AAPG Bulletin, v. 71, p. 419-451.

Salvador, A. (1990): Triassic-Jurassic; In: Salvador, A., (ed.), The Geology of North America, v. J., The Gulf of Mexico Basin; Boulder, Geological Society of America, p. 131– 180.

Salvador, A. (1991a): The Gulf of Mexico Basin: Decade of North American geology; v. DNAG, v. J: Boulder, Colorado, GSA, 568 p.

Salvador, A. (1991b): Triassic-Jurassic; In: A. Salvador, (ed.), The Gulf of Mexico Basin, Boulder, Colorado, GSA, p. 131-180.

Sawyer, D. S., R. T. Buffler, and R. H. Pilger,,Jr, (1991). The crust under the Gulf of Mexico Basin, in A. Salvador, ed., The Gulf of Mexico Basin: The geology of North America, v. J: Geological Society of America, Boulder, Colorado.

Schemper, P., R. G. Loucks, and Q. Fu (2022), Depositional systems, lithofacies, and lithofacies stacking patterns of the Jurassic Smackover Formation (Oxfordian) and Buckner Anhydrite (Kimmeridgian) in Van Zandt County, Texas: A type-cored section from northeastern Texas: Gulf Coast Association of Geological Societies Journal, v. 11, p. 16–36.

Schneider, H. G. (1924). Smackover Oil Field, Ouachita and Union Counties, Ark. Transactions of the AIME, 70(01), 1076-1099.

Scott, K. R., Hayes, W. E., and Fietz, R. P., (1961). Geology of the Eagle Mills Formation: Gulf Coast Assoc. Geol. Socs. Trans., v. 11, p. 1-14.

Sulphur Springs Climate: Weather Sulphur Springs & Temperature by Month. (n.d.). https://en.climate-data.org/north-america/united-states-of-america/texas/sulphur-springs-16639/

Texas A&M Agrilife Extension. (n.d.). Extension Education in Franklin County. https://franklin.agrilife.org/

Troell, A. R. and Robinson, J. D. (1987): Regional stratigraphy of the Smackover limestone (Jurassic) in south Arkansas and north Louisiana, and the geology of Chalybeat Springs oil field. Gulf Coast Association of Geological Societies Transactions, v. 37, p. 225–262.

U.S. Census Bureau (2025): Annual Estimates of the Resident Population for Counties in Texas: April 1, 2020 to July 1, 2024 (CO-EST2024-POP-48), Source: U.S. Census Bureau, Population Division, Release Date: March 2025

Van Siclen, D. C. (1984). Early opening of initially closed Gulf of Mexico and Central North Atlantic Ocean. *AAPG Bulletin*, *68*(9), 1221-1221.

Winker, C. D., & Buffler, R. T. (1988). Paleogeographic evolution of early deep-water Gulf of Mexico and margins, Jurassic to Middle Cretaceous (Comanchean). AAPG bulletin, 72(3), 318-346.

Zimmerman, R. K. (1992): Fractured Smackover limestone in northeast Louisiana; Implications for hydrocarbon exploitation; AAPG Datapages/Archives, GCAGS Transactions, v. 42, p. 401-412.

28.0. QUALIFIED PERSON'S CERTIFICATES

CERTIFICATE OF QUALIFIED PERSON

I, Abinash Moharana, state that:

(a) I am a Mining Engineer at:
WSP USA Inc.
177 Church Ave., Suite 1105
Tucson, Arizona 85701

(b) This certificate applies to the technical report titled "NI 43-101 Technical Report: Maiden Inferred Resource Estimate for Standard Lithium Ltd's Franklin Project Located in Hopkins, Franklin, and Titus Counties, Texas, United States" with an effective date of: September 24, 2025 (the "Technical Report").

(c) I am a "qualified person" for the purposes of National Instrument 43-101 ("NI 43-101"). My qualifications as a qualified person are as follows: I am a graduate of the National Institute of Technology, Rourkela with a Bachelor of Engineering Degree in Mining Engineering and also a graduate of the Southern Illinois University Carbondale with a Master of Science Degree in Mining Engineering. I am a Registered Member of the Society for Mining, Metallurgy, and Exploration. My relevant experience after graduation and over 24 years of experience in mining, for the purpose of the Technical Report, includes 17 years specializing in mine planning, mine scheduling, financial analysis, and data integration for various commodities.

(d) I have not completed a personal inspection of the Franklin Project described in the Technical Report given that this is a greenfield project and that the information stated in my Sections was verified by independent research.

(e) I am responsible for Section(s) 1.1, 2, 3, 5, and 27 of the Technical Report.

(f) I am independent of Standard Lithium as described in Section 1.5 of NI 43-101.

(g) I have not had prior involvement with the Property that is the subject of the Technical Report.

(h) I have read NI 43-101 and the parts of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101; and

(i) At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the parts of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed in Tucson, Arizona this 5th of November, 2025.

/signed/

Abinash Moharana, Registered Member SME 04546443

I, Marek Dworzanowski, EUR ING, CEng, do hereby certify that:

1) I am an independent consulting metallurgical engineer based at 25 Rue Paul Doumer, Tregueux, 22950, France.
2) I graduated with a Bachelor of Science Degree (with honours) in Mineral Processing from the University of Leeds, United Kingdom, in 1980.
3) I am a registered European Engineer (EUR ING) and a registered Chartered Engineer (CEng) in the United Kingdom. I am also an Honorary Life Fellow of the Southern African Institute of Mining and Metallurgy (SAIMM), and I am a Fellow of the Institute of Materials, Minerals and Mining (IMMM)
4) I have practiced metallurgical engineering for 44 years, with 37 years as a registered Professional Engineer, in the global mining industry. I have been a qualified person for more than 10 lithium brine projects. I have provided operational and project reviews for brine operations and lithium carbonate plants in South America. I have provided process consulting on geothermal brine projects in France.
5) I have read the definition of "qualified person" set out in the National Instrument 43-101 ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101), and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6) I oversaw the preparation and am responsible for Sections 1.5, 1.7.2, 12.4, 13, 25.4, 25.5.3, and 26.2 of the technical report titled “NI 43-101 Technical Report: Maiden Inferred Resource Estimate for Standard Lithium Ltd’s Franklin Project Located in Hopkins, Franklin, and Titus Counties, Texas, United States” with an effective date of: September 24, 2025 (the “Technical Report”).
7) I have not visited the Franklin Project.
8) I have not had prior involvement with the Property that is the subject of the Technical Report.
9) I am not aware of any scientific or technical information with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
10) I am independent of Standard Lithium as per NI 43-101 and successfully pass the independence requirements of the Guidance of Independence test in item 1.5 of the Companion Policy to NI 43-101. I am not an employee, insider, director, or partner of Standard Lithium and do not hold any securities or direct/indirect interests related to Standard Lithium or the property and/or adjacent properties that is the subject of this Technical Report.
11) I have read NI 43-101and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Signed in Tregueux, France, 5th of November 2025

/signed/

Marek Dworzanowski, EUR ING, CEng, HonFSAIMM, FIMMM

I, Randal M. Brush, P.E., as a co-author of the technical report titled "NI 43-101 Technical Report: Maiden Inferred Resource Estimate for Standard Lithium Ltd's Franklin Project Located in Hopkins, Franklin, and Titus Counties, Texas, United States" (the "Technical Report"), effective date September 24, 2025, do hereby certify that:

1) I am currently employed as a Senior Engineering Advisor at Haas & Cobb Petroleum Consultants (formerly William M. Cobb & Associates, Inc.) with an office at 12770 Coit Road, Suite 907, Dallas, Texas, 75251.
2) I hold a Master of Science degree in petroleum engineering from Stanford University and a Bachelor of Science degree in chemical engineering from Rice University.
3) I am a member in good standing of the Society of Petroleum Engineers, a constituent organization within the AIME, the American Institute of Mining, Metallurgical and Petroleum Engineers (Member # 0515460). I am also a member of the Society of Petroleum Evaluation Engineers.
4) I am and have been a professional engineer, registered in Texas (License #85165), since 1999.
5) As a professional engineer, I have over 42 years of experience in evaluating the injection and production of water, brines, and other fluids into and out of porous formations like the Smackover. This includes 10 years of evaluating brine recovery at a nearby Smackover field. These tasks have included the following: using engineering analysis, mathematical modeling, and appropriate data collection and analysis techniques to evaluate the injection of gases, water, brine, and steam into underground geologic formations, and the recovery of oil, gas, water, and brine from those formations, specializing in reservoir evaluation, management, and simulation studies to estimate hydrocarbon (crude oil, condensate, and natural gas) and non-hydrocarbon (e.g., bromine, lithium, CO2, and helium) reserves and inventories; provide ultimate recovery estimates by predicting reservoir performance under alternate development plans; and evaluate the performance of gas and CO2 storage reservoirs in response to internal and external operational factors.
6) As a result of my education, qualifications, affiliation with a professional association, and experience, I fulfil the requirements to be a "qualified person" as defined in National Instrument 43-101 ("NI 43-101").
7) I am independent of Standard Lithium applying all the tests in Section 1.5 of the Companion Policy to NI 43-101.
8) I am responsible for Sections 1.2, 1.6, 4, 10, 14.2, 14.3, 23, 24, 25.1, 25.3, 25.5.1, and 27 of this Technical Report.
9) I have not had any prior involvement with the Franklin Property.
10) I visited the Franklin Property on February 22, 2023, and July 24, 2023.
11) I have read NI 43-101, Form 43-101F1, and the sections of the Technical Report for which I am responsible and confirm the Technical Report has been prepared in compliance with NI 43-101.
12) As of the date of this certificate, to the best of my knowledge, information, and belief, this Technical Report contains all of the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed in Tulsa, Oklahoma, 5th of November 2025
/signed/
Randal M. Brush, P.E.

I, Robert E. Williams, Jr., P.G., CPG, as a co-author of the technical report titled "NI 43-101 Technical Report: Maiden Inferred Resource Estimate for Standard Lithium Ltd's Franklin Project Located in Hopkins, Franklin, and Titus Counties, Texas, United States" (the "Technical Report"), effective date September 24, 2025, do hereby certify that:

1) I am currently employed as a Principal Geologist at Haas & Cobb Petroleum Consultants (formerly William M. Cobb & Associates) 12770 Coit Road Suite 907, Dallas Texas, 75251.
2) I am a graduate of Oklahoma State University and earned a degree Bachelor of Science in Geology in 1991.
3) I am a professional geologist registered with Texas Board of Professional Geoscientists #3964, awarded on August 31, 2003.
4) I am a member in good standing of the American Institute of Professional Geologists (AIPG) Certification #12158, awarded on January 9, 2023.
5) I have practiced my profession for 34 years. I have been involved in brine (for bromine, lithium, and other metals extraction) and petroleum geology projects during this time including: subsurface mapping, geologic modelling of carbonate reservoirs, geophysical log interpretation, drilling wells, reservoir volumetric analysis, resources and reserve estimates.
6) As a result of my education, qualifications, affiliation with a professional association, and experience, I fulfil the requirements to be a "qualified person" as defined in National Instrument 43-101 ("NI 43-101").
7) I am independent of Standard Lithium applying all the tests in Section 1.5 of the Companion Policy to NI 43-101.
8) I am responsible for Sections 1.3, 1.4, 1.7.1, 6, 7, 8, 9, 11, 12.1, 12.2, 12.3, 14.1, 25.2, 25.5.2, 26.1, and 27 of this Technical Report.
9) I have had no prior involvement with the Franklin Property.
10) I visited the Franklin Property on January 27, 2023, February 22, 2023, and July 7 to 13, 2023.
11) I have read NI 43-101 and Form 43-101 and the sections of the Technical Report for which I am responsible and confirm the Technical Report has been prepared in compliance with NI 43-101.
12) As of the date of this certificate, to the best of my knowledge, information, and belief, this Technical Report contains all of the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed in Tulsa, Oklahoma, 5th of November 2025

/signed/

Robert E. Williams, Jr., P.G. CPG