NI 43-101 TECHNICAL REPORT

ON THE

THACKER PASS PROJECT
HUMBOLDT COUNTY, NEVADA, USA

Prepared for:

Lithium Americas Corp.
3260 - 666 Burrard St
Vancouver, BC, Canada, V6C 2X8

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Qualified Persons	**Company**
William van Breugel, P.Eng.	SGS Canada Inc.
Johnny Canosa, P.Eng.	SGS Canada Inc.
Joseph M. Keane, P.E.	SGS Canada Inc.
Benson Chow, RM-SME	Sawtooth Mining, LLC
Kevin Bahe, P.E.	Sawtooth Mining, LLC
Paul Kaplan, P.E.	NewFields
Walter Mutler, P.Eng.	EXP U.S. Services Inc.

SGS Project # P20457-01

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1 SUMMARY

1.1 Introduction

Lithium Nevada LLC (“LN”) is advancing the Thacker Pass Project in Humboldt County, Nevada, (hereafter referred to as “the Project”), formerly known as the Lithium Nevada Project or Stage I of the Kings Valley Lithium Project. LN is a wholly-owned subsidiary of a joint venture between Lithium Americas Corp. (“LAC”), which has a 62% ownership, and General Motors Holdings LLC (“GM”), which has a 38% ownership. The terms “LN” and “LAC” are used throughout the report to denote the owners of the Project.

The Property, defined in Section 1.2, encompasses the mineral claims that were formerly referred to as the Stage I area of the Kings Valley Lithium Project and includes lithium (Li) claystone mining at the Thacker Pass deposit. The Project is currently in the development stage with pre-construction activities well advanced. This Technical Report presents the results of a Feasibility Study evaluation of the Thacker Pass Project.

SGS Canada Inc. was commissioned by LAC to prepare this National Instrument 43-101 ("NI 43-101") Technical Report (“Technical Report”). In preparing this report, SGS relied upon input from LAC and information prepared by several qualified independent consulting groups particularly regarding geology, geological mapping, exploration, and resource estimation. See Section 2 for a full discussion of contributors to this study.

The economic analysis is based on second quarter 2024 pricing for capital and operating costs.

1.2 Property Location, Description and Ownership

LAC currently has surface and mineral rights within the Thacker Pass Project and to the northwest of the Thacker Pass Project area in the Montana Mountains. The Thacker Pass Project area encompasses approximately 7,900 ha within the total LAC property of approximately 22,500 ha. The Thacker Pass Project is located in Humboldt County in northern Nevada, approximately 100 km north-northwest of Winnemucca, approximately 33 km west-northwest of Orovada, Nevada, and 33 km due south of the Oregon border. It is situated within 44 North (T44N), Range 34 East (R34E), and within portions of Sections 1 and 12; T44N, R35E within portions of Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17; and T44N, R36E, within portions of Sections 7, 8, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 29.

A list of 2,694 unpatented mining claims (UM Claims) and 30 mill site claims owned or controlled by LAC in northern Humboldt County, Nevada, is presented in Table 4-1. These claims include the Thacker Pass Project area and are shown in Figure 4-2. In addition to these claims, LAC also owns 64.75 ha of private property in the Thacker Pass Project area.

Chevron began an exploration program for uranium in the sediments located throughout the McDermitt Caldera in 1975 and added lithium to its assays in 1978 and 1979 after discovering anomalous concentrations of lithium associated with the caldera. From 1980 to 1987, Chevron began a drilling program that focused on lithium targets and conducted extensive metallurgical testing of the clays to determine the viability of lithium extraction. In 1991, Chevron sold its interest in the claims to Cyprus Gold Exploration Corporation who allowed the claims to lapse. Jim LaBret, one of Cyprus Gold Exploration Corporation claim owner, leased his claims in 2005 to WEDC. In 2007, WEDC leased the mining claims to WLC for the purpose of lithium exploration and exploitation. WLC changed its name to Lithium Americas Corp. in 2016. Section 6 of this Technical Report further describes the history of the Project in further details.

No prior commercial lithium production has occurred on the Property.

1.3 Geology

The Project is located within an extinct 40x30 km supervolcano named McDermitt Caldera, which was formed approximately 16.3 million years ago (Ma) as part of a hotspot currently underneath the Yellowstone Plateau. Following an initial eruption and concurrent collapse of the McDermitt Caldera, a large lake formed in the caldera basin. This lake water was extremely enriched in lithium and resulted in the accumulation of lithium-rich clays.

Late volcanic activity uplifted the caldera, draining the lake and bringing the lithium-rich moat sediments to the surface resulting in the near-surface lithium deposit which is the subject of the Project.

The Thacker Pass deposit sits sub-horizontally beneath a thin alluvial cover and is partially exposed at the surface. The sedimentary section consists of alternating layers of claystone and volcanic ash. Basaltic lavas occur intermittently within the sedimentary sequence. The moat sedimentary section at the Project site overlies the indurated intra-caldera Tuff of Long Ridge. A zone of silicified sedimentary rock, the Hot Pond Zone (HPZ), occurs at the base of the sedimentary section above the Tuff of Long Ridge.

Clay in the Thacker Pass deposit includes two distinct types of clay mineral, smectite and illite. Smectite clay occurs at relatively shallow depths in the deposit and contain roughly 2,000 – 4,000 parts per million (ppm) lithium. Higher lithium contents (commonly 4,000 ppm lithium or greater) are typical for illite clay which occurs at relatively moderate to deep depths and contain values approaching 9,000 ppm lithium in terms of whole-rock assay.

1.4 Deposit Types

Lithium enrichment (greater than 1,000 ppm) in the Thacker Pass deposit and deposits of the Montana Mountains occur throughout the caldera lake sedimentary sequence above the intra-caldera Tuff of Long Ridge. The exact cause for the lithium enrichment in the caldera lake sediments is still up for debate. The presence of sedimentary carbonate minerals and magnesium-smectite (hectorite) throughout the lake indicates that the clays formed in a basic, alkaline, closed hydrologic system.

It is likely that two primary mechanisms play a role in the genesis of the Thacker Pass deposit: (1) neoformation of smectite in a closed lake, rich in lithium due to the leaching of nearby and underlying volcanic glass (Benson et al., 2017b); and (2) alteration of a portion of the smectite-bearing clays to illite during intracaldera hydrothermal alteration associated with the uplift of the Montana Mountains.

Caldera lake sediments of the McDermitt Caldera contain elevated lithium concentrations compared to other sedimentary basins. Exploration results support the proposed model and have advanced the understanding of the geology of the Thacker Pass deposit.

1.5 Exploration

Exploration programs have been carried out in the McDermitt Caldera since 1975, including the drilling campaigns identified in Section 1.6. A collar survey was completed by LAC for the 2007-2008 drilling program using a Trimble GPS (Global Positioning System). The topographic surface of the Project area was mapped by aerial photography dated July 6, 2010, by MXS, Inc. for LAC using Trimble equipment for ground control. In addition to drilling in 2017, LAC conducted five seismic survey lines along a series of historical drill holes to test the survey method’s accuracy and resolution in identifying clay interfaces.

A geophysical investigation of the subsurface materials was performed in 2023 using Electrical Resistivity Tomography (ERT) and Towed Transient Electromagnetic (tTEM) survey methods to map the basalt, alluvium, basement depth, delineate potential faults and differentiate between illite and smectite clays. Further regional mapping of the Caldera has been conducted by the Nevada Bureau of Mines and used to outline the caldera moat sediments. Further work was undertaken with federal labs and universities to refine the geology and improve the genetic model of the Thacker Pass deposit.

1.6 Drilling

The Thacker Pass deposit area has been explored for minerals since the 1970s by different companies and drilling campaigns. Table 1-1 categorizes the different drilling campaigns of LAC, including the number of holes drilled, and type of drilling utilized. Drilling methods were compared to test for sample bias, using core drilling as the standard. Rotary, sonic, and reverse circulation drilling all showed slight sample biases when compared to core drilling. Only HQ core holes were used for resource modeling to minimize the chance of sample bias. The drilling techniques, core recovery, and sample collection procedures provided results that are suitable for use in resource estimation. There are no drilling, sample, or recovery factors that materially impact the accuracy and reliability of results. The data is adequate for use in resource estimation.

Table 1-1 LAC Drill Holes Provided in Current Database for the Thacker Pass Deposit

Drilling Campaign	Number Drilled	Type	Hole IDs in Database	Number used in Resource Model
LAC 2007-2010	230	HQ Core	WLC-001 through WLC-037, WLC-040 through WLC-232	227
	7	PQ Core	WPQ-001 through WPQ-007	0
	5	HQ Core	Li-001 through Li-005	0
	8	RC	TP-001 through TP-008	0
	2	Sonic	WSH-001 through WSH-002	0
LAC 2017-2018	144	HQ Core	LNC-001 through LNC-144	135
LAC 2023	97	HQ Core	LNC-145 through LNC-241	94

Notes: Holes that were omitted were removed from the database due to proximity to other nearby holes which were deeper with more assays and more descriptive geological descriptions.

1.7 Sample Preparation, Analyses and Security

The drilled core was securely placed in core boxes and labelled at site. The boxes of drilled core were then transported to the secure LAC logging and sampling facility in Orovada, Nevada, where they were lithologically logged, photographed, cut, and sampled by LAC employees and contractors under LAC supervision. The samples were either picked up by ALS Global (ALS) by truck or delivered to ALS in Reno, Nevada by LAC employees. ALS is independent of LAC.

Once at ALS, the samples were dried at a maximum temperature of 60ºC. The entire sample was then crushed with a jaw crusher to 90% passing a 10-mesh screen. LAC used ALS Global's standard ME-MS61 analytical package for all of the samples collected which provides analytical results for 48 elements, including lithium. Certified analytical results were reported on the inductively coupled plasma mass spectrometer (ICP-MS) determinations.

Blank samples were used to check for cross-contamination between samples at the lab. Standard samples consisting of a 3,000 ppm and 4,000 ppm grade lithium bearing claystone from the Project area and a commercial 1,000 ppm lithium standard were used to test the accuracy and precision of the analytical methods used at the lab. Duplicate samples are used to check the precision of the analytical methods of the lab and were taken every 30.5 m of core (i.e., they were collected downhole every 100 ft).

1.8 Data Verification

1.8.1 Mineral Resources

Certified laboratory certificates of assays were provided in pdf (Adobe Acrobat Portable Document Format) as well as comma separated value (csv) formatted files for verification of the sample assays database. Sample names, certificate identifications, and run identifications were cross referenced with the laboratory certificates and sample assay datasheet for spot checking and verification of data. No data anomalies were discovered during this check.

Quality Assurance / Quality Control (QA/QC) methodology utilized by LAC and results of these checks were discussed between LAC geologists and Benson Chow, the QP responsible for Section 12 of the Technical Report.

Geologic logs, Access databases, and Excel spreadsheets were provided to Benson Chow for cross validation with the Excel lithological description file. Spot checks between Excel lithological description sheets were performed against the source data with no inconsistencies found with the geologic unit descriptions.

Verification of the block model was performed by the creation of a geostatistical model and the review of its various outputs. Histograms, simulation, and swath plots were created and analyzed to validate the accuracy of the block model.

Based on the various reviews, validation exercises and remedies outlined above, the Mineral Resources QP concluded that the data is adequate for use for resource estimation.

1.8.2 Mineral Reserves

The Mineral Reserves QP reviewed the following as part of the mine planning, cost model, and Mineral Reserves data verification.

- **Geotechnical:** slope stability studies completed by BARR Engineering in 2019 and 2024 were reviewed.
- **Mining Method:** open-pit mining with blasting has been reviewed and assessed with geotechnical reports.
- **Pit Optimization:** multiple pass approach using escalated economic parameters from the 2022 Technical Report. The final pit shell was verified to provide a positive economic value. This economic pit was further subdivided into six pit phases.
- **Mine Design:** ramp, bench, and face angle parameters were validated by geotechnical reports.
- **Production Schedule:** the production schedule was validated based on reasonability.
- **Labor and Equipment:** estimations for equipment sizes, capacity, availability, and utilization were reviewed for reasonability.
- **Economic Model:** model was reviewed and demonstrated economic viability for the Project.
- **Facilities and Materials:** facilities and materials located within the reserve pit boundary will be re-located when access to those areas is required during mining.

1.9 Metallurgical Testing

Extensive metallurgical and process development testing has been performed both internally at LAC's Lithium Technical Development Center ("LiTDC") and externally with vendors and contract commercial research organizations. Data collected from test programs has been used for flowsheet development, various equipment selection, definition of operating parameters and development of process design criteria. The relevant metallurgical test data and results are summarized and discussed in Section 13.

Metallurgical and process development test work was completed and optimized to recover lithium from ore and produce battery grade lithium carbonate. The ore samples used for all metallurgical testing were collected from material within the proposed mining pit at the Thacker Pass deposit. The samples spatially represent the ore body, with material collected from both undisturbed upper smectite horizons and uplifted faulted blocks that represent deeper illite horizons. The metallurgical performance and chemical processes contribute to lithium losses in the plant. Design criteria recoveries range from 74.6% to 86.8% and average 80.6% based on ore mineralization and process chemistries. The five major areas contributing to lithium losses in the process plant include beneficiation, leaching and neutralization, countercurrent decantation

(CCD) and filtration circuit, magnesium and calcium removal (i.e., purification) and lithium carbonate production.

Summary of test work from the key areas are listed below:

- **Attrition Scrubbing**: test work has demonstrated that attrition scrubbing is effective to liberate lithium containing clays from coarse gangue material. A two-stage scrubbing circuit is used for the process design.
- **Classification**: conventional hydrocyclones followed by hydraulic classifiers are used to separate clay from gangue mineralization. Coarse gangue mass is estimated to align with estimated pit ash content (approximately 42% of total mass). Based on bench tests and pilot scale testing, approximately 92% of lithium contained in Run-of-Mine (ROM) is projected to be recovered to the lithium bearing clay slurry at a separation size of approximately 75 µm.
- **Solid-Liquid Separation (Thickening and Dewatering)**: clay slurry will be dewatered in two stages, a high-rate thickener to achieve approximately 25% to 35% solids by mass followed by decanter centrifuges to generate a discharge slurry of approximately 55% solids by mass.
- **Leaching**: an acid dose of 490 kilograms (kg) sulfuric acid per tonne leach feed solids provided the maximum amount of lithium extracted/unit acid from smectite and illite clay types.
- **Neutralization**: ground limestone and recycled solids from the magnesium precipitation circuit have proven effective to neutralize any residual acid in the leached slurry. Limestone reagent efficiency from nearby sources has been confirmed.
- **Neutralized Slurry Filtration**: solid/liquid separation of neutralized slurry is achieved in an eight-stage CCD coupled with plate and frame filter press circuit. The filter cake is not washed. The filtrate recovered is directed back to the CCD circuit to wash the leached residue.
- **Magnesium and Calcium Removal**: tests have demonstrated that about 75% of magnesium in neutralized brine can be removed via crystallization, and the remainder is treated by addition of milk-of-lime in the magnesium precipitation circuit. Calcium is then removed by precipitation with sodium carbonate, and a final ion exchange (IX) step is used to polish the brine and bring divalent ions and boron concentrations down to trace levels.
- **Lithium Carbonate Production**: a three-stage circuit for lithium carbonate (Li_2CO_3) production is necessary to achieve battery-quality product. Crystals produced had little to no agglomerates present.
- **Zero Liquid Discharge (ZLD) crystallization**: it has been demonstrated that sodium and potassium are removed as sulfate salts in a ZLD crystallization system without crystallization of lithium sulfate.

Refinement and further optimization of the process continues at the LiTDC.

1.10 Mineral Resources and Reserves

1.10.1 Mineral Resources

The Mineral Resources estimate for the Thacker Pass deposit is summarized in Table 1-2. Mineral Resources have been classified per the CIM 2014 Definition Standards and estimated using the 2019 CIM Best Practice Guidelines. This mineral resource estimate uses a cutoff grade of 858 ppm lithium.

Table 1-2 Mineral Resources Estimate as of December 31 2024

Classification	Density (g/cc)	Lithium (ppm)	In Situ Dry (Million Metric Tonnes)	In Situ LCE Dry (Million Metric Tonnes)	Metallurgical Recovery (%)
Measured					
Smectite 2	1.74	1,160	59.5	0.4	74%
Smectite 1	1.77	2,390	188.1	2.4	64%
Subtotal - Smectite	**1.76**	**2,090**	**247.6**	**2.8**	**66%**
Illite 3	1.86	2,980	74.2	1.2	84%
Illite 2	1.90	5,020	64.8	1.7	81%
Illite 1	1.81	2,510	174.2	2.3	83%
Subtotal - Illite	**1.84**	**3,140**	**313.2**	**5.2**	**83%**
Subtotal - Measured	**1.81**	**2,680**	**560.8**	**8.0**	**76%**
Indicated					
Smectite 2	1.74	1,240	577.8	3.8	67%
Smectite 1	1.77	2,220	1,328.5	15.7	62%
Subtotal - Smectite	**1.76**	**1,920**	**1,906.3**	**19.5**	**64%**
Illite 3	1.86	2,970	197.4	3.1	84%
Illite 2	1.88	4,860	154.6	4.0	81%
Illite 1	1.80	1,930	966.9	9.9	81%
Subtotal - Illite	**1.82**	**2,490**	**1,318.9**	**17.1**	**81%**
Subtotal - Indicated	**1.79**	**2,150**	**3,225.2**	**36.5**	**71%**
Measured + Indicated					
Smectite 2	1.74	1,230	637.3	4.2	68%
Smectite 1	1.77	2,240	1,516.6	18.1	62%
Subtotal - Smectite	**1.76**	**1,940**	**2,153.8**	**22.2**	**64%**
Illite 3	1.86	2,980	271.7	4.3	84%
Illite 2	1.89	4,900	219.4	5.7	81%
Illite 1	1.80	2,020	1,141.1	12.3	81%
Subtotal - Illite	**1.82**	**2,620**	**1,632.2**	**22.3**	**82%**
Subtotal - Measured + Indicated	**1.79**	**2,230**	**3,786.0**	**44.5**	**72%**
Inferred					
Smectite 2	1.73	1,130	186.5	1.1	62%
Smectite 1	1.78	1,990	1,145.1	12.1	73%
Subtotal - Smectite	**1.77**	**1,870**	**1,331.6**	**13.2**	**71%**
Illite 3	1.87	2,970	108.1	1.7	84%
Illite 2	1.89	4,750	86.1	2.2	81%
Illite 1	1.80	1,830	455.7	4.4	80%
Subtotal - Illite	**1.83**	**2,470**	**649.9**	**8.3**	**81%**
Subtotal - Inferred	**1.79**	**2,070**	**1,981.5**	**21.6**	**75%**

Notes:

1. Mineral Resource Estimate has been prepared by Benson Chow, RM-SME.
2. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
3. The Mineral Resource model has been generated using Imperial units. Metric tonnages shown in table are conversions from the Imperial Block Model.
4. Mineral Resources are in situ and are reported inclusive of 1,056.7 million metric tonnes (Mt) of Mineral Reserves and 14.3 Mt of LCE (**Section 15**).
5. Mineral Resources are reported using an economic break-even formula: "Operating Cost per Resource Short Ton"/"Price per Recovered Short Ton Lithium" * 10^6 = ppm Li Cutoff. "Operating Cost per Resource Short Ton" = US$86.76, "Price per Recovered Short Ton Lithium" is estimated: "Lithium Carbonate Equivalent (LCE) Price" * 5.3228 *(1 – "Royalties") * "Metallurgical Recovery". Variables are "LCE Price" = US$26,308/Short Ton ($29,000/tonne) Li_2CO_3, "GRR" = 1.75% and "Metallurgical Recovery" = 73.5%.
6. Presented at a cutoff grade of 858 ppm Li. and a maximum ash content of 85%.
7. A mineral resource constraining pit shell has been derived from performing a pit optimization estimation using Vulcan software and the same economic inputs as what was used to calculate the cutoff grade.
8. The conversion factor for lithium to LCE is 5.3228.
9. Applied density for the mineralization is weighted in the block model based on clay and ash percentages in each block and the average density for each lithology (**Section 14.1.6.4**).
10. Measured Mineral Resources are in blocks estimated using at least 3 drill holes and 10 samples where the closest sample during estimation is less than or equal to 900 ft. Indicated Mineral Resources are in blocks estimated using at least 2 drill holes and 10 samples where the closest sample during estimation is less than or equal to 1,500 ft. Inferred Mineral Resources are in blocks estimated using at least 2 drill holes and 9 samples where the closest sample during estimation is less than or equal to 2,500 ft.
11. Tonnages and grades have been rounded to accuracy levels deemed appropriate by the QP. Summation errors due to rounding may exist.

12. Mineral Resources are presented on a 100% basis. LN owns the Project. Lithium Americas holds a 62% interest in LN and GM owns the remaining 38%.

1.10.2 Mineral Reserves

The Mineral Reserves estimate for the Thacker Pass deposit are based on an engineered pit shell developed from the December 31, 2024 Mineral Resources. The Mineral Reserves are a modified subset of the Measured and Indicated Mineral Resources. A variable cutoff grade of LCE recovered per tonne of leach ore feed to provide 40,000 LCE tonnes per plant. The mine plan resulted in an 85-year mine life with a ROM total plant feed of 1,056.7 million dry tonnes.

Overall reserve ore and waste tonnages are modeled using Maptek's geologic software package. Waste consists of various types of material, including basalt, volcanic ash, alluvium, and clay that does not meet the ore definition, or the cutoff grade described above.

The classified Mineral Reserves are summarized in Table 1-3 for the 85-year pit. This estimate uses a maximum ash percent cutoff of 85% and a cutoff grade of 13.3 kg of LCE recovered per tonne of leach ore feed. For this analysis, Kevin Bahe, the QP responsible for Section 15 of the Technical Report, has assumed that there will be a 2.5% loss on the top and bottom of the ore zones (5% total) in an effort to clean the contact zones between domains. This analysis has not considered adding dilution into the mine plan due to the loss that is being applied. As the Thacker Pass deposit is further domained into smaller zones, Kevin Bahe recommends reevaluating the need for dilution to be applied to the contact zones.

Table 1-3 Mineral Reserves Estimate as of December 31, 2024

Classification	Density (g/cc)	Lithium (ppm)	ROM Dry (Million Metric Tonnes)	ROM LCE Dry (Million Metric Tonnes)	Metallurgical Recovery (%)
Proven					
Smectite 2	1.71	1,110	0.5	0.0	73%
Smectite 1	1.77	2,460	17.7	0.2	66%
Subtotal - Smectite	**1.77**	**2,420**	**18.2**	**0.2**	**66%**
Illite 3	1.86	3,000	65.6	1.1	84%
Illite 2	1.9	5,020	58.8	1.6	81%
Illite 1	1.8	2,510	126.9	1.7	83%
Subtotal - Illite	**1.84**	**3,230**	**251.3**	**4.3**	**82%**
Subtotal - Proven	**1.83**	**3,180**	**269.5**	**4.5**	**82%**
Probable				0.0	
Smectite 2	1.73	1,730	25.3	0.2	76%
Smectite 1	1.77	2,550	48.7	0.7	64%
Subtotal - Smectite	**1.76**	**2,270**	**74.1**	**0.9**	**67%**
Illite 3	1.85	3,110	102.0	1.7	83%
Illite 2	1.87	4,690	77.0	1.9	81%
Illite 1	1.78	1,840	534.0	5.2	80%
Subtotal - Illite	**1.8**	**2,330**	**713.1**	**8.8**	**81%**
Subtotal - Probable	**1.8**	**2,320**	**787.1**	**9.7**	**80%**
Proven + Probable				0.0	
Smectite 2	1.73	1,720	25.8	0.2	76%
Smectite 1	1.77	2,530	66.4	0.9	64%
Subtotal - Smectite	**1.76**	**2,300**	**92.2**	**1.1**	**67%**
Illite 3	1.85	3,070	167.7	2.7	83%
Illite 2	1.88	4,830	135.9	3.5	81%
Illite 1	1.79	1,970	660.9	6.9	81%
Subtotal - Illite	**1.81**	**2,560**	**964.4**	**13.2**	**82%**
Total - Proven + Probable	**1.81**	**2,540**	**1,056.7**	**14.3**	**80%**

Notes:

1. Mineral Reserves Estimate has been prepared by Kevin Bahe, P.E.
2. Mineral Reserves have been converted from measured and indicated Mineral Resources within the feasibility study and have demonstrated economic viability.
3. Reserves presented in an optimized pit at an 85% maximum ash content, cutoff grade of 858 ppm Li, and an average cut-off factor of 13.3 kg of LCE recovered per tonne of leach ore tonne (ranged from 7.5-26 kg of LCE recovered per tonne of leach ore tonne).
4. A sales price of $29,000 US$/tonne of Li_2CO_3 was utilized in the pit optimization resulting in the generation of the reserve pit shell in 2024. An overall slope of 27 degrees was applied. For bedrock material pit slope was set at 52 degrees. Mining and processing costs of $95.40 per tonne of ROM feed, a processing recovery factor based on the block model, and a GRR cost of 1.75% were additional inputs into the pit optimization.
5. A LOM plan was developed based on equipment selection, equipment rates, labor rates, and plant feed and reagent parameters. All Mineral Reserves are within the LOM plan. The LOM plan is the basis for the economic assessment within the Technical Report, which is used to show the economic viability of the Mineral Reserves.
6. Applied density for the ore is varied by clay type (Table 14-13 of Section 14).
7. Lithium Carbonate Equivalent is based on in-situ LCE tonnes with a 95% mine recovery factor.
8. Tonnages and grades have been rounded to accuracy levels deemed appropriate by the QP. Summation errors due to rounding may exist.
9. The reference point at which the Mineral Reserves are defined is at the point where the ore is delivered to the run-of-mine feeder.
10. Mineral Reserves are presented on a 100% basis. LN owns the Project. Lithium Americas holds a 62% interest in LN and GM owns the remaining 38%.

1.11 Mining Methods

The mining method chosen for the 85-year life of mine will use hydraulic excavators loading a fleet of end dump trucks. The fleet will be used for all material excavation and haulage. The material hauled includes ore, waste, and coarse gangue. The coarse gangue is an oversized material removed after the ore is mixed with water. The excavators and trucks will increase in bucket size and bed size as phases are added,

Mining and material handling will be contracted through Sawtooth Mining, LLC (Sawtooth), a subsidiary of NACCO Natural Resources Corporation (NACCO). A mine plan has been developed to maximize recovered lithium carbonate over the life of mine.

The mine design and mine plan are based on the economic pit shell with four plants at a leach ore feed rate to provide 40,000 LCE tonnes per plant. The truck and excavation fleet will develop several offset benches to maintain a geotechnically stable highwall slope. The bench heights are designed to enable the mine to have multiple grades of ore exposed at any given time, allowing flexibility to deliver different types and grades of ore to be blended as needed to target a cutoff grade of a minimum of 7.5 kg of LCE recovered per tonne of leach ore feed and a maximum of 26 kg LCE recovered per tonne of leach ore feed.

The annual production rate is based on varying ore feed rates determined by providing a higher economic return during the high capital intensity years of plant building and the availability of sulfuric acid for the leaching process. The following is a summary of the 85-year life of mine production:

- 7,722 million total wet tonnes mined which includes the following:
    - 1,219 million wet tonnes of recovered ore (95% ore recovery assumed)
        - 958 million wet tonnes in situ ore to plant
        - 261 million wet stockpiled ore tonnes to plant
    - 6,503 million wet tonnes of total waste (include growth media)
- 13.0 million wet tonnes of waste rehandle
- Strip ratio 5.3:1 (total waste : recovered ore) on a wet tonnage basis
- Pre-production period of four years.
- Mining approximately 14.3 Mt of LCE with 11.5 Mt of lithium carbonate recovered by the process plant.

In the first four years, the mine waste will primarily be hauled to the out-of-pit waste storage area. After four years, some of the mine waste can be dumped back in-pit but will also continue to be hauled out of pit. Ore will be hauled to a run-of-mine stockpile located to the northwest of the process plant area. The attrition scrubber reject material will be hauled to the out-of-pit waste stockpile or back into the empty pit by year 20 per the plan.

1.12 Recovery Methods

The current process flowsheet, material balance, and process design criteria for the Project are developed from metallurgical test work and a steady-state process model built in Aspen® Plus (Aspen) software. Design criteria, major equipment, reagent and utility consumptions, mine plan values, and overall recovery estimates used for lithium carbonate production forecasts provide the basis for the Project economic model. The process flow sheet consists of five key areas: beneficiation, leaching and neutralization, CCD and filtration circuit, magnesium and calcium removal (i.e., purification) and lithium carbonate production. In beneficiation, the lithium concentration of ore is upgraded with the rejection of coarse gangue and retention of clay ore. The upgraded ore slurry is then processed in a leach circuit using sulfuric acid to extract the lithium from the lithium-bearing clay. The lithium-bearing solution is then purified primarily by using crystallizers and precipitation reagents to produce battery grade lithium carbonate. Leach residue is washed, filtered, and stacked in a tailing facility along with various salts generated in the process.

Waste products include coarse gangue from beneficiation, neutralized leach residue filter cake, magnesium sulfate salts, and sodium/potassium sulfate salts. The filter cake and salts will be stacked in the clay tailings filter stack (“CTFS”) facility with coarse gangue placed in a dedicated facility and used as open pit backfill.

Recovery of lithium carbonate equivalent from ore mined and processed in this plan, to produce lithium carbonate, ranges from 75.2% to 83.7%. The weighted average recovery of lithium carbonate from lithium carbonate equivalent mined for the first 25 years and the 85-year life-of-mine plan is 82.1% and 80.4% respectively. The recovery ranges are realized from an average mined lithium grade of 2,538 ppm contained within an ore blend consisting of 96.6% illite and 3.4% smectite.

1.13 Infrastructure

The mining and Processing Plant operations are located within the McDermitt Caldera in northwest Nevada. Raw water is sourced via aquifer-fed wells seven miles east of the processing plant. See the overall site general arrangement in Figure 1-1. The Project is planned to be constructed in five capital expansion phases over 13 years from the start of first production to support the life of mine production and operating plans. Phases 1 through 4 will be spaced 4 years apart with Phase 5 beginning at the same time as Phase 4. Each Phase will support lithium carbonate production as discussed in Section 17. Major circuits planned to be constructed for each phase are shown in Table 1-4.

Table 1-4 Circuit Expansions by Phase

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Acid Plant Capacity (t/d H_2SO_4)	2,250	2,250	2,250	2,250	3,000
Nominal Design LCE Production (t/y)	40,000	40,000	40,000	40,000	n/a
Beneficiation	✓	✓	✓	✓	✓
Leaching, Neutralization & CCD	✓	✓	✓	✓	✓
Magnesium and Calcium Removal	✓	✓	✓	✓	Partial
Lithium Carbonate Production	✓	✓	✓	✓	n/a

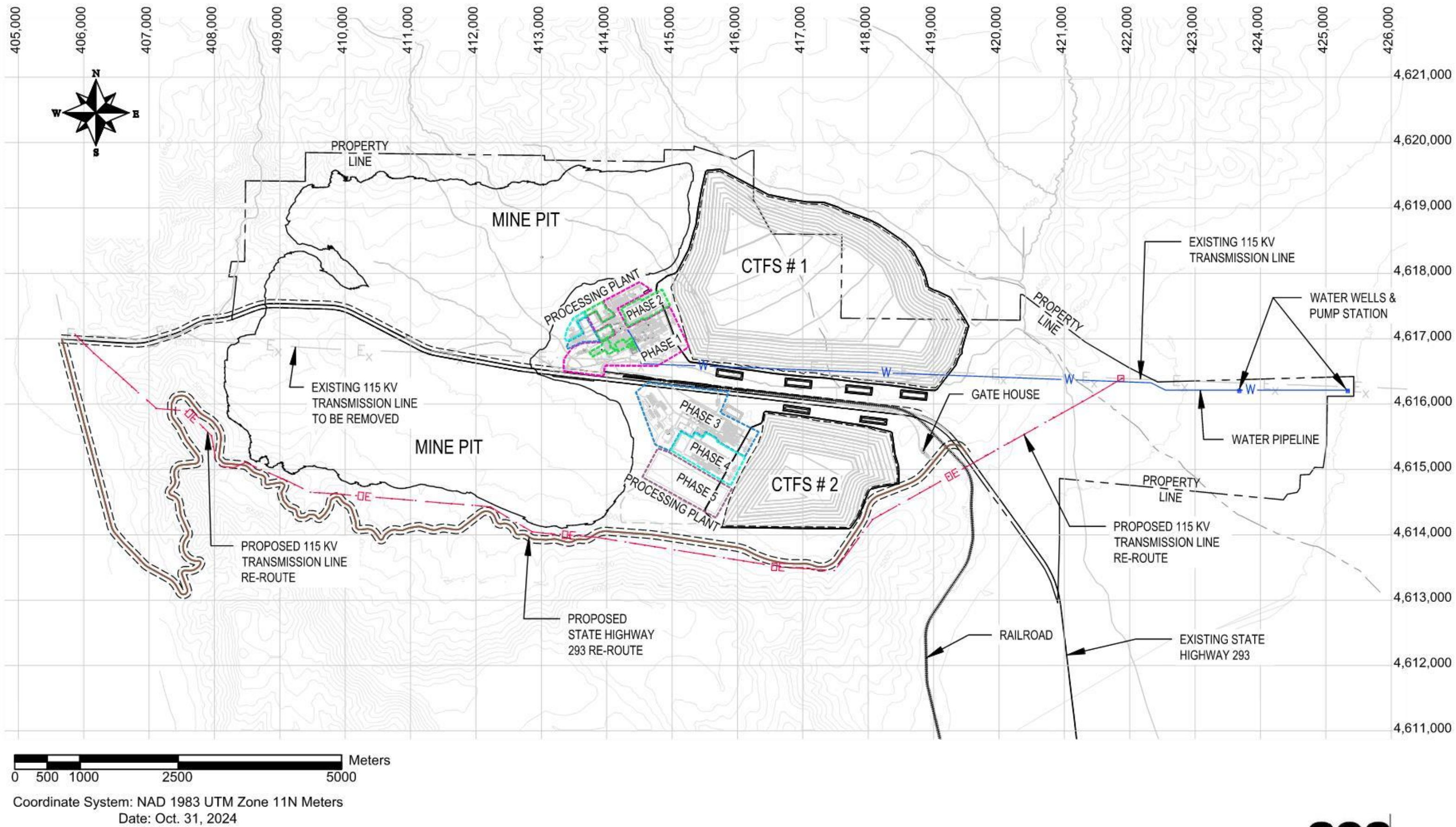
Note that in Phase 5, a new Li_2CO_3 production circuit is not required as there will be excess capacity in those circuits belonging to Phases 1-4. Phase 5 will feed brine to supplement Phases 1-4.

LAC commenced construction on the Thacker Pass Project in early 2023. Construction activities included a water supply system from the Quinn well area including two completed production wells, a pumping system to supply construction water, the primary raw water pipe line to support construction, Phase 1 and Phase 2 water demand, and a construction water pond to provide fresh water for construction activities. Plant pad earthwork construction also started along with the installation of construction offices, fuel storage, site entrances, among other basic site improvements in preparation for the overall execution of the Phase 1 Project.

A direct rail line to the Thacker Pass Project is included during the Phase 4 expansion. This rail system will allow for raw materials to be delivered directly to the Project and will reduce over-highway trucking.

At approximately 4 years and 40 years into the Project a portion of the SR293 and 115 kV transmission line will require relocation to allow for expansion of the CTFS initially and later for the open pit.

Figure 1-1 Overall Site General Arrangement



1.13.1 Raw Materials

Raw materials for the Project are to be delivered to the site by over highway trucks during Phase 1 to 3. Approximately 41 truckloads per day will make raw material deliveries and lithium carbonate product transportation to and from the site during Phase 1, with Phases 2 and 3 scaling to 85 and 127 trucks per day respectively. A local rail-to-truck transloading facility located in Winnemucca will allow for transfer of most of the bulk raw materials for delivery to the Project site during Phase 1, 2 and 3.

A direct rail line is included during the Phase 4 expansion. This will facilitate most raw materials to be railed directly to the Project site and the transloading facility in Winnemucca is assumed to cease operations. For the remaining life of mine an anticipated 51 trucks per day are expected as most raw materials will be direct railed to the site.

1.13.2 Sulfuric Acid Plants

Phases 1, 2, 3 and 4 will each have a single sulfuric acid plant capable of producing a nominal 2,250 t/d (100 weight % H_2SO_4 basis) of sulfuric acid by the double contact, double absorption process. Liquid sulfur is delivered, offloaded and stored onsite by truck during Phases 1 through 3 and delivered by rail thereafter for Phases 4 and 5. The Phase 5 sulfuric acid plant will be capable of producing a nominal 3,000 t/d sulfuric acid. The sulfuric acid generated from each plant is stored and used in the process plant. The acid plants will also generate power for the processing plants. Additional power required will be purchased and delivered to site from the local power grid.

1.13.3 Stockpiles

Approximately 1,219.3 Mt of ore (wet) and 6,503.1 Mt of waste rock (wet) will be mined from the open pit over the LOM. In the initial years, the West and East Waste Rock Storage Facilities (WRSFs) will be constructed to store waste rock from the pit. Once the pit is established, concurrent backfill with waste rock and coarse gangue will be employed. Eventually, the pit footprint will extend to the West and East WRSFs at which point they will be excavated and placed back into the pit as pit backfill.

Coarse gangue is produced in the classification stage of the mineral processing unit operation and is conveyed into the Coarse Gangue Stockpile (CGS) after going through a dewatering process. Initially, the coarse gangue material will be placed in the CGS located east of the open pit. The CGS is designed to store about 36.9 Mm^3 (48.3 Mcy) of material. As described above for the WRSFs, once the pit is established, concurrent backfill with waste rock and coarse gangue will be employed. Eventually, the pit footprint will extend to the CGS at which point the coarse gangue will be excavated and placed back into the pit as pit backfill.

1.13.4 Tailings

A total quantity of 1.10 billion dry tonnes (1.12 billion cubic meters) of clay tailings plus salts require secure disposal on a lined facility. Clay Tailings Filter Stacks (CTFS 1 and CTFS 2) are designed to provide adequate storage over the life of mine. Phased expansions of these facilities are performed as needed over the life of mine.

1.13.5 Power

Total operating loads for Phase 1 through 4 is approximately 59 MW per phase and 44 MW for Phase 5. The total operating load is approximately 276 MW. Power will be generated at the sulfuric acid plants from the steam generated from excess heat during sulfuric acid production. The average power generation and import requirement is estimated to be 134 MW and 142 MW respectively with all phases operating.

Thacker Pass is located in the service territory of Harney Electric Cooperative (HEC). A 115 kilovolt (kV) line passes through the site and will be relocated outside of the open pit extents during mining operations. Since the Nevada power market is regulated, LAC will purchase all imported power from HEC. HEC infrastructure to support this import load will require upgrading and is included in the CAPEX presented. HEC is a full requirements customer of the Bonneville Power Administration (BPA). BPA wheels power to HEC through NV Energy's transmission system. BPA has power available to sell and any constraints on existing transmission infrastructure to deliver the power to the HEC system are being evaluated by NV Energy.

1.13.6 Water

Phases 1, 2, and 3 water demand for mining and process operations is approximately 3.5 Mm^3 (2,850 acre-ft) per year per phase for a total of 10.6 Mm^3 (8,550 acre-ft) per year respectively. To support Phases 4 and 5 approximately 18.8 Mm^3 (15,250 acre-ft) will be required. Water for Phases 1 and 2 will be supplied from two existing wells and raw water pipeline in the Quinn River Valley. LAC purchased and transferred the Phase 1 water rights to the water well location in 2023 and completed the pipeline installation to support Phase 1 and 2 demand. Phase 2 water rights have been partially secured. A well system and pipeline are included for Phase 3 and 4 with water being supplied from the four wells and two pipelines to support the LOM operations.

1.14 Environmental Studies, Permitting and Social or Community Impacts

The Project received all major environmental permits and licenses for Phase 1 and Phase 2. Federal, State, and local permitting for the additional phases and ultimate LOM operations are required. The costs for baseline studies and permitting activities to support the execution strategy for future Phases 3, 4 and 5 are included in the financial model for this report.

Project operations will have a long-term positive impact to direct, indirect, and incidental local and regional economics and communities. Phase 1 will require total construction employment of approximately 2,000, including 1,800 skilled contractors, and operations will employ approximately 350 full time LN and Sawtooth employees. Future phases will see full time employees average near 1,100 personnel with additional jobs created in the local communities through ancillary and support services, such as transportation, maintenance, and supplies.

Lithium Americas continues to be involved in the local communities and for nearly five years LAC has met regularly and collaborated with the communities of Orovada, Winnemucca, Kings River, Fort McDermitt and the Fort McDermitt Paiute and Shoshone Tribe to build relationships, share information, address concerns, and identify areas where the company could have a positive impact on the local communities as the Project advances.

1.15 Market Studies and Contracts

Pricing of lithium carbonate and lithium hydroxide corrected from an all-time high February 2023 of almost $80,000/t imported to China. These highs were disconnected from the production cost curve resulting in the development of very high-cost sources of lithium products including hard rock resources from new jurisdictions such as Africa. Recently pricing corrected to approximately $11,000/t, well below the cost of operation for lithium carbonate being produced, from market-purchased spodumene concentrate within China. The impact of this swing can be seen in the closure of spodumene and lepidolite assets in Canada, Australia and Africa and in the quarterly operating losses being reported by hard-rock based lithium carbonate producers.

Despite swings in realized pricing for lithium carbonate and closures of low-quality resources and chemical production from purchased lithium carbonate, the Chinese demand for LCE has grown by 29% in 2023, and an estimated further 13% in 2024 to a total of 686,745 t LCE. This Chinese demand represents nearly 70% of the 2024 forecasted total demand of lithium chemicals.

Consensus forecast demand is expected to grow to approximately 3,000,000 t LCE by 2030 to meet a 50% global electrification forecast by automotive manufacturers, governments and industry experts. (see Figure 19-1) To roughly triple the global demand and supply of lithium chemicals will require a 20% per year annual growth rate. The 2030 forecasted demand is approximately three times the 2024 estimated actual use of LCE.

The long term-forecast average price used in this study assumes that very high-cost operations will come back online to supply sudden increases in product that longer-term investments with potentially lower costs cannot immediately supply (Figure 19-2). Despite the rapid pricing changes that have occurred in recent history this report assumes a slowly rising price that incentivizes growth of supply to meet the 2030 estimated demand (see Table 19-1). The incentive pricing is estimated by assuming new incremental tonnage being supplied in the low-to mid $20,000/t range allowing chemical conversion from purchased mineral concentrates.

Lithium carbonate pricing history has shown to be disconnected from the cost of production and this report is taking a conservative approach that pricing will remain at current incentive pricing long term if the vision of 100% electric vehicle penetration is to be realized. Incentive pricing is calculated based on justifying the capital investment required for a significant (40,000 t/y LCE basis) operation. Including the cost curve plus approximately $5,000/t required above the operating cost required estimates an incentive price of approximately $29,000/t LCE required. This study assumes a non-incentive price to be conservative.

The pricing forecast for lithium carbonate is based on market research and is set at $24,000 US$/t beginning year 1 of production. A ±25% sensitivity evaluation of the set price is used to evaluate the Project sensitivity to price.

1.16 Financial Model

An economic analysis was carried out using a discounted cashflow (DCF) model, which was prepared by LAC with input from SGS, NewFields, Sawtooth, Bechtel, and EXP U.S. Services Inc. (EXP). The final financial model used to generate results presented in this report was audited and managed by SGS, with reliance on third party experts for individual components. Annual cashflow projections were estimated for eighty-five years based on the LOM plan, estimates of capital expenditures, production costs, taxes, royalties, and sales from lithium carbonate production. The only revenue stream is the sale of lithium carbonate. Inflation is not assumed in this model.

Thacker Pass Project Phase 1 investments since the first quarter 2023 are included in the financial model and economic analysis and depreciated on a 7-year modified accelerated cost recovery system (MACRS) basis.

Production profiles outlined in this Technical Report are limited to the LAC's Proven and Probable Mineral Reserves. The production and financial outcomes from these reserves are summarized in Table 1-5 to Table 1-8. A sensitivity analysis has shown the Project is more sensitive to the lithium carbonate selling price than either CAPEX or OPEX.

Table 1-5 Production Scenario (85-Year LOM – Base Case)

Category	Unit	Value
Operational Life	years	85
Mine and Process Plant Operational Life	years	85
Ore Reserve Life	years	85
Average annual EBITDA*	$-B / yr	2.1
After tax Net Present Value (“NPV”) @ 8% discount rate	$-B	8.7
After tax Internal Rate of Return	%	20.0

*includes capital investments and pre-completion OPEX in years up to production. This is a non-GAAP financial measure. For more information, refer to Section 2.4 of this report.

Table 1-6 Production Scenario – (Years 1-25 of 85-Year LOM Case)

Category	Unit	Value
Operational Life	years	25
Mine and Process Plant Operational Life	years	25
Ore Reserve Life	years	85
Average annual EBITDA*	$-B / yr	2.2
After tax Net Present Value (“NPV”) @ 8% discount rate	$-B	5.9
After tax Internal Rate of Return	%	19.6

*includes capital investments and pre-completion OPEX in years up to production. This is a non-GAAP financial measure. For more information, refer to Section 2.4 of this report.

Table 1-7 Lithium Carbonate Production (85 Year LOM – Base Case)

Item	Unit	Value
Lithium Carbonate Plant Production		
Operational Life	years	85
Annual Lithium Carbonate Production - 85 years	k-tonnes	135
Metallurgical Recovery - 85 Years	%	80.4
Mine Production		
Ore Reserves Production Scenario	years	85
Annual LCE Mined - 85 years	k-tonnes	168

Table 1-8 Lithium Carbonate Production (Years 1-25 of 85-Year LOM Case)

Item	Unit	Value
Lithium Carbonate Plant Production		
Operational Life	years	25
Annual Lithium Carbonate Production - 25 years	k-tonnes	125
Metallurgical Recovery - 25 Years	%	82.1
Mine Production		
Ore Reserves Production Scenario	years	25
Annual LCE Mined - 25 years	k-tonnes	152

1.17 Capital and Operating Costs

The capital cost estimate for the Project has been prepared by Bechtel, Sawtooth, EXP, NewFields, LAC, and third-party contractors in accordance with the scope of the Project. The capital cost estimate covers completed early works development, mine development, mining, the process plant expansions, the acid plant expansions, the transload facility, rail to the Project site, highway and powerline relocation, raw water wells and infrastructure, water rights acquisition, commissioning and all associated infrastructure required to allow for successful construction and operations. Development capital costs are as shown in

Table **1-9**.

Table 1-9 Development Capital Cost Estimate Summary

Description	Ph1 Costs (US$ M)	Ph2 Costs (US$ M)	Ph3 Costs (US$ M)	Ph4/5 Costs (US$ M)	Additional LOM (US$ M)	Total Life of Mine (US$ M)	Responsible
Mine							
Infrastructure	86	0	0	0	0	86	Sawtooth/ SGS/ NewFields
Facilities	2	0	0	0	0	2	Sawtooth
Process Plant and Infrastructure							
Process and Acid Plants	2,842	2,326	2,754	4,074	0	11,995	Bechtel, EXP, LAC
Infrastructure Relocation	0	2	0	0	114	116	LAC/SGS/ NewFields
Rail to Project	0	0	0	241	0	241	CRS
TOTAL DEVELOPMENT CAPITAL	**2,930**	**2,328**	**2,754**	**4,315**	**114**	**12,441**	

Due to rounding, some totals may not correspond with the sum of the separate figures.

Table 1-10 shows LOM sustaining capital costs for the Base Case where the Base Case represents the 85-Year LOM.

Project development capital cost estimates and sustaining capital costs estimates are prepared to a target accuracy of ±15% as per Association for the Advancement of Cost Engineering (AACE) International's Class 3 estimate.

Table 1-10 85-Year LOM Sustaining Capital Estimate Summary (Base Case)

Sustaining Capital (85 Year)		
Description	***LOM Costs (US$ M)**	**Responsible**
Mine		
Equipment Capital	3,100	Sawtooth
Supplies	169	Sawtooth
Pit Development	27	Sawtooth
Infrastructure	76	Sawtooth/SGS
Facilities	56	Sawtooth/SGS
Limestone Quarry	17	Sawtooth
Mobile Equipment		
Plant Equipment Capital	93	LAC
Process Plant and Infrastructure		
Process Plant	763	LAC
Sulfuric Acid Plant	1,759	EXP
Storage Facilities	603	Newfield's, Sawtooth
3rd Party Capital Repayment**	259	LAC
Total	**6,921**	

* Phase 2/3/4/5 capital costs are not included in sustaining costs
**3rd Party capital repayment includes transload, mining, and limestone quarry repayments

Operating costs were developed by Sawtooth, LAC, EXP, and SGS. Annual operating costs are summarized by operating area: Mine, Lithium Process and Acid Plant, and General & Administrative (G&A). Operating costs in each area include labor, maintenance materials and supplies, raw materials, outside services, among others. Average operating costs at $8,039/tonne of lithium carbonate produced, or $1,086 million per annum for 85 years (or $6,238/tonne of lithium carbonate produced and $779 million the first 25 years). The process operating costs are based on Q1-Q4 2024 pricing. See Table 1-11 and Table 1-12.

Table 1-11 Operating Cost Estimate Summary (85-Year LOM – Base Case)

Area	Annual Average ($-M)	$/tonne Lithium Carbonate Product	Percent of Total
Mine	239	1,767	22%
Lithium Processing and Acid Plant	804	5,946	74%
General & Administrative	44	326	4%
Total	**1,086**	**8,039**	**100%**

Table 1-12 Operating Cost Estimate Summary (Years 1-25 of 85-Year LOM Case)

Area	Annual Average ($-M)	$/tonne Lithium Carbonate Product	Percent of Total
Mine	113	904	14%
Lithium Processing and Acid Plant	626	5,013	80%
General & Administrative	40	321	5%
Total	**779**	**6,238**	**100%**

1.18 Conclusions and Recommendations

1.18.1 Conclusions

Based upon analysis, interpretation and results of exploration, engineering, and environmental permitting carried out for the Project the following conclusions have been made:

- Mineral Resource Estimate: The mineralization is at surface and made up of a claystone and ash mix that can be free dug with minimal blasting while using conventional mining equipment. The Mineral Resource estimate was updated in 2024 to 560.8 Mt of Measured Resource averaging 2,680 ppm Li for 8.0 Mt of lithium carbonate equivalent, 3,225.2 Mt of Indicated Resource averaging 2,150 ppm Li for 36.5 Mt of lithium carbonate equivalent and 1,981.5 Mt of Inferred Resource averaging 2,070 ppm Li for 21.6 Mt lithium carbonate equivalent. This resulted in a 229% increase in tonnage and 246% more lithium carbonate equivalent when compared to the November 2, 2022 Technical Report. A cutoff grade of 858 ppm Li and an open pit shell were used to constrain the resource estimate based on break even economics.

- Mineral Reserve Estimate: The Mineral Reserve estimate was estimated from an 85-year pit designed to satisfy ore delivery requirements. Mineral Reserves have been estimated with 269.5 Mt of Proven Reserves with an average grade of 3,180 ppm Li for 4.5 Mt of lithium carbonate equivalent and 787.1 Mt of Probable Reserves with an average grade of 2,320 ppm Li for 9.7 Mt of lithium carbonate equivalent. The total tonnage mined for the 85-year pit is 1,056.7 Mt with an average grade of 2,540 ppm Li for 14.3 Mt of lithium carbonate equivalent

- Environmental Permits: All major permits and authorizations for Phase 1 have been achieved and there are no identified issues that would prevent LAC from achieving all permits and authorizations required to complete construction and operation of the Phase 1 and Phase 2 based on the data that has been collected to date. LAC understands that additional permits are required for Phases 3, 4 and 5 and understands the process and timing required to obtain these permits.

- Metallurgical Processes: Metallurgical processes have been engineered and optimized from pilot testing, bench scale testing, and modeling to produce lithium carbonate using conventional unit operations arranged in a novel flowsheet. Phases 1, 2, 3, and 4 production capacity are designed for a nominal 40,000 t/y each phase for a combined designed nominal capacity rate of approximately 160,000 t/y of lithium carbonate. Owing to a reduction in mining cut-off grade and resulting requirement for additional sulfuric acid, a fifth phase is added including mineral beneficiation through brine evaporation to produce brine to supplement the four purification stages from phases 1, 2, 3, and 4. Recovery of lithium during operations will fluctuate with varying ore mineralization and process chemistries. Illite ores recover better than smectite ores. The LOM lithium carbonate produced is 11.5 Mt from 14.3 Mt of LCE mined with an average recovery of 80.4%. The LOM ore feed contains an average 96.6% illite at an overall feed grade of 2,538 ppm lithium.

- Infrastructure: Construction for the Phase 1 project started in 2023 and is expected to conclude in 2027. Future phased expansions include the addition of four acid plants and supporting facilities to mine and process lithium bearing ore to produce lithium carbonate and stockpiles to store waste and tailings.

- Water and Power: Water rights and quantity required for construction and production during Phase 1 is secured, in the amount of 3.5 Mm^3 (2,850 acre-ft) per year. Future water rights will be required in the amount of 3.5 Mm^3 for Phases 2 and 3 each with an additional 8.3 Mm^3 required to support Phases 4 and 5 through the LOM. Power demand in MW for Phases 1, 2, 3, 4 is approximately 59 and 44 for Phase 5.

- Capital Requirements: Capital costs are based primarily on Q2 2024 pricing. Total development capital spending life of mine is $12.4 billion. CAPEX spending for Phase 1 began in 2023 and will continue through 2027 when production begins with one acid plant, the necessary civil works and infrastructure to support Phase 1 production rates. Phase 1 will require $2.9 billion in capital, Phase 2 will require $2.3 billion, Phase 3 will require $2.8 billion, Phase 4 and 5 will require $4.3 billion. $114 million in infrastructure improvements to roads and powerlines complements the development of the phases in years 39 and 40. Sustaining capital and mine capital repayment over the 85-year mine life totals $6.9 billion to support mining, process and acid plants, and storage facility expansions.

- Operating Costs: Cost inputs into the model are from Q1-Q4 2024. Since Phase 1 is in construction, at the time of writing, investments in the Project to date beginning in 2023 are amortized in the model. The average unit operating cost per tonne of lithium carbonate produced is expected to be $8,039 for the 85-year LOM (base case) and $6,238 for the 25-year case.

- Economic Results: Based on Q1-Q4 2024 capital and operating cost pricing, the economic analysis of the Project includes:
  - Production of 11.5 Mt of lithium carbonate over a 85-year period.
  - Initial capital requirement of $12.4 billion to construct Phases 1-5 over a seventeen-year period.
  - Initial capital of $2.9 billion to construction Phase 1 over a 5-year period
  - Average annual operating cost per tonne of lithium carbonate over an 85-year period of $8,039.
  - Average price per tonne of lithium carbonate over a 85-year period forecasted to be $24,000.

- Average annual EBITDA[1] over a 85-year period estimated to be $2.1 billion.
- Average annual sustaining capital over a 85-year period of $81.4 million.
- Economic indicators for 85-year base case: $8.7 billion NPV, 20.0% IRR, undiscounted payback period of 8.7 years (on an after-tax basis with an 8% discount rate applied).
- This is a non-GAAP financial measure. For more information, refer to Section 2.4 of this report.

1.18.2 Recommendations

Key recommendations include:

- Amend necessary permits as required with proposed modifications as they arise and where applicable.
- Continue to maintain engagement with local communities.
- Secure water rights in the amounts required for Phases 2, 3, 4 and 5.
- Initiate a material density and swell factor study and test on ore and waste materials as they are mined.
- A highwall slope analysis and a dump slope analysis should be performed for future open pits.
- Conduct additional hydrogeological investigations, groundwater characterization, surface water hydrology design, dewatering, depressurization design studies, and ground water level monitoring to support Phased development beyond Phase 2.
- Perform additional geotechnical studies and design updates within the areas of the future Phases 3, 4 and 5 planned facilities including the CTFS and plant areas.
- The northern margins along the Montana Mountains should be drilled to further define the contact between the ore body and the mountains.
- The eastern boundaries of the Mineral Reserve pit should be drilled to better delineate the clay and basalt contact and to better correlate the various basalt flows.
- Additional drilling south of SR293 is recommended to better define the quality and types of clay.
- Density sampling and analysis should continue until there is enough data to accurately model the density variations. Develop a minimum ash percent to be applied in the resource block model.
- Geometallurgical testing is recommended in the southern basin to upgrade some of the Indicated Mineral Resources to Measured Mineral Resources.
- Condemnation drilling will need to be performed for infrastructure locations south of HWY 293.
- Perform metallurgical testing to further optimize production and reduce operating expenses where applicable in areas of solid liquid separation, acid leaching, neutralization, CCD and filtration, along with calcium and magnesium removal.
- Identify areas of suitable construction aggregate materials for future Phases construction use.
- Common and shared buildings required for each phase should be consolidated where appropriate.
- Evaluate and optimize future production wells' location and depth to ensure adequate water supply for Phases 3, 4 and 5.
- Perform a SR293 relocation study in coordination with Nevada Department of Transportation prior to needing to relocate SR293.
- Perform a 115 kV powerline relocation study in coordination with Harney Electric prior to needing to relocate the powerline.
- Power upgrades outside of the Harney Electric's territory that were outside of the scope for the study after Phase 1 are recommended to be understood in time to reserve transmission to support or amend the assumptions in this report.
- Acquire appropriate surface rights to support future Phases 3, 4 and 5 advancements.

[1]This is a non-GAAP financial measure. For more information, refer to Section 2.4 of this report.

- Evaluate the use of solar power energy to augment the STG onsite power generation and grid import power.

2 INTRODUCTION

This Technical Report was prepared at the request of Lithium Americas Corp., a company existing under the laws of British Columbia, Canada, trading under the symbol “LAC” on the Toronto Stock Exchange and the New York Stock Exchange with its corporate office at 3260 – 666 Burrard Street, Vancouver, British Columbia, Canada, V6C 2X8. Work was carried out in cooperation with Lithium Nevada LLC, formerly known as “Lithium Nevada Corp.” and “Western Lithium Corporation”, and currently a joint venture subsidiary of LAC (of which LAC holds a 62% interest).

This document presents the results of the feasibility study evaluation of the Thacker Pass Project (“the Project”) and focuses on the Thacker Pass deposit, formerly Stage I of the Kings Valley Project or Lithium Nevada Project. Excluded from this Technical Report are resource statements from the Montana Mountains deposit (formerly Stage II deposit of the Lithium Nevada Project), as LAC’s focus is on developing a project of scale in Thacker Pass. The claims owned by LN that are north of the Thacker Pass Project in the Montana Mountains do not form part of this mineral project.

This report was prepared in accordance with the rules stipulated by National Instrument 43-101 Standards of Disclosure for Mineral Projects (“NI 43-101”) and Form 43-101F1 applicable in mining issuers Canada. Mineral Resources and Mineral Reserves estimation is based on the Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) 2019 Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (2019 CIM Guidelines). Definitions of Mineral Resources and Mineral Reserves are as set out in the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves.

The current Technical Report will be used by LAC in fulfillment of their continuing disclosure requirements under Canadian securities laws, including NI 43-101. This Technical Report is written in support of a feasibility study completed for LAC.

2.1 Sources of Information

SGS Canada Inc. (“SGS”) was commissioned by LAC to prepare this Technical Report. In preparing this report, SGS relied upon input from LAC and information prepared by several qualified independent consulting groups particularly regarding regional geology, geological mapping, exploration, the lithium market and resource estimation. Through its subsidiary LN, LAC has contracted Sawtooth Mining, LLC (“Sawtooth”), a subsidiary of NACCO Natural Resources Corporation (“NACCO”), which is a wholly owned subsidiary of NACCO Industries, Inc. (NYSE: NC), to provide mineral resource and mineral reserve estimation for this Technical Report. NACCO has reviewed and signed off on the work provided by Sawtooth. EXP U.S. Services Inc. (“EXP”) reviewed the sulfuric acid plant and power plant. NewFields Mining Design & Technical Services (NewFields) contributed to work on environmental and tailings facilities. Bechtel Corporation is an Engineering, Construction, Procurement and Management firm contracted by LN to execute the capital projects for site improvements and the chemical plant construction as well as manage other site activities during the construction phase.

Section 27 includes the reference documents that are part of the sources of information used in the preparation of this report.

SGS, Sawtooth, NewFields, Bechtel and EXP are independent companies and not associates or affiliates of LAC or any associated company of LAC. Table 2-1 lists the Qualified Persons (QP) involved with authoring this report. Table 2-2 lists the sections each QP is responsible for.

Table 2-1 List of Qualified Persons, Professional Designations and Site Visit Dates

Name of Qualified Person	Designation	Company	Date of Site Visit
William van Breugel	P.Eng.	SGS Canada Inc.	-
Johnny Canosa	P.Eng.	SGS Canada Inc.	-
Joseph M. Keane	P.E.	SGS Canada Inc.	July 29 to August 1, 2024
Benson Chow	RM-SME	Sawtooth	November 8, 2018, September 13 &14, 2022, August 15 &16, 2023, and December 19, 2023
Kevin Bahe	P.E.	Sawtooth	August 12 & 13, 2019, July 25, 2022, September 13 & 14, 2022, November 2022. 1-2 weeks per month since July 2023 to Present
Paul Kaplan	P.E.	NewFields	July 30, 2024
Walter Mutler	P. Eng.	EXP U.S. Services Inc.	November 2, 2022

Table 2-2 Qualified Person Areas of Responsibility

Section	Section Name	Qualified Person	Description of Responsibility	Subsections
1	Summary	All QPs	-	-
2	Introduction	All QPs	-	-
3	Reliance on other Experts	All QPs	-	-
4	Property Description and Location	Benson Chow	-	-
5	Accessibility, Climate, Local Resources, Infrastructure and Physiography	Benson Chow	-	-
6	History	Benson Chow	-	-
7	Geological Setting and Mineralization	Benson Chow	-	-
8	Deposit Types	Benson Chow	-	-
9	Exploration	Benson Chow	-	-
10	Drilling	Benson Chow	-	-
11	Sample Preparation, Analyses and Security	Benson Chow	-	-
12	Data Verification	Benson Chow	Site visit, drilling and analytical data verification and block model verification	All of 12.2 to 12.6 and parts of 12.1.1 and 12.8
		Kevin Bahe	Site visit, mine design and LOM Plan verification	All of 12.7 and parts of 12.1.1 and 12.8
		Paul Kaplan	Site visit	All of 12.1.2 and parts of 12.8
		Joseph Keane	Site visit	All of 12.1.3 and parts of 12.8

Section	Section Name	Qualified Person	Description of Responsibility	Subsections
		Walter Mutler	Site visit	All of 12.1.4 and parts of 12.8
13	Mineral Processing and Metallurgical Testing	Joseph M. Keane	-	-
14	Mineral Resource Estimates	Benson Chow	-	-
15	Mineral Reserve Estimates	Kevin Bahe	-	-
16	Mining Methods	Kevin Bahe	-	-
17	Recovery Methods	Joseph M. Keane	-	-
18	Project Infrastructure	Johnny Canosa	Access, water supply, site & process plant arrangement, Power supply	18.1 to 18.8, 18.10.1-18.10.6, 18.13, 18.14, 18.15 and corresponding sections 1, 25 and 26.
		Walter Mutler	Sulfuric acid production	18.9
		Paul Kaplan	Waste rock and tailings disposal	18.10.7, 18.11 and 18.12
19	Market Studies and Contracts	William van Breugel	-	-
20	Environmental Studies, Permitting and Social or Community Impact	Paul Kaplan	-	-
21	Capital and Operating Costs	William van Breugel	Estimate Basis, Project Execution Plan, Project Organization, Project Execution, Process and infrastructure capital costs	All of 21 except for 21.1.4 and 21.2.3
		Kevin Bahe	Mine capital costs	All of 21.1.4 and parts of 21.1.1, 21.2.1, 21.2.2, and 21.3.1
		Paul Kaplan	Closure costs	All of 21.2.3
		Walter Mutler	Sulfuric acid plant costs	Parts of 21.1.1, 21.2.1, and 21.3.1
22	Economic Analysis	William van Breugel	-	-
23	Adjacent Properties	Benson Chow	-	-
24	Other Relevant Data and Information	Kevin Bahe	Limestone Quarry	24.1
25	Interpretation and Conclusions	All QPs	-	-
26	Recommendations	All QPs	-	-
27	References	All QPs	-	-

The Mineral Resource estimate is based on exploration drilling programs conducted in 2007 – 2010, 2017 – 2018, and 2023. Prior versions of the Mineral Resource were reported in previously filed technical reports as shown in Table 2-3.

Table 2-3 Previously Filed Technical Reports

Preparer	Issuer	Title	Effective Date
AMEC	Western Lithium Corporation	Kings Valley Lithium Project, Nevada USA NI 43-101	June 1, 2008
AMEC	Western Lithium Corporation	NI 43-101 Technical Report Kings Valley Lithium Nevada, USA	December 15, 2008
URS	Western Lithium Corporation	Kings Valley Project NI 43-101 Technical Report Preliminary Assessment and Economic Evaluation Humboldt County, Nevada	December 31, 2009
GeoSystems	Western Lithium Corporation	NI 43-101 Technical Report Stage II (South Lens) Resource Estimate Kings Valley Project	May 15, 2010
Tetra Tech	Western Lithium Corporation	Preliminary Feasibility Study Kings Valley Lithium Project	January 27, 2012
Tetra Tech	Western Lithium Corporation	Updated NI 43-101 Technical Report Kings Valley Property Humboldt County, Nevada	April 30, 2014
SRK	Lithium Americas Corporation	Independent Technical Report for the Lithium Nevada Property, Nevada, USA	May 31, 2016
Advisian	Lithium Americas Corporation	Independent Technical Report for the Thacker Pass Project, Humboldt County, Nevada, USA	February 15, 2018
Advisian	Lithium Americas Corporation	Technical Report on the Pre-Feasibility Study for the Thacker Pass Project, Humboldt County, Nevada, USA	August 1, 2018
M3 Engineering	Lithium Americas Corporation	Feasibility Study NI 43-101 Technical Report for the Thacker Pass Project, Humboldt County, Nevada, USA	November 2, 2022

The current Mineral Resource has an effective date of December 31, 2024.

2.2 Description of Personal Inspections

Benson Chow visited LAC's Thacker Pass Project site on November 8, 2018 and September 13 and 14, 2022, August 15th and 16th, and December 19th 2023. The purposes of the visits were to complete a QP data verification, site inspections, and independent verification of the lithium grades. No material changes to the exploration drilling or site conditions have occurred on site since the site visits. During the visit, Benson Chow completed the following tasks:

- Visited the Project location to better understand the local geomorphology and layout.
- Visited the active exploration drilling rig to observe the HQ core drilling, core handling, and core transportation. Additional conversations with the exploration geologists included detailed discussions regarding the core lithology being drilled.
- Visited the LAC core shed located near the Project site to review the core storage facility, core logging procedures, core splitting procedures, core scanning, and sample preparation procedures. While at the core shed, LAC's geologists were actively logging core and an LAC technician was splitting and scanning core. A general conversation about the QA/QC program was conducted with LAC's Senior Geologist.
- Visited the onsite meteorological station to review security, access and general conditions of the station.
- Observed bulk sampling of ore material to be used for testing at LAC's Lithium Technical Development Center from the 2022 bulk sampling program.
- Collected samples from the 2022 bulk sampling program for independent verification of the clay/ash lithium grades.

- Verified drill hole collar locations and elevations.
- Toured the active pit and inspected the alluvium materials
- Visited LAC's Lithium Technical Development Center in Reno.
- Performed a laboratory audit of ALS Reno Laboratory where LAC sends samples for analytical testing preparations.

Kevin Bahe visited LAC's Thacker Pass Project site on August 12-13, 2019, and on September 13-14, 2022, to complete a QP data verification site inspection. Additionally, Kevin Bahe toured the pilot plant lab in Reno, NV on July 25, 2019, and LAC's Lithium Technical Development Center in Reno on September 15, 2022. Lastly from July 2023 to present, Kevin Bahe has visited the site 1-2 weeks every month since July 2023 to present. No material changes to the mining location. During the visits, Kevin Bahe completed the following tasks:

- Kevin Bahe visited the Project location to better understand the general layout of the mining area, dump areas, and plant area.
- During the site visit Kevin Bahe observed BARR engineering drilling cores for the pit slope stability study. Drilling was being done in the initial pit development area. Kevin Bahe was able to inspect cores and see lithology.
- During the visit to LAC's pilot lab, Kevin Bahe observed ore processing steps through the development of clay cake. Kevin Bahe gained a better understanding of ore processing.
- Toured LAC's new Lithium Technical Development Center.
- Observed bulk sampling of ore material to be used for testing at LAC's Lithium Technical Development Center from the 2022 bulk sampling program.
- Assisted in the collection of samples from the 2022 bulk sampling program for independent verification of the clay/ash lithium grades.
- Visited the LAC core shed located near the Project site.
- Toured the ALS Reno laboratory where LAC sends samples for analytical testing procedures.
- Provided engineering support for Sawtooth's heavy earthworks for LAC's process plant Pad site.

Paul Kaplan visited the site several years ago and on July 30, 2024. Earthwork grading (early works) for the Phase 1 Process Facilities were observed and a general tour of the project site was completed.

Joseph M. Keane, accompanied by Sam Yu (SGS team), visited the mine site on July 30, 2024 in the company of Josef Bilant and then visited the LAC Lithium Technical Development Center located in Reno, Nevada on July 31, 2024. Ryan Ravenelle explained the past history of the Lithium Technical Development Center and introduced the SGS visitors to the details of the pilot plant installation.

Walter Mutler of EXP visited the site on November 2, 2022. The highlights of his visit were as follows:

- Visited the Project site to better understand the location of the sulfuric acid and STG power plants and their ancillaries for both Phase 1 and 2.
- Determined that, considering the timeline of the acid plant construction is an earlier activity, there should be a minimum obstruction during the construction of the SA1/Power Plant, as the work will be under green field and grassroots conditions.
- Some of his other findings included:
    - Due to soft clay native topsoil, compaction of the area inside Project battery limits and roads should be considered, particularly in high-traffic roads and where heavy lifting items will take place.
    - The road clearance between the finish road elevation and the powerlines should be confirmed before any oversize transportation, as all construction traffic must cross the 115 kV high-voltage power line.

- Visited LAC's Lithium Technical Development Center in Reno and observed the installation of the pilot plant upstream portion of the process (i.e., ore separation, scrubbing, and thickening).

2.3 Units and Abbreviations

All units used in this report are metric unless otherwise stated. Currency in this report is in United States Dollars (US$) unless otherwise specified. Table 2-4 lists the abbreviations for technical terms used throughout the text of this report.

Table 2-4 Abbreviations and Acronyms

Abbreviation/Acronym	Description
'	feet, minutes (Longitude/Latitude)
"	inches, seconds (Longitude/Latitude)
%	percent
<	Less Than
>	Greater Than
°	Degrees of Arc
°C	Degrees Celsius
°F	Degrees Fahrenheit
µm	Micrometer (10^{-6} meter)
3D	Three-Dimensional
AACE	Association for the Advancement of Cost Engineering International
AAL	American Assay Laboratory
ACOE	U.S. Army Corps of Engineers
ActLabs	Activation Laboratories
Ai	Bond abrasion index
ALS	ALS Global
amsl	above mean sea level
ARDML	Acid Rock Drainage and Metal Leaching
ARO	Annual Reclamation Obligation
ARPA	Native American Graves Protection and Repatriation Act
As	Arsenic
BAPC	Bureau of Air Pollution Control Contacts
BFW	Boiler Feed Water
BLM	Bureau of Land Management
BMRR	Bureau of Mining Regulation and Reclamation
BOOT	Build Own Operate Transfer
BPA	Department of Energy's Bonneville Power Administration
BWi	Bond ball mill work index
$CaCO_3$	calcium carbonate
CaO	Quicklime
CAPEX	Capital Expenditure or Capital Cost Estimate
CCD	Countercurrent Decantation
CGS	Coarse Gangue Stockpile
Chevron	Chevron USA
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
cm	centimeters
CO_2	Carbon dioxide
CoG	cutoff grade
CPE	Corrugated Polyethylene Pipe

Abbreviation/Acronym	Description
Cs	Caesium
CTFS	Clay Tailings Filter Stack (Tailings Storage Facility)
CWi	Bond impact work index
CY	cubic yard(s)
DCDA	Double Contact Double Absorption
DCF	discounted cash flow
DCS	Distributed Control System
deg. C or ºC	Degrees Celsius
DMS	data management system
DOE	United States Department of Energy
DOI	Department of the Interior
DTB	draft tube baffle
EA	Environmental Assessment
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EDG	EDG, Inc.
EDR	Engineering Design Report
EIS	Environmental Impact Statement
EPC	Engineering, Procurement, and Construction
EPCM	Engineering, Procurement, and Construction Management
ESA	Endangered Species Act
ET	evapotranspiration
EXP	EXP U.S. Services Inc.
$Fe_2(SO4)_3$	Ferric sulfate
FEDINC	Florida Engineering and Design, Inc.
FEIS	Final Environmental Impact Statement
FONSI	Finding of No Significant Impact
FRP	Fiberglass Reinforced Polymer
ft	feet or foot
G&A	General & Administrative
g/cm^3	grams per cubic centimeter
g/l or g/L	grams per liter
GMS	Growth Media Stockpile
gpm	Gallon(s) per minute
GPS	Global Positioning System
GRR	Gross Revenue Royalty
GWh/year	gigawatt hours per year
h	hour
H_2S	hydrogen sulfide
H_2SO_4	sulfuric acid
ha	hectares
HAP	hazardous air pollutants
Hazen	Hazen Research
HCT	humidity cell test
HDPE	High Density Polyethylene
HEC	Harney Electric Cooperative
HMI	human machine interface
HP	horsepower
HPTP	Historic Properties Treatment Plan

Abbreviation/Acronym	Description
HPZ	Hot Pond Zone
HQ	Standard “Q” wire line bit size. 96 mm outside hole diameter and 63.5 mm core diameter.
HRS	heat recovery systems
Huber	J. M. Huber Corporation
Hz	Hertz
ICP	Inductively Coupled Plasma Spectrometer
ICP-AES	Inductively Coupled Plasma Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma Mass Spectroscopy
in	inch or inches
IRR	Internal Rate of Return
ITAC	Industrial TurnAround Corporation
IX	Ion Exchange
K	Potassium
KCA	Kappes Cassiday & Associates
kg	kilograms
km	kilometer
kt	thousand tonnes
kV	kilovolt
kW	kilowatt(s)
kWh	kilowatt hour(s)
LAC	Lithium Americas Corporation
LCE	Lithium Carbonate Equivalent
LCT	Lahontan cutthroat trout
LFP	Lithium Ferro Phosphate
LIP	Lithium Iron Phosphate
LHCSL	low hydraulic conductivity soil layer
Li	Lithium
Li_2CO_3	Lithium carbonate
$LiHCO_3$	lithium bicarbonate
LN	Lithium Nevada LLC
LOM	Life of Mine
M	million
m	meter
M3	M3 Engineering & Technology Corporation
m^3/h	cubic meters per hour
Ma	million years ago
MACRS	Modified accelerated cost recovery system
MCY	million cubic yards
mg/L	milligrams per liter
$MgSO_4$	Magnesium sulfate
Mining Act	Mining Act of the United States of America
MLLA	Mineral Lands Leasing Act
mm	millimeters
Mm^3	million cubic meters
Mo	Molybdenum
MOA	Memorandum of Agreement
MOL	milk of lime

Abbreviation/Acronym	Description
MOU	Memorandum of Understanding
Mt	million tonnes
MV	Megavolts
MVR	Mechanical Vapor Recompression
MW	megawatt
MWh	megawatt hour(s)
MWMP	Meteoric Water Mobility Procedure
Na	Sodium
NAAQS	National Ambient Air Quality Standards
NACCO	NACCO Natural Resources Corporation
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NDOW	State of Nevada Department of Wildlife
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act
NewFields	NewFields Mining Design & Technical Services
NFPA	National Fire Protection Association
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NOx	nitrogen oxides
NPV	Net Present Value
NRV	Nevada Reference Values
OPEX	Operational Expense or Operating Cost Estimate
P&ID	piping and instrumentation diagram
PCS	Plant Control System
PDC	Process Design Criteria
PFS	Pre-feasibility Study
pH	measure of acidity
Ph1	Phase 1
Ph2	Phase 2
Ph3	Phase 3
Ph4	Phase 4
Ph5	Phase 5
PoO	Plan of Operation
ppm	parts per million
PQ	Standard “Q” wire line bit size. 122.6 mm outside hole diameter and 85 mm core diameter.
PSD	particle size distribution, Prevention of Significant Deterioration
QA/QC	Quality Assurance and Quality Control
Qal	Quaternary Alluvium
QP	Qualified Person
Rb	Rubidium
RC	Reverse Circulation
RO	reverse osmosis
ROD	Record of Decision
ROM	Run-of-Mine
Sample ID	Sample Tags
SA1	Sulfuric Acid Plant #1

Abbreviation/Acronym	Description
Sawtooth	Sawtooth Mining, LLC
Sb	Antimony
SCR	Selective Catalyst Reduction
SHRIMP	Sensitive High Resolution Ion Microprobe
SO_2	Sulfur dioxide
SR293	State Route 293
SRC	Saskatchewan Research Council
SRK	SRK Consulting (U.S.), Inc.
STG	Steam Turbine Generator
t	Tonne (metric)
t/a	Tonnes per annum (metric)
t/d	Tonnes per day (metric)
t/m^3	Tonnes per cubic meter
t/y	Tonnes per year (metric)
TDS	total dissolved solids
TIC	total installed cost
TLT	Transload Terminal
UCS	unconfined compressive strength
UM	Unpatented Mining
UPPR	Union Pacific Railroad
US EPA	US Environmental Protection Agency
US$	US Dollars
US$/t	United States Dollars per tonne
USBM	United States Bureau of Mines
USEPA	United States Environmental Protection Agency
USFWS	United States Department of the Interior Fish and Wildlife Service
USG	MODFLOW-USG (a water balance model)
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
WBS	Work Breakdown Structure
WEDC	Western Energy Development Corporation
WLC	Western Lithium USA Corporation
Wood	Wood Canada Limited
WPCP	Water Pollution Control Permits
WRSF	Waste Rock Storage Facility
wt.%	percent by weight
WWRSF	West Waste Rock Storage Facility
XRD	X-Ray Diffraction
YOY	year-over-year
ZLD	Zero Liquid Discharge

2.4 Non-GAAP Measures

This report contains certain non-GAAP (Generally Accepted Accounting Principles) measures, including EBITDA. Such measures have non-standardized meaning under GAAP and may not be comparable to similar measures used by other issuers. Each of these measures used are intended to provide additional information to the user and should not be considered in isolation or as a substitute for measures prepared in accordance with IFRS. Non-IFRS financial measures used in this report are common to the industry. The prospective non-GAAP financial measures or ratios presented are not able to be reconciled to the nearest comparable measure under IFRS and the equivalent historical non-GAAP financial measure for the prospective non-GAAP financial measure or ratio discussed herein are not available because the Project is not and has not been in production.

3 RELIANCE ON OTHER EXPERTS

In cases where the study authors have relied on contributions from third parties, the conclusions and recommendations are exclusively those of the particular QP. The QPs have reviewed the information provided by third parties for which the results and opinions outlined in this Technical Report are dependent and have used all means necessary in their professional judgement to verify it and have no reasons to doubt its reliability and have determined it to be adequate for the purposes of this Technical Report. The QPs do not disclaim any responsibility for the information, conclusions, and estimates contained in this Technical Report.

Information received from other experts has been reviewed for factual errors by the Qualified Persons. Any changes made as a result of these reviews did not involve any alteration to the conclusions made. Hence, the statements and opinions expressed in these documents are given in good faith and in the belief that such statements and opinions are not false and misleading at the date of these reports. These experts were relied upon for the following information:

- The Qualified Persons have relied on other experts for property ownership and mineral tenure. Regarding mineral tenure to the property set forth in Section 4.2, the QPs have relied entirely, and without independent investigation, on the title opinion of Richard Harris, an attorney with Harris & Thompson (now Harris, Thompson and Faillers), dated February 6, 2013. The title opinion was updated and supplemented by the updated title opinion of Mr. Harris, dated November 18, 2016. Thomas P. Erwin also issued a Mineral Status Report on May 18, 2020.
- The Qualified Persons have relied on Global Lithium LLC for assistance with the lithium price forecast.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Property Description

LAC currently has surface and mineral rights within the Thacker Pass Project and to the northwest of the Thacker Pass Project Area in the Montana Mountains. Figure 4-1 shows the total LAC Property area. Figure 4-2 depicts the Thacker Pass Project area and the unpatented mining claims owned or controlled by LAC and property owned by LAC in northern Humboldt County, Nevada that are the focus of this Technical Report.

The Thacker Pass Project area encompasses approximately 7,900 ha within the total LAC Property of approximately 22,500 ha. and lies within and is surrounded by public lands administered by the U.S. Bureau of Land Management (BLM). The Thacker Pass Project is located in Humboldt County in northern Nevada, approximately 100 km north-northwest of Winnemucca, about 33 km west-northwest of Orovada, Nevada and 33 km due south of the Oregon border. The area is sparsely populated and used primarily for ranching and farming. A total of 117 people live in Orovada, according to the 2020 US Census for Orovada CDP, Nevada.

More specifically, the Thacker Pass Project is situated at the southern end of the McDermitt Caldera Complex in Township 44 North (T44N), Range 34 East (R34E), and within portions of Sections 1 and 12; T44N, R35E within portions of Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17; and T44N, R36E, within portions of Sections 7, 8, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 29. The Project area is located on the United States Geological Survey (USGS) Thacker Pass 7.5-minute quadrangle at an approximate elevation of 1,500 m.

Figure 4-1 Regional Location Map with LAC Property

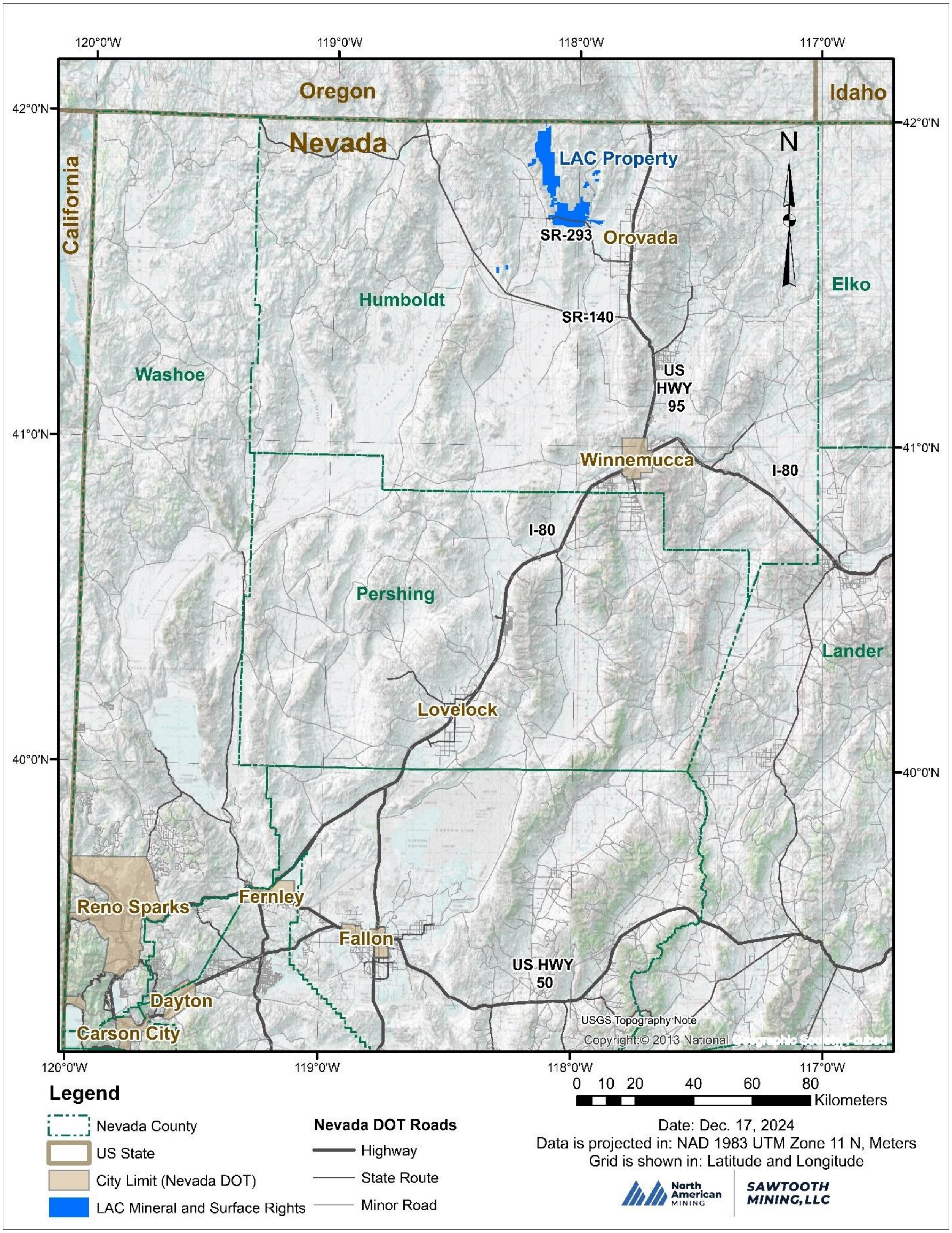
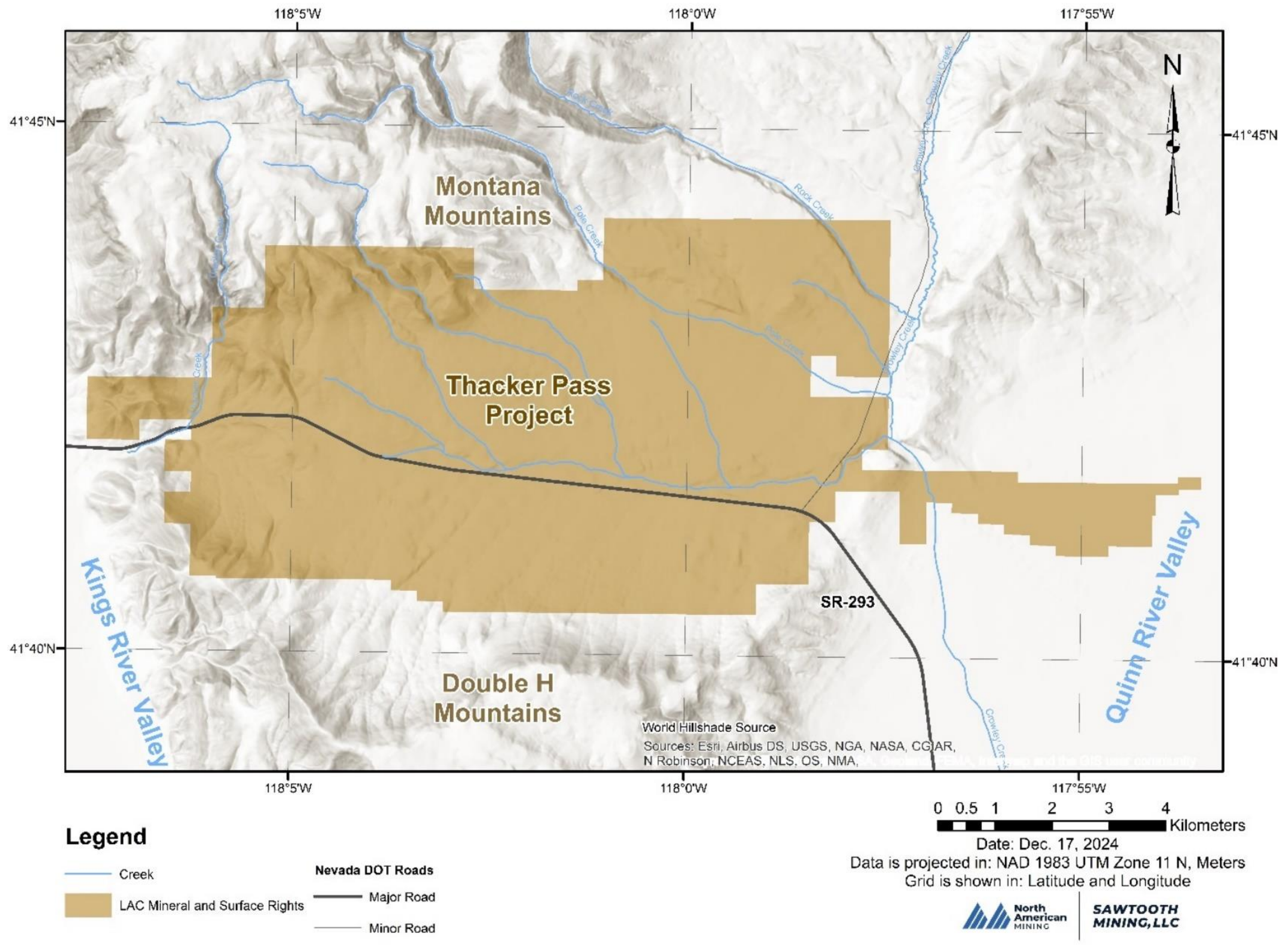


Figure 4-2 Thacker Pass Project Map



4.2 Mineral Tenure

A list of 2,694 unpatented mining claims (UM Claims) and 30 mill site claims owned or controlled by LAC in northern Humboldt County, Nevada, is presented in Table 4-1. These claims include the Thacker Pass Project area which are a subset of the Property and are shown in Figure 4-1 and Figure 4-2. In addition to these claims, LAC also owns 64.75 ha of private property in the Thacker Pass Project area.

Table 4-1 Thacker Pass Project UM Claims Owned or Controlled by LAC

Claim Name	Claim Number	NMC Number	Claims
BASIN	1-30	1170660-1170689	30
BETA	1-51	894721-894771	51
BLSE	1-18	105235961-105235978	18
BPE	1-498	1018964-1019461	498
BPE	499-531	1030193-1030225	33
BPE	532	1049234	1
CAMP	1-66	1191376-1191441	66
CC Mill	1-5	1122041-1122045	5
CC Mill	6-9	1130820-1130823	4
CC Mill	10-12	1170690-1170692	3
DELTA	1-14	919508-919521	14
DPH	1-22	1147600-1147621	22
ION	1-32	1164510-1164541	32
ION	35-50	1164542-1164557	16
ION	53-69	1164558-1164574	17
ION	72-85	1164575-1164588	14
ION	86	1164590	1
ION	87	1164589	1
ION	88	1164591	1
ION	90-107	1164592-1164609	18
ION	109-132	1164610-1164633	24
ION	135-139	1164634-1164638	5
ION	146-149	1164640-1164643	4
ION	153-165	1164644-1164656	13
ION	168-175	1164657-1164664	8
ION	184-202	1164665-1164683	19
ION	212-232	1164684-1164704	21
ION	240-262	1164705-1164727	23
ION	264-286	1164728-1164750	23
ION	300-306	1164751-1164757	7
LITH	1-461	900830-901290	461
LITH	463	901292	1
LITH	465	901294	1
LITH	467	901296	1

Claim Name	Claim Number	NMC Number	Claims
LITH	469	901298	1
LITH	471-473	901300-901302	3
LITH	477	901306	1
LITH	479	901308	1
LITH	481	901310	1
LITH	484	901313	1
LITH	486	901315	1
LITH	488	901317	1
LITH	491-567	901320-901396	77
LITH	586-677	901415-901506	92
LITH	706-708	901535-901537	3
LITH	713-732	901538-901557	20
LITH	734-766	901558-901590	33
LITH	785-1054	901609-901878	270
Longhorn	2-3	1170694-1170695	2
Longhorn	5-6	1170697-1170698	2
MHC	1-14	1087803-1087816	14
MHC	16-99	1087818-1087901	84
OMEGA	1-124	950298-950421	124
Moonlight	1	8001	1
Moonlight	4	732426	1
NEUTRON	31-45	919267-919281	15
NEUTRON	76-105	919282-919311	30
NEUTRON	166-189	919342-919365	24
NEUTRON	190	894562	1
NEUTRON	192	894564	1
NEUTRON	194	894566	1
NEUTRON	196-199	894568-894571	4
NEUTRON	200-207	919366-919373	8
NEUTRON	209-225	919375-919391	17
NEUTRON	238-239	894610-894611	2
NEUTRON	347	894719	1
NEUTRON	353-366	900226-900239	14
NEUTRON	379-402	900252-900275	24
NEUTRON	427-450	900300-900323	24
NEUTRON	475-498	900348-900371	24
NEUTRON	523-546	900396-900419	24
NEUTRON	555-574	900428-900447	20
NEUTRON	579-585	900452-900458	7
NEUTRON	586-627	982465-982506	42
NEUTRON PLUS	1	1020688	1

Claim Name	Claim Number	NMC Number	Claims
NEUTRON PLUS	2	1087902	1
NEUTRON R	25R-30R	1049235-1049240	6
NEUTRON R	70R-75R	1049241-1049246	6
NEUTRON R	160R-165R	1049247-1049252	6
NEUTRON R	195R	1049253	1
NEUTRON R	208R	1049254	1
NEUTRON R	240R	1049255	1
NEUTRON R	242R	1049256	1
NEUTRON R	244R	1049257	1
NEUTRON R	246R	1049258	1
NEUTRON R	248R	1049259	1
NEUTRON R	250R	1049260	1
NEUTRON R	252R	1049261	1
NEUTRON R	254R	1049262	1
NEUTRON R	256R	1049263	1
NEUTRON R	258R	1049264	1
NEUTRON R	260R	1049265	1
NEUTRON R	262R	1049266	1
NEUTRON R	264R	1049267	1
NEUTRON R	270R	1049268	1
NEUTRON R	272R	1049269	1
NEUTRON R	276R	1049270	1
NEUTRON R	278R	1049271	1
NEUTRON R	280R	1049272	1
NEUTRON R	282R	1049273	1
NEUTRON R	284R-288R	1049274-1049278	5
NEUTRON R	348R	1029479	1
PCD Mill	1-18	1020381-1020398	18
PROTON	1-46	900530-900575	46
RAD	1-121	937673-937793	121
ROCK	1-20	1164758-1164777	20

Further details on the history and ownership of the Thacker Pass Project, and the associated claims, are in Section 6.

4.2.1 Unpatented Mining Claims and Surface Rights

The underlying title to the Thacker Pass Project properties is held through a series of UM Claims. UM Claims provide the holder with the rights to all locatable minerals on the relevant property, which includes lithium. The rights include the ability to use the claims for prospecting, mining or processing operations, and uses reasonably incident thereto, along with the right to use so much of the surface as may be necessary for such purposes or for access to adjacent land. This interest in the UM Claims remains subject to the paramount title of the US federal government. The holder of a UM Claim maintains a perpetual entitlement to the UM Claim, provided it meets the obligations for maintenance of the UM Claims as required by the *Mining Act of the United States of America* (the *Mining Act*) and associated regulations.

At this time, the principal obligation imposed on the holders of UM Claims is to pay an annual maintenance fee, which represents payment in lieu of the assessment work required under the *Mining Act*. The annual fee of $200.00 per claim is payable to the BLM, Department of the Interior, Nevada, in addition to a fee of $12.00 per claim paid to the county recorder of the relevant county in Nevada where the UM Claim is located, along with associated administrative filings. All obligations for the Thacker Pass Project UM Claims in Nevada, including annual fees to the BLM and Humboldt County, have been fulfilled as of the effective date of the Technical Report.

The holder of UM Claims maintains the right to extract and sell locatable minerals, which includes lithium, subject to regulatory approvals required under Federal, State and local law. In Nevada, such approvals and permits include approval of a plan of operations by the BLM and environmental approvals. The *Mining Act* also does not explicitly authorize the owner of a UM Claim to sell minerals that are leasable under the *Mineral Lands Leasing Act of 1920, USA*, as amended (the MLLA). At this time, the MLLA is not implicated because the only mineral contemplated for mining and processing at this time is lithium.

4.3 Nature and Extent of Interest and Title

The UM Claims provide LAC the exclusive rights to explore, develop, and mine or otherwise produce any and all lithium deposits discovered on the claims, subject to royalty payments. The claims include the entirety of the mineralized zones in Thacker Pass and the Montana Mountains (formerly Stages 1 to Stage 5). LN is the record owner of the UM Claims in the Thacker Pass Project area. The current Thacker Pass Project does not include the development of UM Claims in the Montana Mountains north of the Project.

Legal access to the UM Claims is provided directly by State Route 293.

4.4 Royalties, Rights and Payments

In addition to the Uranium Royalty and those national, state and local fees identified in Section 4.2.1 of this report, the Thacker Pass Property is subject to a royalty applicable to lithium. The royalty was granted to MF2, LLC, a subsidiary of Orion Mine Fine Finance (Master) Fund I LP (f/k/a RK Mine Finance (Master) Fund II L.P.) in 2013. Orion subsequently transferred 60% of the royalty to Alnitak Holdings, LLC. The interest is a gross revenue royalty on the Thacker Pass Property in the amount of 8% of gross revenue until aggregate royalty payments equal $22 million have been paid, at which time the royalty will be reduced to 4.0% of the gross revenue on all minerals mined, produced or otherwise recovered. LAC can at any time elect to reduce the rate of the royalty to 1.75% on notice and payment of $22 million to Orion.

4.5 Environmental Liabilities

LAC had reclamation obligations for a small hectorite clay mine located within the Project area. On November 1, 2023, NDEP-BMRR approved the request to terminate the Clay Mine Project and on November 13, 2023, the BLM issued a decision to terminate the Clay Mine Project. The reclamation cost for the Clay Mine Project was incorporated into the Thacker Pass Project. Financial assurance of $13.7 million for the initial Thacker Pass Project work plan was placed with the BLM in February, 2023. LAC plans to place additional financial assurance to account for reclamation obligations of Phase 1 of the Thacker Pass Project by early 2025. The bond would be increased before moving into Phase 2 or other future phases of the Project.

LAC’s other environmental liabilities from existing mineral exploration campaigns in the vicinity of the Project area have a reclamation obligation totaling approximately $176,591. LAC currently holds a $1.7 million reclamation bond with the BLM Nevada State Office to cover reclamation costs for other existing mineral exploration campaigns in the vicinity of the Thacker Pass Project.

There are no other known environmental liabilities associated with the Thacker Pass Project.

4.6 Permitting

Construction of the Project requires permits and approvals from various Federal, State, and local government agencies. Permitting status is described in more detail in Section 20.3 of this Technical Report. Based on information provided, or researched and reviewed, all major federal, state and local permits and authorizations for Phase 1 have been achieved and there are no identified issues that would prevent LAC from achieving all permits and authorizations for Phase 1 and 2 of the Thacker Pass Project. Additional analysis would be needed to determine any potential Federal, State or local regulatory or permitting issues for future phases of the Thacker Pass Project.

Since 2008, LAC has performed extensive exploration activities at the Thacker Pass Property under existing approved agency permits. LAC has all necessary federal and state permits and approvals to conduct mineral exploration activities within active target areas of the Thacker Pass Project site.

A Plan of Operations and Reclamation Plan (PoO) No. N85255 for mineral exploration activities, including drilling and trenching for bulk sampling, was submitted to the BLM and the NDEP BMRR in May 2008. This PoO was analyzed by an Environmental Assessment (EA), DOI-BLM-NV-W010-2010-001-EA, in accordance with the *United States National Environmental Policy Act of 1969*. It was subsequently approved in January 2010 under the BLM's *Surface Management Regulations* contained in Title 43 of the *Code of Federal Regulations, Chapter 3809*. Under BLM permit N85255, twelve separate Work Plans have been submitted and approved by the BLM. The NDEP-BMRR issued concurrent approval for the exploration PoO, including the approval of the reclamation financial guarantee, and issued State of Nevada Reclamation Permit No. 0301 for the exploration project. In 2023, this exploration project was terminated. Related disturbance was incorporated into the Thacker Pass Project.

LAC submitted the Thacker Pass Project Proposed PoO Permit Application on August 1, 2019 (LAC, 2019a). The permit application was preceded by LAC's submission of baseline environmental studies documenting the collection and reporting of data for environmental, natural, and socio-economic resources used to support mine planning and design, impact assessment, and approval process.

As part of the overall permitting and approval process, the BLM completed an analysis in accordance with the National Environmental Policy Act of 1969 (NEPA) to assess the reasonably foreseeable impacts to the human and natural environment that could result from the implementation of Project activities. As the lead Federal regulatory agency managing the NEPA process, the BLM has prepared and issued a Final Environmental Impact Statement. BLM then issued the EIS Record of Decision (ROD) and PoO Approval on January 15, 2021 (BLM, 2021), as described in Section 20. In addition, a detailed Reclamation Cost Estimate (RCE) has been prepared and submitted to both the BLM and Nevada Division of Environmental Protection-Bureau of Mining, Regulation and Reclamation (NDEP-BMRR). NDEP-BMRR approved the PoO with the issuance of draft Reclamation Permit 0415 and then issued the final Reclamation Permit 0415. On June 25, 2024, the BLM approved a modification to the PoO, which included an updated facility layout and the addition of the CCDs. A modified Reclamation Permit was issued by NDEP-BMRR in Q4 2024. The BLM will require the placement of a financial guarantee (reclamation bond) to ensure that all disturbances from the mine and process site are reclaimed once mining concludes.

There are no identified issues that would prevent LAC from achieving all permits and authorizations required to construct and operate Phase 1 and Phase 2 of the Thacker Pass Project based on the data that has been collected to date. Ground water appropriation transfer discussions are ongoing for Phase 2 of the Project. Additional discussions regarding permitting are contained in Section 20.

4.7 Other Factors or Risks

The QP for this section is not aware of any other significant factors or risks that may affect access, title, or the right or ability to perform work on the Thacker Pass Property.

4.8 Conclusions

Based on information provided, or researched and reviewed, LAC is approved by the BLM and the NDEP-BMRR to conduct mineral exploration and construction activities at the Thacker Pass Project site in accordance with Permit No. N98582.

LAC has either obtained, or initiated the process to obtain, all major necessary federal, state, and local regulatory agency permits and approvals for further advancement of Phase 1 and Phase 2 of the Thacker Pass Project.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

5.1 Physiography

The Project is located in the southern portion of the McDermitt Caldera. The Project site sits at the southern end of the Montana Mountains, with its western border occurring just east of Thacker Creek. Elevation at the Project site is approximately 1,500 m above sea level. Physiography is characterized by rolling topography trending eastward, with slopes generally ranging from 1% to 5%.

Lands within the Project footprint primarily drain eastward to Quinn River. A small portion of the proposed pit area drains west to Kings River via Thacker Creek. There are no perennially active watercourses on the Project site. A few small seeps and springs have been identified on the Project footprint, none of which are regionally significant.

Soils consist primarily of low-permeability clays intermixed with periodic shallow alluvial deposits.

Vegetation consists of low-lying sagebrush and grasslands. The area is heavily infested with cheatgrass, an unwanted invasive species in Nevada.

5.2 Accessibility

Access to the Project is via the paved US Highway 95 and paved State Route 293; travel north on US-95 from Winnemucca, Nevada, for approximately 70 km to Orovada and then travel west-northwest on State Route 293 for 33 km toward Thacker Pass to the Project site entrance. Driving time to the Project is approximately one hour from Winnemucca, and 3.5 hours from Reno. On-site access is via several gravel and dirt roads established during the exploration and Phase 1 early works phase.

5.3 Climate

The climate of the Project area will not affect mining throughout the year. The LOM plan discussed in this Technical Report assumes mining 365 days per year. The meteorological station in Figure 5-1 has continuously operated at the Project site since 2011. The station collects temperature, precipitation, wind speed and direction, solar radiation, and relative humidity data.

Figure 5-1 On-Site Meteorological Station, Including Tower, Solar Power Station, and Security Fence

Source: LAC, 2012

5.3.1 Temperature

Northern Nevada has a high-desert climate with cold winters and hot summers. The average minimum temperature in January is -11.1°C recorded from LAC on-site meteorological station recorded between 2012 and 2024. The lowest January temperature recorded during this time period is -16.4°C recorded in 2017. The summer temperatures reach up to 35°C to 40°C. Snow can occur from October to May, although it often melts quickly. Nearby mining operations operate continuously through the winter and it is expected that the length of the operating season at the Thacker Pass Project would be year-round.

The temperature recorded in the LAC station from 2011 to 2024 ranges from -18°C to +37°C. The frost depth for the Project is 0.635 m (24 in.) based on Humboldt County Basic Design Requirements.

5.3.2 Precipitation

The area is generally dry, with annual precipitation ranging from 14.8 cm (5.8 inches) in 2020 to 39.9 cm (15.7 inches) in 2014 (Table 5-1). Winter precipitation (December to February) is higher with total monthly precipitation ranging from 0.1 cm to 9.5 cm. In the summer (June to August), precipitation is lower, with monthly precipitation ranging from 0.0 cm to 4.4 cm.

Table 5-1 Annual Precipitation at the Thacker Pass Project Site (in cm)

Month	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
January	-	4.3	2.4	1.0	0.9	6.3	7.6	1.5	3.5	4.1	2.4	2.6	2.5	1.0
February	-	0.7	0.4	5.4	2.0	0.6	4.1	1.5	7.1	0.2	4.7	0.3	0.7	2.5
March	-	2.7	0.8	7.7	1.1	3.6	2.4	5.3	2.4	2.0	0.4	1.1	2.2	0.6
April	-	3.0	0.7	3.6	3.0	2.0	5.4	3.8	1.7	0.4	0.4	2.7	0.8	0.2
May	-	0.8	5.5	1.5	8.9	5.0	2.3	4.2	10.0	1.5	1.3	2.5	4.2	0.8
June	-	1.0	1.1	0.3	0.9	2.2	3.3	1.1	0.9	1.9	2.6	2.8	4.4	0.1
July	-	1.0	0.9	1.6	2.0	0.0	0.1	0.0	1.1	0.0	0.3	0.0	0.0	0.0
August	1.0	1.3	1.4	2.7	0.2	0.0	1.0	0.0	0.4	0.5	0.0	1.6	0.6	-
September	0.0	1.8	3.0	7.2	0.6	2.3	0.7	0.0	2.0	0.0	0.1	0.3	2.1	-
October	2.9	2.9	2.5	1.2	4.4	3.2	0.7	3.2	0.0	0.0	7.6	0.6	0.5	-
November	1.5	2.8	2.0	3.0	1.5	1.7	3.3	1.8	1.3	3.1	0.9	0.7	0.4	-
December	0.1	6.9	0.8	4.5	9.5	6.9	0.4	3.9	6.1	1.0	4.5	6.7	0.4	-
Annual Total	**-**	**29.2**	**21.5**	**39.9**	**35.1**	**33.9**	**31.2**	**26.2**	**36.4**	**14.8**	**25.1**	**21.8**	**18.7**	**-**
Minimum Monthly	**-**	**0.7**	**0.4**	**0.3**	**0.2**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**-**
Maximum Monthly	**-**	**6.9**	**5.5**	**7.7**	**9.5**	**6.8**	**7.6**	**5.3**	**10.0**	**4.1**	**7.6**	**6.7**	**4.4**	**-**

Source: LAC's on-site meteorological station 2024

5.3.3 Evaporation

Open water evaporation estimates are based on data from the Western Regional Climate Center from years 1948 through 2005 for the Rye Patch Reservoir, located approximately 90 km to the south at an elevation of 1,260 m. Using a pan coefficient of 0.7, the estimated open-water evaporation rate is 1.06 m per year.

The region is characterized by a water deficit, with estimated evaporation notably greater than recorded precipitation.

5.4 Local Resources

A long-established mining industry exists in the Winnemucca area. Local resources include all facilities and services required for large-scale mining, including an experienced workforce. The area is about 50 km north of the Sleeper gold mine (currently under care and maintenance) and 100 km northwest of the Twin Creeks, Turquoise Ridge, and Getchell gold mines.

Additionally, there are several other gold and copper mines in the area which rely on the experienced workforce and support for mining operations. Most of the workforce for this Project is expected to originate from the local population.

There are several chemical processing operations (mostly pyrometallurgy and gold processing) in the local area. Experienced operations staffing may have to be brought into the area to operate the lithium processing plant.

5.5 Infrastructure

The existing roads are maintained by the Nevada Department of Transportation. All are paved and in good repair. The roads are all-season roads but may be closed for short periods due to extreme weather during the winter season.

The nearest railroad access is in Winnemucca. This railroad is active and owned and maintained by Union Pacific. BNSF Railway has track rights to this line.

A 115 kV transmission line runs adjacent to State Route 293 through the Project site. This line is owned and operated by Harney Electric Cooperative (HEC). There is sufficient space within the Thacker Pass Project site to accommodate the proposed processing plant and mine support facilities, overburden placement site, waste rock storage facility, gangue storage facility, anticipated clay tailings filter stack (CTFS), water diversions, and containments. See the overall site general arrangement in Figure 18-1.

Although a natural gas transport line is located approximately 35 km to the south of the Project site, natural gas is not required for the Project.

5.6 Water Rights

On April 1, 2020, LN submitted applications to the Nevada Division of Water Resources (NDWR) to change the point of diversion, manner of use, and place of use for Nevada Water Right Permits 68633 and 68634. These water rights were transferred from the LAC-owned ranch east of the Project site. Additional applications to change the point of diversion, manner of use, and place of use for Nevada Water Right Permits 18494, 15605, 21059, 21060, 24617, 83819, 83820, 83821 were submitted August 11, 2020. These water rights were transferred from a ranch east of the Project site pursuant to a purchase agreement with the nearby ranch. Two ranches, one in the Quinn River Valley and one in the King's River Valley, protested the transfer of water rights. A water rights hearing occurred December 1 to December 8, 2021 and the protests were overruled by the State Engineer on February 1, 2023. Permits 89691-89684 and 89995-90006 were issued on Jun 27, 2023, which resulted in a total combined duty of 3,515 million liters (2,850 acre-feet) of water rights being transferred to Thacker Pass Quinn Well 1 and Quinn Well 2. An appeal was filed on the water rights permits in March 2023. No preliminary injunction or stay was granted on the appeal, so water is allowed to be used as needed during the pendency of the case. The court has scheduled an oral hearing February 2025. LAC is optimistic in the outcome as the law requires that the Judge confers deference on the State Engineer's decision overruling original protests. Additional water rights will need to be acquired and transferred for future phases of the Project.

In September 2018, LAC drilled the Quinn Production Well to a depth of 172 m (565 feet) below ground surface. The well was drilled under an approved BLM Permit N94510. In October 2018, LAC performed a 72-hour constant rate pump test on the well to evaluate well performance and aquifer parameters. The testing determined water production from QRPW18-01 is adequate to supply LAC with process water, at sustainable production rate of 909 m^3/h (3,500 gpm) or over 7.9 Mm^3 (6,400 acre-foot) per annum (Piteau, 2019a). A second supply well, Quinn River Production Well 2 (QRPW23-01) was drilled and tested in 2023. Based on relatively low drawdown, step testing was not performed in advance of the constant rate pump test. A 72-hour constant rate pumping test was conducted on the well at a target pumping rate of 318 m^3/h (1,400 gpm), which yielded a maximum drawdown of approximately 5.5 m (18 ft). The two production wells (QRPW18-01 and QRPW23-01) will supply water for the first two phases of the Project. Additional wells will be needed to supply water for future phases. The current suite of inorganic analytes from both well samples meets drinking water standards; additional water quality testing will be conducted to support an application to qualify the wells for potable water use.

6 HISTORY

LN is a Nevada limited liability company that is currently a wholly-owned subsidiary of a joint venture between the Canadian-based LAC and GM. LAC was formerly known as Western Lithium USA Corporation (WLC). The name of the Kings Valley Project was changed to the Lithium Americas Project and was changed again in 2018 to the Thacker Pass Project (includes only the former Stage 1). In Q4 2024, LAC and GM entered into a joint venture agreement which granted GM 38% ownership in the Thacker Pass Project. In this section, any reference to WLC or the Kings Valley Project now refers to LN and the Thacker Pass Project.

6.1 Ownership History

Chevron USA (Chevron) leased many of the claims that comprised the Thacker Pass Project to the J. M. Huber Corporation (Huber) in 1986. In 1991, Chevron sold its interest in the claims to Cyprus Gold Exploration Corporation. In 1992, Huber terminated the lease. Cyprus Gold Exploration Corporation allowed the claims to lapse and provided much of the exploration data to Jim LaBret, one of the claim owners from which they had leased claims. WEDC, a Nevada corporation, leased LaBret's claims in 2005, at which time LaBret provided WEDC access to the Chevron data and access to core and other samples that were available.

Pursuant to an agreement signed on December 20, 2007, between WEDC, a subsidiary of Western Uranium Corporation, and WLC (which was then a subsidiary of Western Uranium Corporation), WEDC leased the mining claims to WLC for the purpose of lithium exploration and exploitation. This agreement granted WLC exclusive rights to explore, develop, and mine or otherwise process any and all lithium deposits discovered on the claims, subject to royalty payments. The leased area, at that time, included the entirety of the Thacker Pass deposit and included 1,378 claims that covered over 11,000 ha.

Lithium deposits to be exploited included, but were not limited to, deposits of amblygonite, eucryptite, hectorite, lepidolite, petalite, spodumene, and bentonitic clays. Rights to all other mineral types, including base and precious metals, uranium, vanadium, and uranium-bearing or vanadium-bearing materials or ores were expressly reserved by WEDC. The term of that lease agreement was 30 years. The lease granted WLC the exclusive right to purchase the unpatented mining claims (UM Claims) comprising a designated discovery, subject to the royalty and other rights to be reserved by WEDC and subject to WLC's obligations under the deed to be executed and delivered by WEDC on the closing of the option.

In July 2008, WLC ceased to be wholly owned by Western Uranium Corporation and became an independent publicly traded company.

Effective February 4, 2011, Western Uranium Corporation, WEDC, and WLC entered into an agreement for the purchase by WLC from WEDC of the royalties and titles for the then-named Kings Valley mineral property.

In March 2011, the parties completed the transaction for the sale by WEDC to WLC of the royalties and titles constituting all of the Kings Valley mineral property. As a result of this transaction, the existing lease and royalty arrangements between the two companies on the Kings Valley property, including the Net Smelter Returns and Net Profits Royalties on any lithium project that the company developed, were terminated. WLC held control and full ownership of the then-named Kings Valley property mining claims and leases, excluding a gold exploration target (on the Albisu property) and a 20% royalty granted by WEDC to Cameco Global Exploration II Ltd. solely in respect of uranium. On March 22, 2016, the company announced a name change from Western Lithium USA Corporation to Lithium Americas Corp. and the name of LN was changed from Western Lithium Corporation to Lithium Nevada Corp. which has subsequently been converted to Lithium Nevada LLC on December 20, 2024. In 2018, LAC changed the name of its proposed lithium project to the Thacker Pass Project, reflecting the company's decision to focus the proposed development within the pass area located south of the Montana Mountains.

In Q4 2024, LAC and GM established a joint venture for ownership of the Thacker Pass Project. GM acquired a 38% asset-level ownership in Thacker Pass, with LAC retaining a 62% interest. Further discussion regarding the GM joint venture is provided in Section 19.5.

6.2 Exploration History

In 1975, Chevron began an exploration program for uranium in the sediments located throughout the McDermitt Caldera. Early in Chevron's program, the USGS (who had been investigating lithium sources) alerted Chevron to the presence of anomalous concentrations of lithium associated with the caldera. Because of this, Chevron added lithium to its assays in 1978 and 1979, began a clay analysis program, and obtained samples for engineering work, though uranium remained the primary focus of exploration.

Results supported the high lithium concentrations contained in clays. From 1980 to 1987, Chevron began a drilling program that focused on lithium targets and conducted extensive metallurgical testing of the clays to determine the viability of lithium extraction. The Chevron drilling consisted of twenty-four rotary holes and one core hole. This drilling data was not used in the resource model since it was determined that only HQ core holes would be used for resource estimation to reduce bias from different drilling methods.

6.3 Historic Production from the Property

Prior owners and operators of the property did not conduct any commercial lithium production from the property.

7 GEOLOGICAL SETTING AND MINERALIZATION

The Thacker Pass Project is located within an extinct 40x30 km super volcano named McDermitt Caldera, straddling the Oregon-Nevada border. The McDermitt Caldera formed approximately 16.3 million years ago as part of a time-transgressive hotspot currently underneath the Yellowstone Plateau of Wyoming, Idaho, and Montana. Following an initial eruption of the ignimbrite and concurrent collapse of the McDermitt Caldera, a large lake formed in the caldera basin. This lake water was extremely enriched in lithium due to extensive hydrothermal activity and natural leaching of lithium from the lithium-rich volcanic rocks associated with caldera volcanism. This resulted in the accumulation of a thick sequence of lithium-rich muddy lacustrine clays at the bottom of the caldera lake.

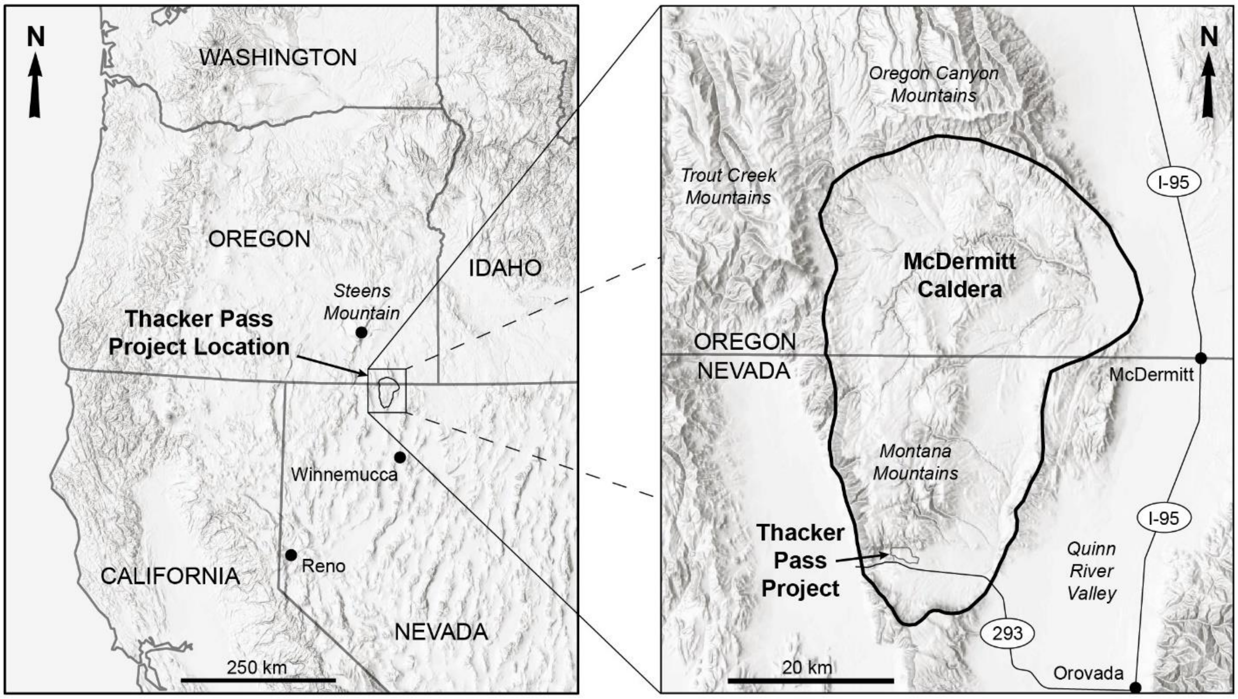
Renewed volcanic activity uplifted the center of the caldera, altering some of the smectite clays to illite, draining the lake and bringing the lithium-rich moat sediments to the surface of the earth. The result of these geological processes is a high-grade, large, and near-surface lithium deposit that is the focus of the Thacker Pass Project.

7.1 Regional Geology

The Thacker Pass Project is located within the McDermitt Volcanic Field, a volcanic complex with four large rhyolitic calderas that formed in the middle Miocene (Benson et al., 2017a). Volcanic activity in the McDermitt Volcanic Field occurred simultaneously with voluminous outflow of the earliest stages of the approximately 16.6 Ma to 15 Ma Columbia River flood basalt lavas. This volcanic activity was associated with impingement of the Yellowstone plume head on the continental crust (Coble and Mahood, 2012; Benson et al., 2017a). Plume head expansion underneath the lithosphere resulted in crustal melting and surficial volcanism along four distinct radial swarms centered around Steens Mountain, Oregon (Figure 7-1; Benson et al., 2017a).

The McDermitt Volcanic Field is located within the southeastern-propagating swarm of volcanism from Steens Mountain into north-central Nevada (Benson et al., 2017a). The Thacker Pass Project is located within the largest and southeastern most caldera of the McDermitt Volcanic Field, the McDermitt Caldera (Figure 7-1).

Figure 7-1 Regional Map Showing the Location of the McDermitt Caldera in the Western US



Source: Lithium Americas Corp. (2022)

7.2 Geologic History of the McDermitt Caldera

7.2.1 Pre-Caldera Volcanism

Prior to collapse of the McDermitt Caldera at 16.33 Ma, volcanism in the northern portion of the McDermitt Volcanic Field and locally small volumes of trachytic to rhyolitic lavas erupted near the present-day Oregon-Nevada border in the Trout Creek and Oregon Canyon Mountains (Figure 7-1). These lavas and the flood basalts are exposed along walls of the McDermitt Caldera and are approximately 16.5 Ma to approximately 16.3 Ma years old (Benson et al., 2017a; Henry et al., 2017).

7.2.2 Eruption of the Tuff of Long Ridge and Collapse of the McDermitt Caldera

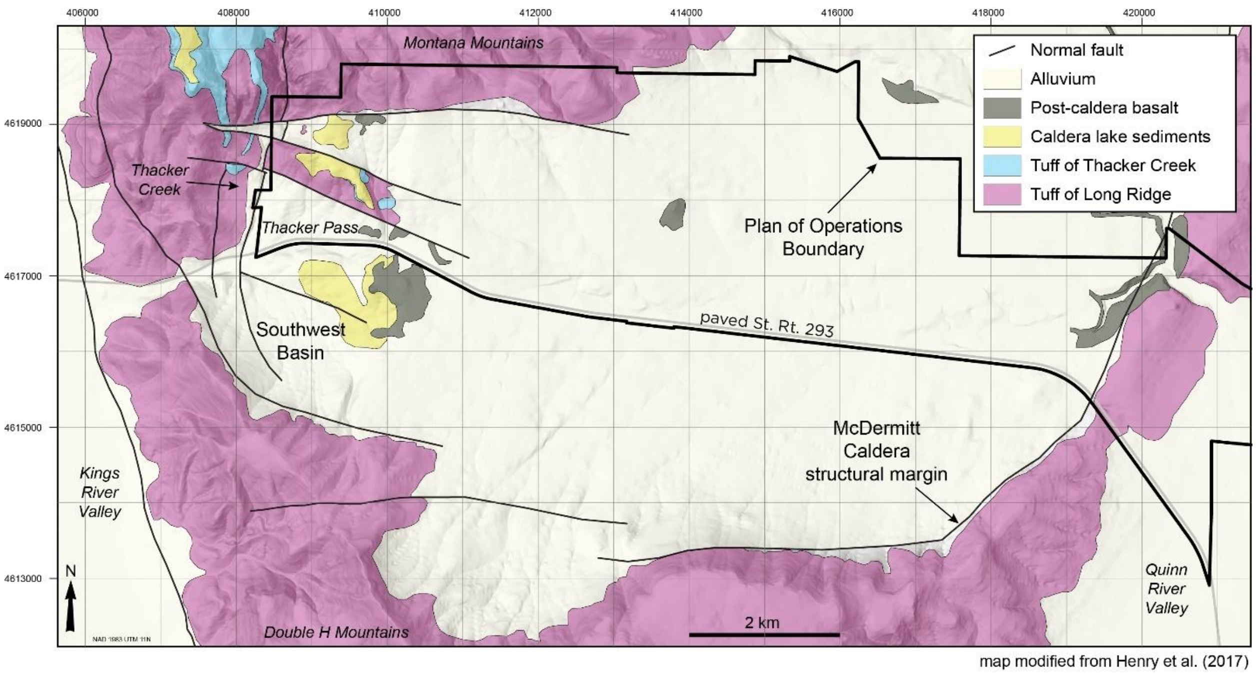
The trachytic to rhyolitic Tuff of Long Ridge erupted at approximately 16.33 Ma and formed the 30 km by 40 km keyhole-shaped McDermitt Caldera (Figure 7-1) that straddles the Oregon-Nevada border. Rytuba and McKee (1984) and Conrad (1984) initially interpreted the McDermitt Caldera as a composite collapse structure formed on piecewise eruption of four different ignimbrites from a single magma chamber. Henry et al. (2017) refined the stratigraphy to a singular ignimbrite they call the McDermitt Tuff (herein called the Tuff of Long Ridge to avoid confusion).

Regional reconnaissance work by Benson et al. (2017a) indicates that there was one large laterally extensive and crystal-poor (<3% feldspar) caldera-forming eruption (Tuff of Long Ridge), though other smaller-volume tuffs are exposed close to the vent and their eruptions and concomitant collapses may have contributed to the peculiar shape of the caldera. An estimated approximately 500 km^3 of ignimbrite ponded within the caldera during the eruption, with approximately 500 km^3 spreading out across the horizon up to 60 km from the caldera (Benson et al., 2017a; Henry et al., 2017).

7.2.3 Post-Caldera Activity

Following eruption of the Tuff of Long Ridge, a large lake formed in the caldera depression. Authigenic and detrital sediments and a subordinate volume of volcanic rock (tephra, basaltic lava, rhyolitic tuff) accumulated in the bottom of the lake. Sedimentation was likely active for several hundreds of thousands of years given that nearby Miocene caldera lakes lasted approximately this long (Coble and Mahood, 2012; Benson et al., 2017a). $^{40}Ar/^{39}Ar$ dates on primary tephra and authigenic feldspar from the sedimentary sequence are as young as approximately 14.9 Ma, indicating that sedimentation and mineralization occurred for at least approximately 1.5 million years (Castor and Henry, 2020). During this interval, the caldera underwent a period of resurgence similar to that of the Valles Caldera in New Mexico (Smith and Bailey, 1968). This resurgence occurred approximately 16.2 Ma (Castor and Henry, 2020) and uplifted a large volume of intracaldera ignimbrite and caldera lake sediments that form the present-day Montana Mountains (Figure 7-2).

Figure 7-2 Simplified Geological Map of the Southern Portion of the McDermitt Caldera and the Thacker Pass Project



Source: Lithium Americas Corp. (2022)
Note: The lithium resources are hosted within the Caldera Lake Sediments

A hydrothermal event associated with magmatic resurgence introduced to the system a hot, acidic fluid rich in Li, Potassium (K), Fluorine (F), Molybdenum (Mo), Cesium (Cs), Rubidium (Rb) and other elements associated with hydrothermal systems (Ingraffia et al., 2020). This fluid altered much of the smectite-bearing clays in the vicinity of Thacker Pass to a lithium-bearing illite, localized around intracaldera normal faults (Figure 7-2).

Beginning around 12 Ma, Basin and Range normal faulting associated with the extending North American lithosphere (Colgan et al., 2006; Lerch et al., 2008) caused uplift of the western half of the McDermitt Caldera and subsidence of Kings River Valley. Faults formed along reactivated ring fractures of the western McDermitt Caldera, and the Tuff of Thacker Creek. This uplift sped up the weathering and erosion of rocks within the caldera.

7.3 Mineralization

7.3.1 Thacker Pass Deposit

The Thacker Pass deposit sits sub-horizontally beneath a thin alluvial cover at Thacker Pass and is partially exposed at the surface (Figure 7-2). The Thacker Pass deposit is the target of a multi-phase mining development as the Thacker Pass Project. It lies at relatively low elevations (between 1,500 m and 1,300 m) in caldera lake sediments that have been separated from the topographically higher deposits to the north due to post-caldera resurgence and Basin and Range normal faulting. Exposures of the sedimentary rocks at Thacker Pass are limited to a few drainages and isolated road cuts. Therefore, the stratigraphic sequence in the Thacker Pass deposit is primarily derived from core drilling.

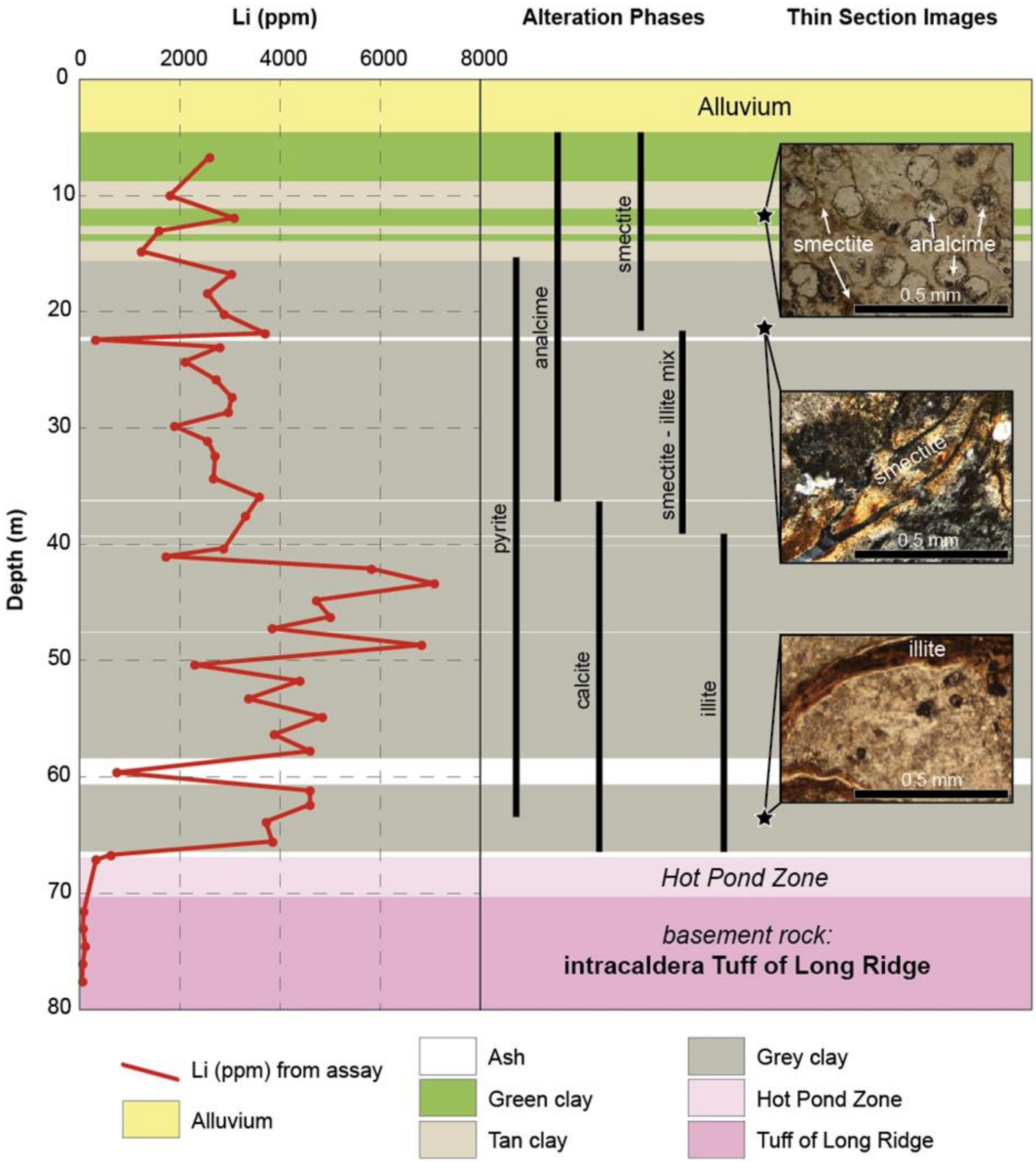
The sedimentary section, which has a maximum drilled thickness of about 160 m, consists of alternating layers of claystone and volcanic ash. Basaltic lavas occur intermittently within the sedimentary sequence. The claystone comprises 40% to 90% of the section. In many intervals, the claystone and ash are intimately intermixed. The claystones are variably brown, tan, gray, bluish-gray and black, whereas the ash is generally white or very light gray. Individual claystone-rich units may laterally reach distances of more than 152 m, though unit thickness can vary by as much as 20%. Ash-rich layers are more variable and appear to have some textures that suggest reworking. All units exhibit finely graded bedding and laminar textures that imply a shallow lacustrine (lake) depositional environment.

Surficial oxidation persists to depths of 15 m to 30 m in the moat sedimentary rock. Oxidized claystone is brown, tan, or light greenish-tan and contains iron oxide, whereas ash is white with some orange-brown iron oxide. The transition from oxidized to unoxidized rock occurs over intervals as much as 4.5 m thick.

The moat sedimentary section at Thacker Pass overlies the hard, dense, indurated intra-caldera Tuff of Long Ridge. A zone of weakly to strongly silicified sedimentary rock, the Hot Pond Zone (HPZ), occurs at the base of the sedimentary section above the Tuff of Long Ridge in most of the cores retrieved from the Thacker Pass deposit. Both the HPZ and the underlying Tuff of Long Ridge are generally oxidized.

Core from each drill hole has been examined and drill logs have been prepared that record rock type, color, accessory minerals, textures and other features of significance. The core has mostly been divided into sample intervals for chemical analyses delineated on the basis of lithology. Figure 7-3 shows a generalized interpretation of the lithology for core hole WLC-043 which is located roughly in the middle of the proposed mine pit area. The core data is the basis of the geologic model discussed in Section 14. Cross sections showing the lithological description and lateral continuity of lithological units are shown in shown in Figure 14-2.

Figure 7-3 Interpreted and Simplified Sample Log for Drill Hole WLC-043, Li Assay Data, Alteration Phases Identified by X-ray Diffraction, and Thin Section Imagery



Source: Lithium Americas Corp. (2022)

Most of the moat sedimentary rocks drilled in the Thacker Pass basin contain high levels of lithium (>1,000 ppm). Intervals that consist mostly of ash or volcanic rock have lithium contents of less than 800 ppm whereas intervals dominated by claystone contain more lithium (>1,000 ppm). Many intervals have very high lithium contents (>4,000 ppm). Intervals with extreme lithium contents (>8,000 ppm) occur sporadically in the Thacker Pass deposit.

There is no obvious change in lithium content across the boundary between oxidized and unoxidized rock. The highest lithium grades generally occur in the middle and lower parts of the sedimentary rock section, or in sections where these rocks have been uplifted to surface. Lithium grade continuity through the Thacker Pass deposit can be visualized in Figure 14-2 which shows the high-grade mineralized zone in the deposit.

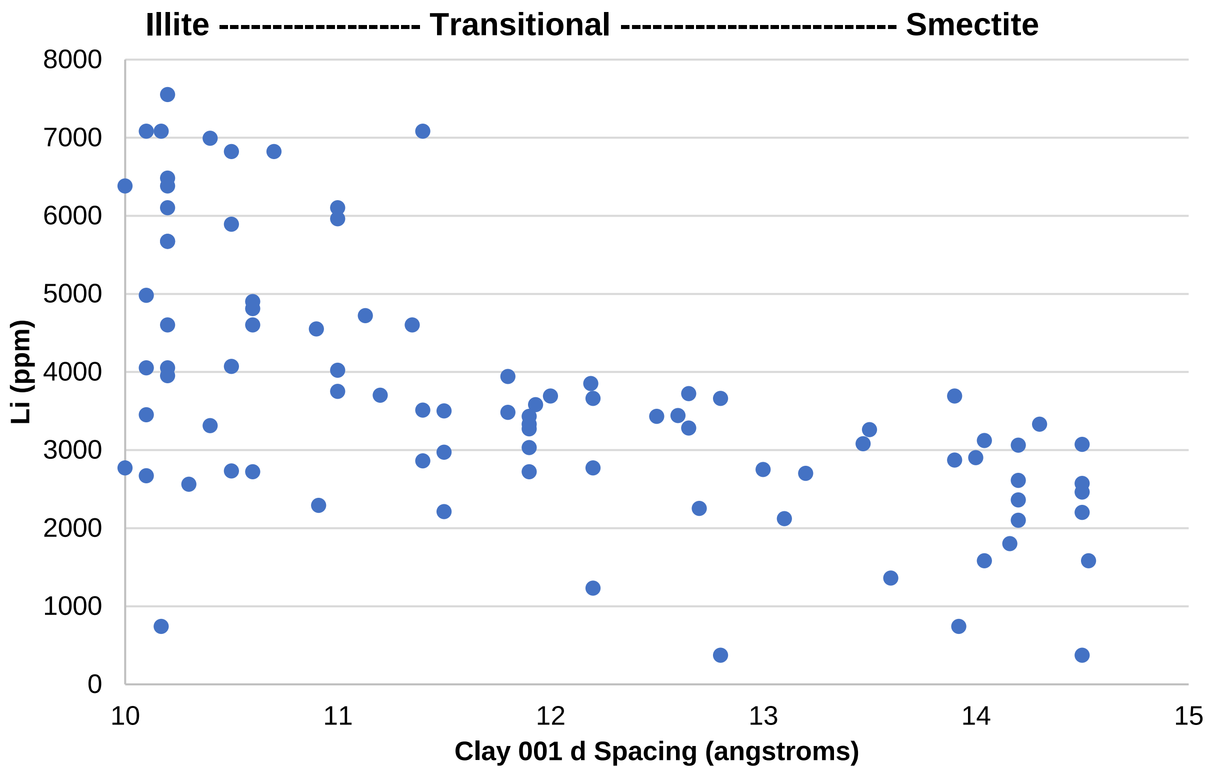
The lithium content of the Thacker Pass deposit claystone can generally be correlated to the color and texture of the rock, as well as the amount of mixed-in ash. Intervals with the highest lithium grades (>4,000 ppm) generally contain gray to dark-gray or black claystone with less than 10% ash. Intervals of bluish-gray claystone with low ash content have moderate lithium content (generally 2,500 ppm to 3,000 ppm). Intervals of light-colored claystone (e.g., tan, light gray, greenish-tan) have lower lithium grades (generally 1,500 ppm to 2,500 ppm). Intervals of mixed claystone and ash are common and have variable lithium contents (generally 1,500 ppm to 3,000 ppm) depending on the type of claystone and proportion of ash present.

7.3.2 Mineralogy

Clay in the Thacker Pass deposit includes two distinctly different mineral types, smectite and illite, based on chemistry and X-ray diffraction (XRD) spectra. Clay with XRD spectra that are indicative of smectite (12 – 15 Å basal spacing) occurs at relatively shallow depths in the Thacker Pass deposit (Figure 7-4; Castor and Henry, 2020). Smectite drill intervals contain roughly 2,000 – 4,000 ppm Li (Figure 7-4). The chemistry and structure of the smectite at McDermitt is most similar to hectorite, a subtype of smectite ($Na_{0,3}(Mg,Li)_3Si_4O_{10}(OH)_2$), though chemically the clay is intermediate between hectorite and two other smectites, stevensite and saponite (Morissette, 2012). Supported hectorite clay occurs elsewhere in the McDermitt Caldera and has been documented by several authors (e.g., Odom, 1992; Rytuba and Glanzman, 1978; Morissette, 2012; Castor and Henry, 2020).

Drill intervals with higher lithium contents (commonly 4,000 ppm Li or greater; Figure 7-4) contain clay 001 d spacing (Figure 7-4) typical for illite (Morissette, 2012; Castor and Henry, 2020). This illite clay occurs at relative moderate to deep depths in the moat sedimentary section and sporadically occurs in intervals that contain values approaching 9,000 ppm lithium in terms of a whole-rock assay, higher than what a hectorite crystal can accommodate. The Li-rich illite is similar in character to tainiolite, a subtype of illite ($K_2[Mg_4Li_2]Si_8O_{20}(OH,F)_4$) (Morissette, 2012; Castor and Henry, 2020). A relatively thin zone of interstratified smectite-illite clay is found between the smectite and illite-type clay (Figure 7-4; Castor and Henry, 2020). Clays in this mixed layer contain basal spacing intermediate between illite and smectite (Figure 7-4).

Figure 7-4 Assay Lithium Content Plotted Against Clay X-Ray Diffraction Data from Drill Holes WLC-043, WLC-006, and WLC-067



Source: Castor and Henry (2020)
Note: Blue Dots Represent Assay Data From Holes WLC-043, WLC-006, and WLC-067

X-ray diffraction data from drill holes WLC-043, WLC-006, and WLC-067 indicate that higher lithium content in the assay intervals correlates with the higher proportions of illite in the sample (Figure 7-4; Castor and Henry, 2020).

Because the assay interval (5 ft or 1.5 m) is coarser than the finely laminated sediments (often sub-cm) and can contain a variety of lithologies due to randomization, separating clay material out an individual assay interval can obtain a more accurate representation of the composition of the clay itself. Clay concentrates from different sections of the Thacker Pass deposit were analyzed by Morissette (2012) and can be used to estimate the bulk composition of a pure clay separate. Illite clay concentrates from Thacker Pass have an average composition of 1.2 wt. % Li (12,000 ppm Li) with 10 Å basal spacing and smectite clay concentrates have an average composition of 0.5 wt. % Li (5,000 ppm Li) with approximately 15 Å basal spacing (Table 7-1).

The smectite clay concentrates at Thacker Pass have a lithium content similar to hectorite clay concentrate at Hector, California (around 5,700 ppm Li; Morissette, 2012; and higher than the average of all clay concentrates at Clayton Valley, Nevada (approximately 3,500 ppm Li average; Morissette, 2012). The illite clay concentrates at Thacker Pass contain approximately twice the concentration of lithium as the hectorite concentrate from Hector, California and approximately three times the concentration of lithium from clay concentrates in Clayton Valley, Nevada.

Table 7-1 Chemical Analyses of Thacker Pass Smectite and Illite Clay Concentrates

Category	Smectite	Illite
Li (wt. %)	0.5	1.2
Li_2O (wt. %)	1.1	2.6
Mg (wt. %)	11.4	11.2
Ca (wt. %)	0.9	0.2
001d Basal Spacing (Å)	14.95	10

Notes:

1. All data from Morissette, C.L. (2012). “The Impact of Geological Environment on the Lithium Concentration and Structural Composition of Hectorite Clays.” MS Thesis, University of Nevada-Reno, 244 p.
2. For sample preparation and analytical methodologies, see Morissette (2012).
3. Smectite data are averages of WLC03-01 and WLC03-02 in Morissette (2012), Table 9.
4. Illite data are averages of WLC03-03, WLC03-04, and WLC03-05 in Morissette (2012), Table 9.
5. 001 d basal spacing from air-dried oriented averages in Morissette (2012), Table 7 (smectites) and Table 8 (illites).
6. The conversion factor from Li_2O to Li is 0.464.
7. The conversion factor from MgO to Mg is 0.6031.
8. The conversion factor from CaO to Ca is 0.7146.

Other minerals in the Thacker Pass deposit claystone include calcite, quartz, K-feldspar, plagioclase, dolomite, and fluorite. Pyrite and bitumen occur in the claystone below near-surface oxidized rock. Ash beds in the Thacker Pass deposit contain quartz and feldspar with local analcime, and minor clay and pyrite. Zeolite minerals are typically present in the north part of the caldera, but analcime is the only zeolite present in the Thacker Pass deposit (Glanzman and Rytuba, 1979; Castor and Henry, 2020). Carbonates (calcite and dolomite) are present throughout the Thacker Pass deposit as primary sedimentary beds and rosettes and masses (Castor and Henry, 2020). Fluorite occurs in the mixed smectite/illite and illite zones and is interpreted by Castor and Henry (2020) to be the product of a secondary fluid. Fluorite often replaces calcite in the illitic portion of the sedimentary sequence, further supporting its genesis from a secondary fluid.

7.3.3 Discussion

The regional geological setting of the Thacker Pass deposit is well-known and understood. The lithium bearing clays are contained within the lacustrine caldera moat sediments that are bounded by the outer wall of the caldera and inner resurgent dome. The local geological setting and degree of local lithium grade variations, within the modeled area, are adequately known for the Thacker Pass deposit for resource estimation.

8 DEPOSIT TYPES

8.1 Lithium Mineralization

Lithium enrichment (>1,000 ppm Li) in the Thacker Pass deposit and deposits of the Montana Mountains occur throughout the caldera lake sedimentary sequence above the intra-caldera Tuff of Long Ridge. The deeper illite-rich portion of the sedimentary sequence contains higher lithium than the shallower, smectite-rich portion. The uplift of the Montana Mountains during both caldera resurgence and Basin and Range faulting led to increased rates of weathering and erosion of a large volume of caldera lake sediments. As a result, much of the sediments in the Montana Mountains have eroded away.

South of the Montana Mountains in the Thacker Pass deposit, caldera lake sediments dip slightly away from the center of resurgence. Because of the lower elevations in Thacker Pass, a smaller volume of the original caldera lake sedimentary package eroded south of the Montana Mountains. As a result, the thickness of the sedimentary package increases with distance from the Montana Mountains. The proposed open-pit mining activity is concentrated just south of the Montana Mountains in Thacker Pass where lithium enrichment is close to the surface with minimal overburden.

8.2 Basis of Exploration

Caldera lake sediments of the McDermitt Caldera contain elevated Li concentrations compared to other sedimentary basins. Although the exact genesis of the Li enrichment processes is not fully understood, exploration activities have been based on the caldera lake model described above. Exploration results support the proposed model and have advanced the understanding of the geology of the Thacker Pass deposit.

The exact cause for the Li enrichment in the caldera lake sediments is still up for debate. Benson et al. (2017b) demonstrated that the parent rhyolitic magmas of the McDermitt Volcanic Field were enriched in lithium due to assimilation of approximately 50% continental crust during magma genesis. In their model, eruption of the Tuff of Long Ridge and the collapse of the McDermitt Caldera resulted in a large volume of Li-enriched glass, pumice, and ash on the surface of the earth near the caldera. Subsequent weathering transported much of this lithium into the caldera which served as a structurally controlled catchment basin. Immediately following collapse, a large volume of loose Li-enriched glass and pumice was sitting within and near the edge of the caldera. This pyroclastic material would have had a relatively high surface area from which Li could be easily leached by meteoric and possibly hydrothermal fluids and deposited into the caldera lake.

The presence of sedimentary carbonate minerals and Mg-smectite (hectorite) throughout the lake sediments indicates that the clays formed in a basic, alkaline, closed hydrologic system. Such conditions enable the direct precipitation of clays from solution (neoformation), the composition of which is dependent on the chemistry of the lake water (e.g., Tosca and Masterson, 2014). Because the McDermitt Caldera lake water was rich in Li and F, the primary Mg-smectite to precipitate was the Li-smectite, hectorite. The relatively low aluminum content of the clays supports an authigenic (non-detrital) genetic model for the smectites.

Ingraffia et al. (2020) hypothesize that the bulk of the Li mass within the caldera lake sediments is sourced from devitrification and degassing of glassy intracaldera tuff as sediments were accumulating in the caldera basin. Geochemical and field evidence suggests that the intracaldera Tuff of Long Ridge was emplaced at high temperatures atypical of continental rhyolitic ignimbrites (>850°C), leading to intense welding and rheomorphism (Hargrove and Sheridan, 1984; Henry et al., 2017). The cooling and degassing of this hot ignimbrite likely took place during most of the history of the caldera lake, which would add significant Li mass to the meteoric water system via hydrothermal fluids. These high-temperature fluids (>100°C) likely mixed with the lake and groundwater to lead to a basin-wide warm hydrologic system near 100°C.

The high-Li (>4,000 ppm) illitic portions of the sedimentary sequence near Thacker Pass formed when a hot, low-pH, Li- and F-rich fluid altered the smectite to illite and dissolved the disseminated carbonates. Geologic evidence for the interaction of sediments with this fluid include replacement of analcime by authigenic K-feldspar (Castor and Henry, 2020), the presence of the siliceous hot pond zone (HPZ) below the illite sediments, and high concentrations of Li, Rb, Cs, As, Mo, Sb, and other trace metals (Castor and Henry, 2020) in the illite-rich portion of the Thacker Pass deposit. This supports a genetic model in which the initial neoformation of smectite in a closed hydrologic system was followed by hydrothermal alteration to illite in the vicinity of Thacker Pass. This explains why the illite in the Thacker Pass deposit reaches whole-rock assay values up to 9,000 ppm Li, whereas the smectite intervals rarely exceed 4,000 ppm Li.

This neoformation-alteration model is consistent with the conclusion by Castor and Henry (2020) that burial diagenesis of tuffaceous sediments alone cannot account for the all the lithium present in the caldera. While the smectite-to-illite pattern observed is consistent with other sedimentary sequences observed in the world, simple mass modeling of burial diagenesis can only account for roughly 20% of the 640 Mt lithium carbonate maximum that Castor and Henry (2020) estimate to be contained within the McDermitt Caldera lake sediments.

9 EXPLORATION

9.1 Thacker Pass

Prior to the 2010 drilling campaign, exploration consisted of:

- geological mapping to delineate the limits of the McDermitt Caldera moat sedimentary rocks, and
- drilling to determine grade and location of mineralization.

Survey work was completed prior to 1980 under Chevron's exploration program. Most of the Project area has been surveyed by airborne gamma ray spectrometry, in search of minerals such as uranium. Anomalously high concentration of lithium was discovered to be associated with the caldera. Lithium became the primary focus of exploration from 2007 onward.

A collar survey was completed by LAC for the 2007-2008 drilling program using a Trimble GPS (Global Positioning System). At that time the NAD 83 global reference system was used. Comparing LAC's survey work with that done by Chevron showed near-identical results for the easting and northings, elevations were off by approximately 3 m and were corrected in order to conform with earlier Chevron work.

The topographic surface of the Project area was mapped by aerial photography dated July 6, 2010. This information was obtained by MXS, Inc. for LAC. The flyover resolution was 0.35 m. Ground control was established by Desert-Mountain Surveying, a Nevada licensed land surveyor, using Trimble equipment. Field surveys of drill hole collars, spot-heights and ground-truthing were conducted by Mr. Dave Rowe, MXS, Inc., a Nevada licensed land surveyor, using Trimble equipment.

In addition to drilling in 2017, LAC conducted five seismic survey lines (Figure 9-1). A seismic test line was completed in July 2017 along a series of historical drill holes to test the survey method's accuracy and resolution in identifying clay interfaces. The seismic results compared favorably with drill logs. As illustrated by the yellow line in Figure 9-2, the contact between the basement (intracaldera Tuff of Long Ridge) and the caldera lake sediments (lithium resource host) slightly dips to the east. Four more seismic survey lines were commissioned in the Thacker Pass Project area (Figure 9-1). The additional seismic lines provide a more complete picture of the distribution, depth, and dip of clay horizons around the edge and center of the moat basin.

Drilling methods were compared to test for sample bias, using core drilling as the standard. Rotary, sonic, and reverse circulation drilling all showed slight sample biases when compared to core drilling. Only core holes were used for resource modeling to minimize the chance of sample bias. The QP believes that the drilling, logging, and sampling techniques procedures used are of reasonable quality and representative of the Thacker Pass deposit. In the Thacker Pass deposit, sample assays, geologic logging and area domains by structural faults were incorporated into the block model. This dataset is adequate for resource grade estimation.

Figure 9-1 Locations of Seismic and Geophysical Surveys

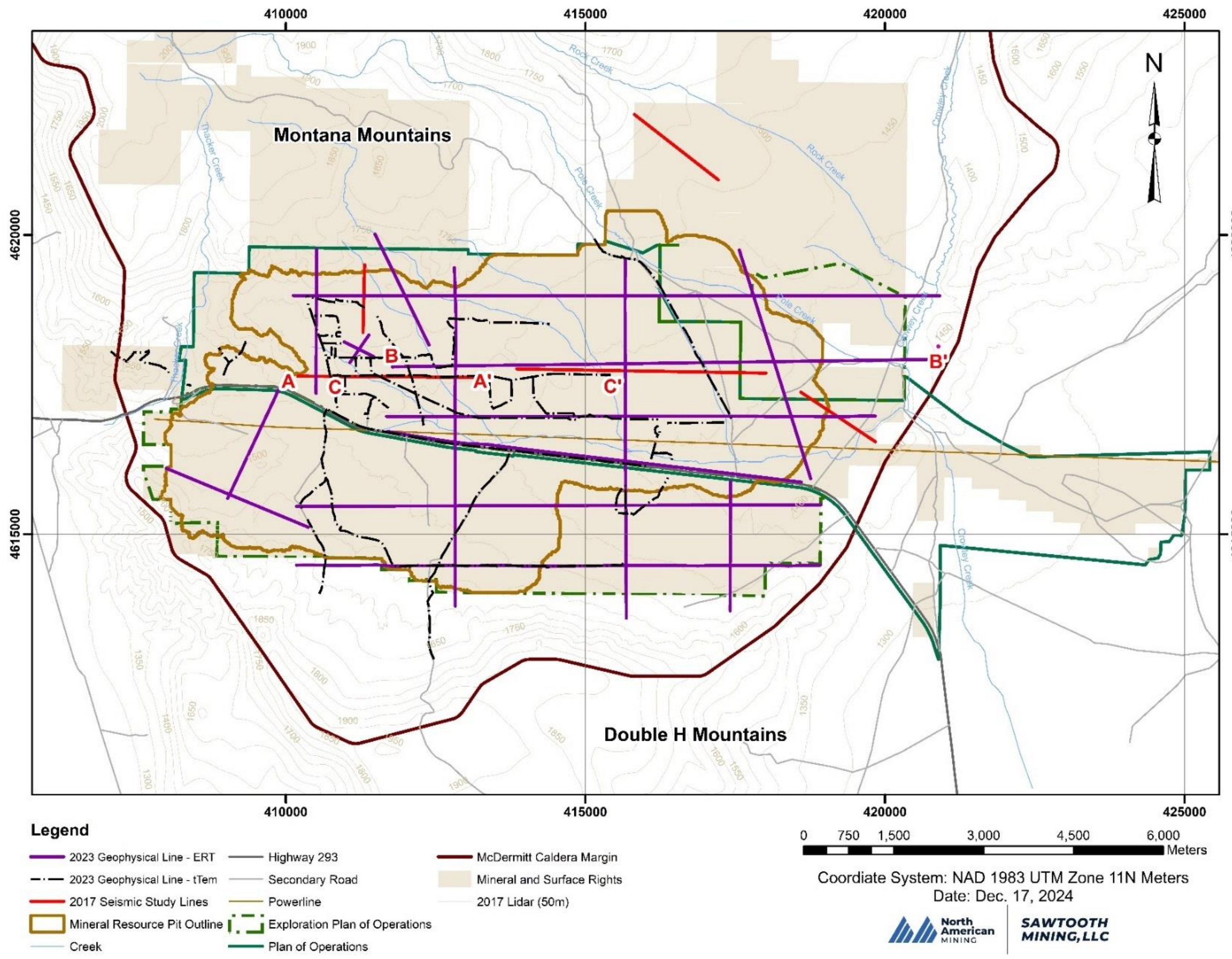
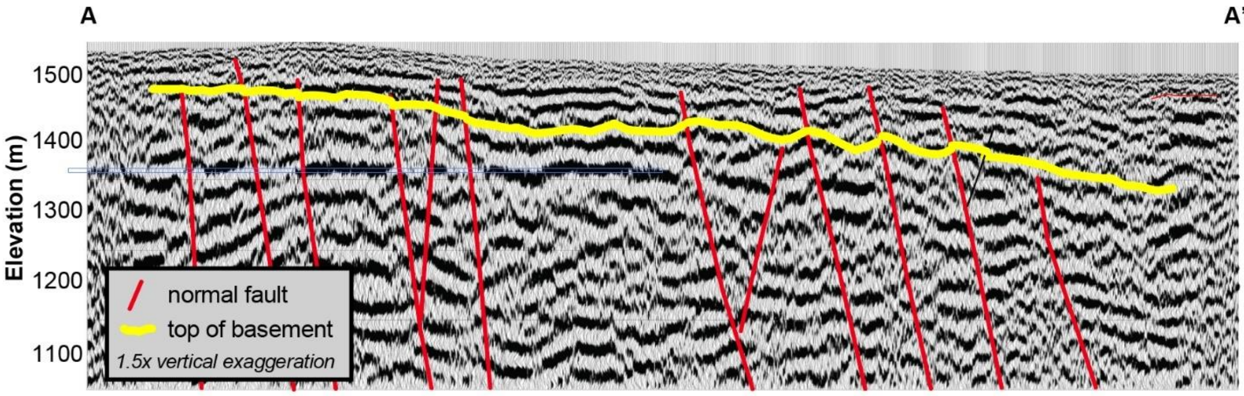


Figure 9-2 Results from one of the Seismic Test Lines (A-A')



Source: Lithium Americas Corp. (2022)

9.2 2023 Geophysical Investigation

A geophysical investigation of the subsurface materials was performed in 2023 using Electrical Resistivity Tomography (ERT) and Towed Transient Electromagnetic (tTEM) survey methods. The objectives of the investigation were to map the thickness of basalt and alluvium layers overlying the clay/ash materials, determine the depth of the basement, delineate potential faults the Montana Mountains, and differentiate between illite and smectite clays. Fifteen ERT test lines and 61 km of tTEM data were collected during this investigation. Locations of each survey method are shown on Figure 9-1.

9.3 Additional Exploration

Regional mapping of the McDermitt Caldera has been conducted by the Nevada Bureau of Mines. This mapping has been used to outline the McDermitt Caldera moat sediments that host the lithium bearing claystone. Former LAC exploration geologist, Dr. Thomas Benson, has also conducted mapping and analytical work within the southern area of the McDermitt Caldera. Collaborative analytical research with external researchers from federal labs and universities across the world is ongoing to further refine the geology of the Thacker Pass deposit and improve the genetic model.

10 DRILLING

10.1 Type and Extent of Drilling by LAC

Three drilling campaigns have been performed by LAC. These campaigns were in 2007-2010, 2017-2018, and 2023. The LAC drilling campaigns consisted of a combination of HQ, PQ, RC, and sonic coring and drilling methods. Table 10-1 lists a summary of holes drilled.

Table 10-1 LAC Drill Holes Provided in Current Database for the Thacker Pass Deposit

Drilling Campaign	Number Drilled	Type	Hole IDs in Database	Number used in Resource Model
LAC 2007-2010	230	HQ Core	WLC-001 through WLC-037, WLC-040 through WLC-232	227
	7	PQ Core	WPQ-001 through WPQ-007	0
	5	HQ Core	Li-001 through Li-005	0
	8	RC	TP-001 through TP-008	0
	2	Sonic	WSH-001 through WSH-002	0
LAC 2017-2018	144	HQ Core	LNC-001 through LNC-144	135
LAC 2023	97	HQ Core	LNC-145 through LNC-241	94

Notes: Holes that were omitted were removed from the database due to proximity to other nearby holes which were deeper with more assays and more descriptive geological descriptions.

Drilling methods were compared to test for sample bias, using core drilling as the standard. Rotary, sonic, and reverse circulation drilling all showed slight sample biases when compared to core drilling. Only HQ core holes were used for resource modeling to minimize the chance of sample bias.

In the Thacker Pass deposit, sample assays, geologic logging and geological domains by stratigraphic units were incorporated into the block model. This dataset is adequate for resource grade estimation. Four-hundred and seventy-one (471) HQ core holes were drilled specifically for assay and lithologic information. Four-hundred and fifty-six (456) of these HQ core holes were used for resource estimation after removing twinned, short or un-assayed drill holes.

Eight Reverse Circulation (RC) holes were drilled to compare drilling techniques. The RC drilling method biased assay results so the method was abandoned. Seven PQ-sized core holes were drilled with the intent to provide samples for metallurgical test work. Two sonic holes were drilled to test the drilling method; it was determined that the lithologic sample quality was not comparable to traditional core drilling and therefore sonic drilling was abandoned.

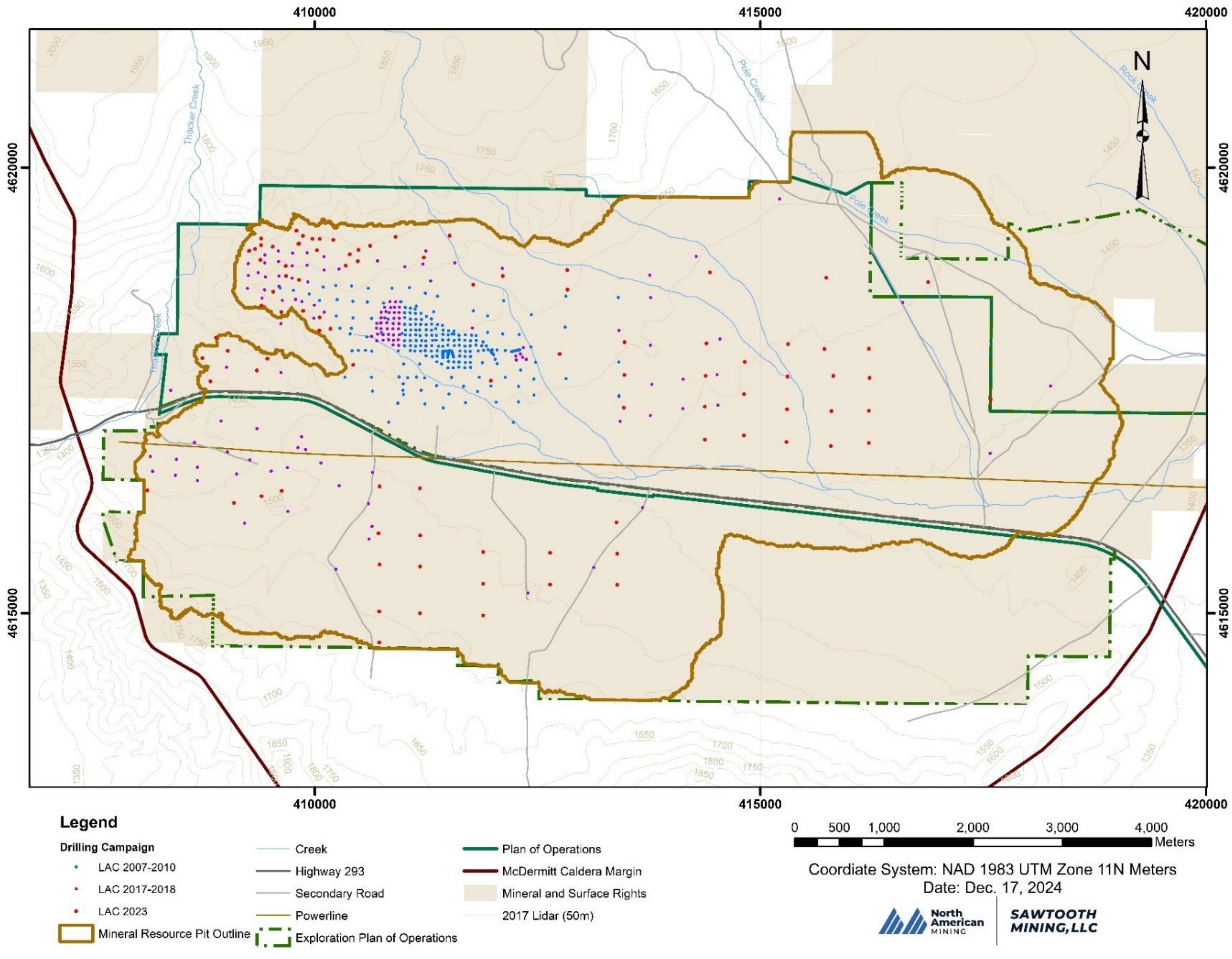
In 2008, LAC drilled five confirmation HQ core drill holes (Li-001 through Li-005) to validate historical drilling across the Montana Mountains to guide further exploration work. These holes were not used in the resource estimation.

From January 2010 through June 2011, August 2017 through December 2017, June 2018 through November 2018, and March 2023 through December 2023, LAC initiated a definition drilling campaign to provide sufficient confidence in the geological and grade continuity to support a Measured and Indicated Mineral Resource for lithium (Figure 10-1). All cores were logged by geologists at a core shed located outside Orovada, NV, who recorded the hole identification number, easting, northing, elevation, total depth, and lithologic description.

Each subsequent drilling campaign since the 2007-2010 drilling expanded the known resource to the northwest, east, south of the highway and further understanding of the local geology across Thacker Pass. All anomalous amounts of lithium occurred in clay horizons.

A total of 227 holes from the 2007-2010 campaigns, 135 holes from the 2017-2018 campaigns, and 94 holes from the 2023 campaign were used in the 2024 Mineral Resource estimate in this report. Lithological interpretations of the drill holes from the 2007-2010, 2017-2018, and 2023 drilling campaigns are shown in Figure 10-1.

Figure 10-1 Drill Hole Map of Thacker Pass Deposit



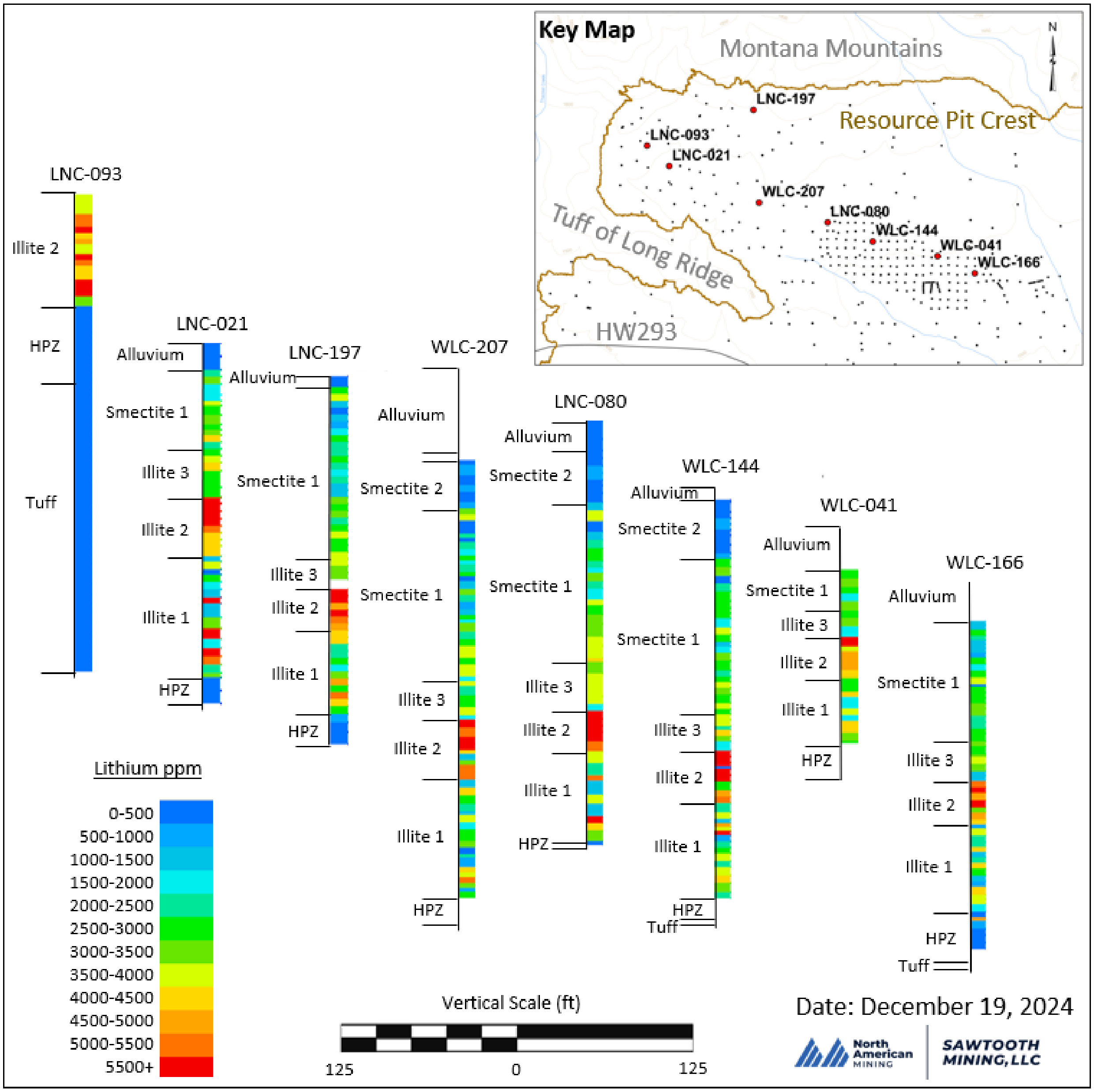
Assays for drill holes prior to January 2010 (WLC-001 through WLC-037) had analytical work done by American Assay Laboratory (AAL) in Nevada. The AAL results failed multiple quality control checks and was determined unfit to use in the resource model. As a remedy, these holes had pulps re-assayed in 2010 by ALS Global (ALS) in Reno, Nevada who now perform all assay work for LAC. The re-assayed samples only reported lithium grade while all other results include ALS' entire ME-MS61 ICP suite of 48 elements. Assay interval length was chosen by the geologist based on lithology and claystone color. The assay data can be visualized in Figure 10-3. Downhole assays and interpolated lithium grades are presented in the cross-sectional views.

Initially optimal drill hole spacing for Inferred, Indicated, and Measured categories was determined by geostatistical methods based on the results of the first 37 drill holes (WLC-001 through WLC-037). After LAC concluded drilling in 2017 the drill hole spacing geostatistics was re-evaluated with an additional 193 WLC holes (WLC-040 through WLC-232) and the drill hole spacing was widened for the 2018 drilling while maintaining the same Inferred, Indicated and Measured confidences. Spacing for the 2023 holes were based upon geostatistics from the 2022 Technical Report, requirements for condemnation drilling, density hole distribution, and to expand resources in the southern basis. An example of the drill core used in the geologic and grade model are shown in Figure 10-2.

Figure 10-2 Photograph of Core after Geologic Logging

Source: Lithium Americas Corp. (2021)

Figure 10-3 Representative Drill Sections with Composite Values



10.1.1 Logging

LAC core was collected once a day and transported back to the LAC secure core shed outside Orovada, Nevada. Core was cleaned and logged for lithology, oxidation, alteration and core recovery. All cores were photographed with high resolution digital cameras and samples were stored in locked buildings accessible by LAC personnel or contractors.

10.2 Additional Drilling in Thacker Pass Deposit

10.2.1 Clay Properties Drilling

In 2017, eight drill holes (LNC-049 through LNC-056 and LNC-086) were drilled to depths less than 16 m to collect samples for LAC. These samples were not geologically logged nor assayed. These samples are not included in the resource estimation or grade model but are included in the geological model.

In August 2018, October 2019, and September 2022, LAC used a large diameter auger (1 m to 1.3 m) to drill thirteen holes up to 26 m deep for the purpose of collecting bulk claystone samples for metallurgical process testing. LN and WLC core holes were evaluated for clay type illite and smectite, lithium grades and calcium grades near surface to be representative samples of the whole Thacker Pass deposit. Clay types are defined by taking the ratio of assayed magnesium value in a sample and dividing by the lithium assayed value. A sample with a ratio of Mg:Li greater than 20 is considered smectite. A sample with a ratio of Mg:Li less than or equal to 20 is illite. The thirteen auger holes twinned the selected holes such that no independent laboratories assayed the samples collected. These holes were not used in the resource model.

10.2.2 Geotechnical Drilling

In 2017, three drill holes (LNC-083 through LNC-085) were drilled to collect geotechnical information. The majority of the drill holes were drilled using normal HQ core drilling practices. Each hole had samples collected by a contract geotechnical engineer at the drill rig. After the geotechnical samples were collected, the drill hole was logged and sampled by LAC employees or contractors. The geotechnical samples were sent to Solum Consultants Ltd. for geotechnical testing.

In April 2017, two auger holes were drilled down 15 m to characterize the ground strength for infrastructure support. The geotechnical samples were sent to Solum Consultants Ltd. for geotechnical characterization. No samples were collected for assay.

In March 2019, thirty-one auger holes were drilled down an average of 15 m, with a maximum depth of 46 m, and twenty-eight trenches were dug, with a maximum depth of 7 m, to characterize the ground strength for infrastructure support. NewFields was contracted to oversee the drilling, trenching, sampling, testing and reporting of the geotechnical work. No samples were collected for assay.

In August 2019, five HQ core drill holes were drilled to collect slope stability geotechnical information for pit highwall design. All five holes were collared at existing historical core hole locations. Three of the holes were drilled at an angle; the other two were vertical. Barr Engineering was contracted to perform the geotechnical sampling, televiewer work, testing, and reporting. These holes were not assayed or included in the resource estimation. The results of their work along with prior geotechnical studies were used to determine the safety factors to use for the engineered mine pit wall slopes.

In December 2019, five auger holes were drilled down an average depth of 31 m, and twenty-one trenches were dug, with a maximum depth of 7 m, to characterize the ground strength and conditions for the CTFS. NewFields Engineering was contracted to oversee the drilling, trenching, sampling, testing and reporting of the geotechnical work. No samples were collected for assay as part of the drilling work; however, a few auger hole samples were assayed afterwards for lithium at LAC's process testing facility in Reno, NV. The sampling method did not meet LAC's standard for quality control on assays and were not used in the resource estimation.

In September and October 2023, Barr Engineering Co. was contracted to perform a geotechnical evaluation of the tuff materials along the Montana Mountains and the tuffs of Long Ridge uplift. The purpose of the study was to update the evaluation of the stability of pit slope configurations performed by Barr in 2019. Pit slopes and geometry were modeled along the tuff contacts with a focus on acceptable factor-of-safety requirements. Four geotechnical borings were completed to an average depth of 86 m and the maximum depth of 129 m. Total of 64 samples from the tuff rock types were obtained for laboratory testing.

10.3 Surveying

Collar surveying for LAC for the 2007-2010 drilling program used a Trimble GPS using the UTM NAD83, Zone 11 coordinate system.

Collar surveying for the 2017-2018 LAC drilling campaign was conducted using a handheld Garmin 62S GPS set to UTM NAD83 Zone 11 with accuracy of ±3 m in the X and Y planes. In December 2017, a high-resolution LiDAR and aerial photo survey of Thacker Pass was conducted in November of 2017 by US Geomatics with a reported accuracy of ±0.08 m. The collar elevations of the 2017-2018 drill holes were then corrected in the drill hole database to the surveyed surface elevation. The average change was an increased elevation of 0.286 m.

Collar surveying for the 2023 drilling campaign was performed using a Carlson RT4 tablet data collector set to WGS84 and UTM NAD 83 Zone 11 with an accuracy of ±0.25 cm. Holes surveyed using WGS84 coordinate system were transposed to UTM NAD 83 Zone 11 coordinates.

From 2009 to 2010, downhole surveys were conducted on selected holes using a Boart-Longyear Trushot magnetic downhole survey tool to verify the holes were not deviating from vertical. Holes drilled in 2017-2018 were down hole surveyed using the same tool whenever the depth exceeded 30 m. All holes were drilled vertical or nearly vertical with the exception of WLC-058 (Azimuth: 180º Dip: -70º) and LNC-083 (Azimuth: 180º Dip: -60º) which were intentionally drilled at angles. Holes drilled in 2023 were also down hole surveyed using the same tool as the previous campaigns whenever the depth exceeded 30 m. Select holes were unable to be logged due to water encountered during drilling. All holes in 2023 were drilled vertically except for the four geotechnical holes: LNC-219, LNC-220, LNC-223, and LNC-224.

10.4 Accuracy and Reliability of Drilling Results

The Project is known for significant amounts of lithium contained in sub-horizontal clay beds in the McDermitt Caldera. Past and modern drilling results show lithium grade ranging from 2,000 ppm to 8,000 ppm lithium over great lateral extents among drill holes. There is a fairly continuous high-grade sub-horizontal clay horizon that exceeds 5,000 ppm lithium across the Project area as shown in the cross-sections in Figure 14-7. This horizon averages 1.47 m thick with an average depth of 56 m down hole. The lithium grade for several meters above and below the high-grade horizon typically ranges from 3,000 ppm to 5,000 ppm lithium. The bottom of the Thacker Pass deposit is well defined by a hydrothermally altered oxidized ash and sediments that contain less than 500 ppm lithium, and often sub-100 ppm lithium (HPZ). All drill holes, except WLC-058, LNC-083, LNC-219, LNC-220, LNC-223 and LNC-224, are vertical which represent the down hole lithium grades as true-thickness and allows for accurate resource estimation.

RC drilled holes were not utilized in the resource model due to analytical biases generated by this drilling method. The traditional core drilling method was determined to be best suited for sampling the Thacker Pass deposit for lithological and analytical investigations.

The drilling techniques, core recovery, and sample collection procedures provided results that are suitable for use in resource estimation. There are no drilling, sample, or recovery factors that materially impact the accuracy and reliability of results. The data is adequate for use in resource estimation.

11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 LAC Site Sample Preparation

The drilled core was securely placed in core boxes and labelled at site. The boxes of drilled core were then transported to the secure LAC logging and sampling facility in Orovada, Nevada, where they were lithologically logged, photographed, cut, and sampled by LAC employees and contractors.

Sample security was a priority during the LAC drilling campaigns. Core from the drill site was collected daily and placed in a lockable and secure core logging and sampling facility (steel-clad building) for processing. All logging and sampling activities were conducted in the secured facility. The facilities were locked when no one was present.

The lengths of the assay samples were determined by the geologist based on lithology. From 2007 to 2011 certain lithologies associated with no lithium value were not sampled for assay. These rock types are alluvium, basalt, HPZ and volcanic tuff. All drilled core collected after 2011 was sampled for assay. Average assay sample length is 1.60 m but is dependent on lithology changes. The core was cut in half using a diamond blade saw and fresh water (Figure 11-1). Half the core was placed in a sample bag and the other half remained in the core boxes and stored in LAC's secure facility in Orovada.

Figure 11-1 Half Core Sawed by a Diamond Blade

Source: Lithium Americas Corp. (2021)

To collect duplicate samples, one half of the core would be cut in half again, and the two quarters would be bagged separately. Each sample was assigned a unique blind sample identification number to ensure security and anonymity. The samples were either picked up by ALS by truck or delivered to ALS in Reno, Nevada by LAC employees.

Once at ALS, the samples were dried at a maximum temperature of 60ºC. The entire sample was then crushed with a jaw crusher to 90% passing a 10 mesh screen. Nominal 250-gram splits were taken for each sample using a riffle splitter. This split is pulverized using a ring mill to 90% passing a 150 mesh screen.

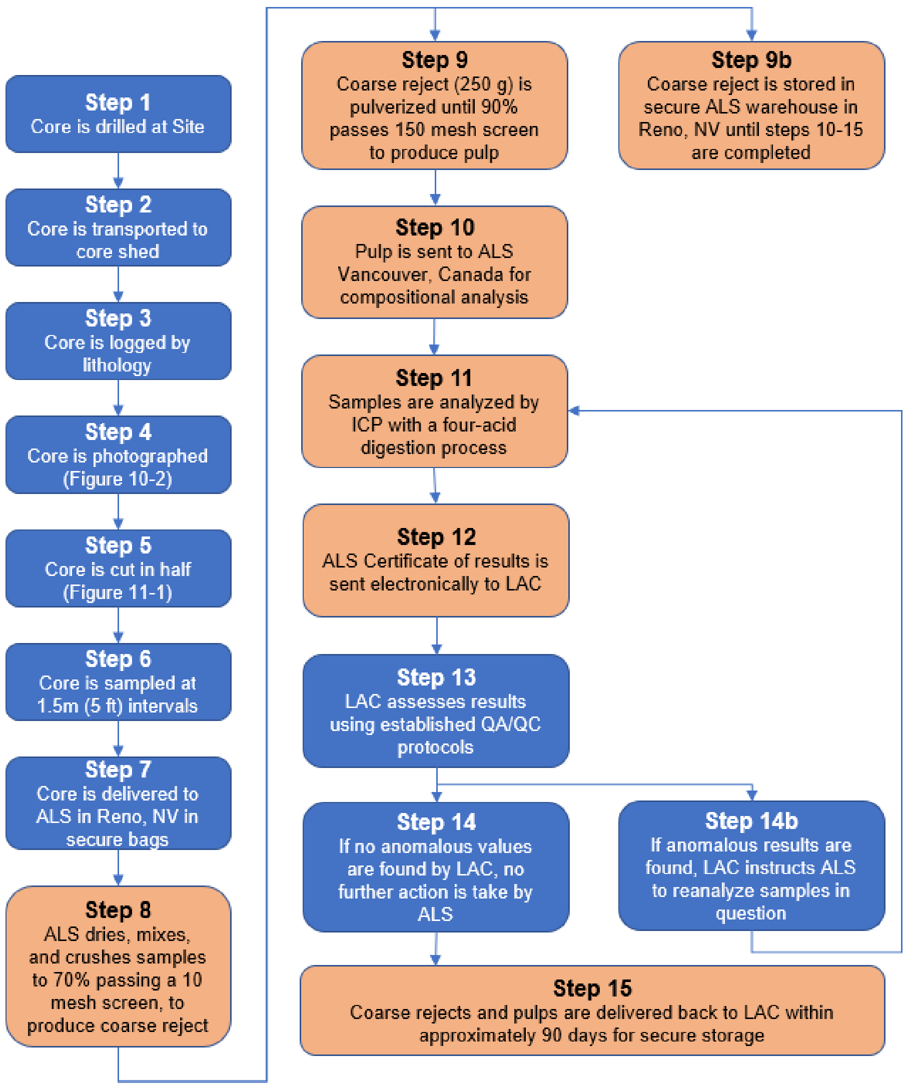
11.2 Laboratory Sample Preparation

ALS of Reno, Nevada, was used as the primary assay laboratory for the LAC Thacker Pass drill program. ALS is an ISO/IEC 17025-2017-certified Quality Systems Laboratory. ALS participates in the Society of Mineral Analysts round-robin testing.

ALS is an independent laboratory without affiliation to LAC.

A sample workflow diagram for geological samples is presented in Figure 11-2.

Figure 11-2 Workflow Diagram for Geological Samples



Source: Lithium Americas Corp. (2021)

11.3 Analysis

ALS Global used their standard ME-MS61 analytical package for testing of all of LAC's samples collected. This provides analytical results for 48 elements, including lithium. The method used a standard four-acid digestion followed by an atomic emission plasma spectroscopy (ICP-AES) analysis to ensure that elevated metal concentrations would not interfere with a conventional inductively coupled plasma mass spectroscopy (ICP-MS) analysis. Certified analytical results were reported on the ICP-MS determinations.

11.4 Density

Several bulk density testing campaigns have been completed within the Project area. The ASTM bulk density and moisture testing standards that have been used are detailed below:

- Bulk Density: ASTM C914-09 standards for consolidated samples.
    - The test specimens shall be dried to a constant weight by heating to 60°C (140°F) to remove entrapped moisture. The temperature has been modified from the ASTM standard of 220°F to 230°F (105°C to 110°C) in order to match the ALS assay preparation. Determine the initial weight of each test specimen in grams to four significant figures. Coat the specimen with wax by dipping the specimen into the container of melted wax. Determine the weight of the wax-coated specimen in grams to four significant figures. Determine the weight of the wax-coated specimen suspended in water in grams to four significant figures.
- Bulk Density: ASTM C127 standards for aggregate samples.
    - A sample of aggregate is immersed in water for 24 ± 4 hours to fill the pores. It is then removed from the water, the water dried from the surface of the particles, and the mass determined. Subsequently, the volume of the sample is determined by the displacement of water method. Finally, the sample is oven-dried and the mass is determined. Using the mass values thus obtained and formulas in this test method, it is possible to calculate relative density (specific gravity) and absorption.

The bulk density samples generally were point samples from drill core that averaged 3 inches in length. A description of the bulk density sampling programs is below.

- MacTec Engineering and Consulting (2008) had six samples from 3 drill holes analyzed for bulk density utilizing the ASTM standard C127 for aggregate samples. Natural moisture was also analyzed for these samples. Analysis was completed at the AAP laboratory.
- AMEC (2011) had 26 samples from six drill holes analyzed for bulk density utilizing the ASTM standard C914 with paraffin wax for consolidated samples. Natural moisture utilizing ASTM standard D2216 was also analyzed for these samples. The AMEC laboratories numbered 1484 and 1485 completed the analysis. This analysis was completed as part of a PFS level geotechnical study for WLC.
- WLC analyzed 62 samples from 19 drill holes during the 2010 – 2011 WLC exploration drilling campaign. The bulk density analysis utilized the ASTM standard C914 with paraffin wax for consolidated samples and C127 for aggregate samples. All analysis was completed in the WLC core shed under the supervision of WLC geologists.
- LAC analyzed 360 density point samples from 19 core holes across the Thacker Pass Project area from the 2023 drilling campaign. Bulk density testing was performed by NewFields Elko, Nevada Laboratory, an AASHTO accredited laboratory, utilizing the ASTM C914 standard with paraffin wax for consolidated samples.

A listing of drill holes used for density testing is provided as Table 11-1 and Table 11-2 quantifies the number of bulk density point samples per drilling campaign and associated lithologies. A visual representation of where the bulk density samples were collected within the Project is shown on Figure 11-3.

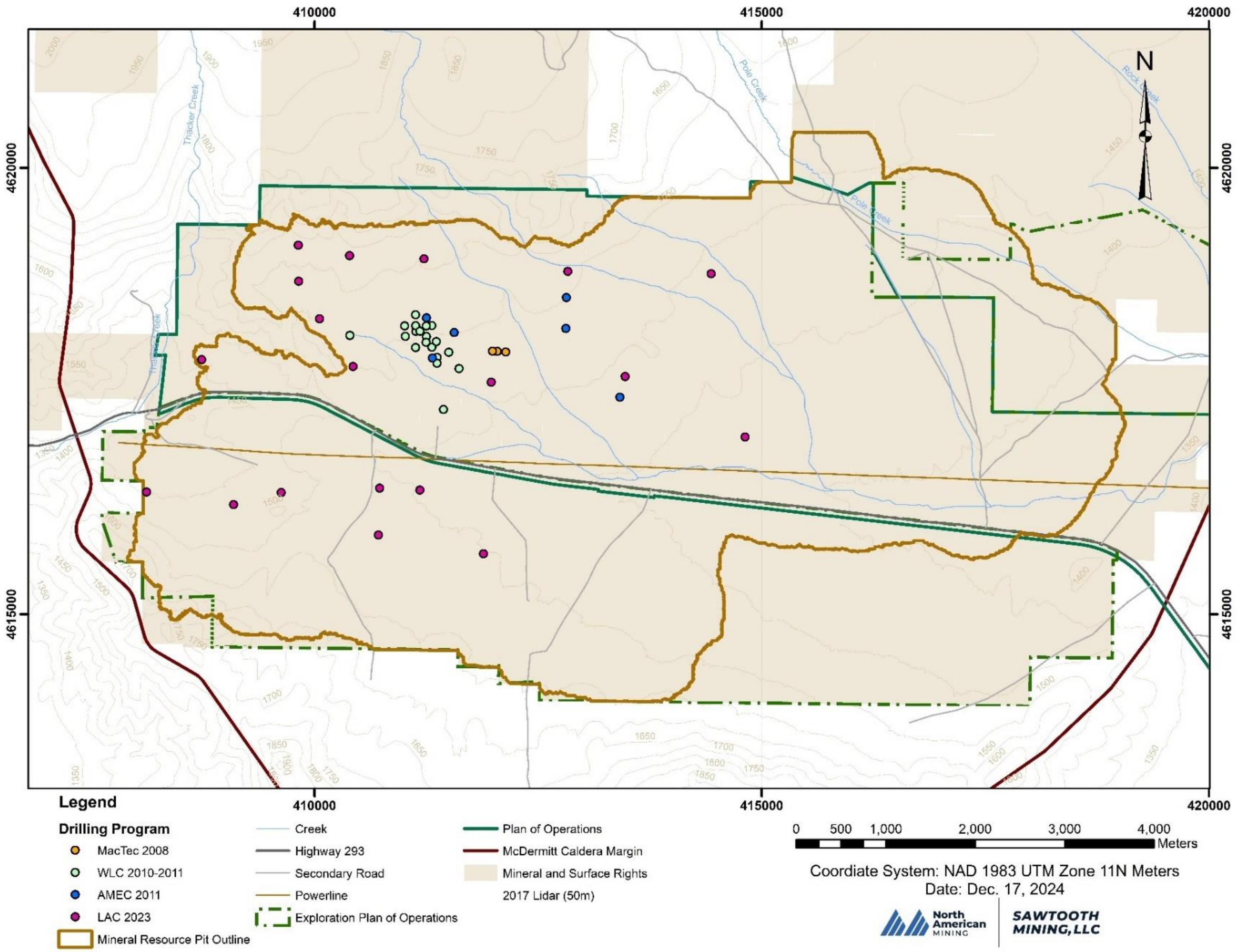
Table 11-1 Holes Used for the Bulk Density Study

Drilling Campaign	Drill Holes Sampled
MacTec (2008)	WLC-20, WLC-21, WLC-22
AMEC (2011)	WLC-157, WLC-158, WLC-181, WLC-182, WLC-183, WLC-186
WLC (2010-2011)	WLC-10-1, WLC-102, WLC-104, WLC-105, WLC-106, WLC-111, WLC-117, WLC-135, WLC-136, WLC-137, WLC-146, WLC-150, WLC-184, WLC-192, WLC-193, WLC-195, WLC-196, WLC-197, WLC-198
LAC (2023)	LNC-164, LNC-168, LNC-170, LNC-179, LNC-180, LNC-190, LNC-198, LNC-199, LNC-201, LNC-202, LNC-203, LNC-204, LNC-205, LNC-206, LNC-207, LNC-208, LNC-209, LNC-210, LNC-214

Table 11-2 Bulk Density Sampling Point Sample Summary by Campaign and Lithology

Drilling Campaign	Density Point Samples by Lithology							
	Alluvium	Basalt	TMS Smectite	TMS Illite	TMS Ash	HPZ	Tuff	Total
MacTec (2008)	0	0	0	6	0	0	0	**6**
AMEC (2011)	6	1	2	13	2	2	0	**26**
WLC (2010-2011)	1	1	28	21	4	3	4	**62**
LAC (2023)	1	84	109	95	31	12	28	**360**
Total	**8**	**86**	**139**	**135**	**37**	**17**	**32**	**454**

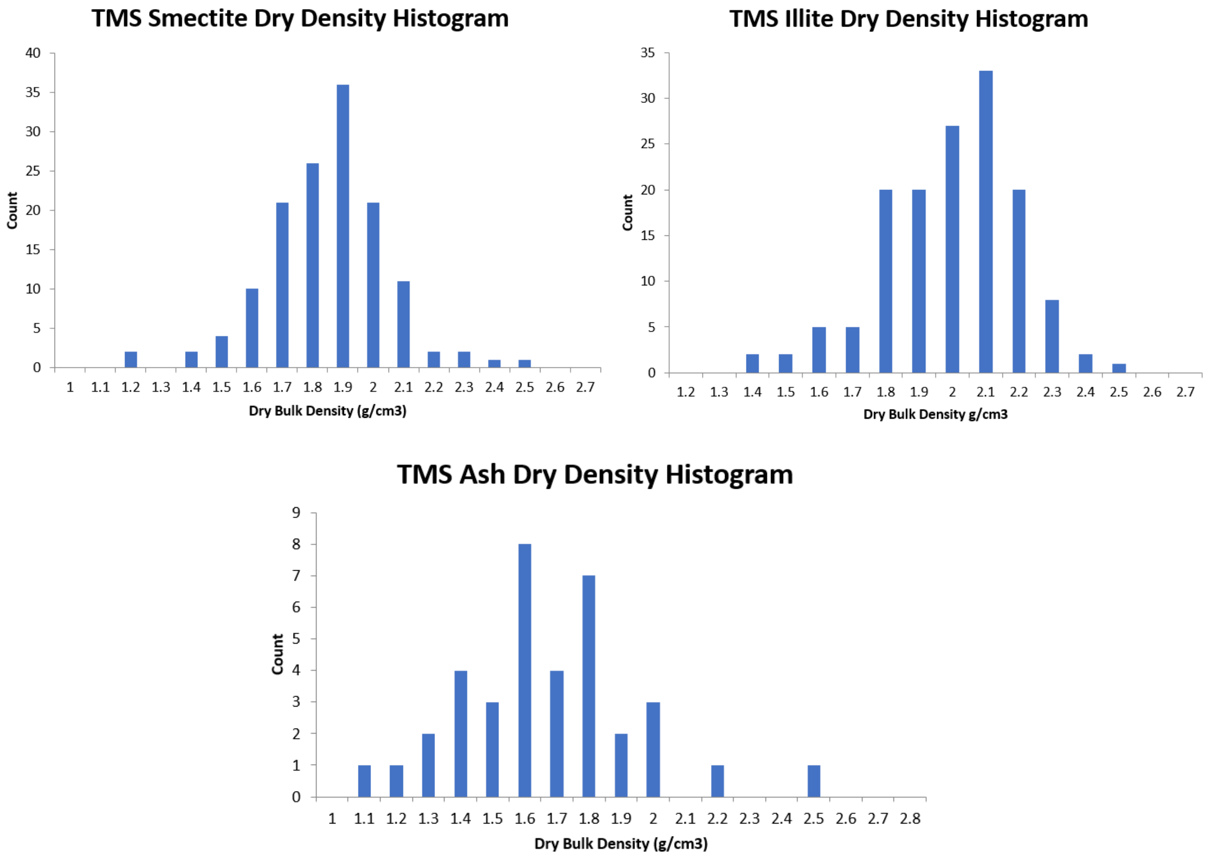
Figure 11-3 Dry Bulk Density Sample Locations



Dry bulk density point samples were categorized by lithology and averaged. Histograms displaying the distribution of dry bulk density samples for TMS lithology are presented in Figure 11-4. A description of each lithological domain's dry bulk density is below:

- A wide distribution of density range exists for smectite and illite dry bulk density values. However, both histograms show a normal bell-shaped distribution of density values. The density average and distribution for smectite (average of 1.80 g/cm^3) was slightly lower than illite (average of 1.96 g/cm^3). Ash materials were generally lower in density values (average of 1.62 g/cm^3) and are represented with a normal bell-shaped distribution. Higher density ash may be a representative of silicified ash layers and the inclusion of higher density - low lithium grade clays.
- The alluvium dry bulk density average of 1.71 g/cm^3 is comprised of 8 samples and its representative histogram shows a random distribution. The random distribution of density values for alluvium is a result of the limited sampling pool, the heterogeneous materials in each sample, and secondary mineralization within the alluvium. Denser and more mineralized samples within the alluvium domain are shown in the higher dry bulk density samples as compared to loose unconsolidated less dense alluvium materials.
- The HPZ density values vary due to the different parent materials that make up the HPZ (average of 1.88 g/cm^3). Various degrees of alteration that occurred to generate the HPZ may have resulted in the wide range of density values from secondary mineralization during the thermal heating of the parent materials.
- The basalt histogram is based off of 86 samples and is mostly uniform in shape with the majority of the samples ranging from 1.41 g/cm^3 to 2.90 g/cm^3 (average of 2.23 g/cm^3). Lower density outliers may represent weathered or vesicular basalts. The average density value of 2.23 g/cm^3 is lower than the global average for most basalts, but Benson Chow, the QP responsible for this section of the Technical Report, is of the opinion that the 86 samples are representative of the Thacker Pass deposit based on the testing to date.
- The tuff density averages 2.0 g/cm^3 and ranges from 1.63 g/cm^3 to 2.48 g/cm^3. The bimodal distribution of the tuff histogram may represent samples from weathered and fresh tuff.

Figure 11-4 Dry Bulk Density Histograms -TMS



The ranges and averages of the dry bulk density per lithology have been tabulated in Table 11-3. The averages represent the dry bulk density values used in the January 2024 resource model for each representative lithological domain. Despite the wide range on some of the distributions, all samples were included in the average to account for geological variation and non-uniform mineral alteration with the different lithological domains.

Table 11-3 Dry Bulk Densities Averages

Lithology	Dry Bulk Density (g/cm^3)				
	Count	Average	Minimum	Maximum	Standard Deviation
Alluvium	8	**1.71**	1.18	2.36	0.40
Basalt	86	**2.23**	1.41	2.90	0.33
TMS Smectite	139	**1.80**	1.18	2.48	0.20
TMS Illite	135	**1.96**	1.39	2.47	0.19
TMS Ash	37	**1.62**	1.03	2.40	0.28
HPZ	17	**1.88**	1.42	2.25	0.26
Tuff	32	**2.00**	1.63	2.48	0.19

Moisture contents were evaluated in the Bulk Density Study for all the lithological domains. Moisture averages and ranges have been included in Table 11-4.

Table 11-4 List Moisture Percentage by Lithology

Lithology	Moisture %				
	Count	Average	Minimum	Maximum	Standard Deviation
Alluvium	1	**2.50**	-	-	-
Basalt	85	**3.28**	0.10	16.97	3.41
TMS Smectite	137	**16.57**	1.39	38.25	7.55
TMS Illite	121	**10.96**	1.28	25.90	4.92
TMS Ash	35	**18.74**	2.07	37.36	8.82
HPZ	15	**9.64**	0.55	25.99	7.52
Tuff	32	**9.83**	0.70	22.03	5.38

Benson Chow, the QP responsible for this section of the Technical Report, understands that there is risk in utilizing average bulk density values for the Thacker Pass deposit and has taken the following steps to help mitigate that risk for the Mineral Resource and Mineral Reserve estimates presented in this report:

- The percentage of ash along with the clay type per block was utilized to estimate the bulk density for each block. This is further discussed in Section 14 of this report.
- The Mineral Resource classification has considered proximity to bulk density samples and has downgraded the Mineral Resource confidence classification areas with little or no bulk density analysis.
- Benson Chow recommends that additional testing be completed. The additional data should then be used to better represent the variability of the density by clay type.

11.5 Quality Control

In 2010, LAC contracted Dr. Barry Smee of Smee & Associates Consulting Ltd., an international specialist in QA/QC procedures who is familiar with the NI 43-101 reporting process, to develop a QA/QC program for exploration drilling. The program included inserting blank standards, 3,000 ppm grade standard, 4,000 ppm grade standard, and duplicate samples into the drill core sample assay sets.

In 2010-2011, for every 34 half core samples, LAC randomly inserted two standard samples (one 3,000 ppm grade and 4,000 ppm grade), one duplicate sample, and one blank sample. The 2017-2018 quality program was slightly modified to include a random blank or standard sample within every 30.5 m (100 ft) interval and taking a duplicate split of the core (¼ core) every 30.5 m.

In 2023, LAC re-certified the 3,000 ppm grade standard, 4,000 ppm grade standard and purchased the OREAS 173 standard (1,000 ppm standard) for use in 2023 QA/QC program. In addition to the three standards, a blank standard and duplicates were also included in the 2023 QAQC program. Like the 2017-2018 program, a random blank or standard sample was included every 30.5 m interval and a duplicate split of the core (¼ core) was taken every 30.5 m.

The total number of LAC blank, duplicate, and standard samples analyzed by the laboratory during LAC's drilling campaign in Thacker Pass are detailed below. These totals do not include ALS internal check and duplicate samples.

- 2010-2011 drilling campaign averaged 9.5% of the total samples assayed
- 2017-2018 drilling campaign averaged 11.1% of the total samples assayed
- 2023 drilling campaign averaged 10.5% of the total samples assayed
- Assaying for all drilling averaged 10.5% of the total samples assayed.

ALS also completed their internal QA/QC program which included blanks, standards and duplicates throughout the LAC exploration programs for lithium and deleterious elements including aluminum, calcium, cesium, iron, potassium, magnesium, sodium and rubidium. The standards used by ALS and the ALS QA/QC programs have been reviewed by Benson Chow, the QP responsible for this section of the Technical Report and were utilized in the QA/QC review.

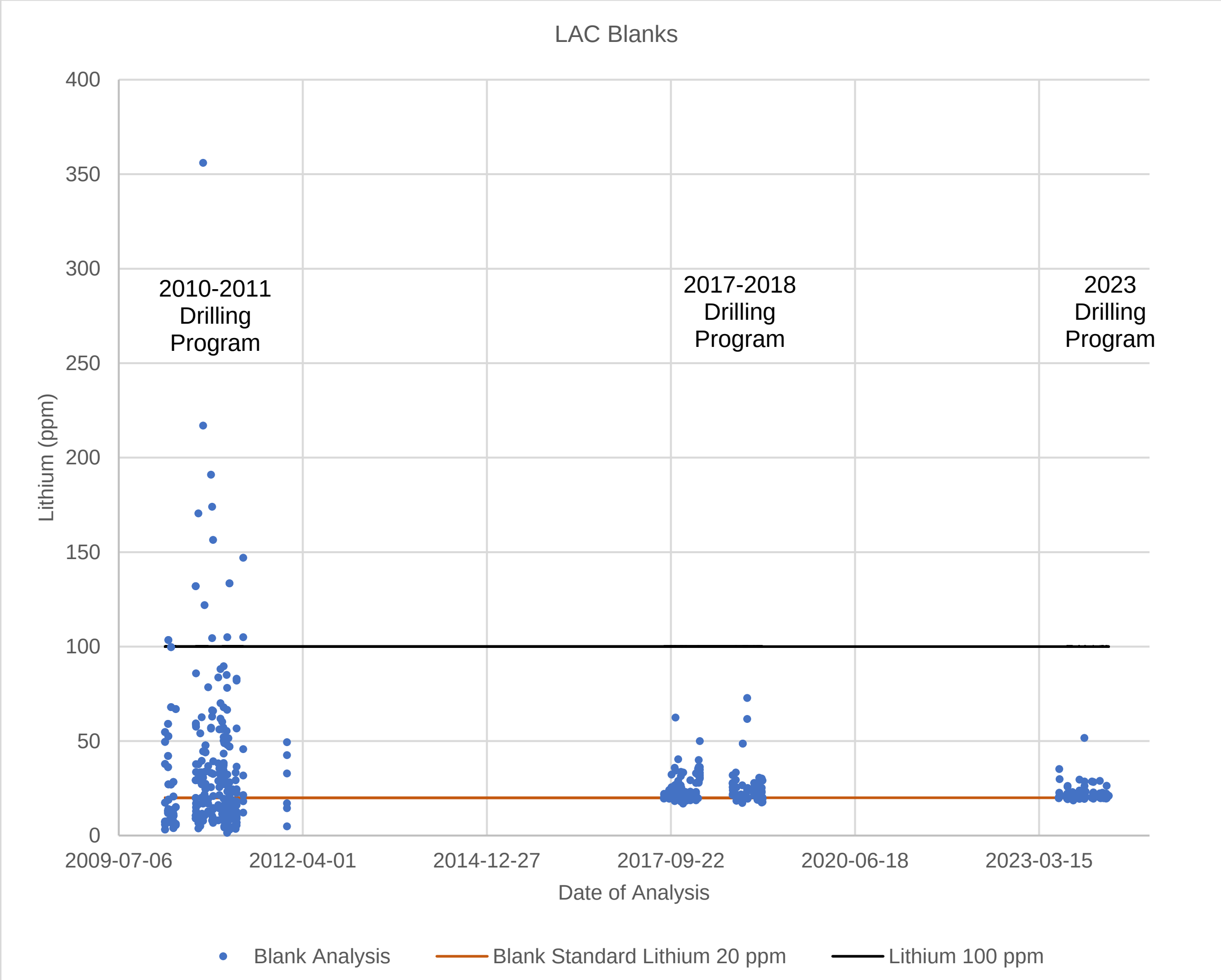
11.5.1 LAC Blank Samples

Blank samples were used to check for cross-contamination between samples at the ALS lab. Blank samples were composed of dolomite sourced from a mine near Winnemucca, Nevada. Dolomite was chosen because it is known to have low lithium content and was, therefore, a good indicator of contamination. A bulk sample was collected and sent to Dr. Smee to be homogenized and certified. A warning limit for lithium was set at 100 ppm by Dr. Smee, which is five times higher than the certified value of 20 ppm lithium. The results of the blank sample checks are presented in Figure 11-5.

In 2010-2011, LAC identified several blank standards that exceeded the 100-ppm lithium set by Dr. Smee. These samples were submitted for re-assay and their values were supported. It is likely that the high values indicate contamination in the crushing or prepping process. However, the frequency and lithium content amount are not high enough to be concerned about the overall assay results.

The LAC 2017-2018 and 2023 exploration programs did not experience any failures of the blank standards and supports that cross-contamination at the lab did not occur.

Figure 11-5 LAC Blank Results



Source: Sawtooth 2024

11.5.2 LAC Standard Samples

Standard samples consisting of two lithium bearing claystone samples from the Project area were used to test the accuracy and precision of the analytical methods used at the lab. To create the standards, a round robin of assays was completed in June 2010 in which 10 standards of each type were sent to six labs for testing. The resulting assays were evaluated by Dr. Smee to determine an average lithium value. The results from two of the labs were discarded because the analytical results were substantially different as compared to the other four labs and thought to be erroneous. Dr. Smee certified each standard with a lithium grade and confidence range of two standard deviations. The 3,000 standard is certified at 3,378 ppm ±511 ppm lithium and the 4,000 standard is certified at 4,230 ppm ±850 ppm lithium.

Benson Chow, the QP responsible for this section of the Technical Report, supported that the standards fell within two standard deviations of the median reported lithium grade for every batch of certified assays reported by ALS as well as within two standard deviations of the standard.

In 2023, LAC contracted Moment Exploration Geochemistry, LLC in Lamoille, Nevada to re-certify the two lithium standards for lithium, aluminum, calcium, iron, potassium, magnesium, sodium and sulfur. The 3,000 standard is certified at 3,420 ppm ±440 ppm lithium and the 4,000 standard is certified at 4,380 ppm ±420 ppm lithium.

In addition to the two standards from the Project area, LAC purchased the standard OREAS 173 that has lithium certified at 1,181 ppm ±130 ppm lithium.

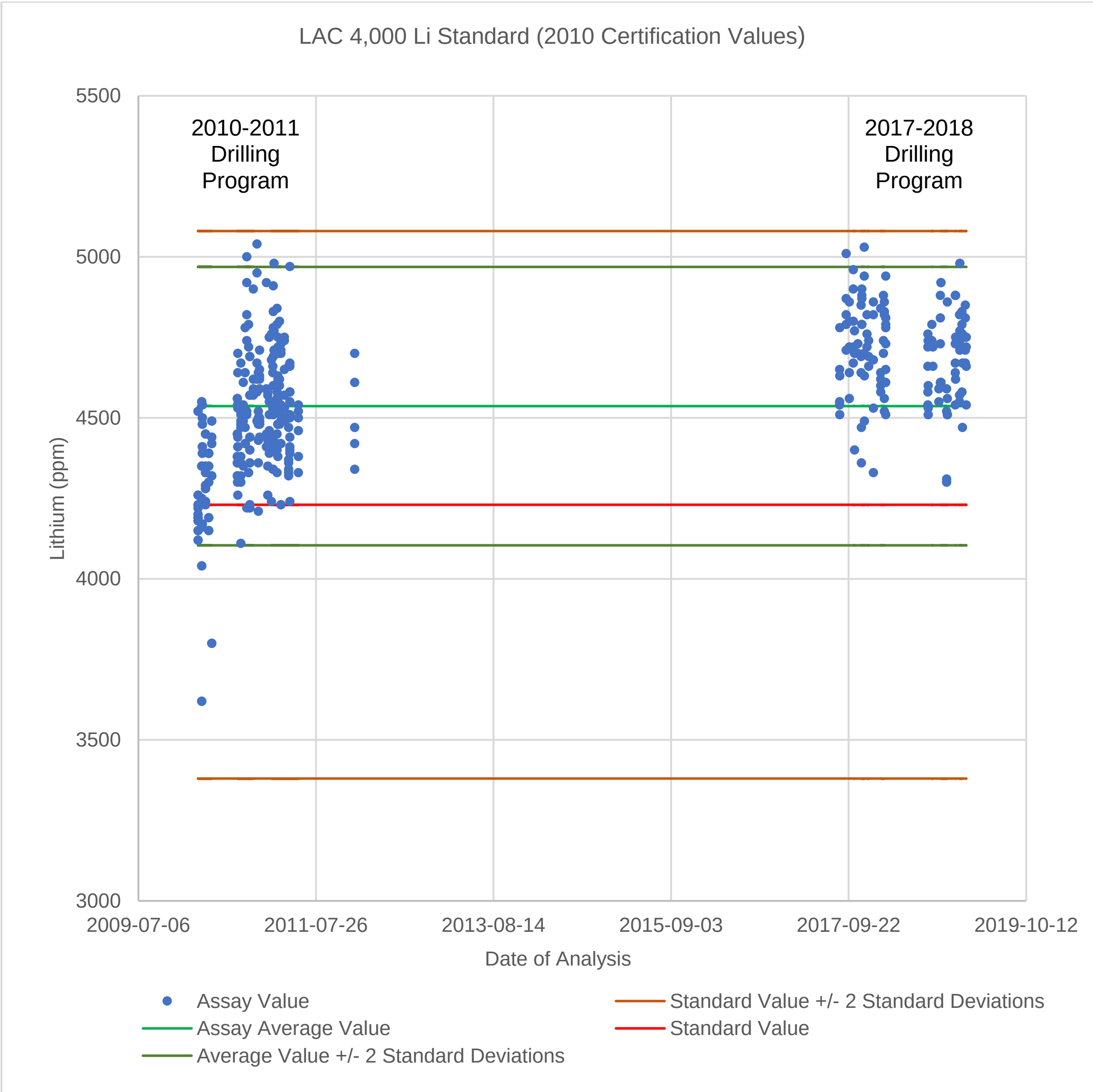
Benson Chow observed that the majority of the standards fell within two standard deviations of the median reported lithium grade for every batch of certified assays reported by ALS as well as within two standard deviations of the standard. Figure 11-6 - Figure 11-10 show the results for the standards quality testing program for 4,000 Li standard, 3,000 Li standard and 1,000 Li standard.

The LAC 2010-2011 drilling experienced a number of sample analyses falling outside two standard deviations. During this time, ALS changed their internal lithium standards used to calibrate the ICP machine in an effort to improve their consistency. This involved adding a 2,020 ppm lithium and 7,016 ppm lithium standard to their QA/QC program. The LAC 2017-2018 drilling campaigns showed a much tighter two-standard deviation bracket indicating ALS had improved their lithium assay quality.

The quality testing from the two standards was effective in supporting the quality of the results. From 2010 to 2011, samples that fell outside the ranges set by Dr. Smee were re-assayed and new assay certificates issued. No samples were required to be submitted for re-assay by LAC in 2017 or 2018. However, ALS did re-run some assays that failed their internal checks before a certificate was issued.

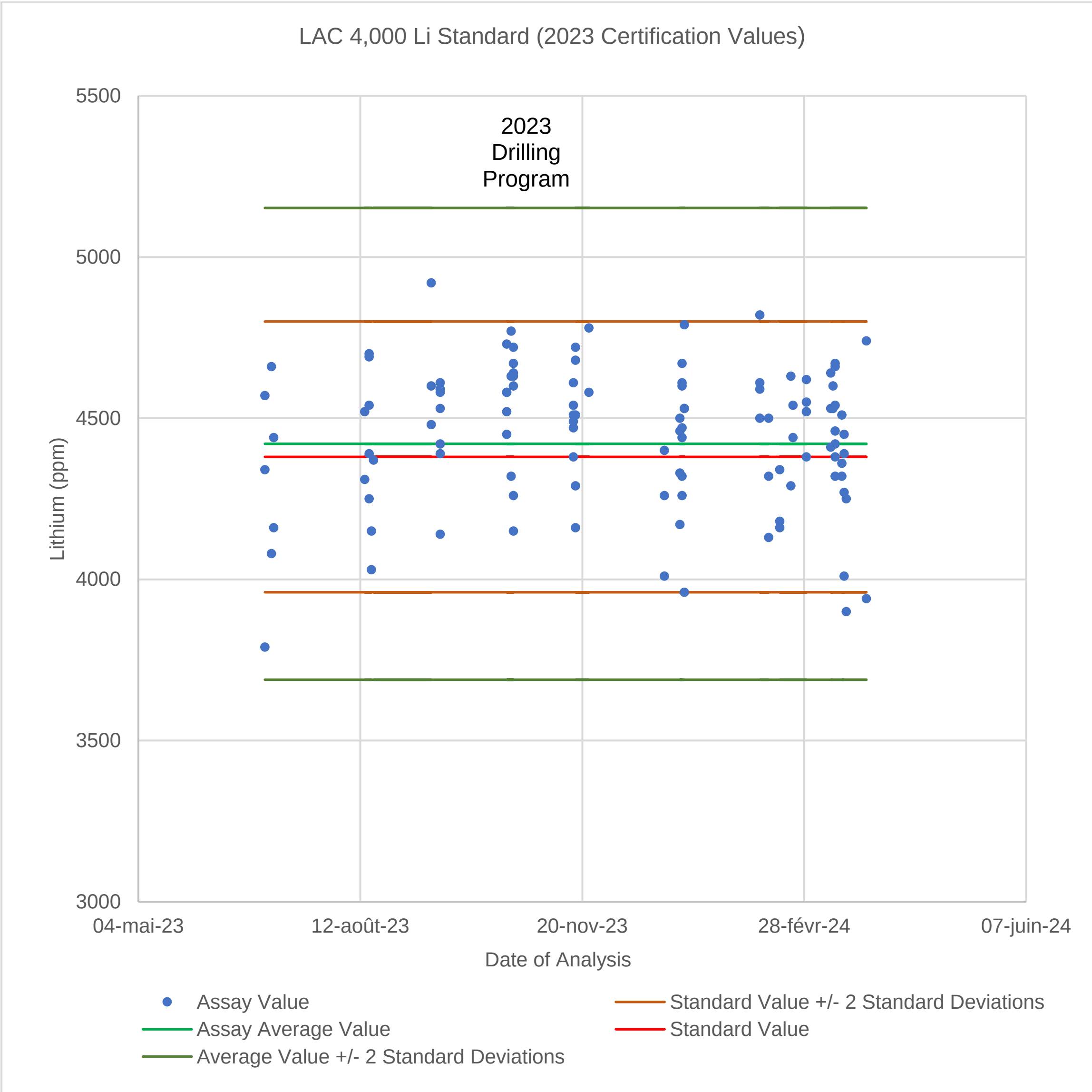
During the 2023 drilling program, three samples fell outside of the 2 standard deviations of the standard value and the average value. These samples were submitted for re-assay and the values were supported.

Figure 11-6 LAC Drilling QA/QC Results (4,000 Li Standard) – 2010 Certification Values



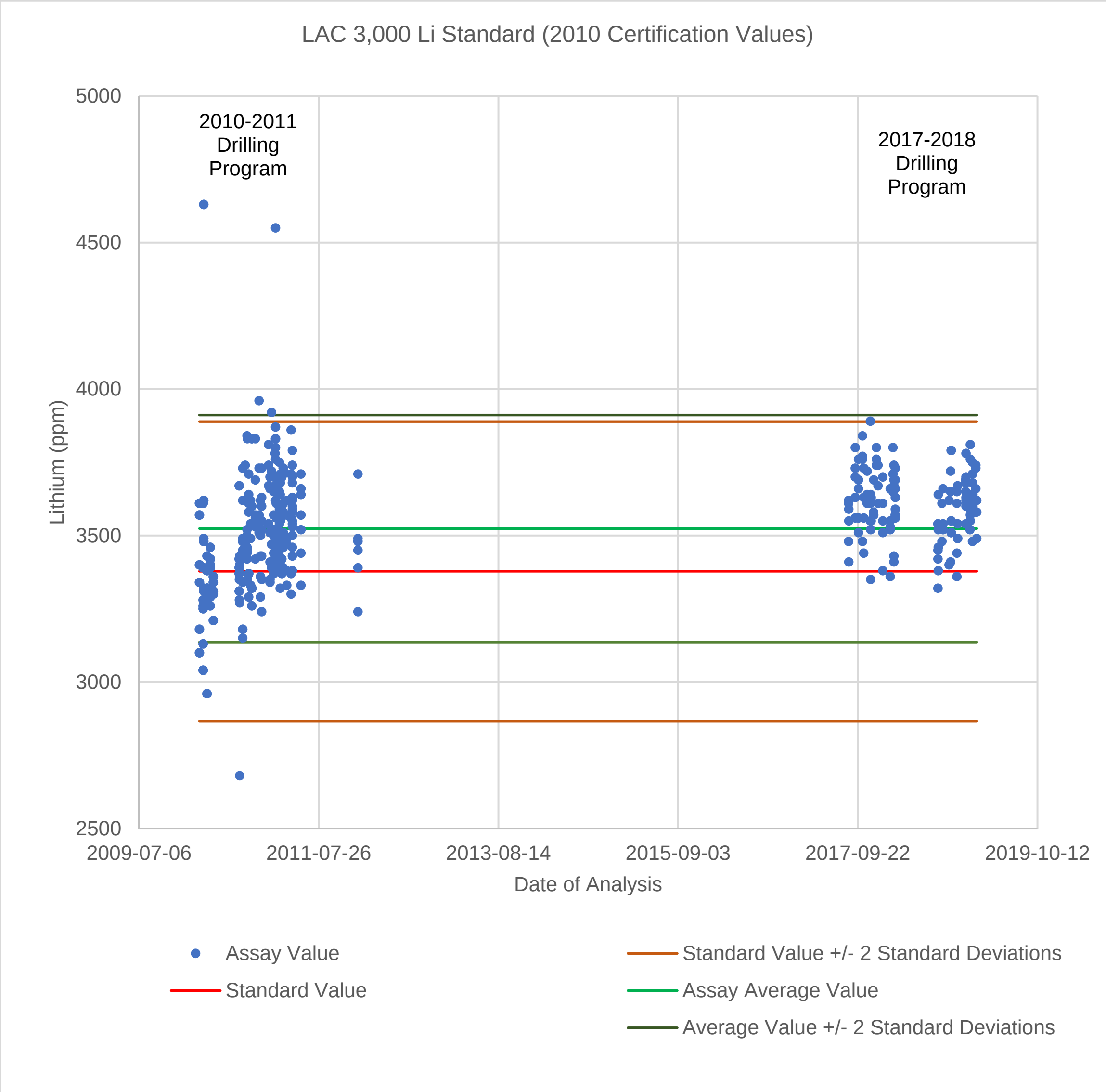
Source: Sawtooth 2024

Figure 11-7 LAC Drilling QA/QC Results (4,000 Li Standard) – 2023 Certification Values



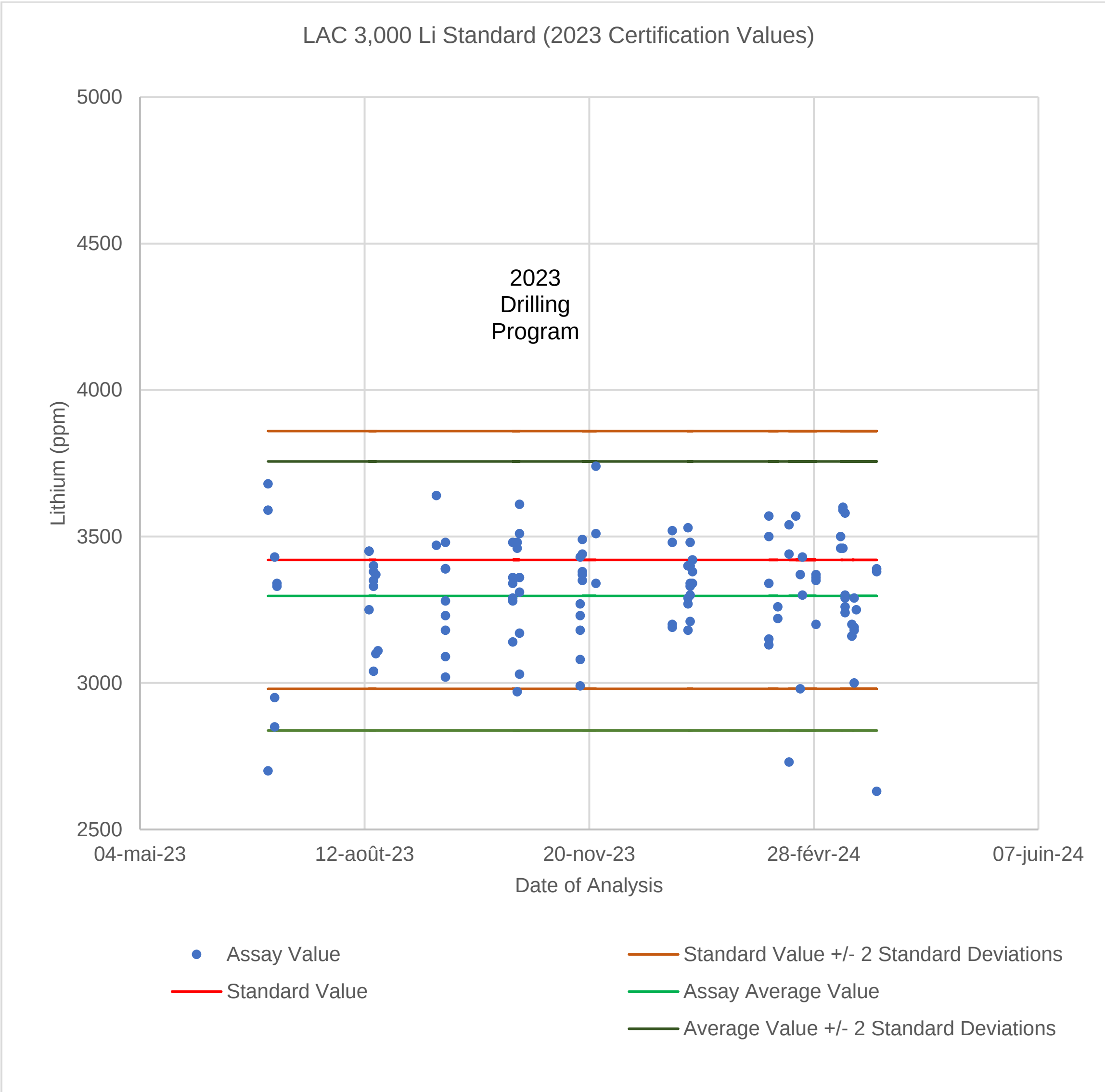
Source: Sawtooth 2024

Figure 11-8 LAC Drilling QA/QC Results (3,000 Li Standard) – 2010 Certification Values



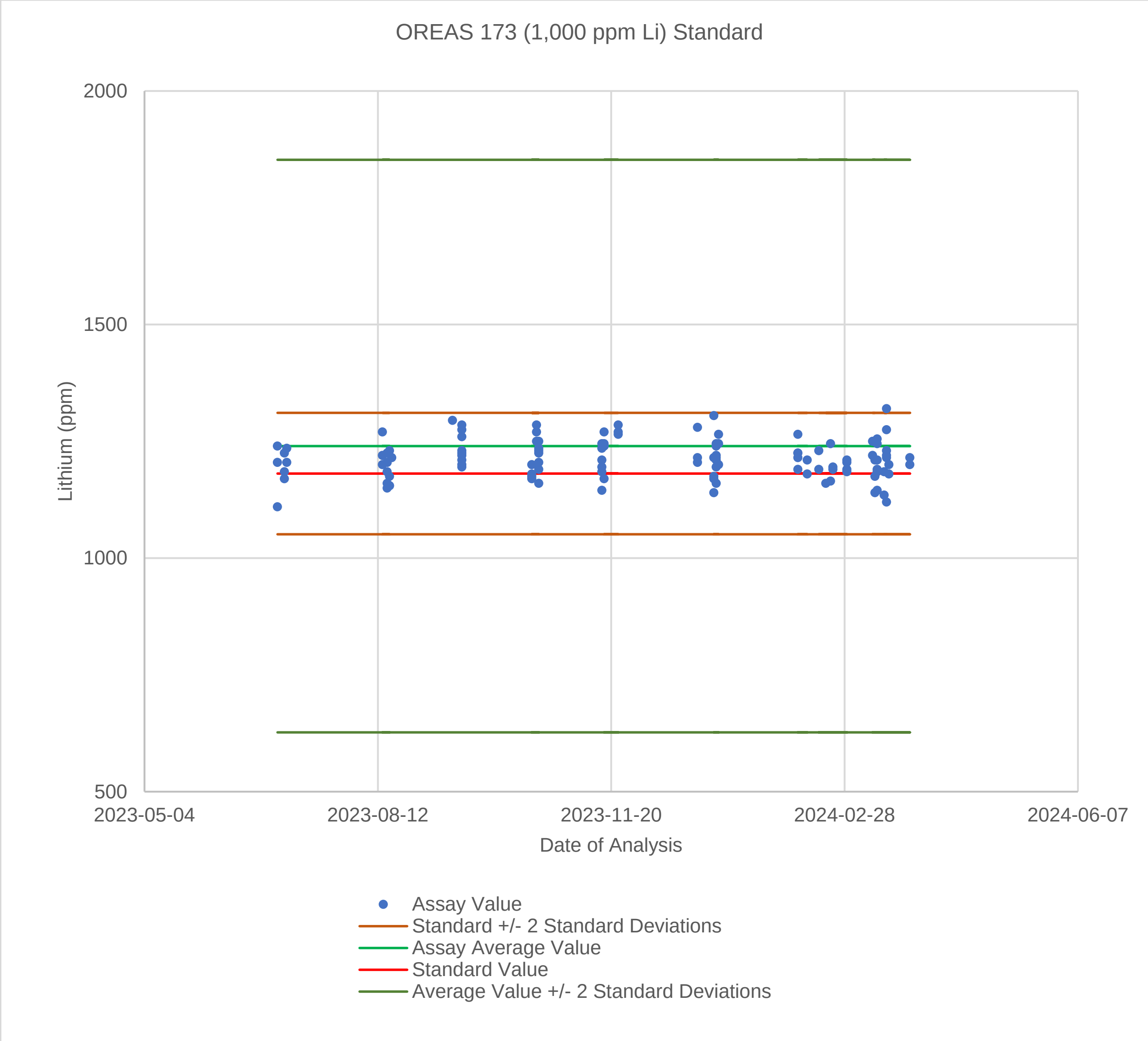
Source: Sawtooth 2024

Figure 11-9 LAC Drilling QA/QC Results (3,000 Li Standard) – 2023 Certification Values



Source: Sawtooth 2024

Figure 11-10 LAC Drilling QA/QC Results (1,000 Li Standard)



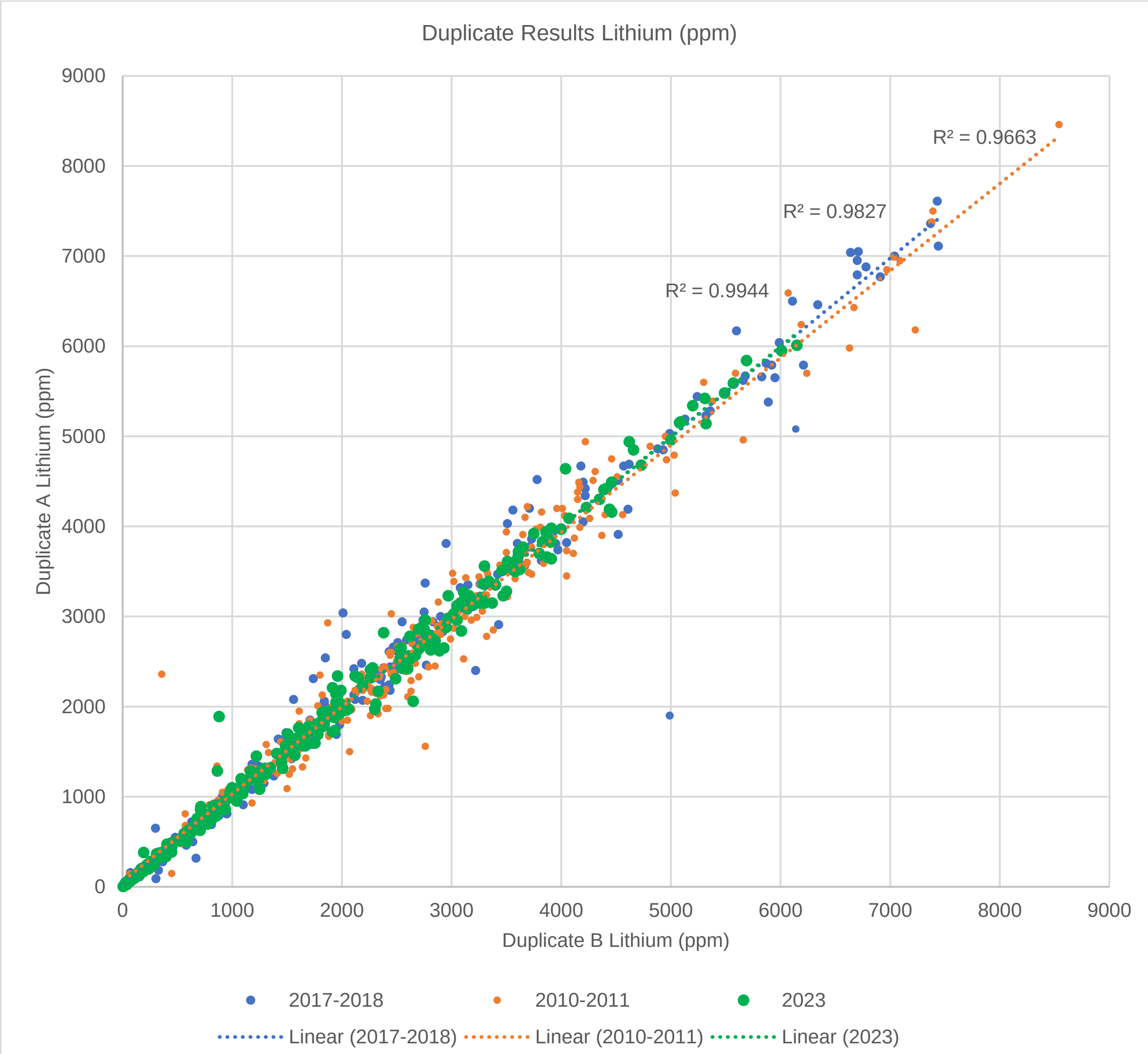
Source: Sawtooth 2024

11.5.3 Duplicate Samples

Duplicate samples are used to check the precision of the analytical methods of the lab and were taken every 30.5 m of core. The duplicate samples earmarked for analysis were prepared in an identical manner as the non-duplicate samples, beginning with the cut half core being cut in half again (¼ core sampling). Each piece of quartered core was bagged and given a blind sample identification number for characterization at the lab. The results were un-blinded and paired up with the corresponding data in Microsoft Excel. The results of the duplicate sample tests are shown in Figure 11-11.

The results from the duplicate samples indicate a high level of precision in the sampling and laboratory techniques and support the quality of data and analysis process.

Figure 11-11 LAC Drilling Duplicate Results



Source: Sawtooth 2024

11.5.4 Discussion of QA/QC Results

The 2010 sampling program was initially seeing a 6% failure rate of the QA/QC samples where 17% of the 4,000 Li standards were returning lithium grades exceeding three standard deviations of their tested median grade. ALS began using a new higher-grade lithium standard to improve the calibration of their ICP. Following the improved calibration process, LAC selected the 16 highest lithium values from drill holes WLC-001 through WLC-037 and WLC-040 through WLC-200 to be re-assayed. The samples were sent to both ALS and Activation Laboratories (ActLabs) in Ancaster, Ontario Canada for lithium assays. The re-assay grade for ALS and ActLabs was 5% and 3% lower than the original assay, respectively. It was concluded that the overall deposit estimate may be lower by at most 2% to 3%. For further assurance, ActLabs was chosen to run lithium assays on 112 random duplicate pulps generated by ALS in April 2011. The results were within 3% of ALS certified lithium grade.

The 2017-2018 and 2023 LAC sampling programs had consistent quality control results for the duration of the campaigns. Duplicate samples returned with an R^2 value of 0.9827 and 0.9944, respectively, indicating a high-level of precision in the sampling and laboratory techniques and supporting the validity of QA/QC protocols. The duplicate grades extend from 4 ppm lithium to 8,500 ppm lithium. In addition, the blank and standards sample quality programs indicated that the accuracy and precision of the analytical process provides results that can be relied on for resource estimation.

11.6 Qualified Person Statement

Benson Chow is of the opinion that the sample preparation, security, and analytical procedures for the drill data for the Thacker Pass deposit are adequate for use for mineral resource estimation.

12 DATA VERIFICATION

12.1 Site Inspection

12.1.1 Sawtooth

Benson Chow visited LAC's Thacker Pass Project site on November 8, 2018 and September 13 and 14, 2022, August 15th and 16th, and December 19th 2023. The purposes of the visits were to complete a QP data verification, site inspections, and independent verification of the lithium grades. No material changes to the exploration drilling or site conditions have occurred on site since the site visits. During the visit, Benson Chow completed the following tasks:

- Visited the Project location to better understand the local geomorphology and layout.
- Visited the active exploration drilling rig to observe the HQ core drilling, core handling, and core transportation. Additional conversations with the exploration geologists included detailed discussions regarding the core lithology being drilled.
- Visited the LAC core shed located near the Project site to review the core storage facility, core logging procedures, core splitting procedures, core scanning, and sample preparation procedures. While at the core shed, LAC's geologists were actively logging core and an LAC technician was splitting and scanning core. A general conversation about the QA/QC program was conducted with LAC's Senior Geologist.
- Visited the onsite meteorological station to review security, access and general conditions of the station.
- Observed bulk sampling of ore material to be used for testing at LAC's Lithium Technical Development Center from the 2022 bulk sampling program.
- Collected samples from the 2022 bulk sampling program for independent verification of the clay/ash lithium grades.
- Verified drill hole collar locations and elevations.
- Toured the active pit and inspected the alluvium materials
- Visited LAC's Lithium Technical Development Center in Reno.
- Performed a laboratory audit of ALS Reno Laboratory where LAC sends samples for analytical testing preparations.

Pictures showing the site conditions and site inspection activities have been included as Figure 12-1.

Figure 12-1 Site Inspection Pictures

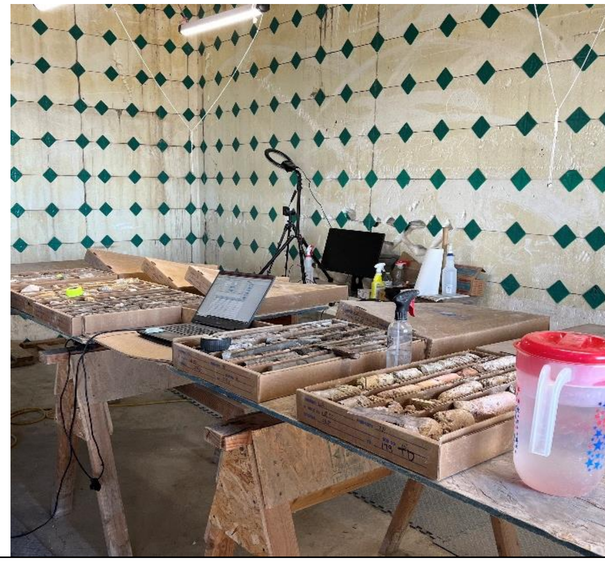
LN core shed inspection where cores were reviewed and stored.

West waste rock storage facility location.

Observed auger sampling of claystone/ash material.

Field located existing drill hole for collar location and elevation verification.

Observed LNC-197 Coring



Reviewed Core Logging Procedures with LAC's Geologist

Source: Sawtooth, 2023

Kevin Bahe visited LAC's Thacker Pass Project site on August 12-13, 2019, and on September 13-14, 2022, to complete a QP data verification site inspection. Additionally, Kevin Bahe toured the pilot plant lab in Reno, NV on July 25, 2019, and LAC's Lithium Technical Development Center in Reno on September 15, 2022. Lastly from July 2023 to present, Kevin Bahe has visited the site 1-2 weeks every month since July 2023 to present. There have been no material changes to the mineral project location since the most recent site visit. During the visits, Kevin Bahe completed the following tasks:

- Kevin Bahe visited the Project location to better understand the general layout of the mining area, dump areas, and plant area.
- During the site visit Kevin Bahe observed BARR engineering drilling cores for the pit slope stability study. Drilling was being done in the initial pit development area. Kevin Bahe was able to inspect cores and see lithology.
- During the visit to LAC's pilot lab, Kevin Bahe observed ore processing steps through the development of clay cake. Kevin Bahe gained a better understanding of ore processing.
- Toured LAC's new Lithium Technical Development Center.
- Observed bulk sampling of ore material to be used for testing at LAC's Lithium Technical Development Center from the 2022 bulk sampling program.
- Assisted in the collection of samples from the 2022 bulk sampling program for independent verification of the clay/ash lithium grades.
- Visited the LAC core shed located near the Project site.
- Toured the ALS Reno laboratory where LAC sends samples for analytical testing procedures.
- Provided engineering support for Sawtooth's heavy earthworks for LAC's process plant pad site.

12.1.2 NewFields

Paul Kaplan visited the site several years ago and on July 30, 2024. Earthworks grading (early works) for the Phase 1 Process Facilities were observed and a general tour of the project site was completed.

12.1.3 SGS

Joseph M. Keane, accompanied by Sam Yu (SGS team), visited the mine site on July 30, 2024 in the company of Josef Bilant and then visited the LAC Lithium Technical Development Center located in Reno, Nevada on July 31, 2024. Ryan Ravenelle explained the past history of the Lithium Technical Development Center and introduced the SGS visitors to the details of the pilot plant installation.

12.1.4 EXP

- Walter Mutler of EXP visited the site on November 2, 2022. The highlights of his visit were as follows:
- Visited the Project site to better understand the location of the sulfuric acid and STG power plants and their ancillaries for both Phase 1 and 2.
- Determined that, considering the timeline of the acid plant construction is an earlier activity, there should be a minimum obstruction during the construction of the SA1/Power Plant, as the work will be under green field and grassroots conditions.
- Some of his other findings included:
    - Due to soft clay native topsoil, compaction of the area inside Project battery limits and roads should be considered, particularly in high-traffic roads and where heavy lifting items will take place.
    - The road clearance between the finish road elevation and the powerlines should be confirmed before any oversize transportation, as all construction traffic must cross the 115 kV high-voltage power line.
- Visited LAC's Lithium Technical Development Center in Reno and observed the installation of the pilot plant upstream portion of the process (i.e., ore separation, scrubbing, and thickening).

12.2 Data Verification Procedures

Excel formatted electronic files containing lithological descriptions, sample assays, hole collar information, and downhole surveys were provided to Sawtooth from LAC for the purpose of generating a geologic resource block model. Certified laboratory certificates of assays were provided in PDF as well as csv formatted files for verification of the sample assays database. Sample names, certificate identifications, and run identifications were cross referenced with the laboratory certificates and sample assay datasheet for spot checking and verification of data by Benson Chow, the QP responsible for this section of the Technical Report.

12.3 Drill Core and Geologic Logs

Geologic logs were consolidated from paper archives and scanned PDFs on the LAC network drives. In 2016, each drill log was transcribed into a spreadsheet using the smallest lithologic interval identified in the log to create the highest resolution dataset possible.

Subsequent geologic loggings of drill cores were entered directly into either an Access database or Excel spreadsheets. The data would then be uploaded into the LAC's Hexagon Mining Drill Hole Manager database.

Geologic logs, Access databases, and Excel spreadsheets were provided to Sawtooth for cross validation with the excel lithological description file. Spot checks between excel lithological description file were performed against the source data and no inconsistencies were found with the geologic unit descriptions. Ash percentages were checked in the lithological descriptions and a minor number of discrepancies were found in the ash descriptions. It was determined that less than 0.7% of the ash data contained discrepancies in the lithological description. Benson Chow, the QP responsible for this section of the Technical Report, determined that this 0.7% database error was not material but noted that it should be addressed in the future.

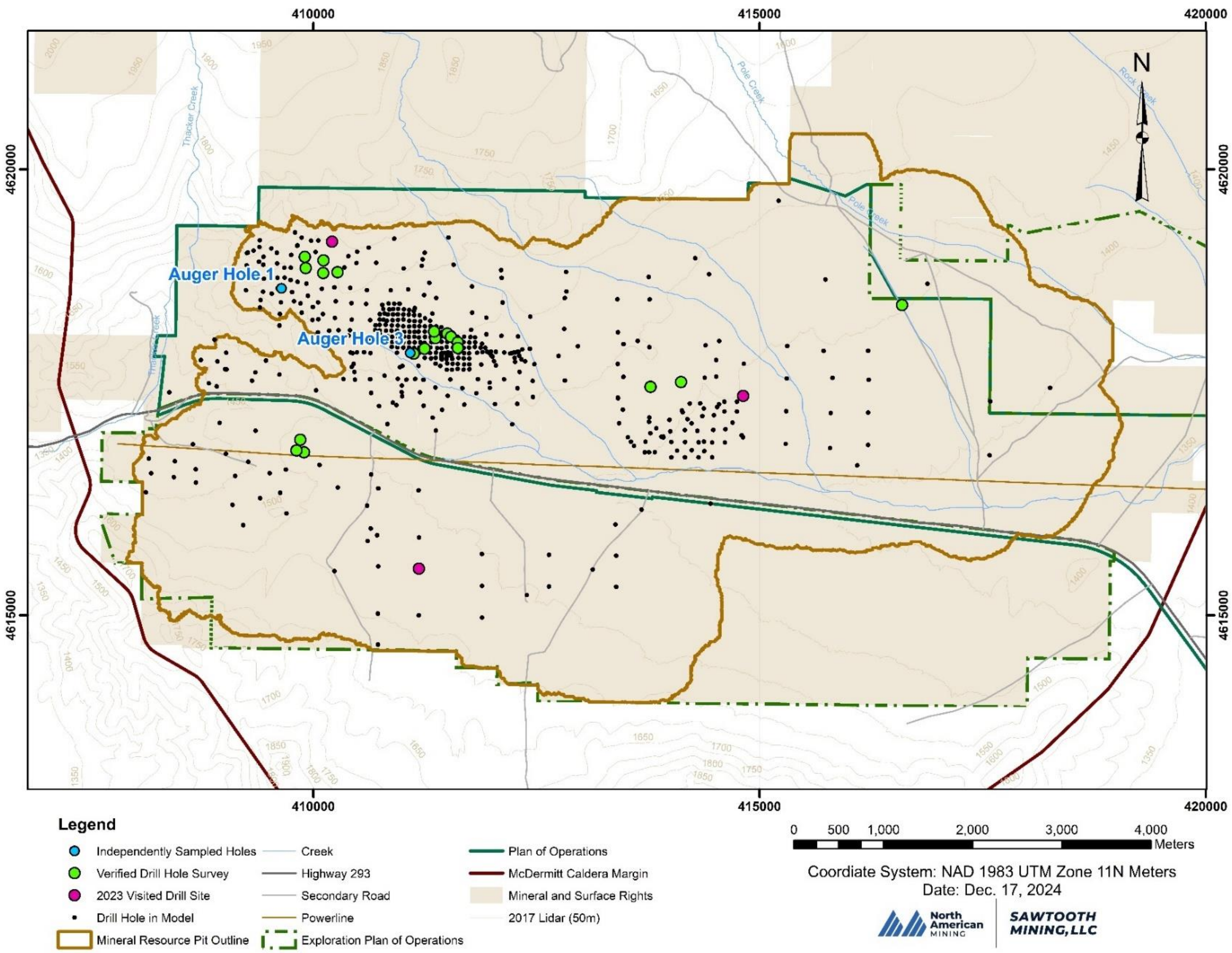
12.4 Verification of Drill Hole Survey

Benson Chow, the QP responsible for this section of the Technical Report, located and resurveyed 18 drill holes using a hand-held GPS unit to verify the coordinates and elevations of the drill hole survey database. Table 12-1 lists the holes located and differences in the surveys and Figure 12-2 shows the locations of the drill hole locations and elevations verified by Benson Chow. The surveyed holes matched the coordinates and elevation of the hole survey provided by LAC closely where the actual drill holes could be found. The drill holes that could not be found did not have permanent markers and are in areas where cattle have been present since the drilling concluded. Benson Chow is satisfied with the number of drill holes that were located as well as the comparison of the collar locations.

Table 12-1 Drill Hole Survey Verification

DHID	Hand Held GPS			Drill Hole Database			Difference			Comment
	Easting (m)	Northing (m)	Elevation (m)	Easting (m)	Northing (m)	Elevation (m)	Easting (m)	Northing (m)	Elevation (m)	
LN 011	409,812	4,616,847	1,544	409,813	4,616,848	1,546	1	1	1	
LN 018	409,855	4,616,968	1,529	409,854	4,616,969	1,532	(1)	1	3	
LN 118	409,898	4,616,826	1,540	409,898	4,616,825	1,542	0	(1)	2	
LN 088	409,906	4,619,017	1,609	409,916	4,619,034	1,615	10	17	6	No hole was found, evidence for drill pad
LN 026	409,915	4,618,891	1,594	409,915	4,618,894	1,598	0	3	4	
LN 027	410,111	4,618,836	1,596	410,106	4,618,841	1,599	(5)	5	3	
LN 087	410,115	4,618,979	1,611	410,104	4,618,990	1,617	(11)	11	5	No hole was found, evidence for drill pad
LN 029	410,273	4,618,845	1,602	410,274	4,618,851	1,607	1	6	5	No hole was found, evidence for drill pad
WLC 120	411,126	4,617,932	1,541	411,125	4,617,932	1,544	(1)	(1)	3	
WLC 114	411,249	4,617,988	1,540	411,249	4,617,989	1,542	0	1	3	
WLC 063	411,355	4,618,180	1,548	411,358	4,618,181	1,552	3	0	4	
WLC 097	411,370	4,618,107	1,544	411,366	4,618,107	1,548	(4)	0	4	
WLC 126	411,503	4,618,158	1,547	411,503	4,618,160	1,551	(0)	2	5	
WLC 155	411,619	4,618,059	1,543	411,622	4,618,058	1,544	3	(1)	1	
WLC173	411,621	4,617,995	1,538	411,622	4,617,996	1,540	1	0	2	
LN 144	413,780	4,617,560	1,474	413,783	4,617,557	1,473	3	(3)	(1)	
LN 138	414,122	4,617,614	1,461	414,133	4,617,616	1,461	11	2	(0)	
LN 115	416,598	4,618,477	1,454	416,598	4,618,476	1,452	(0)	(1)	(2)	

Figure 12-2 Drill Hole Verification Locations

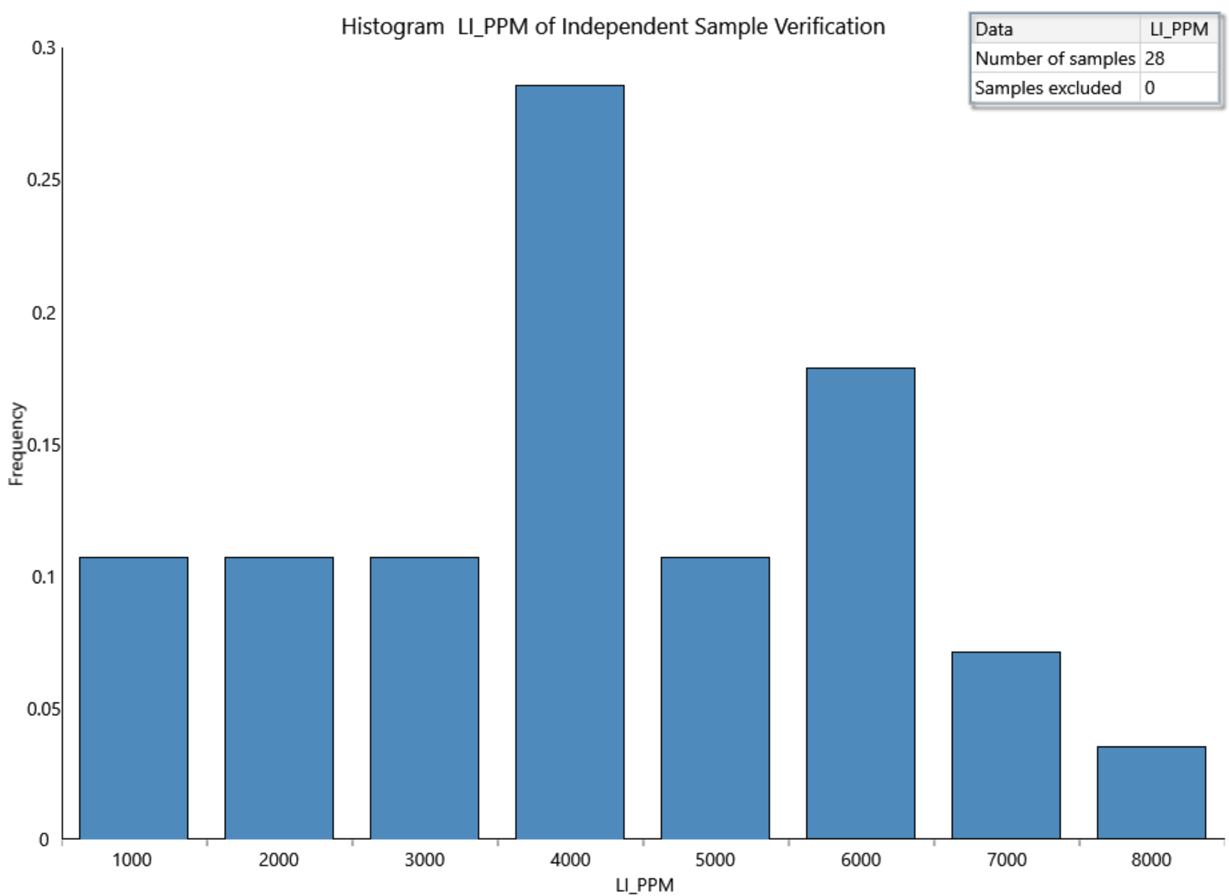


12.5 Verification of Analytical Data

Benson Chow, the QP responsible for this section of the Technical Report, completed spot checks of the Excel assays datasheet used in the creation of the geologic block model by cross-referencing the assay data with the certified laboratory certificate of assays. Only HQ core holes were reviewed since HQ cores were the only holes used for the estimation of resources. No data anomalies were discovered during this check.

Benson Chow collected samples during LAC's 2022 auger bulk sampling program for independent verification of the lithium clay/ash grades. The samples were delivered to ALS Laboratory in Reno, NV for processing and analysis. Figure 12-3 shows the distribution of lithium grades from the 28 independent samples tested by ALS. Distribution of the lithium grades from the independent verification shows distribution of grades similar to what has been reported from the drill core assays. Blank and duplicate samples were also included in the independent verification of the auger bulk samples and results of the analysis seem reasonable.

Figure 12-3 Independent Verification of Lithium Grades Distribution



Source: Sawtooth, 2022

12.6 Geological and Block Modelling

Geologic domains were created based upon lithologies and were used to isolate grades among the different lithologies. Grade was estimated in the block model using variograms in an unfolded model. The grade was allowed to trend with the tuffaceous basal unit. Cross-sectional reviews of the grades were performed to inspect the grade trend along the tuff surface.

Verification of the block model was performed by the creation of a geostatistical model and the review of its various outputs. Histograms, scatter plots, simulation, and swath plots were created and analyzed to validate the accuracy of the block model by Benson Chow, the QP responsible for this section of the Technical Report. The statistical analysis and results are discussed in Section 14.

12.7 Mine Design and LOM Plan

Kevin Bahe reviewed the following as part of the mine planning, cost model, and Mineral Reserves data verification.

12.7.1 Geotechnical

The slope stability studies completed by BARR Engineering in 2019 and 2024 were reviewed by Kevin Bahe. The recommendations were implemented in the pit design. A table of slope configurations can be seen in Section 16.1.

12.7.2 Mining Method

The shallow and massive nature of the Thacker Pass deposit makes it amenable to open-pit mining methods. Per uniaxial compression strength studies done by WorleyParsons (Mar. 2018) and AMEC (May 2011), it was determined that mining of the ore clay body can be done without any drilling and blasting. Additionally, WLC was able to excavate a test pit in 2003 without any drilling and blasting. Only the basalt and tuff waste material will require blasting. The mining method assumes hydraulic excavators loading a fleet of end dump trucks.

12.7.3 Pit Optimization

The pit optimization for reserves was based on the resource pit completed in 2024. The final optimized pit is limited by several physical features. The north is limited by the Montana mountains, to the west by Thacker Pass Creek, to the east by the CTFS and mine facilities, process plants, the south by the Double H mountains, and mineral rights.

It is concluded that the final pit shell along with the waste/ore quantities are reasonable based on the pit optimization inputs and do provide a positive economic value.

12.7.4 Mine Design

The optimized reserved pit was built from the stated resource pit used for mine planning. Ramps are assumed to be at a maximum slope of 10%. The berm, batter, and benching used within the ultimate resource and reserve pit follow the slope recommendations received from the Barr 2024 slope stability study. All mining benches are 4.6 m high. Double benches planned results in a benching height of 9.1m.

12.7.5 Production Schedule

Production sequencing was completed using Maptek's Evolution Origin scheduling software. Ore blocks were defined based on the cutoff grade. Kevin Bahe reviewed the mining sequence and found it to be reasonable and will support the plan.

12.7.6 Labor and Equipment

Kevin Bahe reviewed the assumptions used for equipment fleet size estimation, including equipment capacity, availability, and utilization percentages, equipment operating hours, and haul distances. The truck fleets are adequately sized for the requirements and match the selected excavators and loaders.

12.7.7 Economic Model

Kevin Bahe reviewed the following economic model inputs: mining cost, mining quantities, and mining capital. Based on the results, the project is economically viable.

12.7.8 Facilities and Materials

Through pit optimization routines, Kevin Bahe, has verified that the facilities and waste materials located within the reserve pit boundary can be economically relocated when access to those areas is required during mining.

12.8 Data Adequacy

Based on the various reviews, validation exercises, and remedies outlined above, Benson Chow, Kevin Bahe, Paul Kaplan, Joseph Keane, and Walter Mutler, the QPs responsible for this section of the Technical Report concluded that the data is adequate for use in Mineral Resource and Mineral Reserve estimation.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

Extensive metallurgical and process development testing has been performed both internally at LAC facilities and externally with vendors and contract commercial research organizations. The main objective was to develop a viable and robust process flowsheet to produce battery grade lithium carbonate. Additionally, the flow sheet was designed to only include equipment that has been historically proven in mining and chemical operations to minimize risk of “first-of-kind” technology. Test work is briefly summarized where appropriate and relevant. Major areas of the flow sheet are discussed in more detail in Section 17, but they include:

- Beneficiation
- Leaching
- Neutralization
- Countercurrent Decantation (CCD) and Filtration
- Magnesium and Calcium Removal
- Ion-Exchange Polishing
- Lithium Carbonate (Li_2CO_3) production

Data collected from test programs to date has been used for various equipment selection, definition of operating parameters and development of process design criteria for the current flowsheet. Metallurgical recovery of lithium from each circuit is based on a combination of data and anticipated performance of unit operations at commercial scale. Overall lithium recovery is then calculated as a function of the individual circuits.

The most relevant metallurgical test data are discussed in this section. Unless otherwise noted, all testing has been performed on material collected from the proposed Thacker Pass pit (see Section 13.1.1) and are considered representative of the styles of mineralization and the deposit as a whole.

13.1 Ore Selection for Metallurgical Testing

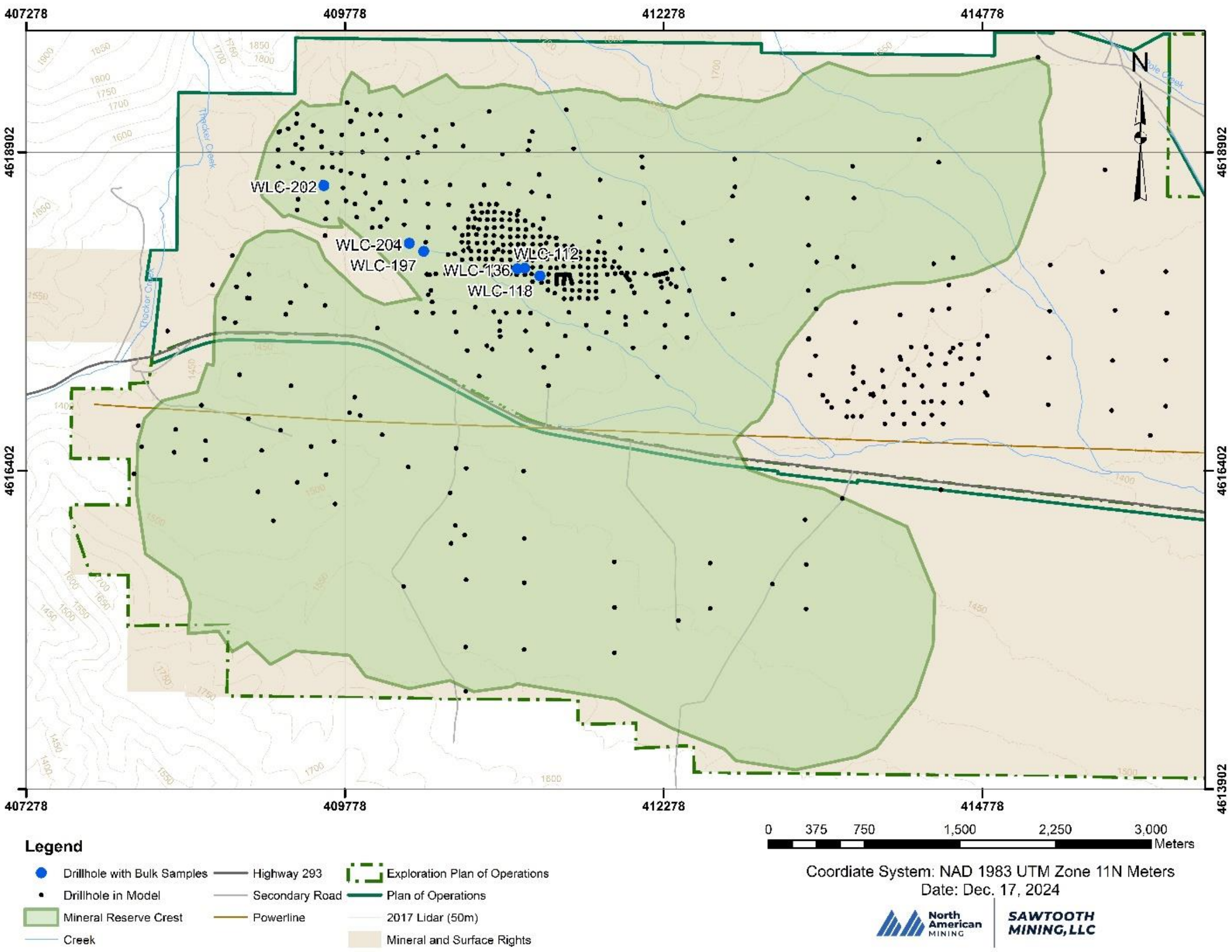
13.1.1 Samples

The ore samples used for bulk metallurgical testing were collected by auger sampling campaigns from the proposed pit at the Thacker Pass deposit. Bulk sample holes were selected to spatially represent the Thacker Pass deposit, targeting both high and low lithium contents and the life of mine mineralogy of both clay types illite and smectite. Clay types are defined by taking the ratio of assayed magnesium value in a sample and dividing by the lithium assayed value. A sample with a ratio of Mg:Li greater than 20 is considered smectite. A sample with a ratio of Mg:Li less than or equal to 20 is illite. The location, depth, and compositions of bulk samples are shown in Table 13-1. Ore was transferred from the auger into bulk bags, and each bulk bag contained approximately 0.9 metric tonne of material. The location of auger holes superimposed on the proposed pit along with exploration drill holes is shown in Figure 13-1.

Table 13-1 Bulker Auger Sample Hole Locations and Depth

Hole Reference	Material	Depth m (ft)	# Bags Collected
WLC-204	Smectite	0.6-25 (2-82)	26
WLC-197	Smectite	3-25 (10-83)	26
WLC-112	Smectite	9-17 (30-57)	28
WLC-202	Illite	10-17 (32-57)	14
WLC-136	Illite	7-24 (22-80)	28
WLC-118	Illite	5-16 (17-52)	24

Figure 13-1 Bulk Sample Hole Locations within Proposed Pit



In other cases, ore samples for small scale testing were taken from drill hole coarse reject bags. These samples were chosen to target specific compositions.

13.2 Metallurgical Test Work by Area

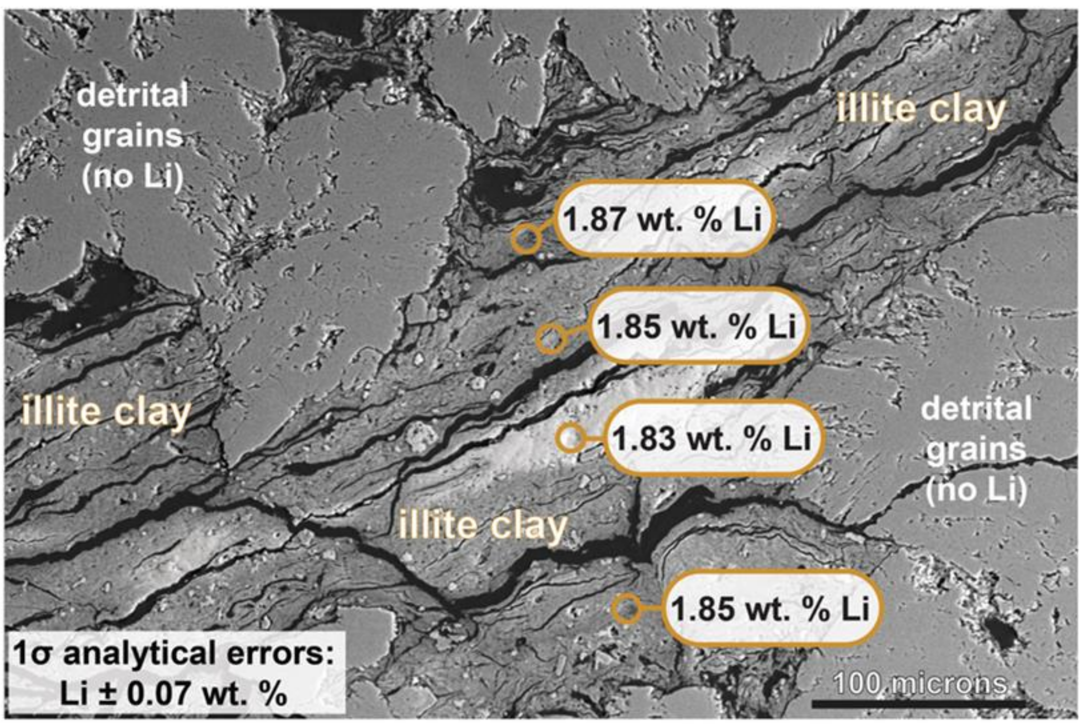
13.2.1 Beneficiation

The beneficiation area of the plant consists of the following circuits:

- *Comminution*: Feeder breakers and mineral sizers to crush ROM ore from the stockpile(s) to about 2" top size for conveyance.
- *Clay liberation*: Log washers and attrition scrubbers to facilitate clay fines liberation from gangue material via hydration and agitation.
- *Clay separation*: Hydrocyclones and hydraulic classification to separate the liberated clay fines from coarse gangue materials.
- *Clay dewatering*: High-rate thickener and decanter centrifuges to mechanically dewater clay fines out of the separation circuit. The water is recovered and reused in the beneficiation area.

The beneficiation flowsheet is designed according to the physical properties of the Thacker Pass deposit. Namely, lithium is primarily located in clays which are intermixed with non-lithium containing minerals, referred to as "coarse gangue". This is confirmed by analysis of ore samples via Sensitive High Resolution Ion Microprobe (SHRIMP), where lithium concentration is as high as 1.81 wt.% in the clay regions located in the boundaries of detrital grains (Figure 13-2) (Benson, T.R., and all, 2023).

Figure 13-2 Lithium distribution in clay and gangue (SHRIMP analysis)



Note that this beneficiation flowsheet is analogous to that used in phosphate mining operations where phosphate rock (product) is separated from clay (waste). The Thacker pass flow sheet utilizes a similar process except clay is the product while rock (gangue) is the waste.

Individual equipment was tested and demonstrated to be effective for the purposes of clay recovery and coarse gangue rejection of Thacker Pass ROM ore. A pilot-scale plant was then built and tested.

13.2.1.1 Pilot-scale Beneficiation Piloting

Pilot-scale testing was performed with Weir Minerals in partnership with Florida Engineering and Design, Inc. with the objective of confirming that the selected flowsheet met Project requirements (FedINC, 2022). The key parameters to be confirmed were coarse gangue rejection, lithium recovery, and pulp density of the decanter centrifuge final product sludge. The pilot plant was sized such that an industrial size cyclone could be used to collect scalable performance data. The pilot facility included the following equipment:

- Log Washer
- Attrition Scrubber (x3 cells)
- Primary Cyclone
- Hydraulic Classifier
- Dewatering Screen
- Thickener
- Decanter Centrifuge

The flow diagram and pictures of equipment are presented in Figure 13-3 through Figure 13-6.

Bulk bags of both illite and smectite from Thacker Pass bulk sampling campaigns were used as feed. The material was crushed, screened at 1”, and blended prior to feeding. Four campaigns were run, each consisting of 10,000 to 12,000 lb of ore, and the results are shown in Table 13-2.

Table 13-2 Campaign 1 to 4 Material Balance Results

Campaign	Ore kg (lb)	Clay Blend, %Illite/Smectite	Ore, % Moisture	Li % Recovery	% Coarse Gangue Rejection
1	5,448 (12,000)	50 / 50	10.4	89.6	33.0
2	5,448 (12,000)	65 / 35	10.4	90.8	24.7
3	5,448 (12,000)	65 / 35	10.2	90.3	33.1
4	4,792 (10,554)	-	6.5	93.8	11.9
			Average	91.1	25.7

For campaigns 1 to 3, mass rejection of coarse gangue was in the expected range for the life of mine and lithium recovery was approximately 91%. Coarse gangue rejection at the dewatering screen is shown in Figure 13-7. During these campaigns it was noted that the hydraulic classifier discharge valve was difficult to control resulting in upsets of the hydraulic classifier bed that negatively affected separation performance. The valve was replaced with one of more appropriate size prior to the fourth campaign. For campaign 4, the oversize material from campaigns 1 to 3 (i.e. +1”) was re-crushed, screened, and used as feed. As the material was leftovers from prior runs, the clay blend ratio is unknown. Lithium recovery in campaign 4 was higher than previous runs while coarse gangue rejection was lower. It is assumed that 92% clay recovery in the plant is achievable. This is partly due to the pilot classifier discharge valve negatively impacting runs 1 to 3, and because longer times at steady-state in the commercial plant are anticipated to help improve efficiency.

Both the thickener and the decanter centrifuge met the desired objectives. Based on test data, a final product of approximately 55% solids (by weight) from the decanter centrifuge can be expected. The particle size distribution in the thickener underflow was in a 90 to 95% range passing 75 µm.

Figure 13-3 Large Scale Beneficiation Pilot Plant Process Flow Diagram

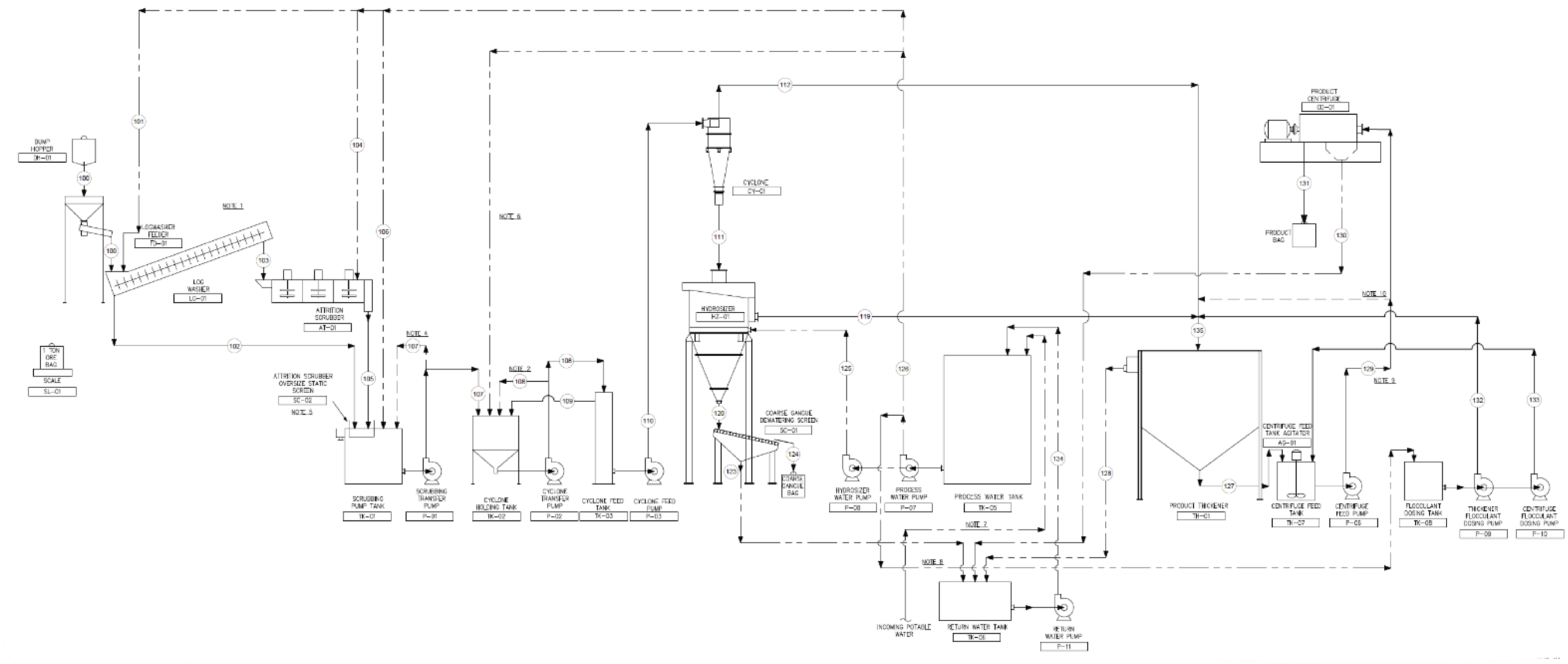
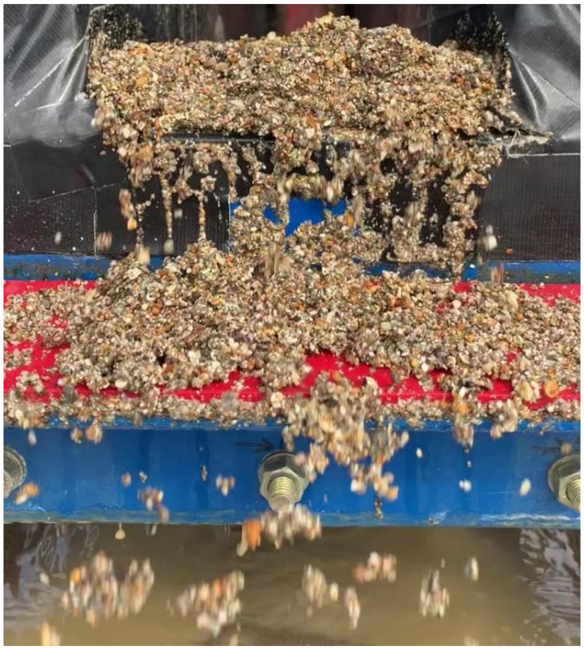


Figure 13-4 Log Washer and Attrition Scrubber

Figure 13-5 Primary Cyclone, Hydraulic Classifier and Dewatering Screen

Figure 13-6 Thickener and Decanter Centrifuge

Figure 13-7 Coarse Gangue Rejection



13.2.1.2 Additional Beneficiation Work

Since the conclusion of the pilot campaign, more testing on equipment in the dewatering area (thickeners, decanter centrifuges) has been completed. This was done to confirm performance and investigate potential optimization.

13.2.1.2.1 Thickening

Additional classification thickener testing was performed by FLSmidth on 12 samples of illite clays (FLSmidth, 2024). The goal of the testing was to confirm sizing and operating parameters determined from prior testing campaigns on various clay blends of smectite and illite. In summary, all key design variables, including flocculant addition, feedwell solids concentration, unit areas and underflow densities were consistent with previous results.

Lithium Americas has performed extensive flocculant testing on the classification thickener at their Lithium Technical Development Center ("LiTDC") in Reno, NV (Lithium Americas Corp., Internal Reports 070 (2023) and 087(2024)). LAC has developed methods and experimental setups in close collaboration with industry partners to bring solid/liquid separation expertise in-house. Flocculants of various types and from various vendors have been screened for performance. Over 35 different flocculants have been analyzed to date and the best performing products have been identified based on polymer chemistry, charge density, and molecular weight. The flocculant consumption and optimum feed solids concentration determined from these testing campaigns has been included in the process design criteria.

13.2.1.2.2 Decanter Centrifuging

Another pilot test of a decanter centrifuge was performed in collaboration with an equipment supplier at the Reno Lithium Technical Development Center (Andritz, 2023). Approximately 5000 gallons of -75µm clay slurry at about 25 wt.% solids were prepared for testing. Slurry was pumped from a holding tank and flocculated in-line prior to entering the centrifuge. An example of the flocculated feed is shown in Figure 13-8.

Figure 13-8 Flocculated Pilot Centrifuge Feed

Key variables included pool depth, differential speed, polymer dosage, G-force, and feed rate. This test demonstrated that under optimized conditions, a cake dryness of 55 to 60 wt% solids could be achieved further confirming previous pilot results (Section 13.2.1.1). The machine performance during the pilot testing was used for key scale-up parameters.

Other tests have been performed in collaboration with vendors to further optimize flocculant addition by examining the effect of dose, flocculant concentration, solids concentration, and dosing strategy (GEA, 2024). LAC plans to include multiple flocculant addition points in the plant design to allow for maximum flexibility and optimization during operations.

13.2.1.3 Key Conclusions for Beneficiation

The beneficiation area of the process has been tested to collect performance data for key pieces of equipment. Over 45,000 lb of Thacker Pass ore have been processed through a large-scale pilot that included a production scale cyclone. The circuit has been shown to be effective for clay liberation and separation from coarse gangue, with clay recovery greater than 90% during testing. A lithium (i.e. clay) recovery of 92% is assumed for the process plant. The dewatering section (thickener, decanter centrifuge) can produce a clay concentrate at approximately 55% solids. This has been verified at pilot scale by other tests.

For design purposes, it is assumed that coarse gangue rejection corresponds to ash content of ROM ore as test work has shown they are correlated. Ash content has been logged for all areas of the pit as part of the geological characterization. Design criteria for thickener sizing, underflow density, and flocculant consumption have also been specified based on test results.

13.2.2 Leaching and Neutralization

The clay concentrate product from the classification circuit is repulped in process brine and directed to the leach circuit. Lithium contained in the clay is solubilized with sulfuric acid in agitated leach tanks. After leaching, excess acid is neutralized with limestone and recycled magnesium hydroxide prior to brine recovery and filtration of the neutralized slurry.

13.2.2.1 Leaching Conditions

The objective of the leach circuit is to optimize lithium extraction, or in other words maximize the mass of lithium leached per mass acid added. Variables such as temperature, particle size, mixing (i.e. mass transfer), acid dose, residence time, and feed composition have been thoroughly investigated over the years by both LAC and external parties. The key conclusions from this test work are summarized below:

- *Temperature*: Leach kinetics are comparable between 60 and 90°C. The reaction is fast, with most leaching occurring with the first 60 minutes. The design residence time (180 minutes) is deemed sufficient to extract the majority of soluble lithium present in the leach feed. Note that the leach circuit temperature will be about 90°C based on the process plant heat and material balance.
- *Particle size*: Leach tests on multiple illite and smectite samples at particle sizes of 75 µm and 38 µm showed no significant difference in lithium leach extraction. Note that in section 13.2.1.1 the particle size distribution of thickened clay (i.e. leach feed) was in a 90 to 95% range passing 75 µm.
- *Mixing*: Various methods of mixing have been explored including sonication and high-shear impellers. No differences were observed compared to standard agitation; it's concluded that mass transfer limitations are minimal.
- *Acid dose*: The optimum acid dose has been shown to be about 0.5 kg acid/kg clay for both clay types.
- *Residence time*: As noted in the temperature section above, due to the fast kinetics a residence time of 3 hours was selected for design.
- *Feed composition*: The lithium leach extraction at optimum acid dose is highly correlated to clay feed composition, especially the concentrations of Li and Mg.

13.2.2.2 Lithium Leach Extraction Model

LAC has collected extensive leach data at both large scale (100 gallon batches) and small scale (1 gallon). This data has been used to build a multivariate model in Minitab® software (Lithium Americas Corp., Internal Report 014, 2021). The model predicts lithium extraction based on lithium and magnesium content in the leach feed and describes approximately 86% of the variability (i.e. R^2 = 86.5%).

The leach correlation was applied to the block model to optimize the mine plan for total extractable lithium. Based on the optimized mine plan and leach correlation, lithium leach extraction ranges between 88% to 97% with an average of 92.5% and is primarily dependent on ore mineralization characteristics.

13.2.2.3 Neutralization

After slurry is leached, residual acid is neutralized to raise the pH and simultaneously precipitate most of the aluminum and iron in solution. There are two stages of neutralization. In stage 1 limestone is added for initial pH adjustment, and in stage 2 a recycled $Mg(OH)_2$ slurry is used for an overall target pH of 6 to 7.

LAC plans to obtain limestone from a nearby source. Test work has shown that pulverized limestone is effective for primary neutralization and that consumption is close to stoichiometry. The performance of local sources is also comparable to commercially available grades.

In the process design criteria, limestone addition is based on controlling the neutralization outlet stream (i.e. stage 2) to a pH target. It will vary depending on residual acid content, iron, and aluminum solution values.

Large batch neutralization tests have been performed using both $CaCO_3$ and recycled magnesium precipitate (magnesium hydroxide/calcium sulfate solids), as currently designed in the flow sheet. It has been confirmed over multiple batches that pulverized limestone and magnesium solids are effective as neutralization reagents and capable of bringing the final slurry pH to a target range of 6 to 7.

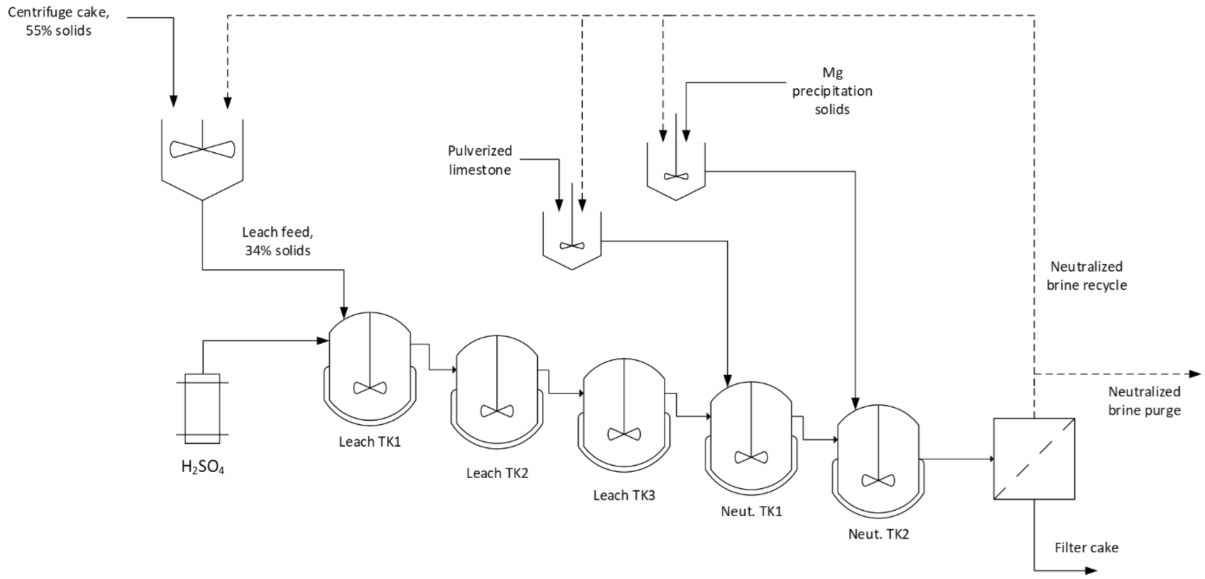
13.2.2.4 Additional Leaching and Neutralization Work

13.2.2.4.1 Continuous Leach and Neutralization

Leaching and neutralization testing has been ongoing. As leaching is the most critical step for lithium recovery, it is a primary focus of research and development testing. One concern about the leaching and neutralization area is the impact of the recycle streams on circuit performance as they can lead to contaminant buildup and other deleterious effects.

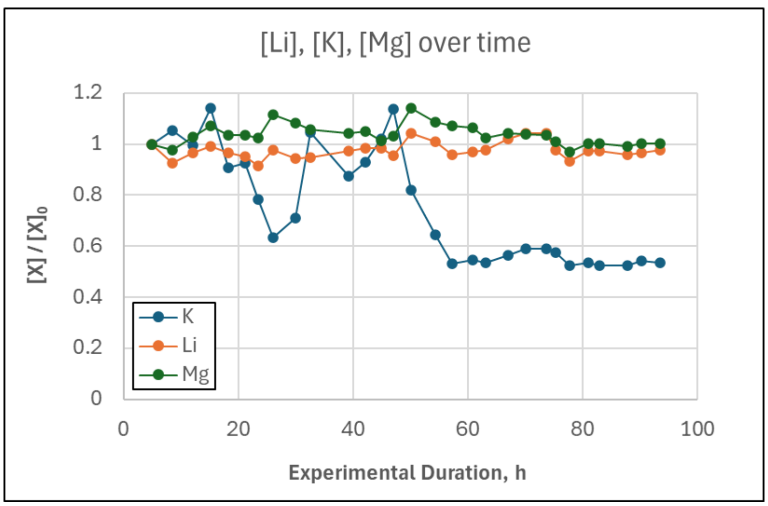
To address this, a 24-hour per day, 4-day, continuous leach and neutralization campaign was conducted at the LiTDC (Lithium Americas Corp., Internal Report 063, 2023). The circuit was run according to the process design criteria (PDC) and included recycling of neutralized brine to mimic the flow sheet (Figure 13-9).

Figure 13-9 Simplified PFD of Continuous Leaching and Neutralization Campaign



The neutralized brine composition was monitored over the course of the campaign and results for major elements Li, Mg, and K are shown in Figure 13-10. The concentrations stabilized over after about 60 h demonstrating the system was at steady state. Lithium extraction was within 6% of model prediction.

Figure 13-10 [Mg], [K], and [Li] in Neutralized Brine Over Time (Reported Relative to Starting Concentrations)

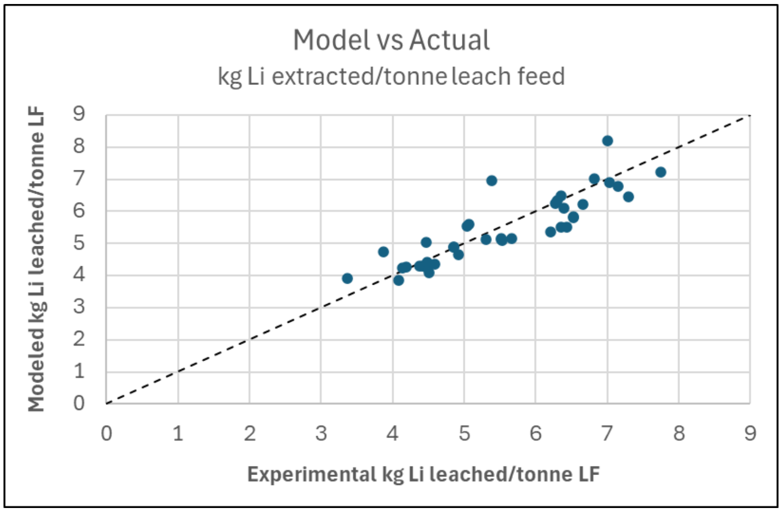


Other major analytes monitored were Cl, F, SO_4, Al, B, Ca, Fe, Mn, and Na. None of these “cycled up” in the system over time and were within expected concentration ranges. Also of note is that during the campaign, steady-state samples from each tank were taken and the rheology characterized. This data is being utilized for agitator design in the circuit.

13.2.2.4.2 Illite Leaching

Illite samples representative of the latest optimized mine plan were leached at the LiTDC. The samples were from coarse rejects and intentionally selected to both meet cutoff criteria (Section 16) and have variability in Mg and K content (Lithium Americas Corp., Internal Report 091, 2024). The samples were leached for 3 hours at the design acid addition, and the experimentally determined lithium leached is compared to that calculated from the correlation (Figure 13-11).

Figure 13-11 Experimental Li Extraction vs Correlation for 40 Illite Samples



Generally, there is good agreement between the predicted values and data. On average over the 40 samples, the observed lithium extraction was 2% higher than the predicted value. Note that a strong correlation between leach feed composition and residual acid was also found.

13.2.2.5 Key Conclusions for Leaching and Neutralization

Through years of leach testing with both smectite and illite clays from the Thacker Pass deposit, LAC has established a fundamental understanding of key variables such as temperature, kinetics, and acid dose. A leach model has been established that correlates incoming leach feed composition to the lithium extraction at design conditions (3h residence time, 0.49 kg acid/kg solids) with good accuracy (R^2 = 86.5%). This model serves as the basis for mine planning. Over 40 samples of optimized mine plan ore have been leached at design conditions and show good agreement with the lithium leach extraction correlation. The average lithium leach extraction is predicted to be 92.5%.

Continuous leaching and neutralization testing incorporating recycle streams has shown no deleterious effects on the leach performance and that no contamination buildup occurs. Design criteria for leach extraction, equipment sizing, and reagent consumptions have been specified based on test results. Leach tests continue at the LiTDC to try and further optimize acid efficiency.

13.2.3 Countercurrent Decantation

Neutralized slurry flows to the countercurrent decantation (CCD) circuit which is comprised of eight thickeners in series. The slurry flows to CCD1 while wash water is added to CCD8. Through countercurrent mixing and settling, the net effect is that wash water displaces the brine portion of the slurry to the front of the circuit (CCD1) for recovery, while the slurry at the end of the circuit (CCD8) is essentially leftover solids and fresh water. Initial scoping work demonstrated that neutralized slurry could be thickened to underflow densities of approximately 32% solids using anionic flocculant and that eight stages of CCD were estimated to recover about 99% of brine.

13.2.3.1 Additional CCD Work

As a follow-up to initial scoping studies, four different samples of neutralized clay slurry were prepared and tested with varying brine TDS concentrations to simulate CCD stages 1, 3, and 8 (FLSmidth, 2022). Each stage was tested to collect critical information for scale-up design including flocculant dose, solids settling flux, thickener underflow solids concentration and rheology. Results agreed with previous test work showing comparable underflow densities, unit areas, and flocculant consumption and were used as the basis of design for the circuit.

LAC has also completed internal confirmation CCD testing at the LiTDC (Lithium Americas Corp., Internal Report 084, 2024). Continuous fill tube tests simulating CCD stages 1, 4, and 8 at process design criteria were performed in duplicate. An example of a sample being tested in the apparatus is shown in Figure 13-12.

Figure 13-12 Continuous Fill Tube Testing at Lithium Americas Lithium Technical Development Center (TC)

For each stage, thickener underflow target densities were achieved. LAC also performed recovery simulations (i.e. wash efficiency) for an 8 stage CCD circuit using a range of underflow densities achieved in the test work. In all cases, recovery was greater than 99% demonstrating minimal recovery impact across the circuit even if the performance of several thickeners is below target.

13.2.3.2 Key Conclusions for Countercurrent Decantation

Multiple testing campaigns, both internal and external, have shown that neutralized slurry can be settled in various CCD stages to acceptable underflow densities. With eight total stages, fluctuation in the underflow density has minimal impact on washing efficiency, thus the system is robust and able to accommodate some fluctuation without a detrimental performance impact.

Design criteria for equipment sizing, reagent consumptions, and operating conditions have been specified based on test results.

13.2.4 Neutralized Slurry Filtration

After CCD, the neutralized slurry is filtered in membrane filter presses, with the objective to generate a dry cake suitable for stacking in the clay tailings filter stack (CTFS). The filtrate (i.e. water) is recycled back to CCD as wash solution. Hundreds of filtration batches have been performed by LAC on a pilot scale membrane filter press. Filter cakes produced are consistently uniform, friable, and with 35 to 40% moisture content as measured drying at 105°C (Figure 13-13).

Figure 13-13 LAC Pilot Membrane Filter Press and Resultant Filter Cake

13.2.4.1 <u>Additional Neutralized Slurry Filtration Work</u>

The effect of CCD on slurry filtration has been investigated at pilot scale (FLSmidth, 2022). Neutralized slurry was freshly prepared according to the design criteria and then washed in thickeners to mimic the preceding CCD circuit. A picture of the pilot setup and resultant cake is shown in Figure 13-14.

Figure 13-14 Pilot CCD and Filtration Setup and Resultant Filter Cake

Pressure filtration, without membrane squeeze, was very effective in dewatering the freshly leached/neutralized and washed clay slurry. In fact, the washed slurry resulted in drastically improved filtration rates compared to prior bench testing on slurry containing brine. The cakes had similar properties to those observed at the Lithium Technical Development Center. It was determined that membrane presses were not required for target cake densities as high-pressure chamber filtration achieved acceptable dewatering. This is advantageous as it decreases overall cycle filtration time reducing the required number of filter presses.

13.2.4.2 Key Conclusions for Neutralized Slurry Filtration

It has been shown that plate and frame filter presses are very effective for solid-liquid separation of neutralized slurry. As a result of using CCD for brine recovery instead of in-press cake washing, filtration rates have substantially increased. The cakes are suitable for dry-stacking and have favorable release properties from the filter cloths. Generally, it is accepted that clays are difficult to filter. However, after leaching the clay properties are substantially altered and become amenable to filtration.

Design criteria for equipment sizing, filtration cycles, and operating conditions have been specified based on test results. Filtration rates include feeding time and nominal mechanical time applicable for full-scale equipment. Lithium recovery in the CCD and filtration circuit is calculated based on design criteria and ranges between 98.5% to 99.5%.

13.2.5 Magnesium and Calcium Removal

13.2.5.1 Magnesium Sulfate Crystallization

Brine recovered in CCD is fed to the magnesium sulfate crystallization circuit, where most of the magnesium is removed in crystallizers. The circuit is designed to remove as much magnesium as possible in the form of hydrated magnesium sulfate salts ($MgSO_4$*xH_2O where x varies with temperature). A critical aspect of magnesium sulfate crystallization is to avoid lithium losses to the salts, because at a threshold concentration of lithium and potassium in solution, lithium can form a double salt with potassium. Therefore, understanding the $LiKSO_4$ phase boundary limit is essential to operate the magnesium crystallizers effectively. LAC, with the assistance of a research partner, has mapped this boundary using in-situ real time monitoring tools during crystallization of brine solutions. LAC now has a custom phase diagram specific to Thacker Pass brines which serves as a thermodynamic operating basis.

Extensive bench and pilot scale testing of the magnesium sulfate crystallization system has been performed by Aquatech International Corp. ("Aquatech"), who is providing the crystallization packages for the Thacker Pass project. Optimum conditions have been identified to maximize magnesium removal while avoiding lithium losses. Crystallizer sizing and target design conditions have been incorporated into the flow sheet per their test results and recommendations. A continuous pilot scale campaign of the magnesium sulfate crystallization has also been performed at the LiTDC and demonstrated successful removal of $MgSO_4$*xH_2O salts while avoiding lithium losses (Lithium Americas Corp. Internal Report 004, 2022).

The precipitated magnesium salts are removed and washed via centrifugation and conveyed to the CTFS, while the filtrate is processed downstream.

13.2.5.2 Magnesium Precipitation

The residual magnesium in the centrate that is not removed in the crystallizers is chemically precipitated with milk of lime (MOL), where magnesium hydroxide ($Mg(OH)_2$) and gypsum ($CaSO_4$) are the main precipitates formed. It has been shown that reagent addition at 1.05 stoichiometric ratio to magnesium is sufficient to decrease the concentration of magnesium in solution to less than 20 mg/kg.

The $Mg(OH)_2$ and $CaSO_4$ precipitates are filtered in a plate and frame filter press, similar to the neutralization slurry, and filter press sizing is based on vendor testing. The filter cakes are not washed, since they are re-pulped and sent back to neutralization, and therefore any lithium held up in cake filtrate is recycled and recovered. The filtrate is then sent downstream to calcium removal.

13.2.5.3 Calcium Precipitation

The calcium removal step takes place in a reactor-clarifier, where soda ash (Na_2CO_3) is added to form a solid calcium carbonate ($CaCO_3$) precipitate. Test work was performed to determine soda ash dose and clarifier sizing. The solids are removed by passing the stream through multimedia filters, and eventually the $CaCO_3$ is sent back to neutralization.

13.2.5.4 Ion Exchange

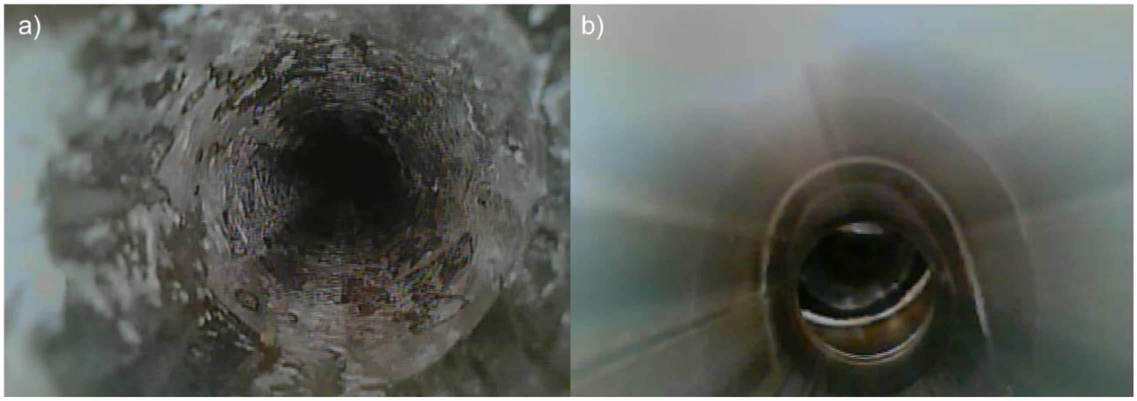
In a final polishing step, low levels of calcium, magnesium and any other divalent cations are removed with traditional ion exchange resin. Another ion exchange resin is used to specifically remove boron. Multiple resins were previously tested and found effective to reduce target ion concentrations to less than 1 ppm.

13.2.5.5 Additional Magnesium and Calcium Removal Test Work

13.2.5.5.1 $MgSO_4$ Crystallization

Aquatech has performed more testing to confirm circuit design criteria with varying feed chemistry (Aquatech, 2024). Brine was generated by LAC at a composition representative of the latest optimized mine plan. The saturation conditions of magnesium, potassium, and lithium sulfate were determined and used to update final operating conditions for the commercial design. The pilot again demonstrated that operating according to the process design conditions will not result in lithium loss to crystals and that 75% of the magnesium in the brine can be removed as sulfate salt. It has also been shown that gypsum seeding of the evaporator in this circuit significantly prevents scaling of the heat exchanger surfaces leading to extended operating time frames (Figure 13-15).

Figure 13-15 Heat Exchanger Surfaces without (a) and with (b) Seeding



13.2.5.5.2 Mg Precipitation

Additional magnesium precipitation tests were performed on mother liquor from the stage 4 magnesium sulfate crystallizer (Lithium Americas Corp. Internal Report 002, 2022). Various reagent additions were tested, and kinetic samples taken. The results show that a 1.05:1 ratio is sufficient for the completion of the reaction and the residual concentration of magnesium was less than 10 mg/kg. The reaction between $Ca(OH)_2$ and magnesium occurred within 5 minutes.

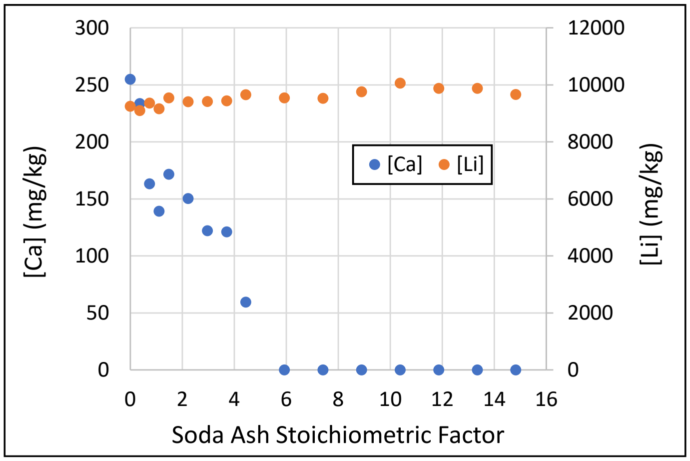
More magnesium precipitation slurry filtration testing was done by FLSmidth on representative process slurry (FLSmidth, 2023). The precipitation was done on-site and then filtered under various conditions. Pressure filtration was effective in dewatering the freshly precipitated magnesium hydroxide sample, and both membrane and recessed chambers produced a competent filter cake (Figure 13-16).

Figure 13-16 Magnesium Precipitation Filter Cake

13.2.5.5.3 Calcium Precipitation

A continuous calcium precipitation circuit was tested at the LiTDC (Lithium Americas Corp. Internal Report 003, 2023). Three tanks were operated in a gravity overflow cascading series with targets of 30 minutes retention time in each vessel. Post Mg-precipitation brine and soda ash solution were added at various stoichiometric ratios and samples were taken from each vessel at steady-state. It was shown that at a stoichiometric factor of 6 (mole Na_2CO_3: mole Ca) and a retention time of 90 minutes, the effluent calcium concentration was less than 35 mg/kg. It was also confirmed that lithium loss does not occur (i.e. Li_2CO_3 precipitation), even at stoichiometric additions of up to 15 (Figure 13-17).

Figure 13-17 Lithium Concentration in Solution for Various Soda Ash Stoichiometric Additions



At the same time of this testing, sample splits were sent to a vendor to simulate softening with a Solids Contact Clarifier (SCC) and determine the required chemical dosages, calcium removal efficiency, solids settling characteristics, and expected effluent clarity (Westech Engineering, 2023). It was confirmed that a soda ash stochiometric factor of approximately 6 was sufficient to achieve less than 35 mg/kg residual calcium. The data was used for SCC sizing.

13.2.5.5.4 Ion Exchange

Ion exchange testing for both the divalent and boron systems was performed at the LiTDC (Lithium Americas Corp., Internal Report 082, 2024). Through scoping studies, the highest performing resin for each was identified. The resins were then tested in flow columns (Figure 13-18) to generate breakthrough curves and measure loading capacities. Resins were tested over multiple cycles, including stripping and regeneration, to confirm performance.

Figure 13-18 Bench Scale Ion Exchange Column Testing Apparatus

13.2.5.6 <u>Key Conclusions for Magnesium and Calcium Removal</u>

The $MgSO_4$ crystallization system has been extensively tested both internally at the LiTDC and externally with the selected crystallizer technology provider for the Thacker Pass project (Aquatech ICD). Test work has repeatedly shown the system can be operated to remove ~75% of magnesium in the brine while avoiding lithium losses to crystals. The data coupled with fundamental thermodynamic phase diagrams has yielded design setpoints and equipment specification. Evaporator seeding has also proven effective to minimize scaling risk and will be implemented at site.

The chemical precipitations of both magnesium (with $Ca(OH)_2$) and calcium (with Na_2CO_3) have been investigated and are well understood. Reagent additions, operating conditions, and equipment design are all based on data collected. Filtration of the magnesium hydroxide slurry will be done with chamber filter presses where the equipment specifications are based on pilot testing.

The brine polishing step with ion exchange has also been evaluated. Optimum resins have been identified for each area and the performance over multiple cycles has been confirmed. Process design criteria for this section of the plant were developed from the data.

The only lithium loss in this section of the process comes from lithium contained in the mother liquor surrounding the crystals. Crystals are washed prior to discharging from the centrifuge and therefore lithium recovery is a function of solution chemistry and centrifuge wash efficiency. Wash efficiencies are estimated based on equipment performance in similar industrial applications. Lithium recovery is expected to be between 98.5 and 99.8%.

13.2.6 Lithium Carbonate Production

13.2.6.1 Purification

The brine feeding the lithium carbonate (Li_2CO_3) purification circuit primarily contains lithium, sodium, and potassium sulfate. The objective is to produce high quality battery grade lithium carbonate. Note that crystal agglomeration and poor wash efficiency are common contributors to product contamination, and thus it is desired to grow large crystals and avoid agglomerates.

The Li_2CO_3 purification circuit is comprised of three stages: primary Li_2CO_3 crystallization, bicarbonation, and secondary Li_2CO_3 crystallization. Each stage has been tested and designed by Aquatech ICD. In the 1st stage, soda ash (Na_2CO_3) is added to the brine in stoichiometric excess to precipitate Li_2CO_3 and form crystals. The crystals collected in this first stage require purification to achieve battery quality (greater than 99.5 wt.%).

The Li_2CO_3 crystals collected from the 1st stage are re-slurried with water and then transferred to a reactor where carbon dioxide (CO_2) gas is continuously metered at controlled temperature and pressure. This reaction converts Li_2CO_3 to highly soluble lithium bicarbonate ($LiHCO_3$). Solid impurities are then removed in a filtration step.

The filtered brine is fed to a 2nd stage reactor, where it's heated to thermally degas CO_2 and precipitate battery quality Li_2CO_3. After separating and washing the crystals, the product is sent to packaging and the solution is recycled back to the circuit.

Pilot campaigns of the circuit have been run to develop the process and equipment design criteria. Test programs were designed to simulate the commercial circuit and included all stages of purification and all primary recycle streams. It has consistently been shown that battery quality lithium carbonate (greater than 99.5 wt%) can be achieved and over 19 kg of battery quality Li_2CO_3 was produced from Thacker Pass ore. Other key design criteria, equilibrium concentrations, reagent consumptions, and power demand have been verified through testing.

Over 5 kg of battery quality lithium carbonate has also been produced internally at Lithium Americas' LiTDC in Reno, NV via the same purification circuit design (LN, 2022). There was good agreement with the Aquatech data for equilibrium solution concentrations and final product purity.

13.2.6.2 Zero Liquid Discharge Crystallization

Mother liquor from the 1st stage and a portion of mother liquor from the 2nd stage are combined and sent to the zero liquid discharge (ZLD) crystallizer with the objective of crystallizing sodium and potassium as sulfate salts by evaporation. Prior to feeding the crystallizer, sulfuric acid is added to destroy any carbonates thus preventing precipitation of lithium carbonate. Because there is a significant concentration of lithium in the ZLD feed stream, crystallization must be controlled to avoid lithium precipitation to solids, similar to the magnesium sulfate crystallizer (Section 13.2.5.1).

To confirm the design, pilot testing of the ZLD circuit was also performed by Aquatech during the pilot purification campaign. The design mother liquor and crystals composition were verified, and it was shown that the crystallizer can be operated without loss of lithium to solids. Similarly, internal pilot testing has also confirmed that lithium loss to solids can be avoided if the mother liquor composition is controlled (LN, 2022).

13.2.6.3 Final Product Handling

High purity lithium carbonate crystals from the 2nd stage are removed via centrifuge and sent to drying, cooling, and packaging circuits. Dryers and coolers were initially selected based on quoted designs from multiple vendors, with moisture properties of the final Li_2CO_3 crystals assumed based on test work and typical industry values.

The packaging system has been designed from bulk testing. The equipment required is similar to others used in the industry.

13.2.6.4 Additional Lithium Carbonate Production Work

13.2.6.4.1 Bicarbonation

Aquatech performed additional testing to define the rate of conversion of Li_2CO_3 to $LiHCO_3$ at the operating conditions defined in the commercial project (Aquatech, 2024). The testing system was designed to match mass transfer conditions at the commercial scale. The measured reaction rates were shown to validate the design of the equipment yielding greater than 99% conversion.

13.2.6.4.2 Dryer/Cooler

Pilot drying and cooling tests were performed at the LiTDC with a vendor supplied paddle style dryer/cooler (Andritz, 2023). Lithium carbonate was prepared at the expected residual moisture content out of the final product centrifuge and fed to the unit. The dryer was able to achieve a final product residual moisture content at or below target of 0.1% using steam as heating medium.

After drying, the unit was connected to cooling water for cooling tests. Hot lithium carbonate was then successfully cooled to below target temperature. These tests demonstrated this style of dryer/cooler is suitable for the application.

13.2.6.5 Key Conclusions for Lithium Carbonate Production

The Li_2CO_3 crystallization system has been extensively tested both internally at the LiTDC and externally with the selected crystallizer technology provider for the Thacker Pass project (Aquatech ICD). Test work has repeatedly shown the system can produce battery quality lithium carbonate. Additionally, the ZLD system has been shown to effectively remove Na and K as sulfate salts without crystallizing lithium. Detailed kinetic studies of the bicarbonation system have validated the design of the Li_2CO_3 to $LiHCO_3$ conversion equipment. Data from these testing campaigns has been used to design equipment, estimate reagent consumption, and specify final operating conditions for the commercial design.

Process design criteria and equipment design for final product handling stages, namely drying, cooling, and packaging have also been developed from test data.

Lithium loss in this area is from lithium contained in the mother liquor surrounding the ZLD crystals. These crystals are not washed because the mother liquor also serves as a purge stream. Lithium recovery from Li_2CO_3 Production ranges between 95% to 98% and is a function of solution chemistry.

13.2.7 Tailings

Numerous geotechnical tests have been completed on tailings material generated from the TC. Based on this testing, stability analysis modeling has shown a stable landform can be constructed when the tailings are compacted near optimum moisture content. To achieve a stable landform, technical specifications have been prepared which identify the moisture content and compaction requirements of the tailings. Section 18 summarizes the tailings plan.

13.3 Metallurgical Test Work Conclusions

Since 2017, LAC has performed extensive metallurgical and process development testing, both internally and externally. Pilot testing of all unit operations has been performed at the appropriate scale and with representative materials from the proposed mine plan to ensure successful scale-up. Beneficiation was pilot tested at the size necessary to collect performance data on a commercial size cyclone. Physical solid/liquid separations with cyclones can be difficult to model, and thus large-scale testing is needed to minimize scale-up risks. In this case, risk is minimized by simply "numbering up" the cyclones instead of scaling up.

Other areas including leaching, neutralization, chemical precipitations, and crystallization were piloted at smaller scale as these are based on thermodynamics and chemical equilibria that are not dictated by scale of equipment. Rather, scale-up design is based on physical considerations like mixing, physical properties, residence times, etc. Scale-up testing by vendors was performed by standard methods and equipment deemed appropriate for those areas. Physical property data has also been generated for key process streams (e.g. rheology, densities and phase equilibria).

Owing to the large change in volume through the process, LAC chose to break the pilot plant into three sections enabling operation at the appropriate scale for testing. By careful selection of the break points, all areas that include recycle streams have been run continuously and fully integrated to assess any impacts. For example, there are no interconnected recycle streams connecting Li_2CO_3 to leach and therefore it is not required to have these circuits pilot tested in series at the same time. The Li_2CO_3 recycle streams are all internal to the circuit and the complete system has been extensively tested. This strategy has allowed for collection of critical information of connected systems and recycle stream impacts without running an end-to-end demonstration plant. Additionally, the developed flow sheet only includes equipment that has been historically proven in mining and chemical operations worldwide. The intent is to minimize risk of "first-of-kind" technology and leverage industry experience.

All relevant data and design criteria have been incorporated into the process modelling software Aspen Plus® to generate a steady-state material and energy balance. Based on results of all test work performed to date and the Aspen Plus® model, the following was established;

Beneficiation

- The beneficiation circuit is effective for clay liberation and separation from coarse gangue. The circuit is analogous to that used in phosphate processing.
- Aspen model lithium recovery is expected to be 92% in beneficiation. Coarse gangue mass rejection is based on ROM ash content.
- The dewatering section (thickener, decanter centrifuge) can produce a clay concentrate at approximately 55% solids.

Leaching and Neutralization

- LAC has established a fundamental understanding of key leaching variables such as temperature, kinetics, and acid dose.
- The optimum acid dose is 0.49 kg acid/kg leach feed solids, and the design residence time is 3 hours.
- A leach model has been established that correlates incoming leach feed composition to the lithium extraction at design conditions with good accuracy (R^2 = 86.5%). This model serves as the basis for mine planning. The model agrees well with leach data from over 40 samples of optimized mine plan feed.
- Aspen Plus® model lithium extraction and recovery from leach feed ranges between 88% to 97% and is primarily dependent on ore mineralization characteristics.
- A two-stage neutralization circuit using pulverized limestone and magnesium precipitation solids has proved to be suitable for pH adjustment.
- Continuous leaching and neutralization testing incorporating recycle streams has shown no deleterious effects on the leach performance and that no contamination buildup occurs.

CCD and Filtration

- An eight-stage countercurrent decantation (CCD) circuit was evaluated and shown to provide an acceptable wash efficiency (greater than 99%) even in the case of a few thickeners not achieving target underflow density.
- Plate and frame filter presses are very effective for solid/liquid separation of neutralized slurry and filtration rates improve because of CCD washing.
- Aspen model lithium recovery from CCD and Filtration ranges between 98.5% to 99.5%.

Magnesium and Calcium Removal

- Magnesium sulfate ($MgSO_4$) crystallization can effectively remove on average 75% of magnesium and avoid lithium losses when operated at design setpoints.
- The chemical precipitations of both magnesium (with $Ca(OH)_2$) and calcium (with Na_2CO_3) have been investigated. The design stoichiometric reagent additions are 1.05:1 and 6:1 for Mg and Ca removal, respectively.
- Ion-exchange resins for divalent removal and boron have been tested over multiple cycles to develop loading capacities.
- Aspen model lithium recoveries from Magnesium Sulfate and Calcium Removal ranges between 98.5 and 99.8% and is based on solution chemistry and centrifuge wash efficiency.

Li_2CO_3 Production

- Lithium carbonate (Li_2CO_3) purification requires three stages to ensure that a battery quality lithium carbonate will be produced.
- Pilot testing has consistently shown that battery quality Li_2CO_3 can be produced, and that Na and K can be removed via the ZLD crystallizer without losses of lithium to the crystals.
- Aspen model lithium recovery from Li_2CO_3 Production ranges between 95% to 98% and is based on solution chemistry.

Lithium Recovery Summary

- Recovery of lithium and production of lithium carbonate during operations will fluctuate with varying ore mineralization and process chemistries. Illite ores overall recover better than smectite ores.

- Equations were created to be utilized in the mine planning process to calculate extractable lithium and predict total recoverable lithium carbonate equivalent (LCE). These equations were derived from the Aspen Plus® model which combined the extensive metallurgical and process test campaigns data sets. The equations are applied to each ore block of the mine plan to account for the anticipated extractable lithium of the blocks mineralization and calculate the expected recovery of LCE based on process chemistries that could be realized from that ore block.

- Extractable (leachable) lithium in ore block = $Li_{Ext} = \rho V Li_{Ore} X_{Li} X_{Ben.}$
  - ρ = Dry bulk density of ore
  - V = Volume of ore block
  - Li_{ore} = Lithium concentration in ore block
  - X_{Li} = Lithium leach extraction
  - X_{Ben} = Lithium recovery in beneficiation

- Lithium leach extraction (X_{Li}) utilizes a proprietary formula that applies statistical coefficients and concentrations of magnesium, lithium and ash content from each ore block.

- Total recoverable LCE in ore block = $LCE_{Recov} = Li_{Ext}\left(1 - \left(X_{fil} + X_{MgSO4} + X_{ZLD}\right)\right) * LCM$
  - X_{fil} = Lithium loss in CCD and filtration
  - X_{MgSO4} = Lithium loss in Mg/Ca removal
  - X_{ZLD} = Lithium loss in Li_2CO_3 production
  - LCM = Lithium to LCE conversion at 5.3228

- Table 13-3 summarizes the expected ranges of lithium recoveries from the ore types that could be encountered in the mine plan and the mineral and chemical processing steps to produce lithium carbonate. These design ranges were calculated from the Aspen Plus® model. Overall recovery of lithium is expected to range between 74.6% to 86.8% with an average of 80.6%.

Table 13-3 Lithium Recovery by Process Step

	Minimum Li Recovery	Maximum Li Recovery	Average Li Recovery
Beneficiation	92.0%	92.0%	92.0%
Leach	88.0%	97.0%	92.5%
CCD/Filtration	98.5%	99.5%	99.0%
Magnesium Sulfate and Calcium Removal	98.5%	99.8%	99.1%
Li_2CO_3 Production	95.0%	98.0%	96.5%
Average Li Recovery	**74.6%**	**86.8%**	**80.6%**

The data presented in this section has been used to establish process design criteria for the plant, mine planning constraints summarized in Section 15, and lithium carbonate production volumes as discussed in Sections 17 and 22.

14 MINERAL RESOURCE ESTIMATES

This section contains forward-looking information related to the Mineral Resource estimates for the Thacker Pass deposit. The material factors that could cause actual results to differ from the conclusions, estimates, designs, forecasts or projections include geological modeling, grade interpolations, bulk density values, lithium price estimates, mining cost estimates, and mine design parameters.

14.1 Thacker Pass Deposit

The current Mineral Resource estimate discussed in this Technical Report is relevant to only the Thacker Pass deposit. The UM Claims owned by LAC in the Montana Mountains are not part of the Thacker Pass Project.

Only HQ core samples subject to the QA/QC programs outlined in Section 11 of this report and assayed by ALS Global in Reno, Nevada, were used to estimate the resource.

456 drill holes were used in the development of the resource block model (Table 14-1). A map of all drill holes used in the resource estimation is presented in Figure 14-1.

Table 14-1 Drill Holes Used in the Grade Estimation Model

Drilling Campaign	Number Drilled	Type	Hole IDs in Database
LAC 2007-2010	227	HQ Core	WLC-001 through WLC-031, WLC-034 through WLC-037, WLC-041 through WLC-232
LAC 2017-2018	135	HQ Core	LNC-001, LNC-003 through LNC-011, LNC-013, LNC-015 through LNC-052, LNC-054, LNC-057 through LNC-109, LNC-111, LNC-113 through LNC-128, LNC-130 through LNC-144
LAC 2023	94	HQ Core	LNC-145 through LNC-184, LNC-186 through LNC-192, LNC-194 through LNC-212, LNC-214 through LNC-241

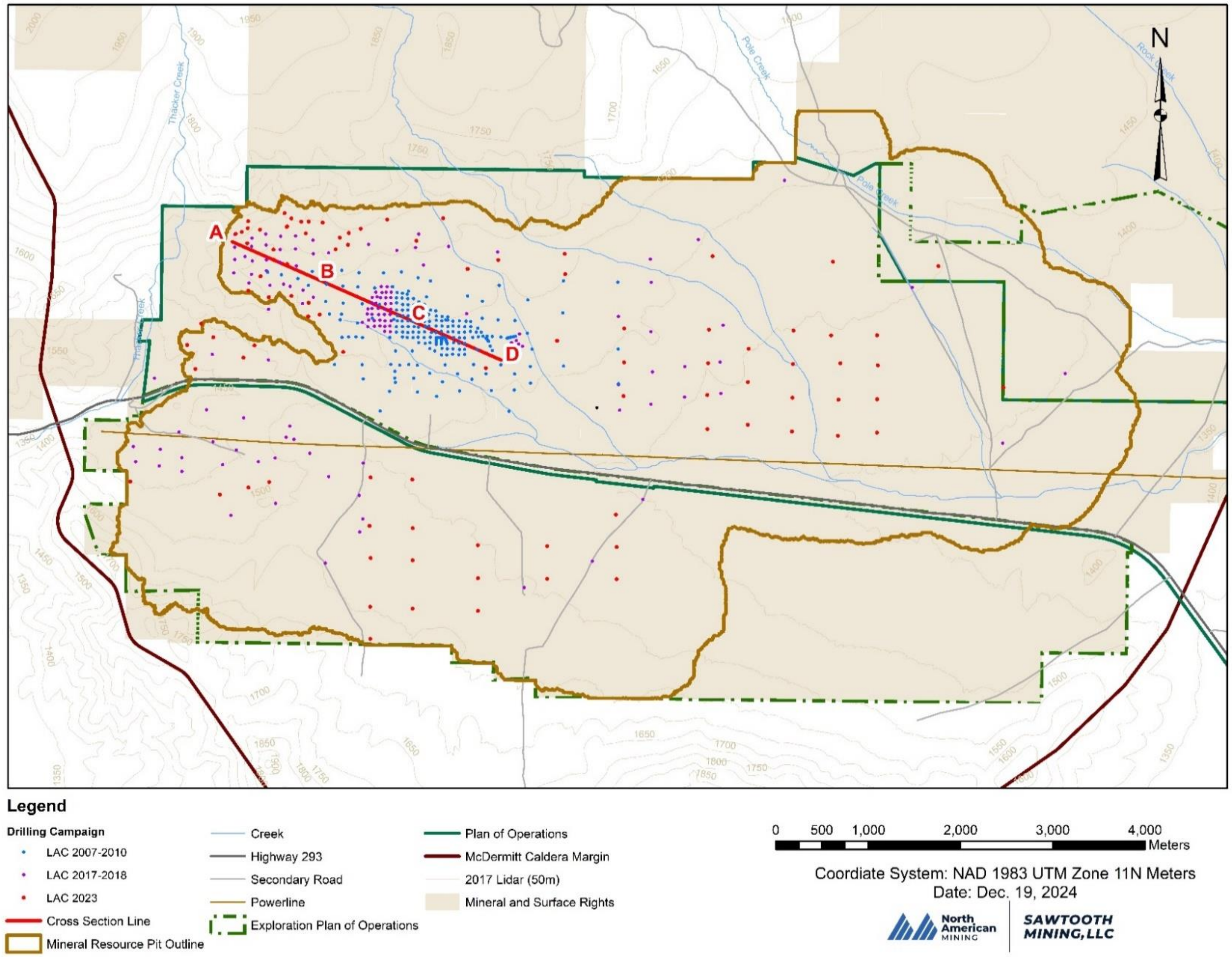
Note:

Holes that were omitted were removed from the database due to proximity to other nearby holes which were deeper with more assays and more descriptive geological descriptions.

All drill holes used for the grade model except WLC-058, LNC-083, LNC-219, LNC-220, LNC-223, and LNC-224 are essentially vertical (87.7 degrees to 90 degrees). Regular downhole gyro surveys were conducted to verify this, as described in Section 10 of this Technical Report. All mineralization thicknesses recorded are treated as true thicknesses.

All drill holes used for grade estimation were standard HQ core. The core is stored at a secure logging facility while being processed, then locked in CONEX containers or a warehouse after sampling was completed.

Figure 14-1 Drilling Utilized for the Resource Estimate



14.1.1 Geological Domains

Geological domains were created based on lithology in order to capture the variations in chemical distributions and heat alteration of the clays and the waste material types. A list of the domains in downhole order is detailed in Table 14-2 along with the average thickness of each domain. In general, the thresholds noted in Table 14-2 were applied to help define the lithological domaining in the database, however, there were some interpretations based on surrounding holes where the thresholds did not provide a definitive segregation of domains. The smectite and illite domains are the Lithium rich domains that were included in the Mineral Resource estimate.

Table 14-2 Lithological Domains

Lithology		Thickness		Element Domain Thresholds							
		ft	m	Mg/Li Ratio	Li	Mg	Rb	Fe	Y	Be	Cs
Alluvium		24.3	7.4								
Smectite	S2	94.7	28.9	> 20					> 40 ppm		
	S1	102.2	31.2			> 60,000 ppm				> 40 ppm	> 225 ppm
Illite	I3	27.3	8.3	≤ 20							
	I2	27.7	8.4		> 5,000 ppm	> 60,000 ppm	> 600 ppm	< 1.5%			
	I1	77.9	23.8								
HPZ		37.7	11.5		< 500 ppm						
Tuff [1]											
Basalt [2]	BA1	110.8	33.8								
	BA2	44.4	13.5								
	BA3	29.9	9.1								
	BA9	17.8	5.4								

Notes:

1. Tuff is the basal unit and the total thickness was not completely intersected by any drill hole.
2. Basalt flows are not in stratigraphic order as they cross-cut the sedimentary geological units.
3. Highlighted fields indicate Lithium rich domains that are included in the Mineral Resource estimate.

The alluvium domain is material that has settled on the surface after the clay/ash layers were deposited. This material is a mixture of fine grained sandy/silty material and weathered tuffaceous cobbles and boulders from the Montana Mountains. The extents of this domain were determined based on the geological logging intervals by drill hole. The average thickness of alluvium in the drill holes is 24.3 ft (7.4 m).

The Tertiary Moat Sediment (TMS) clay and ash layers in the Thacker Pass deposit are defined as smectite or illite and are the two Lithium rich zones within the deposit. With the current processing techniques, the illite clays have a higher metallurgical recovery so differentiating between the smectite and illite clays in the geological model was important to be able to estimate the amount of material of each of these clay types. The smectite/illite domains were first differentiated based on the Mg/Li ratio where values less than or equal to 20 were classified as illite, values greater than 20 were classified as smectite.

In the clays, Lithium (Li) is positively correlated with Rubidium (Rb), Magnesium (Mg), Beryllium (Be), Cesium (Cs) and weakly correlated with Iron (Fe) and Yttrium (Y). Those seven elements were reviewed during the domaining process and were helpful in further differentiating the smectite zone between S1 and S2 by utilizing Y to help define S2; and Mg, Be and Cs to help differentiate S1. The S2 has a higher concentration of ash bands as well as a lower average Lithium value. Domaining the smectite into these two zones allowed for the model to show the separation between the lower Lithium zone and the higher Lithium zone within the smectite clays. The average thickness from the drill holes for the S2 is 94.7 ft (28.9 m) and 102.2 ft (31.2 m) for the S1.

The illite zone has been separated into three zones: I3, I2, and I1. The I2 zone is approximately 30 ft lower stratigraphically from the top of the illite/smectite contact and has very high Lithium grades. The I2 was defined by high Li, Mg and Rb values as well as its low Fe values. The I3 was defined as the illite material above the I2. The I3 was defined as the illite material below the I2. Domaining the illite this way has allowed for the high grade I2 zone to be quantified separately. The average thickness from the drill holes for the I3 is 27.3 ft (8.3 m), 27.7 ft (8.4 m) for the I2 and 77.9 ft (23.8 m) for the I1.

The Hot Pond Zone (HPZ) domain is the lower clay/ash zone that has been altered by radiant heat from the basal tuffaceous zone. The HPZ domain was set based on geological logging intervals by drill hole and a low Lithium grade at the base of the illite zone. The average thickness of HPZ in the drill holes is 37.7 ft (11.5 m).

The Tuff domain is the basal tuffaceous material and is the lowest lithological unit for the Thacker Pass deposit that has been intersected to date. From the current geological research to date, the Tuff unit is thought to be 1,000 – 3,000 ft thick. No drill hole has intersected the entire thickness of the Tuff unit. For domaining purposes, the drill hole lithological logs were reviewed and the upper contact of the Tuff was used for modeling.

The four basalt domains were set based on geological logging intervals by drill hole and the 2023 geophysical survey results. The basalt flows intruded into the clay/ash layers post deposition.

The raw statistics from the un-composited assay database for Lithium by lithological domain are shown in Table 14-3.

Table 14-3 Raw Samples Statistics (Lithium ppm)

Lithology Domain		Number of samples	Mean (ppm)	Maximum (ppm)	Minimum (ppm)
Alluvium		509	201	4,360	7
Smectite	S2	4,081	747	5,060	5
	S1	7,284	2,306	5,500	23
Illite	I3	1,911	3,018	6,120	108
	I2	1,887	5,117	8,850	194
	I1	5,555	2,439	7,770	39
HPZ		1,697	133	4,880	2
Tuff [1]		1,623	35	1,520	2
Basalt [2]		2,212	219	3,030	7

Notes:

1. Tuff is the basal unit and the total thickness was not completely intersected by any drill hole.
2. Basalt flows are not in stratigraphic order as they cross-cut the sedimentary geological units.
3. Highlighted fields indicate Lithium rich domains that are included in the Mineral Resource estimate.

14.1.2 Geological Model

A Vulcan ISIS database was designed and populated with raw geologic data from Excel datasheets containing drill hole assays, collars, lithological, and survey data. The data files were compiled and verified by Benson Chow, the QP responsible for this section of the Technical Report, from the supporting files that LAC provided. The domains were added to the lithological and assay data files as described in Section 14.1.1.

The topography surface used in the geological model was a lidar surface that was provided by LAC in 5 ft contours. The lidar surface was compared against the drill hole collar values where most drill hole collars were within +/- 5 ft of the lidar surface. Select drill holes that were within a WLC test pit were about 20 ft off from lidar as the drill holes were drilled prior to the test pit and the lidar was flown after the test pit was constructed.

Triangulated surfaces for the Alluvium, S2, S1, I3, I2, I1, Hot Pond Zone and Tuff intervals were created in Maptek's Vulcan software. In areas where there was not a lot of drill hole data, a thickness triangulation was utilized to ensure that the thickness of the intervals followed geological trends. Due to the secondary uplift of the TMS units, described in Section 7, the Tuff surface was used as a trend surface for the overlying units.

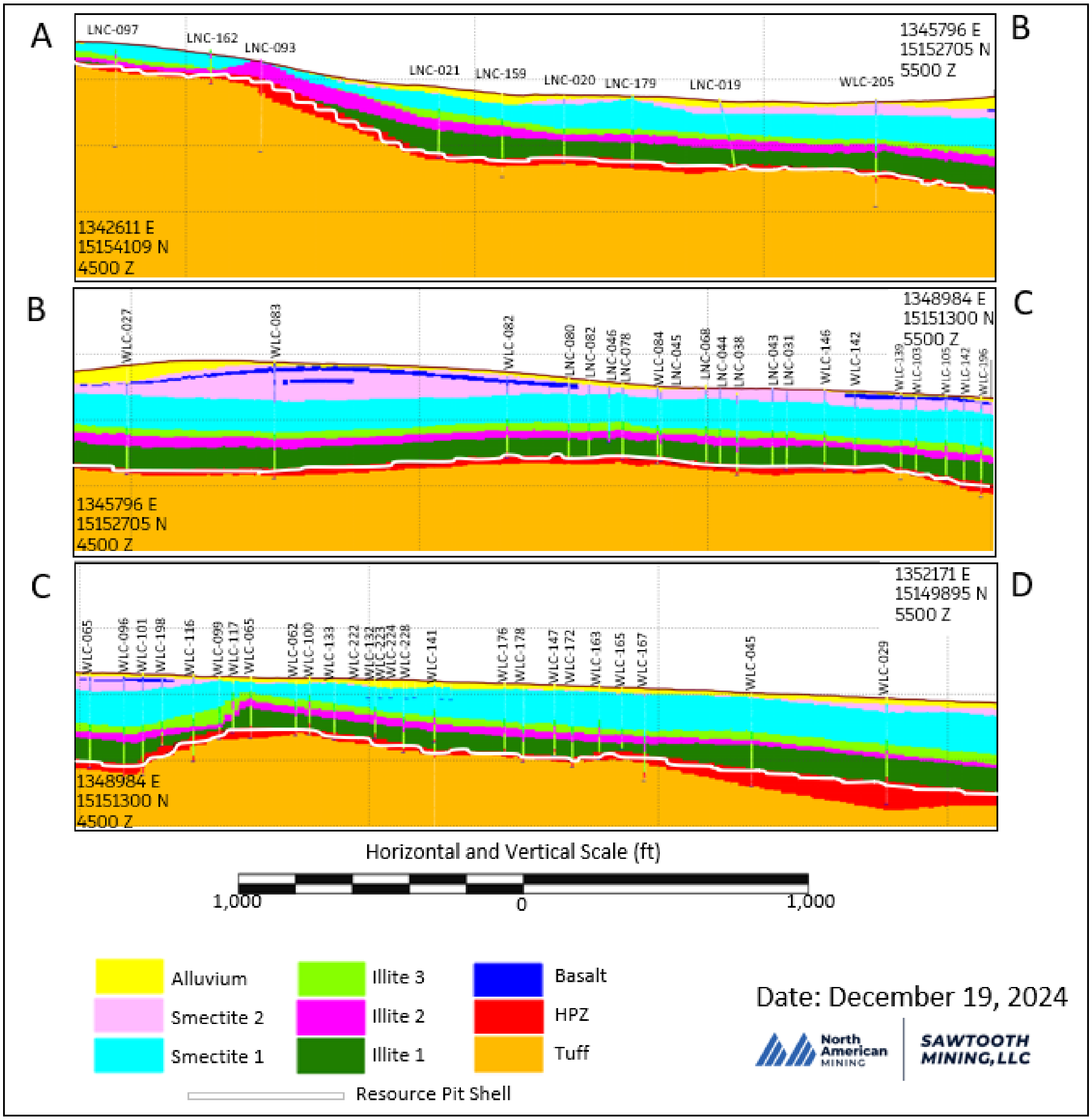
Four basalt flows were correlated based on drill hole data and the 2023 geophysical survey results. Triangulated solids for the four basalt flows were created in Maptek's GeologyCore - Vein Modeler.

From the geological surfaces, unfolding specifications were created in Vulcan for 10 different zones. Two unfolding specifications were created for variogram analysis: smectite and illite. While the remaining eight unfolding specifications were created for grade interpolation: Alluvium, Smectite 2, Smectite 1, Illite 3, Illite 2, Illite 1, HPZ, and Tuff.

While Benson Chow, the QP responsible for this section of the Technical Report, understands that there are several small-scale normal faults present throughout the Thacker Pass deposit that could lead to uncertainty near the fault traces, faults have not been included in this model. The QP believes that the unfolding specifications utilized during the interpolation help to define the structural variations introduced during the uplifts of the tuffaceous zones. The addition of the faults will help to better define local geology but will have limited impact on the global Mineral Resource estimate. It is recommended that faults be further defined and added into the model as more data is available.

Lithological cross-sectional views of the generated block model displaying the geologic units in the Thacker Pass deposit have been included as Figure 14-2 along the A-B, B-C, and C-D cross-section lines. The location of the cross section is displayed on Figure 14-1. The block model is not rotated.

Figure 14-2 Lithological Cross- Sectional Views (Looking Northeast)



14.1.3 Compositing Assay Data

A composited database was created from the raw ISIS database. A compositing run length of 5 ft was chosen based on most of the samples being taken at 5 ft intervals and wanting to have approximately three composite samples per 15 ft block height. During the creation of the composited database, the geological domains were used to separate the samples from each domain into separate composite values.

Figure 14-3 shows the raw database sample lengths and Figure 14-4 shows the composite database sample lengths. During the compositing routine, the number of samples increased to 30,293 from 26,768 due to splitting some of the larger samples into 5 ft composites. The maximum sample length of the composite database is 6 ft where it is 33 ft in the raw database.

Figure 14-3 Histogram: Raw Assay Sample Thickness (ft)

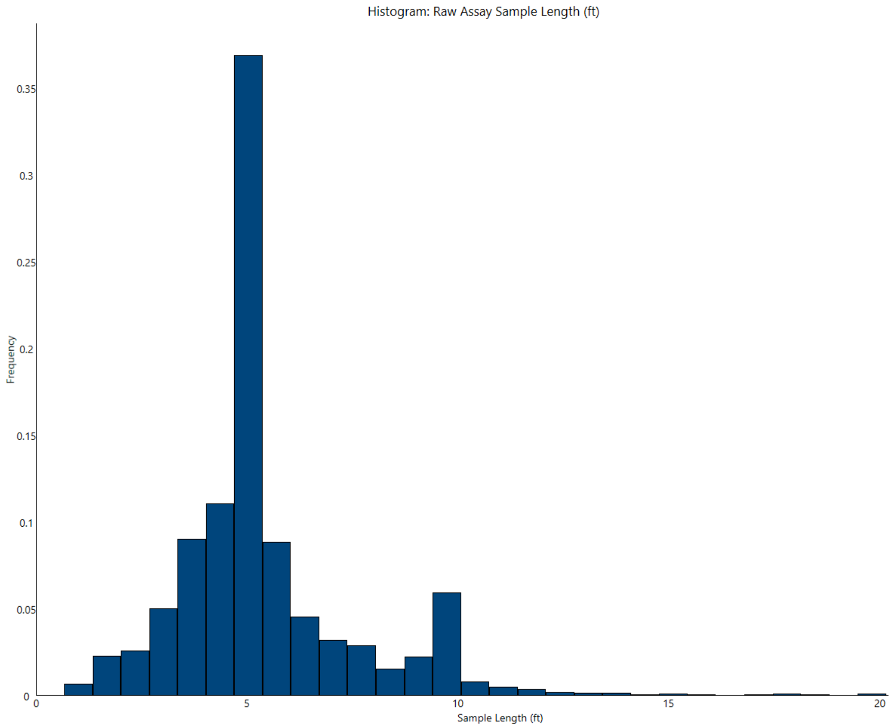
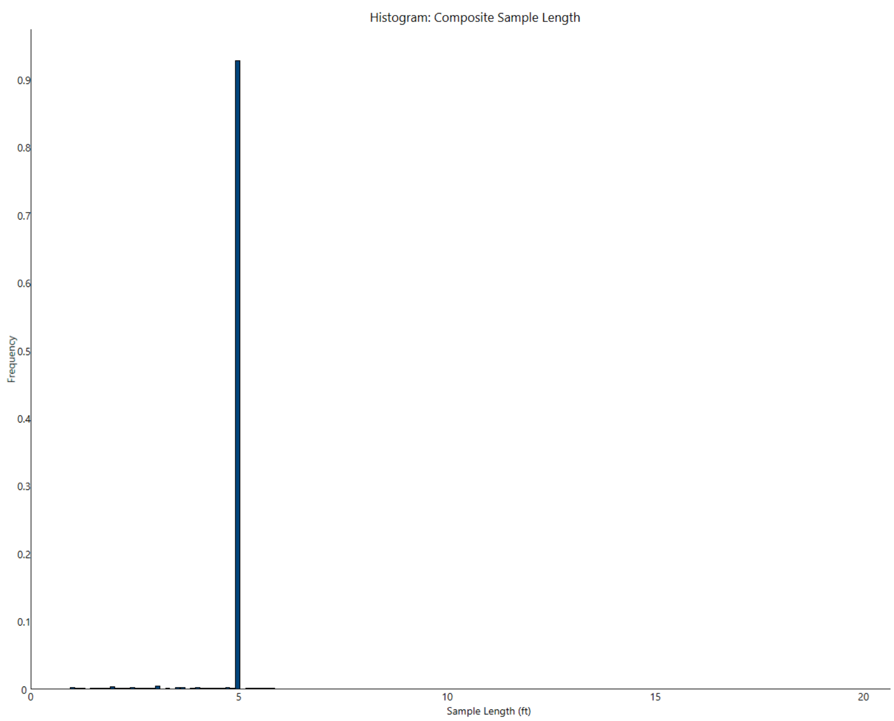


Figure 14-4 Histogram: Composite Assay Sample Thickness (ft)



The composited statistics for Lithium by lithologic domain are shown in Table 14-4. The majority of the composited samples as well as the highest average lithium grades are within the smectite and Illite domains.

Table 14-4 Composite Samples Statistics (Lithium ppm)

Lithology Domain		Number of samples	Mean (ppm)	Maximum (ppm)	Minimum (ppm)
Alluvium		1,318	175	4,360	7
Smectite	S2	4,418	722	4,844	17
	S1	7,092	2,336	5,500	30
Illite	I3	1,930	3,005	4,940	108
	I2	1,926	5,173	8,690	245
	I1	5,704	2,410	6,978	39
Hot Pond Zone		2,089	123	2,700	2
Tuff [1]		2,117	35	832	2
Basalt [2]		3,698	194	3,020	7

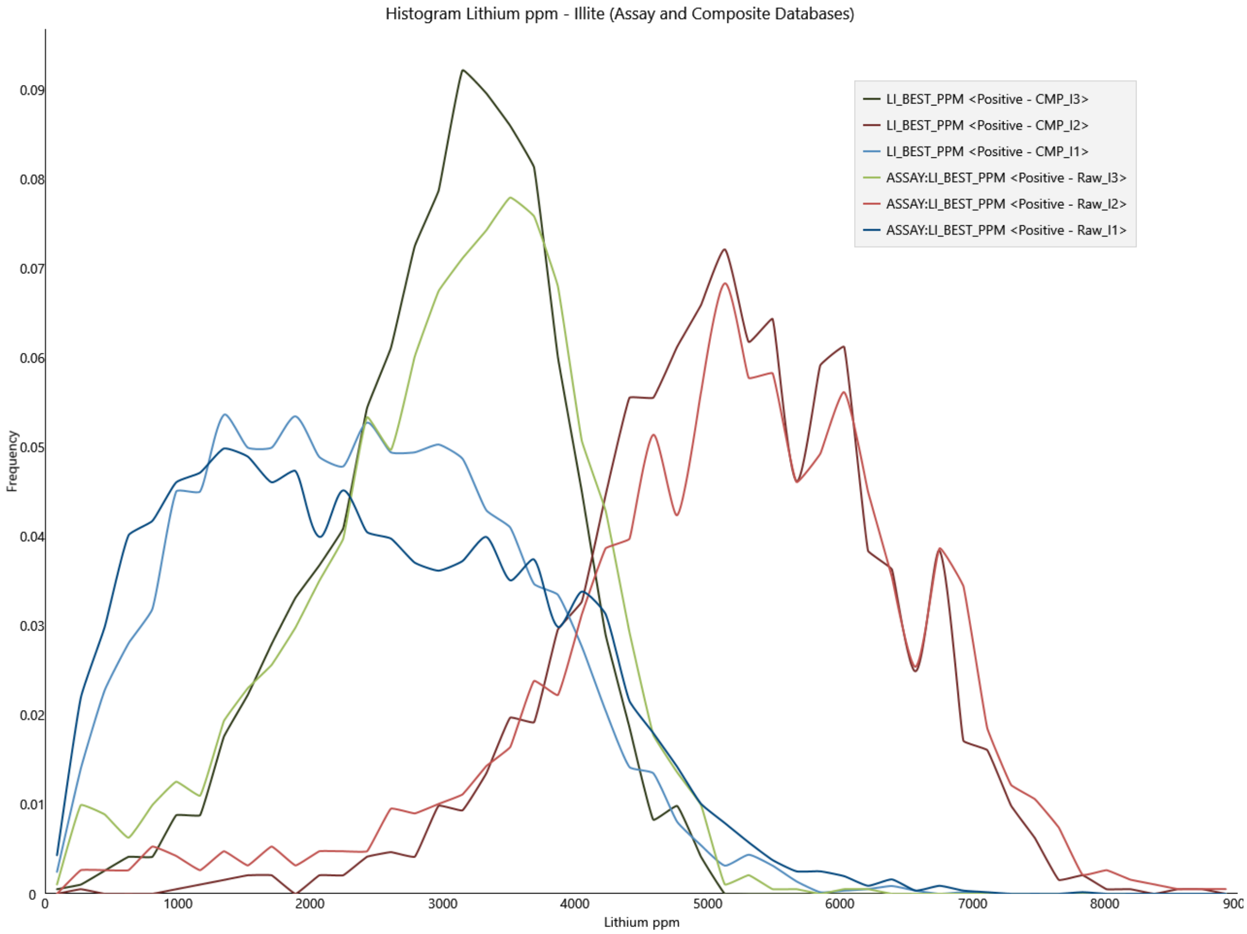
Notes:

1. Tuff is the basal unit and the total thickness was not completely intersected by any drill hole.
2. Basalt flows are not in stratigraphic order as they cross-cut the sedimentary geological units.
3. Highlighted fields indicate Lithium rich domains that are included in the Mineral Resource estimate.

When comparing the raw to composite databases for the smectite and illite domains, the maximum average difference between the two databases for Lithium grades is 56 ppm. This shows the closeness between the raw database and the composited database.

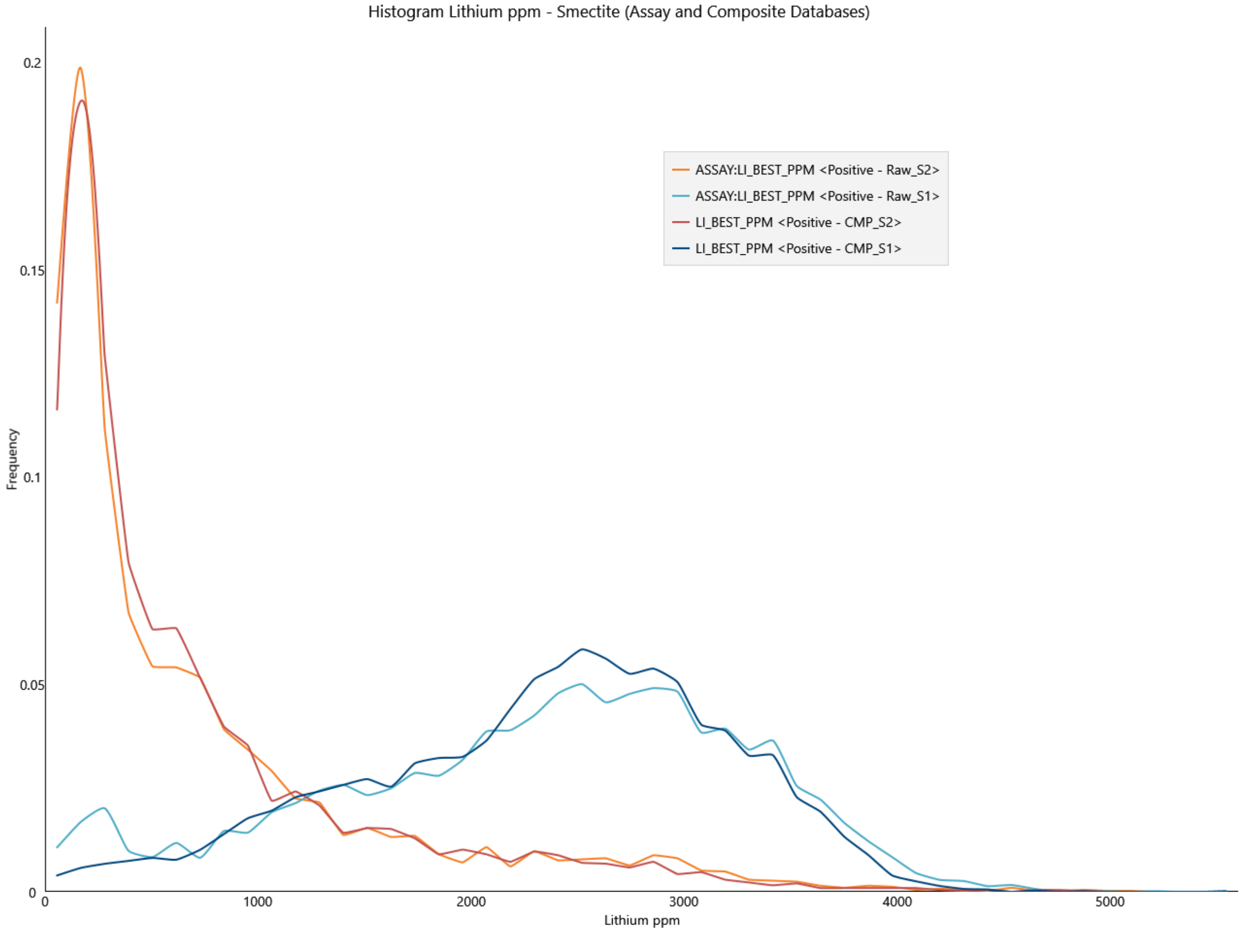
To display the distribution of Lithium grades, two histograms have been generated with the raw database and the composited database in Figure 14-5 and Figure 14-6. The histograms show a very similar distribution of lithium grades between the two datasets for each of the illite and smectite domains.

Figure 14-5 Histogram Lithium ppm – Illite (Assay and Composite Databases)



Source: Sawtooth 2024

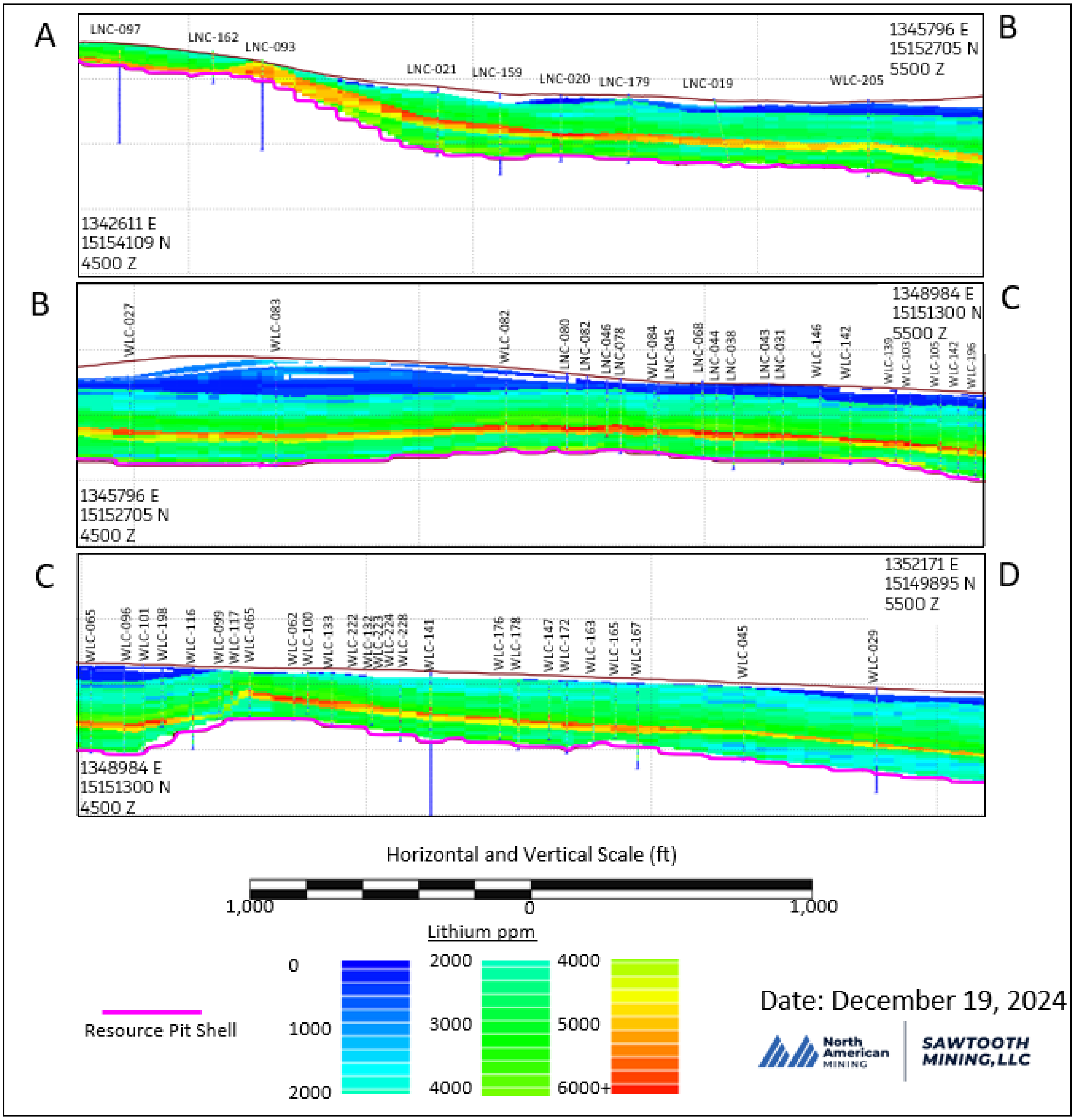
Figure 14-6 Histogram Lithium ppm – Smectite (Assay and Composite Databases)



Source: Sawtooth 2024

The lithium high-grade mineralized zone (I2) is concentrated towards the bottom third of the smectite/illite zone as shown in the cross-sectional views in Figure 14-7 (cross section line shown on Figure 14-1). Lithium grades were modeled for all domains including the waste domains, but only the smectite and illite domains are shown in the cross sections below.

Figure 14-7 Smectite and Illite – Lithium (ppm) Cross-Sections (Looking Northeast)



Note: white space blocks indicate waste zones.

14.1.4 Outliers and Grade Capping

High-grade outliers were managed through the compositing routine. The highest lithium grade of 8,850 ppm in the raw database was reduced to 8,690 ppm after the database compositing routine.

No grade capping was performed for this dataset since the nugget effect is low in this stratified deposit.

14.1.5 Variography

Variograms were constructed for the smectite and illite domains and utilized for interpreting grade into the respective domains. The smectite variogram utilized composite data from S1 and S2, while the illite variogram utilized composite data from the I1, I2, and I3. Generating variograms by lithology group allowed for the variograms to have more data and to show a better representation of the data.

A fan diagram analysis was completed in Vulcan for both the smectite and illite domains. Based on the fan diagrams, a major direction of 135° and a semi-major direction of 45° was chosen for both the smectite and illite variograms.

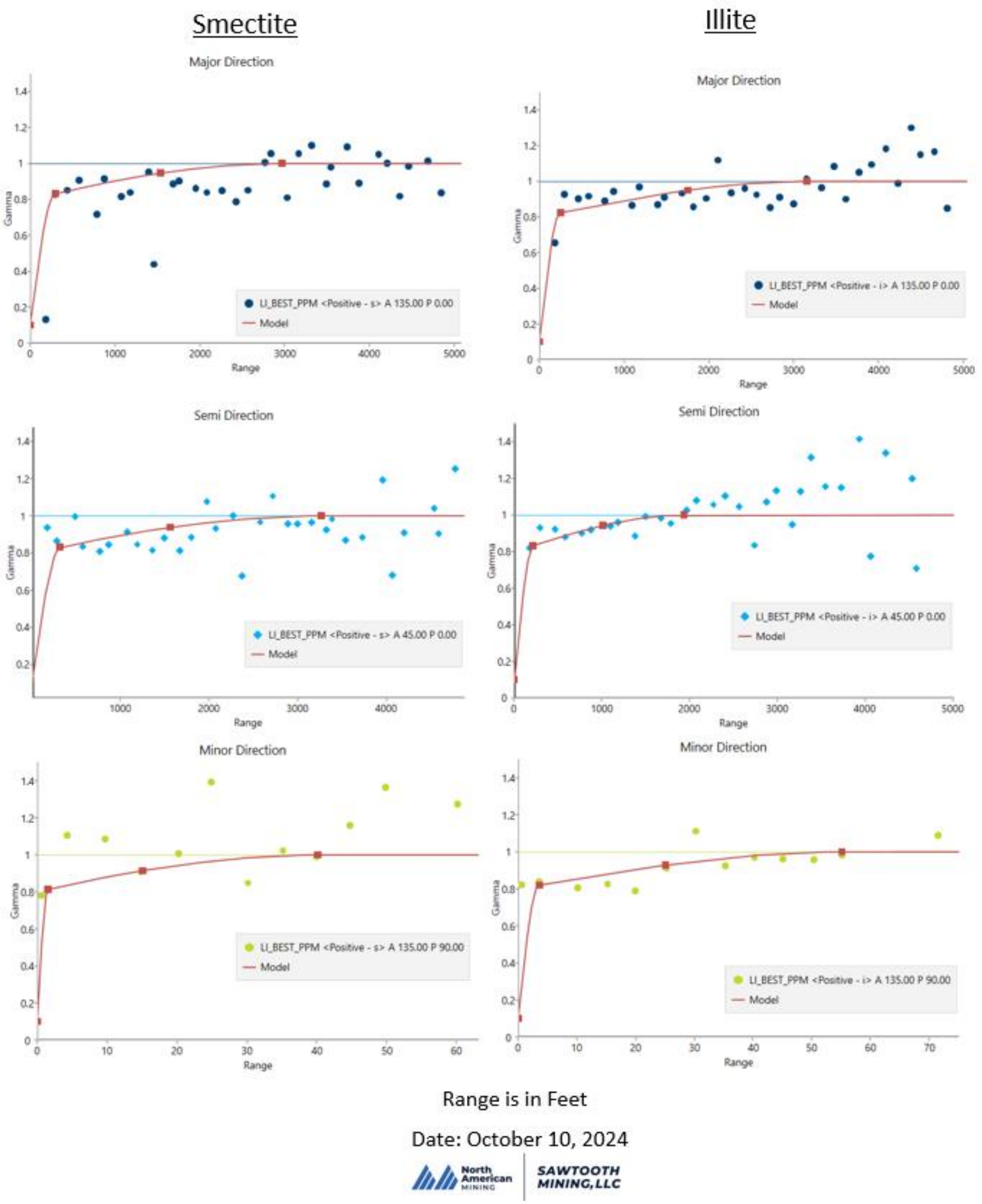
The unfolded specifications for smectite and illite were used during the creation of the variograms to search for data as structural variations occurred throughout the Thacker Pass deposit.

A summary of the variography is given in Table 14-5, and plots of each domain's experimental and modeled variograms are shown in Figure 14-8. These variograms were used in the grade estimation for each representative domain.

Table 14-5 Variogram Summary

Smectite (Nugget = 0.1)				Illite (Nugget = 0.1)			
Model Parameter	Structure 1	Structure 2	Structure 3	Model Parameter	Structure 1	Structure 2	Structure 3
Sill	0.6989	0.0164	0.1847	Sill	0.6996	0.0026	0.1978
Major (ft)	291	1,532	2,959	Major (ft)	245	1,742	3,144
Semi (ft)	317	1,560	3,259	Semi (ft)	211	1,009	1,932
Minor (ft)	1.5	15	40	Minor (ft)	3.5	25	55
Bearing (°)	135	135	135	Bearing (°)	135	135	135
Plunge (°)	0	0	0	Plunge (°)	0	0	0
Dip (°)	0	0	0	Dip (°)	0	0	0

Figure 14-8 Smectite and Illite Variograms



14.1.6 Block Model Parameters, Grade Estimation, Ash and Density

14.1.6.1 Block Model Parameters

A block model was created under the supervision of Benson Chow, the QP using Maptek's Vulcan 3D subsurface geologic modeling software. A sub-blocked block model with a parent block size of 75 ft x 75 ft x 15 ft and a minimum sub-block size of 25 ft x 25 ft x 5 ft was generated. The block model was sub-blocked in order to have tighter definition along the lithology contacts.

The origin of the block model is described in Table 14-6 in NAD 1983 UTM Zone 11N (feet).

Table 14-6 Block Model Origin (ft)

Block Model Origin (ft)	
X Coordinate	1,337,300
Y Coordinate	15,137,800
Z Coordinate	3,200

The lithological domain surfaces and solids described in Section 14.1.2 were used as hard boundaries in the block model to flag the representative blocks with the Geocode field. The domain names in the block model are detailed in Table 14-7. The smectite and illite codes (TMS_S2, TMS_S1, TMS_I3, TMS_I2 and TMS_I1) include the Lithium rich domains that are included in the Mineral Resource statement.

Table 14-7 Geological Domain Names in Block Model

Lithology Domain		Geological Domain
Alluvium		QAL
Smectite	S2	TMS_S2
	S1	TMS_S1
Illite	I3	TMS_I3
	I2	TMS_I2
	I1	TMS_I1
Hot Pond Zone		TMS_WHPZ
Tuff [1]		Tuff
Basalt [2]		Basalt

Notes:

1. Tuff is the basal unit and the total thickness was not completely intersected by any drill hole.
2. Basalt flows are not in stratigraphic order as they cross-cut the sedimentary geological units.
3. Highlighted fields indicate Lithium rich domains that are included in the Mineral Resource estimate.

The interpolation of ash percent and calculations for moisture and density are discussed in detail in sections 14.1.6.3 and 14.1.6.4 this report.

The In Situ tonnages, Run of Mine (ROM) tonnages and Extractable tonnages were added to the block model in order to accurately account for the different tonnage types. Imperial and Metric tonnages and volumes were carried in the block model along with wet and dry tonnages to allow for the flexible reporting for the mine plan schedule (imperial), metallurgical recovery processes (metric), and cost model (metric). The equations were setup in a single Vulcan Block Calculation File (BCF).

14.1.6.2 Grade Estimation

Elemental grades have been estimated throughout the block model using the composited assay database through an ordinary kriging modeling interpolation for the smectite and illite domains and an inverse distance squared for the waste domains. Each geological domain was estimated independently as shown in Table 14-8. The variogram models are based on the Lithium grades, however additional elements were also estimated with the Lithium as detailed in Table 14-9.

Table 14-8 Grade Interpolation Parameters

Domain / Pass	Variogram Model	Unfolding Spec	Search Region				Discretisation Steps (X, Y, Z)	Sample Count		Octant Limits	Drill Hole Limits		
			Bearing	Major (ft)	Semi (ft)	Minor (ft)		Min	Max	Max Samples per Octant	Max Samples per DH	Min Drill Holes	Max Drill Holes
Alluvium - 1	None - ID2	Alluvium	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Smectite 2													
1	Smectite	Smectite 2	135	900	900	15	4, 4, 1	6	10	3	3	4	6
2	Smectite	Smectite 2	135	1,500	1,500	30	4, 4, 1	6	10	3	6	3	6
3	Smectite	Smectite 2	135	2,500	2,500	45	4, 4, 1	3	10	3	6	2	6
4	Smectite	Smectite 2	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Smectite 1													
1	Smectite	Smectite 1	135	900	900	15	4, 4, 1	6	10	3	3	4	6
2	Smectite	Smectite 1	135	1,500	1,500	30	4, 4, 1	6	10	3	6	3	6
3	Smectite	Smectite 1	135	2,500	2,500	45	4, 4, 1	3	10	3	6	2	6
4	Smectite	Smectite 1	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Illite 3													
1	Illite	Illite 3	135	900	900	15	4, 4, 1	6	10	3	3	4	6
2	Illite	Illite 3	135	1,500	1,500	30	4, 4, 1	6	10	3	6	3	6
3	Illite	Illite 3	135	2,500	2,500	45	4, 4, 1	3	10	3	6	2	6
4	Illite	Illite 3	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Illite 2													
1	Illite	Illite 2	135	900	900	15	4, 4, 1	6	10	3	3	4	6
2	Illite	Illite 2	135	1,500	1,500	30	4, 4, 1	6	10	3	6	3	6
3	Illite	Illite 2	135	2,500	2,500	45	4, 4, 1	3	10	3	6	2	6
4	Illite	Illite 2	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Illite 1													
1	Illite	Illite 1	135	900	900	15	4, 4, 1	6	10	3	3	4	6
2	Illite	Illite 1	135	1,500	1,500	30	4, 4, 1	6	10	3	6	3	6
3	Illite	Illite 1	135	2,500	2,500	45	4, 4, 1	3	10	3	6	2	6
4	Illite	Illite 1	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
HPZ - 1	None - ID2	HPZ	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Tuff - 1	None - ID2	TUFF	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Basalt - 1	None - ID2	-	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6

Table 14-9 Additional Elements in Grade Interpolation

Additional Elements		
Aluminum Percentage	Lanthanum PPM	Sulfur Percentage
Arsenic PPM	Magnesium PPM	Strontium PPM
Beryllium PPM	Manganese PPM	Titanium Percentage
Calcium Percentage	Sodium Percentage	Uranium PPM
Cesium PPM	Niobium PPM	Yttrium PPM
Copper PPM	Nickel PPM	Zinc PPM
Iron Percentage	Palladium PPM	Zirconium PPM
Potassium Percentage	Rubidium PPM	

The various interpolation parameters in Table 14-8 were selected based on the following criteria:

- The variogram model selected was based on if the domain was either smectite or illite.
- The unfolding specification was selected based on the domain being estimated. The basalt domain encompasses four different basalt flows, so an unfolding specification was not created for the basalt domain.
- The bearing for the search region is based on the fan diagram analysis described in Section 14.1.5 of this report.
- The search regions were based on drill hole spacings and variogram models where 900 ft is the average distance for the closely spaced drill holes, 1,500 ft was close to the average distance of the 2^{nd} structure of the variograms and 2,500 ft was about 500 ft less than the 3^{rd} structure of the variograms. The 4th pass of 5,000 ft was utilized to infill the block model.
- The minimum and maximum samples per estimate, maximum samples per octant, and drill hole limits were tested to find a combination that worked well with the number of composites in each domain.
- A cross-sectional view of the lithium grade estimation results has been included as Figure 14-7 and shows the lithium grades through the different clay domains.

The smectite and illite Lithium statistics from the block model are shown in Table 14-10.

Table 14-10 Block Model Statistics by Domain – Lithium (ppm)

Lithology Domain		Mean (ppm)	Maximum (ppm)	Minimum (ppm)
Smectite	S2	625	4,088	47
	S1	2,161	4,269	190
Illite	I3	2,930	4,588	786
	I2	4,742	7,474	2,763
	I1	2,051	5,958	277

14.1.6.3 Ash Percentage Estimation

The ash percentage originated from the geologist's logs where a percentage of ash was estimated through visual inspections at the time of geological logging. The recordings were logged by the geologist in the lithological table.

The estimated ash percentage was then brought into the Vulcan ISIS database in the lithology table where it was utilized to create 5-ft composite samples.

The ash composite samples were then estimated into the Vulcan block model for the domains using the inverse distance squared interpolator. The interpolation passes, distances, drill hole requirements and sample requirements for the ash content as shown in Table **14-11**. The passes, distances and drill hole requirements mimic those used for grade interpolation discussed in Section 14.1.6.2. The waste domains were interpolated using one pass, while the smectite and illite domains were interpolated using four passes.

Table 14-11 Ash Content Interpolation Parameters

Domain / Pass	Unfolding Spec	Search Region				Discretisation Steps (X, Y, Z)	Sample Count		Octant Limits	Drill Hole Limits		
		Bearing	Major (ft)	Semi (ft)	Minor (ft)		Minimum Samples per Estimate	Maximum Samples per Estimate	Max Samples per Octant	Max Samples per Drill Hole	Minimum Drill Holes	Maximum Drill Holes
Alluvium - 1	Alluvium	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Smectite 2												
1	Smectite 2	135	900	900	15	4, 4, 1	6	10	3	3	4	6
2	Smectite 2	135	1,500	1,500	30	4, 4, 1	6	10	3	6	3	6
3	Smectite 2	135	2,500	2,500	45	4, 4, 1	3	10	3	6	2	6
4	Smectite 2	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Smectite 1												
1	Smectite 1	135	900	900	15	4, 4, 1	6	10	3	3	4	6
2	Smectite 1	135	1,500	1,500	30	4, 4, 1	6	10	3	6	3	6
3	Smectite 1	135	2,500	2,500	45	4, 4, 1	3	10	3	6	2	6
4	Smectite 1	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Illite 3												
1	Illite 3	135	900	900	15	4, 4, 1	6	10	3	3	4	6
2	Illite 3	135	1,500	1,500	30	4, 4, 1	6	10	3	6	3	6
3	Illite 3	135	2,500	2,500	45	4, 4, 1	3	10	3	6	2	6
4	Illite 3	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Illite 2												
1	Illite 2	135	900	900	15	4, 4, 1	6	10	3	3	4	6
2	Illite 2	135	1,500	1,500	30	4, 4, 1	6	10	3	6	3	6
3	Illite 2	135	2,500	2,500	45	4, 4, 1	3	10	3	6	2	6
4	Illite 2	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Illite 1												
1	Illite 1	135	900	900	15	4, 4, 1	6	10	3	3	4	6
2	Illite 1	135	1,500	1,500	30	4, 4, 1	6	10	3	6	3	6
3	Illite 1	135	2,500	2,500	45	4, 4, 1	3	10	3	6	2	6
4	Illite 1	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
HPZ - 1	HPZ	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Tuff - 1	TUFF	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6
Basalt - 1	-	135	5,000	5,000	60	4, 4, 1	3	10	3	6	2	6

The ash content statistics from the block model are shown in Table 14-12. The smectite and illite domains with the highest ash content include the Smectite 2 (42%) and the Illite 1 (44%), which correlates well with the number of consistent ash zones in the geologist's logs throughout the Thacker Pass deposit. The Illite 2 domain does not have a consistent thick ash zone, however the average ash content for the I2 is 22% due to the amount of ash bands present throughout the Thacker Pass deposit. It is recommended that a minimum percent of ash be applied in the future to blocks in order to account for potential visual logging errors.

Table 14-12 Block Model Statistics by Domain - Ash Content (%)

Lithology Domain		Mean (%)	Maximum (%)	Minimum (%)
Alluvium		12	100	0
Smectite (Ore)	S2	42	100	0
	S1	21	95	0
Illite (Ore)	I3	32	100	0
	I2	22	99	0
	I1	44	100	0
Hot Pond Zone		51	100	0
Tuff [1]		19	100	0
Basalt [2]		12	100	0

Notes:

1. Tuff is the basal unit and the total thickness was not completely intersected by any drill hole.
2. Basalt flows are not in stratigraphic order as they cross-cut the sedimentary geological units.
3. Highlighted fields indicate Lithium rich domains that are included in the Mineral Resource estimate.

14.1.6.4 Density Estimation

Average densities as described in Section 11.4 of this Technical Report and in Table 14-13 were included in the block model calculations.

Table 14-13 Average Density Values Used in the Resource Model

Lithology	Average of Dry Density (g/cc)	Average of Moisture Content (wt.%)
Alluvium	1.71	2.50
Basalt	2.23	3.28
TMS Smectite	1.80	16.57
TMS Illite	1.96	10.96
TMS Ash	1.62	18.74
HPZ	1.88	9.64
Tuff	2.00	9.83

Note:

1. Highlighted fields indicate Lithium rich domains that are included in the Mineral Resource estimate.

In order to account for the density appropriately, the ash percentage in the block model was utilized to weight average the clay and ash density average values for dry bulk density, wet bulk density, and moisture.

The block model calculations for illite and smectite are shown below:

Illite
Density g/cc Dry = (((1.62*Ash Percent)+(1.96*(100- Ash Percent)))/100)
Moisture = (((18.74* Ash Percent)+(10.96*(100- Ash Percent)))/100)

Smectite
Density g/cc Dry = (((1.62* Ash Percent)+(1.80*(100- Ash Percent)))/100)
Moisture = (((18.74* Ash Percent)+(16.57*(100- Ash Percent)))/100)

The Density statistics from the block model are shown in Table 14-14. The waste domains (Alluvium, Hot Pond Zone, Tuff and Basalt) match the average values noted in Table 14-13 as there was no weight averaging with the ash content for the waste domains.

In Table 14-14 for the smectite and illite domains, when the maximum values are equal to the average density values for smectite and illite in Table 14-13 the ash content is 0%. Similarly, when the minimum values for smectite and illite are equal to average density value for ash in Table 14-13 the ash content is 100%.

The 2022 Technical Report utilized an average density value of 1.79 g/cc for the smectite and illite domains based on the analysis that had been completed at that time. With the additional density sampling completed by LAC in 2023 (Section 11.4), the individual values for smectite, illite and ash are better understood. When the average density values noted in Table 14-14 are incorporated into the block model with consideration for the ash content, the Illite domains are heavier than the 2022 Technical Report average density value of 1.79 g/cc. The smectite domains are closer to the 2022 Technical Report average density value of 1.79 g/cc. Based on the additional testing completed in 2023, Benson Chow, the QP responsible for this section of the Technical Report supports the changes to the density values.

As previously discussed, the Smectite 2 and Illite 1 domains have the highest ash values for smectite and illite, correspondingly, these two domains have the lowest density values for smectite and illite, respectively. Additionally, Illite 2 has the lowest ash value and the highest density value for illite (Table 14-14).

Table 14-14 Block Model Statistics by Domain – Dry Density (g/cc)

Lithology Domain		Mean (g/cc)	Maximum (g/cc)	Minimum (g/cc)
Alluvium		1.71	1.71	1.71
Smectite	S2	1.74	1.80	1.62
	S1	1.78	1.80	1.63
Illite	I3	1.88	1.96	1.62
	I2	1.91	1.96	1.62
	I1	1.86	1.96	1.62
Hot Pond Zone		1.88	1.88	1.88
Tuff [1]		2.00	2.00	2.00
Basalt [2]		2.23	2.23	2.23

Notes:

1. Tuff is the basal unit and the total thickness was not completely intersected by any drill hole.
2. Basalt flows are not in stratigraphic order as they cross-cut the sedimentary geological units.
3. Highlighted fields indicate Lithium rich domains that are included in the Mineral Resource estimate.

14.1.6.5 Mass and Geometallurgical Recoveries

Mining recoveries were applied to the ROM and Extractable tonnages on a block by block basis. However, only In-Situ tonnages were reported for the Mineral Resource estimate. ROM and Extractable tonnages were utilized during mine planning and the Mineral Reserve estimate (see Section 15).

Plant process recovery factors and equations were provided by LAC and applied to the block model as noted in Section 14.1.6.1 and Section 15. For the purposes of the Mineral Resource pit optimization and economic resource pit-shell, an average recovery of 73.8% was provided by LAC and then rounded down to 73.5%. This average value was utilized instead of the individual block metallurgical values to determine the cutoff grade for resources and the economic pit shell.

Metallurgical Recovery averages from the block model by domain are shown in Table 14-15. As noted previously, smectite has a lower mean recovery than illite.

Table 14-15 Block Model Statistics by Domain – Metallurgical Recovery (%)

Lithology Domain		Mean (%)	Maximum (%)	Minimum (%)
Smectite	S2	66%	86%	0%
	S1	70%	86%	0%
Illite	I3	84%	86%	28%
	I2	81%	86%	56%
	I1	81%	86%	38%

14.1.6.6 Model Validation

Geological model validation included comparing drill holes to the triangulated surfaces with cross sections and plan view interrogations. The block model geological domain field was also interrogated in cross sectional view for correct flagging, consistency to the triangulated surfaces, and accuracy with the drill holes.

Ash interpolation was validated with histograms and statistics by domain by comparing the raw database values to the composite database, and then to the block model. Cross sectional block model interrogations were also completed.

Density and moisture validations were completed on a block by block basis to ensure that the formulas were applied correctly. Additional validation included histogram and statistical analysis by domain to review minimums, maximums and averages values.

Block model parameters with tonnage, volumes, and metallurgical recovery were validated on a block by block basis to ensure that the formulas were applied correctly.

The grades interpolated into the block model were validated in a variety of different ways as noted below:

- Histograms were generated by domain to compare the Raw Database, Composite database and the Block Model. This was done to check that the distribution of grades stayed consistent.
- Scatter plots were created by domain comparing the block model values against the composite databases. This was done to show the representativeness of the block model compared to the input data set.
- Cross Sections were created to review the trends of the grades to ensure that the unfolding was behaving as expected, grade fluctuations were supported by drilling data, and there was grade continuity throughout the block model.
- Regularized block models were created by domain to review the average trends of the grade in plan view. These were also compared against drilling data to ensure accuracy.
- Lithium swath plots by domain were created to compare the composite data to the Ordinary Kriging estimate, Nearest Neighbor estimate and Inverse Distance estimate.
- Simulation was performed for Lithium where 100 realizations were created to validate the Ordinary Kriging interpolation.

14.1.7 Cutoff Grade and Pit Optimization

The CIM 2014 Definition Standards state that a Mineral Resource is a "concentration of occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction."

For the determination of reasonable prospects for eventual economic extraction, the Mineral Resource QP has utilized a cutoff grade (CoG) for lithium ppm with inputs from Table 14-16 and the following equation. The values below are based on the 2022 Technical Report and have been escalated to Q2-2024 dollars.

Based on the Q2 2024 Benchmark pricing forecast, the average long term Lithium price was $29,000/tonne. Benson Chow, the QP responsible for this section of the Technical Report, has relied on LAC to provide this price, but is in agreement with the long term forecast price for the use in Mineral Resource determination of Reasonable Prospects for Eventual Economic Extraction. Please see Section 19 of this Technical Report for further discussion on the justification for Lithium pricing.

Table 14-16 Cutoff Grade Inputs

Item	Units	Value – Metric	Value – Imperial
Li_2CO_3 Price	$/t	29,000	26,308
Convert Li_2CO_3 to Li		5.3228	5.3228
Li Price	$/t	154,361	140,034
Royalties (GRR)	%	1.75	1.75
Royalties (GRR) as a function of Li	$/t	2,701	2,451
Processing Recovery	%	73.5	73.5
Price per Recovered tonne Li	$/t	111,470	101,124
Mining Cost per dry tonne of ore mined	$/t	9.05	8.25
Processing Cost per dry tonne of ore mined	$/t	86.35	78.50
Operating Cost per dry tonne of ore mined	$/t	95.40	86.76

Notes:

- Cost estimates are as of the 2022 Technical Report and have been escalated to 2024 dollars
- Lithium price estimate is as of Q2 2024 (Benchmark Q2, 2024). See Section 19.
- GRR refers to Gross Revenue Royalty

$$\text{Economic Mining CoG} = \frac{\text{Operating Cost per Tonne Processed}}{\text{Price per Recovered Tonne Lithium}} = 858 \text{ ppm}$$

A resource constraining pit shell has been derived from performing a pit optimization estimation using Vulcan Software. The pit optimization utilized the inputs in Table 14-17 and the lithium cutoff grade of 858 ppm Li to determine the constraining resource pit shell. Figure 14-9 shows the estimated resource area determined through pit optimization.

In addition to the costs detailed in the Table 14-17, in areas where the Mineral Resources lie underneath the processing plant or waste disposal areas, costs that would be required for the removal of those items were included in the evaluation of the Mineral Resource pit.

The Mineral Resource pit is only within the BLM mining claims and private property that LAC has rights to.

Table 14-17 Pit Optimizer Parameters

Parameter	Unit	Value – Metric	Value – Imperial
Li_2CO_3	$/t	29,000	26,308
Li Price	$/t	154,361	140,034
Processing Cost (including G&A)	$/t ROM	86.35	78.50
Process Recovery	%	73.5	73.5
Mining Cost for Waste and Topsoil (No D&B)	$/t	2.70	2.46
Mining Cost for Basalt (Included D&B)	$/t	4.00	3.65
Ore Incremental Haulage	$/t	1.21	1.10
Cost to Feed Ore to Plant (feeder stockpiles)	$/t	1.04	0.95
Mining Recovery Factor	%	100	100
Royalties (GRR)	$/t	2,701	2,451
Pit Wall Slope Factor	%	27	27

Notes:

- Cost estimates are as of the 2022 Technical Report and have been escalated to 2024 dollars
- Lithium price estimate is as of Q2 2024 (Benchmark Q2, 2024)

14.1.8 Resource Classification

The CIM 2014 Definition Standards state that:

"An Inferred Mineral Resource is based on limited information and sampling gathered through appropriate sampling techniques from locations such as outcrops, trenches, pits, workings and drill holes. Inferred Mineral Resources must not be included in the economic analysis, production schedules, or estimated mine life in publicly disclosed Pre-Feasibility or Feasibility Studies, or in the Life of Mine plans and cash flow models of developed mines. Inferred Mineral Resources can only be used in economic studies as provided under NI 43-101.

There may be circumstances, where appropriate sampling, testing, and other measurements are sufficient to demonstrate data integrity, geological and grade/quality continuity of a Measured or Indicated Mineral Resource; however, quality assurance and quality control, or other information may not meet all industry norms for the disclosure of an Indicated or Measured Mineral Resource Under these circumstances, it may be reasonable for the Qualified Person to report an Inferred Mineral Resource if the Qualified Person has taken steps to verify the information meets the requirements of an Inferred Mineral Resource.

Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Pre-Feasibility Study which can serve as the basis for major development decisions.

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.

Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve."

During the Ordinary Kriging grade estimation process for each domain, blocks were populated with the variables for distance to sample, number of holes, and number of samples for estimation. Histograms of the variables for distance to samples, number of holes, and number of samples for estimation were plotted and analyzed to establish ranges for each classification class. Quartiles, minimum, median, and maximum values were used to establish the ranges for each classification. Table 14-18 outlines all the sampling requirements for each classification class.

Table 14-18 Resource Classification

Category	Distance (ft)	Holes	Samples
Measured	900	3	10
Indicated	1,500	2	10
Inferred	2,500	2	9

Blocks were analyzed using the results in Table 14-18 by searching the block model for the corresponding Ordinary Kriging distance to samples, number of holes, and number of samples.

The resulting classification blocks were post processed to remove isolated classification blocks and improve geologic continuity. Additionally, several areas were downgraded based on the following geological risks:

- Measured blocks in the southern basin were downgraded to Indicated due to the lack of Metallurgical Analysis south of the highway
- Measured blocks on the eastern portion of the deposit were downgraded to Indicated due to the large basalt flow and potential risk in its exact location and a lack of density samples.
- Indicated blocks on the far east side of the property were downgraded to Inferred back on a lack of Indicated continuity

A view of the classified resource block model is presented in Figure 14-9. Figure 14-10 shows the resource classification in cross-sectional view along the A-B, B-C, and C-D section lines shown in Figure 14-9.

Figure 14-9 Classified Resource Block Model

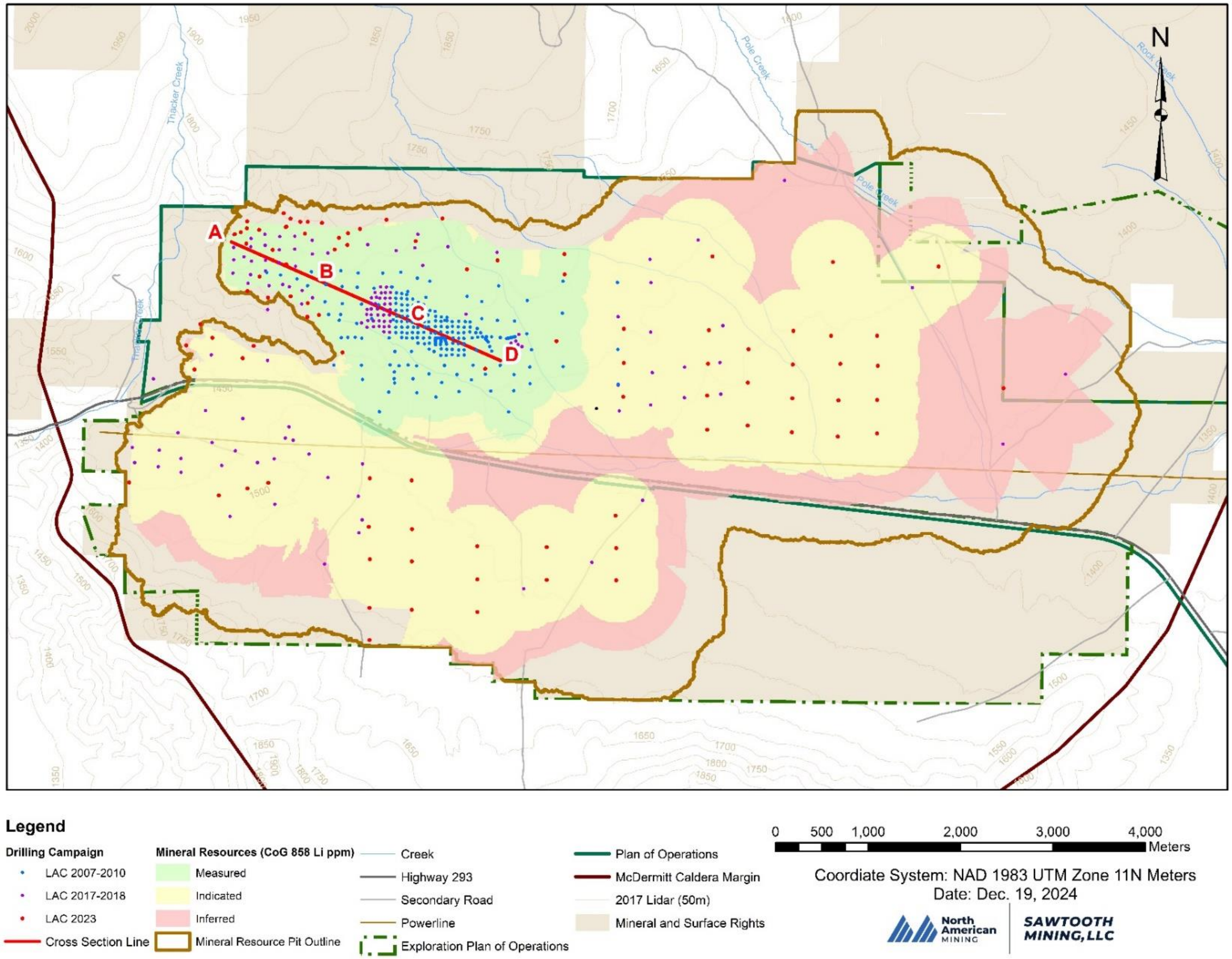
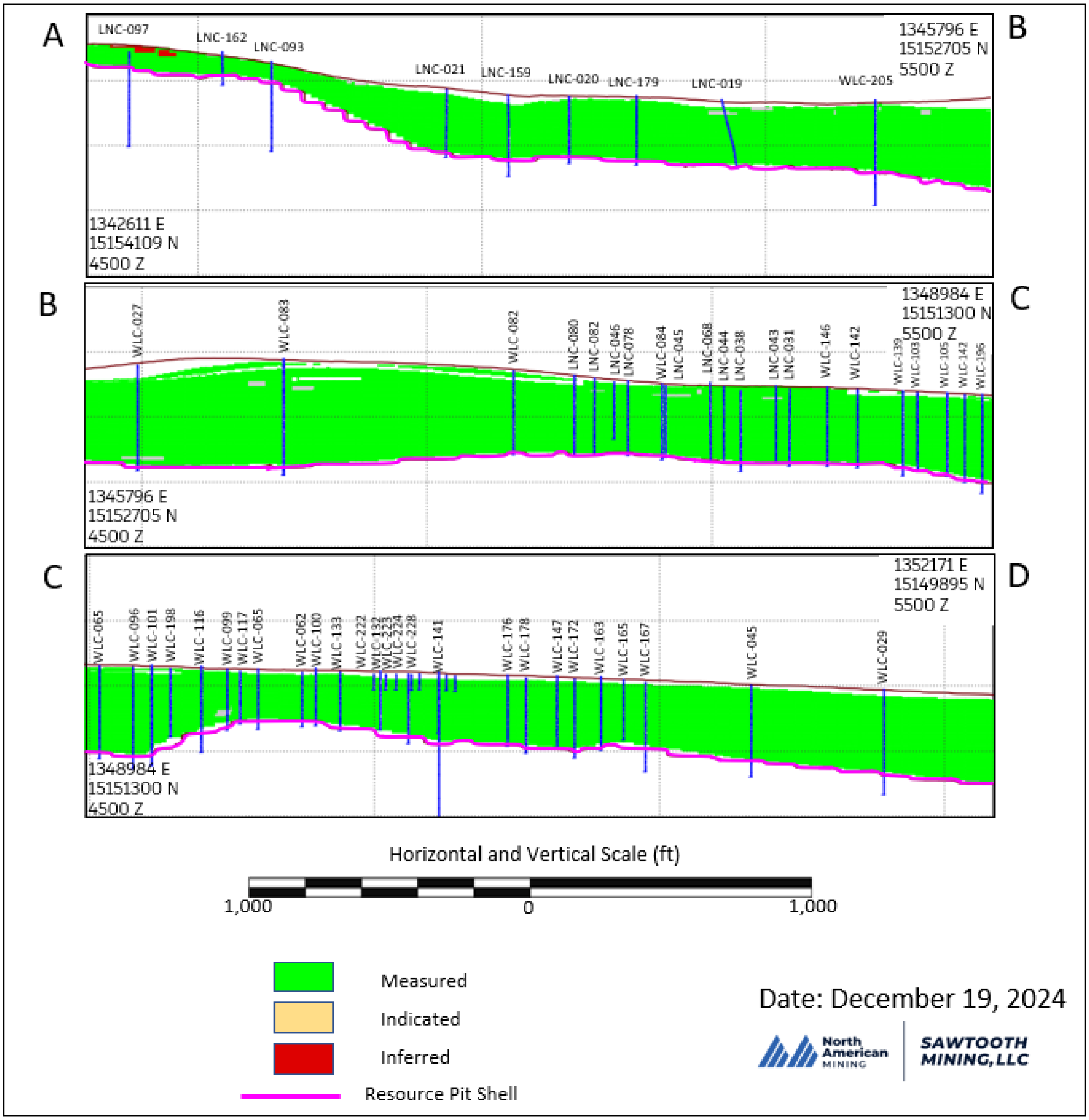


Figure 14-10 Cross-Sectional View of Classified Block Model (Looking Northeast)



14.1.9 Mineral Resource Estimate

The statement of Mineral Resources for the Project with an effective date of December 31, 2024 is presented in Table 14-19. Mineral Resources are reported inclusive of Mineral Reserves. All tonnages presented are estimates and have been rounded accordingly. Mineral Resources were estimated using the 2019 CIM Best Practices Guidelines and are reported using the 2014 CIM Definition Standards.

Table 14-19 Mineral Resources Estimate with an effective date of December 31, 2024

Classification	Density (g/cc)	Lithium (ppm)	In Situ Dry (Million Metric Tonnes)	In Situ LCE Dry (Million Metric Tonnes)	Metallurgical Recovery (%)
Measured					
Smectite 2	1.74	1,160	59.5	0.4	74%
Smectite 1	1.77	2,390	188.1	2.4	64%
Subtotal - Smectite	**1.76**	**2,090**	**247.6**	**2.8**	**66%**
Illite 3	1.86	2,980	74.2	1.2	84%
Illite 2	1.90	5,020	64.8	1.7	81%
Illite 1	1.81	2,510	174.2	2.3	83%
Subtotal - Illite	**1.84**	**3,140**	**313.2**	**5.2**	**83%**
Subtotal - Measured	**1.81**	**2,680**	**560.8**	**8.0**	**76%**
Indicated					
Smectite 2	1.74	1,240	577.8	3.8	67%
Smectite 1	1.77	2,220	1,328.5	15.7	62%
Subtotal - Smectite	**1.76**	**1,920**	**1,906.3**	**19.5**	**64%**
Illite 3	1.86	2,970	197.4	3.1	84%
Illite 2	1.88	4,860	154.6	4.0	81%
Illite 1	1.80	1,930	966.9	9.9	81%
Subtotal - Illite	**1.82**	**2,490**	**1,318.9**	**17.1**	**81%**
Subtotal - Indicated	**1.79**	**2,150**	**3,225.2**	**36.5**	**71%**
Measured + Indicated					
Smectite 2	1.74	1,230	637.3	4.2	68%
Smectite 1	1.77	2,240	1,516.6	18.1	62%
Subtotal - Smectite	**1.76**	**1,940**	**2,153.8**	**22.2**	**64%**
Illite 3	1.86	2,980	271.7	4.3	84%
Illite 2	1.89	4,900	219.4	5.7	81%
Illite 1	1.80	2,020	1,141.1	12.3	81%
Subtotal - Illite	**1.82**	**2,620**	**1,632.2**	**22.3**	**82%**
Subtotal - Measured + Indicated	**1.79**	**2,230**	**3,786.0**	**44.5**	**72%**
Inferred					
Smectite 2	1.73	1,130	186.5	1.1	62%
Smectite 1	1.78	1,990	1,145.1	12.1	73%
Subtotal - Smectite	**1.77**	**1,870**	**1,331.6**	**13.2**	**71%**
Illite 3	1.87	2,970	108.1	1.7	84%
Illite 2	1.89	4,750	86.1	2.2	81%
Illite 1	1.80	1,830	455.7	4.4	80%
Subtotal - Illite	**1.83**	**2,470**	**649.9**	**8.3**	**81%**
Subtotal - Inferred	**1.79**	**2,070**	**1,981.5**	**21.6**	**75%**

Notes:

1. Mineral Resource Estimate has been prepared by Benson Chow, RM-SME.
2. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
3. The Mineral Resource model has been generated using Imperial units. Metric tonnages shown in table are conversions from the Imperial Block Model.
4. Mineral Resources are in situ and are reported inclusive of 1,056.7 million metric tonnes (Mt) of Mineral Reserves and 14.3 Mt of LCE (**Section 15**).
5. Mineral Resources are reported using an economic break-even formula: "Operating Cost per Resource Short Ton"/"Price per Recovered Short Ton Lithium" * 10^6 = ppm Li Cutoff. "Operating Cost per Resource Short Ton" = US$86.76, "Price per Recovered Short Ton Lithium" is estimated: "Lithium Carbonate Equivalent (LCE) Price" * 5.3228 *(1 – "Royalties") * "Metallurgical Recovery". Variables are "LCE Price" = US$26,308/Short Ton ($29,000/tonne) Li_2CO_3, "GRR" = 1.75% and "Metallurgical Recovery" = 73.5%
6. Presented at a cutoff grade of 858 ppm Li. and a maximum ash content of 85%
7. A mineral resource constraining pit shell has been derived from performing a pit optimization estimation using Vulcan software and the same economic inputs as what was used to calculate the cutoff grade.
8. The conversion factor for lithium to LCE is 5.3228
9. Applied density for the mineralization is weighted in the block model based on clay and ash percentages in each block and the average density for each lithology (**Section 14.1.6.4**)
10. Measured Mineral Resources are in blocks estimated using at least 3 drill holes and 10 samples where the closest sample during estimation is less than or equal to 900 ft. Indicated Mineral Resources are in blocks estimated using at least 2 drill holes and 10 samples where the closest sample during estimation is less than or equal to 1,500 ft. Inferred Mineral Resources are in blocks estimated using at least 2 drill holes and 9 samples where the closest sample during estimation is less than or equal to 2,500 ft.
11. Tonnages and grades have been rounded to accuracy levels deemed appropriate by the QP. Summation errors due to rounding may exist.

12. Mineral Resources are presented on a 100% basis. LN owns the Project. Lithium Americas holds a 62% interest in LN and General Motors owns the remaining 38%.

14.1.9.1 Mineral Resource Uncertainty

The sources of uncertainty present in the Mineral Resource estimate are described throughout this TR and include:

- Drilling methods
- Sampling methods
- Data processing and handling
- Bulk density determination
- Geological modeling and domain determination
- Geology and grade continuity
- Unrecognized faults in the geological model
- Geostatistical analysis
- Grade modeling
- Mineral Resource estimation

The drilling methods, sampling methods and data processing and handling that were completed by LAC follow internal procedures and protocols and are appropriate for the Thacker Pass deposit type. Benson Chow, the QP responsible for this section of the Technical Report, reviewed the procedures for drilling and sampling and audited the database for compliance with original documents. During the audit, minor errors were found that will not materially affect the Mineral Resource estimate. Since these items are handled on a drill hole basis and not by resource classification, all three resource classifications have a low uncertainty.

The bulk density is described in detail in Section 11.4. There are risks to using an average bulk density value and these concerns have been incorporated into the mineral resource classification. Areas outside of the main concentration of bulk density sampling have not been well sampled for bulk density, that is why Measured Resources have been estimated exclusively where there are some bulk density measurements. The bulk density uncertainty for Measured Resources is determined to be Low/Moderate since there is still some uncertainty with using average density values. Indicated Resources have an uncertainty of Moderate for bulk density, and Inferred Resources have a Moderate/High bulk density uncertainty.

The geological modeling, fault mapping and domain determination are subject to the drilling that has been completed. The domains utilized in this Mineral Resource estimate are based on the lithological descriptions from the geological logging and the assay grade values. Fault mapping has not been utilized to include the normal faults throughout the deposit in the current geological model. However, through the use of unfolding during grade estimation, structural deformation is captured in the resulting grade model. Since the domaining and geological model are based on drill holes, the uncertainty for the deposit increases as the drill hole spacing increases. Therefore, Measured is thought to have a low level of uncertainty, Indicated is thought to have a low/moderate level of uncertainty, and Inferred is thought to have a moderate/high level of uncertainty for geological modeling and domain determination.

Similarly, the geology and grade continuity are also subject to the drilling that has been completed. Extensive work has been completed by LAC to understand the regional geology, local geology, and mineralization and this information was utilized when the exploration drilling programs were designed. The drilling results from these exploration programs have left a well-defined resource and grade continuity. Additional drilling will likely change the local values within the resource, but the global grade trends will likely stay fairly similar to the current interpretation. Since the change in geology and grade continuity are based on drill holes, the uncertainty for the deposit increases as the drill hole spacing increases. Therefore, Measured is thought to have a low level of uncertainty, Indicated is thought to have a low/moderate level of uncertainty, and Inferred is thought to have a moderate/high level of uncertainty for the geology and grade continuity.

Benson Chow completed geostatistical analysis utilizing the complete composite database regardless of resource classification. The procedures and analysis that were performed during the geostatistical analysis are well known procedures. Since the analysis was handled on a total drill hole basis and not by resource classification, all three resource classifications have a low uncertainty for the geostatistical analysis. The geostatistical analysis was used to interpret the grade through ordinary kriging into the block model. This interpolation utilized parameters from the variograms, other parameters that Benson Chow determined to be appropriate, and the composite drill hole sample database. Benson Chow performed validation to ensure that the grade model is accurate for the Thacker Pass deposit and current drilling. Similar to the geological modeling, the grade modeling is subject to the drilling that has been completed. Additional drilling will likely change the grade values at a local scale, but not materiality at a global scale. Since the change in grade values are based on drill holes, the uncertainty for the Thacker Pass deposit increases as the drill hole spacing increases. Therefore, Measured and Indicated are thought to have a low level of uncertainty and Inferred is thought to have a low/moderate level of uncertainty for grade modeling.

The Mineral Resource Estimate is based on a cutoff grade analysis, an optimized pit shell, and drill hole spacing based on geostatistical analysis. The Mineral Resource was also assessed where it was estimated under major infrastructure such as waste piles and the plant. Some uncertainties exist under the processing plant island and due to the potential risk, no measured resources were classified in this area. The Mineral Resource estimate carries the uncertainties of the above-mentioned topics as those are utilized to estimate the tonnages and grades of the Thacker Pass deposit. Based on this, Benson Chow believes that the Measured has a low uncertainly, Indicated is low/moderate and Inferred is moderate/high for the Mineral Resource estimate.

Table 14-20 shows a tabular summary of the resource classification uncertainty.

Table 14-20 Resource Classification Uncertainty Summary

Uncertainty Type	Measured Uncertainty	Indicated Uncertainty	Inferred Uncertainty
Drilling	Low	Low	Low
Sampling	Low	Low	Low
Data Processing and Handling	Low	Low	Low
Bulk Density	Low/Moderate	Moderate	Moderate/High
Geological Modeling and Domain determination	Low	Low/Moderate	Moderate/High
Geology and Grade Continuity	Low	Low/Moderate	Moderate/High
Geostatistical Analysis	Low	Low	Low
Grade Modeling	Low	Low	Low/Moderate
Mineral Resource Estimate	Low	Low/Moderate	Moderate/High

14.1.9.2 Comparison to Previous Estimate

The Mineral Resources have significantly increased since the Mineral Resource Estimate as of November 2, 2022 was published. Table 14-21 shows both the difference between the November 2, 2022 and the December 31, 2024 estimate as well as the percent change. The major factors that attributed to this change include:

- Additional drill holes from the 2023 drilling campaign allowed for more Measured, Indicated and Inferred Mineral Resources in the southern and eastern portions of the property.
- Updating the domaining to include lithological domains has allowed for the grade interpretation to better align with mineralization. This has decreased the amount of grade smearing along the contacts between the various domains and subsequently increased the average Lithium grade values and tonnages.
- Utilizing the non-declustered composite database in the Ordinary Kriging estimation has attributed to the increase in average Lithium grade values and tonnages.
- An increase in the estimate Lithium price from 2022 of $22,000 to 2024 of $29,000 has allowed for the cutoff grade to drop and for more tonnages to be included in 2024 Mineral Resource statement.
- Additional density sampling has allowed for a more robust determination of density for the Thacker Pass deposit.

Table 14-21 Mineral Resources Comparison to Previous Estimate

Classification	Difference (2024-2022)			Percent Change (2024 - 2022/2022)		
	Lithium (ppm)	In Situ Dry (Million Metric Tonnes)	In Situ LCE Dry (Million Metric Tonnes)	Lithium (ppm)	In Situ Dry (Million Metric Tonnes)	In Situ LCE Dry (Million Metric Tonnes)
Measured	230	26.1	1.0	9%	5%	14%
Indicated	300	2,302.7	27.4	16%	250%	301%
Measured + Indicated	**160**	**2,328.8**	**28.4**	**8%**	**160%**	**177%**
Inferred	200	1,684.3	18.6	11%	567%	619%

14.2 Comments

Benson Chow, the QP responsible for this section of the Technical Report, is of the opinion that the resource estimation methodology is in general accordance with the 2019 CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines and uses the definitions in 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves for the classification of Mineral Resources.

Potential risk factors that could affect the Mineral Resource estimates include but are not limited to large changes in the market pricing, commodity price assumptions, material density factor assumptions, material ash estimations, fault mapping, future geotechnical evaluations, metallurgical recovery assumptions, mining and processing cost assumptions, and other cost estimates could affect the pit optimization parameters and therefore the cutoff grades and Mineral Resource estimates.

15 MINERAL RESERVE ESTIMATES

This section contains forward-looking information related to the Mineral Reserve estimates for the Thacker Pass deposit. The material factors that could cause actual results to differ from the conclusions, estimates, designs, forecasts, or projections include geological modeling, grade interpolations, bulk density values, lithium price estimates, mining cost estimates, and final pit shell limits such as more detailed exploration drilling or final pit slope angle.

15.1 Geological Block Model

The Mineral Reserve estimate relies on the resource block model prepared by the Resource QP, detailed in Section 14.

The block model had geological domains applied based on lithological type and grade. The domains in the block model include:

- Alluvium
- Smectite – S1 and S2
- Illite – I1, I2 and I3
- Hot Pond Zone
- Tuff
- Basalt

The smectite and illite clay and ash zones are the Lithium rich domains within the Thacker Pass deposit and were the domains included in the Mineral Resource estimate. The waste zones include Alluvium, Hot Pond Zone, Tuff, and Basalt.

The block model is a sub-blocked model with a parent block size of 22.9 m x 22.9 m x 4.6 m (75 ft x 75 ft x 15 ft) and a minimum sub-block size of 7.6 m x 7.6 m x 1.5 m (25 ft x 25 ft x 5 ft). The block model was sub-blocked in order to have a tighter definition along the lithology contacts.

The block model was generated in Maptek's geological software package and includes fields for geological domain, Mineral Resource classification, density, moisture, elemental values, in situ tonnages and volumes, ROM tonnages, extractable tonnages, and metallurgical recovery. The extractable tonnages and metallurgical recovery are based on recovery equations developed by LAC through material testing in LAC's Lithium Technical Development Center in Reno, as discussed in Section 17. All equations have been applied to the entire block model and take into consideration the individual block's elemental values, ash values and lithology.

15.2 Extractable Lithium and Metallurgical Recovery Factors

LAC provided Kevin Bahe, the QP responsible for this section of the Technical Report, with a set of equations to estimate the metallurgical recovery of lithium based on ash content, magnesium grade, and lithium grade, extractable lithium tonnage, and other important factors for determining waste tonnages. Imperial and Metric tonnages and volumes were carried in the block model along with wet and dry tonnages to allow for the flexible reporting for the mine plan schedule (imperial), metallurgical recovery processes (metric), and project cost model (metric).

These equations are described below and were applied on a block-by-block basis.

- Run of Mine (ROM) Tonnage were determined by multiplying In Situ tonnages by 95% recovery.
    - ROM Clay Leach Ore Tonnage. **Leach Ore is the clay tonnage used in the mine plan. The acid production of the Sulfuric Acid Plant directly affects the amount of ROM**

Clay Leach Ore Tonnage that can be processed. Thus, the Leach Ore is the ROM Total Feed minus Ash Tonnage.

  - ROM Total Feed Tonnage. **This is the tonnage used for the ROM Total Feed Tonnage reported in the Mineral Reserves.**

- Lithium and LCE Tonnage
  - Lithium In Situ Tonnage were determined by multiplying the lithium grade in percent by the In Situ Total Feed Tonnage.
  - Lithium Carbonate Equivalent (LCE) In Situ Tonnage were then determined by multiplying the Lithium In Situ Tonnage by 5.3228 (lithium factor to convert mass of lithium to mass lithium carbonate equivalent).
  - Lithium ROM Tonnage were determined by multiplying the Lithium In Situ Tonnage by a 95% mining recovery.
  - LCE ROM Tonnage were determined by multiplying Lithium ROM Tonnage by 5.3228. **This is the tonnage used for the ROM LCE Tonnage reported in the Mineral Reserves.**
- Lithium Extraction Percentage, Extractable Lithium and LCE Tonnages, and Metallurgical Recoveries were determined based on LAC metallurgical testing results and equations as described in Section 13.
- Cutoff Grades
  - Kilograms of Lithium Recovered / ROM (in tonnes) was determined by dividing Extractable Lithium Tonnage by ROM Total Feed Tonnage and then multiplying by 1000. This factor was used as the cutoff grade for the 2022 Technical Report.
  - Kilograms of Extracted LCE / Leach Ore Recovered (in tonnes) was determined by dividing Final Extractable LCE Tonnage by ROM Clay Leach Ore Tonnage and then multiplying by 1000. **This factor was used as the cutoff grade for this Technical Report**.

15.3 Mineral Reserves Cutoff Grade and Pit Optimization

The Mineral Reserve pit for this Technical Report is substantially larger than the pit utilized for the 2022 Technical Report. This change in size is due primarily to the LAC business decision to allow for the 2024 Mineral Reserves to extend outside of the currently permitted pit.

In determining where the pit would be allowed to extend, Kevin Bahe, the QP responsible for this section of the Technical Report, utilized a cut-off grade analysis, pit optimization routines, stripping ratio maps, waste tonnage amounts per pit area, and planned infrastructure locations.

15.3.1 Cut-off Grade

Kevin Bahe, utilized two types of cutoff grades for the pit optimization in order to create the ultimate pit that will be utilized for the mine plan and Mineral Reserves. The two cutoff factors are:

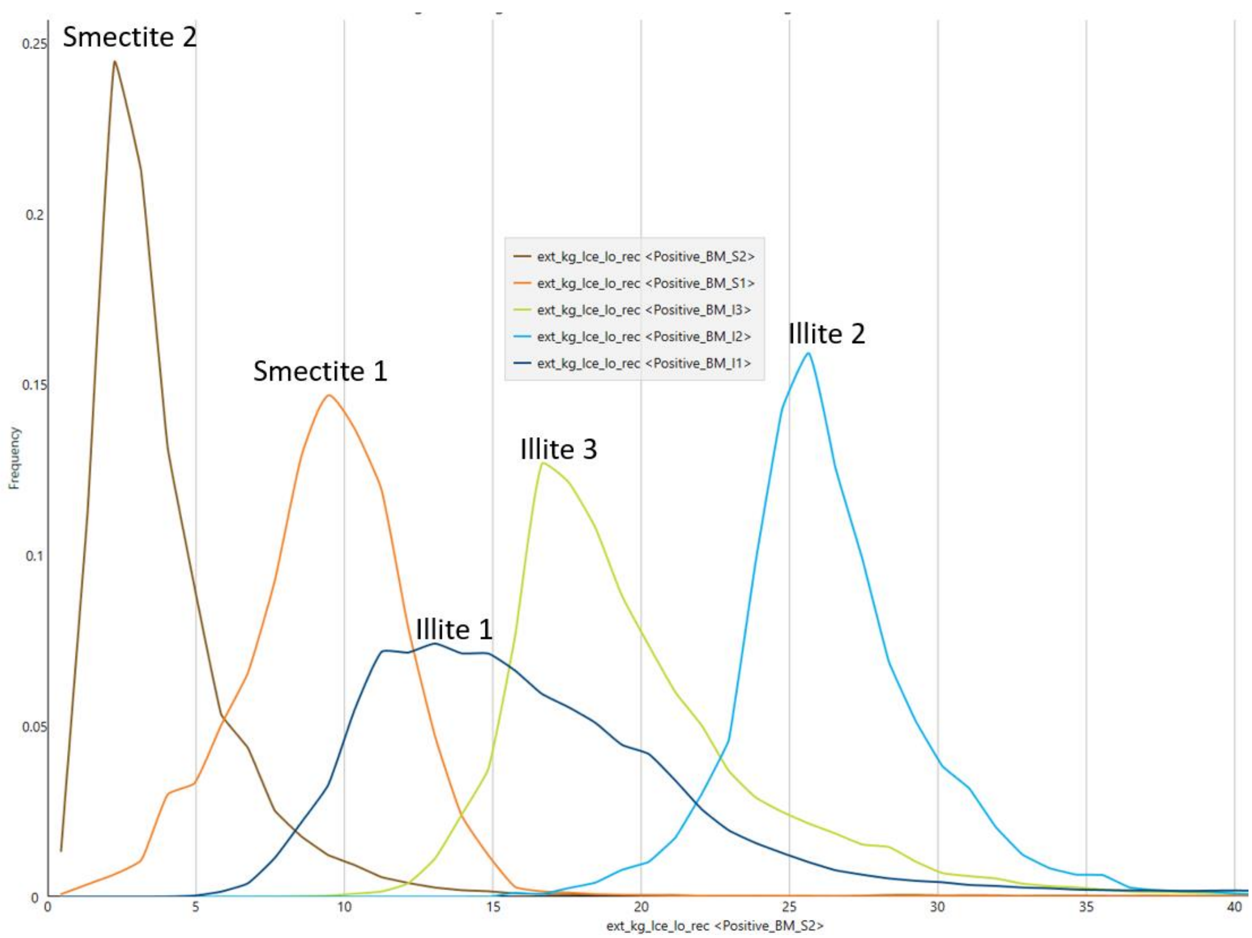
- Economic Cutoff Grade of Lithium ppm
- Kilogram of Extracted LCE per Leach Ore Tonne

The lithium cutoff grade is the same as the Mineral Resource cutoff grade of 858 ppm Li, as noted in Table 14-16. A second cutoff factor was based on the pit optimization analysis in order to meet the Project goals as noted in Section 16.2. This resulted in the application of the cutoff factor of 15 Kilograms of Extracted LCE per Leach Ore for pit optimization.

In the 2022 Technical Report, the cut-off factor utilized Extracted Lithium and ROM Total Feed. However, in the current Mineral Reserve estimate, the Kilograms of Extracted LCE per tonne of Leach Ore cutoff factor was utilized to evaluate the blocks. The 2024 cut-off factor is based on how much LCE could be produced per Leach Ore tonne. With the 2024 factor, utilizing the LCE recovered allowed for the incorporation of the Metallurgical Recovery into the cut-off factor considerations. Which allows the equation to focus on the material quantities after Attrition Scrubbing.

Figure 15-1 shows a histogram of the relationship of the Kilograms of Extracted LCE per Leach Ore cut-off factor by clay type, illite and smectite. Illite 2 has the highest value, which correlates well with the high lithium grade and high metallurgical recovery seen for the Illite 2. The Illite 3 has the next highest average value, which also correlates well with the lithium grade and metallurgical recovery present for that domain.

Figure 15-1 Histogram: Kilograms of Extracted LCE per Leach Ore by Domain



15.3.2 Pit Optimization

The pit optimization routine for the Mineral Reserve estimate has been completed in several passes. In the first pass, a reserve constraining pit shell was derived by performing a pit optimization estimation using Vulcan Software. The pit optimization utilized the inputs as follows:

- Inputs from Table 15-1
- A lithium cutoff grade of 858 ppm
- The Mineral Reserve pit is only within the BLM mining claims and private property that LAC has rights to.

- Additionally, the Mineral Reserve pit only selected Mineral Resources that were Measured and Indicated.

The first pass of the pit optimization did not utilize the Kilograms of Extracted LCE per Leach Ore cutoff factor, but was rather an attempt to have a complete set of blocks that could be considered for Mineral Reserves.

Based on the Q2 2024 Benchmark pricing forecast, the average long term Lithium price was $29,000/tonne. Kevin Bahe, the QP responsible for this section of the Technical Report, has relied on LAC to provide this price, but is in agreement with the long term forecast price for the use in pit optimization activities. The final long range price forecast that is being used for the determination of Mineral Reserves is based on $24,000/tonne. Please see Section 19 of this Technical Report for further discussion on the justification for Lithium pricing.

Table 15-1 Pit Optimizer Parameters

Parameter	Unit	Value – Metric	Value – Imperial
Li_2CO_3	$/t	29,000	26,308
Li Price	$/t	154,361	140,034
Processing Cost (includes G&A)	$/t ROM	86.35	78.50
Process Recovery	%	Varies by block	Varies by block
Mining Cost for Waste and Topsoil (No D&B)	$/t	2.71	2.46
Mining Cost for Basalt (Included D&B)	$/t	4.03	3.65
Ore Incremental Haulage	$/t	1.22	1.10
Cost to Feed Ore to Plant (feeder stockpiles)	$/t	1.05	0.95
Mining Recovery Factor	%	95	95
Royalties (GRR)	$/t	2,701	2,451
Pit Wall Slope Factor	%	27	27

Notes:

- Cost estimates are as of the 2022 Technical Report and have been escalated to 2024 dollars
- Lithium price estimate is as of Q2 2024 (Benchmark Q2, 2024)

Utilizing the first pass of the pit optimization, grade/tonnage curves were developed with the Kilograms of Extracted LCE per Leach Ore as a cutoff factor to analyze the blocks in the pit. The pit was then further divided by geological regions into:

North Pit

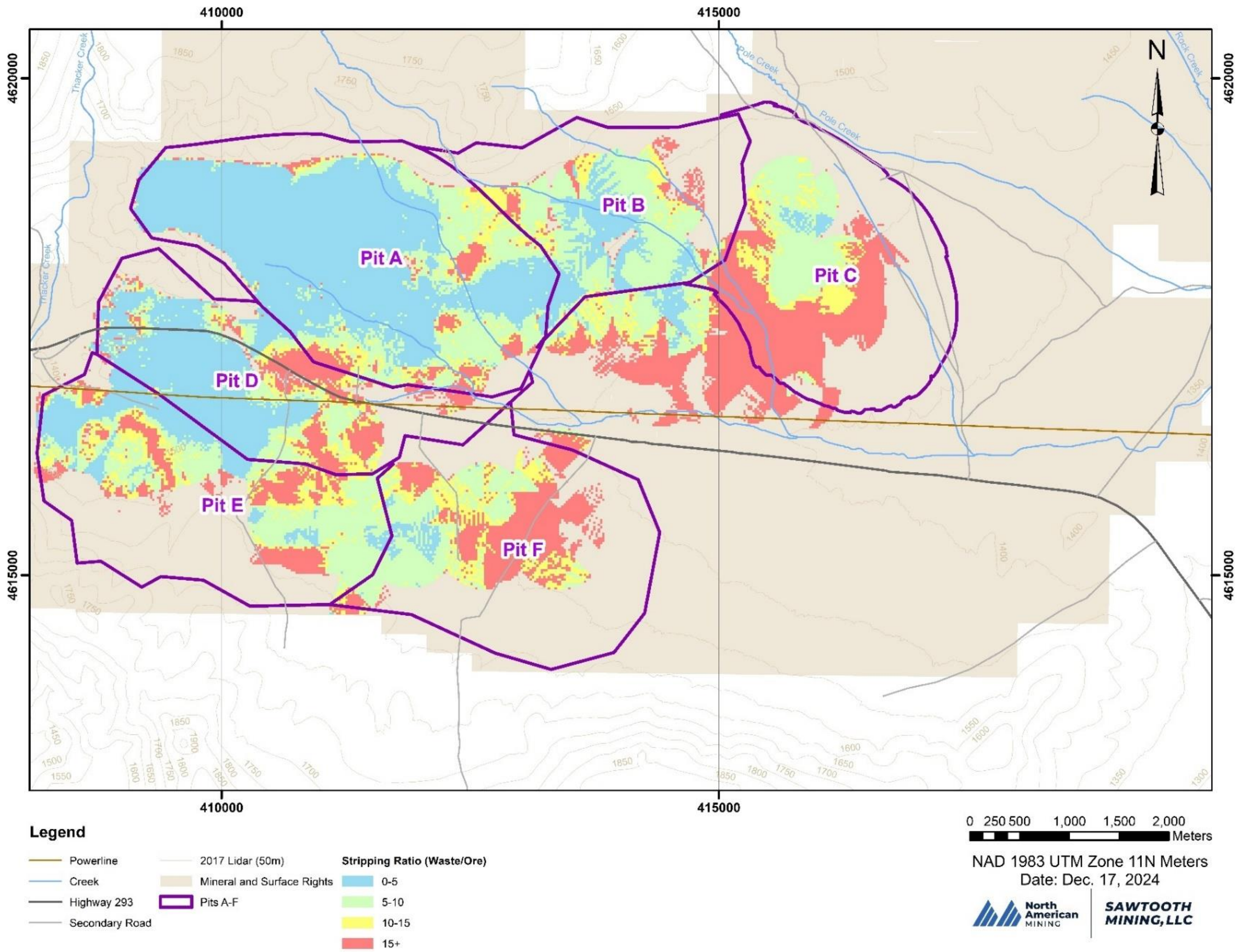
- Pit A – Permitted pit area
- Pit B – East of permitted pit (includes East Waste Rock Storage Facility and Coarse Gangue Stockpile)
- Pit C – Far east area underneath CTFS (excluded from final reserve pit)

South Pit

- Pit D – Northern half of the Southern Basin (Includes West Waste Rock Storage Facility)
- Pit E – South-western half of the Southern Basin
- Pit F – South-eastern half of the Southern Basin

The various pit locations can be seen in Figure 15-2 along with the stripping ratio.

Figure 15-2 Pit Optimization Overview Map with Stripping Ratio



The North Pit and South Pit Grade Tonnage Curves are shown in Figure 15-3 through Figure 15-7. As shown on the graphs, Pit B, Pit C, Pit D, and Pit E/F have much higher stripping ratios and lower LCE tonnages than Pit A. The highest Lithium grade and lowest stripping ratio is located within the Pit A. As the pit advances to the east and to the south, the grade decreases and the stripping ratio increases.

The cutoff grade utilized for pit optimization was 15, however the cutoff grade used in the mine plan varied annually based on the location of the pit for each year. This fluctuation in cutoff grade was required in the mine plan because the grade varies greatly as you progress from west to east and north to south. As shown in the Grade/Tonnage curves below, the stripping ratio and LCE tonnages fluctuate by pit.

Figure 15-3 Pit A Grade Tonnage Curve

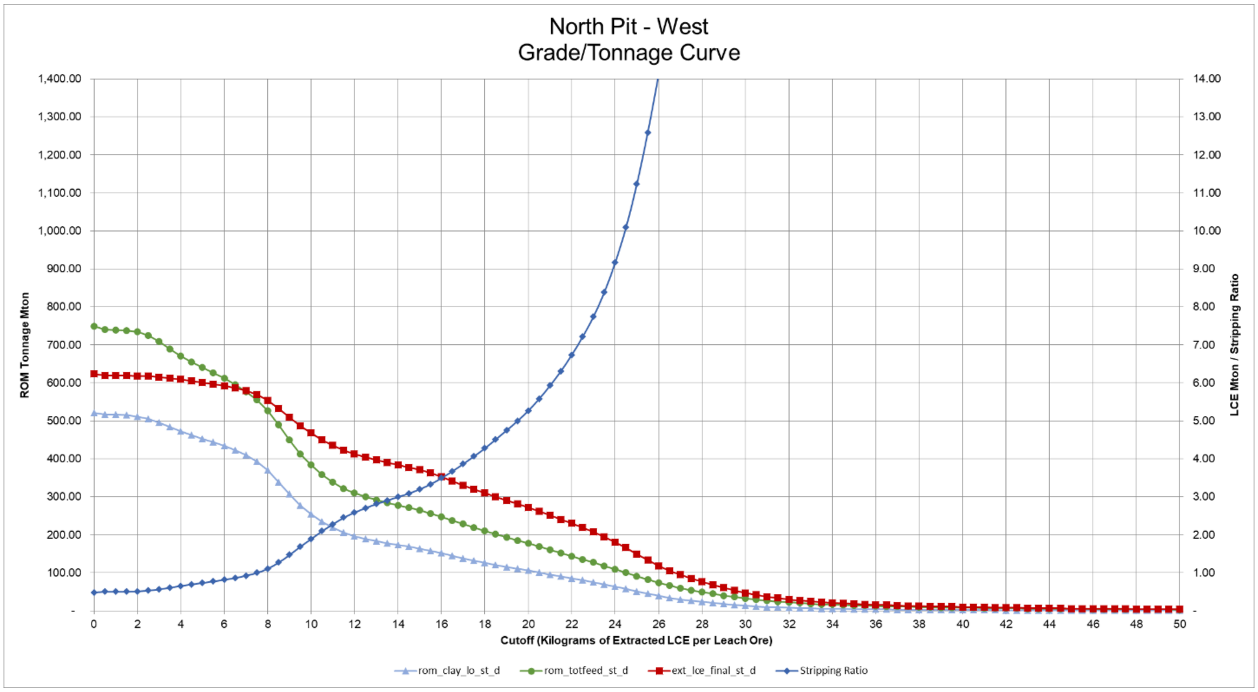


Figure 15-4 Pit B Grade Tonnage Curve

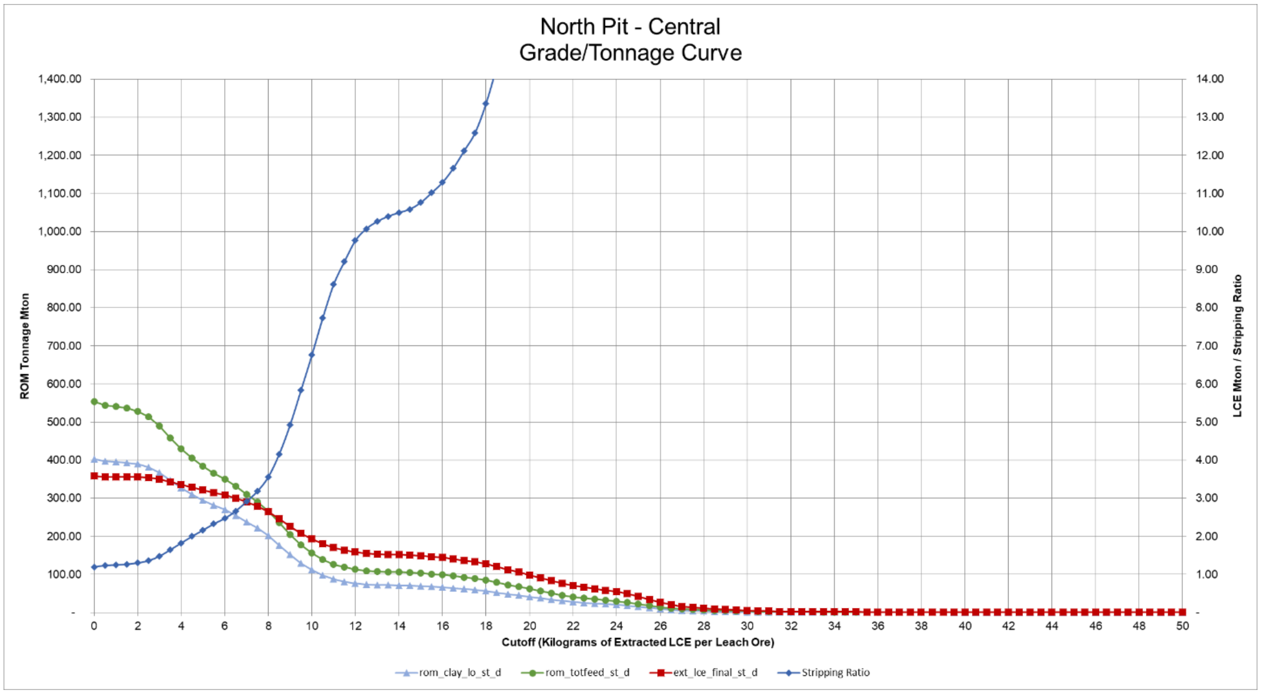


Figure 15-5 Pit C Grade Tonnage Curve

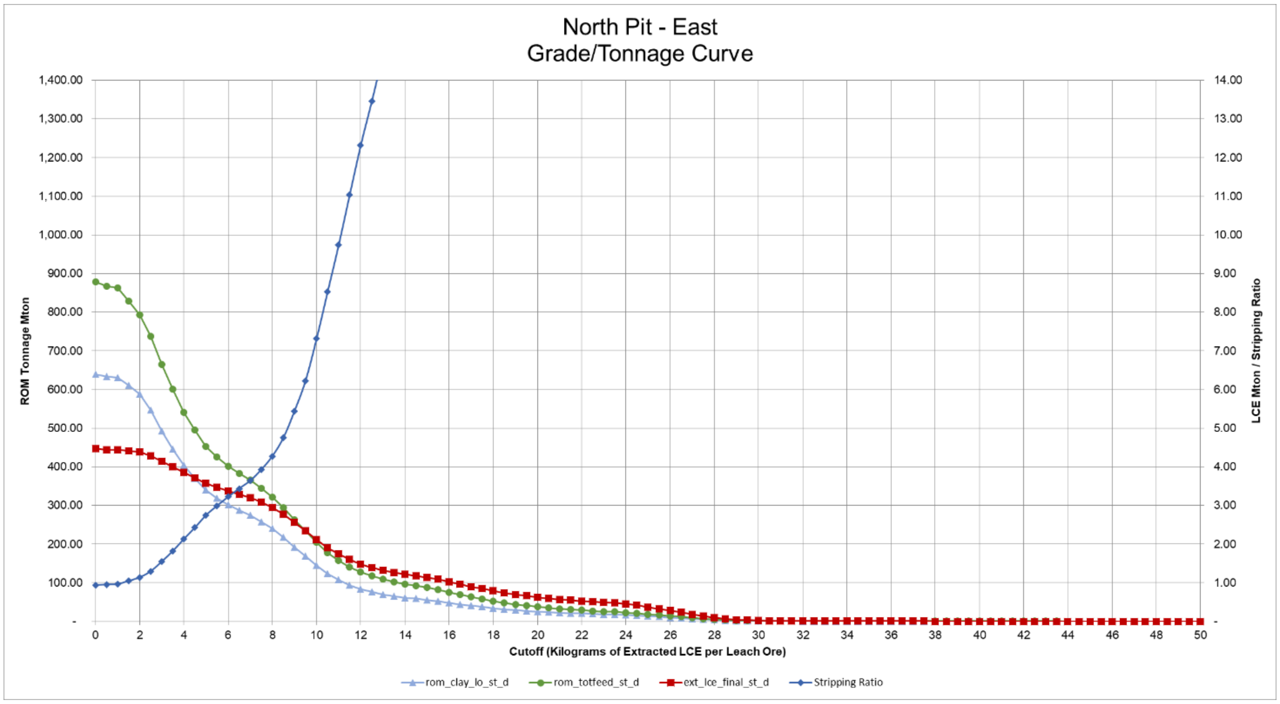


Figure 15-6 Pit D Grade Tonnage Curve

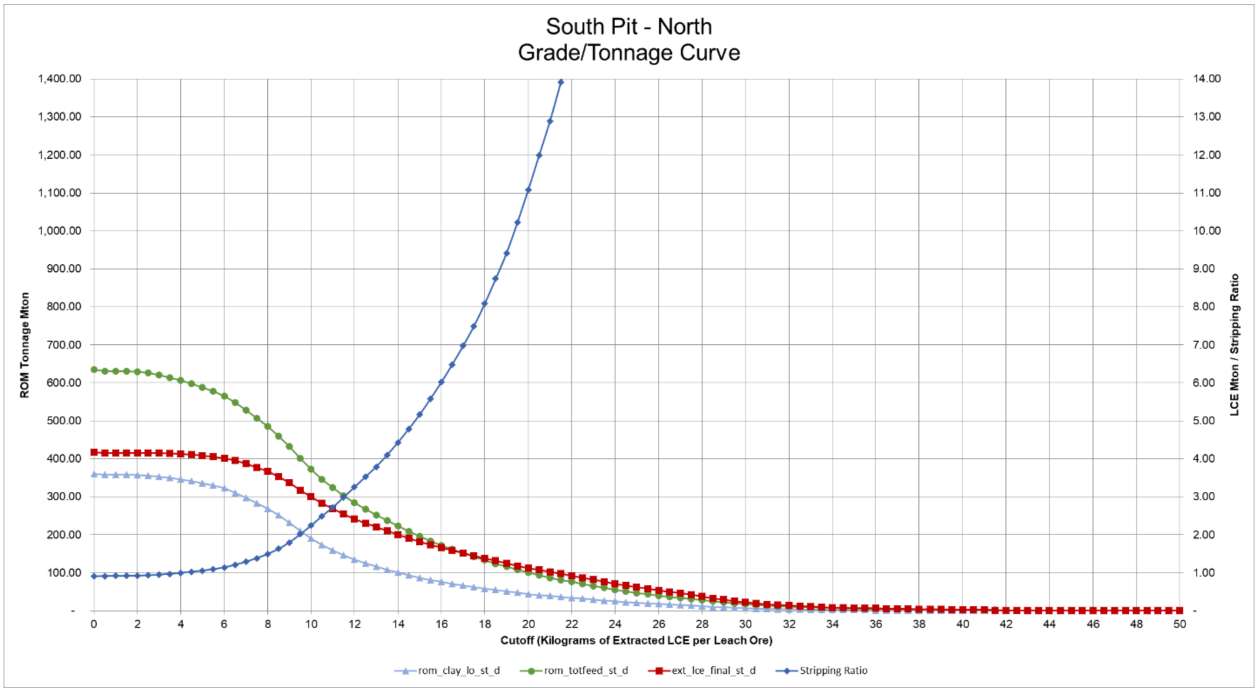
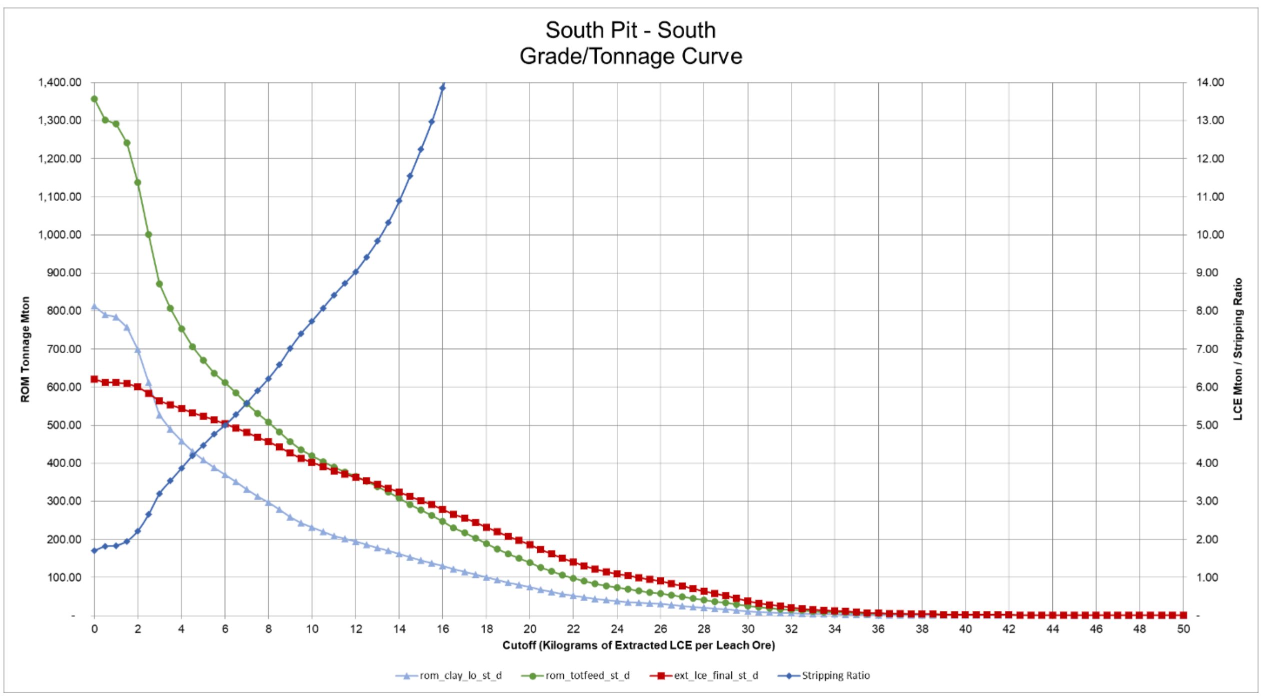


Figure 15-7 Pit E and F Grade Tonnage Curve



Along with the grade/tonnage curves and the stripping ratio review, Kevin Bahe, the QP responsible for this section of the Technical Report, also analyzed the feasibility of mining through the CTFS area (Pit C), the amount of waste that each pit area would produce, and the likelihood of being able to achieve a consistent mine plan within each area and within the total mine plan. The decision was made to exclude the CTFS (Pit

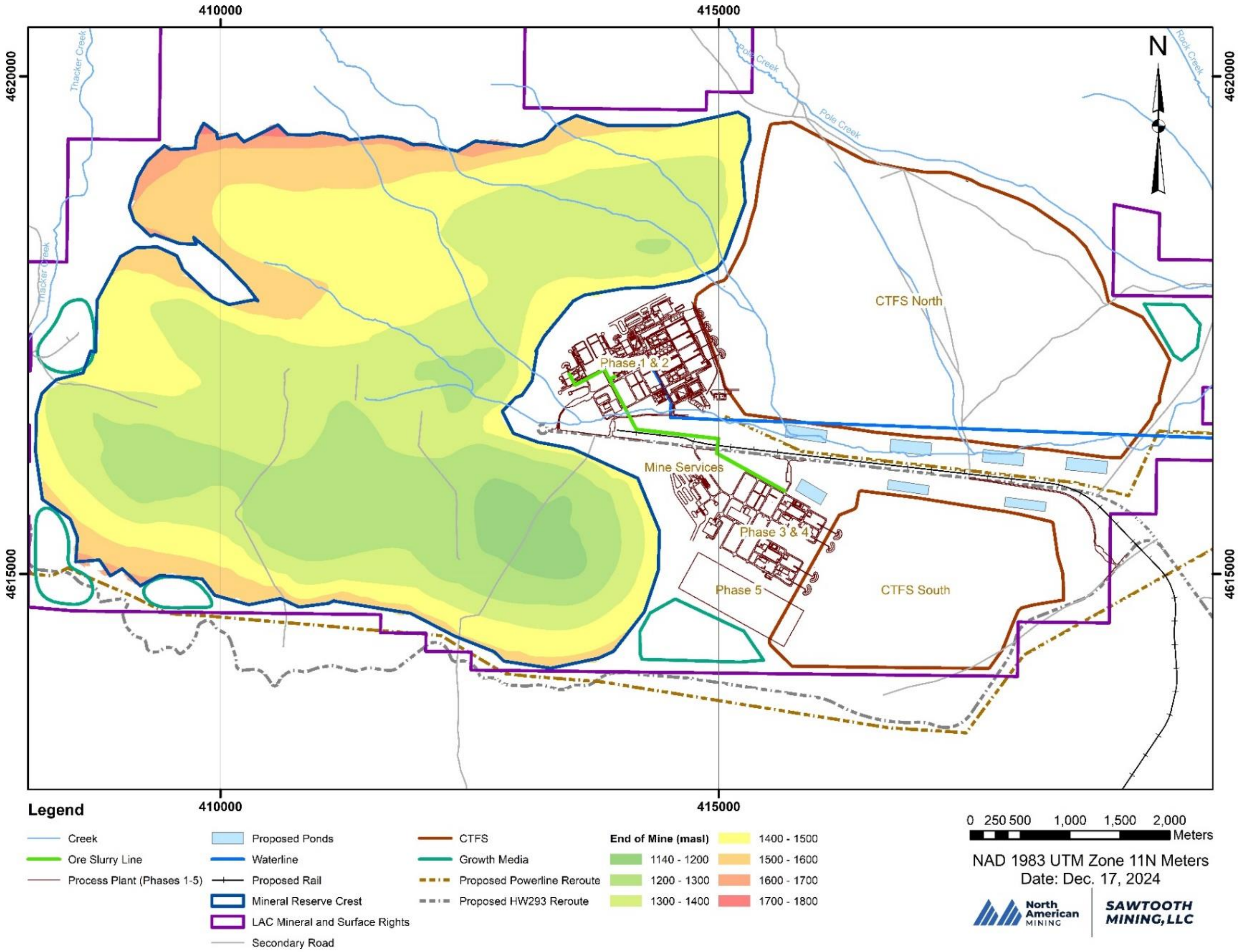
C) along with the process plant facilities area from the final pit optimization analysis due to its high amount of waste, relatively low amount of LCE tonnage, and the lack of space to be able to relocate the CTFS.

For the final pit optimization run, the following criteria was applied:

- Inputs from Table 15-2
- A lithium cutoff grade of 858 ppm was utilized
- The Mineral Reserve pit is only within the BLM mining claims and private property that LAC has rights to.
- Pit C area was excluded due to high waste volumes
- A maximum ash content of 85%.
- The Mineral Reserve pit only selected Mineral Resources that were Measured and Indicated.
- A minimum Kilograms of Extracted LCE per tonne of Leach Ore cutoff factor of 15 was utilized.
- A 244 m (800 ft) exclusion zones were also made around the plant facilities to account for highwall stability and blasting considerations with fly-rock.

The resulting pit optimization pit shell was designed to include the geotechnical considerations discussed in Section 16. The final Mineral Reserves pit shell can be seen in Figure 15-8.

Figure 15-8 Final Mineral Reserve Pit



15.4 Plant Capacities and Mine Plan Considerations

The mine plan is based on four plants at a leach ore feed rate to provide 40,000 LCE tonnes per plant. The 5th plant is for acid only production. Each of these plants comes online in different years. Table 15-2 shows the years and capacity of each plant provided by LAC. The mine plan resulted in an 85-year mine life with a total plant leach ore feed of 611.8 million dry tonnes. Leach ore feed tonnes are the ROM dry tonnes less the ash tonnes.

The cutoff factor varied annually in the mine plan to achieve the required LCE's while controlling total tonnes mined. The cutoff factor varied from a minimum of 7.5 kg of LCE recovered per tonne of leach ore feed and a maximum of 26 kg LCE recovered per tonne of leach ore feed. For the first 25 years of the mine plan, the cutoff factor averaged 17.2 kg LCE recovered per tonne of leach ore feed to provide higher economic returns during the high capital intensity years of plant building. In years 26-85, the cutoff factor decreased to an average of 12.3 kg LCE recovered per tonne of leach ore feed to increase the recovery of the remaining Mineral Resources.

Table 15-2 Plant Capacities

Plant Phase	Start Year	Process Plant Capacity (Metric tonnes per year lithium carbonate)	Acid Plant (Metric tonnes per day H_2SO_4)
1	1	40,000	2,250
2	5	40,000	2,250
3	9	40,000	2,250
4	13	40,000	2,250
5	13	Acid Only	3,000

15.5 Dilution and Mining Recovery

The block model is a sub-blocked model with a parent block size of 22.9 m x 22.9 m x 4.6 m (75 ft x 75 ft x 15 ft) and a minimum sub-block size of 7.6 m x 7.6 m x 1.5 m (25 ft x 25 ft x 5 ft). The block model was sub-blocked to have a tighter definition along the lithology contacts.

For this analysis, Kevin Bahe, the QP responsible for this section of the Technical Report, has assumed that there will be a 2.5% loss on the top and bottom of the ore zones (5% total) in an effort to clean the contact zones between domains. This analysis has not considered adding dilution into the mine plan due to the loss that is being applied. As the Thacker Pass deposit is further domained into smaller zones, Kevin Bahe recommends reevaluating the need for dilution to be applied to the contact zones.

15.6 Waste and Stripping Ratio

As noted in Section 15.1, waste consists of various types of material: basalt, alluvium, tuff, and clay that does not meet the ore definition or the cutoff factor described above. Detailed material type descriptions can be found in Section 7 of this study.

The resulting stripping ratio of the final Mineral Reserve pit is 5.3 tonnes of waste rock with 5% ore loss included to 1 tonne of recovered ore with stockpile reclaim included.

15.7 Mineral Reserve Estimate

A Mineral Reserves estimate was calculated for the resource pit from the Vulcan geologic block model used in the Mineral Resource estimate as discussed in Section 14. The 85-year pit is designed to satisfy the ore delivery requirements.

The Mineral Reserves are a modified subset of the Measured and Indicated Mineral Resources. In accordance with the CIM Definition Standards, the Measured and Indicated Resources were used to determine the Mineral Reserves classification as “proven” and “probable”. Measured Resources does not necessarily guarantee a “proven” reserve. Modifying factors include mining, processing, metallurgical, economic, marketing, legal, environmental, infrastructure, social and governmental factors. The Mineral Reserves estimate considers the Inferred Mineral Resources as waste.

The reference point at which the Mineral Reserves are defined is at the point where the ore is delivered to the run-of-mine feeder. Reductions attributed to plant losses have been estimated on a block by block basis and were used for mine planning purposes, however, ROM tonnages are reported in the Mineral Reserve estimate shown below.

The classified Mineral Reserves are presented in Table 15-3 for the Mineral Reserve Pit.

Table 15-3 Mineral Reserves Estimate with and effective date of December 31, 2024

Classification	Density (g/cc)	Lithium (ppm)	ROM Dry (Million Metric Tonnes)	ROM LCE Dry (Million Metric Tonnes)	Metallurgical Recovery (%)
Proven					
Smectite 2	1.71	1,110	0.5	0.0	73%
Smectite 1	1.77	2,460	17.7	0.2	66%
Subtotal - Smectite	**1.77**	**2,420**	**18.2**	**0.2**	**66%**
Illite 3	1.86	3,000	65.6	1.1	84%
Illite 2	1.9	5,020	58.8	1.6	81%
Illite 1	1.8	2,510	126.9	1.7	83%
Subtotal - Illite	**1.84**	**3,230**	**251.3**	**4.3**	**82%**
Subtotal - Proven	**1.83**	**3,180**	**269.5**	**4.5**	**82%**
Probable				0.0	
Smectite 2	1.73	1,730	25.3	0.2	76%
Smectite 1	1.77	2,550	48.7	0.7	64%
Subtotal - Smectite	**1.76**	**2,270**	**74.1**	**0.9**	**67%**
Illite 3	1.85	3,110	102.0	1.7	83%
Illite 2	1.87	4,690	77.0	1.9	81%
Illite 1	1.78	1,840	534.0	5.2	80%
Subtotal - Illite	**1.8**	**2,330**	**713.1**	**8.8**	**81%**
Subtotal - Probable	**1.8**	**2,320**	**787.1**	**9.7**	**80%**
Proven + Probable				0.0	
Smectite 2	1.73	1,720	25.8	0.2	76%
Smectite 1	1.77	2,530	66.4	0.9	64%
Subtotal - Smectite	**1.76**	**2,300**	**92.2**	**1.1**	**67%**
Illite 3	1.85	3,070	167.7	2.7	83%
Illite 2	1.88	4,830	135.9	3.5	81%
Illite 1	1.79	1,970	660.9	6.9	81%
Subtotal - Illite	**1.81**	**2,560**	**964.4**	**13.2**	**82%**
Total - Proven + Probable	**1.81**	**2,540**	**1,056.7**	**14.3**	**80%**

Notes:

1. Mineral Reserves Estimate has been prepared by Kevin Bahe, P.E.
2. Mineral Reserves have been converted from measured and indicated Mineral Resources within the feasibility study and have demonstrated economic viability.
3. Reserves presented in an optimized pit at an 85% maximum ash content, cutoff grade of 858 ppm Li, and an average cut-off factor of 13.3 kg of LCE recovered per tonne of leach ore tonne (ranged from 7.5-26 kg of LCE recovered per tonne of leach ore tonne).
4. A sales price of $29,000 US$/tonne of Li_2CO_3 was utilized in the pit optimization resulting in the generation of the reserve pit shell in 2024. An overall slope of 27 degrees was applied. For bedrock material pit slope was set at 52 degrees. Mining and processing costs of $95.40 per tonne of ROM feed, a processing recovery factor based on the block model, and a GRR cost of 1.75% were additional inputs into the pit optimization.
5. A LOM plan was developed based on equipment selection, equipment rates, labor rates, and plant feed and reagent parameters. All Mineral Reserves are within the LOM plan. The LOM plan is the basis for the economic assessment within the Technical Report, which is used to show the economic viability of the Mineral Reserves.
6. Applied density for the ore is varied by clay type (Table 14-13 of Section 14).
7. Lithium Carbonate Equivalent is based on in-situ LCE tonnes with a 95% mine recovery factor.
8. Tonnages and grades have been rounded to accuracy levels deemed appropriate by the QP. Summation errors due to rounding may exist.
9. The reference point at which the Mineral Reserves are defined is at the point where the ore is delivered to the run-of-mine feeder.
10. Mineral Reserves are presented on a 100% basis. LN owns the Project. Lithium Americas holds a 62% interest in LN and General Motors owns the remaining 38%.

15.8 Comparison to Previous Estimate

The Mineral Reserves have increased significantly since the Mineral Reserves Estimate as of November 2, 2022, was published. Table 15-4 shows both the difference between the November 2, 2022, and the December 31, 2024 estimate as well as the percent change. Figure 15-2 shows the 2022 reserve pit and the 2024 reserve pit. The major factors that attributed to this change include:

- Additional drill holes from the 2023 drilling campaign allowed for more Measured and Indicated resources in the southern and eastern portions of the property. This has allowed for the Mineral Reserves to stretch into those areas as well.
- Updating the domaining to include lithological domains has allowed for the grade interpretation to better align with mineralization. This has decreased the amount of grade smearing along the contacts between the various domains and subsequently increased the average Lithium grade values and tonnages.
- An increase in Lithium price from $22,000 to $24,000 has allowed for more tonnage to be considered in the Mineral Reserve estimate.

Table 15-4 Mineral Reserves Comparison to Previous Estimate

Category	Difference (2024-2022)			Percent Change (2024 - 2022/2022)		
	Tonnage (Mt)	Lithium (ppm)	LCE Mined (Mt)	Tonnage (Mt)	Lithium (ppm)	LCE Mined (Mt)
Proven	76.6	0	1.2	40%	0%	36%
Probable	762.7	-690	9.3	3,126%	-23%	2,325%
Proven & Probable	839.4	-620	10.6	386%	-20%	286%

15.9 Comments

The Mineral Reserves estimate in this Technical Report is based on current knowledge, engineering constraints, and land status. Kevin Bahe, the QP responsible for this section of the Technical Report, is of the opinion that the methodology for the estimation of Mineral Reserves in this Technical Report is in general accordance with the 2019 CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines and using the definitions in 2014 CIM Definition Standards for the classification of Mineral Reserves.

Large changes in the market pricing, commodity price assumptions, material density factor assumptions, future geotechnical evaluations, cost estimates, or metallurgical recovery could affect the pit optimization parameters and therefore the cutoff grades and estimates of Mineral Reserves.

16 MINING METHODS

This section contains forward-looking information related to the mining methods for the Thacker Pass deposit. The material factors that could cause actual results to differ from the conclusions, estimates, designs, forecasts or projections include mine design parameters, production rates, equipment selection, and personnel requirements.

The shallow and massive nature of the Thacker Pass deposit makes it amenable to open-pit mining methods. The mining method assumes hydraulic excavators loading a fleet of end dump trucks. This truck/excavator fleet will develop several offset benches to maintain geotechnically stable highwall slopes. These benches will also enable the mine to have multiple grades of ore exposed at any given time, allowing flexibility to deliver and blend ore as needed.

The major change between the 2022 43-101 Technical Report and this report is the addition of phases and the overall size of the pit. The 2022 Technical Report had two plants, phase 1 and phase 2. This Technical Report will have phase 3 and phase 4 with an additional acid plant, Phase 5.

The annual production rate for the mine plan is based on varying plant feed leach ore rates that are based on the availability of sulfuric acid for the leaching process. LAC provided leach ore feed rates for each phase. Phase 1 (years 1-4) has an average annual feed rate of 1.4 million dry tonnes of ore to leach, and Phase 1/2 (years 5-8) has an average annual feed rate of 2.9 million dry tonnes of ore to leach. Phases 1/2/3 (years 9 -12) have an average annual feed rate of 4.4 million tonnes of ore to leach and Phase 1/2/3/4 (years 13-85) has an average annual feed rate of 8.0 million tonnes of ore to leach. The mine plan leach ore feed rates are shown in Table 16-3 and Table 16-4.

16.1 Pit Design

A highwall slope-stability study was completed by Barr Engineering Co. (BARR) in December 2019 and a second study was completed by Barr in April 2024 to better understand the geotechnical behavior of the Tuff rock types and update the pit geometry parameters. BARR conducted geotechnical drilling, testing, and analysis to assess the geology and ground conditions. Core samples were obtained to determine material characteristics and strength properties. A minimum factor-of-safety value of 1.20 is generally acceptable for active open pit walls. However, given the possibility of long-term exposure of the pit slopes in clay geological formations, a value of 1.30 was incorporated into the design for intermediate and overall slope stability. Table 16-1 summarizes the maximum recommended slope configuration by material type per the 2024 BARR study. The recommendations listed are the maximum slope angles that the pit can achieve. However, the overall slopes are lower than what is listed as the maximum due to the depth of the pit.

All designs were implemented in Vulcan in imperial units but have been converted to metric for reporting purposes of this Technical Report.

Table 16-1 Pit Geometry

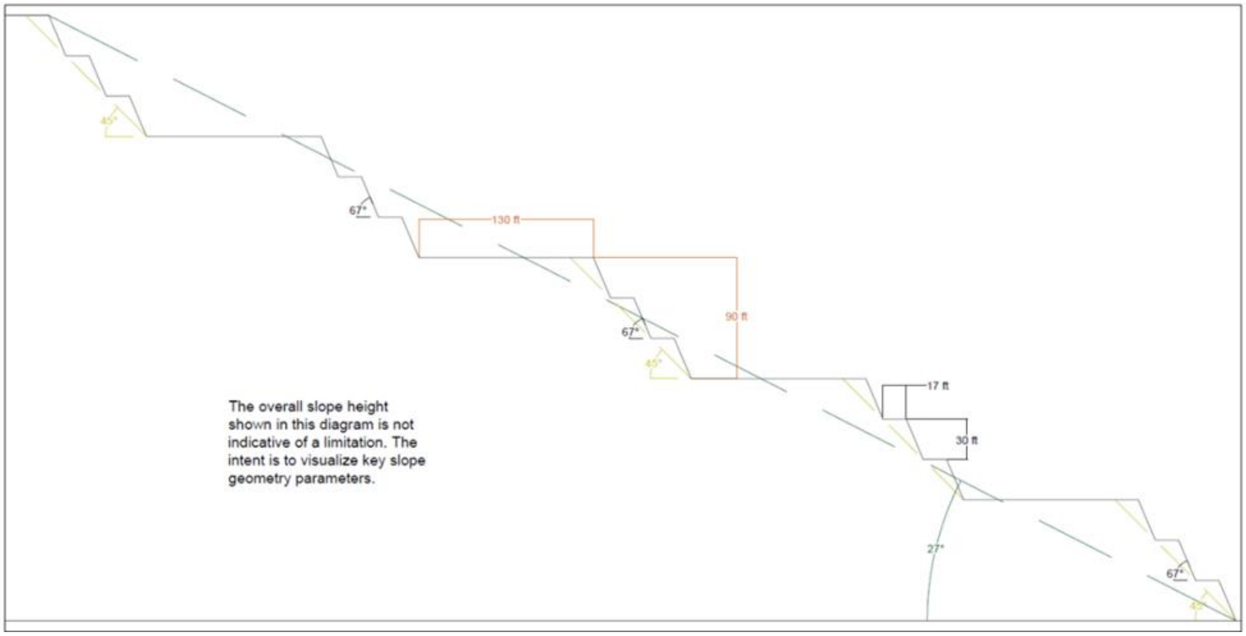
Material Type	Slope	Geometry and Configuration
Any uncertain geological conditions	Overall Pit Slope	Design and establish a maximum 27-degree overall slope angle
Clay/Ash/HPZ /Alluvium	Overall	Design and establish a maximum 27-degree slope angle
	Inter-ramp	Design and establish 27.4-meter high (90ft) maximum, 39.6-meter wide (130ft) mining bench, and maximum 45-degree angle inter-ramp slopes
	Catch Bench	Design and establish 9.1 meter high (30ft), 5.2 meter wide (17ft) catch bench, and maximum 67-degree bench face angle (this is a double bench established from two 15 ft stacked single benches)
Tuff/Basalt	Overall	Design and establish a maximum 52-degree overall slope angle
	Inter-ramp	Design and establish 36.6-meter high (120ft) maximum, 8.2-meter wide (27ft) mining bench, and maximum 55-degree angle inter-ramp slopes
	Catch Bench	Design and establish 9.1 meter high (30ft), 3.0 meter wide (10ft) catch bench, and a maximum 70-degree bench face angle (this is a double bench established from two 15 ft stacked single benches)
Spoil	Overall	Design and establish a maximum 27-degree overall slope through the spoil pile
	Inter-ramp	Design and establish a 38-degree overall slope through the spoil lift to a maximum height of 30.5 meter (100ft)

The geotechnical analysis indicates that geology is generally uniform across the Project site. The competence of the in-situ material in conjunction with the use of the proposed high wall angles meets or exceeds the minimum recommended factor-of-safety values for intermediate and overall slope configurations.

A working bench width of 91 meters (300 ft) and a mining bench face height of 4.572 meters (15 ft) was chosen. As mining progresses and larger equipment is introduced, the working bench width increases. The face height is amenable to efficient loading operations while still shallow enough to allow for the removal of thicker barren horizons within the cut to minimize dilution. For this analysis, Kevin Bahe, the QP is responsible for this section of the Technical Report, has assumed that there will be a 2.5% loss on the top and bottom of the ore zones (5% total) in an effort to clean the contact zones between domains. This analysis has not considered adding dilution into the mine plan due to the loss that is being applied.

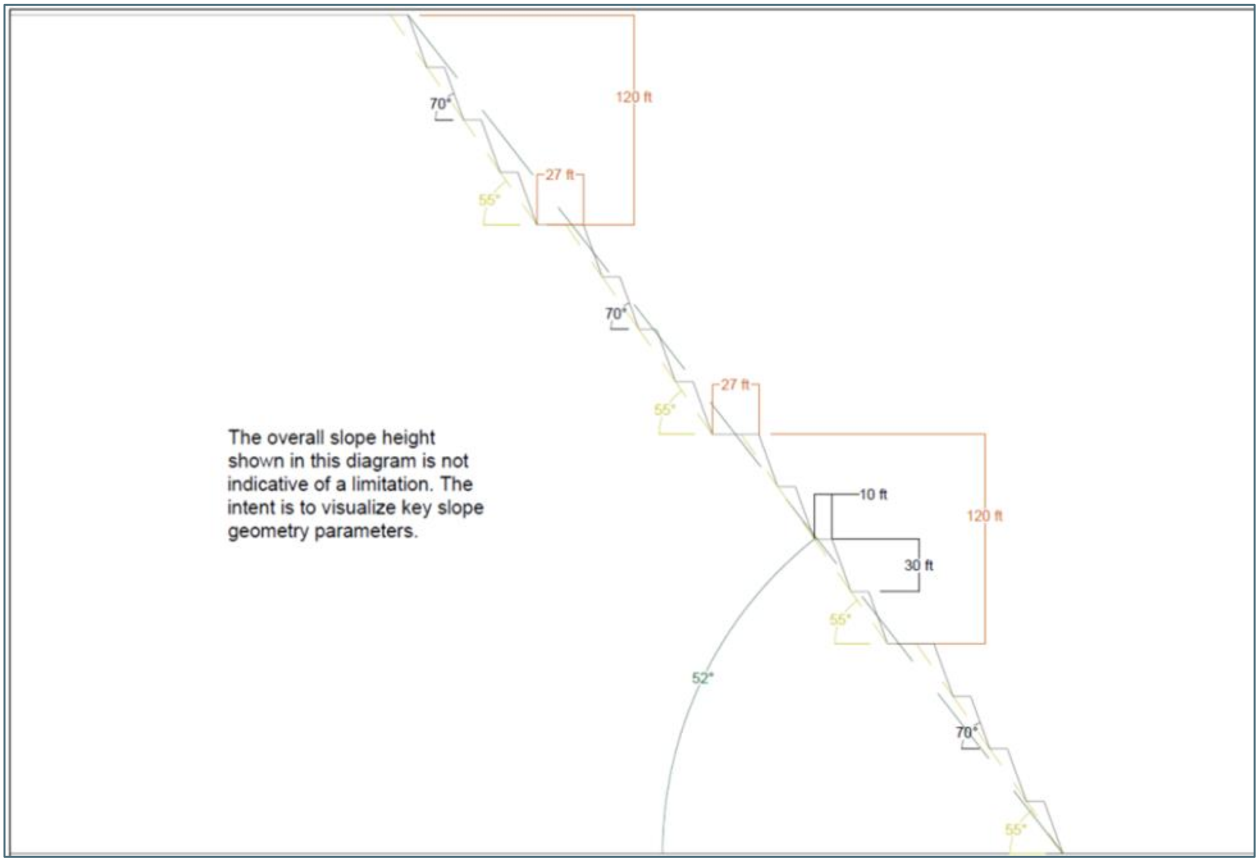
Double benching and increasing the bench height to 9.144 meters (30ft) before implementing offsets, will be used to increase mining depths while maintaining the inter-ramp slope requirements. Figure 16-1 and Figure 16-2 show cross-section views of the planned highwall layback scheme for the different geological horizons.

Figure 16-1 Highwall Angles - Clays/Ash/Alluvium/HPZ



Source: Sawtooth, 2024
Note: All linear measurements are in feet.

Figure 16-2 High Wall Angles – Tuff and Basalt



Source: Sawtooth, 2024
Note: All linear measurements are in feet.

16.2 Mine Plan

Mining advancement is based on five objectives:

1. Recover all ore,
2. Provide ore grades to meet required annual lithium production,
3. Provide higher grade ore early in the Project life,
4. Facilitate placement of waste into the previously mined pit area as soon as feasible, and
5. Mine the entirety of the life of mine pit.

Figure 16-3 shows the LCE tonnage by area and the advancement direction of mining. As shown by the LCE tonnages on Figure 16-3, LCE tonnage is the highest in the northwest portion of the property. This is due to the Lithium grade being the highest in that portion of the property. In addition to a high grade, the Tuff of Long Ridge uplift has brought the illite clays to the surface on both the north and south margins of the uplift. For these reasons, the pit starts in the very northwest section of Pit A and advances to the east first. Once Pit A and Pit B are mined out, Pit D and Pit E will be mined from north to south. Pit F is the deepest portion of the pit and will be mined from east to west. As mentioned in Section 15, Pit C was excluded from the final Mineral Reserve pit due to high waste volumes.

Figure 16-3 LCE Map and Direction of Mining

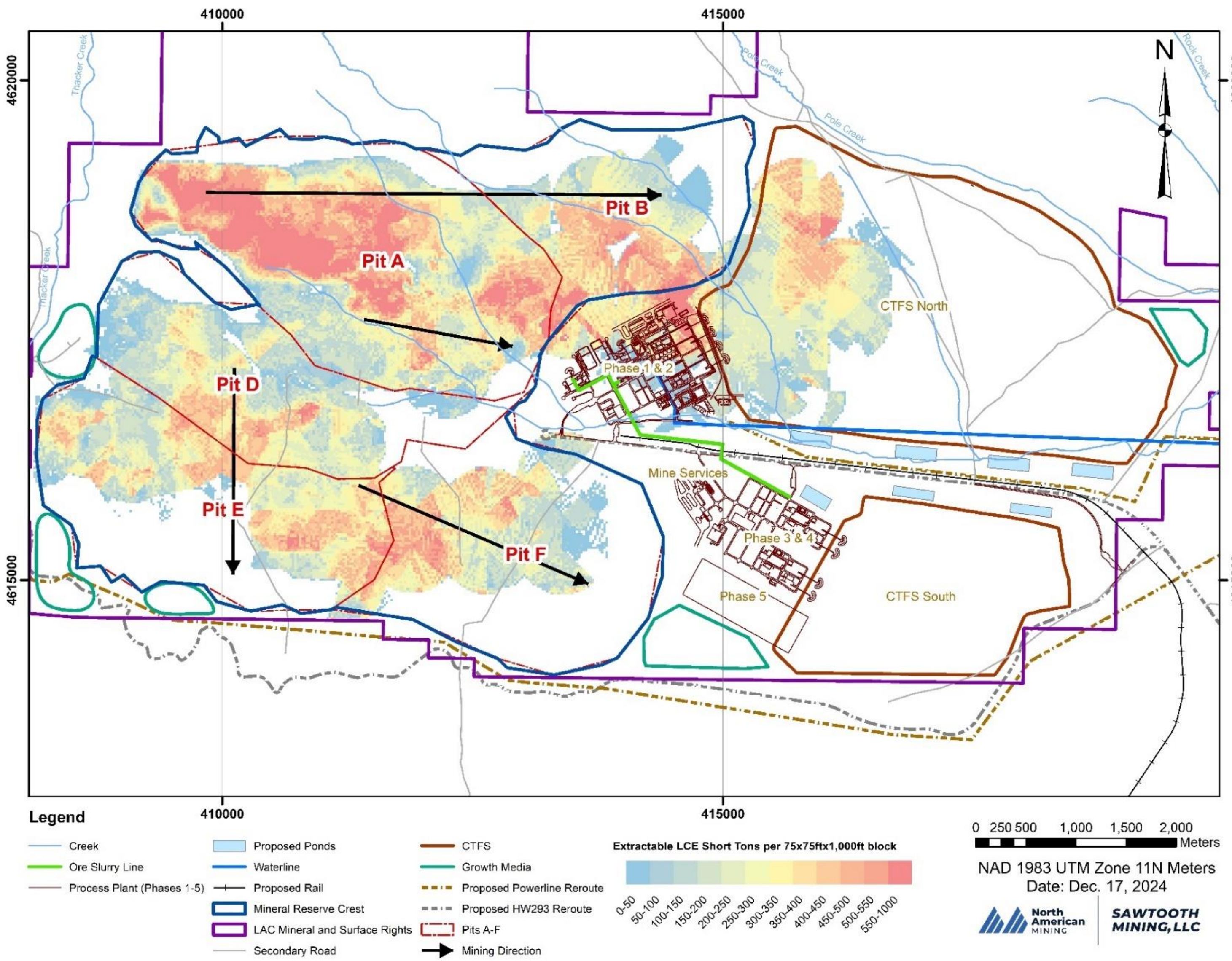


Figure 16-4 shows year 1 mining advancement. Ore and waste will be hauled via the haul road starting at the mouth of the valley, near the Tuff of Long Ridge uplift. The haul road is at the 1,540 m level as it comes out of the pit.

Figure 16-4 through Figure 16-16 show the highwall, waste storage facilities, main haul roads, and backfilling at different points in time. Figure 16-4 shows year 1 advancement while Figure 16-5 through Figure 16-16 show pit advances for 5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80 and 85-year pit advances.

In the first three years, the mine waste will primarily be hauled to the West Waste Rock Storage Facility (WWRSF). After three years, enough space is available in the pit to allow for backfilling some waste in-pit along with continued hauling of waste to the WWRSF and east waste rock storage facility (EWRSF) through year 10. After year 10, all waste will be dumped in-pit.

Coarse Gangue will be hauled to the Coarse Gangue Stockpile (CGS) from years 1-20. In year 20, the CGS is full and coarse gangue will be directly hauled back in the pit with the other waste material that is backfilling the pit.

Starting in year 20, EWRSF will start to be rehandled as the mine progresses to the east. The waste material in EWRSF will be backfilled into the pit. Similarly, the CGS and WWRSF will also be rehandled where the waste material will be backfilled into the pit. EWRSF, CGS, and WWRSF will be completely mined through by year 40.

Prior to the pit advancing south and across the current Highway 293, the powerline and Highway 293 will need to be re-routed south of the final Mineral Reserve pit shell.

The pit advancements on the figures below show the stated end-of-year mining for backfilling and mining face. Also shown are the haulage routes for ore, waste, coarse gangue and clay/salts. Sawtooth provided cost for all these haulage operations. Further discussion of the clay tailings can be found in section 17.4.8.

Figure 16-4 Year 1 Advancement

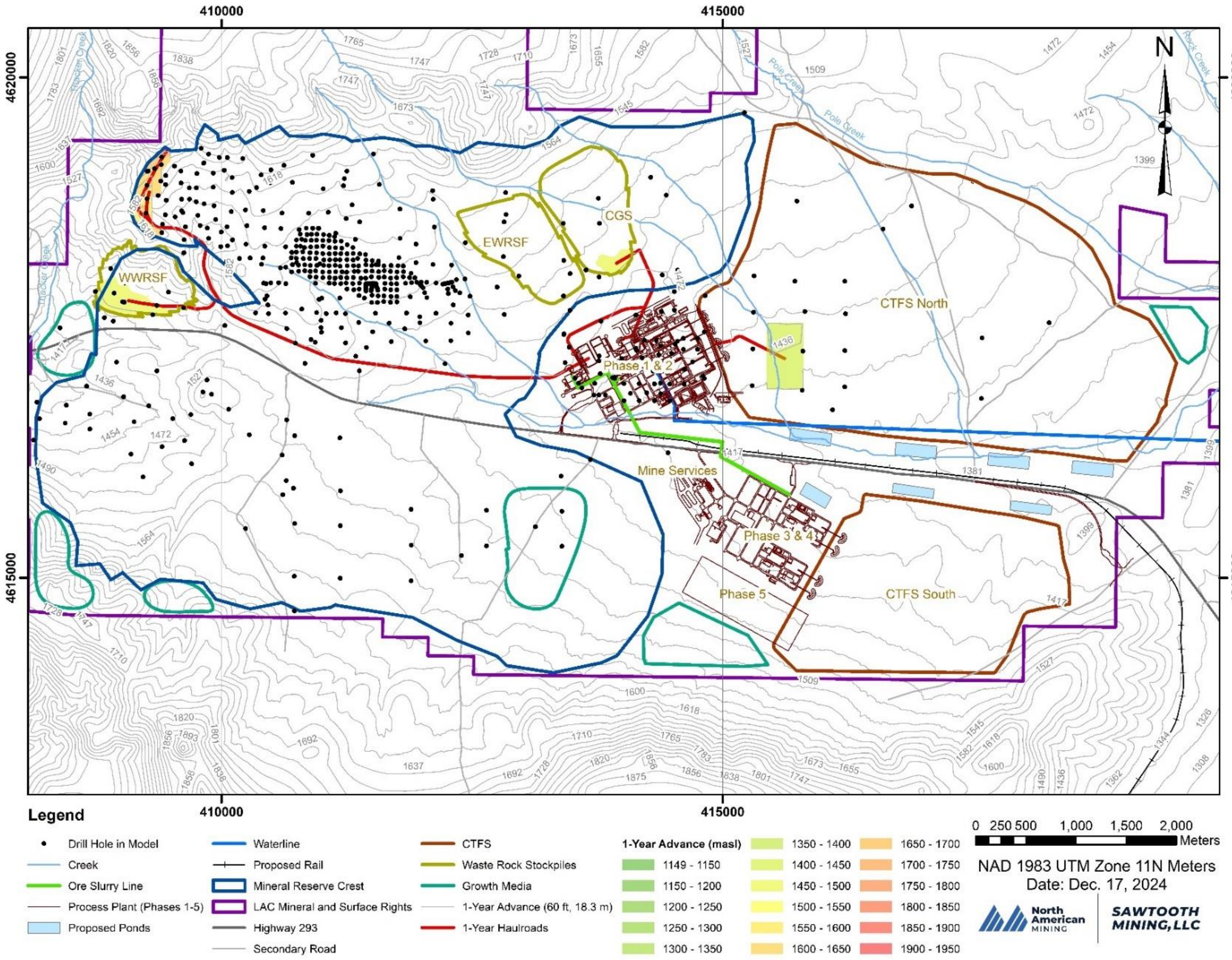


Figure 16-5 Five Year Advance

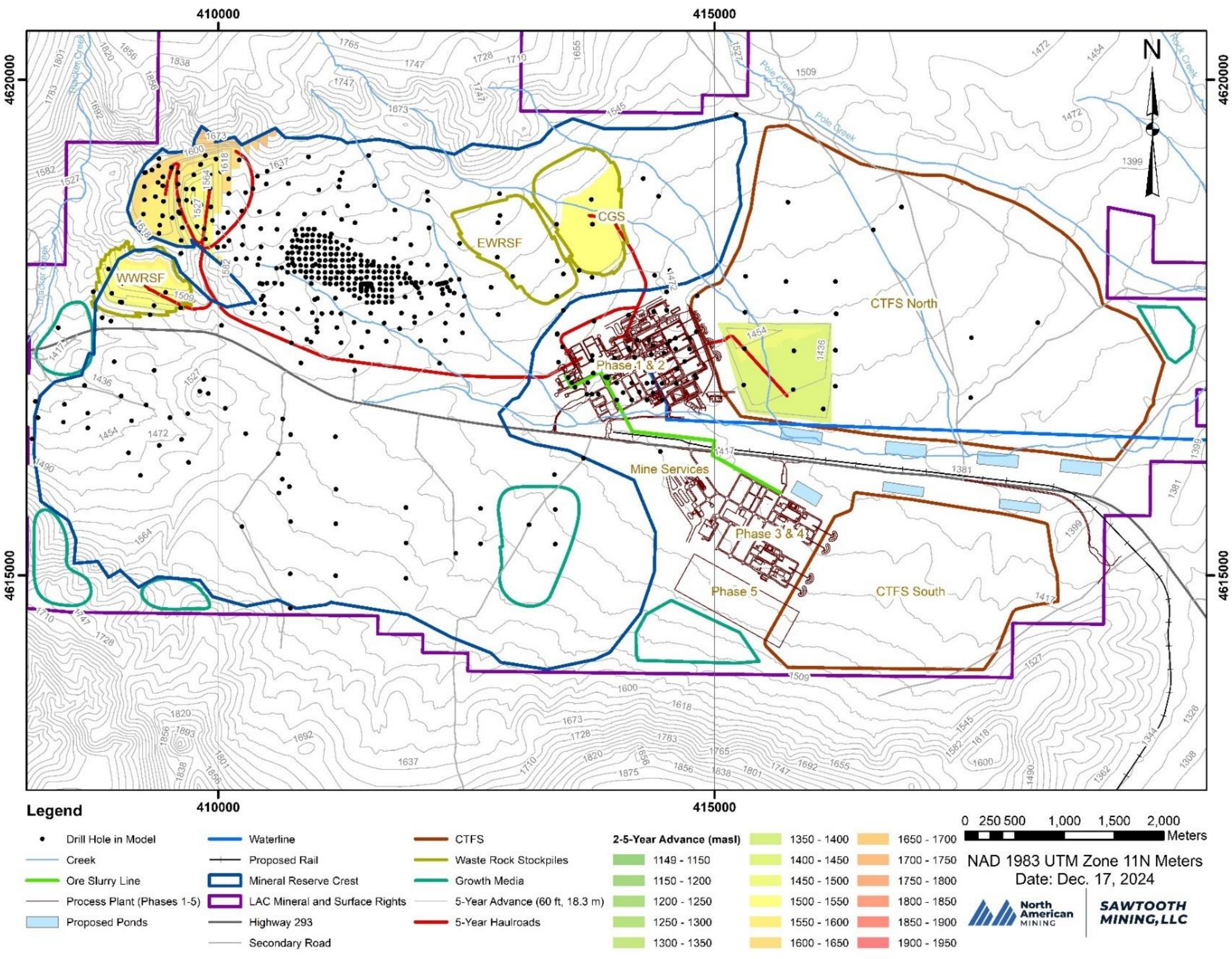


Figure 16-6 10 Year Advance

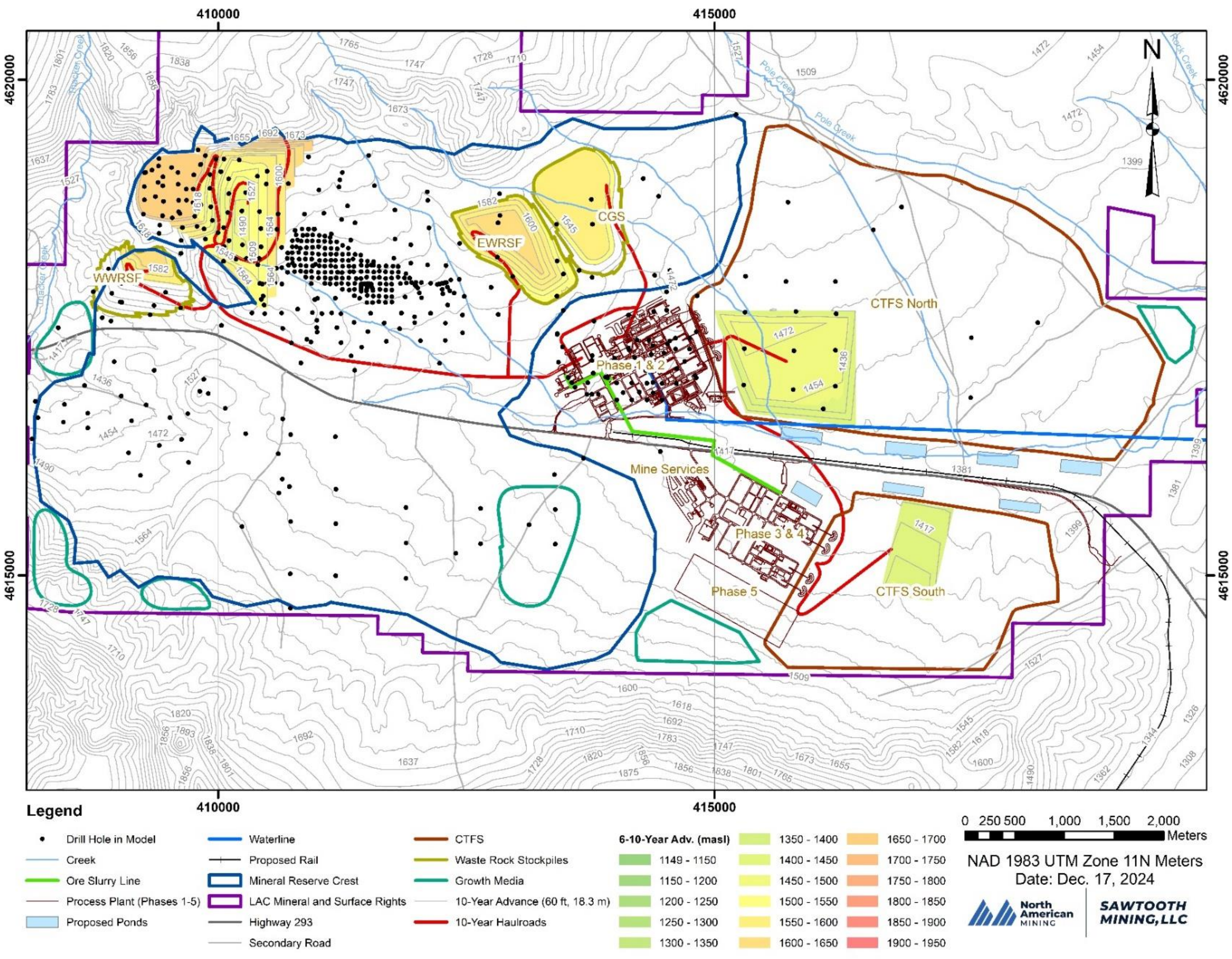


Figure 16-7 15 Year Advance

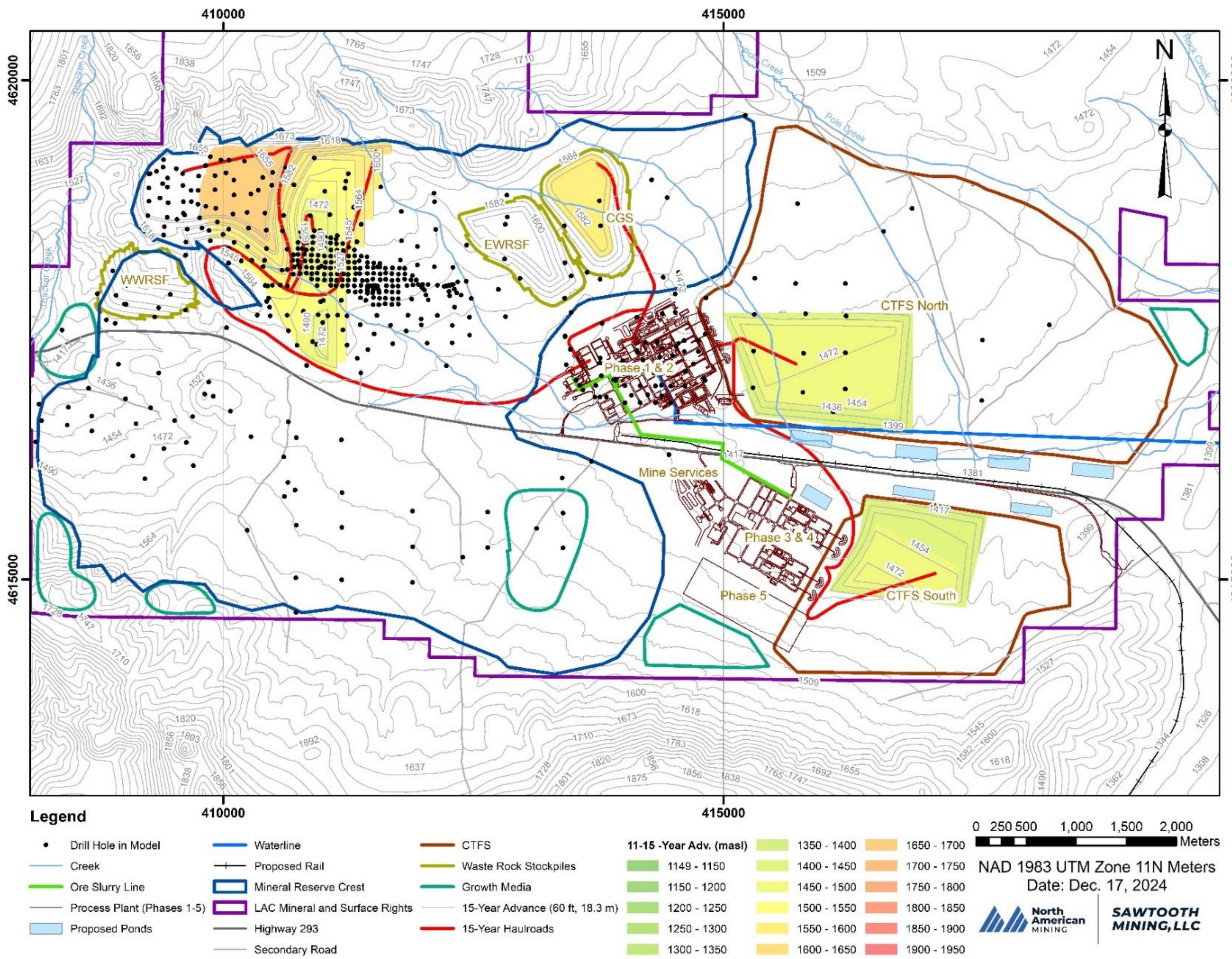


Figure 16-8 20 Year Advance

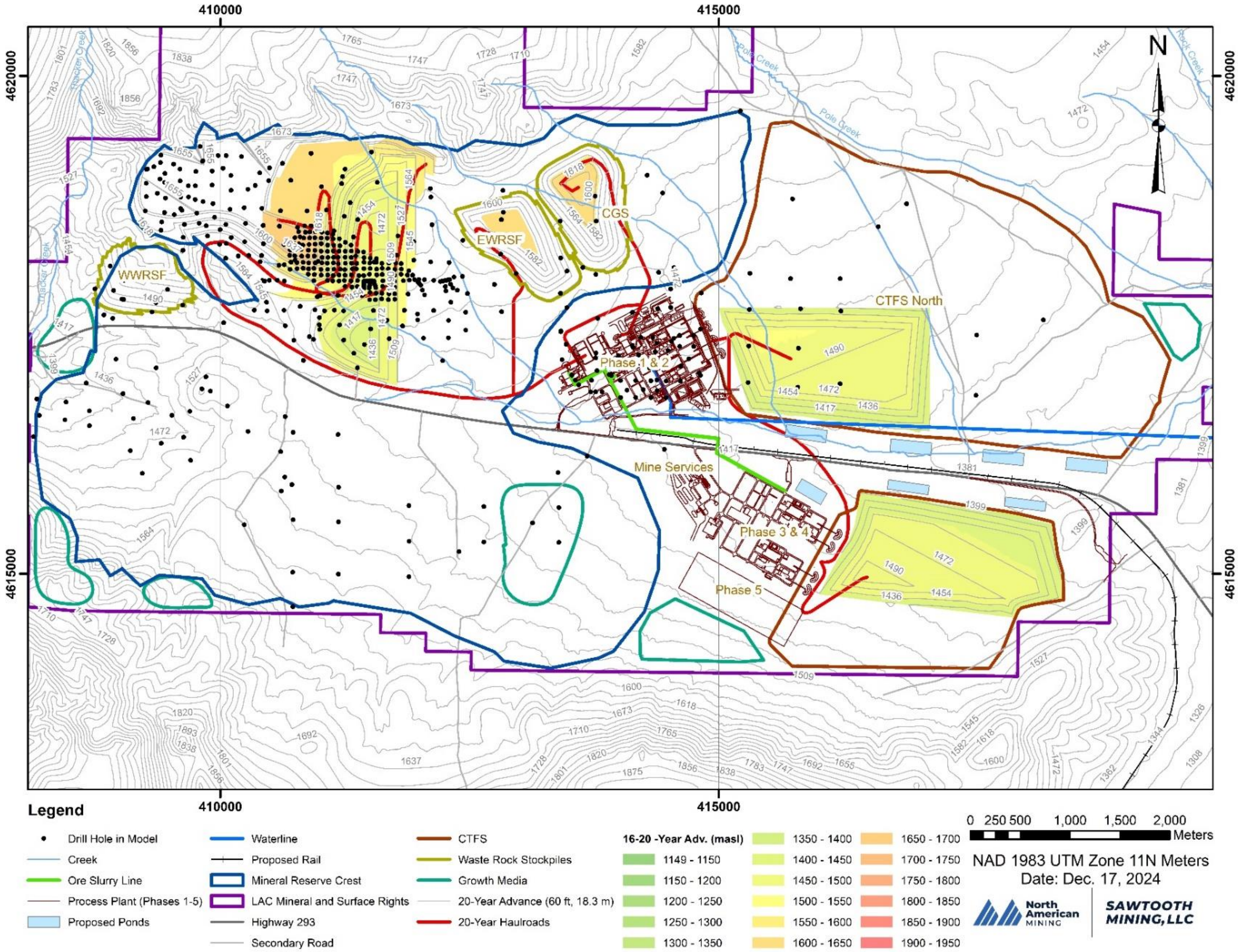


Figure 16-9 25 Year Advance

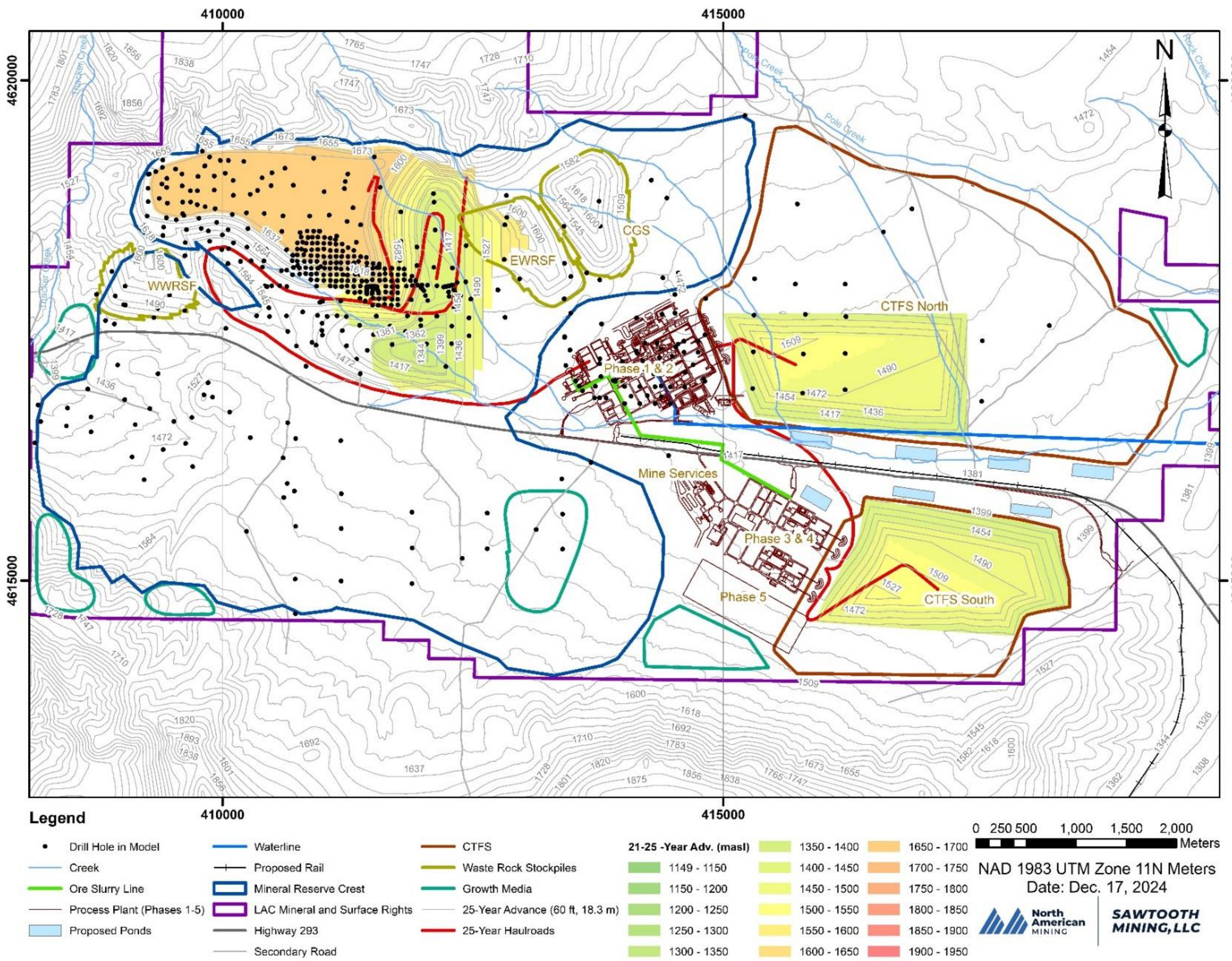


Figure 16-10 30 Year Advance

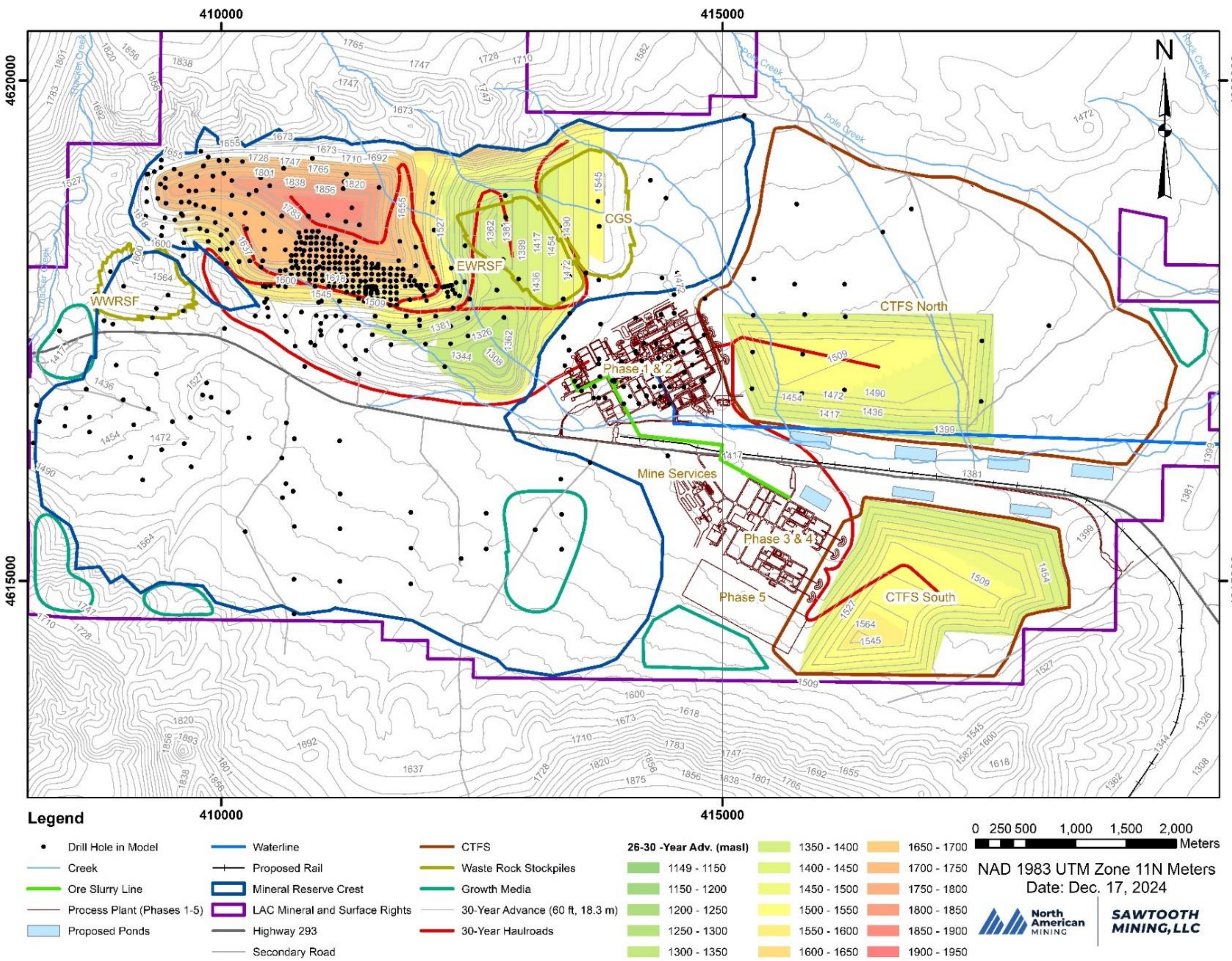


Figure 16-11 40 Year Advance

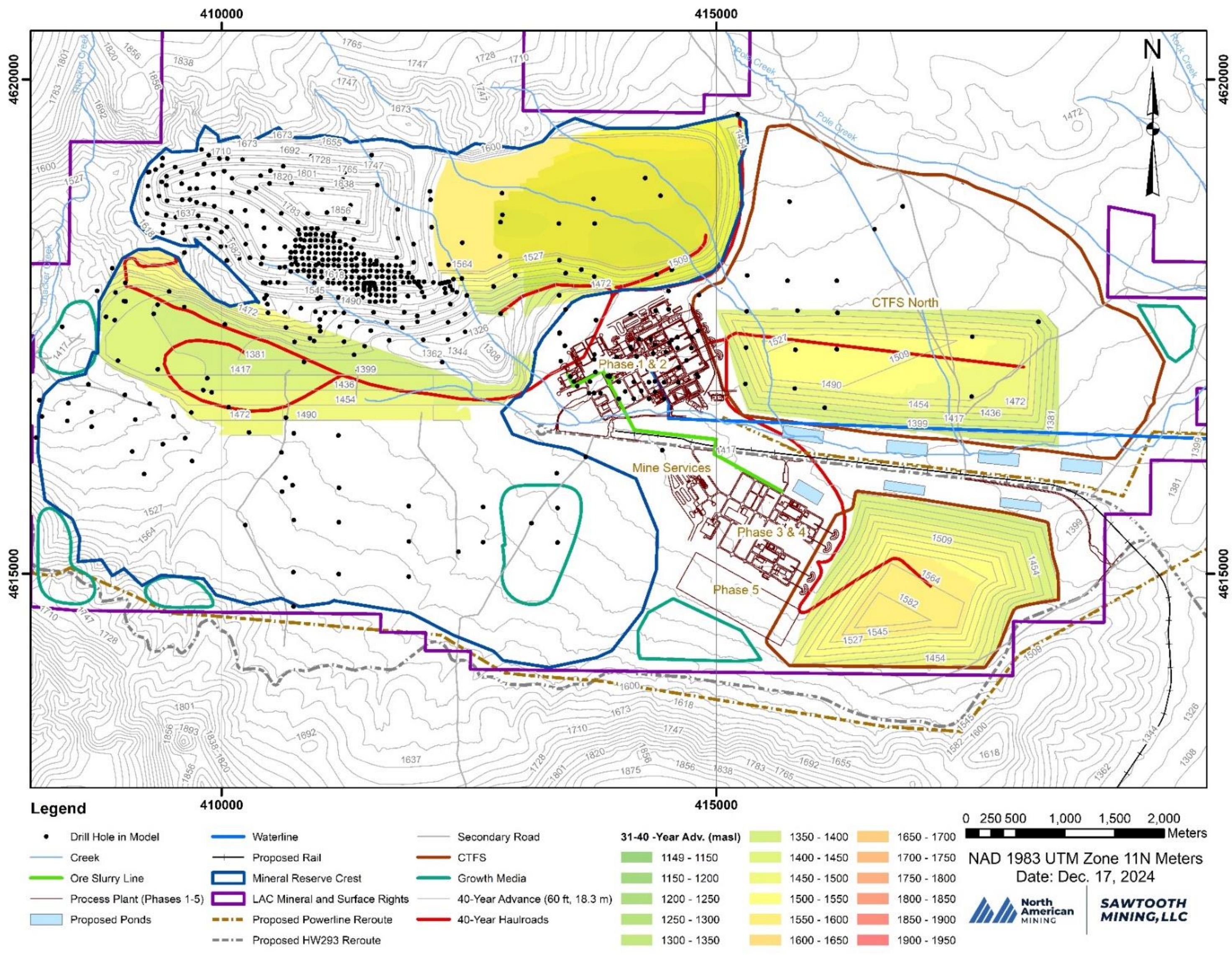


Figure 16-12 50 Year Advance

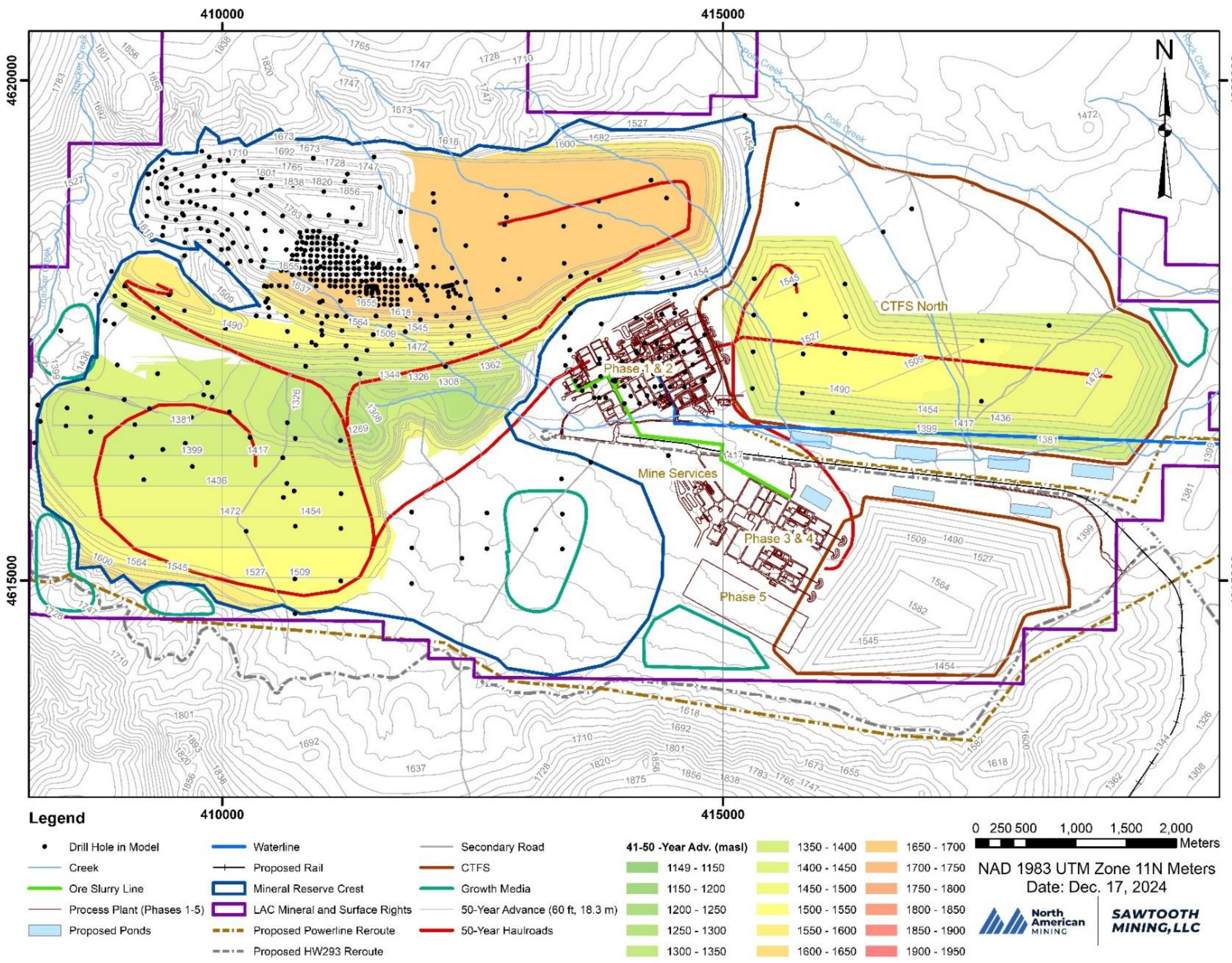


Figure 16-13 60 Year Advance

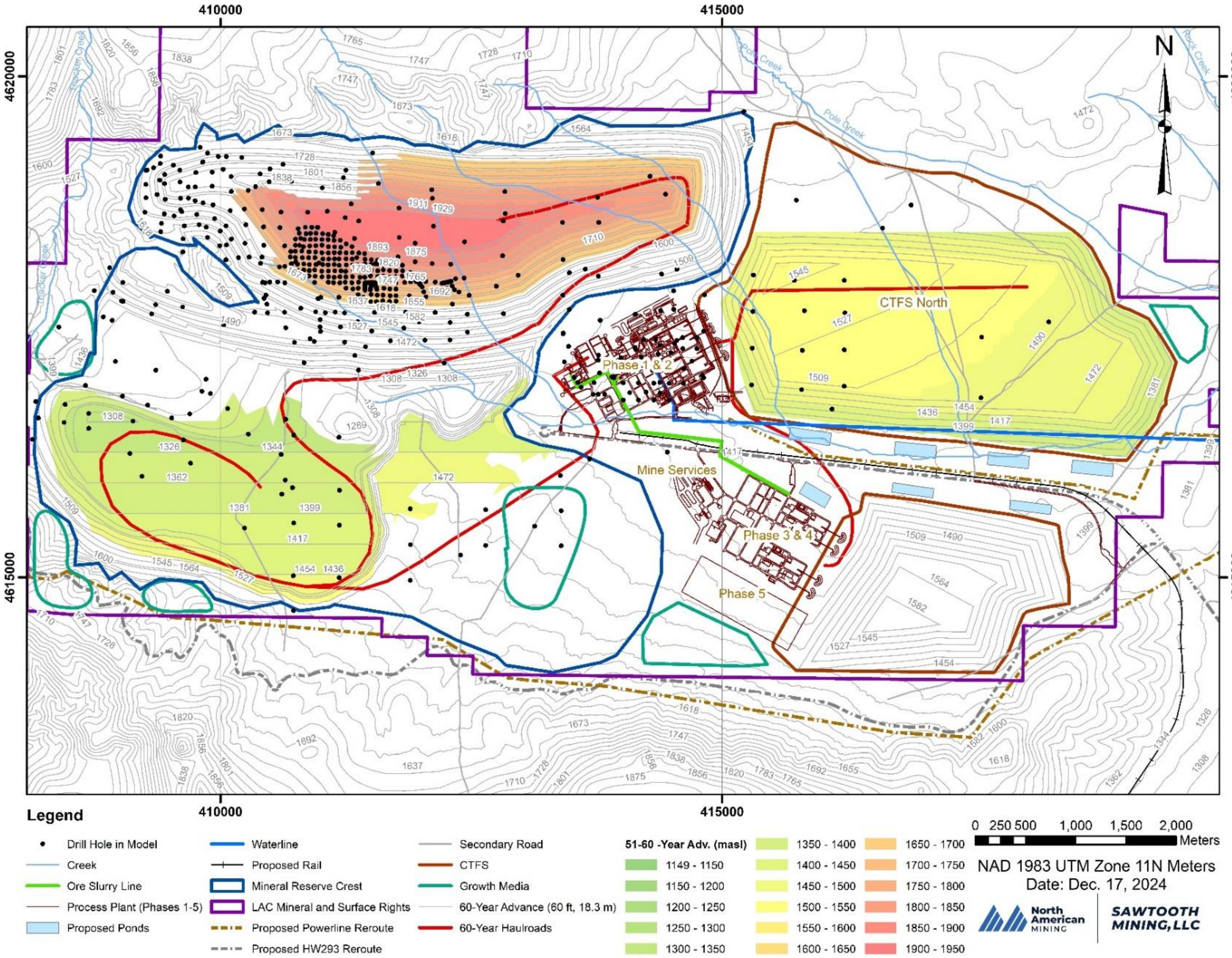


Figure 16-14 70 Year Advance

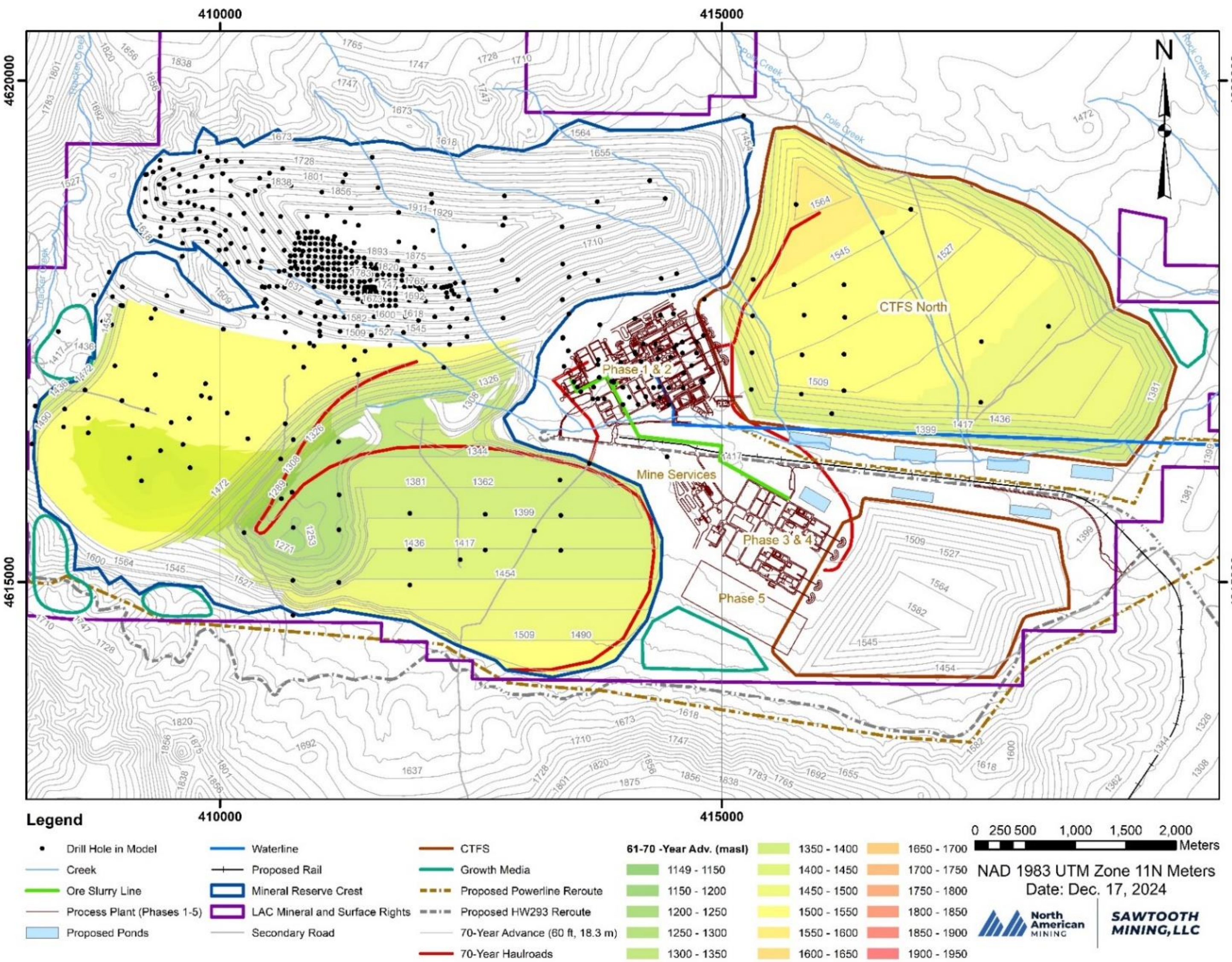


Figure 16-15 80 Year Advance

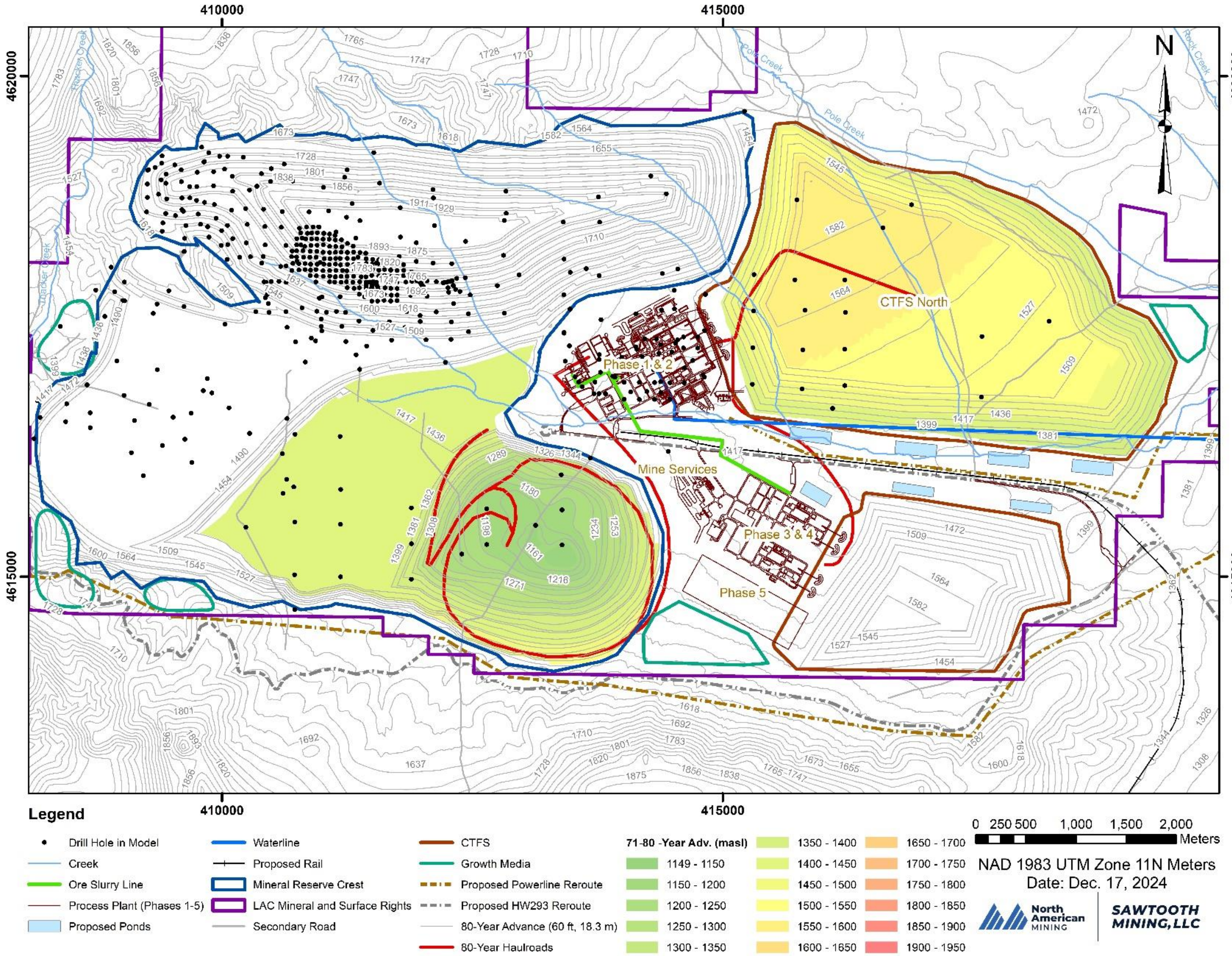
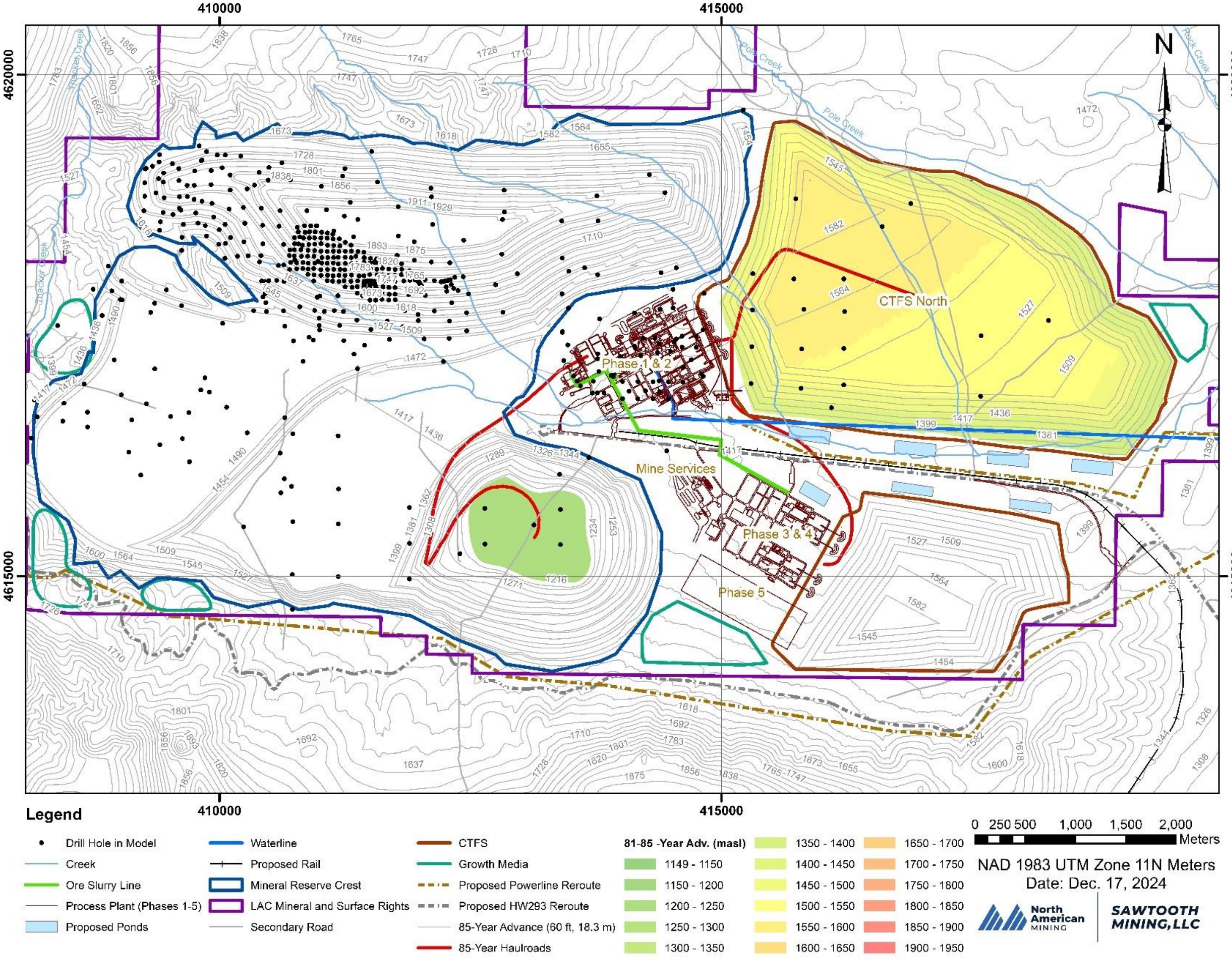


Figure 16-16 Final Year (85 Years) Advance



16.3 Mining Operations

Waste removal and ore removal will initially be done using two hydraulic excavators and a fleet of end 91-tonne dump trucks. The end dump truck fleet will haul the ore to the ROM stockpile and the waste will be hauled either to the West Waste Rock Storage Facility (WWRSF) or placed in previously mined sections of the pit. The end dump truck fleet will also be used to haul coarse gangue material. As plant phases are added and the mine expands, the mining fleets size will adjust accordingly to supply ore, haul waste, and coarse gangue.

Due to the sequence of mining, the majority of in-pit ramps will be temporary. Additionally, cross-pit ramping will be utilized from the load face to the in-pit waste dump as well as access to the main haul road. The cross-pit ramps will be constructed from the lower bench face to the lower bench of the waste dump using waste material. As the pit advances, portions of the in-pit ramp will be excavated to allow mining access to the lower mining faces. Removal of portions of the in-pit ramp will be considered rehandle and is accounted for in the total waste removed.

16.3.1 Waste Handling

A breakdown of the waste material types and tonnes are shown in Table 16-2.

Table 16-2 Waste Material

Waste Material	In-situ Wet Density (t/m^3)	Wet Tonnes (Millions)
Basalt	2.45	2,230.5
HPZ	2.03	73.7
Tuff	2.20	133.4
Qal (Alluvium)	2.35	419.4
Clay inferred	2.15	655.9
Clay M&I (Below CoG)	2.15	2,304.5
Waste (ore with ash >85%)	2.15	608.7
Ore Loss (5%)	2.15	64.2

16.3.2 Ore Handling

The determination of ore versus waste will be an ongoing process during operations carried out by an in-pit sampling program and field inspections. The sampling program will be done with a mobile drill rig. It is estimated that on each bench, sampling will consist of two rows with drill holes at 25 to 30-meter intervals along the rows, resulting in sampling blocks of approximately 25 x 25/30 x 5 meters. The sample results will be mapped and provided to the planners and supervisors to develop ore delivery plans for each shift for ore hauled from the pit, to be blended with previously stockpiled ore of known and tracked quality and grade. Additionally, a handheld ore quality detector will be used to spot-check indicative lithium concentration in the pit, stockpile, and feeders. Also, the sampling results will be used to update short term geological modeling.

The ore will initially be fed into two, ultimately three, feeder breakers operating 24 hours per day, seven days per week. This configuration represents Phase 1 and 2. Phase 3 and 4 will be duplicated from Phase 1 and 2, and Phase 5 will be a standalone system with a two feeder breaker configuration. End dump trucks hauling from the pit, in conjunction with dozers pushing off the ROM stockpile, will provide the ore feed to consistently match plant demand. While assigned to ore, the truck/excavator fleet will need to operate at a production rate higher than the delivery rate to the feeders to build inventory on the ROM stockpile. This inventory will then be used while this same truck/excavator fleet is assigned to waste removal. As Phases are added, the ROM stockpile will be built up to hold a 45-day inventory for the added capacity. The feed system from ROM stockpiles is designed to provide ore when trucks are not hauling as well as to blend between the feeders to ensure consistent quality and quantity of delivered ore.

The ROM stockpile will consist of three piles based on grade, a high-grade pile, a mid-grade pile, and a low-grade pile. The ore will be pushed into the variable feed rate feeders. The variable rate feeders allow the feed operator to keep the blend of the ore within the specified grade ranges.

16.3.3 Coarse Gangue

Blended ore from the process facility feeding system is first conveyed into the log washers, which is where the water is first introduced to the process. From the log washers, ore is transferred to the attrition scrubbers, then to a screen to remove oversize material that did not get separated by the attrition scrubbers, referred to as ‘attrition scrubber reject’. The attrition scrubber reject is assumed to be less than 1% of the delivered ore. The attrition scrubber reject is combined with the coarse gangue reject from the classification circuit and discharged to the coarse gangue stockpile. The Coarse Gangue stockpile will be complete in year 17. After the coarse gangue pile is full, the coarse gangue will then be hauled to the pit with haul trucks. Additionally, when the CTFS expands, course gangue material will be used as over-liner material.

16.3.4 Mine Quantities

Table 16-3 is a summary of the mining quantities by year for the first 25 years. The quantities are then summarized in 5-year annualized increments in Table 16-4.

Table 16-3 Mine Quantities Summary (tonnes in millions unless noted) for the 25 First Years

	Phase 1				Phase 1/2				Phase 1/2/3				Phases 1/2/3/4/5												
	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21	Y22	Y23	Y24	Y25
Dry Ore Tonnes Mined (95% Rec)	1.7	2.5	2.3	2.6	4.2	5.0	4.9	5.3	6.9	7.5	8.0	7.5	11.9	13.5	12.5	13.0	12.4	12.2	12.7	12.3	11.7	12.6	12.8	12.0	12.2
Wet Ore Tonnes Mined (95%Rec)	1.9	2.9	2.6	3.0	4.9	5.8	5.7	6.1	8.0	8.7	9.2	8.6	13.7	15.5	14.4	14.9	14.3	14.0	14.5	14.1	13.4	14.4	14.6	13.7	14.0
Wet In Situ Ore Tonnes (Informational)	2.0	3.0	2.8	3.2	5.1	6.1	6.0	6.4	8.4	9.1	9.7	9.1	14.4	16.3	15.1	15.7	15.0	14.7	15.3	14.9	14.1	15.2	15.4	14.4	14.7
Plant Feed (Dry Tonnes Leach Ore)	1.0	1.5	1.4	1.6	2.5	2.9	3.0	3.2	4.0	4.5	4.6	4.6	6.8	8.0	7.7	8.2	8.1	7.7	8.2	8.1	7.7	8.2	8.1	7.7	8.2
Average Li Concentration (ppm)	4,351	4,132	4,251	3,970	3,653	3,683	3,714	3,521	3,461	3,492	3,242	3,464	3,202	3,215	3,065	3,032	3,284	3,215	3,285	3,322	3,165	2,939	2,882	2,884	2,977
Total Waste Tonnes (Wet)	3.5	4.1	8.4	16.0	17.2	20.8	22.9	21.9	24.6	23.1	31.5	36.5	33.8	32.7	31.9	34.1	34.5	31.3	36.9	37.2	48.2	57.9	57.3	65.8	71.4
Growth Media Tonnes (Wet, kt)	13.1	6.5	14.8	33.9	98.9	53.9	53.9	53.9	53.9	53.9	99.6	99.6	99.6	99.6	99.6	65.6	65.6	65.6	65.6	65.6	95.0	95.0	95.0	95.0	95.0
Total Tonnes Mined (Wet)	6.2	7.1	11.1	19.0	22.1	26.8	28.9	28.3	32.7	32.6	42.1	48.6	46.9	47.2	45.5	46.4	47.2	44.0	56.4	53.4	62.4	73.2	76.5	83.4	90.0
Coarse Gangue (Wet, kt)*	7.9	11.9	10.2	12.0	19.6	24.1	22.3	24.9	33.9	35.2	39.4	33.8	58.2	63.8	55.6	55.0	49.5	51.9	51.6	48.5	45.6	50.8	53.6	49.2	45.9
Strip Ratio (Total Waste: Ore Mined (95%REC))	1.8	1.4	3.2	5.3	3.5	3.6	4.0	3.6	3.1	2.7	3.4	4.2	2.5	2.1	2.2	2.3	2.4	2.2	2.5	2.6	3.6	4.0	3.9	4.8	5.1
Lithium Carbonate Tonnes (Dry, kt) Delivered	1.7	2.5	2.3	2.6	4.2	5.0	4.9	5.3	6.9	7.5	137.5	138.2	202.0	230.6	204.1	209.3	217.5	208.7	221.5	218.1	196.7	197.0	195.8	183.7	193.3

Note: * Growth media is include in the Total Waste Tonnes

Table 16-4 Mine Quantities Summary (tonnes in millions unless noted) by 5-Years Annualized Increments

	Phases 1/2/3/4/5													
	Y26-30	Y31-35	Y36-40	Y41-45	Y46-50	Y51-55	Y56-60	Y61-65	Y66-70	Y71-75	Y76-80	Y80-85	85 Yr Average	Total
Dry Ore Tonnes Mined (95% Rec)	58.4	58.5	84.1	81.0	70.6	71.9	73.2	73.4	64.0	71.2	69.8	60.3	12.4	1,056.7
Wet Ore Tonnes Mined (95%Rec)	66.8	66.8	97.4	93.7	82.1	83.6	84.5	85.0	74.3	82.1	80.6	69.8	14.3	1,219.3
Wet In Situ Ore Tonnes (Informational)	70.3	70.3	102.6	98.6	86.4	88.0	88.9	89.4	78.2	86.4	84.8	73.5	15.1	1,283.4
Plant Feed (Dry Tonnes Leach Ore)	39.9	40.4	40.0	39.9	40.4	40.0	39.9	40.4	39.9	39.9	40.4	33.3	7.2	611.8
Average Li Concentration (ppm)	3,089	3,330	2,191	2,200	2,026	2,090	2,483	2,172	1,992	2,699	2,448	1,778	2,538	N/A
Total Waste Tonnes (Wet)	587.9	491.9	491.8	435.7	604.6	615.7	532.6	588.5	595.5	586.5	152.4	3.7	76.4	6,490.2
Growth Media Tonnes (Wet, kt)*	317.6	731.6	731.6	967.8	967.8	134.7	134.7	694.7	694.7	0.0	0.0	0.0	101.6	7,112.6
Total Tonnes Mined (Wet)	668.4	562.1	637.4	624.2	640.1	657.1	623.8	651.4	609.5	674.3	283.2	N/A**	90.7	7,709.4
Coarse Gangue (Wet, kt)	213.2	207.1	513.7	477.5	352.3	372.2	386.0	382.8	280.0	361.9	340.5	313.1	60.6	5,154.8
Strip Ratio (Total Waste: Ore Mined (95%REC))	8.8	7.4	5.0	4.6	7.4	7.4	6.3	6.9	8.0	7.1	1.9	N/A*	5.3	N/A
Lithium Carbonate Tonnes (Dry, kt) Delivered	960.6	1,036.3	980.5	948.3	761.6	800.2	968.0	848.9	678.8	1,023.1	910.1	571.1	168.1	14,288.0

Notes: * Growth media is included in the Total Waste Tonnes, * *Production in Years 81-85 is only sourced from long term ore stockpile rehandle.

16.4 Equipment Selection

Equipment selection was based on the annual quantities of material required to be mined. Kevin Bahe, the QP responsible for this section of the Technical Report, consulted Caterpillar, Komatsu, and Liebherr to determine the best fleet size. After reviewing various options, 91-tonne class end dump trucks loaded by two 18-tonne class hydraulic excavators in five passes was selected. The excavators will be used to load two types of ore as well as the waste material. They will be staged to minimize movement between the multiple required dig faces. The trucks can easily be assigned or re-assigned to either machine to maintain maximum production depending on excavator downtime, changes in required material to be hauled, and haul cycle times. The excavators and trucks will be equipped with buckets and bodies specifically designed for the density of the material at Thacker Pass.

16.4.1 Excavators/Loaders

A hydraulic excavator with a backhoe-type configuration was selected over a wheel loader or hydraulic front shovel due to its ability to better separate and remove thin waste horizons within the ore. Additionally, the track setup allows for better tractability and stability when working on clay material. The hydraulic excavators can be staged to minimize movement between the multiple required dig faces. The trucks can easily be assigned or re-assigned to either machine to maintain maximum production depending on excavator downtime, changes in required material to be hauled, and haul cycle times. The excavators and trucks will be equipped with buckets and bodies specifically designed for the density of the material at Thacker Pass.

Over the life of the mine for this plan, three different size excavators are utilized to load ore and waste. The excavator classes used are 18-tonne, 36-tonne, and 73-tonne. The 18-tonne excavator is paired with 91-tonne end dumps. The 36-tonne excavator is paired with 181 tonne end dumps and the 63- tonne excavator is paired with 305-tonne end dumps.

The 18 tonne excavators are used from Year 1-5 hauling both waste and ore. In year 6, after Phase 2 starts, the 36 tonne excavators are added to the operations. From Years 6-10, the 36-tonne fleet is deployed to handle waste full time. During this time period the 18-tonne fleet is primarily hauling only ore while providing some waste support.

Starting in year 11, the 18 tonne excavators are backup machines. The 36-tonne fleet is the main fleet hauling ore through the life of mine. Also in year 11, the 63-tonne excavators are added to become the primary waste removal fleet through the end of life of the mine.

For loading and haulage of coarse gangue and clay and salts, the 22-tonne front-end loader is paired with 91-tonne end dump trucks. This fleet configuration is used throughout the life of the mine.

16.4.2 End Dumps

The number and size of end dump trucks in the fleet will allow each loading unit to operate at a high production rate. The size of the end dump trucks used with the excavator and loaders are based on OEM recommendations. The size of end dump trucks used for this mine plan are 91-tonne, 182-tonne and 305 -tonne.

16.4.3 Dozers

Over the life of mine, three different sizes of dozers are utilized. The class of dozers used are 475 HP dozers, 600 HP dozers, and 850 HP dozers. The size of dozers increases with the increase of waste and ore and mining equipment size. The dozers will be used to feed ore into the feeder, manage dumps, provide support for the excavators and loaders, and manage stockpiles – coarse gangue, clay tailings.

For years 1-5, ore feed and stockpile maintenance will be accomplished with 475 HP dozers. In year 6, 600 HP dozers are added. Additional 600 HP dozers are added in years 9 and 13. The first 850 HP dozers are added in year 11. Additional 850 HP dozers are added in years 24 and 26.

16.4.4 Water Trucks and Graders

Motor graders and large and small water trucks were selected based on the requirements needed to adequately support the truck/excavator fleet. Table 16-5 lists the size and count of these pieces of equipment by phase.

Table 16-5 Major Equipment Specifications

Equipment	Class	Usage	Phase 1 (Y1-4)	Phases 1-2 (Y5-8)	Phases 1-3 (Y9-12)	Phases 1-5 (Y13-85)
Hydraulic Excavator						
Hydraulic Excavator 1	18 tonne	Waste and Ore Removal	2	2	2	2
Hydraulic Excavator 2	36 tonne		-	2	2	2
Hydraulic Excavator 3	63 tonne		-	-	1	1 - 4
End Dump Trucks						
End Dump 1	91 tonne	Ore, Waste, Attrition Scrubber	6-9	12	12	12 - 15
End Dump 2	181 tonne		-	8	8 - 14	14 - 17
End Dump 3	305 tonne		-	-	8	8 - 54
Wheel Loader						
Wheel Loader 1	22 tonne	Coarse Gangue, Ore, Waste, Ore Feed	1	1	1	1
Track Dozer						
Track Dozer 1	475 HP	Ore, Waste, Coarse Gangue, Ore Feed	3 - 4	5	5	5
Track Dozer 2	600 HP		-	2	4	5 - 6
Track Dozer 3	850 HP		-	-	2	2 - 6
Grader						
Grader 1	305 HP	All areas	2 - 3	4	5	5 - 7
Grader 2	535 HP		-	-	2	2 - 15
Water Truck (Primary)						
Water Truck1	32k Liter	Dust Suppression, All areas	2	2	2	2
Water Truck 2	83k Liter		1 - 2	3	3	3
Water Truck 3	167k Liter		-	2	2 - 3	3 - 13
Wheel Dozer						
Wheel Dozer 1	500 HP	Coarse Gangue, Ore, Waste	1	1	1	1

Table 16-6 is a list of support and auxiliary equipment and quantity.

Table 16-6 Support Equipment

Equipment	Phase 1 (Y1-4)	Phase 1-2 (Y5-8)	Phase 1-3 (Y9-12)	Phase 1-5 (Y13-85)
Light-duty vehicles	8 - 18	18	22	22 - 79
Light Plants	6 - 16	18	20	20 - 43
Mechanics Truck	1 - 2	2	3	3 - 9
Fuel/lube truck	2	3	3	3 - 11
Telehandler	1	1	1	1

16.4.5 Equipment Productivity

The mine will operate 7 days per week, 24 hours per day. Ore, waste, coarse gangue, and/or clay/salt tails may be hauled on any given shift. Productivity estimations for each piece of mining equipment are based on 355 scheduled days per year excluding holidays. However, the mine will be able to operate on holidays to provide ore to the plant. The equipment operating hours take into account mechanical availability and operational availability. The operational availability includes various items such as supervisor communication, transportation to the workplace, equipment pre-start checks, and breaks.

The estimated annual production rate for the excavators and loaders is based on CAT equipment rates and internal experience. Vulcan software to layout haul profiles. The haul profile information (distance and grade) was then entered into Barr's in-house haulage cycle time spreadsheet. The cycles times for each profile was then calculated. The haul profiles were developed by mining block and by year and from the various loading operations to the haulage destination: ROM stockpile, waste rock storage facilities, in-pit waste rock placement, coarse gangue stock stockpile and the clay tailings storage facility.

The haulage cycle times were combined with estimated loading and dump times to determine total cycle times. Based on the total cycle times, mechanical availability, and production efficiencies, the number of end dump trucks were assigned to each loading operation, and the required operating hours were estimated. The minimum and maximum annual scheduled hours by equipment fleet for ore and waste by phases are presented in Table 16-7.

Table 16-7 Scheduled Hours by Fleet (hours in thousands unless noted)

Fleet	Phase 1 Scheduled Hours (Min/Max)	Phases 1-2 Scheduled Hours (Min/Max)	Phases 1-3 Scheduled Hours (Min/Max)	Phases 1-5 Scheduled Hours (Min/Max)
Hydraulic Excavator				
Hydraulic Excavator 18 Tonne	5.3 - 14.1	4.4 - 16.4	0.5 - 8.9	0.5 - 1.4
Hydraulic Excavator 36 Tonne	-	8.2 - 8.4	3.6 - 8.3	4.9 - 13.1
Hydraulic Excavator 63 Tonne	-	-	7.2 - 8.2	7.0 - 28.6
End Dump Trucks				
End Dump 91 Tonne	29.3 - 61.8	41.0 – 86.1	14.7 – 75.0	19.6 – 63.3
End Dump 181 Tonne	-	47.7 – 48.7	39.4 - 48.6	30.5 - 110.8
End Dump 305 Tonne	-	-	41.0 - 47.6	34.8 - 403.3
Wheel Loader				
Wheel Loader 22 Tonne	0.6 – 1.0	1.6 – 2.0	2.7 – 3.2	3.3 – 8.3
Track Dozer				
Track Dozer 475 HP	11.5 – 28.6	20.7 - 36.6	3.2 – 10.2	3.9 – 9.1
Track Dozer 600 HP	-	12.3 - 12.6	21.6 - 32.0	32.7 - 49.1
Track Dozer 850 HP	-	-	10.8 - 12.3	10.6 - 42.9
Motor Grader				
Motor Grader (305 HP)	8.8 – 18.9	25.9 – 29.7	16.9 – 37.1	16.2 – 52.6
Motor Grader (535 HP)	-	-	12.3 - 14.3	10.4 - 121.0
Water Truck (Primary)				
Water Truck 32k Liter	1.2 – 2.5	1.6 – 3.4	0.4 -2.9	-
Water Truck 83k Liter	5.9 – 12.9	8.4 - 17.3	3.7 – 16.5	4.8 – 14.4
Water Truck 167k Liter	-	10.5 - 10.7	10.7 - 20.3	19.4 - 102.3
Wheel Dozer				
Wheel Dozer (500 HP)	0.3	0.5 – 0.6	0.8 – 0.9	1.0 – 2.5

16.5 Personnel Requirements

Four crews will be utilized to cover the 168 hours per week rotating operating schedule. A Monday through Friday schedule has been included for management and technical service positions. It is assumed that local talent will be available, and no fly-in-fly-out adjustments have been included.

The positions included in the labor are listed in Table 16-8. Positions listed are for mining operations including waste and ore, clay/salt tailings and coarse gangue.

Table 16-8 Personnel List

Position	Roster	Phase 1 Headcount (Y1-4)	Phase 1-2 Headcount (Y5-8)	Phase 1-3 Headcount (Y9-12)	Phase 1-5 Headcount (Y13-85)
Management					
Mine Manager	M-F	1	1	1	1
Technical Services					
Mining Engineers	M-F	2	4 - 5	5	5 - 32
Engineer Technician/Surveyor	M-F	2 - 3	4	4 - 5	5 - 12
Geologist	M-F	1	1	1	2
Operations					
Supervisors	M-S	4 - 6	9-10	10	10 - 36
Equipment Operators	M-S	43 - 85	102 - 112	112 - 137	137 - 343
Maintenance					
Maintenance Planner	M-F	1-2	2	2 - 3	3 - 6
Supervisors	M-S	2 - 3	3 - 4	3 - 4	4 - 16
Mechanics/Welders	M-S	14 – 26	31 - 34	34 - 40	40 - 149
Electricians	M-S	1-2	2	2 - 3	3 - 6
Administrative					
Business Manager	M-F	1	1	1	1
Accountant	M-F	1-2	2	2 - 3	3 - 7
Administrative / AP Clerk	M-F	1-2	2	2	2 - 5
Human Resources	M-F	1-2	2	2	2 - 4
Safety Supervisor	M-F	1-2	2	2	2 - 4

16.6 Fuel

Equipment fuel consumption rates are based on the manufacturer's recommendation along with historical data from Sawtooth affiliated mines operating similar equipment in similar conditions. The diesel fuel unit cost used is $3.80 per US gallon.

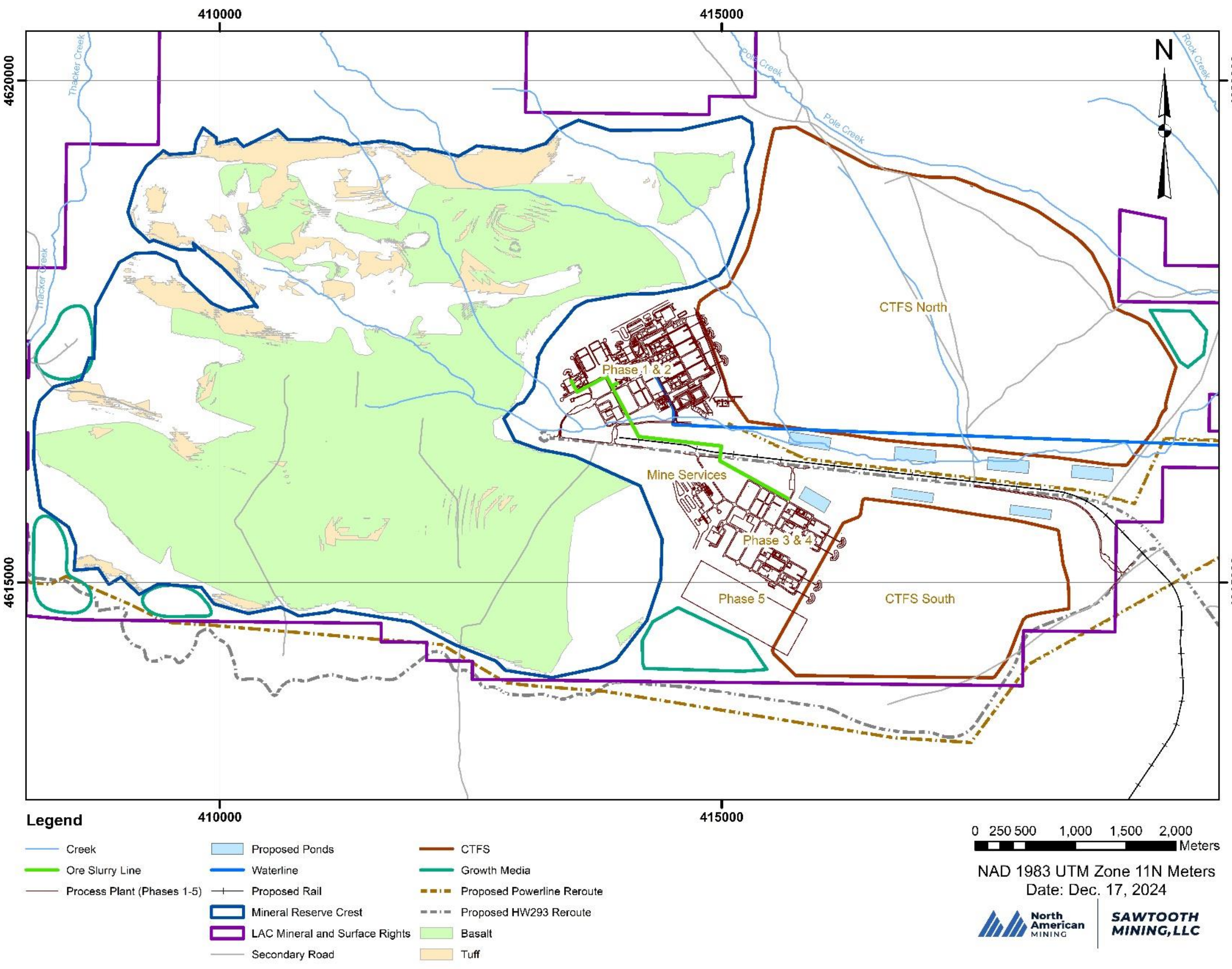
16.7 Drilling and Blasting

The “Factual Geotechnical Investigation Report for Mine Pit Area” (Mar 2018) completed by Worley Parsons and the “Prefeasibility Level Geotechnical Study Report” (May 2011) completed by AMEC were used to determine the ability to mine without blasting. The uniaxial compressive strength (UCS) test results in the AMEC data range from essentially 0 to 55.4 MPa. The UCS test results in the Worley Parsons data range from 0.61 to 21.82 MPa with an average of 7.7 MPa. The range of UCS results is within the cutting range of the excavator. Additionally, a small test pit was excavated by WLC in 2013 using a small loader and dozer. No blasting was required.

Based on reported test results, exploratory drill logs, and actual excavation of a test pit, only the basalt is expected to require blasting. However, there are bands of hard ash which may require ripping with a dozer prior to loading. The remaining waste and ore can be free dug with the hydraulic excavators. A third-party contractor will be used for the drilling and blasting on an as needed basis.

Figure 16-17 shows the outlines of the basalt areas within the pit area. Also, an outcrop of tuff is at the entrance of the initial pit area. This tuff will be blasted and used for road base.

Figure 16-17 Basalt and Tuff Zones within Mineral Reserve Pit

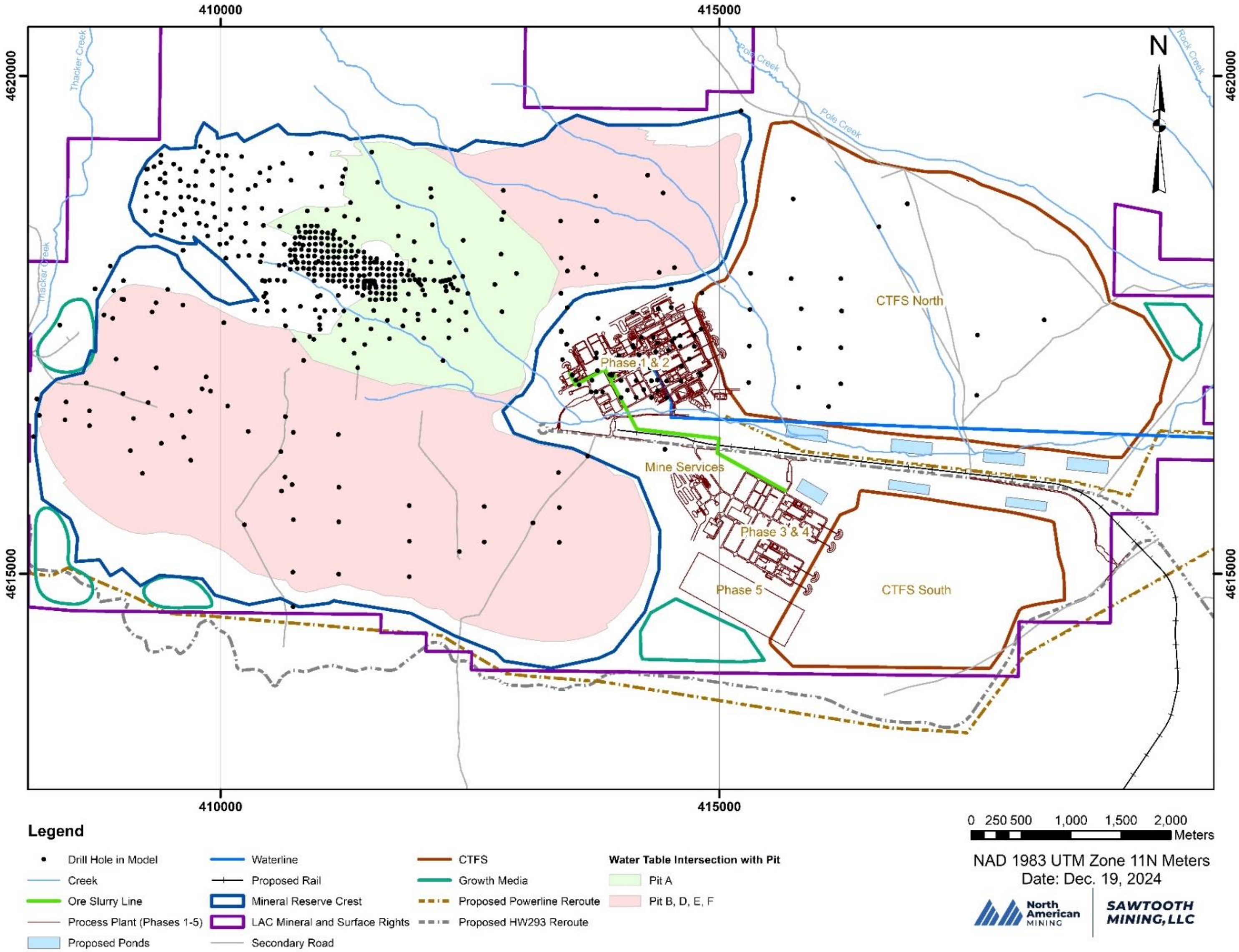


16.8 Dewatering

It is anticipated that appreciable groundwater is not likely in the mining operations for Pit A. This assumption is based on a November 2019 report by Piteau Associates. The regional groundwater table is expected to be encountered in approximately year 15 of mining in Pit A. Groundwater discharge into the pit is not expected to be more than approximately 23 m^3/h (100 gpm) at peak. Dewatering wells are not anticipated to be required for these minor discharge rates. Any water encountered in Pit A will be collected in sumps and possibly be utilized for in-pit dust control.

Figure 16-18 shows the groundwater model contact with the Mineral Reserve pit floor. The model projects groundwater throughout the pit shell. Groundwater studies will need to be conducted for Pit B, D, E and F to verify the water table level and discharge for these areas.

Figure 16-18 Modeled Groundwater Contact with Reserve Pit Floor



17 RECOVERY METHODS

17.1 General Description

This section describes the major processing areas of the operation that will recover lithium from the ore. The proposed flowsheet is based on metallurgical test results described in Section 13. The process employs industry-standard, commercially available equipment. This information serves as the basis for the development of the capital and operating costs presented in Section 21.

The Mineral Reserves are comprised of two main types of lithium-bearing clay, smectite and illite, with volcanic ash and other gangue minerals mixed throughout. Feed to the process plant is determined by a cutoff factor of extractable lithium per tonne clay as discussed in Section 15.3.1. The extractable recoverable lithium is calculated based on correlations developed by LAC (see Section 13). Though both types of clay will be processed, most of the feed is illite clay type, averaging 96.6% over the life of mine. Run-of-mine ore will be delivered to the plants from stockpiles which have dedicated comminution and conveyor systems.

The ore will be upgraded using a wet attrition scrubbing process followed by two classification stages to remove coarse material with low lithium content, referred to as coarse gangue. The upgraded ore slurry will be processed in a leach circuit using sulfuric acid to extract the lithium from the lithium-bearing clay. The lithium-bearing solution will then be purified primarily by using crystallizers and precipitation reagents to produce battery grade lithium carbonate. Leach residue will be washed, filtered, and stacked in a tailing facility along with various salts generated in the process.

The Project will be constructed in five expansion phases. Lithium carbonate production from Phases 1 through 4 is designed for a nominal 40,000 t per annum capacity per phase for a total nominal capacity of 160,000 t per annum. Phase 5 expansion will be introduced at the time of Phase 4 expansion when mined ore grade decreases resulting in available capacity in the lithium carbonate crystallization circuits constructed during the initial four Phases. The process plant will operate 24 hours/day, 365 days/year with an overall availability of 88% and a mine life of 85 years. The total amount of ore processed from the mine plan is 1,057 Mt (dry).

The recovery process consists of the following primary circuits:

- Beneficiation
    - Comminution
    - Attrition Scrubbing
    - Classification
    - Solid-Liquid Separation (Thickening and Dewatering)
- Leaching
- Neutralization
- Countercurrent Decantation (CCD) and Filtration
- Magnesium and Calcium Removal
- Lithium Carbonate (Li_2CO_3) Production
    - 1st Stage Lithium Carbonate Crystallization
    - Bicarbonation
    - 2nd Stage Lithium Carbonate Crystallization
    - Zero Liquid Discharge (ZLD) Crystallization (Sodium Sulfate and Potassium Sulfate)

Table 17-1 summarizes the primary processing steps utilized during each expansion phase.

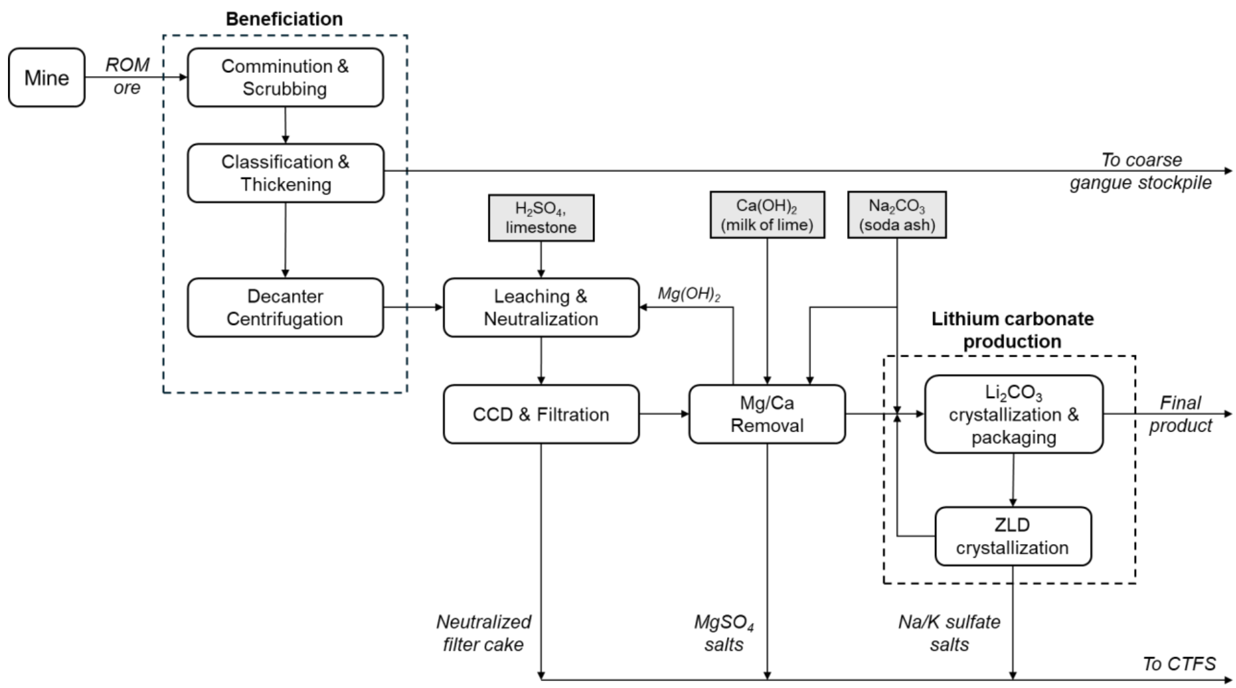
Table 17-1 Primary Circuits by Phase

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Acid Plant Capacity (t/d H_2SO_4)	2,250	2,250	2,250	2,250	3,000
Nominal Design LCE Production per phase (t/y)	40,000	40,000	40,000	40,000	0
Beneficiation	✓	✓	✓	✓	✓
Leaching	✓	✓	✓	✓	✓
Neutralization	✓	✓	✓	✓	✓
CCD	✓	✓	✓	✓	✓
Mg and Ca Removal	✓	✓	✓	✓	Note 1
Lithium Carbonate Production	✓	✓	✓	✓	

Note 1: In phase 5, only another Stage 1 evaporator circuit will be constructed.

A simplified process flowsheet is provided in Figure 17-1. Note that for Phase 5, the process will end prior to magnesium removal and the brine sent to Phases 1 to 4 for processing.

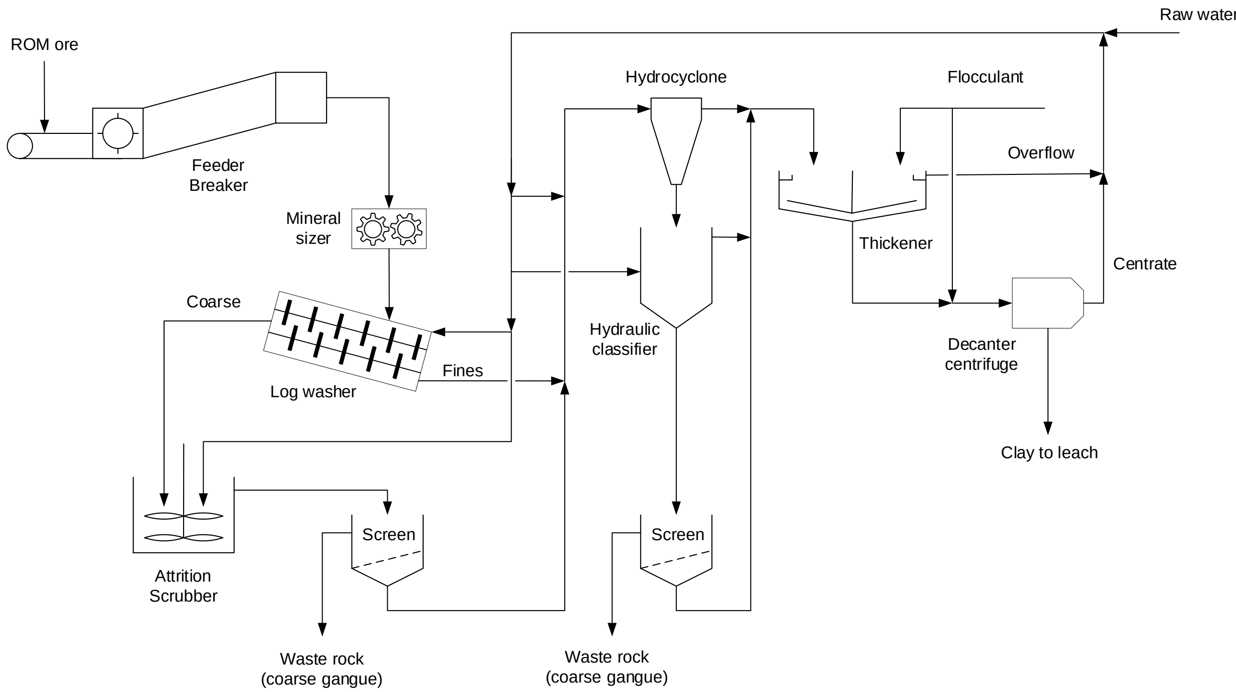
Figure 17-1 Overall Simplified Process Flowsheet



Source: LAC, 2022

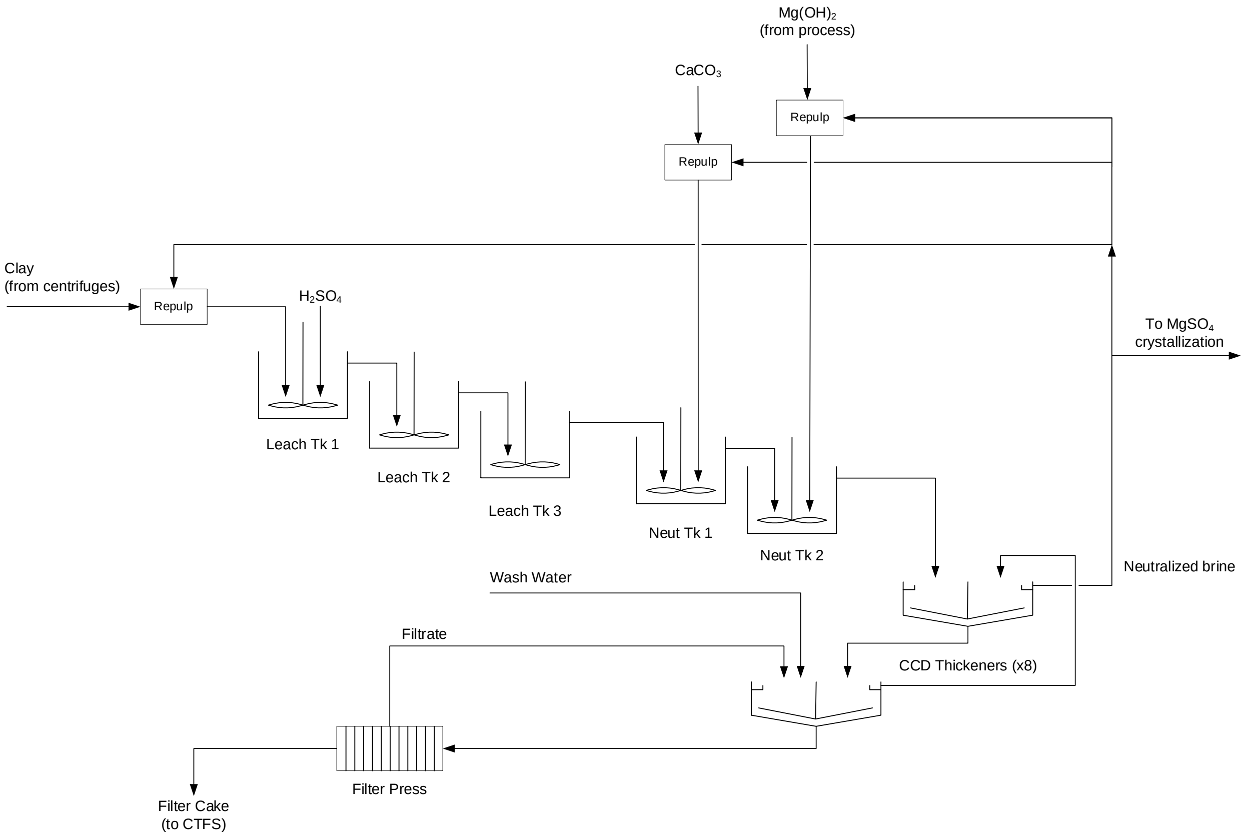
In beneficiation, ROM ore is crushed then mixed with water and fed to unit operations designed to liberate lithium bearing clay from gangue material. The clay is separated from coarse gangue in classification, with coarse gangue being stockpiled and eventually used as pit backfill material. The clay fines are then sent to the first dewatering stage (thickening) followed by decanter centrifuging (Figure 17-2).

Figure 17-2 Beneficiation and Dewatering Flowsheet



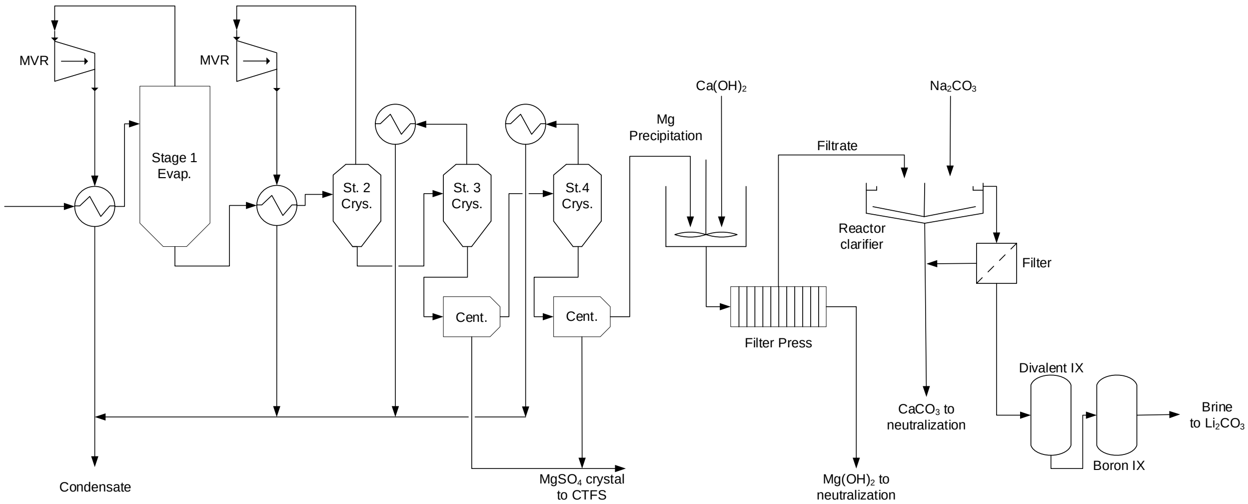
The centrifuge discharge cake is repulped in recycled process solution then mixed with sulfuric acid (H_2SO_4) from the acid plant, leaching lithium and other constituents into solution. Acid availability determines leach feed rates, which in turn determines ore mining rates. The free acid contained in the resultant leached residue is neutralized with both a slurry of ground limestone and a magnesium hydroxide slurry from the downstream magnesium precipitation circuit. The neutralized slurry is sent to a CCD circuit to recover the lithium bearing solution from the solids with the washed solids then being fed to recessed chamber filter presses. The filter cake is then conveyed to the CTFS (Clay Tailings Filter Stack) as waste material for storage while the filtrate is returned to the CCD circuit (Figure 17-3).

Figure 17-3 Leach, Neutralization, CCD and Filtration Flowsheet



The lithium bearing solution recovered in CCD is sent to magnesium and calcium removal circuits where first the bulk of the magnesium is crystallized as hydrated $MgSO_4$ salts, removed via centrifugation, and conveyed to the CTFS. Any remaining magnesium in the brine is then precipitated with milk-of-lime and separated by recessed chamber filter presses. The precipitated solids are repulped and recycled back to neutralization (as stated above), eventually leaving the process with neutralized filter cake. The calcium in the liquor is removed via soda ash addition, and an ion exchange polishing step brings the divalent cation concentration to very low levels (Figure 17-4).

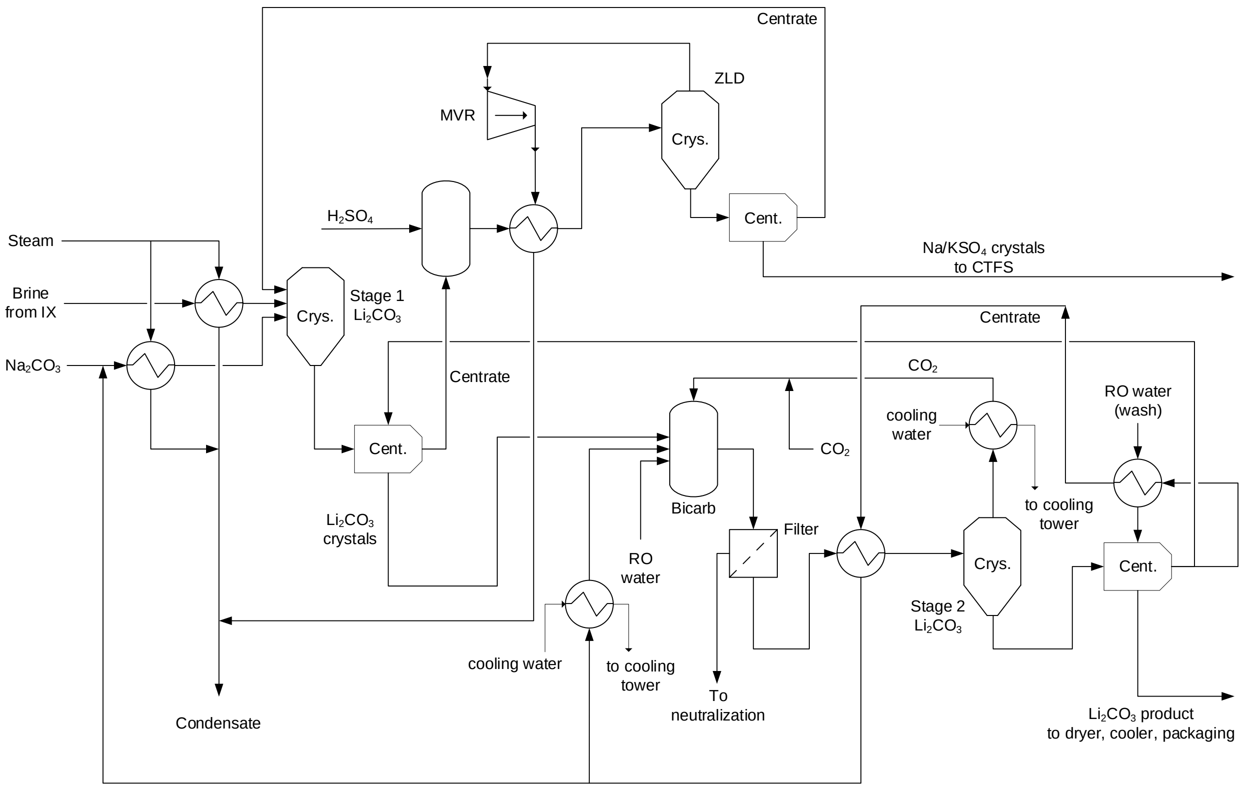
Figure 17-4 Mg/Ca Removal and Polishing Flowsheet



This lithium-bearing brine is fed to the first stage of the Li_2CO_3 production circuit where soda ash is used to precipitate lithium carbonate. The impure Li_2CO_3 crystals are fed to the bicarbonation step to allow for further reduction of impurities in the Li_2CO_3 crystals produced in the second stage of crystallization.

The second stage Li_2CO_3 crystal product is separated via centrifugation then sent to drying, cooling, and packaging. Mother liquor from the Li_2CO_3 crystallizers is sent to the Zero Liquid Discharge (ZLD) crystallizer to remove Na and K as sulfate salts. The salts are sent to the CTFS while lithium remaining in the centrate is recycled back to the front of the Li_2CO_3 circuit and recovered (Figure 17-5).

Figure 17-5 Li_2CO_3 Production Flowsheet



17.2 Process Design Criteria

Process design criteria were developed by LAC's process engineering group based on in-house and vendor test results that were incorporated into the process modelling software Aspen Plus® to generate a steady-state material and energy balance. The data and criteria below were used as nominal values for equipment design/sizing. The design basis for the beneficiation facility is to process an average ROM throughput rate for each Phase expansion of about 2.7 M dry tonnes per year, or 7,522 dry t/d of feed, including an 88% plant annual overall availability. Throughput from the mine to the crushing plant is targeted based on an average coarse gangue rejection rate of about 42% of the ROM material. The design basis results in an estimated production rate of approximately 125 t/d (42,196 t/y) of battery grade lithium carbonate. For the purposes of this report each expansion from Phases 1 – 4 equates to a nominal production rate of 40,000 t/y lithium carbonate per phase.

Table 17-2 and Table 17-3 summarize the main process design parameters used for Phases 1-4 of this study. Flow rates, based on process mass balance, Rev. K HMB, are nominal for a single phase for design purposes. Phase 5 is scaled from the PDC tables based on the leach feed throughput realized from a 3,000 t/d acid plant and the acid available per year from that plant. Table 17-4 and Table 17-5 summarize the major process equipment used for a single phase.

Table 17-2 Process Design Criteria – Beneficiation through Neutralized Tailing

Parameter	Units	Value
PLANT AVAILABILITY		
Operating schedule	days/year	365
Process Plant	%	88
Acid plant (not including turnarounds)	%	96
THROUGHPUT		
Run of mine feed to plant (dry)	t/a	2,746,000
Run of mine feed to plant (dry) (with availability)	t/d	8,176
Feed to Leach (dry)	t/a	1,487,000
Feed to Leach (dry) (with availability)	t/d	4,428
CTFS total tailing (neutralized filter cake, sulfate salts) (dry)	t/a	2,360,000
CTFS total tailing (neutralized filter cake, sulfate salts) (dry) (with availability)	t/d	7,027
LCE produced (dry)	t/a	42,196
LCE produced (dry) (with availability)	t/d	125
CRUSHING		
ROM Li content	ppm	3,559
Particle size distribution (F_{80})	mm	82
Ore bulk density (transport)	t/m^3	1.6
Ore moisture total (loose)	weight %	16
Crushed particle size (P_{80})	mm	25
Feed to attrition circuit (dry)	t/d	7,522
Discharge screen oversize (% ROM)	%	1
CLASSIFICATION		
Feed particle size (P_{80})	microns	126
Overflow particle size (P_{98})	microns	75
Underflow particle size (P_{80})	microns	272
Coarse material rejection (dry)	%	38
Thickener underflow pulp density	weight %	25-37
Flocculant consumption	g/t	130
Decanter centrifuge cake density	weight %	55
Flocculant consumption (thickening and centrifuging), each	g/t	130
LEACH		
Feed solids Li content	ppm	6,044
Feed pulp density	weight %	30-35
Leach residence time	minutes	180
NEUTRALIZATION		
Neutralization tank (limestone) residence time	minutes	60
Neutralization tank ($Mg(OH)_2$) residence time	minutes	60
pH in final neutralization tank	pH	6.5
CCD and FILTRATION		
No. of CCD stages	-	8
Flocculant consumption (total)	g/t	951
Filtration residual moisture in cake	%	38
CCD/Filtration recovery	%	99

Notes:

1. Flow rates based on process mass balance, Rev. K HMB, are nominal for a single phase for equipment design/sizing purposes.
2. Values rounded to the nearest thousand where appropriate.

Table 17-3 Process Design Criteria – Purification Plant

Parameter	Units	Value
MAGNESIUM SULFATE CRYSTALLIZATION		
No. of stages (evaporation/crystallization)	-	1/3
% of Mg removed (average, based on Rev. K HMB)	% of feed	78
Centrifuge cake moisture	weight %	4
MAGNESIUM PRECIPITATION		
Residual magnesium content	ppm	5
$Mg(OH)_2$ recycle stream pulp density	weight %	30
CALCIUM PRECIPITATION		
Residual calcium content	ppm	35
Underflow solids density	weight %	2-3
ION EXCHANGE		
Residual calcium content	ppm	Proprietary
Residual magnesium content	ppm	Proprietary
Residual boron content	ppm	Proprietary
LITHIUM CARBONATE PLANT		
No. of stages (crystallization/bicarbonation)	-	2/1
2^{nd} Stage Centrifuge Cake Moisture	weight %	9
ZLD Centrifuge Cake Moisture	weight %	15
Dryer Discharge Moisture	weight %	0.1

Table 17-4 Major Process Equipment – Beneficiation/Classification/Filtering

Note: Equipment counts are for all phases operating e.g. Phase 3 is for Phase 1 through 3.
Operating (o), Standby (s).

Item	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Description	Key Criteria
	Quantity	Quantity	Quantity	Quantity	Quantity		(each)
Feeder Breaker	2 (o)	3 (o)	5 (o)	6 (o)	8 (o)	42” wide drag conveyor, dual drive 2 x 56kW, 24” pick diameter breaker, 56kW	169 kW
Mineral Sizer	2 (o)	3 (o)	5 (o)	6 (o)	8 (o)	Direct Drive Crusher-Sizer, 0.76 m diameter x 1.22 m wide	112 kW
Log Washer	2 (o)	4 (o)	6 (o)	8 (o)	10 (o)	13-26 RPM	150 kW
Attrition Scrubber	1 (o)	2 (o)	3 (o)	4 (o)	5 (o)	Four Cells c/w Hi-Chrome Props and SS shafts	600 kW
	1 (s)	1 (s)	2 (s)	2 (s)	3 (s)		
Attrition Scrubber Discharge Screen	1 (o)	2 (o)	3 (o)	4 (o)	5 (o)	Single deck, dual vibrating motors, 1.8 m x 3.66 m, linear vibrating, 25.4 mm square opening	13 kW
	1 (s)	1 (s)	2 (s)	2 (s)	3 (s)		
Classification Cyclone Cluster	1 (o)	2 (o)	3 (o)	4 (o)	5 (o)	8-Place (6 operating/2 standby), 20 inch	P_{98} = 75 µm
Hydraulic Classifier	1 (o)	2 (o)	3 (o)	4 (o)	5 (o)	3.66 m x 3.66 m	75 µm separation size
Dewatering Screens	1 (o)	2 (o)	3 (o)	4 (o)	5 (o)	Single deck, dual vibrating motors, 1.5	10 kW
	1 (s)	1 (s)	2 (s)	2 (s)	3 (s)		

Item	Phase 1 Quantity	Phase 2 Quantity	Phase 3 Quantity	Phase 4 Quantity	Phase 5 Quantity	Description	Key Criteria (each)
						m x 3.66 m, linear vibrating, 0.5 x 12 mm slot	
Classification Thickener	1 (o)	2 (o)	3 (o)	4 (o)	5 (o)	55 m diameter	30 kW
Classification Centrifuge	3 (o)	6 (o)	9 (o)	12 (o)	15 (o)	Decanter type with variable Frequency Drive (VFD) on Main and Secondary drives	355 kW (main)
	1 (s)	2 (s)	3 (s)	4 (s)	5 (s)		160 kW (sec)
Acid Leach Tank	3 (o)	6 (o)	9 (o)	12 (o)	15 (o)	10.4 m diameter x 11.3 m high, agitated, rubber lined carbon steel, closed top	75 kW
Neutralization Tank	2 (o)	4 (o)	6 (o)	8 (o)	10 (o)	10.4 m diameter x 11.3 m high, agitated, rubber lined carbon steel, closed top	56 kW
CCD Thickener	8 (o)	16 (o)	24 (o)	32 (o)	40 (o)	Hi-Density, 36 m diameter	30 kW
Filter Feed Tank	2 (o)	4 (o)	6 (o)	8 (o)	10 (o)	9.0 m diameter x 11.4 m high, agitated, rubber lined carbon steel, closed top	150 kW
Filter Feed Pump	6 (o)	12 (o)	18 (o)	24 (o)	30 (o)	575 m^3/hr @ 212 kPag initial feed rate,	260 kW
	2 (s)	4 (s)	6 (s)	8 (s)	10 (s)	72 m^3/hr @ 824 kPag final feed rate, horizontal centrifugal	
Neutralization Filter	3 (o) 1 (s)	6 (o) 2 (s)	9 (o) 3(s)	12 (o) 4 (s)	15 (o) 4 (s)	Overhead filter press, 2.5 m x 2.5 m, 32 mm chambers	150 kW

Table 17-5 Major Process Equipment – Purification Process

Note: Operating (o), Standby (s).

Item	Phase 1 Quantity	Phase 2 Quantity	Phase 3 Quantity	Phase 4 Quantity	Phase 5 Quantity	Description	Key Criteria (each)
Magnesium Removal							
$MgSO_4$ Removal System	1 (o)	2 (o)	3 (o)	4 (o)	5 (o)	2 pre-evaporators and 2 crystallizer trains operating per phase Pusher type centrifuges w/VFD, 2205 duplex SS wetted parts Product contacting: Duplex 2205 Non-product contact: SS Various SS	27 MW

Item	Phase 1 Quantity	Phase 2 Quantity	Phase 3 Quantity	Phase 4 Quantity	Phase 5 Quantity	Description	Key Criteria (each)
Magnesium Precipitation Tank	1 (o)	2 (o)	3 (o)	4 (o)	5 (o)	4.0 m diameter x 6.1 m high, 56 m^3 operating volume, agitated, carbon steel, closed top	30 kW
Magnesium Precipitation Filter	1 (o) 1 (s)	2 (o) 2 (s)	3 (o) 3 (s)	4 (o) 4 (s)	5 (o) 5 (s)	Overhead filter press, 2.5 m x 2.5 m, 32 mm chambers	150 kW
Li_2CO_3/ZLD Crystallization							
Calcium Precipitation Reactor Clarifier	1 (o)	2 (o)	3 (o)	4 (o)	5 (o)	12.2 m dia. x 5.8 m high (straight side) w/rake drive and internal recirculation pump, carbon steel	
Calcium Precipitation Filter	1 (o) 1 (s)	2 (o) 2 (s)	3 (o) 3 (s)	4 (o) 4 (s)	5 (o) 5 (s)	Dual media type, 3.35 m dia. x 1.83 m high (straight side), rubber lined carbon steel	
Cation Removal Ion Exchange System	1 (o)	2 (o)	3 (o)	4 (o)	5 (o)	Ion Exchange (IX) system w/associated acid/caustic/water tanks and pumps, lined FRP columns	Ca concentration proprietary Mg concentration proprietary
Boron Removal Ion Exchange System	1 (o)	2 (o)	3 (o)	4 (o)	5 (o)	Ion Exchange (IX) system w/associated acid/caustic/water tanks and pumps, lined FRP columns	Boron concentration proprietary
Li_2CO_3 System	1 (o)	2 (o)	3 (o)	4 (o)	4 (o)	Peeler type centrifuges, 316L SS wetted parts	Target ppm Li proprietary
						Product contacting: Duplex 2205	Operating temperature proprietary
						Non-product contact: SS 304/316	
Li_2CO_3 Dryer	1 (o)	2 (o)	3 (o)	4 (o)	4 (o)	Paddle type w/integral baghouse, 3.0 m wide x 12.5 m long, indirect steam heated	0.1 wt.% moisture
Li_2CO_3 Cooler	1 (o)	2 (o)	3 (o)	4 (o)	4 (o)	Paddle type w/integral baghouse, 3.0 m wide x 12.5 m long, indirect water cooled	Operating temperature proprietary

Item	Phase 1 Quantity	Phase 2 Quantity	Phase 3 Quantity	Phase 4 Quantity	Phase 5 Quantity	Description	Key Criteria (each)
Li_2CO_3 Storage Bins	1 (o)	2 (o)	3 (o)	4 (o)	4 (o)	Wedge bottom silo, 3.66 m dia. x 9.14 m high (straight side), 304L SS	54 tonnes
Li_2CO_3 Packaging (FIBC)	1 (o)	2 (o)	3 (o)	4 (o)	4 (o)	FIBC packing system including pallet dispenser, slip sheet dispenser, conveyors, scales, dust collection, manual sleeve wrap station, automatic stretch wrap system, PLC	20 x 1,000 kg bags/h or 30 x 500 kg bags/h
ZLD System	1 (o)	2 (o)	3 (o)	4 (o)	4 (o)	1 Crystallizer Solid bowl type centrifuge Product contacting: 2507 Non-product contact: Various SS	10 Megavolts (MV)

17.3 Recovery

Recovery of lithium during operations will fluctuate with varying ore mineralization and process chemistries. Section 13 summarizes the expected lithium recoveries and expected LCE production by process step and how they are applied to the mine block model and mine planning process. Section 15.2 summarizes the extractable lithium and metallurgical recoveries applied to and calculated from the LOM plan. Based upon metallurgical test work the expected range of lithium carbonate recovery in the process plant from LCE mined ranges between 74.6% and 86.8% with an average of 80.6%. From the mine plan presented in this report the 85-year LOM lithium carbonate recovery averages 80.4% while the first 25 years realizes an average recovery of 82.1%, owing primarily to a higher illite blend. Table 17-6 and Table 17-7 summarizes the range of lithium carbonate recoveries calculated from the 85-year and 25-year annual mine plan totals.

Table 17-6 Lithium Carbonate Recovery Summary (Years 1-85 Life of Mine – Base Case)

	Lithium Carbonate Recovery	% Illite	% Smectite	Li Feed Grade (ppm)
Minimum	75.2%	85.0	15.0	1,778
Maximum	83.7%	100.0	0.0	4,351
Average	80.4%	96.6	3.4	2,538

Table 17-7 Lithium Carbonate Recovery Summary (Years 1-25 of 85 Year LOM)

	Lithium Carbonate Recovery	% Illite	% Smectite	Li Feed Grade (ppm)
Minimum	79.4%	97.0%	3.0%	2,882
Maximum	83.7%	100.0%	0.0%	4,351
Average	82.1%	99.4%	0.6%	3,243

17.4 Process Description

17.4.1 ROM Stockpile/Feed

Ore will be delivered to the Run-of-Mine (ROM) stockpile from the mining operation using haul trucks. The mine plan realizes an ore blend of approximately 96.6% illite and 3.4% smectite over the life of the mine plan. ROM ore will be pushed via dozer from the stockpile to feeder breakers to reduce the material to a top size of about 150 mm, then conveyed to a mineral sizer (toothed roll crusher) for reduction to about minus 50 mm. Discharge from each mineral sizer will be combined on a common conveyor to the mineral beneficiation process.

17.4.2 Beneficiation

The purpose of mineral beneficiation is to liberate the clay from the gangue and then concentrate lithium-bearing clay by rejecting coarse, non-lithium or low lithium grade gangue material.

17.4.2.1 Clay Liberation

Crushed ore will be conveyed to a classifying, spiral paddle mixer, commonly referred to as a log-washer, operating at 40 wt.% solids to provide hydration time and an initial separation of clay from coarse material. The fine material will report to a downstream pump box. The coarse material will be transported up the inclined log-washer, where it will discharge to an attrition scrubber with four cells, operating at 30 wt.% solids. The attrition scrubber will impart a high degree of agitation resulting in aggressive particle-on-particle contact, or scrubbing, to remove the majority of the remaining clay from coarse material. Recycled water from the downstream dewatering circuit will be used for density control in both the log washer and attrition scrubber. Slurry discharging from each of the attrition scrubbers will pass through a vibrating screen into a common pump box. The screens will remove material coarser than 25 mm that will be combined with classification dewatering screen oversize and conveyed to an intermediate coarse gangue stockpile. The fine clay material passing through the screen will combine with the log washer fine material and will be pumped to the classification circuit.

17.4.2.2 Classification

Separation of clay is achieved by a combination of hydrocyclones and a hydraulic classifier. The overflow from both the hydrocyclones and the hydraulic classifier flow by gravity to the classification thickener feed box. Solids from the hydrocyclones (cyclone underflow) report to the hydraulic classifier which rejects material primarily greater than 75 micron particles in the underflow. This will be dewatered by vibrating screens. The screen oversize (coarse gangue) will be conveyed to an intermediate coarse gangue stockpile and then reclaimed by a front-end loader and trucked to the coarse gangue stockpile. The screen undersize will report to the classification thickener. Up to an estimated 46% of the ore fed to the process will be rejected during classification.

17.4.2.3 Solid-Liquid Separation (Thickening and Dewatering)

The fine clay material from the hydrocyclone and hydraulic classifier overflows (minus 75 microns) will be thickened to approximately 25 wt.% solids in a high-rate thickener. The thickener overflow will be collected in a recycle water tank from which it will be distributed to the various users in the classification and mineral beneficiation circuits. The thickener underflow will be further dewatered to an estimated 55 wt.% solids by multiple horizontal decanter centrifuges. The centrate will be pumped back to the classification recycle water tank while the cake will be repulped primarily with CCD wash solution and then pumped to the acid leach circuit at about 34 wt.% solids. Raw water make-up to the beneficiation circuit reports to the hydraulic classifiers as elutriation water.

17.4.3 Leaching and Neutralization

17.4.3.1 Acid Leaching

Solids feed rate to the leach circuit will be largely dictated by sulfuric acid plant capacity. The leach temperature of 75-90°C will be governed by heat generated from the dilution of the sulfuric acid and acid-clay reactions.

Continuous leaching will be performed in three agitated tanks in series at ~1 hour leaching time each. Acid addition will be 490 kg of 100% H_2SO_4 per tonne of leach feed solids. On average for the LOM an estimated 93% of the lithium will be dissolved from the clay. Due to the non-selective leaching by the acid, other elements of interest that will be leached in appreciable amounts include magnesium, calcium, potassium, sodium, iron, boron, and aluminum. The tanks will be vented to a caustic scrubber to remove entrained acid-laden droplets from the vapor streams (primarily carbon dioxide and water) generated in the leach tanks. The scrubber effluent will be pumped to the downstream neutralization circuit. The leached clay slurry at 10-50 g/L H_2SO_4 of residual acid will flow by gravity to the neutralization circuit.

17.4.3.2 Neutralization

A two-stage neutralization will be performed in agitated tanks – one per stage. In the first stage, a slurry of ground limestone will be combined with the acidic slurry to achieve a pH of 6.5 discharging the second stage neutralization tank. The first stage neutralization at 1 hour retention time will neutralize a portion of the residual acid from acid leach, as well as precipitate most of the iron and aluminum. Magnesium hydroxide from the downstream magnesium precipitation circuit will be used to complete the neutralization to a pH of 6.5 in the second stage at a retention time of 1 hour. This pH will both ensure lithium solubility is at or near the maximum in the downstream magnesium sulfate crystallization circuit, and to avoid redissolution of calcium borate – a coprecipitate in the magnesium precipitation circuit. The neutralization product slurry will contain residual clay, calcium sulfate, calcium borate and metal hydroxides. Effluents from the sulfuric acid plant tail gas scrubber, liquid sulfur tank scrubbers and transloading scrubber will be combined in an agitated tank from which it will report to the first stage neutralization tank. Slurry from the second stage neutralization tank will be pumped from an overflow tank to the countercurrent decantation (CCD) circuit.

17.4.4 Countercurrent Decantation and Filtration

17.4.4.1 CCD

The CCD circuit will be comprised of eight thickeners in series each operating with an underflow solids content of about 33 wt.%. Flocculant dilution to each thickener will be achieved by recirculating the overflow of each thickener. The wash water added to the final thickener will be a combination of process recycle water and process condensate. Filtrate from the downstream filter will be returned to the second-to-last thickener to be used as wash water. Stage mixing efficiency has been estimated to be 95%. The overflow from the first thickener will be cooled with cooling water prior to being distributed to other process areas and downstream to the magnesium sulfate crystallization circuit. The cooling is required to avoid damage to downstream equipment.

17.4.4.2 Filtration

Underflow slurry from the final thickener will be pumped to the filter feed tank from which it will be fed to recessed chamber filters (3 operating/1 stand-by) to produce a 62 wt.% solids filter cake which will be conveyed to an intermediate stockpile near the Clay Tailings Filter Stack (CTFS). The filtrate comprised of sulfate solution with lithium, magnesium, potassium and sodium cations will be sent to the second-to-last CCD thickener.

17.4.5 Magnesium and Calcium Removal

17.4.5.1 Magnesium Sulfate Crystallization

The neutralized filtrate will be concentrated and crystallized in four stages (1 stage of evaporation and 3 stages of crystallization) to produce hydrated magnesium sulfate crystals in the form of magnesium sulfate hexahydrate ($MgSO_4 \cdot 6H_2O$) and magnesium sulfate heptahydrate ($MgSO_4 \cdot 7H_2O$), or Epsom salt, which will be rejected to the dry stack tailings facility.

17.4.5.2 Magnesium Precipitation and Filtration

Liquor from the magnesium sulfate crystallization process will be mixed with a 25 wt.% milk-of-lime slurry to adjust the pH to approximately 11 to precipitate magnesium as magnesium hydroxide while sulfate is removed as coprecipitated anhydrous calcium sulfate. Magnesium will be precipitated to about 5 ppm in a single agitated tank with a retention time of 1 hour. Calcium remains at the calcium sulfate saturation level of approximately 590 ppm. The discharge from magnesium precipitation will gravity flow to the magnesium precipitation filter feed tank from where it will be pumped to the magnesium precipitation filters (1 operating/1 stand-by). The magnesium hydroxide/calcium sulfate cake will be repulped with neutralization CCD wash solution on a batch basis then pumped to the upstream second stage of neutralization. The filtrate will be sent to the calcium precipitation circuit for further processing.

17.4.6 Magnesium and Calcium Removal

17.4.6.1 Calcium Precipitation

Filtrate from magnesium filtration will be mixed with a 25 wt.% soda ash solution to precipitate calcium carbonate. Calcium will be precipitated to approximately 35 ppm in a combination reaction tank with a retention time of 60 minutes followed by a reactor clarifier. The reactor feed tank will be maintained at about 10 g/L solids loading by recycling clarifier underflow slurry. The reactor slurry will flow by gravity into the reactor clarifier reaction chamber where it will meet circulating solids, ferric sulfate (coagulant) and flocculant. The reactor clarifier overflow will contain 10 ppm or less suspended solids while the underflow will be at 2-5 wt.% solids. A fraction of the solids will be recycled to the reaction tank while the remainder recycles to the magnesium precipitation filter feed tank. The overflow from the reactor clarifier will be pumped through a multimedia filter for further clarification. The filter will be air scoured and backwashed with filtrate about every two days. The backwash will be collected in the agitated backwash tank where it will be combined with solids from the soda ash filters. The contents of the backwash tank will be metered into the calcium precipitation reaction tank.

17.4.6.2 Ion Exchange

Filtrate from the calcium precipitation circuit will be fed to an ion exchange (IX) system for the removal of hardness, primarily calcium and magnesium to less than the acceptable limit. This solution is then fed to an ion exchange system for the removal of boron to less than the acceptable limit.

The soda ash solution used for lithium carbonate crystallization will also be treated via ion exchange to remove calcium and magnesium to below the target levels.

17.4.7 Lithium Carbonate Production

17.4.7.1 Lithium Carbonate Circuit

The lithium carbonate purification system will receive concentrated lithium sulfate solution from the ion exchange circuit as well as recycled centrate from the Zero Liquid Discharge (ZLD) crystallization circuit (see Section 17.4.7.2). Battery grade lithium carbonate will be produced by a three-stage process. In the first stage, lithium carbonate will be crystallized in a draft tube baffle (DTB) crystallizer by reacting the concentrated lithium sulfate solutions with a 25 wt.% soda ash solution. Lithium carbonate crystals withdrawn from the crystallizer will be dewatered using peeler centrifuges. The crystals will be washed using wash centrate from the second stage lithium carbonate centrifuges then repulped with both treated (RO) water and recycled centrate from the second stage lithium carbonate centrifuges. The repulp slurry will be fed to the lithium bicarbonate reactor. The centrate will report to the sodium/potassium sulfate salts crystallization circuit, or ZLD circuit.

The undissolved lithium carbonate and lithium carbonate in solution will be converted to soluble lithium bicarbonate ($LiHCO_3$) by reaction with carbon dioxide in three agitated reactors in series. Temperature will be maintained by cooling with chilled water. Carbon dioxide (CO_2) will be supplied from the second stage crystallizer condenser. Make-up will be provided from a tank vent or from a liquid CO_2 storage vessel. The lithium bicarbonate liquor will be filtered to remove insoluble material prior to feeding the second stage lithium carbonate crystallizer. The insolubles captured on candle type filters will be disposed of properly.

The second stage lithium carbonate crystallizer will be a DTB type and operated at a temperature where the lithium bicarbonate will be converted back to lithium carbonate crystals and carbon dioxide will be liberated. The overhead vapor will be condensed with cooling water and the non-condensable carbon dioxide will be compressed and recycled to the lithium bicarbonate reactors. Lithium carbonate crystals withdrawn from the crystallizer will be dewatered using peeler centrifuges. The crystals will be washed using hot treated water. A portion of the centrate will be recycled to the lithium bicarbonate reactor feed for repulping and the remaining portion will report to the Zero Liquid Discharge (ZLD) crystallization circuit.

17.4.7.2 ZLD Crystallizers

Centrate from the first stage lithium carbonate crystallizers will pass through a decarbonation step in which sulfuric acid will be added to convert the lithium carbonate to lithium sulfate while also driving off any dissolved carbon dioxide. The lithium sulfate solution will be pumped to the ZLD crystallizers for removal of sodium and potassium sulfate salts.

Sodium and potassium sulfate salts will be removed from the decarbonated lithium sulfate solution in forced circulation mechanical vapor recompression (MVR) crystallizers. Lithium will be concentrated to near the point of crystallizing the lithium-potassium double salt. Crystal slurry will be pumped to a pusher centrifuge to remove crystals which are conveyed to an intermediate stockpile near the Clay Tailings Filter Stack (CTFS). The centrate will be returned to the first stage lithium carbonate feed tank.

17.4.7.3 Final Product Handling

After the lithium carbonate is dried, it will be run through a cooler followed by a lump breaker to remove any material that may have clumped together. After the lump breaker, the material will be pneumatically conveyed to a storage bin. The lithium carbonate will be fed into the bulk bag packaging line. A bar magnet will remove any tramp metal prior to the line. The bulk bag line will fill either 500 kg or 1000 kg bags and place them on pallets. A forklift then will transfer the loaded bags into a shipping container.

A rework system will be designed to rework off-spec material after it has been bagged. The off-spec product will be screw conveyed from a bag unloading system into the dissolution tank. Water and sulfuric acid will be added to the tank to convert the lithium carbonate into lithium sulfate. The lithium sulfate then will be pumped to the Calcium Precipitation circuit for reprocessing. Alternatively, treated water and lithium carbonate will be mixed in the tank to produce a lithium carbonate slurry which will be pumped to the bicarbonation feed tank for reprocessing.

17.4.8 Clay Tailings Filter Stack

17.4.8.1 Description

Neutralized clay tailings filter cake will be radially stacked in an intermediate stockpile within the lined area of the Clay Tailings Filter Stack (CTFS) storage facility. These tailings will be hauled by loader and truck to a designated location on the CTFS. Salt tailings from the magnesium sulfate crystallization circuit and the sodium/potassium sulfate salts from the ZLD circuit will be radially stacked in an intermediate stockpile separate from the neutralized clay tailings. The salt tailings will be hauled by loader and truck to a designated location on the CTFS. The CTFS will be progressively expanded and reclaimed during the life of the Project.

17.4.8.2 Management Strategy

The tailings discharge from the filters will be conveyed to an intermediate stockpile location in the southwest corner of the CTFS across from the process plant. From the stockpile, the material will be loaded with wheeled loaders hauled by end dump trucks and placed within the CTFS in lifts. During material placement, samples will be collected and tested for moisture content determination. If the moisture content of the tailings is above the specified range above the optimum moisture content, the tailings will be scarified using a motor grader, disc, rotovator or similar equipment to increase the surface area and to promote drying of the material. Frequent scarification and mixing of the materials will reduce the time required to lower the moisture content of the tailings. During the scarification and mixing process, samples will be collected for moisture content testing. Once it has been determined that the material is within the specified range of the optimum moisture content the tailings will be compacted using a vibrating and/or pad foot compactor.

The tailings placement described above will be completed in cells within each CTFS lift, with tailings being placed in designated cells until each cell is built to its designated size. This will result in numerous cells being actively dried, scarified/mixed and compacted concurrently until the desired moisture and dry density is achieved for that cell. Once the technical requirements for moisture and density are achieved, the cell can be stacked on during placement of the next lift. Haulage routes of the clay and salts are shown in Figure 16-3 to Figure 16-15.

17.5 Reagents

17.5.1 Sulfur

Sulfuric acid will be primarily used for leaching and will be generated on-site from liquid sulfur by the individual sulfuric acid plants associated with each expansion phase. During summer months, the product will be 98.5 wt.% H_2SO_4, and in winter it will be diluted to 93.2 wt.% to avoid freezing complications. Two acid tanks, 4,506 m^3 (8,266 tonnes) each, with a combined seven (7) days of storage capacity, will supply sulfuric acid to the processing plant.

Liquid sulfur will be delivered by truck from a transload facility located in Winnemucca, NV, where it is transferred from railcars to a storage tank 6,227 m^3 (14,000 tonnes) by gravity dump. There will be about 28 days of liquid sulfur storage capacity at the sulfuric acid plant. A caustic scrubber will be installed near the sulfur storage tank to capture H_2S that can potentially off-gas during unloading and storage. From Phase 4 onwards, liquid sulfur is delivered directly by rail.

17.5.2 Limestone

Limestone will be used as a neutralizing reagent to react with any residual acid remaining after leach. Limestone will be sourced from local deposits. It will be crushed and ground to a target size at the limestone preparation plant at site. Ground limestone will be mixed with a slip stream of neutralization wash filtrate to make a 38 wt.% slurry for addition to the neutralization circuit. Limestone will be stored in a 500 tonne bin.

17.5.3 Quicklime

Quicklime (CaO) will be the primary reagent for magnesium precipitation. It will be delivered in pebble form to the site by bulk trucks and transferred to a storage silo (1000-t capacity). It will be unloaded pneumatically from the trucks, with dedicated stationary blowers, for unloading two trucks simultaneously. The quicklime will then be slaked with water in a vertical mill type slaker to produce milk-of-lime (MOL or $Ca(OH)_2$) at 25 wt.% solids and transferred to a tank 1,095 m^3 (289,340 gallons) with a 13-hr storage capacity. The lime slaking plant capacity is 13 t/h. From Phase 4 onwards, quicklime is delivered directly by rail.

17.5.4 Sodium Hydroxide

Sodium hydroxide (NaOH) solution (caustic soda) will be used for off-gas scrubbers and ion exchange resin regeneration. It will be delivered via tanker truck as a 50 wt.% liquid and offloaded to a storage tank 132.5 m^3 (35,000 gallons) with 5.83 days of capacity. The caustic will be diluted prior to use.

17.5.5 Soda Ash

Na_2CO_3 (soda ash) will be the main reagent for Li_2CO_3 production and will be also used for calcium precipitation. It will be delivered by bulk truck and offloaded to a 1,000-tonne silo. Soda ash will be mixed primarily with reverse osmosis (RO) water to produce a 25 wt.% solution. From Phase 4 onwards, soda ash is delivered directly by rail.

17.5.6 Flocculant

Flocculant will be used in the classification area for the thickener and centrifuges. It's also used in the CCD thickeners and calcium precipitation reactor clarifier. Anionic flocculant will be delivered by bulk truck and transferred to a flocculant preparation system to create a concentrated solution prior to dilution and use in the plant. From Phase 4 onwards, flocculant is delivered directly by rail.

17.5.7 Carbon Dioxide

Carbon dioxide (CO_2) will be solely used in the lithium bicarbonate reactors as part of Li_2CO_3 production. Nearly all of the CO_2 used in the lithium bicarbonate reactors is recycled back to these reactors via the second stage lithium carbonate crystallizers. A minor amount of make-up is required which is sourced from the acidulation tanks vent lines. A supply is needed for startup and will be delivered to site in liquid form by tanker truck and stored in a pressurized vessel. The liquid will be vaporized for use in the plant.

17.5.8 Ferric Sulfate

Ferric sulfate ($Fe_2(SO4)_3$) solution at 12% Fe will be used as a coagulant in calcium precipitation. It will be delivered by truck in liquid totes and pumped for use in the plant.

17.5.9 Hydrochloric Acid

HCl (hydrochloric acid) at about 35% will be used to regenerate the ion exchange resin used to remove hardness from process solutions. It will be delivered by tanker truck in liquid form and transferred to a storage tank 32.3 m^3 (8,531 gallons) for use in the plant. A scrubber will capture acid vapors generated during the filling of the storage tank.

17.5.10 Miscellaneous

Other miscellaneous chemicals will be used including dust suppressants, chemicals for RO/water treatment, antiscalants, cleaning agents, etc. Acids and other chemicals will be used in the main assay laboratory for sample analysis.

17.5.11 Raw Materials Consumptions

All major raw materials consumption estimates for process plant reagents are based on test work. In the case where test work is not available, consumption rates for minor reagents are estimated based on vendor provided information or best practices. Consumption rates in Table 17-8 are based upon expected mine plan production rates during the life of the Project. Table 17-9 shows the estimated consumption of reagents for the 25-year LOM case.

Table 17-8 Reagent Consumption (85-Year LOM Base Case)

Raw Materials		85 Yr LOM Avg Annual Consumption	85 Yr LOM Average (unit/tonne Lithium Carbonate produced)
Quicklime	tonne	355,625	2.63
Limestone	tonne	399,133	2.95
Soda Ash	tonne	420,262	3.11
Hydrochloric Acid 35%	tonne	25,802	0.19
Ferric Sulfate 60%	tonne	878	0.01
Caustic Soda 50%	tonne	38,059	0.28
Flocculant	tonne	8,399	0.06
Liquid Sulfur (calculated)	tonne	1,237,123	9.15
Water Treatment (SA1)	Liter	3,556	0.03
Diesel Off-Road	US gallon	24,384,001	180.45
Unleaded Gasoline LN	US gallon	427,429	3.16
Propane LN	tonne	2,119	0.02

Table 17-9 Reagent Consumption (Years 1-25 of 85 Year LOM)

Raw Materials		25 Yr LOM Avg Annual Consumption	25 Yr LOM Average (unit/tonne Lithium Carbonate product)
Quicklime	tonne	268,914	2.15
Limestone	tonne	301,813	2.42
Soda Ash	tonne	388,343	3.11
Hydrochloric Acid 35%	tonne	19,511	0.16
Ferric Sulfate 60%	tonne	664	0.01
Caustic Soda 50%	tonne	28,779	0.23
Flocculant	tonne	6,351	0.05
Liquid Sulfur (calculated)	tonne	935,476	7.49
Water Treatment (SA1)	Liter	2,689	0.02
Diesel Off-Road	US gallon	10,207,322	81.74
Unleaded Gasoline	US gallon	304,190	2.44
Propane LN	tonne	1,602	0.01

17.6 Plant Water

The plant site will have several water systems including raw water, potable water, demineralized water, and fire water. Site water systems are described in Section 18 of this report.

17.6.1 Water Supply

The facility is designed to maximize water recycling. Raw water will be introduced to various locations within the process including the mine facilities raw water tank, the mine water truck fill stand, the sulfuric acid plant, and various locations in the process plant. All make-up water for the process plant is added in the beneficiation circuit. Makeup water for the process plant accounts primarily for water lost in tails. Water evaporated during crystallization is collected as condensate and recycled for use in the process. Water estimated to be used in the plant, based on process mass balance Rev. K HMB, and for mining operations, is shown in Table 17-10. Water demand is estimated to be approximately 5% below the current allowance.

Table 17-10 Plant Water Use

Site Water Demand, average	Units	Phase 1	Phase 1-2	Phase 1-2-3	Phase 4/5 through LOM
Process Water Make-up	m^3/hr	277	554	831	1,385
Potable	m^3/hr	2	4	6	11
Mine Operations	m^3/hr	100	200	250	750
Total Water Consumption	m^3/hr	379	758	1,087	2,146
	acre-ft/yr	*2,690*	*5,381*	*7,716*	*15,226*
Available Water	m^3/hr	402	804	1,206	2,149
	acre-ft/yr	*2,850*	*5,700*	*8,550*	*15,250*
Water Available by Phase	m^3/hr	402	402	402	943
	acre-ft/yr	*2,850*	*2,850*	*2,850*	*6,700*

17.6.2 Steam

High pressure steam is generated in the sulfuric acid plant from the conversion of liquid sulfur to sulfuric acid. This steam reports to a steam turbine generator for power production. To meet the steam demands of the process plant, both medium pressure (10 barg) and low pressure (4.8 barg) steams are extracted from the generator and exported to the process plant. The steam consumers and consumption rates are shown in Table 17-11.

Table 17-11 Steam Use

Site Demand	Units	Pressure Class	Phases 1-2-3-4-5 each
Li_2CO_3 Crystallization	kg/h	Low	26,261
$MgSO_4$ Crystallization	kg/h	Medium	8,923
Li_2CO_3 Dryer	kg/h	Medium	747
Total Steam Consumption	kg/h		41,699

The steam consumers used internally by the sulfuric acid plant are not listed above.

Only a small portion of the steam is condensed in heat exchangers that allows it to be returned to the sulfuric acid plant for boiler feed water.

The majority of the steam is used in either steam jet ejectors ($MgSO_4$ crystallization system) where it is condensed and combines with cooling tower water, or directly injected into a crystallizer (Li_2CO_3 crystallization system) where it partially condenses into the process fluid and partially evaporates water which reports to the process condensate system. The process condensate is cooled to three different temperatures using air-to-liquid coolers and a cooling tower. The condensate at the different temperatures is distributed to various users including filter cloth wash, CCD washing, solids repulping, ion exchange, RO feed, reagent systems, tail gas scrubber and cooling towers for make-up.

17.7 Power

The estimated average running load demand for the site is shown in Table 17-12. Electrical power supply is discussed in Section 18. Total imported power will be less than total load due to power generated on site from the sulfuric acid plant. Power generated by the sulfuric acid plant is shown in Section 18.9.

Table 17-12 Power Demand by Area (based on Equipment List)

		Phase 1		Phase 2		Phase 3		Phase 4		Phase 5	
Area Name	Area Code	Connected Load MW	Operating Load MW	Connected Load MW	Operating Load MW	Connected Load MW	Operating Load MW	Connected Load MW	Operating Load MW	Connected Load MW	Operating Load MW
Mine Area	1000	0.6	0.4	0.3	0.2	0.6	0.4	0.3	0.2	0.6	0.4
Mineral Beneficiation	1100	4.2	2.8	3.5	2.5	4.2	2.8	3.5	2.5	5.1	3.4
Leaching & Neutralization	1200	14.6	8.2	14.6	8.2	14.6	8.2	14.6	8.2	17.7	9.9
Magnesium Sulfate	1300	19.1	13.8	19.1	13.8	19.1	13.8	19.1	13.8	15.2	11.6
Lithium Carbonate	1400	13.9	10.8	13.9	10.8	13.9	10.8	13.9	10.8	0	0
Sulfuric Acid Plant	1500	16.9	11.6	16.9	11.6	16.9	11.6	16.9	11.6	20.4	14.0
Utilities	1600	14.9	7.9	14.9	7.9	14.9	7.9	14.9	7.9	7.5	4.0
Tailings Disposal	1700	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.5	0.4
Raw Materials	1800	3.7	2.2	3.7	2.1	3.7	2.1	3.7	2.1	0	0
Ancillary Buildings	1900	1.1	0.6	0.6	0.3	1.1	0.6	0.6	0.3	0	0
Total		**89.5**	**58.6**	**87.9**	**57.6**	**89.5**	**58.5**	**87.9**	**57.6**	**67.0**	**43.7**

17.8 Air Service

A central compressed air system will be located at the main processing plant area and will be comprised of compressors, dryers, and air receivers. All air will be dried prior to being distributed to both plant air and instrument air users. The distribution system will be comprised of main supply headers to dedicated satellite air receivers for both plant air and instrument air in various areas of the plant. The compressors and dryers will be located in a building and the air receivers will be located outdoors.

Dedicated compressors will be provided for the neutralization filters and will be located near the filter plant. The system will be comprised of three compressors (two operating and one standby), an air receiver, and distribution piping. The compressors and air receiver will be located in a building.

Dedicated compressors will be provided for the magnesium precipitation filters and will be located near the filter plant. The system will be comprised of one compressor, an air receiver, and distribution piping. The compressor and air receiver will be located in the same building as the neutralization filters compressed air equipment.

17.9 Quality Control

Sample preparation and analytical equipment will be available to handle the daily requirements of the mine and processing plant. Streams will be monitored using on-line instrumentation where appropriate, which may include pH control and reagent addition control systems. The data will be used to optimize process conditions. Routine samples of intermediate products and final products will be collected and analyzed in an assay laboratory where standard assays and analyses will be performed. The data obtained will be used for product quality control and routine process optimization. Feed and tailings samples will also be collected and subjected to routine assay.

The analytical laboratory will consist of a full set of assay instruments for lithium analysis, including an Inductively Coupled Plasma Spectrometer (ICP), and other instruments such as moisture balance, pH, and redox potential meters.

17.10 Sampling

Samplers will be installed in locations required for metallurgical accounting and process control purposes. Installation location and type of major sampling equipment related to the plant metallurgical balance is listed in Table 17-13. Sampling points for process control are listed in Table 17-14.

Table 17-13 Metallurgical Accounting Sampler Summary, Major Process Inlets/Outlets

Location	Sampler Type	Purpose	Information
Log Washer Feed Belt	Cross-cut sampler	Metallurgical Balance	Mass and elemental feed to plant
Classification-Coarse Gangue	Cross-cut sampler	Metallurgical Balance	Mass and elemental loss to coarse gangue
Neutralization filtration	Cross-cut sampler	Metallurgical Balance	Mass and elemental loss to filter cake
CTFS – salt conveyor	Cross-cut sampler	Metallurgical Balance	Mass and elemental loss to salts
Li_2CO_3 production	In-line composite	Metallurgical Balance, QA/QC	Mass Li_2CO_3 produced, quality assurance

Table 17-14 Process Control Sampler Summary

Locations		
Attrition Scrubber Discharge	$MgSO_4$ Evaporator Feed	Li Carbonate Feed
Classification Cyclone Feed	$MgSO_4$ Precipitation Feed	Li Carbonate Dryer Discharge
Classification Cyclone Overflow	IX Feed	ZLD Feed
Acid Leach Feed	IX Discharge	ZLD Crystals
Neutralization Filtrate	IX Product	ZLD Purge

17.11 Auxiliary Systems

Auxiliary systems such as reagent mixing and storage, maintenance, and office facilities, laboratory, etc. are discussed in Section 18 of this report.

17.12 Process Control Philosophy

The control philosophy for the plant is for all unit operations to be controlled by a Distributed Control System (DCS) from a central control room with a satellite control room in the attrition scrubbing area. Local controls will be minimized, but options for wireless tablet-based field control stations to provide operator flexibility may be included. The control room operators will initiate sequences, input setpoints, operate valves, start/stop equipment and be alerted to alarms and interlocks via the human machine interface (HMI). Data from both the DCS and analytical laboratory will be fed to an integrated data management system (DMS). Vendor instrumentation and control packages will be integrated with the central control system. The plant central control room will be staffed by trained personnel twenty-four hours per day.

Intelligent type motor control centers will be located in electrical rooms throughout the facilities. A network interface to the DCS will facilitate remote operation and monitoring of motor control center equipment. Field instrumentation and devices will be hardwired to the process control system except where wireless solutions are cost effective.

A site wide process control network will be established in a ring architecture wherever feasible. This will be a combination of ethernet and fiber optic where appropriate.

18 PROJECT INFRASTRUCTURE

The Project is planned to be constructed in five phases. Each expansion will occur four years apart from each other with Phases 1, 2, 3, and 4 designed to produce a nominal 40,000 metric tons of lithium carbonate per annum from acid plants producing a nominal 2,250 t/d sulfuric acid. Phase 5 will occur at the same time as Phase 4 and is designed to include a 3,000 t/d acid plant and a process plant to support higher leach feed rates through brine production only. Mined material and tailings will be moved by conveyors and trucks and the infrastructure needed to support these production rates are summarized in this section.

Table 18-1 summarizes the acid and process plant expansion strategy.

Table 18-1 Thacker Pass Project Expansion Summary

Phase	Year	Nominal Acid Plant Expansion (t/d H_2SO_4)	Nominal Process Plant Expansion (t/y, LCE)	Logistics Infrastructure
1	1	2,250	40,000	Winnemucca Transload
2	5	2,250	40,000	Winnemucca Transload
3	9	2,250	40,000	Winnemucca Transload
4	13	2,250	40,000	Rail to Thacker Pass
5	13	3,000	Brine only	Rail to Thacker Pass

18.1 Summary

The proposed activities and facilities associated with the Project include:

- Development of an open pit mine.
- Concurrent backfilling of the open pit using waste rock and coarse gangue material.
- Construction and operation of mining facilities including a maintenance shop, fuel island, and wash bay.
- Construction of Run-of-Mine (ROM) ore stockpiles.
- Construction and operation of lithium processing facilities including;
    - Phase 1 – 40,000 t/y nominal lithium carbonate production
    - Phase 2 – 40,000 t/y nominal lithium carbonate production
    - Phase 3 – 40,000 t/y nominal lithium carbonate production
    - Phase 4 – 40,000 t/y nominal lithium carbonate production
    - Phase 5– beneficiation through brine production only, owing to reduced ROM lithium grade, excess capacity in Phases 1-4 purification stages will be utilized
- Construction and operation of a sulfuric acid plant.
    - Phase 1 – 2,250 t/d nominal sulfuric acid production
    - Phase 2 – 2,250 t/d nominal sulfuric acid production
    - Phase 3 – 2,250 t/d nominal sulfuric acid production
    - Phase 4 – 2,250 t/d nominal sulfuric acid production
    - Phase 5– 3,000 t/d nominal sulfuric acid production
- Construction and operation of Clay Tailings Filter Stacks (CTFS).
- Construction and maintenance of haul and secondary roads.
- Construction and maintenance of stormwater management infrastructure (diversions and sediment ponds).
- Construction of alluvial and growth media stockpiles as needed to support development.
- Construction of electricity transmission lines, substations, and distribution.
- Construction and operation of a rail line.

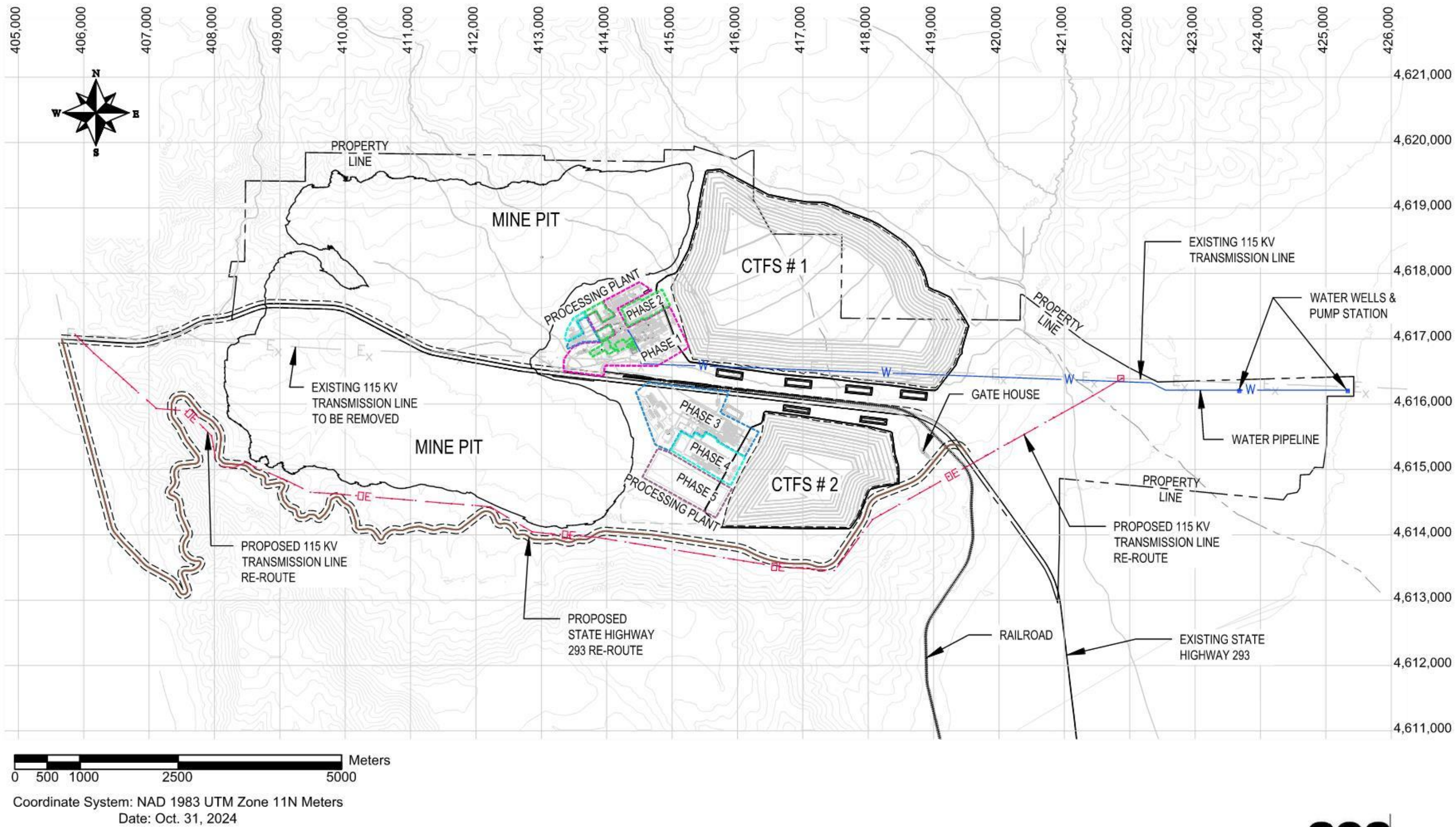
- Installation of water supply wells and associated infrastructure (pipes, ponds, tanks, fencing, buildings)
- Relocation of portions of SR293 and transmission lines as the open pit advances; and
- Construction of ancillary facilities to support the Project such as septic systems, communication towers, guard shacks, reclaim ponds, monitoring wells, weather station, fiber optic line, buffer areas, laydown areas, borrow areas, temporary stockpiles, roads, parking, wash bays, fencing, etc.

The proposed layout of the Thacker Pass Project site is shown in Figure 18-1.

18.2 Overall Site General Arrangement

The mining and Processing Plant operations are in the McDermitt Caldera in northwest Nevada. Lithium-rich clays are mined and transported via haul truck to the mineral beneficiation equipment at the processing plant. Raw water is sourced via aquifer-fed wells 7 miles east of the processing plant. The overall site general arrangement is presented in Figure 18-1.

Figure 18-1 Overall Site General Arrangement



18.3 Process Plant General Arrangement Phase 1 & 2

The processing plants are east of the mine open pit. See Figure 18-2 for the general arrangement layout of the process facilities. Product flows from each Phase expansion are clockwise starting where the ore is delivered to a ROM stockpile and beneficiation processes. Classification, beneficiation, and coarse gangue removal are in this area. Thickened slurry is pumped to classification (centrifuges) and then pumped to acid leaching, neutralization, and countercurrent decantation (CCD) circuit before being sent to the filtration area. Magnesium removal continues in a central section of the plant before flowing to calcium precipitation, calcium and boron ion exchange, and lithium carbonate production followed by ZLD crystallization. The packaging system (Section 18.15) is immediately adjacent to the lithium carbonate plant to minimize product transfer distance. Primary east-west pipe racks and secondary north-south pipe racks contain much of the process and utility piping, electrical, and instrumentation feeds for each phase. Raw water is pumped 7 miles east of the process areas to dedicated raw water tanks located in the process plant areas.

Generally, Phase 2 is a mirror of Phase 1. Phase 4 is a mirror of Phase 3 and the Phase 5 expansion is a standalone expansion.

Figure 18-2 Process Facility General Arrangement (Phase 1 – 2)

18.4 Reagents and Consumables

Limestone, quicklime, flocculant, and soda ash reagents are delivered to each processing plant in solid form while liquid sulfur, propane, ferric sulfate, caustic soda, and hydrochloric acid are delivered as liquids. Over-highway trucking will occur during Phases 1 through 3. During Phase 4 a short-line railroad to the project will deliver most bulk raw materials directly to the project site for the duration of the life of mine.

Delivery routes and offloading locations for raw materials are designed to minimize potential incidents with other traffic, operations, and maintenance activities.

18.5 Ancillary Buildings

Ancillary buildings to support each phase of the project include:

- Site security buildings and entrances
- Administration office buildings
- Plant maintenance and warehouse buildings
- Packaging Warehouse building
- Laboratory and control room buildings
- Mine facilities area holding fuel, lubrication, wash bay, and maintenance workshop

For the Phases specified in Table 18-2, the administration office buildings and the maintenance and warehouse buildings are north of the acid plants area storage tanks. The Process Control and the Analytical Laboratories are co-located near the CCD area. The administration building houses the administrative and managerial staff. A helipad is situated near the security entrances for ready access. A building list with functionality is provided in Table 18-2. See Figure 18-3 for locations of Ancillary Buildings and the buildings general layout provided in Section 18.5.1. The Ancillary Building list is a summary of buildings required and shared for Phase 1 and 2 together, Phase 3 and 4 together, and Phase 5 independently. Phases 1 and 2 will share a control room and laboratory facility. Phases 3, 4, and 5 will share a second control room and laboratory facility.

Table 18-2 Building List by Phase 1-2, and 3-4-5

WBS Code	Ancillary Facilities	Phases 1 and 2	Phases 3 and 4	Phase 5	Purpose/Function
1905	Site Security Building (905-BG-001)	1	1	0	Control access to site. Receiving point for raw materials and shipments.
1910	Administration Buildings (910-BG-001)	1	1	0	House administrative and managerial personnel. House shower and changing areas and medial resources.
1915	Plant Warehouse Building (915-BG-001)	1	1	0	Co-located with Plant Maintenance Building. House Maintenance staff and spare parts. Provide work areas for mobile equipment maintenance and plant maintenance.
1920	Plant Maintenance Building (920-BG-001)	1	1	0	Co-located with Plant Warehouse Building. House Maintenance staff and spare parts. Provide work areas for mobile equipment maintenance and plant maintenance.
1925	Packaging Warehouse Building (925-BG-001)	1	1	0	House product packaging equipment, provide storage area for product material including QAQC hold area. Provide loading area for product into semi-trailers and shipping containers.
1930	Plant Laboratory Building (930-BG-001)	1	1	0	Co-located with Operations Control. Provide housing and equipment for testing of material and product (ore through finished)

WBS Code	Ancillary Facilities	Phases 1 and 2	Phases 3 and 4	Phase 5	Purpose/Function
1950	Operations Control Rooms	1	1	1	Co-located with Plant Laboratory, provide areas for shift exchange and crew assignments. House equipment for process control and plant interface and control screens. A second control room will be located in the beneficiation area.
1960	Heavy Equipment Wash Station	1	1	1	Provide an area to wash mining equipment and plant mobile equipment, provide an area for collection and containment of equipment wash water.
-	Mine Area Facilities	Temporary	Temporary	1	Mining related facilities for maintenance, fueling, and administrative service.

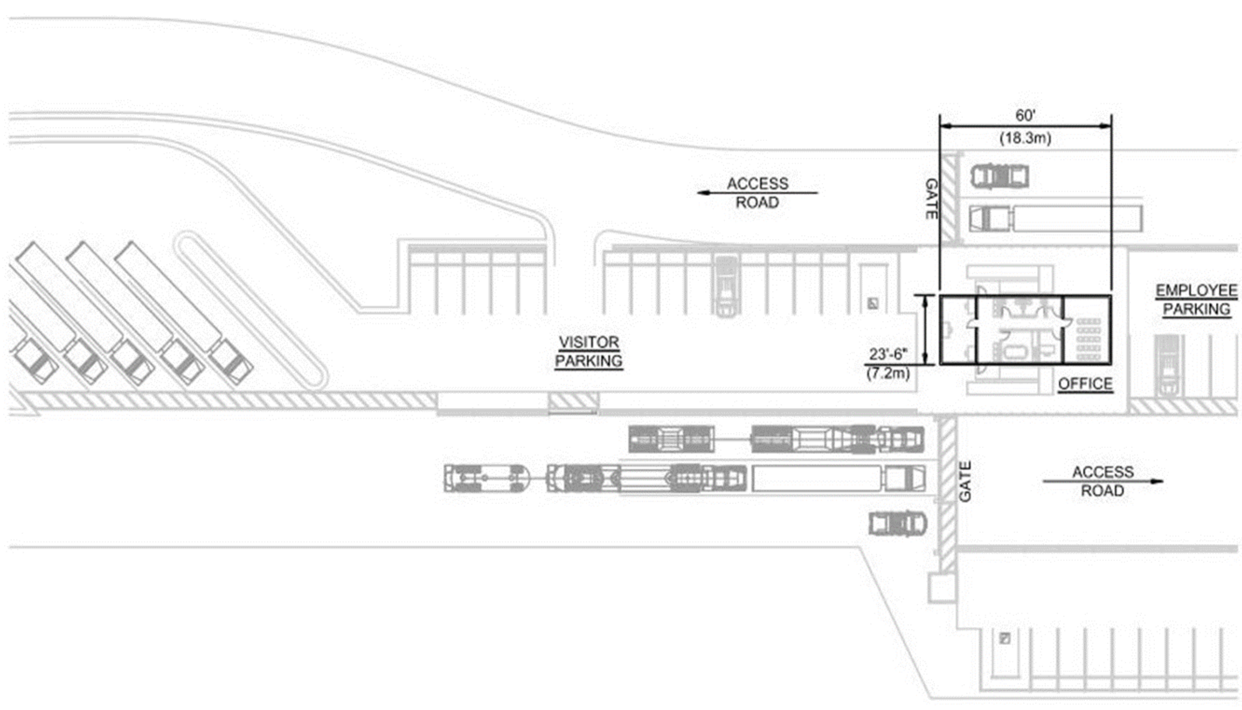
18.5.1 Buildings General Layout

The following Figure 18-3 to Figure 18-8 show the general building layouts required for each Phase as summarized in Table 18-2.

18.5.1.1 General Site Entrance

The project will utilize two site security entrance areas to control access to and from the project sites. One to access Phases 1 and 2 and a second to access Phases 3, 4 and 5. The general site security access control areas is shown in Figure 18-3 and will be located at each of the main entrances with parking space for trucks and light vehicles. All traffic needing to access and exit the project areas will check in and out and enter and exit through these locations. Traffic includes employees, visitors, contractors, raw material deliveries, service and supply deliveries, and products leaving the project.

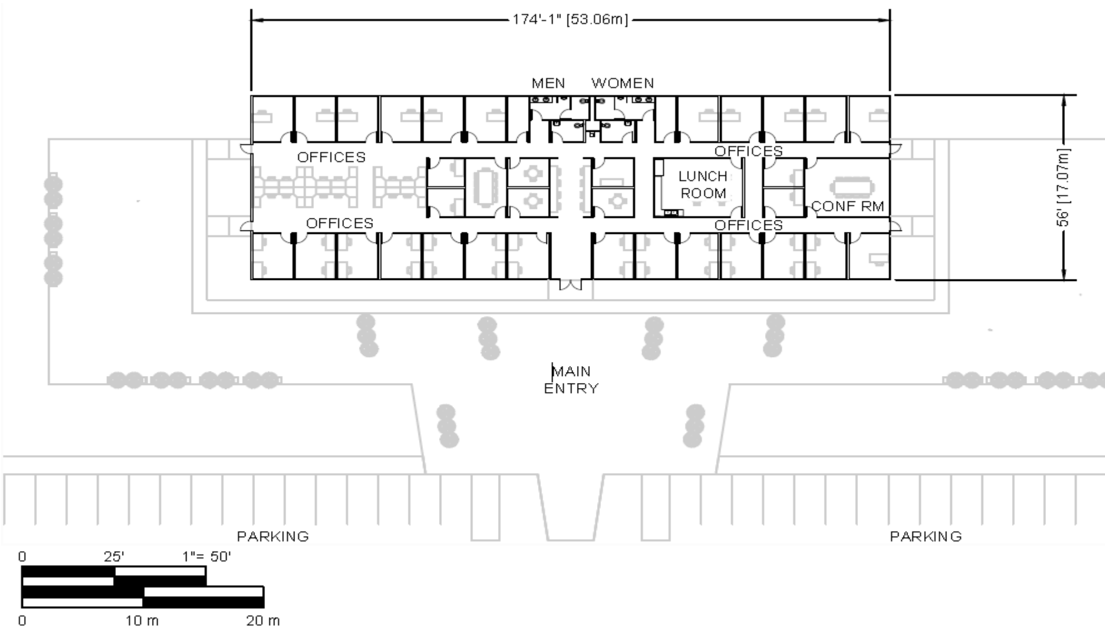
Figure 18-3 General Site Security Entrance



18.5.1.2 General Administrative Building

Administration offices for LAC are generally depicted in Figure 18-4. This office area will comprise office space for the General and Administrative staff and activities including meeting rooms, site management offices, administration, engineering, project planning and control, technical services, and information technology services.

Figure 18-4 General Administration Offices



18.5.1.3 General Process Area Maintenance and Warehouse Building

Process Plant Maintenance and Warehouse buildings are included to support the Phases of the project.

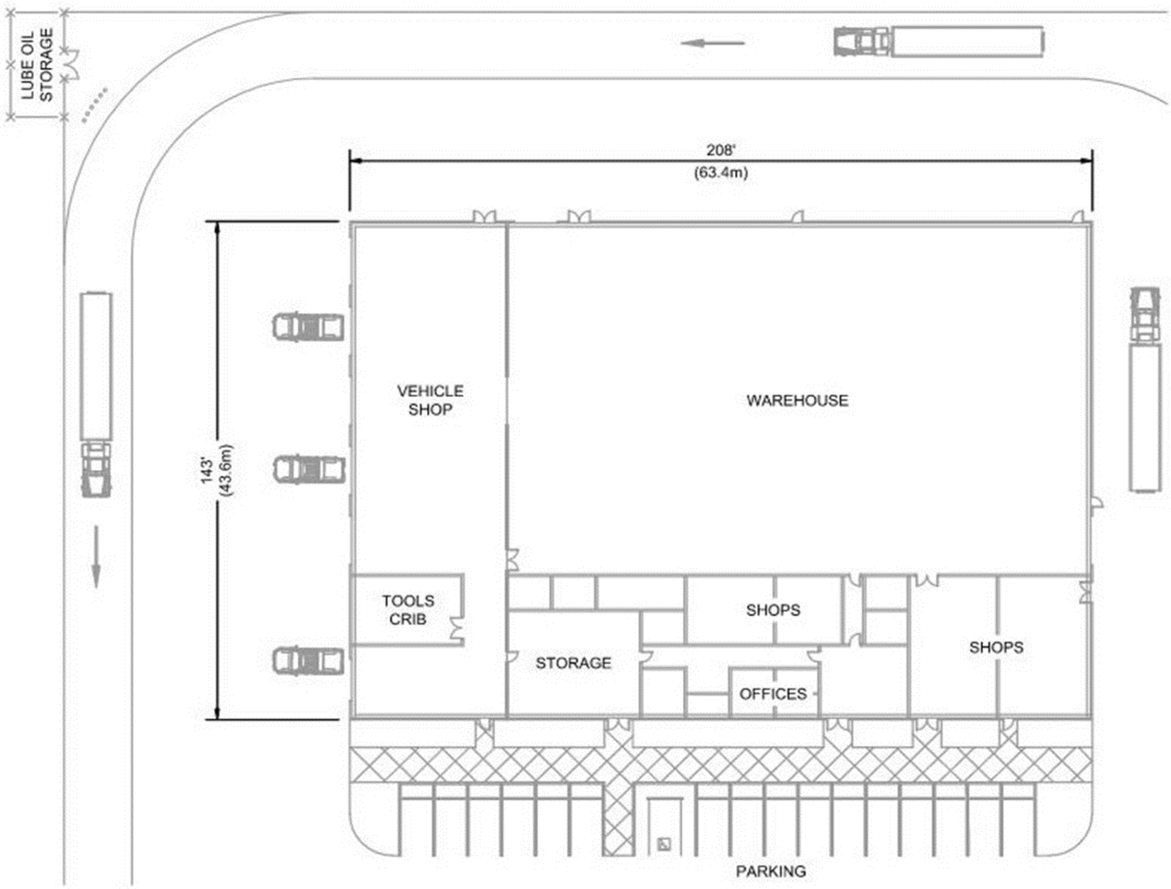
Fixed and mobile maintenance activities will be performed here along with warehousing and office spaces to support the maintenance and warehouse staff. During construction these buildings will serve as covered storage for critical equipment and during operations they will serve as storage for spare parts, tools, supplies, and consumables.

The reagents storage and handling, fuel tank farm and dispensing station, truck scale, and power generation will be managed from the warehouse offices.

The warehouse will be provided with rows of steel shelves, where all spare parts can be stored orderly for easy identification until they are required for use.

The storage of chemical drums will be stored in adequate storage areas outside the warehouse according to its hazardous materials classification.

Figure 18-5 General Process Area Maintenance and Warehouse Building



18.5.1.4 <u>General Mine Facility Truck Shop</u>

The truck shop is the main building and center of activities of the services hub. As plant phases are added and the mine expands, the mining fleet size will adjust accordingly to supply ore, haul waste, and coarse gangue. In the life of mine it will host the maintenance area for the off-road mine fleet primarily 200- and 300-tonne trucks as provided in (Figure 18-6 and Figure 18-7) and other mining support equipment. The truck shop will be composed along one side of its main axis of eight major bays, four for major off-road truck maintenance, two for major crawling equipment, one for lubrication, and another for tire repair. Also, a fully enclosed truck washing cabin/bay will be within.

A section of the building will host the lubricants storage area and compressed air equipment, while another will host the hazardous materials (used lube oil and washing water for further treatment and/or temporary storage until it can be disposed of by the relevant contractor). A clean oil dispensing system will be used to fill the equipment while a vacuum recovery system will be used to recover the used oil to 10,000 liters (about 2,642 gal) of discarded oil storage tanks for later final disposal. These tanks will be emptied once a month and treated off-site by third parties.

Mechanical and electrical maintenance work benches will also be distributed along a central corridor of the building, while a piping and steel workshop area have been considered to complete the necessary plant maintenance area. Minor electrical and delicate instrumentation repairs will also be performed at the truck maintenance workshop.

Heavy lifts such as trucks haul boxes, engines, and gearboxes will be handled by a 20-ton overhead traveling crane, servicing the whole mine fleet bays and central corridor.

There is a dedicated building for tire repair and a wash station next to the truck shop. In front of the truck shop, there are separate buildings for changing house, maintenance shops (mechanical and electrical), and safety & emergency.

Figure 18-6 General Mine Facility Truck Shop (200-tonne Truck)

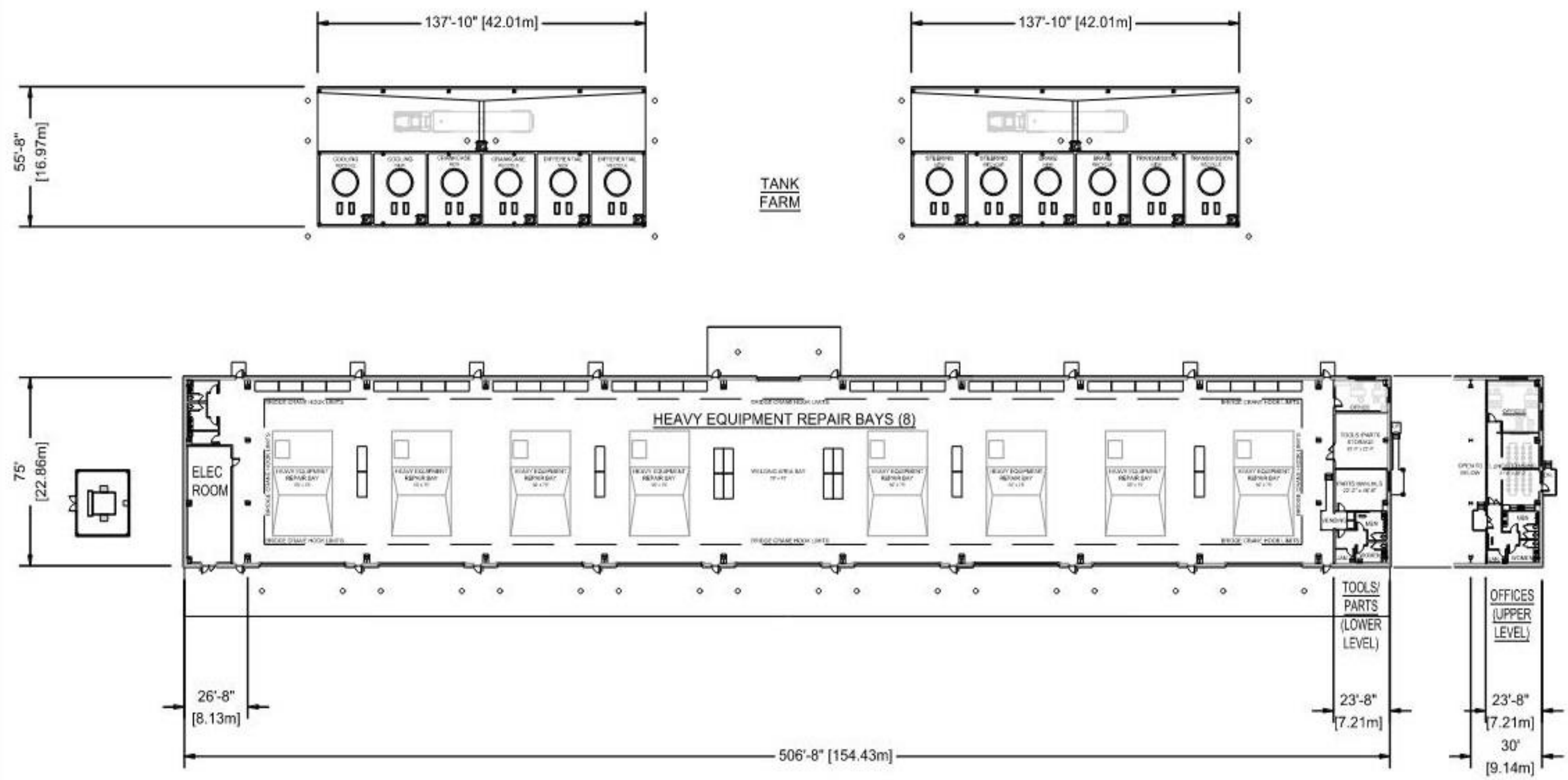
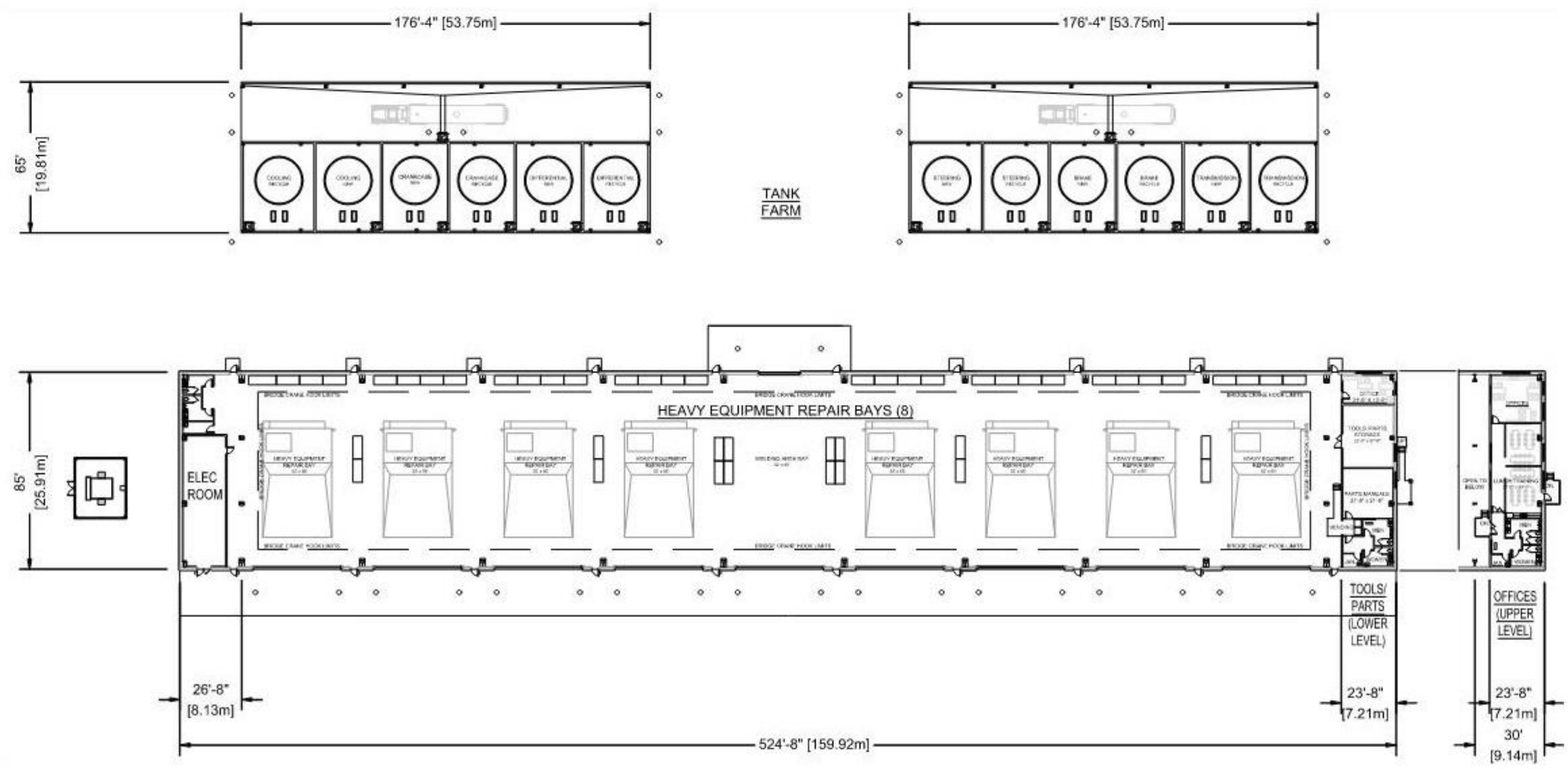


Figure 18-7 General Mine Facility Truck Shop (300-tonne Truck)

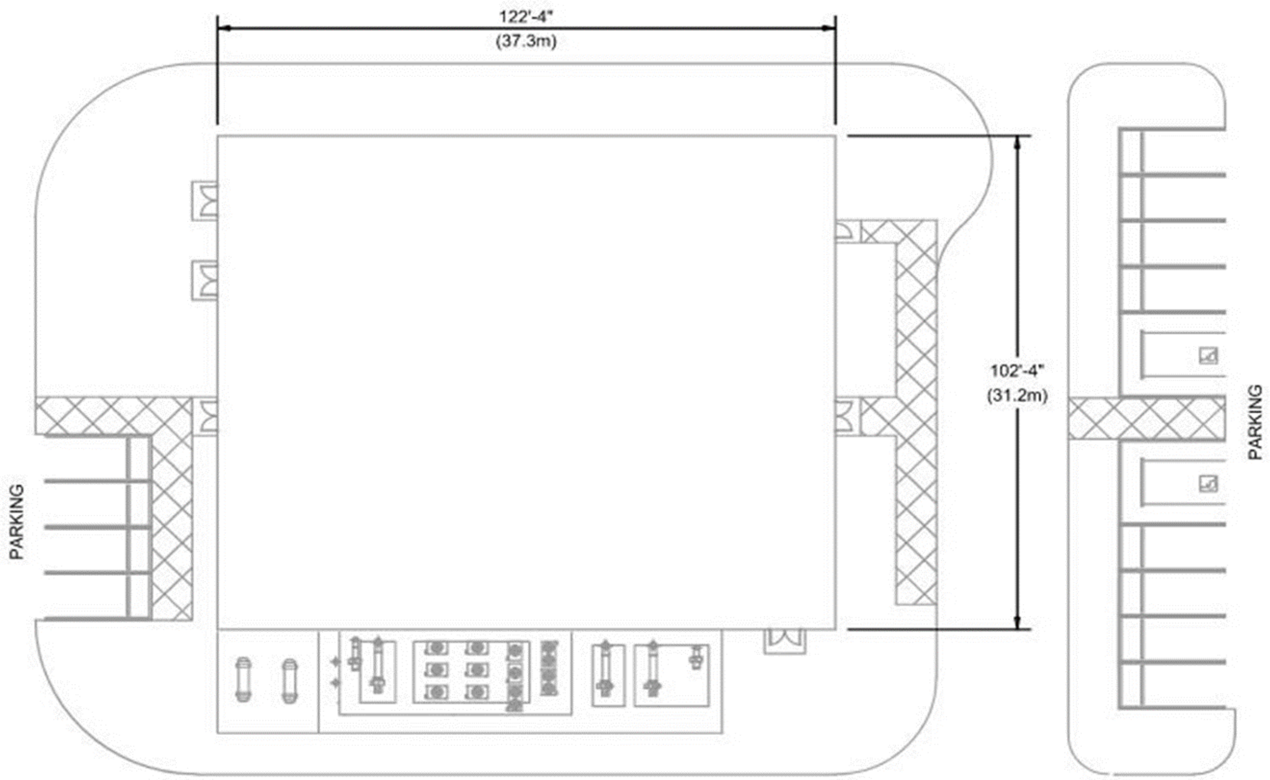


18.5.1.5 General Process Plant Control Room and Laboratory

Process plant control rooms and laboratories are co-located together. These buildings will also have office spaces for operators and supervision. A separate control room for the beneficiation plant areas will be near the ROM stockpile.

The laboratory (Figure 18-8) will perform all necessary ore control, assaying, and chemical analysis related to the plant operations.

Figure 18-8 Plant Laboratory and Operations Control



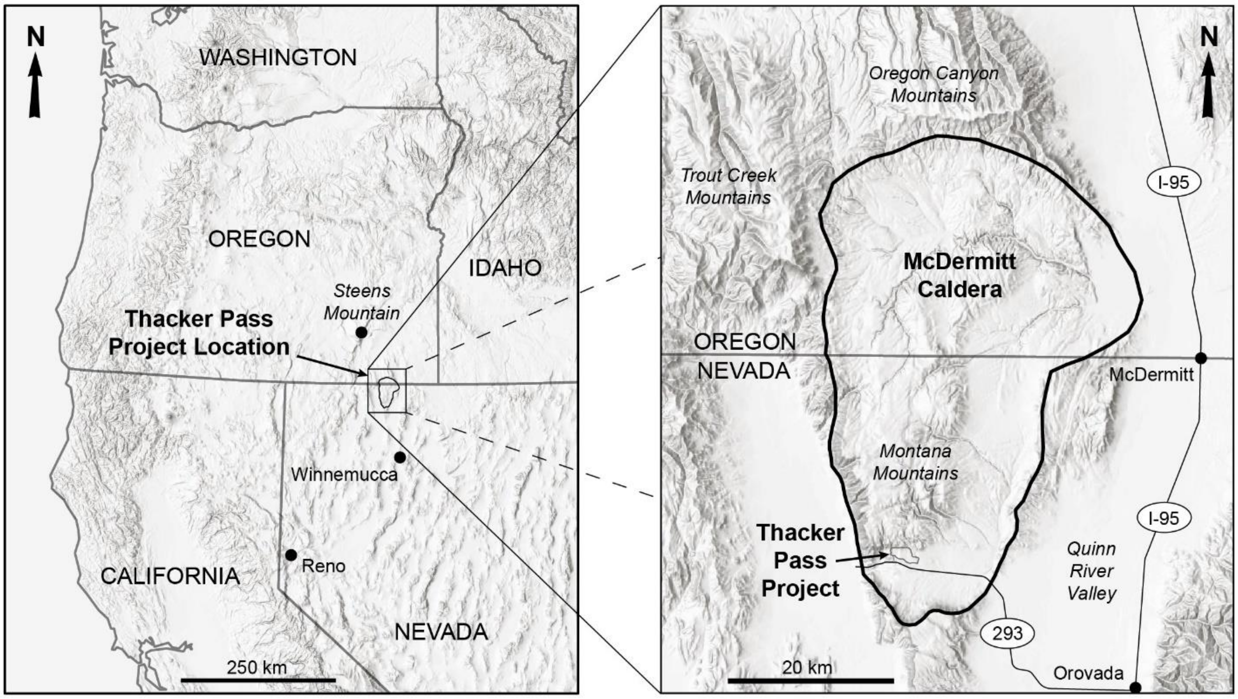
Source: SGS 2024

18.6 Roads

18.6.1 Site Access

The planned traffic flow to the project will primarily come from Winnemucca Nevada along Highway 95 then onto SR-293.

Figure 18-9 Regional Site Map with Thacker Pass Project

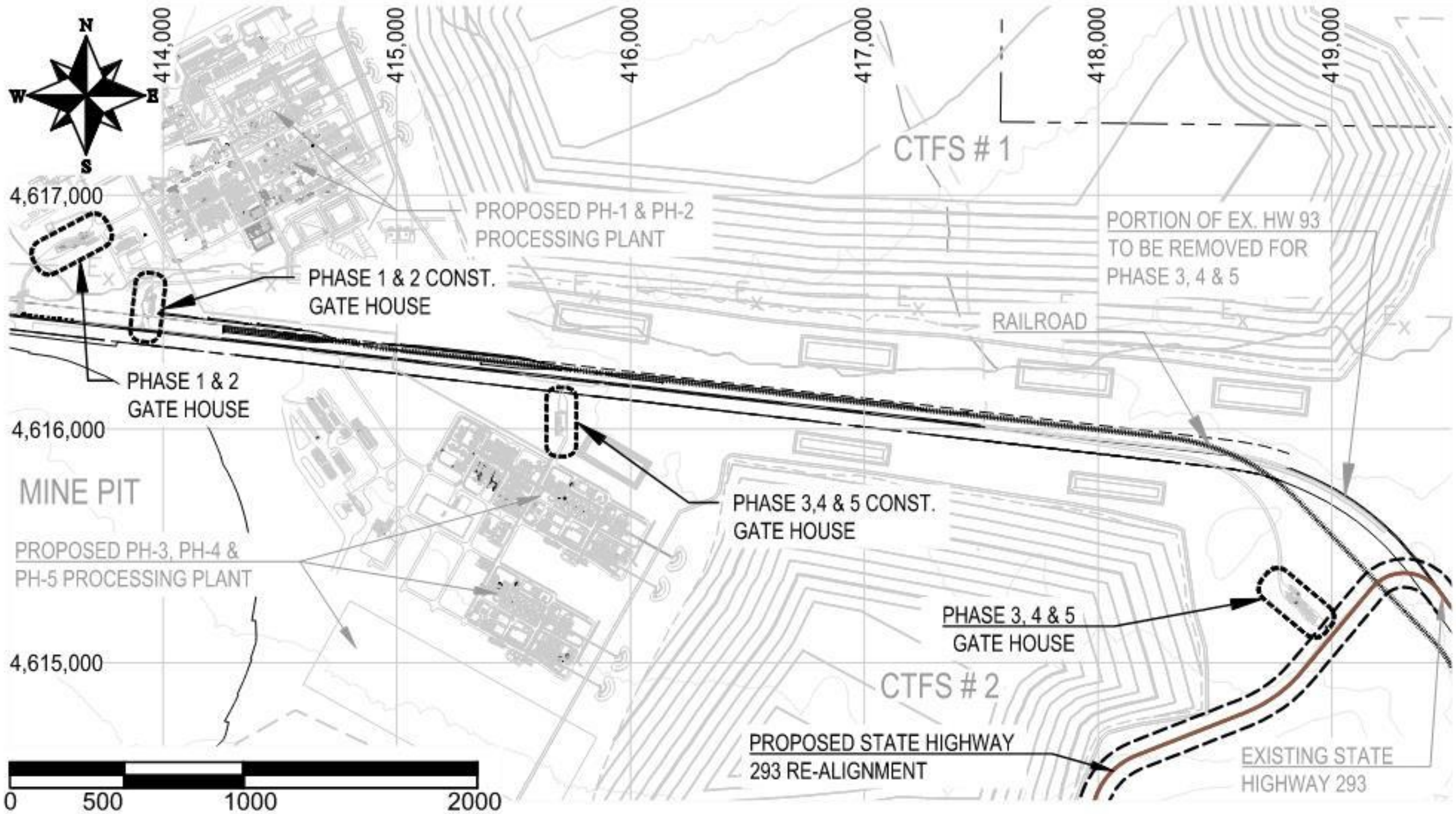


Source: Lithium Americas Corp. (2022)

Access improvements along SR-293 adjacent to the project site were completed in 2023 with Nevada Department of Transportation (NDOT) oversight. Improvements included the development of three turn/deceleration lanes at the Phase 1 and 2 Process Plant Entrance, Construction Entrance, and Mine Entrance along with cattle guard improvements on the BLM Pole Creek Road. These entrances will support the construction and operations during Phase 1 and 2 developments.

Additionally, an intersection in the town of Orovada, NV at US-95/ SR-293 junction was improved in 2023 with NDOT oversight to accommodate additional traffic to the Thacker Pass site. All construction and operations traffic to the site will travel northbound on US-95 and turn west onto SR-293. The highway improvements included a deceleration lane for traffic to turn onto SR-293.

Figure 18-10 Site Entrances



Source: SGS, 2024

18.6.2 Phase 1 and 2 Entrances

18.6.2.1 Phase 1 and 2 Process Plant Entrance

Approximately 3.6 km (11,800 ft) west of Pole Creek Road is the primary site access. This entrance is intended to support raw material deliveries, mine and process operations groups, warehouse deliveries, contractors, and visitors.

18.6.2.2 Phase 1 and 2 Construction Entrance

Approximately 548.64 m (1,800 ft) east of the Process Plant Entrance is the construction entrance and switchyard access entrance. This location was constructed in 2023 and will be the access point for construction deliveries and contractors during construction activities while the plant entrance is constructed. After construction, this entrance will be available for Harney Electric personnel to access the Harney Electric Substation and equipment needed during operations. There is limited light vehicle traffic planned at this location once full-scale operations are in place.

18.6.2.3 Mine Area Entrance

The entrance to the mine facilities area will be via the Phase 1 and Phase 2 plant entrance.

18.6.3 Phases 3, 4 and 5 Entrance

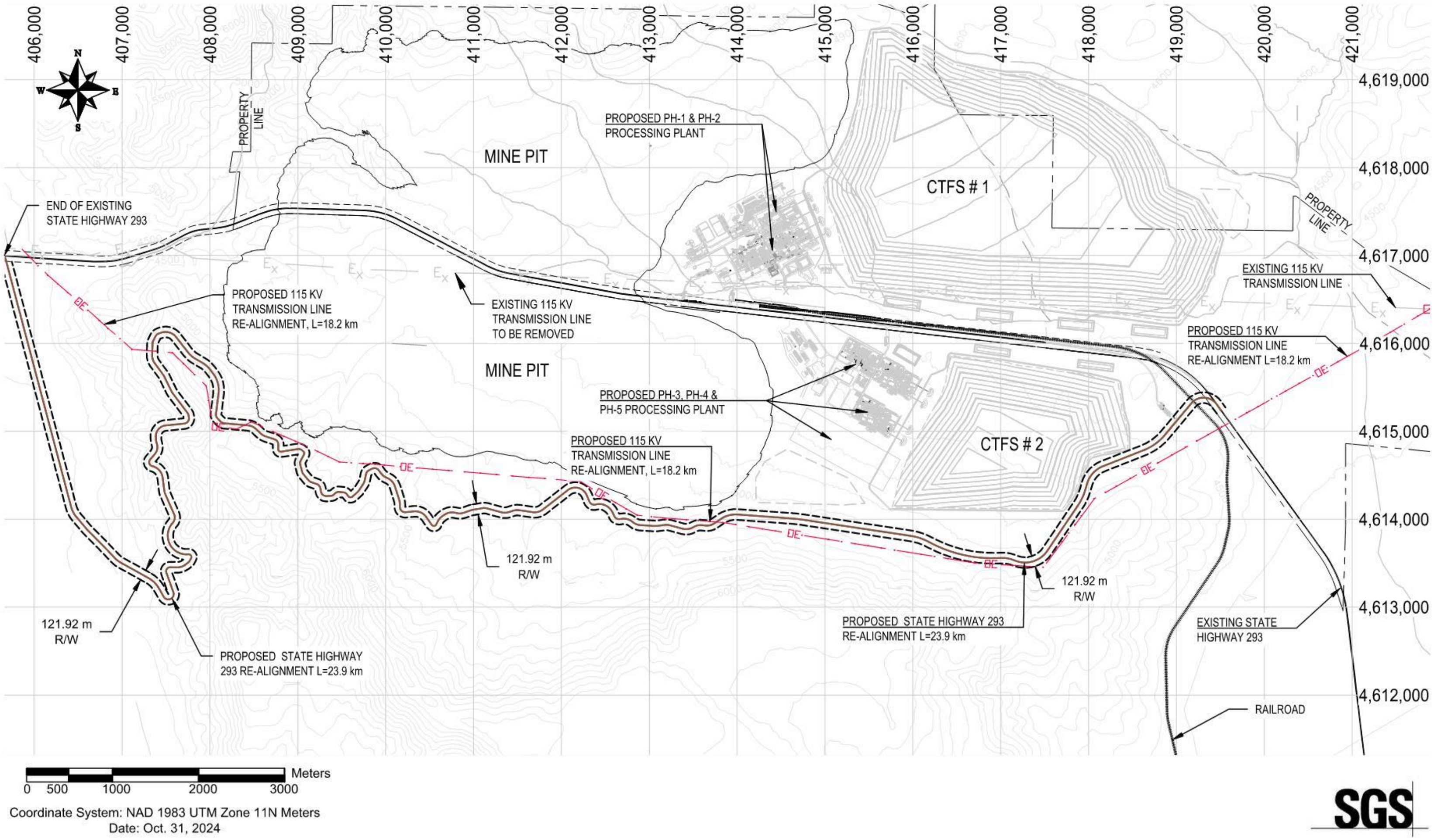
18.6.3.1 Phase 3, 4, and 5 Process Plant Entrance

Across from Phases 1 and 2 Process Entrance will be an identical access point to support construction and operations access to the plant expansions for Phases 3, 4, and 5. Turn Lane improvements to support deliveries along with a controlled access point will be created.

18.6.4 State Route 293 and Transmission Line Relocation

SR-293 passes through the Thacker Pass Project proposed open pit mine and connects the Kings River Valley to U.S. Highway 95 in Orovada, Nevada. During years 39 and 40 SR-293 will be rerouted outside of the proposed open pit limits. The re-alignment will be 23.9 kilometers (14.9 miles) and will satisfy the Nevada Department of Transportation requirements. Also included with the state route relocation, is the realignment of the overhead 115 kV transmission and fiber optic communication line to the Kings River Substation. Figure 18-11 shows the proposed alignment for both the SR-293 and the power transmission line.

Figure 18-11 Existing State Route 293 and 115 kV Transmission Line Re-Alignment



18.7 Raw Material Logistics

Raw materials for the Project will be delivered to the site by over highway trucks during the first three phases. A local rail-to-truck transloading facility in Winnemucca will allow for the transfer of most raw materials for delivery to the Project site. A summary of the primary raw materials to be used during operations, and their logistics, are listed in Table 18-3. The cost per tonne of the raw material is included in the OPEX for the consumables.

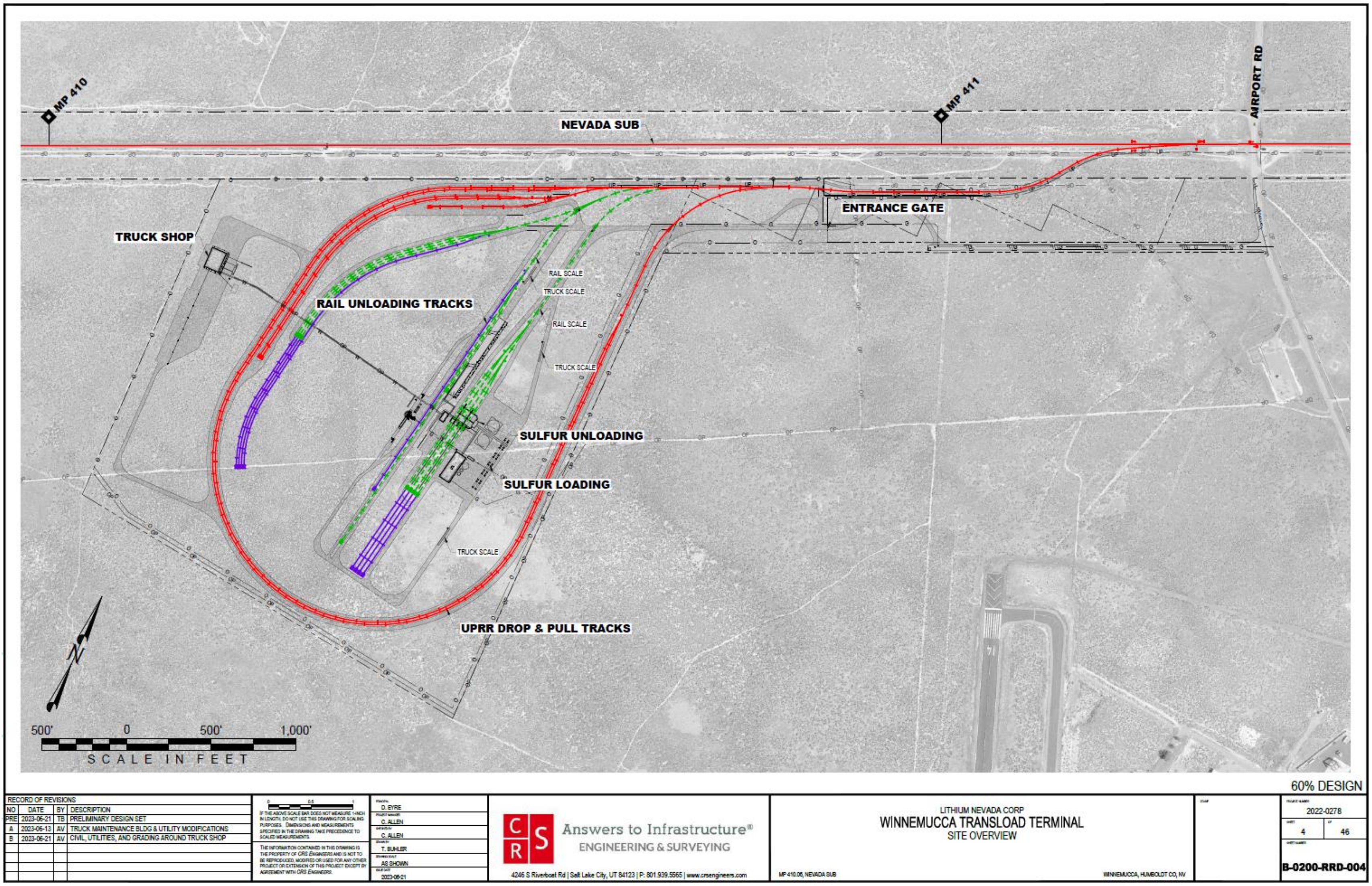
18.7.1 Transload Facility

High volume raw materials are to be shipped by rail to a transload facility to be constructed for the Thacker Pass Project in Winnemucca, NV. A rail-to-truck Transload Terminal (TLT) will be constructed on a 177-acre parcel of land owned by the City of Winnemucca located just northwest of the Winnemucca Municipal Airport. This parcel has been leased from the city for the express purpose of constructing the TLT. Various bulk reagents such as sulfur, soda ash, and flocculant will arrive at the TLT in railcars on the Union Pacific Railroad (UPRR) and will be transloaded to trucks for transport to the Thacker Pass Project plant site. Rail traffic from the UPRR will enter the TLT via a signalized mainline switch on the UPRR's Winnemucca Subdivision.

The TLT will have two loop tracks, one for arrivals and one for departures. UPRR will place arriving railcars on the drop track and will pick up leaving railcars from the pull track. The TLT operator will use locomotives to move railcars from the drop track to either storage tracks, indexing tracks for grouping, or unloading tracks, and then after railcar unloading to the pull track for UPRR pick-up. The TLT layout has been pre-approved by UPRR operations and has been designed with a phased approach to support start-up and Thacker Pass Project Phase 1 production, with expansion capability to support Thacker Pass Project Phase 2 and 3 productions. Figure 18-12 shows the TLT layout. A build, own, operate, and transfer (BOOT) contract has been executed with Iron Horse Nevada LLC.

Transload Terminal CAPEX will be paid for by the contracted operator. Transload operating costs will consist of fixed and volume-based operation and maintenance fees and are included in the financial model with the transloaded raw materials.

Figure 18-12 Transload Facility Site General Arrangement



Source: CRS, 2022

18.7.1.1 Design Criteria

The Winnemucca transload terminal design includes the scope described below for each phase. The following scope is assumed for each Phases 1 and 2 of the Project operation:

1. Phase 1 – (750 tonnes per day liquid sulfur)
   a. Installation of a switch on the Nevada Sub
   b. Spurs for Drop, Pull, Index and Repair in Place.
   c. Sulfur unloading spurs, platforms, sump and (2) pumps
   d. Sulfur tank
   e. (2) pumps for the truck loading rack
   f. Sulfur truck loading rack; (2) spot, double sided
   g. Soda Ash/Quicklime transloading spur using mobile transloading equipment
   h. Boilers;(2) primary and (1) spare for steaming up to 48 railcars, heat tracing, & tank heating
   i. Bulk liquid transload spur and road, for mobile transloading equipment
   j. Supporting utilities including electrical infrastructure, a scrubber, fire water and breathing air.
   k. Roads and buildings
2. Phase 2 – (1,800 T/D liquid sulfur)
   a. Additional sulfur storage tank
   b. Pump to support the new sulfur truck loading rack
   c. Additional truck loading rack; (2) spot, single sided
   d. Sulfur unloading spur extensions with a new (3) spot rack and pump
   e. Soda Ash transloading spur, silo, and truck loading area
   f. Quicklime transloading spur, silo and truck loading area
   g. Additional (2) boilers

Table 18-3 Raw Material Logistics Scheme with Transload (Phase 1, 2, 3)

Raw Material	Description	Approximate Truck Loads per Day	Origin
Liquid Sulfur	Includes unloading, storage, and delivery to the plant via a 39-tonne tanker from a trans-loading facility in Winnemucca, NV.	54	Western North America
Soda Ash	Includes unloading, storage, and delivery to the plant via a 39-tonne trailer from a trans-loading facility in Winnemucca, NV.	22	Green River, WY
Quicklime	Includes unloading, storage, and delivery to the plant via a 39-tonne trailer from a trans-loading facility in Golconda, NV. Optionally, may be shipped to the site from the transloading facility in Winnemucca, NV.	14	Nevada or Utah
Limestone	Includes operation of in-pit primary crusher, delivery to the process plant via 39-tonne trailer, and secondary limestone crushing/screening/grinding plant at the process plant.	17	(Quarried Locally)
Fuel	Includes diesel, unleaded gasoline, propane and their unloading, and delivery to the plant via 10,000- or 12,500-gallon trailer to the site. Optionally, may be shipped to the site from a transloading facility in Winnemucca, NV.	>2	Via Winnemucca fuel market by owner or others

Raw Material	Description	Approximate Truck Loads per Day	Origin
Other	Includes delivery to the plant via 21-tonne trailer of Ferric Sulfate, Hydrochloric Acid, Caustic Soda, and Flocculant direct to site. Optionally, may be shipped to site from a transloading facility in Winnemucca, NV with minor capital improvements.	>3	Bulk flocculant from SE USA Low volume reagents from UT and NV markets

18.7.2 Rail to Thacker Pass

High volume raw materials will be shipped by rail to the Thacker Pass Project directly, beginning with Phase 4 project expansion. CRS Engineers performed a 58-mile route study to refine a selected railroad corridor and prepared a Class IV cost estimate (-20% / +30%) including major costs for the construction of the proposed railroad connection (CRS Engineers, 2022). The rail will include an interchange yard along existing UPRR track near Winnemucca, an industrial lead track to the project site, and a working yard at the project site to offload rail trains.

The purpose of transitioning to rail during Phase 4 is due to the high volumes of raw materials required for the remaining life of mine, to minimize over-highway traffic along US-95 and SR-293, and to take advantage of reduced freight costs realized with a direct rail line versus a transload terminal and over highway logistics. Permitting of the route and land acquisition will be required.

Table 18-4 Raw Material Logistics Scheme with Rail (Phase 4 through LoM)

Raw Material	Description	Approximate Truck Loads per Day	Origin
Liquid Sulfur	Includes unloading, storage, and delivery to the plant via rail	0	Western North America
Soda Ash	Includes unloading, storage, and delivery to the plant via rail.	0	Green River, WY
Quicklime	Includes unloading, storage, and delivery to the plant via rail.	0	Nevada or Utah
Limestone	Includes operation of in-pit primary crusher, delivery to the process plant via 39-tonne trailer and secondary limestone crushing/screening/grinding plant at process plant.	31	(Quarried Locally)
Fuel	Includes diesel fuel and unleaded gasoline and their unloading, and delivery to the plant via rail.	0	Fuel market by owner or others
Other	Includes delivery to the plant for water treatment, propane, and other small quantity raw materials via various tonne trailers.	>1	Low volume reagents from UT and NV markets

18.8 Power Supply

Electrical power for the Project will be supplied by on-site power generation and via grid power from the local electric utility cooperative, Harney Electric Cooperative (HEC). A 115 kV transmission line crosses the Project site. The Project will generate a portion of the steady-state power demand via Steam Turbine

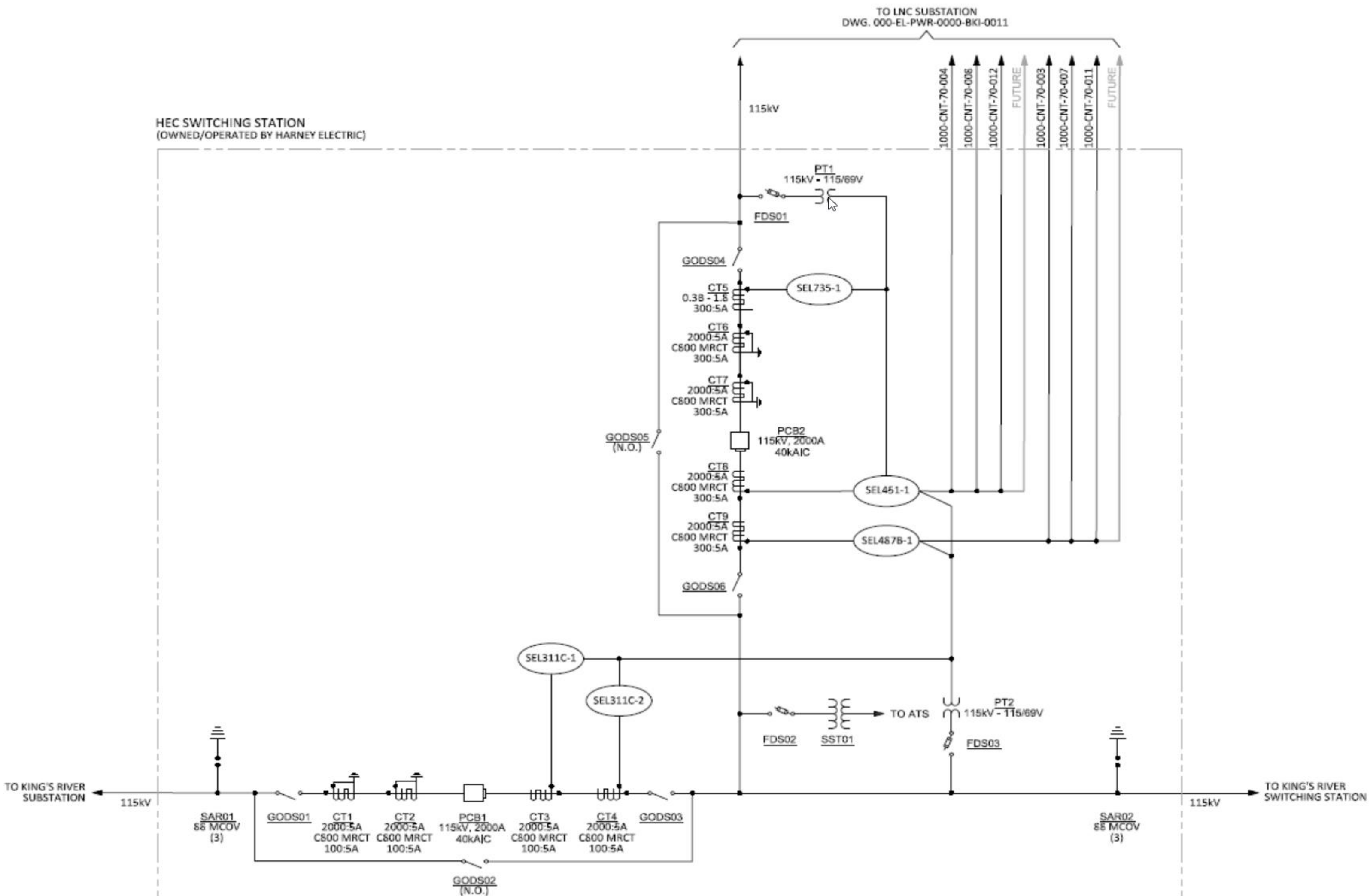
Generators (STG) driven by steam produced by the sulfuric acid plant. The rest of the steady-state loads and any peaks will be serviced by power purchased from HEC.

The main onsite electrical infrastructure makes up the following:

- 115 kV Overhead power lines for interconnection to HEC 115 kV transmission network
- 115 kV - 34.5 kV Utility Interconnection Substation
- 34.5 and 13.8 kV Main Distribution Substations
- 13.8 kV, 4.16 kV, 480 V Plant Distribution Substations
- 13.8 kV Steam Turbine Generators
- 4.16 kV and 480V Standby Diesel Generators

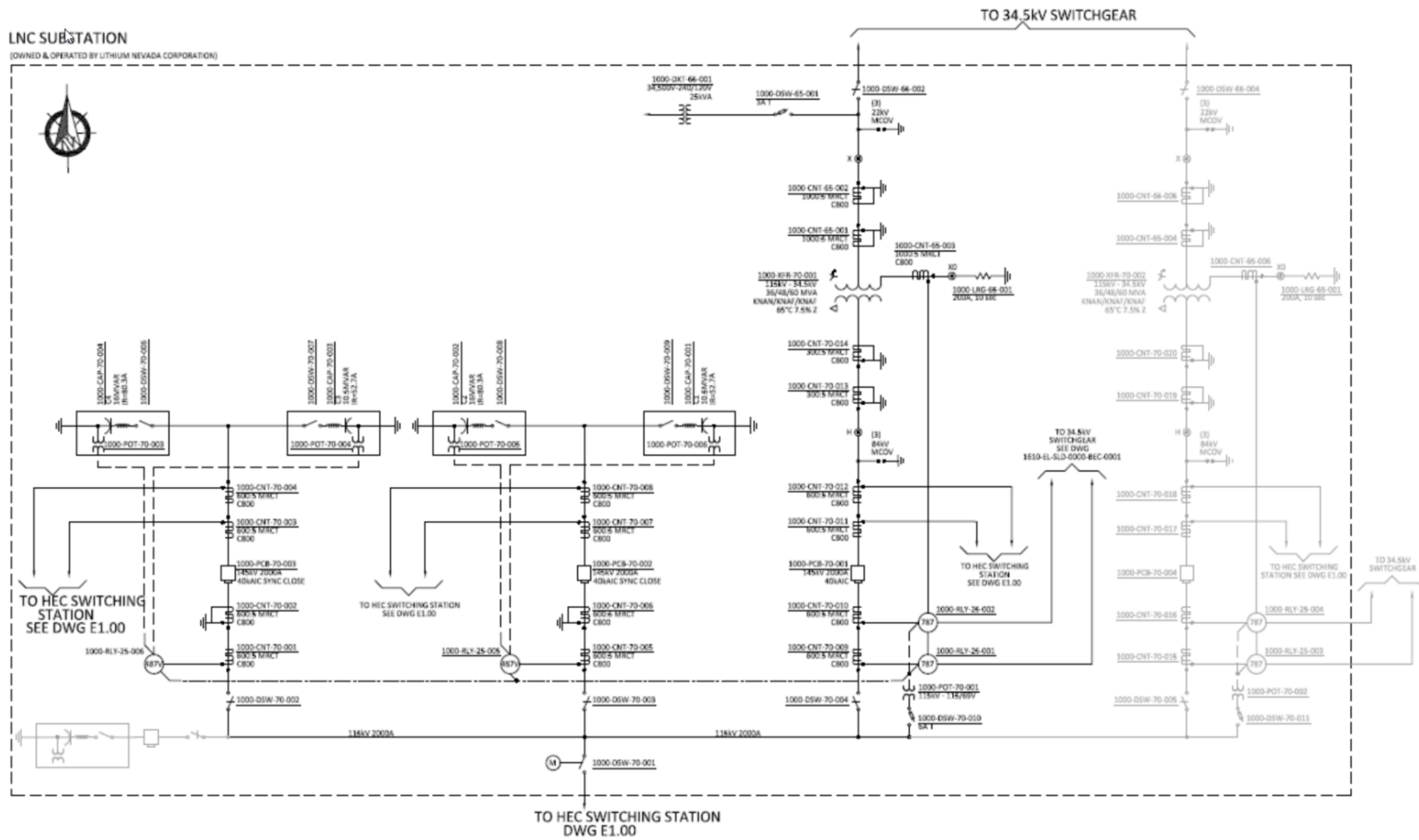
A single line diagram showing the main onsite in-coming electrical infrastructure main grid power connection to Harney Electric Cooperative (HEC) 115 kV is shown in Figure 18-13.

Figure 18-13 Line Diagram showing the Main Onsite in-coming Electrical Infrastructure Main Grid Power Connection to Harney Electric Cooperative (HEC) 115 kV



The proposed Substation is presented in Figure 18-14.

Figure 18-14 Proposed Substation



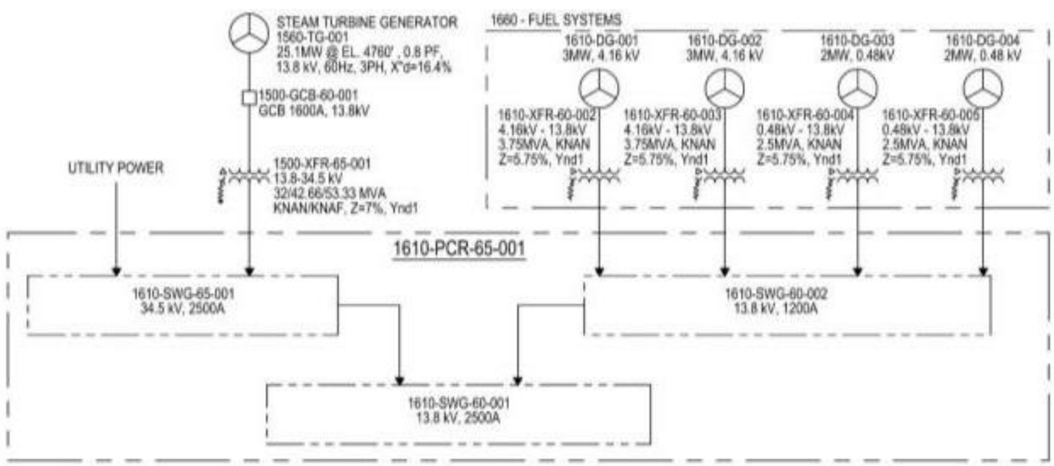
18.8.1 Plant Power Generation

The acid plant produces steam during sulfuric acid production. Steam generated by the acid plants will be used in the lithium processing plants and generate approximately 135 MW of electricity with all five phases operating.

The in-plant power generation will consist of five Steam Turbine Generators, one for each of the five phases, that provide normal power to the plant and Stand-by Diesel Generators that provide power for the plant black start operation and critical loads that require backup power upon loss of normal power. A line diagram for the in-plant generation is provided in Figure 18-15.

LAC will not export power from in-plant generation to the HEC grid.

Figure 18-15 13.8 kV Steam Turbine Generators Line Diagram



18.8.2 Interconnection to Utility Grid

HEC will provide all grid power for the Thacker Pass Project. HEC purchases all power from the Department of Energy's Bonneville Power Administration (BPA). BPA delivers hydropower generated mainly in the Columbia River Basin to HEC's southern system in northern Nevada via BPA's Southern Inertie and NV Energy's transmission system.

An Interconnection Study has been completed and the projected upgrade costs to HEC's system are included in this report. With the budgeted upgrades, HEC's system can reliably support LAC's load for all phases. The existing radial 115 kV transmission circuit, owned and operated by HEC, currently runs parallel to the proposed Project site. The plant location is approximately 11.6 miles from the Kings River Switching Substation on the 20.7-mile Kings River Switching Substation - Kings River Substation 115 kV transmission line. This line will be upgraded to meet the project requirements prior to Phase 1. At Thacker Pass, the budgeted upgrades will add a new HEC Switching Station to service the LAC Substation for Phase 1&2 and continue service to HEC's existing Kings River Substation, as mentioned below. This is then repeated for Phase 3 to 5. The budgeted upgrades will also add additional communication, and protection upgrades to HEC's 115 kV network to improve service reliability to the proposed LAC plant. This report does not consider upgrades outside of HEC's system as these requirements are dependent on other projects.

Phase 1:

The new HEC Switching Station will include:

- 115 kV Transmission Line Structure interconnecting incoming power and service feeders.
- One 115 kV power circuit breaker and protection to service the LAC Substation.
- One 115 kV power circuit breaker and protection to service the HEC's existing Kings River Substation.
- Required HEC metering equipment.

The new LAC substation will include:

- 115 kV Bus Structure
- One 115 kV power circuit breaker and protection for the power transformer.
- 115kV power factor correction equipment.
- One 115 kV - 34.5 kV power transformer.
- One prefabricated control enclosure to house the protection and control equipment.

Phase 2:

The 115kV bus from phase 1 will be utilized for phase 2 additions at the LAC substation, including a 115kV circuit breaker, power transformer, power factor correction, and prefab enclosure similar to phase 1.

Phase 3, 4 and 5:

Scaled systems from Phases 1 and 2 are included to support the future phases of power demand.

18.8.3 Power Distribution

18.8.3.1 Plant Distribution

The 34.5 kV main distribution substation will consist of one 34.5 kV gas insulated switchgear and 13.8 kV switchgear to allow for the distribution of electrical power to the local substations in the plant. The electrical equipment will be housed in a prefabricated electrical building Power Control Room (PCR) adjacent to the utility interconnection substation and the acid plant.

The main distribution substation will supply electrical power to downstream substations in each area throughout the plant at 13.8 kV, 3-phase, 60 Hz.

Power factor correction equipment will be used where technically required to meet the minimum power factor requirements from utility.

The plant design will allow the addition of another 34.5 kV main distribution substation which will be installed in Phase 2 of the Project.

18.8.3.2 System Voltages

Locally positioned substations throughout the plant will be used to transform the electrical power to a voltage suitable for utilization by the various local electrically powered equipment. The distribution voltages are summarized in Table 18-5.

Most cable runs will be supported on cable trays mounted on the pipe racks. Arial distribution is used to support the well field for water supply.

Table 18-5 System Voltages

Equipment	Nominal Voltage	No of Phases	Frequency (Hz)	Grounding Remarks
Incoming Supply	115 kV	3	60 Hz	Low Resistance Grounding
In-Plant Generation	13.8 kV	3	60 Hz	High Resistance Grounding
MV Distribution	34.5 kV	3	60 Hz	Low Resistance Grounding
MV Distribution	13.8 kV	3	60 Hz	Low Resistance Grounding
MV Distribution	4.16 kV	3	60 Hz	Low Resistance grounding
LV Distribution	480 V	3	60 HZ	High Resistance grounding
AC UPS	120 V	1	60 Hz	Solid grounding

Table 18-6 Motor Voltages

Motor HP Range	DOL* Starting	Reduced Voltage** Starting	Motor Rated Voltage (V)	System Voltage (V)	Phases
Below 0.5	X	X	115	120	1
0.5 to 200	X		460	480	3
Above 200 up to 3,500	X		4,000	4,160	3
0.5 up to 450		X	460	480	3
500 up to 5,500		X	4,000	4,160	3
Above 3,500	x		13,200	13,800	3

* Direct Online Starting
** Reduced Voltage Starting (Adjustable Speed Drive or Soft Starter)

18.8.3.3 Electrical Loads

The total connected load for the plant for all five phases is calculated at approximately 422 MW with a calculated operating demand of approximately 276 MW. The anticipated load breakdown is summarized in Table 18-7. The total power generation is calculated at approximately 135 MW from five sulfuric acid plants. Total power import for five phases is anticipated to be 166 MW (see Table 18-8).

Table 18-7 Electrical Load Breakdown

Area	Connected (MW)					Demand (MW)					Total Connected (MW)	Total Demand (MW)
	Ph 1	Ph 2	Ph 3	Ph 4	Ph 5	Ph 1	Ph 2	Ph 3	Ph 4	Ph 5		
Acid Plant	16.9	16.9	16.9	16.9	20.4	11.6	11.6	11.6	11.6	14.0	87.8	60.3
Process Plant / Mine	72.6	71.1	72.6	71.1	46.5	47.0	46.1	46.9	46.1	29.7	333.9	215.7
Total	89.5	87.9	89.5	87.9	67.0	58.6	57.6	58.5	57.6	43.7	421.8	276.0

Table 18-8 In-Plant Generation vs. Grid Import

Power	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total Power (MW)
Generation (MW)	25.2	25.2	25.2	25.2	33.6	134.4
Grid Import (MW)	33.4	32.4	33.3	32.4	10.1	141.6

18.8.3.4 Mine Area, Mine Area Booster Pumps, Attrition Scrubbing, Classification

Power to the mine area will be supplied from the 13.8 kV main distribution switchgear via underground conduits to the Mine transformer and switchgears to distribute the power to various loads at the required voltages.

18.8.3.5 Processing Plant

Power to the processing plant will be supplied from the main distribution switchgear via 13.8 kV cables routed in cable trays mounted on pipe racks to supply the process loads while providing feeders to the following areas:

- Beneficiation and Classification
- Leaching, Neutralization & CCD
- Neutralization Filtration
- Magnesium Sulfate Crystallization, Magnesium Precipitation & Calcium Removal
- Lithium Carbonate, Packaging Warehouse, and Sulfate Salts Crystallization (ZLD)
- Fuel Storage, Diesel Generators, and Ion Exchange
- Limestone
- Sulfuric Acid Plant
- Utilities

Each area substation will contain all the necessary power control room, transformers, switchgear, and motor control centers to distribute the power to various loads at the required voltage within the process area.

18.8.3.6 Well Site, Event Pond Pumps, CTFS Pump

Power to the water well site, event pond pump and CTFS pumps will be supplied from the main distribution switchgear via 13.8 kV overhead distribution line on wooden poles.

18.8.4 Power Tabulation

The future phases power requirements are summarized in Table 18-9.

Table 18-9 Project Power Demands – by Phase

Area Name	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5	
	Connected Load MW	Operating Load MW	Connected Load MW	Operating Load MW	Connected Load MW	Operating Load MW	Connected Load MW	Operating Load MW	Connected Load MW	Operating Load MW
Mine Area	0.6	0.4	0.3	0.2	0.6	0.4	0.3	0.2	0.6	0.4
Mineral Beneficiation	4.2	2.8	3.5	2.5	4.2	2.8	3.5	2.5	5.1	3.4
Leaching & Neutralization	14.6	8.2	14.6	8.2	14.6	8.2	14.6	8.2	17.7	9.9
Magnesium Sulfate	19.1	13.8	19.1	13.8	19.1	13.8	19.1	13.8	15.2	11.6
Lithium Carbonate	13.9	10.8	13.9	10.8	13.9	10.8	13.9	10.8	0	0
Sulfuric Acid Plant	16.9	11.6	16.9	11.6	16.9	11.6	16.9	11.6	20.4	14.0
Utilities	14.9	7.9	14.9	7.9	14.9	7.9	14.9	7.9	7.5	4.0
Tailings Disposal	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.5	0.4
Raw Materials	3.7	2.2	3.7	2.1	3.7	2.1	3.7	2.1	0	0
Ancillary Buildings	1.1	0.6	0.6	0.3	1.1	0.6	0.6	0.3	0	0
Total	**89.5**	**58.6**	**87.9**	**57.6**	**89.5**	**58.5**	**87.9**	**57.6**	**67.0**	**43.7**

18.9 Sulfuric Acid Production

The sulfuric acid plants for the Project are Double Contact Double Absorption (DCDA) sulfur burning sulfuric acid plants. Phase 1 through Phase 4 will each have a single sulfuric acid plant capable of producing nominal 2,250 t/d while Phase 5 will be 3,000 t/d (100 weight % H_2SO_4 basis) of sulfuric acid by burning liquid elemental sulfur. Sulfur is delivered to site and is unloaded by gravity into a Sulfur Unloading Pit which provides sulfur to the sulfuric acid plants. The sulfuric acid generated from each plant is used in the process plant for the chemical production of lithium carbonate. The total annual operating days are based upon expected scheduled and unscheduled maintenance. Acid production is a function of the plant's nominal capacity and production over Design Capacity with production efficiency of the equipment decreasing over a three-year period until scheduled maintenance occurs. Each sulfuric acid plant has two Liquid Sulfur Storage Tank with a total storage capacity of 28 days (about 4 weeks). The sulfur is transferred from the tank to the Sulfur Feed Pit and from there to the Sulfur Furnace.

The chemical processes in the sulfuric acid plant include combustion of sulfur to produce sulfur dioxide, SO_2, catalytic conversion of SO_2 to sulfur trioxide, SO_3, and absorption of SO_3 in acid, all of which generate substantial amounts of excess heat. This excess heat is captured via economizers, a waste heat boiler, and superheaters to produce steam which, in turn, is used to generate electrical power via the acid plant steam turbine generator (STG) set. Energy recovery from the absorption reaction is partially recovered by preheating boiler feed water to the deaerator. Low pressure steam is extracted from the STG set for use in the lithium processing plant. The individual STG power output is 25.2 MW under dirty conditions at 2,250 t/d, and each sulfuric acid internal consumption is 10.6 MW, leaving a net export of 14.6 MW from each turbine for use by the lithium processing plant.

A Tail Gas Scrubber is provided for each sulfuric acid plant where residual SO_2 and acid mist in the tail gas is removed to less than US Environmental Protection Agency (US EPA) Prevention of Significant Deterioration (PSD) emission limits before the gas is expelled to atmosphere via a tail gas stack. Sodium hydroxide solution is used as the scrubbing medium and the effluent is consumed in the lithium processing plant.

Selective Catalyst Reduction (SCR)'s will be installed on both phase 1 and phase 2 sulfuric acid plants during phase 2 and for all subsequent sulfuric acid plants to minimize nitrogen oxides (NOx) emissions.

Each plant has two Sulfuric Acid Storage Tanks with a combined storage capacity of 7 days. A single Start-up Acid Tank services both sulfuric acid plants. Acid is produced at 98.5% and is diluted to 93% in the winter months for freeze protection. A truck loadout facility services all sulfuric acid plants. A single central Control Room also services both sulfuric acid plants and will be expanded to accommodate future phases.

Water consumption in the sulfuric acid plants is minimized by utilizing closed loop air coolers for the strong acid system, and an air-cooled condenser on the turbine generator. A small open loop cooling tower is utilized only for product acid cooling and lube oil systems.

Liquid effluents are minimized in the plant design. Reverse osmosis rejects from the Water Demineralizer are returned to a common Process Recycle Water Tank for re-use within the complex. Storm Water is collected by the event collection pond which services the process plant area. The strong acid sump contents, which may be acidic, are delivered to an Effluent Neutralization Area which services all the sulfuric acid plants. From the Effluent Neutralization Area, the contents can be consumed in the Lithium Processing Plant.

Sound enclosures are provided where necessary to attenuate operational noise levels to below acceptable limits.

18.10 Water Management

18.10.1 Water Supply

The Thacker Pass project requires water for the following uses:

- Dust suppression during mining operations;
- Dust suppression in the dry plant area (Crusher and stockpiles);
- Process plant and reagents storage and preparation;
- Service Hub, laboratories, truck shop, and truck washing station;
- Construction activities, concrete preparation, etc.; and
- Fire water reserve.

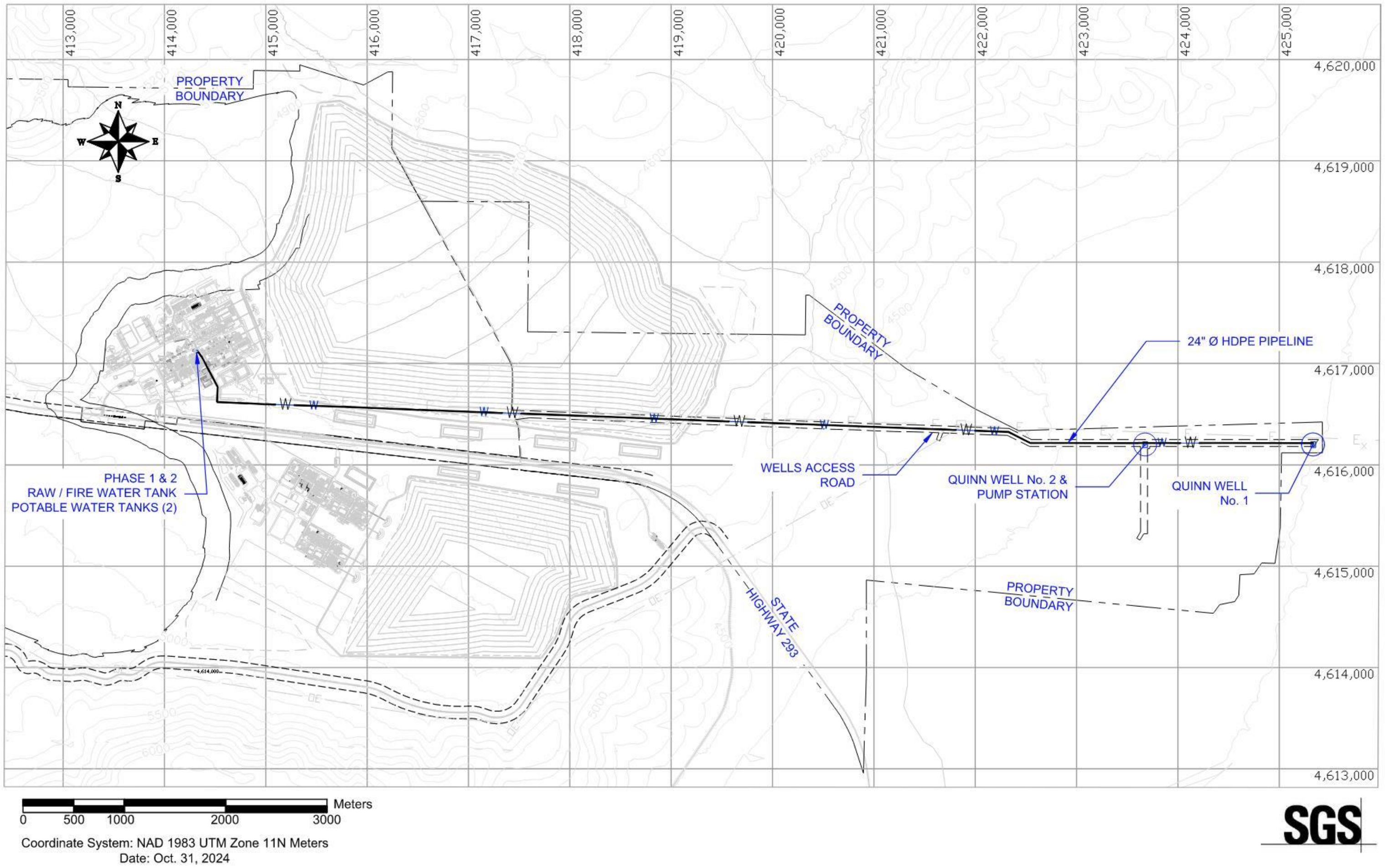
18.10.2 Water Source and System Design

The Thacker Pass water supply system for Phases 1 and 2 is shown in Figure 18-16. The existing Quinn Raw Water Well QRPW18-01 (Quinn Well 1) was drilled in September 2018 to a depth of 172.2 meters (about 564.96 ft) below the ground surface (bgs). The well has been tested and is able to sustain 908 m^3/h (4,000 gpm) which satisfies the expected average demand servicing all potable, mining, and process flow streams for Phase 1 of 380 m^3/h and 760 m^3/h for Phase 2. Quinn Well 2 (QRPW23-01) is a backup well located 1.6 km (1 mile) west of QRPW18-01 that was drilled to a depth of 173.7 meters (bgs) in February 2023.

The hydraulic capacity of the pump and piping system from the production wells to the plant site is 908 m^3/h (4,000 gpm). The Process Plant Raw/Fire Water Tank (35 m diameter) capacity is 7,059 m^3 (1.86 M gallons), storing 5,016 m^3 (1.32 M gallons) for 6 hours make up water, above the fire water reserve.

Phases 3, 4 and 5 will require an additional raw water supply system to include production wells and raw water supply line. Two additional wells and a pipeline will be installed to provide an additional 908 m^3/h (4,000 gpm) per well.

Figure 18-16 Thacker Pass Water Supply System



18.10.3 Water Supply, Water Well and Pump Stations

Raw water supply infrastructure will expand as the project expands. Phases 1 and 2 will utilize the existing Quinn wells 1 and 2 wells and raw water pipeline A. Beginning with Phase 3 a duplicate raw water system will include Quinn wells 3 and 4 and raw water pipeline B. See Table 18-10 Raw Water Infrastructure and Supply Capacity for additional details. Life of mine operations will utilize all four water wells and the two pipelines to meet operations demand.

The following summarizes the raw water flow to the process plant buildings for Phase 1 and 2:

- Raw water will be delivered from the Quinn River Valley.
- Quinn Well No. 1 pumps to a tank at Quinn Well No. 2, located approximately 1.6 kilometers west of Well No. 1 through a 24" HDPE pipeline (pipeline A).
- Water from Well No. 1 will be combined with the water from Well No. 2 in the tank, and pumps will deliver the raw well water to the Process Plant Raw/Fire Water Tank through a 24" HDPE pipeline.
- The Raw Water Tank sits within the footprint of the Process Plant. Raw water is distributed from this tank to the process and mine areas.
- Water fill stations for mining and dust control are located adjacent to the CTFS and in the mine area. These stations are supplied from the raw water tank and Pipeline A respectively.
- Process Plant area fire water is a reserve level within the Raw Water Tank. Water is fed to dedicated fire water distribution pumps and pipeline within the Plant area.
- Potable water is supplied from the Raw Water Tank and is located adjacent to the Raw Water Tank. Potable water is treated via a chlorination system prior to the potable water tank.
- Potable water is fed to the Process Plant and Mine areas via distribution pumps.

The following summarizes the raw water flow to the process plant buildings for Phases 3, 4, and 5:

- Raw water will be delivered from the Quinn River Valley.
- Drilling of two additional water wells is included.
- Installation of a raw water pipeline (pipeline B) from the wells to the Phase 3, 4, and 5 project areas is included.
- Quinn Well No. 3 pumps to a tank at Quinn Well No. 4, located approximately 1.6 kilometers west of Well No. 1 through a 24" HDPE pipeline.
- Water from Well No. 1 will be combined with the water from Well No. 2 in the tank, and pumps will deliver the raw well water to the Process Plant Raw/Fire Water Tank through a 24" HDPE pipeline.
- The Raw Water Tank sits within the footprint of the Phase 3, 4, and 5 Process Plant area. Raw water is distributed from this tank to the process and mine areas.
- Process Plant area fire water is a reserve level within the Raw Water Tank. Water is fed to dedicated fire water distribution pumps and pipeline within the Plant area.
- Potable water is supplied from the Raw Water Tank and is located adjacent to the Raw Water Tank. Potable water is treated via a chlorination system prior to the potable water tank.
- Potable water is fed to the Process Plant and Mine areas via distribution pumps.

Table 18-10 summarizes the water supply source by project Phase and the average amount of water required by Phase. These values include process operations raw water makeup, mine water demand, and potable water demand. Refer to Section 17.6 Plant Water for additional information.

Table 18-10 Raw Water Infrastructure and Supply Capacity

	Phase 1	Phase 2	Phase 3	Phase 4 & 5, Remaining LOM
Quinn Well 1 and 2	X	X	X	X
Pipeline A	X	X	X	X
Quinn Well 3 and 4	None	None	X	X
Pipeline B	None	None	X	X
Raw Water Infrastructure Capacity in m^3/hr (cumulative)	1,816	1,816	3,632	3,632
Raw Water Consumption in m^3/hr (cumulative)	379	758	1,087	2,146
Raw Water Required in m^3/hr (cumulative)	402	804	1,206	2,149

Figure 18-17 present the Water Well to Process Plant water flow diagram. Figure 18-18 shows the potable water tank flow diagram. Figure 18-19 presents the Quinn well water pumping system.

Figure 18-17 Water Well to Process Plant Water Flow Diagram

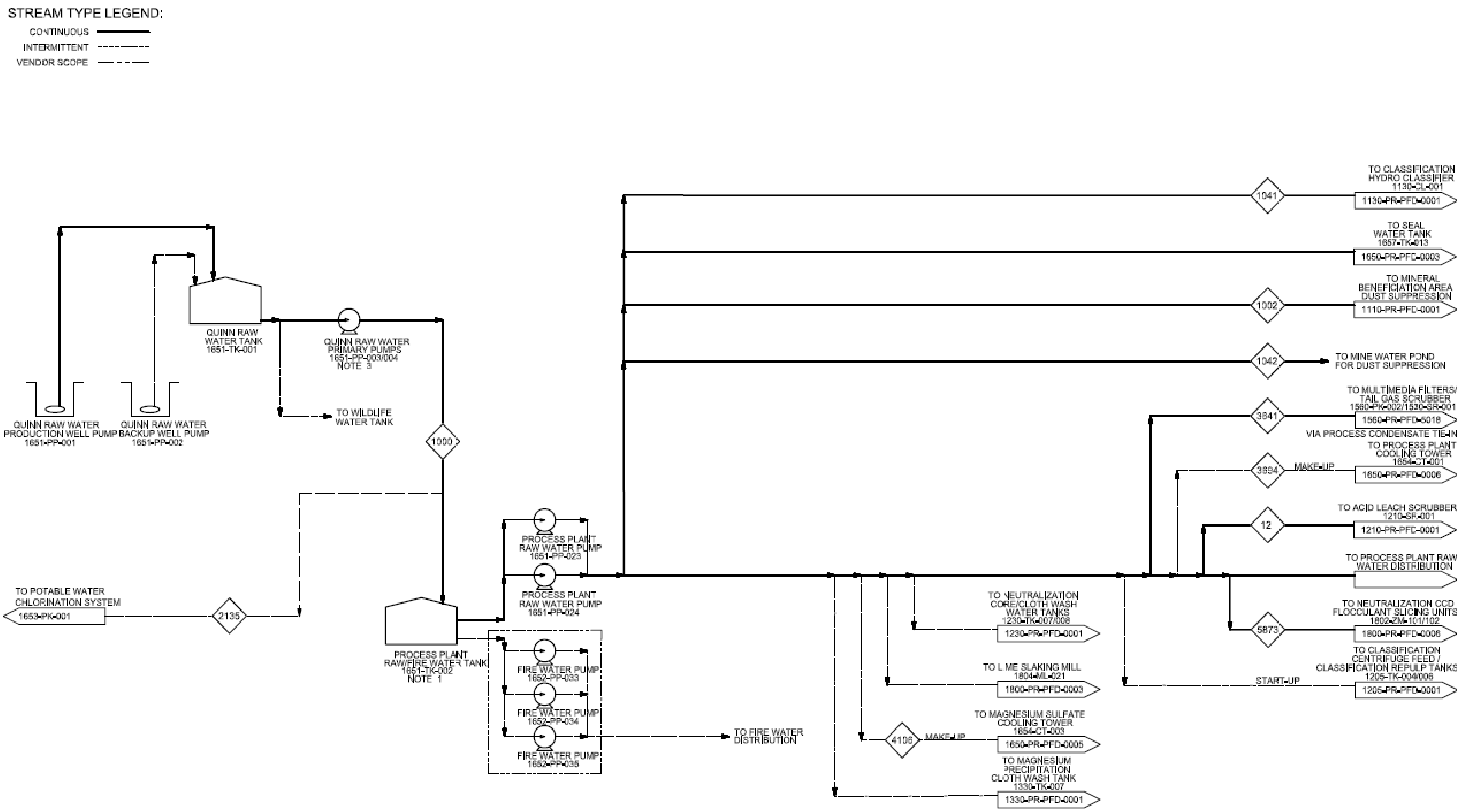


Figure 18-18 Potable Water Tank Flow Diagram

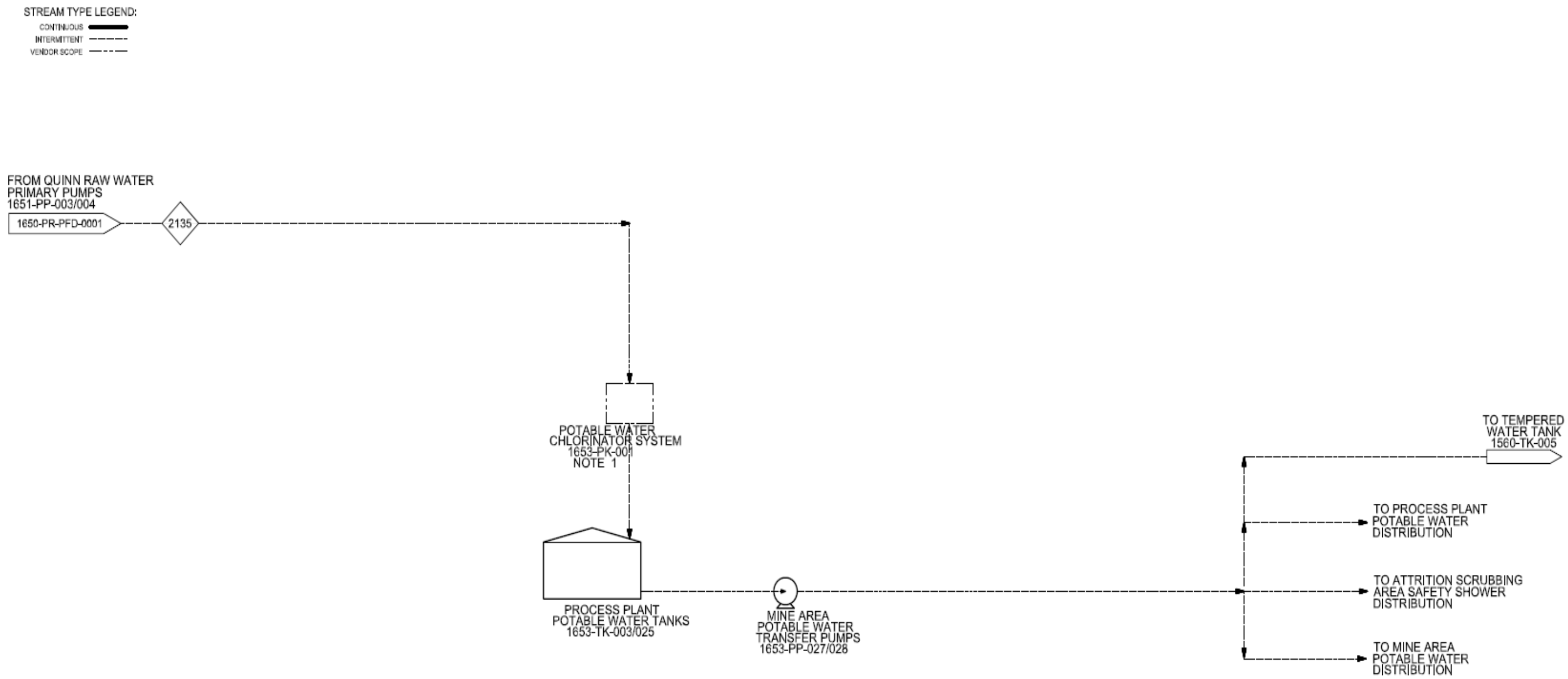
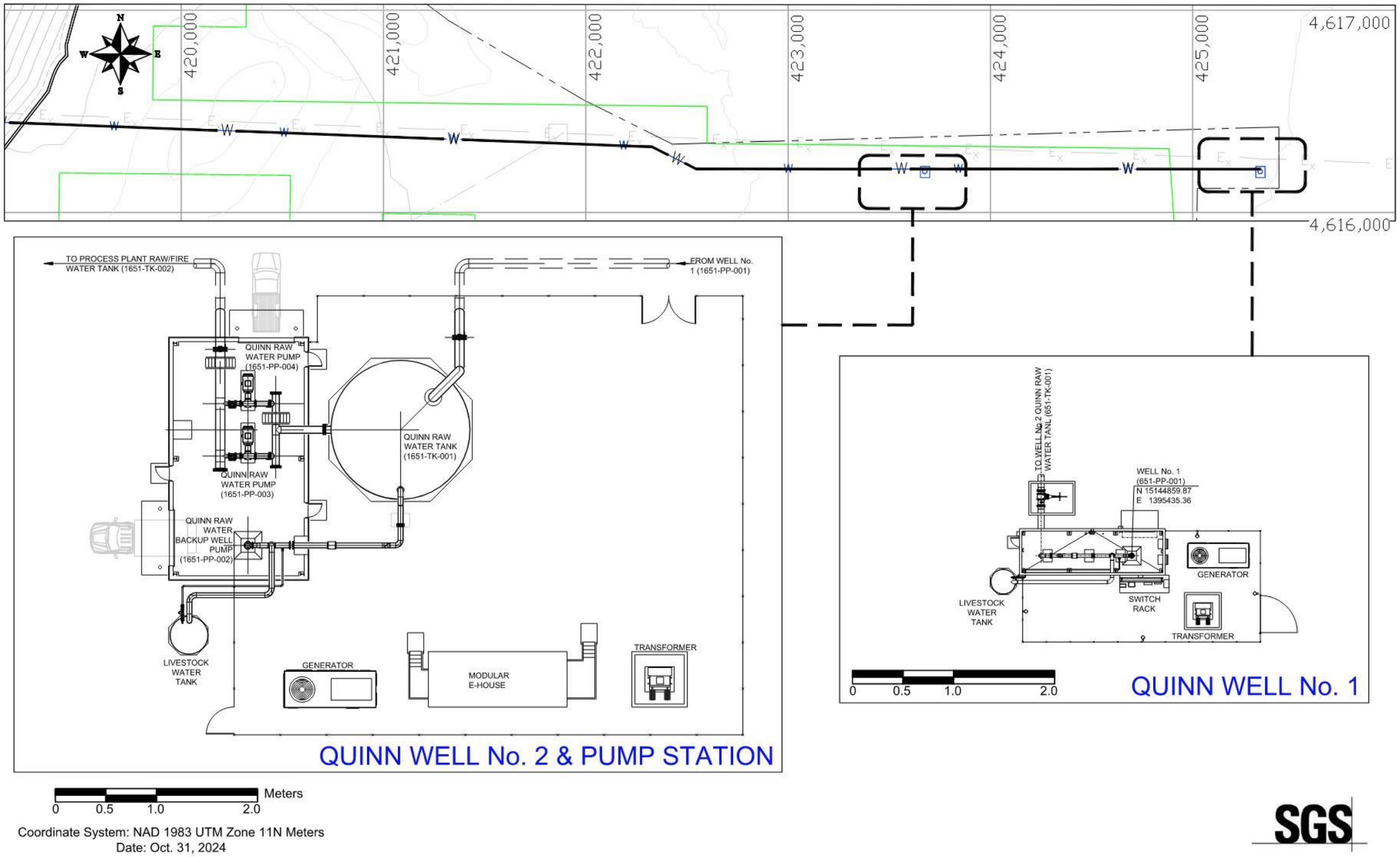


Figure 18-19 Water System – Wells and Pumps



18.10.4 Potable Water

A potable water system will be installed to supply water to the laboratory, plant offices, mine area, and safety showers with a total requirement of 6.8 m^3/hr. The raw water will be treated to drinking water standards via a chlorination system before being conveyed to the potable water tank.

The combined site demand for potable water at the process plant and mine site is estimated to be approximately 100 m^3/d (27,000 gallons per day), based on Phase 2 headcount plus the continuous flow demands of the potable system. Future expansion phases 3, 4, and 5 will increase potable water demand to 150, 200, and 250 m^3/d, respectively.

18.10.5 Fire Water Tank

The site fire water reserve volumes for the process plant and mine site were calculated in accordance with National Fire Protection Association (NFPA) Codes & Standards. Fire water is pumped from the Quinn Well to the Process Plant Raw/Fire Water Tank. The Process Plant Raw/Fire Water tank volume is 7,059 m^3 (1.86 million gallons). Fire water is supplied to the Process and Mine areas and in the event of a fire, will be pumped to the various hydrants located throughout the Process and Mine service areas.

18.10.6 Sewage System

The sewage treatment/septic system will treat sewage coming from the process plant offices and buildings. The septic system will consist of septic tanks and leach fields in the following locations:

- Mine Facilities
- Security Building
- Plant Site Administration Building
- ROM Stockpile Area
- Plant Laboratory/Control Building

An assortment of chemical toilets and modular or trailer-type toilets for up to 2,000 people working on the facilities during the construction phase will be provided as temporary facilities. The temporary facilities will include wastewater tanks for sewage collection, which will be pumped to collection trucks and transported off-site for treatment and disposal.

The septic design will be based on a daily water consumption of 150 l/person and an organic load of 66 g DBO_5/(day-person), hence it should be able to process up to 180 m^3/day and 80 kg of BDO_5 during construction and 45 m^3/d and 20 kg of BDO_5 once the project is in operation, with 250 mg/l at the inlet and less than 50 mg/l at the outlet. Sludge will be recovered and shipped for final disposal to Nevada treatment facilities, while treated fluids will be infiltrated into the ground.

The sewage design will be compliant with the applicable standards of the Nevada Administrative Code (NAC) and the Humbolt County Building Department. The effluent dumping typical parameters are shown in Table 18-11.

Table 18-11 Quality of Treated Effluent

Parameter	Unit	Value
ph		6.5-10
Settleable Solids	ml/l	≤1
DQO	mg/l	≤250
Grease (SSEE)	mg/l	≤50
DBO_5	mg/l	≤50
Fecal Coliforms	NMP/100 ml	≤2000

18.10.7 Stormwater Management

The objectives of stormwater management are to:

- Prevent flooding of the Project site,
- Prevent the contamination of clean runoff,
- Contain contact water, dispose, or treat it in an environmental responsible manner,
- Prevent soil erosion because of increased runoff from the mining area, and
- Prevent the loss of stockpiled topsoil to be used during the rehabilitation phase.

The Thacker Pass Project straddles the topographic divide separating the Kings River Valley hydrographic basin (Rio King Subarea) and the Quinn River Valley hydrographic basin (Orovada Subarea).

The topography surrounding the mine is typical of the Basin and Range province, consisting of narrow, short mountain ranges with moderate to high relief which are separated by broad valleys composed of basin fill and lacustrine deposits.

Lands within the proposed Project area primarily drain eastward to Quinn River Valley. A small portion of the proposed mine area drains west to Kings River Valley via Thacker Creek. There are no jurisdictional waters of the U.S. that could potentially be impacted by stormwater originating from the Project.

All parts of the Project area eventually drain to roadside ditches, and ephemeral tributaries to Crowley or Thacker creeks which provide containment and remediation opportunities if required.

18.10.7.1 Water Containment Structures – Phase 1 Design

LN will implement Best Management Practices (BMPs) to manage the flow of stormwater, prevent flooding, and minimize erosion and sediment transport from Project facilities and disturbed areas during construction, operations, and reclamation. BMPs covered in this section include structural and non-structural controls.

Structural stormwater controls include stormwater diversion, conveyance, and sediment control facilities. Structural controls will be designed to manage increased peak flows created by disturbance of natural surfaces and will work towards reducing scour or energy, preventing run-on, and managing runoff quantity and quality. Structural controls are either permanent as part of the overall stormwater management plan (including post-reclamation) or are temporary as part of stormwater management during construction and operations.

Non-structural stormwater controls are preventative in nature and include good housekeeping practices, inspections, preventative maintenance, and reclamation and revegetation.

The following sections describe specific structural BMPs for Project facilities. Design flows will comply with applicable regulations. Rip rap, concrete or geomembrane will be placed in areas with concentrated flows and/or high scour velocities to prevent erosion.

18.10.7.1.1 Mine Pit

Mine pit dewatering and depressurization are not expected to be necessary to support mining operations in the pit initially during Phases 1 and 2 as described in Section 16.8. Additional hydrogeologic assessments will be required to assess dewatering and depressurization requirements for Phase 3 through Phase 5, if any. A swale north (upgradient) of the pit is designed to divert surface water flows away from the pit. The Mine Sediment Pond will be constructed downstream of the northeastern portion of the pit until the pit elevation drops below natural ground to capture sediment. Other temporary sediment basins and check dams will be constructed to capture sediment as required.

18.10.7.1.2 Mine Facilities

Diversion channels and berms will be constructed to capture runoff from the Mine Facilities area and direct flow to lined and unlined sediment ponds. Water will be pumped to the process circuit from the lined pond or released to natural drainages from the unlined ponds.

18.10.7.1.3 ROM Stockpile & Attrition Scrubbing

The base of the ROM stockpile pad will have a one-foot-thick compacted soil layer (to provide containment) placed and then covered with two feet of liner cover material to minimize desiccation. A lined ditch and berm will be constructed to capture stormwater runoff from the area and direct flow to the lined Facility Sediment Pond # 2. Water in lined sediment ponds will be pumped back for use in the process circuit or, if the water meets Profile 1 water quality requirements, it could be discharged to the natural drainage. LN will fence the area surrounding the pond to restrict wildlife access.

18.10.7.1.4 Clay Tailings Filter Stack

Diversion channels sized to contain the 500-year, 24-hour storm will be constructed to manage non-contact stormwater on the outside of the clay tailings stacks during closure. At closure, most of the stormwater runoff will be cut off by the pit to the northwest of CTFS 1 or intercepted by a diversion channel to the south of CTFS 2 and directed to the east side of the CTFS where it will be directed into a natural drainage. The remaining stormwater will be intercepted and routed along the west side of the CTFS. The CTFS layouts are shown in Figure 18-1.

Stormwater runoff within each CTFS will drain down the slopes of the CTFS and either seep through the two-foot-thick underdrain seepage collection layer (over liner) or flow between the toe of the CTFS and the toe of the perimeter road at the reclaim pond. Each reclaim pond will be double lined with two HDPE geomembrane layers separated by a layer of geonet. A leak collection and recovery system will be located between the two geomembrane layers at the pond sump. Water in the reclaim pond will be pumped to the Process Plant to be used as make-up water for processing operations or will evaporate. The reclaim pond is designed to hold runoff from the 100-year, 24-hour design storm plus operating inventory, plus three feet of freeboard. The reclaim ponds can store 25.5 M gallons of water to the spillway. LAC will fence the area surrounding the reclaim pond to restrict wildlife access. At closure, the reclaim ponds will be converted to evapotranspiration cells (ET cells).

18.10.7.1.5 Processing Facility

Up-gradient run-on will initially be diverted away from the processing facility and into a Sediment Pond or the Process Plant Event Pond. Water in the Sediment Pond will be pumped back for use in the process circuit. Riprap is used in areas of concentrated inflows and outflows for erosion control.

Diversion channels for critical areas around the Process Plant will be constructed. Disturbed areas around the Process Plant that will not be used during operations will be revegetated after construction is completed to reduce erosion.

The conveyors for the clay tailings and salt will have a containment tray beneath them so any runoff from the conveyor will drain to the CTFS or back to the Plant Site concrete containment area.

18.10.7.1.6 Growth Media Stockpiles

The surfaces of growth media stockpiles will have slopes no steeper than 3H:1V and seeded with an approved seed mix to reduce erosion. Stormwater channels, berms, silt fences, or staked straw bales will be constructed upstream of the stockpiles, if needed, to prevent or minimize erosion until vegetation is established.

18.10.7.1.7 Ancillary Facilities

BMPs at ancillary facilities include secondary containment for storage tanks and other containers, spill collection containment for fuel dispensing, preventative maintenance and inspections, and provision of spill response kits. Large tanks of fuels, petroleum products, reagents, and chemicals will be stored within secondary containment. Containment will be designed to store 110 percent of the largest vessel or open-flanged vessels, and secondary containment will additionally provide capacity to store runoff from the 100-year, 24-hour design storm.

Fittings connecting the delivery truck hoses to the unloading systems will be within the containment areas or spill collection structures to contain minor leaks and catastrophic failures of the delivery system. Containers and tanks will be inspected on a scheduled basis, and maintenance will be performed to avoid leakage from container ports or dispensing devices. Spill kits will be located at or near storage areas to contain and absorb spills. Storage areas will be placed away from clean stormwater.

LN maintains a Spill Contingency Plan and an Emergency Response Plan that describe emergency response responsibilities, procedures, and cleanup.

18.10.7.1.8 Solid Waste Facility

Industrial solid waste will be disposed of in vendor-supplied dumpsters that will be hauled to the nearest municipal landfill, or an on-site Class III industrial landfill will be built on site. Stormwater control measures for this facility are the same as for the WRSFs or CGS. Any landfills created on site will be capped, and their locations surveyed and documented throughout the mine life.

18.10.7.1.9 Construction Activities

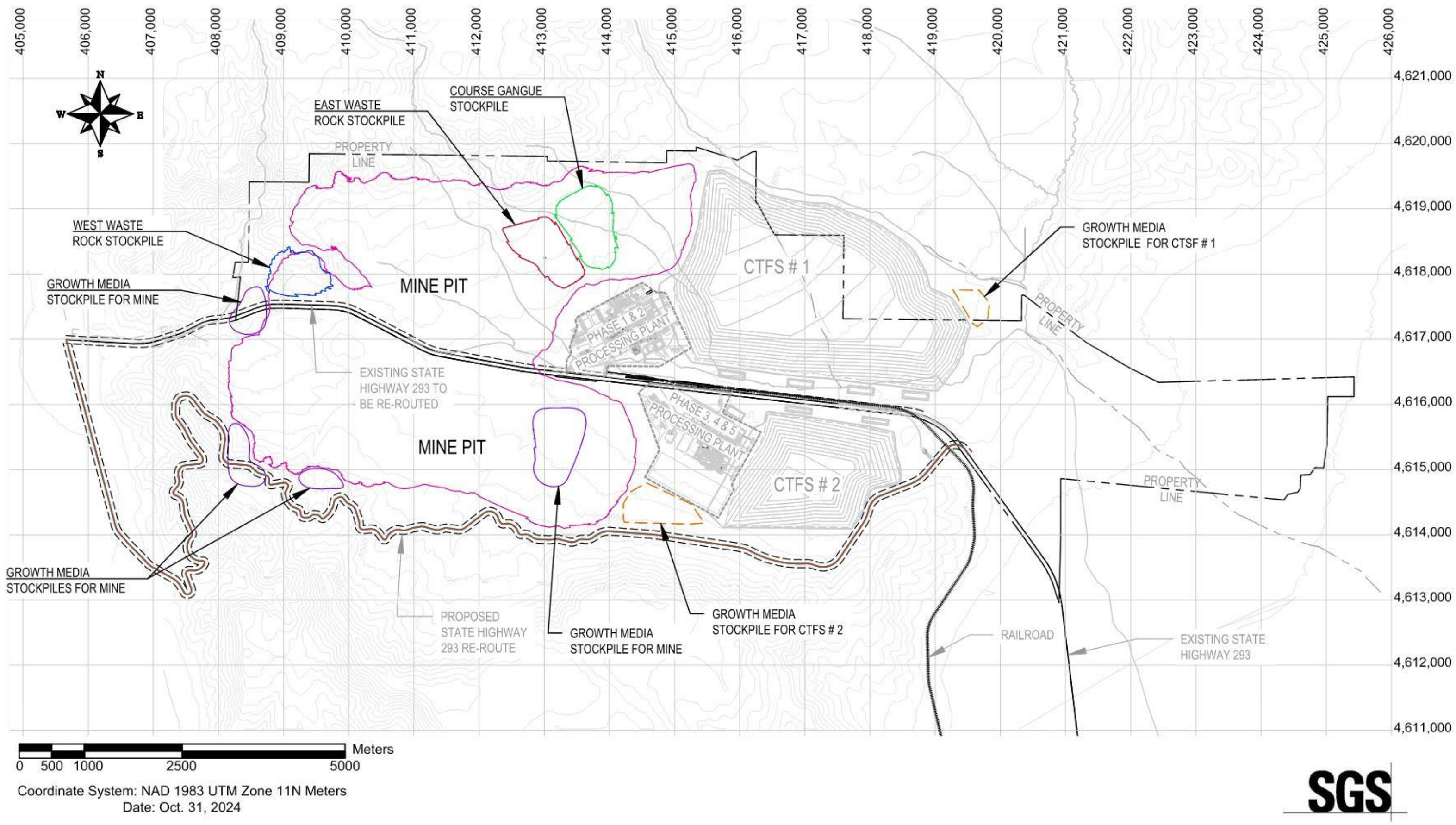
- Erosion and sediment control BMPs will be installed at disturbed areas during construction to manage stormwater quality and mitigate peak flows as appropriate.

18.11 Stockpiles

The following section describes stockpiles that will store waste materials from pit mining and mineralized material processing. There will be temporary waste storage facilities at the west and east namely West Waste Rock, the East Waste Rock Storage Facilities, and the east CGS. Growth media from these areas will be collected and stored in stockpiles to be used for future reclamation.

Figure 18-20 shows interim waste rock storage facilities (west and east waste rock), CGS, and Growth Media Stockpiles.

Figure 18-20 Stockpiles



18.11.1 Waste Rock

Approximately 6,503.1 M wet tonnes of waste rock are expected to be mined from the pit. In the initial years, the West and East WRSFs will be constructed to store waste rock from the pit. Once the pit is established, concurrent backfill with waste rock and coarse gangue will be employed. Initially, excavation will start on the western side of the overall pit extent. The West WRSF will be southwest of the pit and store 20.6 Mm^3 (27 Mcy) of excavated mine waste rock material. The East WRSF was designed to the east of the pit and can store 26.8Mm^3 (35 Mcy) with the capacity to expand. Eventually, the pit footprint will extend to the West and East WRSFs at which point they will be excavated and placed back into the pit as pit backfill.

18.11.2 Growth Media Stockpile

Growth media stockpiles will store material salvaged from the proposed disturbance on site. On average approximately one foot of growth media will be stripped from native ground and stockpiled in various locations around the site between planned facilities and infrastructure. The stockpiles will be used over time to perform reclamation activities on areas that are ready for reclamation.

18.11.3 Coarse Gangue Stockpile

Coarse gangue is produced in the classification stage of the mineral processing unit operation and is conveyed into the CGS after going through a dewatering process. LAC will initially convey the coarse gangue material to the CGS located east of the open pit. The gangue material will include lithium content whose economic value cannot be extracted with a rate of return meeting LAC’s criteria. The stockpile is designed to store about 36.9 Mm^3 (48.3 Mcy) of material. The total capacity of the coarse gangue stockpile will be used with the ability to expand. The remaining coarse gangue generated from the process operations will be placed in the pit as a backfill.

The coarse gangue placed in the CGS will be placed above existing ground that has been stripped of growth media. The stripped growth media will be placed in the growth media stockpile(s). The stripped existing ground will be lined with one foot of low hydraulic conductivity soil layer (LHCSL), which will then be covered with a material to prevent the LHCSL from drying out or cracking. Perforated Corrugated Polyethylene Pipe (CPE pipe) will be placed in the major drainages to promote drainage to the CGS Sediment Pond or pit sump.

The current design for the CGS has 15 m (50 ft) lift heights and benches between each lift to provide an overall stacking slope of 3H:1V. Additional stability analysis completed by NewFields shows that the coarse gangue stockpile can be stacked to 3H:1V slopes and still meet the minimum stability requirements if the sands are adequately dewatered during the classification process. Additional strength testing of the coarse gangue material will be conducted during operations and side slope requirements may change in the future.

18.12 Tailings

18.12.1 Clay Tailings and Salt Storage

Lithium processing will produce tailings comprised of acid leach residue filter cake (clay material), magnesium sulfate salt, and sodium/potassium sulfate salts, collectively called clay tailings. The clay tailings strategy is based on consideration of the following aspects of the site plan:

- Adoption of the filtered stack method of clay tailings disposal, referred to as the Clay Tailings Filter Stack (CTFS).
- Fully contained HDPE-lined facility for permanent storage of clay tailings.
- Site selection for the CTFS: the selected location is on low-gradient terrain within the mineral claim area for proper containment, while maintaining proximity to the process plant.
- Surface water management to minimize water entering the tailings storage area.

Placement of clay tailings, otherwise termed as "filtered tailings," differs from conventional slurry tailings methodology and typically has higher operating costs but with the benefit of improved stability and reduced water consumption. At the tailings storage site, it is possible to reduce the tailings to a moisture content amenable to placement in the CTFS.

At the end of the leach neutralization process cycle, water from the clay tailings is recovered by solid-liquid separation (dewatering), utilizing filter presses. The filtered tailings are then transported by conveyor and trucks to the HDPE lined CTFS facility. In this state, the filtered tailings can be spread, scarified, air-dried (if required) and compacted in lifts like the practice for typical earth embankment construction.

18.12.2 Tailings Production and Stack Design

At full plant production from the five phases an average of 19.9 M wet tonnes per year of clay tailings and salts will be generated, resulting in a total of 996.1 M wet tonnes (675.9 Mm^3) of clay tailings and 522.6 M wet tonnes (448.9 Mm^3) of salts for a combined volume of 1,518.7 M wet tonnes (1,124.8 Mm^3) requiring secure disposal over an 85-year period. The CTFS #1 and #2 will accommodate this volume with a stack height of up to approximately 152 m (500 ft). The facilities will be expanded throughout the life of the mine with an initial footprint covering 83.6 hectares (9 M ft^2). Future expansion would take place to the east and upslope to the north for the northern CTFS (CTFS #1) and expansions in the south CTFS (CTFS #2) would take place to the south and east, in combination with an increased stack height. CTFS #1 is designed for a volume of 979 Mm^3 (1,280 Mcy) and CTFS #2 is designed for a volume of 257.7 Mm^3 (337 Mcy). Both have thicknesses of approximately 152 m (500 ft) and side slopes of 3.5H:1V overall.

The design of each CTFS is based on the following key considerations:

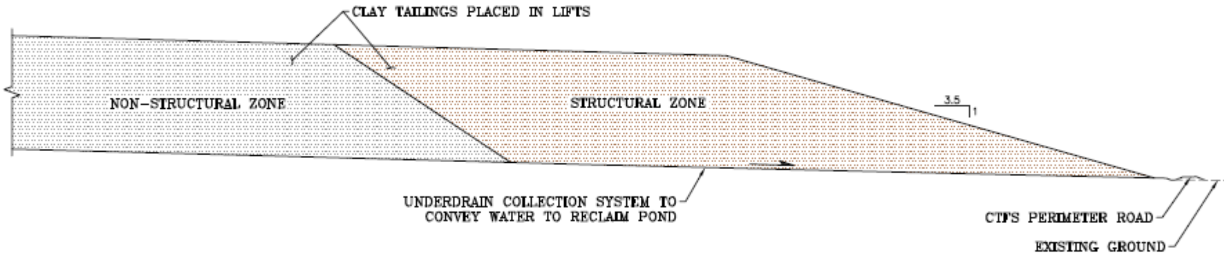
- Perimeter structural zone to enhance stability of the CTFS.
- HDPE liner for seepage containment and environmental protection.
- Placement of potentially higher moisture tailings in the interior of the deposit during wet or cold periods or during operational upsets.
- Underdrain collection system.
- Surface water management.

Figure 18-1 presents the location of CTFS #1 and CTFS #2 in the overall site layout plan.

The tailings will be stacked with a compacted structural zone around the perimeter of the facility and a lower compaction nonstructural zone in the stack interior. As shown on Figure 18-21, tailings will be placed in lifts, the thickness of which will be determined using test pads during the start of operations that meet the minimum design requirements. Concurrent with the construction of each lift, a layer of waste rock material may be placed in select areas (roadways/travel lanes) on the clay tailings to provide a trafficable surface for relocating and operating vehicles and conveyors. The thickness of the waste rock layer will depend on the quality of the materials, the maximum particle size, and the construction equipment used. The waste should be considered a contingency and placed as needed to provide a working surface for vehicles and conveyors. The material will be sourced from the pit, delivered using haul trucks, and spread using a bulldozer.

The exterior slopes of the structural zone of the CTFS will be graded to provide stability based on a minimum static safety factor of 1.3. Both CTFS facilities will be fully lined with an HDPE geomembrane, underlain with a six-inch liner bedding material. The facility will include an underdrain collection system above the geomembrane to collect drainage from the stack. Drainage from the stack will gravity flow to the geomembrane-lined reclaim ponds.

Figure 18-21 CTFS Conceptual Design Cross Section



Source: NewFields, 2024

The design is based on the following factors:

- The fines content (silt and clay fraction) of the tailings will be high so the permeability of the tailings will be low, and the rate of water infiltration will be very low.
- The surface of the CTFS facilities can be designed to direct runoff to the Reclaim Ponds. From there it may be pumped to the process plant for use as makeup water or left to evaporate. The annual evaporation rate exceeds annual precipitation at site.
- The Reclaim Ponds are double geomembrane lined and are designed to contain runoff from a 100-year, 24-hour storm event.
- The base of the CTFS will consist of HDPE geomembrane. An underdrain system is then installed over the geomembrane to collect fluids that drain from the stack or meteoric water to the Reclaim Ponds.
- The underdrain system consists of a network of perforated CPE pipes aligned in a herringbone pattern covered with a two-foot layer of permeable material (sand and gravel material).

The Reclaim Ponds will be double lined with an HDPE geomembrane liner system with an interstitial layer of geonet or equivalent to serve as leak collection. The pond will be equipped with a leak collection and removal system consisting of a collection sump between the two liners and a riser pipe laid along one of the slopes, providing access for monitoring and recovering any leakage through the primary liner.

18.13 Site Services

18.13.1 Diesel Storage and Fueling Systems

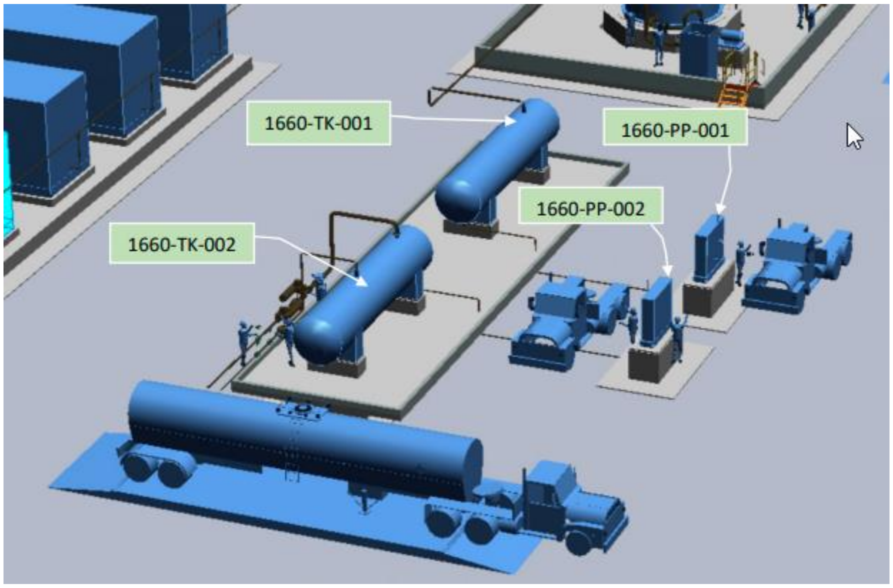
The mine area fuel systems will be located near the mine facility shop. The fuel storage and distribution will expand over time to align with the mine fleet sizes as production increases. Phase 1 mine area fuel infrastructure will include;

- 2x113,560-liter (30,000 US gallons) diesel tanks for heavy equipment
- 1x37,854-liter (10,000 US gallon) light vehicle diesel tank
- 1x37,854-liter (10,000 US gallon) unleaded tank for light vehicles
- Secondary containment, offloading and dispensing systems

The process plant fuel infrastructure for Phase 1 will be located within the process plant area. The light vehicle fueling layout is shown in Figure 18-22. Future Phase expansions will be identical to Phase 1 design.

- 1x151,417-liter (40,000 US gallons) diesel storage tank to supply the standby generators for backup power.
- 1x37,854-liter (10,000 US gallons) light equipment diesel tank supplied by the 151,417-liter diesel storage tank
- 1x37,854-liter (10,000 gallons) unleaded tank for light vehicles
- Secondary containment, offloading and dispensing systems

Figure 18-22 Light Vehicle Fueling Layout



All fuel storage tanks and equipment for the Thacker Pass Project will be built according to the Nevada storage standards. Fuel will be supplied and delivered by a fuel supplier.

18.13.2 Propane Supply

Propane is used to support the acid plant start up. Sufficient storage is required on site for a standard cold start-up with no steam to the processing plant. The peak total flow rate is 5,000 lb/hr with a minimum cumulative consumption of 287,800 lb requiring a tank size of 70,000 gallon. A hot startup with 1/3 steam flow to the processing plant and building heating will require the propane supply of 7,000 lb/hr (about 3175.14 kg) of flow. The tank capacity will remain with a truck delivery over a 12-hour period.

Propane is commercial grade HD5 with an average Lower Heating Value (LHV) of 19,917 BTU/lb., with supply of 60 (psig). The above specification describes the minimum process requirements for the Propane Supply System utilized to supply propane to the sulfuric acid plant (SA1). The propane supply system is designed and supplied by others.

18.13.3 Site Wide Communications

The mine site will employ a site-wide communications system based on a single mode fiber optic backbone. VOIP telephones, intranet and internet access, and control system network connectivity will be integrated into this fiber backbone so that these systems can be accessible anywhere on site. Broadband internet access will be purchased from a satellite internet service provider. The corporate network (intranet) will be isolated from the control system network via a firewalled DMZ (de-militarized zone) network.

Industrial communications from the process plant or water well field will be routed to the central control room, while some of the control room hardware and offices will have to be connected to it. Hence, an underground fiberoptic network will be installed sitewide through adequate polypropylene pipes buried at least 50 cm deep.

The remaining site communications will either be handled with radios and Wi-Fi internet with separate bandwidth capacity for operations or leisure use lunchroom areas.

18.13.4 Site Fencing

Fencing will be installed around the project site. 4-strand barb wire will be used to delineate the perimeter of the project and open pit to prohibit cattle from entering the active project areas. Eight-foot wildlife fence will be placed around the raw water wells and pump stations, process solution ponds, and secured areas.

18.14 Utilities Network and Water Distribution

The following utility networks will be installed within the project area.

- Fresh water distribution network
- Firefighting distribution network
- Sewage leach fields
- High (HV) and Low Voltage (LV) electrical distribution network
- Industrial communications network (fiberoptic).

18.14.1 Firefighting Water Distribution Network

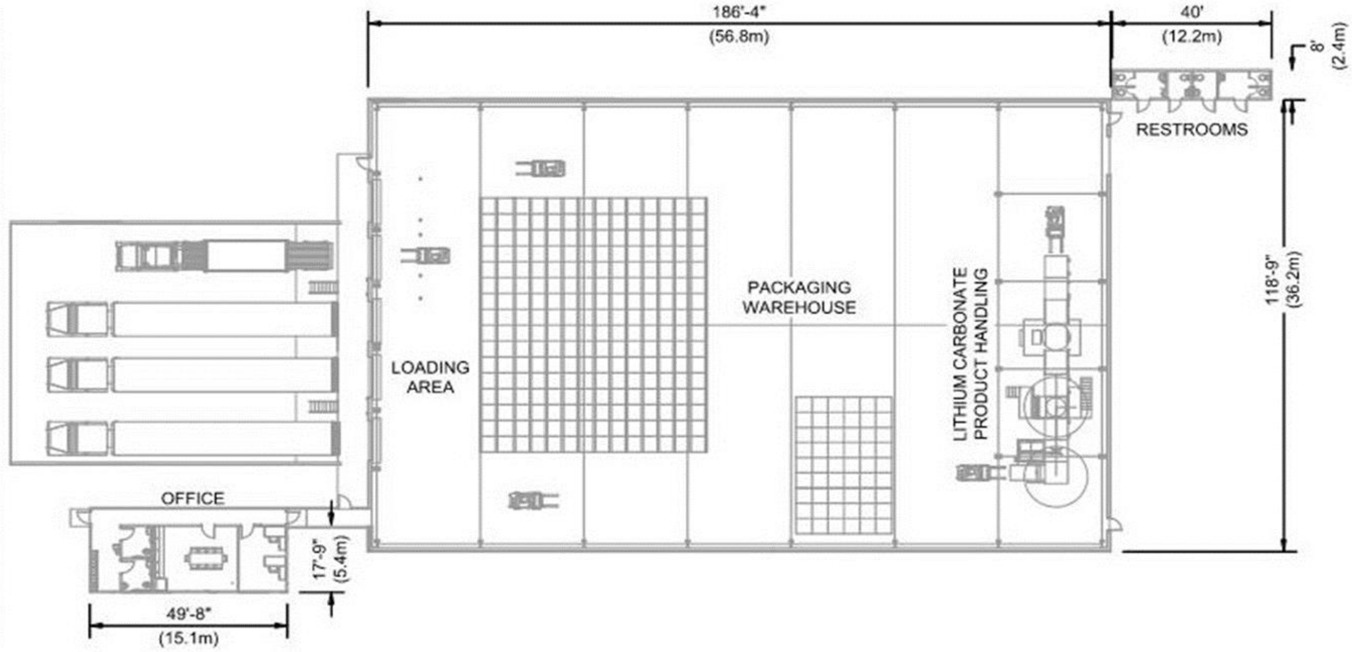
An underground firefighting water network will be installed throughout the process plant facilities, administration offices, maintenance shops, and warehouses as mentioned in previous sections.

The corresponding jockey pumps for firefighting will be installed next to the freshwater storage and treatment plant. Power to support the fire suppression systems will come from the standby emergency generators. The network includes buried piping to distribute water to fire hydrants.

18.15 Lithium Carbonate Product Shipping

Battery-grade lithium carbonate is packaged in flexible intermediate bulk containers (FIBC or bulk bags) and is stored in the packaging warehouse (Figure 18-23) west of the Lithium Carbonate Crystallization building. FIBC's will be loaded into semi-trailers or shipping containers and shipped from Thacker Pass to customer facilities to be determined.

Figure 18-23 Packaging Warehouse



19 MARKET STUDIES AND CONTRACTS

19.1 2021 to 2024 Synopsis

Lithium demand displayed significant growth in 2021 and 2022 due to strong consumer demand for electric vehicles, increased product offerings and government policies to encourage electrification.

Increases in production from Albemarle, SQM and Chinese suppliers were predominantly responsible for supply growth. Supply and demand were not synchronized in 2022. This market tightening resulted in strong upward pressure on prices to all-time highs in the spot market. Fastmarkets battery grade, spot price (DDP Europe and US) reached $72,500/t for battery grade lithium carbonate in October, 2022. Contract pricing for battery grade lithium chemicals also increased throughout 2022, settling around $52,000/t for hydroxide and $39,000/t for carbonate in Q3 2022 (Wood Mackenzie, 2022).

In 2023 and 2024, the overcapacity of Chinese electric vehicle production resulted in excess inventory of vehicles and batteries in the supply chain. This began to suppress demand versus the rate of supply growth for lithium chemicals from the cathode producers. This resulted in the spot pricing of lithium carbonate falling to approximately $10,500/t. This new low cycle pricing is approximately 40% more than the last cycle low of $7,650/t. At the current pricing levels, the Chinese major producers (Tianqi Lithium and Ganfeng Lithium) are not profitable as reported in their 1st half 2024 financial disclosures, and only one of the seven spodumene concentrate producers is profitable. The current pricing within China is not sustainable to maintain existing levels of production, just as the high prices realized during 2022 were not reasonable versus the costs of production within the supply base.

19.2 Supply and Demand Forecast

Demand is forecasted to increase from electrification of the transportation sector and stationary storage supported by government policy in the EU, North America, and Asia. Sales of passenger and light duty electric vehicles were expected to increase from 5.8 million in 2021 to over 15 million in 2025 (approximately 15% of total vehicles sold) (Benchmark Mineral Intelligence, 2021). 14 million electric vehicles were sold in 2023 per the IEA (IEA, 2024). By 2030, approximately 46% of all passenger vehicles sold are forecasted to be electric in the material constrained case. The demand driven by policy would place EV penetration closer to 55% in 2030. (Benchmark Mineral Intelligence, Q2 2024 Lithium Forecast Spreadsheet). The increase in penetration estimates and early attainment of vehicle production comes from China developing enough capacity for roughly 10 million electric vehicles per year. The China vehicle market is roughly 8 million vehicles per year. This has resulted in record exports of electric vehicles to Europe, South America and Canada from China, and tariffs from the United States.

The size of battery packs is forecasted to increase for passenger vehicles, from 45 kWh in 2021 to nearly 64 kWh by 2030 (Benchmark Mineral Intelligence, Q2 2024 Lithium Forecast Spreadsheet).

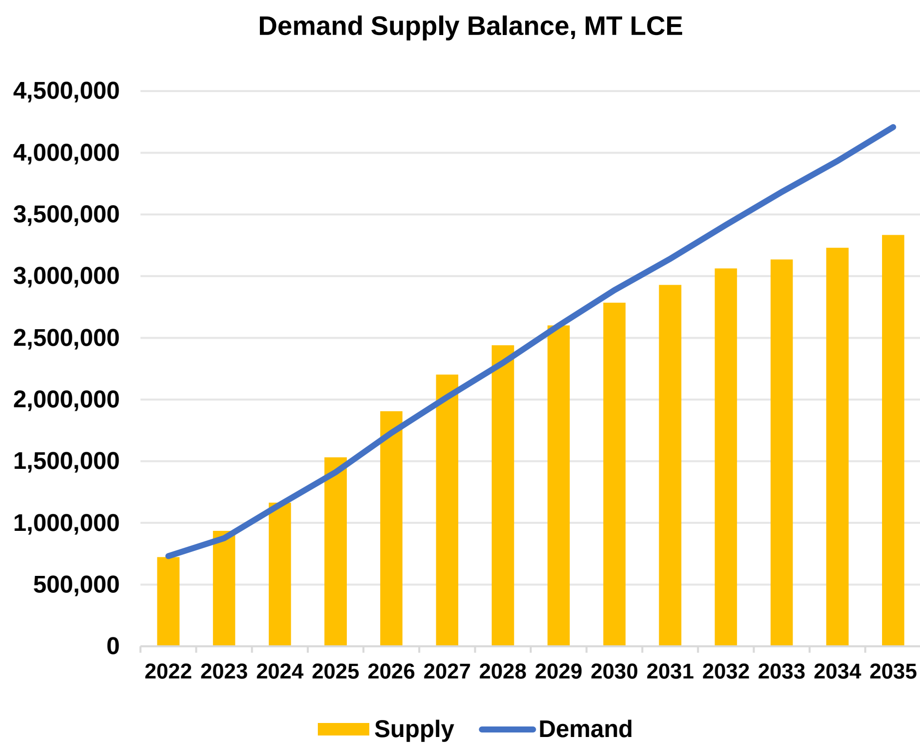
Most proposed lithium resource greenfield and expansion projects are in Argentina, Australia and Chile, while most of the chemical production expansion is expected within China. Additions of lepidolite being mined and shipped from Africa added to the supply in 2023 and resulted in a new high cost of product supply. The overcapacity built within China and control of raw material supply chains (such as lithium) is part of the national strategy to develop a dominant position in the electric vehicle supply globally. This includes subsidizing the supply of uneconomic materials to develop a cost advantage.

Supply and demand forecasts tend to include supply deficit returning in approximately 2028 to 2029. These forecasts include some portion of all announced potential production (expansion, new resources, and recycling) regardless of progress and have not yet been updated for announced delays in investment or difficulties in raising capital or attaining permits in the current environment. With Electric Vehicle and battery plants within China operating at approximately 50% of their full capacity, it is expected that Chinese producers will find ways to export product to willing markets. This will result in a slower, but significant growth in demand over the coming 2-3 years, while high cost producers will exit the market and come back on line as the demand increases.

Supply and demand forecasts to 2040 are presented in Figure 19-1.

Historic estimates from Benchmark Mineral Intelligence (2021) estimated global lithium demand doubling by 2024 to 970 kt. This is close to their forecast figure of 1,100 kt on 2024, and approximately 980,000 t LCE in 2023. (Benchmark Mineral Intelligence, Q2 2024) (Figure 19-1).

Figure 19-1 Lithium Market Balance 2020-2040



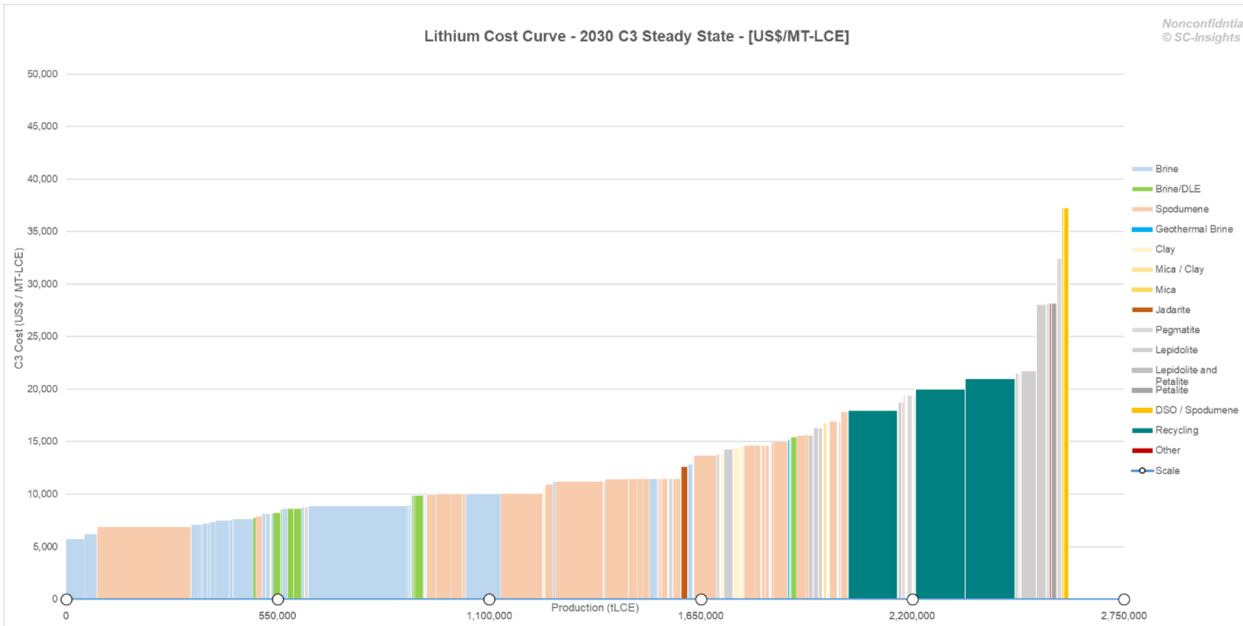
Source: Benchmark Mineral Intelligence, Q2 2024, Base Case

Going forward, the market demand is expected to be in deficit between lithium carbonate and lithium hydroxide towards the end of the decade versus the global demand. Advantages in Lithium Iron Phosphate (LFP) batteries and low- and mid-nickel cathode chemistries that rely on lithium carbonate for their synthesis are shifting the mix of products to almost an even demand for lithium hydroxide and lithium carbonate. This could result in further price volatility as there is not enough supply known to meet the forecasted demand.

Forecasting lithium chemical pricing has always been a challenge due to the relatively small market and rapid growth. To sustain a particular supply level, pricing must be high enough to maintain the highest cost of supply. The cost curve indicates what the “next ton” of supply should sell for. Spodumene sourced lithium carbonate will always be on the high-cost end of the lithium carbonate production cost curve when compared with brines.

The following estimation of whole cost of production of lithium carbonate was prepared by Supply Chain Insights is shown in Figure 19-2. The x-axis on the graph is the whole cost per metric ton of product in US dollars, while the y-axis width shows the annual tons of production of lithium carbonate equivalent.

Figure 19-2 C3 Lithium Carbonate Cost Curve (US$/MT LCE)



Source: Supply Chain Insights, Q3 2024

The current spot price within China has made more than half the world's production unprofitable. This is clearly unsustainable. It is expected that the price of lithium chemicals will rise to the marginal cost of production over the coming year or two and continue to rise as demand increases and more high-cost capacity comes back to market.

Growth beyond what is or has been available will require incentive pricing above the cost curve to drive capital investment and expand production capacity. Forecasts for demand project 3 million tons LCE by approximately 2030. To realize growth in both demand and supply, significant investment must be made in expanding existing or starting new resources through chemical production. Since the structural cost of those potential operations, and the incentive required to undertake a long-term investment is yet to be developed, we are using the current structural cost to estimate the long-term pricing at a fixed value over the life of the operation.

19.3 Pricing

In the near term, both spot and contract prices are expected to continue to be flat through the remainder of 2024 and possibly into mid-2025, with demand within China being capped due to risks of opening export markets. It is expected that companies that produce and sell either spodumene concentrates or direct shipped ore will continue to run a negative cash balance despite good demand for product. Once operations outside of China's control begin to curtail production, we expect to see a price response within China. China will continue to be the dominant market for lithium chemicals followed by South Korea. South Korea's realized cost for lithium carbonate tends to be 50-60% higher than the China spot prices.

Suppressed prices are delaying investment in new projects including expansions of existing producers that have been announced this year. Early-stage companies are not able to attract investment, nor do their lowered market capitalization allow for equity dilution to raise capital. This will hinder the development of the projects outside of China that would bring on new supply of lithium materials.

In the long term, unprecedented market demand combined with lack of supply is expected to support pricing required to incentivize CAPEX-intensive greenfield projects. In addition, pressure from customers to incorporate carbon-neutral and sustainable technologies will further increase CAPEX and operational costs that will be reflected in pricing. National laws such as the Inflation Reduction Act's Electric Vehicle Tax Credit will also prioritize resources in compliant jurisdictions that are capable of economic operation.

Investments by China and others during the last high price cycle resulted in new, higher cost operations and commercial models supplying the bulk of the new supply. This has resulted in a roughly 44% increase in the low cycle spot price.

19.4 Pricing Forecast

The forecast pricing shown in Table 19-1 assumes that the forecasted growth in demand follows the projected demand growth from Benchmark Minerals, and pricing follows a structurally driven growth in the cost of production to satisfy that level of demand. From 2029 onward, a fixed structural price, including incentives to undertake major capital investment to grow supply of lithium chemicals is assumed at $29,000/t. For the purposes of this report to apply a degree of conservatism, $24,000/t is assumed.

Sensitivities around the long-term price assumption will be used to show the impact to project economics. These sensitivities will be calculated in the range of 75% to 125% of the forecasted pricing.

Table 19-1 Lithium Price Forecast

Lithium Carbonate Price (US$/t, CIF)	2025	2026	2027	2028	2029	2030	2031	2032	2033 / LT
Contract, CIF	17,000	22,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000

Notes: Real prices used, where available.

1. Prices assume straight-line from final yearly forecast to LT price.
2. 2033 / LT represents lithium carbonate pricing beyond 2032

19.5 Contracts

LAC and GM entered into an investment agreement in Q4 2024 to establish a joint venture for the purpose of funding, developing, constructing and operating Thacker Pass. The investment closed in Q4 2024, with GM acquiring a 38% asset-level ownership stake in Thacker Pass. This Joint Venture transaction provides LAC cash and letters of credit from GM. GM has a conditional lithium carbonate offtake agreement from Phase 1 production through the first 20 years of production. GM is entitled to thirty-eight percent (38%) of the Phase 2 product.

A contract mining agreement with Sawtooth has been entered into for the Thacker Pass Project. LAC is under contract with Bechtel Infrastructure and Power Corp. for Engineering Procurement and Construction Management (EPCM) services, EXP and MECS for the sulfuric acid plant engineering and procurement and EDG Inc., as Owner's Engineer. LAC is finalizing contracts with various equipment vendors including issuance of a Limited Notice to Proceed with Aquatech International Corp. for crystallization equipment supply. A contract for the operation of the Transload Terminal has been executed with Iron Horse Nevada LLC.

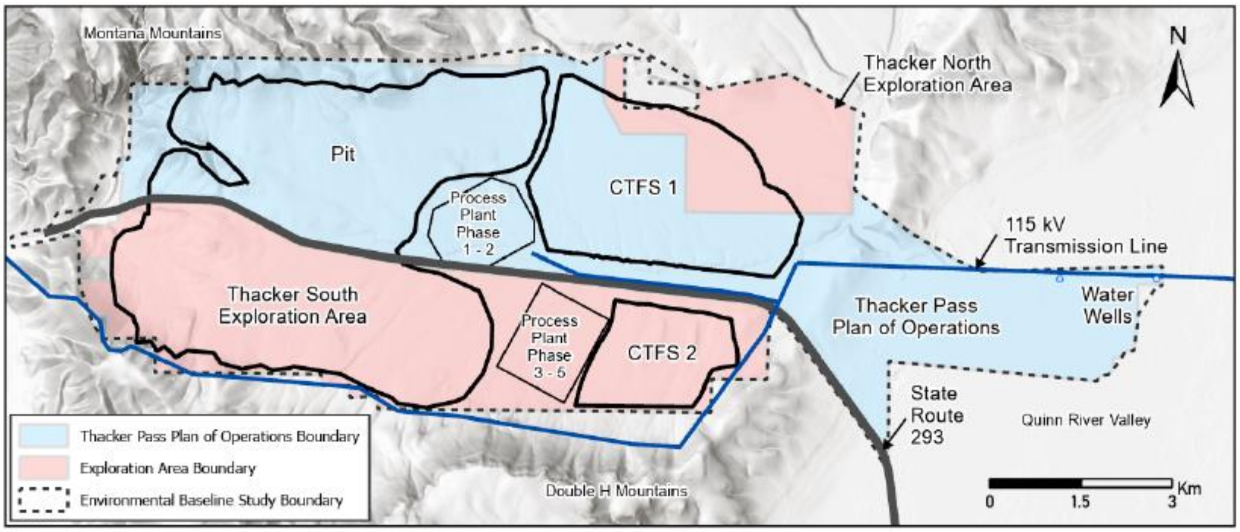
19.6 Qualified Person Statement

William van Breugel, the QP responsible for this section of the Technical Report has reviewed the studies, forecasts and analysis presented herein and confirms that the results support the assumptions made in this Technical Report.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

This section summarizes the available information on environmental, permitting, and social/community factors related to the construction, operation, reclamation, and closure of LAC's Thacker Pass Project (the Project). The units in this section are presented in metric with the original imperial (i.e., US standard units) in parentheses to maintain consistency with permitting documentation. Figure 20-1 presents the current PoO boundary, and the limits of the environmental baseline surveys completed to date.

Figure 20-1 Permit and Environmental Baseline Study Boundaries



Source: NewFields, 2024

20.1 Introduction

The Project is located on public lands administered by the U.S. Department of the Interior, Bureau of Land Management (BLM). Construction of the Project requires permits and approvals from various Federal, State, and local government agencies.

The process for BLM authorization includes the submission of a proposed Mine Plan of Operations (PoO, previously defined) and Reclamation Plan for approval by the agency. LN, which holds the mining claims at Thacker Pass, submitted the Thacker Pass Project Proposed PoO and Reclamation Plan Permit Application on August 1, 2019 (LAC, 2019a), which included Phase 1 and Phase 2 of the Project. The permit application was preceded by LN's submission of baseline environmental studies documenting the collection and reporting of data for environmental, natural, and socio-economic resources used to support mine planning and design, impact assessment, and approval processes.

As part of the overall permitting and approval process, the BLM completed an Environmental Impact Statement (FEIS), (DOI-BLM-NV-W010-2020-0012-EIS) in accordance with the National Environmental Policy Act of 1969 (NEPA) to assess the reasonably foreseeable impacts to the human and natural environment that could result from the implementation of Project activities. Following the issuance of the FEIS, BLM issued the EIS Record of Decision (ROD) and Plan of Operations Approval on January 15, 2021 (BLM, 2021). In addition, a detailed Reclamation Cost Estimate (RCE) that includes Phase 1 operations was approved by both the BLM and Nevada Division of Environmental Protection-Bureau of Mining, Regulation and Reclamation (NDEP-BMRR). The BLM will require the placement of a financial guarantee (reclamation bond) to ensure that all disturbances from the mine and process site are reclaimed once mining concludes.

Regulatory agencies that formally cooperated or participated in the preparation of the EIS included NDEP-BMRR; the United States Environmental Protection Agency (USEPA); the United States Department of the Interior Fish and Wildlife Service (USFWS); the State of Nevada Department of Wildlife (NDOW); and Humboldt County.

In 2024, BLM approved a minor modification that includes d a process update resulting in neutral tailings, the addition of CCD thickeners, and an updated facility layout. NDEP-BMRR approval of the Reclamation Cost Estimate is pending.

Based on the data that has been collected to date, there are no identified issues that are expected to prevent LAC from achieving all permits and authorizations required to complete construction and operate Phase 1 and Phase 2 of the Project, though certain state permits would require modification in advance of mining below the water table. Future phases of the Project would require additional environmental analysis and permit approvals. Future expansions are expected to involve construction of a rail line to site, moving the transmission line that runs through the current Project, and moving State Route 293. Environmental analysis and permit approvals will be needed in advance of these planned infrastructure changes.

20.1.1 Permitting Pre-Planning Process

To prepare for the NEPA and environmental permitting processes, LAC submitted baseline environmental data and engaged with regulatory agencies prior to submitting the PoO to the BLM and NDEP-BMRR. Beginning in January 2012, LAC (then known as Western Lithium USA Corporation) presented to the BLM an initial project overview and a summary of existing baseline information. Over the next several years, LAC redesigned the Project to concentrate on developing the resource at Thacker Pass. LAC completed baseline data collection by December 2018 and early 2019 and submitted baseline environmental reports to the BLM. LAC made changes to the Project as a direct result of engaging with regulators and community members, evaluating environmental resources, and concluding a supplemental exploration program in the Thacker Pass Area.

In developing the Project, LAC also engaged in meetings with BLM, NDEP-BMRR and other regulatory agencies, and received guidance from agencies on the direction of all baseline studies and ecological-resource priorities. Baseline data was collected with oversight from BLM, NDEP, NDOW, and USFWS. LAC and its Technical data were derived from the engineering design process and from the environmental baseline study efforts.

LAC's Thacker Pass Project Proposed PoO was submitted to the BLM and NDEP-BMRR in August 2019 to describe a proposed Project that would encompass approximately 4,236 hectares (10,468 acres) with an estimated disturbance footprint of approximately 2,244 hectares (5,545 acres). A new Exploration Plan of Operations was also proposed at the same time (to perform mineral exploration in areas south and northeast of the Project area. The boundaries of these two Plan of Operations areas are shown on Figure 20-1. Responding to agency comments, LAC revised the PoO and submitted the latest version on October 15, 2021.

The engagements leading up to the submission of the mine PoO provided the BLM and other agencies with an opportunity to understand the Project and prepare for the EIS process prior to BLM's issuance of a Notice of Intent (NOI) to prepare an EIS issued in January 2020.

20.2 Federal, State, and Local Regulatory Permitting Requirements

A review by multiple administrative agencies is undertaken to obtain all required Federal, State, and local agency permits and approvals necessary to construct, operate and ultimately reclaim and close the proposed Project.

The following permits are described in the following sections.

- Federal Permits (20.2.1)
  - BLM: Mine Plan of Operations for open pit mining and ore processing on public lands;
  - USFWS: Incidental Golden Eagle Take Permit.
- State Permits (20.2.2)
  - NDEP-BMRR: Reclamation Permit for reclamation of the mine and process facilities;
  - NDEP-BMRR: Water Pollution Control Permit (WPCP) for the construction, operation, and closure of the mine and process facilities to maintain surface and groundwater quality;
  - NDEP-Bureau of Air Pollution Control (BAPC): Air Quality Permit for the construction and operation of the mine and process facilities to maintain ambient air quality; and
  - NDWR: Water Right Change Applications to use groundwater for mining and milling purposes.
  - NDWR: Dam Safety Permit(s).
  - NDOT Encroachment Permit.
- Humboldt County Permits (20.2.3)
  - Regional Planning Department: conditional use permit allowing mining and processing;
  - Building Department: various permits to construct and inhabit structures and facilities at the Project, including building, electrical, plumbing, and mechanical permits and inspections.

20.2.1 Federal Permits

20.2.1.1 Bureau of Land Management

As lead Federal agency, BLM's Winnemucca District Office managed the NEPA process for the PoO with participation from cooperating Federal, State, and local agencies. BLM approval of Phase 1 and Phase 2 for the proposed Project was provided in accordance with the General Mining Law, which provides a statutory right to mine, and related Surface Management Regulations contained in 43 CFR 3809.

Consultations regarding historic properties and locations of Native American Religious Concern were conducted by the BLM between 2018 to 2021 pursuant to the National Historic Preservation Act (NHPA) and implementing regulations at 36 CFR 800 in compliance and accordance with the BLM-Nevada State Historic Preservation Office (SHPO) 2014 State Protocol Agreement. The BLM coordinates NEPA and NHPA Section 106 compliance by using the NEPA scoping process to partially fulfill NHPA public notification requirements to seek input from the public and other consulting parties on the Project and the effects on historic properties. The BLM further coordinated with the USEPA regarding environmental justice issues. BLM also consulted with USFWS, which provided an official list of Threatened and Endangered Species that could potentially occur within the Project area and served as a cooperating agency in the development of the EIS. As the state agency with jurisdiction and expertise related to wildlife, NDOW also participated as a cooperating agency in discussions regarding wildlife and special status species habitat, reclamation strategy, and other wildlife issues. Potential effects to Bald and Golden Eagles were analyzed to assist USFWS evaluation of LAC's application for an Incidental Golden Eagle Take Permit under the Bald and Golden Eagle Protection Act (50 CFR 22) (the impacts were programmatically analyzed in the PEIS [USFWS, 2016a]). USFWS issued a Record of Decision approving the Eagle Take Permit on March 8, 2022, followed by issuance of the permit on April 8, 2022.

Future phases of the project would likely require additional environmental analysis and permit approvals by BLM. Specifically, future phases would require LAC's submittal of a new Plan of Operations and Mine Plan and preparation of updated NEPA analysis, such as through a Supplemental EIS or Environmental Assessment ("**EA**"). Additional and more recent baseline studies would likely be needed to support the supplemental analysis. Local, State, and Federal agencies would be asked to be cooperating agencies to the Supplemental EIS process. Formal consultations regarding historic properties and Native American religious concerns would be conducted by the BLM pursuant to NHPA. Additional consultation would be performed with USFWS regarding the potential for threatened and endangered species that could potentially occur within the expanded project area. Consultation with NDOW would occur and NDOW would likely be a cooperating agency in the NEPA analysis. Potential effects to Golden Eagles would also be considered by USFW along with consideration of whether a new or modified incidental Golden Eagle Take Permit would be needed.

20.2.1.2 Environmental Documentation Process

NEPA provided a public process for analyzing and disclosing to the public the direct and cumulative impacts to the human environment that could result from the proposed action and selected alternatives; taking a ‘hard look’ at impacts and assessing the level of significance for identified impact from the Project and alternatives; and proposing mitigation measures if needed to reduce the potential impact from the selected proposed action. Following the NEPA analysis and review process, the ROD that was finalized in January 2021 included discussion of the alternatives considered, the environmentally preferred alternative; and mitigation plans, including any enforcement and monitoring commitments.

In compliance with the ROD Conditions of Approval, and in compliance with State Mitigation Regulation Nevada Administrative Code (NAC) 232.400-232, LAC subsequently fulfilled its initial compensatory mitigation obligation regarding sage-grouse, in coordination with the State of Nevada Sagebrush Ecosystem Council. LAC also completed its initial mitigation commitments under the Eagle Take Permit in April 2022.

A supplemental NEPA analysis to any development beyond Phases 1-2 would provide a process for analyzing and disclosing to the public additional direct and cumulative impacts to the environment that could result from future phases of the Project. Following the supplemental NEPA process, a ROD would be prepared documenting the federal agencies’ decision regarding the proposed expansion. In compliance with State Mitigation Regulation Nevada Administrative Code (NAC) 232.400-232, LAC would fulfill any compensatory mitigation obligations regarding sage-grouse. In addition, associated with an incidental take permit, LAC would fulfill any compensatory mitigation obligations regarding Golden Eagle.

20.2.2 State Permits

NDEP-BMRR is the primary State agency regulating mining. There are three branches within BMRR: Regulation, Reclamation, and Closure. NDEP-BAPC works closely with NDEP-BMRR on mining projects and issues permits to construct facilities that emit gases or particulate matter to the atmosphere. NDWR issues an appropriation to use groundwater for mining, milling, and domestic purposes. NDWR also administers the Dam Safety Program.

The State of Nevada does not have the equivalent of the Federal NEPA process requiring an impact assessment. However, most State permits and authorizations require public notice and a comment period after the completion of an administrative and technical review of the proposed facilities permit before approval. There is also a baseline characterization requirement that is accomplished using baseline data acquired during the preparation of the PoO.

20.2.2.1 Water Pollution Control Permit

NDEP-BMRR Regulation Branch administers the State of Nevada WPCP application process for the mine, ore processing, and operation of the fluid management system in accordance with Nevada Administrative Code (NAC) 445A.350 through NAC 445A.447. A WPCP includes requirements for the management and monitoring of the mine and ore processing operations, including the fluid management system, to prevent the degradation of waters of the state (NAC 445A.424). The permit also includes procedures for temporary, seasonal, and tentative permanent closure of mine and ore processing operations.

On April 3, 2020, LN submitted the Thacker Pass Project WPCP Application to the Regulation Branch. The application included an Engineering Design Report (EDR) for the Clay Tailings Filter Stack (CTFS), Waste Rock Storage Facility (WRSF), Coarse Gangue Stockpile (CGS), mine facilities, and process plant components. LN received iterative formal comments from NDEP-BMRR regarding the WPCP application. LN addressed the comments received to date. A public hearing was held on December 1, 2021, and the public comment period ended on December 8, 2021. The WPCP (NEV2020104) was issued and became effective March 12, 2022.

Since the initial permit was issued, two minor modifications have been submitted to NDEP-BMRR to account for process updates and engineering design optimization. The first minor modification introduced a process that results in neutral tails and includes the addition of countercurrent decantation (CCD) thickeners. This minor modification was approved in January 2024. The second minor modification included an updated facility layout to account for engineering design optimization for Phase 1 of the project. That minor modification was submitted and was approved in September 2024. The current WPCP allows for the construction and operations of Phase 1 of the Project. The permit will need to be modified to include additional facilities before construction of further phases of the Project commences. Geochemical and water quality and quantity data have been adequately assessed to apply for a modified permit for Phase 2 of the Project. Additional data from current monitoring would be submitted in connection with future permitting modifications.

A WPCP is valid for a duration of 5 years, provided the operator remains in compliance with the regulations. LN would be expected to apply for permit renewals in 5-year increments during the mine life. In line with this NDEP-BMRR requirement, the BLM ROD includes a stipulation requiring adaptive mitigation, including updating the groundwater model every five years to include new data. The current WPCP states that mining operations will not take place below the 1,475 m (4,840 ft) above mean sea level (amsl) elevation, which is 4.5 m (15 ft) above the pre-mining regional water table. Prior to mining below the water table (which is not expected to take place for approximately 15 years at Phase 2 production rates), LN would be required to submit, for NDEP review and approval, a revised WPCP application. That application would include a then-current groundwater model which evaluates the impacts and demonstrates waters of the State will not be degraded. Alignment with federal authorizations would also be sought as may be required. Based on current modeling, several approaches to long-term water management for operations below the water table have been identified. Those measures include in-pit water pumping with passive water treatment, and the creation of a hydraulic sink to control contaminants through a modified backfill plan. Other options would be studied prior to submitting an updated application, including the use of an adsorption amendment for backfill material placed below the water table.

20.2.2.2 Reclamation Permit

NDEP-BMRR Reclamation Branch issues a Reclamation Permit for the Project, in accordance with NAC 519A, to reclaim and close the mine, ore processing, and related transportation facilities in the unanticipated event of a default by the operator.

NDEP-BMRR and BLM cooperatively reviewed the initial submittal of the PoO and accepted the Reclamation Permit Application to establish a financial guarantee for reclamation activities meeting Federal and State requirements to ensure that adequate funds would be available to reclaim and close the site. The initial Reclamation Permit issued included a 10-year disturbance footprint, with Phase 1 facilities only. In November 2023, LAC submitted an Early Works Plan and associated Early Works RCE to the BLM and NDEP-BMRR for review and approval. The purpose of the early works plan was to start initial earthworks construction of Phase 1 of the Project without placing a larger, 10-year bond payment. The Early Works Plan was approved by NDEP-BMRR February 16, 2023 and a modified Reclamation Permit was issued, that includes earthworks construction only. The plan was approved BLM February 17, 2023. The Project is bonded under LN's existing BLM Statewide Bond, BLM Bond Number NVB002804.

In December 2023, LAC submitted a modified 10-year RCE to BLM and NDEP-BMRR to address the project update resulting in neutral tailings, the addition of CCD thickeners, and an updated facility layout. The minor modification was approved by the BLM on June 27, 2024, and NDEP-BMRRl is expected to conclude its review in Q4 2024. LAC will post the associated bond upon approval of the Reclamation Permit under the existing Statewide Bond, supporting the 10-year reclamation permit for Phase 1 facilities. The RCE would be updated to include additional facilities for future phases.

20.2.2.3 Air Quality Permit

NDEP-BAPC issues Air Quality Permits for the construction and operation of mine and process facilities to maintain ambient air quality. Permits are issued in accordance with NAC 445B.001 through NAC 445B.3689. NDEP-BAPC has primacy for air quality activities in Humboldt County under the Federal Clean Air Act of 1970, as amended. Based on the Project design and the analyses by consultant Air Sciences, in January 2021 LAC applied for a Class II Air Quality Operating Permit from the NDEP-BAPC, which is a permit typical for facilities that emit less than 90 tonnes (100 short tons) per year for any one regulated pollutant, emit less than 23 tonnes (25 short tons) per year for total hazardous air pollutants (HAP), and emit less than 9 tonnes (10 short tons) per year of any one HAP. Following review and a public comment period, the final Class II Air Quality Operating Permit (AP1479-4334) was issued February 25, 2022, and allows for Phase 1 construction and operations. Since the initial permit was issued, two modifications have been submitted to NDEP-BAPC to account for process updates and engineering design optimization. The first modification, approved in July 2023, introduced process updates as well as construction emission points including construction generators and a batch plant. The second modification included an updated facility layout to account for engineering design optimization for Phase 1 of the project. That modified permit is expected to be issued early 2025.

The Thacker Pass Project NEPA Air Quality Impact Analysis Report (Air Sciences, 2019a) includes Phase 1 and Phase 2 of the Project and indicates the first two phases of the proposed Project meets the criteria to be considered a minor source for new source review, in particular:

- The facility-wide potential process emissions are less than the 227 tonnes (250 short tons) per year threshold (40 CFR 52.21) for prevention of significant deterioration (PSD) applicability for each criteria pollutant, hydrogen sulfide, and sulfuric acid mist.
- The sulfuric acid plant emissions, including fugitive emissions from the plant (NRS listed source category per 40 CFR 52.21(b)(1)(i)(a)), are less than the 90 tonnes (100 short tons) per year threshold for PSD applicability for each criteria pollutant, hydrogen sulfide, and sulfuric acid mist.

Given that the facility-wide potential process source emissions for the proposed Project are expected to be below the 90 tonne (100 short ton) per year threshold for the Title V program, the proposed Project would be considered a minor source, not subject to Title V permitting for the first two phases of the proposed Project. Additionally, the facility-wide HAP emissions for the first two phases of the proposed Project are expected to be less than 9 tonnes (10 short tons) per year for a single HAP and less than 23 tonnes (25 short tons) per year for all HAP emissions in aggregate. Therefore, the proposed Project is considered to be an area source for National Emission Standards for Hazardous Air Pollutants applicability.

The sulfuric acid plant emissions are expected to trigger PSD starting in Phase 3 of the project. As part of PSD review, Best Available Control Technology (BACT) would be analyzed and implemented on all new and modified emission units starting in Phase 3. BACT is an emissions limitation which is based on the maximum degree of control that can be achieved. This can be add-on control equipment or modification of the production processes or methods and includes fuel cleaning or treatment and innovative fuel combustion techniques. BACT may be a design, equipment, work practice, or operational standard if imposition of an emissions standard is infeasible.

Additional air quality analysis would be completed starting in Phase 3 to analyze the PSD source. The air quality analysis must demonstrate that new emissions emitted from the Project will not cause or contribute to a violation of any applicable national ambient air quality standards (NAAQS) or PSD increment. Fugitive emissions would be analyzed and the Project must demonstrate no adverse impact to specific Air Quality Related Values (AQRV's) defined by Federal Land Managers for Class I areas. The air quality analysis will involve an assessment of existing air quality, which may include ambient monitoring data and air quality dispersion modeling results; and predictions, using dispersion modeling, of ambient concentrations that will result from the proposed project and future growth associated with the proposed project. A significant deterioration is said to occur when the amount of new pollution exceeds the available PSD increment. Once subject to PSD, an additional impacts analysis would be undertaken to assess impacts of air, ground, and water pollution on soils, vegetation, and visibility caused by any increase in emissions of any regulated pollutant from the source or modification under review, and from associated growth.

20.2.2.4 Groundwater Appropriation

Approvals to use groundwater for mining, milling, and domestic purposes are issued by NDWR, typically for the life of the mine. In April 2020, LN submitted applications to NDWR to change the point of diversion, manner of use, and place of use for water rights from a LAC-owned ranch near the project site. Similar change applications were submitted to transfer water rights from another ranch east of the Project site pursuant to a water-purchase agreement with that ranch. Two other ranches, one in the Quinn River Valley and one in the King's River Valley, protested the transfer of water rights. Following a water rights hearing, the protests were overruled by the State Engineer. Permits 89691-89684 and 89995-90006 were issued in mid 2023, which resulted in a total combined duty of 3.515 million cubic meters (2,850 acre-feet) of water rights being transferred to Thacker Pass Quinn Well 1 and Quinn Well 2. Pursuant to that permit, water may be used in the Quinn River Basin, which includes the Plant site. NDWR subsequently issued temporary authorizations for water use in the Kings River Basin. One ranch appealed NDWR's decision to overrule the protests. As no preliminary injunction or stay has been granted on the appeal, the Project is using the transferred water pursuant to the issued permits. The court has scheduled an oral hearing for February 2025. LAC is optimistic in the outcome as the law requires that the Judge confers deference on the State Engineer's decision overruling original protests.

LAC plans to submit a more permanent approach for water use in the Kings River Basin to NDWR for approval. In addition, water rights would need to be acquired and transferred for future phases of the Project. For that authorization, the current groundwater model would likely be updated based on additional pumping of groundwater, and associated environmental impacts would be addressed. Mitigation measures, permit modifications and additional water rights would be required if surface or groundwater sources are impacted by additional pumping and/or pit development.

The water rights held by LAC are sufficient for Phase 1 operations and a portion of Phase 2.

20.2.3 Humboldt County Permits

The Humboldt County Regional Planning Department (HCRPD) has the responsibility to issue a conditional use permit (similar to zoning) allowing for mining and processing land use at the Project. LAC holds a conditional use permit issued by the HCRPD in 2013 for the Kings Valley Clay Mine (which was proposed in 2013 but never fully developed), which the HCRPD confirmed is current and valid for the Thacker Pass Project on July 8, 2021. Expansion of the Plan of Operations Boundary into the south exploration project would likely require a new conditional use permit.

The County Building Department will issue various permits to construct and inhabit structures and facilities at the Project, including building, electrical, plumbing and mechanical permits and inspections.

Other Federal, State and Humboldt County agencies will issue additional permits, approvals, notices, or concurrences for various mine operations and activities in accordance with applicable Federal, State and county ordinances, guidelines, laws, and regulations. Existing permits will be regularly reviewed and assessed. Should engineering design changes be proposed, LN will apply for and obtain appropriate permit modifications and/or amendments, as needed.

20.3 Summary Schedule for Permitting, Approvals, and Construction

The Project is being considered in five phases, lasting 85 years. Initially, LAC will utilize existing surface transportation infrastructure (highways) to service the Project. As the Project advances, LAC proposes to relocate a portion of SR 293 and will utilize the old highway to service the Project. The following is a summary schedule for permitting, approvals and construction for Phase 1 of the Project.

- Q3 2018 – Submitted Conceptual Mine Plan of Operations
- Q3 2019 – Submitted Proposed Mine Plan of Operations and Reclamation Plan Permit Application, BLM deems the document technically complete
- Q1 2020 – BLM published NOI to prepare an EIS in the Federal Register
- Q1 2021 – Final EIS and Record of Decision issued by BLM
- Q1 2022 – Issuance of final WPCP, Reclamation Permit, and Class II Air Quality Operating Permit
- Q1 2023 – Initiate early-works construction
- Q3-Q4 2023 – Initiate Plant Construction
- Q2 2026 – Commissioning process plant, initiate mining
- Q4 2027 – Start of Production

Additional permitting will likely be initiated after the start of Phase 1 production. Approximate production from the future expansion phases are summarized as follows.

- Phase 2 – 4 years after Phase 1
- Phase 3 – 4 years after Phase 2
- Phase 4/5 – 4 years after Phase 3

20.4 Current Permitting Status

All major federal, state and municipal permits required to construct and operate Phase 1 and Phase 2 have been received.

20.5 Community Engagement

LAC has developed a Community Engagement Plan (LAC, 2022), recognizing that the support of stakeholders is important to the success of the Project. The Project was designed to reflect information collected during numerous stakeholder meetings. To date LAC has participated in over 150 community events.

Numerous laws and regulations require the BLM to consider Native American cultural and religious concerns. These include the NHPA, the American Indian Religious Freedom Act of 1978, Executive Order 13007 (Indian Sacred Sites), Executive Order 13175 (Consultation and Coordination with Tribal Governments), the Native American Graves Protection and Repatriation Act, the ARPA, as well as NEPA and the FLPMA. Secretarial Order No. 3317, issued in December 2011, updates, expands and clarifies the Department of Interior's policy on consultation with Native American tribes. The BLM also utilizes H-8120-1 (General Procedural Guidance for Native American Consultation) and National Register Bulletin 38 (Guidelines for Evaluating and Documenting Traditional Cultural Properties). In connection with LAC's previously proposed Kings Valley Clay Mine Project (at Thacker Pass) and in coordination with the BLM, letters requesting consultation were sent to the Fort McDermitt Paiute and Shoshone Tribe and the Summit Lake Paiute Tribe on April 10, 2013. The BLM held consultation meetings with the Fort McDermitt Paiute and Shoshone Tribe on April 15, 2013 and the Summit Lake Paiute Tribe on April 20 and May 18, 2013.

As part of the Thacker Pass Project, the BLM Winnemucca District Office initiated the Native American Consultation process. Consultation regarding historic properties and locations of Native American Religious Concerns were conducted by the BLM via mail and personal correspondence in 2018 and 2019 pursuant to the NHPA and implementing regulations at 36 CFR 800 in compliance and accordance with the BLM-SHPO 2014 State Protocol Agreement. On July 29, 2020, the BLM Winnemucca District Office sent formal consultation letters to the Fort McDermitt Paiute and Shoshone Tribe, Pyramid Lake Paiute Tribe, Summit Lake Paiute Tribe, and Winnemucca Indian Colony. In late October 2020, letters were again sent by the BLM to several tribes asking for their assistance in identifying any cultural values, religious beliefs, sacred places and traditional places of Native American people which could be affected by BLM actions on public lands, and where feasible to seek opinions and agreement on measures to protect those tribal interests. As the lead federal agency, the BLM prepared the MOU for the Project and continues to facilitate all ongoing Project-related consultation.

LAC has also independently engaged with the Fort McDermitt Paiute and Shoshone Tribe between 2017 and 2020 (as described in Lithium Nevada Corp., 2020). On July 29, 2019, LAC and the Fort McDermitt Paiute and Shoshone Tribe entered into a Project engagement agreement to facilitate meaningful interaction between LAC and the Fort McDermitt Paiute and Shoshone Tribe. In February and March 2020, LAC held one-on-one meetings with tribal members to provide information about workforce development and employment opportunities and conduct job skills analysis of several tribal members.

The in-person work was discontinued during most of the COVID pandemic, but LAC continued to discuss employment opportunities with tribal members through virtual meetings and phone communication. In November 2020, LAC worked with members of the Fort McDermitt Paiute Shoshone Tribe to bring the BuildNV Core Construction Training Program to Fort McDermitt. Eleven participants successfully completed the program. In February and April 2021, LAC presented a Project update to the Fort McDermitt Tribal Council and hosted a community meeting in McDermitt to discuss and provide answers regarding the Thacker Pass Project. In August 2021 and January 2022, LAC had meetings with Tribal Council members to present a conceptual benefits package and on October 20, 2022, LAC signed a community benefits agreement with Fort McDermitt Paiute and Shoshone Tribe. In October 2021 and October 2022, LAC sponsored a Heavy Equipment Operator Training course held in Fort McDermitt in October 2021 for fourteen participants, and in October 2022 for sixteen participants who received certificates for learning to safely operate various pieces of heavy equipment.

20.6 Environmental Baseline Studies

Since 2010, LAC has conducted extensive baseline characterization studies and data collection programs for the Project. These studies initially focused on surveys within an approximate 1,497-hectare (3,700-acre) boundary of the previous Project concept, in the immediate vicinity of the pit and plant layout proposed by Western Lithium Corporation. In 2018, the baseline study program was expanded to encompass over 7,527 hectares (18,600 acres). All baseline studies for Phase 1 and Phase 2 of the Project were substantially completed in 2018 and early 2019. Targeted geochemistry humidity cell test (HCT) laboratory testing was completed in late 2020 and updated in 2024. Refer to Figure 20-1 for the limits of the current environmental baseline studies.

The baseline study program was conducted to characterize existing environmental and social resources and support the completion of the multi- Federal and State agency permitting and approval program, and the anticipated environmental documentation process that is required under NEPA. This baseline program includes, but is not limited to, studies for the following standard resource topics:

- Vegetation;
- Wildlife;
- Special status (threatened, endangered, and candidate status) vegetation and wildlife species including those species managed under the requirements of the Federal Endangered Species Act of 1973, as amended;
- Invasive, non-native plant species, including noxious weeds;
- Soils and available growth media;
- Geology and minerals;
- Paleontology;
- Water quality and quantity including surface hydrology and groundwater hydrogeology;
- Jurisdictional wetlands and waters of the United States as required by Section 404 of the Federal Clean Water Act of 1977, as amended;
- Air quality as required by the Federal Clean Air Act of 1963, as amended;
- Cultural resources as managed under the National Historic Preservation Act of 1966, as amended, and the Archaeological Resources Protection Act of 1979;
- Environmental Justice in accordance with Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Providers;
- Hazardous materials and solid waste;
- Range and livestock management;

- Social and economic impacts; and
- Aesthetics, including noise and visual assessments.

Although comprehensive baseline studies were completed for the initial two phases of the Project, current baseline studies would need to be updated and additional baseline studies would need to be performed for any new or recently listed threatened or endangered species to support future expansions.

The study area will likely be expanded as Phases 3-5 of the Project are anticipated to be developed. As such, new studies will be performed including, but not limited to, four quarters of seep and spring surveys, cultural resources surveys, and a Waters of the U.S. delineation. Additional studies will be coordinated well in advance of proposed expansions to allow for permitting activities.

The following sections summarize key baseline studies. Baseline data collection and impact studies were initially completed between 2018-2020. Although comprehensive baseline studies have been performed, current studies will need to be updated when preparing for Phases 3-5 of the project. Additional baseline studies will need to be performed as the study area expands to include Phases 3-5 of the Project.

20.6.1 Climate/Weather Monitoring

In August 2011, LAC installed a weather station at the Project site to collect site-specific meteorological data to support engineering design, reclamation efforts, the air quality permitting and approval program and the NEPA documentation process. Hourly on-site weather data has been continuously collected since 2011. Data is downloaded and archived on a quarterly basis. Parameters include wind speed and direction, temperature at 2-m (6.6 feet) and 10-m (33 feet), relative humidity, precipitation, barometric pressure, and solar radiation. Weather data will continue to be collected and used for future permitting needs.

20.6.2 Wildlife

The Project area contains habitat for a variety of wildlife typical of the Great Basin Region. Habitat is predominantly sagebrush, intermixed with salt desert scrub and invasive grasslands and forblands. The BLM identifies areas in which the Project lies as Greater Sage-Grouse priority habitat. BLM considers Greater Sage-Grouse to be a sensitive species and has regulations to protect the species and its habitat.

Since 2008, LN has performed (via independent biological contractors) six separate field surveys for sage grouse in Thacker Pass (Enviroscientists, 2008; Enviroscientists, 2010; JBR, 2012a; JBR, 2012b; Great Basin Ecology, 2012; Great Basin Ecology, 2013). The purpose of the surveys included assessing the quality of habitat and Greater Sage-Grouse use. The sage grouse is a game bird that BLM has identified as a special status species. Sage grouse lek sites have not been identified in the Project area but have been documented north of the Project in the Montana Mountains. Baseline studies indicated that habitat located in the Project area has been considerably modified by recent and historical wildfires and contiguous infestations of invasive annual grasses, primarily cheatgrass. The landscape is generally devoid of healthy sagebrush assemblages, with patchy occurrences of sagebrush. LN has fulfilled initial sage grouse compensatory mitigation commitments as described in Section 20.2.1.1. Additional compensatory mitigation obligations regarding sage-grouse will likely be required for future phases of the Project.

NDOW regularly monitors Greater Sage-Grouse leks and performs lek counts within the Montana Mountains, north of the proposed Project site. These data are available for use by LN during the mine permitting and approval process and the NEPA environmental documentation process.

In March 2018, LN hired SWCA Environmental Consultants to perform additional environmental baseline surveys in the expanded 7,527 hectares (18,600 acres) Project area, for general wildlife, general vegetation, special status species, and Greater Sage-Grouse habitat surveys. Updated surveys were completed in Q3 2018 (SWCA, 2018a; SWCA, 2018b; SWCA, 2019a; SWCA, 2019b). Surveys will need to be updated when preparing for future phases of the Project.

In February 2018, LN hired Wildlife Resource Consultants to perform aerial presence and ground territory surveys for raptors. Surveys within a 16-km (10-mile) radius of the Project site were completed in 2018 and 2019 (WRC, 2018a, 2019). Surveys within a 3-km (2-mile) radius of the Project site were completed in 2019, 2020, 2021, and 2022 (WRC, 2019, 2020, 2021, 2022). Two active golden eagle nests were identified in 2022 (WRC, 2022) within Thacker Canyon, approximately 0.6 km (0.4 mile) from the Phase 1 and Phase 2 PoO boundary. The Project operation will not directly interfere with the nest; LAC could conduct operations without a permit, potentially with some seasonal restrictions. The USFWS issued a Record of Decision approving issuance of the permit in March 2022 and then issued the final Incidental Take Permit on April 8, 2022. The Company has initiated mitigation stipulated by the permit. In future phases of the Project, as mining advances to the south, an additional Incidental Take Permit and associated compensatory mitigation obligations regarding Golden Eagle will likely be required.

Lahontan cutthroat trout (LCT), listed as threatened under the Endangered Species Act (ESA), is known to exist in portions of the Crowley Creek-Quinn River watershed. No LCT occur in Thacker Creek. No LCT were observed in the lower reaches of Pole Creek or in the lower reaches of Crowley Creek (below the confluence of Rock Creek), both which are considered intermittent and ephemeral. A 1995 U.S. Fish and Wildlife Report and subsequent summaries have not identified naturally occurring LCT or habitat in upper Pole Creek. According to NDOW, LCT habitat may occur in the upper reaches of Pole Creek, located approximately three miles north of the Project area; and in the upper reaches of Crowley Creek, above the confluence of Rock Creek, located approximately three miles northeast of the Project area.

In October 2011, and June 2012, NDOW attempted to introduce LCT in the upper reach of Pole Creek. According to NDOW, LCT was observed in upper Pole Creek in 2014, but no LCT were observed or identified in 2015. To date, stocking efforts have not demonstrated survival or habitat there. According to hydrological modeling conducted by Piteau Associates, no measurable impacts to the upper or middle Pole Creek surface flow are simulated (Piteau, 2020c) for Phase 1 and Phase 2 of the Project. Additional modeling will need to be completed to analyze potential impacts to Pole Creek for future phases of the Project. In November 2020, per regulations 50 CFR Part 402 and Section 7 of the Endangered Species Act, the BLM requested informal consultation with the USFWS regarding the Project (Consultation Code: 08NVD00-2020-SLI-0619) (BLM, 2020). The BLM also prepared a Biological Assessment and determined the Project may affect, but is not likely to adversely affect, the threatened LCT in the Thacker Pass Lithium Mine Project area (BLM, 2020). On December 4, 2020, the USFWS concurred with the BLM's determination that Phase 1 and Phase 2 of the Project may affect, but is not likely to adversely affect, LCT (USFWS File No. 2021-I-0041) (USFWS, 2020).

In March 2018, LAC hired Wildlife Resource Consultants to perform Spring Snail surveys in proximity to the Project. The spring snail surveys were completed in Q3 2018 (WRC, 2018). The Kings River pyrg was found to occur at 13 undeveloped springs in the larger survey area; however, it was not found to occur within the Project Boundary. According to hydrological modeling conducted by Piteau Associates (Piteau, 2020c), direct and indirect effects on the spring are not expected from construction or operations of Phase 1 and Phase 2 of the Project. Additional modeling will need to be completed to analyze potential impacts on the Kings River pyrg for future phases of the Project.

The Kings River pyrg is not a BLM special status species, though it is a NDOW species of conservation priority. On October 31, 2023, a petition to list the Kings River pyrg under the Endangered Species as an endangered or threatened species and to concurrently designate critical habitat was filed with the USFWS. On February 8, 2024, the USFWS announced a 90-day finding on the petition. Based on the review, the USFWS found that the petition to list the Kings River pyrg presents substantial scientific or commercial information indicated that the petitioned action may be warranted. At this time, the USFWS announced that they are initiating a status review to determine whether the petitioned action is warranted. To ensure the status review is comprehensive, the USFWS requested scientific and commercial data and other information regarding the Kings River pyrg and factors that may affect its status. LAC is working with USFWS on this matter and providing studies that the Company has completed to assist with the review. Based on the status review, USFWS will issue a 12-month petition finding, which will address whether or not the petitioned action is warranted. The 12-month petition finding is not expected to be released to the public until 2028.

20.6.3 Cultural Resources

In March 2018, LAC hired Far Western Anthropological Group to perform a Class III Cultural Resource Survey within the approximately 7,527-hectare (18,600-acre) baseline study area. The cultural resource survey was completed in Q3 2018 (McCabe, 2012; Young, 2018). The cultural resource survey has been reviewed and approved by both the BLM and SHPO. A new cultural resource survey is typically required every ten years. For this reason, the cultural resource survey will likely need to be updated in the south pit area, as the Project prepares for future phases.

In consultation with SHPO, the BLM determined to resolve adverse effects to historic artifacts and other historic properties within the Phase 1 and 2 Project area. To specify how those effects would be resolved, the BLM created a Memorandum of Agreement (MOA) and Historic Properties Treatment Plan (HPTP). Draft copies of the MOA and HPTP were mailed to local tribes and the SHPO for review and comment in September 2020. The MOA and HPTP contain descriptions of the historic properties involved, the mitigation research design, mitigation methods, and the specific actions to be taken at each historic property. In general, mitigation for physical effects to historic properties-including both prehistoric and historic resources-would involve data recovery (e.g., excavation, publications) to learn as much as possible about the property prior to its destruction, and mitigation for visual effects to historic properties would involve interpretation for the public (e.g., research, publications, interpretive signage). The BLM edited the MOA based on comments it received. In late October 2020, letters were sent to several tribes asking for their assistance in identifying any cultural values, religious beliefs, sacred places and traditional places of Native American people which could be affected by BLM actions on public lands, and where feasible to seek opinions and agreement on measures to protect those tribal interests. The letter sent to tribes also provided a copy of the MOA final version and invited their signature as a concurring party. Tribes were again invited to submit additional comments and meet further with the BLM. The SHPO signed the MOA as a Signatory on November 5, 2020. LAC was invited to be a concurring party to the MOA, and LAC provided signature on December 2, 2020.

The MOA and HPTP serve as the comprehensive guide for the implementation of cultural resources treatment measures in response to adverse effects identified by BLM in consultation with Nevada SHPO and also through the NEPA compliance framework presented in the Project EIS. The content of the Project's HPTP, coupled with dynamic Project planning and adherence to the MOA stipulations, will mitigate direct and indirect impacts to Historic Properties during the Project's construction and future exploration activity. As the lead federal agency, the BLM generated the MOA and facilitates all on-going, Project-related consultation. The BLM would conduct additional consultation with SHPO for future phases of the Project to determine and resolve adverse effects regarding historic artifacts and other historic properties within the expanded Project area. The MOA and HPTP would likely be updated and provided to local tribes and the SHPO for review and comment before being finalized.

20.6.4 Water Resources

Water resource studies for the Quinn River Basin and Kings River Basin were conducted through a series of reconnaissance reports commissioned by the Nevada Division of Water Resources (NDWR) (Malmberg, 1966; Huxel, 1966; Visher, 1957; Zones, 1963). Although these studies focused on water supply and availability from the alluvial basins, they provide some discussion on bedrock conditions in the Thacker Pass vicinity.

Project scale hydrogeologic studies began in 2011 with a groundwater investigation and was conducted by Lumos and Associates which included monitoring well drilling, testing, and spring surveying (Lumos, 2011a, Lumos, 2011b). Continuous spring surveying was conducted by SRK between 2011 to 2013. SRK visited most spring locations for at least 4 quarters (SRK, 2011a, 2011b, 2012a, 2012b, 2012c, 2012d, 2013). Seven (7) additional wells were drilled by LAC in 2011 with oversight from Schlumberger Water Services, of which 5 wells have been continuously monitored to present (SWS, 2013). An initial basin-scale groundwater model spanning the Kings and Quinn River hydrographic basins was developed to identify potential groundwater quantity impacts (SWS, 2013). These investigations focused on a smaller open pit plan.

In 2018, a supplemental investigation began, focused on characterizing conditions for the larger 2018 pit configuration at Thacker Pass. This included 4 additional monitoring wells, 9 piezometers, 2 production wells, 3 surface water gaging stations, and the resumption of seep and spring monitoring. The work is summarized in the Baseline Hydrological Data Collection Report (Piteau, 2019a). A numerical groundwater model was updated to evaluate potential water related impacts to surface and groundwater resources including the potential to generate a pit lake and pit lake geochemistry. A Fate and Transport analysis was also performed to assess the potential migration of pore water in the proposed pit backfill on the groundwater system. The results are summarized in “Thacker Pass Project Water Quantity and Quality Impacts Report Revision 1” (Piteau, 2020). In August 2021, a revised analysis was completed for a 2,850 acre-ft/yr water supply abstraction (Piteau, 2021).

Significant future pit expansions or new pit areas could necessitate additional monitoring wells and piezometers, along with at least four quarters of additional monitoring. Additional seep and spring data would also be collected, and at least four quarters of seep and spring monitoring would be completed. The Baseline Hydrological Data Collection Report would be revised to include new data. Groundwater modeling would be updated to include the expanded pit as well as additional pumping from new groundwater wells proposed for future phases of the Project. Water related impacts to surface and groundwater resources, including the potential to generate a pit lake and pit lake geochemistry, would be reanalyzed. The Fate and Transport analysis also would be updated to assess potential migration of pore water in the proposed pit backfill on the groundwater system for the expanded pit. Updates to the Thacker Pass Project Water Quantity and Quality Impacts Report would be prepared, and a supplemental NEPA process would analyze potential impacts to groundwater quantity and quality.

A summary of the current hydrogeological results is described in the following sections: groundwater setting and availability at Thacker Pass (20.6.4.1), groundwater quality across the Project (20.6.4.2), seeps and springs monitoring (20.6.4.3), surface water features adjacent to the Project (20.6.4.4) and the status as Waters of the US (20.6.4.5), water related impacts as evaluated from a numerical groundwater model (20.6.4.6), and monitoring and mitigation plans to evaluate water resources and mitigate mining related impacts during operations and post-closure (20.6.4.7).

20.6.4.1 Groundwater Setting

The Project site resides along a hydrographic basin divide between two designated hydrographic basins: the Kings River Valley to the west and the Quinn River Valley to the east. Water rights in both basins have been fully allocated, with perennial yields of 17,000 and 60,000 acre-feet per year, respectively.

Recharge of the Quinn River and Kings River valleys begins in the adjacent mountain blocks, which have elevations that are 1,524 meters (5,000 feet) amsl. Recharge is distributed to the alluvial basin via two processes: (1) deep bedrock recharge from infiltration of direct precipitation and snowmelt in bedrock mountain blocks; and (2) runoff recharge derived from infiltration of surface water runoff as it flows from mountain blocks across alluvium material along basin margins.

Groundwater discharge from the Quinn River and Kings River valleys occurs primarily through four processes: (1) evapotranspiration through phreatophytes; (2) extraction by irrigation wells; (3) natural discharge at seeps and springs; and (4) groundwater outflow to adjacent basins. Irrigation extraction is currently the largest component of groundwater discharge.

Groundwater levels have been monitored in the vicinity of the Thacker Pass Project at a series of monitoring wells since 2011. Groundwater levels measured through 2019 are typically 1,410 meters (4,625 feet) amsl to 1,534 meters (5,034 feet) amsl. The highest water levels were observed at monitoring well WSH-7 (approximately 1,611 meters (5,285 feet) amsl) north of the proposed open pit. The anomalously high water level is attributed to the location of the well north (upgradient) of the principal east-west fault that functions as a hydraulic flow barrier. Water levels in the western portion of the proposed Project decline to an elevation of approximately 1,410 meters (4,625 feet) amsl, observed at piezometer PZ18-05 located along the western margin of the Project site. This is approximately 6 meters (20 feet) higher than the headwaters of Thacker Creek. East of the proposed CTFS 1 and open pit, water levels decline to 1,376 meters (4,513 feet) amsl, observed at monitoring well MW18-02, which serves as the down gradient monitoring point. Water level data indicated the groundwater divide is approximately 1,064 meters (3,500 feet) east of the hydrographic divide. The groundwater divide corresponds with a corridor of elevated water levels in monitoring well WSH-7 (1,611 meters (5,285 feet) amsl), monitoring well PH-1 (1,534 meters (5,034 feet) amsl), and monitoring well WSH-17 (1,482 meters (4,861 feet) amsl) which are compartmentalized by minor faults that act as flow barriers (Piteau 2018a; Piteau 2019a; Piteau 2020). More recent groundwater levels indicate that levels generally declined in 2023 as much as 0.85 m (2.8 feet) across Thacker Pass and generally increased up to 0.82 m (2.7 feet) in the Quinn River Valley (Piteau, 2024).

Water bearing rock units adjacent to the Phase 1 and Phase 2 open pit consist of claystone, interbedded claystone / ash, volcanic tuff, and lava flows. Claystone / ash bedrock units are the most transmissive bedrock units, although still considered low permeability materials, owing to the greater abundance of interbedded ash layers. The presence of interbedded ash functions as a secondary permeability pathway to transmit groundwater flow because they interconnect transmissive beds of ash in a broader fabric of claystone at the mesoscopic scale. The presence of faults, even with minor offset, can impede groundwater flow through i) truncating ash beds against low permeability claystone and ii) the intrinsically low permeability materials themselves. The other bedrock units of volcanic tuff and lava flows possess crystalline rock matrices with very little intrinsic permeability. Hydrologic testing confirmed the low permeability character of bedrock materials and indicated that faults were barriers perpendicular to flow. The bedrock and structural compartmentalization surrounding the open pit are not conducive to sustaining high volumes of flow.

Water supply potential from the mine site is expected to be minimal. Therefore, the Project water supply targeted the more transmissive alluvium sediments in Quinn River Valley. A water supply well (Quinn River Production Well 1 (QRPW18-01)) was drilled and successfully tested in 2018. A second supply well, Quinn River Production Well 2 (QRPW23-01) was drilled and successfully tested in 2023. The two production wells (QRPW18-01 and QRPW23-01) will supply water for the first two phases of the Project.

It is anticipated that additional wells would be needed to supply water for Phases 3-5.

20.6.4.2 Groundwater Quality

Groundwater major ion chemistry ranges from calcium/sodium bicarbonate to calcium/sodium – sulfate types, possessing nearly equal components of calcium and sodium cations. Major ion chemistry of seeps and springs is similar to that of monitoring wells with slightly higher calcium composition. The similarity between major ion chemistry of groundwater and perennial seeps and springs can be attributed to the seeps and springs being locations where groundwater discharges at ground surface, and the groundwater expressed at seeps and springs having relatively short flow paths and residence times.

Groundwater in the Project area has naturally elevated background concentrations of several constituents (arsenic, fluoride, iron, manganese) that exceed Nevada Reference Values (NRVs). Profile I standards set forth Nevada's reference values for drinking water. A summary of groundwater Profile I exceedances in the existing groundwater is presented in Table 20-1. Detailed groundwater chemistry and groundwater quality information is presented in the Water Quantity and Quality Impacts Report (Piteau, 2020). More recent water chemistry results obtained through quarterly sampling in 2023 similarly report exceedances of arsenic, fluoride, iron and antimony (Piteau, 2024). Additional monitoring wells will need to be installed and at least 4 quarters of additional groundwater monitoring will need to be completed and analyzed through the supplemental EIS process before moving into phases of the Project beyond Phase 2.

Table 20-1 Summary of Background Groundwater Profile 1 Exceedances

Constituent	Wells (82 total samples)		
	No. Exceedance Samples	Percentage (%)	Key Wells
Aluminum	5	6	WSH-04
Antimony	5	6	PH-1, WSH-13, WSH-14
Arsenic	61	66	Most Wells
Fluoride	26	35	WSH-Series Wells
Iron	5	5	PH-1, MW18-04
Manganese	1	1	-

20.6.4.3 Seeps and Springs

Spring and seep monitoring began in 2011 and continued through 2019. Surveying followed BLM guidelines, consisting of measuring a location, flow rate, field parameters, and water chemistry. In addition, photographs, a summary of riparian vegetation, and a site description were documented. In 2018, the spring and seep sampling program was expanded from historical surveys to include 52 spring and seep sampling locations. (Lumos, 2011b, SRK, 2011a, 2011b, 2012a, 2012b, 2012c, 2012d, 2013, Piteau, 2018b; Piteau, 2018c; Piteau, 2018d; Piteau, 2018e, Piteau, 2019b).

Spring surveying identified 21 perennial springs, including those in the Thacker Creek spring system. A subset of 17 perennial and ephemeral springs have been selected by regulatory agencies for continued quarterly monitoring throughout mine operations. Spring monitoring for this subset started in 2021 (Piteau, 2023). Additional seeps and springs would be assessed if they occur within the area of influence associated with the expanded mine area. At least four quarters of additional seep and spring surveys would be completed and analyzed through the supplemental NEPA process before moving into phases of the Project beyond Phase 2.

20.6.4.4 Surface Water

Lands within the proposed Project area primarily drain eastward in the direction of the Quinn River Valley. A small portion of the proposed mine pit area and the West Waste Rock Storage Facility are in the Kings Valley hydrographic basin and thus drains west in the direction of Thacker Creek and subsequently to the Kings River Valley.

Perennial and intermittent surface water creeks located near the Project area include Thacker Creek, Pole Creek, Rock Creek, and Crowley Creek. Thacker Creek is a perennial stream fed by springs. It is the stream nearest the proposed Project area. Pole Creek and Rock Creek are intermittent streams whose headwaters are in the Montana Mountains. These streams ultimately discharge to Crowley Creek when flow is present. Pole Creek has discontinuous flow with reaches that are perennial and seasonally dry (intermittent) during portions of the year. The lower reach of Crowley Creek, below the confluence with Rock Creek, is intermittent, experiencing dry conditions during summer months, while the upper reach is perennial.

In April 2018, surface water monitoring stations were established in Crowley Creek, Upper Thacker Creek, and Lower Thacker Creek to assess baseline flow conditions, evapotranspiration (ET) consumption, and to monitor stream responses to storm events. Key findings from one year of stream flow monitoring include the following:

- Discharge varies seasonally in Crowley Creek, peaking in March to April (> 30 m^3/min [>8,000 gpm]) and tapering off during summer months. Dry conditions were observed at the monitoring station from July through November 2018, corresponding to peak ET consumption.

- Flow in Upper Thacker Creek peaked in spring months (0.8 m^3/min [220 gpm]) and tapered off during summer months (less than 0.02 m^3/min [<5 gpm]). Flow in upper Thacker Creek is perennial due to groundwater baseflow, which gains as the creek flows downstream.
- Flow at Lower Thacker Creek is also perennial, with smaller seasonal variation than observed at the Upper Thacker monitoring station. Springtime flows are approximately 1 m^3/min (270 gpm) to 1.2 m^3/min (330 gpm) during March and April with baseflow rates estimated to be 0.9 m^3/min (234 gpm).

Additional details are available in the Thacker Pass Project Baseline Hydrological Data Collection Report (Piteau, 2019a). More recent data obtained in 2023 are also available (Piteau, 2024). The Thacker Pass Project Baseline Hydrological Data Collection Report will need to be updated in association with the supplemental EIS process.

20.6.4.5 Waters of the US

Redhorse Corporation performed a formal Waters of the U.S. Delineation (including wetlands delineation) within a 18,686-acre study area (Redhorse, 2018). On February 8, 2019, the U.S. Army Corps of Engineers (ACOE) Sacramento District concurred with the findings of the 2018 Redhorse Corporation delineation report (ACOE, 2019). Specifically, the ACOE determined that aquatic resources within the survey area are isolated and have no apparent interstate or foreign commerce connection. Hence, they are not designated as Waters of the United States and are not within the jurisdiction of the ACOE (SPK-2011-01263). The ACOE aquatic resources determination must be reverified every five years. On November 15, 2023, an Aquatic Resource Reverification Report was submitted to the ACOE Sacramento District, requesting an approved jurisdictional determination (AJD) for aquatic resources for the Thacker Pass Project. Approval is pending, but LAC expects the outcome of the determination to be the same as the determination that was received in 2019.

20.6.4.6 Water Balance

A groundwater flow model was developed in MODFLOW-USG finite difference numerical code and simulates saturated/unsaturated groundwater flow in bedrock and alluvial hydrostratigraphic units. The model domain is centered on Thacker Pass and extends into portions of the alluvial basins in Kings River and Quinn River. The groundwater model was calibrated to water level measurements, pumping tests, groundwater discharge measurements from springs and surface water flow, and water balance estimates for the Quinn River and Kings River basins. Model predictive runs were designed to estimate the potential for water quantity impacts within the study area that would result from the proposed Project.

A forward-looking water quantity impacts analysis was performed based on pumping 2,605 acre-feet (3.2 million m^3) annually (for Phase I) and 5,210 acre-feet (6.4 million m^3) annually (for Phase 2) from the Quinn River Production Wellfield, east of the proposed Project site (Piteau, 2020). Water level drawdown was simulated during mining and for a period of 300 years after mining. Two 10-foot (3 m) isopleth drawdowns are presented (Piteau, 2020) corresponding to pumping from Quinn River Valley and mining at Thacker Pass. A 10-foot drawdown contour was used as the point of reliable impacts prediction.

Considering the approved Plan of Operations, the Phase 2 10-foot (3 m) drawdown isopleths related to Project mining is limited to an approximately 2.5-mile (4 km) radius centered on the South sub-pit, where dewatering is predicted to be greatest (Piteau, 2020). The end of mining drawdown isopleth does not extend to the Thacker Creek spring system, or to the upper reaches of Pole Creek or upper Crowley Creek where Lahontan Cutthroat Trout habitat has been mapped. At the higher Phase 2 production rates, drawdown in the Thacker Pass area extends into the southern portion of the Montana Mountains, potentially affecting several springs and man-made impoundments. Surface water flows are predicted to be minimally impacted, with any changes in groundwater discharge being less than the measurement error. Since the bedrock water table at Thacker Pass is not expected to be impacted until later in the mine life, LAC currently has not sought a water right associated with pit-dewatering but would need to consider such an authorization in advance of pit dewatering below the bedrock water table.

Using information provided in the Piteau reports and other sources of information, NDWR prepared a numerical groundwater flow model to estimate impacts from the water rights change applications. NDWR predicted approximately six feet of drawdown at points closest to the Quinn Wells and a 6-foot reduction in drawdown east of the Quinn River. Relatively nearby wells were predicted to have less than six feet of drawdown (about half of LAC's prediction), which the State concluded was reasonable as sufficient head exists in those wells to continue to serve existing water rights. After mine closure the water rights would likely be retired, which over time would result in a net positive recovery of water levels in Quinn River.

The groundwater flow model would need to be updated to incorporate future phases of mining and the expanded pit. Supplemental water quantity impacts analyses would be performed based on pumping for all future phases, 2,850 acre-feet (3.5 million m^3) annually (for Phase I) 5,700 acre-feet (7 million m^3) annually (for Phase 2), 8,550 acre-feet (10.5 million m^3) annually (for Phase 3), and 15,250 acre-feet (18.7 million m^3) annually (for Phase 4 and 5) from the Production Wells. 10-foot (3 m) isopleth drawdowns will need to be modeled to predict impacts and impacts would be analyzed through the supplemental NEPA process.

20.6.4.7 Monitoring and Mitigation Plan

A mitigation plan was initially prepared as part of BLM approved operations which addresses possible conflicts with regards to adjacent water rights and stakeholders. The mitigation plan incorporates monitoring and provides mitigation for stock water supply and feed. The mitigation plan will need to be updated to incorporate any potential impacts related to additional groundwater pumping and pit expansion from Phases 3-5 of the Project.

Under direction from the ROD, LAC will monitor groundwater sources and will maintain water quality and quantity for wildlife, livestock, and human consumption to the State of Nevada standards. LAC will regularly monitor groundwater levels in designated wells as part of the Water Pollution Control Permit (WPCP) requirements and LAC's proposed monitoring and mitigation plan. LAC will routinely update the groundwater model using the collected monitoring data as part of the ROD and WPCP requirements. The BLM recommends continued monitoring in conjunction with the mine's WPCP, and may require additional monitoring of seeps, springs, and non-mining wells outside the groundwater model boundary, if necessary. If monitoring finds that the Project results in drawdown to seeps and springs within the Project boundary, the BLM will require LAC to develop alternative sources of water for wildlife and livestock use.

As data are collected from the field, LAC will update the groundwater model with firsthand information on a schedule not to exceed five (5) years from the previous modelling. The groundwater model will also need to be updated to include Phases 3-5 of the project, with increased groundwater pumping and an expanded pit. If such updated models continue to support the assumption that the backfilled pits would exhibit flow-through at low rates with some quality degradation, LAC will adopt appropriate mitigation early, prior to mining below the bedrock water table, to minimize or eliminate the risk of groundwater impairment through strategies determined with BLM and NDEP concurrence.

LAC will monitor the proposed activity to identify or prevent impacts according to the operating plans and permits submitted with the Mine PoO and the WPCP.

20.6.4.8 Geochemical Characterization

The Project will generate waste rock, coarse gangue, and mineral clay tailings material from the beneficiation of ore. BLM Instruction Memorandum NV-2013-046, Nevada Bureau of Land Management Rock Characterization Resources and Water Analysis Guidance for Mining Activities (BLM, September 19, 2013) outlines the rock and water resources data information that needs to be collected under 43 CFR 3809.401(b)(2) and 3809.401(c)(1) for mine PoO. Additional guidance on mine waste characterization was issued by the NDEP-BMRR on March 22, 2019, pursuant to the WPCP program and associated NAC 445A regulations. LAC's investigation of the potential for development of Acid Rock Drainage and Metal Leaching

(ARDML) from waste rock, ore, gangue, and tailings associated with the Project was pursued in accordance with these guidelines.

SRK Consulting (U.S.), Inc. ('SRK') has completed a characterization program to establish baseline geochemical conditions prior to the start of proposed mining operations. Geochemical testing of mine waste materials provides a basis for assessment of the potential for ARDML, prediction of contact water quality (i.e., surface water and groundwater that contacts waste rock, ore, gangue, pit walls, or tailings), and evaluation of options for design, construction, and closure of the mine facilities.

The results of the geochemistry testing is summarized in the Baseline Geochemical Characterization Report for the Thacker Pass Project (SRK, 2020). The study describes the composition of waste rock, ore, gangue and tailings and potential impacts of material weathering in the Project study area. Following submittal of the December 2020 baseline geochemistry report, SRK conducted a characterization program on tailings material from the modified process flow sheet pursuant to the WPCP NEV2020104 requirement for ongoing evaluation of tailings neutralization (Part I.N.3). Adding a neutralizing agent before filtration produces a final pH tailings waste stream that is circum-neutral with low metal release. The results from this tailings characterization program were provided in the Neutral Tailings Geochemical Characterization Report (SRK, 2023).

The characterization study performed by SRK involved the collection and analysis of a combined total of 290 samples representative of waste rock, ore, gangue, and tailings for static geochemical testing. In addition, 14 representative waste rock/ore samples, 4 gangue samples, and 5 tailings samples were submitted for kinetic humidity cell testing. The results demonstrate that the waste rock and ore will be net neutralizing with a low potential for acid generation and metal leaching. Although the excess of neutralizing capacity means that net acid conditions are unlikely to develop, there is still a potential for the waste rock and ore to leach some constituents of concern under neutral to neutral to alkaline conditions, in particular antimony and arsenic.

As with the waste rock and ore, the gangue material has a low potential for acid generation and metal leaching. Under the neutral to alkaline conditions, the gangue material has a potential to leach aluminum, arsenic and antimony. There are differences in some of the leachable constituent concentrations for the gangue material compared to the ore feed material, including increased concentrations of aluminum, arsenic, antimony, iron, and manganese. This is presumably a result of the breakdown of mineral grains during the wet attrition process and the enrichment of these constituents in the coarse gangue fraction. Conversely, calcium, chloride, sodium, sulfate, and total dissolved solids (TDS) concentrations are lower in the coarse gangue material compared to the ore feed material, indicating these constituents are rinsed from the ore material during the attrition process.

For the tailings characterization, static and kinetic testing was completed for samples of neutralized filter cake, one sample representative of magnesium sulfate salts, one sample representative of sodium/potassium salts from the modified lithium extraction process. These samples were generated at the LAC research and development facility and are representative of process materials that will be generated from the current process flow sheet. To simulate the product of co-mingling the various waste streams in the tailings impoundment, a "blended tailings" sample was also included in the characterization program. The tailings samples from the modified process contain little to no sulfides and static test results confirm that that the modified process effectively eliminates acid generation from this material. Based on leach test results, several constituents were leached from the tailings material at concentrations above Profile I NRVs under the neutral pH conditions. LAC is planning on incorporating CCD thickeners before filtration that will result in more efficient rinsing of the material and improve lithium extraction. This additional step with more efficient rinsing will produce material with a lower potential for metal release than those samples included in the characterization program. Therefore, the leach test results for the tailings samples are considered conservative. The results from modified process are provided in the Neutral Tailings Geochemical Characterization Report (SRK, 2024).

Due to the potential to leach some constituents above Profile I NRVs, the tailings facility will be constructed as a zero-discharge facility, stored on lined containment and covered with waste rock/growth media at closure. In addition, because the tailings facility will store filtered tailings, the facility does not store water on the surface of the tailings during operations.

20.6.5 Air Quality

Air Sciences has prepared an air quality impact analysis report and greenhouse gas emissions and downstream emissions reduction report based on the PoO final process design (Air Sciences, 2019a; Air Sciences, 2019b), which includes Phase 1 and Phase 2 of the Project. The air quality analysis quantified and evaluated the impacts on ambient air quality resulting from the Project. The modeled maximum concentrations and the estimated total ambient concentrations (modeled concentrations plus background concentrations) were compared with the applicable National Ambient Air Quality Standards (NAAQS)and Nevada Ambient Air Quality Standards (NvAAQS). The modeling performed determined the estimated maximum total ambient concentrations for all the pollutants and averaging periods are below the applicable NAAQS and NvAAQS. Additionally, Air Sciences completed an odor analysis (Air Sciences, 2020) for the proposed Project based on results from air dispersion modeling completed for the quality impact analysis report (Air Sciences, 2019a). Sulfur dioxide (SO_2) and hydrogen sulfide (H_2S) emissions were analyzed for their potential to produce odors outside of the proposed Project boundary. Modeling results show that both SO_2 and H_2S concentrations are below their odor thresholds outside of the proposed Project boundary meaning that no detectable odor from the Project is expected.

An updated air quality impact analysis report and greenhouse gas emissions and downstream emissions reduction report will need to be prepared in association with the supplemental EIS process for the proposed expansions. The air quality analysis will need to quantify and evaluate the impacts on ambient air quality resulting from current and future phases of the Project. The modeled maximum concentrations and estimated total ambient concentrations must remain below the applicable NAAQS and NvAAQS for all the pollutants and averaging periods. If modeling shows that maximum total ambient concentrations for any pollutant is above applicable NAAQS or NvAAQS, additional control measures, process changes, or throughput reduction will be required on emission units. Potential odor impacts from SO_2 and H_2S should also be re-analyzed to include future phases of the Project. If modeling results show that SO_2 or H_2S concentrations are above their odor thresholds outside of the proposed Project boundary, additional control measures should be placed on SO_2 and H_2S emission units to mitigate any potential odor.

20.7 Waste Rock, Gangue, and Tailings Facility Management

The management and site monitoring of waste rock, coarse gangue, and tailings storage facilities, during operations and closure are key issues for any mine and ore processing operation located in the State of Nevada. BLM requires that mining and processing operations on public lands prevent unnecessary or undue degradation of the land. State requirements mandate that mine, ore processing, and fluid management system operations do not degrade waters of the State.

20.7.1 Waste Rock and Gangue Storage and Management

Waste rock from the open pit may be used as fill for Project infrastructure, managed through the construction of a surface WRSF, and backfilled in the pit. Coarse gangue will be stored in the CGS facility or backfilled in the pit. The footprints of both the West and East WRSF will be lined with 0.3 m (1 ft) of compacted low hydraulic conductivity soil layer (LHCSL) overlain by a cover layer. An underdrain collection system is designed in the major natural drainages to promote drainage to each respective single-lined sediment pond. Runoff collected in the ponds will be pumped for use in the process circuit.

The footprint of the ROM Stockpiles will have a 0.3 m (1 ft) thick compacted LHCSL base layer overlain by 0.6 m (2 ft) of overliner which the ore material will be stacked on. Phase 1 and Phase 2 will share a ROM stockpile as will Phase 3 and Phase 4. The fifth expansion phase (Phase 5) will have its own stockpile. The footprint of the coarse gangue stockpile will be lined with 0.3 m (1 ft) of compacted LHCSL overlain by a cover layer. An underdrain collection system is designed in the major natural drainages to promote drainage to a single-lined sediment pond. Runoff collected in the pond will be pumped for use in the process circuit.

A detailed Waste Rock and Gangue Management Plan has been prepared for Phase 1 and Phase 2 of the Project (SRK, 2024). The Waste Rock and Gangue Management Plan will need to be updated for future phases of the Project.

20.7.2 Tailings Storage and Management

Lithium processing will produce tailings composed of neutralized clay, magnesium sulfate salt, and sodium/potassium sulfate salts. These products are collectively referred to as clay tailings. The clay tailings will be placed in CTFS areas, which will be geomembrane-lined zero-discharge storage facilities. Two CTFS areas are required to support the volume of clay tailings expected to be produced. CTFS 1 will be located east of the Phase 1 and Phase 2 process plant and CTFS 2 will be located east of the Phase 3, 4, and 5 process plants. Conveyors will be used to transport the tailings material from the process plants to stockpiles and then loaded on trucks for deposition in the respective CTFS areas. From each plant, one conveyor will transport the clay tailings material and a second conveyor will transport the magnesium sulfate salt and the sodium/potassium sulfate salts. The area below the conveyors will be lined with 2-mm (80-mil) high density polyethylene (HDPE) geomembrane for secondary containment. From the temporary stockpiles at the conveyor endpoints, material will be transported with haulage trucks or other similar equipment, placed in lifts and scarified (if required) to increase the surface area of material that is exposed to sun and wind to accelerate the drying process. Once the target moisture range is achieved, the tailings will be compacted. Tailings material will be stored on lined containment and covered with waste rock/growth media at closure.

20.7.3 Stormwater Management

Stormwater infrastructure at the Project is designed to protect water quality and mitigate erosion potential and sediment transport onsite. Stormwater events will be managed per NDEP-BMRR design standards. A Stormwater Pollution Prevention Plan was submitted with the PoO as well as the WPCP application. At closure, all facilities will have a soil cover placed on the surfaces and be vegetated to reduce infiltration and erosion potential. Stormwater management at the Thacker Pass Mine site is described in the following Sections.

20.7.3.1 Waste Rock Storage Facility

The WRSFs will be lined with one-foot of compacted LHCSL overlain by a 0.6 m (2 ft) thick cover layer designed to promote drainage to single-lined sediment ponds. The ponds are sized to hold the 100-year, 24-hour storm event. Runoff collected in the ponds will be pumped for use in the process circuit.

20.7.3.2 Mine Facilities

Stormwater management for the Mine Facility will include channels designed to convey the 100-year, 24-hour design storm. LAC will construct unlined sediment ponds to improve water quality of runoff coming from the Mine Facilities Area. Diversion channels and berms will be constructed to capture runoff from the area and direct the flow to sediment ponds to allow sediments to settle. At a minimum, unlined ponds in the Mine Facilities area will be sized to contain a 2-year, 24-hour storm event. The geomembrane lined pond (Mine Facilities Pond # 2) will be sized to contain a 100-year, 24-hour storm event. Water will be pumped to the process circuit from the lined pond or released to natural drainages for the unlined ponds.

20.7.3.3 ROM Stockpile, Attrition Scrubbing

Stormwater management for the facility will include channels designed to convey the 100-year, 24-hour design storm. The ROM stockpile will have a 0.3 m (1 ft) thick compacted LHCSL overlain by 0.6 m (2 ft) of cover material which the ore material will be stacked on. Runoff from the ROM stockpile and the Attrition

Scrubbing Area will drain to a single-lined pond (Mine Facilities Pond 2). The pond will be sized to hold a 100-year, 24-hour storm event plus sediment storage. Water from this pond will be pumped for use in the process circuit.

20.7.3.4 Coarse Gangue Stockpile

The CGS will be lined with one foot of compacted LHCSL overlain by cover material to prevent the LHCSL from drying out or cracking. Runoff from the CGS will drain into a single-lined sediment pond. The CGS pond will be sized to hold a 100-year, 24-hour storm event, plus sediment storage. Runoff collected in the pond will be pumped for use in the process circuit. The road around the CGS serves as a stormwater diversion berm and is designed to convey the 100-year, 24-hour storm flows. Riprap will be used as required for erosion control.

20.7.3.5 Clay Tailings Filter Stack

Diversion channels sized to convey the 100-year, 24-hour storm will be constructed to manage non-contact stormwater around the perimeter of the CTFSs. For CTFS 1, most of the stormwater runoff will be intercepted by the West CTFS diversion channel where it will be directed to the natural drainage to the south. The remaining stormwater will be intercepted and routed along the east side of CTFS 1. For CTFS 2 most of the stormwater will be diverted from the south side to the east side.

Stormwater runoff within the CTFSs (contact water) will be collected and conveyed to one or more of the double-lined Reclaim Ponds. Water in the Reclaim Ponds will be pumped to the Process Plants to be used as make-up water for processing operations or will evaporate. The Reclaim Ponds are designed to hold runoff from the 100-year, 24-hour storm plus operating inventory, sediment storage and three feet of freeboard.

20.7.3.6 Process Plant

Stormwater around the Process Plant Area will be captured and conveyed using channels, pipes, berms, ditches other BMP’s. Diverted stormwater which contains runoff from disturbed areas will be directed to either a sediment pond(s) or the CTFS West Diversion Channel. Stormwater runoff that is contact water (poor quality) will be captured and routed to the HDPE lined Plant Event Pond where it can be stored until it can be treated or reintroduced into the plant system. The haul road to the north of the Process Plant diverts most of stormwater runoff from undisturbed areas upstream to natural drainages around the site. Rip rap will be employed as required to prevent erosion.

Tanks and buildings in the Process Plant with process solutions will have secondary containment structures that are sized for 110 percent of the largest tank or vessel in the area plus precipitation from a 100-year, 24-hour storm event, as applicable.

Two conveyor crossings from each process plant to the CTFS will have secondary containment where required in the form of conveyor pans beneath the conveyor systems and/or the 2 mm (80-mil) HDPE liner within the CTFS draining to a contained area.

20.7.4 Post-Closure Monitoring

The primary goal of conducting post-mining monitoring will be to demonstrate that the Project site does not degrade groundwater and surface water in the Project area. Consequently, groundwater, surface water and erosion and revegetation monitoring will continue for at least five years after cessation of mining, processing, and closure operations.

20.7.5 Site Monitoring

All Federal, State, and County agencies will require monitoring of the mine, ore processing operations, and the fluid management system to ensure compliance with the Project permits. BLM monitoring requirements were issued as part of the ROD under its Surface Management Regulations contained in 43 CFR 3809. NDEP-BMRR monitoring requirements are included in the WPCP issued for the Project in accordance with the regulations contained in NAC 445A.350 through NAC 445A.447.

20.8 Social or Community Impacts

During operations, it is expected that most employees will be sourced from the surrounding area, which already has established social and community infrastructure including housing, retail and commercial facilities such as stores and restaurants; and public service infrastructure including schools, medical and public safety departments and fire and police/sheriff departments.

Based on the projected mine life, the number of potential hourly and salaried positions, and the projected salary ranges, Project operations would have a long-term positive impact to direct, indirect, and induced local and regional economics. Phase 1 full production will require approximately 350 direct employees to support the Project, with the average annual salary estimated at $100,000. The life of mine average overall head count to directly support mining and processing operations is 1,100 full time employees. An additional and positive economic benefit is the creation of short-term positions for construction activities. It is estimated that approximately 2,000 temporary construction jobs will be created to support Phase 1 construction including approximately 1,800 skilled contractors. Additional jobs will be created through ancillary and support services, such as transportation, maintenance, and supplies.

The economic study titled: Social, Economic and Fiscal Impact for New Lithium Operations in Humboldt County, Nevada; prepared by the University of Nevada, Reno; University Center for Economic Development (Borden & Harris, 2023), showed that both lithium mine and processing plant operations have positive economic and fiscal contributions to Humboldt County and the State of Nevada through increased economic activity, employment, household incomes and tax receipts. This study forecasted average annual indirect and induced jobs during construction in the State of Nevada for Phases 1 and 2 to be 1,502 and 579 respectively (average employment multiplier is 7.09). Forecasted average annual indirect and induced jobs during operations in the State of Nevada are 588 and 205 respectively (average employment multiplier is 3.16).

The Fort McDermitt Paiute and Shoshone Tribe is located approximately 56 km (35 miles) from the Thacker Pass Project site. A community benefits agreement was signed by LAC and the Fort McDermitt Paiute and Shoshone tribe in October 2022. The benefits agreement will provide infrastructure development, training and employment opportunities, support for cultural education and preservation, and synergistic business and contracting opportunities. Over the past three years, LAC has organized several training events for Tribe members, including basic construction skills, heavy equipment operator training and specialized cultural monitor training for archeological work. In addition, when LAC begins construction of the Project, LAC has committed to construct a community center that includes a daycare, preschool, cultural facility and playground, as well as a separate greenhouse to provide food crops and revenue from seeds/seedlings for reclamation projects. Numerous Native Americans have been employed by construction contractors since 2023 to assist with clearing and excavation of the Project site.

For over 10 years LAC has met regularly with the community of Orovada, which is 19 km (12 miles) from the Thacker Pass Project site and is the closest community to the Project. The purpose of the meetings was to educate the community about LAC’s plans, identify community concerns and develop ways to address them. The meetings began informally and were open to the entire community. Eventually, the community formed a committee to work with LAC. A facilitator was hired to manage a process that focused on priority concerns and resolution. The committee and LAC have addressed issues such as the local K-8 school and determined that a new school should be built in Orovada. The community has agreed to a new location and LAC has worked with the BLM to secure the site and permit the school for the Humboldt County

School District. LAC has also completed a preliminary design for the school and is moving forward with detailed engineering, planning and construction.

The construction Temporary Housing summarized in Section 21 will house nearly 2,000 non-local construction workers for the construction of Phase 1 and future phased expansions. This housing is designed to alleviate impacts on the local community and not overburden local restaurants, grocery stores, fitness centers, etc.

20.9 Mine Reclamation and Closure

Reclamation and closure of the mine, ore processing, and transportation operations will be completed in accordance with the approved PoO and Reclamation Plan, and the Tentative Plan for Permanent Closure as approved by NDEP-BMRR. On February 25, 2022, NDEP-BMRR Reclamation Branch issued an initial Reclamation Permit (Permit 0415), which permitted disturbance for Phase 1 of the Project. On February 16, 2023, NDEP-BMRR issued a modified Reclamation Permit (Permit 0415), which included earthworks construction only. LAC is currently bonded to complete earthworks construction under the existing Statewide Bond, BLM Bond Number NVB002804. A modified Phase 1 Reclamation Plan is currently being reviewed by NDEP-BMRR and a modified Reclamation Permit, to include Phase 1 of the Project, is expected to be issued Q4 2024. LAC will post the associated Phase 1 bond upon issuance of the modified Reclamation Permit under existing Statewide Bond, BLM Bond Number NVB002804.

The PoO and Reclamation Plan, and the Tentative Plan for Permanent Closure will need to be updated to include all five phases of the Project. The updated plans will need to be reviewed and approved by BLM and NDEP-BMRR and the associated reclamation bond will need to be posted before future phases of the project begin.

Reclamation and closure plans are required to be updated on a regular basis, in consultation with BLM and NDEP-BMRR, to ensure compliance with the following requirements:

- The latest Federal and State regulatory requirements for reclamation and closure as contained in 43 CFR 3809; NAC 519A; and NAC 445A.350 through NAC 445A.447;
- The latest and appropriate reclamation and closure technologies and procedures; and
- Ensuring that the posted reclamation bond remains sufficient to reclaim and close the mine site and fund post closure monitoring activities.

The post-mining land use requirements will require the establishment of a sagebrush vegetation community to restore the area to the pre-mining land uses of wildlife habitat, livestock grazing, and dispersed recreation.

Project facilities will be reclaimed using standard reclamation techniques and procedures as summarized in the following list:

- During construction activities, suitable and available growth media material will be stripped from sites scheduled for surface disturbance and stockpiled for future reclamation activities.
- LN will conduct concurrent reclamation of sites no longer required for mine and ore processing operation activities.
- Buildings and other structural facilities including power lines and substations will be dismantled and removed off site to appropriate storage or disposal facilities.
- Process plant components will be removed off site and transported to approved storage or disposal facilities.
- Concrete foundations will be broken up and buried on site or removed off site to an approved disposal area.
- The CTFS reclaim ponds will either be reclaimed or converted into an ET-Cells. If a CTFS pond is reclaimed, it will be reclaimed by removing any evaporated solids (if present) and disposing as determined by characterization results. The pond will be backfilled to a sufficient elevation above

the original ground surface, then graded to promote drainage and revegetated with an approved reclamation seed mix. If a reclaim pond is converted to an ET-Cell, the evaporation zone will evaporate water during periods of the year that evaporation exceed precipitation and an underlying storage zone will store water when the inflow exceeds the evaporative loss rate. The storage zone will consist of a sand-and-gravel material, possibly coarse gangue, and the evaporation zone will consist of a 0.3 m (1 ft) thick layer of growth media.

- The CTFS slopes will be capped with granular cover material and overlain by stockpiled growth media and revegetated with an approved reclamation seed mix.
- As the open pit is advanced to the WRSF and CGS areas, these materials will be excavated and placed in the open pit as backfill. The slopes of any materials remaining on surface will be graded as needed, capped with stockpiled growth media, and revegetated with the approved reclamation seed mix.
- The open pit will be left in a substantially backfilled configuration. The final internal backfilled pit slopes will be designed for long-term stability.
- Roads not needed for long term monitoring access will be regraded and revegetated using the approved reclamation seed mix.
- A portion of the surface water diversion ditches will be constructed as permanent features and will remain in place to divert surface water flows around the reclaimed mine site area. In accordance with NAC445A, permanent stormwater diversions will be designed and constructed to safely pass the 500-year, 24-hour design storm event.

BLM and NDEP-BMRR have initiated a long-term trust fund program for mining properties as part of the Federal and State permitting program to provide for the funding of long-term water management and related compliance obligations for site maintenance and monitoring activities following the completion of final reclamation and closure activities. If determined to be applicable, the financial method for securing and placement of the trust fund, the trust fund cost and the fund's duration are determined based on the characteristics of the Project. Consultation with BLM and NDEP-BMRR during the permitting and renewal processes would determine the necessity of a long-term trust fund program. Due to the environmental setting and proposed water management approach for the Project, it is unlikely a long-term trust fund will be required. Estimated reclamation costs are adequately described as part of sustaining capital costs in Section 21.2.

21 CAPITAL AND OPERATING COSTS

21.1 Capital Cost Estimate

21.1.1 Summary

The capital cost estimate for the Thacker Pass Project has been prepared by Bechtel, Sawtooth, EXP, NewFields and LAC to include capital cost estimating data in accordance with the scope of the Project. The capital cost estimate covers post-sanction early works, mine development, mining, the process plant, the transload facility, commissioning and all associated infrastructure required to allow for successful construction and operations.

Process, mining, sulfuric acid plant, and infrastructure capital costs are based on Q2 2024 pricing. The estimate has been prepared to a target accuracy of ±15% as per Association for the Advancement of Cost Engineering (AACE) International's Class 3 estimate. Closure costs were estimated to a scoping level by NewFields. Note that the tables in this section were rounded to a limited number of significant figures and therefore some summation errors may be present.

The cost estimates presented in this section pertain to three categories of capital costs:

- Phase 1, 2, 3, 4, 5 Development capital costs
- Phase 1, 2, 3, 4, 5 Sustaining capital costs
- Closure capital costs

Development capital costs include the engineering, procurement, and construction management (EPCM) estimate as well as the LAC estimate for the Project costs. Sustaining capital costs for the Thacker Pass Project have been estimated and are primarily for continued development of the clay tailings filter stack and coarse gangue stockpile, mining activities, sulfuric acid plant, mining equipment and activities, and plant and infrastructure sustaining capital expenditures.

Development capital costs for each Phase commence with detailed engineering and project sanction by the owner and continue to construction and through mechanical completion and commissioning. Mining pre-production costs have been capitalized and are included under development capital. The capital costs for years after commencement of production are carried as sustaining capital. Pre-sanction costs from completion of this Technical Report to project sanction, including environmental impact assessments, permit approvals and other property costs are excluded from this report and these costs are not included in the development capital.

Direct costs include the costs of all equipment and materials and the associated contractors required to perform installation and construction. The contractor indirects are included in the direct cost estimate as a percent of direct labor cost. EPCM / Project indirects were detailed out in a resource plan to account for all identified costs, then budgeted as a percent of construction and equipment to be distributed through the process areas. In general, these costs include:

- Installation contractor's mobilization, camp, bussing, meals, and temporary facilities & power
- EPCM
- Commissioning and Vendors
- Contingency

Contract mining capital repayment includes the 60-month financed repayment of the miner's mobile equipment assets acquired prior to the start of operation.

Table 21-1 summarizes the development capital cost estimate for each phase and the life of mine. Mining capital development costs support the development of the initial mine with future costs captured as sustaining capital. A 15% contingency is applied to the total value and carried within the Total Development Capital values.

Table 21-1 Development Capital Cost Estimate Summary

Description	Ph1 Costs (US$ M)	Ph2 Costs (US$ M)	Ph3 Costs (US$ M)	Ph4/5 Costs (US$ M)	Additional LOM (US$ M)	Total Life of Mine (US$ M)	Responsible
Mine							
Infrastructure	86	0	0	0	0	86	Sawtooth/ SGS
Facilities	2	0	0	0	0	2	Sawtooth/ NewFields
Process Plant and Infrastructure							
Process and Acid Plants	2,842	2,326	2,754	4,074	0	11,995	Bechtel, EXP, LAC
Infrastructure Relocation	0	2	0	0	114	116	LAC/SGS/ NewFields
Rail to Project	0	0	0	241	0	241	CRS
TOTAL DEVELOPMENT CAPITAL	**2,930**	**2,328**	**2,754**	**4,315**	**114**	**12,441**	
Overall Contingency	15%	15%	15%	15%	15%	15%	LAC/ Bechtel
Included Contingency Value	440	349	413	647	17	1,866	LAC/ Bechtel

Due to rounding, some totals may not correspond with the sum of the separate figures.

Sustaining Capital costs for the base case totaling US$6,921 million have been estimated over the Life of Mine (LOM).

Table 21-2 Sustaining Capital Estimate Summary (85-Year LOM – Base Case)

Sustaining Capital (85 Year)		
Description	***LOM Costs (US$ M)**	**Responsible**
Mine		
Equipment Capital	3,100	Sawtooth
Supplies	169	Sawtooth
Pit Development	27	Sawtooth
Infrastructure	76	Sawtooth/SGS
Facilities	56	Sawtooth/SGS
Limestone Quarry	17	Sawtooth
Mobile Equipment		
Plant Equipment Capital	93	LAC
Process Plant and Infrastructure		
Process Plant	763	LAC
Sulfuric Acid Plant	1,759	EXP
Storage Facilities	603	Newfield's, Sawtooth
3rd Party Capital Repayment**	259	LAC
Total	6,921	

* Phase 2/3/4/5 capital costs are not included in sustaining costs
**3rd Party capital recovery includes transload, mining, and limestone quarry repayments

The yearly summarized spend schedule, including sustaining and closure capital, is provided in Table 21-3.

Table 21-3 Capital Cost Spend Schedule

Operation Year	< -3	-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	85+	Total
Sustaining Capital (US$M)																																			
Mining, Equipment & Infrastructure					11	7	0	21	19	82	4	1	14	5	135	14	21	7	6	96	192	301	186	270	184	271	406	264	185	340	150	133	121		3,445
Plant Mobile Equipment					0	0	0	0	0	4	0	0	0	0	0	6	0	0	0	9	9	9	1	9	9	9	9	9	1	9	1	1	1		93
Plant & Infrastructure					0	4	4	4	4	5	5	5	5	7	7	7	7	10	10	48	48	48	48	48	48	48	48	48	48	48	48	48	48		763
Sulfuric Acid Plants					0	0	6	0	0	7	6	3	8	7	3	5	8	6	14	50	70	117	114	133	162	136	127	147	125	93	156	110	146		1,759
Storage Facilities					8	13	6	14	9	9	5	2	45	0	0	0	0	55	0	53	32	42	31	24	54	40	36	45	43	36	0	0	0		603
Capital Recovery					33	32	32	30	29	22	21	20	19	19	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		259
Development Capital (US$ M)																																			
Mine and Storage Facilities 1 only)	16	21	28	22																															88
Phase 1 Process and Acid Plant	218	1,092	1,026	505																															2,842
Phase 2 Process and Acid Plant						46	744	929	606																										2,326
Phase 3 Process and Acid Plant										115	938	1,042	658																						2,754
Phase 4 Process and Acid Plant														89	761	850	537																		2,237
Phase 5 Process and Acid Plant														73	625	698	441																		1,837
Infrastructure Relocation								2																114											116
Rail to Project														60	121	60																			241
Closure Costs (US$ M)																																			
Closure																																		462	462
Annual Capital Expenditure (US$ M)	234	1,113	1,055	527	53	102	793	1,001	667	244	979	1,074	751	261	1,653	1,640	1,014	78	29	257	351	517	381	599	457	504	625	513	403	526	355	292	316	462	19,824

Note: Due to rounding, some totals in this table may not correspond with the sum of the separate figures.

21.1.2 Estimate Basis

21.1.2.1 Scope of Estimate

The total installed cost estimates for the 5 Phases of the Project, including the mine and limestone areas are summarized in Table 21-2.

The Project schedule used as the basis of the estimate assumes site construction starting in early 2023. Production is expected to begin 5 years later in 2027 as Period 1.

Capital costs are based on Q1-Q4 2024 pricing including process equipment, labor, materials and other costs.

Table 21-4 defines the functional and process areas that are contained in each of the identified estimate sections.

Table 21-4 Work Breakdown Structure and Associated Responsibilities

Process Area		Process Systems	Engineering Lead
1	Mine Area Infrastructure	Mine Site	Sawtooth
		Mine Shops	Sawtooth, SGS
		Waste Stockpiles	Sawtooth, NewFields
		ROM Handling	Sawtooth
		Waste Rock	Sawtooth, NewFields
		Limestone mining/crushing	Sawtooth
2	Site Development and Facilities	Roads and Parking Areas	Bechtel
		Buried Utilities	Bechtel
		Site Development, Drainage and Collection	NewFields, Bechtel
		Temporary Facilities	Bechtel
		Fuel Systems	Bechtel
		Sewage Treatment	Bechtel
		Ancillary Facilities	Bechtel
		Site Security Building (905-BG-001)	Bechtel
		Administration Buildings (910-BG-001)	Bechtel
		Plant Warehouse Building (915-BG-001)	Bechtel
		Plant Maintenance Building (920-BG-001)	Bechtel
		Packaging Warehouse Building (925-BG-001)	Bechtel
		Plant Laboratory Building (930-BG-001)	Bechtel
		Operations Control	Bechtel
		Heavy Equipment Wash Station	Bechtel
3	Sulfuric Acid Plant Area	Sulfuric Acid Plant	EXP
		Liquid Sulfur	EXP
		Sulfuric Acid Plant Gas and Strong Acid	EXP
		Tail Gas Treatment	EXP
		BFW and Steam System	EXP
		Maintenance Boiler	EXP
		Cooling Water System	EXP
		Turbine Generator	EXP
		Sulfuric Acid Product	EXP

Process Area		Process Systems	Engineering Lead
		Sulfur Vapor Recovery & Scrubber	EXP
		Caustic Unloading/Storage Tank	EXP
4	Mineral Beneficiation	Mineral Beneficiation	Bechtel
		ROM Crushing	Bechtel
		Attrition Scrubbing	Bechtel
		Classification	Bechtel
5	Leach and Neutralization	Leaching and Neutralization	Bechtel
		Acid Leaching	Bechtel
		Neutralization	Bechtel
		Neutralization Filtration	Bechtel
6	Magnesium / Calcium Removal	Magnesium/Calcium Removal	Bechtel
		Magnesium Sulfate Crystallization	Bechtel
		Magnesium Precipitation	Bechtel
		Magnesium Precipitation Filtration	Bechtel
		Calcium Precipitation	Bechtel
		Cation Removal Ion Exchange	Bechtel
7	Li_2CO_3	Lithium Carbonate	Bechtel
		Lithium Carbonate Crystallization	Bechtel
		Lithium Carbonate Product Handling	Bechtel
		Na/K Sulfate Salts Crystallization (ZLD Plant)	Bechtel
8	Lithium Products	Lithium Products Handling	Bechtel
9	Reagents	Liquid CO_2 Storage and Distribution	Bechtel
		Flocculant (Classification)	Bechtel
		Caustic Soda Distribution (outside Sulfuric Acid Plant)	Bechtel
		Limestone	Bechtel
		Lime	Bechtel
		Soda Ash	Bechtel
10	Utilities	Sitewide Utilities	Bechtel
		Temporary Power	Bechtel
		Substation	Bechtel
		E-Buildings	Bechtel
		Lighting, Grounding, Communications, Security	Bechtel
		M/V O/H Lines	Bechtel
		Fiber Optic & Plant Wide Telecom (incl. Towers)	Bechtel
		Steam Distribution	Bechtel
		Compressed Air	Bechtel
		Water Systems	Bechtel
		Sitewide Utilities Misc Scope	Bechtel
11	Tailings, Coarse Gangue, WRSFs	Tailings, Coarse Gangue and Waste Rock Disposal facilities	Sawtooth, NewFields
12	Other	Rail to Thacker Pass	CRS Engineers
		Powerline Relocation	NewFields
		SR293 Relocation	SGS, NewFields

21.1.2.2 Contingency

Contingency accounts for estimating inaccuracies on the scope as defined by the engineering documents and is not intended to cover the costs of scope additions or additional field labor overtime to achieve schedule compression. The Project will manage and account for Contingency in budget reports. Development Capital assumes an overall contingency of 15%.

21.1.2.3 Exclusions

Exclusions were as follows:

- Final selection of suppliers may impact construction costs. All costs are considered budgetary since not all detailed technical specifications were prepared and some competitive quotes were not yet obtained.
- Components of the estimate do not include cost impact of potential vendor or contractor performance or process guarantees, liquidated damages or specialty insurances.
- Construction costs include the costs of construction equipment and contractor support activities that include materials off-loading, storage, handling, preparation, etc.
- Based on expected system operating requirements, the basis of design and cost estimate accounted for a steady-state electrical load only.
- Travel time for craft personnel from the man camp to the job site is not included in the cost estimate. The costs of buses and fuel are included in the cost estimate.
- The basis of design and the cost estimate do not include field disconnects and field start/stops.
- Allowance for weather delays is included in the estimate as a 5% weather allowance on labor but not included for schedule. Construction during wintertime has the potential to lower productivity and to cause delays due to inclement weather.
- The estimate does not include the cost of unscheduled downtime.
- The estimate includes factored costs for capital spares included in Owner's cost but excludes a detailed account of capital spares.
- The estimate does not include allowances for escalation of equipment, materials, and labor costs.

21.1.3 Project Schedule

21.1.3.1 Phase 1

Phase 1 Schedule, subject to Final Investment Decision (FID) and Full Notice to Proceed (FNTP) to contractors in Q1 2025. Construction and commissioning are estimated to take three years.

The Project's Key Completion Phases and contractual points are outlined below.

Figure 21-1 Key Completion Phases

Bulk Construction	Sub-System Completion	Precommissioning	Wet Commissioning	Process Commissioning	Operation
AREA, DISCIPLINE & WORK PACKAGE BASED	SUB-SYSTEM BASED	SUB-SYSTEM BASED	OPERABLE SYSTEM BASED	PLANT BASED	
CONSTRUCTION CONTRACTORS			EPCM CONTRACTOR'S PRECOMMISSIONING TEAM	COMPANY OPERATIONS TEAM *(Company Permitting in Place)*	
• Construction completes quality checks as per Construction QC Manual including: - Plant air operational - Instrument air operational - Equipment alignment - Vessel closures - Crane testing - Piping installations complete, hydro-tests - Motor, switchgear and transformer inspection - Instrument calibration - Continuity checks - Megger & Hi-Pot tests - Static conveyor alignment • Complete sub-system Commissioning loops • Identify system Commissioning loops • Identify area interface loops • Complete Commissioning schedule and construction turnover activities • Power distribution cable pulled, tested and terminated	• Commissioning Team works with construction to ensure timely completion of quality Operable-Systems and preparation of as built documentation all components of Operable Systems complete all required QA/QC checks completed • Power distribution cable energized using temp or permanent power, electrical Equipment level set and tested • Piping air/steam blows & lines flushed, connected to Equipment, instruments calibrated and set to initial set points • Equipment cleaned/flushed, grouted, lubricated, aligned, rotation checked from local start-stops, power/control circuits complete, instrumentation installed, calibrated, tested and preset	• Pre-Commissioning of Equipment and Sub-systems (completion of Precommissioning activities) • Motor bump/run-ins; final couplings and alignments; loop checking via DCS and PLC; power and control Equipment is tested and energized; field instrument calibrations and adjustments; verification of interlocks, safety devices and alarms; no load running conveyor alignments; plant air, instrument air and cooling system operational on permanent power and piping distribution Operable Systems; first fills of lubricants • Run individual Equipment from local control and check out operations, mechanical problems, temperature and lubrication Operable Systems • Complete local no load run-in by Sub-system • Sub-system Mechanical Completion walk downs; Preliminary Punch List generated & Safety and Operability punch list items identified & cleared **Mechanical Completion →**	• Commissioning of Operable Systems while Preliminary Punch List items continue to be cleared • Functional checkout locally and through the control system • Operable Systems run on permanent instrument air and water • Tuning of control loops and testing of interlocks • Verification of emergency Operable Systems • Collect initial performance data • Contractor's locks and tags removed; Company's locks and tags applied to Operable Systems and Equipment. • Operable System walk down; agree on Operable System Punch List • Turnover packages; as-built drawings and Vendor reports completed and turned over •Transfer of care, custody and control (TCCC) for the Operable System from the Contractor to the Company **Transfer of CC&C →**	• Initial plant start-up using production materials • Performance and completion of Process Commissioning • Agree on Final Punch List to be closed out • Conduct performance testing for Vendors and other Project participants and collect test data • Contractor completes contract requirements for Practical Completion • Contractor issues Notice of Readiness for Practical Completion • Contractor proceeds to clear punch list items under Company's permitting process **Practical Completion →**	• Operation begins • All documents and other deliverables and all other activities required for Final Completion provided or handed over by the Contractor to the Company • Final punch list closed out **Final Completion →**

21.1.3.2 Future Phases

The strategy to fully monetize the Thacker Pass resources consists of a total of five (5) capital expansions including Phase 1. Phase 2 thru 4 will utilize Phase 1 as base case with any lessons learned or changes in commercial landscape for Phases 2 thru through 4. For Phase 5, which will be executed in parallel with Phase 4, will be based upon an acid plant capacity 3,000 t/d H_2SO_4 and necessary capacity adjustment from beneficiation through. Phase 5 filtrate production will feed surplus crystallization capacity in the other four phases.

Table 21-5 Phase Milestones

<table>
<tr><th>Milestone</th><th>Phase 1</th><th>Phase 2</th><th>Phase 3</th><th>Phase 4</th><th>Phase 5</th></tr>
<tr><td>FEL 3</td><td>2022</td><td>~2028
Post Phase 1
1st Production</td><td>Post Phase 2
1st Production</td><td>Post Phase 3
1st Production</td><td>Post Phase 3
1st Production</td></tr>
<tr><td>Commence Early Works</td><td>1Q 2023</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Release of Initial (Pre-FNTP) Funds</td><td>May-2024</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Final Investment Decision (FID)</td><td>Q1-2025</td><td rowspan="2">37 months</td><td rowspan="2">37 months</td><td rowspan="2">37 months</td><td rowspan="2">36 months</td></tr>
<tr><td>Transfer of Care, Custody & Control (TCCC)</td><td>Q4-2027</td></tr>
<tr><td>First Production</td><td>Q4-2027</td><td>Four yrs. post Phase 1
1st Production</td><td>Four yrs. post Phase 2
1st Production</td><td>Four yrs. post Phase 3
1st Production</td><td>Four yrs. post Phase 3
1st Production</td></tr>
<tr><td>Ramp-up Completion</td><td>Q4-2028</td><td>~ 6 months</td><td>~ 3 months</td><td>~ 3 months</td><td>~ 9 months</td></tr>
<tr><td>Name Plate Capacity (t/y -LCE production)</td><td>40,000</td><td>40,000</td><td>40,000</td><td>40,000</td><td>n/a</td></tr>
</table>

21.1.4 Mine Capital Costs

Mine development costs are estimated to be $88 million for Phase 1 and are summarized in Table 21-1. Mine development costs include initial facilities and infrastructure. After Phase 1 all mining capitalized costs are captured in sustaining capital. This sustaining capital is summarized in Table 21-2.

21.1.4.1 Mine Facilities

- The site chosen for the Mine facilities is part of the process facilities and located to the North of the Process Facility along Nevada State Route 293. The site is located outside of future mining operations and maximizes the ability to support both short and long-term mining operations. Construction of temporary facilities is projected to begin three years before production is expected to start, or year -3. The temporary facilities will be expanded about 6 months before production. Expansion is required to accommodate an increase in manpower for production. These larger temporary facilities will be used until the permanent facilities are built. The construction of the permanent office/shop is projected to occur in year 3 of production. Facilities are listed below:
- Temporary Office (Construction Phase)
- Temporary Shop (Construction Phase)
- Permanent Office/Shop (Phase 1)
- Warehouse (Phase1)
- Outside Warehouse Area (Phase 1)
- Lube System (Phase 1)

- Fuel Farm (Phase 1)
- Equipment Wash (Phase 1)
- Parking Lot (Phase 1)
- Lighting and Fencing (Phase 1)

As the mine expands and equipment size increases, the overall mine facilities will expand to accommodate the equipment count and size and the increase in headcount. See section 18.5.1.4 for discussion and layout of facilities.

21.1.4.2 Infrastructure

An infrastructure of roads, ponds, diversions, and other Mine-related features will be built during the Mine construction phase to serve over the life of the mine. These projects will be developed prior to the commissioning of the Process Facility.

- Sediment retention ponds, 5 units
- Diversion, 3 unit
- Water collection channels, 1units
- ROM stockpile base, 7.2 ha
- Mine facilities pad site, 4.1 ha
- Haul roads, 7.0 km
- Ancillary roads, 5.5 km
- Tuff Material Uncovering (on-site material for wearing course), 3.2 ha
- Initial cut within pit
- West Waste Rock storage facility pad
- Coarse Gangue storage facility pad

21.1.5 Transload Facility

Transload facility capital cost will be carried by Iron Horse with a capital recovery strategy over a 10-year period. This capital repayment is included in the sustaining capital summary. The facility will be constructed in the town of Winnemucca, NV by LAC to support Phase 1, 2 and 3 bulk raw materials required for the Project, identified in Section 18. The transload is assumed to cease operation after rail to the Thacker Pass Project is completed for Phase 4 and for the remaining duration of the life of mine.

21.1.6 Temporary Housing

Non-local construction personnel will be accommodated in a purpose-built facility located in Winnemucca. The facility provides accommodation, catering, recreational and operational support facilities including administration, bus terminals, carparks, resident laundries, maintenance, and storage buildings to support workers needs whilst engaged on the project. The Work Force Hub accommodations will have a total of 1,997 beds. The future Phases use of the housing are included in that phases capital cost estimate.

The modules, transportation and certain engineering design are purchased and completed. The facility modules are used and have been relocated to the Work Force Hub location in Winnemucca. The capital costs to procure, construct and operate this temporary housing is included in the capital costs.

21.1.7 Owners Costs

Owner's costs were developed by LAC and are estimated specifically within the capital execution phase of the Project. Estimated Owner's Cost are divided into eleven categories and are included in the Project's estimate. Table 21-6 summarizes the Owners Costs estimate for Phase 1.

The items included in the individual Owners Cost categories include are:

- **Pre-Execution Costs** – items needed to be available prior to Project execution, such as the tie into the Nevada electrical power grid and an early laydown yard.
- **Land Purchase/Lease** – Land purchase for Workforce Hub (WFH) and Lease for Transload Terminal (TLT).
- **Facility Equipment** – Furniture and Supplies such as building furniture, computers, and emergency equipment.
- **Owners Project Costs** – items needed to support the Project owner, LAC, during project execution, such as owners project management and engineering costs.
- **Permitting & Environmental** – items needed to support the Project's environmental and permitting requirements and Permit costs.
- **External Costs** – Community Projects and road upgrades.
- **Telecoms** – Main Automation Control (MAC) – Telecom Vendors & Material and Public Address System (PAS) System & Services
- **Operational Business Readiness** – items needed to directly support Project support and commissioning activities, such as specialty equipment, staffing, and employee training.
- **Finance** – Project insurances.
- **Business Systems Costs** – Project Control System.
- **Mobile Equipment Costs** – non-mining portable or movable equipment needed throughout the Project, such as cranes, forklifts, man lifts, light duty vehicles, and other specific use vehicles.
- **Sales Use Tax** – Neveda sales use tax
- **Contingency** – Contingency for Owners Costs
- **Target Trends** – Cost savings targets.

Table 21-6 Phase 1 Owners Cost Estimate

Capital Cost Area	Baseline (Thousand)
Pre-Execution Costs	$4,206
Land Purchase/Lease (WFH/TLT)	$5,420
Facility Equipment	$350
Project Owner's Cost	$54,152
Permitting & Environmental	$3,850
External Costs (Community Projects & US95)	$22,883
Telecoms	$8,557
Operational Business Readiness	$48,735
Finance (Insurance)	$20,767
Business System	$465
Mobile Equipment	$882
Sale Use Tax	$33,000
Contingency	$10,000
Total (Thousands)	**$213,267**

21.1.8 Potential Risks

21.1.8.1 Change of Execution Strategy

The Project cost and schedule will be affected by shifting the Project delivery method or scope.

21.1.8.2 Risk Mitigation

Engage construction partners early in design to ensure constructability.

Utilize a strong Construction Management Team experienced in safely and effectively coordinating multiple site and industrial contractors.

Implement robust Project Controls to regularly provide information to the Project Manager for use in monitoring resources and deliveries and controlling the Project cost, schedule, earned values, field progress, and change management.

21.2 Sustaining Capital Costs

Sustaining capital costs are based on Q1-3 2024 pricing.

21.2.1 Mine, Plant, and Sulfuric Acid Plant Sustaining Capital Cost

Sustaining capital costs for the Thacker Pass Project have been estimated and are primarily for continued development of the clay tailings filter stack and coarse gangue stockpile, mining activities, sulfuric acid plant, and other sustaining plant and infrastructure expenditures. Sustaining capital costs for the clay tailings filter stack and coarse gangue stockpile include the years those facilities need to be expanded for stockpiling capacities (provided by NewFields; MTO). Mining sustaining capital costs reflect the cost of replacing the mobile mining fleet to handle the provision of ore to the process plant as well as stripping and placement of waste material (provided by Sawtooth; itemized). Sustaining capital costs for the sulfuric acid plants are expected to occur every three years (provided by EXP; itemized). Sustaining capital for the general plant is factored from the Project equipment list based on Standard Useful Lives of equipment provided in Attachment 10 of the DOE's 2015 Financial Management Handbook. Closure Costs (provided by NewFields) are a post production activity. Sustaining capital costs allotted for the life of the Project are shown in Table 21-7.

Table 21-7 Sustaining Capital Costs allotted for the Life of the Project

Year	Mining, Equipment & Infrastructure (US$-M)	Plant Mobile Equipment (US$-M)	Plant & Infrastructure (US$-M)	Sulfuric Acid Plants (US$-M)	Storage Facilities (US$-M)	Capital Recovery (US$-M)	Total Cost (US$-M)
1	11	0	0	0	8	33	53
2	7	0	4	0	13	32	56
3	0	0	4	6	6	32	49
4	21	0	4	0	14	30	69
5	19	0	4	0	9	29	62
6	82	4	5	7	9	22	129
7	4	0	5	6	5	21	41
8	1	0	5	3	2	20	31
9	14	0	5	8	45	19	92
10	5	0	7	7	0	19	38
11-15	183	6	41	36	55	2	322
16-20	96	9	48	50	53	0	257
21-25	192	9	48	70	32	0	351
26-30	301	9	48	117	42	0	517
31-35	186	1	48	114	31	0	381
36-40	270	9	48	133	24	0	485
41-45	184	9	48	162	54	0	457
46-50	271	9	48	136	40	0	504
51-55	406	9	48	127	36	0	625
56-60	264	9	48	147	45	0	513

Year	Mining, Equipment & Infrastructure (US$-M)	Plant Mobile Equipment (US$-M)	Plant & Infrastructure (US$-M)	Sulfuric Acid Plants (US$-M)	Storage Facilities (US$-M)	Capital Recovery (US$-M)	Total Cost (US$-M)
61-65	185	1	48	125	43	0	403
66-70	340	9	48	93	36	0	526
71-75	150	1	48	156	0	0	355
76-80	133	1	48	110	0	0	292
81-85	121	1	48	146	0	0	316
86+	Closure Reclamation						
Total	**3,445**	**93**	**763**	**1,759**	**603**	**259**	**6,921**

*Costs shown in this table are in millions of dollars. Due to rounding, some totals in this table may not correspond with the sum of the separate figures.

The estimated sustaining capital costs for the expansion of the Thacker Pass Project are estimated in Q2 2024 dollars.

21.2.2 Stockpiles and Filter Stack Sustaining Capital Costs

- The coarse gangue stockpile (CGS) and clay tailings filter stack (CTFS) will require expansions over the life of the Project. The initial construction costs of the CGS and CTFS are captured in the initial capital plan. The overall design and permitted square footages are summarized in Section 18. Expansions will occur the year before either facility is expected to reach the capacity of the previously constructed footprint. The sustaining capital timing for these expansions is determined from mining and processing mass balances along with a reasonable footprint to support operations for multiple years before the next expansion is required. The price per square foot to expand the facilities is determined from engineered estimates from Sawtooth and NewFields and the initial construction estimates of the CGS and CTFS. The price per square foot includes civil works, synthetic liner deployment, collection systems, overliner and equipment and labor to construct the facility. See Table 21-8.

  - **Coarse Gangue Stockpile:** the stockpile of reject material generated from the beneficiation circuit. The material to be stockpiled on this facility will be used for pit backfill and does not require any expansion after year 9 as coarse gangue will likely be directly hauled from beneficiation and dumped in the pit. Total sustaining capital is estimated within the Storage Facilities column of the Sustaining Capital Costs table and is estimated to be \$13.3 M from 0.7 Mm^2 (7.1 million square feet) of expanded footprint.

  - **Clay Tailings Filter Stack:** the storage facilities of clay tailings generated from the neutralization circuit and sulfate salts. Total sustaining capital is estimated within the Storage Facilities column of the Sustaining Capital Costs table and is estimated to be \$561.7 M from 13.0 Mm^2 (140.2 million square feet) of expanded footprint over the 85-year mine life.

- The East and West Waste Rock Storage Facilities (WRSF's) will require expansions over the life of the Project. The initial construction of the West Waste Rock Storage Facility is captured in the initial mine capital plan. Expansions of the West Waste Rock and initial construction of the East Waste Rock Storage Facility are captured in Table 22-11. The overall design and permitted square footages are summarized in Section 18. Expansions will occur the year before either facility is expected to reach the capacity of the previously constructed footprint. The sustaining capital timing for these expansions is determined from mining and processing mass balances along with a reasonable footprint to support operations for multiple years before the next expansion is required. The price per square foot to expand the facilities is determined from engineered estimates from

Sawtooth and NewFields and the initial construction estimates of the CGS and CTFS. The price per square foot includes civil works, synthetic liner deployment, collection systems, overliner and equipment and labor to construct the facility. See Table 21-8.

- **Waste Rock Storage Facilities:** the temporary storage facilities for waste rock mined prior to in-pit waste dumping. The total sustaining capital is estimated within the Storage Facilities column of the Sustaining Capital Costs table and is estimated to be $27.9M from 0.9 Mm^2 (9.2 million square feet) of expanded footprint from years 1 through 9.

Table 21-8 CTFS, CGS, and WRSF's Expansion Area and Costs

Year	Total		CGS		CTFS		WRSF's (calculated)	
	Mm^2	($ M)	Mm^2	$ M	Mm^2	$ M	Mm^2	$ M
1	0.2	8.1	0.1	1.8	0.1	5.7	0.01	0.6
2	0.4	13.0	0.3	5.3	0.2	7.7	0.00	0.0
3	0.1	5.9	0.0	0.0	0.1	5.9	0.00	0.0
4	0.3	14.3	0.0	0.0	0.3	11.5	0.04	2.8
5	0.3	9.0	0.0	0.0	0.0	0.0	0.29	9.0
6	0.4	9.3	0.2	4.2	0.0	0.0	0.20	5.1
7	0.2	5.3	0.0	0.0	0.0	0.0	0.20	5.3
8	0.1	2.3	0.0	0.0	0.0	0.0	0.09	2.3
9	1.1	44.9	0.1	1.9	0.9	40.3	0.04	2.7
10	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0
11-15	1.3	54.7	0.0	0.0	1.3	54.7	0.00	0.0
16-20	1.2	53.2	0.0	0.0	1.2	53.2	0.00	0.0
21-25	0.7	31.7	0.0	0.0	0.7	31.7	0.00	0.0
26-30	1.0	41.6	0.0	0.0	1.0	41.6	0.00	0.0
31-35	0.7	31.4	0.0	0.0	0.7	31.4	0.00	0.0
36-40	0.6	24.2	0.0	0.0	0.6	24.2	0.00	0.0
41-45	1.3	54.1	0.0	0.0	1.3	54.1	0.00	0.0
46-50	0.9	40.0	0.0	0.0	0.9	40.0	0.00	0.0
51-55	0.8	35.5	0.0	0.0	0.8	35.5	0.00	0.0
56-60	1.0	44.7	0.0	0.0	1.0	44.7	0.00	0.0
61-65	1.0	43.3	0.0	0.0	1.0	43.3	0.00	0.0
66-70	0.8	36.2	0.0	0.0	0.8	36.2	0.00	0.0
71-75	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0
76-80	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0
81-85	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0
Total	**14.5**	**$602.9**	**0.7**	**$13.3**	**13.0**	**$561.7**	**0.9**	**$27.9**

21.2.3 Closure Costs

Closure costs are estimated from NewFields based upon necessary reclamation, remediation, and closure of the 85-year facility. The 2024 Standardized Reclamation Cost Estimator for 2024 from the Nevada Division of Environmental Protection and Nevada Bureau of Land Management was used to extrapolate the total reclamation cost estimate from the facilities, mine footprint and five phases of expansions. The closure costs of $462M will be updated as operations continue, and concurrent reclamation takes place. Site overhead during closure will be a corporate cost. Closure is expected to take place after production concludes in year 85. See Table 21-9.

Table 21-9 Reclamation Costs

Category	Costs ($-M)
Earthwork/Recontouring	152
Revegetation/Stabilization	6
Detoxification/Water Treatment/Disposal of Wastes	11
Structure, Equipment and Facility Removal, and Misc.	178
Monitoring	4
Construction Management & Support	8
Indirect Cists	103
Total	**$462**

21.2.4 Pre-Sanction Costs

For the purposes of this study, there are several work activities upon the completion of the feasibility study that have been considered pre-sanction and are not included in this capital cost estimate. These include:

- Consultants for the feasibility study stage, including the EPCM and support consultants,
- Owner team support during the feasibility study stage,
- Technical investigations to support the feasibility study, and
- Permitting costs.

Investments in the Project to date were not included in the economic analysis (and are not amortized in the model).

21.3 Operating Cost Estimate

21.3.1 Basis of Estimate

21.3.1.1 Estimating Base Date and Accuracy Range

Cost inputs into the model ranged from Q1 to Q4 2024 pricing. The estimate is prepared on an annual basis and includes all site-related operating costs associated with the production of lithium carbonate.

For the purposes of this study, all operating costs incurred from Project award, up to but excluding commissioning, are deemed preproduction costs and have been included in the CAPEX, as they are considered part of construction.

21.3.1.2 Responsibilities

Direct costs were developed by LAC for the process operating area and Sawtooth for the mining area. The input from each party was assembled and reviewed by LAC, Sawtooth, EXP and SGS to generate the master Project OPEX.

The responsibilities for developing the operating costs are as follows:

- Mining operating costs were developed by Sawtooth as part of the integrated mine cost model.
- Sulfuric acid plant operating costs were developed by EXP and LAC on an annual basis.
- Process plant, infrastructure and general/administrative operating costs were developed by LAC in conjunction with SGS on an annual basis.

21.3.1.3 Estimating Methodology

21.3.1.3.1 Estimate Structure

Operating costs have been organized into three main areas: Mining, Lithium Processing and General and Administrative costs. Each area has several sub areas defined by the estimating team. The mine life, and concurrent processing operations, is defined to be 85 years. Mine costs were estimated by year for years 1 through 25 and in 5-year increments from years 26 through 85. Each five-year increment was adjusted to annual values to input into the annual cost model. Process Operating costs and G&A cost estimates were calculated on an annual basis.

Lithium Processing costs, which also includes the sulfuric acid plant costs, are further divided among ten expense types: Mining, Process Labor, Raw Materials, Fuel (non-mining), Power, Maintenance/Parts/Outside Services, Supplies, Tailings Placement and General and Administration.

21.3.1.4 Data Sources

The following data sources were used to prepare the OPEX estimate:

- **Mining Cost Model**: Includes annual mine operating costs as well as the mining production rates and material movement over the life of the mine.
- **Financial Cost Model**: Includes a consolidated model that estimates and summarizes annual production rates from mining, mineral and chemical processing operating costs, process plant production profiles, and raw material consumption among others.
- **Process Design Criteria and Mass Balance**: Used to define process variables and production rates, the consumption rates of raw materials, lithium extraction and recovery.
- **Electrical Load List**: Used to estimate total annual electrical demand and consumption.
- Capital Cost Estimate: For estimation of maintenance supplies and services based on installed equipment values
- **Staffing Plan**: The Project's staffing plan and labor rates by period.
- **Raw Material Pricing**: Provided by LAC based on quotations from various suppliers or market sources for the logistics, handling, storage, and preparation of the reagents such as soda ash, limestone, sulfur, quicklime, and others
- **Assumptions**: Allowances were made based on recent similar projects and studies for minor items where no analysis or detail was available.

21.3.2 Elements of Costs

21.3.2.1 Labor

Labor for the Project will require staffing for a 24 hour per day, seven day per week operation. All 24-hour operations are based on a four (4) shift rotation of 12-hour shifts. Non-shift labor is based on a 40-hour work week. Due to the proximity of Winnemucca to the mine site, no camp is required at the mine site. Bus transportation will be provided to and from the site. Bussing expenses are included in G&A operating costs.

The labor costs for this Project were estimated based on the expected salaries in the region along with a payroll burdens allowance of 27% and a 10% overtime allowance for hourly labor. A master labor list was compiled by LAC for all positions including process plant, sulfuric acid plant, management, and support staff.

The labor requirements and average annual cost are summarized by OPEX area in Table 21-10 with average head count by Phase expansion summarized in Table 21-11. Management includes shift supervisors through Plant Manager. Labor includes hourly staff.

Table 21-10 Lithium Americas Labor Requirements and Average Annual Cost Summary (85-Year Life of Mine)

Plant Area	85 Yr LOM Annual Average	85 Yr LOM Annual Average Cost ($-M)
Lithium Processing		
Plant Management and Supervision	17	$3.4
Plant Labor	252	$31.0
Sulfuric Acid Plants		
SA Management and Supervision	8	$1.2
SA Labor	57	$7.3
Plant Maintenance		
Maintenance Management and Supervision	23	$3.6
Maintenance Labor	116	$15.8
Technical Services		
Laboratory and Quality Control	30	$3.7
Engineering	8	$1.2
IT & Data Services	10	$1.4
General and Administrative		
Management and Administrative	5	$1.4
Health, Safety & Environment	16	$2.5
Human Resources	9	$1.3
Finance	7	$1.0
Supply Chain	23	$3.1
Total	**580**	**$77.9**

Table 21-11 Lithium Americas Headcount by Phase

Head Count by Phase	Phase 1	Phase 1-2	Phase 1-2-3	Phase 1-2-3-4	Phase 1-2-3-4-5
Lithium Processing	80	124	153	239	291
Sulfuric Acid	20	33	48	59	70
Plant Maintenance	49	78	112	131	149
Technical Services	24	30	41	45	49
Management and Administration	20	22	27	28	28
Supply Chain/Procurement	7	8	16	18	24
EHS	6	9	12	14	15
Total by Phase per year	**206**	**304**	**409**	**534**	**626**

21.3.2.2 Raw Materials

Materials consumed by the process are estimated using unit consumption rates or are consumed at a fixed rate each year. The reagent consumption rates are sourced from the process design criteria. Usage rates were based on test work, mine plan modeling, and Aspen Plus® mass balance modelling estimations.

Consumption rates of liquid sulfur, sodium hydroxide (‘caustic soda’) and water treatment chemicals for the acid plant were developed and provided by EXP.

Consumption rates of fuel (diesel, gasoline and propane) were estimated from mobile and fixed equipment expected hours of operation, utilization, and fuel burn rates of equipment. Consumption values include consumption for both mining and processing. Mining fuel costs are included in the total mining operating cost estimate. Process fuel consumptions are included in fuel non-mining and raw material costs.

Usage rates of sulfuric acid were assumed to be equal to the yearly estimated maximum produced from the sulfuric acid plant, per EXP.

Unit pricing for raw materials was based on discussions with suppliers and benchmarking data. Table 21-12 represents the purchase price and delivered price for each major raw material.

Table 21-12 Raw Material Purchase and Delivered Pricing

Raw Materials	$/unit	Price Delivered to Thacker Pass	Phases 1-3 (TLT)	Phases 4 - LOM, (Rail)
Quicklime	$/t	196	N	Y
Limestone	$/t	44	N	N
Soda Ash	$/t	265	Y	Y
Hydrochloric Acid 35%	$/t	394	N	Y
Ferric Sulfate 60%	$/t	477	N	Y
Caustic Soda 50%	$/t	699	N	Y
Flocculant	$/t	2,958	Y	Y
Liquid Sulfur	$/t	216	Y	Y
Propane	$/t	1,422	N	N
Diesel Off Road	$/US gallon	3.8	N	Y
Gasoline	$/US gallon	3.9	N	Y
Water Treatment	$/liter	5.4	N	N

Average consumptions during the life of the mine are summarized in Table 21-13 and Table 21-14 represents the expected annual consumption rates for 85 year and 25 years, respectively. The total Diesel and Unleaded Gasoline consumed include Sawtooth and LAC's calculated values. Sawtooth's mining fuel costs are included in the Mining operating expenses. The unit consumption per tonne of lithium carbonate produced is also calculated.

Table 21-13 Raw Material Annual Consumption (85-Year LOM Base Case)

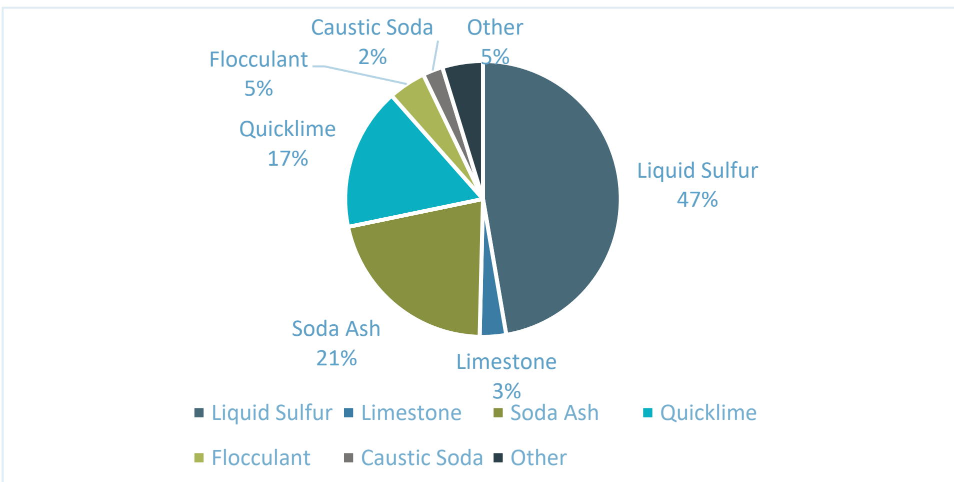
Raw Materials		85 Yr LOM Avg Annual Consumption	85 Yr LOM Average (unit/tonne Lithium Carbonate produced)
Quicklime	tonne	355,625	2.63
Limestone	tonne	399,133	2.95
Soda Ash	tonne	420,262	3.11
Hydrochloric Acid 35%	tonne	25,802	0.19
Ferric Sulfate 60%	tonne	878	0.01
Caustic Soda 50%	tonne	38,059	0.28
Flocculant	tonne	8,399	0.06
Ammonia	tonne	0	0.00
Liquid Sulfur (calculated)	tonne	1,237,123	9.15
CO_2	t	0	0.00
Water Treatment (SA1)	liter	3,556	0.03
Diesel Off-Road	US gallon	24,384,001	180.45
Unleaded Gasoline	US gallon	427,429	3.16
Propane LN	tonne	2,119	0.02

Table 21-14 Raw Material Annual Consumption (Years 1-25 of 85-Year LOM)

Raw Materials		25 Yr LOM Avg Annual Consumption	25 Yr LOM Average (unit/tonne Lithium Carbonate product)
Quicklime	tonne	268,914	2.15
Limestone	tonne	301,813	2.42
Soda Ash	tonne	388,343	3.11
Hydrochloric Acid 35%	tonne	19,511	0.16
Ferric Sulfate 60%	tonne	664	0.01
Caustic Soda 50%	tonne	28,779	0.23
Flocculant	tonne	6,351	0.05
Liquid Sulfur (calculated)	tonne	935,476	7.49
Water Treatment (SA1)	liter	2,689	0.02
Diesel Off-Road	US gallon	10,207,322	81.74
Unleaded Gasoline	US gallon	304,190	2.44
Propane LN	tonne	1,602	0.01

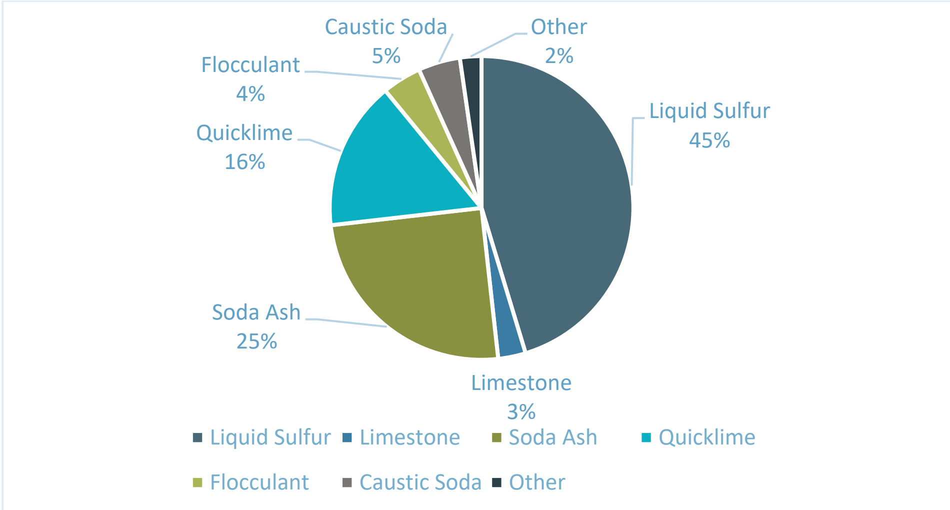
Figure 21-2 presents the raw materials distribution over the 85 years of operations as part of the base case. Figure 21-3 presents the raw materials distribution over the first 25 years of operation for.

Figure 21-2 Raw Materials Cost Distribution (85-Year LOM – Base Case)



Source: LAC, 2024

Figure 21-3 Raw Materials Cost Distribution (Years 1-25 of 85-Year LOM)



Source: LAC, 2024

21.3.2.3 Power

Electrical power costs are based on a rate of US$98.64/MWh, based on the analysis by EnergyWest, LLC. This includes wheeling charges. Electrical power consumption and estimates were based on equipment connected loads and load analysis. Table 21-15 presents the annual average power cost by area over the 85-year life of mine. Table 21-16 shows this for years 1 to 25 of the life of mine.

The cost of net power imported is estimated by subtracting the power generated on site in the Acid Plants from the overall power required and multiplying by the power cost.

Table 21-15 Average Annual Power Cost (85 Year LOM – Base Case)

Power	GWh/y	Average ($-M)	$/tonne Lithium Carbonate Product
Lithium Processing	1,630.7	160.8	1,190.3
Acid Plant	427.9	42.2	312.3
Generation	-1,016.9	-100.3	-742.3
Net Power Import	1,041.6	102.7	760.3

Table 21-16 Average Annual Power Cost (Years 1 to 25 of 85 Year LOM)

Power	GWh/y	Average ($-M)	$/tonne Lithium Carbonate Product
Lithium Processing	1,279.4	126.2	1,010.7
Acid Plant	323.6	31.9	255.6
Generation	-769.0	-75.9	-607.5
Net Power Import	834.0	82.3	658.8

21.3.2.4 Maintenance and Supplies

Sulfuric Acid Plant maintenance is itemized over the 85-year operating activities and is dependent on each acid plants maintenance cycle by year. The maintenance budget for the sulfuric acid plant is generated by EXP and compiled via non-capital parts budget and a subset of the staffing plan. No factors are used. Additional outside labor and services are capitalized with major equipment rebuilds as presented in the yearly cash flow for the acid plant.

Lithium Processing maintenance allowances and outside services include supplies, such as spare parts, repair materials, miscellaneous consumables, and third-party support required for general maintenance from operating activities. The allowances for fixed mechanical equipment, electrical, instrumentation, mobile equipment (non-mining) are based on a factored percentage of installed mechanical and electrical equipment capital values. Outside Services are a factor of total maintenance cost. Factors are assumed to be constant for all periods of operation (i.e., 85-year base case and 25-year case).

Factored maintenance, supplies, and outside service costs for process activities (non-mining activities) are summarized in Table 21-17.

Table 21-17 Factored Maintenance Annual Allowances

Lithium Processing	Allowance	Allowance ($-M/yr Avg)
Fixed Mechanical Maintenance	3%	25.0
Electrical, Instrumentation & Automation	2%	5.5
Mobile Equipment (non-mining)	3%	0.5
Outside Services	10%	3.1
Sulfuric Acid Plant Maintenance	Allowance	1.5

21.3.2.5 General & Administrative

General and Administrative costs include costs related to the Process Plant and Sulfuric Acid Plant areas, for which a fixed amount is allotted each year. These include items such as salaries for nonproduction staff, software licenses, legal costs, insurance, as well as administrative costs such as office supplies, administrative services and fees, environmental health and safety, public relations, and other costs.

Table 21-18 General and Administrative Costs (85 Year LOM – Base Case)

	Yrs 1-85 LOM	
General & Administrative	Annual Average ($-M)	$/tonne Product
Salaries & Fringes	19.2	142
Accounting (excluding labor)	0.1	0
Safety (excluding labor)	0.1	0
Human Resources (excluding labor)	0.1	0
Environmental Dept. (excluding Labor	0.2	1
Security (excluding labor)	0.6	4
Janitorial Services (contract)	0.1	1
Community Relations (excluding labor)	0.1	1
Office Operating Supplies and Postage	0.0	0
Phone/Communications	0.1	1
Licenses, Fees, and Taxes	0.2	2
Legal	0.6	4
Insurances	12.1	90
Subs, Dues, Mining Leases, Water Rights	0.1	0
Travel, Lodging, and Meals	0.2	1
Training	0.3	2
Travel - busing	3.3	25
Rentals	5.6	41
Relocation	0.1	0
IT	1.1	8
Total	**$44**	**$326**

Table 21-19 General and Administrative Costs (Years 1 to 25 of 85-Year LOM)

	Yrs 1-25 LOM	
General & Administrative	Annual Average ($-M)	$/tonne Product
Salaries & Fringes	17.7	142
Accounting (excluding labor)	0.1	0
Safety (excluding labor)	0.1	0
Human Resources (excluding labor)	0.1	0

Environmental Dept. (excluding Labor	0.2	1
Security (excluding labor)	0.6	5
Janitorial Services (contract)	0.1	1
Community Relations (excluding labor)	0.1	1
Office Operating Supplies and Postage	0.0	0
Phone/Communications	0.1	1
Licenses, Fees, and Taxes	0.2	2
Legal	0.6	5
Insurances	11.6	93
Subs, Dues, Mining Leases, Water Rights	0.1	0
Travel, Lodging, and Meals	0.1	1
Training	0.3	2
Travel - busing	2.6	21
Rentals	4.5	36
Relocation	0.1	1
IT	1.1	9
Total	**$40**	**$321**

21.3.3 Operating Cost Areas

21.3.3.1 Mining Operating Cost Areas

21.3.3.1.1 Mining Operating Cost

Mining operating costs are driven by work effort. Specifically, the ore requirements of the process facility determine the total volume of waste that must be moved to expose the ore to be mined and delivered. This annual requirement is used to estimate equipment hours, the major driver of the mine's operating costs. Factors such as waste-to-ore ratio, haul distance and haul profile influence work effort and operating costs. Hauling and storage of the waste material, attrition scrubber reject, and coarse gangue is included as part of the mine operations.

The mining operating costs include the following:

- **Mine Management:** Includes the salaried labor of the mine managers and supervisors, administrative personnel, engineers, and technicians. Rates are derived from Sawtooth and affiliates' standard midpoints.
- **Mine and Tailings Labor:** Labor cost for mining equipment operators. Rates were based upon independently researched mining wage rates in the Winnemucca, Nevada region. Includes benefits and burden estimated based on state and federal requirements as well as Sawtooth and affiliates standard benefits package.
- **Mine Maintenance Labor:** Maintenance labor to maintain equipment and facilities. Rates were based upon independently researched mining wage rates in the Winnemucca, Nevada region. Includes benefits and burden estimated based on state and federal requirements as well as Sawtooth and affiliates standard benefits package.
- **Equipment Cost:** Includes parts and supplies, contract maintenance labor, lube, major repairs, diesel fuel, tires, and shop supplies.
- **Overhead Cost**: Includes outside labor, reimbursable G&A, rentals, property taxes and Sawtooth mining profit.
- **Drill and Blast Costs:** Includes contracted drilling and blast hole loading along with explosives products and supplies.
- **Contingency Cost:** Contingency was estimated using the AACE International Recommended Practice No. 47R-11, *Cost Estimate Classification System – As Applied in Engineering procurement, and Construction for Mining and Mineral Processing Industries.* Using Oracles Crystal Ball software, a Monte-Carlo simulation was performed on each cost category to develop the P50 cost estimate.

A summary of the Mining Operating Cost Estimate for the 85-year base case and for the 25 years are provided in Table 21-20 and Table 21-21, respectively.

Table 21-20 Mining Operating Cost Estimate (85-Year LOM Base Case)

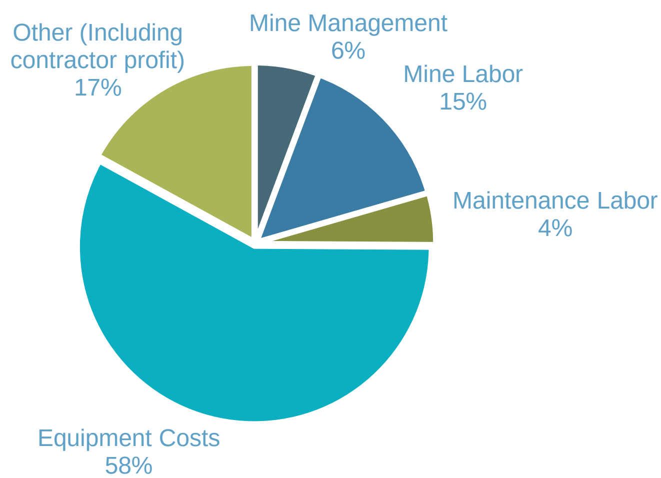
Mining Costs	Annual Average ($-M)	$/tonne Mined (ore+waste)	$/tonne Product
Mine Management	14	0.1	101
Mine Labor	35	0.4	262
Maintenance Labor	11	0.1	81
Equipment Costs	138	1.5	1,023
Other (Including contractor profit)	41	0.4	301
Total	**239**	**2.5**	**1,767**

Table 21-21 Mining Operating Cost Estimate (Years 1-25 of 85-Year LOM)

Mining Costs	Annual Average ($-M)	$/tonne Mined (ore+waste)	$/tonne Product
Mine Management	7	0.2	59
Mine Labor	17	0.4	139
Maintenance Labor	6	0.1	45
Equipment Costs	54	1.2	430
Other (Including contractor profit)	29	0.7	230
Total	**113**	**2.6**	**904**

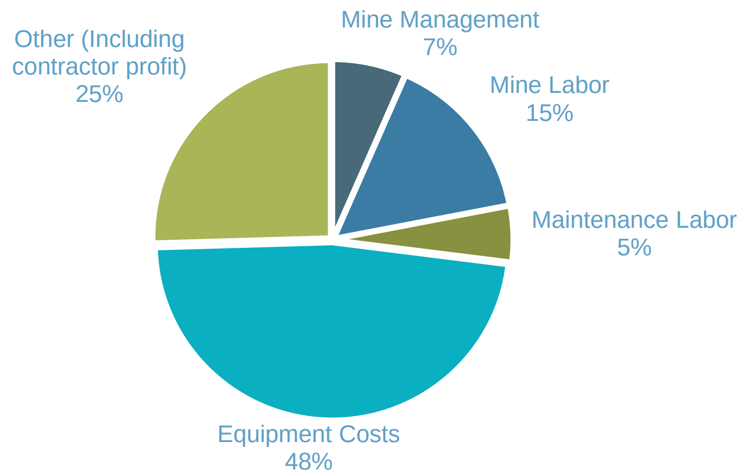
Figure 21-4 and Figure 21-5 present the distribution of the mining operating expenses for the 85-year base case and for 25 years, respectively.

Figure 21-4 Distribution of Mining Operational Cost (85-Year LOM – Base Case)



Source: Sawtooth, 2024

Figure 21-5 Distribution of Mining Operational Cost (Years 1-25 of 85-Year LOM Case)



Source: Sawtooth, 2024

21.3.3.1.2 Mining Battery Limits

The battery limits for the mining contractor's portion of the operating cost estimate are presented in Table 21-22.

Table 21-22 Battery Limits for Mining Operating Cost Estimate

Mining Scope	Battery Limit	Outside Mining Scope
All operating costs necessary to mine and haul ore to the ROM stockpiles and feed ore into the feeders with a dozer.	ROM stockpile feeder loading	Costs associated with the feeder breakers, attrition scrubbers, and slurry pipeline.
All operating costs necessary to excavate and haul waste material from the pit to the waste rock storage.	Waste rock storage	No outside scope is associated with this operation.
All operating costs necessary to grub, excavate and haul growth media either to stockpiles or to final placement on regraded spoil.	Disturbance area	No outside scope is associated with this operation.
All operating costs necessary to haul coarse gangue from the processing plant to the coarse gangue stockpile.	Coarse gangue stacker conveyor head pulley.	The cost associated with equipment, maintenance, and labor required to operate the coarse gangue radial stackers.
All mine facilities maintenance.	ROM side of concrete push wall, electrical substation at shop/office facilities site, main water supply tank.	All water lines and electric power lines and equipment necessary to feed the mine facilities.

21.3.3.1.3 Clay and Salt Tailings Battery Limits

The battery limits for the clay and salt haulage and stacking are presented in Table 21-23. See Table 21-27 and Table 21-28 for operating costs.

Table 21-23 Clay and Salt Tailings Battery Limits

Clay and Salt Tailings Scope	Battery Limit	Outside Mining Scope
Hauling, stacking, and final compaction of salt and clay waste.	Clay and salt stacker conveyors' head pulleys	The cost associated with equipment, maintenance, and labor required to operate the clay and salt radial stackers.
The cost associated with haul road maintenance.	Clay and salt stacker conveyors' head pulleys	The cost associated with maintenance of Clay Tailings Filter Stack: piping, liner repair, ponds, pumps, and lighting.

21.3.3.1.4 Estimation Methodology

The OPEX estimation for both mining and clay tailings relies on a series of budgetary quotations, but also internal databases and historical pricing. Table 21-24 presents a description of the estimation methodology and the items estimated under that methodology.

Table 21-24 Mining Estimation Methodology

Methodology	Items
Budgetary Quotations	Diesel price, Contractor Drilling and Blasting cost
Internal Databases	Sawtooth and affiliates equipment rates and operating cost database Sawtooth and affiliates salary labor rates and benefits
Historical Pricing	Monthly diesel pricing for Winnemucca, Nevada region
Public Information	CAT handbook for equipment rates

21.3.3.1.5 Source of Data

Quotations were received from Komatsu, and Caterpillar. Sawtooth contracted with a local human resource consulting firm, Pray and Company, to develop labor rates for the Winnemucca region.

Sawtooth used its internal database for estimating operating costs for the equipment used in this Project. For equipment not in the database, the costs were either estimated by factoring the costs to a similar piece of equipment by their respective horsepower, or by using CostMine by Glacier Resource Innovation Group as a reference.

21.3.3.2 Lithium Processing

Process operating costs were estimated based upon a production commissioning curve, ramp up, and steady-state operation for the five phases of expansions. The plant design data includes the use of the AspenPlus® material balance based on steady-state conditions. The design steady state lithium carbonate annual production rate was estimated based on the average annual mine plan data for that year.

The labor roster and mobile equipment fleet for the process areas are fixed. Consumption of raw materials, power and other items that are considered variable, are estimated separately each year based on the material balance and the tonnes of ore processed, tonnes of sulfuric acid produced, and lithium carbonate produced, as applicable.

Process and administrative operating costs are presented with indicative life of mine average operating costs per tonne lithium carbonate produced and Life of Mine (LOM) annual averages, as provided in Table 21-25 and Table 21-26.

Table 21-25 Average Lithium Process Operating Costs (85 Year LOM – Base Case)

Lithium Processing and Acid Plant	Average ($-M)	$/tonne Product
Labor	58	427
Raw Materials	529	3,916
Fuel (non-mining)	5	34
Net Power Imported	103	760
Maintenance, Parts, Outside Services	36	264
Supplies	21	157
Tailings	52	387
Total	**804**	**5,946**

Table 21-26 Average Lithium Process Operating Costs (Years 1-25 of 85- Year LOM)

Lithium Processing and Acid Plant	Average ($-M)	$/tonne Product
Labor	43	342
Raw Materials	423	3,386
Fuel (non-mining)	4	30
Net Power Imported[1]	82	659
Maintenance, Parts, Outside Services	29	233
Supplies	16	126
Tailings	30	237
Total	**626**	**5,013**

21.3.4 Summary of Operating Costs

Table 21-27 and Table 21-28 present a summary of the Project operating costs.

Table 21-27 Project Operating Cost Summary (Years 1-85 Life of Mine – Base Case)

Area	Annual Average ($-M)	$/tonne Product	Percent of Total
Mine	239	1,767	22%
Lithium Processing and Acid Plant	804	5,946	74%
General & Administrative	44	326	4%
Total	**1,086**	**8,039**	**100%**

Table 21-28 Project Operating Cost Summary (Years 1-25 of 85 Year LOM)

Area	Annual Average ($-M)	$/tonne Product	Percent of Total
Mine	113	904	14%
Lithium Processing and Acid Plant	626	5,013	80%
General & Administrative	40	321	5%
Total	**779**	**6,238**	**100%**

21.3.5 Exclusions

The following items are excluded from the OPEX estimate:

- Cost escalation (due to quotes being refreshed in Q1 and Q2 2024)
- Currency fluctuations
- All costs apart from plant labor incurred prior to commercial operations
- Corporate office costs
- First fills (included in CAPEX),
- Closure and reclamation costs post operations (concurrent reclamation is included)
- Salvage value of equipment and infrastructure

The following items were also excluded from the Operating Cost Estimate, but are included in the financial model:

- Initial and sustaining capital costs
- Working capital
- Taxes
- Royalties
- Revenues
- Confidential offtake agreements
- Operating cost contingency during construction period of Phase 1
- G&A during construction period of Phase 1

22 ECONOMIC ANALYSIS

22.1 Introduction

This Technical Report contains “forward-looking information” and “forward-looking statements” within the meaning of applicable Canadian and the United States securities legislation which involve a number of risks and uncertainties. Forward-looking information and forward-looking statements include, but are not limited to, statements with respect to the following:

- Estimates of Mineral Resource and Mineral Reserve,
- Assumed commodity prices (and exchange rates, where applicable),
- The timing and amount of estimated future production,
- Timing of the life of mine,
- Mine production plans,
- Mining methods for the Thacker Pass deposit,
- Proposed plant throughput,
- Projected process recovery rates,
- Assumed raw material and process supplies unit prices,
- Assumed labor wage and salary rates,
- Assumed closure costs,
- Government regulation of mining operations,
- Environmental risks,
- Unanticipated reclamation expenses,
- Title disputes or claims,
- Limitations on insurance coverage and
- Estimates of sustaining, capital and operating costs.

Often, but not always, forward-looking statements can be identified by the use of words such as “plans”, “expects”, or “does not expect”, “is expected”, “budget”, “scheduled”, “estimates”, “forecasts”, “intends”, “anticipates”, or “does not anticipate”, or “believes”, or variations of such words and phrases or state that certain actions, events or results “may”, “could”, “would”, “might” or “will” be taken, occur or be achieved.

Forward-looking statements are based on the opinions, estimates and assumptions of contributors to this Technical Report. Certain key assumptions are discussed in more detail. Forward looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of LAC to be materially different from any other future results, performance or achievements expressed or implied by the forward-looking statements. Such factors include, among others:

- Unexpected variations in process throughput, grade, or recovery rates,
- Changes to costs of production from what is assumed specific to the Project such as: raw material and supplies availability, vendor pricing and estimated escalation of vendor pricing,
- Changes to costs of production due to general economic factors such as: recession, inflation, deflation, and financial instability,
- Changes in project parameters as plans continue to be refined,
- Unexpected variations in quantity of mineralized material or recovery rates,
- Failure of plant, equipment, or processes to operate as intended,
- Accidents, labor disputes, climate change risks and other risks of the industry,
- Delays in obtaining governmental approvals or financing or in the completion of development or construction activities,
- Unanticipated environmental risks and reclamation expenses, and
- Changes to regulatory or governmental royalty and tax rates.

There may be other factors than those identified that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be anticipated, estimated or intended. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers are cautioned not to place undue reliance on forward-looking statements. Unless required by securities laws, the authors undertake no obligation to update the forward-looking statements if circumstances or opinions should change.

22.2 Methodology

The analysis was carried out using a discounted cash flow (DCF) model. A broad team of project professionals, technical experts, and delivery experts from LAC, EDG, Bechtel, Sawtooth, EXP, Aquatec, Leading Projects and numerous equipment suppliers and subcontractors were involved in the development of the model. Cash flows for each year are totaled and discounted based on the assumption of even distribution of cash flow over the 85- year mine-life. The Project timeline starts with “Year -4” for construction and “Year 1” being the start of production.

The only revenue stream is sales of lithium carbonate.

Cost inputs into the model are based primarily on Q3 2024 pricing, and the discount period commences Q3 2023.

22.3 Input Data

22.3.1 Sources of Information

Details of the scope and assumptions of the CAPEX and OPEX are defined in the basis of estimate, which is provided in Section 21 of this report.

Tax assumptions and royalty obligations were provided by LAC. The market analysis in Section 19 was used to set realistic lithium carbonate pricing.

The model includes a financial analysis to estimate the annual tax burden, including indicative earnings and cash flow statements for the Project.

Financial model inputs were received from multiple sources, as outlined in the following sections. SGS provided high level auditing of the info provided by each contributing party for the data contributing to the final financial metrics of the Project and against guiding documents (process design criteria, heat and mass balance, etc.) and verified functionality of formulas for standard economic estimations within the model.

22.3.1.1 Development CAPEX

Capital costs are based on Q2-Q4 2024 pricing and meet the accuracy of a Class 3 AACE estimate.

22.3.1.2 Reagent Pricing

Reagent quotes were solicited and received by LAC from Q1-Q4 2024.

22.3.1.3 Reclamation Costs and Quantities

Reclamation costs input tab was provided by NewFields, which draws on work from Sawtooth and Bechtel civil/structural design.

22.3.1.4 WRSF/CGS/CTFS Costs and Quantities

Costs and quantities for coarse gangue storage and clay filtered tailings stack were received from NewFields and Sawtooth, and manually input into the financial model yearly cash flow.

22.3.1.5 Mine Plan and Mining OPEX

Mine plan and mine plan summary input tabs were provided by Sawtooth to document yearly waste, ore, tailings volumes, and feed lithium values to the financial model. The mine plan was developed in conjunction with LAC's ore control file for determining cutoff grades by ore block composition and also coordinates with the 85-year heat-mass balance Aspen process simulations conducted by the LN process group.

22.3.1.6 Sulfuric Acid Plant SUSEX, Labor, and Maintenance

EXP provided anticipated yearly sulfur, other materials, labor, power demand/generation, availability, and adjusted yearly capacity that could be expected from the plant operating at maximum capacity throughout its lifetime. EXP in conjunction with consultant Kevin Bryan provided itemized yearly parts and labor costs for planned activities necessary to extend acid plant life to 85 years and categorized all items off this list into either capital or non-capital (i.e., maintenance) costs, and applied them to the financial model accordingly.

22.3.1.7 Labor

William van Breugel audited the salaries and staffing plan provided in November 2023 by Nevada Mining Association against historical projects of similar scope and size. Headcount was believed to be slightly higher than average, but within the expected range. No adjustments were found to be necessary except for additional management positions required for sulfuric acid plant maintenance management.

22.3.1.8 Power

Demand and connected load for both process and ancillaries were compiled by Bechtel into a single input table. This table represents the equipment list with diversity factors applied, ancillary power design documents, and unallocated capacity included in the electrical design. The electrical MTO for the CAPEX estimate used in this report reflects the EXP acid plant design.

22.3.1.9 Mobile Equipment

William van Breugel audited the mobile equipment schedule provided by LAC and escalated costs for light and medium equipment by 13% to be within the expected range. Prices for some items of equipment reflect used market value.

22.3.1.10 Maintenance and Supplies

Maintenance and supplies were adopted from the original LAC model with minor adjustments by William van Breugel.

22.3.1.11 Raw Materials

Raw material values provided reflect a synthesis of third-party test work, in-house pilot plant data, vendor projections, HSC software modeled concentrations, and statistical regression to estimate the consumptions of raw materials required for the acid and process plants.

22.3.1.12 Process Modeling Software Outputs (Aspen)

Aspen process modeling outputs determined yearly values of lithium carbonate production, and therefore sales, from mined LCE production values, raw material usage, water usage, and utility steam/cooling demand used in the financial model.

William van Breugel conducted extensive spot checks with LAC in the design case Aspen process simulation file used to produce the heat and mass balance stream tables used for design.

22.3.1.13 General Accounting and Figures

Model architecture, inputs, and estimation methodology was reconstructed, verified, or augmented by William van Breugel, the QP responsible for this section of the Technical Report, for standard financial outputs (sensitivity analysis, depreciation, yearly cash flow organization, financial metrics, taxes, displayed discount rates, etc.). Royalty and transportation costs were provided by LAC.

22.3.2 Sunk Costs

Investments in the Thacker Pass project since February 2023 are included in the economic analysis and depreciated on a 7-year modified accelerated cost recovery system (MACRS) basis.

22.3.3 Development Capital

Development capital costs are divided across the five construction phases with additional life of mine capital required to relocate state route and power line infrastructure. The totals for each phase are presented in Table 22-1. Though Phase 1 has been optimized to exclude some Phase 2 pre-investment possible, it inherently includes the majority of civil earth works and site infrastructure to support Phase 2, construction of one acid plant, and construction of the mineral and chemical processing facility to produce nominally 40,000 t of lithium carbonate per year. Phase 2, 3, and 4 includes the addition of acid plants and construction of mineral and chemical processing facilities to produce an additional nominal 40,000 t of lithium carbonate per year from each phase. Phase 5 expansion occurs at the same time as Phase 4 expansion and includes the addition of an acid plant capable of producing 3,000 t/d sulfuric acid. Phase 5 processing circuits include beneficiation through magnesium sulfate. Due to excess capacity available in the purification circuits constructed from phases 1-4 the lithium extracted from Phase 5 will be introduced into the Phase 1-4 purification plants.

Table 22-1 Development Capital Costs Summary

Description	Ph1 Costs (US$ B)	Ph2 Costs (US$ B)	Ph3 Costs (US$ B)	Ph4/5 Costs (US$ B)	Additional LOM ($B)	Total Life of Mine (US$ B)
Total Development Capital	2.9	2.3	2.8	4.3	0.1	12.4

22.3.4 Sustaining Capital

Sustaining capital is provided for the mining, plant equipment and infrastructure, sulfuric acid plants, stockpiles and tailings areas of the Project over the 85-year mine life. The tailings costs (provided by NewFields; MTO) include future expansions of the facility over the life of the Project when additional capacity is required. Mining sustaining capital (provided by Sawtooth; itemized) supports equipment replacement at scheduled intervals after the equipment has reached its useful operational life. The sulfuric acid plant requires regular scheduled capital maintenance every three years (provided by EXP; Itemized). Sustaining capital for the general plant is factored from the Project equipment list based on Standard Useful Lives of equipment provided in Attachment 10 of the DOE's 2015 Financial Management Handbook (provided by ITAC/M3). Sustaining capital for each area is presented in Table 22-2.

Table 22-2 Sustaining Capital Summary

Year	Mining, Equipment & Infrastructure (US$-B)	Plant Mobile Equipment (US$-B)	Plant & Infrastructure (US$-B)	Sulfuric Acid Plants (US$-B)	Storage Facilities (US$-B)	Capital Recovery (US$-B)	Total Cost (US$-B)
Total	3.4	0.1	0.8	1.8	0.6	0.3	6.9

22.3.5 Operating Costs

The estimated average annual operating expenditures (OPEX) over the eighty-five-year mine life is US$1,086 million, or US$8,039/t of lithium carbonate produced. Table 22-3 presents the Operating Costs for each area for the 85-year Life of Mine – Base Case. Table 22-4 presents the Operating Costs for each area only for the first 25 years of 85 years of the Life of Mine Plan. The figures in tables exclude $5.5M of operating expense contingency and $27.9M in operating costs occurring during the Phase 1 construction period. These values are included in the economic indicators and financial model.

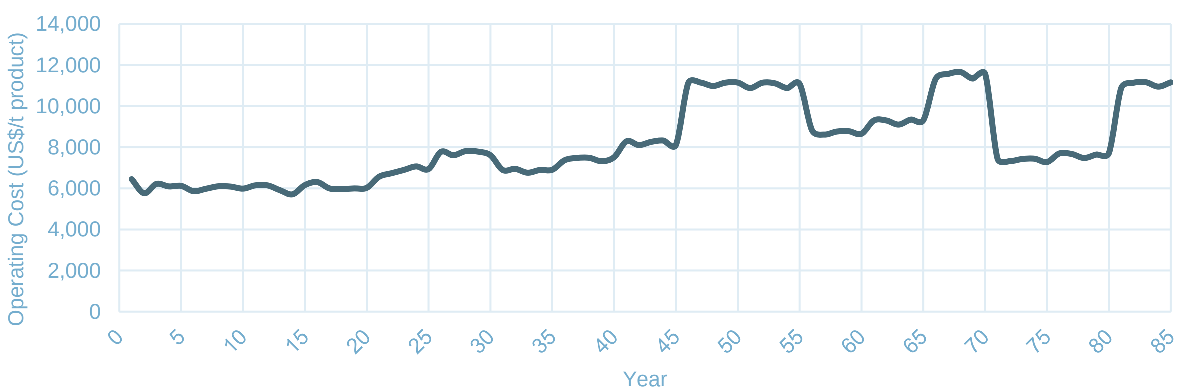
Table 22-3 Operating Costs Summary (85-Year LOM – Base Case)

Area	Annual Average ($-M)	$/tonne Product	Percent of Total
Mining	239	1,767	22%
Process Labor	58	427	5%
Raw Materials	529	3,916	49%
Fuel (non-mining)	5	34	0%
Power	103	760	9%
Maintenance, Parts, Outside Services	36	264	3%
Supplies	21	157	2%
Tailings Placement	52	387	5%
G&A	44	326	4%
Total	**1,086**	**8,039**	**100%**

Table 22-4 Operating Costs Summary (Years 1-25 of 85 Year LOM)

Area	Annual Average ($-M)	$/tonne Product	Percent of Total
Mining	113	904	14%
Process Labor	43	342	5%
Raw Materials	423	3,386	54%
Fuel (non-mining)	4	30	0%
Power	82	659	11%
Maintenance, Parts, Outside Services	29	233	4%
Supplies	16	126	2%
Tailings Placement	30	237	4%
G&A	40	321	5%
Total	**779**	**6,238**	**100%**

Figure 22-1 Operating Cost US$/t Lithium Carbonate Produced



22.3.6 Escalation

The economic analysis excludes cost escalation and excludes revenue escalation (see Section 22.3.8)

22.3.7 Production

Phases 1 through 4 are each designed for a nominal production rate of 40,000 t/y of lithium carbonate. The Phases will come online in years 1, 5, 9, and 13 respectively. A fifth phase will be construction to produce brine only to feed the 4 previous phases. Phase 2 production is anticipated to begin in year 5 and includes the addition of a second acid plant capable of producing 2,250 t/d acid and processing infrastructure to double production with a nominal production rate of 80,000 t/y of lithium carbonate. Phase 3 production is anticipated to begin in year 9 and includes the addition of a third acid plant capable of producing 2,250 t/d acid and processing infrastructure to increase total nominal production to 120,000 t/y of lithium carbonate. Phase 4 production is anticipated to begin in year 13 and includes the addition of a fourth acid plant capable of producing 2,250 t/d acid and processing infrastructure to increase total nominal production to 160,000 t/y of lithium carbonate. Phase 5 production begins with Phase 4 during year 13 and includes the addition of a fifth acid plant capable of producing 3,000 t/d acid, beneficiation and brine processing circuits. The fifth phase will provide brine to the four previously constructed phases.

Actual production varies with the grade of ore mined and process chemistries in each year of the expected mine life of 85 years.

Ramp-up rates are incorporated into each phase of expansion with a lower tonnage expected for the first two years in each of the four phases before steady state rates are realized. See the financial model in Table 22-11 regarding the expected yearly cash flow.

Production profiles summarized below are limited to the Company's proven and probable ore reserves. The production and financial outcomes from these reserves are summarized in Table 22-5 and Table 22-6.

Table 22-5 Average Production Values (85 Year Base Case)

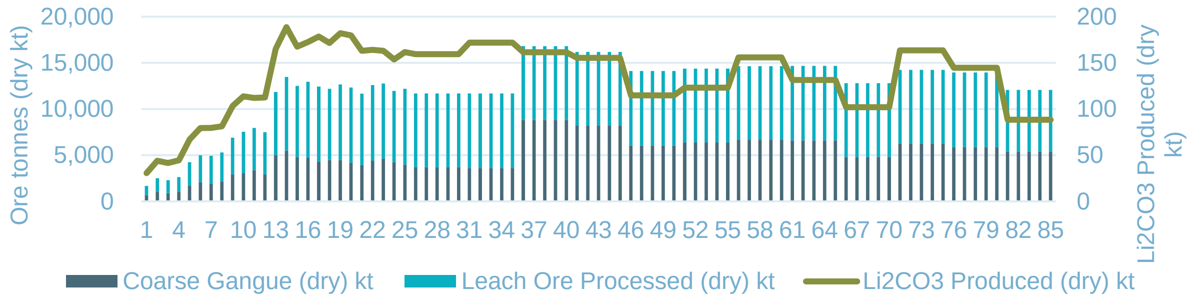
Item	Unit	Value
Lithium Carbonate Plant Production		
Operational Life	years	85
Average Annual Lithium Carbonate Production - 85 years	k-tonnes	135
Average Metallurgical Recovery - 85 Years	%	80.4
Mine Production		
Ore Reserves Production Scenario	years	85
Average Annual LCE Mined - 85 years	k-tonnes	168

Table 22-6 Average Production Values (Years 1-25 of 85-Year LOM)

Item	Unit	Value
Lithium Carbonate Plant Production		
Operational Life	years	25
Average Annual Lithium Carbonate Production - 25 years	k-tonnes	125
Average Metallurgical Recovery - 25 Years	%	82.1
Mine Production		
Ore Reserves Production Scenario	years	25
Average Annual LCE Mined - 25 years	k-tonnes	152

Figure 22-2 shows the total ore tonnes mined and the contained leach ore processed in relationship with total lithium carbonate production for each year.

Figure 22-2 Total Mined, Ore Processed and Lithium Carbonate Production by Year



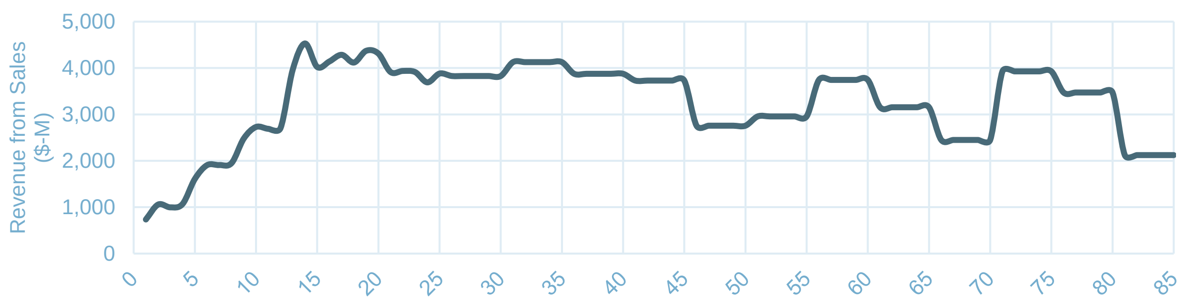
Source: LAC, 2024

22.3.8 Revenues

Product selling prices have been forecasted over the study period (See Section 19). The base case value for price selling was set at $24,000/t. Sensitivities are discussed in Section 22.5.

Total annual revenues by year are shown in Figure 22-3 and summarized in Table 22-7 and Table 22-8.

Figure 22-3 Total Annual Revenue by Year



Source: LAC, 2024

Table 22-7 Total Annual Production and Revenue (85 Year LOM – Base Case)

Production and Revenue	Yrs 1-85 LOM	
	Annual Average	Total
Lithium Carbonate Production (tonnes)	135,132	11,486,261
Lithium Carbonate Revenue ($-M)	$3,243	$275,670
Annual Lithium Carbonate Selling Price ($/tonne)	$24,000	

Table 22-8 Total Annual Production and Revenue (Years 1-25 of 85 Year LOM)

Production and Revenue	Yrs 1-25 LOM	
	Annual Average	Total
Lithium Carbonate Production (tonnes)	124,867	3,121,685
Lithium Carbonate Revenue ($-M)	$2,997	$74,921
Annual Lithium Carbonate Selling Price ($/tonne)	$24,000	

22.3.9 Financing

Lithium Americas Corp. (LAC) has closed a $2.3B loan from the U.S. Department Energy under the Advanced Technology Vehicles Manufacturing ("ATVM") Loan Program. LAC has received a $11.8 million grant from the U.S. Department of Defense to support an upgrade of the local power infrastructure and to help build a transloading facility. LAC also has concluded a joint-venture investment and offtake agreements for Phases 1 and 2 with GM. Financial modeling has considered multiple discount rates to account for various funding avenues. LAC is also contemplating multiple options for additional funding. Project financing costs from the DoE loan for Phase 1 are accounted for in the model.

Future Phases 2, 3, 4 and 5 will be self-funded from operating cash flow activities.

22.3.10 Discount Rate

A discount rate of 8% per year has been applied to the model, though other levels from 6-16% are also included for Project assessment at various risk profiles and financing options.

22.3.11 Taxes

The modeling is broken into the following categories: Operational Taxes (which are eligible deductions to arrive at taxable income) and Corporate Net Income Taxes.

Thacker Pass is eligible for the Inflation Reduction Act (IRA) 45X critical mineral tax credits. The credits reflected in the model are based on the latest confirmed guidance from our advisor of the US. Department of the Treasury and IRS Oct. 28, 2024 published final regulations regarding the Section 45X Advanced Manufacturing Production Credit of the Internal Revenue Code. Credits are calculated as 10% of the following costs: raw materials, mining, production supplies, supplier financing from 3rd parties, royalties, process labor (for both operations and sulfuric plant), tailings, power, non-mining fuel, maintenance parts and outside services, general and administrative, transload handling and logistics, and raw material logistics costs from Winnemucca to Thacker Pass. Only the credit realized when LAC is in a tax paying position (which starts in year 1 of production) is reflected in the model. LAC also has the potential to claim a benefit of a direct pay credit for five consecutive years that is not reflected in the model.

Payroll taxes are included in salary burdens applied in the OPEX. These include social security, Medicare, federal and state unemployment, Nevada modified business tax, workers compensation and health insurance.

Property tax is assessed by the Nevada Centrally Assessed Properties group on any property operating a mine and/or mill supporting a mine. Tax is 3% to 3.5% of the assessed value, which is estimated at 35% of the taxable value of the property. The property tax owed each year is estimated as 1.1% of the net book value at the close of the prior year plus current year expenditures with no depreciation.

Currently, Humboldt County does not maintain a revenue-based business license for mining operations. No business license costs are included.

22.3.11.1 Corporate Net Income Taxes

In Nevada, lithium mining activities are taxed at 2 to 5% of net proceeds, depending on the ratio of net proceeds to gross proceeds. Net proceeds are estimated as equal to gross profit for purposes of this study. A tax rate of 5% is applicable to the Thacker Pass Project.

Revenue subject to a net proceeds of minerals tax is exempt from the Nevada Commerce tax; therefore, the Nevada Commerce tax is excluded from the study.

The current corporate income tax rate applicable to the Project under the Tax Cut and Jobs Act is 21% of taxable income.

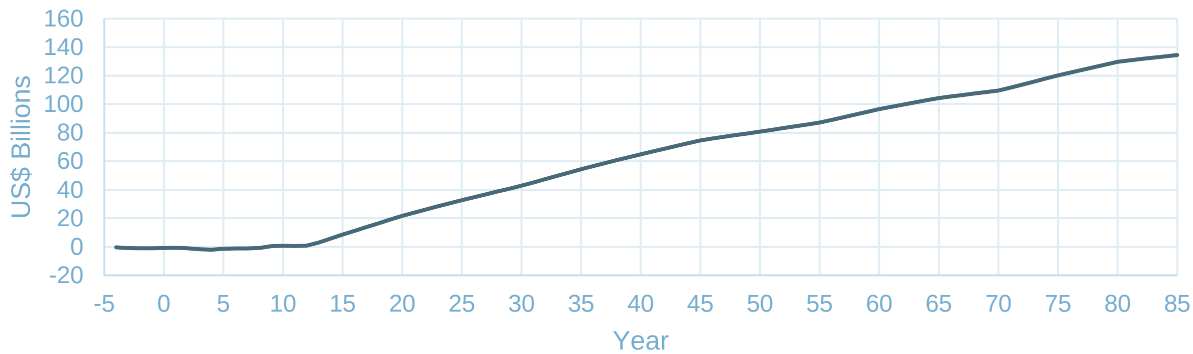
22.3.12 Royalties

The Project is subject to a 1.75% royalty on net revenue produced directly from ore, subject to a buy-down right. This royalty has been included in the economic model on the assumption that the Project owner will exercise its buy-down right to reduce the royalty from 8.0% to 1.75% by making an upfront payment of US$22 million in the first year of operations. Under the current lithium carbonate pricing assumption the ongoing annual royalty payments will average $422/t lithium carbonate sold over the 85-year LOM (base case).

22.4 Cash Flow

Undiscounted annual cash flows (post tax) are presented in Figure 22-4.

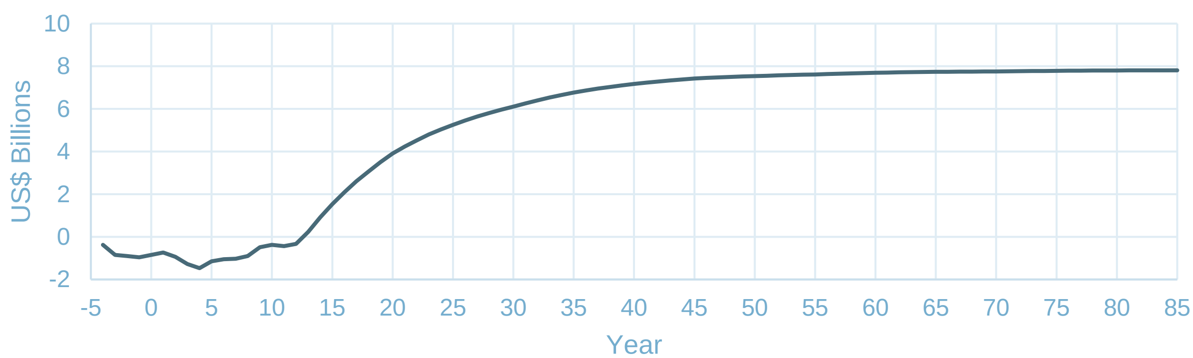
Figure 22-4 Cumulative Undiscounted Annual Cash Flow



Source: LAC, 2024

Cumulative discounted cash flow at the 8% discount rate is presented in Figure 22-5.

Figure 22-5 Cumulative Discounted Cash Flow



Source: LAC, 2024

For the Base Case financial assumptions outlined in Section 22.3, the Project financial performance is measured through Net Present value, Internal Rate of Return and Payback period. The after-tax financial model results are summarized in Table 22-9.

Table 22-9 After-Tax Financial Model Results (85 Year LOM – Base Case)

After-Tax Financial Model Results		
Operational Life	years	85
Mine and Process Plant Operational Life	years	85
Ore Reserve Life	years	85
Average annual EBITDA*	$-B / yr	2.1
After tax Net Present Value ("NPV") @ 8% discount rate	$-B	8.7
After tax Internal Rate of Return	%	20.0
Payback (undiscounted)	years	8.7

*includes capital investments and pre-completion OPEX in years up to production.
This is a non-GAAP financial measure.
For more information, refer to Section 2.4 of this report.

Table 22-10 After-Tax Financial Model Results (Years 1-25 of 85 Year LOM)

After-Tax Financial Model Results		
Operational Life	years	25
Mine and Process Plant Operational Life	years	25
Ore Reserve Life	years	85
Average annual EBITDA*	$-B / yr	2.2
After tax Net Present Value ("NPV") @ 8% discount rate	$-B	5.9
After tax Internal Rate of Return	%	19.6
Payback (undiscounted)	years	8.7

**includes capital investments and pre-completion OPEX in years up to production.
This is a non-GAAP financial measure.
For more information, refer to Section 2.4 of this report.

Table 22-11 presents the detailed cash flow model for the Project.

Table 22-11 Financial Model

		Dates	Dates	Year -4	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4
				-4	-3	-2	-1	1	2	3	4
				1-Jul-23	1-Nov-24	1-Nov-25	1-Nov-26	1-Nov-27	1-Nov-28	1-Nov-29	1-Nov-30
		25 Year	LOM	31-Oct-24	31-Oct-25	31-Oct-26	31-Oct-27	31-Oct-28	31-Oct-29	31-Oct-30	31-Oct-31
Process Plant Production											
Total Ore Mined (dry)	ktonne	220,162	1,056,675		-	-	-	1,667	2,517	2,304	2,625
Ex-pit Ore to Plant (dry)	ktonne	*210,656*	*831,557*					*1,667*	*2,517*	*2,304*	*2,625*
Reclaimed Ore to Plant (dry)	ktonne	*9,506*	*225,117*					*0*	*0*	*0*	*0*
Total Waste Mined (waste)	ktonne	803,205	6,490,176		-	-	-	3,502	4,051	8,410	15,975
Total Mined (ore + waste + reclaim ore+ growth media) (wet)	ktonne	1,093,515	7,997,490					6,363	7,259	11,222	19,156
Total Tailings Produced (CTFS and CGS) (wet)	ktonne	337,766	1,518,712					2,417	3,650	3,481	3,905
Leach Ore Processed (dry)	ktonne	137,560	611,809		-	-	-	984	1,487	1,418	1,590
LCE Mined	ktonne	3,801	14,289		-	-	-	39	55	52	55
Li PPM Head Grade	ppm	3,269	2,538					4,351	4,132	4,251	3,970
LCE Produced/Sold	ktonne	3,122	11,486		-	-	-	30.639	44.066	41.542	44.579
% Li Recovery	%	82.1%	80.4%		-	-	-	79.4%	79.6%	79.7%	80.4%
Sulfuric Acid -Sold	ktonne	-	-								
Selling Price											
LCE Sale Price	$/mt			0	0	0	0	24,000	24,000	24,000	24,000
Sulfuric Acid	$/mt			$0	$0	$0	$0	$74	$73	$73	$72
Revenues	$000										
LCE		$74,921,330	$275,669,681	$0	$0	$0	$0	$735,343	$1,057,578	$996,998	$1,069,900
Selling Fee		-	$0	$0	0	0	0	0	0	0	0
Transportation		-	$0	$0	0	0	0	0	0	0	0
Sulfuric Acid		-	$0	$0	0	0	0	0	0	0	0
Net Revenues		74,921,330	$275,669,681	$0	$0	$0	$0	$735,343	$1,057,578	$996,998	$1,069,900
LCE sales price		$24,000	$24,000	$0	$0	$0	$0	$24,000	$24,000	$24,000	$24,000
Operating Cost	$000										
Mining - $		2,821,615	20,294,097					26,910	31,758	41,108	39,907
Mining $/mt (ore+waste)		*2.6*	*2.5*					*4.2*	*4.4*	*3.7*	*2.1*
Process Labor - $		1,066,088	4,906,773	$0	$42	$927	$12,233	$19,693	$19,925	$19,925	$19,925
Labor $/mt LCE sold		*341.5*	*427.2*					*642.7*	*452.2*	*479.6*	*446.9*
Raw Materials - $		10,571,672	44,984,151					86,419.4	125,997.0	121,140.9	132,637.9
Reagents $/mt LCE sold		*3,386.5*	*3,916.3*					*2,820.5*	*2,859.3*	*2,916.1*	*2,975.3*
Fuel (non-mining) - $		93,004	394,958					1,341.7	1,341.7	1,341.7	1,341.7
Fuel $/mt LCE sold		*29.8*	*34.4*					*43.8*	*30.4*	*32.3*	*30.1*
Power - $		2,056,647	8,733,222					16,247.5	25,240.8	25,134.0	26,248.9
Power $/mt LCE sold		*658.8*	*760.3*					*530.3*	*572.8*	*605.0*	*588.8*
Maintenance, Parts, Outside Services - $		726,200	3,033,549					14,808.1	14,808.1	14,812.8	14,888.5
Maint $/mt LCE sold		*232.6*	*264.1*					*483.3*	*336.0*	*356.6*	*334.0*
Supplies - $		394,331	1,802,616					1,783.9	2,503.4	2,458.8	4,447.8
Supplies $/mt LCE sold		*126.3*	*156.9*					*58.2*	*56.8*	*59.2*	*99.8*
Tailings Placement - $		739,823	4,447,262					4,440.0	6,354.5	6,557.2	5,714.8
Tailings $/mt LCE sold		*237.0*	*387.2*					*144.9*	*144.2*	*157.8*	*128.2*
G&A - $		1,002,877	3,745,968	$682	$2,959	$3,842	$7,262	25,898.5	26,020.3	25,770.3	26,598.6
G&A $/mt LCE sold		*321.3*	*326.1*					*845.3*	*590.5*	*620.3*	*596.7*
Total Operating Cost		$19,472,256	$92,342,596	$682	$3,000	$4,770	$19,495	$197,543	$253,948	$258,248	$271,710
$/mt LCE sold		$6,238	$8,039					$6,447	$5,763	$6,217	$6,095
Royalties (1.75% of Net LCE Rev)		$1,333,123	$4,846,219	$0	0	0	0	34,868.5	18,507.6	17,447.5	18,723.2
Salvage Value		0	0	$0	0	0	0	0	0	0	0
Reclamation & Closure		0	0	$0	0	0	0	0	0	0	0
Total Production Cost		$20,833,326	$97,216,763	$682	$3,000	$4,770	$19,495	$232,411	$272,456	$275,695	$290,433
OPEX Contingency		5,476	5,476	$23	$600	$954	$3,899	$0			
Operating Income (EBITDA)*		$54,082,528	$178,447,442	-$705	-$3,600	-$5,724	-$23,394	$502,932	$785,122	$721,303	$779,467
Depreciation											
Initial Capital		12,326,680	12,440,804	$0	0	0	0	418,698	717,559	512,458	365,958
Sustaining Capital		1,088,072	6,501,659	$0	0	0	0	2,801	8,273	11,717	16,298
Total Depreciation		$13,414,751	$18,942,463	$0	$0	$0	$0	$421,500	$725,832	$524,175	$382,256
Net Income after Depreciation		40,668,481	159,504,979	-$705	-$3,600	-$5,724	-$23,394	$81,432	$59,290	$197,128	$397,211
Property Tax		727,701	1,062,009	4,082	15,654	26,715	31,449	28,527	28,159	32,811	36,628
Net Proceeds of Mineral Tax		2,054,532	8,069,263	0	0	0	0	4,269	3,218	10,115	20,132
Income Taxes		6,473,980	25,529,412	0	0	0	0	11,929	8,662	28,924	58,333
Adv. Manuf. Production Credit		-3,111,438	-11,302,553	0	0	0	0	-11,929	-8,662	-28,924	-58,333
Net Income after Taxes		$34,523,706	$136,146,848	-$4,787	-$19,254	-$32,438	-$54,842	$48,636	$27,913	$154,202	$340,451
Cash Flow	$000										
Net Income after Depreciation		40,668,481	159,504,979	-$705	-$3,600	-$5,724	-$23,394	$81,432	$59,290	$197,128	$397,211
Add back Depreciation		13,414,751	18,942,463	$0	$0	$0	$0	$421,500	$725,832	$524,175	$382,256
Working Capital											
Account Receivables		-8,210,557	-30,210,376	$0	0	0	0	-80,586	-115,899	-109,260	-117,249
Accounts Payable		1,600,459	7,589,802	$0	0	0	0	16,236	20,872	21,226	22,332
Inventory - Parts, Supplies		-663,293	-3,145,511	$0	0	0	0	-6,729	-8,650	-8,797	-9,255
Total Working Capital		-$371,312	-$185,171	$0	$0	$0	$0	-$71,078	-$32,599	$6,846	-$7,341
Capital Expenditures	$000										
Initial Capital		12,326,671	12,440,796	$371,119	$1,051,954	$1,005,519	$430,381	$103,178	$636,475	$898,482	$659,779
Sustaining Capital		1,289,878	6,662,821	$0	$0	$0	$0	$19,604	$24,296	$16,363	$39,137
3rd Party Capital Recovery		258,670	258,670	$0	$0	$0	$0	$33,108	$31,601	$32,279	$30,273
Total Capital Expenditures		13,875,220	19,362,287	$371,119	$1,051,954	$1,005,519	$430,381	$155,889	$692,372	$947,125	$729,188
CAPEX intensity ($/mt LCE)		$4,445	$1,686	0	$0	$0	$0	$5,088	$15,712	$22,799	$16,357
Cash Flow before Taxes	$000	39,835,996	158,899,984	-$371,824	-$1,055,555	-$1,011,243	-$453,775	$275,965	$60,151	-$218,976	$42,937
Cummulative Cash Flow before Taxes											
Taxes		6,148,857	$23,358,131	$4,082	$15,654	$26,715	$31,449	$32,796	$31,377	$42,926	$56,760
		0	0								
Cash Flow after Taxes Before AVTM Loan	$000	33,687,138	$135,541,853	-$375,906	-$1,071,208	-$1,037,957	-$485,224	$243,169	$28,774	-$261,902	-$13,822
Cummulative Cash Flow after Taxes				-$375,906	-$1,447,114	-$2,485,071	-$2,970,295	-$2,727,126	-$2,698,352	-$2,960,254	-$2,974,077
Debt Draws		1,970,000	$1,970,000	$0	$504,383	$971,958	$405,859	$87,800	$0	$0	$0
Principle Payments and Cash Sweep		-$2,253,190	-$2,253,190	$0	$0	$0	$0	$0	-$238,916	-$237,529	-$262,543
Interest Payments		-$763,753	-$763,753	$0	$0	$0	$0	$0	-$112,718	-$100,127	-$87,317
Cash Flow after Taxes incl AVTM Loan	$000	32,640,195	$134,494,909	-$375,906	-$566,826	-$65,999	-$79,364	$330,969	-$322,860	-$599,558	-$363,682
Cash Flow Before Taxes incl AVTM Loan		38,789,052	$157,853,040	-$371,824	-$551,172	-$39,285	-$47,916	$363,765	-$291,483	-$556,632	-$306,923
Period				0	0	0	0	0	0	0	0
Discounted Cash Flow after Taxes @ 0%				-$375,906	-$942,731	-$1,008,731	-$1,088,095	-$757,126	-$1,079,987	-$1,679,545	-$2,043,227
Cumulative Discounted cashflow after taxes @ 0%				-$375,906	-$942,731	-$1,008,731	-$1,088,095	-$757,126	-$1,079,987	-$1,679,545	-$2,043,227

	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	1-Nov-31	1-Nov-32	1-Nov-33	1-Nov-34	1-Nov-35	1-Nov-36	1-Nov-37	1-Nov-38	1-Nov-39	1-Nov-40	1-Nov-41	1-Nov-42	1-Nov-43	1-Nov-44	1-Nov-45	1-Nov-46	1-Nov-47	1-Nov-48
	31-Oct-32	31-Oct-33	31-Oct-34	31-Oct-35	31-Oct-36	31-Oct-37	31-Oct-38	31-Oct-39	31-Oct-40	31-Oct-41	31-Oct-42	31-Oct-43	31-Oct-44	31-Oct-45	31-Oct-46	31-Oct-47	31-Oct-48	31-Oct-49
Process Plant Production																		
Total Ore Mined (dry)	4,246	4,997	4,939	5,309	6,906	7,544	7,966	7,496	11,855	13,475	12,508	12,967	12,439	12,198	12,669	12,336	11,677	12,594
Ex-pit Ore to Plant (dry)	*4,246*	*4,997*	*4,939*	*5,309*	*6,822*	*7,401*	*7,966*	*7,496*	*10,131*	*12,183*	*11,216*	*10,381*	*11,147*	*11,106*	*12,669*	*12,336*	*11,677*	*12,594*
Reclaimed Ore to Plant (dry)	*0*	*0*	*0*	*0*	*84*	*143*	*0*	*0*	*1,724*	*1,293*	*1,293*	*2,586*	*1,293*	*1,092*	*0*	*0*	*0*	*0*
Total Waste Mined (waste)	17,178	20,758	22,932	21,941	24,609	23,059	31,461	36,520	33,766	32,657	31,921	34,080	34,471	31,340	36,861	37,212	48,184	57,867
Total Mined (ore + waste + reclaim ore+ growth media) (wet)	22,253	26,951	29,016	28,474	32,989	32,964	42,240	48,725	49,128	48,918	47,255	49,659	48,955	45,498	56,576	53,584	62,549	73,390
Total Tailings Produced (CTFS and CGS) (wet)	6,258	7,146	7,386	7,736	9,764	11,051	11,217	11,232	16,768	19,545	18,893	20,126	20,012	18,926	20,126	19,957	18,978	20,126
Leach Ore Processed (dry)	2,549	2,910	3,008	3,151	3,977	4,501	4,568	4,574	6,829	7,960	7,695	8,197	8,150	7,708	8,197	8,128	7,729	8,197
LCE Mined	83	98	98	99	127	140	137	138	202	231	204	209	217	209	222	218	197	197
Li PPM Head Grade	3,653	3,683	3,714	3,521	3,461	3,492	3,242	3,464	3,202	3,215	3,065	3,032	3,284	3,215	3,285	3,322	3,165	2,939
LCE Produced/Sold	67.044	79.440	79.543	81.247	103.365	113.734	112.085	112.635	165.186	188.739	167.622	172.590	178.558	171.596	182.149	179.687	163.041	164.059
% Li Recovery	81.2%	81.1%	81.5%	81.7%	81.2%	81.1%	81.5%	81.5%	81.8%	81.9%	82.1%	82.5%	82.1%	82.2%	82.2%	82.4%	82.9%	83.3%
Sulfuric Acid -Sold																		
Selling Price																		
LCE Sale Price	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
Sulfuric Acid	$71	$71	$71	$71	$70	$70	$70	$70	$70	$69	$69	$69	$69	$70	$69	$69	$70	$69
Revenues																		
LCE	$1,609,044	$1,906,564	$1,909,028	$1,949,919	$2,480,752	$2,729,622	$2,690,033	$2,703,238	$3,964,456	$4,529,736	$4,022,924	$4,142,153	$4,285,388	$4,118,295	$4,371,562	$4,312,484	$3,912,967	$3,937,410
Selling Fee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sulfuric Acid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Revenues	$1,609,044	$1,906,564	$1,909,028	$1,949,919	$2,480,752	$2,729,622	$2,690,033	$2,703,238	$3,964,456	$4,529,736	$4,022,924	$4,142,153	$4,285,388	$4,118,295	$4,371,562	$4,312,484	$3,912,967	$3,937,410
LCE sales price	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000
Operating Cost																		
Mining - $	64,888	74,156	78,666	81,292	97,384	106,224	97,411	100,967	129,452	140,499	132,123	148,939	130,265	122,543	154,481	134,717	163,329	170,869
Mining $/mt (ore+waste)	*2.9*	*2.8*	*2.7*	*2.9*	*3.0*	*3.2*	*2.3*	*2.1*	*2.6*	*2.9*	*2.8*	*3.0*	*2.7*	*2.7*	*2.7*	*2.5*	*2.6*	*2.3*
Process Labor - $	$28,303	$31,096	$31,096	$31,096	$40,096	$41,796	$41,796	$41,796	$52,572	$46,703	$46,703	$46,703	$46,703	$46,703	$46,703	$46,703	$64,011	$64,011
Labor $/mt LCE sold	*422.2*	*391.4*	*390.9*	*382.7*	*387.9*	*367.5*	*372.9*	*371.1*	*318.3*	*247.4*	*278.6*	*270.6*	*261.6*	*272.2*	*256.4*	*259.9*	*392.6*	*390.2*
Raw Materials - $	207,225.9	237,181.0	243,005.1	252,786.9	319,744.5	357,632.2	365,473.1	366,289.6	539,416.1	616,195.6	583,633.0	616,461.5	618,694.8	587,671.1	624,323.0	618,348.6	576,561.4	604,162.9
Reagents $/mt LCE sold	*3,090.9*	*2,985.6*	*3,055.0*	*3,111.3*	*3,093.4*	*3,144.4*	*3,260.7*	*3,252.0*	*3,265.5*	*3,264.8*	*3,481.8*	*3,571.8*	*3,464.9*	*3,424.7*	*3,427.5*	*3,441.2*	*3,536.3*	*3,682.6*
Fuel (non-mining) - $	2,220.7	2,220.7	2,220.7	2,220.7	3,332.7	3,332.7	3,332.7	3,332.7	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6
Fuel $/mt LCE sold	*33.1*	*28.0*	*27.9*	*27.3*	*32.2*	*29.3*	*29.7*	*29.6*	*30.5*	*26.7*	*30.0*	*29.2*	*28.2*	*29.3*	*27.6*	*28.0*	*30.9*	*30.7*
Power - $	42,183.8	49,751.4	50,634.4	51,966.3	81,055.0	76,561.1	79,501.4	75,973.3	119,329.3	115,185.4	111,942.5	107,933.3	114,158.6	111,835.1	107,933.3	113,846.6	112,141.5	107,933.3
Power $/mt LCE sold	*629.2*	*626.3*	*636.6*	*639.6*	*784.2*	*673.2*	*709.3*	*674.5*	*722.4*	*610.3*	*667.8*	*625.4*	*639.3*	*651.7*	*592.6*	*633.6*	*687.8*	*657.9*
Maintenance, Parts, Outside Services - $	15,101.9	20,686.0	20,766.4	20,766.4	21,050.5	27,661.7	27,661.7	27,729.4	28,175.0	37,946.5	37,955.8	38,031.6	38,040.9	38,040.9	38,096.7	38,126.0	38,135.3	38,181.8
Maint $/mt LCE sold	*225.3*	*260.4*	*261.1*	*255.6*	*203.7*	*243.2*	*246.8*	*246.2*	*170.6*	*201.1*	*226.4*	*220.4*	*213.0*	*221.7*	*209.2*	*212.2*	*233.9*	*232.7*
Supplies - $	4,934.0	5,755.1	5,839.6	9,346.1	9,116.3	10,116.9	10,180.9	15,274.3	19,981.8	22,825.0	22,172.4	30,241.0	22,913.1	22,329.9	22,966.0	30,475.2	22,104.9	22,420.3
Supplies $/mt LCE sold	*73.6*	*72.4*	*73.4*	*115.0*	*88.2*	*89.0*	*90.8*	*135.6*	*121.0*	*120.9*	*132.3*	*175.2*	*128.3*	*130.1*	*126.1*	*169.6*	*135.6*	*136.7*
Tailings Placement - $	13,085.9	15,259.4	13,800.7	16,535.6	19,063.0	20,449.5	26,380.9	23,262.3	37,045.2	42,735.8	42,023.7	44,007.7	44,196.1	39,906.1	42,078.7	44,748.1	43,397.3	46,716.6
Tailings $/mt LCE sold	*195.2*	*192.1*	*173.5*	*203.5*	*184.4*	*179.8*	*235.4*	*206.5*	*224.3*	*226.4*	*250.7*	*255.0*	*247.5*	*232.6*	*231.0*	*249.0*	*266.2*	*284.8*
G&A - $	32,412.5	29,619.7	29,619.7	29,619.7	38,257.7	37,192.3	37,192.3	37,192.3	44,497.4	50,647.0	50,647.0	50,647.0	50,647.0	50,647.0	50,647.0	50,647.0	45,584.2	45,718.2
G&A $/mt LCE sold	*483.5*	*372.9*	*372.4*	*364.6*	*370.1*	*327.0*	*331.8*	*330.2*	*269.4*	*268.3*	*302.1*	*293.5*	*283.6*	*295.2*	*278.1*	*281.9*	*279.6*	*278.7*
Total Operating Cost	$410,355	$465,725	$475,648	$495,630	$629,099	$680,966	$688,930	$691,816	$975,501	$1,077,770	$1,032,232	$1,087,996	$1,070,651	$1,024,708	$1,092,260	$1,082,644	$1,070,298	$1,105,046
$/mt LCE sold	$6,121	$5,863	$5,980	$6,100	$6,086	$5,987	$6,146	$6,142	$5,905	$5,710	$6,158	$6,304	$5,996	$5,972	$5,997	$6,025	$6,565	$6,736
Royalties (1.75% of Net LCE Rev)	28,158.3	33,364.9	33,408.0	34,123.6	43,413.2	47,768.4	47,075.6	47,306.7	69,378.0	79,270.4	70,401.2	72,487.7	74,994.3	72,070.2	76,502.3	75,468.5	68,476.9	68,904.7
Salvage Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reclamation & Closure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Production Cost	$438,513	$499,090	$509,056	$529,753	$672,512	$728,735	$736,006	$739,123	$1,044,879	$1,157,040	$1,102,633	$1,160,484	$1,145,645	$1,096,779	$1,168,763	$1,158,112	$1,138,775	$1,173,951
OPEX Contingency																		
Operating Income (EBITDA)*	$1,170,531	$1,407,474	$1,399,972	$1,420,166	$1,808,239	$2,000,887	$1,954,027	$1,964,115	$2,919,577	$3,372,696	$2,920,290	$2,981,669	$3,139,743	$3,021,516	$3,202,799	$3,154,372	$2,774,193	$2,763,459
Depreciation																		
Initial Capital	594,013	830,955	668,439	421,176	601,483	882,328	689,664	447,915	862,718	1,302,589	1,000,803	661,866	385,344	384,912	385,344	192,456	0	0
Sustaining Capital	21,845	35,966	45,011	37,433	39,142	41,791	55,552	66,310	54,808	53,800	55,152	50,823	47,253	43,304	50,374	57,603	54,912	55,275
Total Depreciation	$615,858	$866,921	$713,451	$458,609	$640,625	$924,120	$745,216	$514,226	$917,526	$1,356,389	$1,055,955	$712,690	$432,597	$428,217	$435,718	$250,059	$54,912	$55,275
Net Income after Depreciation	$554,673	$540,553	$686,521	$961,557	$1,167,614	$1,076,768	$1,208,811	$1,449,889	$2,002,051	$2,016,308	$1,864,335	$2,268,979	$2,707,146	$2,593,299	$2,767,081	$2,904,312	$2,719,280	$2,708,183
Property Tax	32,485	33,384	37,264	40,508	36,878	40,977	52,341	59,605	51,816	37,750	26,455	18,990	14,559	10,384	6,731	4,426	4,517	4,558
Net Proceeds of Mineral Tax	28,144	27,493	34,802	48,573	59,010	54,519	61,130	73,186	101,078	101,893	94,249	114,537	136,428	130,690	139,446	146,298	137,034	136,514
Income Taxes	81,451	79,363	100,819	146,683	175,502	158,142	178,873	226,663	307,625	297,390	278,789	356,749	440,858	422,015	450,820	479,565	451,882	449,096
Adv. Manuf. Production Credit	-81,451	-79,363	-100,819	-100,770	-133,233	-158,142	-148,122	-125,335	-196,241	-251,343	-215,859	-187,317	-157,824	-152,500	-160,448	-140,817	-119,369	-122,923
Net Income after Taxes	$494,045	$479,676	$614,456	$826,562	$1,029,458	$981,272	$1,064,589	$1,215,770	$1,737,772	$1,830,617	$1,680,702	$1,966,020	$2,273,125	$2,182,710	$2,330,531	$2,414,841	$2,245,216	$2,240,937
Cash Flow																		
Net Income after Depreciation	$554,673	$540,553	$686,521	$961,557	$1,167,614	$1,076,768	$1,208,811	$1,449,889	$2,002,051	$2,016,308	$1,864,335	$2,268,979	$2,707,146	$2,593,299	$2,767,081	$2,904,312	$2,719,280	$2,708,183
Add back Depreciation	$615,858	$866,921	$713,451	$458,609	$640,625	$924,120	$745,216	$514,226	$917,526	$1,356,389	$1,055,955	$712,690	$432,597	$428,217	$435,718	$250,059	$54,912	$55,275
Working Capital																		
Account Receivables	-176,334	-208,939	-209,209	-213,690	-271,863	-299,137	-294,798	-296,245	-434,461	-496,409	-440,868	-453,935	-469,632	-451,320	-479,075	-472,601	-428,818	-431,497
Accounts Payable	33,728	38,279	39,094	40,737	51,707	55,970	56,624	56,862	80,178	88,584	84,841	89,424	87,999	84,223	89,775	88,984	87,970	90,826
Inventory - Parts, Supplies	-13,978	-15,864	-16,202	-16,883	-21,429	-23,196	-23,467	-23,566	-33,229	-36,713	-35,161	-37,061	-36,470	-34,905	-37,206	-36,879	-36,458	-37,642
Total Working Capital	-$52,412	-$29,940	$208	-$3,520	-$51,750	-$24,777	$4,722	-$1,308	-$124,562	-$57,027	$53,349	-$10,382	-$16,532	$16,101	-$24,504	$6,011	$43,188	-$1,006
Capital Expenditures																		
Initial Capital	$177,641	$819,934	$1,024,971	$722,352	$218,363	$1,258,858	$1,631,496	$1,143,160	$173,008	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sustaining Capital	$32,287	$106,733	$20,701	$11,647	$72,915	$18,727	$145,279	$31,430	$36,417	$77,673	$29,114	$34,078	$29,742	$48,656	$103,694	$40,470	$63,178	$59,020
3rd Party Capital Recovery	$29,297	$21,980	$20,530	$19,552	$19,292	$19,170	$1,590	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Capital Expenditures	$239,225	$948,647	$1,066,202	$753,551	$310,569	$1,296,755	$1,778,364	$1,174,590	$209,426	$77,673	$29,114	$34,078	$29,742	$48,656	$103,694	$40,470	$63,178	$59,020
CAPEX intensity ($/mt LCE)	$3,568	$11,942	$13,404	$9,275	$3,005	$11,402	$15,866	$10,428	$1,268	$412	$174	$197	$167	$284	$569	$225	$387	$360
Cash Flow before Taxes	$878,895	$428,887	$333,977	$663,096	$1,445,920	$679,355	$180,385	$788,217	$2,585,589	$3,237,997	$2,944,526	$2,937,208	$3,093,469	$2,988,960	$3,074,601	$3,119,913	$2,754,203	$2,703,433
Cummulative Cash Flow before Taxes																		
Taxes	$60,629	$60,877	$72,066	$134,996	$138,156	$95,496	$144,222	$234,120	$264,279	$185,691	$183,634	$302,959	$434,021	$410,589	$436,550	$489,472	$474,065	$467,246
Cash Flow after Taxes Before AVTM Loan	$818,266	$368,010	$261,911	$528,100	$1,307,764	$583,859	$36,163	$554,098	$2,321,310	$3,052,306	$2,760,892	$2,634,249	$2,659,448	$2,578,371	$2,638,051	$2,630,441	$2,280,139	$2,236,187
Cummulative Cash Flow after Taxes	-$2,155,810	-$1,787,801	-$1,525,889	-$997,789	$309,975	$893,834	$929,997	$1,484,094	$3,805,404	$6,857,710	$9,618,602	$12,252,851	$14,912,300	$17,490,670	$20,128,721	$22,759,162	$25,039,301	$27,275,488
Debt Draws	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principle Payments and Cash Sweep	-$91,089	-$79,673	-$134,580	-$128,032	-$121,534	-$187,082	-$207,597	-$144,962	-$187,376	-$232,277	$0	$0	$0	$0	$0	$0	$0	$0
Interest Payments	-$77,125	-$72,401	-$67,281	-$60,393	-$53,825	-$46,260	-$36,198	-$26,496	-$18,203	-$5,409	$0	$0	$0	$0	$0	$0	$0	$0
Cash Flow after Taxes incl AVTM Loan	$650,052	$215,936	$60,051	$339,675	$1,132,404	$350,518	-$207,632	$382,640	$2,115,731	$2,814,620	$2,760,892	$2,634,249	$2,659,448	$2,578,371	$2,638,051	$2,630,441	$2,280,139	$2,236,187
Cash Flow Before Taxes incl AVTM Loan	$710,681	$276,813	$132,116	$474,670	$1,270,561	$446,014	-$63,410	$616,759	$2,380,010	$3,000,310	$2,944,526	$2,937,208	$3,093,469	$2,988,960	$3,074,601	$3,119,913	$2,754,203	$2,703,433
Period	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Discounted Cash Flow after Taxes @ 0%	-$1,393,175	-$1,177,240	-$1,117,189	-$777,514	$354,890	$705,408	$497,776	$880,416	$2,996,146	$5,810,766	$8,571,658	$11,205,908	$13,865,356	$16,443,726	$19,081,777	$21,712,218	$23,992,357	$26,228,544
Cumulative Discounted cashflow after taxes @ 0%	-$1,393,175	-$1,177,240	-$1,117,189	-$777,514	$354,890	$705,408	$497,776	$880,416	$2,996,146	$5,810,766	$8,571,658	$11,205,908	$13,865,356	$16,443,726	$19,081,777	$21,712,218	$23,992,357	$26,228,544

	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30	Year 31	Year 32	Year 33	Year 34	Year 35	Year 36	Year 37	Year 38	Year 39	Year 40
	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	1-Nov-49	1-Nov-50	1-Nov-51	1-Nov-52	1-Nov-53	1-Nov-54	1-Nov-55	1-Nov-56	1-Nov-57	1-Nov-58	1-Nov-59	1-Nov-60	1-Nov-61	1-Nov-62	1-Nov-63	1-Nov-64	1-Nov-65	1-Nov-66
	31-Oct-50	31-Oct-51	31-Oct-52	31-Oct-53	31-Oct-54	31-Oct-55	31-Oct-56	31-Oct-57	31-Oct-58	31-Oct-59	31-Oct-60	31-Oct-61	31-Oct-62	31-Oct-63	31-Oct-64	31-Oct-65	31-Oct-66	31-Oct-67
Process Plant Production																		
Total Ore Mined (dry)	12,767	11,969	12,194	11,684	11,684	11,684	11,684	11,684	11,692	11,692	11,692	11,692	11,692	16,812	16,812	16,812	16,812	16,812
Ex-pit Ore to Plant (dry)	*12,767*	*11,969*	*12,194*	*11,684*	*11,684*	*11,684*	*11,684*	*11,684*	*11,692*	*11,692*	*11,692*	*11,692*	*11,692*	*16,812*	*16,812*	*16,812*	*16,812*	*16,812*
Reclaimed Ore to Plant (dry)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Waste Mined (waste)	57,308	65,757	71,385	117,586	117,586	117,586	117,586	117,586	98,386	98,386	98,386	98,386	98,386	98,358	98,358	98,358	98,358	98,358
Total Mined (ore + waste + reclaim ore+ growth media) (wet)	76,676	83,588	90,130	133,843	133,843	133,843	133,843	133,843	112,588	112,588	112,588	112,588	112,588	127,638	127,638	127,638	127,638	127,638
Total Tailings Produced (CTFS and CGS) (wet)	19,957	18,926	20,181	19,590	19,590	19,590	19,590	19,590	19,829	19,829	19,829	19,829	19,829	19,623	19,623	19,623	19,623	19,623
Leach Ore Processed (dry)	8,128	7,708	8,219	7,978	7,978	7,978	7,978	7,978	8,076	8,076	8,076	8,076	8,076	7,992	7,992	7,992	7,992	7,992
LCE Mined	196	184	193	192	192	192	192	192	207	207	207	207	207	196	196	196	196	196
Li PPM Head Grade	2,882	2,884	2,977	3,089	3,089	3,089	3,089	3,089	3,330	3,330	3,330	3,330	3,330	2,191	2,191	2,191	2,191	2,191
LCE Produced/Sold	163.067	153.803	161.712	159.531	159.531	159.531	159.531	159.531	171.980	171.980	171.980	171.980	171.980	161.506	161.506	161.506	161.506	161.506
% Li Recovery	83.3%	83.7%	83.7%	83.0%	83.0%	83.0%	83.0%	83.0%	83.0%	83.0%	83.0%	83.0%	83.0%	82.4%	82.4%	82.4%	82.4%	82.4%
Sulfuric Acid -Sold																		
Selling Price																		
LCE Sale Price	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
Sulfuric Acid	$69	$70	$70	$70	$70	$70	$70	$70	$70	$70	$70	$70	$70	$70	$70	$69	$69	$69
Revenues																		
LCE	$3,913,597	$3,691,268	$3,881,071	$3,828,736	$3,828,736	$3,828,736	$3,828,736	$3,828,736	$4,127,504	$4,127,504	$4,127,504	$4,127,504	$4,127,504	$3,876,146	$3,876,146	$3,876,146	$3,876,146	$3,876,146
Selling Fee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sulfuric Acid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Revenues	$3,913,597	$3,691,268	$3,881,071	$3,828,736	$3,828,736	$3,828,736	$3,828,736	$3,828,736	$4,127,504	$4,127,504	$4,127,504	$4,127,504	$4,127,504	$3,876,146	$3,876,146	$3,876,146	$3,876,146	$3,876,146
LCE sales price	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000
Operating Cost																		
Mining - $	188,620	178,872	186,234	310,811	310,811	310,811	310,811	310,811	235,946	235,946	235,946	235,946	235,946	264,832	264,832	264,832	264,832	264,832
Mining $/mt (ore+waste)	*2.5*	*2.1*	*2.1*	*2.3*	*2.3*	*2.3*	*2.3*	*2.3*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*
Process Labor - $	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011
Labor $/mt LCE sold	*392.5*	*416.2*	*395.8*	*401.2*	*401.2*	*401.2*	*401.2*	*401.2*	*372.2*	*372.2*	*372.2*	*372.2*	*372.2*	*396.3*	*396.3*	*396.3*	*396.3*	*396.3*
Raw Materials - $	599,397.0	567,755.2	603,517.9	596,488.9	572,466.0	600,438.9	597,763.7	572,466.0	610,677.2	606,727.2	583,913.2	610,677.2	606,727.2	574,090.7	603,349.1	598,113.6	574,090.7	602,063.5
Reagents $/mt LCE sold	*3,675.8*	*3,691.4*	*3,732.1*	*3,739.0*	*3,588.4*	*3,763.8*	*3,747.0*	*3,588.4*	*3,550.9*	*3,527.9*	*3,395.2*	*3,550.9*	*3,527.9*	*3,554.6*	*3,735.8*	*3,703.3*	*3,554.6*	*3,727.8*
Fuel (non-mining) - $	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6
Fuel $/mt LCE sold	*30.9*	*32.7*	*31.1*	*31.5*	*31.5*	*31.5*	*31.5*	*31.5*	*29.3*	*29.3*	*29.3*	*29.3*	*29.3*	*31.2*	*31.2*	*31.2*	*31.2*	*31.2*
Power - $	113,846.6	111,835.1	108,229.0	113,846.6	111,835.1	107,933.3	114,158.6	111,835.1	107,933.3	113,846.6	112,141.5	107,933.3	113,846.6	111,835.1	108,229.0	113,846.6	111,835.1	107,933.3
Power $/mt LCE sold	*698.2*	*727.1*	*669.3*	*713.6*	*701.0*	*676.6*	*715.6*	*701.0*	*627.6*	*662.0*	*652.1*	*627.6*	*662.0*	*692.4*	*670.1*	*704.9*	*692.4*	*668.3*
Maintenance, Parts, Outside Services - $	38,220.3	38,220.3	38,287.9	38,287.9	38,287.9	38,287.9	38,329.8	38,329.8	38,371.8	38,371.8	38,371.8	38,413.8	38,413.8	38,413.8	38,455.8	38,455.8	38,455.8	38,480.4
Maint $/mt LCE sold	*234.4*	*248.5*	*236.8*	*240.0*	*240.0*	*240.0*	*240.3*	*240.3*	*223.1*	*223.1*	*223.1*	*223.4*	*223.4*	*237.8*	*238.1*	*238.1*	*238.1*	*238.3*
Supplies - $	22,406.1	29,353.8	22,384.3	22,301.4	21,961.8	29,846.1	22,336.6	21,964.3	22,657.8	30,241.7	22,375.7	22,660.3	22,676.2	29,587.2	22,378.1	22,361.3	22,021.7	29,906.0
Supplies $/mt LCE sold	*137.4*	*190.9*	*138.4*	*139.8*	*137.7*	*187.1*	*140.0*	*137.7*	*131.7*	*175.8*	*130.1*	*131.8*	*131.9*	*183.2*	*138.6*	*138.5*	*136.4*	*185.2*
Tailings Placement - $	47,022.6	46,234.5	48,806.6	44,172.0	44,172.0	44,172.0	44,172.0	44,172.0	55,216.6	55,216.6	55,216.6	55,216.6	55,216.6	56,336.3	56,336.3	56,336.3	56,336.3	56,336.3
Tailings $/mt LCE sold	*288.4*	*300.6*	*301.8*	*276.9*	*276.9*	*276.9*	*276.9*	*276.9*	*321.1*	*321.1*	*321.1*	*321.1*	*321.1*	*348.8*	*348.8*	*348.8*	*348.8*	*348.8*
G&A - $	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2
G&A $/mt LCE sold	*280.4*	*297.3*	*282.7*	*286.6*	*286.6*	*286.6*	*286.6*	*286.6*	*265.8*	*265.8*	*265.8*	*265.8*	*265.8*	*283.1*	*283.1*	*283.1*	*283.1*	*283.1*
Total Operating Cost	$1,124,275	$1,087,033	$1,122,222	$1,240,670	$1,214,296	$1,246,251	$1,242,334	$1,214,340	$1,185,564	$1,195,112	$1,162,727	$1,185,609	$1,187,588	$1,189,857	$1,208,343	$1,208,708	$1,182,334	$1,214,314
$/mt LCE sold	$6,895	$7,068	$6,940	$7,777	$7,612	$7,812	$7,787	$7,612	$6,894	$6,949	$6,761	$6,894	$6,905	$7,367	$7,482	$7,484	$7,321	$7,519
Royalties (1.75% of Net LCE Rev)	68,487.9	64,597.2	67,918.8	67,002.9	67,002.9	67,002.9	67,002.9	67,002.9	72,231.3	72,231.3	72,231.3	72,231.3	72,231.3	67,832.5	67,832.5	67,832.5	67,832.5	67,832.5
Salvage Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reclamation & Closure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Production Cost	$1,192,763	$1,151,630	$1,190,141	$1,307,673	$1,281,299	$1,313,254	$1,309,337	$1,281,343	$1,257,796	$1,267,343	$1,234,958	$1,257,840	$1,259,819	$1,257,690	$1,276,175	$1,276,541	$1,250,166	$1,282,146
OPEX Contingency																		
Operating Income (EBITDA)*	$2,720,834	$2,539,638	$2,690,930	$2,521,063	$2,547,437	$2,515,482	$2,519,400	$2,547,393	$2,869,708	$2,860,161	$2,892,546	$2,869,663	$2,867,684	$2,618,456	$2,599,970	$2,599,605	$2,625,979	$2,593,999
Depreciation																		
Initial Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16,308
Sustaining Capital	54,796	58,222	69,608	76,776	79,808	82,210	88,847	102,028	102,137	92,727	85,969	88,343	89,607	87,565	85,168	83,120	91,469	96,515
Total Depreciation	$54,796	$58,222	$69,608	$76,776	$79,808	$82,210	$88,847	$102,028	$102,137	$92,727	$85,969	$88,343	$89,607	$87,565	$85,168	$83,120	$91,469	$112,824
Net Income after Depreciation	$2,666,038	$2,481,416	$2,621,323	$2,444,287	$2,467,630	$2,433,272	$2,430,552	$2,445,365	$2,767,571	$2,767,434	$2,806,577	$2,781,321	$2,778,077	$2,530,891	$2,514,802	$2,516,485	$2,534,511	$2,481,175
Property Tax	4,453	4,613	5,065	5,155	5,339	5,301	5,787	6,023	5,629	5,387	5,235	5,479	5,168	5,360	5,249	5,345	6,232	6,591
Net Proceeds of Mineral Tax	134,426	125,158	132,188	123,455	124,596	122,910	122,770	123,483	139,564	139,567	141,492	140,252	140,091	127,734	126,948	127,033	127,908	125,273
Income Taxes	441,234	409,546	433,065	398,931	403,593	396,732	396,190	399,152	456,536	456,507	464,323	459,279	458,632	415,124	411,910	412,246	415,848	405,201
Adv. Manuf. Production Credit	-124,756	-120,985	-125,975	-138,445	-136,111	-139,546	-139,818	-138,337	-135,993	-136,007	-132,093	-134,618	-134,943	-134,525	-136,134	-135,966	-134,164	-139,497
Net Income after Taxes	$2,210,680	$2,063,084	$2,176,979	$2,055,191	$2,070,212	$2,047,875	$2,045,623	$2,055,046	$2,301,835	$2,301,980	$2,327,621	$2,310,930	$2,309,129	$2,117,198	$2,106,829	$2,107,827	$2,118,687	$2,083,608
Cash Flow																		
Net Income after Depreciation	$2,666,038	$2,481,416	$2,621,323	$2,444,287	$2,467,630	$2,433,272	$2,430,552	$2,445,365	$2,767,571	$2,767,434	$2,806,577	$2,781,321	$2,778,077	$2,530,891	$2,514,802	$2,516,485	$2,534,511	$2,481,175
Add back Depreciation	$54,796	$58,222	$69,608	$76,776	$79,808	$82,210	$88,847	$102,028	$102,137	$92,727	$85,969	$88,343	$89,607	$87,565	$85,168	$83,120	$91,469	$112,824
Working Capital																		
Account Receivables	-428,887	-404,523	-425,323	-419,588	-419,588	-419,588	-419,588	-419,588	-452,329	-452,329	-452,329	-452,329	-452,329	-424,783	-424,783	-424,783	-424,783	-424,783
Accounts Payable	92,406	89,345	92,237	101,973	99,805	102,432	102,110	99,809	97,444	98,228	95,567	97,447	97,610	97,796	99,316	99,346	97,178	99,807
Inventory - Parts, Supplies	-38,297	-37,028	-38,227	-42,262	-41,363	-42,452	-42,318	-41,365	-40,384	-40,710	-39,607	-40,386	-40,453	-40,531	-41,160	-41,173	-40,274	-41,364
Total Working Capital	$3,535	$22,572	-$19,107	$11,436	-$1,269	$1,538	-$189	-$1,347	-$34,127	$459	-$1,559	$1,101	$95	$27,655	$890	$18	-$1,269	$1,539
Capital Expenditures																		
Initial Capital	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$47,552	$57,062
Sustaining Capital	$45,217	$72,778	$110,724	$84,947	$96,565	$78,755	$133,041	$123,393	$66,331	$70,775	$72,115	$110,514	$61,348	$105,073	$75,040	$91,833	$124,549	$88,444
3rd Party Capital Recovery	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Capital Expenditures	$45,217	$72,778	$110,724	$84,947	$96,565	$78,755	$133,041	$123,393	$66,331	$70,775	$72,115	$110,514	$61,348	$105,073	$75,040	$91,833	$172,101	$145,507
CAPEX intensity ($/mt LCE)	$277	$473	$685	$532	$605	$494	$834	$773	$386	$412	$419	$643	$357	$651	$465	$569	$1,066	$901
Cash Flow before Taxes	$2,679,152	$2,489,432	$2,561,100	$2,447,552	$2,449,603	$2,438,265	$2,386,170	$2,422,652	$2,769,251	$2,789,845	$2,818,872	$2,760,251	$2,806,431	$2,541,038	$2,525,820	$2,507,789	$2,452,609	$2,450,032
Cummulative Cash Flow before Taxes																		
Taxes	$455,357	$418,331	$444,344	$389,096	$397,418	$385,397	$384,929	$390,319	$465,735	$465,454	$478,956	$470,391	$468,948	$413,693	$407,973	$408,658	$415,824	$397,568
Cash Flow after Taxes Before AVTM Loan	$2,223,794	$2,071,101	$2,116,755	$2,058,456	$2,052,185	$2,052,868	$2,001,241	$2,032,333	$2,303,515	$2,324,391	$2,339,916	$2,289,860	$2,337,483	$2,127,345	$2,117,846	$2,099,132	$2,036,786	$2,052,464
Cummulative Cash Flow after Taxes	$29,499,282	$31,570,383	$33,687,138	$35,745,594	$37,797,780	$39,850,648	$41,851,888	$43,884,221	$46,187,736	$48,512,127	$50,852,043	$53,141,903	$55,479,386	$57,606,731	$59,724,578	$61,823,709	$63,860,495	$65,912,959
Debt Draws	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principle Payments and Cash Sweep	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Payments	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Flow after Taxes incl AVTM Loan	$2,223,794	$2,071,101	$2,116,755	$2,058,456	$2,052,185	$2,052,868	$2,001,241	$2,032,333	$2,303,515	$2,324,391	$2,339,916	$2,289,860	$2,337,483	$2,127,345	$2,117,846	$2,099,132	$2,036,786	$2,052,464
Cash Flow Before Taxes incl AVTM Loan	$2,679,152	$2,489,432	$2,561,100	$2,447,552	$2,449,603	$2,438,265	$2,386,170	$2,422,652	$2,769,251	$2,789,845	$2,818,872	$2,760,251	$2,806,431	$2,541,038	$2,525,820	$2,507,789	$2,452,609	$2,450,032
Period	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Discounted Cash Flow after Taxes @ 0%	$28,452,338	$30,523,439	$32,640,195	$34,698,650	$36,750,836	$38,803,704	$40,804,945	$42,837,277	$45,140,792	$47,465,183	$49,805,099	$52,094,959	$54,432,442	$56,559,787	$58,677,634	$60,776,765	$62,813,551	$64,866,015
Cumulative Discounted cashflow after taxes @ 0%	$28,452,338	$30,523,439	$32,640,195	$34,698,650	$36,750,836	$38,803,704	$40,804,945	$42,837,277	$45,140,792	$47,465,183	$49,805,099	$52,094,959	$54,432,442	$56,559,787	$58,677,634	$60,776,765	$62,813,551	$64,866,015

***This is a non-GAAP financial measure. For more information, refer to Section 2.4 of this report.**

				Year 41	Year 42	Year 43	Year 44	Year 45	Year 46	Year 47	Year 48	Year 49	Year 50
		Dates	Dates	41	42	43	44	45	46	47	48	49	50
				1-Nov-67	1-Nov-68	1-Nov-69	1-Nov-70	1-Nov-71	1-Nov-72	1-Nov-73	1-Nov-74	1-Nov-75	1-Nov-76
		25 Year	LOM	31-Oct-68	31-Oct-69	31-Oct-70	31-Oct-71	31-Oct-72	31-Oct-73	31-Oct-74	31-Oct-75	31-Oct-76	31-Oct-77
Process Plant Production													
Total Ore Mined (dry)	ktonne	220,162	1,056,675	16,192	16,192	16,192	16,192	16,192	14,127	14,127	14,127	14,127	14,127
Ex-pit Ore to Plant (dry)	ktonne	210,656	831,557	16,192	16,192	16,192	16,192	16,192	6,517	6,517	6,517	6,517	6,517
Reclaimed Ore to Plant (dry)	ktonne	9,506	225,117	0	0	0	0	0	7,610	7,610	7,610	7,610	7,610
Total Waste Mined (waste)	ktonne	803,205	6,490,176	87,149	87,149	87,149	87,149	87,149	120,930	120,930	120,930	120,930	120,930
Total Mined (ore + waste + reclaim ore+ growth media) (wet)	ktonne	1,093,515	7,997,490	125,009	125,009	125,009	125,009	125,009	137,504	137,504	137,504	137,504	137,504
Total Tailings Produced (CTFS and CGS) (wet)	ktonne	337,766	1,518,712	19,600	19,600	19,600	19,600	19,600	19,830	19,830	19,830	19,830	19,830
Leach Ore Processed (dry)	ktonne	137,560	611,809	7,982	7,982	7,982	7,982	7,982	8,076	8,076	8,076	8,076	8,076
LCE Mined	ktonne	3,801	14,289	190	190	190	190	190	152	152	152	152	152
Li PPM Head Grade	ppm	3,269	2,538	2,200	2,200	2,200	2,200	2,200	2,026	2,026	2,026	2,026	2,026
LCE Produced/Sold	ktonne	3,122	11,486	155.414	155.414	155.414	155.414	155.414	114.905	114.905	114.905	114.905	114.905
% Li Recovery	%	82.1%	80.4%	81.9%	81.9%	81.9%	81.9%	81.9%	75.4%	75.4%	75.4%	75.4%	75.4%
Sulfuric Acid -Sold	ktonne	-	-										
Selling Price													
LCE Sale Price	$/mt			24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
Sulfuric Acid	$/mt			$69	$69	$69	$69	$69	$69	$69	$69	$69	$69
Revenues	$000												
LCE		$74,921,330	$275,669,681	$3,729,935	$3,729,935	$3,729,935	$3,729,935	$3,729,935	$2,757,720	$2,757,720	$2,757,720	$2,757,720	$2,757,720
Selling Fee		-	$0	0	0	0	0	0	0	0	0	0	0
Transportation		-	$0	0	0	0	0	0	0	0	0	0	0
Sulfuric Acid		-	$0	0	0	0	0	0	0	0	0	0	0
Net Revenues		74,921,330	$275,669,681	$3,729,935	$3,729,935	$3,729,935	$3,729,935	$3,729,935	$2,757,720	$2,757,720	$2,757,720	$2,757,720	$2,757,720
LCE sales price		$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000
Operating Cost	$000												
Mining - $		2,821,615	20,294,097	343,446	343,446	343,446	343,446	343,446	372,152	372,152	372,152	372,152	372,152
Mining $/mt (ore+waste)		2.6	2.5	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Process Labor - $		1,066,088	4,906,773	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011
Labor $/mt LCE sold		341.5	427.2	411.9	411.9	411.9	411.9	411.9	557.1	557.1	557.1	557.1	557.1
Raw Materials - $		10,571,672	44,984,151	594,377.9	569,080.2	597,053.1	593,103.2	570,289.2	563,736.8	559,786.9	535,763.9	565,022.3	559,786.9
Reagents $/mt LCE sold		3,386.5	3,916.3	3,824.5	3,661.7	3,841.7	3,816.3	3,669.5	4,906.1	4,871.7	4,662.7	4,917.3	4,871.7
Fuel (non-mining) - $		93,004	394,958	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6
Fuel $/mt LCE sold		29.8	34.4	32.4	32.4	32.4	32.4	32.4	43.8	43.8	43.8	43.8	43.8
Power - $		2,056,647	8,733,222	114,158.6	111,835.1	107,933.3	113,846.6	112,141.5	107,933.3	113,846.6	111,835.1	108,229.0	113,846.6
Power $/mt LCE sold		658.8	760.3	734.5	719.6	694.5	732.5	721.6	939.3	990.8	973.3	941.9	990.8
Maintenance, Parts, Outside Services - $		726,200	3,033,549	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4
Maint $/mt LCE sold		232.6	264.1	247.6	247.6	247.6	247.6	247.6	334.9	334.9	334.9	334.9	334.9
Supplies - $		394,331	1,802,616	22,211.8	21,839.6	22,155.9	29,739.7	21,873.8	20,930.9	20,946.8	28,175.2	20,966.1	20,949.3
Supplies $/mt LCE sold		126.3	156.9	142.9	140.5	142.6	191.4	140.7	182.2	182.3	245.2	182.5	182.3
Tailings Placement - $		739,823	4,447,262	60,454.9	60,454.9	60,454.9	60,454.9	60,454.9	60,876.8	60,876.8	60,876.8	60,876.8	60,876.8
Tailings $/mt LCE sold		237.0	387.2	389.0	389.0	389.0	389.0	389.0	529.8	529.8	529.8	529.8	529.8
G&A - $		1,002,877	3,745,968	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2
G&A $/mt LCE sold		321.3	326.1	294.2	294.2	294.2	294.2	294.2	397.9	397.9	397.9	397.9	397.9
Total Operating Cost		$19,472,256	$92,342,596	$1,287,892	$1,259,899	$1,284,286	$1,293,833	$1,261,448	$1,278,872	$1,280,852	$1,262,046	$1,280,489	$1,280,854
$/mt LCE sold		$6,238	$8,039	$8,287	$8,107	$8,264	$8,325	$8,117	$11,130	$11,147	$10,983	$11,144	$11,147
$/mt LCE moving average													
		$427	$422										
Royalties (1.75% of Net LCE Rev)		$1,333,123	$4,846,219	65,273.9	65,273.9	65,273.9	65,273.9	65,273.9	48,260.1	48,260.1	48,260.1	48,260.1	48,260.1
Salvage Value		0	0	0	0	0	0	0	0	0	0	0	0
Reclamation & Closure		0	0	0	0	0	0	0	0	0	0	0	0
Total Production Cost		$20,833,326	$97,216,763	$1,353,166	$1,325,173	$1,349,560	$1,359,107	$1,326,722	$1,327,133	$1,329,112	$1,310,306	$1,328,749	$1,329,114
OPEX Contingency		5,476	5,476										
Operating Income (EBITDA)*		$54,082,528	$178,447,442	$2,376,769	$2,404,762	$2,380,375	$2,370,827	$2,403,212	$1,430,588	$1,428,608	$1,447,415	$1,428,971	$1,428,606
Depreciation													
Initial Capital		12,326,680	12,440,804	27,949	19,960	14,254	10,191	10,180	10,191	5,090	0	0	0
Sustaining Capital		1,088,072	6,501,659	94,910	95,585	92,057	93,929	96,590	89,405	88,480	92,182	97,574	101,675
Total Depreciation		$13,414,751	$18,942,463	$122,860	$115,546	$106,311	$104,120	$106,770	$99,597	$93,570	$92,182	$97,574	$101,675
Net Income after Depreciation		40,668,481	159,504,979	$2,253,909	$2,289,216	$2,274,064	$2,266,707	$2,296,443	$1,330,991	$1,335,038	$1,355,232	$1,331,398	$1,326,931
Property Tax		727,701	1,062,009	6,385	6,221	5,753	6,019	5,606	5,371	5,430	5,592	5,789	5,815
Net Proceeds of Mineral Tax		2,054,532	8,069,263	113,983	115,721	114,987	114,629	116,084	67,828	68,033	69,024	67,850	67,627
Income Taxes		6,473,980	25,529,412	363,223	370,273	367,244	365,775	371,714	201,561	202,368	206,400	201,642	200,750
Adv. Manuf. Production Credit		-3,111,438	-11,302,553	-147,603	-144,072	-145,587	-146,323	-143,349	-142,673	-142,268	-140,249	-142,632	-143,079
Net Income after Taxes		$34,523,706	$136,146,848	$1,917,920	$1,941,074	$1,931,665	$1,926,607	$1,946,389	$1,198,904	$1,201,476	$1,214,465	$1,198,749	$1,195,816
Cash Flow	$000												
Net Income after Depreciation		40,668,481	159,504,979	$2,253,909	$2,289,216	$2,274,064	$2,266,707	$2,296,443	$1,330,991	$1,335,038	$1,355,232	$1,331,398	$1,326,931
Add back Depreciation		13,414,751	18,942,463	$122,860	$115,546	$106,311	$104,120	$106,770	$99,597	$93,570	$92,182	$97,574	$101,675
Working Capital													
Account Receivables		-8,210,557	-30,210,376	-408,760	-408,760	-408,760	-408,760	-408,760	-302,216	-302,216	-302,216	-302,216	-302,216
Accounts Payable		1,600,459	7,589,802	105,854	103,553	105,558	106,342	103,681	105,113	105,275	103,730	105,246	105,276
Inventory - Parts, Supplies		-663,293	-3,145,511	-43,870	-42,917	-43,747	-44,072	-42,969	-43,563	-43,630	-42,990	-43,618	-43,630
Total Working Capital		-$371,312	-$185,171	$19,564	-$1,347	$1,174	$459	-$1,559	$107,383	$95	-$905	$888	$18
Capital Expenditures	$000												
Initial Capital		12,326,671	12,440,796	$9,510	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sustaining Capital		1,289,878	6,662,821	$94,584	$100,652	$63,798	$128,285	$69,206	$78,191	$98,938	$106,925	$115,523	$104,049
3rd Party Capital Recovery		258,670	258,670	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Capital Expenditures		13,875,220	19,362,287	$104,094	$100,652	$63,798	$128,285	$69,206	$78,191	$98,938	$106,925	$115,523	$104,049
CAPEX intensity ($/mt LCE)		$4,445	$1,686	$670	$648	$410	$825	$445	$680	$861	$931	$1,005	$906
Cash Flow before Taxes	$000	39,835,996	158,899,984	$2,292,239	$2,302,763	$2,317,751	$2,243,002	$2,332,448	$1,459,779	$1,329,766	$1,339,585	$1,314,336	$1,324,575
Cummulative Cash Flow before Taxes													
Taxes		6,148,857	$23,358,131	$335,989	$348,143	$342,398	$340,101	$350,054	$132,087	$133,562	$140,767	$132,649	$131,114
		0	0										
Cash Flow after Taxes Before AVTM Loan	$000	33,687,138	$135,541,853	$1,956,250	$1,954,620	$1,975,353	$1,902,901	$1,982,394	$1,327,693	$1,196,204	$1,198,817	$1,181,687	$1,193,461
Cummulative Cash Flow after Taxes				$67,869,209	$69,823,829	$71,799,181	$73,702,083	$75,684,476	$77,012,169	$78,208,373	$79,407,190	$80,588,877	$81,782,338
Debt Draws		1,970,000	$1,970,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principle Payments and Cash Sweep		-$2,253,190	-$2,253,190	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Payments		-$763,753	-$763,753	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Flow after Taxes incl AVTM Loan	$000	32,640,195	$134,494,909	$1,956,250	$1,954,620	$1,975,353	$1,902,901	$1,982,394	$1,327,693	$1,196,204	$1,198,817	$1,181,687	$1,193,461
Cash Flow Before Taxes incl AVTM Loan		38,789,052	$157,853,040	$2,292,239	$2,302,763	$2,317,751	$2,243,002	$2,332,448	$1,459,779	$1,329,766	$1,339,585	$1,314,336	$1,324,575
Period				0	0	0	0	0	0	0	0	0	0
Discounted Cash Flow after Taxes @ 0%				$66,822,265	$68,776,885	$70,752,237	$72,655,139	$74,637,533	$75,965,225	$77,161,429	$78,360,246	$79,541,934	$80,735,394
Cumulative Discounted cashflow after taxes @ 0%				$66,822,265	$68,776,885	$70,752,237	$72,655,139	$74,637,533	$75,965,225	$77,161,429	$78,360,246	$79,541,934	$80,735,394

	Year 51	Year 52	Year 53	Year 54	Year 55	Year 56	Year 57	Year 58	Year 59	Year 60	Year 61	Year 62	Year 63	Year 64	Year 65	Year 66	Year 67
	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67
	1-Nov-77	1-Nov-78	1-Nov-79	1-Nov-80	1-Nov-81	1-Nov-82	1-Nov-83	1-Nov-84	1-Nov-85	1-Nov-86	1-Nov-87	1-Nov-88	1-Nov-89	1-Nov-90	1-Nov-91	1-Nov-92	1-Nov-93
	31-Oct-78	31-Oct-79	31-Oct-80	31-Oct-81	31-Oct-82	31-Oct-83	31-Oct-84	31-Oct-85	31-Oct-86	31-Oct-87	31-Oct-88	31-Oct-89	31-Oct-90	31-Oct-91	31-Oct-92	31-Oct-93	31-Oct-94
Process Plant Production																	
Total Ore Mined (dry)	14,386	14,386	14,386	14,386	14,386	14,647	14,647	14,647	14,647	14,647	14,682	14,682	14,682	14,682	14,682	12,803	12,803
Ex-pit Ore to Plant (dry)	7,492	7,492	7,492	7,492	7,492	14,647	14,647	14,647	14,647	14,647	11,062	11,062	11,062	11,062	11,062	2,946	2,946
Reclaimed Ore to Plant (dry)	6,895	6,895	6,895	6,895	6,895	0	0	0	0	0	3,620	3,620	3,620	3,620	3,620	9,857	9,857
Total Waste Mined (waste)	123,147	123,147	123,147	123,147	123,147	106,520	106,520	106,520	106,520	106,520	117,701	117,701	117,701	117,701	117,701	119,108	119,108
Total Mined (ore + waste + reclaim ore+ growth media) (wet)	140,020	140,020	140,020	140,020	140,020	124,921	124,921	124,921	124,921	124,921	134,869	134,869	134,869	134,869	134,869	134,134	134,134
Total Tailings Produced (CTFS and CGS) (wet)	19,623	19,623	19,623	19,623	19,623	19,589	19,589	19,589	19,589	19,589	19,841	19,841	19,841	19,841	19,841	19,623	19,623
Leach Ore Processed (dry)	7,992	7,992	7,992	7,992	7,992	7,978	7,978	7,978	7,978	7,978	8,080	8,080	8,080	8,080	8,080	7,987	7,987
LCE Mined	160	160	160	160	160	194	194	194	194	194	170	170	170	170	170	136	136
Li PPM Head Grade	2,090	2,090	2,090	2,090	2,090	2,483	2,483	2,483	2,483	2,483	2,172	2,172	2,172	2,172	2,172	1,992	1,992
LCE Produced/Sold	123.222	123.222	123.222	123.222	123.222	156.009	156.009	156.009	156.009	156.009	131.437	131.437	131.437	131.437	131.437	102.076	102.076
% Li Recovery	77.0%	77.0%	77.0%	77.0%	77.0%	80.6%	80.6%	80.6%	80.6%	80.6%	77.4%	77.4%	77.4%	77.4%	77.4%	75.2%	75.2%
Sulfuric Acid -Sold																	
Selling Price																	
LCE Sale Price	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
Sulfuric Acid	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69
Revenues																	
LCE	$2,957,316	$2,957,316	$2,957,316	$2,957,316	$2,957,316	$3,744,205	$3,744,205	$3,744,205	$3,744,205	$3,744,205	$3,154,489	$3,154,489	$3,154,489	$3,154,489	$3,154,489	$2,449,819	$2,449,819
Selling Fee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sulfuric Acid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Revenues	$2,957,316	$2,957,316	$2,957,316	$2,957,316	$2,957,316	$3,744,205	$3,744,205	$3,744,205	$3,744,205	$3,744,205	$3,154,489	$3,154,489	$3,154,489	$3,154,489	$3,154,489	$2,449,819	$2,449,819
LCE sales price	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000
Operating Cost																	
Mining - $	448,451	448,451	448,451	448,451	448,451	421,701	421,701	421,701	421,701	421,701	294,252	294,252	294,252	294,252	294,252	280,884	280,884
Mining $/mt (ore+waste)	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	2.2	2.2	2.2	2.2	2.2	2.1	2.1
Process Labor - $	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011
Labor $/mt LCE sold	519.5	519.5	519.5	519.5	519.5	410.3	410.3	410.3	410.3	410.3	487.0	487.0	487.0	487.0	487.0	627.1	627.1
Raw Materials - $	542,603.8	570,576.6	567,901.4	542,603.8	570,576.6	593,592.2	570,778.2	597,542.1	593,592.2	569,569.3	578,619.0	573,383.5	549,360.6	577,333.4	574,658.3	525,212.6	553,185.4
Reagents $/mt LCE sold	4,403.5	4,630.5	4,608.8	4,403.5	4,630.5	3,804.9	3,658.6	3,830.2	3,804.9	3,650.9	4,402.2	4,362.4	4,179.6	4,392.5	4,372.1	5,145.3	5,419.3
Fuel (non-mining) - $	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6
Fuel $/mt LCE sold	40.8	40.8	40.8	40.8	40.8	32.3	32.3	32.3	32.3	32.3	38.3	38.3	38.3	38.3	38.3	49.3	49.3
Power - $	111,835.1	107,933.3	114,158.6	111,835.1	107,933.3	113,846.6	112,141.5	107,933.3	113,846.6	111,835.1	108,229.0	113,846.6	111,835.1	107,933.3	114,158.6	111,835.1	107,933.3
Power $/mt LCE sold	907.6	875.9	926.4	907.6	875.9	729.7	718.8	691.8	729.7	716.9	823.4	866.2	850.9	821.2	868.5	1,095.6	1,057.4
Maintenance, Parts, Outside Services - $	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4
Maint $/mt LCE sold	312.3	312.3	312.3	312.3	312.3	246.7	246.7	246.7	246.7	246.7	292.8	292.8	292.8	292.8	292.8	377.0	377.0
Supplies - $	20,861.6	28,746.0	21,236.4	20,864.1	21,180.5	29,757.7	21,891.8	22,176.3	22,192.2	29,420.6	21,467.0	21,450.2	21,110.6	28,994.9	21,485.3	20,223.4	20,539.8
Supplies $/mt LCE sold	169.3	233.3	172.3	169.3	171.9	190.7	140.3	142.1	142.2	188.6	163.3	163.2	160.6	220.6	163.5	198.1	201.2
Tailings Placement - $	64,045.3	64,045.3	64,045.3	64,045.3	64,045.3	64,680.1	64,680.1	64,680.1	64,680.1	64,680.1	66,796.3	66,796.3	66,796.3	66,796.3	66,796.3	65,018.8	65,018.8
Tailings $/mt LCE sold	519.8	519.8	519.8	519.8	519.8	414.6	414.6	414.6	414.6	414.6	508.2	508.2	508.2	508.2	508.2	637.0	637.0
G&A - $	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2
G&A $/mt LCE sold	371.0	371.0	371.0	371.0	371.0	293.0	293.0	293.0	293.0	293.0	347.8	347.8	347.8	347.8	347.8	447.9	447.9
Total Operating Cost	$1,341,039	$1,372,995	$1,369,035	$1,341,042	$1,365,429	$1,376,820	$1,344,435	$1,367,276	$1,369,255	$1,350,449	$1,222,606	$1,222,971	$1,196,597	$1,228,552	$1,224,593	$1,156,417	$1,180,804
$/mt LCE sold	$10,883	$11,142	$11,110	$10,883	$11,081	$8,825	$8,618	$8,764	$8,777	$8,656	$9,302	$9,305	$9,104	$9,347	$9,317	$11,329	$11,568
$/mt LCE moving average																	
Royalties (1.75% of Net LCE Rev)	51,753.0	51,753.0	51,753.0	51,753.0	51,753.0	65,523.6	65,523.6	65,523.6	65,523.6	65,523.6	55,203.6	55,203.6	55,203.6	55,203.6	55,203.6	42,871.8	42,871.8
Salvage Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reclamation & Closure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Production Cost	$1,392,792	$1,424,748	$1,420,788	$1,392,795	$1,417,182	$1,442,344	$1,409,959	$1,432,799	$1,434,779	$1,415,972	$1,277,809	$1,278,174	$1,251,800	$1,283,756	$1,279,796	$1,199,289	$1,223,676
OPEX Contingency																	
Operating Income (EBITDA)*	$1,564,523	$1,532,568	$1,536,527	$1,564,521	$1,540,133	$2,301,861	$2,334,246	$2,311,406	$2,309,427	$2,328,233	$1,876,680	$1,876,315	$1,902,689	$1,870,733	$1,874,693	$1,250,530	$1,226,143
Depreciation																	
Initial Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sustaining Capital	102,802	103,071	110,124	125,119	128,064	117,428	107,306	101,025	108,128	115,257	102,542	87,627	82,323	87,968	95,373	96,686	96,533
Total Depreciation	$102,802	$103,071	$110,124	$125,119	$128,064	$117,428	$107,306	$101,025	$108,128	$115,257	$102,542	$87,627	$82,323	$87,968	$95,373	$96,686	$96,533
Net Income after Depreciation	$1,461,722	$1,429,497	$1,426,404	$1,439,402	$1,412,069	$2,184,433	$2,226,940	$2,210,381	$2,201,299	$2,212,976	$1,774,138	$1,788,688	$1,820,365	$1,782,766	$1,779,320	$1,153,845	$1,129,610
Property Tax	5,920	5,902	6,266	6,793	6,430	6,099	5,778	5,624	6,051	6,028	5,461	5,283	5,148	5,526	5,446	5,720	5,723
Net Proceeds of Mineral Tax	74,427	72,848	72,689	73,311	71,969	110,598	112,691	111,886	111,434	111,999	89,929	90,657	92,215	90,367	90,191	58,849	57,661
Income Taxes	223,018	216,582	215,966	218,565	213,107	349,014	357,501	354,193	352,380	354,714	280,815	283,718	290,043	282,535	281,849	173,358	168,518
Adv. Manuf. Production Credit	-149,559	-152,782	-153,091	-151,791	-154,525	-155,977	-151,727	-153,382	-154,291	-153,123	-138,035	-136,580	-133,412	-137,172	-137,517	-129,597	-132,021
Net Income after Taxes	$1,307,916	$1,286,946	$1,284,574	$1,292,525	$1,275,088	$1,874,699	$1,902,695	$1,892,060	$1,885,723	$1,893,357	$1,535,967	$1,545,610	$1,566,372	$1,541,510	$1,539,352	$1,045,515	$1,029,727
Cash Flow																	
Net Income after Depreciation	$1,461,722	$1,429,497	$1,426,404	$1,439,402	$1,412,069	$2,184,433	$2,226,940	$2,210,381	$2,201,299	$2,212,976	$1,774,138	$1,788,688	$1,820,365	$1,782,766	$1,779,320	$1,153,845	$1,129,610
Add back Depreciation	$102,802	$103,071	$110,124	$125,119	$128,064	$117,428	$107,306	$101,025	$108,128	$115,257	$102,542	$87,627	$82,323	$87,968	$95,373	$96,686	$96,533
Working Capital																	
Account Receivables	-324,089	-324,089	-324,089	-324,089	-324,089	-410,324	-410,324	-410,324	-410,324	-410,324	-345,697	-345,697	-345,697	-345,697	-345,697	-268,473	-268,473
Accounts Payable	110,222	112,849	112,523	110,223	112,227	113,163	110,502	112,379	112,542	110,996	100,488	100,518	98,350	100,977	100,651	95,048	97,052
Inventory - Parts, Supplies	-45,680	-46,769	-46,634	-45,681	-46,511	-46,899	-45,796	-46,574	-46,642	-46,001	-41,646	-41,659	-40,760	-41,849	-41,714	-39,392	-40,222
Total Working Capital	-$18,977	$1,538	-$191	-$1,347	$1,174	-$85,686	-$1,559	$1,099	$95	-$905	$58,474	$18	-$1,269	$1,538	-$191	$73,943	$1,174
Capital Expenditures																	
Initial Capital	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sustaining Capital	$112,309	$101,450	$143,202	$172,992	$95,073	$87,339	$78,203	$87,003	$146,964	$113,131	$50,986	$71,470	$70,045	$122,298	$88,144	$121,575	$96,844
3rd Party Capital Recovery	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Capital Expenditures	$112,309	$101,450	$143,202	$172,992	$95,073	$87,339	$78,203	$87,003	$146,964	$113,131	$50,986	$71,470	$70,045	$122,298	$88,144	$121,575	$96,844
CAPEX intensity ($/mt LCE)	$911	$823	$1,162	$1,404	$772	$560	$501	$558	$942	$725	$388	$544	$533	$930	$671	$1,191	$949
Cash Flow before Taxes	$1,433,237	$1,432,656	$1,393,134	$1,390,182	$1,446,235	$2,128,836	$2,254,485	$2,225,502	$2,162,557	$2,214,197	$1,884,167	$1,804,862	$1,831,374	$1,749,973	$1,786,358	$1,202,898	$1,130,473
Cummulative Cash Flow before Taxes																	
Taxes	$153,805	$142,550	$141,830	$146,877	$136,981	$309,734	$324,244	$318,321	$315,575	$319,618	$238,170	$243,078	$253,994	$241,255	$239,969	$108,330	$99,882
Cash Flow after Taxes Before AVTM Loan	$1,279,432	$1,290,106	$1,251,304	$1,243,304	$1,309,254	$1,819,101	$1,930,241	$1,907,181	$1,846,982	$1,894,578	$1,645,997	$1,561,784	$1,577,381	$1,508,718	$1,546,389	$1,094,568	$1,030,590
Cummulative Cash Flow after Taxes	$83,061,770	$84,351,876	$85,603,180	$86,846,485	$88,155,738	$89,974,840	$91,905,080	$93,812,262	$95,659,244	$97,553,822	$99,199,819	$100,761,603	$102,338,984	$103,847,702	$105,394,091	$106,488,660	$107,519,250
Debt Draws	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principle Payments and Cash Sweep	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Payments	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Flow after Taxes incl AVTM Loan	$1,279,432	$1,290,106	$1,251,304	$1,243,304	$1,309,254	$1,819,101	$1,930,241	$1,907,181	$1,846,982	$1,894,578	$1,645,997	$1,561,784	$1,577,381	$1,508,718	$1,546,389	$1,094,568	$1,030,590
Cash Flow Before Taxes incl AVTM Loan	$1,433,237	$1,432,656	$1,393,134	$1,390,182	$1,446,235	$2,128,836	$2,254,485	$2,225,502	$2,162,557	$2,214,197	$1,884,167	$1,804,862	$1,831,374	$1,749,973	$1,786,358	$1,202,898	$1,130,473
Period	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Discounted Cash Flow after Taxes @ 0%	$82,014,826	$83,304,932	$84,556,236	$85,799,541	$87,108,794	$88,927,896	$90,858,136	$92,765,318	$94,612,300	$96,506,878	$98,152,875	$99,714,659	$101,292,040	$102,800,758	$104,347,147	$105,441,716	$106,472,306
Cumulative Discounted cashflow after taxes @ 0%	$82,014,826	$83,304,932	$84,556,236	$85,799,541	$87,108,794	$88,927,896	$90,858,136	$92,765,318	$94,612,300	$96,506,878	$98,152,875	$99,714,659	$101,292,040	$102,800,758	$104,347,147	$105,441,716	$106,472,306

	Year 68	Year 69	Year 70	Year 71	Year 72	Year 73	Year 74	Year 75	Year 76	Year 77	Year 78	Year 79	Year 80	Year 81	Year 82	Year 83	Year 84	Year 85
	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
	1-Nov-94	1-Nov-95	1-Nov-96	1-Nov-97	1-Nov-98	1-Nov-99	1-Nov-00	1-Nov-01	1-Nov-02	1-Nov-03	1-Nov-04	1-Nov-05	1-Nov-06	1-Nov-07	1-Nov-08	1-Nov-09	1-Nov-10	1-Nov-11
	31-Oct-95	31-Oct-96	31-Oct-97	31-Oct-98	31-Oct-99	31-Oct-00	31-Oct-01	31-Oct-02	31-Oct-03	31-Oct-04	31-Oct-05	31-Oct-06	31-Oct-07	31-Oct-08	31-Oct-09	31-Oct-10	31-Oct-11	31-Oct-12
Process Plant Production																		
Total Ore Mined (dry)	12,803	12,803	12,803	14,243	14,243	14,243	14,243	14,243	13,968	13,968	13,968	13,968	13,968	12,066	12,066	12,066	12,066	12,066
Ex-pit Ore to Plant (dry)	2,946	2,946	2,946	14,243	14,243	14,243	14,243	14,243	10,893	10,893	10,893	10,893	10,893	0	0	0	0	0
Reclaimed Ore to Plant (dry)	9,857	9,857	9,857	0	0	0	0	0	3,075	3,075	3,075	3,075	3,075	12,066	12,066	12,066	12,066	12,066
Total Waste Mined (waste)	119,108	119,108	119,108	117,303	117,303	117,303	117,303	117,303	30,473	30,473	30,473	30,473	30,473	735	735	735	735	735
Total Mined (ore + waste + reclaim ore+ growth media) (wet)	134,134	134,134	134,134	135,029	135,029	135,029	135,029	135,029	60,552	60,552	60,552	60,552	60,552	14,690	14,690	14,690	14,690	14,690
Total Tailings Produced (CTFS and CGS) (wet)	19,623	19,623	19,623	19,579	19,579	19,579	19,579	19,579	19,829	19,829	19,829	19,829	19,829	19,634	19,634	19,634	19,634	19,634
Leach Ore Processed (dry)	7,987	7,987	7,987	7,974	7,974	7,974	7,974	7,974	8,076	8,076	8,076	8,076	8,076	6,659	6,659	6,659	6,659	6,659
LCE Mined	136	136	136	205	205	205	205	205	182	182	182	182	182	114	114	114	114	114
Li PPM Head Grade	1,992	1,992	1,992	2,699	2,699	2,699	2,699	2,699	2,448	2,448	2,448	2,448	2,448	1,778	1,778	1,778	1,778	1,778
LCE Produced/Sold	102.076	102.076	102.076	163.675	163.675	163.675	163.675	163.675	144.681	144.681	144.681	144.681	144.681	88.469	88.469	88.469	88.469	88.469
% Li Recovery	75.2%	75.2%	75.2%	80.0%	80.0%	80.0%	80.0%	80.0%	79.5%	79.5%	79.5%	79.5%	79.5%	77.5%	77.5%	77.5%	77.5%	77.5%
Sulfuric Acid -Sold																		
Selling Price																		
LCE Sale Price	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
Sulfuric Acid	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69
Revenues																		
LCE	$2,449,819	$2,449,819	$2,449,819	$3,928,194	$3,928,194	$3,928,194	$3,928,194	$3,928,194	$3,472,347	$3,472,347	$3,472,347	$3,472,347	$3,472,347	$2,123,260	$2,123,260	$2,123,260	$2,123,260	$2,123,260
Selling Fee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sulfuric Acid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Revenues	$2,449,819	$2,449,819	$2,449,819	$3,928,194	$3,928,194	$3,928,194	$3,928,194	$3,928,194	$3,472,347	$3,472,347	$3,472,347	$3,472,347	$3,472,347	$2,123,260	$2,123,260	$2,123,260	$2,123,260	$2,123,260
LCE sales price	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000
Operating Cost																		
Mining - $	280,884	280,884	280,884	260,566	260,566	260,566	260,566	260,566	166,460	166,460	166,460	166,460	166,460	94,996	94,996	94,996	94,996	94,996
Mining $/mt (ore+waste)	2.1	2.1	2.1	1.9	1.9	1.9	1.9	1.9	2.7	2.7	2.7	2.7	2.7	6.5	6.5	6.5	6.5	6.5
Process Labor - $	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011	$64,011
Labor $/mt LCE sold	627.1	627.1	627.1	391.1	391.1	391.1	391.1	391.1	442.4	442.4	442.4	442.4	442.4	723.5	723.5	723.5	723.5	723.5
Raw Materials - $	549,235.5	526,421.5	553,185.4	599,897.2	575,874.3	603,847.1	599,897.2	575,874.3	588,225.9	585,550.8	560,253.1	588,225.9	584,276.0	515,230.9	541,994.8	538,044.9	514,021.9	543,280.4
Reagents $/mt LCE sold	5,380.7	5,157.2	5,419.3	3,665.2	3,518.4	3,689.3	3,665.2	3,518.4	4,065.7	4,047.2	3,872.3	4,065.7	4,038.4	5,823.8	6,126.4	6,081.7	5,810.2	6,140.9
Fuel (non-mining) - $	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6	5,032.6
Fuel $/mt LCE sold	49.3	49.3	49.3	30.7	30.7	30.7	30.7	30.7	34.8	34.8	34.8	34.8	34.8	56.9	56.9	56.9	56.9	56.9
Power - $	113,846.6	112,141.5	107,933.3	113,846.6	111,835.1	107,933.3	113,846.6	111,835.1	107,933.3	114,158.6	111,835.1	107,933.3	113,846.6	112,141.5	107,933.3	113,846.6	111,835.1	108,229.0
Power $/mt LCE sold	1,115.3	1,098.6	1,057.4	695.6	683.3	659.4	695.6	683.3	746.0	789.0	773.0	746.0	786.9	1,267.6	1,220.0	1,286.8	1,264.1	1,223.4
Maintenance, Parts, Outside Services - $	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4	38,480.4
Maint $/mt LCE sold	377.0	377.0	377.0	235.1	235.1	235.1	235.1	235.1	266.0	266.0	266.0	266.0	266.0	435.0	435.0	435.0	435.0	435.0
Supplies - $	28,123.6	20,257.6	20,542.2	22,424.5	29,652.9	22,406.2	22,424.5	22,087.4	29,396.2	21,886.6	21,514.4	21,830.7	29,414.5	19,845.3	20,129.9	20,145.8	27,374.2	20,165.1
Supplies $/mt LCE sold	275.5	198.5	201.2	137.0	181.2	136.9	137.0	134.9	203.2	151.3	148.7	150.9	203.3	224.3	227.5	227.7	309.4	227.9
Tailings Placement - $	65,018.8	65,018.8	65,018.8	67,957.5	67,957.5	67,957.5	67,957.5	67,957.5	68,593.0	68,593.0	68,593.0	68,593.0	68,593.0	67,340.1	67,340.1	67,340.1	67,340.1	67,340.1
Tailings $/mt LCE sold	637.0	637.0	637.0	415.2	415.2	415.2	415.2	415.2	474.1	474.1	474.1	474.1	474.1	761.2	761.2	761.2	761.2	761.2
G&A - $	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2	45,718.2
G&A $/mt LCE sold	447.9	447.9	447.9	279.3	279.3	279.3	279.3	279.3	316.0	316.0	316.0	316.0	316.0	516.8	516.8	516.8	516.8	516.8
Total Operating Cost	$1,190,352	$1,157,966	$1,180,807	$1,217,934	$1,199,128	$1,215,953	$1,217,934	$1,191,563	$1,113,851	$1,109,892	$1,081,898	$1,106,286	$1,115,833	$962,796	$985,637	$987,616	$968,810	$987,253
$/mt LCE sold	$11,661	$11,344	$11,568	$7,441	$7,326	$7,429	$7,441	$7,280	$7,699	$7,671	$7,478	$7,646	$7,712	$10,883	$11,141	$11,163	$10,951	$11,159
$/mt LCE moving average																		
Royalties (1.75% of Net LCE Rev)	42,871.8	42,871.8	42,871.8	68,743.4	68,743.4	68,743.4	68,743.4	68,743.4	60,766.1	60,766.1	60,766.1	60,766.1	60,766.1	37,157.1	37,157.1	37,157.1	37,157.1	37,157.1
Salvage Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reclamation & Closure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Production Cost	$1,233,223	$1,200,838	$1,223,679	$1,286,678	$1,267,872	$1,284,696	$1,286,678	$1,260,306	$1,174,617	$1,170,658	$1,142,664	$1,167,052	$1,176,599	$999,953	$1,022,794	$1,024,773	$1,005,967	$1,024,410
OPEX Contingency																		
Operating Income (EBITDA)*	$1,216,595	$1,248,981	$1,226,140	$2,641,516	$2,660,322	$2,643,498	$2,641,516	$2,667,888	$2,297,730	$2,301,689	$2,329,683	$2,305,295	$2,295,748	$1,123,307	$1,100,467	$1,098,488	$1,117,294	$1,098,850
Depreciation																		
Initial Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sustaining Capital	95,471	101,243	104,314	100,102	97,325	89,362	79,080	75,554	71,151	69,474	69,079	63,150	57,259	55,118	54,059	60,159	66,586	63,050
Total Depreciation	$95,471	$101,243	$104,314	$100,102	$97,325	$89,362	$79,080	$75,554	$71,151	$69,474	$69,079	$63,150	$57,259	$55,118	$54,059	$60,159	$66,586	$63,050
Net Income after Depreciation	$1,121,125	$1,147,737	$1,121,826	$2,541,414	$2,562,998	$2,554,136	$2,562,436	$2,592,334	$2,226,579	$2,232,216	$2,260,604	$2,242,146	$2,238,489	$1,068,189	$1,046,408	$1,038,328	$1,050,708	$1,035,800
Property Tax	5,724	5,958	5,792	5,620	5,610	5,112	4,944	4,842	4,727	4,809	4,769	4,555	4,426	4,366	4,340	4,741	4,812	4,618
Net Proceeds of Mineral Tax	57,247	58,545	57,272	128,289	129,349	128,923	129,340	130,808	112,443	112,721	114,112	113,214	113,040	54,372	53,306	52,904	53,504	52,777
Income Taxes	166,824	172,140	166,965	416,015	420,325	418,554	420,209	426,179	363,757	364,883	370,552	366,865	366,133	163,854	159,504	157,892	160,365	157,388
Adv. Manuf. Production Credit	-132,869	-130,208	-132,799	-138,678	-136,520	-137,406	-136,576	-133,586	-124,577	-124,013	-121,174	-123,020	-123,386	-105,507	-107,685	-108,493	-107,255	-108,746
Net Income after Taxes	$1,024,200	$1,041,303	$1,024,595	$2,130,168	$2,144,234	$2,138,953	$2,144,519	$2,164,091	$1,870,228	$1,873,817	$1,892,346	$1,880,533	$1,878,276	$951,103	$936,943	$931,284	$939,281	$929,763
Cash Flow																		
Net Income after Depreciation	$1,121,125	$1,147,737	$1,121,826	$2,541,414	$2,562,998	$2,554,136	$2,562,436	$2,592,334	$2,226,579	$2,232,216	$2,260,604	$2,242,146	$2,238,489	$1,068,189	$1,046,408	$1,038,328	$1,050,708	$1,035,800
Add back Depreciation	$95,471	$101,243	$104,314	$100,102	$97,325	$89,362	$79,080	$75,554	$71,151	$69,474	$69,079	$63,150	$57,259	$55,118	$54,059	$60,159	$66,586	$63,050
Working Capital																		
Account Receivables	-268,473	-268,473	-268,473	-430,487	-430,487	-430,487	-430,487	-430,487	-380,531	-380,531	-380,531	-380,531	-380,531	-232,686	-232,686	-232,686	-232,686	-232,686
Accounts Payable	97,837	95,175	97,053	100,104	98,558	99,941	100,104	97,937	91,549	91,224	88,923	90,928	91,712	79,134	81,011	81,174	79,628	81,144
Inventory - Parts, Supplies	-40,548	-39,444	-40,222	-41,487	-40,846	-41,420	-41,487	-40,589	-37,942	-37,807	-36,853	-37,684	-38,009	-32,796	-33,574	-33,642	-33,001	-33,629
Total Working Capital	$459	-$1,559	$1,099	-$160,227	-$905	$810	$95	-$1,269	$46,216	-$191	-$1,347	$1,174	$459	$140,480	$1,099	$95	-$905	$888
Capital Expenditures																		
Initial Capital	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sustaining Capital	$95,559	$122,431	$89,277	$84,476	$96,365	$44,151	$63,792	$66,275	$60,707	$76,861	$65,443	$43,723	$45,535	$49,709	$51,669	$96,649	$73,006	$45,414
3rd Party Capital Recovery	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Capital Expenditures	$95,559	$122,431	$89,277	$84,476	$96,365	$44,151	$63,792	$66,275	$60,707	$76,861	$65,443	$43,723	$45,535	$49,709	$51,669	$96,649	$73,006	$45,414
CAPEX intensity ($/mt LCE)	$936	$1,199	$875	$516	$589	$270	$390	$405	$420	$531	$452	$302	$315	$562	$584	$1,092	$825	$513
Cash Flow before Taxes	$1,121,496	$1,124,991	$1,137,962	$2,396,813	$2,563,052	$2,600,157	$2,577,820	$2,600,344	$2,283,238	$2,224,637	$2,262,892	$2,262,747	$2,250,673	$1,214,078	$1,049,898	$1,001,933	$1,043,383	$1,054,324
Cummulative Cash Flow before Taxes																		
Taxes	$96,925	$106,434	$97,230	$411,246	$418,764	$415,183	$417,917	$428,244	$356,351	$358,399	$368,258	$361,613	$360,213	$117,086	$109,465	$107,044	$111,426	$106,037
Cash Flow after Taxes Before AVTM Loan	$1,024,570	$1,018,557	$1,040,732	$1,985,567	$2,144,288	$2,184,974	$2,159,902	$2,172,100	$1,926,888	$1,866,239	$1,894,634	$1,901,134	$1,890,460	$1,096,993	$940,433	$894,889	$931,956	$948,287
Cummulative Cash Flow after Taxes	$108,543,820	$109,562,378	$110,603,110	$112,588,677	$114,732,965	$116,917,939	$119,077,841	$121,249,941	$123,176,829	$125,043,068	$126,937,702	$128,838,835	$130,729,295	$131,826,288	$132,766,720	$133,661,610	$134,593,566	$135,541,853
Debt Draws	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principle Payments and Cash Sweep	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Payments	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Flow after Taxes incl AVTM Loan	$1,024,570	$1,018,557	$1,040,732	$1,985,567	$2,144,288	$2,184,974	$2,159,902	$2,172,100	$1,926,888	$1,866,239	$1,894,634	$1,901,134	$1,890,460	$1,096,993	$940,433	$894,889	$931,956	$948,287
Cash Flow Before Taxes incl AVTM Loan	$1,121,496	$1,124,991	$1,137,962	$2,396,813	$2,563,052	$2,600,157	$2,577,820	$2,600,344	$2,283,238	$2,224,637	$2,262,892	$2,262,747	$2,250,673	$1,214,078	$1,049,898	$1,001,933	$1,043,383	$1,054,324
Period	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Discounted Cash Flow after Taxes @ 0%	$107,496,876	$108,515,434	$109,556,166	$111,541,733	$113,686,021	$115,870,995	$118,030,897	$120,202,998	$122,129,885	$123,996,124	$125,890,758	$127,791,891	$129,682,351	$130,779,344	$131,719,777	$132,614,666	$133,546,622	$134,494,909
Cumulative Discounted cashflow after taxes @ 0%	$107,496,876	$108,515,434	$109,556,166	$111,541,733	$113,686,021	$115,870,995	$118,030,897	$120,202,998	$122,129,885	$123,996,124	$125,890,758	$127,791,891	$129,682,351	$130,779,344	$131,719,777	$132,614,666	$133,546,622	$134,494,909

***This is a non-GAAP financial measure. For more information, refer to Section 2.4 of this report.**

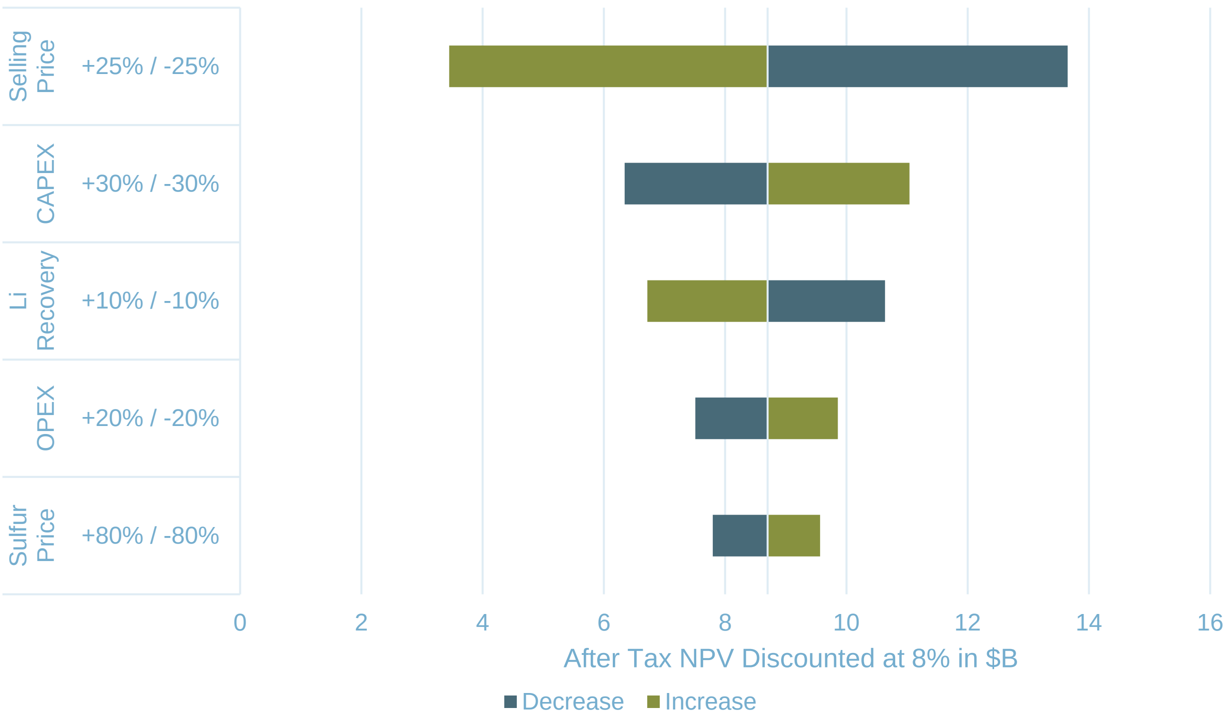
Economic Indicators before Taxes		25 Yr LoM	85 Yr LoM
NPV @ 0%	0.0%	$38,789,052	$157,853,040
NPV @ 6%	6.0%	$10,993,747	$18,164,837
NPV @ 8%	8.0%	$7,291,109	$10,644,575
NPV @ 10%	10.0%	$4,818,312	$6,470,349
NPV @ 12%	12.0%	$3,145,419	$3,991,877
NPV @ 16%	16.0%	$1,206,369	$1,448,757
IRR		21.8%	22.2%

Economic Indicators after Taxes		25 Yr LoM	85 Yr LoM
NPV @ 0%	0.0%	$32,640,195	$134,494,909
NPV @ 6%	6.0%	$9,004,372	$15,072,109
NPV @ 8%	8.0%	$5,861,408	$8,691,029
NPV @ 10%	10.0%	$3,766,854	$5,157,892
NPV @ 12%	12.0%	$2,354,272	$3,065,907
NPV @ 16%	16.0%	$727,780	$931,184
IRR		19.6%	20.0%
Payback	Years	8.8	8.8

22.5 Sensitivity Analysis

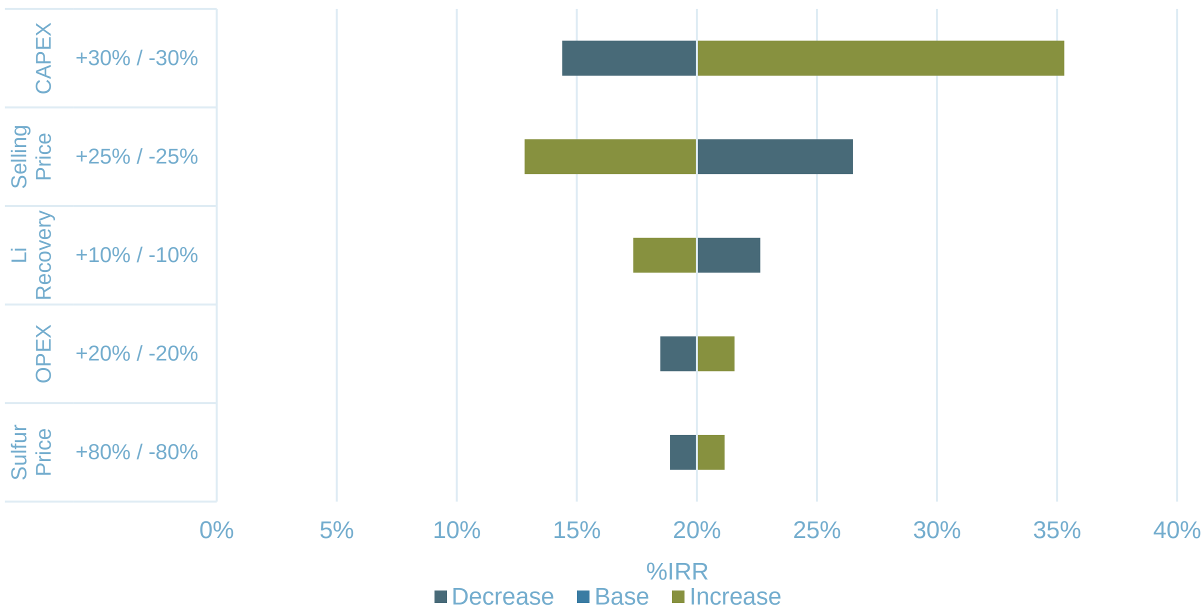
A sensitivity analysis was performed to examine variables in the economic model to understand the impact of the variables on the Project value and economics. The variables examined are lithium carbonate selling price, lithium recovery, OPEX, CAPEX and liquid sulfur price. The change in Project NPV was estimated based on the defined increase or decrease of the particular variable. The results of this sensitivity analysis are presented on an after-tax basis in Figure 22-6 for Project NPV and Figure 22-7 for IRR.

Figure 22-6 Sensitivity Analysis of Various Variables, After-Tax NPV, 8% Discount Rate



Source: LAC, 2024

Figure 22-7 Sensitivity Analysis of Various Variables, After-Tax IRR



Source: LAC, 2024

The analysis demonstrates high sensitivity to lithium carbonate price and CAPEX. The Project is relatively insensitive to changes in lithium recovery, OPEX and liquid sulfur price.

Table 22-12 presents NPV and IRR at a range of discount rates for three lithium carbonate product selling price cases: -25% (downside), 0% (base-fixed), and +25% (high).

Table 22-12 After-Tax NPV at 8% and IRR (85 Year Base Case)

Economic Indicator	Unit	Value
NPV @ 8%	$ Billions	$8.7
IRR	%	20.0
Payback	Years	8.7

Table 22-13 After-Tax NPV at 8% and IRR with Varying Lithium Carbonate Selling Prices

Average Selling Price ($/tonne)	$18,000 Low: -25%	$24,000 Base: 0%	$30,000 High: +25%
NPV ($ billions)	3.4	8.7	13.6
IRR	12.8%	20.0%	26.5%

Table 22-14 presents the sensitivity of NPV to different discount rates.

Table 22-14 NPV for Various Discount Rates

Economic Indicators after Taxes ($-B)	Years 1-25 of 85 Year LOM	85-Year LOM
NPV @ 0%*	$32.6	$134.5
NPV @ 6%	$9.0	$15.1
NPV @ 8%	$5.9	$8.7
NPV @ 10%	$3.8	$5.2
NPV @ 12%	$2.4	$3.1
NPV @ 16%	$0.7	$0.9

*undiscounted cash flow

23 ADJACENT PROPERTIES

There are no adjacent properties that bear on the lithium properties and there are no nearby operating mines.

24 OTHER RELEVANT DATA AND INFORMATION

24.1 Limestone Quarry

Limestone is a main reagent used in the process circuit at Thacker Pass. To keep costs down and ensure consistent supply, LAC evaluated several sources of limestone including existing market sources and undeveloped sources located in Humboldt County. A local source ("the Quarry") located in Humboldt County nearest to the Thacker Pass site is expected to provide the quality of limestone required by the project, favorable transportation costs, and favorable vehicular emissions when compared to sources that are further away.

LAC assumes the Quarry will be operated by a contract miner to develop the Thacker Pass deposit and deliver limestone meeting the quality required to the Thacker Pass Project. The delivery cost for limestone from the Quarry is estimated to be $43.75/t on average. Costs to develop, operate and deliver limestone from the Quarry to Thacker Pass Project was developed by Sawtooth and included in the financial assumptions of this report. This pricing is based on detailed mine planning from Sawtooth from the Quarry targeting an overall 88% $CaCO_3$ quality delivered to the Thacker Pass Project.

25 INTERPRETATION AND CONCLUSIONS

The mineralization within the volcanogenic clays in the Thacker Pass Project area are of economic grade and suited to open-pit mining operations. The proven and probable Mineral Reserves were estimated from forecasted lithium carbonate sales price, capital investment required for mine and processing plant development, operating costs for mine and processing plant production, mineral and metallurgical process data engineered to produce lithium carbonate economically, and ability to acquire all necessary permits and approvals.

The Project is viable at this stage of development based on the findings in this report. The recommendations as described in Section 26 are typical design development tasks and/or are studies with potential to optimize efficiency, reduce operational and financial risk, or lower capital cost.

25.1 Mineral Resource and Mineral Reserve Estimate

The Thacker Pass Project is set in the moat sediments of a large extinct caldera. The nature of the Thacker Pass deposit is sub-horizontal with consistent grades over large lateral distances. The mineralization is at or near surface and made up of a claystone and ash mix that can be free dug without blasting using conventional mining equipment. The 2024 Resource Estimate updated the resource to 560.8 Mt of Measured Resource averaging 2,680 ppm Li for 8.0 Mt of lithium carbonate equivalent, 3,225.2 Mt of Indicated Resource averaging 2,150 ppm Li for 36.5 Mt of lithium carbonate equivalent and 1,981.5 Mt of Inferred Resource averaging 2,070 ppm Li for 21.6 Mt lithium carbonate equivalent. A cutoff grade of 858 ppm Li and an open pit shell were used to constrain the resource estimate based on break even economics. The cost to remove constructed structures is included in this economic evaluation.

The proven and probable Mineral Reserve ore tonnages for an 85-year mine life constitute 1,056.7 Mt. Proven and Probable Mineral Reserves total 14.3 Mt delivered lithium carbonate equivalent over the 85-year mine life.

25.2 Mining

The mine plan to produce the required lithium carbonate by phases is met with the mine plan developed for this report. Additionally, the overall cash flow based on this mine is positive. The life of mine for this plan is 85-years. The overall mined waste tonnes are approximately 6.5 billion tonnes (wet). The overall ore delivered to the plant is 1.1 million tonnes (dry) containing 14.3 Mt of LCE (dry tonnes) with an average overall lithium grade of 2,538 ppm. Illite mineralization has a higher recovery than smectite and mixed zone mineralization. The 85-year life of mine realizes an average 96.6% illite ore feed to the plant. The overall recoverable strip ratio is 5.3:1 (Total pit waste tonnes: ore tonnes delivered). The overall mining method includes hydraulic excavator/end dumps over the life-of-mine with increases in equipment sizes and headcount as mine production levels increase. With the large pit, the amount of basalt that will be blasted is 2.4 billion tonnes.

Ore control is a key component of this plan. A short term in-pit sampling program will need to be developed to ensure the proper grade of clay is mined and sent to the plant. Additionally, the grade of ore in the stockpiles will need to be tracked.

25.3 Infrastructure

Infrastructure required for the execution and operation of the Project can be delivered. The Project resides in a mining jurisdiction where labor, housing, and support is available. Key aspects of the infrastructure include:

- Construction for Phase 1 of the project started in 2023 with development of site access, construction offices, water wells and raw water pipeline, construction water pond, and plant pad

bulk earthworks. Phase 1 construction is scheduled to include the mining and processing infrastructure to produce lithium carbonate according to the plan.
- Storage facilities are geotechnically stable and sized for storing the Project's quantified overburden and process plant reject materials over the Project's 85-year life.
- The clay tailings filter stacks (CTFS 1 and CTFS 2) have excess capacity to meet the Project's 85-year life.
- LAC has secured water rights for all of Phase 1 and a portion of Phase 2. Water demand for the Project during Phase 1 is 3.5 Mm^3 (2,850 acre/ft) per year Water rights for all future Phases (2, 3, 4, and 5) have not yet been fully acquired. The basin is fully appropriated therefore the acquisition of Phase 2 through Phase 5 water rights will require a transfer from existing rights. The successful transfer of water rights for Phase 1 production are completed and successful acquisition and transfer of water rights for future phases need to be completed.
- The water pipeline and wells have been completed for Phase 1 and Phase 2 water demand. Future phases will require an additional system identical to Phase 1 and Phase 2. Four wells and two pipelines have been assumed and incorporated into this report.
- A rail link to the project is proposed during Phase 4. Detailed design, land acquisition and permitting needs to be completed.
- Power requirements are defined for the Project. Onsite power generation using waste heat from the Sulfuric Acid Plant(s) and transmission grid upgrades by the local power provider (Harney Electric) are defined. All power supply to Harney Electric will be provided by Bonneville Power Administration (BPA). Upgrades outside of Harney Electric are outside the scope of this report as timing of requirements is dependent on other users and projects.
- Powerline and fiber optics relocations will be required at years 5 and 40 to support infrastructure advancement and pit development.
- A portion of State Route 293 and the 115 kV transmission line requires relocation by year 40 as the pit advances. Permitting and detailed design will be required with collaboration between regulators and the Nevada Department of Transportation.

25.4 Environment

The Project received all major environmental permits and approvals for Phase 1 and Phase 2. Federal, State, and local permitting for the additional phases and ultimate life of mine operations are required. The key risks that may impact the Project include:

- Successful approval of major environmental applications is required so as not to delay the start of the future Phases construction activities.
- Regulatory changes, administrative, and judicial appeals have the potential to delay the start of future construction activities; if any re-work is required by an appeal or change to regulation, additional regulatory considerations and possible design updates may be warranted. Receipt of revised Project permits would still be expected, but on a delayed timeline.
- Water quality and use applications are based on the initial mine plan to operate above the water table. Adaptive Management considerations stipulated by BLM will be implemented to facilitate a future permit application for deeper operations in the eastern pit area at Year 15. Permitting would be addressed with State and Federal regulators well ahead of time to mitigate risk of mine-plan disruption.
- Hydrogeology within the ultimate pit footprint needs to be modeled with appropriate modifications to current permits as necessary.

25.5 Economics

The economic analysis of the Project includes:

- Production of 11.5 Mt of lithium carbonate over a 85-year period.
- Initial capital requirement of $12.3 billion to construct Phases 1-5 over a thirteen-year period.
- Initial capital of $2.9 billion to construct Phase 1 over a 3-year period
- Average annual production cost per tonne of lithium carbonate over an 85-year period of $8,039.

- Average selling price per tonne of lithium carbonate over a 85-year period forecasted to be $24,000.
- Average annual EBITDA* over a 85-year period estimated to be $2.1 billion.
- Average annual sustaining capital over a 85-year period of $81.4 million.
- Economic indicators for 85-year base case (on an after-tax basis with an 8% discount rate applied): $8.7 billion NPV, 20.0% IRR, and undiscounted payback period of 8.7 years.

The Project economics are most sensitive to the selling price of lithium carbonate. A low-end sales price that is 25% below the projected selling price results in a decline in NPV (8%, after-tax) to $3.4B, whereas a 25% higher selling price increases the NPV (8%, after tax) to $13.6B. IRR is estimated at 12.8% and 26.5% respectively.

The Project is less sensitive to production levels. A ±10% variation in recovery of lithium results in a corresponding increase/decrease in IRR of -2.7% and +2.6%, respectively. CAPEX sensitivity of ±30% has an IRR effect of -5.6% or +15.3%. A ±80% variation in sulfur price affects IRR -1.1% or +1.2% for the levels considered. All other raw materials, mining, power, and operating labor affect IRR sensitivity by less than 0.3% each for the ranges presented in this report.

Overall, the Project is resilient to market changes in raw materials, lithium recovery fluctuations, and CAPEX.

*This is a non-GAAP financial measure. For more information, refer to Section 2.4 of this report.

25.6 Recovery Methods

Metallurgical and process development testing performed to-date has been used for flowsheet development, various equipment selection, definition of operating parameters and development of process design criteria. All test work was performed on material collected from the proposed pit at the Thacker Pass deposit and is considered representative of the ore body. In instances where data was not available, assumptions were made based on best industry practices and recommendations, and/or from best estimates by the LAC engineering team and process consultants familiar with the metallurgical processes associated with the Thacker Pass Project and lithium production.

The Project will be the first of its kind with respect to lithium extraction, and therefore lithium carbonate production, from clay mineralization. As such, technical challenges could occur. The technology utilized in this Project is not new to mineral, metallurgical and chemical processing; however, it is being used in a novel way.

Recovery of lithium, and therefore lithium carbonate, during operations will fluctuate with varying ore mineralization and process chemistries. Illite ores recover better than smectite ores. The LOM lithium carbonate produced is 11.5 Mt from 14.3 Mt of LCE mined with an average recovery of 80.4%. The LOM ore feed contains an average 96.6% illite at an overall feed grade of 2,538 ppm lithium.

25.6.1 Clay Liberation

Clay is separated from non-valuable waste material (i.e. coarse gangue) by hydration and agitation. The flowsheet includes two stages of clay liberation. The first "mild" stage of scrubbing is performed in a log washer and removes the easily separable clay from ROM via washing under mild agitation. In the second "intense" stage, the log washer discharge solids are sent to attrition scrubbers to separate the remaining clay by high intensity agitation. The combination of log washing and attrition scrubbing has proven to be an effective method to separate lithium containing clays from coarse gangue material.

25.6.2 Classification

The attrition scrubber discharge slurry is classified using hydrocyclones followed by hydraulic classifiers to separate clay from gangue mineralization. The hydrocyclone circuit was designed based on a target separation size of 75µm. The cyclone underflow is fed to a hydraulic classifier which further separates any clay present. Test work has demonstrated that cyclones combined with a hydraulic classifier can make a very sharp separation at 75µm. The hydraulic classifier underflow discharges onto dewatering screens to further recover clay fines. Coarse gangue rejection is assumed to align with ash content. Pilot testing validated an average lithium recovery of 92% reporting to the clay (fines) fraction.

25.6.3 Solid-Liquid Separation

The lithium bearing clay slurry will be dewatered in two stages, a high-rate thickener to achieve 20-25% solids followed by decanter centrifuges to generate a discharge slurry of 55% solids. The thickener design and flocculant dosage were based on vendor test work. Multiple pilot scale tests with decanter centrifuges have confirmed that 55% solids is achievable.

25.6.4 Acid Leaching

Through extensive clay leaching tests, an acid dose of approximately 490 kg H_2SO_4/tonne leach feed solids was found to be optimal to maximize lithium production. This was used as the design acid addition. Leach data collected over years of testing has been used to build an empirical predictive model of lithium leach extraction as a function of the slurry composition. This model was used to optimize the mine plan to maximize lithium production. Based on the mine plan and leach correlation, an average of approximately 92% lithium extraction is expected in the acid leach circuit.

25.6.5 Neutralization

Pulverized limestone and recycled magnesium hydroxide-bearing solids from the magnesium precipitation circuit have proven effective to neutralize residual acid in the leach residue and bring the final pH to a target of approximately 6.5. It has been confirmed that lithium in solution does not precipitate during the neutralization step. Test work has demonstrated good reagent efficiency and has been used for consumption estimates. Target limestone particle size was also developed through testing.

25.6.6 Neutralized Slurry CCD & Filtration

A combined CCD and filtration circuit was selected to minimize losses of lithium contained in the residual moisture in the filter cake. The circuit consists of eight stages of CCD coupled with a final stage of filtration in recessed plate filter presses. Recovery of lithium in solution for the circuit is estimated to be approximately 99%. Geotechnical testing shows the filter cakes are suitable for stacking.

25.6.7 Calcium and Magnesium Removal

Pilot scale tests have demonstrated that on average ~75% of magnesium in neutralized brine can be removed via a flash cooling crystallization approach. A multistage $MgSO_4$ cooling crystallization circuit has been selected for the flowsheet. The residual magnesium in the liquor discharging the crystallization circuit is removed by addition of milk-of-lime in the magnesium precipitation circuit. Testing has demonstrated that low levels of magnesium can be achieved at high reagent efficiency. Calcium is primarily removed by precipitation with Na_2CO_3 followed by ion exchange. Bench scale testing has shown that calcium can be reduced to low levels in a dilute brine using sodium carbonate without precipitating lithium. Ion Exchange following calcium precipitation has been tested and found to reduce divalent ion concentrations, i.e., Ca and Mg, and boron concentration to very low levels. Resins have been shown to be effective over multiple loading cycles.

Calcium and magnesium are removed from the concentrated soda ash solution using ion exchange prior to being used in the lithium carbonate crystallization circuit.

25.6.8 Lithium Carbonate Purification & Crystallization

Pilot scale test work has confirmed a conventional three-stage circuit for Li_2CO_3 production including primary Li_2CO_3 purification, lithium bicarbonate dissolution and secondary Li_2CO_3 purification is necessary to achieve battery quality product.

Additional pilot scale testing of the commercial circuit has verified key design criteria, equilibrium concentrations, reagent consumptions, and power demand. Over 19 kg of battery quality lithium carbonate (>99.5 wt%) were produced with an overall circuit lithium recovery of >96.0% by Aquatech. LAC has produced over 5 kg of battery quality lithium carbonate following the same process design criteria that were confirmed during the Aquatech testing. This work was completed at their Lithium Technical Development Center in Reno, NV with the same three-stage circuit.

25.6.9 ZLD Crystallization

Pilot scale test work has shown sodium and potassium can be removed as sulfate salts in a conventional ZLD crystallization system without crystallization of lithium. It has also verified the design ZLD mother liquor and crystals composition and demonstrated no loss of lithium to crystals. Similarly, internal pilot testing at the LAC Lithium Technical Development Center has confirmed that lithium loss to crystals can be avoided if the mother liquor composition is controlled.

25.6.10 Water

Sufficient water supply is available for the current flowsheet design and operating parameters for Phase 1. Even small demand increases above current estimates have the potential to impact production if additional water rights are not obtained. Water rights for future phases will need to be acquired. A complete heat/mass balance to account for raw water requirements for the entire process would minimize risk and uncertainties associated with the Project.

25.6.11 Raw Materials

Raw materials required to support the metallurgical and chemical processes to produce battery grade lithium carbonate are calculated from the Aspen Plus heat and material balance. Annual quantities of raw materials are calculated from the annual mine plan, sulfuric acid plant and process plant production schedules.

26 RECOMMENDATIONS

The sections that follow describe areas that have recommendations for increasing Project certainty or reduce Project risk.

26.1 Environmental Permitting

It is recommended LAC continue the current permitting strategy to ensure community and government engagement/support and streamline Project permitting as outlined below. Costs for these activities are generally carried in the operating and capital costs of this report.

- Maintain regular consultation activities with all appropriate Federal, State, and local regulatory agencies. These agencies include the BLM Winnemucca District Office, the various NDEP Bureaus, the appropriate Humboldt County departments and other Federal and State agencies as deemed appropriate. These meetings will keep the regulatory agencies up to date on Project activities and allow them to provide decisions on permits in a timely manner.
- Maintain engagement with local communities.
- Amend necessary permits as required with proposed modifications as they arise and where applicable. Minor modifications to amendments are typical and generally require 6 months for approval once submitted.
- Expand monitoring infrastructure upon final permit approvals for future Phases to establish long-term data monitoring. This is estimated to take 6 months to 1-year for each expansion, as necessary.
- Secure future water rights for Phase 2 and beyond. These costs are included in the capital estimates.
- Recurring permitting activities such as the Plan of Operations, Water Pollution Control Permit, Reclamation Cost Estimate, and Air Quality, among others, require renewals at regular intervals. These updates and renewals are captured in the operating costs.

26.2 Mining

It is recommended that a highwall slope analysis and a dump slope (waste, CTFS) analysis be done for the B, C, D, and E pits. Analysis will aid in ensuring that the benches and dumps are designed and built for stability. This analysis should also provide geotechnical recommendations for mining the clays under the 152.4-meter-thick basalt flow that is present in the southeastern portion of the property. The estimated cost of the studies is $300,000.

Growth Media survey for areas south of SR293 are recommended. The study will determine growth media depths in the proposed mining area, proposed plant area and proposed CTSF area. The estimated cost is $500,000 prior to those areas' construction.

For this analysis, Kevin Bahe, the QP responsible for this section of the Technical Report, has assumed that there will be a 2.5% loss on the top and bottom of the ore zones (5% total) in an effort to clean the contact zones between domains. This analysis has not considered adding dilution into the mine plan due to the loss that is being applied. As the Thacker Pass deposit is further domained into smaller zones, Kevin Bahe recommends reevaluating the need for dilution to be applied to the contact zones. The estimated cost for this analysis is $100,000.

26.3 Exploration

It is recommended that the northern margins along the Montana Mountains be drilled to further define the contact between the ore body and the mountains. The 2023 geophysical survey has indicated a faulted system that should be better defined for both lithium grade control and geotechnical considerations for mining. To drill, log, and sample these holes would cost between $1 million and $2 million.

The eastern boundaries of the Mineral Reserve pit should also be drilled to better delineate the clay and basalt contact. Additionally, a study should be completed to better understand the correlations between the different basalt flows. The cost for this exploration and testing would be between $2 million and $3 million.

Additional exploration and condemnation drilling in the west and southwest side of the Project area would help to define the large basalt flow in the southeast portion of the Project. The cost for the proposed additional exploration, drilling, testing, and studies is estimated in the range of $3 million to $5 million.

It is recommended that density sampling and analysis continue until there is enough data to accurately model the density variations without the use of average values by lithology type. LAC has been working with core scanning technologies to help verify the Ash Percentages recorded by the logging geologists. Benson Chow, the QP responsible for Section 9 of the Technical Report, recommends that LAC continue with this work to better support the Ash Percentages from the logging geologists. It is also recommended that a minimum percent of ash be applied to blocks in order to account for potential visual logging errors. The estimated cost for additional density testing and better defining ash content is $2 million to $5 million.

In the southern basin, it is recommended that additional drilling be done in the mine area south of the highway to better define the quality and clay type. Additional geometallurgical testing will help to upgrade some of the Indicated Mineral Resources to Measured Mineral Resources. Condemnation drilling will need to be performed for infrastructure locations south of HWY 293. The estimated cost is $2 million to $5 million.

Additional geological model refinements could include: update and incorporation of fault trace mapping, update basalt zone domaining, and update lithological domaining. These improvements will likely have minimal impacts on the global Mineral Resource grade and tonnage estimates but could allow for changes at the local level. The cost to update the geological model is $100,000.

For the Limestone Quarry, analysis of the limestone core as full-length samples is recommended, rather than point samples, to better define the density, grade, neutralization, and physical characteristics. Current geological and block modelling demonstrates a scoping level analysis but is subject to change based on additional sampling and analysis of the core. The estimated cost is $500,000. Equipment size and other affected areas should also be reviewed based on the quality.

It is recommended that the Limestone Quarry model be updated based on updated sampling and analysis of core, and that a detailed mine plan be developed based on the updated model. The estimated cost is $50,000.

26.4 Metallurgical Testing

Metallurgical recommendations are listed below and grouped by process areas. These recommendations could occur before or concurrent with operations.

The LAC pilot plant in Reno, NV will continue to be used for future testing in support of detailed engineering, risk reduction, and process optimization for the Project. Preparation of samples required by equipment manufacturers may be necessary to support equipment selection. The estimated cost is $100,000.

Lessons learned from Phase 1 steady state operations should be incorporated into the future phases metallurgical design.

26.4.1 Solid-Liquid Separation

To reduce OPEX, test other flocculants in the primary thickener. The estimated cost is $5,000. It is also recommended to investigate flocculation strategies for the decanter centrifuges to optimize consumption. The estimated cost is $10,000.

26.4.2 Acid leaching

Leach tests should continue to further refine the leach correlation and look for improvements. Furthermore, focusing on improving leach extraction in clays that currently do not meet cutoff grade could increase processable ROM ore. Sensitivity analysis shows that improvement of leach extraction will result in a significant improvement in Project economics. The estimated cost is $100,000.

Slurry level of agitation merits further study to ensure that sufficient mixing in plant equipment matches lab parameters. More mixing studies, including computational fluid dynamic simulations, should be conducted to develop leach slurry rheology data required for agitator design. Energy requirements will be determined on the optimum design for agitation of the leach vessels. The estimated cost for this study is $100,000.

26.4.3 Neutralization

The neutralized slurry rheology should be evaluated similar to the leach slurry for agitator design. The estimated cost is $50,000.

26.4.4 Neutralized Slurry CCD & Filtration

It is recommended to evaluate additional flocculants in an attempt to reduce operating costs. The estimated cost is $10,000.

26.4.5 Calcium and Magnesium Removal

It is recommended to continue evaluating resins from other vendors for potential OPEX savings. Testing of a pilot scale continuous IX circuit to confirm resin performance and reagent consumption would also decrease risk. The estimated cost is $200,000.

26.5 Infrastructure

The costs for completing the priority recommendations listed below have been included in the sustaining capital cost estimates unless stated otherwise.

The mine plan phasing should be reviewed to identify opportunities for concurrent reclamation that could further reduce reclamation costs. Engineering costs for mine planning is included in the annual operating costs of this report.

It is recommended that further studies be done to determine available aggregate material on site for construction use. The estimated cost of the studies is $300,000.

Upon completion of Phase 1 construction, actual costs incurred for the project should be used to update future expansion estimates where appropriate. The approximate cost to update the cost estimates is $25,000.

Additional hydrogeological investigations, groundwater characterization, surface water hydrology design, and dewatering and depressurization design studies will be required to support Phased development beyond Phase 2. The estimated cost for these studies is $4,000,000.

It is recommended to perform additional geotechnical studies and design updates within the areas of the future Phases 3, 4 and 5 planned facilities including the CTFS and plant areas. The estimated cost to perform this work is $750,000 per phase.

Stacking plans should be optimized over the LOM to determine the proper distribution of tailings between CTFS 1 and CTFS 2, particularly later in the mine development. The estimated cost to complete this is captured in the operating costs of this report.

Common and shared buildings required for each phase should be consolidated where appropriate to take advantage of economies of scale. Common buildings include administration, laboratories, control rooms, warehouses and packaging among others. The estimated cost to perform this evaluation is $500,000.

It is recommended the raw water pump and piping systems included during Phases 3, 4 and 5 be optimized in location and depth prior to construction to ensure adequate supply of raw water for project demand. The estimated cost to perform this work is $150,000.

State Route 293 and the adjacent fiber optic line planned to be relocated before year 40 based on the production schedule needs to be finalized beforehand with a requirement for a road study in coordination with the Nevada Department of Transportation. The estimated cost to perform this work is $500,000.

The 115 kV powerline is planned to be relocated before year 40 based on the production schedule. The preliminary alignment needs to be finalized beforehand with a requirement for a relocation study in coordination with Harney Electric. The estimated cost to perform this work is $150,000.

It is recommended that power upgrades outside of Harney Electric's territory that were out of scope for this study for Phase 2 onward, are understood in time to reserve transmission to support or amend the assumptions in this report. The estimated cost to perform this work is $200,000.

It is recommended that surface rights be acquired for the road from the highway to the mine area additional mining claims or surface rights be acquired to expand the processing area if needed and for waste rock or clay tailings storage. The anticipated cost to perform this work is $250,000.

Solar power in Nevada is growing due to a renewable portfolio standard which requires 50% renewable energy by 2030. The state has abundant open land areas and some of the best solar potential in the country. The number and size of photovoltaic power stations in Nevada have been growing rapidly since about 2010. LAC to investigate via a trade-off study the use of solar power energy to augment the proposed on-site power generation Steam Turbine Generators (STG) driven by steam produced by the sulfuric acid plant and the grid connection to the nearby local electric utility cooperative (HEC). The anticipated cost to perform this work is $250,000.

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28 DATE AND SIGNATURE PAGE

This report titled "Feasibility Study for the Thacker Pass Project, Humboldt County, Nevada, USA" dated December 31, 2024 (the "Technical Report") for Lithium Americas Corp. was prepared and signed by the following authors:

The effective date of the report is December 31, 2024
The date of the report is January 7, 2025.

Signed by:

Qualified Persons	**Company**
William van Breugel, P.Eng.	SGS Canada Inc.
Johnny Canosa, P.Eng.	SGS Canada Inc.
Joseph M. Keane, P.E.	SGS Canada Inc.
Benson Chow, RM-SME	Sawtooth Mining, LLC
Kevin Bahe, P.E.	Sawtooth Mining, LLC
Paul Kaplan, P.E.	NewFields
Walter Mutler, P.Eng.	EXP U.S. Services Inc.