Lithium Americas

Technical Report on the Pre-Feasibility Study for the Thacker Pass Project, Humboldt County, Nevada, USA

Effective Date: August 1st, 2018

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These forward-looking statements relate to, among other things, mineral reserve and resource estimates, grades and recoveries, development plans, mining methods and metrics including strip ratio, recovery process and the expected performance of the equipment, mining and production expectations including expected cash flows, capital cost estimates and expected life of mine operating costs, the expected payback period, receipt of government approvals and licenses including the timing for submitting a response to the EIS/EA, time frame for construction, financial forecasts including net present value and internal rate of return estimates, tax and royalty rates, and other expected costs.

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Important Notice

This Report, following National Instrument 43-101 rules and guidelines, was prepared for Lithium Nevada Corp., a wholly owned subsidiary of Lithium Americas Corp. ("LAC") by Advisian Americas ("Advisian"), a division of the WorleyParsons Group.

The quality of information, conclusions and estimates contained herein, is consistent with the level of effort involved in Advisian' services, and is based on the:

- Information available at the time of preparation.
- Data supplied by outside sources.
- Assumptions, conditions, and qualifications set forth in this Report.

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Prepared and Signed by the following Qualified Persons

This Report titled "Technical Report on the Pre-Feasibility Study for the Thacker Pass Project, Humboldt County, Nevada, USA", issued August 1st, 2018, was prepared and signed by the following qualified persons:

Louis F. Fourie, P.Geo, Pri.Sci.Nat

Resource Geologist

Date: August 1st, 2018

Daniel Peldiak, P. Eng.

Principal Metallurgical Engineer

Date: August 1st, 2018

Reza Ehsani, P.Eng.

Senior Project Manager

Date: August 1st, 2018

Andrew Hutson, FAusIMM, BE (Mining)

Principal Mining Engineer

Date: August 1st, 2018

John Young, B.Sc., SME-RM

Principal Environmental Specialist

Date: August 1st, 2018

Ken Armstrong, P. Eng.

Principal Sulfuric Acid Plant Engineer

Date: August 1st, 2018

Rob Spiering, P. Eng.

Project Director

Date: August 1st, 2018

Certificate of Qualified Person

To Accompany the Report titled "Technical Report on the Pre-Feasibility Study for the Thacker Pass Project, Humboldt County, Nevada, USA".

Filing Date: August 1st, 2018

I, Reza Ehsani, P.Eng., do hereby certify that:

1. I am a professional Engineer at WorleyParsons with an office at 8133 Warden Ave, Markham, Ontario, L6G 1B3.
2. I graduated from the University of Sharif, University of Technology with a Bachelor's degree, in 1997.
3. I am a registered member of the Professional Engineers of Ontario, under Registration No. 1000751237.
4. I have practiced as a Professional Engineer for 19 years.
5. I have read the definition of "qualified person" set out in the National Instrument 43-101 and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be an independent qualified person for the purposes of NI 43-101.
6. I am responsible for Section 18 of this Technical Report along with those sections of the Summary pertaining thereto.
7. I have had no prior involvement with the properties that are the subject of the Technical Report.
8. I have not visited the site.
9. I have no personal knowledge as of the date of this certificate of any material fact or change, which is not reflected in this report.
10. Neither I, nor any affiliated entity of mine, is at present under an agreement, arrangement or understanding or expects to become an insider, associate, affiliated entity or employee of Lithium Americas Corp. or Lithium Nevada Corp., or any associated or affiliated entities.
11. Neither I, nor any affiliated entity of mine, own directly or indirectly, nor expect to receive, any interest in the properties or securities of Lithium Nevada Corp., or any associated or affiliated companies.
12. I have read NI 43-101 and Form 43-101F1 and have prepared the technical report in compliance with NI 43-101 and Form 43-101F1.
13. I have prepared the report in conformity with the generally accepted Canadian Mining Industry practices and, as of the date of the certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to ensure the technical report is not misleading.

This 1st day of August, 2018

Reza Ehsani, P.Eng.
Senior Project Manager

Certificate of Qualified Person

To Accompany the Report titled "Technical Report on the Pre-Feasibility Study for the Thacker Pass Project, Humboldt County, Nevada, USA".

Filing Date: August 1st, 2018

I, John Young, B.Sc., SME-RM, do hereby certify that:

1. I am the Principal Environmental Specialist at Great Basin Environmental Services, LLC with an office at 2572 Rampart Terrace, Reno Nevada 89519.
2. I graduated from Kansas State University with a Bachelor of Science degree in Agriculture, in 2001.
3. I am a registered member of the Society for Mining, Metallurgy, and Exploration, Inc., under Registration No. 4147616RM.
4. I have practiced as a Principal Environmental Specialist for 39 years.
5. I have read the definition of "qualified person" set out in the National Instrument 43-101 and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be an independent qualified person for the purposes of NI 43-101.
6. I am responsible for Section 20 of this Technical Report along with those sections of the Summary pertaining thereto.
7. I have had no prior involvement with the properties that are the subject of the Technical Report.
8. I have visited the site on November 13, 14, and 15, 2017 and on January 29, 30, and 31, 2018.
9. I have no personal knowledge as of the date of this certificate of any material fact or change, which is not reflected in this report.
10. Neither I, nor any affiliated entity of mine, is at present under an agreement, arrangement or understanding or expects to become an insider, associate, affiliated entity or employee of Lithium Americas Corp. or Lithium Nevada Corp., or any associated or affiliated entities.
11. Neither I, nor any affiliated entity of mine, own directly or indirectly, nor expect to receive, any interest in the properties or securities of Lithium Nevada Corp., or any associated or affiliated companies.
12. I have read NI 43-101 and Form 43-101F1 and have prepared the technical report in compliance with NI 43-101 and Form 43-101F1.
13. I have prepared the report in conformity with the generally accepted Canadian Mining Industry practices and, as of the date of the certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to ensure the technical report is not misleading.

This 1st day of August, 2018

John M Young

John Young, B.Sc., SME-RM
Principal, Great Basin Environmental Services, LLC

Certificate of Qualified Person

To Accompany the Report titled "Technical Report on the Pre-Feasibility Study for the Thacker Pass Project, Humboldt County, Nevada, USA".

Filing Date: August 1st, 2018

I, Andrew Hutson, FAusIMM, BE do hereby certify that:

1. I am a Principal Mining Consultant with Mining Plus Pty Ltd at Bravo Building, 1 George Wiencke Drive, Perth Domestic Airport, WA 6105, AUSTRALIA
2. I graduated from the South Australian Institute of Technology with a Bachelor's Degree in Mining Engineering, in 1990.
3. I am a registered Fellow of the Australian Institute of Mining and Metallurgy, under Registration No. 920705
4. I have practiced as a Mining Engineer for 27 years.
5. I have read the definition of "qualified person" set out in the National Instrument 43-101 and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be an independent qualified person for the purposes of NI 43-101.
6. I am responsible for the preparation Sections 15 and 16 of this Technical Report along with those sections of the Summary pertaining thereto.
7. I have had no prior involvement with the properties that are the subject of the Technical Report.
8. I have visited the site on April 5th, 2018
9. I have no personal knowledge as of the date of this certificate of any material fact or change, which is not reflected in this report.
10. Neither I, nor any affiliated entity of mine, is at present under an agreement, arrangement or understanding or expects to become an insider, associate, affiliated entity or employee of Lithium Americas Corp. or Lithium Nevada Corp., or any associated or affiliated entities.
11. Neither I, nor any affiliated entity of mine, own directly or indirectly, nor expect to receive, any interest in the properties or securities of Lithium Nevada Corp., or any associated or affiliated companies.
12. I have read NI 43-101 and Form 43-101F1 and have prepared the technical report in compliance with NI 43-101 and Form 43-101F1.
13. I have prepared the report in conformity with the generally accepted Canadian Mining Industry practices and, as of the date of the certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to ensure the technical report is not misleading.

This 1st day of August, 2018

1/8/18

Andrew Hutson FAusIMM, BE (Mining)
Principal Mining Engineer

Certificate of Qualified Person

To Accompany the Report titled "Technical Report on the Pre-Feasibility Study for the Thacker Pass Project, Humboldt County, Nevada, USA".

Filing Date: August 1st, 2018

I, Daniel Peldiak, P.Eng.do hereby certify that:

1. I am a Metallurgical Engineer with WorleyParsons with an office at 8133 Warden Ave, Markham, Ontario Canada.
2. I graduated from the Technical University of Nova Scotia with a Bachelor's of Engineering Degree, in Metallurgy in 1998.
3. I am a registered member of the Professional Engineers of Ontario, under Registration No. 100103328.
4. I have practiced as a Metallurgical Engineer continuously since my graduation from University.
5. I have read the definition of "qualified person" set out in the National Instrument 43-101 and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be an independent qualified person for the purposes of NI 43-101.
6. I am responsible for Section 13 and 17 of this Technical Report.
7. I have had no prior involvement with the properties that are the subject of the Technical Report.
8. I have not visited the site.
9. I have no personal knowledge as of the date of this certificate of any material fact or change, which is not reflected in this report.
10. Neither I, nor any affiliated entity of mine, is at present under an agreement, arrangement or understanding or expects to become an insider, associate, affiliated entity or employee of Lithium Americas Corp. or Lithium Nevada Corp., or any associated or affiliated entities.
11. Neither I, nor any affiliated entity of mine, own directly or indirectly, nor expect to receive, any interest in the properties or securities of Lithium Nevada Corp., or any associated or affiliated companies.
12. I have read NI 43-101 and Form 43-101F1 and have prepared the technical report in compliance with NI 43-101 and Form 43-101F1.
13. I have prepared the report in conformity with the generally accepted Canadian Mining Industry practices and, as of the date of the certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to ensure the technical report is not misleading.

This 1st day of August, 2018

Daniel Peldiak, P.Eng.
Principle Metallurgical Engineer

LICENSED PROFESSIONAL ENGINEER
D. J. M. PELDIAK
100103328
PROVINCE OF ONTARIO

Certificate of Qualified Person

To Accompany the Report titled "Technical Report on the Pre-Feasibility Study for the Thacker Pass Project, Humboldt County, Nevada, USA".

Filing Date: August 1st, 2018

I, Louis F. Fourie, P.Geo, Pri.Sci.Nat , do hereby certify that:

1. I am a Geologist at Terra Modelling Services Inc. with an office at 438 – 165 3rd Avenue South, Saskatoon, SK, Canada.
2. I graduated from the University of Johannesburg with a Bachelor's of Science in Geology, in 1996,
3. I am a registered member of the Association of Professional Engineers and Geoscientists of Saskatchewan, under Registration No. 22198.
4. I have practiced as a Professional Engineer for 19 years.
5. I have read the definition of "qualified person" set out in the National Instrument 43-101 and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be an independent qualified person for the purposes of NI 43-101.
6. I am responsible for Section 4 to 12, 14 and 23 and associated portions of Section 1 of this Technical Report.
7. I have had no prior involvement with the properties that are the subject of the Technical Report.
8. I have visited the site on November 14, 2017.
9. I have no personal knowledge as of the date of this certificate of any material fact or change, which is not reflected in this report.
10. Neither I, nor any affiliated entity of mine, is at present under an agreement, arrangement or understanding or expects to become an insider, associate, affiliated entity or employee of Lithium Americas Corp. or Lithium Nevada Corp., or any associated or affiliated entities.
11. Neither I, nor any affiliated entity of mine, own directly or indirectly, nor expect to receive, any interest in the properties or securities of Lithium Nevada Corp., or any associated or affiliated companies.
12. I have read NI 43-101 and Form 43-101F1 and have prepared the technical report in compliance with NI 43-101 and Form 43-101F1.
13. I have prepared the report in conformity with the generally accepted Canadian Mining Industry practices and, as of the date of the certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to ensure the technical report is not misleading.

This 1st day of August, 2018

L Fourie

Louis F. Fourie, P.Geo, Pri.Sci.Nat
Resource Geologist

PROFESSIONAL GEOSCIENTIST
L.F. FOURIE
MEMBER 22198
18 08 01
YR. MN. DAY
SASKATCHEWAN

Certificate of Qualified Person

To Accompany the Report titled "Technical Report on the Pre-Feasibility Study for the Thacker Pass Project, Humboldt County, Nevada, USA".

Filing Date: August 1st, 2018

I, Ken Armstrong, P.Eng. do hereby certify that:

1. I am a Professional Engineer with Chemetics Inc. at Suite 200, 2930 Virtual Way, Vancouver, BC, Canada V5M 0A5.
2. I graduated from the University of British Columbia with a Bachelor's degree in Science (Chemistry) in 1987, a Bachelor's degree in Chemical Engineering in 1988, and a Masters of Business Administration in 1997.
3. I am registered member of the Association of Professional Engineers and Geoscientists of British Columbia, under Registration No. 17500.
4. I have practiced as a Professional Engineer for 28 years.
5. I have read the definition of "qualified person" set out in the National Instrument 43-101 and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfil the requirements to be an independent qualified person for the purposes of NI 43-101.
6. I am responsible for Sections 18.9.5 with regards to the Acid Plant and the associated portions of Sections 1 and 21 of this Technical Report.
7. I have had no prior involvement with the properties that are the subject of the Technical Report.
8. I have not visited the site.
9. I have no personal knowledge as of the date of this certificate of any material fact or change, which is not reflected in this report.
10. Neither I, nor any affiliated entity of mine, is at present under any agreement, arrangement or understanding or expects to become an insider, associate, affiliated entity or employee of Lithium Americas Corporation, or Lithium Nevada Corporation, or any associated or affiliated entities.
11. Neither I, nor any affiliated entity of mine, own directly or indirectly, nor expect to receive, any interest in the properties or securities of Lithium Nevada Corporation, or any associated or affiliated companies.
12. I have read NI 43-101 and Form 43-101F1 and have prepared the Technical Report in compliance with NI 43-101 and Form 43-101F1.
13. As of the date of the certificate, to the best of my knowledge, information, and belief, the above parts of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to ensure the technical report is not misleading.

This 1st day of August, 2018

PROFESSIONAL
PROVINCE OF
K. J. ARMSTRONG
BRITISH COLUMBIA
ENGINEER

Ken Armstrong, P.Eng
Principal Sulfuric Acid Plant Engineer

Certificate of Qualified Person

To Accompany the Report titled "Technical Report on the Pre-Feasibility Study for the Thacker Pass Project, Humboldt County, Nevada, USA".

Filing Date: August 1st, 2018

I, Rob Spiering, P.Eng., do hereby certify that:

1. I am a professional Engineer with WorleyParsons at 8133 Warden Ave, Markham, Ontario, L6G 1B3.
2. I graduated from the University of Calgary with a Bachelor's degree, in 1980.
3. I am a registered member of the Professional Engineers of Ontario, under Registration No. 100122103
4. I have practiced as a Professional Engineer for 30 years.
5. I have read the definition of "qualified person" set out in the National Instrument 43-101 and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be an independent qualified person for the purposes of NI 43-101.
6. I am responsible for Section 1, 2, 3, 19, 21, 22, 24, 25, 26, 27 of this Technical Report.
7. I have had no prior involvement with the properties that are the subject of the Technical Report.
8. I have not visited the site.
9. I have no personal knowledge as of the date of this certificate of any material fact or change, which is not reflected in this report.
10. Neither I, nor any affiliated entity of mine, is at present under an agreement, arrangement or understanding or expects to become an insider, associate, affiliated entity or employee of Lithium Americas Corp. or Lithium Nevada Corp., or any associated or affiliated entities.
11. Neither I, nor any affiliated entity of mine, own directly or indirectly, nor expect to receive, any interest in the properties or securities of Lithium Nevada Corp., or any associated or affiliated companies.
12. I have read NI 43-101 and Form 43-101F1 and have prepared the technical report in compliance with NI 43-101 and Form 43-101F1.
13. I have prepared the report in conformity with the generally accepted Canadian Mining Industry practices and, as of the date of the certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to ensure the technical report is not misleading.

This 1st day of August, 2018

Rob Spiering

Rob Spiering, P.Eng.
Project Director

LICENSED PROFESSIONAL ENGINEER
R. M. SPIERING
100122103
Rob Spiering
PROVINCE OF ONTARIO

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1. Summary

1.1 Introduction

Lithium Nevada Corp. (LNC), a wholly owned subsidiary of Lithium Americas Corp. (LAC), is advancing the Thacker Pass Project. The Thacker Pass Deposit is part of the Thacker Pass Project (formerly known as Lithium Nevada Project or Stage I of Kings Valley Project), which is a first-of-its-kind, lithium claystone mining project. The Thacker Pass Project encompasses the mineral claims that were formerly referred to as the Stage 1 area of the Lithium Nevada Project. The claims owned by LNC that are north of the Thacker Pass Project are not considered in this study.

This report presents the results of a pre-feasibility study (PFS) on the Thacker Pass Project (the Project). In 2017, LAC decided to pursue an alternative approach that would reduce overall operational and capital costs and leverage the physical properties of the soft claystone. A new process flow sheet that uses conventional leaching and purification technology has been developed, and replaces the roasting/calcining approach that was considered in a previous technical study (Tetra Tech, 2014).

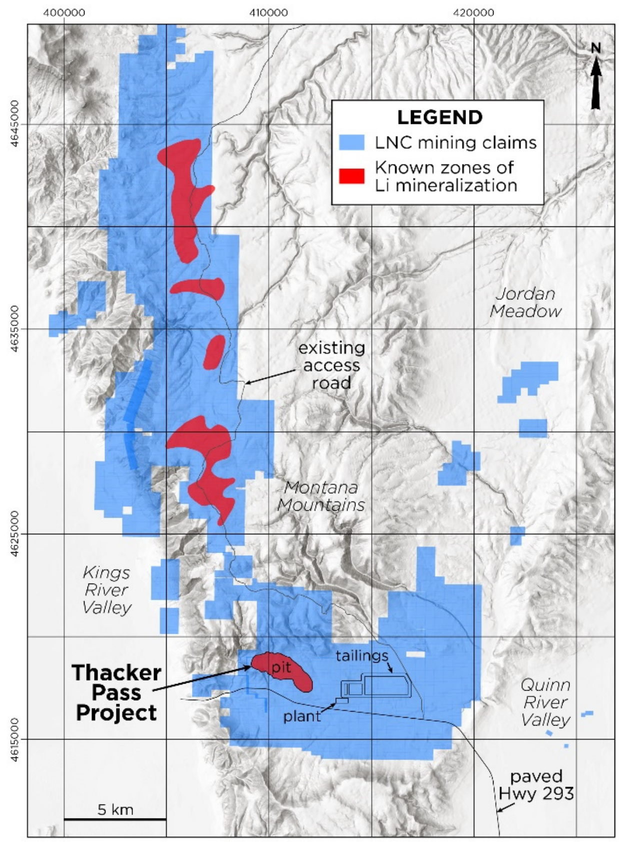
This Technical Report follows a News Release (dated June 21, 2018) detailing an updated Preliminary Feasibility Study in accordance with the National Instrument 43-101 for the Standards of Disclosure for Mineral Projects requirements.

1.2 Location and Ownership

The Thacker Pass Project is located within the McDermitt Caldera 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 at the southern end of the McDermitt Caldera in T44N, R35E, within Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16, and 17, and encompasses approximately 3,367 ha.

The Project is 100% owned by LNC.

Figure 1-1 LNC Mining Claims Map (see Figure 4-1 for more detail)



Source: Lithium Nevada Corp. (2018)

Exploration programs have been carried out in the McDermitt Caldera since 1975. The most recent exploration program was by LNC in 2017. The history of the exploration programs and NI 43-101 reporting are summarized as follows:

- 1975: Chevron carried out a uranium exploration program in the sediments located throughout the McDermitt Caldera.
- 1978 – 1979: Chevron was alerted to the presence of anomalous concentrations of lithium associated with the Caldera and initiated a clay analysis program, which confirmed the presence of high lithium concentrations. Most of the project area was surveyed by airborne gamma ray spectrometry.
- 1980 – 1987: Chevron began a drilling program that focused on lithium targets and conducted extensive metallurgical testing to determine the viability of extracting lithium from the clays. In 1985, they completed a non-compliant National Instrument (NI) 43-101 resource estimate for a 0.25% Li cut-off.
- Between 2007 and 2011, Western Lithium USA Corporation (WLC) conducted an exploration program that focused on the southern portion of the McDermitt Caldera. Of the 232 drilled exploration holes, 198 cores were assayed (20,000 m of core). The results of the assay analysis indicated the presence of an anomalously high grade (HG) lithium deposit. A collar survey was completed using a Trimble Global Positioning System (GPS). The topographic surface of the project area was mapped by aerial photography in 2010.

- The Project has been in active development since 2008, and was operated by WLC until 2015 when it merged with LAC. In March 2016, WLC adopted the LAC name and renamed the Nevada-based subsidiary LNC.
- 2014: Tetra Tech prepared a NI 43-101 compliant Technical Report for the Thacker Pass Project.
- 2016: A NI 43-101 compliant Technical Report on the resource was prepared by SRK (Carew and Rossi 2016). The Technical Report is based on a 2,000 ppm (parts per million) Li cut off and identified 51 million tonnes of Measured Resource, 164 million tonnes of Indicated Resource and 125 million tonnes of Inferred Resource.

1.3 Geology

The Thacker Pass Deposit is located within an extinct supervolcano (30 km by 40 km) named McDermitt Caldera, which was formed 16.3 million years ago and is associated with the Yellowstone hotspot. For a few hundred thousand years following the volcanic eruption, water percolated through nearby volcanic rocks leaching lithium. The lithium was then deposited in the caldera basin, forming a large caldera lake and a thick sequence of associated lacustrine deposits.

Renewed volcanism uplifted the center of the caldera, draining the lake and bringing the lithium-rich sediments to the surface of the earth in the vicinity of the present-day Montana Mountains.

Recent drilling confirms that the lithium mineralization is laterally extensive across the whole caldera, which suggested that the formation of lithium-rich clays is not associated with a localized hydrothermal system. The pattern of the lithium mineralization is consistent with burial diagenesis at moderately high temperatures.

1.4 Mineralization

In the immediate project area, lithium-rich clays are typically overlain by alluvium with an average thickness of approximately 5 m and underlain by intracaldera rhyolite tuff. Basaltic lavas and ash layers are sporadically intercalated with the lacustrine sediments. The clay itself is interbedded with ash. Mineralogically, the upper clay horizons are dominated by smectite-type clay, while the deeper horizons are dominated by illite-type clay, with the latter showing mineralization of up to 9,000 ppm, and the former up to 4,000 ppm. The smectite-to-illite transition and associated increase in lithium concentration occurs across the whole caldera, supporting the hypothesis that the mineralization is associated with burial diagenesis.

Vertical drilling indicates that the clay intersections range from a few meters up to 90 m.

1.5 Exploration and Drilling

The objective of the 2017 exploration program conducted by LNC was to identify a resource of scale in the Thacker Pass area. Seventy-seven (77) exploration holes were drilled (6,653 m of core) and a seismic survey was completed, consisting of five seismic survey lines, one of which was completed along historic drill holes to test the accuracy and resolution in identifying clay interfaces. The remaining four survey lines provide a more complete picture of the distribution, depth and dip of the clay horizons around the edge and center of the moat basin. The results indicated a larger lithium deposit than previously identified. The core assay data was used to update the Indicated, Measured and Inferred Resource Estimate.

The historic and 2017 drilling results show a continuous lithium grade ranging from 2,000 ppm to 8,000 ppm lithium over great lateral extents. There is a continuous high grade sub-horizontal clay horizon that exceeds 5,000 ppm lithium across the project area. 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 HG horizon typically ranges from 3,000 ppm to 5,000 ppm. The bottom of the deposit is well defined by a hydrothermally altered oxidized ash, with less than 500 ppm lithium and sometimes less than 100 ppm lithium. Additional exploration, aimed to increase the resource size northwest of the pit area and in the southwest basin continues in 2018 (the results of this drilling program were not available at the time of, nor are they included in, this study).

1.6 Mineral Resources and Reserves

Based on all drilling results received by December 21, 2017, a Resource Estimate for the Thacker Pass Project was compiled as shown in Table 1-1 and is based on drilling results obtained prior to December 21, 2017.

Table 1-1 Resource Estimate for the Thacker Pass Project, Based on Drilled Data Collected Up Until December 21, 2017

Category	Tonnage (‘000 metric tonnes)	Average Li (ppm)	Lithium Carbonate Equivalent (LCE) (‘000 metric tonnes)
Measured	242,150	2,948	3,800
Indicated	143,110	2,864	2,182
Measured and Indicated	385,260	2,917	5,982
Inferred	147,440	2,932	2,301

Notes:

1. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resource will be converted into mineral reserves.
2. Resources presented at 2,000 ppm Li cut-off grade.
3. The conversion factor for lithium metal (100%) to LCE is 5.323.
4. Applied density for the ore is 1.79.
5. Data from 275 drill holes was used to develop a geological model for development of the Resource Estimate. The geological model encoded all relevant lithologies, with the clay-horizon being the sole mineralized horizon and other lithologies (alluvium, basalt, rhyolite) being barren. In addition, six major fault blocks were encoded within the model.

The Measured and Indicated Resources were used to determine the Mineral Reserves as shown in Table 1-3 based upon the parameters and methodology described in Sections 15 and 16.

Table 1-2 Mineral Reserve Summary

Category	Tonnage ('000 metric tonnes)	Average Li (ppm)	LCE ('000 metric tonnes)
Proven	133,944	3,308	2,358
Probable	45,478	3,210	777
Proven and Probable	179,422	3,283	3,135

Notes:

1. Mineral Reserves are defined at the point where the ore is delivered to the processing plant. Reductions attributed to plant losses have not been included.
2. Reserves presented at a 2,500 ppm Li cut-off grade.
3. The conversion factor for lithium metal (100%) to LCE is 5.323.
4. Applied density for the ore is 1.79 (Section 11.2).
5. All tonnages are presented on a dry basis.

1.7 Processing and Recovery

1.7.1 Mining Methods

The mining method chosen is a modified panel mining method which employs excavators and surface miners. In this method, a section along the length of the pit is mined to the entire width and depth before proceeding to the next section of the pit.

The annual production rate for the mine varies and it is determined by a phased Lithium Carbonate Equivalent (LCE) annual production rate which takes into account the varying *in-situ* Lithium grade. The following is a summary of the Life-of-Mine (LoM) production:

- 510 Million total tonnes Mined which includes the following:
  - 179 Million dry tonnes Recovered Ore
  - 330 Million dry tonnes Waste
  - Stripping Ratio 1.84: 1 (Waste: Recovered Ore) on a dry tonnage basis
  - Stripping Ratio 1.6:1 (In situ Waste: Ore) on a dry tonnage basis
- Pre-Production Period of two (2) years
- 46 Years of Commercial Production, including the following:
  - 3.5 Years of Phase 1 Production at 30,000 tonnes LCE per year
  - 42 Years of Phase 2 Production at 60,000 tonnes LCE per year
- Life of Mine Production of 3.135 Million tonnes of LCE product

Waste removal will be completed by means of an excavator and haul truck operation. Mine waste will primarily be backfilled directly into the mined-out pits. Mine waste will also be used for construction fill material as well as construction of the tailings embankment. A waste dump was designed near the pit limit for excess mine waste during the beginning of the mine life.

Ore will be mined by a surface miner which will simultaneously load haul trucks. Ore will be hauled to an overland ore conveyor located near the pit limit that will transport material to the process plant.

1.7.2 Metallurgical Testing

The Pre-Feasibility test work builds on previous study programs with the purpose to define the selected process flow sheet which would enable the production of high quality battery grade lithium carbonate. The test work focused on developing the information needed to select and size commercial equipment in partnership with world-class providers.

In 2017, LAC decided to pursue an alternative approach that would reduce overall operational and capital costs and leverage the physical properties of the soft claystone. A new process flow sheet that uses conventional leaching and industry-proven purification technology has been developed.

Metallurgical test work for the PFS was carried out at production facilities owned and operated by Jiangxi Ganfeng Lithium Co., Ltd. (“Ganfeng Lithium”) in Jiangxi Province, China and with Saskatchewan Research Council (SRC). LAC provided four statistically representative composites of ore from the deposit that characterize the different grades of ore in the proposed pit area. These samples were based on the mass weighted average of the deposit and were assembled from different depths and locations to ensure a representative testing campaign.

Traditional ball or rod milling technology would be challenging because of the unique properties of the claystone-based ore. Tooth roll sizer followed by an attrition scrubber was found to be effective in reducing particle size and preparing the ore for sulfuric acid leaching. The current flowsheet does not include an allowance for traditional ore upgrading, and further investigation of ore upgrading is recommended at the next engineering phase, although it is not necessary to the viability of the project.

Sulfuric acid leaching is employed to remove lithium, along with other constituents, from the claystone ore. Testing looked at various acid concentrations, ratio of acid to ore, slurry densities, leaching temperatures, and leaching times. The results indicate that leaching with reduced acid concentrations for three hours gives the same lithium yield as using higher concentration acid. Using more dilute acid is preferable as it reduces equipment costs and total acid consumption.

The properties of the claystone after leaching show acceptable settling and filtration rates. Washing of the spent clay showed very high lithium recoveries.

Crystallization was also examined for the removal of by-products such as magnesium sulfate. Important process variables such as Li-Mg concentration ratio, crystallization temperature, and final liquor concentrations were identified.

Testing was conducted to identify reagent consumption and kinetic information. The results demonstrated optimum neutralization conditions, such as reagent addition, temperature and residence times. These conditions allowed for a high recovery of lithium and reduced the capital and operating cost.

This information obtained from these tests has proved critical in defining the process variables, e.g. reagent volumes and concentrations, physical operating conditions and control parameters. The results from these tests were used to develop and validate the process model.

Aspen Technology, Inc. Process Engineering suite was used to simulate the full process. The results of this model were compared to the laboratory studies, and a final bench-scale confirmation test was completed at Ganfeng Lithium's facilities to confirm the results of the model. The process design criteria (PDC) and equipment costs were based on Aspen process model results.

1.7.3 Recovery Methods

The process plant is proposed to be designed in two phases. Phase one will utilize some equipment that would be common in both phase 1 and 2. Phase 2 will be commissioned 3.5 years after Phase 1, and will add additional equipment and infrastructure.

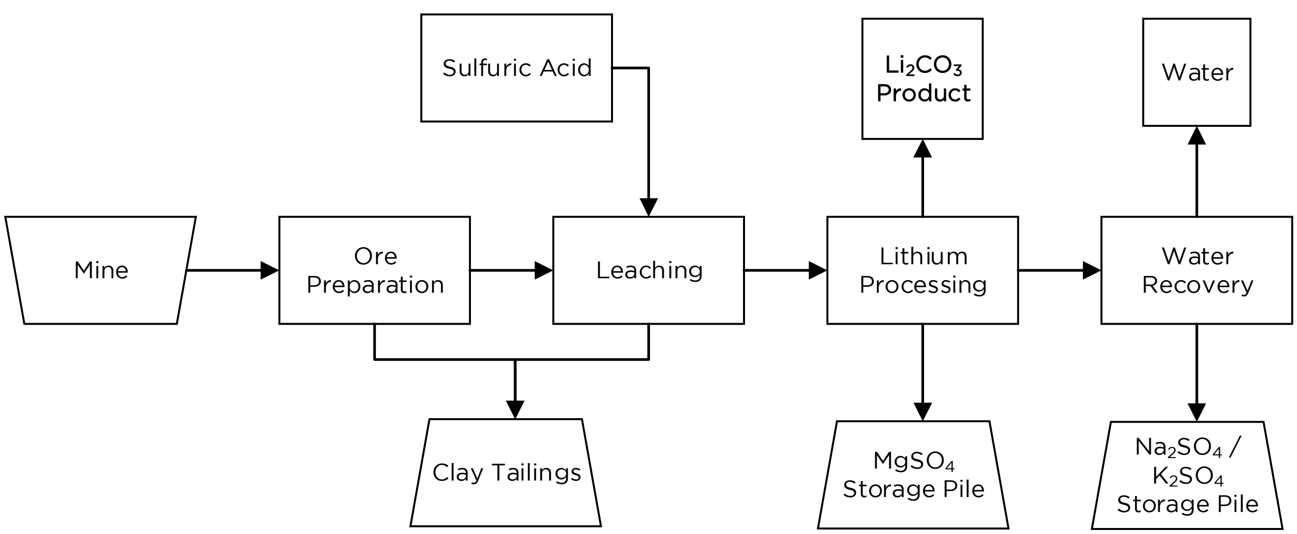
Phase 1 of the project is designed on the basis of treating on average 2.2 Mt/y of ore during the first four years of production resulting in an annual production rate of 30,000 tpa of lithium carbonate Li_2CO_3 per year. During phase 2 of the project which includes production from years 3.5 to 46, the average yearly production rate will increase to 60,000 tpa of lithium carbonate.

The recovery process consists of the following major components:

14. Ore preparation and leaching
15. Lithium processing
16. Sulfuric acid production

The recovery block diagram is provided in Figure 1-2.

Figure 1-2 Recovery Block Diagram



The plant operating plan is a continuous 24 h/d operation, using two 12 h shifts per day, 365 d/y. The design plant availability for the ore preparation and lithium carbonate production plant is 85%. This availability is based on the maintenance requirement of the evaporation and crystallization systems, with a small allowance for other downtime. The sulfuric acid plant is engineered to operate at or above 97% availability. Infrastructure has been planned to allow the sulfuric acid plant to continue operation through the process plant downtime, thereby, producing excess sulfuric acid for sale to regional consumers.

A summary of the projected flow sheet is as follows:

The process contemplates the use of conventional and commonly available equipment arranged to take advantage of the distinctive qualities of the high-grade ore. The process comprises a series of steps to concentrate, separate and produce battery-grade lithium carbonate.

First, ore from the mine will be sized, slurried, screened and then transferred to the leaching circuit. In the leaching circuit, sulfuric acid will be added to attack the ore and liberate the lithium from the clay. The high-grade quality of the ore allows for leaching to occur in stirred reactors specifically designed to maximize speed and efficiency of lithium dissolution and minimize sulfuric acid consumption.

The slurry from the leaching system will be filtered to remove the spent clay and send the lithium bearing solution to neutralization. The spent clay will be washed, and the wash solution will be recycled to the leaching system. The clay will then be transported and dry stacked by conveyor in a tailings storage facility.

The resulting lithium bearing solution from filtration will then go through a pH neutralization step. Neutralization will be achieved with ground limestone during startups and sustained with recycled alkaline solids from an upstream precipitation process during normal operation.

Next, the lithium solution will undergo an evaporation and crystallization step using steam and electricity from the sulfuric acid production process to recover pure water and produce magnesium sulfate. The magnesium sulfate from the crystallizer, also known as Epsom salt, will be dry-stacked in a magnesium sulfate (Epsom salt) storage facility.

Any remaining magnesium is removed in a second step after crystallization that involves the addition of reagents to precipitate magnesium hydroxide. The precipitated alkaline solids will be filtered and returned to the neutralization step.

Finally, saturated soda ash solution will be added to the lithium bearing solution to precipitate a high-quality, battery-grade lithium carbonate. The lithium carbonate solids will be filtered, washed, dried and packaged for sale. The liquid separated from the lithium carbonate solids will then be sent for water recovery in a zero-liquid discharge evaporator and crystallizer. This crystallizer will send any solids to a sodium/potassium sulfate storage facility, and the pure water being produced will be re-used in the process.

The total time projected to manufacture battery-grade lithium carbonate from the ore is less than 24 hours. The overall recovery of lithium from the ore is 83%.

By-products from the process will be separated into three distinct streams for dry-stack storage: clay tailings, magnesium sulfate and sodium/potassium sulfate.

The next step is the development of the pilot plant in real *in-situ* conditions, and the testing programs for Thacker Pass to demonstrate the process technology at a commercial scale.

1.8 Project Infrastructure

The Thacker Pass project is located in a remote area and is accessed via State Route (SR) 293, approximately 30 km west of Highway 95 junction. The traffic study has shown that SR 293 has sufficient capacity to accommodate the additional traffic that will be generated by the project.

The project is to be constructed in two phases. Phase 1 will have a production of 30,000 tonnes per annum (tpa) of lithium carbonate, and Phase 2 will expand the production rate to 60,000 tpa of lithium carbonate. The design of the two-phase approach was done in a combined foot print to reduce the overall project layout and improve operational costs.

1.8.1 Roads

All site roads have been designed to the final production rate at Phase 2. These roads are classified as private roads, with the main loop around the services buildings. Utility roads have also been planned.

Movement of material in Phase 1 will be by truck. A rail system will be constructed as part of Phase 2, and will be used extensively to move raw materials and finished products. The layout of the process and operation allows for installation of the rail system without interruption to the site operations, with the exception of the final tie-in.

1.8.2 Tailings and Salt Storage

The tailings and salt storage strategy is based on consideration of the following aspects of the site plan:

- Adoption of filtered stack method of clay tailings disposal, referred to as Clay Tailings Filter Stack (CTFS).
- Fully contained lined cells for mineral salts for separate storage. There are two storage cells: one to store magnesium sulfate and the other for potassium and sodium sulfates. Crystallized magnesium and sodium/potassium sulfate salts generated in separate streams in the process will be contained in separate fully contained cells. The cells will be constructed from mine waste placed in lifts and compacted under the action of the haul trucks and grading equipment.
- Site selection for the CTFS and salt cells. The selected location is on relatively flat topography within the lease area to ensure proper containment, while maintaining close proximity to the process plant.
- Surface water management to minimize water entering the tailings area and contain any meteoric waters. The storage area is designed to direct runoff from higher ground around the stack. Precipitation falling directly on the deposit will be managed to maintain a dry working area to place the tailings, to mitigate erosion of the tailings and manage turbidity in runoff prior to recycling the collected water to the process plant.
- Utilization of mine waste rock to provide supplemental perimeter containment of the tailings on the downslope sides.
- The salt storage areas are designed for eventual recovery of the salts in the storage areas. The stored materials have a market value and their potential recovery as economic products will be evaluated in later engineering phases. No revenue is assumed from the sales of these stored salts.

1.8.3 Water Supply and Treatment

Raw water is supplied to the plant site via a raw water pipeline from a well or series of wells in the Quinn River Valley to the east of the site. Potable water will be supplied by treating Quinn River Valley water and stored on site. The fire water supply for the permanent fire protection is provided from the raw water tank located within the plant.

The sanitary sewer system is to use a septic leach field in an alluvial fan to handle the septic and sanitary sewers on site.

1.8.4 Power

A 115 kV transmission line runs directly through the site and has sufficient capacity for the proposed Phase 2 operations should co-generated power produced from the sulfuric acid plant be temporarily unavailable. The electrical infrastructure will also allow operation using only power generated on-site, should there be an interruption in supply from this line. The main substation will be installed during Phase 1 and will include the required 25 kV metal clad switchgear (12 circuit breakers + two spares) to allow for the distribution of power to both Phase 1 and 2 equipment.

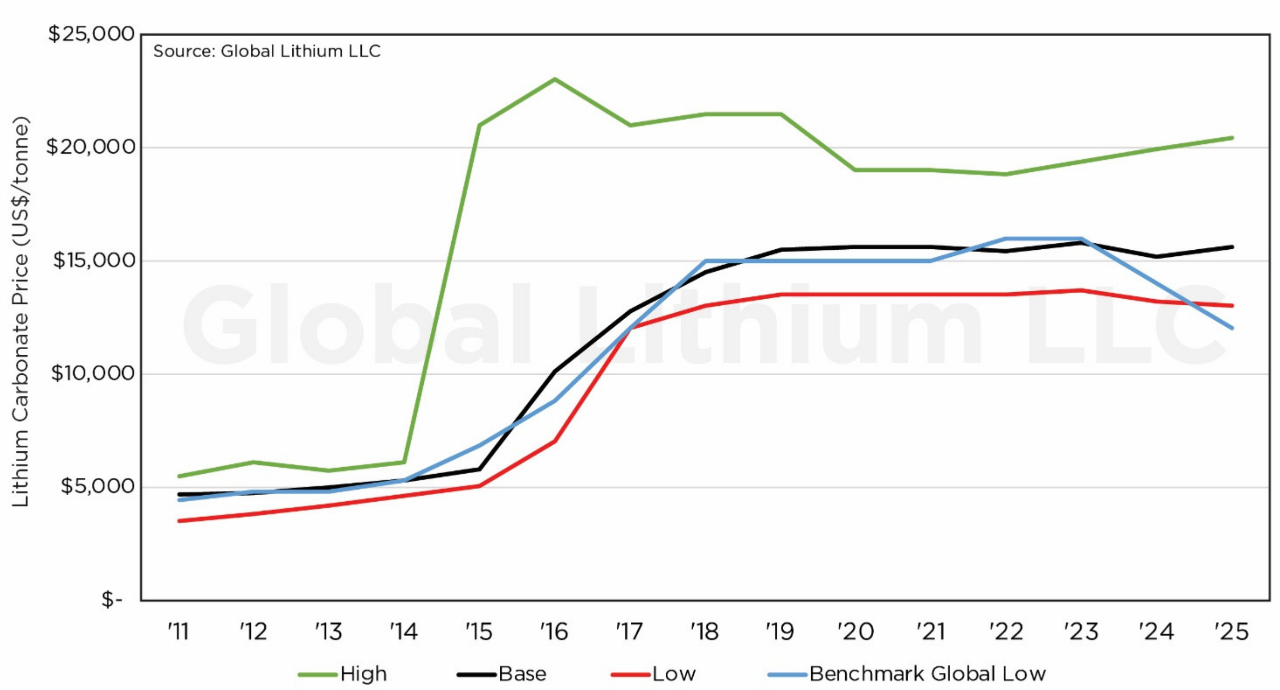
During startup service, power will be temporarily sourced from the local utility. Steam produced by the acid plant will be used to generate electricity. Power for the operation will be capable of being generated locally by the power plant turbo generators or via the grid connected to the nearby Harney Electric Cooperative 115 kV transmission network in a buy or sell all commercial agreement. In steady-state operation, power will be consumed from the sulfuric acid plant and excess power will be sold via the proximal 115 kV transmission line.

Fuel for the startup package boilers will be supplied from an on-site fuel bunker that will be resupplied by truck.

1.9 Market Studies

Global Lithium LLC, a recognized leader in lithium markets, was engaged to conduct a market study and price projection for Li_2CO_3. Global Lithium provided price projections for the global market through to 2025. They project sustained firm lithium carbonate pricing over the next five to seven years and expect that demand will grow a minimum of 300% between 2017 and 2025. Global Lithium suggests using a conservative low-price estimate of US$12,000/tonne for project economics. That will provide a margin of safety over what is believed to be the most likely price scenario going forward.

Figure 1-3 Lithium-Carbonate Prices 2011-2025 (US$/kg) (source: Global Lithium, 2018)



1.10 Environmental Studies, Permitting and Social or Community Impact

1.10.1 Environmental Studies

Environmental studies are underway for all mine and process site facility infrastructure, with a total study area of 18,866 acres. This baseline study program is scheduled to be substantially complete by Q4 2018.

WorleyParsons' review of the completed and ongoing baseline study program indicates that LNC has initiated the environmental and natural resource baseline studies required to support the permitting and approval program and the NEPA environmental documentation process for the Project. The studies completed to date and the ongoing studies are adequate and in conformance with what are typically performed for mining projects located on BLM-managed public lands in Nevada.

There are no identified environmental issues that would prevent LNC from achieving all permits and authorizations required to commence construction and operation of the Project based on the data that has been collected to date.

1.10.2 Waste Rock and Tailings Management

Waste rock from the open pit will be either used as fill for project infrastructure, managed through the construction of a surface waste rock storage facility, or backfilled in the pit. In-pit waste backfill will total 285 million tonnes, with only 2.2 million tonnes being transferred by truck to a nearby waste rock dump. The remaining waste rock will used for project infrastructure.

Clay tailings will be dewatered in the process facility prior to deposition in the Tailings Storage Facility (CTFS). The leached clay tailings will be mixed with limestone to improve stacking stability before being conveyed to the clay tailings dry stack. The CTFS will be constructed in lifts to a physically stable configuration, then reclaimed. For the purposes of this report, all remaining process tailings and salts are assumed to be left in place for final reclamation and closure.

1.10.3 Water Management, and Site Monitoring

All process solutions will be contained on lined facilities and re-used in the process or allowed to evaporate. The plant is designed to be a Zero-Liquid Discharge (ZLD) facility to ensure protection of local and regional water quality.

At the end of the process life, all residual solutions will drain to a lined solution pond and allowed to evaporate.

Post-closure monitoring is required for at least five years after achieving chemical stability for all process solutions and other fluids to ensure waters of the State are not degraded.

The preliminary designs presented are aimed at meeting all Federal, State, and local agency requirements and would be protective of the environment.

1.10.4 Permitting and Bonding Requirements

A multi-agency regulatory process will be completed to obtain all required Federal, State and local agency permits and approvals necessary to construct, operate and ultimately reclaim and close the Project, including all mining, ore processing, and transportation related operations.

Existing permits include approval to mine a small clay pit for hectorite and several exploration-related permits that allow exploration and similar drilling related activities.

A reclamation bond is required for the total amount that would be incurred by the Agencies to reclaim and close the area affected by the Project and fund post closure monitoring activities.

Where long-term water management is a concern, a long-term trust fund can be required to fund long-term water management and related compliance obligations. Due to the environmental setting and proposed water management approach for the Project, it is not certain a long-term trust fund will be required.

1.10.5 Community and Social Engagement

LNC has developed a community engagement plan and has held numerous agency, stakeholder, and other public meetings. Future public open houses are planned as the project advances to ensure the community is fully engaged. Additional meetings with regulatory agencies and elected officials are included in the engagement plan.

The Borden & Harris 2017 economic study, Economic and Fiscal Impacts from New Lithium Mine and Lithium Processing Operations in Humboldt County, Nevada (Borden & Harris, 2017), 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.

1.10.6 Mine Reclamation and Closure

Reclamation and closure of the mine, ore processing, and transportation operations will be completed in accordance with the approved Mine Plan of Operations and Reclamation Plan, and the tentative closure as approved by NDEP-BMRR.

The post-mining land use requirements will require the establishment of a sage-brush vegetation type to restore the area to the pre-mining land uses of wildlife habitat, grazing, and recreation.

Reclamation and closure costs are derived from industry standard practices and methods in conformance with typical standards used for other mining projects located on public lands in Nevada.

1.11 Capital and Operating Cost Estimates

Table 1-3 below summarizes the key elements of the PFS cost estimate and financial analysis. The Capital Cost estimate has a predicted accuracy of +25/-20%.

Table 1-3 Thacker Pass - PFS Results Summary

Parameter	Value
Lithium carbonate price	\$12,000/t Li_2CO_3
Mining method	Continuous open-pit mining with surface miner
Annual production capacity	60,000 tpa Li_2CO_3 (Phase 1 - 30,000 tpa)
Mineral reserves	3.135 million tonnes of LCE at 3,283 ppm Li (average)
Mine life	46 years
Strip ratio (waste-to-ore mined)	1.6:1
Pit depth (max)	120 m

Parameter	Value
Initial capital costs	\$1,059 million (Phase 1 - \$581 million)
Operating costs (average LOM)	\$2,570/t Li_2CO_3 (\$4,088/t before by-product credits)
EBITDA (average annual)	\$520 million (Phase 1 - \$246 million)
NPV (8% discount, pre-tax)	\$3.9 billion
NPV (8% discount, after-tax)	\$2.6 billion
IRR (pre-tax)	36.6%
IRR (after-tax)	29.3%

1.11.1 Capital Costs

Total initial Phase 1 capital expenditures are estimated at US\$581 million and a total of US\$1,059 million at the completion of Phase 2. The capital cost estimate excludes the LOM sustaining capital cost of US\$623 million. Capital cost estimates are presented in Table 1-4.

Table 1-4 Capital Cost Estimate

Category	Phase 1, Capital Costs, (US\$ millions)	Phase 2, Capital Costs, (US\$ millions)	Total, Capital Costs, (US\$ millions)
Direct Costs			
Lithium Carbonate Plant	218	96	314
Sulfuric acid plant	134	158	293
Mine	46	1	47
Railroad and yards	3	81	84
Total Direct Cost	**401**	**336**	**737**
Total Indirect Cost	**89**	**65**	**154**
Contingency (18.8%)	91	77	168
Total Capital Costs	**581**	**478**	**1,059**

1.11.2 Operating Costs

The operating costs are based on an operation achieving average annual production of approximately 30,000 tpa in Phase 1 and rising to 60,000 tpa of battery-grade Li_2CO_3 in Phase 2. The estimated average operating cost for the mine and processing facilities are presented in Table 1-5. These operating costs exclude credits from electricity and sulfuric acid sales.

Table 1-5 Estimated Average Operating Costs for Mine and Processing Facility (excluding credits from electricity and sulfuric acid sales)

Category	Operating Cost, (US$/tonne Li_2CO_3)	% of Total
Mining	488	12.0%
Lithium processing	1,649	40.0%
Sulfuric acid plant	1,780	44.0%
General and administrative	156	3.6%
Electricity delivery (wheeling charge)	15	0.4%
Total Operating Costs	**4,088**	**100.0**

1.12 Economic Analysis

The financial results are derived from inputs based on an annual production schedule. A sensitivity analysis on the unlevered economic results over a 46-year operating period is summarized in Table 1-6, and reported on a 100% equity project basis. The data in Table 1-6 includes revenue from electricity and sulfuric acid sales.

Table 1-6 Thacker Pass – After Tax NPV and IRR Sensitivity Analysis

Discount Rate, (%)	Low Case NPV $10,000/t Li2CO3 ($ millions)	Base Case NPV $12,000/t Li2CO3 ($ millions)	High Case NPV $14,000/t Li2CO3 ($ millions)
6%	2,790	3,800	4,811
8%	1,856	2,591	3,327
10%	1,259	1,816	2,373
IRR (%)	**24.0**	**29.3**	**34.3**

The project is subject to a 1.75% royalty on net revenue produced directly from ore. This royalty has been included in the economic model with the assumption that LNC will exercise its right under the terms of the royalty to reduce it from 8.0% to 1.75% by making an upfront payment of US$22 million in the first year of operation. At US$12,000/tonne Li_2CO_3, the ongoing annual royalty payments will average US$210/tonne Li_2CO_3 sold. The royalty is not applicable to revenues from the sale of electricity and sulfuric acid.

1.13 Conclusions and Recommendations

1.13.1 Conclusions

The Prefeasibility study phase of the project was done to sufficient detail to refine the economics to a +25/-20% level of accuracy and outline the areas needing attention for the project going forward. The project economics are sufficiently robust to warrant moving to the next phase of development.

The project is planned to be built in two phases. The first phase of construction is estimated to cost US$581 million. The second phase has an estimated cost of US$478 million and can be funded from cash-flow from the first phase. The total estimated cost for the total project is US$1,059 million.

In the next phase of project development, LNC needs to advance flowsheet and equipment design with pilot work specifically designed to optimize the process and provide detailed information for equipment scale-up. Much of this work can be performed by equipment suppliers at their respective testing facilities. The schedule of the project is determined by the receipt of the phase 1 regulatory approval to begin construction in the 4th quarter of 2020. The schedule for Phase 2 approval is determined by approvals for the rail corridor and plant expansion by the 2nd quarter of 2025.

1.13.2 Recommendations

Based on the Pre-feasibility work completed and results achieved, the following is recommended for the next phase of project development:

Community, Environment and Permitting:

- Continue current permitting strategy to develop positive community support and streamline final project approval. Continue to hold regular consultations, town halls, meetings with elected officials, and regulators.

Mining:

- Detail the design of the running surface and the life of mine schedule.
- Evaluate other pit design strategies, ore cut-off grade, revenue factors, and mine waste in the subsequent phases to optimize the mining operations for recovery while reducing waste.
- Perform a detailed trade-off study between an excavator and a surface miner for mining ore.
- Perform a trade-off study for the overland ore conveyor vs. truck haulage.
- Investigate additional ranges of panel widths to optimize the pit design and mine operation.
- Investigate additional pit sequences to optimize feed to the plant.
- Investigate alternate mining and stockpiling strategies to result in a deferral or reduction of capital purchases over the mine life.

Exploration:

- Continue exploration to the northwest of the pit area and the southwest basin is recommended in order to increase the Resource.

Process:

- Additional process investigation is recommended to reduce sulfuric acid consumption.
- Additional leach testing is recommended to determine optimum economic recovery of lithium.
- Perform equipment testing with partner and vendor companies to optimize performance and refine equipment selection.

Infrastructure:

The following activities are recommended to be included in the next phase of the project:

- Perform geotechnical investigation for the process plant, mine facilities, water pipeline and pump station to finalize the foundation and earthwork design.
- Finalize the Power agreement with Harney Electric Cooperative Inc. for purchase and wheeling of the power.
- Execute a power purchase agreement with a third party off-taker.
- Explore partnerships and options for logistics needs for the operation.

Tailings:

The CTFS should be updated at the next phase. The filter stack design discussed in this report should be detailed in the next phase of study, which will require further evaluation of physical and chemical stability, construction, and closure procedures. The recommended next steps envisaged to be undertaken during the next design development study are as follows:

- Conduct a further program of geotechnical laboratory testing.
- Conduct slope stability modeling for the tailings disposal site.
- Finalize CTFS geometry and refine estimated tailings storage capacity.
- Determine tailings chemistry and seepage assessment.
- Review and update geochemical test results.
- Conduct tailings saturation and leachate quality modeling.
- Apply a two-dimensional infiltration and seepage model of the TMF (VADOSE/W or similar) to estimate evaporation, seepage, and tailings moisture contents.
- Review the receiving environments (groundwater and surface water) and regulatory requirements.
- Finalize the design of the bottom liner.
- Perform a construction and constructability assessment for summer and winter season tailings disposal, including methods for transporting and placing tailings. Compare conveyor versus truck haul for placement.
- Confirm waste rock and tailings production schedules.
- For the closure assessment, develop cover criteria, review cover options and develop a progressive reclamation plan.

2. Introduction and Terms of Reference

This report presents the Preliminary feasibility study findings of LNC's Thacker Pass Project, including layouts, implementation strategy, and capital and operating costs estimates.

LNC is a wholly owned subsidiary of LAC, formerly known as WLC. This report focuses on the Thacker Pass Deposit (formerly Stage I of the Kings Valley Project or Lithium Nevada Project).

This report follows the report "Independent Technical Report for the Thacker Pass Project, Humboldt County, Nevada, USA" issued on May 17, 2018, and the press release (Lithium Americas Corp. 2018a) announcing the preliminary feasibility study results for the Thacker Pass Project, dated June 21, 2018.

Excluded from this report are resource statements from the Montana Mountains deposit (formerly Stage II-V deposit of the Lithium Nevada Project), as LNC's focus is on developing a project of scale in Thacker Pass (SRK Consulting 2012). The claims owned by LNC that are north of the Thacker Pass Project in the Montana Mountains no longer form part of this mineral project.

This report meets the requirements for NI 43-101 and the resource and reserve definition is as set forth in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (2014).

2.1 Terms of Reference

This technical report is based on an exploration drilling program conducted in 2017, and builds on these previously filed technical reports:

- Independent Technical Report for the Lithium Nevada Property, Nevada, USA; Stage I and Stage II Resource Estimate; Effective Date: May 31, 2016 (SRK Technical Report, Carew and Rossi 2016).
- Preliminary Feasibility Study, Lithium Nevada Project, Humboldt County, Nevada, Effective Date of Stage 1 Resource Estimate; Effective Date: June 28, 2014 (Tetra Tech 2012).

Advisian was commissioned by LNC to prepare a NI 43-101 compliant preliminary feasibility study report. The purpose of the report is to advance the design of the Thacker Pass Project to an AACE International Class 4 maturity level for project deliverables including a +25/-20% cost estimate. This report provides information, findings and results based on the 2017 drilling campaign, and the new metallurgical process.

Advisian is an independent company and not an associate or affiliate of LNC or any associated company of LAC.

In preparing this report, Advisian has relied upon input from LNC and LNC's sulfuric acid plant specialist, Chemetics Inc, particularly regarding owner's costs, logistics, market intelligence, contracts, implementation strategy, regional geology, process engineering, geological mapping, exploration, and sulfuric acid plant design, and power generation.

In addition, Advisian has relied upon results of the metallurgical test work undertaken by LNC and their affiliates as a basis for its metallurgical and process development.

Advisian has sought expert services from Mining-Plus, a consulting firm specialized in mine planning and development, as well as Great Basin Environmental Services, LLC, a consulting firm specialized in environmental services and permitting requirements.

This report was prepared by the authors, at the request of Lithium Americas Corp., a Vancouver registered company, trading under the symbol of LAC on the Toronto Stock Exchange and the New York Stock Exchange with its corporate office at:

1150-355 Burrard Street,
Vancouver, British Columbia, Canada
V6C 2G8

This report is considered current as of 1 August 2018.

2.2 Scope of Work

Advisian was assigned by LNC the scope of designing the mine, infrastructure, and process plant of the Thacker Pass Project, not including the sulfuric acid plant and ancillary facilities. This included developing the implementation strategy, identifying risks, safety issues, and estimating the capital and operating costs. Chemetics Inc. was assigned the design of the double contact / double absorption sulfur-burning sulfuric acid plant and the associated infrastructure by LNC.

Table 2-1 presents the list of authors and their responsibilities. The QP's reviewed all sections not written by them.

Table 2-1 List of Qualified Persons and Area of Responsibilities

Qualified Persons[1]	Company	Area of Responsibility
Ken Armstrong	Chemetics Inc./Jacobs Engineering Group	Sections 18.9.5 and the associated portions of Sections 1 and 21 relating to the sulfuric acid plant.
Reza Ehsani	WorleyParsons/Advisian	Sections 18 and the associated portions of Section 1 excluding the sulfuric acid plant
Louis Fourie	WorleyParsons/Advisian	Sections 4 to 12, 0, 23, and the associated portions of Section 1
Andrew Hutson	Mining-Plus	Sections 15 and 16, and the associated portions of Section 1

Qualified Persons[1]	Company	Area of Responsibility
Daniel Peldiak	WorleyParsons/Advisian	Sections 0 and 17, and the associated portions of Section 1
Rob Spiering	WorleyParsons/Advisian	Sections 1, 2, 3, 19, 21, 22, 24, 25, 26, 27
John Young	Great Basin Environmental Services, LLC	Section 20, and the associated portions of Section 1

Note: [1]Qualified Person as defined by National Instrument 43-101.

2.3 Property Inspection by Qualified Persons

The resource estimate qualified person (QP) for the Thacker Pass Project is Louis Fourie, Advisian. He conducted a site visit on the project property on November 14, 2017.

- Andrew Hutson, Principal Mining Engineer for Mining-Plus visited the site.
- John Young, Environmental and permitting specialist visited the site.
- The following Advisian QPs joined the study at the midpoint and have not visited the site: Reza Ehsani, Dan Peldiak, and Rob Spiering. It was not deemed necessary for these Advisian QPs to visit the site for a PFS study.
- Ken Armstrong, Principal Sulfuric Acid Plant Engineer, has not visited the site. Mr. Armstrong joined the project at the midpoint and a site visit was deemed unnecessary. Mr. Armstrong relied on site-specific information provided by Advisian.

2.4 Units and Currency

Unless otherwise stated all units used in this report are metric. The US$ is used throughout this report unless otherwise specified.

Table 2-2 lists the abbreviations for technical terms used throughout the text of this report:

Table 2-2 Abbreviations and Acronyms

Abbreviation/Acronym	Description
'	feet, minutes (Longitude/Latitude)
"	inches, seconds (Longitude/Latitude)
%	Percent
<	Less Than

Abbreviation/Acronym	Description
>	Greater Than
°	Degrees of Arc
μm	Micrometer (10^{-6} meter)
2D	Two-Dimensional
3D	Three-Dimensional
AACE	American Association of Cost Engineers (AACE International)
AAL	American Assay Labs
ABA	Acid/Base Accounting
ActLabs	Activation Laboratories
AFWR	Adjusted Formula Weight Recovery
AIP	Agreement-in-Principle
ALS	ALS Minerals
ANFO	Ammonium Nitrate - Fuel Oil
asl	Above Sea Level
BAQ	Bureau of Air Quality
bgs	Below Ground Surface
BLM	Bureau of Land Management
CAA	Clean Air Act
CAD$	Canadian Dollar
CAPEX	Capital Expenditure
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
Chevron	Chevron USA

Abbreviation/Acronym	Description
deg. C	Degrees Celsius
CoA	Capital Cost by Code of Account
CTFS	Clay Tailings Filter Stack (Tailings Storage Facility)
CWA	Clean Water Act
DCF	Discounted Cash Flow
DOI	Department of the Interior
DTM	Digital Terrain Model
EA	Environmental Assessment
ESA	Endangered Species Act
FCA	Financial Conduct Authority
GPS	Global Positioning System
Hazen	Hazen Research
HG	High-Grade
Huber	J. M. Huber Corporation
HPZ	Hot Pond Zone
IRR	Internal Rate of Return
ICP-MS	Inductively Coupled Plasma Mass Spectroscopy
KCA	Kappes Cassiday & Associates
LAC	Lithium Americas Corporation
LCE	Lithium Carbonate Equivalent
LNC	Lithium Nevada Corporation
LG	Low-Grade

Abbreviation/Acronym	Description
LOA	Living Out Allowance
LOM	Life of Mine
Mining Act	Mining Act of the United States of America
MLLA	Mineral Lands Leasing Act
MPO	Mine Plan of Operations
NDEP-BMRR	Nevada Department of Environmental Protection -Bureau of Mining Regulation and Reclamation
NEPA	National Environmental Policy Act
NPV	Net Present Value
OPEX	Operational Expense
PoO	Plan of Operations and Reclamation Plan
PDC	Process Design Criteria
ppm	parts per million
QA/QC	Quality Assurance and Quality Control
Qal	Quaternary Alluvium
QP	Qualified Person
RC	Reverse Circulation
ROM	Run of Mine
ROR	Rate of Return
Sample ID	Sample Tags
SRC	Saskatchewan Research Council
STB	Surface Transportation Board

Abbreviation/Acronym	Description
Torque	Hexagon Mining Torque
tpa	Tonnes per annum (Metric)
TV	Tertiary Volcanics
UACE	US. Army Corps of Engineers
UM	Unpatented Mining
UM Claim	Unpatented Mining Claim
US$	US Dollars
USBM	United States Bureau of Mines
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
WBS	Work Breakdown Structure
WEDC	Western Energy Development Corporation
WLC	Western Lithium USA Corporation
WRSF	Waste Rock Storage Facility
XRD	X-Ray Diffraction
XRF	X-Ray Fluorescence

3. Reliance on Other Experts

3.1 Mineral Tenure Property

In respect of the discussion 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 July 27, 2017. The relevant sections of the report to which this applies are included in Section 4.

3.2 Metallurgical Testing

Several laboratories have been involved in the recent test work program. Their expertise and test results provide a foundation for the process design. Size reduction tests have been performed at ALS Geochemistry in Reno, Nevada. Leaching, filtration, precipitation, and neutralization tests have been carried out in SRC (Canada), LAC and its affiliates (Reno and elsewhere).

4. Property Description and Location

Information on the purchase of past royalties and land titles was verified by Richard Harris, an attorney with Harris, Thompson and Faillers, dated February 6, 2013, as updated and supplemented by the updated title opinion of Mr. Harris, dated July 27, 2017.

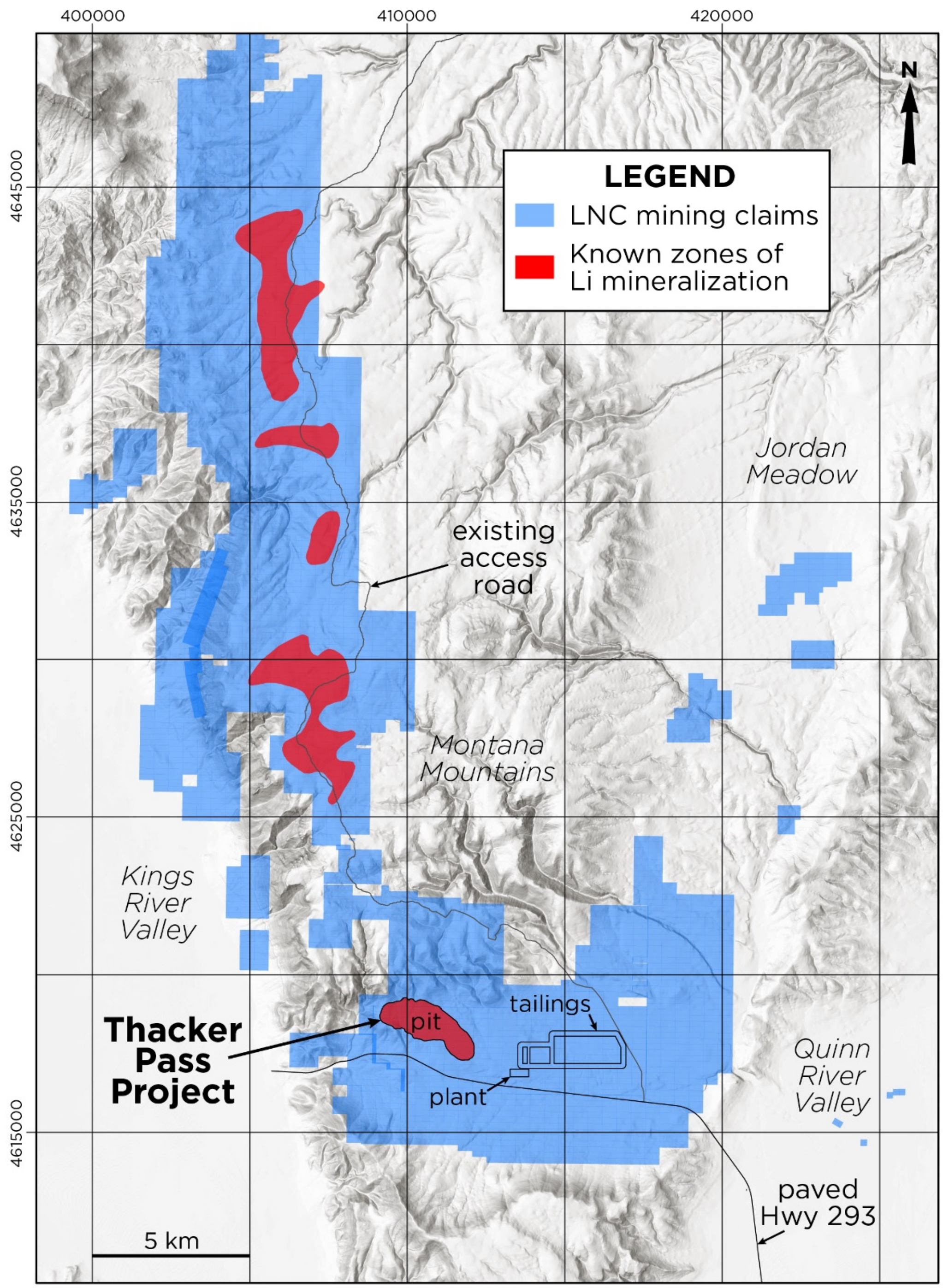
4.1 Property Description

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 155 people live in Orovada, Nevada, according to the 2010 US Census.

More specifically, the Thacker Pass Project is situated at the southern end of the McDermitt Caldera in T44N, R35E within Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16, and 17. 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.

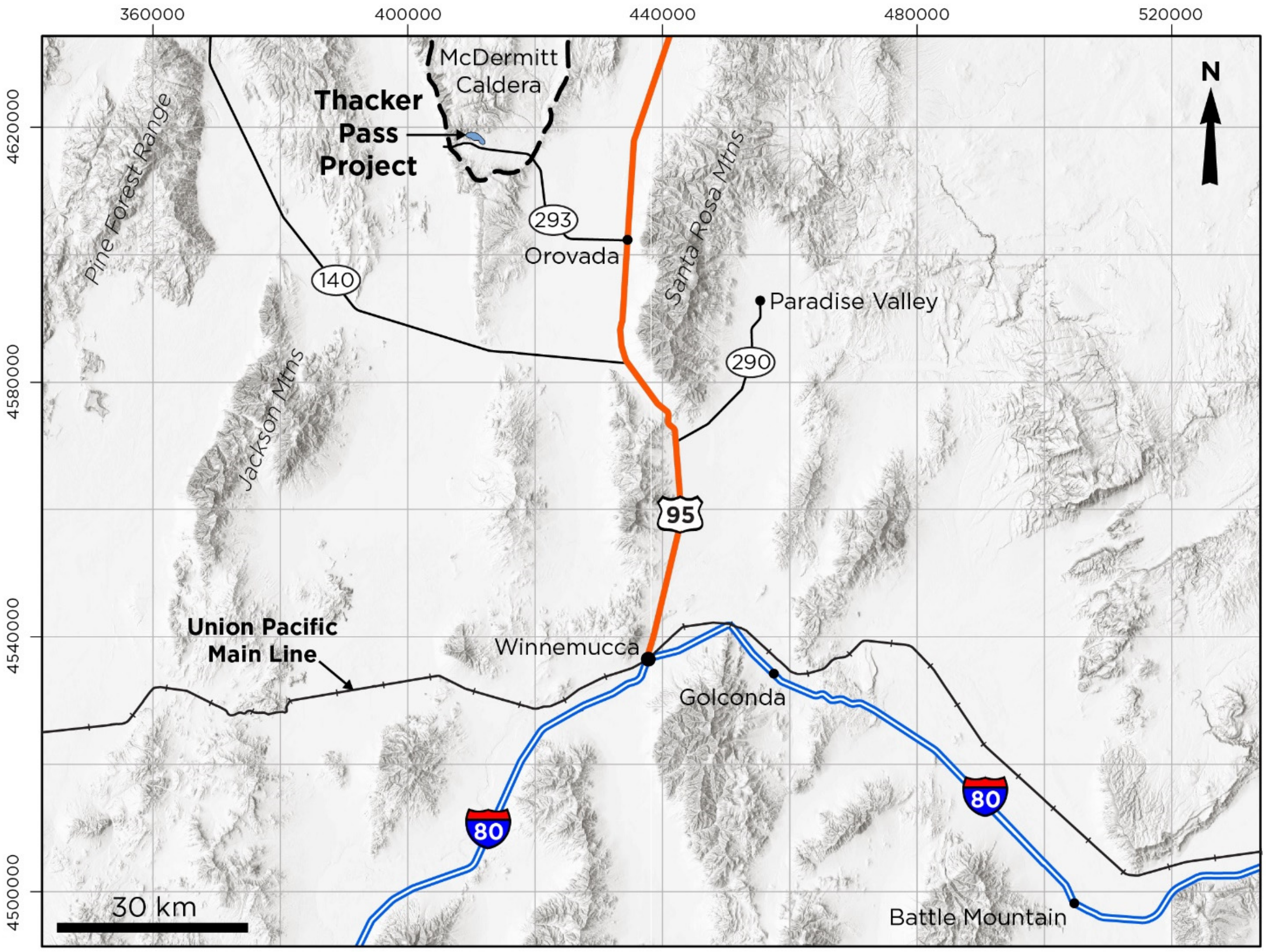
The 2016 Technical Report indicated that Stage 1 of the Lithium Nevada Project encompassed an area totaling 1,468 ha. The Thacker Pass Project area now encompasses approximately 3,367 ha. Figure 4-1 and Figure 4.2 show a map of the Thacker Pass Project and other known mineralized zones within the McDermitt Caldera. The property lies within and is surrounded by federally owned lands administered by the Bureau of Land Management (BLM).

Figure 4-1 Location Map of the McDermitt Caldera, Thacker Pass Project, and Other Known Mineralized Zones



Source: Lithium Nevada Corp. (2018)

Figure 4-2 Location Map of the McDermitt Caldera and Thacker Pass Project



Source: Lithium Nevada Corp. (2018)

4.2 Mineral Tenure

A list of the UM Claims encompassing the Thacker Pass Project is presented in Table 4-1.

Table 4-1 Thacker Pass Project UM Claims Owned by LNC

Claim Name	Claim Number	NMC Number
Beta	18	894738
Beta	16	894736
Beta	14	894734

Claim Name	Claim Number	NMC Number
Beta	21-51	894741-894771
BPE	1-194	1018964-1019157
BPE	253-301	1019216-1019264
BPE	337-378	1019300-1019341
BPE	413	1019376
BPE	415-452	1019378-1019415
BPE	499-531	1030193-1030225
Neutron	31-45	919267-919281
Neutron	353-366	900226-900239
Neutron	379-400	900252-900273
Neutron	402	900275
Neutron	427-448	900300-900321
Neutron	475-494	900348-900367
Neutron	523-538	900396-900411
Neutron	540	900413
Neutron	555-566	900428-900439
Neutron	568	900441
Neutron	579-584	900452-900457
Neutron	586-627	982465-982506
Neutron	76-105	919282-919311
Neutron	166-189	919342-919365
---	190	894562
Neutron	192	894564

Claim Name	Claim Number	NMC Number
Neutron	194	894566
Neutron	196-202	894568-919368
Neutron Plus	1	1020688
Neutron R	25-30	1049235-1049240
Neutron R	70-75	1049241-1049246
Neutron R	195	1049253
Neutron R	160-165	1049247-1049252
Neutron R	240,242,244,246, 248, 250,252,254,256,258,260,262,264, 268	1049255-1049267
Neutron R	348	1029479
Longhorn	1-12	1170693-1170704
Basin	1-30	1170660-1170689
Rock	1-20	1164758-1164777

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

4.2.1 UM Claims

The underlying title to the Lithium Nevada 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. However, this interest remains subject to the paramount title of the US federal government, who maintains a simple title fee on the land. The holder of an UM Claim maintains a perpetual entitlement to the UM Claim, provided it meets the obligations for UM Claims as required by the *Mining Act of the United States of America* (the *Mining Act*).

At this time, the principal obligation imposed on the holders of UM Claims is to pay an annual fee, which represents payment in lieu of the assessment work required under the *Mining Act*. The annual fee of US$155.00 per claim is payable to the BLM, Department of the Interior, Nevada, in addition to a fee of US$10.50 per claim paid to the county recorder of the relevant county in Nevada where the UM Claim is located. All obligations for Lithium Nevada's UM Claims in Nevada, including annual fees to the BLM and Humboldt County, have been fulfilled.

A UM Claim does not, on its own, give the holder the right to extract and sell locatable minerals. There are numerous other regulatory approvals and permits required as part of this process. 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).

The BLM is vested with a great deal of discretion in the management of the right to sell minerals governed by the MLLA, particularly where they represent a potential by-product to an economically viable mineral deposit governed by the *Mining Act*. At this time, the only mineral contemplated for mining and processing is lithium.

4.3 Nature and Extent of Interest and Title

LNC is a Nevada corporation that is currently a wholly-owned subsidiary of the Canadian-based LAC (formerly WLC). Pursuant to an agreement signed on December 20, 2007, between Western Energy Development Corporation (WEDC), a subsidiary of Western Uranium Corporation, and WLC (which was then also a subsidiary of Western Uranium Corporation), WEDC leased to WLC the Lith and neutron claims for the purpose of lithium exploration and exploitation (the Lease).

On March 22, 2016, the company announced a name change from Western Lithium USA Corp. to Lithium Americas Corp. and the name of its Nevada-based wholly owned subsidiary was changed to Western Lithium Corp. to Lithium Nevada Corp. The name of the project was changed to the Thacker Pass Project in 2018 and now excludes UM Claims in the Montana Mountains.

The agreement granted LNC exclusive rights to explore, develop, and mine or otherwise produce any and all lithium deposits discovered on the claims, subject to royalty payments. The leased area, at that time, included the entirety of the mineralized zones in Thacker Pass and the Montana Mountains (formerly Stage 2 to Stage 5), and included 1,378 claims that covered more than 11,000 ha lithium deposits to be exploited included, but not limited to, were 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 LNC the exclusive right to purchase the UM Claims comprising a designated discovery, subject to the royalty and other rights to be reserved by WEDC and subject to LNC obligations under the deed to be executed and delivered by WEDC on the closing of the option. In July 2008, LNC ceased to be wholly owned by Western Uranium Corporation and became an independent publicly traded company.

Effective February 4, 2011, Western Uranium Corporation, WEDC, LAC, and LNC entered into an agreement for the purchase by LNC from WEDC of the royalties and titles for the Lithium Nevada Property.

In March 2011, the parties completed the transaction for the sale by WEDC to LNC of the royalties and titles constituting all of the Lithium Nevada Property. As a result of this transaction, the existing lease and royalty arrangements between the two companies on the Lithium Nevada Property, including the net smelter returns and net profits royalties on any lithium project that the company developed, were terminated. LNC holds, indirectly, control and full ownership of the Lithium Nevada 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 (the Uranium Royalty).

The UM Claims subject to the Lease authorize LNC to develop and mine minerals, which are subject to location under the *Mining Law of 1872*, as amended (*Mining Law*). The *Mining Law* does not explicitly authorize the owner of a UM Claim to sell minerals, which are minerals that are leasable under the *Mineral Lands Leasing Act of 1920*, as amended. The sale of by-products, produced as a result of mining and processing lithium products from the Lithium Nevada Property, are not being considered at this time.

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 rates identified in Section 4.3 of this report, the Thacker Pass Property is subject to a royalty with the Orion Mine Finance Fund I (f.n.a. RK Mine Finance [Master] Fund II L.P.) (Orion). It is a gross revenue royalty on the Thacker Pass Property in the amount of 8% of gross revenue until aggregate royalty payments equal US$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. LNC can at any time elect to reduce the rate of the royalty to 1.75% on notice and payment of US$22 Million to Orion.

4.5 Environmental Liabilities

LNC has reclamation obligations for a small hectorite clay mine located within the project area. The financial liability for this reclamation obligation, as stipulated by the BLM, is US$572,590. LNC's other environmental liabilities from existing mineral exploration projects in the vicinity of the project area have a reclamation obligation totaling approximately US$364,159. LNC currently holds a US$1,007,520 reclamation bond with the BLM Nevada State Office.

There are no other known environmental liabilities associated with the project.

4.6 Permitting for Exploration

Based on information provided to, or researched and reviewed by, Advisian as part of this technical study, there are not any federal, state or local regulatory or permitting issues identified at this time that could preclude overall approval of the proposed Thacker Pass Project.

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

LNC is in the process of amending existing US federal and state permits and approvals to further expand exploration activities at and in the vicinity of the Thacker Pass Project site. All amended permits are anticipated to be received in the summer of 2018.

A Plan of Operations and Reclamation Plan (PoO)—Plan of Operations 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*.

As requested by the BLM, appropriate baseline studies that included a cultural resource assessment were completed to support the finalization of the EA process and the approval of the PoO.

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. LNC has initiated the process to obtain all necessary federal, state, and local regulatory agency permits and approvals for the proposed Thacker Pass Project. This process, which includes the completion of environmental and natural resource baseline studies, will be described further in the Prefeasibility Study.

4.7 Other Factors or Risks

Advisian 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 property.

4.8 Conclusions

Based on information provided to, or researched and reviewed by, Advisian as a part of this Technical Report, LNC is approved by the BLM and the NDEP BMRR to conduct mineral exploration activities at the Thacker Pass Project site in accordance with PoO No. N85255.

LNC has initiated the process to obtain all necessary federal, state, and local regulatory agency permits and approvals for the further advancement of the Thacker Pass Project.

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

5.1 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. On-site access is via several gravel and dirt roads established during the exploration phase.

5.2 Climate

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 Photograph of the On-Site Meteorological Station, Including Tower, Solar Power Station, and Security Fence

5.2.1 Temperature

Northern Nevada has a high-desert climate with cold winters and hot summers. The average minimum temperature in January is -3°C. 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 LNC station from 2011 to 2017 ranges from is -18°C to +37°C. The frost depth for the project is 0.635 m (24 in.) based on Humboldt County Basic Design Requirements.

5.2.2 Precipitation

The area is generally dry, with annual precipitation ranging from 218 mm in 2013 to 399 mm in 2015 (Table 5-1). Winter precipitation (December to February) is higher with total precipitation ranging from 0.3 in. to 3.7 in. Summer (June to August) precipitation is lower, ranging from 0 in. to 1.3 in.

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

Month	2011	2012	2013	2014	2015	2016	2017
January	---	1.7	1.0	0.4	0.4	2.5	3.0
February	---	0.3	0.2	2.1	0.8	0.2	1.6
March	---	1.1	0.3	3.0	0.5	1.4	0.9
April	---	1.2	0.3	1.4	1.2	0.8	2.1
May	---	0.3	2.2	0.6	3.5	---	0.9
June	---	0.4	0.4	0.1	0.4	---	1.3
July	---	0.4	0.4	0.6	0.8	0.0	0.0
August	0.4	0.5	0.7	1.1	0.1	0.0	0.4
September	0.0	0.7	1.2	2.9	0.2	0.9	0.3
October	1.2	1.1	1.0	0.5	1.8	1.3	---
November	0.6	1.1	0.8	1.2	0.6	0.7	---
December	0.0	2.7	0.3	1.8	3.7	2.7	---
Annual Total	**---**	**11.5**	**8.6**	**15.7**	**13.8**	**---**	**---**

Maximum Monthly	**---**	**2.7**	**2.2**	**3.0**	**3.7**	**---**	**---**
Minimum Monthly	**---**	**0.3**	**0.2**	**0.1**	**0.1**	**---**	**---**

5.2.3 Wind Speed and Direction

In general, wind predominantly blows from the westerly directions (Figure 5-2). In the summer (June to August), wind also often blows from the north with wind speeds mostly stronger than 5 m/s (Figure 5-3). Hourly average wind speeds were higher in the spring (March to May) and summer (June to August). Wind speeds are summarized in Table 5-2.

Figure 5-2 Annual Wind Roses Developed Using Data Collected from the On-Site Meteorological Station, 2012 to 2015

Figure 5-3 Average Seasonal Wind Roses Developed Using Wind Data Collected from the On-Site Meteorological Station

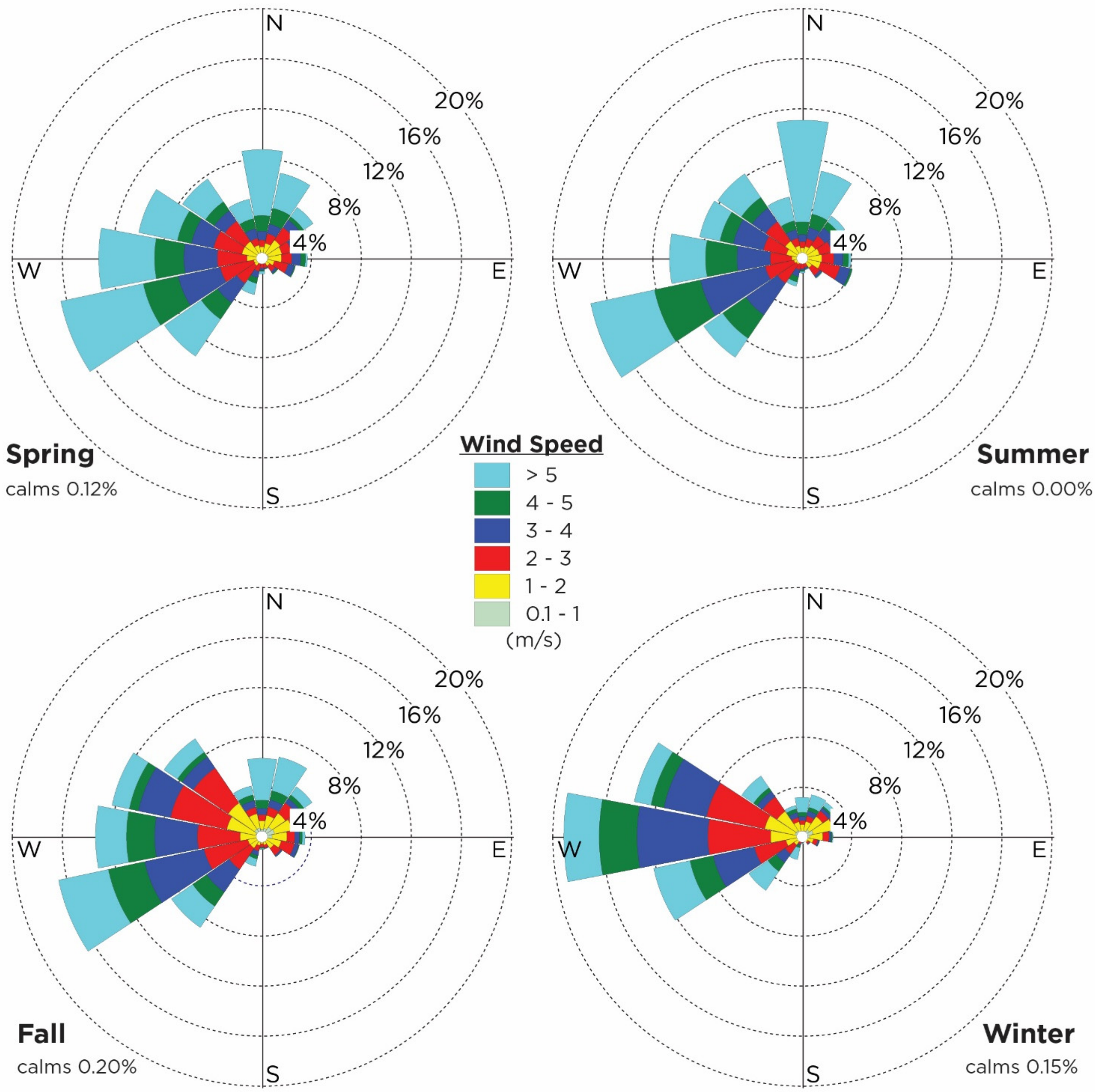


Table 5-2 Wind Speed from 2011 to 2017 (m/s)

Month	2011	2012	2013	2014	2015	2016	2017
January	---	3.4	2.9	3.2	2.4	2.8	3.5
February	---	3.4	3.4	3.7	3.9	3.0	4.4
March	---	5.1	3.8	4.1	3.2	4.3	3.9
April	---	3.9	5.0	3.8	4.1	4.1	4.2
May	---	4.5	4.3	4.7	3.6	---	4.1
June	---	4.7	4.3	4.2	4.3	---	4.2
July	---	3.8	4.2	4.0	3.9	4.3	3.9
August	3.8	3.7	3.7	3.7	3.9	3.9	3.8
September	3.3	3.2	4.5	3.9	3.1	3.8	3.7
October	3.1	3.3	3.3	3.0	3.2	3.6	---
November	3.5	3.2	3.7	3.5	3.4	2.8	---
December	3.3	3.8	3.2	3.4	4.2	3.0	---
Average Daily	**---**	**3.9**	**3.8**	**3.8**	**3.6**	**---**	**---**
Maximum Monthly	**---**	**5.1**	**5.0**	**4.7**	**4.3**	**---**	**---**
Minimum Monthly	**---**	**3.2**	**2.9**	**3.0**	**2.4**	**---**	**---**

5.2.4 Evaporation

Open water evaporation estimates are based on data from 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 1.07 m per year.

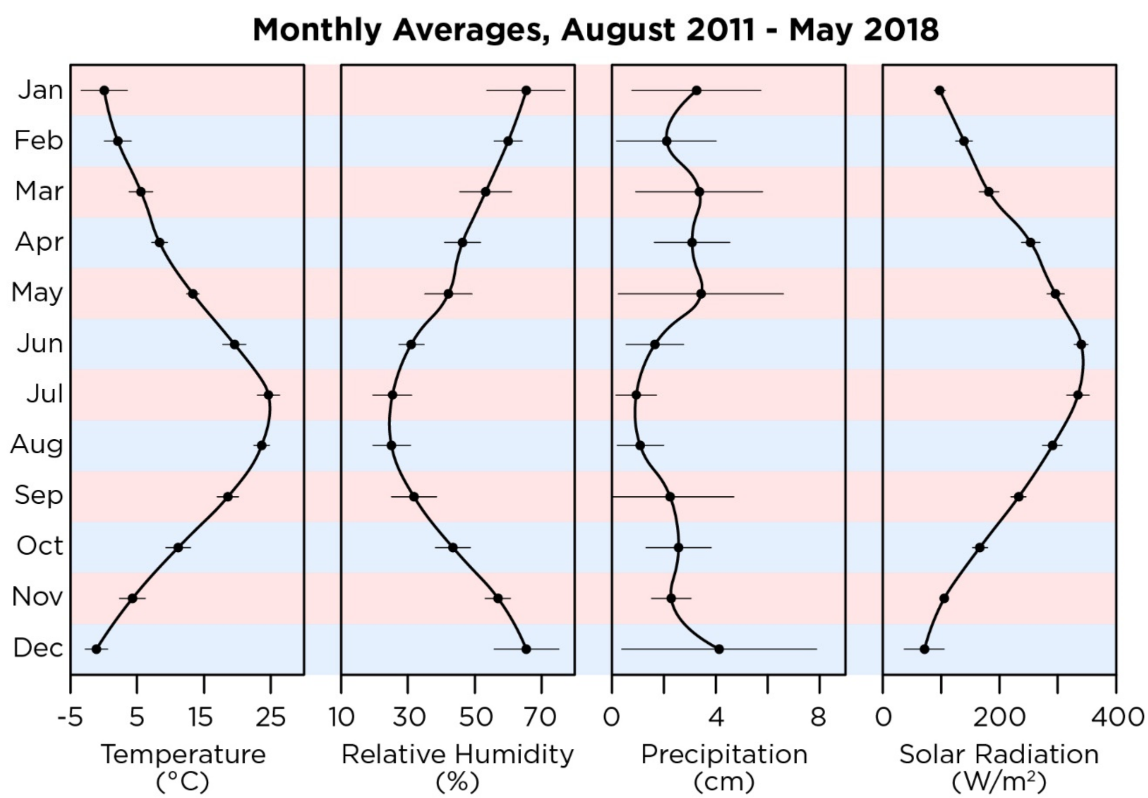
The region is characterized by a water deficit, with estimated evaporation notably greater than recorded precipitation (Table 5-1).

5.2.5 Barometric Pressure and Relative Humidity

The barometric pressure measured ranged from 24.7 in Hg to 25.0 in Hg at the proposed project location.

The average monthly relative humidity ranges from 20% to 80% (Figure 5-4). In the winter, relative humidity is higher. In the summer months, relative humidity is lower (less than 40%).

Figure 5-4 Monthly Average Relative Humidity



5.2.6 Solar Radiation

Solar radiation is the total frequency spectrum of electromagnetic energy emanating from the sun. Table 5-3 summarizes the maximum and minimum daily solar radiation recorded. The minimum daily average solar radiation occurred in the winter between November and December. The maximum daily average solar radiation mostly occurred in June, except the incomplete data years.

Table 5-3 Daily Average Solar Radiation from 2011 to 2017

Year	Maximum Daily Average Solar Radiation (W/m^2)	Date	Minimum Daily Average Solar Radiation (W/m^2)	Date
2011*	338	August 12	22	October 10
2012	392	June 9	9	November 30
2013	391	June 15	19	December 2
2014	388	June 5	9	December 20
2015	383	June 11, 12, and 22	16	December 21
2016*	392	June 20	9	December 10
2017*	385	June 29	8	September 20

Note: *Indicates partial years.

5.3 Local Resources

A long-established mining industry exists in the Winnemucca area. Local resources include all the 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 Winnemucca’s population.

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

5.4 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.

A 115-kV transmission line runs adjacent to State Route 293 through the project site. The line has adequate capacity for construction, start-up, and operations for the project. The project plan includes the construction of a large cogeneration power facility with a capacity that will exceed the project's electricity requirements. Excess electricity is expected to be sold via the existing 115 kV transmission line. This transmission line will be able to provide back-up electricity for operations during planned and emergency shut-down of the cogeneration facility.

There is sufficient space within the Thacker Pass site to accommodate a prospective processing plant and mine support facilities, overburden placement site, anticipated tailing storage facility (CTFS), water diversions, and containments (Figure 4-1). Further condemnation drilling is planned for those sites.

Although a natural gas transport line is located near site, natural gas is not required for the project.

5.5 Water Rights

LNC has existing, fully certificated water rights within the Quinn River Valley (located 25 km east of the proposed mine site) totaling nearly 1,000 acre-feet annually. The point of diversion and use of the water rights will need to be transferred to the mine through a well-defined administrative process specified under *Nevada State Water Law*. Additional water rights, if required, can be obtained through land acquisition (with appurtenant water rights) in Quinn Valley.

Water is available near the mine. A test well was successfully drilled in 2017 and indicated sufficient flow rates for the process water requirements. Water quality was also deemed to be good.

An independent groundwater study was completed by Schlumberger Water Services in 2012. An updated study has commenced in 2018 by Piteau and Associates, which includes the drilling of a water supply well, additional groundwater monitoring wells and piezometers, and the installation of creek/spring monitoring gauges.

5.6 Physiography

The Thacker Pass 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 of small seeps/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 cheat grass, an unwanted invasive species in Nevada.

6. History

On March 22, 2016, the Company announced a name change from WLC to LAC and the name of its Nevada-based wholly owned subsidiary was changed to LNC from WLC. The name of the Kings Valley Project was changed to the Lithium Nevada Project. In 2018, the LAC reorganized its project holdings and designated the claims hosting Stage 1 of the Lithium Nevada Project as a stand-alone project named the Thacker Pass Project. The balance of the mineral claims, data and related information and estimates are not relevant to the prospective exploration and development plans at this stage of the Thacker Pass Project are not considered in this study.

6.1 Ownership History

Chevron USA (Chevron) leased many of the claims that comprised the lithium 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 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 to WLC claims for the purpose of lithium exploration and exploitation. This agreement granted WLC exclusive rights to explore, develop, and mine or otherwise produce 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 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, Western Lithium Corporation, and WLC entered into an agreement for the purchase by Western Lithium Corporation from WEDC of the royalties and titles for the then-named Kings Valley claims.

In March 2011, the parties completed the transaction for the sale by WEDC to Western Lithium Corporation of the royalties and titles constituting all of the Kings Valley claims. As a result of this transaction, the existing lease and royalty arrangements between the two companies, including the Net Smelter Returns and Net Profits Royalties on any lithium project that the company developed, were terminated. Western Lithium Corporation held control and full ownership of the 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.

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 confirmed 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. In 1985, Chevron undertook a resource estimate for a 0.25% Li cutoff. This estimate is not considered NI 43-101 compliant.

In 2007, WLC commenced an exploration drilling program focused in the southern portion of the caldera. Over a period of four years, WLC drilled 232 exploration holes in the vicinity of Thacker Pass. 198 of these exploration holes were assayed, totaling approximately 20,000 m of core. This program identified an anomalously High-Grade (HG) lithium deposit. As a result of this drilling program, WLC completed an NI 43-101 pre-feasibility study in 2011, updated in 2014. In 2016, LAC rescinded the study on the basis that the underlying technical and economic basis of the study were no longer current.

The resource was updated in May 2016 in the SRK Technical Report (Carew and Rossi 2016) using a cutoff of 2,000 ppm, which resulted in a Measured Resource of 843,000 metric tonnes LCE, Indicated Resource of 2,489,000 metric tonnes LCE and an Inferred Resource of 1,954,000 metric tonnes LCE.

LNC conducted an exploration program in 2017. The objective of the 2017 exploration program was to identify a resource of scale in the Thacker Pass area (formerly Zone 1 or Stage I of the Kings Valley Project), where sage grouse habitat quality is substantially lower than in the Montana Mountains to the north. In Thacker Pass, a total of 77 exploration holes totaling 6,653 m were drilled, a seismic survey was conducted, and the surface geology of the project was remapped. The results indicated a larger lithium deposit than was previously identified, and the data were used to update the Indicated, Measured and Inferred Resource (as presented in Section 0).

6.3 Metallurgical Test Work History

In 2008, LNC performed a mineralogical study on samples collected during a drilling program that started in late 2007 and ended in May 2008 (Hudson, 2008). That study identified the presence of hectorite as well as bitumen in the deposit. LNC determined the density of six samples from the Thacker Pass Deposit.

Metallurgical test work was performed on samples from the Thacker Pass Project deposit by investigators, including the Chevron Research Company, United States Bureau of Mines (USBM), and Hazen Research (Hazen). Bench-scale laboratory studies were performed by Hazen to examine lithium extraction from a composite ore sample with about 0.35% lithium prepared from drill core samples supplied by LNC. Most of the work completed was derived from the work conducted by Chevron. Hazen found that wet attritioning is effective in liberating the clay fines from the ore. Hazen also developed methods to separate lithium-rich fines from gangue and to reduce carbonate concentration to less than 0.5% by weight. Acid pugging, curing, and water leaching were then used to extract lithium from the clay fines, with an acid dose of approximately 473.21 kg per tonne of ore required for 95% extraction. The results obtained by Hazen were consistent with those found by Chevron.

In late 2008, metallurgical test work was performed by Kappes Cassiday & Associates (KCA) on samples from the Thacker Pass Deposit by various researchers, based in principle on the USBM report, Lithium and Its Recovery from Low-Grade (LG) Nevada Clays (USBM Bulletin 691, 1988). USBM investigated several extraction techniques and pursued two options, gypsum-limestone roast and chlorinating roast. Selecting samples from two different areas of the McDermitt Caldera, USBM performed successful preliminary tests of gypsum-limestone roasting. This led to extensive batch-roast studies and further to larger-scale roasting in a rotary furnace. Chlorination was also tested but proved to be lower yield and economically unfeasible.

The KCA test work was based on the prior work completed by USBM. Samples obtained in August 2008 and October 2008 from recent drilling campaigns included both oxidized ore (comprising an estimated 15% to 20% of the deposit) and unoxidized ore (comprising 80% to 85% of the deposit). An analysis of possible ore upgrading techniques resulted in selecting wet attritioning followed by wet screening. Subsequent calcining of the ore with a mixture of limestone and gypsum was performed, followed by water leaching to recover soluble lithium and other alkali sulfates. Results confirmed that the USBM process for recovery of lithium from this ore was technically viable.

Development work undertaken since 2015 has focused on an alternative process, based on a lower mass and energy consumption footprint that is more robust and less dependent on ore grade.

6.4 Historic Production from the Property

There has been no commercial lithium production from the property. Through a subsidiary company, LAC does operate a hectorite clay mine on the property that produces hectorite clays for industrial purposes. The facility consists of a small open pit and small outbuilding.

6.5 Historical Resource Estimates

The information in this section was excerpted from the URS report titled "*NI 43-101 Technical Report Preliminary Assessment and Economic Evaluation, Kings Valley Project*, *Humboldt County, Nevada, USA*", effective date December 31, 2009. In 1985, Chevron (Glanzman and Winsor, 1982) produced polygonal estimates of the Li resources on their properties at Lithium Nevada. A cut-off grade of 0.25% lithium, minimum thickness of 1.52 m, and a minimum 9.0 ft.% Grade x Thickness (GT) were used for the estimate. The tonnage factor used was 1.8 g/cm^3.

Note that there is insufficient information available with respect to the classification of this resource estimate to enable comparison with the current CIM Definition Standards for Mineral Resources and Mineral Reserves (2014). This estimate is not, therefore, considered to be reliable, or to be relevant in terms of the amended report. A qualified person has not done sufficient work to classify the historical estimate as current mineral resources, and LNC is not treating this historical estimate as current mineral resources. The estimate is included here for historical purposes only.

In 2010, and as identified in the 2016 technical report, the Company reported an inferred resource for Stage 2 in the Montana Mountains (Tetra Tech 2014, Carew and Rossi 2016). LNC has determined that this estimate is no longer current.

7. Geological Setting and Mineralization

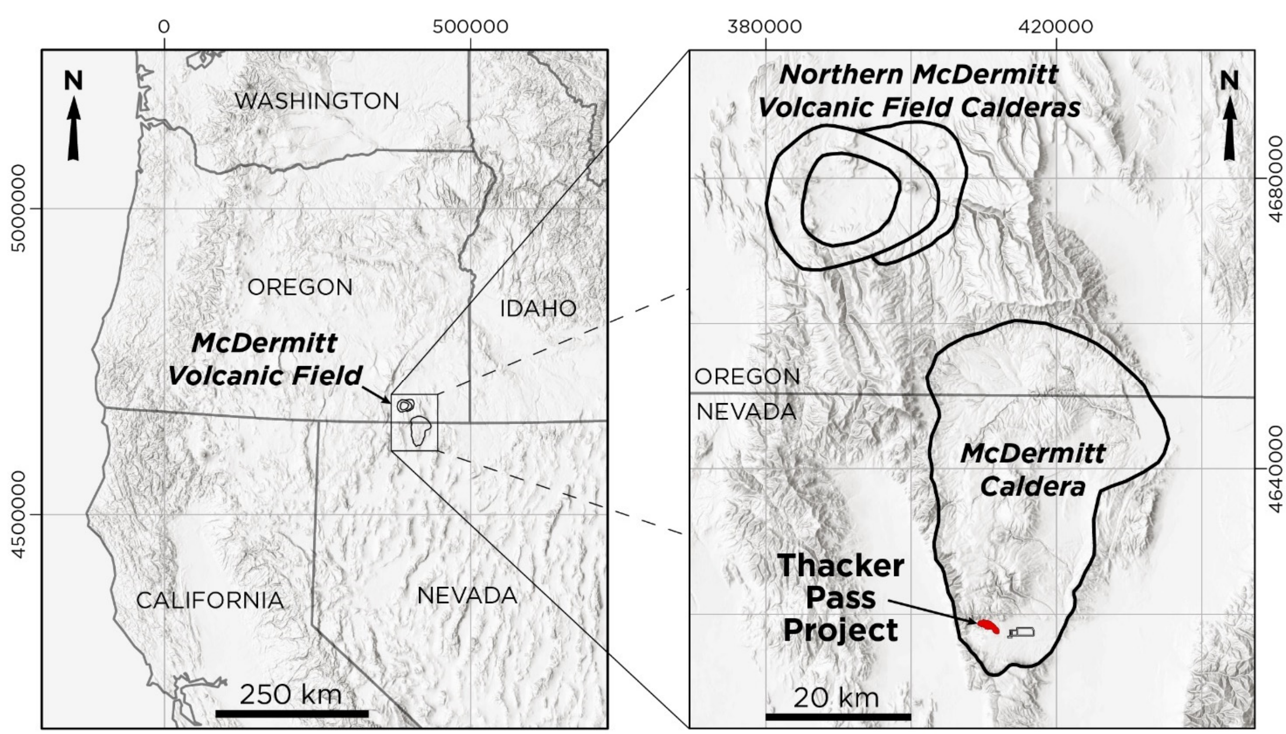
The Thacker Pass Project is located within an extinct supervolcano named McDermitt Caldera, which is 30 km by 45 km. The caldera was formed approximately 16.3 million years ago from a hotspot that has since migrated to the Yellowstone area of Wyoming and Montana. Following an initial eruption at the McDermitt Caldera, water leached lithium from nearby volcanic rocks and deposited it in the caldera basin over hundreds of thousands of years.

A large caldera lake formed, and a thick sequence of associated lacustrine deposits settled. Renewed volcanic activity uplifted the center of the caldera, draining the lake and bringing the lithium-rich sediments to the surface of the earth in the vicinity of the present-day Montana Mountains. The result of these geological processes is a high-grade (HG), large and near-surface lithium deposit called the Thacker Pass Project.

7.1 Regional Geology

The Thacker Pass Project is located within the McDermitt Volcanic Field (Figure 7-1), a volcanic complex with four large rhyolitic calderas that formed in the middle Miocene. 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 (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 (Benson et al., 2017a).

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



Source: Lithium Nevada Corp. (2018)

The McDermitt Volcanic Field is located within the southeastern-propagating swarm of volcanism from Steens Mountain into north-central Nevada. The Thacker Pass Project is located within the largest and southeastern most caldera of the McDermitt Volcanic Field, the McDermitt Caldera.

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 (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

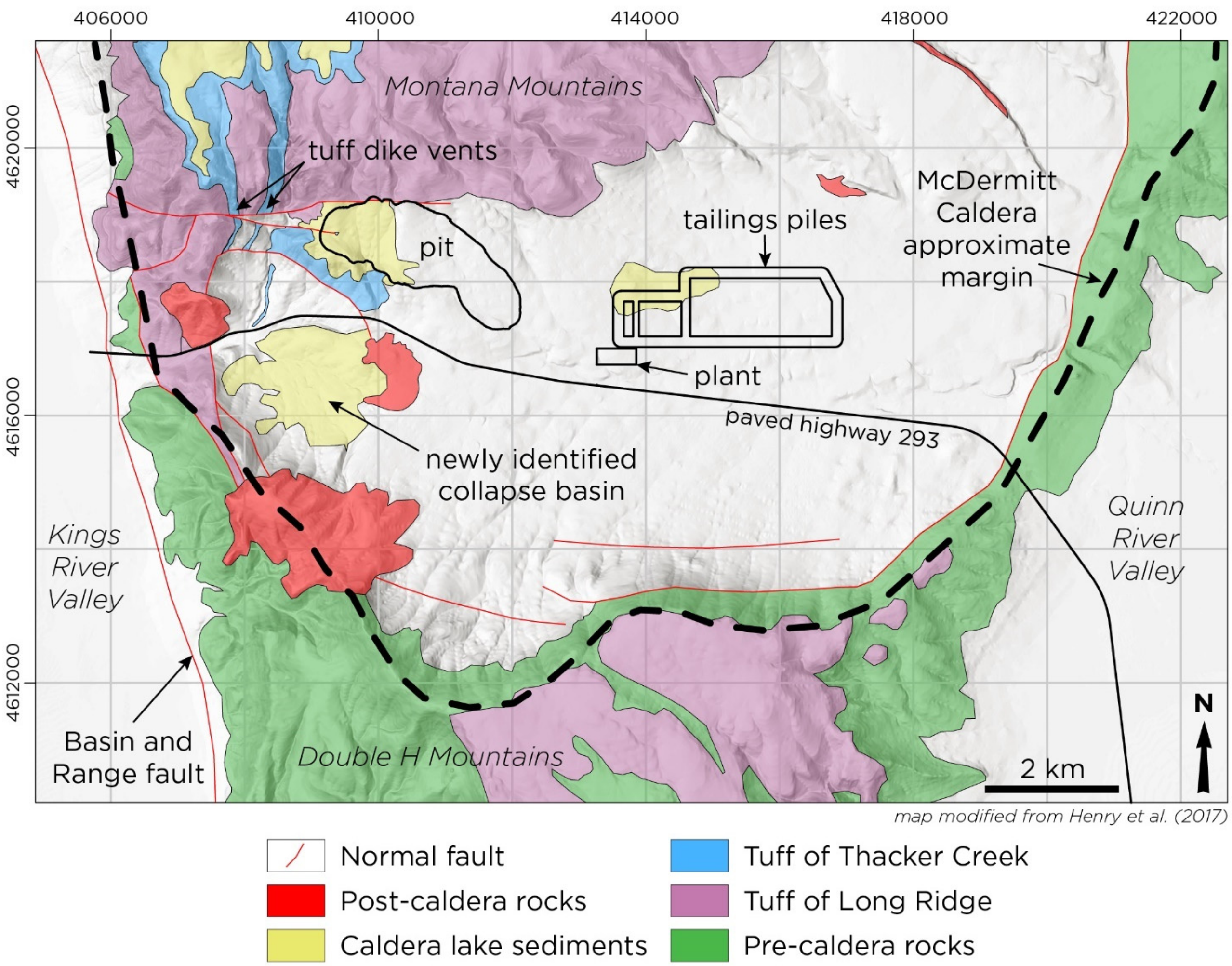
The trachytic to rhyolitic Tuff of Long Ridge erupted at approximately 16.33 Ma and formed the 30 km by 45 km keyhole-shaped McDermitt Caldera (Figure 7-1) that straddles the Oregon-Nevada border. Rytuba and McKee (1984) and Conrad (1984) initially interpreted the McDermitt Caldera as a composite collapse structure formed on piecewise eruption of four different ignimbrites from a single magma chamber. Recently, 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).

7.2.3 Post-Caldera Activity

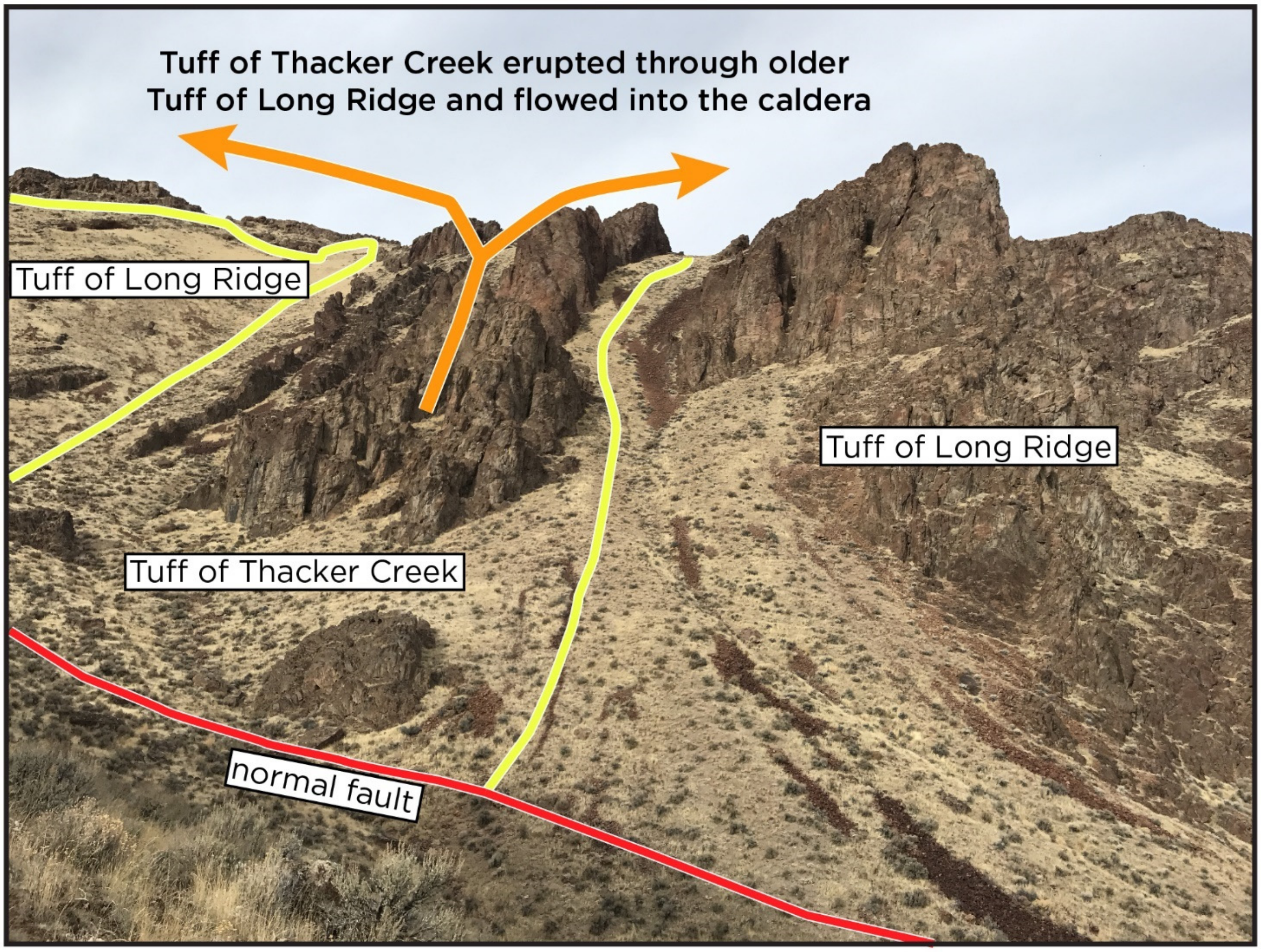
Following eruption of the Tuff of Long Ridge, a large lake formed in the caldera depression. The lake captured sediments that were eroded from the surrounding drainage areas. Though no ash layers have been dated within the associated lacustrine sediments, sedimentation was likely active for approximately 100,000 years given that nearby Miocene caldera lakes lasted approximately this long (Coble and Mahood, 2016; Benson et al., 2017a). 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 uplifted a large volume of intracaldera ignimbrite and caldera lake sediments (Figure 7-2) that form the present-day Montana Mountains.

Figure 7-2 Simplified Geological Map of the Southern Portion of the McDermitt Caldera and the Thacker Pass Project - the Lithium Resource is Hosted within the Caldera Lake Sediments



Volcanic features associated with this resurgence are exposed along Thacker Creek (Figure 7-2), where tuff dikes of the newly identified crystal-rich (approximately 15% feldspar and quartz) Tuff of Thacker Creek crosscut the intra-caldera facies of the Tuff of Long Ridge (Figure 7-3). From this vent area, the Tuff of Thacker Creek mostly flowed north atop intra-caldera Tuff of Long Ridge. Minor arcuate normal faults are associated with this eruption, forming a 2 km graben to the west of the Thacker Pass Deposit (Figure 7-2). The Tuff of Thacker Creek ponded and welded along the fault scarps during its eruption and formed the large ridge that bounds the southwest of the Thacker Pass Deposit (Figure 7-2).

Figure 7-3 Photograph Looking North Showing One of the Source Vents for the Newly Identified Tuff of Thacker Creek Cutting Through the Tuff of Long Ridge - Location of Photograph is Shown in Figure 7-2



Following eruption of the Tuff of Thacker Creek, minor-volume rhyolitic and basaltic lavas erupted along the normal faults associated with this event (Figure 7-2). Around this time, icelanditic, rhyolitic, and basaltic lavas erupted from vents in the northern and eastern part of in the caldera (Henry et al., 2017). Thin basaltic lava flows are intercalated with caldera lake sediments in drill cores and show evidence for interaction with wet sediments, suggesting that caldera lake sedimentation occurred for the duration of post-caldera volcanism.

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 contains the targeted multi-phase mining development of the Thacker Pass Project. It lies at relatively low elevations (between 1,500 m and 1,300 m) in moat caldera lake sediments that have been separated from the topographically higher deposits to the north. Exposures of the sedimentary rocks at Thacker Pass are limited to a few drainages and isolated road cuts. Therefore, the stratigraphic sequence in the 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 thick claystone and thin volcanic ash. 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 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. On the basis of core examination, 14 lithologic codes have been recognized (Table 7-1). The core has mostly been divided into sample intervals for chemical analyses delineated on the basis of lithology. Figure 7-4 shows a generalized interpretation of the lithology for core hole WLC-43 which is located roughly in the middle of the proposed mine pit area.

Table 7-1 Summary of Lithologic Units

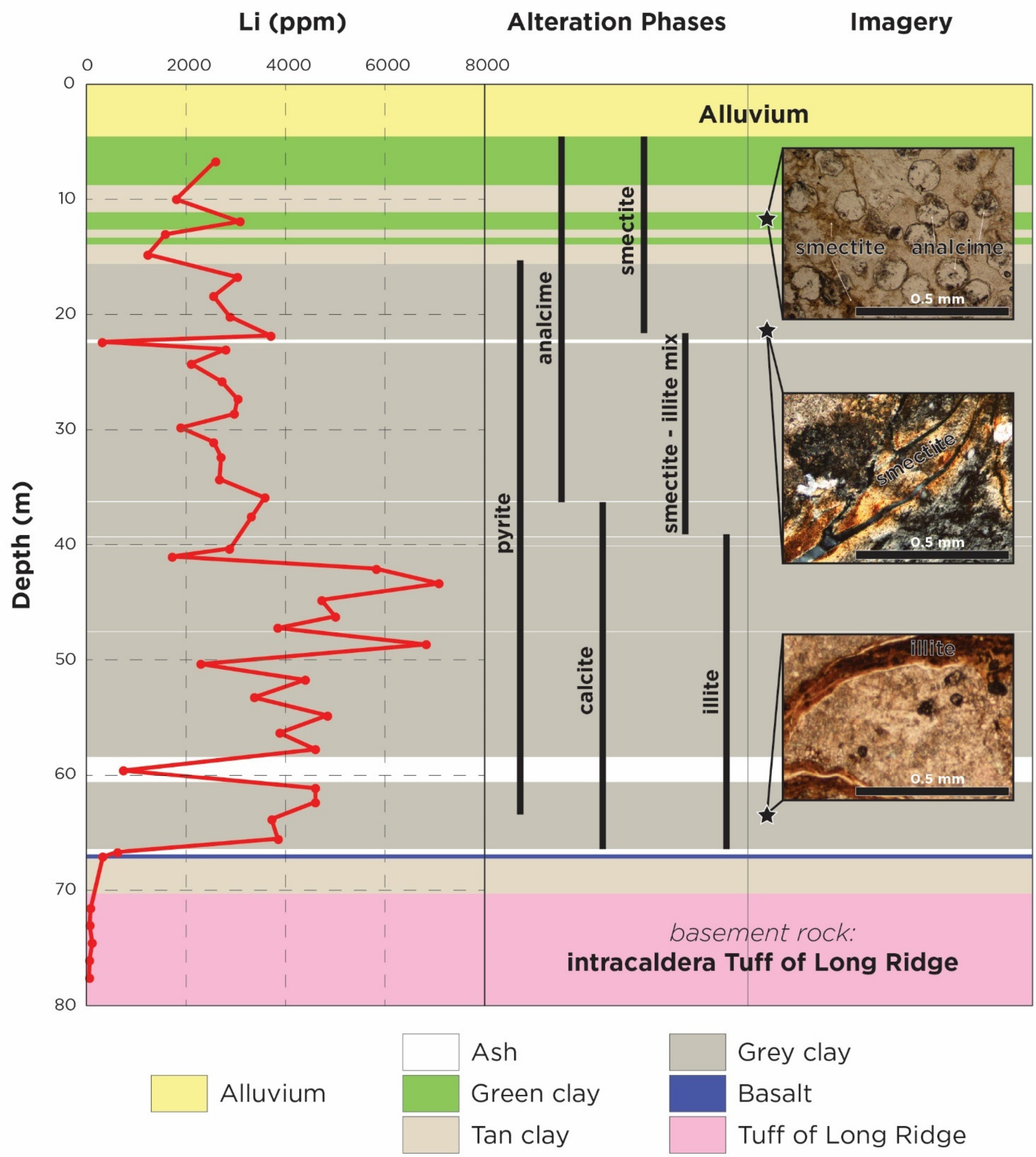
Lithologic Code	Geology	Dominant Characteristic	Secondary Characteristic
1	Green Claystone	Greenish gray claystone.	With or without iron oxidation, may or may not be massive, may or may not contain thin ash layers.
2	Tan Claystone	Tan to light brown claystone.	
3	Light Gray Claystone	Light gray to medium gray claystone.	

Lithologic Code	Geology	Dominant Characteristic	Secondary Characteristic
4	Gray Claystone	Medium gray to dark gray claystone.	
5	Carbon Claystone	Dark gray claystone.	Minimal to moderate carbon, may have <20% white or gray-white ash.
6	Bluish Claystone	Bluish gray claystone.	May be massive.
7	Ash/Claystone	>60% gray or white ash or arkose with claystone.	Ash may be layered or intermixed with claystone and may have iron oxide coatings.
8	Claystone/Ash	>60% green, tan, gray, dark, gray, black or blue claystone with white, tan or gray ash.	Claystone may be layered or intermixed with ash.
9	Laminated	Laminated claystone and ash, usually small thin layers.	Not applicable.
10	Qal (Quaternary Alluvium)	Light brown to tan alluvium, ranges between 0 m and 8.2 m thick.	Not applicable.
11	HPZ	Laminated, silicic and oxidized.	Must have all three dominant characteristics.
12	TV (Tertiary Volcanics)	Vuggy orange brown volcanics.	May contain lithic fragments up to 4 in. in diameter, includes, voids, mudflows, breccias.
13	Basalt	Brown to black basalt.	May or may not be oxidized.
14	Ash	>80% gray, light tan, white or yellow-brown ash.	Minor arkose may be present.

Notes:

1. Lithologic codes were provided by LNC.
2. Codes are based on drill hole descriptions for WLC 1-37 and WLC 40-200.

Figure 7-4 Interpreted and Simplified Sample Log for Drill Hole WLC-43



Source: Lithium Nevada Corp. (2018)

Most of the moat sedimentary rocks drilled in the Thacker Pass basin contain high levels of lithium (>100 ppm). Intervals that consist mostly of ash 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 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.

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 occurs at relatively shallow depths (less than 30 m bgs) in the deposit (Castor, 2010). Confirmed hectorite clay, a subtype of smectite, occurs elsewhere in the McDermitt Caldera and has been documented by several authors (e.g. Odom, 1992; Rytuba and Glanzman, 1979).

Drill intervals with high lithium contents (commonly >4,000 ppm) contain clay that yields XRD spectra that are more typical for illite than smectite (Castor, 2010). An illite-type clay occurs at relative moderate to deep depths in the moat sedimentary section and sporadically occurs in intervals that contain as much as 8,000 ppm lithium, higher than what a hectorite crystal can accommodate. A relatively thin layer of interstratified smectite-illite clay is found between the smectite and illite-type clay (Castor, 2010).

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).

7.3.3 Discussion

The regional geological setting of this deposit is well-known and understood. The lithium bearing clays are contained within the moat sediments that are bounded by the caldera’s outer wall and inner resurgent dome. The Thacker Pass Deposit area is 5 km north-south by 10 km east-west with lithium bearing zones up to 160 m thick. The LNC drilling and resource estimation has focused on the west end of the deposit in an area measuring 2.4 km north-south by 4 km east-west. The local geological setting and degree of local lithium grade variations, within the modeled area, are adequately known for the Thacker Pass Deposit to allow for NI 43-101 compliant resources estimation.

8. Deposit Types

8.1 Lithium Mineralization

Lithium enrichment in the Thacker Pass Deposit and deposits of the Montana Mountains occur in the lowest portions of the caldera lake sedimentary sequence, just above the intra-caldera Tuff of Long Ridge. 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, the deposits of the Montana Mountains have minimal overburden and the Li-enriched interval occurs close to the surface. Along the southern and eastern margins of the Montana Mountains, caldera lake sediments dip slightly away from the center of resurgence.

Dips on the sediments in the vicinity of the Thacker Pass Deposit were slightly restored during the collapse event associated with the Tuff of Thacker Creek; most of the sediments within this deposit are sub-horizontal. Because of the lower elevations in Thacker Pass, a smaller volume of the overburden eroded south of the Montana Mountains. As a result, the amount of overburden increases with distance from the Montana Mountains. The proposed pit mining activity is concentrated along the southern margin of the Montana Mountains in Thacker Pass where lithium enrichment is close to the surface with minimal overburden.

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. Benson et al. (2017b) further hypothesize that Li-enriched clays then formed under low-temperature and low-pH hydrothermal conditions primarily along the ring fractures of the caldera.

New assay data from the 2017 exploration drilling program indicates that the Li-enriched interval is laterally extensive throughout the southern portion of the caldera, just above the intra-caldera Tuff of Long Ridge. This suggests that the formation of the Li clays is not associated with hydrothermal activity, but rather due to burial diagenesis and/or primary erosional processes. Burial diagenesis is consistent with XRD data that show a transition from smectite to illite with depth in the caldera lake sequence. The smectite-illite diagenetic transformation is well-documented in sedimentary basin literature and occurs at temperatures expected within a caldera lake sequence (e.g. Pytte and Reynolds, 1989).

Because the sub-horizontal deposit occurs just above the intra-caldera tuff, it is also possible that immediately following collapse, a large volume of loose Li-enriched glass and pumice was sitting within and near the edge of the caldera. This material would have had a relatively high surface area from which Li could be easily leached by meteoric fluids and deposited into the caldera lake. In this scenario, as the Li-enriched glass and pumice eroded away with time, the resulting Li enrichment in the caldera lake would decrease up-section, towards the edges of the lake.

Additional work is required to understand the exact origin of this deposit. It is likely that a combination of hydrothermal (Benson et al, 2017b), diagenetic, and erosional processes played a role in the formation of the HG Li deposits in the McDermitt Caldera.

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. As a result, Measured, Indicated, and Inferred Resources have been identified to form the basis of the Thacker Pass Project.

9. Exploration

9.1 Thacker Pass

Prior to the 2010 drilling campaign, exploration consisted of:

a) geological mapping to delineate the limits of the McDermitt Caldera moat sedimentary rocks, and

b) 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. Lithium became the primary focus of exploration from 2007 onward.

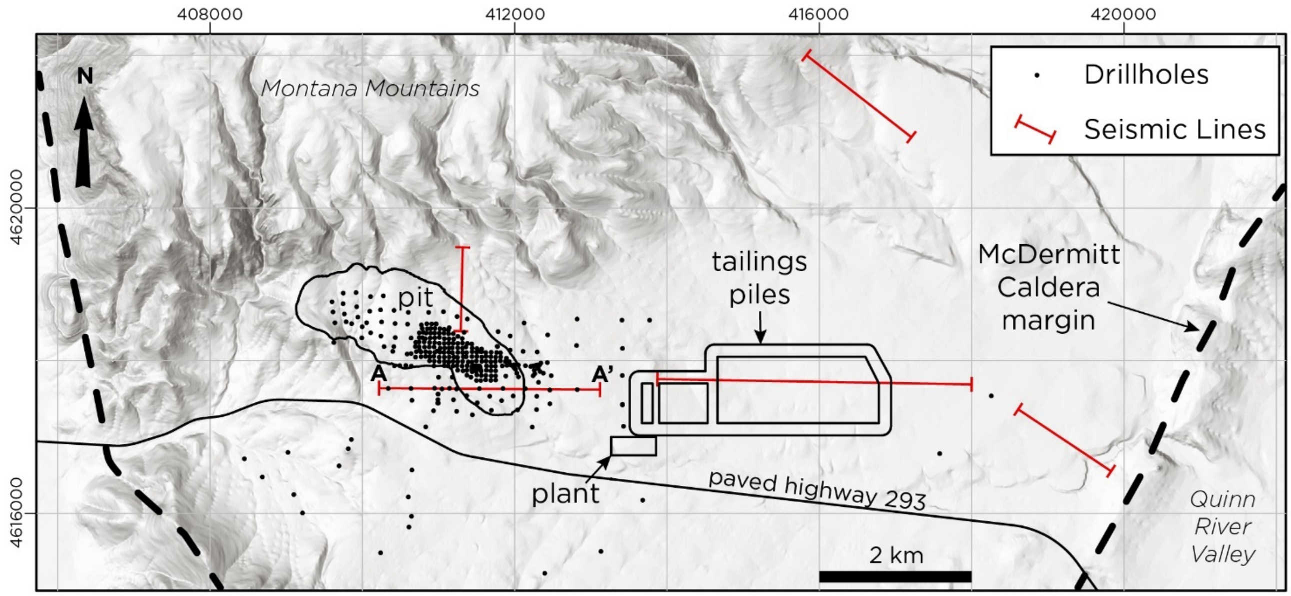
A collar survey was completed by LNC for the 2007-2008 drilling program using a Trimble GPS (Global Positioning System). At that time the NAD 83 global reference system was used. Comparing LNC's survey work with that done by Chevron showed near-identical results for the easting and northings, elevations 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 LNC. 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, LNC conducted five seismic survey lines (Figure 9-1). A seismic test line was completed in July 2017 along a series of historic 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.

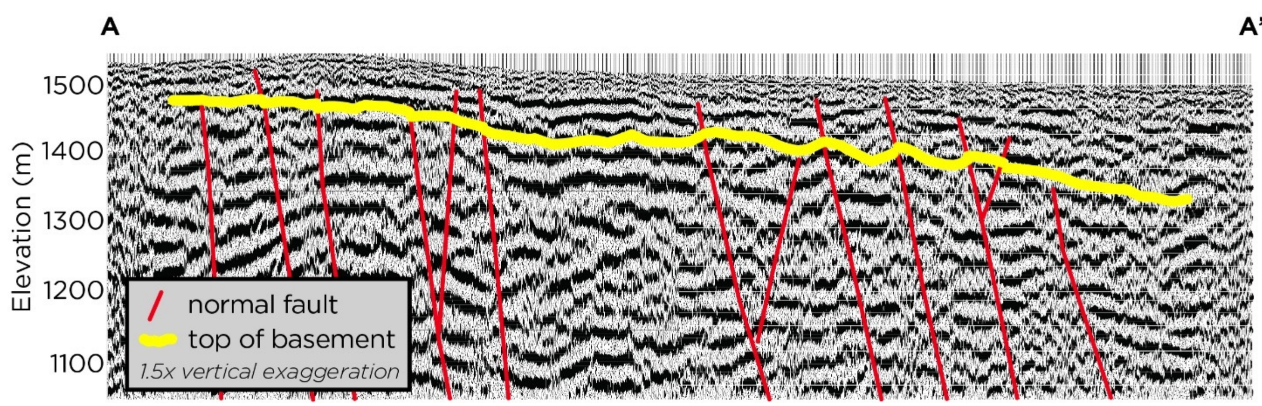
Drilling methods were compared to test for sample bias, using core drilling as the standard. Rotary, sonic, and reverse circulation drilling all showed slight sample biases when compared to core drilling. Only core holes were used for resource modeling to minimize the chance of sample bias. Mr. Randal Burns, LNC Senior Geologist, believes that the drilling, logging, and sampling techniques procedures used are of reasonable quality and representative of the 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 Surveys Conducted in 2017



Source: Lithium Nevada Corp. (2018)

Figure 9-2 Results from the Seismic Test Line (Blue Line in Figure 9-1)



Source: Lithium Nevada Corp. (2017)

9.2 Lithium Deposits in the Montana Mountains

Exploration of areas north of the Thacker Pass Deposit in the Montana Mountains have consisted of geological mapping and drilling. Some, if not most, of the area has been covered by airborne gamma ray spectrometry. However, that data is not directly relevant to lithium exploration. Chevron drilled 234 holes in the 1970s and 1980s that broadly outlined the lithium deposit. In 2009, LNC drilled 38 HQ core holes (SP-001 through SP-038) in the southern part of the Montana Mountains to better define a known lithium area for resource estimation. Although this data is useful in understanding the regional geology and exploration model, this report only focuses on the Thacker Pass Deposit as a target for development.

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. LNC exploration geologist, Dr. Thomas Benson, has also conducted mapping and analytical work within the southern area of the McDermitt Caldera.

10. Drilling

10.1 Type and Extent of Drilling by LNC

The Thacker Pass Deposit area has been explored for minerals since the 1970s. Exploration began with a focus on uranium but switched to lithium in the late 1980s when Chevron still controlled the mineral interest. LNC drilled 54 core holes between 2007 and 2009 to expand on the work Chevron had done, followed by an additional 139 holes in 2010.

These holes were drilled with the primary aim of defining the lithium occurrences within the known deposit area. Table 10-1 lists a summary of holes drilled. Thirty-seven core holes (WLC-001 through WLC-037) were drilled specifically for assay and lithologic information. Eight 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.

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

Drilling Campaign	Number Drilled	Type	Hole IDs in Database
Chevron	24	Rotary	PC-84-001 through PC-84-012, PC-84-015 through PC-84-026
	1	Core	PC-84-014c
LNC 2007-2010	230	HQ Core	WLC-001 through WLC-037, WLC-040 through WLC-232
	7	PQ Core	WPQ-001 through WPQ-007
	8	RC	TP-001 through TP-008
	2	Sonic	WSH-001 through WSH-002
LNC 2017	77	HQ Core	LNC-001 through LNC-048, LNC-057 through LNC-85

Notes:

*Assay results were not available from the lab for LNC-057 through LNC-085 at the time of resource estimation.

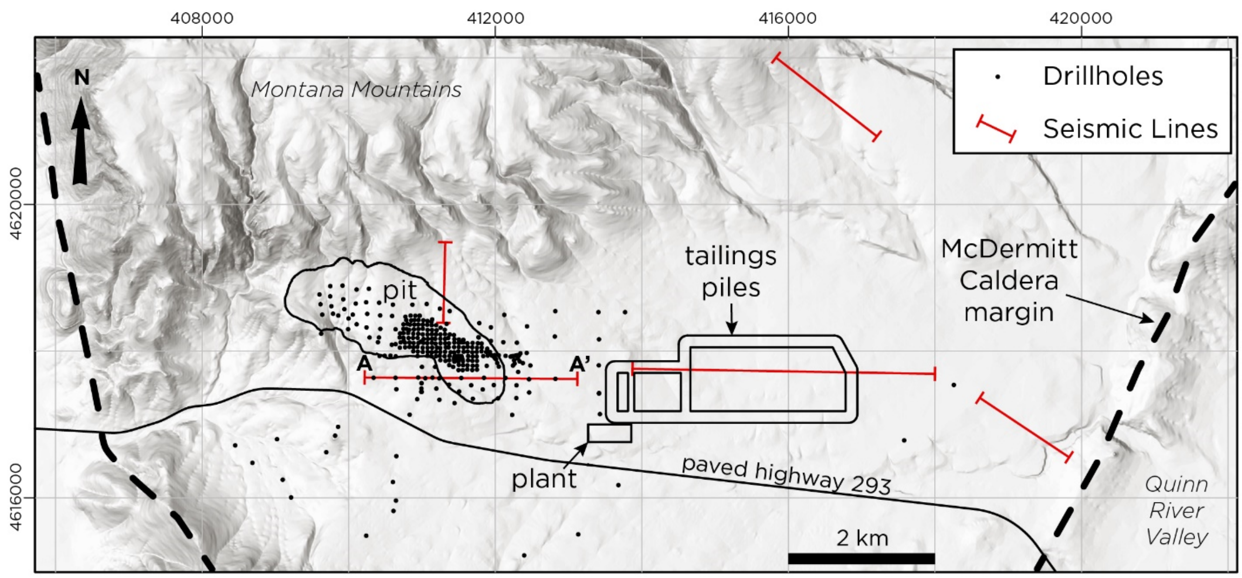
Holes LNC-049 through LNC-056, which were drilled to target shallow industrial clay resources for Lithium Americas' subsidiary, RheoMinerals Inc., were not tested for lithium, and therefore were not used in the Resource Estimate.

In 2008, LNC drilled five confirmation HQ core drill holes (Li-001 through Li-005) to validate the Chevron drilling results. Five historic Chevron drill holes that are broadly distributed across the Montana Mountains were selected to twin. Results demonstrated that the Chevron assay data was reliable enough to guide further exploration work.

From January 2010 through June 2011, and again from August 2017 through December 2017, LNC initiated a definition drilling campaign to define a Measured and Indicated Resource for lithium (Figure 10-1). All cores were logged by geologists on-site who recorded the hole ID, easting, northing, elevation, total depth, and lithologic description.

LNC conducted exploration drilling in June 2017, drilling 22 widely spaced HQ core holes. Results of this work help expand the known resource to the northwest of the 2009-2010 drilling, identify a target south of the highway in an area designated the Southwest Basin (SW Basin), and further understand the local geology across Thacker Pass. All anomalous amounts of lithium occurred in clay horizons.

Figure 10-1 Drill Hole Map of Thacker Pass Deposit



Source: Lithium Nevada Corp. (2018)

Assays for drill holes prior to January 2010 (WLC-001 through WLC-037) had analytical work done by American Assay Labs (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 assays repeated in 2010 by ALS Minerals (ALS) in Reno, Nevada who now perform all assay work for LNC. 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.

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). The core of the drill holes used in the geologic and grade model are shown in Figure 10-2. The Chevron drill holes were excluded from consideration in the grade model due to unknown sample quality controls at the time of drilling.

Figure 10-2 Photograph of Core after Geologic Logging

10.1.1 Logging

During Chevron's exploration tenure, core was collected from the drills twice a day and descriptively logged by geologists at Chevron's field camp. Chip samples from rotary drills were logged at the drill site. Two composite samples were collected every 5 ft. and bagged. The geologist logging the hole made a chip board at the drill site. The chipboards consisted of drill cuttings glued to a 25.4 mm by 101.6 mm board whose vertical scale was 25.4 mm = 3.48 m. Lithological logging of both core and chip samples highlighted lithologic units, contacts, mineralization, alteration, and brecciation.

LNC core was collected once a day and transported back to the LNC 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 LNC 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 50 ft. to collect samples for LNC's subsidiary RheoMinerals Inc. for exploration of industrial clay. These samples were not geologically logged nor assayed. These samples are not included in the resource estimation.

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 LNC employees or contractors. The geotechnical samples were not assayed for lithium, and were recorded as such in the database. The geotechnical samples were sent to Solum Consultants Ltd. for geotechnical testing. The results of their work determined the safety factors to use on the engineered mine pit wall slopes.

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.

10.3 Surveying

Claim surveying for Chevron was performed by Tyree Surveying Company, Albuquerque, New Mexico and Desert Mountain Surveying Company, Winnemucca, Nevada. According to Chevron (1980), both companies used theodolites and laser source electronic distance meters to survey the claims. Records show that both companies were contracted to survey the drill hole locations. It is presumed that the same instrumentation was used for the collar locations. The reported error was within 0.1515 m horizontally and 0.303 m vertically. The survey coordinates were reported in UTM NAD 27.

Collar surveying for LNC for the 2007-2008 drilling program used a Trimble GPS using the UTM NAD83, Zone 11 coordinate system. The collar locations for the Chevron drill holes were updated to the NAD83 coordinate system at that time. Comparing LNC 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 to earlier Chevron work.

Collar surveying for the 2017 LNC drilling campaign was conducted using a handheld Garmin 62S GPS set to UTM NAD83 Zone 11 with accuracy of ±3 m. 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 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.

From 2009 to 2010, gyroscopic downhole surveys were conducted on selected holes to verify the holes were not deviating from vertical. Holes drilled in 2017 were down hole surveyed whenever the depth exceeded

100 ft. All holes were drilled were vertical or nearly vertical with the exception of WLC-058 (Az: 180° Dip: -70°) and LNC-083 (Az: 180° Dip: -60°) which were intentionally drilled at an angle.

10.4 Accuracy and Reliability of Drilling Results

The Thacker Pass Project is known for significant amounts of lithium contained in sub-horizontal clay beds in the McDermitt Caldera. Historic and modern drilling results show continuous lithium grade ranging from 2,000 ppm to 8,000 ppm lithium over great lateral extents. There is a continuous high grade sub-horizontal clay horizon that exceeds 5,000 ppm lithium across the project area. 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 HG horizon typically ranges from 3,000 ppm to 5,000 ppm lithium. The bottom of the deposit is well defined by a hydrothermally altered oxidized ash that contains less than 500 ppm lithium, and often sub-100 ppm lithium. All drill holes, except WLC-058 and LNC-083, are vertical which represent the down hole lithium grades as true-thickness and allows for accurate resource estimation.

The drilling techniques, core recovery, and sample collection procedures provided results that are compliant with NI 43-101 standards. There are no drilling, sample, or recovery factors that materially impact the accuracy and reliability of results. The data is acceptable for NI 43-101 compliant resource estimation.

11. Sample Preparation, Analyses, and Security

11.1 Quality Program Development

The QA/QC protocols used during the Thacker Pass Deposit sampling and analytical program were developed by Dr. Barry Smee of Smee & Associates Consulting Ltd., an international specialist in QA/QC procedures who is familiar with the requirements of NI 43-101. LNC (Mr. Randal Burns, LNC Senior Geologist) evaluated the QA/QC procedures used prior to 2017 and adopted the same procedures for the 2017 drilling campaign.

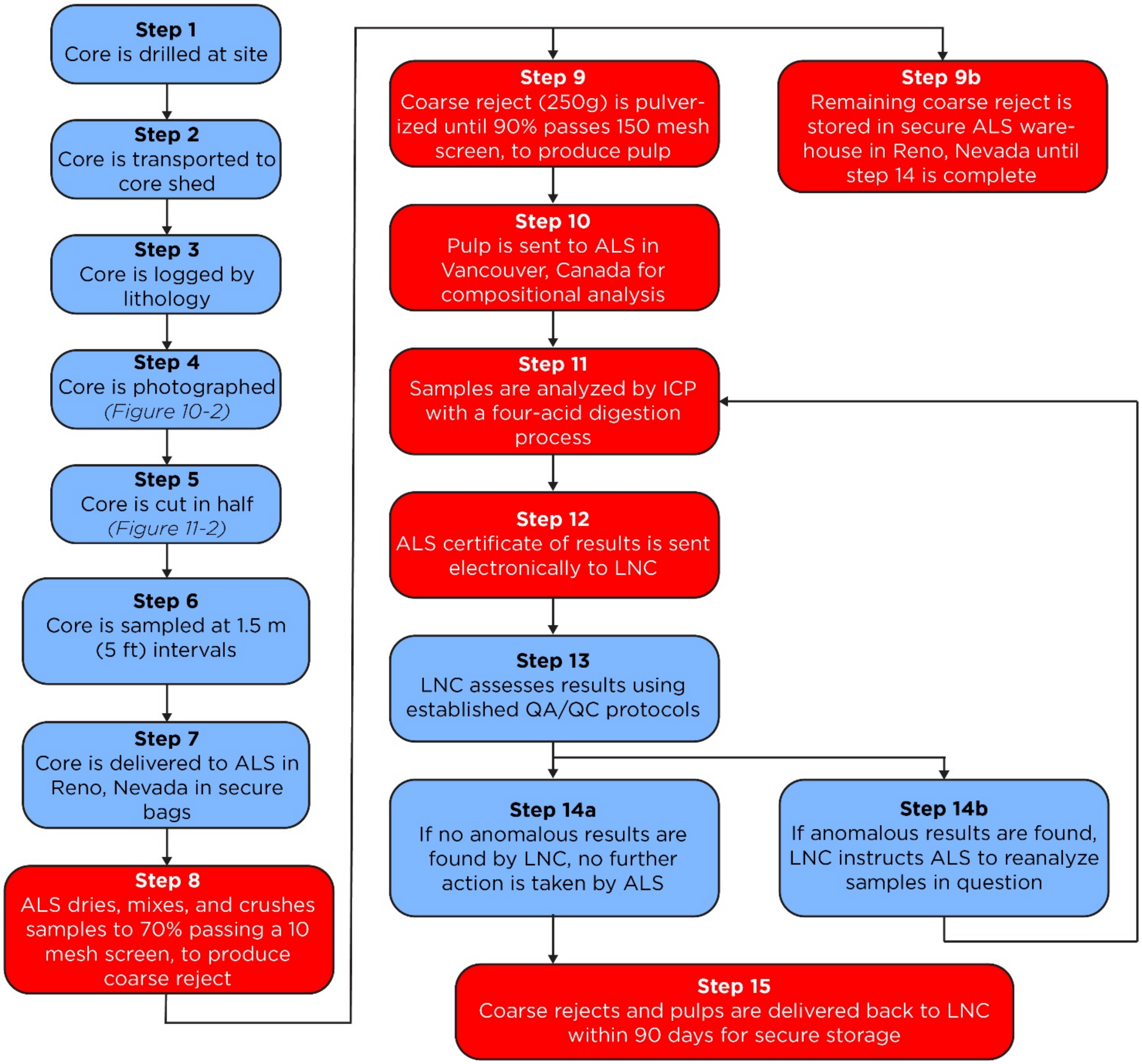
ALS of Reno, Nevada, was used as the primary assay laboratory for the LNC Thacker Pass drill program. ALS is an ISO 9001:2000-certified laboratory and an ISO/IEC 17025-certified Quality Systems Laboratory. ALS participates in the Society of Mineral Analysts round-robin testing.

ALS is an independent laboratory without affiliation to LNC.

The QA/QC program employed by Chevron is uncertain, and therefore data collected by Chevron are not used for resource estimation.

A sample work flow diagram is presented in Figure 11-1.

Figure 11-1 Work Flow Diagram for Geological Samples



11.2 Sample Preparation

After the drilled core was brought to the secure LNC logging and sampling facility in Orovada, Nevada, the boxes of core were lithologically logged, photographed, cut, and sampled by LNC employees and contractors. The length of the assay samples were determined by the geologist based on lithology. Average assay sample length is 1.52 m. The core was cut in half using a diamond blade saw and fresh water (Figure 11-2). Half the core was placed in a sample bag.

Figure 11-2 Half Core Sawed by a Diamond Blade

For 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 blinded 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 LNC employees.

Once at ALS, the samples were dried at a maximum temperature of 60 deg. C. 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.

11.3 Analysis

LNC used ALS' standard ME-M561 analytical package. 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 elevation metal concentrations would not interfere with a conventional inductively coupled plasma mass spectroscopy (ICP-MS) analysis. Certified analytical results are reported on the ICP-MS determinations.

11.4 Density

LNC submitted 25 core samples from the Thacker Pass Deposit to ALS for density determinations. Density was measured by two methods: 24 samples were tested using the paraffin-coated method (ASTM Designation C914-95), while one sample was tested using the method described by ASTM C127-04 for bulk handling. The material was weighed and recorded, and then the samples were dried at 75 deg. C for 24 hours. The dry material was then weighed again with the weight recorded. A rock density test was then performed on the dry material using a wax immersion procedure. Table 11-1 shows the dry density values that were used in the resource model.

Table 11-1 Average Density Values Used in the Resource Model

Lithology	Average of Density Determination (tonnes per m^3)
Alluvium	1.52
Claystone	1.79
Basalt	2.51
Other Volcanic Rocks	1.96

11.5 Quality Control

11.5.1 Methods

In 2010, LNC contracted Dr. Smee to develop a QA/QC program. The program included inserting blank, LG standard, HG standard, and duplicate samples into the drill core sample assay sets. At least 10% of the assays were quality control samples to ensure precision and accuracy in the sampling and assaying method.

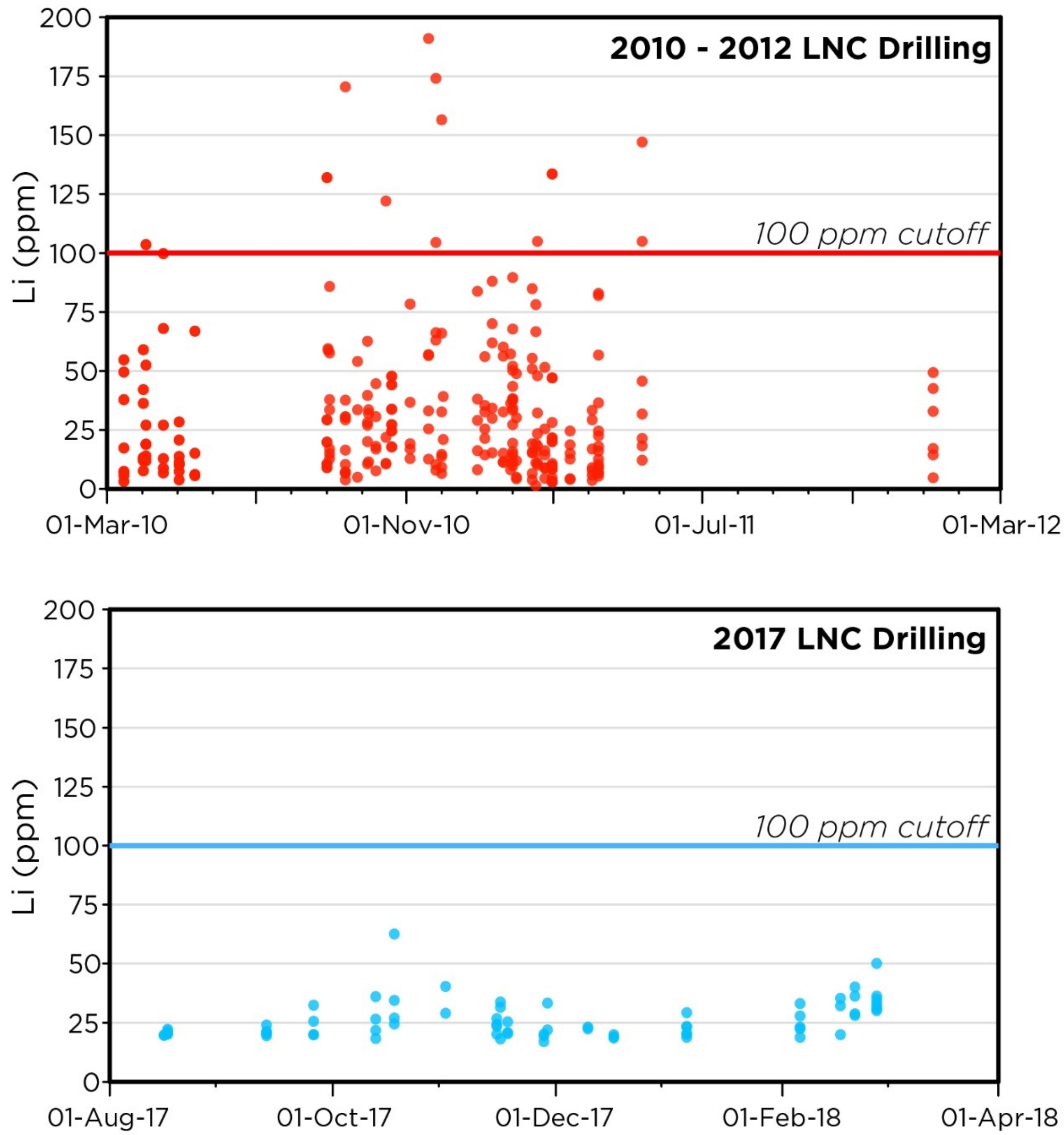
In 2010, for every 34 half core samples, LNC randomly inserted two standard samples (one LG lithium and one HG lithium), one duplicate sample, and one blank sample. The 2017 quality program was slightly modified to include a random blank or standard sample within every 30.48 m interval and taking a duplicate split of the core (¼ core) every 30.48 m.

The total number of blank, duplicate, and standard samples analyzed by the laboratory during LNC's drilling campaign in Thacker Pass from the 2010 exploration campaign was 12% of the total samples assayed. LNC's 2017 drilling campaign averaged 10.1% of the total samples assayed. This does not include ALS internal check and duplicate samples.

11.5.2 Blank Samples

Blank samples were used to check for cross-contamination between samples at the 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 11-3.

Figure 11-3 2010-2012, 2017 LNC Drilling Blank Results



In 2010-2012, LNC 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 confirmed. It is likely that the high values indicate contamination in the crushing or prepping process. The frequency and lithium content amount is not high enough to be concerned about the overall assay results. The LNC 2017 exploration program did not experience any failures of the blank standards and confirms that cross-contamination at the lab did not occur.

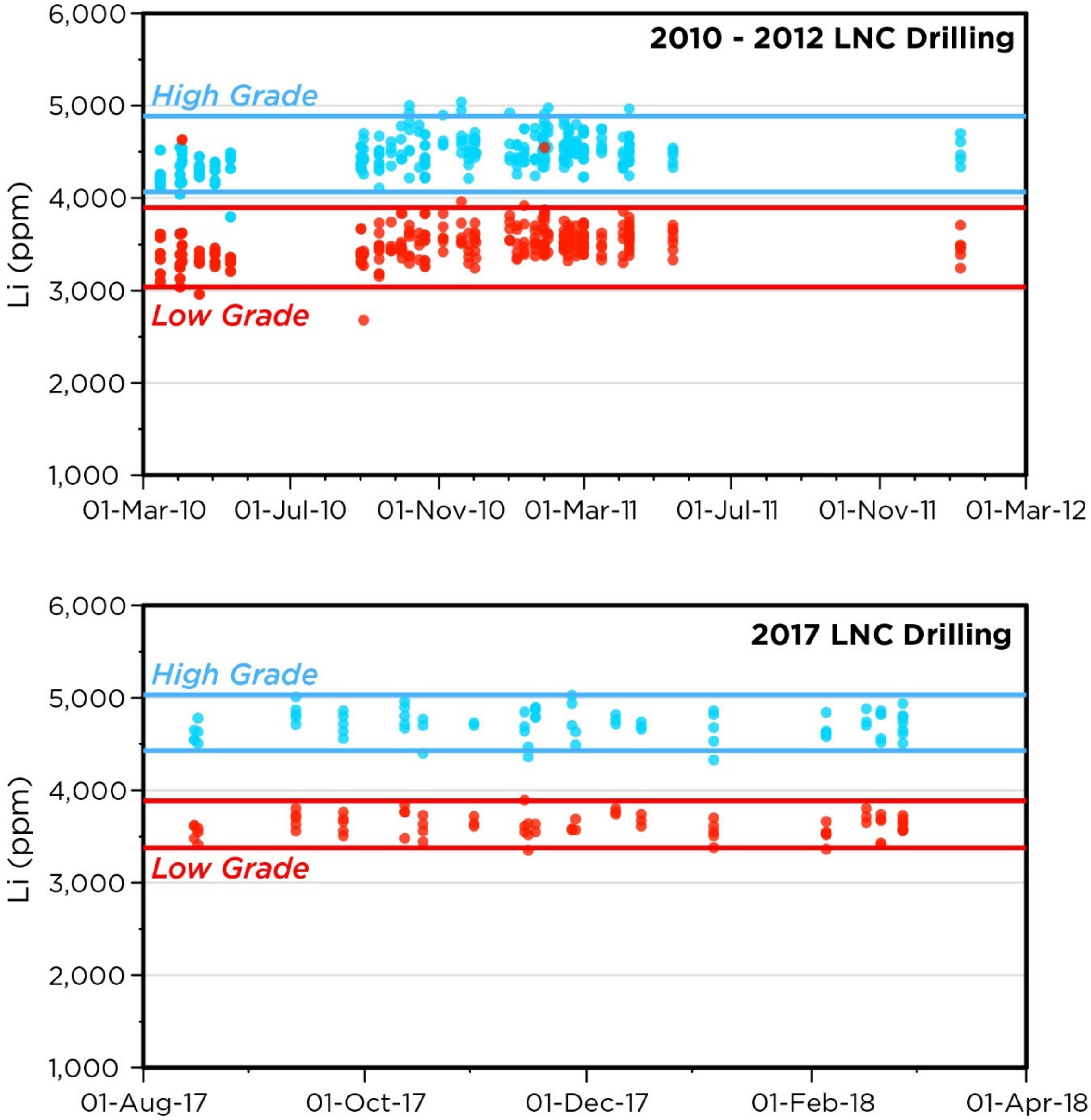
11.6 Standard Samples

Standards consisting of a HG and a LG lithium bearing claystone from the project area were used to test the accuracy and precision of the analytical methods used at the lab.

To create the LG and HG 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, potassium, sodium, and fluorine value for each. The results from two of the labs were discarded because the analytical results were substantially different as compared to the other four labs, and therefore thought to be erroneous. Dr. Smee certified each standard with a lithium grade and confidence range of two standard deviations. The LG standard is certified at 3,378 ppm ±511 ppm lithium and GH standard 4,230 ppm ±850 ppm lithium.

Due to the wide grade tolerance each standard is certified for, LNC focused on the repeatability of ALS' assay work for each drilling campaign using the same two standard deviation tolerance set by Dr. Smee. For each batch of certified assays ALS reported, LNC checked that the standards fell within two standard deviations of the median reported lithium grade. Figure 11-4 shows the results for the standards at the end of each drilling campaign. The LNC 2010-2012 drilling experienced a number of samples falling outside two standard deviations; however, remained within the tolerance range set by Dr. Smee. During this time, ALS changed their internal lithium HG standard used to calibrate the ICP machine in an effort to improve their consistency. The LNC 2017 drilling campaign showed a much tighter two-standard deviation bracket indicating ALS had improved their lithium assay quality.

Figure 11-4 2010/2012, 2017 LNC Drilling QA/QC Results (Black Lines Indicate Two Standard Deviations)

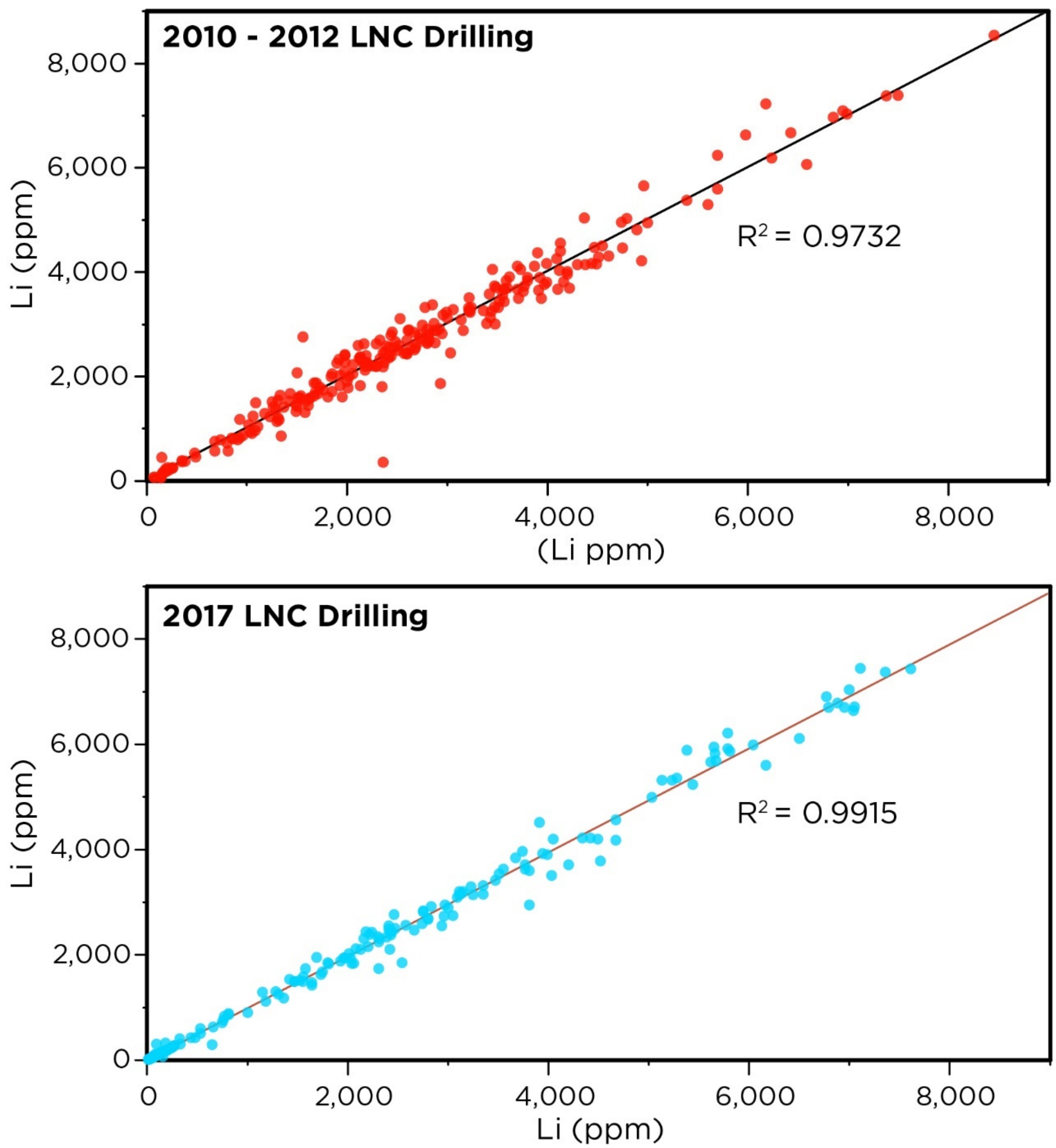


The HG and LG quality testing was effective in ensuring quality of the results. From 2010 to 2012, samples that fell outside the ranges set by Dr. Smee were re-assayed and new assay certificates issued. No samples were required to be submitted for re-assay by LNC in 2017. However, ALS did re-run some assays that failed their internal checks before a certificate was issued.

11.6.1 Duplicate Samples

Duplicate samples are used to check the precision of the analytical methods of the lab, and were taken every 100 ft. (100 ft., approximately 30 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). The quartered core was bagged and given a blinded 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 11-5.

Figure 11-5 2010-2012, 2017 LNC Drilling Duplicate Results



The results from the duplicate samples indicate a high level of precision in the sampling and laboratory techniques and confirm the quality of data and analysis process. Only one sample pair in 178 duplicate pairs was withdrawn from the data set with an assay difference of 3,000 ppm lithium. The lithium grade of these samples ranges from low to very high, demonstrating that there is no grade bias. A R^2 value of 1 is a perfect correlation of every value, and anything above 0.95 is considered by the QP to provide results that are compliant with NI 43-101 standards.

11.7 Discussion of QA/QC Results

The 2010 LNC sampling program was initially seeing a 6% failure rate of the QA/QC samples. 17% of the HG standards were returning lithium grades exceeding three standard deviations of their tested median grade. ALS began using a new higher-grade lithium standard to better calibrate their ICP. LNC then choose the 16 highest lithium values from drill holes WLC-001 through WLC-037 and WLC-040 through WLC-200 to have re-assayed. The samples were sent to both ALS and Activation Laboratories (ActLabs), Ancaster, Ontario Canada for lithium assays. The re-assay grade for ALS and ActLabs was 5% and 3% lower than the original assay, respectively. Dr. Smee concluded that the overall deposit estimate may be lower by at most 2% to 3%, i.e. within industry standards. 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 LNC sampling program had consistent quality control results for the duration of the campaign. Duplicate samples returned with an R^2 value of .9915, indicating a high-level of precision in the sampling and laboratory techniques and confirming the validity of QA/QC protocols. The duplicate grades extend from 13 ppm lithium to 7,500 ppm lithium. In addition, the blank and standards sample quality programs indicated that the accuracy and precision of the analytical process provides results that are compliant with NI 43-101 standards.

11.8 Sample Security

At the time of the Chevron drilling, it is unlikely there were any formal sample security measures in place. Therefore, Chevron drilling data are not used in resource estimation by LNC.

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

11.9 Qualified Person Statement

The QP 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 in a NI 43-101 complaint resource estimation.

12. Data Verification

12.1 Data Verification Procedures

In November 2016, LNC assembled a fully digitized geological database from the original paper drill logs, assay certificates, and relevant data archived on LNC's network drive. This data was compiled into Microsoft Excel spreadsheets and imported into a central Hexagon Mining Torque (Torque) database software, providing a robust method for resource estimation.

LNC maintains a tracking chart in an Excel spreadsheet that is used to match analytical data from ALS (which is provided electronically in the form of both Excel spreadsheets and secured PDF assay certificates) to the intervals logged by the geologists and referenced to duplicate sample tags (Sample ID) in the core boxes. LNC also maintains a master chart to track and manage QA/QC samples.

Mr. Randal Burns, LNC Senior Geologist, maintains the LNC master blinded sample identification spreadsheet. Blinded sample numbers are paired up with the original assay samples identifications using MS Excel. Both the drill hole samples and QA/QC samples were decoded and paired with the digital assay certificates provided by ALS. The QA/QC samples were parsed out and re-plotted, verifying the QA/QC work done in 2010-2012.

No inconsistency in the assay data was found and only a small number of inconsistencies with lithologic coding was found as the resolution of the geologic data was significantly improved from LNC's 2010-2012 work. These differences were well below 1% of the total interval data reviewed and therefore are not considered significant. However, all have been corrected in the Torque database.

12.2 Drill Core and Geologic Logs

Geologic logs were consolidated from paper archives and scanned PDFs on the LNC 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.

During the review of the paper logs, several drill holes were selected at random to compare the core samples to the logs. The logging detail identified small lithologic intervals and structures, but was inconsistent in describing the colors of the clay beds. While the clay color description by the geologist was maintained in the database and in current logging methods, the statistical evidence indicates color is not a marker unit or grade indicator. Clay types are not easily determined visually by a logging geologist. Identifying a color change is simply to identify a condition change during formation not necessarily a clay type change that could indicate grade or otherwise influence lithium extraction processing factors.

In 2017, LNC began systematically estimating the amount of ash as a percentage in each lithologic interval. Previous logging typically recorded an ash percent, but not consistently. Knowing the approximate percentage of ash in a given interval may be of future use; for example, in quantifying lithium grade dilution as a function of ash content.

12.3 Topography

The topographic surface utilized in the estimate was provided by LNC in 3D Digital Terrain Model (DTM) and contour format (DWG file), and was based on aerial photography dated July 6, 2010. 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 was conducted by Mr. Dave Rowe, MXS, Inc., a Nevada licensed land surveyor, using Trimble equipment. A comparison of surveyed collars to the topography DTM highlighted inconsistencies for a small number of collars, which were investigated and rectified in conjunction with Mr. Rowe.

Collar surveying for the 2017 LNC drilling campaign was conducted using a handheld Garmin 62S GPS set to UTM NAD83 Zone 11 with accuracy of ±3 m. 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 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.

12.4 Verification of Analytical Data

All assays used for resource modeling were imported into the Torque database from original assay lab digital certificates. If the digital certificate was not located on the LNC network drives, a certified copy was downloaded from the ALS Webtrieve site. At no time was assay data entered manually into the database.

12.5 Data Adequacy

Based on the various reviews, validation exercises and remedies outlined above, the QP concluded that the data is adequate for use in a NI 43-101 compliant resource estimate.

13. Mineral Processing and Metallurgical Testing

The recent metallurgical test work program undertaken on the Thacker Pass Project was conducted with the objective of developing a viable and robust process flowsheet for the production of HG lithium carbonate.

Information generated from the current test work program was used to define the process variables which in turn were used as a basis in the design of the process flowsheet.

Metallurgical testing of the ore deposit has been performed by various organizations since 2010. The results have been disclosed in a previous technical report (Tetra Tech 2014). The previous process flow sheet adopted an approach that is based on conventional lithium hard rock processing. Hard rock lithium ore behaves very differently than lithium claystone, primarily because of its genesis. Lithium hard rock ores, such as pegmatite, are formed deep in the Earth's crust under high temperature and pressure, and therefore they must be attacked aggressively with high temperature and strong reagents to liberate the lithium. Claystone is a result of weathering processes and is formed in a less hostile, sedimentary environment. Therefore, a less aggressive, and more cost-effective, process to extract the lithium from claystone is possible.

In 2017, LAC decided to pursue an alternative approach that would reduce overall operational and capital costs, and leverage the physical properties of the soft claystone. To this end, a new process flow sheet that uses conventional leaching and industry-proven purification technology has been developed. Technical indicators obtained from tests so far are encouraging and support continued optimization, pilot testing, and engineering.

Key findings of previous research related to the current project, technical fundamentals of the new process and results are presented in this Section. The data presented herein have been used to validate and design the process flow sheet, as well as the chemical process model (ASPEN®). The test work is categorized and summarized in three Sections 13.1, 13.2, and 13.3.

13.1 Run of Mine (ROM) Clay Comminution and Upgrading

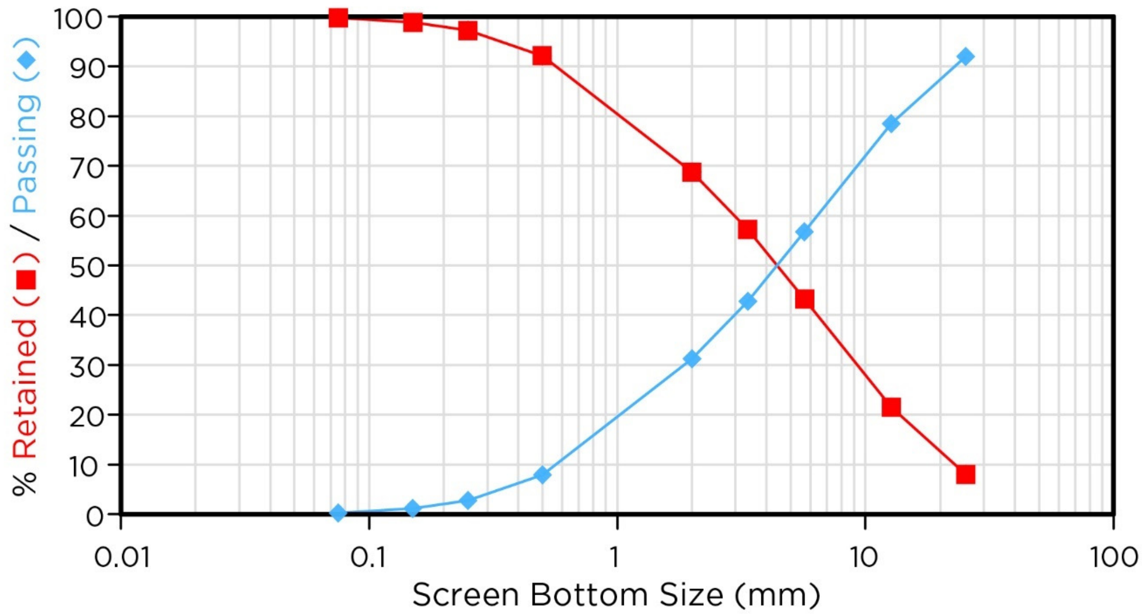
The ROM claystone ore is a unique sedimentary material. It does not behave like traditional hard rock ores that are successfully mined today. Therefore, understanding how to handle the ROM ore and prepare it into feed to the processing plant is necessary for the commercial development of this project.

13.1.1 ROM Clay Ore Characterization

ROM ore was collected from five separate locations around a stockpile located in Winnemucca, Nevada (Lithium Nevada Corp. 2018). The stockpile material was collected from a small production pit approximately 300 m east of the current designed economic pit. The pit location was chosen for its low overburden and 10 m to 15 m thick horizon of oxidized hectorite clay. The physical properties of the clay and ash material removed from the production pit are representative of the material within the economic pit shell. A total of 30 kg of material was submitted to ALS Geochemistry in Reno, Nevada for screening and size fraction analysis in February 2018. The samples were dry screened at the following sizes (all in mm): 25.4, 12.7, 5.66, 3.36, 2.0, 0.5, 0.25, 0.15, and 0.075. All size fractions were then analyzed for lithium and other elements via ICP-MS.

The average ROM size distribution via dry screening is shown in Figure 13-1.

Figure 13-1 ROM Size Distribution via Dry Screening



Source: Lithium Nevada Corp. 2018

From this data, the ROM P80 size is approximately 13 mm, which indicates that 80% of the measured particles are $\leq$13 mm in size. Also, 8% of the ore was retained on the 25.4 mm screen. ICP results reveal that lithium and other elements of interest are distributed homogeneously throughout the size fractions (Lithium Nevada Corp. 2018). More discussion of the clay mineralogy is detailed in Section 0. This information was used to define the design criteria of the size reduction circuit.

13.1.2 Milling/Grinding

Traditional ball or rod mill circuit was considered for milling. However, this technology is challenging for claystone-based ore because:

- Claystone can behave like an adhesive when wet, making it difficult to move when slurried at high percent solids. It would therefore require a large circulating load and low percent solids slurry which results in diminished throughput.
- Claystone is not as structurally competent as traditional hard rock ores. It has unique and unpredictable breakage behavior.

Based on discussions with experienced clay processors and equipment vendors, it was decided that a tooth roll sizer be used as the initial means of particle reduction to effectively deal with the unique qualities of claystone ore.

13.1.3 Alternative Size Reduction Methods

Test observations suggest that further reduction can be easily and cost-effectively achieved via other methods besides traditional milling. The claystone ROM ore exhibits interesting behavior when submerged in water. It visibly swells and readily dissociates into smaller particles. By simply soaking the ore and agitating in water, large particles are reduced in size and the slurry separates into very distinct layers (Figure 13-2).

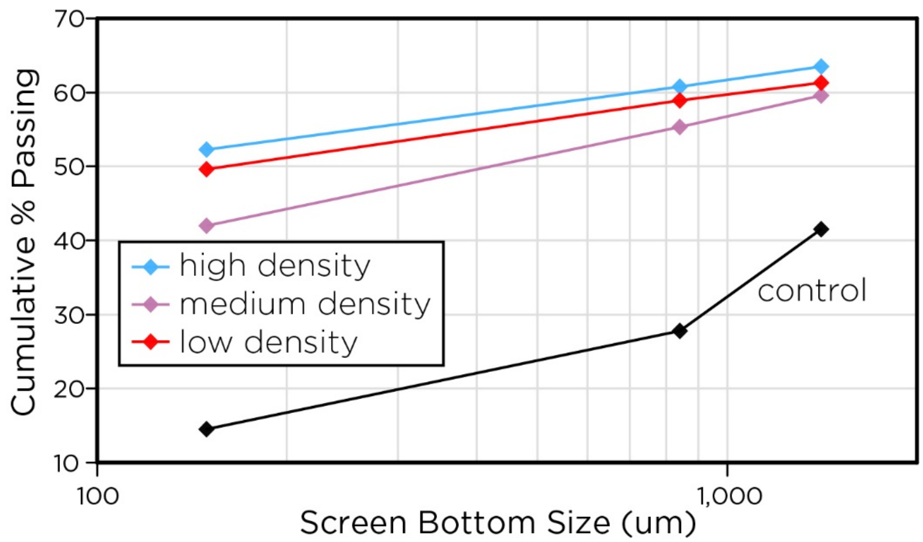
Figure 13-2 Images of Typical ROM Ore (Left) and After Soaking/Agitating in Water (Right)

Based on the ore behavior in water, alternative methods of size reduction were investigated. For these experiments, samples of ROM ore were riffle split into sub-samples.

The sub-samples were then mixed with water to different solids densities to produce slurries with different solids concentrations (high, medium, and low all on a dry basis) and processed. The ROM ore had a native moisture content of 24.72% as measured by a moisture balance. Each slurry was then wet screened at US-standard mesh sizes 14M, 20M, and 100M (1.41, 0.841, and 0.149 mm, respectively). A control sample was wet screened over the same stack. Each screen fraction was dried in an oven at 80 deg. C for two days prior to weighing. The material that passed 100M was calculated by mass balance.

The size distributions of each test sample and the control are shown in Figure 13-3. The wet screen control had 14.5% of the mass passing 0.149 mm, while the treated samples had between 42% to 52% passing 0.149 mm. This demonstrates that the alternative methods had a significant impact on the ore size.

Figure 13-3 Size Distributions of Size Reduction Test Samples



13.1.4 Upgrading

The current process flow sheet does not include any form of traditional ore upgrading.

However, ore upgrading by various methods has been previously studied, including wet light attrition followed by wet screening, wet sonication followed by screening, optical sorting, column elutriation, and wet heavy attrition followed by wet screening (KCA 2010). Some of the results were promising, indicating potential to separate a more lithium rich fraction from the ROM ore. Further investigation is recommended to fully understand the impact on the process design and reagent consumption.

13.2 Leaching and Neutralization

Acid leaching is the primary processing circuit step that removes lithium, along with other constituents, from the claystone ore. The leaching conditions can have a dramatic effect on the overall processing cost. Consequently, much work has been performed to identify optimum processing conditions. Following acid leach, a downstream neutralization step purifies the solution and prepares it for further separations.

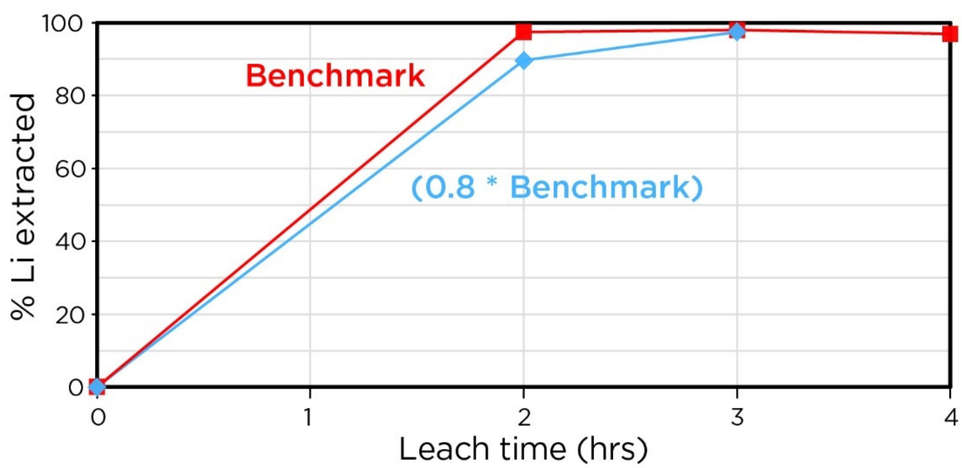
13.2.1 Acid Tank Leaching

13.2.1.1 Acid Concentration and Time

Previous testing campaigns investigated acid concentration effect on lithium extraction (KCA 2010). The results showed that increasing the acid concentration increases the rate at which lithium is leached into solution. Acid concentrations of 2 %w to 30 %w were tested and all acid concentrations returned reasonably high lithium extractions after extended time except for the 2 %w case.

Subsequent leaching studies were performed at the laboratories of a large lithium production facility in the winter of 2017 (Lithium Americas Corp. 2017a). A benchmark H_2SO_4 concentration and a reduced concentration (80% of benchmark) were used to leach clay for two to four hours. The total leachable lithium was measured for extraction efficiency (both in filtrate and wash water). The overall effect of time and acid concentration are shown below in Figure 13-4.

Figure 13-4 Li Leaching Results for Two Acid Concentrations



The results indicate that leaching with the reduced acid concentration for three hours gives the same lithium yield as using higher concentration acid. Using more dilute acid is preferable as it reduces total acid consumption, these results were incorporated into the leaching circuit design.

13.2.1.2 Slurry Density (Percent Solids)

The effect of slurry density, or weight percent solids, on leaching kinetics was investigated (KCA 2010). The results showed that a high relative slurry density provides excellent leaching results. Running at higher densities is advantageous from a mass throughput perspective because it reduces operating costs. A high density was assumed for the process flow sheet; however, optimization testing to determine the upper limit of slurry density is recommended.

13.2.1.3 Ore Type

Four different grades of lithium claystone, which combined are representative of the entire ore body, were leached at the process conditions established by previous tests (Lithium Americas Corp. 2017b). The solids were filtered then washed with water. The total leachable lithium was measured for extraction efficiency (both in filtrate and wash water). The results are summarized in Table 13-1.

Table 13-1 Summary of Leaching of Different Clay Samples

Trade Name	Li (%)	Li Recovery (%)	Acid Consumption (g H_2SO_4/g LCE)
LG Type 1	0.280	95.75	20.21
LG Type 2	0.281	80.80	30.69
HG Type 2	0.349	91.75	24.49
HG Type 1	0.392	96.95	17.23

The data shows that leach recovery and acid consumption can be dependent on ore type. This information was used in the process model.

13.2.1.4 Acid Recycle

Experiments were performed to examine the potential for recycling the leach solution, which would work towards improving recoveries and reducing the operating costs (Lithium Americas Corp. 2017c). Using identical leach conditions as described in Section 13.2.1.1, the recycled leach solution was readjusted to the target acid concentration and the required volume by adding more acid before injection to the next successive leach. Each test was run in triplicate to verify reproducibility.

The results demonstrated that the leach solution could be effectively recycled to improve recoveries and reduce processing costs. The concentration of elements in solution, including lithium, increased as the number of leaches increased. After the second recycle, the solution formed a precipitate ($MgSO_4*7H_2O$) as it cooled, which is advantageous for removing unwanted magnesium in the solution. The amount of acid consumed over the recycle experiments was 22.82 g H_2SO_4/g LCE. These tests demonstrate that a major benefit of recycling the leach solution is generation of a liquor that is more concentrated in lithium, and uses less acid overall per unit lithium, than a single pass leach.

The filtrate of the final recycle leach liquor was saved and used as the 'mother liquor' for further testing (see Section 13.3.2).

13.2.2 Neutralization with Limestone

Once the clay ore is leached, the pH of the acidic liquor must be raised (neutralized) to remove key contaminants and prepare the solution for subsequent processing steps. Leach liquors generated by the experiments detailed above were neutralized with limestone to identify reagent consumption and kinetic information (Lithium Americas Corp. 2017d). The results demonstrated optimum neutralization conditions, such as reagent addition, temperature and residence time.

13.3 Crystallization and Precipitation

Separation of the lithium from other components in post-neutralization solution is critical to obtaining high purity Li_2CO_3 product. Commercially proven crystallization and precipitation technology is a viable option based on the experiments detailed below.

13.3.1 $MgSO_4$ Crystallization

This step of the process purifies the lithium product by using crystallization to remove magnesium (an unwanted element in any final HG lithium product). Solutions representative of process streams were prepared and tested for crystallization/precipitation of $MgSO_4$ (Lithium Americas Corp. 2017e). A range of crystallization parameters were tested until the optimum conditions were found, where lithium recovery reached ≥98% and half of the magnesium was removed from solution. Important process variables such as Li-Mg concentration ratio, boiling temperature, crystallization temperature, and final liquor concentrations were identified.

13.3.2 Three-Step Purification

The acid recycles “mother liquor” (see Section 13.2.1.4) was used to test stepwise crystallization and precipitation for lithium purification (Lithium Americas Corp. 2017f). The experimental work flow is provided in Figure 13-5 and can be considered a three-step purification. The first is neutralization ($CaSO_4$ removal), the second is crystallization ($MgSO_4$ removal), and the third is precipitation ($MgOH_2$ and $CaSO_4$). Table 13-2 shows the lithium recoveries of each successive step of the process and the overall lithium recovery.

Figure 13-5 Outline of the Three-Step Purification Work Flow

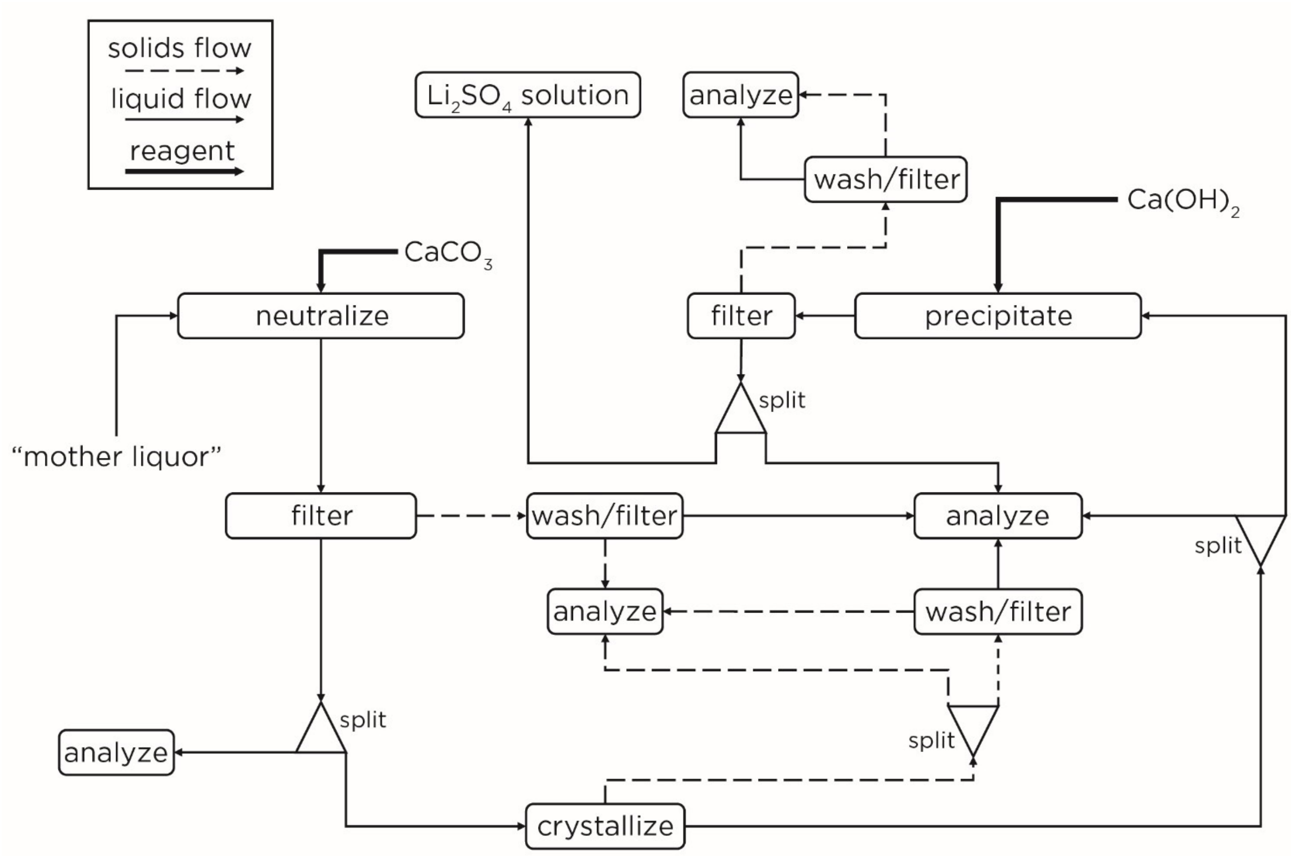
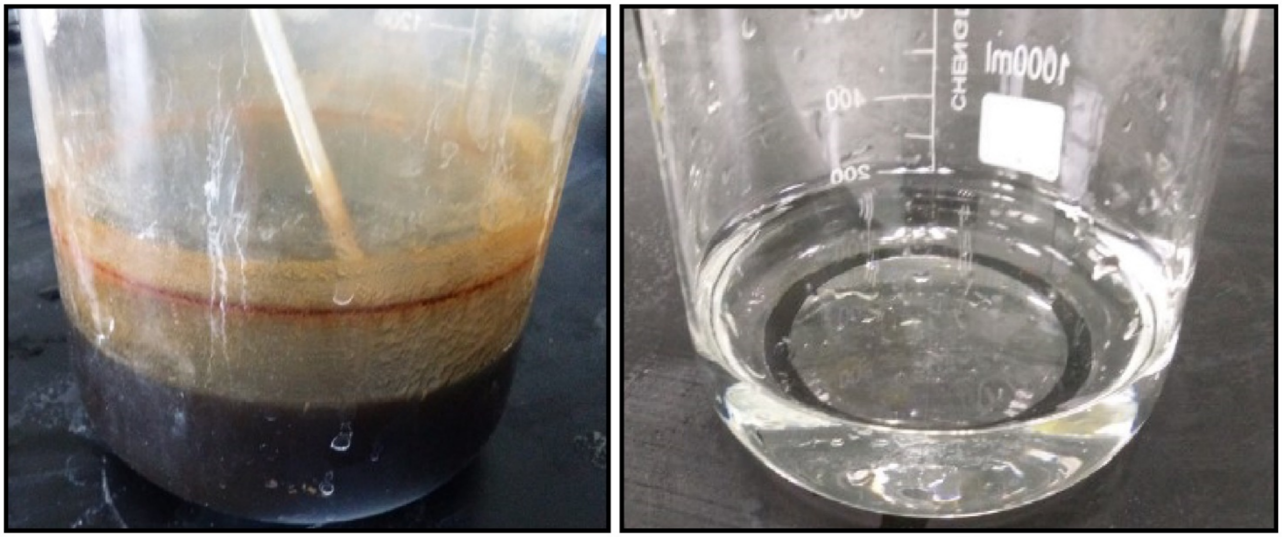


Table 13-2 Recoveries Obtained from Three-Step Purification

Description	Neutralization	Crystallization	Precipitation	Overall
Recoveries	89.3%	99.6%	98.6%	87.7%

A striking difference was observed in the liquid before and after precipitation with $CaOH_2$ (Figure 13-6). The clear lithium sulfate solution obtained after precipitation is readily amenable to lithium carbonate production. The reagent consumptions were estimated from these preliminary experiments and are in good agreement with those predicted in the chemical process model.

Figure 13-6 The Liquid Before (Left) and After (Right) Mg Removal with $CaOH_2$



These results show that a crystallization/precipitation process can be used to isolate a pure Li_2SO_4 product at around 88% recovery and served as a basis for the process design. Conversion of Li_2SO_4 to Li_2CO_3 is achievable with commercially proven and reliable methods.

13.4 Conclusions

All the test work to date has provided valuable information used to validate and design the process flow sheet and the chemical process model, applicable for all grades of claystones. Section 13.1 highlights background results used in the comminution and classification circuit design. In Section 13.2, the acid leach and neutralization test work used to design the circuits is described. This information has proved critical in defining the process variables, e.g. reagent volumes and concentrations, physical operating conditions and control parameters. The crystallization and precipitation test work discussed in Section 13.3 has aided in defining design criteria for these separations.

14. Mineral Resource Estimates

14.1 Thacker Pass Deposit

The resource estimated below is relevant for the Thacker Pass Deposit. The UM Claims owned by LNC in the Montana Mountains are not part of the Thacker Pass Project.

Only HQ core samples subject to the QA/QCs outlined in Section 0 of this report and assayed by ALS in Reno, Nevada, were used to estimate the resource.

LNC concluded drilling December 13, 2017 (a mild winter allowed for a long drilling season). To maintain schedule for the Prefeasibility Study (to be completed in Q2/18), a cutoff date of December 21, 2017, was established for reported assays that would make it into the resource estimation. Any assay data received after that were not utilized for this estimate. The grade estimation model relied on the drill holes outlined in 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

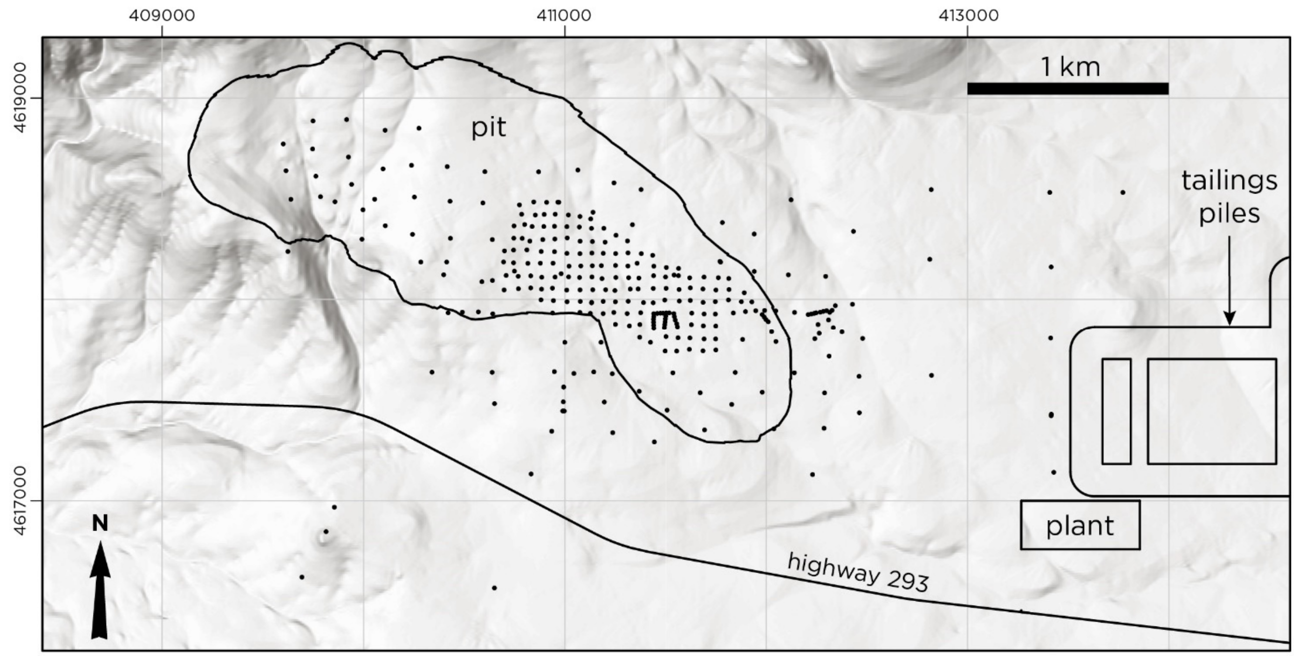
Drilling Campaign	Number Drilled	Type	Hole IDs in Database
LNC 2007-2010	228	HQ Core	WLC-001 through WLC-037, WLC-040 through WLC-215, WLC-218 through WLC-232
LNC 2017	47	HQ Core	LNC-001 through LNC-048*

Note:

*Assay results were not available from the lab for LNC-057 through LNC-085 at the time of resource estimation.

Holes LNC-049 through LNC-056, which were drilled to target shallow industrial clay resources for Lithium Americas' subsidiary, RheoMinerals Inc., were not tested for lithium, and therefore were not used in the Resource Estimate.

Figure 14-1 Drilling Utilized for the Resource Estimate



Source: Lithium Nevada Corp. (2018)

All drill holes used for the grade model except one (WLC-058) are essentially vertical (88.8 degrees to 90 degrees). Regular downhole gyro surveys were conducted to verify this. All mineralization thicknesses recorded are treated as true thicknesses.

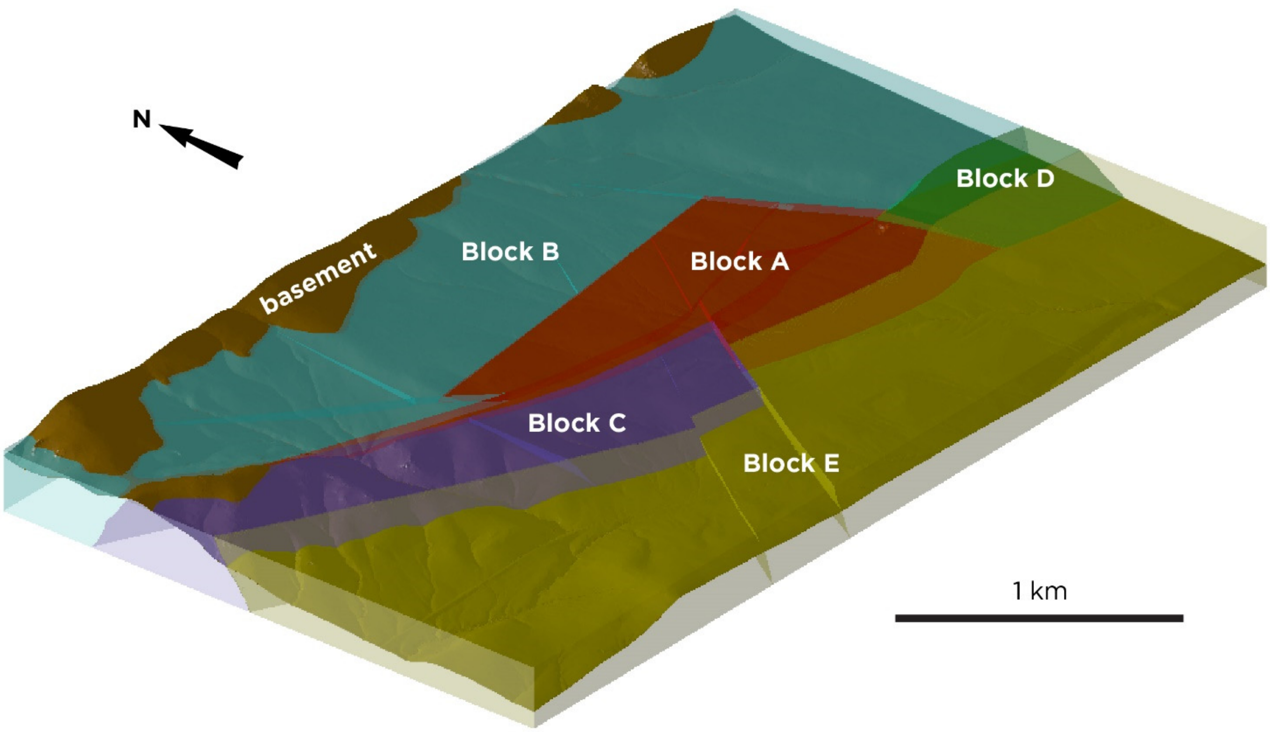
All drill holes used for grade estimation were standard HQ core, drilled using standard techniques by Marcus & Marcus Exploration Inc., now known as Idea Drilling Inc. Core is stored at a secure logging facility while being processed, then locked in CONEX containers or a warehouse after sampling was completed.

14.1.1 Geological Model

A block model was created by LNC geologists. The blocks are tagged through nearest-neighbor interpolation with the relevant lithology and are 30 m by 30 m by 5 m in size. The block model is not rotated. Due to the complex nature of the horizontal interlayering features, especially in the shallower areas of the deposit (such as crater sediments, alluvium and basalt); no wireframes were utilized in the model construction. This block model was imported into Geovia GEMS and examined for veracity by the QP and found to be a good representation of the logged lithology. This model was subsequently limited by the topography, which was constructed from detailed contour lines and borehole survey data.

As seen in Section 7.2.3, several faults are present in the deposit. After examination of strike and dip of the sediments, six major fault blocks were identified. All modelling was subsequently confined and limited to the fault blocks. In addition, only the core area of the deposit has been modeled, the outer limits of the deposit being undefined. Figure 14-2 illustrates the core modelled area, and the six major fault blocks.

Figure 14-2 Six Fault Blocks Were Modeled for the Thacker Pass Deposit - Block A (Red), Block B (Light Blue), Block C (Purple), Block D (Green), Block E (Yellow) - View from the Southwest



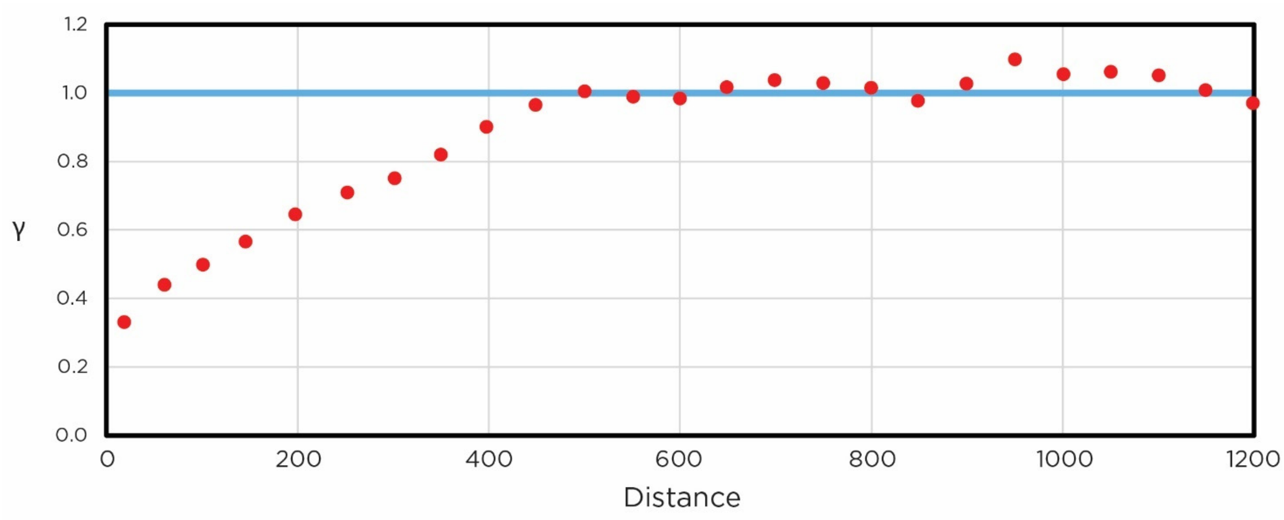
14.1.2 Grade and Mineralogical Interpolation

Variograms were constructed for the Li grade for all fault blocks. A summary of the variography is given in Table 14-2, and an example of one of the variograms in Figure 14-3.

Table 14-2 Variogram Summary

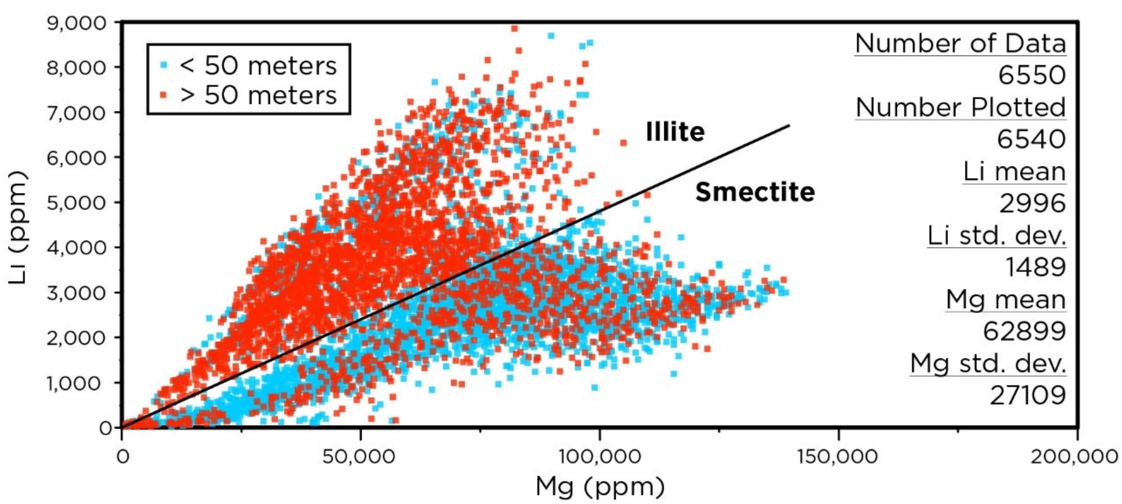
Structural Block	Nugget	Omnidirectional Sub-Horizontal Plane (X - Y)						Vertical (Z)			
		Principal Azimuth	Principal Dip	First Structure		Second Structure		First Structure		Second Structure	
				Component	Range	Component	Range	Component	Range	Component	Range
Block A	0.25	180°	3°	---	---	0.75	525	---	---	0.75	30
Block B	0.2	170°	2.5°	0.6	500	0.2	1,600	0.6	37	0.2	42
Block C	0	152.5 °	6.5°	0.55	120	0.45	320	0.55	5	0.45	22
Block D	---	---	---	---	---	---	---	---	---	---	---
Block E	0.3	122°	6°	0.7	800	---	---	0.7	30	---	---

Figure 14-3 Block A Omnidirectional Variogram in the Sub-Horizontal Plane



In addition, the interpreted distribution of illite versus smectite claystones was modeled to support the design needs of downstream processing facilities. The background to the illite/smectite differentiation is given in Section 7.3.2. Initial statistical analysis indicated that a strong differentiation exists between the illite and smectite mineralized group (Figure 14-4). A Li:Mg ratio of 0.048 is used to define the illite and smectite ores, illite having a Li:Mg ratio higher than 0.048, and smectite lower than 0.048.

Figure 14-4 Li versus Mg versus Depth (Grey Shading, Shading Increasing with Depth from 0 m to 220 m) for All Mineralized Clay Samples



Composites of 5 m, within lithological units, were calculated for all interpolation purposes.

Interpolation for non-grade elements as well as the clay ore characterization was by Inverse Distance Squared Interpolation.

14.1.3 Resource Classification

With Block A having the shortest range, as well as the greatest drill hole and data concentration, the variogram ranges of this block was used to define the Inferred, Indicated and Measured Resource categories throughout the deposit.

Following Parker & Dohm (2014), the category ranges were defined as 50% of range for Measured, 75% for Indicated, and 100% for Inferred. A summary is given in Table 14-3.

The definition of these categories is per the CIM 2014 standards:

> *"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."*

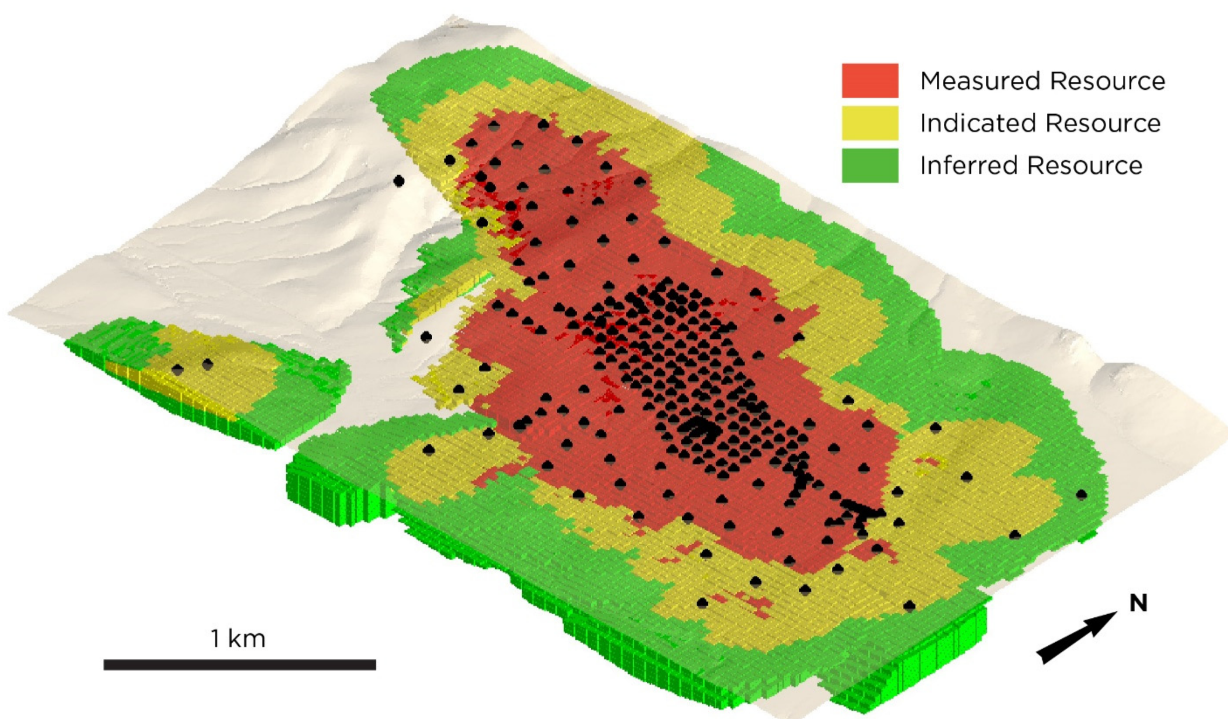
Table 14-3 Resource Classification

Category	X (m)	Y (m)	Z (m)	Sampling
Measured	262.5	262.5	15	5-16 samples, 3+ drill holes, 2 samples maximum per hole.
Indicated	393.75	393.75	22.5	3-16 samples, 2+ drill holes, 2 samples maximum per hole.
Inferred	525	525	30	2-16 samples, 1+ drill holes, 2 samples maximum per hole.

Grade interpolation proceeded using Ordinary Kriging, utilizing the variograms indicated above and the classification listed in Table 14-3.

A view of the classified block model is presented in Figure 14-5.

Figure 14-5 Classified Block Model, View from the Southeast



The classified resource is presented in Table 14-4. Note that this resource estimate uses a cut-off grade of 2,000 ppm Li. This cut-off was applied to the 2016 Resource Estimate (Carew & Rossi, 2016). That report stated:

> *SRK is of the opinion that, at a 2,000 ppm (0.20%) lithium cut-off, the Stage I Lens (now known as Thacker Pass Deposit) has reasonable prospects for economic extraction by open-pit mining.*

The QP agrees with this above statement as the basis for the cut-off limit determination.

Table 14-4 Resource Tonnage and Grade

Category	Tonnage ('000 metric tonnes)	Average Li (ppm)	LCE ('000 metric tonnes)
Measured	242,150	2,948	3,800
Indicated	143,110	2,864	2,182
Measured and Indicated	**385,260**	**2,917**	**5,982**
Inferred	147,440	2,932	2,301

Notes:

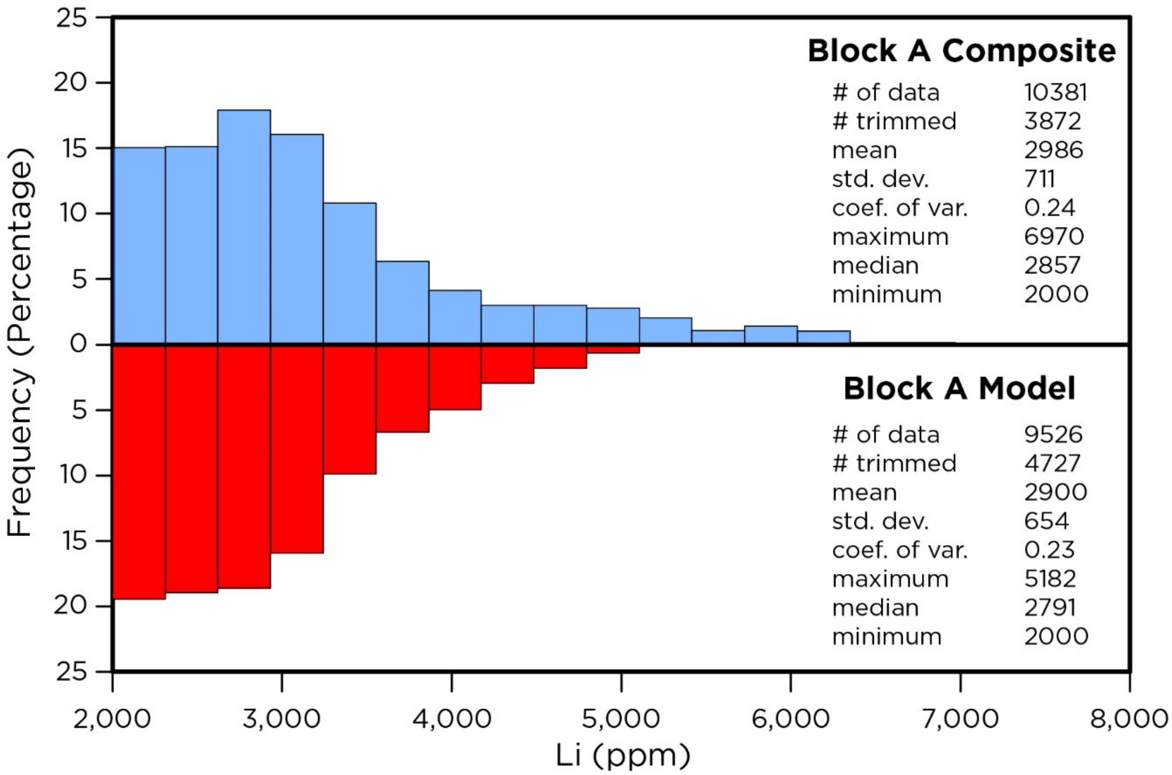
1. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resource will be converted into mineral reserves.
2. Resources presented at a 2,000 ppm Li cut-off grade.
3. The conversion factor for lithium metal (100%) to LCE is 5.323.
4. Applied density for the ore is 1.79 (Section 11.2).

14.1.4 Reconciliation

An independent grade interpolation and Resource Estimation was run independently in MineSight3D by LNC Senior Geologist, Mr. Randal Burns, with resulting tonnages and grade less than 1% different from the figures outlined in Table 14-4. Reconciliation between assays, composites, and modeled grades have also been completed, and deemed satisfactory.

In addition, grade histograms comparing input data, composite data and interpolated block data were compiled. Note that these histograms have a 2,000 Li ppm cut-off applied. The variation of less than 3% is satisfactory to the QP, given the complexity of the deposit. An example of this reconciliation is given in Figure 14-6, for Block A.

Figure 14-6 Composite and Model Grades for Block A



14.2 Comments

The QP is of the opinion that the resource estimation methodology complies with the 2014 CIM standards for the classification of Mineral Resources. The QP has not been made aware of any factors, including property and/or lease ownership, mineral processing, environmental, socio-economic or legal exclusions that would affect this Resource Estimate.

15. Mineral Reserve Estimates

The Mineral Reserve is 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 classified as “proven” and “probable”. The Measured Resource does not necessarily guarantee a “proven” reserve. Measured Resources can become a “probable” reserve if modifying factors are deemed not of sufficient accuracy. Modifying factors include mining, processing, metallurgical, economic, marketing, legal, environmental, infrastructure, social and governmental factors. The Mineral Reserves estimate excludes the Inferred Mineral Resource.

The reference point at which the Mineral Reserves are defined is at the point where the ore is delivered to the processing plant. Reductions attributed to plant losses have not been included in the Mineral Reserve estimate.

The Mineral Reserve estimate relies on the resource block model prepared by WorleyParsons (Feb. 2018). The block model was provided as a GEOVIA GEMS export and converted to a Datamine block model via Deswik Mining Software. Validation checks were completed on the imported model to ensure results consistent with the resource stated in Table 14-4.

15.1 Pit Optimization

15.1.1 Addition of Waste Blocks

The imported block model was also visually analyzed. The northern boundary of the block model was not completely encapsulated in waste blocks. Prior to optimization, blocks were added to the model to fully encapsulate the mineralization in waste. This provides a more accurate optimization result. Figure 15-1 presents the northern boundary of the block model prior to the addition of the waste blocks.

Figure 15-1 Block Model Northern Boundary

15.1.2 Pit Optimization Parameters

Dassault Systèmes Geovia Lerchs-Grossman Whittle software (Whittle) was used to produce a series of pit shells using the input parameters listed in Table 15-1.

Table 15-1 Pit Optimization Parameters

Parameter	Unit	Value
Li_2CO_3 Price	US$/t	12,000
Royalties	%	1.75
Ore Mining Cost	US$/t	2.80
Waste Mining Cost	US$/t	2.80
Processing Cost	US$/t ROM	55.00
Process Recovery	%	83
Pit Slope 1	degree	27
Pit Slope 2	degree	47

The price, royalties, processing cost and process recovery parameters were provided by Lithium Nevada. The operating costs for mining were based upon benchmark data. A mining recovery was not applied in Whittle. Two preliminary slope angles were provided by Worley Parsons. An overall slope of 27 degrees was applied to soil material to a depth of 30 m. The remaining pit slope was set to 47 degrees for bedrock material. A delineation between the soil and bedrock within the 2017 drillhole borings varies up to a depth of 45 m. An average depth of 30 m has been assumed for this study.

Transportation, General and Administrative, and other selling costs are included in the US$55.00/tonne ROM processing cost.

15.1.3 Cut-Off Grade

Prior to Whittle analysis, the economic cut-off grade was calculated from the inputs included in Table 15-2.

Table 15-2 Cut-Off Grade Inputs

Item	Unit	Value
Li_2CO_3 price	US$/t	12,000
Convert Li_2CO_3 to Li_2		5.32
Li_2 price	US$/t	63,840
Royalties	%	1.75

Item	Unit	Value
Processing Recovery	%	83
Price per recovered tonne Lithium	US$/t	52,059
Mining cost	US$/t	2.80
Processing cost	US$/t	55.00
Operating Cost per tonne ore	US$/t	57.80

$$Economic\ Mining\ COG = \frac{Operating\ Cost\ per\ Tonne\ Ore}{Price\ per\ Recovered\ Tonne\ Lithium} = 1110\ ppm$$

$$Economic\ Milling\ COG = \frac{Processing\ Cost\ per\ Tonne\ Ore}{Price\ per\ Recovered\ Tonne\ Lithium} = 1056\ ppm$$

The resulting Lithium cut-off grade is 1,110 ppm. A mathematical analysis of the sensitivity of the cut-off grade was performed. The most important single factor is the Li_2CO_3 price. The changes to operating costs or recovery would need to be significant to greatly affect the cut-off grade.

A cut-off grade of 2,000 ppm was applied by Lithium Nevada to the reported Mineral Resource to align with historical reporting. Processing test work has been completed to support a mill feed of greater than 2,500 ppm, with no samples tested below this value. There is also a perceived risk of processing losses due to the high ash content for grades lower than 2,500 ppm of which further test work is required; therefore, a cut-off grade of 2,500 ppm was applied to the Whittle pit optimization to ensure consistency with the processing test work to date. It is recommended that additional work be undertaken regarding the impact of deleterious elements or lower grades to realize the potential additional processing feed available by lowering the cutoff grade.

15.1.4 Resulting Pit Shells

A series of pit optimization runs with varied revenue factors were performed with Whittle. Two resulting pit shells were chosen for the basis of the pit limitation.

An ultimate pit shell, number 39, with a revenue factor of 0.870 was chosen to define the Mineral Reserves. This shell had the highest discounted value given the Whittle parameters; however, the majority of the value is contained in Whittle shells with lower revenue factors as shown in Figure 15-2 and in Table 15-3.

Figure 15-2 Whittle Shell by Shell Graph

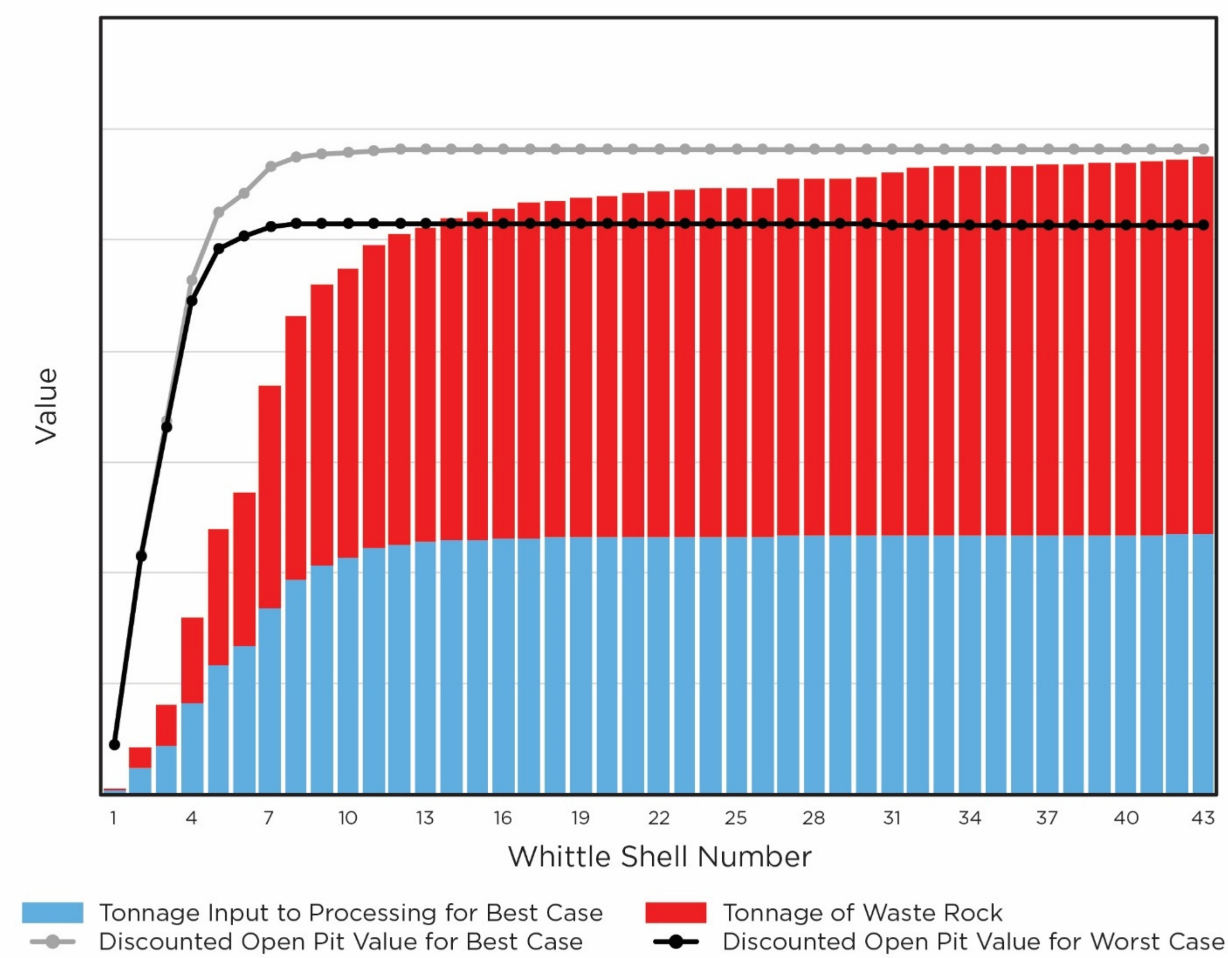


Table 15-3 Whittle Shell Results

Pit Shell	Relative Discounted Cashflow* (US$)	Mineralized Tonnage	Stripping Ratio*	Li Grade, ppm
2	2.1B	23M	0.81	3633
3	3.4B	44M	0.82	3577
4	4.8B	88M	0.94	3521
5	5.3B	118M	1.00	3481
6	5.4B	134M	0.99	3449
8	5.7B	193M	1.20	3357

Pit Shell	Relative Discounted Cashflow* (US$)	Mineralized Tonnage	Stripping Ratio*	Li Grade, ppm
10	5.8B	223M	1.27	3299
12	5.8B	246M	1.37	3257
Max (39)	5.8B	263M	1.67	3228

*Note: Discounted Operating Cashflow is shown for the purposes of comparing pit shells and should not be used as absolute numbers. The Stripping Ratio listed does not include consideration for Mining Recovery.

The increase in value becomes less significant with increasing shell sizes due to the large scale of the resource. Further refinement focused on Whittle Shell 6 as it contained greater than 90% of the value of Whittle Shell 39 with a lower stripping ratio and sufficient tonnage to support a 30+ year mine life. The optimization was run using a smaller interval of revenue factors. The resulting graph shown in Figure 15-3 and the data presented in Table 15-4 indicates sharp increases in stripping ratio for increases in mineralized tonnage. This is due to expansions of the pit shell to higher waste areas of the resource.

Figure 15-3 Refined Whittle Shell 6 Graph

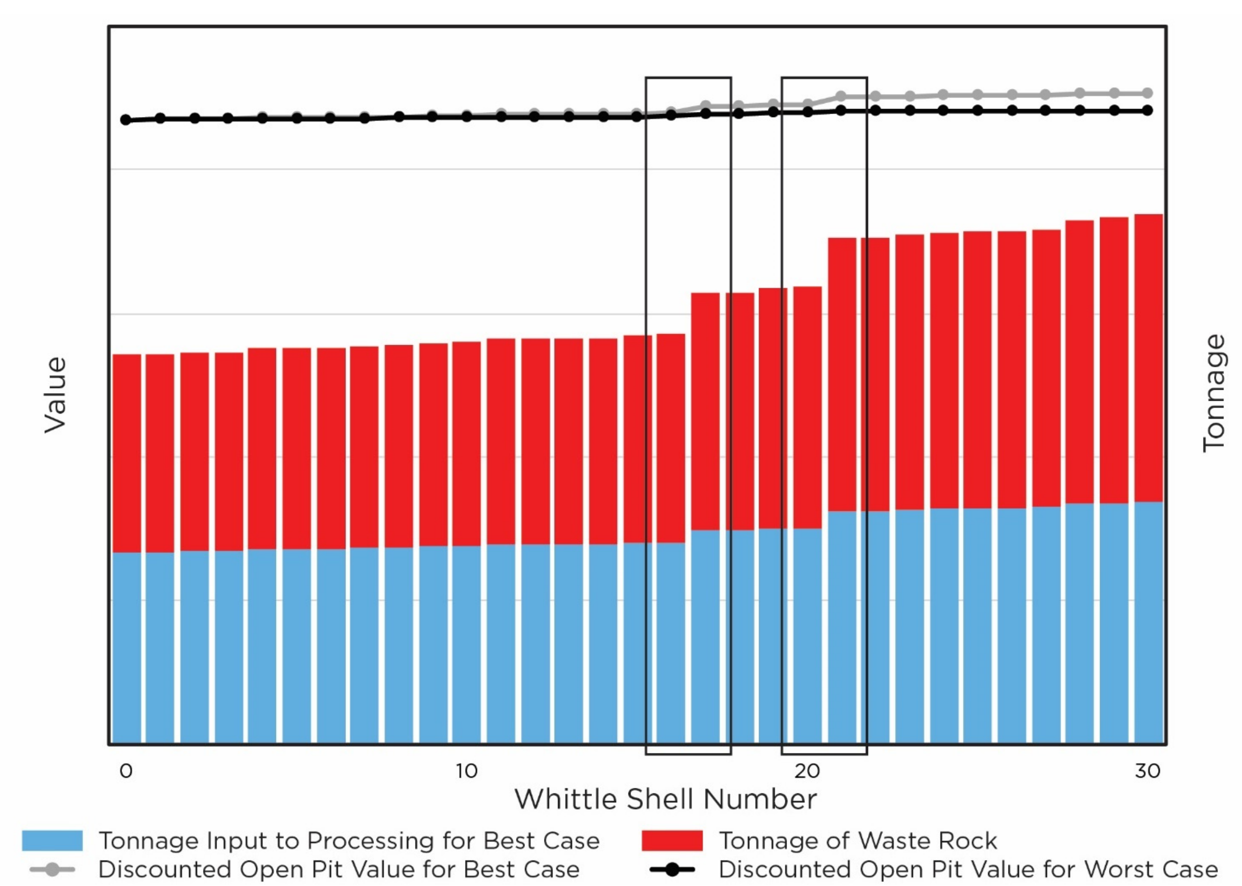
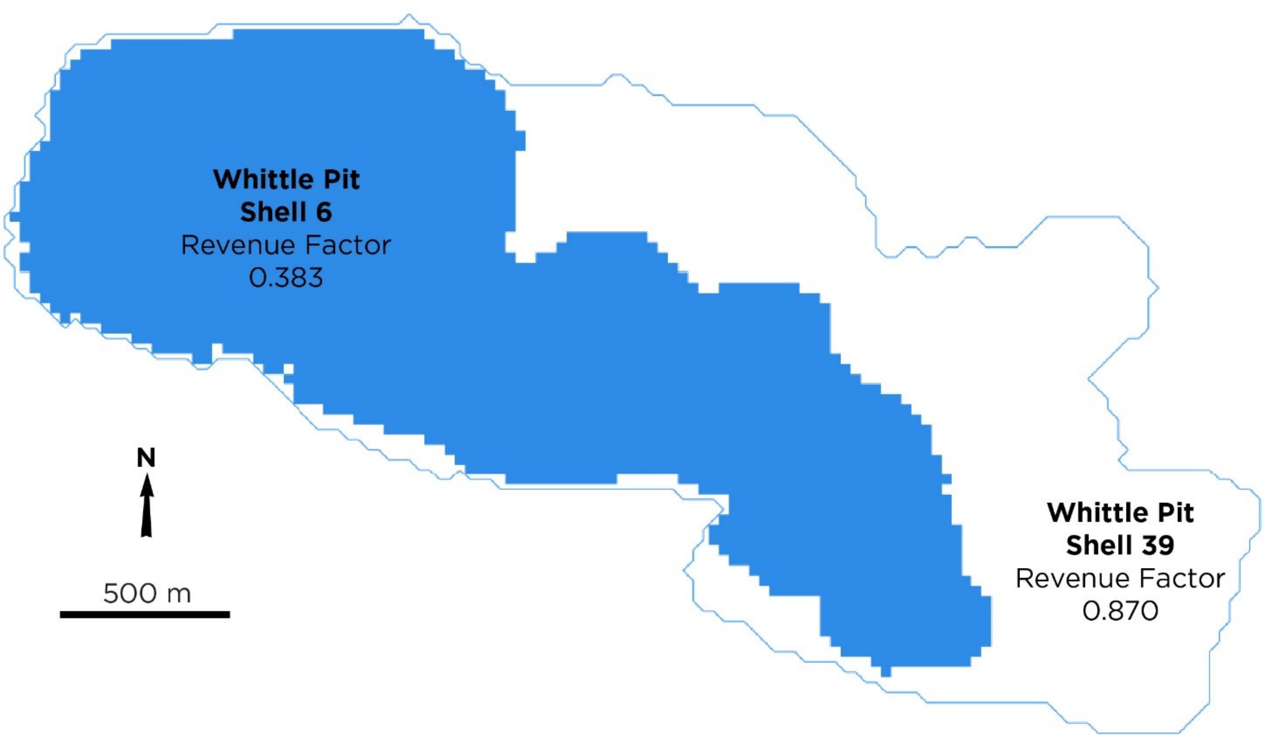


Table 15-4 Refined Whittle Shell 6 Relevant Results

Pit Shell	Revenue Factor	Mineralized Tonnage	Stripping Ratio	Li Grade, ppm
6-17	0.383	140M	1.04	3429
6-18	0.384	148M	1.12	3429
6-21	0.385	150M	1.12	3425
6-22	0.386	162M	1.17	3409

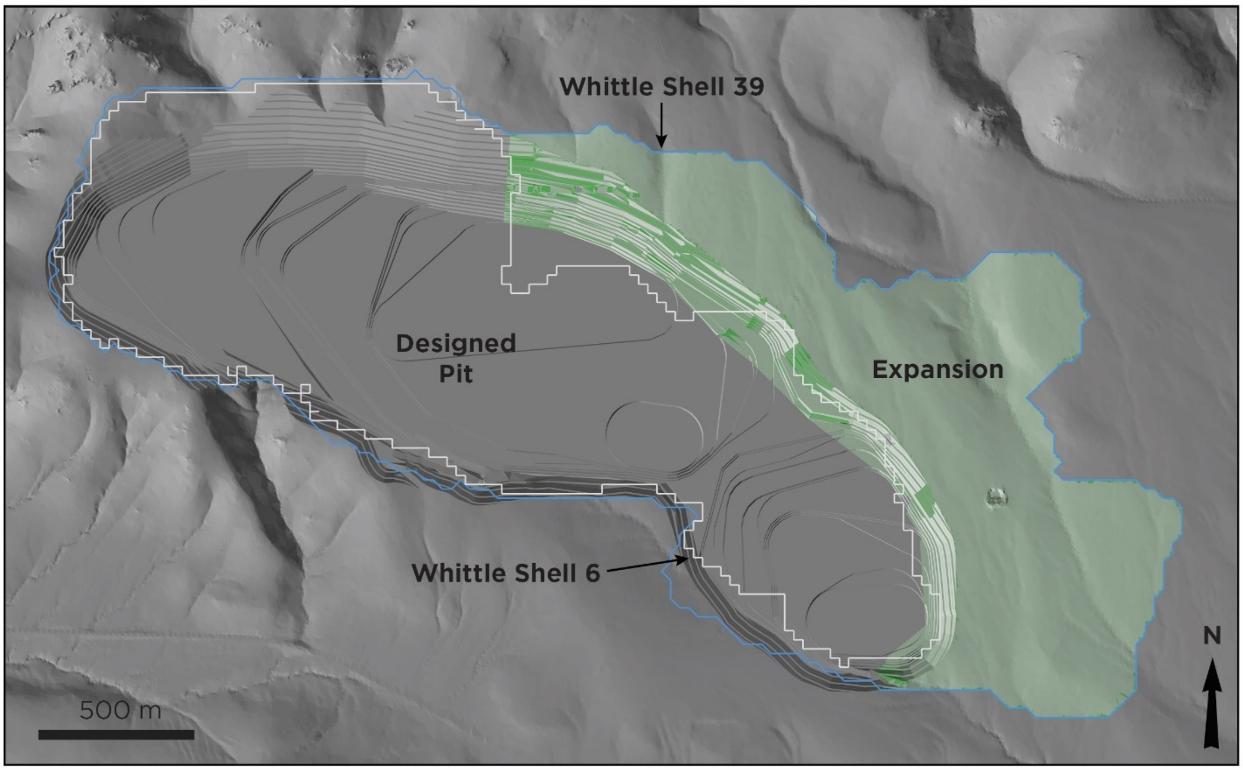
Refined Whittle Shell 6-17, with a revenue factor of 0.383, was chosen to complete the pit design. It not only provides for early positive cash flows with higher grades and lower strip ratios but also is situated on the pit shell cash flow curve just before a significant step change in stripping ratio. This shell provides sufficient mineralized material for a mine life in excess of 30 years with a stripping ratio near 1.00 and delivers over 90% of the discounted value of Whittle Shell 39. The Whittle shells used for pit limit determination are shown in Figure 15-4.

Figure 15-4 Whittle Shells Chosen for Mineral Reserves



The pit design expands the pit walls and floor to Whittle Shell 39 for the western part of the deposit. It also includes a portion of Whittle Shell 39 to remove a bend in Whittle Shell 6-17 as shown in Figure 15-5. The remaining portion of Whittle Shell 39 is included in the Mineral Reserves without a detailed pit design. A pit design was not completed as the discounted cashflow does not increase greatly beyond the designed pit based on Whittle Shell 6-17 and it is included as an expansion at the end of the mine life.

Figure 15-5 Designed Pit and Expansion



15.1.5 Sensitivity to Input Parameters

The slope recommendations included in the "*Geotechnical Recommendations for the Proposed Open Pit Slopes*" technical note by WorleyParsons (Apr. 2018) concluded that for pit wall depths greater than 90 m, the slope of the bedrock zone must be reduced to 38 degrees. Whittle Shell 6, with a revenue factor 0.383, was analyzed at a series of overall slopes to determine the sensitivity of the shell. The reduced slopes do not greatly affect the pit shape and have similar ore tonnage as shown in Figure 15-2 and Figure 15-3. The change is therefore considered immaterial and the shell with a rock slope of 47 degrees continued to be used for the pit limit. The detailed design includes the reduced slope in the appropriate areas.

Figure 15-6 Pit Shell Revenue Factor 0.383 Slope Sensitivity – Ore Tonnage

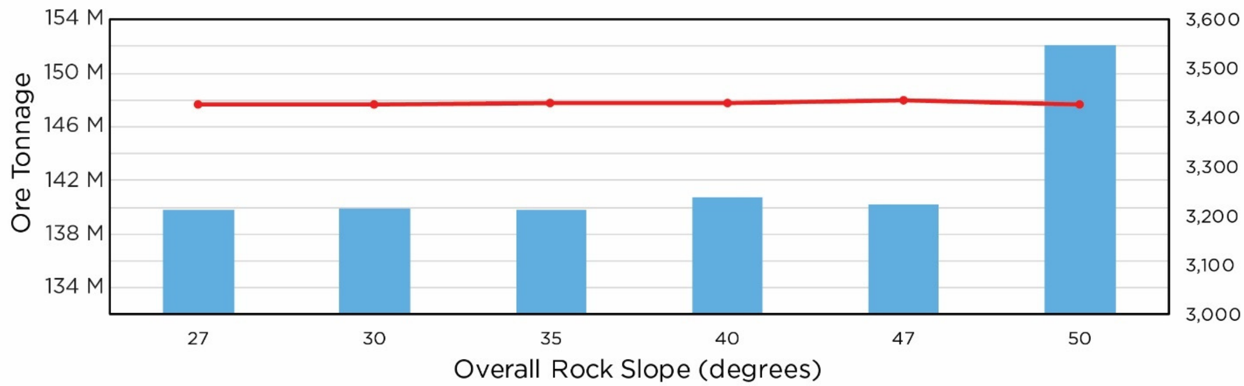
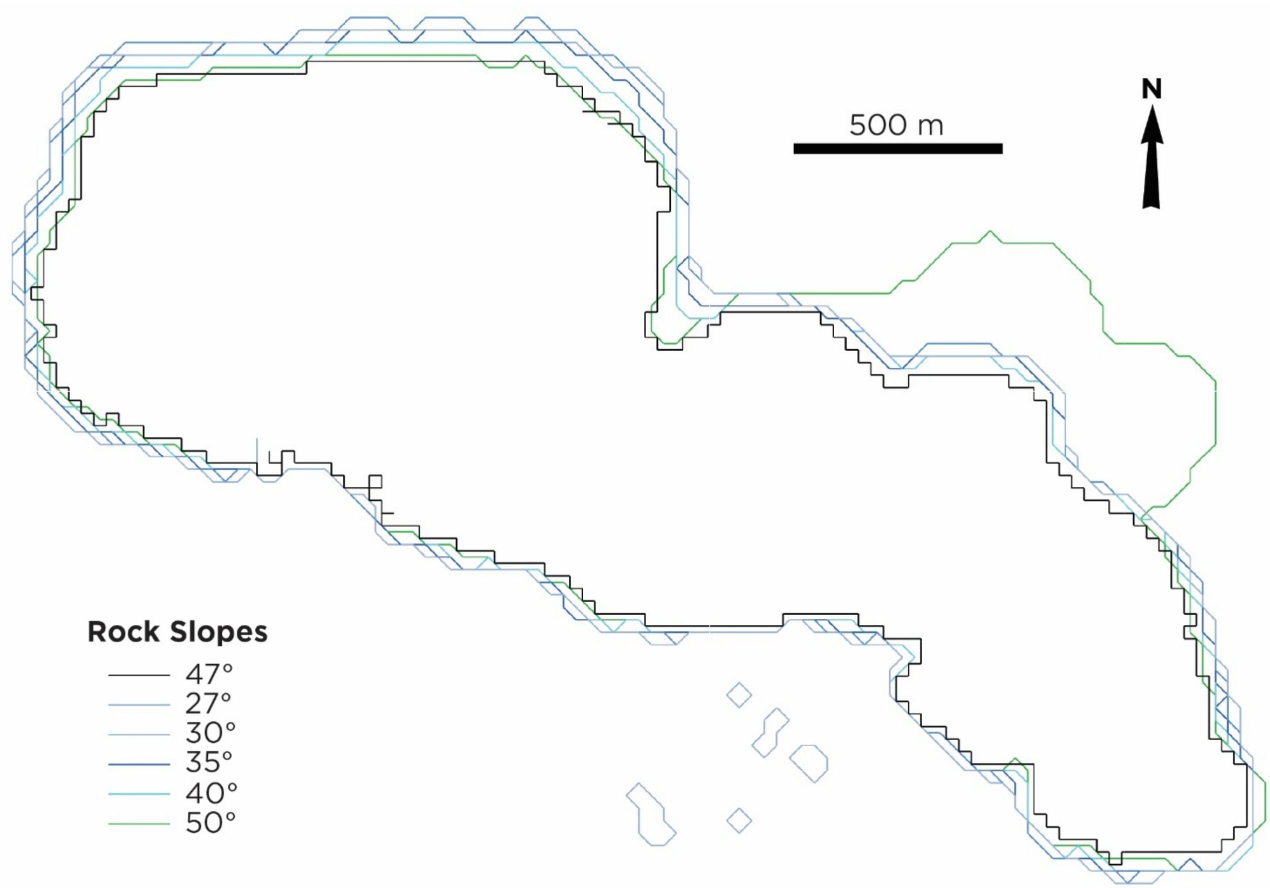
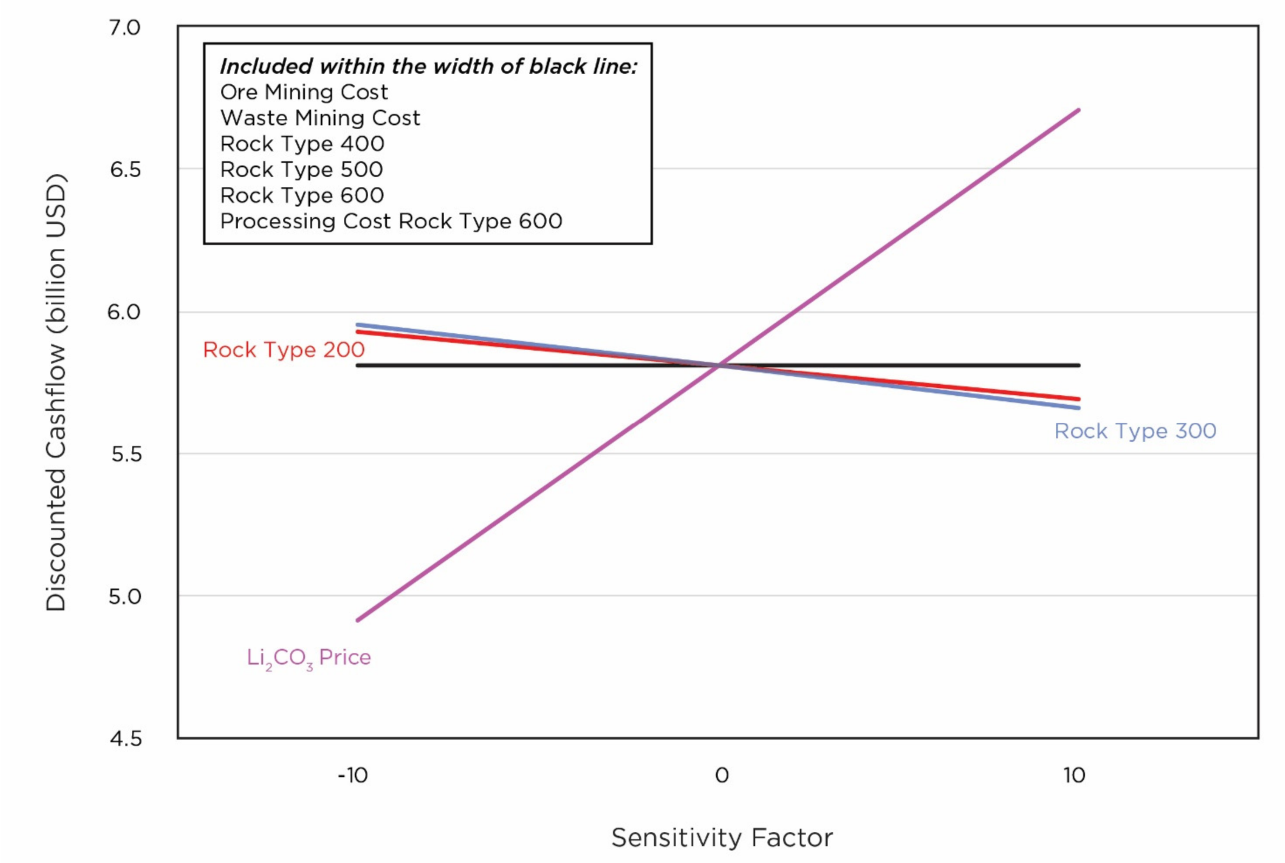


Figure 15-7 Pit Shell Revenue Factor 0.383 Slope Sensitivity - Pit Shape



The sensitivity graph produced by Whittle is consistent with the economic cut-off grade analysis. The most significant single factor for the optimization is the price as shown in Figure 15-8.

Figure 15-8 Whittle Sensitivity Spider Graph



15.2 Dilution and Mining Recovery

The resource model is a regular block model with block sized 30 m (x) x 30 m (y) x 5 m (z). Due to the regular block model and the block size, dilution is considered inherent in the block model.

The Mining Recovery is expected to vary depending on the machine extracting the ore, i.e. surface miner versus excavator. An average life of mine recovery of 93% was applied for the Mineral Reserves Estimate.

15.3 Stripping Ratio

The resulting stripping ratio of the designed pit and shell expansion is 1.8 tonnes of waste rock plus ore loss to 1 tonne of recovered ore. Excluding the application of mining recovery, the stripping ratio is 1.6 tonnes *in-situ* waste to 1 tonne of *in-situ* ore. The increase in stripping ratio when compared to the Whittle shell is due to the application of mining recovery, additional waste due to pit design floor and walls, and the decrease in slope for areas of the pit greater than 90 m deep.

15.4 Mineral Reserve Estimate

The completed detailed pit design and the remaining portion of Whittle Shell 39 were interrogated to obtain the Mineral Reserve Estimate. The assumptions and methodology for completing the pit design are described in Sections 16.2 through 16.5. The summary of the Mineral Reserve is shown in Table 15-5 and has been estimated using the parameters and methodology described in Section 0.

The Mineral Resource presented in Table 14-4 includes the Mineral Reserve indicated in Table 15-5.

Table 15-5 Mineral Reserve Summary

Reserve Category	Tonnage ('000 tonnes)	Average Li (ppm)	LCE ('000 tonnes)
Proven	133,944	3,308	2,358
Probable	45,478	3,210	777
Proven and Probable	**179,422**	**3,283**	**3,135**

Notes:

1. Mineral Reserves are defined at the point where the ore is delivered to the processing plant. Reductions attributed to plant losses have not been included.
2. Reserves presented at a 2,500 ppm Li cut-off grade.
3. The conversion factor for lithium metal (100%) to LCE is 5.323.
4. Applied density for the ore is 1.79 (Section 11.2).
5. All tonnages are presented on a dry basis.

16. Mining Methods

The shallow and massive nature of the deposit makes it amenable to open pit mining methods. The mining method chosen is a modified panel mining method which employs excavators and surface miners. In this method, a section along the length of the pit is mined to the entire width and depth before moving to the next section of the pit. The ore body is perfectly set up for this as it is massive and the floor is fairly consistent.

The annual production rate for the mine varies and it is determined by a phased Lithium Carbonate Equivalent (LCE) annual production rate which takes into account the varying *in-situ* Lithium grade. The following is a summary of the Life-of-Mine (LoM) production:

- 510 Million tonnes mined of total material which includes the following:
  - 179 Million dry tonnes Recovered Ore
  - 330 Million dry tonnes Waste
  - Stripping Ratio 1.84 : 1 (Waste : Recovered Ore) on a dry tonnage basis
  - Stripping Ratio 1.6:1 (In situ Waste : Ore) on a dry tonnage basis
- Pre-Production Period of two (2) years
- 46 Years of Commercial Production, including the following:
  - 3.5 Years of Phase 1 Production at 30,000 tonnes LCE per year
  - 42 Years of Phase 2 Production at 60,000 tonnes LCE per year
- Life of Mine Production of 3.135 Million tonnes of LCE product

The densities contained within the block model as listed in Table 11-1 were used for all calculations. Tonnages are reported on a dry basis unless otherwise noted.

16.1 Mine Operations

Waste removal will be done by means of an excavator and haul truck operation. Once the ore has been exposed and a running surface prepared to a relatively consistent profile, the excavator will move to the next panel section. Following the waste removal, the surface miner will mine the exposed ore and load the haul trucks directly.

The ore will be hauled to the head of an overland ore conveyor or to nearby short-term stockpiles. A front-end loader will be used for any rehandling of ore and for managing the short-term stockpiles.

During the first year of pre-production, mine waste will be hauled to the plant site to be used for construction fill material and will also be used to construct the tailings embankment. During the second year of pre-production, mine waste continues to be used for construction with any excess mine waste hauled directly to the waste dump. The waste dump has been designed to accommodate sufficient material such that when it is complete the remaining waste mined for the life of the mine can be backfilled directly into the mined-out pits, less any that is used for subsequent tailing embankment construction.

Due to the sequence of mining, the majority of in-pit ramps will be temporary, and some will be built on backfill. Exposure to final pit walls will also be temporary.

16.2 Geotechnical Data

The WorleyParsons geotechnical recommendation was based upon final pit slopes that incorporated a 10 m bench height and 5 m berm width. The final pit design includes both 5 m bench heights and 10 m double-benching. A geotechnical slope verification was conducted after the pit design was completed which recommended that the inter-ramp angles for the bedrock are adjusted to 48 and 38 degrees instead of 47 and 39 degrees. As the majority of the pit wall requires a 48/47 angle, the designed pit is slightly more conservative than the geotechnical recommendations.

The results of a seismic reflection survey completed by Advanced Geoscience shows shear wave velocities up to 2,600 m/s to a depth of 100 m. This indicates the material should be rippable by a D10 dozer or similar.

16.3 Pit Wall Design

A bench height of 5 m was chosen to limit dilution. Double benching was included to increase the bench widths while still maintaining the inter-ramp slope requirements.

Three (3) geotechnical zones were included in the pit design. A delineation between soil and bedrock occurs around 30 m depth. The inter-ramp angle for the soil is 25 degrees for all areas of the pit. For total pit wall depths less than 90 m, the bedrock slope is 47 degrees. Areas of the pit with wall depths between 90 m and 120 m have a bedrock inter-ramp angle of 39 degrees. Slopes A, B and C, and resulting Pit Design parameters listed in Table 16-1.

Table 16-1 Pit Wall Design Parameters

Parameter	Unit	Slope A Soil	Slope B Bedrock	Slope C Bedrock
Pit Wall Depth	*m*	0-30	30-60	30-120
Bench Height	*m*	5	5	5
Double Bench Height	*m*	10	10	10
Bench Width	*m*	5	5	5
Inter-Ramp Angle	*deg.*	25	47	39
Bench Angle	*deg.*	32	67	54

Cross-sections of the combined soil and bedrock slope designs are presented in Figure 16-1 and Figure 16-2. Over one-half pit design includes a combination of Slope A and Slope B as presented in Figure 16-3.

Figure 16-1 Pit Wall Design for Pit Wall Depth Less than 90 m

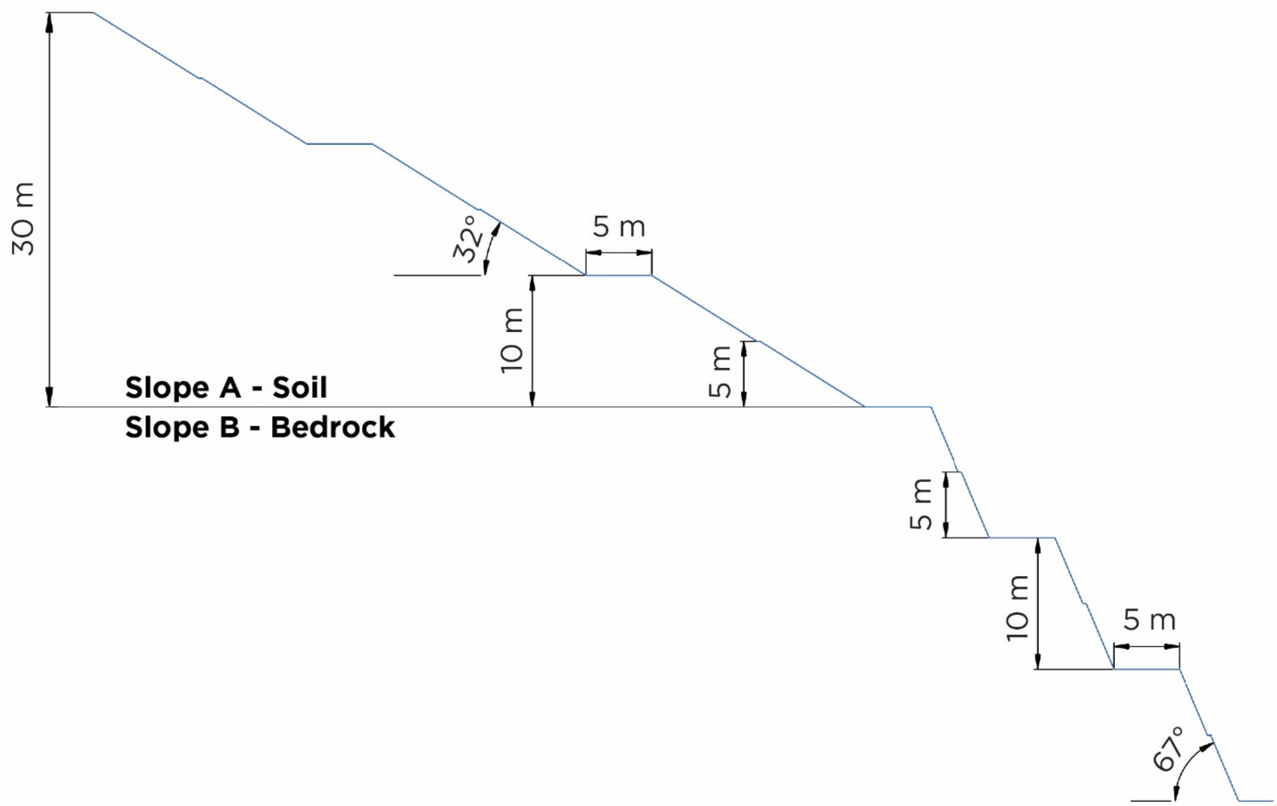


Figure 16-2 Pit Wall Design for Pit Wall Depth of 90 m to 120 m

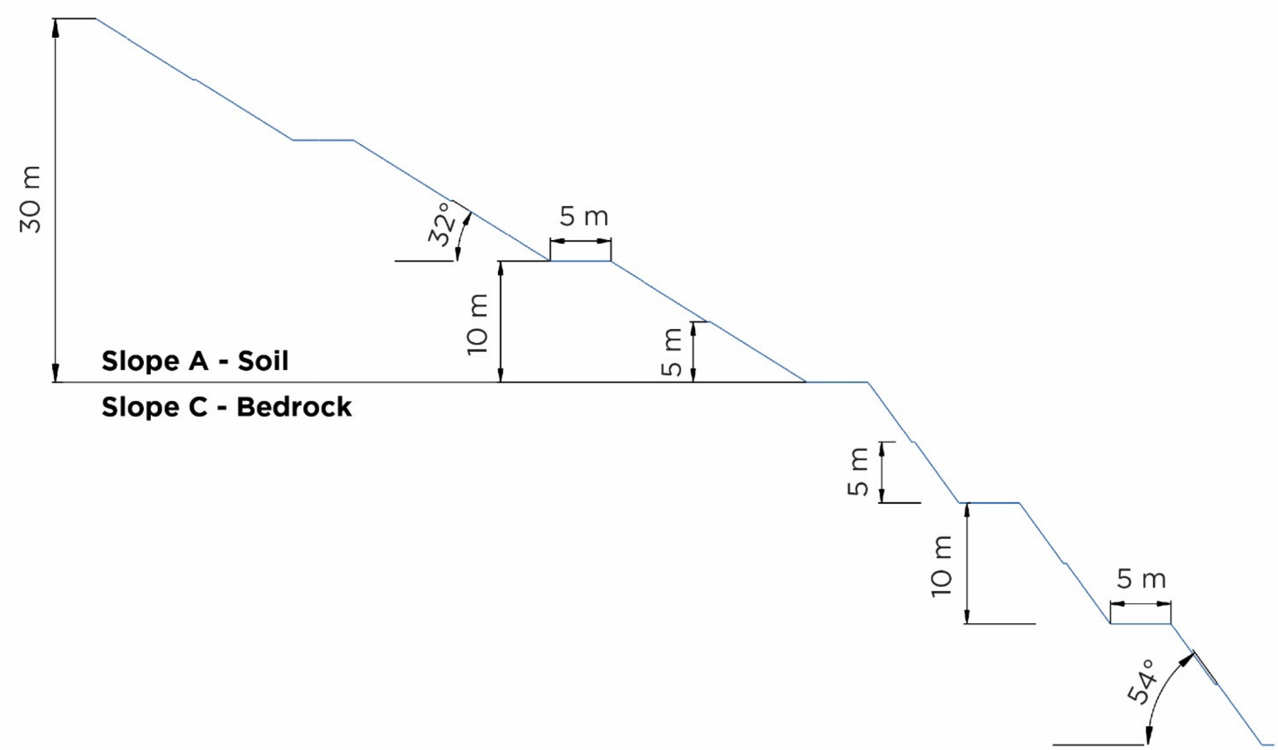
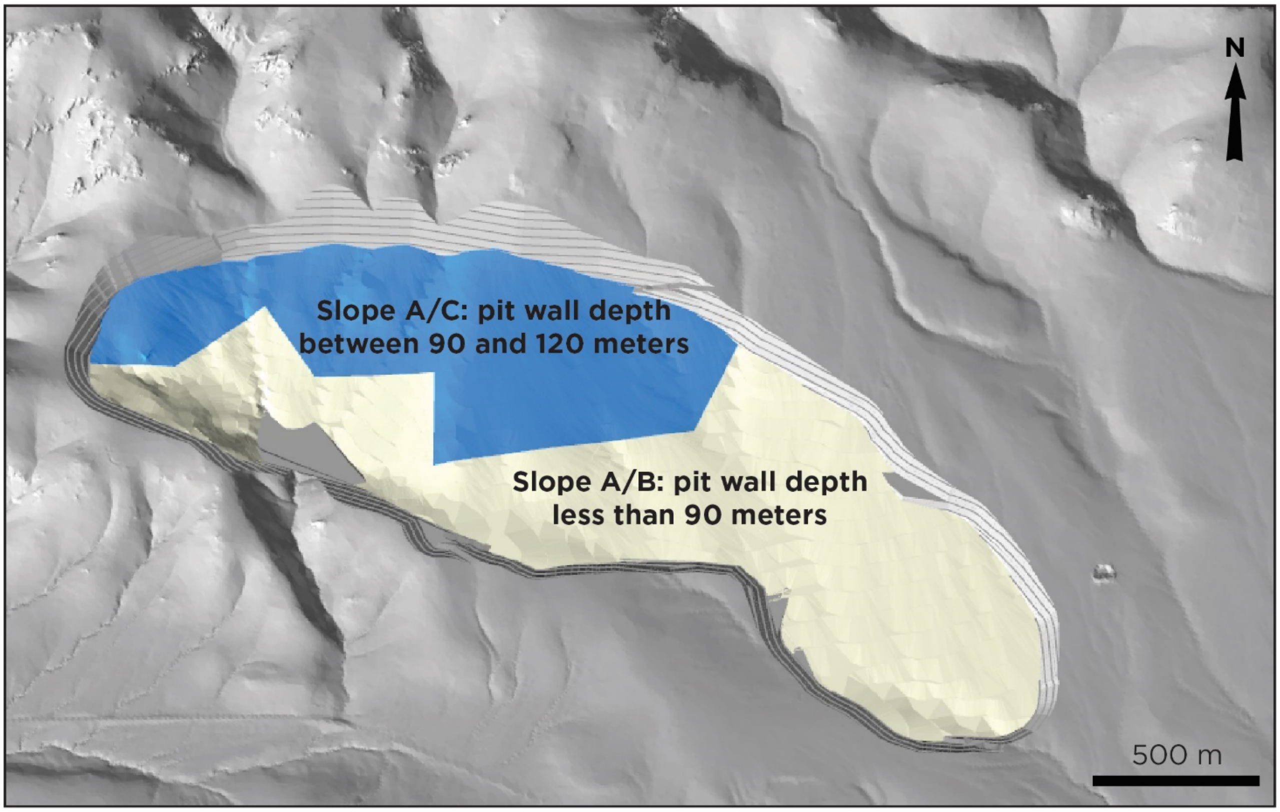


Figure 16-3 Geotechnical Zones



16.4 Pit Limit Determination

16.4.1 Pit Optimization

Dassault Systèmes Geovia Lerchs-Grossman Whittle software (Whittle) was used to produce optimized pit shells based upon the input parameters listed in Table 15-1. Whittle optimization runs were completed with varied revenue factors. Two of the resulting pit shells were chosen for the basis of the pit limitation. An ultimate pit shell, Whittle pit shell 39, was chosen as it has the highest discounted operating cashflow; however, the majority of the value is contained in Whittle shells with lower revenue factors as shown in Figure 15-2 and Table 15-3. Therefore, a smaller pit which is a variation of Whittle pit shell 6, was chosen to be the guideline for pit design as it contains more than 90% of the value and sufficient tonnage to support an initial 30-year mine life which achieves the majority of the project value. This was chosen as the basis of the pit design. The expansion to the east (Portions of Whittle pit shell 39) does not have a pit design, but is included in the Reserve Statement, Life of mine schedule and financials. The combination of the pit design and the pit expansion results in a 46-year mine life. Pit optimization results and modifying factors are discussed further in Chapter 15.

The pit design was expanded to the walls of Whittle pit shell 39 for the western part of the deposit and expanded to the floor. The remaining portion of Whittle Shell 39 is included in the Mineral Reserve as well as the Life of Mine Schedule; however, a pit design was not completed for this expansion, as the discounted cashflow does not increase greatly with its inclusion. Only variations of Slope A and Slope B were considered within the Whittle optimization. Slope C was included in the detailed pit design after optimization was completed. The chosen Whittle shell was also analyzed over a range of slopes and the shape of the shell did not change significantly for bedrock slopes less than 47 degrees. Therefore, the optimized Whittle pit shell 6 continued to be used for the pit limit guideline. The results of the sensitivity of the shell to slope are shown in Figure 15-5.

16.4.2 Pit Wall Depth

The northern portion of the pit was also subject to an artificial limitation as the mineralization ends abruptly in the block model. This caused the pit edge to terminate at the steep slope of the bluff. As the slope was reduced to 39 degrees, the pit depth continued to increase requiring a reduced slope which causes an iterative process of increasing wall depth and reducing slopes. To prevent this from happening, a maximum pit depth of 120 m was set and the wall was limited further south than the Whittle shell. It is recommended that with additional drilling and redefining of the material to the north of the current block model, the optimization process be repeated to ascertain if more of the bluff could be mined and additional ore recovered.

16.4.3 Pit Floor

The Whittle shells include undulating pit floor surfaces which target small pockets of ore. The pit design limited this variability to provide sufficient floor room and to limit floor slopes for the surface miner operation.

16.5 Haul Road Design

In-Pit Ramps will primarily be temporary due to the mining method and sequence chosen. All ramps were designed for a 60 tonne class of haul truck; however, subsequent brief studies have indicated that when including the waste haulage to the plant site and for tailing embankment construction and plant site fill, a larger class of truck should be more economical, and it is recommended that further work be done in this area. The difference in ramp width to accommodate a larger truck is not considered a material change and is not included in this study. The design parameters chosen are listed in Table 16-2. Detailed ramp width parameters are listed by truck model in Table 16-3.

Table 16-2 Ramp Design Parameters

Parameter	Unit	Value
Ramp Total Width	*m*	20
Ramp Gradient	*%*	10

Table 16-3 Ramp Width by Truck Model

Truck Model	Nominal Capacity, tonne	Operating Width, m	Road Width, m	Tire	Berm Height, m	Berm Width, m	Drain Width, m	Total Width, m
CAT 775 G	60	5.7	15.3	24.00 R35	1.1	2.9	0.6	18.8
Komatsu HD605-8	60	5.5	15.0	24.00 R35	1.1	2.9	0.6	18.4
Cat 777 C	90	6.7	18.1	27.00 R49	1.3	3.6	1.0	22.6
Komatsu HD785-7	90	6.9	18.6	27.00 R49	1.3	3.6	1.0	23.2

16.6 Staged Pit Design

The sequenced Whittle pit shells were used as guidelines for designing the mine. In most cases the pit walls were extended to their final alignment to eliminate impractical pushbacks. The perimeters of the pits and stages were smoothed to eliminate significant bends and bullnoses and ramps were included in the pit designs. A summary of the designed pits is presented in Table 16-4.

Table 16-4 Staged Pit Summary

Staged Pit No.	*In-Situ* Ore Tonnes	Recovered Ore Tonnes	Recovered Li Grade, ppm	Stripping Ratio (*Recovered*)
Staged Pit No. 1	53.3M	49.8M	3,386	1.19
Staged Pit No. 2	16.4M	15.3M	3,460	0.99
Staged Pit No. 3 *(excluding Phased Pit. 1 and 2)*	67.1M	62.4M	3,333	1.64
Staged Pit No. 4 *(portion of Whittle Shell 39, not a detailed design)*	55.9M	51.9M	3,074	2.95
Total	**192.7M**	**179.7M**	**3,283**	**1.84**

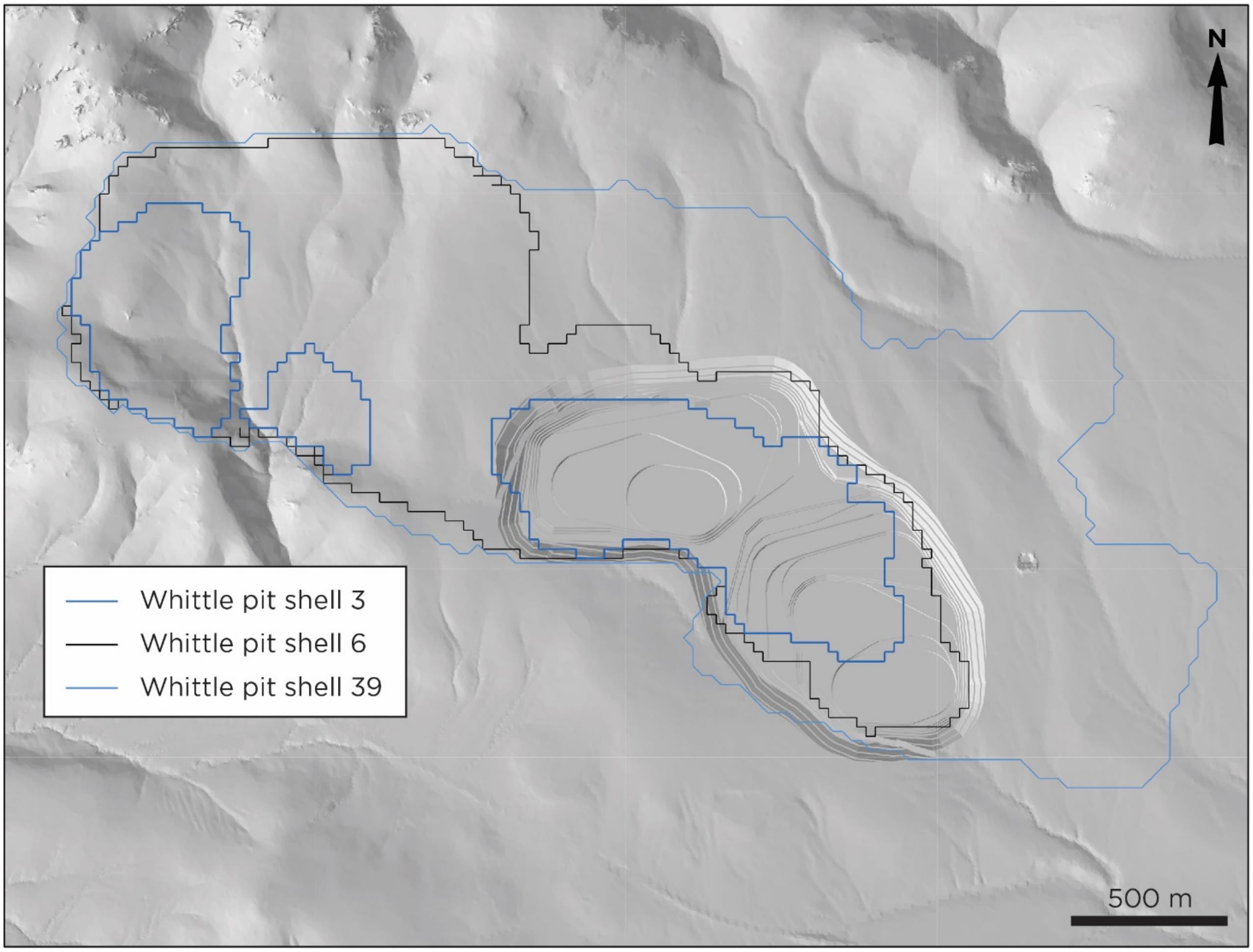
Notes:

1. All references to tonnage are on a dry basis unless otherwise noted.
2. The stripping ratio was calculated based upon the tonnage ratio of (Waste as Defined by the Block Model and Cut Off Grade + Ore Loss) to (Recovered Ore).

16.6.1 Staged Pit Number 1

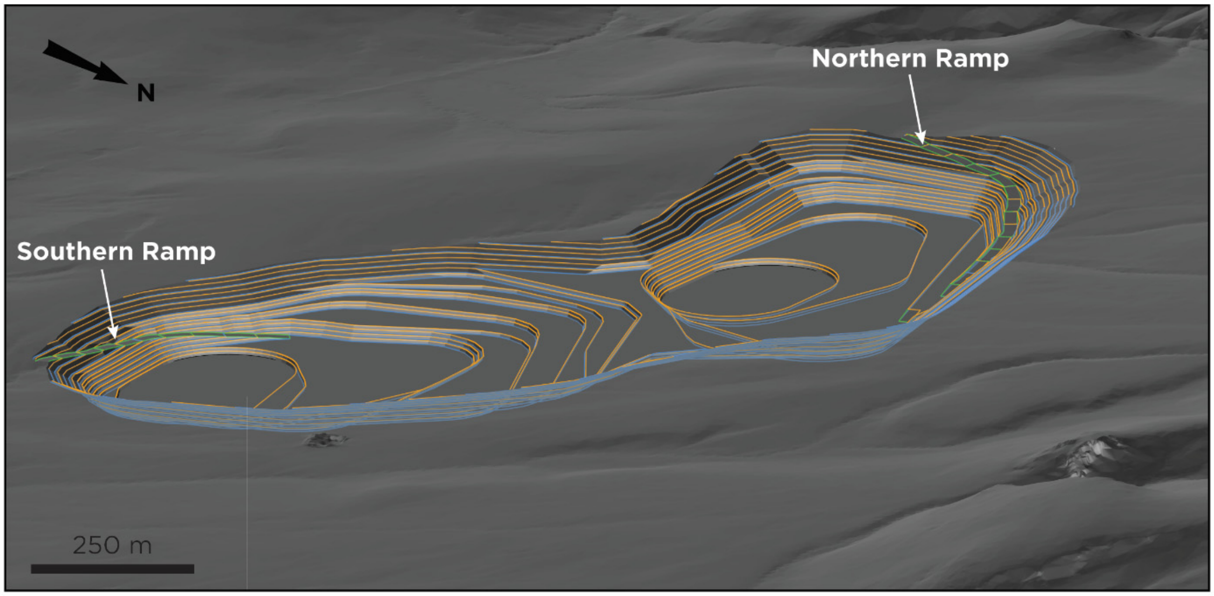
Whittle pit shell 3 was used as the basis for choosing the first stage of mining. This shell includes two mining areas: a northern area and a southern area. The southern area was chosen as the first pit because it provides a more consistent grade and a lower stripping ratio as well as a larger amount of ore than the northern area. Figure 16-4 displays the designed Pit 1 and relevant Whittle pit shell outlines.

Figure 16-4 Staged Pit No. 1 Versus Whittle Shells



Ramps were included in both the northern and southern pit walls. The southern ramp remains in subsequent designs but access will be temporary due to backfilling operations. The ramp locations are shown in Figure 16-5.

Figure 16-5 Staged Pit No. 1 Ramps



16.6.2 Staged Pit Number 2

The northern portion of Whittle pit shell No. 3 was used as a guideline for the second pit. A single temporary ramp was included along the eastern pit wall. Pit 2 and relevant Whittle shell outlines are shown in Figure 16-6 and Figure 16-7.

Figure 16-6 Staged Pit No. 2 Versus Whittle Shells

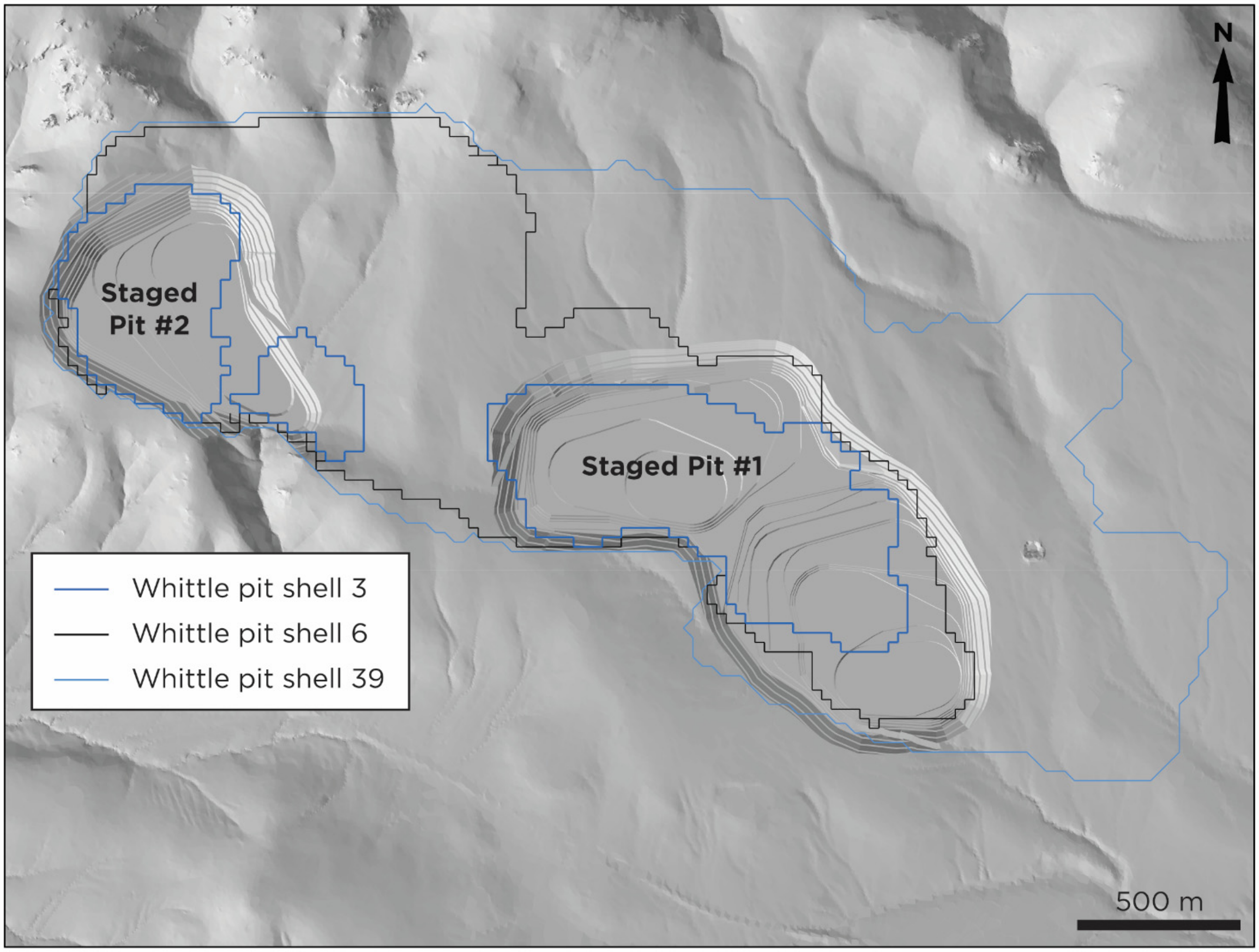
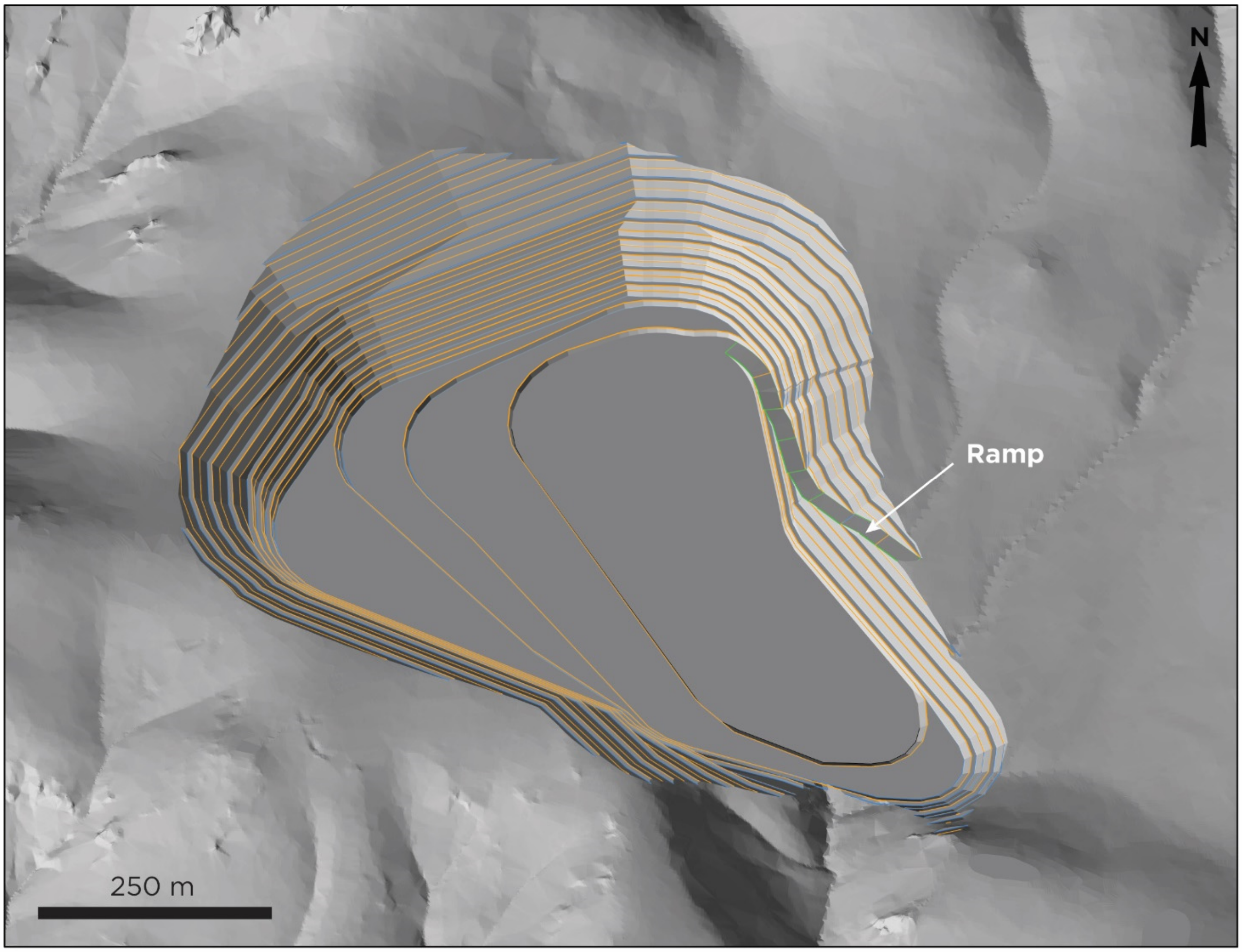


Figure 16-7 Staged Pit No. 2 Ramp



16.6.3 Staged Pit Number 3

The final designed pit includes the remainder of Whittle pit shell 6 as well as a portion of Whittle pit shell 39 to remove the bend along the northeastern pit wall. Three ramps are included in the design. The first ramp will be used to access the ore conveyor, as well as the maintenance shop and fuel farm. The second ramp is temporary and will be used to access the Pit 4 expansion. The final ramp is from the Pit 1 and will be inaccessible due to backfilling operations Figure 16-8 and Figure 16-9 presents the final pit design; Pit 3, and the relevant Whittle pit shell outlines.

Figure 16-8 Staged Pit No. 3 Versus Whittle Shells

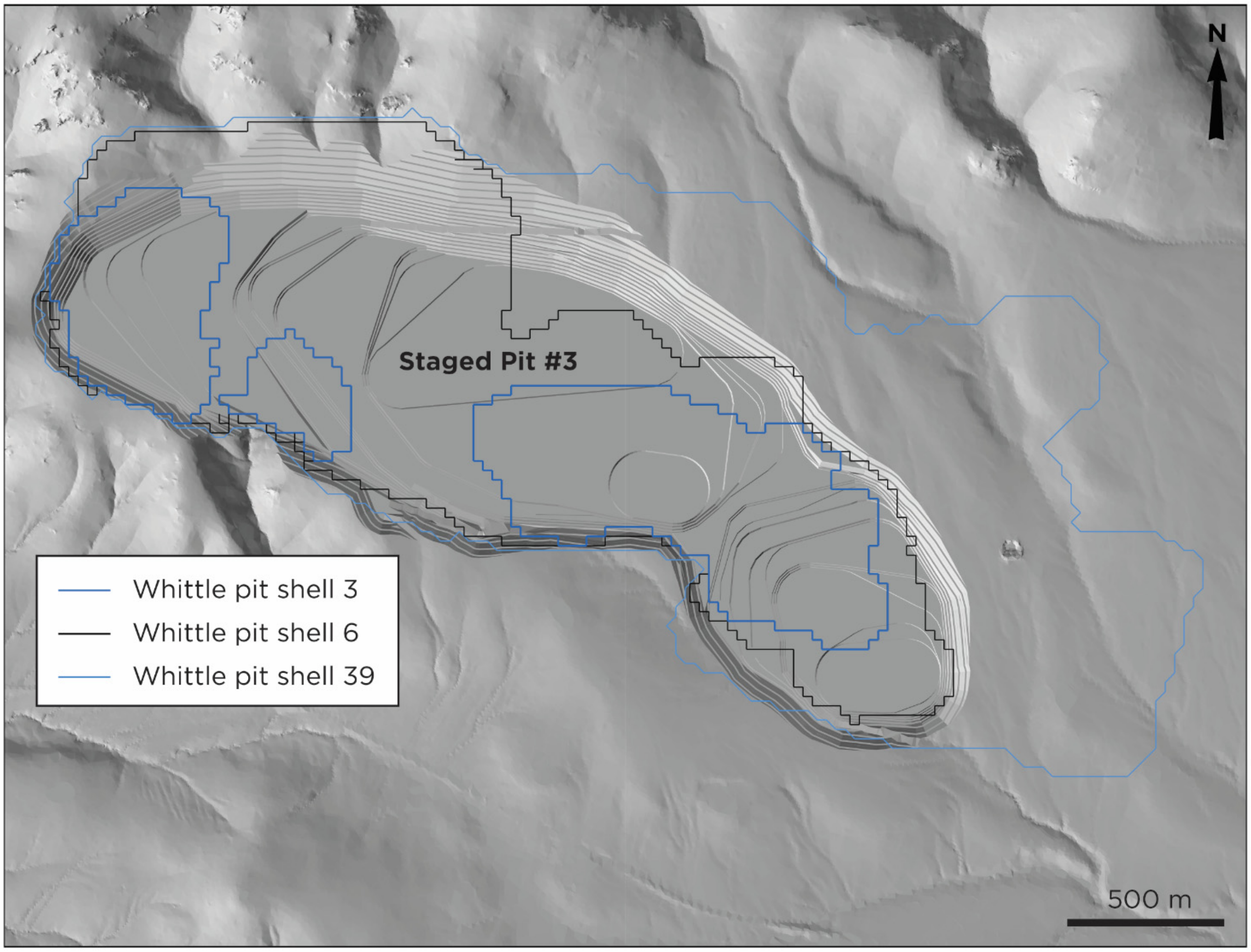
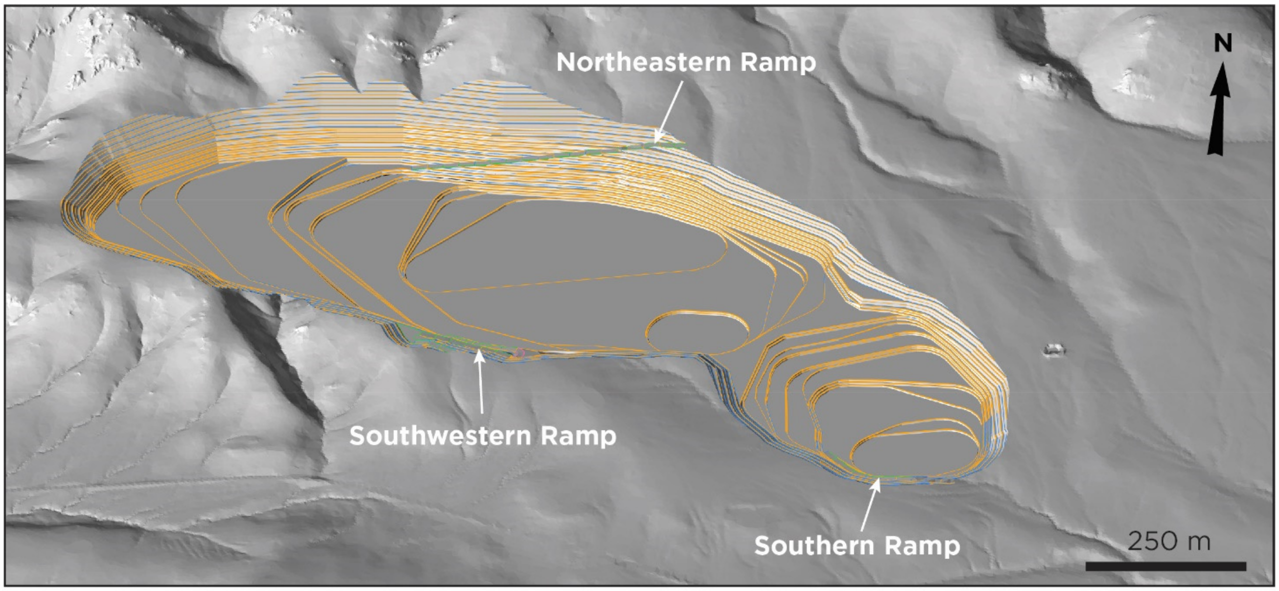


Figure 16-9 Staged Pit No. 3 Ramps



16.6.4 Staged Pit Number 4

A detailed pit design was not completed for Pit 4. This expansion occurs at the end of the mine life and was included in the Mineral Reserve estimate as well as the Life of Mine Schedule. It consists of the remaining portion of Whittle pit shell 39, as shown in Figure 16-10.

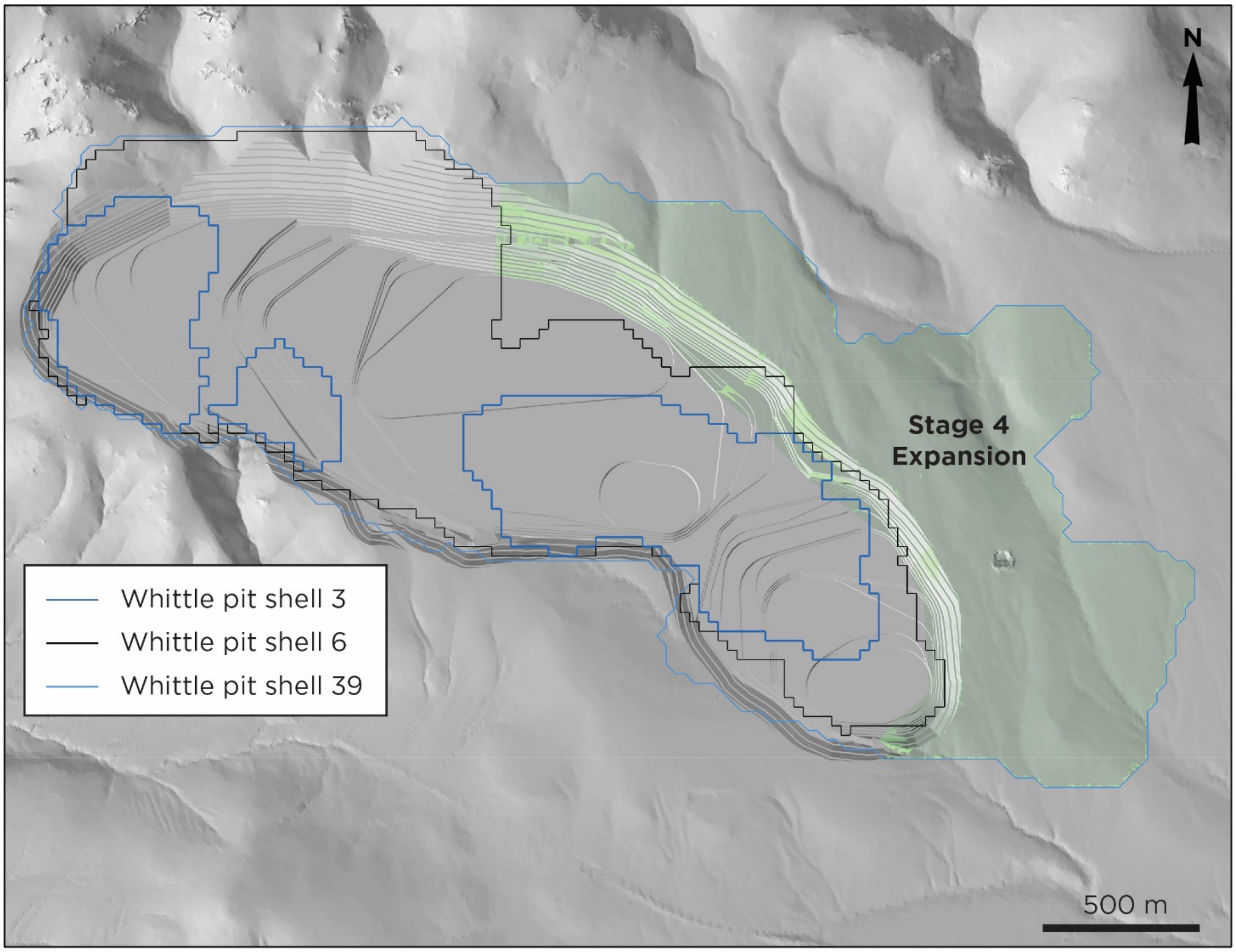
The inclusion of Pit 4 into the Mineral Reserve without a detailed pit design is premised on the detailed assessment of the first three pits in relation to their correlation to the optimization shells, and due to the very long mine life which ensures that the cost incurred, and revenue received through mining the final stage will not make a material difference to the overall project value.

The three pit designs completed have shown a good correlation to the optimization shells and required little deviation to create the practical mining designs, which would be expected to be repeated for the final pit; hence, it is reasonable to expect that the ore recovered, and waste removed would also be similar, leading to a similar cost and revenue profile.

The first three pits cover a 33-year mine life, therefore when Pit 4 is planned to be mined the discounting factors that would be applied when calculating the NPV are in excess of 95% which indicates that the last 12 years of processing while adding significant cash flow would add very little value to the project NPV, as shown in Figure 22-5.

It is on these bases that the final pit can be included in the Mineral Reserve without a detailed design.

Figure 16-10 Staged Pit No. 4 Versus Whittle Shells



16.7 Waste Handling and Dump Design

The waste material is primarily claystone material that is below the 2,500 ppm Li cut-off grade, as shown in as shown in Table 16-5 and Figure 16-11. Table 16-5 lists the waste material by lithology.

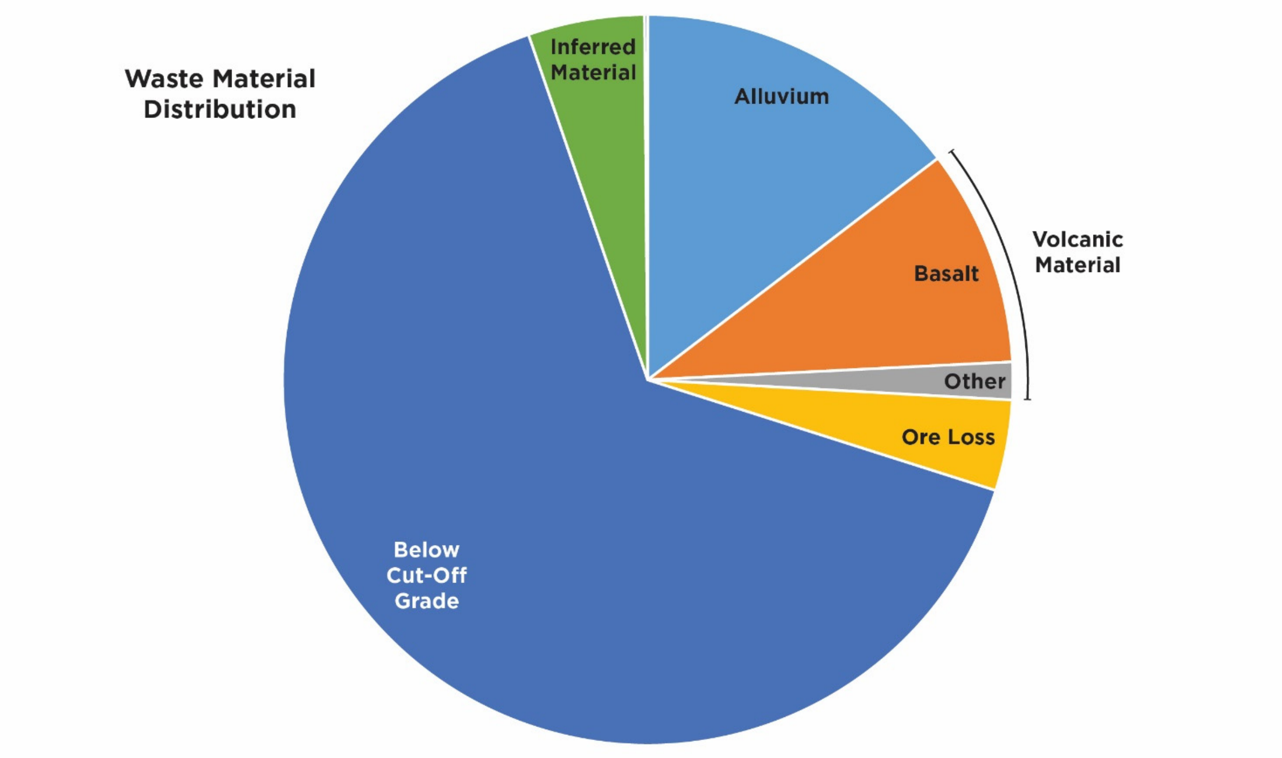
Table 16-5 Waste Material Tonnage

Lithology	*In-Situ* Density, tonne/m^3	Tonnage
Alluvium	1.52	48.3M
Basalt	2.51	31.7M
Volcanic	1.96	5.5M
Claystone	1.79	244.4M
Inferred Material	*1.79*	*17.0M*
Ore Loss	*1.79*	*13.3M*
Below Cut-Off Grade	*1.79*	*214.1M*
Unclassified Material	1.79	0.5M

Notes:

1. All references to tonnage are on a dry basis unless otherwise noted.
2. The *In-Situ* Densities listed were obtained from the resource model and are also listed in Table 11-1.

Figure 16-11 Waste Material Distribution



As the majority of the waste material is backfilled into the pit, the designed waste dump is relatively small. The design parameters are listed in Table 16-6. The designed dump has a capacity of 2.4 million m^3, large enough to allow the pit to be developed sufficiently to commence backfilling. Figure 16-12 shows the location of the Waste Dump.

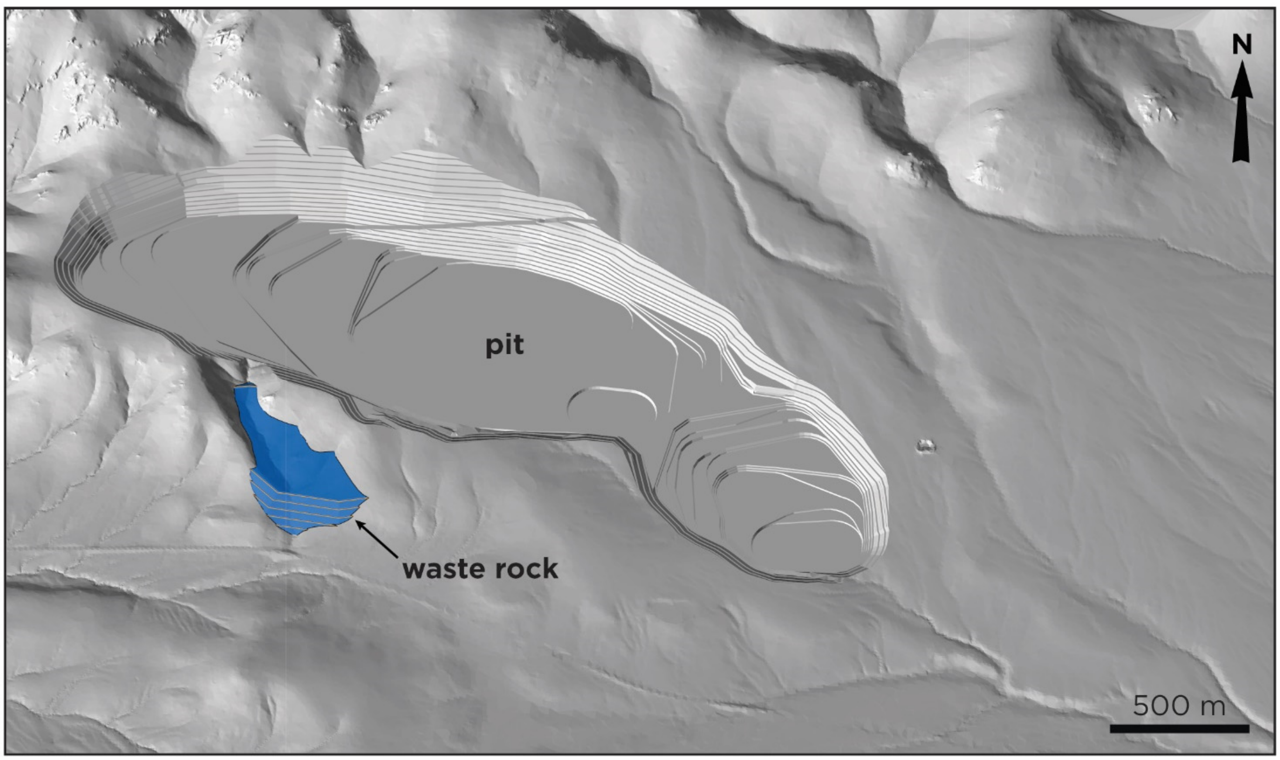
Detailed backfill designs were not completed for this stage of the project except that the mine schedule returned the waste material to the previously mined panels which were assumed to be able to store the same volume as was removed including an allowance for swell. This assumption also assumes that the final landform is similar to the pre-mining surface.

Table 16-6 Waste Dump Design Parameters

Parameter	Unit	Value
Min. Offset from Pit Boundary	m	50
Lift Height	m	10
Bench Width	m	5
Overall Slope	deg.	18

Parameter	Unit	Value
Lift Angle	deg.	22
Swell	%	25

Figure 16-12 Waste Dump Location



16.8 Life of Mine Schedule

Deswik Scheduling software was used to schedule waste and ore operations. The software was used to provide levelled annual plans to meet the Project Phase 1 production goal of 30,000 tonnes of LCE product per year and the Phase 2 production goal of 60,000 tonnes of LCE product per year as shown in Table 16-8.

The designed Pits 1 through 3 as well as the Pit 4 expansion were included in the Life of Mine Schedule.

The scheduling methodology involved slicing each pit into 150 m wide panels. The panels were then sliced horizontally by 5 m benches, as per the design. An ore grade shell at 2,500 ppm Li was then used to assign these blocks to either the excavator operation or surface miner operation. The excavator is primarily used to remove waste while the surface miner will target ore (refer to Section 16.1 for a description of the mine operations or Section 16.10 for a description of equipment applications). The assignation was based upon the majority of the solid being inside or outside the grade shell. This results in the scheduling software reporting the surface miner as mining some waste and the excavator as mining some ore. In a practical situation, it is expected that the excavator will remove waste material and then some, albeit minimal, ore to provide a relatively smooth, but not horizontal surface for the surface miner to operate on. To account for this, the ore mined by the excavator has been included in the Life of Mine Schedule as recovered ore but with an 80% Mining Recovery applied. The ore mined by the surface miner has been included with a 95% Mining Recovery applied. The schedule parameters are summarized in Table 16-7.

Table 16-7 Life of Mine Parameters

Parameter	Unit	Value
Phase 1 Product Goal	tonnes recovered LCE	30,000
Phase 1 Period	year	4.5
Phase 2 Product Goal	tonnes recovered LCE	60,000
Phase 2 Period	year	remaining Life of Mine
Mill Recovery	%	83
Mining Recovery – Surface Miner	%	95
Mining Recovery – Excavator	%	80
Mining Recovery (average for Life of Mine)	%	93
Panel Width	m	150

During the first five (5) years of production, a stockpile was used to store some 'lower grade' material to ensure the mill feed volume and grade remains relatively consistent through co-mingling with higher-grade ore. The 'lower grade' material consists of 2500 to 2700 ppm Li ore and the stockpile reaches its maximum capacity during Year 3 at 541,000 tonnes.

The annual mined tonnes and recovered ore tonnes varies throughout the life of the mine to ensure the production of a fairly consistent output of lithium. The graphs presented in Figure 16-13 and Figure 16-4 show the production for the entire life of mine. The graph presented in Figure 16-15 shows the total mined tonnes by operation.

The graphs show that as the schedule is driven by a final product tonnage the feed tonnage must rise as the grade mined declines. This shows well in years 10-20 where the feed grade is in excess of 3,500 ppm and the tonnage is 4.0 Mtpa, whereas when the grade drops to 3,000 ppm after year 30 the tonnage fed into the plant must rise to 4.5 Mtpa, an increase of 12.5%.

This variability in ore tonnage requirement is compounded by the increasing strip ratios within the mine, as shown in Figure 16-6. Decreasing ore grade after year 36 is compensated by an increase in ore tonnage into the plant to maintain the design production rate of 60,000 tpa LCE, which in turn increases the required mining rates.

Figure 16-13 Lithium Production

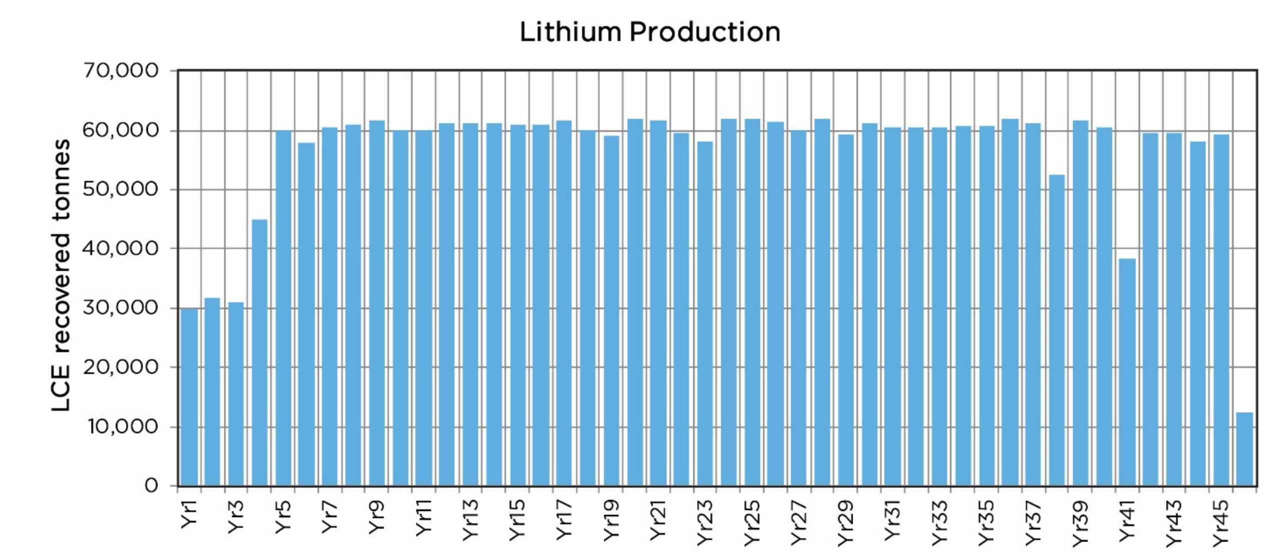


Figure 16-14 Processing Plant Feed and Grade

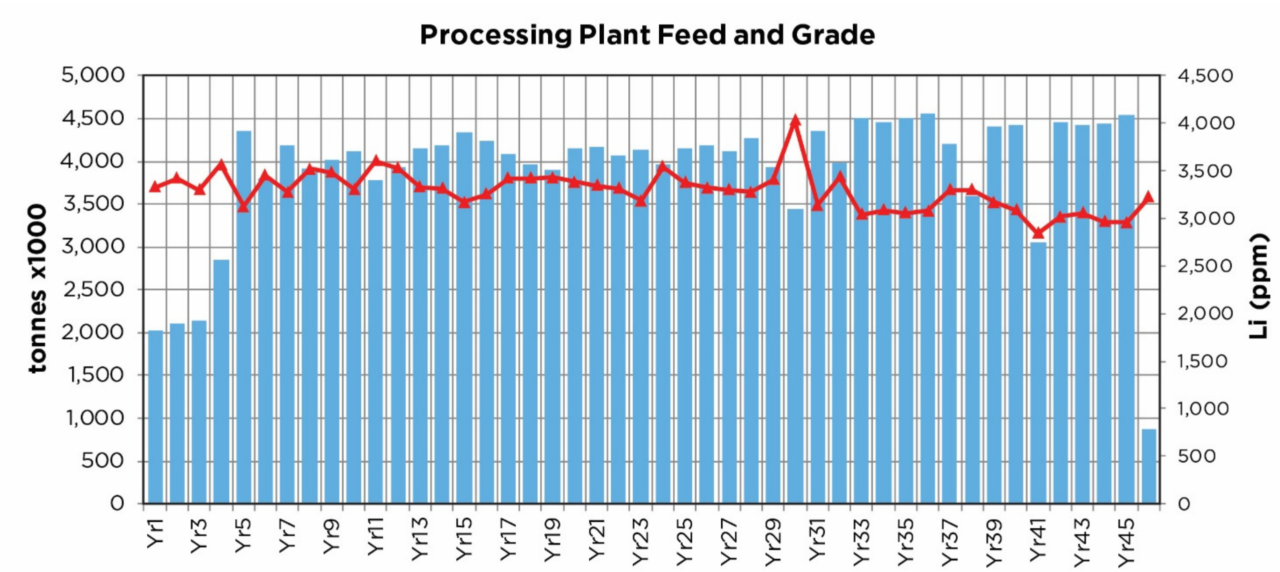


Figure 16-15 Mining Tonnage

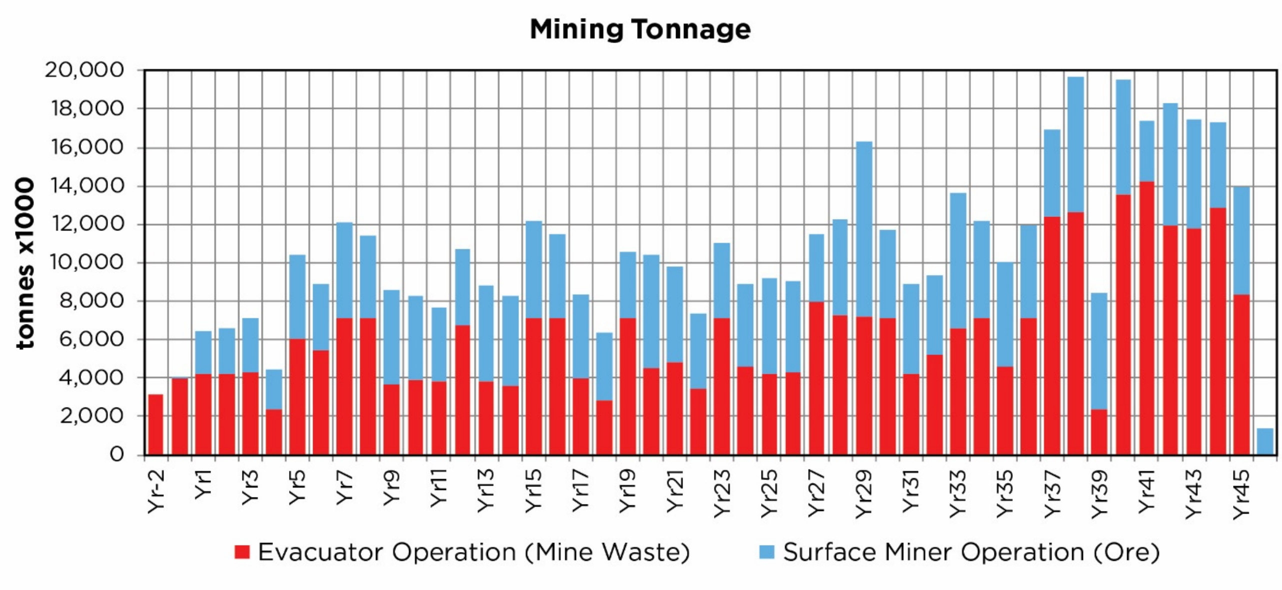


Figure 16-16 Recovered Ore Tonnes and Strip Ratio

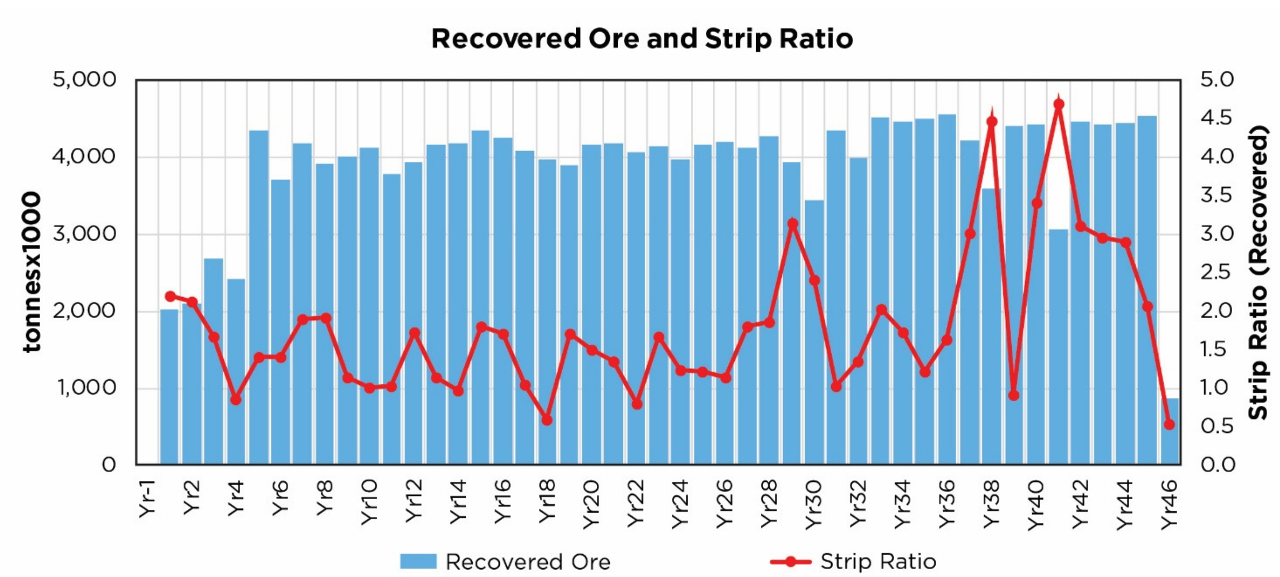


Table 16-8 Life of Mine Schedule

Year	Recovered Ore, ktonnes	Recovered Li Grade, ppm	Total Mined ktonnes	Strip Ratio (*Recovered*)	Mill Feed	
					ktonnes	Li Grade, ppm
Yr-2	-	-	3,127	-	-	-
Yr-1	17	2,749	3,992	425.97	-	-
Yr1	2,012	3,333	6,448	2.20	2,029	0
Yr2	2,102	3,424	6,584	2.13	2,102	3,328
Yr3	2,676	3,156	7,129	1.66	2,135	3,424
Yr4	2,413	3,744	4,482	0.86	2,853	3,298
Yr5	4,350	3,122	10,450	1.40	4,350	3,567
Yr6	3,698	3,478	8,876	1.40	3,799	3,122
Yr7	4,179	3,279	12,078	1.89	4,179	3,454
Yr8	3,915	3,522	11,444	1.92	3,915	3,279
Yr9	4,011	3,486	8,580	1.14	4,011	3,522
Yr10	4,115	3,308	8,293	1.02	4,115	3,486
Yr11	3,780	3,600	7,684	1.03	3,780	3,308
Yr12	3,927	3,525	10,709	1.73	3,927	3,600
Yr13	4,148	3,334	8,845	1.13	4,148	3,525
Yr14	4,180	3,313	8,278	0.98	4,180	3,334
Yr15	4,341	3,174	12,201	1.81	4,341	3,313
Yr16	4,242	3,253	11,501	1.71	4,242	3,174
Yr17	4,081	3,425	8,327	1.04	4,081	3,253
Yr18	3,970	3,419	6,347	0.60	3,970	3,425
Yr19	3,898	3,430	10,546	1.71	3,898	3,419
Yr20	4,148	3,384	10,410	1.51	4,148	3,430
Yr21	4,175	3,347	9,815	1.35	4,175	3,384
Yr22	4,060	3,319	7,334	0.81	4,060	3,347
Yr23	4,138	3,182	11,041	1.67	4,138	3,319
Yr24	3,961	3,543	8,874	1.24	3,961	3,182
Yr25	4,155	3,375	9,215	1.22	4,155	3,543
Yr26	4,188	3,324	9,003	1.15	4,188	3,375
Yr27	4,118	3,301	11,505	1.79	4,118	3,324
Yr28	4,278	3,281	12,216	1.86	4,278	3,301
Yr29	3,932	3,409	16,313	3.15	3,932	3,281
Yr30	3,444	4,029	11,746	2.41	3,444	3,409

Year	Recovered	Recovered	Total Mined	Strip Ratio	Mill Feed	
Yr31	4,353	3,141	8,853	1.03	4,353	4,029
Yr32	3,981	3,434	9,372	1.35	3,981	3,141
Yr33	4,506	3,040	13,643	2.03	4,506	3,434
Yr34	4,453	3,085	12,150	1.73	4,453	3,040
Yr35	4,502	3,059	10,023	1.23	4,502	3,085
Yr36	4,553	3,078	11,982	1.63	4,553	3,059
Yr37	4,207	3,298	16,909	3.02	4,207	3,078
Yr38	3,592	3,303	19,658	4.47	3,592	3,298
Yr39	4,409	3,170	8,456	0.92	4,409	3,303
Yr40	4,429	3,088	19,554	3.41	4,429	3,170
Yr41	3,054	2,840	17,409	4.70	3,054	3,088
Yr42	4,455	3,020	18,279	3.10	4,455	2,840
Yr43	4,419	3,053	17,469	2.95	4,419	3,020
Yr44	4,445	2,966	17,329	2.90	4,445	3,053
Yr45	4,537	2,959	13,946	2.07	4,537	2,966
Yr46	876	3,223	1,348	0.54	876	2,959

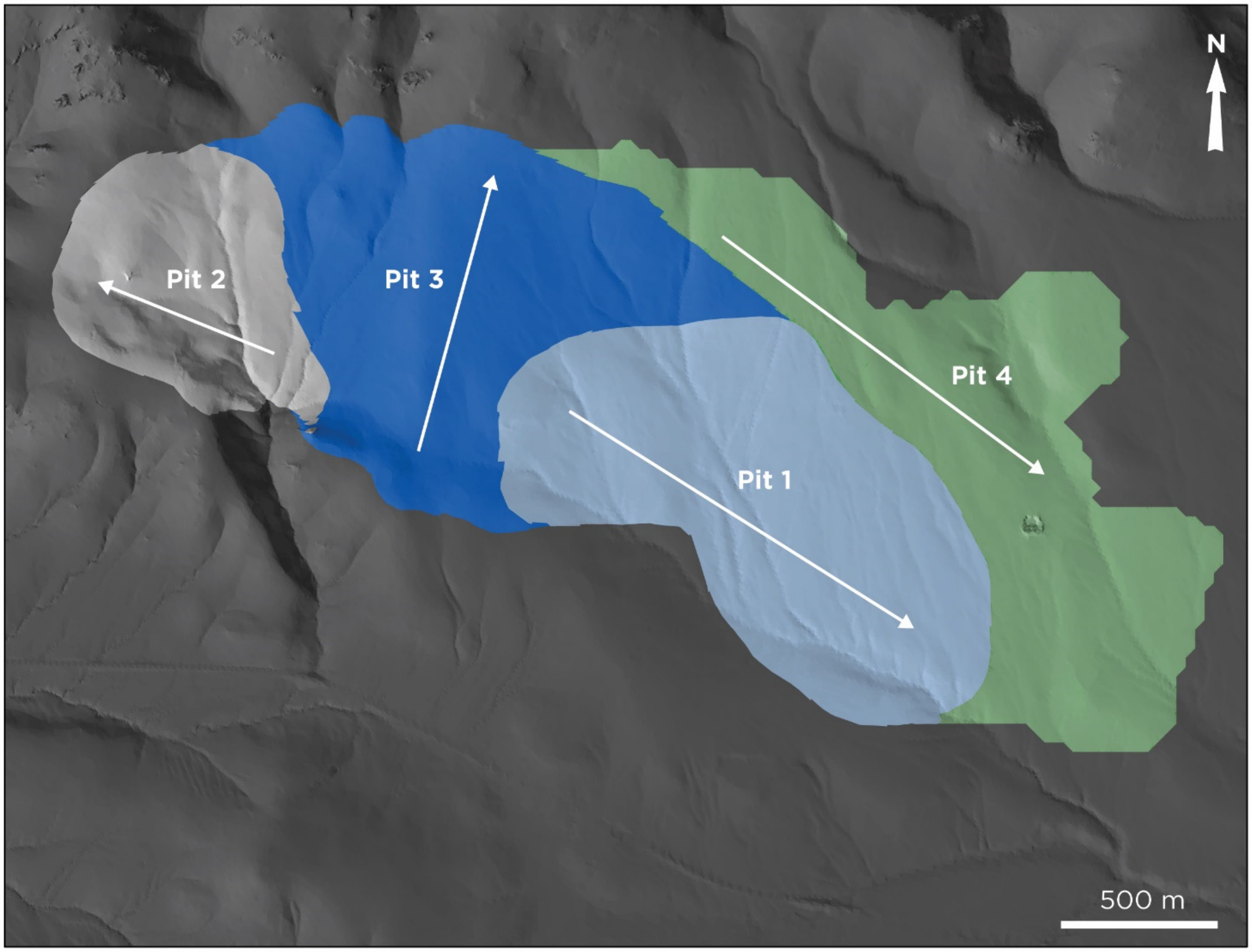
Notes

1. All references to tonnage are on a dry basis unless otherwise noted.
2. The stripping ratio was calculated based upon the tonnage ratio of (Waste as Defined by the Block Model and Cut Off Grade + Ore Loss) to (Recovered Ore).

Two schedules were completed for Stage Pit Number 1 to determine which direction mining should follow. The directions investigated were north-to-south and south-to-north. The study concluded that the better result in terms of grade and strip ratio could be obtained by a sequence of mining which followed panels from north to south. Some Basalt material is mined early in the mine life with this sequence and can be used for infrastructure construction.

Pit 2 was sequenced from south to north due to the stripping ratio increasing in this direction, which allows for lower mining rates and cost to be undertaken earlier in the mine life. Pit 3 was scheduled from south to north due to operations logistics, and Pit 4 was sequenced from north to south. The direction of mining for all pits is shown in Figure 16-17.

Figure 16-17 Direction of Mining



The life of mine schedule results in 46 years of commercial production mining with two (2) years of pre-production waste stripping. The pre-production stripping can be reduced to a single year; but was scheduled to coincide with plant construction. This allowed for mine waste to be utilized as construction fill, removing the need for imported fill.

Table 16-9 summarizes the time associated with the stages of the mine life.

Table 16-9 Timeline for Mine Stages

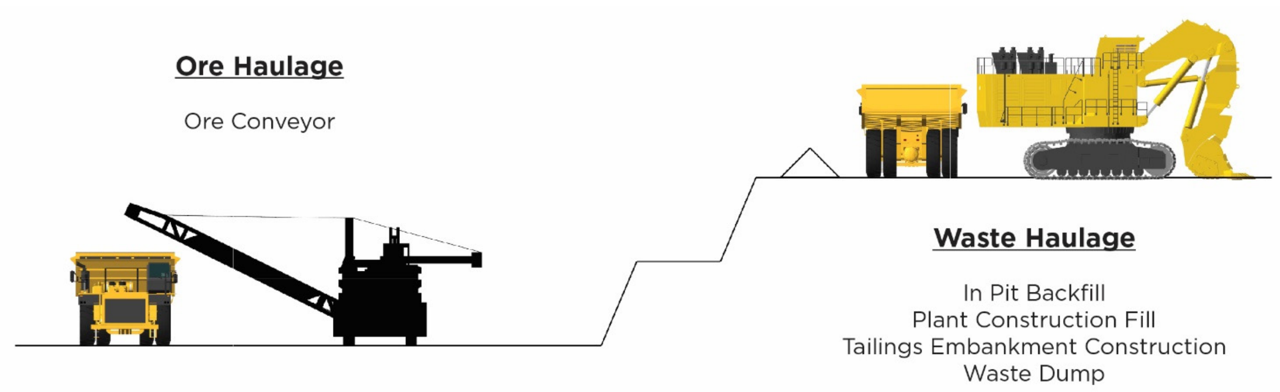
Pre-Production Stripping	Years
Staged Pit No. 1	2
Ore Production	Years
Staged Pit No. 1	14.5

Staged Pit No. 2	4.0
Staged Pit No. 3	14.5
Staged Pit No. 4	12.2
Total Ore Production	46
	Years
Total Mine Activities	48

16.9 Haul Profiles

Haulage profiles were completed for the pits and the mined tonnes of ore and waste were allocated accordingly. The number of trucks, fuel usage and maintenance costs were estimated utilizing the required operating hours resulting from the haulage profile cycle times. The longest cycle times (haulage route to the plant and tailings embankment) are just under one hour. The ore is hauled to an overland conveyor near the pit limit where it is then transported to the plant for processing. The waste is hauled to the plant and tailings embankment areas, to previously mined portions of the pit, or to the nearby waste dump. The destination of the ore and waste material from the pit is summarized in Figure 16-18.

Figure 16-18 Truck Haulage Destinations



16.10 Equipment Requirements

16.10.1 Equipment Selection

The mining equipment consists of a surface miner, excavators, haul trucks and support equipment. The major and support equipment requirements are summarized in Table 16-10.

Table 16-10 Major Equipment Selected

Equipment	Class	Max. Quantity for First 25 Years	Max. Quantity
Surface Miner		1	1
Excavator	11 m^3	1	2
Haul Trucks	60 m^3	13	28
Front End Loader		1	1
Dozer	18-22 m^3	4	5
Grader		2	2
Water Truck		1	1

Table 16-11 Support Equipment

Equipment	Max. Quantity
Telehandler	1
Small Utility Excavator	1
Service Truck	1
Fuel/Lube Truck	1
50t All Terrain Crane	1
Lighting Tower	8
Light Duty Passenger Vehicles	12

An overland ore conveyor is used to transport ore from the pit margin to the plant.

A surface miner was chosen to mine the ore due to its ability to selectively and efficiently mine the sub-horizontal layers of ore. Surface miners also have the ability to mine the ore without blasting or crushing, while simultaneously producing a crushed ore feed at 100% passing 150 mm. This simplifies the process of using an overland ore conveyor to transport the ore from the pit edge to the process plant. Based upon the manufacturer's specifications a single surface miner is capable of meeting the annual production rates presented in Table 16-12.

Rules of thumb typically dictate the use of two smaller machines to meet the production rate in case of the failure of one machine. This was not contemplated because a smaller surface miner would be on its threshold of being capable of breaking the harder material and would be less efficient in loading the 60 m^3 trucks.

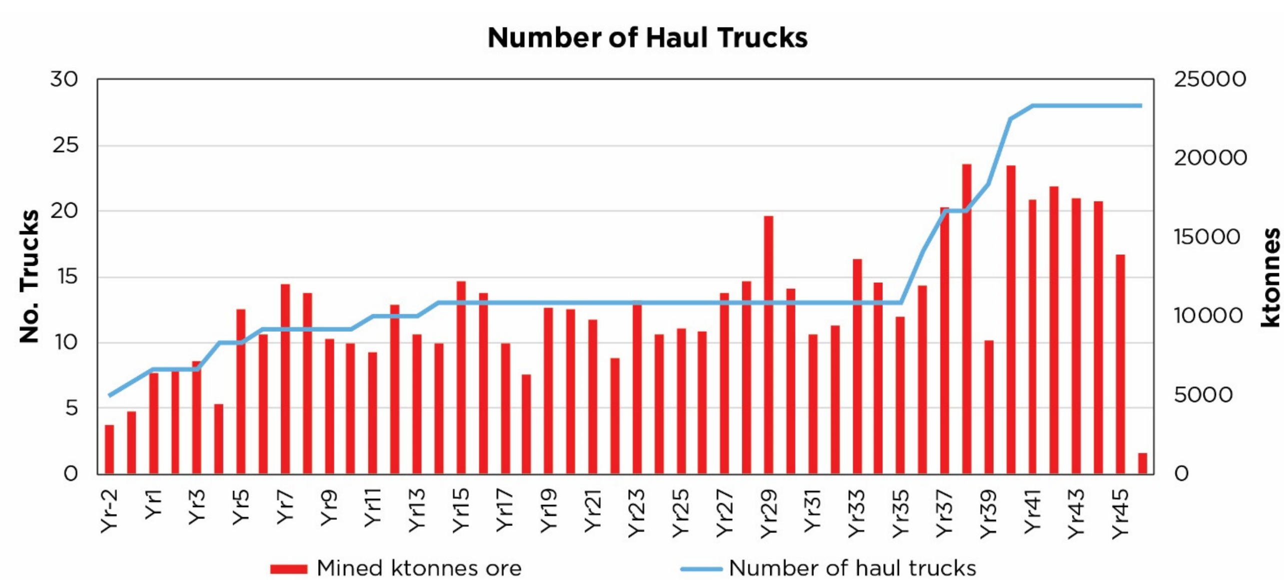
Instead of having a second surface miner, two alternative options are available within the projected equipment list. To account for the varying lithium grade over time, the specified surface miner is capable of mining more ore than is required and the excess can be stockpiled and rehandled if machine availability is compromised. Alternately, the excavator can also mine the ore when needed as generally this machine is in advance of the surface miner and can move from waste mining for discrete periods.

A hydraulic excavator was selected to mine the waste material. The excavator is sized large enough to be able to free-dig the material. The excavator was chosen with a bucket capacity of 11 m^3 which has the capacity to meet the annual rate required for most of the mine life as shown in Table 16-12. It is also appropriately sized for the haul truck fleet. A second excavator is purchased in the last quarter of the mine life due to the increased stripping ratio of the Pit 4.

A front-end loader has been included to manage the stockpile initially and any rehandling of ore near the conveyor next to the pit.

The haul truck size selected is a 60 m^3 class of truck; however, the number of trucks increases significantly at the end of the mine life due to the increased stripping ratio and mined tonnage which could provide an opportunity for improved economics by utilizing larger trucks. Figure 16-19 presents the required haul truck fleet size over the life of mine.

Figure 16-19 Truck Fleet Size



16.10.2 Equipment Productivity

The mine is planned to be operated 24 hours per day with two (2) 12-hour shifts. Productivity calculations are based upon 350 available days per year. Non-operating and not manned delays include supervisor communication, transport to workplace, equipment pre-start check and meal breaks. The non-operating and manned delays include time waiting for trucks, machine relocation, fuel and lube for equipment and comfort breaks. The excavator productivity also includes delays for dozer clean-up.

The calculated annual production rate for the excavator is based upon first principles, with a loading cycle time. The surface miner annual productivity is based upon a rate provided by the manufacturer. Table 16-12 presents the productivity rates of the excavator and surface miner.

Table 16-12 Excavator and Surface Miner Productivity

Parameter	Unit	Excavator	Surface Miner
Operational Factors			
Available days per year	*days*	350	350
Maintenance Availability	*%*	85	85
Non-Operating and Not Manned	*hours/shift*	1.333	1.333
Non-Operating and Manned	*hours/shift*	1.225	0.917
Overall Utilization	*%*	60.4	62.9
Production Factors			
Bucket Capacity	*m^3*	11	
Bucket Fill Factor	*%*	90	
Operator Efficiency	*%*	85	
Load Time	*s*	6.0	
Swing Angle	*deg.*	135	
Swing Speed	*rpm*	4.8	
Swing Time	*s*	4.7	
Dump Time	*s*	3.0	
Cycle Time	*s*	21.8	
Swell	*%*	25	
In Situ Moisture	*%*	25	
Density[1]	*t/b. m^3*	1.84	1.79
Production Rate	*t/op. hr.*	1529	1360
Annual Production Rate	***Mt/yr***	**8.1**	**7.2**

Notes:

1. The waste density is the weighted average of the block model rock type and associated density that was included in the pit design and expansion.

16.11 Personnel Requirements

A rotating schedule of four (4) days on and four (4) days off has been included for operations and maintenance personnel. A Monday through Friday schedule has been included for management and technical services positions. It is assumed that local talent will be available and no fly in-fly out adjustments have been included.

The positions included in Mining labor are listed in Table 16-13. Safety and training personnel, as well as other general and administrative roles, are not included, as these are accounted for in in the plant labor schedule. It is assumed that light duty vehicle maintenance will be performed offsite and so these positions are not listed. The cost for offsite maintenance of the light duty vehicles is included.

Table 16-13 Personnel List

Position	Roster	No. Employed	No. per Shift
Management			
Mine Manager	M-F	1	1
Personal Assistant	M-F	1	1
Technical Services			
Senior Mine Engineer	M-F	1	1
Senior Mine Geologist	M-F	1	1
Grade Control Geologist	M-F	1	1
Operations			
Mining Superintendent	M-F	1	1
Shift Supervisor	4/4	4	1
Mine General Foreman	M-F	1	1
Excavator Operator	4/4	4 to 8	1 to 2
Surface Miner Operator	4/4	4	1
Truck Operator	4/4	24 to 112	6 to 28
Front End Loader	4/4	4	1

Position	Roster	No. Employed	No. per Shift
Dozer	4/4	12 to 20	3 to 5
Grader	4/4	4 to 8	1 to 2
Water Truck Operator	4/4	4	1
Dewatering and General Laborer	4/4	8	2
Mining Maintenance			
Maintenance Superintendent	M-F	1	1
Maintenance Planner	M-F	1	1
Boilermaker	4/4	4 to 12	1 to 3
Mechanical Fitter	4/4	4 to 12	1 to 3
Electrician	4/4	8	2
Service Person	4/4	2 to 6	~1 to 2

16.12 Fuel

Fuel burn rates were provided by manufacturers within the budgetary quotations for major equipment. Fuel consumption of light duty vehicles was estimated based on internal databases.

16.13 Drilling and Blasting

The "*Factual Geotechnical Investigation Report for Mine Pit Area*" (Mar. 2018) completed by WorleyParsons 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 55.4MPa. The UCS test results in the Worley Parsons data range from 0.61 to 21.82 MPa with an average of 7.7MPa. The range of UCS results are within the cutting range of the surface miner model chosen. The seismic velocity is also rippable with a D10 dozer.

From the test results in the reports, and the machine excavation of the test pit, it is expected that only the basalt waste material may require blasting, and this was the assumption included in the PFS. This test pit was excavated without blasting. The remaining waste as well as the ore will be mined without explosives. Due to the relatively small quantity of waste requiring blasting, a contractor will be used for the drilling and blasting on site.

16.14 Dewatering

The groundwater inflow estimate was completed by Piteau Associates using Whittle pit shell 6 as a guide. This estimate was used to size the dewatering pump. Table 16-14 lists the three levels of estimate. The dewatering pump chosen is capable of pumping peak requirements up to 340 m^3/hr.

Table 16-14 Groundwater Estimate

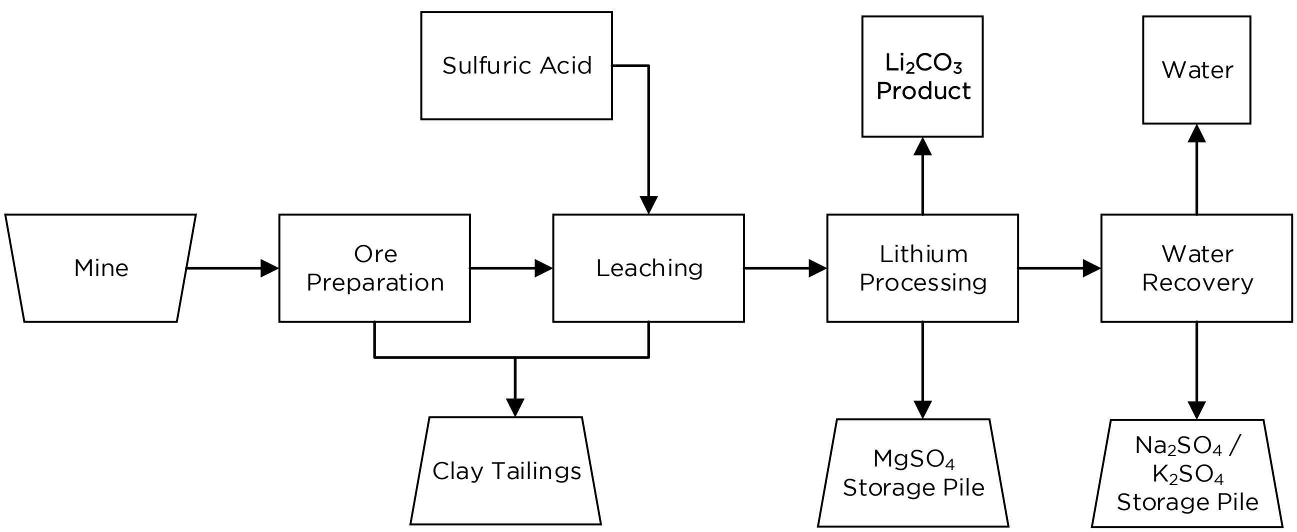
Category	Flow Rate
Low	74 m^3/hr
Central	112-114 m^3/hr
High/Peak	163-191 m^3/hr

17. Recovery Methods

This Section describes the major processing areas of the operation that will recover lithium from the ore. The proposed flowsheet is based on test work described in Section 13. The process employs industry-standard, commercially available equipment that will be assembled in a unique arrangement and operated with novel conditions. This information serves as the basis for the development of the capital and operating costs presented in Section 21. The electrical load breakdown by major operating area is provided in Table 18-7.

The recovery process consists of the following major components (Figure 17-1): i) Ore preparation and leaching (Section 17.1) and ii) lithium processing (Section 17.2). Each are described in the following sections.

Figure 17-1 Recovery Overview



17.1 Ore Preparation and Leaching

The Ore Preparation will prime the ore for lithium extraction in a leaching circuit. Ore will be delivered to the run of mine ("ROM") stockpile from the mining operation. The ore in the ROM stockpile will be sized using toothed roll crusher (sizer) to optimize the efficiency of leaching lithium. The process design criteria for the ore preparation and leaching circuit are presented in Table 17-1 and the flow sheet is presented in Figure 17-2 and Figure 17-3.

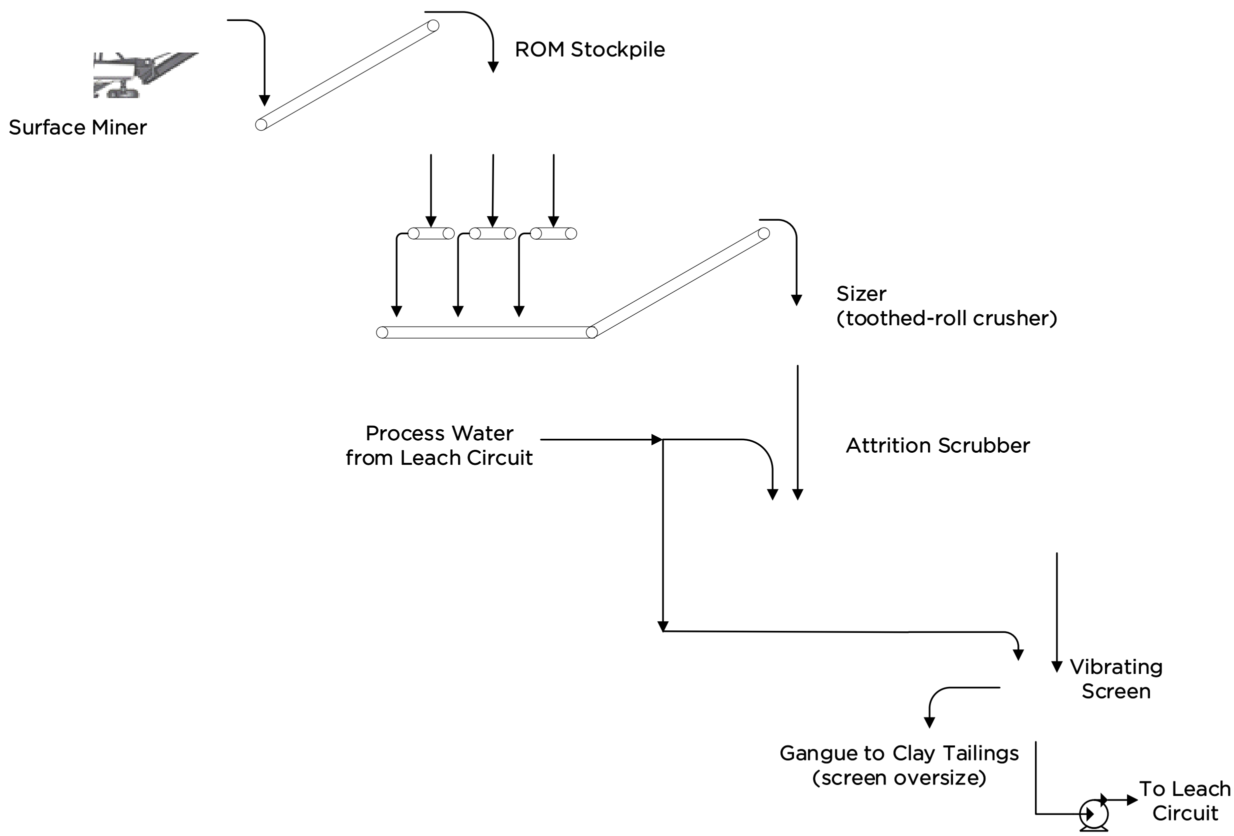
17.1.1 Ore Preparation

The ore will be transferred from ROM by reclaim feeders to a toothed roll crusher for size reduction prior to being mixed with filter wash solution in attrition scrubbers. The clay will readily disengage from coarse gangue size fraction during scrubbing. The gangue (defined as screen oversize material) will be transferred to the clay tailings facility for storage and reclamation.

Table 17-1 Process Design Criteria for Ore Preparation and Leaching (Phase 2 rates in parenthesis)

Parameter	Value	Units
Surface Miner/Crushing Equipment Availability	85	%
Ore Preparation and Leaching Equipment Availability	85	%
Nominal Ore Feed Rate	2,074,180 (4,148,360)	dry tonnes per annum
Design Ore Feed Rate	2,385,307 (4,770,614)	dry tonnes per annum
Nominal Rate of Gangue to Clay Tailings	86,374 (172,748)	dry tonnes per annum
Design Rate of Gangue to Clay Tailings	99,032 (198,064)	dry tonnes per annum
Sulfuric Acid Consumption Ratio	23.8	tonnes H_2SO_4, 100% per tonne Li_2CO_3
Limestone Consumption Ratio	3.51	tonnes of limestone per tonne Li_2CO_3
Nominal Ore Grade	3,227	ppm Li (average)
	3.58	% by weight K
	5.61	% by weight Mg
	1.19	% by weight Na

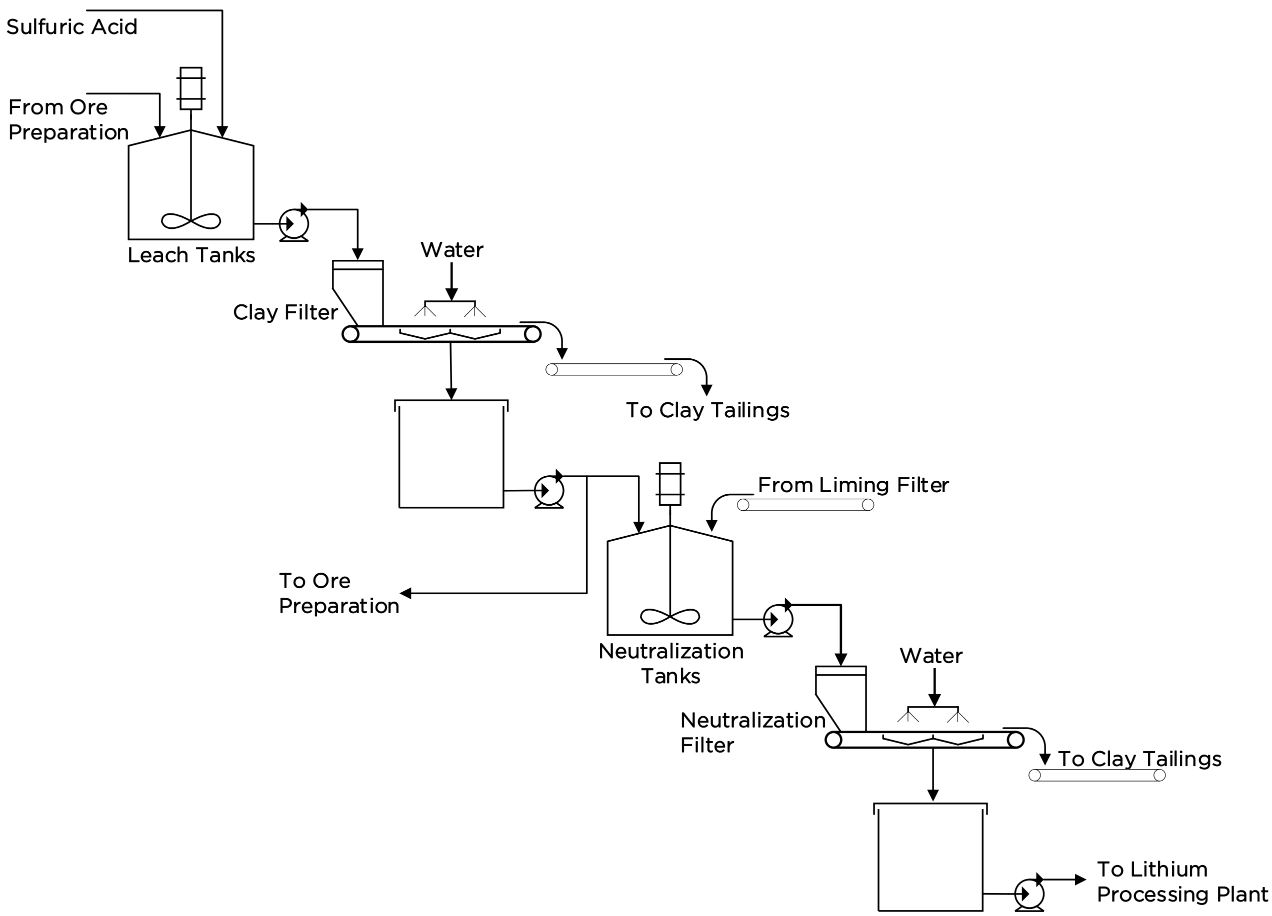
Figure 17-2 Simplified Ore Preparation Flow Sheet



17.1.2 Leaching

After Ore Preparation, the ore will be transferred as a slurry to the Leaching circuit. Sulfuric acid will be mixed in with the slurry to liberate the lithium from the clay. The leaching process will take place in stirred reactors designed to (a) maximum lithium dissolution from the ore and (b) optimize sulfuric acid consumption. The lithium bearing solution, i.e. "lithium brine", will be separated from the leach residue by filtration. The filtered residue will be washed to recover any remaining free lithium, and then conveyed to the clay tailings facility. The wash solution will be recycled to the slurry ore in the attrition scrubbers. Crushed limestone and residue from the neutralization filters (Section 17.1.3) will be added to the leach clay residue to produce a geotechnically stable clay tailings.

Figure 17-3 Simplified Leach Circuit Flow Sheet



17.1.3 Neutralization

To prepare the lithium brine for subsequent processing, pH-neutralization is required. Neutralization will predominantly use high-pH hydroxide-based filter residue from the liming process (Section 17.2.2). Limestone may be intermittently added for nominal pH control. Waste solid compounds will precipitate from the neutralization step and will be filtered from the lithium brine. The filter residue will be washed with process water to recover any residual lithium, resulting in an enriched wash solution. The wash solution and lithium brine will be combined and processed in the lithium processing plant (Section 17.2). The resultant lithium brine is a sulfate solution dominated by lithium, magnesium, potassium, and sodium cations.

Figure 17-4 Simplified Process Flow Sheet for the Lithium Processing Plant

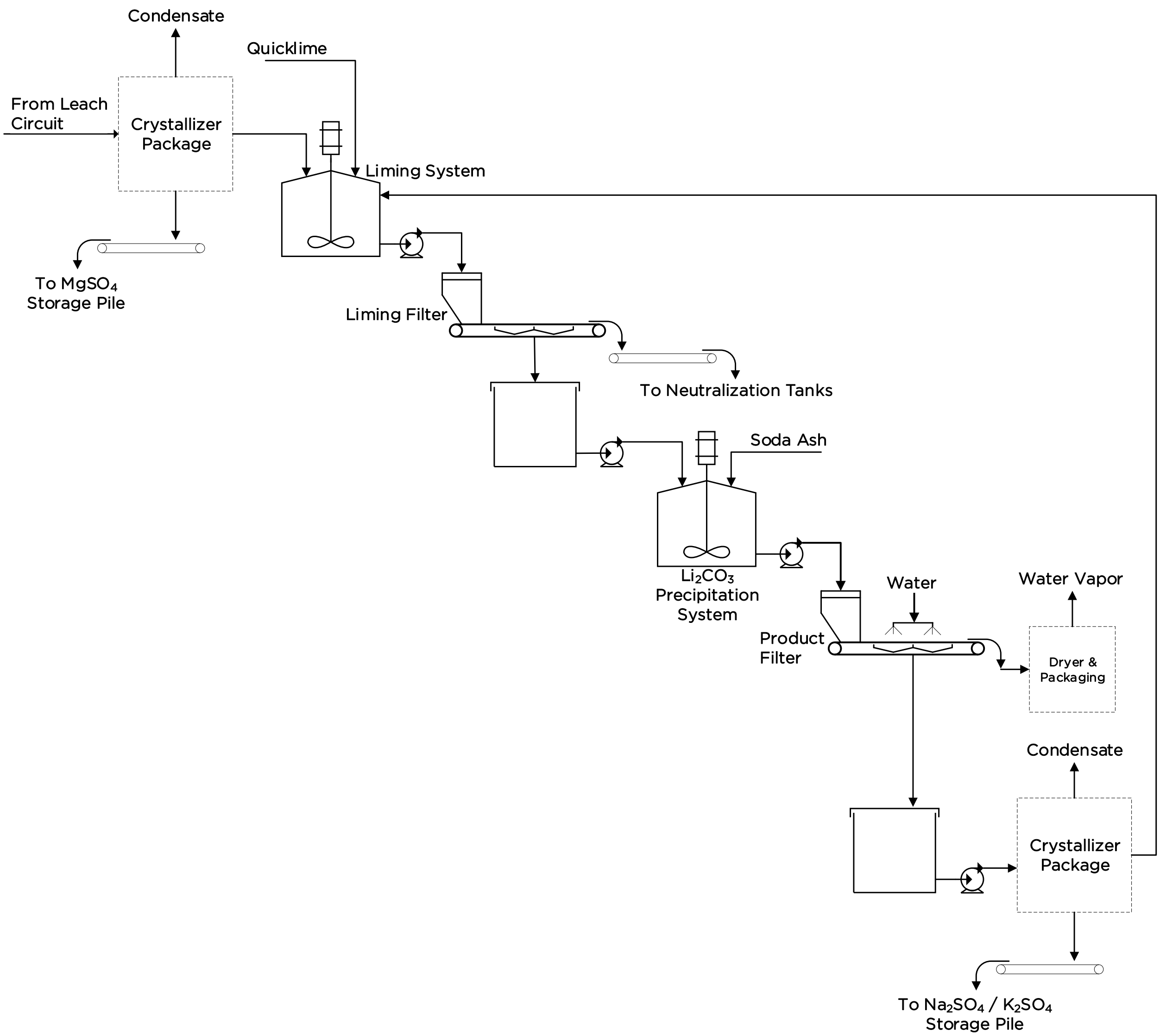


Table 17-2 Process Design Criteria for the Lithium Processing Plant (Phase 2 rates in parenthesis)

Parameter	Value	Units
Equipment Availability	85%	
Nominal Brine Feed Rate	243 (486)	tonnes per hour
Design Brine Feed Rate	291 (582)	tonnes per hour
Lithium Carbonate Production	30,000 (60,000)	tonnes per annum
Overall Lithium Recovery	83%	
Magnesium Sulfate Salt	598,425 (1,196,850)	dry tonnes per annum
Sodium/Potassium Sulfate Salt	119,643 (239,286)	dry tonnes per annum
Quicklime Consumption Ratio	2.49	tonnes of quicklime per tonne of Li_2CO_3
Soda Ash Consumption Ratio	2.04	tonnes of soda ash per tonne of Li_2CO_3

17.2 Lithium Processing Plant

The Lithium Processing Plant will take the lithium brine from the Ore Preparation and Leaching circuit and separate out lithium from the remaining salts in the brine, i.e. magnesium, potassium and sodium. The Plant will produce lithium chemicals that meet or exceed market requirements, including use in making lithium batteries.

The first step in lithium separation involves purifying the lithium brine through crystallization of magnesium sulfate, followed by removal of residual magnesium with the addition of quicklime. Soda ash will then be added to the brine to precipitate out lithium as a carbonate solid. The remaining solution, containing potassium and sodium sulfates, will be put through another crystallization step to remove the remaining salts as solid salt tailings. The left-over water will be recovered and returned to the process. The process design criteria for the lithium processing plant is presented in Table 17-2 and the flow sheet is presented in Figure 17-4.

17.2.1 Magnesium Sulfate Crystallizer

The Magnesium Sulfate evaporator and crystallizer will be used to remove magnesium sulfate from the lithium brine. The evaporated water produced from this step will be reused in upstream processes. The magnesium sulfate salt will be conveyed to a dedicated storage facility. In the future, the magnesium sulfate salt, otherwise known as Epsom salt, could be sold to a variety of industrial and agricultural end users. The sale of Epsom salt is not considered in this study.

17.2.2 Liming

The purpose of the liming step is to remove residual magnesium and calcium impurities. The lithium brine from the magnesium sulfate crystallizer will be reacted with quicklime to increase the pH, resulting in precipitation of magnesium hydroxide and calcium sulfate crystals. The alkaline solids will be filtered and transferred to a tank in the Neutralization area (Section 17.1.3). Transferring the alkaline solids to the Neutralization tank beneficially raises the pH of the acidic slurry from the Leaching circuit and further recovers lithium contained in the alkaline residue.

17.2.3 Lithium Carbonate Precipitation

Following liming, the purified lithium brine will be transferred to a Lithium Carbonate Precipitation circuit. The precipitation system will react the lithium in the lithium brine with saturated soda ash solution to create lithium carbonate solids. The lithium carbonate solids will be filtered from the barren brine and washed with water. The precipitation and filtration system will be engineered to produce consistent, high quality product that will meet or exceed a variety of industry standards, namely specifications corresponding to lithium ion batteries. The purified lithium carbonate will be dried and packaged in bulk bags for shipment to customers.

17.2.4 Water and Lithium Recovery

The barren brine drawn from the lithium carbonate process will be reacted with sulfuric acid to remove any remaining carbonates. A zero-liquid discharge crystallizer will recover the water and precipitate a combination of sodium and potassium sulfate salts. The sodium and potassium sulfate salt mixture will be transferred to a dedicated storage facility. In the future, the salt mixture could be processed to yield potassium sulfate and sodium sulfate for sale into the fertilizer and industrial markets. The sale of potassium sulfate and sodium sulfate is not considered in this study.

The zero-liquid discharge crystallizer will purge a small amount of barren lithium brine back to the liming system (Section 17.2.2) to maintain a predetermined lithium concentration in the crystallizer that will optimize lithium recovery.

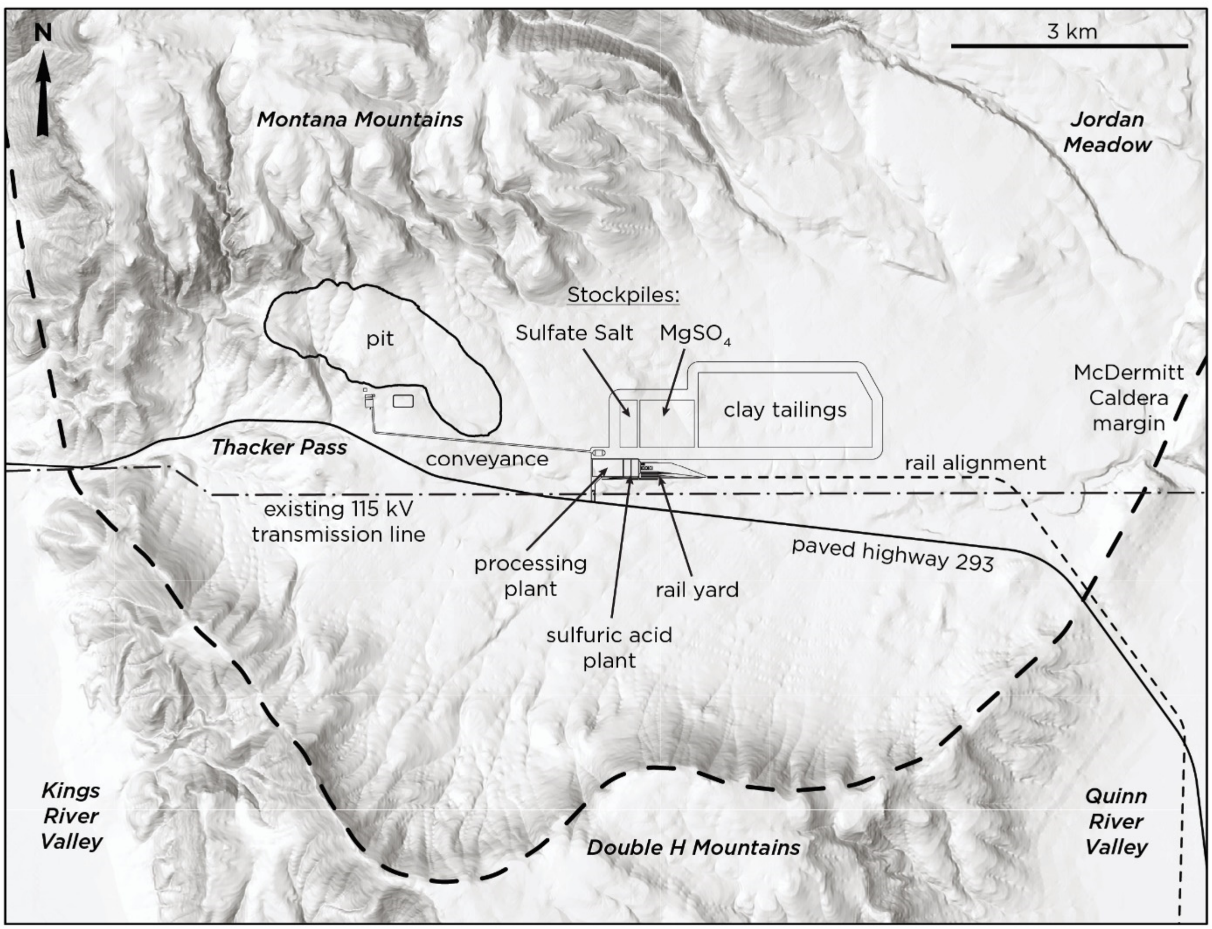
Each of the two phases of the Thacker Pass Project will require approximately 2,000 acre-feet per year of make-up water from wells described in Section 18.6.

18. Infrastructure

The project is planned to be constructed in two phases. The first phase will have a production of 30,000 tpa of lithium carbonate, and the second phase will expand the production rate to 60,000 tpa of lithium carbonate.

Figure 18-1 shows the site general arrangement including the proposed rail logistics for the full 60,000 tpa operation. The design of the two-phase approach was done in a combined footprint to reduce the overall project layout and includes space for the full production rate in the same footprint. The system will be constructed as part of Phase 2 and the Phase 1 material movement will be by trucks.

Figure 18-1 Site General Arrangement



18.1 Raw Material Logistics

18.1.1 Phase 1

The raw materials for the project are to be delivered to the site by truck during Phase 1. Through a contact with an established supply chain company with local rail-to-truck transloading facilities, LNC will receive raw materials to site for use in the operation (Table 18-1). This will include the limestone grinding and storage facility, soda ash transloading facility and the sulfur transloading facility. The cost per tonne of the raw material is included in the OPEX for the consumables.

Table 18-1 Phase 1 Logistics Scheme

Raw Material	Description
Sulfur	Includes unloading, storage, and delivery to the plant via 38-tonne tanker from a transloading facility in Golconda, NV.
Soda Ash	Includes unloading, storage, and delivery to the plant via 38-tonne trailer from a transloading facility in Golconda, NV.
Quicklime	Includes unloading, storage, and delivery to the plant via 38-tonne trailer from a transloading facility in Golconda, NV.
Limestone	Includes operation of limestone crushing plant and delivery to the plant via 38-tonne trailer.

18.1.2 Phase 2

Phase 2 of the project will require railcar quantities of raw materials to be delivered to the plant site directly. A rail spur has been designed to connect the plant with the Union Pacific mainline located approximately 93 km to the south. The plant layout has been designed to accommodate rail loading and unloading. To minimize interruption to production, construction of the rail facilities will be timed to allow final interconnection to occur during a planned plant turnaround. All raw materials except for limestone are planned to be brought to site by rail during Phase 2, and the sulfuric acid produced at the plant can be transported by railcar to customers. The lithium carbonate packaging and warehouse will still be serviced primarily by truck and will have the capability to load rail containers for shipment depending on customer demands. Table 18.2 below defines the logistics scheme for the receipt of raw materials for the plant in phase 2.

Table 18-2 Phase 2 Logistics Scheme

Raw Material	Description
Sulfur	Delivery to plant via rail car. Includes unloading and switching.
Soda Ash	Delivery to plant via rail car. Includes unloading and switching.
Quicklime	Delivery to plant via rail car. Includes unloading and switching.
Limestone	Includes operation of limestone crushing plant and delivery to the plant via 38-tonne trailer. Additional storage added in Phase 2.

18.2 Roads

18.2.1 Public Roads

The main access road to the site connects to State Route (SR) 293, approximately 30 km west of the Highway 95 junction. The main access road runs north from SR 293 and enters the project area from the south. The main access road will be asphalt paved.

The main access road and intersection with SR 293 is designed in accordance with Nevada Department of Transportation's Road Design Guide (DOT 2010).

The design vehicles are as follows:

- Turning Radius design uses WB-21 design vehicle.
- Loading design uses H-25 design vehicle.

State Route 293 crosses the property. A traffic and road study has shown that SR 293 has sufficient capacity for the additional traffic presented by the project. This includes employee and truck traffic for both phases.

18.2.2 Site Roads

Site roads have been designed for operational and maintenance traffic for the eventual 60,000 tpa production rate. The plant layout allows for access by crane and truck for all the equipment, and construction of the second phase during operation of the first phase.

Mine haul roads will be minimal due to the use of conveyors on the site. Haul trucks will be primarily used in the pit for movement of ore to the conveyor systems or movement of waste to in-pit backfill.

In-plant roads are considered to be asphalt paved and the haul roads are gravel paved.

Plant site roads are asphalt paved and haul roads are gravel paved.

Plant site roads will be classified as private roads. All site roads are designed to allow for emergency vehicle access minimum requirements. The plant site road layout is designed to support the anticipated site traffic for construction, operations and maintenance requirements of the facility. The design considers anticipated vehicle traffic, equipment turning requirements and clearances and ensures access requirements are met.

18.2.3 Primary Traffic

The loop road around the service buildings is considered as plant primary roads and is asphalt paved. The main access roads and the plant primary roads will handle heavy volumes, multi vehicle traffic flow, heavy equipment usage and emergency vehicle access.

18.2.4 Maintenance Access

Maintenance access roads will be graveled and will typically handle moderate traffic volumes, occasional multi-vehicular usage, occasional heavy equipment usage and emergency vehicle access.

18.2.5 Others

Site utility roads will serve as alternate routes to provide access for low traffic flow and occasional seasonal access only. There is no emergency vehicle access requirement.

18.3 Stockpiles

Two stockpiles are planned for the project. One is the feed ore from the mine, the second is a limestone pile for process consumption.

18.3.1 Ore stockpile

The ore stockpile pad is proposed to be constructed in Phase 1 but is designed to accommodate the full 60,000 tpa production rate during Phase 2. The only upgrade to the ore stockpile required for Phase 2 will be to add feeders for the belt. It is expected that the clay will have a high angle of repose, and the pile has been designed to allow for that behavior in a conservative case.

18.3.2 Limestone Stockpile

The limestone stockpile will be stored near the limestone crushing and storage facility for easy access by truck. It will store approximately 10,000 tonnes of material and will feed the limestone crushing and storage facility by a reclaim conveyor.

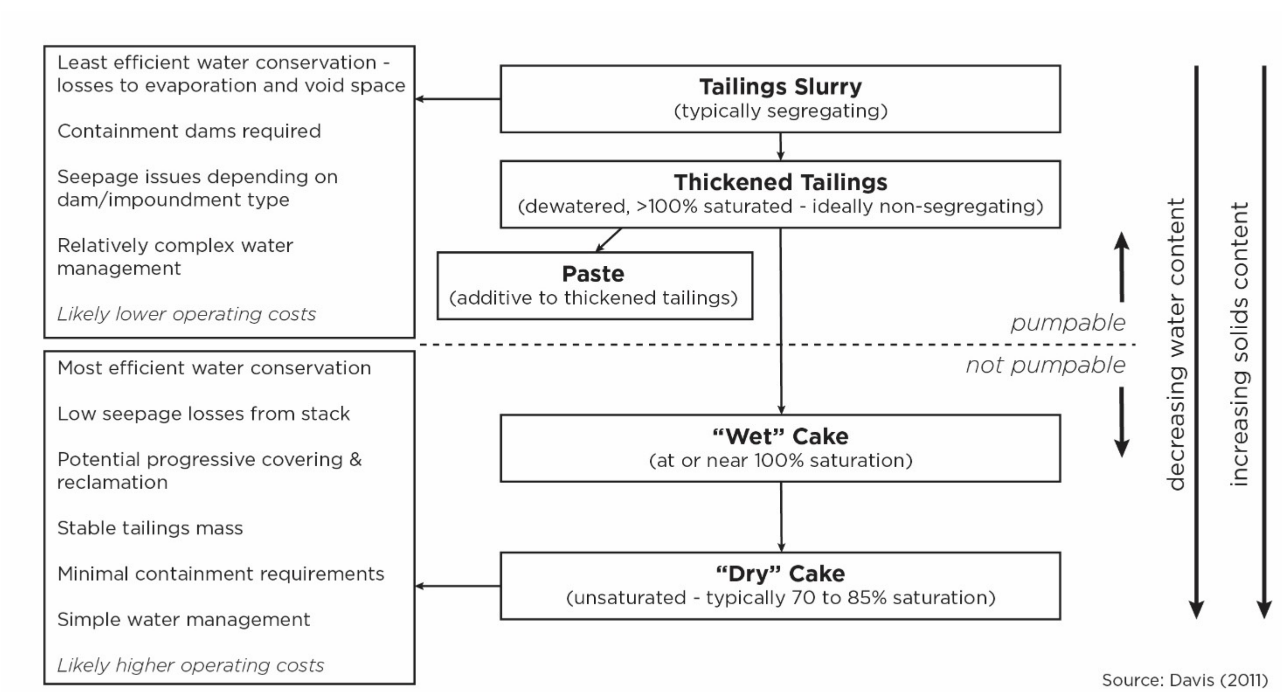
18.4 Clay Tailings and Salt Storage

The tailings and salt storage strategy is based on consideration of the following aspects of the site plan:

- Adoption of filtered stack method of clay tailings disposal, referred to as the Clay Tailings Filter Stack (CTFS).
- Fully contained and lined cells for the mineral salts requiring separate storage.
- Site selection for the CTFS and salt cells: the selected location is on relatively flat terrain within the mineral claim area for proper containment, while maintaining close proximity to the process plant.
- Surface water management to minimize water entering the tailings area.
- Utilization of mine waste rock to provide supplemental perimeter containment of the tailings on the downslope sides and for storage of the mineral salts in fully contained cells.
- The salt storage areas are designed for eventual recovery of the salts, driven by market conditions. The stored materials have a market value, and their potential recovery as economic products will be evaluated in later engineering phases. There are two storage cells: one to store magnesium sulfate and the other for potassium and sodium sulfates. These topics are discussed in the following sub-sections.

Deposition of filtered tailings, otherwise termed as "dry stack tailings", is not as common as the conventional slurry method and typically has higher operating costs but has the benefit of improved stability and reduced risk of catastrophic failure and environmental impacts. Figure 18-2 shows the different states of tailings based on water content. At the tailings storage site, it is possible to dewater the tailings to a relatively low water content, but not quite to the degree to which it can be considered a "dry stack" as such. Hence, the term "filter stack" has been adopted for this application as described herein.

Figure 18-2 Tailings Continuum from Davis, 2011



At the end of the processing cycle, water from the tailings is recovered by dewatering to a moisture content of approximately 41% (defined as the water content by weight as a percentage of the weight of solids plus water), based on laboratory testing. The filtered tailings are then transported by conveyor to the CTFS site. In this “quasi dry” state, the filtered tailings can be spread and compacted in lifts similar to the practice for typical earth embankment construction.

On the downslope perimeter of the deposit, physical containment within earth or rock fill bunds (toe berms) is included in the design to enhance stability. The use of mine waste excavated from the open pit is planned for this purpose and will reduce the volume of waste rock to be disposed on site.

18.4.1 Tailings Production and Stack Design

At full plant production, up to approximately 22,600 t/day of clay, neutralized and limestone tailings solids and contained pore water will be generated over a period of up to 46 years, resulting in a volume of up to 216 Mm^3 of clay tailings requiring secure disposal. The present stack design will accommodate approximately 25 years of production output, with a stack height of 60 m. Future expansion would take place upslope to the north, potentially in combination with an increased stack height, based on the stack performance.

Based on limited chemistry testing conducted in conjunction with the process design, it is anticipated that most of the soil overburden and waste rock excavated from the open pit can be used to construct perimeter containment dykes, subject to confirmation of their physical and chemical properties.

Additional drilling (at least 10 holes) will be needed for both the pit slopes design and characterizing the properties of the overburden for use as granular and general fill.

Any chemically unsuitable mined rock will need to be encapsulated within pit backfill or in the waste rock facility, or otherwise can be accommodated within the interior of the CTFS where it can be co-disposed in layers with the filtered tailings, thereby aiding access to the interior of the stack and consolidation of the contained tailings during the winter season, when evaporation rates are relatively low.

18.4.2 Clay Tailings Properties

A laboratory test program was completed to determine the physical and chemical properties of the tailings. The tests were performed on samples prepared from leach residue, neutralized residue, and residue from solution neutralization.

Two ore samples were tested. One was smectite rich and the other was illite rich. The major composition of the ore samples with assay percentage is shown in Table 18-3.

Table 18-3 Major Composition of the Ore Samples

Ore Type/ Composition	Al_2O_3 (%)	CaO (%)	Fe_2O_3 (%)	K_2O (%)	Li (%)	MgO (%)	Na_2O (%)	TiO_2 (%)
Smectite	6.51	5.83	2.25	7.36	0.46	9.27	1.22	0.31
Illite	6.95	6.45	2.92	3.08	0.28	10.60	0.65	0.30

The types of physical and geotechnical tests conducted are listed in Table 18-4 and the results are summarized in the remainder of this section.

Table 18-4 Summary of Physical and Geotechnical Tests Conducted on Tailings

Tests	Samples Tested	Applicable Standards
Specific Gravity	Smectite / Illite	ASTM D854
Atterberg Limits	Smectite / Illite	ASTM D4318
Shrinkage Limits	Smectite / Illite	ASTM 4943
Standard Proctor	Smectite / Illite	ASTM D698
Hydraulic Conductivity	Smectite / Illite	ASTM D5084
Direct Shear	Smectite / Illite	ASTM D628
One Dimensional Consolidation	Smectite / Illite	ASTM D2435

18.4.2.1 Specific Gravity

The specific gravity values for smectite and illite range from 2.60 to 2.68 with an average of 2.64.

18.4.2.2 Atterberg and Shrinkage Limits

Smectite and illite samples tested indicate the material to be elastic silt (ML, MH) based on Unified Soil Classification System (USCS). Liquid limit of the samples is above 50% and Plasticity Index is below 7%. Shrinkage limit is above 30 to 45% in general with an average of 37%. One test on smectite showed a lower shrinkage limit of 12.8%.

18.4.2.3 Standard Proctor Compaction

The maximum dry density (MDD) and optimum moisture content (OMC) of the remolded smectite and illite samples are similar based on the test results. MDD ranges from 985 to 1128 kg/m^3. OMC ranges from 49.5 to 58.3%. The average MDD and OMC are 1057 kg/m^3 and 53.9%, respectively.

18.4.2.4 Hydraulic Conductivity

The hydraulic conductivity values based on an average flow rate for remolded smectite and illite samples are as follows:

- Smectite: Hydraulic Conductivity, k = 8.2x10^{-07} cm/s
- Illite: Hydraulic Conductivity, k = 3.0X10^{-07} cm/s

The average hydraulic conductivity, k = 5.6x 10^{-07} cm/s. The results indicate the hydraulic conductivity of the clay tailings is generally low.

18.4.2.5 Direct Shear

The direct shear test of remolded smectite and illite samples recorded friction angles from 40.3 to 43.6 degrees and 38.9 to 39.1 degrees at peak and post peak shear, respectively.

18.4.2.6 Consolidation

The consolidation test of the remolded smectite and illite samples resulted in coefficient of consolidation values as following:

- Smectite: Coefficient of Consolidation, c_v = 6.0X10^{-05} cm^2/s
- Illite: Coefficient of Consolidation, c_v = 2.0X10^{-05} cm^2/s

The average coefficient of consolidation is 4.0x 10^{-05} cm^2/s.

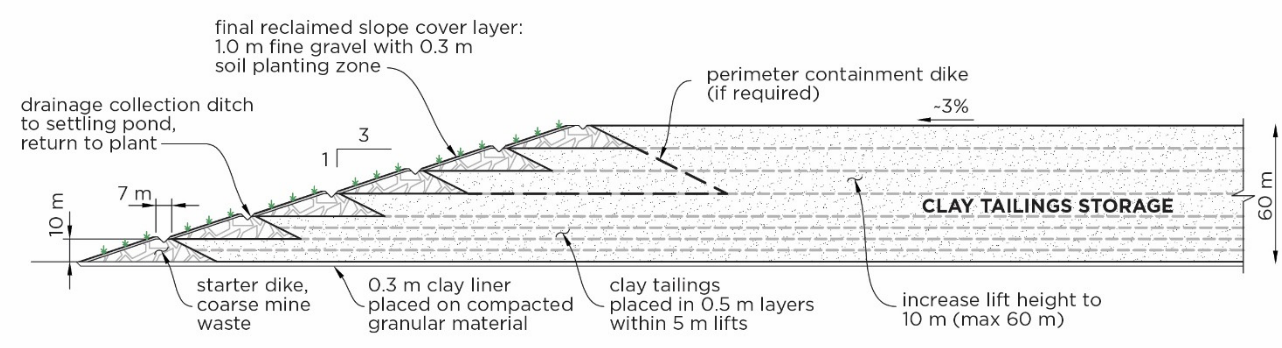
18.4.3 Conceptual Design

The design of the CTFS is based on the following key considerations:

- Perimeter containment to enhance stability of the CTFS.
- Basal clay liner for ground water protection.
- Placement of potentially saturated tailings in the interior of the deposit during the wet season.
- Surface water management.

Figure 18-3 presents the CTFS conceptual design.

Figure 18-3 CTFS Conceptual Design



The disposal operation is designed for a 60 m high stack supported by perimeter containment dykes constructed from coarse mine waste on the downslope. The dykes are 10 m high, with a 7 m wide crest, with inner and outer side slopes of 2H: 1V and 3H: 1V, respectively. A 300 mm basal clay liner is placed on compacted native ground. The tailings are then placed and compacted in 500 mm layers within 5 m lifts.

With a relatively arid climate averaging 21.4 cm (8.43 in) per annum of precipitation, the evaporation rate will significantly exceed precipitation, except during the colder winter months (November to March), when it will be challenging to achieve full compaction of the tailings. As compaction of the tailings to a target of 95% of the standard Proctor density (SPD) is anticipated to be readily achievable during the warmer months of April to October, it is recommended that the perimeter of the CFTS be constructed during the dry season. Tailings placed in the upslope (interior) portions can be compacted to a lesser density in the colder months, targeting for a minimum of 92% of the SPD.

Following neutralization, the tailings are anticipated to be essentially inert and hence do not pose a hazard to contaminate the groundwater, especially when taking account of the relatively low hydraulic conductivity of the compacted tailings. However, as a precaution for groundwater protection, a basal clay liner is included in the present design.

The approach to protecting the groundwater is based on the following factors:

- The finest fraction of the tailings is sufficiently fine to severely limit the amount and rate of water infiltration.
- The surface of the CFTS can be shaped to direct run-off water into lows or sumps from which collected water can be pumped out, preferably to the process plant; thereby minimizing the hydraulic head and associated gradient and hence the seepage rate and volume.
- A clay liner will be placed from clay soil or mudstone rock obtained from the pit excavation. Limited laboratory data indicate the availability of relatively low permeability material (range of 1 x 10^{-6} to 1 x 10^{-7} cm/s), thereby minimizing any seepage losses from the CTFS.
- It is understood that there is no shallow underlying potable water aquifer close to the ground surface that might potentially be contaminated by any minor seepage potentially penetrating the bottom of the CTFS and the underlying soil deposit.

18.4.4 Water Management

The storage area is designed to direct runoff from higher ground around the stack. Precipitation falling directly on the deposit will be managed in order to maintain a dry working area to place the tailings, to mitigate erosion of the tailings, and manage turbidity in runoff prior to recycling the collected water to the process plant.

Tailings placement will be restricted during and immediately after precipitation events and surface accumulations of water allowed to runoff and evaporate. Surface runoff will be facilitated by sloping the deposit surface to essentially match the underlying topography, with an overall slope of 2-3% towards the south-east. Runoff water will be collected in an engineered saucer-shaped low from where it will be gravity drained through a pipe in the perimeter dyke and discharged to a sedimentation pond located adjacent to the south-east corner of the facility.

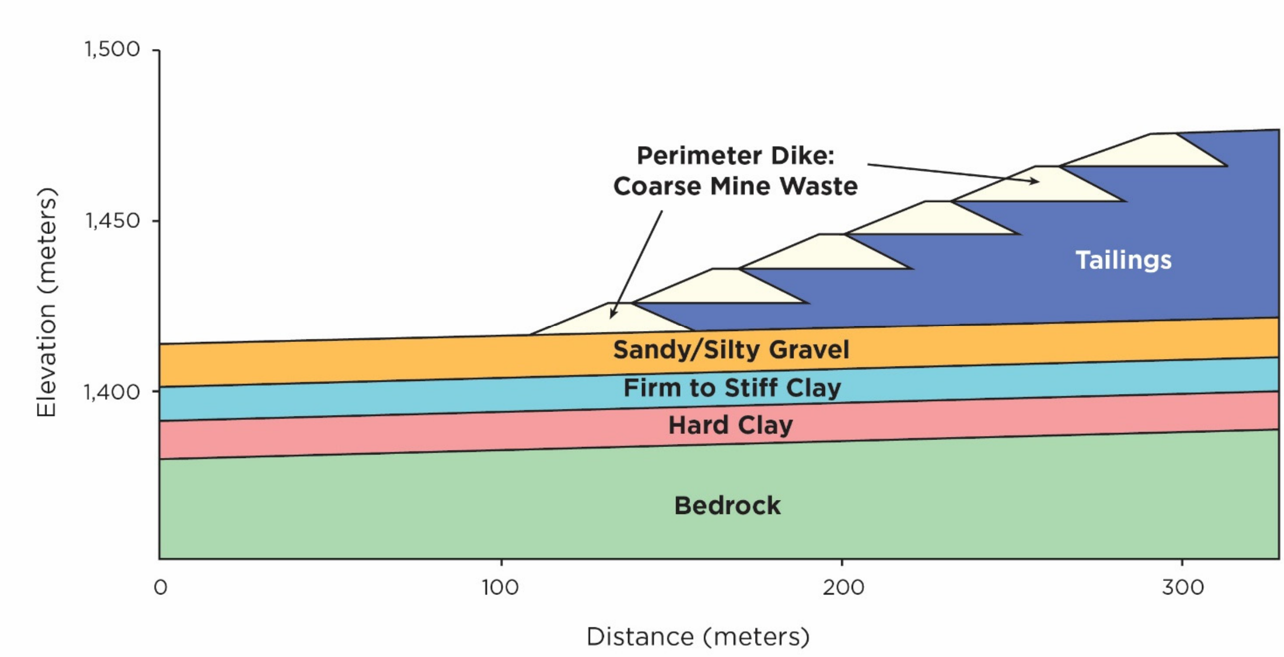
The perimeter toe of the stack will be armored with rock to mitigate erosion that could affect the stability of the CTFS. During construction, some erosion of the tailings slopes is inevitable, which will require runoff to be collected in the sedimentation pond and pumped to the process plant. Once construction of the CTFS is completed, a final protective cover will be placed to facilitate revegetation and minimize erosion, at which point the sedimentation pond may be decommissioned.

18.4.5 Stability Analysis of CTFS

18.4.5.1 Sections Analyzed

Three sections at Stations 0+400 (East), 1+200 (Center) and 2+000 (West) have been selected for stability analysis. A snapshot of a representative stockpile section is shown below in Figure 18-4.

Figure 18-4 Snapshot of Stockpile Section



18.4.5.2 Material Parameters

The material parameters used in the stability analysis are summarized in Table 18-5 below. The parameters are based on the present and previous site investigations (by Advisian and AMEC), laboratory test results and Advisian's experience with similar materials.

Table 18-5 Material Parameters Used in Stability Analysis

Soil	Unit Weight (kN/m³)	Cohesion (kPa)	Friction Angle (degrees)
Sandy/Silty Gravel (0 m to 10 m)	20	0	32
Firm to Stiff Clay (10 m to 20 m)	19	5	26
Hard Clay (20 m to 30 m)	19	5	30
Bedrock (Below 30 m)	21	196	16
Tailings (Compacted to 92 to 95% SPD)	16	0	25
Coarse Mine Waste	21	0	38

18.4.5.3 Groundwater

A shallow groundwater table is assumed to be at 20 m below the ground surface (AMEC 2011).

18.4.5.4 Seismicity

Peak ground acceleration for the site was assumed to be 0.34 g (AMEC 2011).

18.4.5.5 Analysis Methodology

Stability analyses were conducted using the geotechnical software GeoStudio 2018 Version 9.0.4.15639. The option used was the Morgenstern Price method to determine the factor of safety against slope failure. The analysis addressed both static and seismic loading conditions. For seismic stability, a pseudo static analysis was carried out. The pseudo-static method is a screening-level tool to determine the preliminary seismic stability of a slope. It is also used to determine whether a more sophisticated dynamic analysis may be warranted. With the pseudo-static method, the dynamic forces during an earthquake are equated to a horizontal force that is expressed as the product of the Seismic Coefficient and the weight of the potential sliding mass. If the Factor of Safety approaches unity, the section may be potentially unsafe and may warrant further analysis related to the prospect of the foundation soils undergoing liquefaction.

18.4.5.6 Target Factors of Safety

The following target FOS values were considered in the tailings stockpile stability analysis:

- FOS = 1.5 for Static and FOS >1.0 for Pseudo-Static (Seismic)

18.4.5.7 Slope Stability Analysis Results

The results of the slope stability analyses for a typical pit slope are presented in Table 18-6.

Table 18-6 Slope Stability Analysis Results

Station	Analysis Case	Factor of Safety (FOS)
0+400	Static	1.72
	Pseudo-Static (MCE)	1.54
1+200	Static	1.71
	Pseudo-Static (MCE)	1.53
2+000	Static	1.71
	Pseudo-Static (MCE)	1.53

FOS results satisfy the target values of 1.5 and 1 for static and seismic cases respectively.

18.4.6 Closure Plan

One of the most attractive features associated with the filter stack method is the ease of reclaiming and closing the facility at the end of mining. The following guidelines are proposed for CTFS closure:

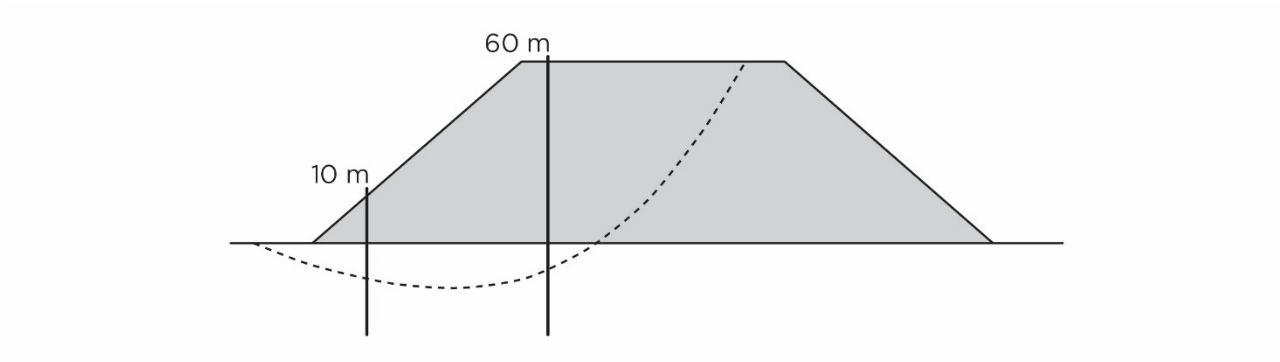
- Contoured as a dry landform conforming as much as possible to the surrounding landscape.
- Drainage directed in shallow swales placed at regular intervals (50 m to 100 m spacing) which are vegetated or lined with gravel rockfill for erosion protection on steeper gradients.
- The central portion of the deposit is anticipated to settle with time due to long-term consolidation of the tailings.
- Placement of a 1.0 m thick mixed grained soil cover and a 300 mm thick layer of topsoil.
- Establishment of a native vegetative cover as erosion protection and which is compatible with the surrounding vegetation.
- Suitable vegetation should be established that can withstand the relatively arid climate.

18.4.7 Clay Tailings Filter Stack Monitoring

A geotechnical monitoring program for the CTFS will potentially include:

- Regular visual observation of the perimeter dyke and tailings surface for cracks, bulges, slumps etc.
- Survey pins along inside crest of perimeter containment dykes on south and east sides of the CTFS. Pin spacing between 50 – 100 m.
- Slope inclinometers along inside crest of perimeter containment dykes on south and east sides of the CTFS. Inclinometers to be installed to a minimum depth of 15 m below the original ground surface at stack heights of 10 and 60 m (Figure 18-5) and spaced at 250 m along the dyke crest.

Figure 18-5 Inclinometer Monitoring Scheme



Inclinometers are used to monitor subsurface movements and deformations of the tailings stack as well as native ground below the tailings. The applications of the inclinometer for the filter stack will include:

- Detecting zones of movement and establishing whether movement is constant, accelerating, or responding to remedial measures.
- Checking that deformations are within design limits and that adjacent infrastructure is not affected by ground movements.
- Verifying the overall stability of the stack.

18.5 Design of Salt Containment Cells

Crystallized magnesium and sodium/potassium sulfate salts generated in separate streams in the process will be disposed in separate fully contained cells as illustrated in Figure 18-2. The salts will be generated at a rate of 4,200 t/d for the magnesium sulfate and 850 t/d for the sodium/potassium sulfates. The corresponding LOM volumes are 50.2 Mm^3 and 10.7 Mm^3, respectively.

The cells will be constructed from mine waste placed in lifts and compacted under the action of the haul trucks and grading equipment.

Although the moisture content of the salts is anticipated to be relatively low (5%), as a precaution against the possible generation of leachate associated with infiltration of precipitation, the cells will be lined with a 40 mil HDPE membrane to prevent seepage into the underlying sand and gravel overburden. As an additional protection, a 300 mm thick secondary clay liner will be placed along the bottom of each cell. A geotextile underlay will be placed on the interior slopes of the dykes forming the cells as illustrated on Figure 18-3

The capacity of the initial cells is designed at 5 Mm^3 for the sodium/potassium salts and 25 Mm^3 for the magnesium salt, equivalent to approximately 25 years of storage. Depending on market conditions for salt sales, an additional two cells may be required for storage after year 25. These would be constructed on the north side of the initial cells.

The interior lined slopes of the cells are at 2H:1V. The exterior slopes are at 3H:1V to facilitate placement of a cover layer of 1 m of mixed grained soil overlain by 300 mm of topsoil suitable to support vegetative growth.

18.6 Water Supply

Raw water is supplied to the plant site via a raw water pipeline from a well or series of wells in the Quinn River Valley to the east of the site. The primary uses of the raw water are makeup to boiler feed water (demineralized) water for a waste heat boiler and other wet processes, i.e. acid leaching process (sulfuric acid) and neutralization (lime). Raw water will also be used to fill the water system when the plant first starts.

Electrical submersible well pumps will be installed in the groundwater wells in the Quinn River Valley to bring the water to a surface pump station, where the water will be pumped to the plant site via two booster pump stations and an approximately 12 km pipeline.

The single pipeline is designed to deliver an estimated peak flow of 225 m^3/h and 564 m^3/h of raw water (non-potable) to the plant site for Phase 1 and Phase 2, respectively. The elevation of the water pipeline generally follows the existing ground surface elevation. The average depth of the water pipeline is 1.5 m below ground surface. Air vents are required at the high points and blow off hydrants are required at the low points in the water pipeline. A new easement and access road are required along the water pipeline alignment.

The new maintenance access road along the water pipeline alignment from the well location to SR 293 is a 6 m wide, two-direction gravel road with a total length of 6.4 km.

Raw water is discharged to the site into the 2,760 m^3 raw water storage tank (16 m diameter by 15 m height). The tank has enough capacity to provide a minimum of four hours residence time for Phase 2. A raw water pump station at the plant site connects to the raw water storage tank and distributes the water throughout the plant for non-potable use.

18.6.1 Potable Water

Potable water will be supplied by treating water pumped from the Quinn River Valley to comply with drinking water standards and stored on site.

18.6.2 Fire Water

The fire water supply for the permanent fire protection is provided from the raw water tank located within the plant. The raw water tank has an active storage volume of 2,760 m^3 and is continuously fed from the raw water pipeline. The fire water supply shall be based on the requirements provided by National Fire Protection Association (NFPA) standards and LNC specifications.

The permanent fire protection water supply equipment consists of one electric-driven fire pump, one diesel engine-driven fire pump, and two electric-driven jockey pumps. The fire pumps operate on pressure sensors in the firewater distribution system. A drop-in system line pressure engages the main electric-driven fire pump, while further reduction of pressure triggers the start of the diesel-driven fire pump. The jockey pumps are required to maintain the fire water header system pressure.

The fire pumps are located in the raw water pump house. The raw water pump house has an inlet channel and a dedicated wet pit for the fire pumps. The design of the wet pit and inlet channel shall be in accordance with the requirements of NFPA standards and Hydraulic Institute (HI) standard on pump intake design.

The plant has underground firewater distribution mains, ensuring that the water requirements for the fire hydrants and all buildings/facilities requiring fire suppression are effectively met. The fire water mains are looped and should be sufficiently sized to supply the flow requirements. Interior fire protection loops are considered an extension of the main and should be provided with at least two valve connections to the main with appropriate sectional control valves on the interior loop.

The fire hydrants are located not less than 12.2 m from the buildings to be protected. The hydrants spacing is a maximum of 91 m. Each hydrant is equipped with a separate shutoff valve located on the branch connection to the fire water main.

18.6.3 Process Water

Boiler feed and reaction water for the sulfuric acid plant will be supplied from an on-site water purification and treatment system as part of the sulfuric acid plant.

The water systems will be separated between the lithium plant and the sulfuric acid plant.

18.7 Electrical Power

A 115 kV transmission line runs directly through the site. The line is owned and operated by Harney Electric Cooperative Inc. ('Harney Electric'). During startup service, power will be temporarily sourced from the local utility. In steady-state operation, power can be consumed from local cogeneration (generated using steam produced by the sulfuric acid plant), and excess power can be sold via the proximal 115 kV transmission line. For the purpose of this PFS, it was assumed that all power produced from the local cogeneration plant will be sold to a customer and wheeled via Harney Electric's grid and all mine and plant power requirements would be provided from the Harney Electric grid. The electrical infrastructure will allow operation using only power generated on-site should there be an interruption in supply from this line.

The onsite electrical infrastructure comprises the following:

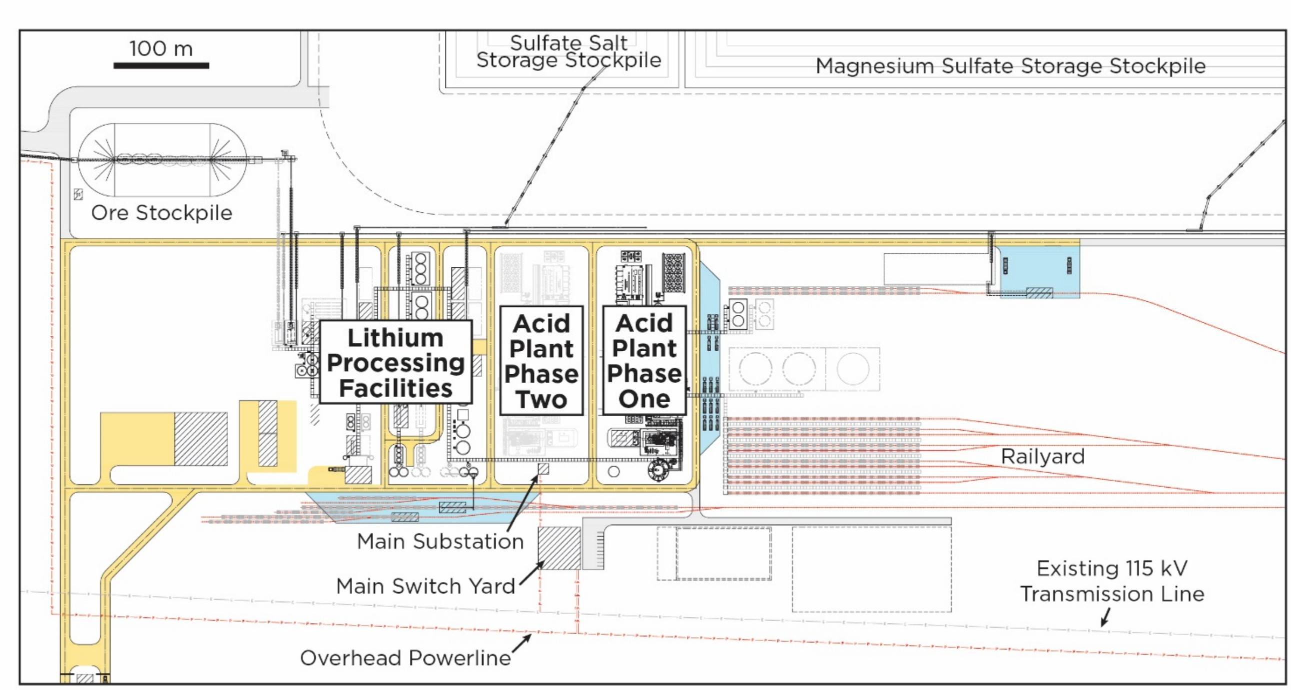
- 115kV Overhead power line for interconnection to Harney Electric Transmission network.
- 115kV Main Switchyard.
- 25kV Main Substation.
- 25kV Mine electrical distribution system.

18.7.1 Interconnection to Existing Network

The acid plant produces steam during the production of sulfuric acid. Steam will be used in the lithium process plant and the excess steam will be used to generate electricity. Electricity for the mine and plant can be supplied entirely by the local cogeneration power plant or via the grid connected to the nearby 115kV Transmission network (Harney Electric) governed by a commercial agreement.

The grid interconnection will be located immediately to the south of the proposed process plant adjacent to SR 293 as shown in Figure 18-6 below.

Figure 18-6 Electrical Equipment Locations



18.7.2 Main Switchyard Power Supply

Approximately 50 m of 115kV overhead transmission line will be constructed from the 115 kV Harney Electric network to the main switchyard. Initial power calculations indicate two 40/50 MVA, 115/25 kV transformers will be required for the export of the excess power. The main switchyard will be consisting of:

- Circuit breakers and protection for the incoming 115kV supply from Harney Electric.
- Circuit breakers and protection for the transformers.
- Two 40/50MVA, 115/25kV power transformers complete with o-load tap changers.
- Required Harney Metering equipment.
- E-house for protection and control equipment.

From the main switchyard, underground feeders will be installed between the main switchyard and the main substation (Substation 1). These ducts will cross underneath the railway with enough space ducts to facilitate future requirements.

18.7.3 Main Substation

The main substation will be installed during Phase 1 and include the required 25 kV metal clad switchgear (12 circuit breakers + two spares) to allow for the distribution of power to both Phase 1 and 2 equipment. The equipment will be housed in a prefabricated e-house located centrally to the power and acid plants. Dual feeders will be supplied form the main substation to the process plant to provide redundancy in the event of a failure or maintenance of one of the 25kV circuits.

The configuration of the main substation offers flexibility by allowing the site to operate on either one or two transformers/power plants either individually or in parallel. Parallel operation offers the best utilization of equipment but is subject to the fault levels and limitations imposed by the switchgear fault ratings.

18.7.4 Mine Electrical Distribution

Electrical power will be reticulated around the process plant at 25 kV which is derived from the 115 kV/25 kV transformers in the main switchyard. The majority of cable runs will be supported on cable tray mounted to the pipe racks with underground ducts-installed only where installation on pipe racks is not possible. All 25 kV distribution required for Phase 2 operations will be installed in Phase 1. This equipment will be sized for Phase 1 and Phase 2 loads. The total connected load is calculated at 49.4 MW with a calculated operating demand of 39.5 MW. The anticipated load breakdown is summarized in Table 18-7 below.

Table 18-7 Electrical Load Breakdown

Area	Phase 1 Connected (MW)	Phase 1 Demand (MW)	Phase 2 Connected (MW)	Phase 2 Demand (MW)	Total Connected Load (MW)	Total Demand (MW)
Acid	10	8.3	10	8.3	20	16.6
Process Plant / Mine	18	13.8	11.3	9.1	29.4	22.9
Total	28	22.1	21.3	17.4	49.4	39.5

Locally positioned substations throughout the mine will be used to transform the electrical power to a voltage suitable for utilization by the various local electrically powered equipment. This includes the following areas:

- Power Plant
- Acid Plant
- Mine Area
- Processing Plant

Table 18-8 provides the details on the various power supplies utilized in the mine distribution system.

Table 18-8 Electrical Power Distribution Voltages

Equipment	Nominal Voltage	No of Phases	No of Wires	Frequency (Hz)	Grounding Remarks
Incoming Supply	115 kV	3	3	60 Hz	TBC
MV Distribution	25kV	3	3	60 Hz	Resistance Grounding
Motors up to 350HP	480V	3	3	60 Hz	High Resistance grounding
Motors 350 - 3500HP	4.16 kV	3	3	60 HZ	High resistance grounding
LV Distribution	480V/277V	3	4	60 Hz	Solid grounding
AC UPS	120V	1	2	60 Hz	Solid grounding
DC UPS	110V	-	2	DC	TBA
Lighting	120V	2	2	AC	Solid
Instrumentation					TBA

18.7.5 Mine Area

Power to the mine area will be provided by a 25 kV overhead distribution line on single wooden poles. This overhead line will loop around the southern boundary of the process plant before following a similar route to the overland conveyor to the mine. The mine loads consist of mine infrastructure loads i.e. wash bays, refueling, lighting, maintenance and administration buildings etc. The mine substation will contain all the necessary e-houses, transformers and switchgears to distribute the power to various loads at the required voltage.

18.7.6 Processing Plant

Power to the processing plant will be via 25 kV cable mounted in cable tray mounted on pipe racks. The main process pant substation (Substation 2) will be located near the process plant lunch room. This substation will contain the required 25 kV switchgear and transformers to supply the process loads while providing feeders to the following areas:

- Magnesium Sulfate Crystallization Package (Phase 1 and Phase 2).
- Sulfate Salt Crystallization Package (Phase 1 and Phase 2).
- Wet Attrition Scrubbing Substation (Substation 3). This substation will be located adjacent the Wet Attrition Scrubbing area and power process loads (3210, 2120,2220,2230,3210,2220, Cooling Towers).

- Lithium Carbonate Substation (Substation 4). This substation will be located between the Maintenance Facilities and Lithium Carbonate Warehouse and supply the site offices, Maintenance Warehouse, Lithium Carbonate Warehouse and associated process loads.
- Stockpile/Tailings Substation (Substation 6). This substation will be located adjacent the limestone unloading area and will power the associated tailings and product stockpile conveyors and the limestone package.

Each area substation will contain all the necessary e-houses, transformers and switchgears to distribute the power to various loads at the required voltage.

No emergency power is required for major loads within the process plant. Power to the plant can be provided by either the grid or the local power cogeneration plants connected to the main substation.

18.8 Fuel

Natural gas is not required for the chemical plant operations. Startup package boilers will be supplied fuel from an on-site fuel bunker that will be resupplied by truck. These boilers will only be run for startup of the sulfuric acid plant on a limited basis. Fuel storage for this is included in the Acid plant.

Diesel will be supplied by fuel truck to an on-site fueling system. That fueling system will supply on site truck demand. The fuel farm for the mine is a modular system complete with pumps and fuel storage. The fuel farm in the mine is sized for 60,000 gallons of diesel fuel storage for Phase 1, plus an additional 60,000 gallons for Phase 2. This is approximately five (5) days of storage at the maximum fuel consumption rates for each phase. The fuel bunker for diesel will be located near the mine pit for fueling of diesel trucks.

18.9 Sanitary Sewer

The sanitary sewer system is planned to use a septic leach field located south of the plant next to the storm water pond in an alluvial fan to handle discharge from the septic and sanitary sewers on site.

18.9.1 Meteoric Water Controls

The site is being designed to have roof coverage over the process, loading and unloading areas to minimize any potential chance of contamination of meteoric waters by process materials.

18.9.2 Storm Water Pond

The majority of the meteoric water will fall on site roads, unimproved land and will have no contamination from the process. This water will be directed around the plant using a series of ditches and swales to a small pre-sedimentation pond which discharges then to a large storm water pond (10,600 m^3) located south of the plant. This system will settle out suspended solids and contain the water from the site. This pond will then release the clean water back to the local water courses or be used on site.

18.9.3 Emergency Pond

In the event of an emergency on site, such as firefighting activities or process upsets, the water from the process areas will be diverted to an emergency water pond. Normally this pond will remain empty. The emergency pond is for slurry/solids that must be removed from secondary containment that cannot be immediately returned to the process. It also includes any water used to clean up the slurry/solid. All material going to this pond will be eventually returned to the process

This pond will be lined, and the material sent to this pond will be brought back and processed at site through the lithium and sulfuric acid plants. The pond is located south of the plant with volume capacity of 3,875 m^3.

18.9.4 Contaminated Storm Water

The contaminated storm water system is designed to collect all meteoric water from the site that has been contaminated by contact with process materials. This includes rainwater from process roofs and containment areas.

Water stored in this tank will be consumed by the process plant.

18.9.5 Sulfuric Acid Production

The sulfuric acid plants anticipated in Phase 1 and Phase 2 of the project are both Double Contact Double Absorption (DCDA) sulfur burning acid plants with energy recovery systems.

Each plant is capable of producing 2,640 tonnes per day (100 weight% H_2SO_4 basis) of sulfuric acid by burning liquid elemental sulfur which is delivered to the acid plants in the molten form via road tank cars (Phase 1) and then by rail tank cars (Phase 2). Liquid sulfur unloading facilities include steaming of incoming tankers/rail cars, heated unloading trenches, transfer pit and storage tanks.

The chemical processes in the acid plant; burning of sulfur to produce SO_2; catalytic conversion of SO_2 to SO_3 and absorption of SO_3 in acid generate large amounts of excess heat. This excess heat is captured via economizers, a boiler and a super-heater to produce steam which, in turn, is used to generate electrical power via the acid plant turbine generator (TG) set. Low pressure steam is extracted from the turbine generator for use in the process plant. The electric power generated is more than sufficient to meet the operational need of the acid plant with excess power being available from the TG for use in the process plant or export to the external grid. Plant 1 and Plant 2 will each have a TG power output of 34.5 MW based on no steam extraction. Further energy recovery can be realized by installation of an “Alpha System” to recover heat in the form of medium pressure steam from the SO_3 absorption. Installation of Alpha Systems is anticipated in Phase 2 and will allow the TG sets to operate at maximum power output without steam extraction (approximately 80 MW total).

Tail gas from the acid plant is sent to the scrubbing section of the acid plant where residual SO_2 and acid mist in the tail gas is removed to less than US EPA Prevention of Significant Deterioration (PSD) emission limits before the gas is expelled to atmosphere via a tail gas stack common to the two phases. Carbonate solution is used as the scrubbing medium with effluent acidulated and then returned to the process plant without need for discharge and dedicated treatment.

Liquid effluents are minimized in the plant design. Collection sumps in most areas and reverse osmosis rejects from the Water Demineralizer are returned to a common Process Water Tank for re-use within the complex. The exception is the strong acid sump which may be acidic and is delivered to a holding tank where the contents can be bled back into the process plant.

Buildings are also provided in the plant areas to minimize any interactions to local weather conditions and to attenuate operational noise levels to below acceptable limits.

Cooling for the acid plant is provided by dedicated air-cooling systems for the circulation acid in a closed indirect water circulation loop and directly at the turbine condenser.

19. Market Studies and Contracts

19.1 Introduction

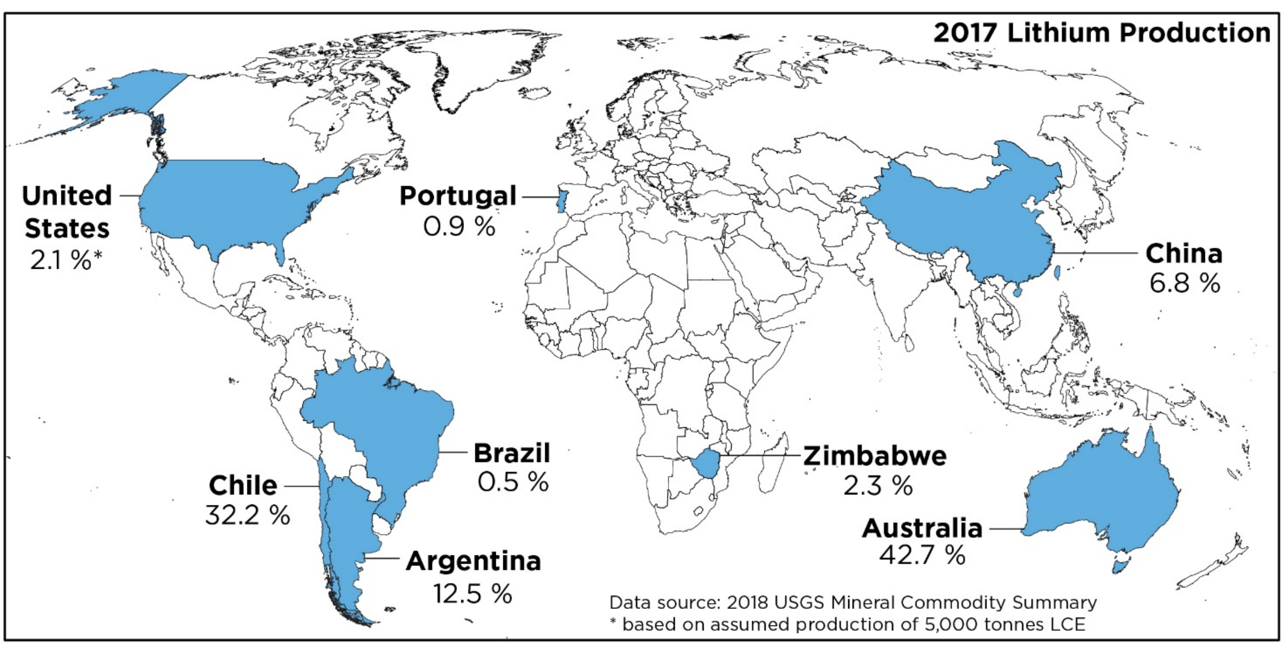
Global Lithium LLC ("Global Lithium") was engaged to conduct a market study and price projection for lithium carbonate. Global Lithium is a recognized industry leader in lithium markets and provides advisory services to lithium producers, purchasers, investors, and governments worldwide.

Lithium's versatile properties make it a sought-after metal for many applications. Although lithium is commonly used in the manufacture of ceramics, pharmaceuticals, alloys and lubricants, significant future demand increases are projected because of its widespread use in electric vehicle batteries and stationary energy storage. Due to its low weight and unique electrical properties, lithium is perfectly suited for use as a cathode in electric vehicle batteries. Both lithium carbonate and lithium hydroxide are commonly used in cathode manufacturing and generally requires purity grades above 99.5%, although specifications are typically unique to individual manufacturers.

19.2 Lithium Supply

Currently, around 80% of the total lithium production worldwide originates from Australia, Chile, and Argentina, as shown in Figure 19-1. Lithium production is dominated by five companies: SQM, Albemarle, FMC, Tianqi Lithium, and Jiangxi Ganfeng Lithium. Currently, all the lithium production in Chile and Argentina is sourced from brine, and all of Australia's production is sourced from hard rock. China's production is from both hard rock and brine. Australia produces a concentrated spodumene which is transported to China for upgrading into specialty lithium chemicals (primarily lithium hydroxide).

Figure 19-1 Lithium Production Worldwide (Source: USGS Mineral Commodity Summaries/Lithium)



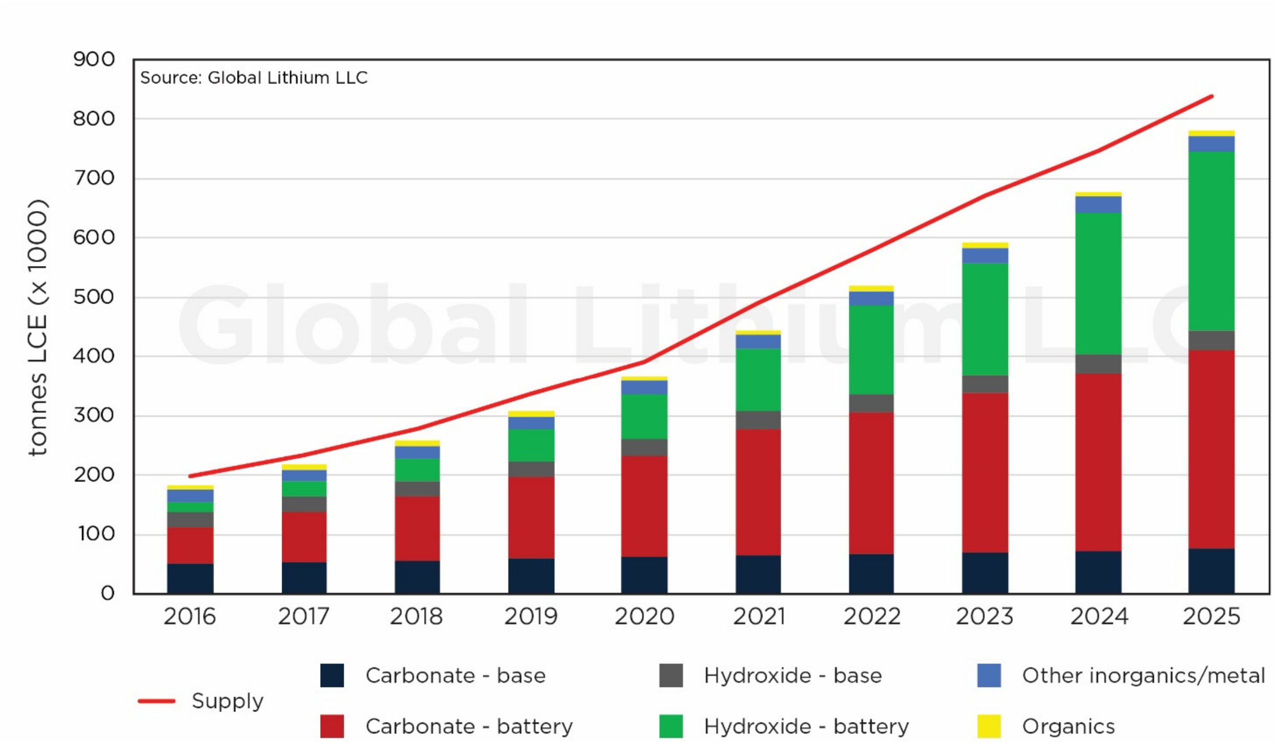
Due to rapidly rising demand caused by the uptake in electric vehicles, lithium supply security has become a top priority for battery producers and vehicle manufacturers, which are looking to secure long-term supply through strategic alliances, joint ventures or partnerships.

19.3 Lithium Demand

As shown in Figure 19-2, the lithium industry is entering a period of significant demand growth. Shortages in the supply chain begin to happen when capacity utilization is above 85%. Between 2016 and 2025, capacity utilization never falls below 90% in Global Lithium's demand estimate, which is lower than the consensus average. It should be noted that a portion of capacity additions will not be of sufficient quality to be used in battery applications, which further exacerbates a tight supply situation.

It will be challenging for supply to stay ahead of demand growth in the next five years, even in the base case growth scenario, as presented in Figure 19-2. Although it is possible for spodumene deposits (pyroxene mineral, which is a source of lithium) to enter production and come to market quickly relative to brine deposits, the existing spodumene conversion capacity is still a limiting factor. Planned spodumene conversion capacity expansions will be critical to meeting demand over the next five years.

Figure 19-2 Lithium Supply and Demand 2016-2025

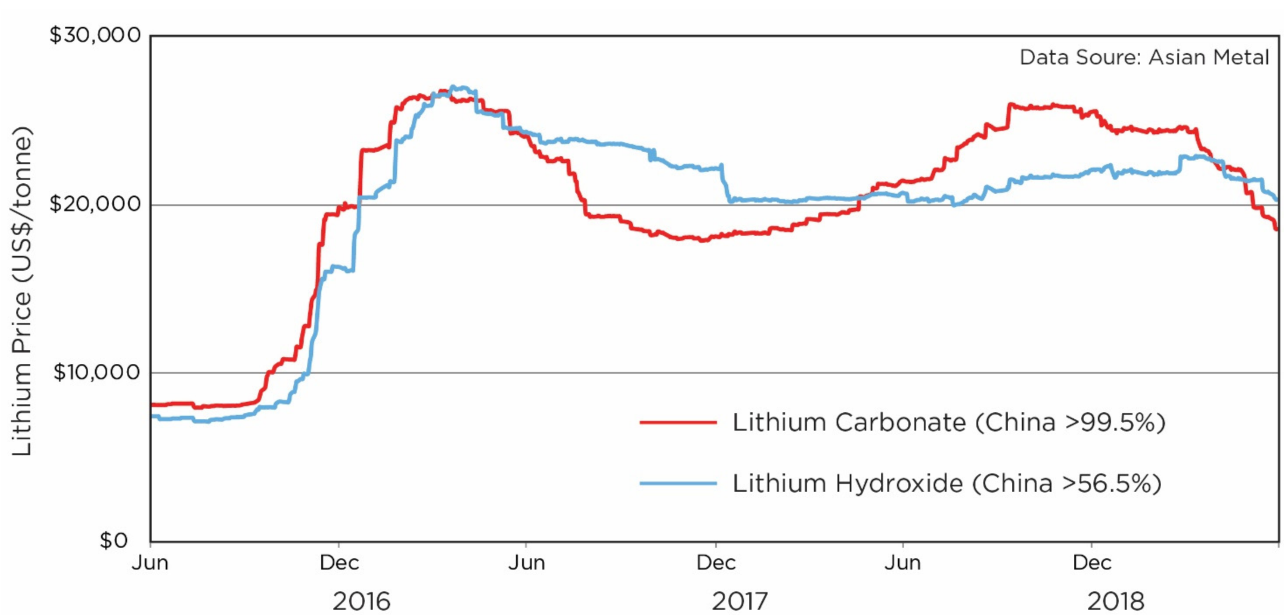


19.4 Lithium Prices

In the second half of 2015, the two shareholders of Talison Lithium's JV, Sichuan Tianqi (51%) and Albemarle (49%), announced a change in the distribution policy of spodumene concentrate produced at Talison's Greenbushes mine. The Joint Venture stopped selling directly to the market and began to limit sales only to the two owners, who receive their pro-rata share of the material. The change in policy limited spodumene concentrate feedstock available to independent converters. As a result, the output of lithium chemicals in China decreased briefly, prices spiked in the fourth quarter of 2015 and due to surging demand, have remained high ever since.

Over the same period, demand for lithium carbonate was increasing as well in response to growing demand for battery cathodes needed in the transportation segment (electric buses and electric vehicles). The net result was a steep run-up in China domestic prices. Prices doubled in Q4 of 2015 and then settled early in 2016 at nearly three times the Q3 2015 price.

Figure 19-3 Lithium Carbonate Pricing from Asian Metal

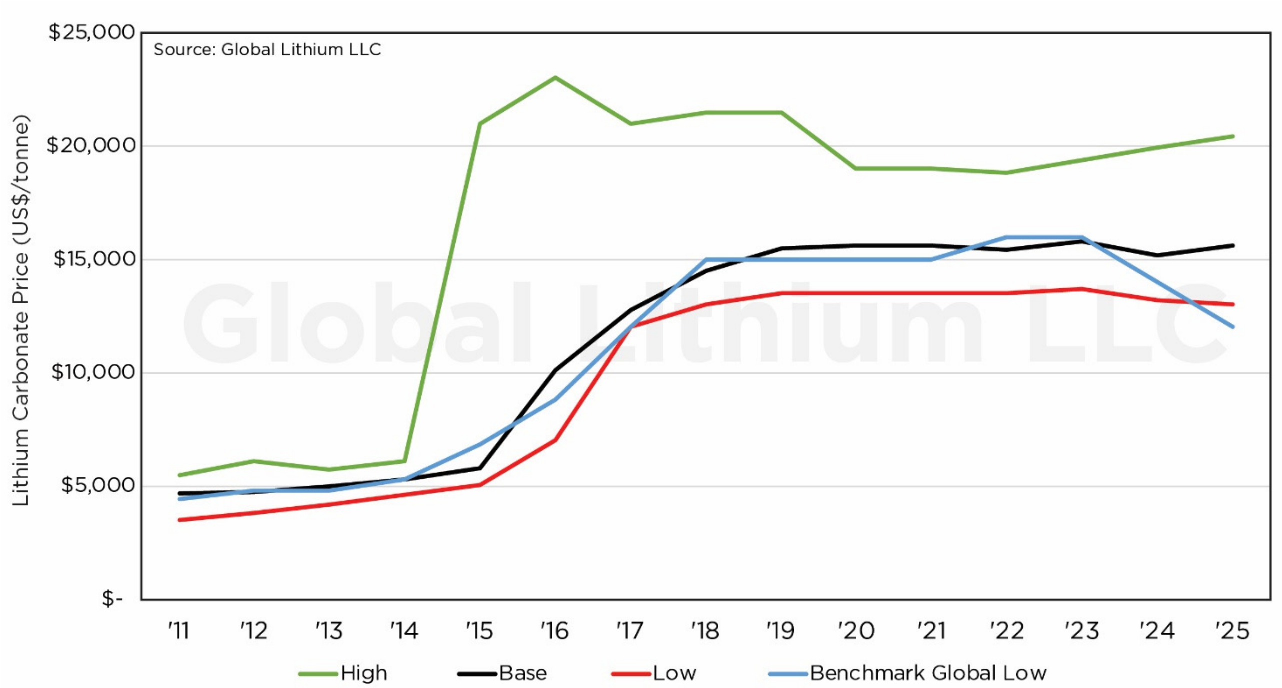


In January 2016, Asian Metal published data on the late 2015 price run up in China that continued into 2016, supporting the forecast that pricing will remain high. Figure 19-3 presents Asian Metal's data on lithium carbonate spot price per tonne from 2008 to 2018.

Initially the price run-up was considered by many to be a short term "spot price" bubble. Over time, it became clear that the increase in demand projected for 2016 and beyond had resulted in a "new normal" for lithium prices. By the end of Q1 2016, prices were in the range of US$22,000/tonne - US$27,000/tonne (including VAT of 17%).

Outside of China, due to longer term contract commitments by major suppliers Albemarle and SQM, the transition to higher prices has taken longer. The average price outside of China moved from less than US$6/kg (US$6,000/tonne) in 2015 to high single digits in 2016 and on to low teens in 2017 as depicted in Figure 19-4.

Figure 19-4 Lithium Carbonate Prices 2011-2025 (US$ per/kg)



Prices have achieved what appears to be a "new normal" especially given the fact that recently signed royalty agreements have doubled the cash costs of the lowest cost brine producers when prices remain in the US$14,000/tonne range and the cash cost of high end of the hard rock cost curve in China is above US$10,000/tonne.

Global Lithium projects sustained firm lithium carbonate pricing over the next five to seven years based on the consensus opinion of lithium producers, purchasers and industry experts that demand will grow a minimum of 300% between 2017 and 2025. Although the major lithium companies are planning significant expansions and many junior mining companies are attempting to finance new projects, based on the time it takes to bring capacity online and the fact that over US$10 billion of uncommitted investment is required over the next three to five years to keep the market in balance in 2025, oversupply and dropping prices seem a very unlikely scenario.

The lithium chemicals market in China has the highest prices, currently over US$20,000/tonne due to the majority of supply coming from high cost domestic production. At present, the majority of pricing outside of China is in the US$16,000/tonne range. Certain suppliers are selling at lower prices based on previously signed long-term contracts but even the low case price scenario is projected to be above US $13,000/tonne by Global Lithium.

Global Lithium has suggested a conservatively low-price estimate of US$12,000/tonne for project economics to provide a margin of safety over what is believed to be the most likely price scenario going forward.

19.5 Offtake Contracts

LNC nor LAC have any offtake contracts or agreements in place for the Thacker Pass Project.

19.6 Qualified Person Statement

Rob Spiering, qualified person as defined by National Instrument 43-101, has reviewed the study and analysis presented by Global Lithium 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 the proposed lithium mine and processing facilities.

20.1 Introduction

The Project is located on public lands administered by the Bureau of Land Management (BLM). Construction of the Project requires permits and approvals from various Federal, State and local government agencies. The primary permit and application submittal consist of three (3) parts; (a) Mine Plan of Operations (MPO), (b) a baseline study program to collect and report data for environmental, natural and socio-economic resources that will be used to support the permitting, impact assessment, and approvals process; and (c) a preliminary impact assessment or environmental report.

As part of the overall permitting and approvals process, an environmental documentation program performed in accordance with the *National Environmental Policy Act* of 1969 (NEPA) will be completed to assess the potential impacts to the human and natural environment that could result from the implementation of project activities. This impact analysis is commonly known as an Environmental Impact Statement (EIS).

A significant body of environmental and socio-economic work has been conducted to support the historical technical study released in 2012 by the heritage company, Western Lithium Corp. Although this work was developed to support operational permit applications for a project of smaller capacity and scale (3,700-acre project boundary), much of the information is currently valid and credible. This work, which includes baseline data assessments and geochemical analysis, is being supplemented and expanded to account for the proposed Area of Interest (AOI) which totals 18,866 acres. This baseline study program is scheduled to be substantially complete by Q4 2018.

There are no identified issues that would prevent LNC from achieving all permits and authorizations required to commence construction and operations of the Project based on the data that has been collected to date.

20.2 Permitting and Approvals Process

Phase 1 of the Project is located entirely on Federal lands administered by the Bureau of Land Management (BLM), which will be the lead agency for issuing Federal approval under the General Mining Law and implementing surface management regulations and the preparation of an Environmental Impact Statement ("EIS"). Other permits will be required from various other Federal, State, and local agencies.

Phase 2 of the project will require additional approvals from BLM and the Surface Transportation Board (STB) for the additional rail corridor and plant site infrastructure. STB regulates the construction and operation of railroads in the USA.

The process for permitting a lithium mine on federal lands in the USA is currently being reviewed as a result of Presidential Executive Order 13817, which calls for a federal strategy to ensure secure and reliable supplies of critical minerals. A critical mineral is defined as being a non-fuel mineral, with a vulnerable supply chain, that is essential to the economic or national security of the USA. Lithium is categorized as a critical mineral.

The new federal strategy is expected to include streamlining of permitting and review processes to expedite production of critical minerals. The project could benefit from an accelerated permitting procedure that supports the federal mandate to enhance domestic lithium production.

20.3 Federal, State, and Local Regulatory Permitting Requirements

A multi-agency regulatory process will be completed to obtain all required Federal, State and local agency permits and approvals necessary to construct, operate and ultimately reclaim and close the Project, including all mining, ore processing, and transportation related operations.

The following key permits are required for open pit mining, ore processing, and transportation operations and are explained below.

- Federal Permits (20.3.1)
  - Bureau of Land Management (BLM); Mine Plan of Operations; for open pit mining, ore processing, and transportation operations on public lands;
  - Surface Transportation Board (STB); for railroad construction and operation; and
  - U.S. Army Corps of Engineers (USACE); for facility construction in jurisdictional waters of the US for Phase 2 construction of infrastructure.
- State Permits (20.3.2)
  - Nevada Division of Environmental Protection (NDEP)-Bureau of Mining Regulation and Reclamation (BMRR); Reclamation Permit; for reclamation of the mine and process facilities;
  - NDEP-BMRR; Water Pollution Control Permit; for the construction, operation, and closure of the mine and process facilities to maintain surface and groundwater quality;
  - NDEP-Bureau of Air Quality (BAQ); Air Quality Permit for the construction and operation of the mine and process facilities to maintain ambient air quality; and
  - Nevada Division of Water Resources (NDWR); appropriation to use groundwater for mining and milling purposes.
- Humboldt County Permits (20.3.3)
  - Regional Planning Dept.; conditional use permit allowing mining and processing;
  - Building Dept.; various permits to construct and inhabit structures and facilities at the Project, including building, electrical, plumbing and mechanical permits and inspections.

20.3.1 Federal Permits

20.3.1.1 Bureau of Land Management

As lead Federal agency, BLM’s Winnemucca District Office would directly manage the review and approval of the Mine Plan of Operations and the NEPA process on behalf of all cooperating Federal agencies. BLM will issue approval for the proposed Project in accordance with the General Mining Law, which provides a statutory right to mine, and related Surface Management Regulations contained in 43 CFR 3809.

The NEPA process for the proposed Project will take the form of an Environmental Impact Statement (EIS) since the Project disturbance exceeds 640 acres.

BLM will also require the placement of a financial guarantee (reclamation bond) to ensure that all disturbances from the mine and process site are reclaimed.

The permit application submittal consists of three (3) parts:

- Mine Plan of Operations (MPO) that describes the proposed mining and ore processing/fluid management system operations, along with reclamation and closure activities;
- A baseline study program to collect and report data for environmental, natural and socio-economic resources that will be used to support the permitting, impact assessment, and the subsequent approvals process; and
- An environmental documentation process (a preliminary impact assessment or Environmental Report) that analyzes the impacts of the Project to the human and natural environment and any facility siting or operating alternatives considered for the project.

The submittal of an MPO under 43 CFR 3809 is considered a "major Federal action" and sequentially initiates the review of the Project described in the MPO for compliance with other major Federal environmental protection statues, including; the *National Environmental Policy Act* (NEPA); the *Clean Water Act* (CWA), *Clean Air Act* (CAA); *National Historic Preservation Act* (NHPA), *Endangered Species Act* (ESA), and various other Federal statutes as they apply to the project. Compliance with these and other regulatory requirements require an understanding of the existing environment as related to the proposed mine, process, and transportation facilities which creates the need for project-specific environmental baseline data.

20.3.1.2 MPO Pre-Planning Process

BLM has implemented a process for MPO review that starts at the conceptual planning level and continues through the development of an administratively complete three-part MPO application submittal as described above.

On submittal of a conceptual project configuration or general facility arrangement, BLM will conduct a formal "baseline needs assessment", which is documented in the pre-planning process. This assures the proponent that the data gathered is collected and reported to BLM standards. This generally includes the development of baseline data collection work plans, which are submitted to BLM for review and approval prior to initiating the baseline data collection. The full content of the MPO Application is based on an iterative process as technical data is derived from the engineering design process and from the environmental baseline study efforts.

Environmental impact analysis criteria are also documented at this stage and will be further refined as the Project description becomes administratively complete.

As required by BLM, the MPO includes all mine and processing design information and mining methods, waste rock management plan, quality assurance plan, storm water plan, spill prevention plan, reclamation plan, monitoring plan, and an interim management plan. In addition, the reclamation plan must contain a Reclamation Cost Estimate ("RCE") for the reclamation and closure of the mine as proposed.

20.3.1.3 Surface Transportation Board (STB)

The STB would issue approval for the construction and operation of the proposed railroad and related facilities in Phase 2. Construction proposals are subject to review under the *Interstate Commerce Act* (49 USC 10901).

The permit application would contain the information already documented in the MPO submittal. The submittal of the rail construction proposal is also considered a "major Federal action" and sequentially initiates the review of the Project described in the construction proposal for compliance with the same major Federal statutes as the MPO initiates. For this reason, STB NEPA compliance can be demonstrated using the same NEPA baseline and impact analysis documentation as used for the MPO.

The initial approval step is a Petition for Exemption under 49 U.S.C. 10502 from the formal application procedures of 49 U.S.C. 10901. The STB reviews the Petition to decide whether, from a transportation perspective, the proposed rail service is necessary. If the STB finds the proposed service is necessary, it will typically issue a conditional grant of authority, subject to the STB's further environmental review and compliance with NEPA under 49 CFR 1105.

When the environmental review process (NEPA) is complete, the STB will issue a further decision addressing the environmental aspects of the proposed railroad and deciding whether to allow the exemption to become effective. No construction of the railroad may begin until the STB decides to allow the exemption to become effective.

20.3.1.4 U.S. Army Corps of Engineers (USACE)

The USACE would issue approval for the construction and operation of facilities discharging dredged or fill material into jurisdictional waters of the USA (surface waters or wetlands).

The permit application would contain the information already documented in the MPO and STB approval applications. NEPA compliance can be demonstrated using the same NEPA baseline and impact analysis documentation as used for the MPO and STB.

20.3.1.5 Environmental Documentation Process

NEPA is not a permit or approval action. NEPA is a "law of disclosure" which analyzes and discloses to the public the potential impacts to the human environment that could result from the proposed action and any alternatives; assesses the level of significance for each identified impact; and proposes mitigation measures if needed to reduce the potential impact from the selected proposed action to a less than significant level. The results of the NEPA analysis are used by BLM, STB, COE, and other Federal agencies as part of their decision-making process.

The general requirements of an Environmental Report that would serve as the basis for the formal NEPA process are:

- The environmental report should include a description of the proposed action, a Statement of the project purpose, a description of the environment affected by the Project, and must discuss the following considerations:

  - The impact of the proposed action on the environment. Impacts shall be discussed in proportion to their significance;
  - Any adverse environmental effects which cannot be avoided should the Project be implemented; and
  - Alternatives to the proposed action. The discussion of alternatives must be sufficiently complete to aid the Agency(s) in developing and exploring, pursuant to section 102(2)(E) of NEPA, "appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." To the extent practicable, the environmental impacts of the proposal and the alternatives should be presented in comparative form.
- The relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity;
- Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented; and
- An analysis that considers and balances the environmental effects of the proposed action, the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects.

20.3.1.6 NEPA Time Frames

Executive Order 13817, "A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals" issued December 20, 2017 directs that it "…shall be the policy of the Federal Government to reduce the Nation's vulnerability to disruptions in the supply of critical minerals, which constitutes a strategic vulnerability for the security and prosperity of the United States". This EO further emphasizes Federal priority of securing reliable supplies of critical minerals such as lithium by directing all Federal agencies to "develop strategies for streamlining permitting processes to expedite exploration, production, processing, reprocessing, recycling, and domestic refining of critical minerals."

In response to this EO, the Secretary of the Department of Interior (DOI) issued Order No. 3355 -- Streamlining National Environmental Policy Act Reviews and Implementation of Executive Order 13817 by "Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects." DOI Order No. 3355, issued August 31, 2017, sets page limits of 150-300 pages (excluding appendices) for EIS's and limits the time to complete an EIS to 12 months, measured from issuance of the Notice of Intent to prepare an EIS to BLM Project Authorization. EIS timelines exceeding the target completion timeframe of 12 months by more than 3 months must be approved by the relevant DOI authority in charge of BLM.

Thacker Pass will be among the first mine development projects in Nevada positioned to take advantage of the expedited permitting process resulting from these Federal orders. The summary schedule in Section 20.6 assumes a 12-month time period for the EIS.

20.3.2 State Permits

NDEP-BMRR is the primary State agency regulating mining. There are three (3) branches within BMRR; Regulation, Reclamation, and Closure. The Bureau of Air Quality works closely with BMRR on mining projects and issues permits to construct facilities that emit gases or particulate matter to the atmosphere. The Nevada Division of Water Resources (NDWR) issues an appropriation to use groundwater for mining and milling purposes.

Nevada does not have the equivalent of the Federal NEPA process requiring an impact assessment. However, all State permits and authorizations require public notice and a comment period after the completion of an administrative and technical review of the proposed facilities before approval. There is also a baseline characterization requirement that is accomplished using baseline data acquired during the MPO baseline effort.

20.3.2.1 Water Pollution Control Permit

The Regulation Branch will issue the State of Nevada Water Pollution Control Permit (WPCP) for the mine, ore processing, and operation of the fluid management system in accordance with NAC 445A.350 through NAC 445A.447. The WPCP will include requirements for the management and monitoring of the mine and ore processing operations, including the fluid management system, to ensure that they do not degrade waters of the State. The permit will also include procedures for temporary, seasonal and tentative permanent closure of mine and ore processing operations.

20.3.2.2 Reclamation Permit

The Reclamation Branch will issue a Reclamation Permit (RP) for the project in accordance with NAC 519A, inclusive to reclaim and close the mine, ore processing, and related transportation facilities.

The MPO submittal to BLM contains the Reclamation Permit Application (RPA) and is a joint application and review process that is submitted concurrently to both BLM and BMRR under a Memorandum of Understanding (MOU) between these two agencies. BMRR will cooperatively review and approve the MPO/RPA and establish a financial guarantee for reclamation activities meeting Federal and State requirements to ensure that adequate funds are available to reclaim and close the site should the proponent default.

20.3.2.3 Air Quality Permit

NDEP-Bureau of Air Quality (BAQ) issues Air Quality Permits for the construction and operation of the mine and process facilities to maintain ambient air quality. Permits are issued in accordance with NAC 445B.001 through NAC 445B.3689.

20.3.2.4 Groundwater Appropriation

The Nevada Division of Water Resources (NDWR) issues the approval to use groundwater for mining and milling purposes for the life of the mine.

20.3.3 Humboldt County Permits

The County Regional Planning Department will issue a conditional use permit (similar to zoning) allowing a mining and processing land use at the Project. 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, regulations and laws.

Additional permits and approvals will be identified as necessary during the completion of the definitive feasibility study process.

20.4 Summary Schedule for Permitting, Approvals, and Construction

The Project is proposed in two (2) phases. Phase 1 includes all mining and process facilities to a 30,000 tonne per year process rate starting production in 2022 and relies on existing surface transportation infrastructure (highways) to service the Project. Phase 2 allows the construction of the railroad and plant expansion to the full 60,000 tpa processing rate in 2026, which requires rail for economic and other production constraints. The following is a summary schedule for permitting, approvals and construction:

- Q3 2018 - Submit preliminary Mine Plan of Operation for Phase 1
- Q3 2019 - Submit administratively complete MPO, environmental baseline, and environmental impact report for Phase 1
- Q4 2020 - Receive Phase 1 Approvals and begin construction
- Q3 2022 - Commissioning and first Phase 1 production
- Q2 2025 – Receive Phase 2 Approvals for rail corridor and plant expansion
- Q2 2025 - Commence construction for Phase 2
- Q3 2026 - Commissioning and Phase 2 production realized

20.5 Current Permitting Status

Multiple permitting activities are already underway to develop the required information for permitting the project and engaging the various permitting agencies, the local community, and the Native American communities that will be impacted by the project to ensure community support and timely completion of the permitting process.

20.5.1 Federal, State, and Local Agency Consultation

In accordance with Nevada BLM guidance outlined in Instructional Memorandum IM NV-2011-004, LNC regularly meets with and updates the management and Interdepartmental (ID) Team of the BLM's Winnemucca District Office. In 2017, LNC initiated consultation with appropriate federal and state regulatory agency specialists to ensure that the environmental and natural baseline study data is collected using approved procedures to meet appropriate data adequacy standards that will support the multi-federal and state agency permitting program and the anticipated NEPA environmental documentation process.

In November 2017, LNC prepared a comprehensive Habitat Evaluation, which encompassed both a desktop and field evaluation to identify the potential for Bureau of Land Management (BLM) sensitive status species, NDOW Wildlife Action Plan species, and project area migratory birds likely to occur within the project area and involved agency consultation.

20.5.2 Community Engagement

Lithium Americas has developed a community engagement plan, recognizing that the buy-in of all stakeholders is essential to the success of the Project. The Project has been designed reflecting information collected during numerous stakeholder meetings, including public open houses held in July 2017 and July 2018 in Orovada, Humboldt County, Nevada. This approach is expected to mitigate potential concerns at the design level, and ensures the local community is included early in the development process. Future public open houses are planned as the project advances to ensure the community is fully engaged.

20.5.3 Native American Consultation

Numerous laws and regulations require the BLM to consider Native American 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 LNC’s Thacker Pass Project 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 Ft. McDermitt Paiute and Shoshone tribe on April 15, 2013 and the Summit Lake Paiute Tribe on April 20 and May 18, 2013. In June 2017 and July 2018, LNC met with senior members of the Ft. McDermitt Paiute and Shoshone Tribe. LNC will continue engagement with the Ft. McDermitt Paiute and Shoshone Tribe as the project advances to ensure efficient exchange of information and that Native American values and interests thoroughly captured and acted on. As part of the Thacker Pass Project NEPA EIS Process, the BLM Winnemucca District Office will perform formal consultation with both the Ft. McDermitt Paiute and Shoshone Tribe and the Summit Lake Paiute Tribe.

20.5.4 Environmental Baseline Studies

A baseline study program is scheduled to be substantially complete by Q4 2018. This program will collect the environmental, natural resource and socio-economic data required to support the completion of the multi-Federal and State agency permitting and approval program, and the anticipated environmental documentation process that will be required under NEPA. This baseline program includes, but is not limited to, studies for the following standard resource issues and 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;
- Paleontology;
- Water quality and quantity including surface and groundwater hydrology;

- 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;
- Native American traditional values as regulated by various Federal laws and regulations including the *American Indian Religious Freedom Act* of 1978, as amended, the *Native American Graves Protection and Repatriation Act* of 1990, and Executive Order 13175 – Consultation and Coordination with Tribal Governments;
- 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 management;
- Social and economic impacts; and
- Aesthetics, including noise and visual assessments.

Since 2010, LNC has completed an extensive baseline study and data collection program, including the completion of over forty environmental reports and agency consultation activities. These studies primarily focused on surveys within an approximate 3,700-acre boundary of the previous project concept, in the immediate vicinity of the pit and plant layout proposed by Western Lithium Corp. in 2012.

The following baseline data collection and impact studies are currently underway to supplement historical baseline information and/or reports to support construction and operations permit applications for the Project.

20.5.5 Climate/Weather Monitoring

In August 2011, LNC installed a State-of-the-art weather station at the Project site to collect site-specific meteorological data that will 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 and 10 m, relative humidity, precipitation, barometric pressure, and solar radiation.

20.5.6 Wildlife

The BLM identifies the area in which the Thacker Pass Project lies as sage grouse priority habitat. BLM considers sage grouse to be a sensitive species and has regulations to protect its habitat.

Since 2008, Lithium Nevada Corp. (and its heritage company, Western Lithium Corp.) have performed (via independent biological contractors) six separate field surveys for sage grouse in Thacker Pass. The purpose of the surveys included assessing the quality of habitat and sage grouse use. Although a total of six separate surveys were performed by independent specialists and none of the surveys has ever identified any sage grouse use or sage grouse signs within the Thacker Pass survey area.

NDOW regularly monitors sage grouse leks and performs lek counts within the Montana Mountains, north of the proposed mine site. These data are available for use by LNC during the mine permitting and approval process and the NEPA environmental documentation process.

In March 2018, LNC hired SWCA Environmental Consultants to perform additional environmental baseline surveys in the expanded 18,866-acre project area, for general wildlife, general vegetation, special status species, and sage grouse habitat surveys. Updated surveys will be completed by September 1, 2018.

In February 2018, LNC hired Wildlife Resource Consultants to perform aerial presence and ground territory surveys for raptors. Surveys are underway within a 10-mile radius of the project site and will be completed by June 30, 2018.

In March 2018, LNC hired Wildlife Resource Consultants to perform Spring Snail surveys in proximity to the proposed lithium mine. The spring snail surveys will be completed by July 31, 2018.

20.5.7 Cultural

In March 2018, LNC hired Far Western Anthropological Group to perform a Class III Cultural Resource Survey within the revised 18,666-acre project area. The cultural resource survey will be completed by September 1, 2018.

20.5.8 Water

The hydrogeological team from Piteau Associates ('Piteau') has been engaged at the Thacker Pass Project since 2010[1] providing hydrogeological expertise and support for permitting activities. Initial activities centered around a groundwater monitoring program to characterize the bedrock aquifer in the immediate vicinity of the project. The team installed six groundwater monitoring wells around the original open pit area. Data from these wells (including water quality and groundwater elevation) has been continuously collected since 2011. In 2012, the groundwater monitoring data was used to calibrate a basin-scale groundwater model spanning Kings and Quinn River hydrographic basins to identify potential groundwater quantity impacts. A renewed investigation commenced in 2018 to characterize surface water and groundwater conditions in the context of a larger pit area and mine operation (as compared to 2012). Additional wells and piezometers will be installed near the proposed pit area. The groundwater model will be updated with these data findings and used to evaluate drawdown, water consumption, and recovery associated with mining the Thacker Pass Project. Completion of this work is scheduled for Q2 2019.

In March 2018, LNC hired Redhorse Corporation to perform a formal Waters of the US Delineation (including wetlands) within the revised 18,866-acre project area. The revised Waters of the US Delineation will be completed by September 1, 2018.

In March 2018, LNC hired Piteau Associates to perform a quarterly spring and seep monitoring and sampling program. The seep and spring sampling program has been expanded from historical surveys. The survey now includes sampling 51 seeps and springs.

[1] Prior to 2017 the team lead, Tyler Cluff, was employed by Schlumberger.

In April 2018, LNC hired Rain to River Consulting to install three continuous streamflow monitoring stations in the vicinity of the Project to collect baseline flow data. Monthly monitoring of these gauges, including manual flow measurements to calibrate water levels with stream flows, is ongoing.

In March 2018, LNC engaged Piteau Associates to manage all surface and groundwater data collection, update the groundwater data record to characterize existing water quality and quantity, and model potential effects to surface and groundwater resources including the potential to generate a pit lake. Also included is the installation of four additional groundwater monitoring wells and additional piezometers, all located in the vicinity of the larger 2018 pit configuration. The revised water quality and quantity characterization report is anticipated to be completed in early 2019.

In late 2017, LNC drilled a 560-foot groundwater test well located in the Quinn River Valley, located about 12 km east of the plant site. The test well identified an adequate source of water (quantity and quality) for the proposed lithium project. A production well is scheduled to be installed at this location in Summer 2018. A backup well will be installed prior to mine operations.

20.5.9 Air Quality

LNC will conduct an air quality monitoring and modeling program based on the final process design. LNC will coordinate this activity with the key regulatory agencies including the Nevada Division of Environmental Protection (NDEP), Bureau of Air Quality (BAQ), and BLM to ensure that the program will support the State air quality permitting process and the NEPA environmental documentation program. The NDEP BAQ has primacy for air quality activities in Humboldt County under the Federal *Clean Air Act* of 1970, as amended.

20.5.10 Geochemical Characterization

20.5.10.1 Historical Geochemical Analysis

In Fall 2011, LNC initiated a detailed geochemistry study to characterize acid generation and neutralization potential of ore and waste rock for the proposed 2012 pit configuration. Results of these tests indicate that acid generation from ore and waste rock is not predicted. These results are still considered valid as, at a minimum, the ore and waste rock tested are representative in areas where there is overlap of the new and historical pit configurations.

20.5.10.2 Current Geochemical Program

SRK Consultants have been engaged to review and potentially expand on the historical geochemical work conducted to: 1) account for the expanded pit area to ensure acid generation and neutralization potential of ore and waste rock is effectively characterized; and 2) characterize the tailings from the new process. This scope includes assessment of the new mine plan and open pit configuration, geochemistry testing of additional representative ore and waste rock samples (if determined necessary), perform geochemistry testing of representative tailings samples, prepare a final geochemistry characterization report, prepare a waste rock management plan, perform pit lake geochemical modeling, and complete a screening-level ecological risk assessment using the resulting pit lake geochemical predictions to evaluate the potential toxicological threats to mammalian and avian wildlife by the pit lake following closure.

20.5.11 Environmental Baseline Study Data Gap Analysis

WorleyParsons' review of the completed and ongoing baseline study program indicates that LNC has initiated the environmental and natural resource baseline studies required to support the permitting and approval program and the NEPA environmental documentation process for the Project. The studies completed to date and the ongoing studies are adequate and in conformance with what are typically performed for mining projects located on BLM-managed public lands in Nevada.

20.6 Waste Rock and Tailings Facility Management

The management of waste rock and tailings storage facilities, water management, and site monitoring 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".

20.6.1 Waste Rock Storage and Management

Waste rock from the open pit will be either used as fill for project infrastructure, managed through the construction of a surface waste rock storage facility (WRSF), or backfilled in the pit shown in Figure 18-1.

The in-pit WRSF will be constructed by end dumping in lifts to a stable, overall slope configuration of 3.0 horizontal to 1.0 vertical (3.0H:1.0V). This construction method will facilitate final reclamation, revegetation and closure of the waste rock storage facility. The external to-the-pit WRSF is shown in Figure 16-12 located in an area immediately south of the open pit to reduce haulage requirements and also will be constructed to a stable configuration for eventual reclamation.

Based on the 2011-2013 geochemistry results and the sedimentary nature of the geology, segregated waste rock management is not anticipated. Topsoil and additional growth media will likely be selectively handled and managed as appropriate for reclamation.

20.6.2 Tailings Storage and Management

The tailings management program described below is expected to be refined based on the results of the ongoing process engineering design.

20.6.3 Clay Tailings

Clay tailings will be dewatered in the process facility prior to deposition in the Clay Tailings Storage Facility (CTFS). The leached clay tailings will be mixed with limestone to improve structural stability before being conveyed to the clay tailings dry stack. The CTFS will be constructed in lifts to a physically stable configuration, then reclaimed as described in the Mine Closure and Reclamation section of this report.

20.6.4 Magnesium Sulfate, and Sodium / Potassium Tailings

The magnesium sulfate, and sodium/potassium salt by-products will each be transferred to their own isolated tailings cell within the lined facility. This strategy allows for future use of the salts (if market demand and pricing are favorable) as well as minimizes the area that may require lining.

20.6.5 Water Management

All process solutions will be contained in lined facilities and re-used in the process or allowed to evaporate. The plant is designed to be a Zero Liquid Discharge (ZLD) facility to ensure protection of local and regional water quality.

At the end of the process life, all residual solutions will drain to a lined, solution pond and allowed to evaporate.

20.6.5.1 Post-Closure Monitoring

Post-closure monitoring is required until chemical stability is achieved. Monitoring is required for at least five years after achieving chemical stability to ensure waters of the State are not degraded.

20.6.5.2 Minimum Waste Rock and Tailings Storage Facility Design Requirements

All mine facilities must be designed by a licensed professional engineer and be designed, constructed, operated, and closed without any liquid discharge or release in excess of those design standards established except for meteorological events which exceed the design storm event.

Process water ponds must have two impermeable liners to prevent the escape of process fluids; if process or other wastes contain fluids that can leach into the ground, the facility must have an impermeable liner system with leak detection. Containment of process fluids must consist of an engineered liner system which provides containment equal to or greater than that provided by a synthetic liner placed on top of a prepared subbase of 12 inches of native, imported or amended soil, which has a maximum recompacted in place coefficient of permeability of 1x10-6 cm/sec.

Much of the mined claystone meets this permeability requirement and may be used instead of a synthetic liner if testing demonstrates conformance to the design standard, including chemical stability and resilience.

20.6.6 Site Monitoring

All Federal, State, and County agencies will require monitoring of the mine, ore processing operations, including the fluid management system, and transportation infrastructure to ensure there is no contribution to unnecessary or undue degradation of public lands or degradation of waters of the State. BLM monitoring requirements will be issued as part of its Record of Decision for approving the Project under its Surface Management Regulations contained in 43 CFR 3809. NDEP-BMRR monitoring requirements will be included in the Water Pollution Control Permit issued for the Project in accordance with the regulations contained in NAC 445A.350 through NAC 445A.447.

20.7 Social or Community Impacts

The construction and operation of the Thacker Pass Mine and ore processing operations should not negatively affect local or regional social or community infrastructure. It is expected that employees will come 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 in regard to direct, indirect and induced local and regional economics. The total number of direct employees during Phase 1 and Phase 2 is 215 and 292 respectively, with the average annual salary estimated at $86,400. An additional and positive economic benefit would be the creation of short-term positions for construction activities. It is estimated that nearly 1,000 construction jobs will be created during Phase 1 and approximately 650 construction jobs for Phase 2. In addition, there will be additional jobs created through ancillary and support services, such as transportation, maintenance and supplies.

The Borden & Harris 2017 economic study, Economic and Fiscal Impacts from New Lithium Mine and Lithium Processing Operations in Humboldt County, Nevada (Borden & Harris, 2017), 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.

20.7.1 Mine Reclamation and Closure

Reclamation and closure of the mine, ore processing, and transportation operations will be completed in accordance with the approved Mine Plan of Operations and Reclamation Plan, and the tentative closure as approved by NDEP-BMRR. Reclamation costs are included in the sustaining capital estimate for tailings management, WBS 5000. In the economic model, the sustaining capital estimate for this area is distributed every four years as per the progressive mine reclamation plan. 10% of the total sustaining capital estimate is associated with final closure. The sustaining capital for each area is presented in Table 22-2.

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 type to restore the area to the pre-mining land uses of wildlife habitat, grazing, and 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 medium material will be stripped from sites scheduled for surface disturbance and stockpiled for future reclamation activities.
- LNC 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 runoff collection pond will be reclaimed by removing evaporated solids and disposing as determined by characterization results. The ponds will be backfilled with stockpiled soil material to a sufficient elevation above the original ground surface, then graded to promote drainage and revegetated with an approved reclamation seed mix.
- The CTFS slopes will be capped with stockpiled growth medium and revegetated with an approved reclamation seed mix.
- The waste rock storage facility slopes will be graded as needed, capped with stockpiled growth medium 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. To inhibit public access, pit access roads will be reclaimed, and the pit perimeter will be enclosed with a rock berm or fence. Warning signs will be placed at suitable locations along the rock berm or fence to notify the public of a hazardous condition.
- Roads not needed for long term monitoring access will be regraded and revegetated using the approved reclamation seed mix.
- The surface water diversion ditches were constructed as permanent features and will remain in place to divert surface water flows around the reclaimed mine site area.

Where long-term water management is a concern, BLM and NDEP-BMRR have initiated a long-term trust fund program on 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 applicable, the financial method for securing and placement of the trust fund, the trust fund cost and the determined long-term duration varies by project. Consultation with BLM and NDEP BMRR during the impact analysis, bonding, and approvals process determines the necessity of a long-term trust fund program.

Due to the environmental setting and proposed water management approach for the Project, it is not certain a long-term trust fund will be required.

21. Capital and Operating Costs

21.1 Capital Cost Basis of Estimate

21.1.1 Capital Cost Estimate Classification and Accuracy

This capital cost (CAPEX) estimate is a Class 4 estimate, prepared in accordance with the AACE International's estimate classification system (Recommended Practice 47R-11), and meets or exceeds accuracy requirements of NI 43-101 for Pre-Feasibility Studies. The P50 accuracy range is -20% to +25%, after application of contingency.

The estimate was prepared with a base date of June 2018. The prices and unit rates used in this estimate were obtained in 2018.

21.1.2 Responsibilities

Advisian consolidated the Capital Cost Estimates provided by the following consultants:

- Mining — Mining Plus
- Mechanical Process/Pre-Eng Buildings — Advisian
- Site Infrastructure and Ancillary Buildings — Advisian
- Sulfuric Acid Plant — Chemetics
- Power, Water, Gas Supply and Distribution — Advisian
- Environmental — Advisian
- Owners' costs — LNC

21.1.3 Estimate Structure

The Estimate is assembled and coded with a hierarchical Work Breakdown Structure (WBS), by Area and Code of Account (CoA) numbers and is presented in United States dollars (US$). The project WBS is presented in Table 21-1.

Table 21-1 Capital Cost by Work Breakdown Structure (WBS)

WBS Area	Title	Phase 1 (US$)	Phase 2 (US$)	Phases 1 + 2 (Total Initial Capital) (US$)	Sustaining Capital (US$)
1000	Mine	$54,935,008	$677,093	$55,612,101	$294,101,835
2000	Ore Crushing and Handling	31,482,697	11,942,662	43,425,360	28,233,077
3000	Process Plant	77,023,821	60,970,241	137,994,062	98,575,633

WBS Area	Title	Phase 1 (US$)	Phase 2 (US$)	Phases 1 + 2 (Total Initial Capital) (US$)	Sustaining Capital (US$)
4000	Sulfuric Acid Plant	135,124,730	158,374,765	293,499,495	included in OPEX
5000	Tailings Management	55,882,841	10,629,034	66,511,875	146,292,671
6000	On-Site Infrastructure	40,756,077	9,094,988	49,851,065	3,918,686
7000	Off-Site Infrastructure	6,199,730	84,389,092	90,588,822	2,163,233
9000	Indirect Costs	53,596,983	36,633,306	90,230,289	28,722,845
9700	Owner's Costs	35,309,495	28,890,884	64,200,379	21,000,000
9900	Provisions	91,023,868	76,719,491	167,743,358	---
Total Cost		**$581,335,249**	**$478,321,557**	**$1,059,656,806**	**$623,007,981**

The capital cost by code of account (CoA) are presented in Table 21-2.

Table 21-2 Capital Cost by Code of Account

WBS CoA	Title	Phase 1 (US$)	Phase 2 (US$)	Phases 1 + 2 (Total Initial Capital) (US$)
10	Civil Earthwork	$73,097,890	$84,174,395	$157,272,285
20	Concrete	27,125,626	22,733,795	49,859,421
30	Structural Steel	28,660,915	30,218,662	58,879,577
40	Architectural	7,136,502	3,428,451	10,564,953
50	Mechanical Process Equipment	186,824,463	134,685,262	321,509,725
60	Mechanical Piping	33,896,562	32,199,055	66,095,617
70	Electrical	30,894,033	19,333,557	50,227,590
80	Instrumentation	10,512,684	7,192,327	17,705,012
91	Design Growth Allowances	3,256,229	2,112,373	5,368,601
Total Direct Cost		**$401,404,904**	**$336,077,876**	**$737,482,780**

WBS CoA	Title	Phase 1 (US$)	Phase 2 (US$)	Phases 1 + 2 (Total Initial Capital) (US$)
92	Project Indirect Costs	53,596,983	36,633,306	90,230,289
93	Owners Costs	35,309,495	28,890,884	64,200,379
94	Contingency	91,023,868	76,719,491	167,743,358
Total Indirect Cost		**$179,930,345**	**$142,243,681**	**$322,174,026**
Total		**$581,335,249**	**$478,321,557**	**$1,059,656,806**

Each item in the capital cost estimate is coded by cost type, phase, WBS, CoA and sequential numbering, as follows:

#	-	#	-	####	-	##.###
TC		Phase		Area		CoA . Seq.

Where:

- TC: Type of Cost (1 - Direct, 2 - Indirect);
- Phase: Construction Phase (1 for Phase 1, 2 for Phase 2, 3 for Sustaining CAPEX);
- Area: WBS Code;
- CoA: Code of Accounts; and
- Seq.: CAPEX Sequential Code.

The estimate is divided into five sub-estimates, each of which has an independent indirect cost analysis: Open Pit Mine, Lithium Processing and Infrastructure (includes power and water supply), Sulfuric Acid Plant, Railroad and Yards and Owner's Costs.

21.1.4 Project Currency and Foreign Exchange

The base currency for the capital cost estimate is US dollars (US$). Costs submitted in other currencies are converted to US$, based on the foreign exchange rates presented in Table 21-3. Canadian dollars are represented by CAD and Australian dollars are represented by AUD.

Table 21-3 Foreign Exchange Rates

Currency	Exchange
US$1.00	CAD 0.7675
US$1.00	AUD 0.7544

As the majority of project costs are in US$, no allowance is provided for foreign exchange fluctuations.

21.1.5 Duties and Taxes

Duties and Taxes are excluded in the estimate.

21.1.6 Measurement System

The International System of Units (SI) measurement system is used in the estimate.

21.1.7 Equipment Pricing

The estimate was prepared based on budgetary quotations provided by vendors for major equipment, including prices in US$, delivery lead times, freight costs, commissioning, training and start-up costs and spares (capital and start-up) allowance.

Prices for smaller equipment, construction and miscellaneous materials were based on supplier quotations and in-house data from recent projects and reference databases.

All equipment and material costs are included as Financial Conduct Authority (FCA) Free Carrier manufacturer plant Incoterms 2000. Other costs such as spares, taxes, duties, freight and packaging are covered in Indirect Costs.

21.1.8 Labor Rates and Costs

Labor rates for each construction discipline were developed by Advisian, based on Nevada State occupational wage rate estimates and are used throughout the estimate. These rates were confirmed with local Nevada contractors.

The labor rates include the following:

- Vacation and statutory holiday pay;
- Fringe benefits and payroll burdens;
- Small tools;
- Consumables;
- Personal protection equipment;
- Living Out Allowance (LOA) (Craft subsistence); and
- Contractor's overhead and profit.

Travel allowances are included under Construction Indirects. Labor crews were assigned to each activity in the estimate. Table 21-4 presents a summary of average cost per man hour for each CoA discipline:

Table 21-4 Average Cost per Man-Hour Summary

Code	Discipline	Average Labor Rate (US$/hr)
10	Civil Earthwork	61
20	Concrete	84
30	Structural Steel	92
40	Architectural	48
50	Mechanical Process Equipment	82
60	Mechanical Piping	95
70	Electrical	81
80	Instrumentation	93

21.1.9 Man-Hour and Productivity

Labor costs are based on a man-hours/work week schedule of ten (10) hours a day, six (6) days a week, with 75% of workers local and 25% on a three weeks on/one week off rotation, as per the Owner's construction workforce plan.

Productivity factors were applied to direct field labor hours to compensate for labor productivity loss on the job site.

The specific factors considered in this productivity assessment are as follows:

- Site isolation;
- Site altitude;
- Weather conditions;
- Safety conditions (hazardous materials, confined space, working at heights);
- Work hours and schedule;
- Local workforce age, skill, and availability;
- Site work congestion (plant conditions);
- Project scale and complexity;
- Tools and construction equipment quality;
- Local construction techniques;
- Local work practices; and
- Supervision and construction management team.

Productivity factors were developed separately for each phase of construction. Productivity is expected to be lower during Phase 2 construction due to proximity and interfaces with the operating production line constructed for Phase 1. The productivity factor for Phase 1 is 1.11, and for Phase 2 it is 1.18.

21.1.10 Elements of Costs

The capital cost estimate consists of four main parts (Cost types in the WBS):

- Direct Costs;
- Indirect Costs;
- Owner's Costs; and
- Contingency.

21.1.10.1 Direct Costs

Quantities were developed from general arrangement drawings, process design criteria, process flow diagrams and equipment lists. Design allowances were applied to all areas based on discussions between the respective discipline leads and the estimator. Details on the respective discipline quantities are described in the following sections.

Bulk Earthworks Including Site Preparation and Site Roads

Quantities for civil and earthworks were developed based on preliminary site layout drawings and 3D analysis, as follows:

- The cut and fill was optimized for the plant location and the material take-off (MTO) generated from Civil 3D software.
- The rail cut and fill MTO was developed from 3D software.
- MTOs for storm water diversion channels, berms and culverts were estimated based on length of each on the plot plan and from typical cross sections sized for the project location and boundary.
- The quantity of on-site drainage ditches and culverts was estimated from the drainage layouts and road layouts.
- MTOs for the storm water ponds were estimated based on the required storage volumes and layout.
- MTOs for roads were based on typical WorleyParsons designs, with lengths taken from the layout.
- MTOs for asphalt and gravel surfaces were estimated from the general arrangement and plot plans.
- MTOs for the utility pipelines (sewers and potable waters) were based on the calculated sizes of the pipes, with lengths taken from the layout.
- MTOs for the sewage treatment system were based on the pre-feasibility design of on-site sewage disposal system (septic field).
- MTOs for the off-site fresh water pipeline were based on the calculated sizes of the pipes from the plant water requirements in Phase 2 and the distance from the groundwater wells.
- MTOs for the ground water wells include additional well developments and the electrical submersible pump and downhole assembly components.

The earthmoving unit rates are calculated based on data obtained from local contractors and Advisian's reference database. The rates included in the estimate account for the context of current geotechnical data, specifications and drawings available. Fuel costs are included in the rates. Mobilization and demobilization costs are included in the indirect costs.

Concrete aggregates, structural backfill, granular base, road base and sub-base is supplied from the borrow sources established in the area. The unit costs associated with these materials include borrow source development (crushing and screening) and transport costs.

The following assumptions were made for the bulk earthwork estimate:

- Detailed geotechnical investigation of the proposed overall site has not been conducted.
- Topsoil depth is to be determined (varies across the site). It is stripped and stockpiled on site.
- Suitability of excavated material varies over the site and the assumed % of suitable/unsuitable is made on an area by area basis based on preliminary geotechnical information.
- Material excavated for construction of roads and areas other than the plant site is expected to be till/gravels/silts. An allowance of 10% basalt rock is allowed unless indicated differently by future geotechnical investigation/analysis/reports.
- Any surplus excavated material is stockpiled on site.
- All roads will have granular surfacing, base and sub-base; thickness of each layer is subject to material quality and traffic loading.

Mining

The CAPEX estimate includes site preparation, clearing, roads and storm water management costs based on MTOs generated by Advisian. Mine facilities, including the dry, offices, truck wash, fuel storage, and workshop were estimated by Advisian based on preliminary design requirements. Workshop tooling was estimated by Mining Plus. The remainder of the mine are estimates provided by Mining Plus.

Overview

The Mining capital expenditures (CAPEX) consist primarily of equipment purchases and the initial pre-production development of the mine. It is split into four categories, as follows:

Initial Mining Operations: The first two (2) years of initial capital purchases, as well as the first two (2) years of pre-production waste excavation, are included in the Initial Mining Operations.

Initial Construction - Waste Haulage to Plant and Tailings: The first two (2) years of haulage costs to transport waste excavated from the pit to the plant site and tailings embankment (to be used as construction/fill material) are included in Initial Construction. The area also includes the initial purchases of three (3) haul trucks and one (1) dozer.

Sustaining Mining Operations: This area includes the remaining years of capital equipment purchases.

Sustaining Construction – Waste Haulage to Plant and Tailings: The remaining years of hauling waste material from the pit to the plant site and tailings embankment are included in Sustaining Construction.

Battery Limits

The battery limits for the mining portion of the cost estimate are presented in Table 21-5.

Table 21-5 Battery Limits for Mining Portion of Cost Estimate

Mining Scope	Battery Limit	Outside Mining Scope
All mining equipment necessary to mine and haul ore to the overland conveyor or associated stockpiles nearby. The mining cost estimate also includes a front-end loader to rehandle material for the storage piles	**Overland Conveyor**	Costs associated with the hopper and conveyor, including infrastructure.
All mining equipment necessary to excavate and haul waste material from the pit to the plant and tailings site. A single dozer has also been included to assist with the material placement.	**Tailings and Plant Construction**	Equipment, maintenance, and labor costs associated with placing and compacting the fill and tailings embankment material above and beyond the dozer. Additional trucks required for hauling tailings from the plant or significant use of haulage equipment for detailed construction (a streamlined process has been assumed).
Mobile light plants etc.	**Infrastructure**	All mine buildings, tanks, and infrastructure.
Dewatering from the pit floor to the pond at the top of the pit	**Dewatering**	The pond itself. Pumping the water from the pond to the plant site.

Estimation Methodology

The CAPEX estimation for the Mine relies primarily on budgetary quotations, internal databases and historical pricing, as presented in Table 21-6.

Table 21-6 Pricing Sources

Methodology	Items
Budgetary Quotations	Heavy equipment, including, but not limited to Excavators, surface miner, grader, water truck, dozers and pumps
Internal Databases	Service truck, fuel/lube truck, light plants, skid steer
Public Information	PPE, light duty vehicles, crane

Key Assumptions

- The mine operations will be owner-operated. The only contractor operation assumed is the drilling and blasting of the basalt.
- The equipment is directly purchased by LNC. Leasing options have not been included to date.
- Replacements for mining equipment are suspended after Year 40.

Recommendations for Future Work

The following are recommended for future project development:

- Evaluate leasing option for major mining equipment;
- Perform a trade-off study for overland ore conveyor vs truck haulage;
- Evaluate the use of excavators to mine the ore, as well as the waste.
- Optimize the life of mine schedule to account for plant fill and tailings embankment material.

Sulfuric Acid Plant

The acid plant basis of estimate was prepared by Chemetics Inc.

Site preparation for the acid plant area was included in the MTOs prepared by Advisian. The two (2) Alpha heat recovery units, to be added in Phase 2, were provided by LNC and included the following: US$1.5 million for engineering, US$11 million in materials, US$12.25 million for labor and US$250,000 for site services (total US$25 million for both units).

Other costs excluded by Chemetics were included in the infrastructure direct costs, owner's costs, and indirect costs prepared by Advisian. These costs include site wide fire protection, construction cranes and temporary construction facilities, site preparation and other costs.

Concrete

Concrete quantities are determined from preliminary engineering design and are factored based on experience from previous projects of a similar nature, as follows:

- MTOs for foundations were estimated from the equipment type, as given on the equipment list and from typical foundations developed on other similar projects. High level calculations and schematics were developed where required.
- Preliminary geotechnical data was reviewed by Advisian's engineers as a starting point for foundation assessments.
- MTOs for floor slabs were estimated from the building layouts on the general arrangement and plot plans, with thickness allowances increased for heavier types of traffic where expected.

The unit rates for concrete placement and finishing are derived from in-house data from similar projects and verified by local contractors. Aggregate is assumed to be sourced and supplied locally for use with on-site batch plants. This price is included with the concrete unit prices.

Typically, all concrete is based on 30 MPa, with the exception of lean mix levelling concrete, which is 10 MPa and the batching cost to be US$285/$m^3$. The price for the supply of reinforcing steel was of US$1.80/kg, based on recent quotations for other projects. An allowance of US$50.00/$m^2$ is assumed for formwork. The blended unit rate for concrete, formwork and reinforcing steel costs varies from US$560/$m^3$ - US$1,265/$m^3$ with an average of US$640/$m^3$ for different applications.

Structural Steel

Steel quantities are based on quantities developed from preliminary engineering design and are factored based on experience from previous projects of a similar nature, as follows:

- Building type and size are defined on the plan view general arrangement drawings from which the steel MTOs were estimated.
- Quantity of steel was factored based on estimated building volume and building type. High level calculations and schematics were made to assist in the MTOs by estimating the height of the equipment stack ups and then estimating the steel for support structures.

The average unit rate for supply of fabricated steel sections is US$3,620/tonne, based on Advisian in-house data from recent projects.

21.1.10.2 Architectural

Buildings

A list of process plant buildings, with their respective sizes, was developed for estimating purposes based upon the building dimensions indicated on the general arrangement drawings. MTOs were prepared as follows:

- Architectural MTOs were estimated based on the information on the layouts and typical from WorleyParsons database for similar projects.
- The process plant buildings or structures are assumed to be enclosed with roofing and siding where there is any process using significant amounts of process water, or where filtration, crystallizing and final processing is carried out.

Budget quotations of similar projects were used for ancillary on-site infrastructure buildings.

Additional allowances were included, where applicable, for the following:

- Interior partitions and finishings;
- Electrical and plumbing hook-ups;
- Furnishings, office supplies, and workshop/warehouse equipment;
- Washroom facilities;
- Electrical wiring and fixtures; and
- IT/Communications systems.

Building Services: Heating, Ventilation and Fire Protection

The cost for major heating, ventilation and air conditioning (HVAC) and fire protection systems in buildings was based on recent budget quotes, prorated for building footprint, and based upon experience with similar projects and similar facilities.

Mechanical Equipment

Mechanical equipment and plate work were estimated based on the equipment list and MTOs prepared by discipline engineers, as follows:

- An equipment list was generated from the PFDs and layout, which included equipment sizes, materials, estimated motor horsepower and type.
- An MTO was developed for tanks, chutes and other plate work from information on the Process Design Criteria, PFDs, layouts and type of equipment.
- Conveyor lengths were estimated from the plot plan and general arrangements. Conveyors were sized based on the PFDs and Process Design Criteria.

Advisian has obtained budgetary quotations from vendors for major equipment, in accordance with the PFDs and Equipment Lists. All other mechanical equipment was estimated based on recent quotes and similar projects using Advisian's in-house database.

Piping

Piping quantities were developed using MTOs and factors, as follows:

- Large bore pipes (greater than 10") were sized and estimated as part of the MTO for piping. Small bore pipes were estimated based on a percentage of the cost of equipment for each WBS area.
- Civil pipelines, including on-site fire water piping, sewer pipe and off-site raw water pipeline, are estimated based on MTOs.
- Valves and fittings cost are estimated as part of the piping estimate included in the MTOs, or percentage of equipment total installed cost.

The cost of process piping in the plant was estimated using unit rates from recent similar projects, including valves and fittings, based on pipe size and complexity. Building services piping costs are included as a percentage of each building cost, based on costs from similar projects. Long, large diameter pipelines were estimated based on in house data and the applicable method of construction.

Electrical

An MTO of major electrical equipment, cable runs, and related infrastructure was prepared based on an assessment of overall site electrical requirements for both phases, including high voltage cables and number of e-houses, and substation requirements. Electrical systems within the process plant and all required electrical installation costs were priced based on a percentage of process equipment and building costs. The percentages were calculated based on costs from similar projects.

The pricing of electrical systems was developed, as follows:

- Major long lead electrical equipment prices were obtained from budget vendor quotes on issue of specification and data sheet.
- Main incoming 115 kV power lines to the main substation was based on estimate from BKI.
- Power lines on overhead (OH) poles, running from plant to mine and plant to raw water, were priced based on Advisian's historical data base for similar installations.
- E-houses size and MTOs were estimated from the number and power size in the equipment list and prices based on historical Advisian's data base for similar E-houses.
- Allowance was carried for the work required to stiffen the Harney 115 kV transmission network.

Other electrical equipment and materials were priced based on preliminary specifications using Advisian in-house data.

Instrumentation, Communications and Security

The instrumentation and control estimate is factored based on project data. This includes man-hours, material cost and equipment cost, as follows:

- Instrumentation quantities were factored based on the equipment list and PFDs.
- Cable trays and other bulk instrumentation equipment were factored from the total mechanical equipment price in each WBS area
- Quantities for major control systems, including Programmable Logic Controllers (PLCs), Supervisory Control and Data Acquisition (SCADA), and operator stations, including associated software, were prepared based on Advisian's historical information for similar plants.
- Information technology (IT) and telephone systems within each facility were factored based on building size and function.
- Mine telecommunications infrastructure, including a fiber optic ring at the site and interconnection to the local telecommunications utility, was based on Advisian's historical data for similar mine sites.

The costs of process instrumentation and control systems, including all the electrical wiring, were priced based on a percentage of the process equipment cost. These percentages and allowances were calculated based on costs from similar projects.

Indirect Costs

Indirect Costs include project indirect costs, Owner's costs, and contingency. These costs are summarized in Table 21-7.

Table 21-7 Indirect Costs Summary

Indirect Costs	Phase 1 (US$ x1,000)	Phase 2 (US$ x1,000)	Total (US$ x1,000)
Project Indirect Costs			
Construction Indirect Costs			
Contractor Mobilization/Demobilization	524	619	**1,143**
Freight, Logistics, and Services	12,553	10,687	**23,240**
Studies			
Survey	201	252	**453**
Geotechnical Investigation	441	383	**824**
EPCM			
Engineering	14,351	11,202	**25,553**
Procurement	5,248	3,919	**9,166**
Construction Management	20,280	9,570	**29,850**
Owner's Costs			
Project Costs			
Project Management	4,702	2,850	**7,552**
Project Controls	740	432	**1,172**
Land Acquisition	3,300	10,000	**13,300**
Public Relations	192	112	**$304**
Community Engagement	192	112	**$304**

Indirect Costs	Phase 1 (US$ x1,000)	Phase 2 (US$ x1,000)	Total (US$ x1,000)
Environmental	9,783	105	**9,888**
Construction Insurance	2,298	1,930	**4,228**
First Fills, Spares, and Inventory			
First Fills	828	828	**1,656**
Capital Spares	1,902	750	**2,652**
Commissioning Spares	127	50	**177**
Pre-Production Operations			
Recruitment and Training	233	78	**311**
Pre-Commissioning and Vendor's Representatives	1,103	1,234	**2,337**
Stripping and Pre-Production Indirect Labour	8,820	8,820	**17,640**
Commissioning and Start-up	1,090	1,590	**2,680**
Provisions			
Contingency	91,024	76,719	**167,743**

Project Indirect Costs Basis of Estimate

Contractor Construction Indirect Costs

Most construction indirect costs are included in the labor rates, including small tools, consumables and contractor administration, overhead, and profit. Contractor mobilization and demobilization are calculated separately as a percentage of the direct costs for each sub-estimate and each construction phase, ranging from 0.1% to 1% of the total direct cost, depending on the scope.

Temporary facilities and services are included in the Owner's costs as the Owner intends to provide construction offices, lunchrooms, temporary utilities, heavy cranes, and transportation for construction crews during both construction phases.

Freight and Logistics

Freight and logistics allowance is calculated on a percentage basis, based on Advisian recent in-house experience, the source location of quoted equipment and the logistics of site access. An allowance for staging of freight is included in the indirect costs, based on recent historical data from similar projects.

The total freight allowance is 4% of equipment and materials costs, based on a weighted average of 3% for inland freight and 10% for overseas freight.

Engineering, Procurement and Construction Management (EPCM)

EPCM costs are estimated as a percentage of total direct cost for each sub-estimate in accordance with standard industry practice. The sulfuric acid plant EPCM cost was provided by Chemetics and is inclusive of the acid plant supplier overhead and profit. The total EPCM cost is equal to 8.76% of the total direct cost.

Owner's Costs

Owner's Costs were prepared in consultation with the Owner and are provided for the following general project costs:

- Owner's home office staffing, including project management, project controls, supervision, safety, procurement, and environmental staff. This includes travel, burdens and general expenses related to these positions.
- Legal costs.
- Right of way and land purchase costs required for additional water rights and construction of the rail spur planned for Phase 2.
- Environmental base line monitoring.
- Environmental impact statements, permitting/licensing applications and fees.
- Environmental mitigation fees and studies.
- Insurance.
- Community relations and local infrastructure contributions.

Initial Fills, Spares and Inventories

Commissioning, capital, and start-up spares are included as Owner's Costs for one year's supply, for process equipment and material costs based on budget quotes and Advisian's project experience. The total spares allowance is 1.6% of mechanical equipment costs.

Initial fills costs were estimated based on pricing of inventory and consumables prepared for the OPEX and the planned storage/inventory capacity installed on site. An allowance of one (1) month initial fills for warehouse inventory (miscellaneous items) and mining supplies is included.

Pre-Production Operations and Start-Up Costs

Costs for recruitment of employees, training and pay during start-up of operations are included as Owner's Costs in the estimate based on the number of positions to be filled.

In some cases, vendor representatives, contractors' crew and management staff is required on-site to supervise equipment installation and perform pre-start-up inspections, in order to satisfy equipment performance warranty requirements. Costs associated with this requirement are included in the estimate, based on the number of representatives required and costs for these services indicated in budgetary quotations received from suppliers.

Chemetics has included specific costs for installation, commissioning, start-up and training services for the sulfuric acid plant.

Escalation

There is no provision in the estimate for escalation beyond June 2018.

21.1.10.3 Contingency

A contingency, based on the total direct and indirect costs, was included to meet anticipated undefined costs within the scope of the estimate. The contingency percentage for each WBS was individually assessed on the accuracy of quantity measurement, type and scope of work and price information. A weighted average contingency of 16.125% was calculated and applied to the complete estimate, except for the sulfuric acid plant, for which contingency was included in the estimate provided by Chemetics as 35% of equipment and materials costs. This cost was included in the CAPEX as a single item for each phase in WBS 9910 to be counted with contingencies for the rest of the project scope. The overall project contingency is therefore 18.8%. The contingencies applied to each Area are presented in Table 21-8.

Table 21-8 Contingencies

Section	Direct (US$)	Indirect (US$)	Contingency (US$)	Contingency (%)	Total (US$)
Mining	46,546,602	11,917,574	9,427,348	16.125	**67,891,524**
Lithium Processing and Infrastructure	313,460,502	42,119,375	57,337,255	16.125	**412,917,133**
Acid Plant	293,499,495	24,129,245	75,139,949	23.657	**392,768,689**
Railroad and Yards	83,976,181	9,584,095	15,086,595	16.125	**108,646,870**
LNC (Owner's Costs)	---	66,680,379	10,752,211	16.125	**77,432,590**
Total	**737,482,780**	**154,430,668**	**167,743,358**	**18.807**	**1,059,656,806**

The percentage allowances were based on an analysis of uncertainties and risks associated with the estimated costs.

The contingency allowance is an integral part of the estimate. The contingency allowance is not to be considered as a compensating factor for estimating inaccuracy, nor did it intend to cover such items as any potential labor disputes, currency fluctuations, escalation, force majeure or other uncontrolled risk factors. It should be assumed that the contingency amount will be spent over the engineering and construction period.

21.1.11 Sustaining Capital

21.1.11.1 Summary

Sustaining capital costs have been included in the capital cost estimate covering four major areas, as follows:

- Mining;
- Process Plant;
- Tailings management and reclamation; and
- Owner's Costs.

Contingency and design growth allowances are not applied to sustaining capital costs.

Table 21-9 is a summary of the sustaining capital estimate by WBS Area.

Table 21-9 Sustaining Capital Estimate Summary

Area	Description	Total (US$)
1120	Mining Equipment	150,554,975
1130	Construction Material Haulage	143,546,860
2100	ROM Ore Handling	14,321,087
2200	Crushing Plant	13,911,991
3200	Leaching and Filtration	27,463,183
3300	Neutralization and Crystallization	29,175,202
3400	Lithium Carbonate Precipitation, Purification, Drying	8,065,203
3500	By Products Production	15,773,820
3600	Product and By Products Storage, Packaging/Loading	1,750,715

Area	Description	Total (US$)
3800	Reagents	14,563,668
3900	Utilities and Services	1,783,841
5100	Clay Filtered Tails Stack Facility	146,292,671
6200	Power Supply	1,073,733
6400	Water Systems	2,844,954
7200	Main Rail Yard	1,659,577
7300	Utility Connections	503,656
9000	Indirect Costs	28,722,845
9700	Owner's Costs	21,000,000
Total		**623,007,981**

21.1.11.2 Mining

Mining sustaining capital is included in the integrated mining cost model prepared by Mining Plus, as described above.

21.1.11.3 Process Plant

The cost of replacement and major overhaul of mechanical equipment has been included as a sustaining CAPEX cost based upon an average equipment lifespan of 25 years. For this study, 100% of the initial CAPEX for supply and installation of equipment is assumed to be spent over a 10-year period spanning operating years 20 through 30. This includes equipment associated with project infrastructure, such as water supply, power supply and the railroad service yard.

21.1.11.4 Tailings Management and Reclamation

Advisian prepared MTOs for initial development of the dry stack tailings areas in Phases 1 and 2, as well as final development over the life of mine through reclamation. These quantities have been included in the sustaining CAPEX estimate.

21.1.11.5 Indirect and Owner's Costs

A lump sum allowance of US$21,000,000 is included in the sustaining capital estimate to cover owner's costs for project management of the process equipment replacement and tailings management costs associated with sustaining capital. The estimate also includes indirect costs for procurement and construction management of these projects.

21.1.12 Summary of the Capital Cost

A summary of the capital cost is as shown in the Table 21-10.

Table 21-10 Capital Cost Estimate Summary

Capital Costs (US$ x 1,000,000)			
Area	**Phase 1**	**Phase 2**	**Total**
Direct Costs			
Lithium Carbonate Plant	218	96	313
Sulfuric Acid Plant	135	158	293
Mine	46	0.7	47
Railroad and Yards	2.8	81	84
Total Direct Cost	**401**	**336**	**737**
Total Indirect Cost	**89**	**65**	**154**
Contingency (18.8%)	91	77	168
Total Capital Costs	**581**	**478**	**1,059**

21.3 Operating Costs

21.3.1 Basis of Estimate

21.3.1.1 Estimating Base Date and Accuracy Range

The operating cost estimate uses prices obtained in Q2 2018 and is considered to have an accuracy of ±25%. 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

The responsibilities for developing the operating costs are as follows:

- Mining operating costs were developed by Mining Plus as part of the integrated mine cost model.
- Sulfuric acid plant operating costs were developed by Chemetics.
- Process plant, infrastructure and administrative operating costs were developed by Advisian, in conjunction with LNC.

In general, the operating costs were developed by the party responsible for design and capital cost estimation of a given area. The OPEX input from each party was assembled into the master project OPEX by Advisian.

21.3.1.3 Estimating Methodology

Estimate Structure

Operating costs have been organized into four main areas: Mining, Lithium Processing, Sulfuric Acid Plant and General and Administrative costs. Each area has several sub areas defined by the estimating team.

Operating costs are further divided among six expense types: Labor, Maintenance, Fuel, Power, Consumables and Fixed Costs.

21.3.1.4 Data Sources

The following data sources were used to prepare the OPEX estimate:

- **Mining Cost Model:** Includes all details on the analysis of annual mine operating costs, as well as the planned feed to the process plant for each year of operation.
- **Process Design Criteria and Mass Balance:** Consumption rates of reagents and consumables.
- **Equipment List and Electrical Load List:** Used to estimate total annual electrical consumption.
- **Capital Cost Estimate:** For calculation of maintenance supplies/services based on capital cost.

- **Staffing Plan:** Required to estimate operating labor costs. Provided by LNC for each phase and verified by Advisian.
- **Reagent Pricing:** Provided by LNC, based on discussions with local suppliers. LNC has engaged a partner for delivery, logistics, unloading, storage and preparation of sulfur, soda ash, limestone, and quicklime.
- **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

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. Transportation to and from the site will be the responsibility of each individual employee. Labor requirements have been developed separately for each phase of the project.

The manpower costs for this Project were estimated based on expected salaries in the region along with a payroll burdens allowance of 30%. A master labor list was compiled by Advisian with input from LNC for all positions including mining, process plant, sulfuric acid plant, management and support staff.

The labor requirements and average annual cost are summarized by OPEX area in Table 21-11.

Table 21-11 Labor Requirements and Average Annual Cost Summary

Area	Labor Count Phase 1	Labor Count Phase 2	LOM Average Annual Labor Cost (US$)
Mine			
Mine Management	3	3	436,800
Mine Operations (*Varies)	56*	75*	8,662,196
Maintenance Labor	38	38	3,747,821
Technical Services	3	3	338,000
Lithium Processing			
Plant Management	4	4	618,800
Plant Operations Labor	23	40	3,332,013
Plant Maintenance Labor	19	22	2,522,452

Area	Labor Count Phase 1	Labor Count Phase 2	LOM Average Annual Labor Cost (US$)
Engineering	2	2	234,000
Laboratory and Quality Control	8	8	709,800
Sulfuric Acid Plant			
Plant Operations	22	38	3,080,915
Plant Maintenance	8	11	1,104,152
General and Administrative			
Management and Administrative	2	2	325,000
Health and Safety	6	7	910,141
Security	2	2	117,000
Human Resources	1	1	156,000
Accounting	5	6	604,571
Procurement and Warehouse	12	15	1,095,674
Total	**213**	**277**	**27,995,336**

21.3.2.2 Process Consumables

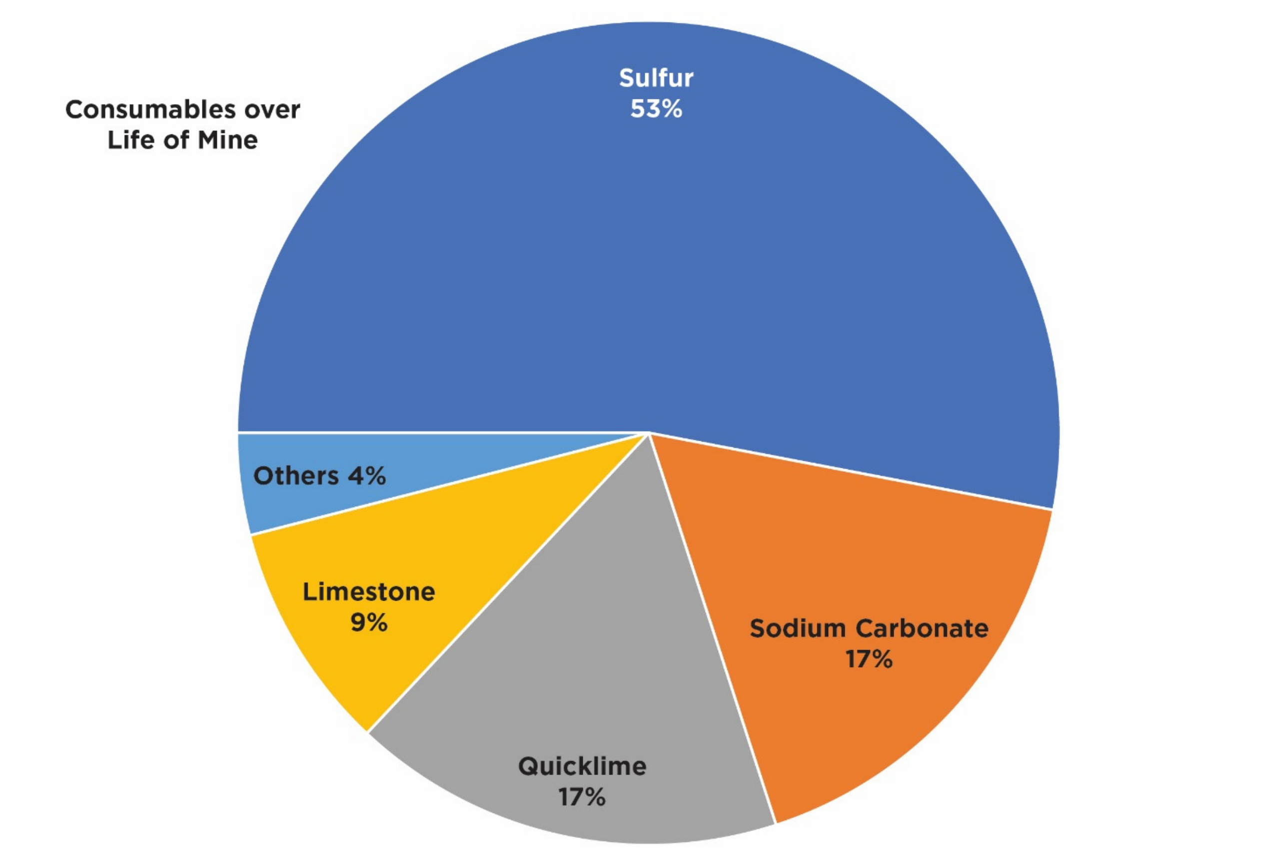
Materials consumed by the process are calculated using unit consumption rates or are consumed at a fixed rate each year. The reagent and consumable consumption rates are sourced from the process design criteria, which provides them as kg/t or g/t of ore processed. Usage rates were based on test work and ASPEN modelling mass balance calculations discussed in Section 17.

Consumption rates of liquid sulfur, sodium carbonate and boiler chemicals for the acid plant were developed and provided by Chemetics.

Unit pricing for major commodities was based on discussions with suppliers.

Figure 21-1 presents the consumables cost over the life of mine.

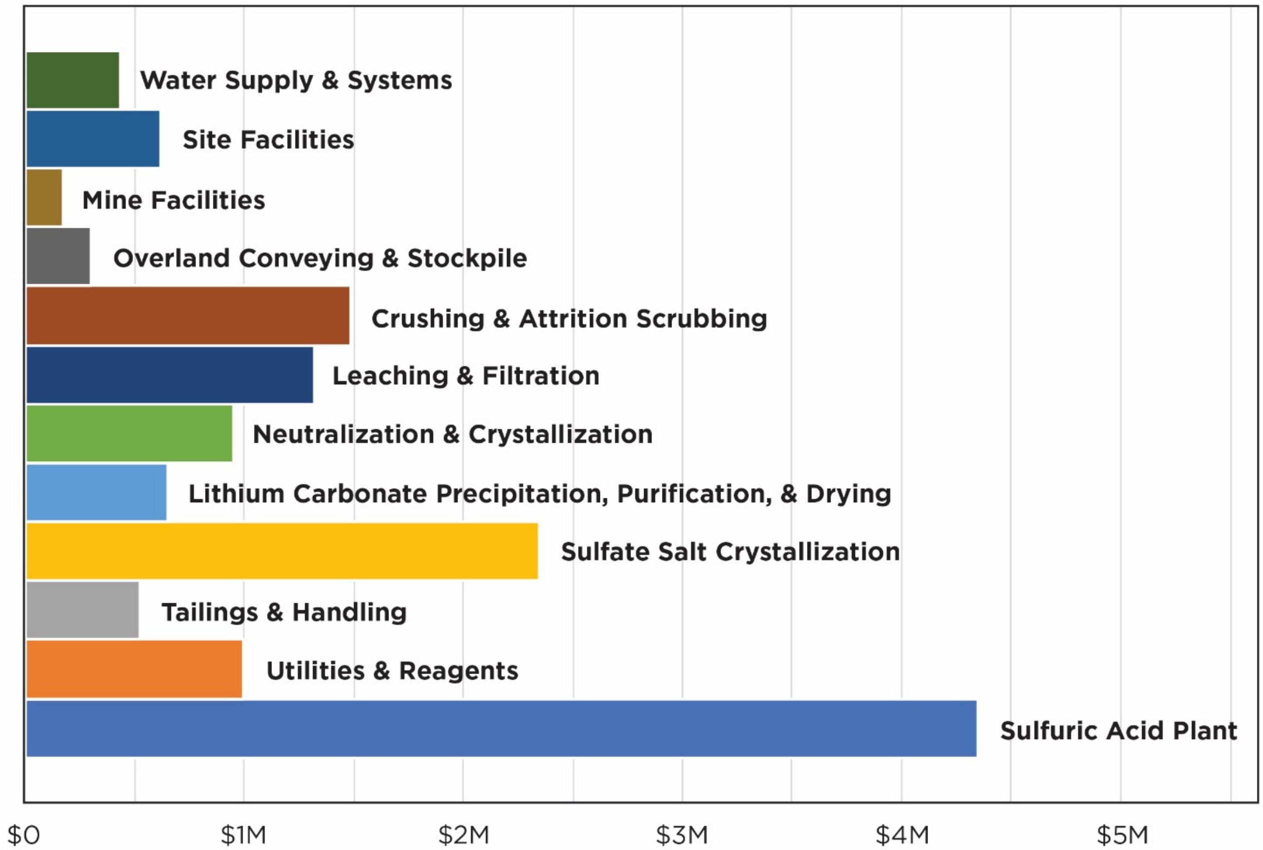
Figure 21-1 Consumables Cost Over Life of Mine



21.3.2.3 Power

Electrical power costs are based on a rate of US$0.0632/kWh, following research and discussions with local electricity suppliers. Electrical power consumption and estimates were based on major equipment connected loads and load analysis. Figure 21-2 presents the annual average power cost by area over the life of mine.

Figure 21-2 Annual Average Power Cost by Area Over the Life of Mine



21.3.2.4 Fuel

Diesel costs are based on equipment usage rates and a unit cost of US$0.54/L. This price is quoted from a local supplier and includes delivery to the Winnemucca area.

The annual fuel consumption for onsite mobile equipment is based on the number of units, utilization and fuel consumption of each piece of mobile equipment.

21.3.2.5 Maintenance

Maintenance allowances include supplies, such as spare parts, repair materials and miscellaneous consumables and contract services required for general maintenance. The allowances for stationary equipment, piping, electrical, instrumentation and plant services are based on a factored percentage of installed mechanical and electrical equipment direct costs.

Building and structural maintenance is estimated based on a factored percentage of the installed direct cost of buildings, including concrete, structural steel and architectural.

Factored maintenance costs are summarized in Table 21-12. Note the maintenance allowance provided by Chemetics for the acid plant is shown, calculated as a percentage of total installed cost.

Table 21-12 Factored Maintenance Annual Allowances

Description	Annual Allowance (% of CAPEX)	Total, Phase 1 (US$)	Total, Phase 2 (US$)
Mine Facilities	2%	87,127	97,284
Overland Conveying and Stockpile	3%	353,100	382,044
Crushing and Attrition Scrubbing	3%	173,133	353,070
Leaching and Filtration	3%	400,562	668,893
Neutralization and Crystallization	3%	417,061	729,208
Lithium Carbonate Precipitation, Purification, Drying	3%	116,236	232,423
Sulfate Salt Crystallization	3%	243,919	453,794
Product Storage and Loadout	3%	21,127	42,160
Tailings Handling	3%	654,027	684,855
Utilities and Reagents	3%	242,220	451,314
Acid Plant Maintenance, All Areas	2%	3,440,000	5,848,000
Rail Yard	3%	0	81,632
Substation and Distribution	3%	278,973	283,388
Well, Fire, Storm and Raw Water	3%	71,638	99,036
Sewage, Fire Protection, IT/Communications	2%	17,220	17,220
Building and Structural Maintenance	1%	48,189	86,529

The maintenance cost for mobile equipment was estimated based on unit costs per operating hour for the light, medium and heavy vehicles and other mobile equipment for the process plant.

21.3.2.6 Fixed Costs

Fixed costs include miscellaneous costs related to Mining, Process and General and Administrative areas, for which a fixed amount is allotted each year. These include technical items such as software licenses, laboratory supplies, site road and railroad maintenance and engineering consultants, as well as administrative costs such as office supplies, HR costs, environmental and other costs.

21.3.3 Operating Cost Areas

21.3.3.1 Mining

Overview

The Mining operating expenditures were estimated based on first principles calculations. The summary includes the following categories:

- **Indirect Labor:** The indirect labor category includes all personnel not participating in loading and hauling activities.
- **Direct Labor:** The direct labor category includes operators involved in loading and hauling activities.
- **Insurance:** An annual 1.5% insurance has been applied to certain light duty vehicles such as pickups. The insurance for off-road vehicles has been excluded.
- **Fuel:** The cost for off road diesel fuel and gasoline.
- **Equipment Maintenance:** The parts and consumables cost for maintaining equipment.
- **GET:** Ground engagement tools such as surface miner picks.
- **Drilling and Blasting Contractor:** The cost for a contractor to drill and blast the basalt material.
- **Clothing and PPE:** The clothing and personal protective equipment associated with the number of personnel onsite.
- **Grade Control Drilling:** Grade control drilling has been excluded.
- **Technical Services:** The cost for software maintenance, survey equipment maintenance, and survey services etc.

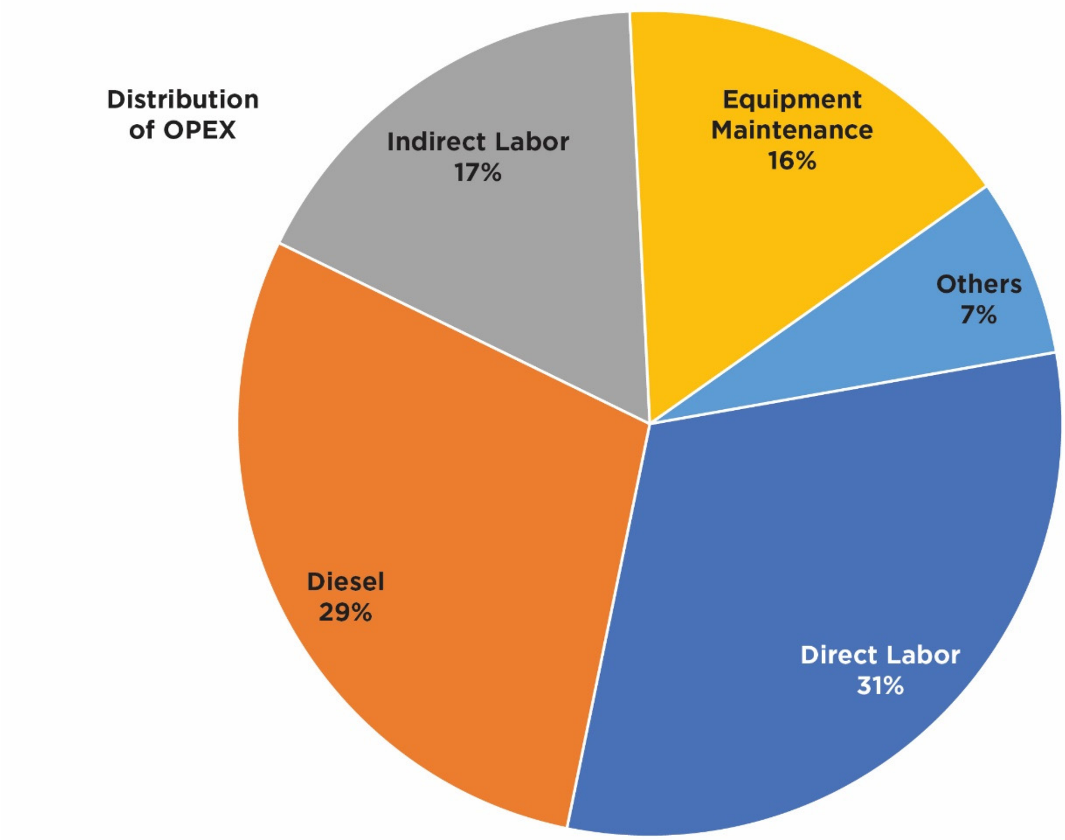
A summary of the Mining Operating Cost Estimate is provided in Table 21-13.

Table 21-13 Mining Operating Cost Estimate

Mine	LOM Average Annual Total (US$)	US$/tonne Processed	US$/tonne Product
Mine Management	436,800	0.11	7.72
Mine Operations	22,675,221	5.81	400.74
Maintenance Labor	3,747,821	0.96	66.24
Technical Services	475,900	0.12	8.41
Mine Facilities	258,721	0.07	4.57
Total	**27,594,463**	**7**	**488**

Figure 21-3 presents the distribution of the mining operating expenses.

Figure 21-3 Distribution of OPEX



21.3.3.2 Battery Limits

The battery limits for the mining portion of the operating cost estimate are presented in Table 21-14.

Table 21-14 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 overland conveyor or associated stockpiles nearby	Overland Conveyor	Costs associated with the operation of the hopper and conveyor
All operating costs necessary to excavate and haul waste material from the pit to the plant and tailings site. Costs associated with operating a single dozer has also been	Tailings and Plant Construction	Equipment, maintenance, and labor costs associated with placing and compacting the fill and tailings embankment material above and beyond the dozer. Additional trucks required for hauling tailings from the plant or significant use of haulage

Mining Scope	Battery Limit	Outside Mining Scope
included to assist with the material placement		equipment for detailed construction (a streamlined process has been assumed).
Operation of mobile light plants etc.	Infrastructure	All mine buildings, tanks, and infrastructure costs.
Operating costs for dewatering from the pit floor to the pond at the top of the pit	Dewatering	Pumping the water from the pond to the plant site.

21.3.3.3 Estimation Methodology

The OPEX estimation relies on a series of budgetary quotations, but also internal databases and historical pricing. The historical pricing for the Drilling and Blasting Contractor was factored to account for escalation. Table 21-15 presents a description of the estimation methodology and the items estimated under that methodology.

Table 21-15 OPEX Estimation Methodology

Methodology	Items
Budgetary Quotations	Heavy Equipment maintenance costs and fuel burn, Diesel price
Nevada Mining Association	Salary and hourly wages with some exceptions per Lithium Nevada
Internal Databases	Tire costs, GET costs, Survey and Software, Other technical services
Historical Pricing	Drilling and Blasting Contractor Unit Price (2014)
Public Information	PPE, Gasoline price

21.3.3.5 Reference Documents

The reference documents utilized in the development of the OPEX are presented in Table 21-16.

Table 21-16 OPEX Reference Documents

Document No.	Description
207071-00100-00-PC-SCH-0001_R0	Life of Mine Schedule
MP-5126-PFES-LNC OPEX CAPEX-R5-31May2018.xlsm	CAPEX and OPEX Cost Estimate

21.3.3.6 Source of Data

Quotations were received from Wirtgen, Komatsu, Caterpillar, Hitachi and PacMachine.

The 2016 Nevada Mining Association's (NMA) labor survey was used as the basis for salary and hourly wages. The rates were not escalated; instead, the 75 percentiles were chosen. Some salaries were adjusted but remain within the range or slightly exceed the NMA's survey.

21.3.3.7 Key Assumptions

Key assumptions for the development of the OPEX are as follows:

- The mine will be owner-operated. The only contractor operation assumed is the drilling and blasting of the basalt.
- The equipment is directly purchased by the owner. Leasing options have not been included to date.
- A four (4) crew roster of four (4) days on and four (4) days off work schedule.
- Burden of 30%. The burden is not applied to the overtime rate for hourly wages.
- An off-road diesel fuel price of USD$0.541/L was obtained via budgetary quote from a local supplier.
- Closing costs have not been included in the CAPEX but are indirectly included in the OPEX.
- High level haulage profiles were generated for each pit stage.
- A single year of pre-production stripping is needed prior to Phase 1 production; however, the cost estimate has edited the schedule to provide material for plant construction fill and tailings embankment construction. This results in two years of pre-production stripping.

21.3.3.8 Recommendations for Future Phases of the Project

- Increase the design to a more detailed level. Refine haul routes and roads and complete a detailed haulage study.
- Complete trade-off of overland ore conveyor vs truck haulage.
- Evaluate the use of excavators to mine the ore, as well as the waste.
- Optimize the life of mine schedule to account for plant fill and tailings embankment.
- Evaluate leasing option for major mining equipment.

21.3.3.9 Lithium Processing

Process operating costs were estimated based upon a steady-state operation; hence, excludes ramp up and final year of production. The plant design data includes the use of ASPEN mass balance numbers based on steady state conditions. The design steady state Li_2CO_3 annual production rates are as follows:

- 30,000 tpa for Phase 1 (based on a ROM Li grade of 0.3227%), representing production from Year 1 to half way through Year 4; and
- Phase 2 is based on a yearly production of 60,000 tpa of Li_2CO_3 and represent production from half way through Year 4 through cessation of operations in Year 46.

The operating costs were prepared separately for each phase of the project. The labor roster and mobile equipment fleet for the process areas are fixed for each phase. Consumption of reagents, power and other items that are considered variable, are calculated separately each year based on the assessed consumption rate and the tonnes of ore processed or lithium carbonate produced, as applicable.

Process and administrative operating costs are presented with indicative life of mine average operating costs per tonne of ore processed and tonne of lithium carbonate produced, as provided in Table 21-17.

Table 21-17 Average Lithium Process Operating Costs

Lithium Processing	LOM Average Annual Total (US$)	US$/tonne Processed	US$/tonne Product
Plant Management	618,800	0.16	10.94
Plant Operations Labor	3,332,013	0.85	58.89
Plant Maintenance Labor	2,522,452	0.65	44.58
Engineering	307,098	0.08	5.43
Laboratory and Quality Control	2,881,652	0.74	50.93
Overland Conveying and Stockpile	759,907	0.19	13.43
Crushing and Attrition Scrubbing	2,040,178	0.52	36.06
Leaching and Filtration	1,968,424	0.50	34.79
Neutralization and Crystallization	1,654,843	0.42	29.25
Lithium Carbonate Precipitation, Purification, Drying	884,172	0.23	15.63
Sulfate Salt Crystallization	2,786,483	0.71	49.25

Lithium Processing	LOM Average Annual Total (US$)	US$/tonne Processed	US$/tonne Product
Product Storage and Loadout	507,813	0.13	8.97
Tailings Handling	2,261,044	0.58	39.96
Utilities and Reagents	70,759,579	18.14	1,250.55
Total	**93,284,457**	**23.92**	**1,648.64**

21.3.3.10 Sulfuric Acid Plant

The estimate for the Sulfuric Acid Plant was prepared by Chemetics and has an AACE Class 4 +25/ -20% accuracy for engineering, procurement, and construction. Table 21-18 presents the Sulfuric Acid Plant operating cost summary.

Table 21-18 Sulfuric Acid Plant Operating Cost Summary

Description	LOM Average Annual Total (US$)	US$/tonne Processed	US$/tonne Product
Plant Operations	7,430,802	1.91	131.33
Plant Maintenance	6,768,935	1.74	119.63
Raw Materials	86,503,162	22.18	1,528.79
Total	**100,702,899**	**26**	**1,780**

21.3.3.11 General and Administrative Costs

General and Administrative costs include the following:

- Operation and maintenance of infrastructure such as railroad, water and power supply, warehouse, general site maintenance and utilities; and
- Management, administration, accounting, health, safety, environmental, community relations and legal/government costs.

Labor, power, maintenance and fuel costs for General and Administrative areas were estimated as described above. Insurance, mining claim maintenance, permit/license renewal and environmental costs were provided by LNC. Other fixed costs were estimated as allowances by Advisian, based on experience with similar projects. The average annual operating costs for General and Administrative are provided in Table 21-19.

Table 21-19 Average Annual General and Administrative Costs

General and Administrative	LOM Average Annual Total (US$)	US$/tonne Processed	US$/tonne Product
Site Maintenance	205,345	0.05	3.63
Management and Administrative	2,635,000	0.68	46.57
Health and Safety	1,033,239	0.26	18.26
Security	117,000	0.03	2.07
Medical	50,800	0.01	0.90
Environmental	250,000	0.06	4.42
Human Resources	324,402	0.08	5.73
Accounting	659,571	0.17	11.66
Railroad and Service Yard	820,435	0.21	14.50
Procurement and Warehouse	1,120,674	0.29	19.81
Power Supply and Distribution	283,052	0.07	5.00
Water Supply and Systems	533,552	0.14	9.43
Site Utilities	17,220	0.00	0.30
Site Facilities	808,646	0.21	14.29
Total	**8,858,938**	**2.27**	**156.57**

21.3.4 Summary of Operating Costs

Table 21-20 presents a summary of the Project operating costs excluding any sales of electricity or sulfuric acid.

Table 21-20 Project Operating Cost Summary

Area	Operating Cost (US$/tonne Li_2CO_3)	% of Total
Mine	487.68	11.9
Lithium Processing	1,648.64	40.3
Sulfuric Acid Plant	1,779.75	43.5
General & Administrative	156.57	3.8
Electricity Delivery (Wheeling Charge)	15.19	0.4
Total	**4,088**	**100**

21.3.5 Exclusions

The following items are excluded from the OPEX estimate:

- Cost escalation beyond Q2 2018;
- Currency fluctuations;
- Costs outside Advisian's battery limits;
- All costs incurred prior to start-up of process plant operations;
- Product shipping costs (to be captured by Lithium Americas Corporate);
- Corporate office costs;
- First fills (included in CAPEX); and
- Closure costs (included in Sustaining CAPEX).

The following items were also excluded from the Operating Cost Estimate, but are included in the financial model:

- Electricity delivery/wheeling charges for electricity produced by the acid plant and sold to the market (included in the OPEX summary only);
- Initial and sustaining capital costs;
- Working capital;
- Taxes;
- Royalties; and
- Revenues, including credit for sale of excess sulfuric acid and sales of electricity.

22. Economic Analysis

22.1 Introduction

An economic analysis was conducted to assess the economic feasibility of constructing and operating the Thacker Pass Project. The analysis was based on the mine plan and production schedule prepared by Mining Plus, capital and operating expenditures prepared by Advisian, and terms for product and by-product sales provided by LNC. The justification for principal assumptions involving lithium carbonate sales price and the basis of the estimates including raw materials, labor, and electricity are provided in Sections 19 and 21.

The economic evaluation presents the after-tax net present value (NPV), payback period, and the after-tax internal rate of return (IRR) for the project based on annual cash flow projections.

This economic analysis includes sensitivities to variations in selling prices, various operating costs, initial and sustaining capital costs, overall production rate, and discount rate.

22.2 Methodology

The analysis was carried out using a discounted cash flow (DCF) model, which was prepared by Advisian with input from LNC, Mining Plus, and Chemetics. Annual cash flow projections were estimated over life of mine based on the estimates of capital expenditures, production costs, production volumes, taxes, royalties and sales.

Cash flows for each year are totaled and discounted based on the assumption of even distribution of cash flow over the year. The base date for NPV valuation is January 1, 2020, which coincides with the planned date of commencement of detailed engineering for Phase 1, at which time significant project funding would need to be secured.

Sales includes three revenue streams, as follows:

- Lithium carbonate;
- Excess sulfuric acid; and
- Electricity generated by the acid plant.

The revenues from sulfuric acid and electricity sales are credited against production costs to produce an equivalent cost of production of lithium carbonate comparable to other projects.

All inputs to the model are in Q2 2018 United States dollars (US$).

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 Chapter 21 of this report.

Tax assumptions and royalty obligations were provided by LNC, based on guidance provided by a Nevada-based tax professional. The market analysis in chapter 0 was used to set a conservative long-term price for lithium carbonate. Electrical and sulfuric acid pricing were estimated based on expert analysis of the local markets. A conservative price for electrical and sulfuric acid were determined based on the analysis and used for the economics in this study.

The model includes a financial analysis to estimate the annual tax burden, including indicative earnings and cash flow statements for the project.

22.3.2 Sunk Costs

Investments in the project to date were not included in the economic analysis (and are not amortized in the model). Engineering direct and indirect costs are included based on a factored estimate from the equipment quotations.

22.3.3 Initial Capital

Initial capital costs are divided among the two construction phases. The totals for each phase are presented in Table 22-1.

Table 22-1 Initial Capital Costs Summary

Initial Capital	Construction Phase		Total Amount (US$)	Percentage of Total
	Phase 1 (US$)	Phase 2 (US$)		
Open Pit Mine	67,011,312	880,213	67,891,524	6%
Lithium Processing and Infrastructure	287,007,327	125,909,806	412,917,133	39%
Sulfuric Acid Plant	182,595,569	210,173,120	392,768,689	37%
Railroad and Yards	3,717,891	104,928,980	108,646,870	10%
Owner's Costs	41,003,151	36,429,439	77,432,590	7%
Total	**581,335,249**	**478,321,557**	**1,059,656,806**	

22.3.4 Sustaining Capital

Sustaining capital is provided for the major areas of the plant. This includes progressive reclamation costs of the tailings and closure costs and reclamation of the mine and process facilities. Reclamation costs are included in the sustaining capital estimate for tailings management, WBS 5000. In the economic model, the sustaining capital estimate for this area is distributed every four years as per the progressive mine reclamation plan. 10% of the total sustaining capital estimate is associated with final closure. The sustaining capital for each area is presented in Table 22-2. The sustaining capital for the Sulfuric acid plant is included in the OPEX.

Table 22-2 Sustaining Capital Summary

Area	Total (US$)
Mining	294,131,245
Lithium Processing and Infrastructure	277,811,079
Sulfuric Acid Plant	included in OPEX
Railroad and Yards	1,401,400
Owner's Costs	49,664,257
Total	**623,007,981**

22.3.5 Operating Costs

The estimated total operating expenditures (OPEX) is US$10.64 billion over the 46-year life of mine, averaging US$146 million/year in Phase 1 (US$4,782/tonne of lithium carbonate produced, or US$3,507/tonne after acid and electricity credits) and US$238 million/year in Phase 2 (US$4,060/tonne of lithium carbonate, or US$2,535/tonne after acid and electricity credits). Table 22-3 presents the Operating Costs for each area.

Table 22-3 Operating Costs Summary

Area	Annual Averages			Total Cost (US$)
	Phase 1 (US$)	Phase 2 (US$)	Average (US$)	
Mine	16,103,982	28,678,740	27,594,463	1,269,345,318
Lithium Processing	55,735,866	96,458,678	93,284,457	4,291,085,044
Sulfuric Acid Plant	67,065,707	103,401,317	100,702,898	4,632,333,324

Area	Annual Averages			Total Cost (US$)
	Phase 1 (US$)	Phase 2 (US$)	Average (US$)	
G&A	7,174,972	8,995,963	8,858,938	407,511,125
Electricity Wheeling Charges	383,400	898,800	859,585	39,540,900
Total	**146,463,926**	**238,433,498**	**231,300,342**	**10,639,815,711**
Operating Cost per Ore Tonne Processed	**70.13**	**58.80**	**59.30**	---
Operating Cost per Tonne Li_2CO_3	**4,782**	**4,060**	**4,088**	---
Operating Cost per Tonne Lithium Carbonate, Net Acid Plant Revenues	**3,507**	**2,535**	**2,570**	---

22.3.6 Escalation

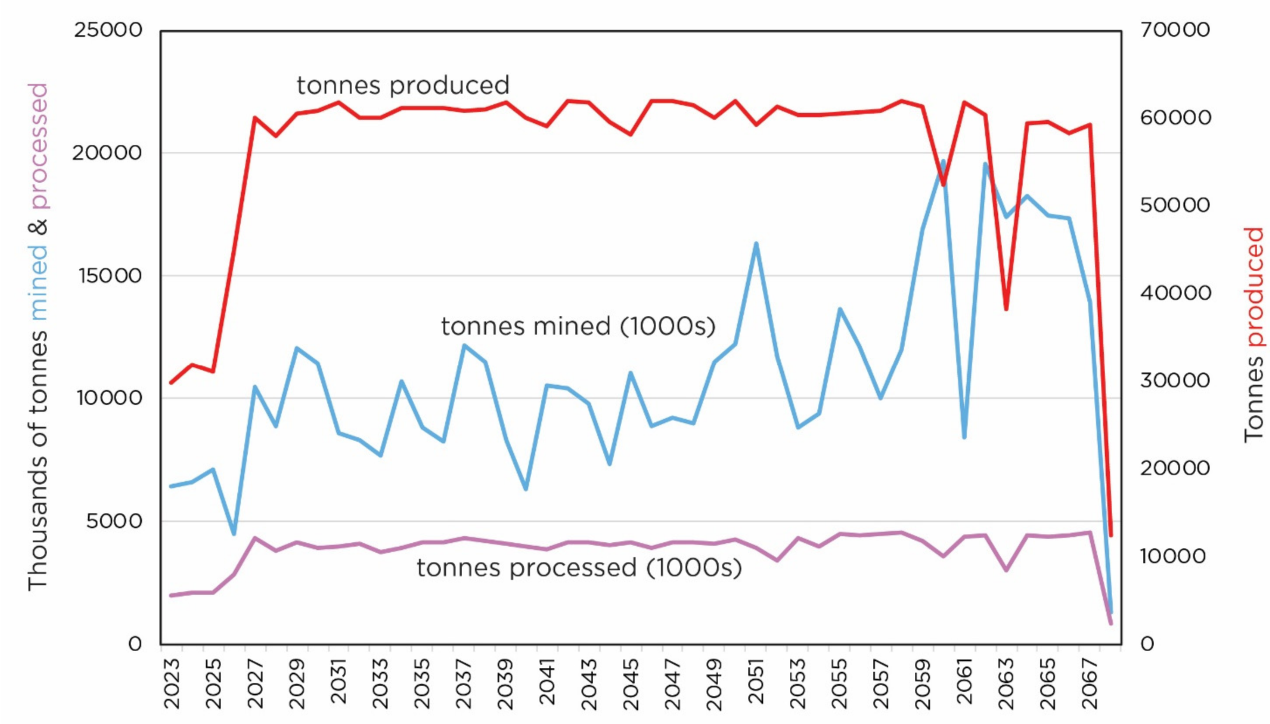
The economic analysis excludes cost and price inflation.

22.3.7 Production

The project has a nominal production rate of 30,000 tpa of lithium carbonate in Phase 1, and 60,000 tpa in Phase 2. Actual production varies with the grade of ore mined in each year, as higher-grade areas are prioritized early in the mine life. Phase 1 is projected to operate for 3.5 years, and Phase 2 is projected to run for 42.5 years.

Figure 22-1 shows the total mined, total ore processed and total lithium carbonate production for each year.

Figure 22-1 Total Mined, Ore Processed and Lithium Carbonate Production by Year



22.3.8 Revenues

Product selling prices have been assumed constant over the life of mine as presented in Table 22-4.

Table 22-4 Product Selling Prices

Product	Value	Unit
Lithium Carbonate	12,000	US$/tonne
Electricity	0.0756	US$/kWh
Sulfuric Acid	90.00	US$/tonne

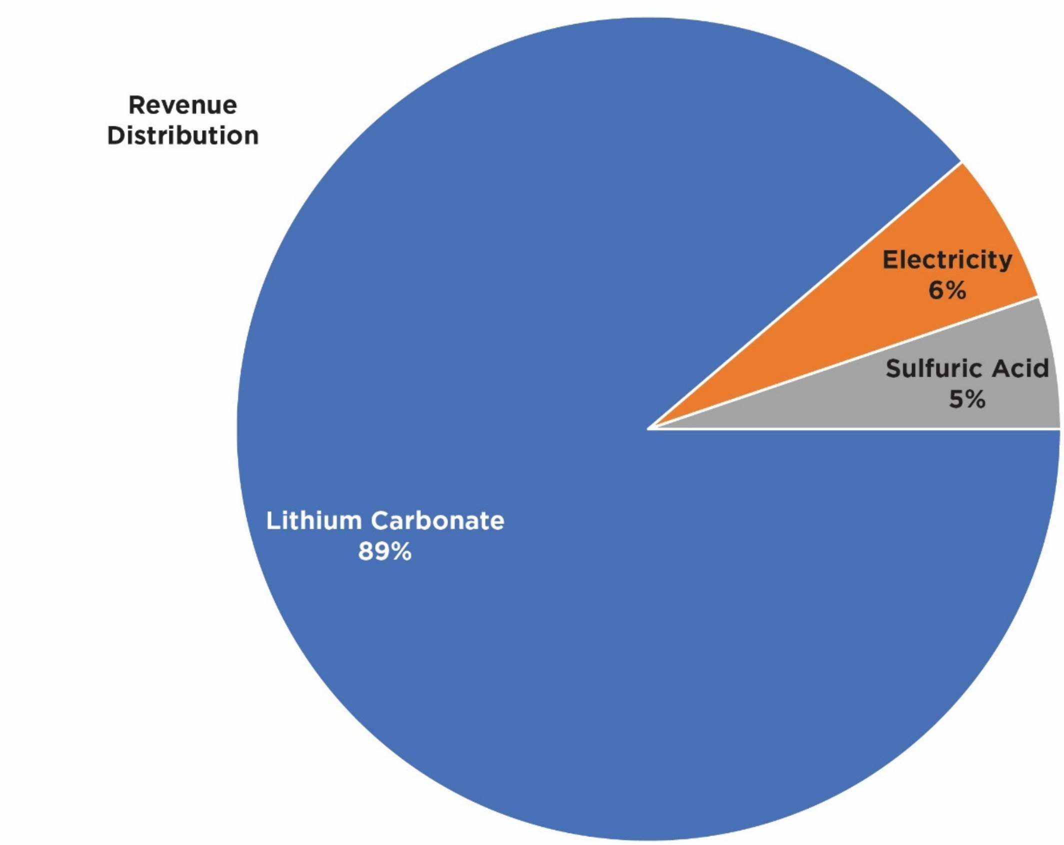
Total annual production and revenue for each phase are shown in Table 22-5.

Table 22-5 Total Annual Production and Revenue for each Phase

Production and Revenue	Phase 1	Phase 2	LOM Average	Total
Products				
Lithium Carbonate (tonnes)	30,629	58,722	56,583	**2,602,805**
Electricity (MWh)	271,733	636,897	609,105	**28,018,835**
Sulfuric Acid (tonnes)	205,578	460,419	442,705	**20,364,430**
Gross Revenue				
Lithium Carbonate (US$)	367,547,079	704,667,306	678,992,634	**31,233,661,171**
Electricity (US$)	20,543,050	48,149,410	46,048,347	**2,118,223,962**
Sulfuric Acid (US$)	18,502,045	41,437,726	39,843,449	**1,832,798,660**
Total (US$)				**35,184,683,793**

Figure 22-2 summarizes the distribution of revenues.

Figure 22-2 Revenue Distribution



22.3.9 Financing

Lithium America's is contemplating multiple options for funding the construction and operation of the project. For the purposes of the pre-feasibility study for Phase I, the project will be equity financed. Project financing costs are excluded from the model.

22.3.10 Discount Rate

A nominal discount rate of 8% per year has been applied to the model.

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.

22.3.11.1 Operational Taxes

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 approximately 3% to 3.5% of the assessed value, which is calculated at 35% of the taxable value of the property. The property tax owing each year is estimated as the net book value at the close of the prior year plus current year expenditures with no depreciation multiplied by 1.1%. This provides an approximation of 35% assessed value and a tax rate of 3% of the assessed value.

Currently, Humboldt County (the location of the mine site) does not maintain a revenue-based business license for mining operations. No business license costs are included.

22.3.11.2 Corporate Net Income Taxes

In Nevada minerals are taxed at 2-5% 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.

Revenue subject to a net proceeds of minerals tax is exempt from the Nevada Commerce tax; therefore, this tax is excluded from the study.

Under the *Tax Cut and Jobs Act*, based in December 2017, the corporate tax rate has been decreased to 21% of taxable income for all income ranges. Certain deductions have been limited such as dividend received deductions, business interest deduction, meals and entertainment and certain employee fringe benefits, which may cause an increased in the expected effective rate as compared to previous years. Due to these changes, a 25% effective income tax rate has been applied in the economic model.

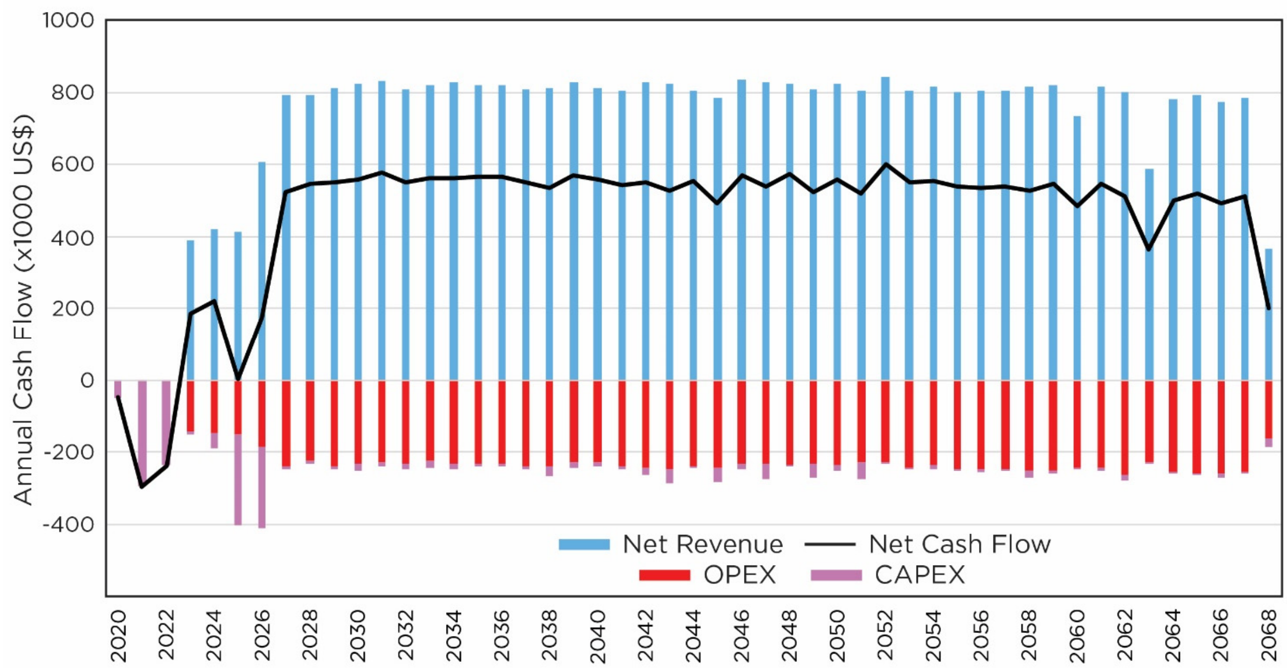
22.3.12 Royalties

The Project is subject to a 1.75% royalty on net revenue produced directly from ore. This royalty has been included in the economic model with the assumption that the Company will exercise its right under the terms of the royalty 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. At US$12,000/tonne Li_2CO_3 the ongoing annual royalty payments will average $210/tonne Li_2CO_3 sold. The royalty is not applicable to revenues from the sale of electricity and sulfuric acid.

22.4 Cash Flow

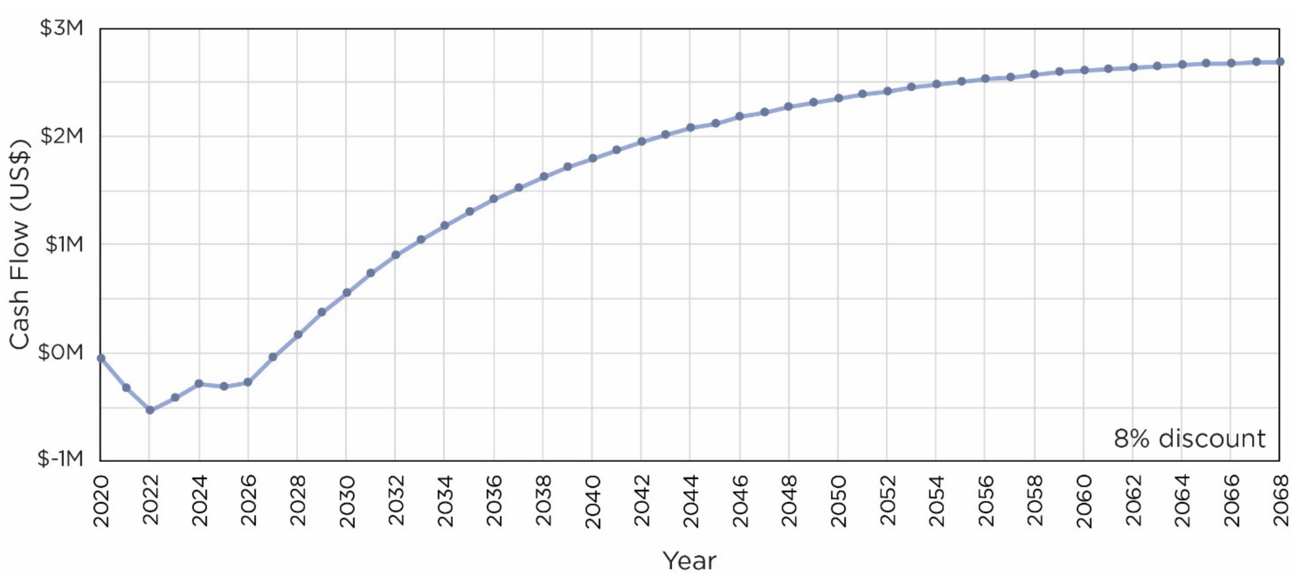
Undiscounted annual cash flows, including CAPEX, OPEX, and net revenue (pre-tax) are presented in Figure 22-3.

Figure 22-3 Undiscounted Annual Cash Flow



Cumulative discounted cash flow at the 8% discount rate is presented in Table 22-4.

Figure 22-4 Cumulative Discounted Cash Flow



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 periods. The Financial model shows:

Capital efficiency factors are as follows:

- After-Tax Net Present Value: US$2.59 billion; and
- After-Tax Internal Rate of Return: 29.3%.

After-Tax Payback is measured in years of operation, as follows:

- Payback Period: 4.6 years; and
- Payback Period (discounted): 5.2 years.

The capital investment required for construction of Phase 2 increases the payback period of the project. Excluding Phase 2, the payback period is 3.1 years.

Table 22-6 shows the sensitivity of NPV to different discount rates.

Table 22-6 After-Tax NPV for Various Discount Rates

Discount Rate	NPV (US$)
None	15,578,603
6%	3,800,371
8%	2,590,970
10%	1,815,879

22.5 Sensitivity Analysis

A sensitivity analysis was performed against key variables in the economic model. The change in project NPV and IRR was calculated due to a 20% increase or decrease in any variable. The results of this sensitivity analysis are presented in Figure 22-5 and Figure 22-6.

Figure 22-5 Sensitivity Analysis of Various Variables, Net Present Value, 8% Discount Rate

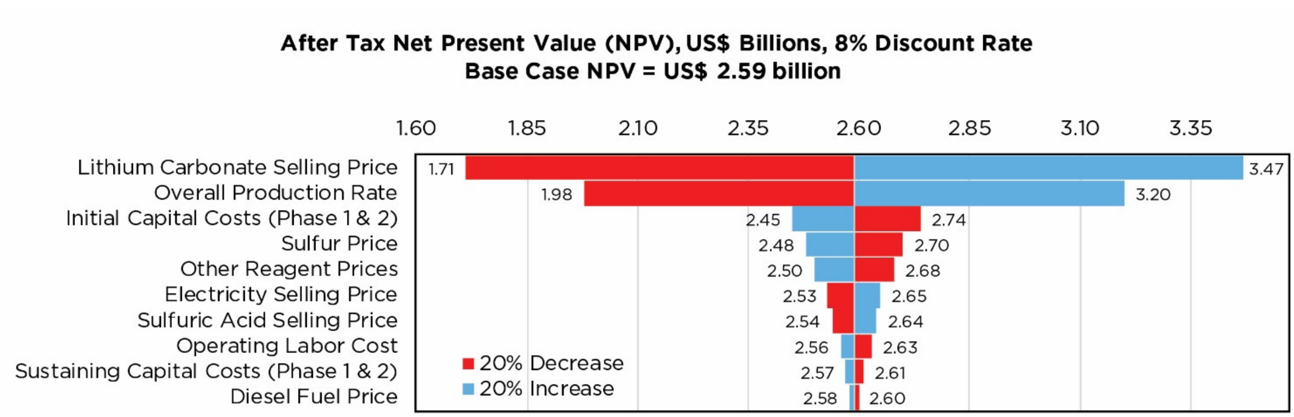
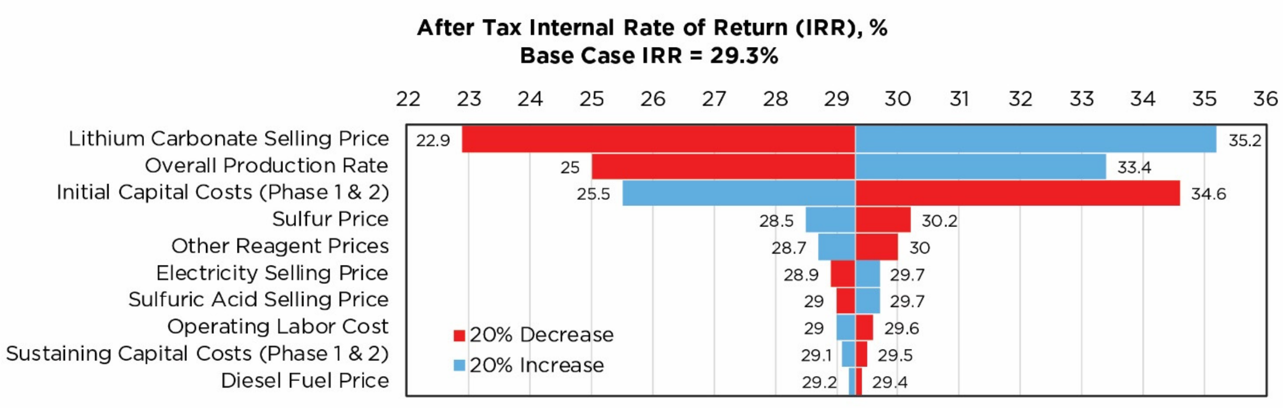


Figure 22-6 Sensitivity Analysis of Various Variables, Internal Rate of Return



The analysis demonstrated high sensitivity to lithium carbonate price, overall plant production, initial capital costs, and the cost of sulfur and other reagents. The project is relatively insensitive to changes in electricity or diesel fuel prices, or to sustaining capital costs.

Table 22-7 indicates a NPV at a range of discount rates and IRR for three lithium carbonate product price cases; US$10,000/tonne (low case), US$12,000/tonne (base case), and US$14,000/tonne (high case).

Table 22-7 NPV and IRR

Discount Rate (%)	Low Case NPV \$10,000/tonne Li_2CO_3 (US\$ millions)	Base Case NPV \$12,000/tonne Li_2CO_3 (US\$ millions)	High Case NPV \$14,000/tonne Li_2CO_3 (US\$ millions)
6%	2,790	3,800	4,811
8%	1,856	2,591	3,327
10%	1,259	1,816	2,373
IRR (%)	**24.0**	**29.3**	**34.3**

23. Adjacent Properties

Apart from the other mineralized lenses on the Lithium Nevada Project, there are no adjacent properties that bear on the lithium properties and there are no nearby operating mines. Several gold mines are in operation well to the southeast, indicating the viability of mining permitting.

24. Other Relevant Data and Information

There are no other relevant data or information for the Preliminary Feasibility Study of the Thacker Pass Project.

25. Interpretation and Conclusions

25.1 Interpretation

The data presented in this report favors the presence of consistent mineralization of lithium within the volcanogenic clays in the Thacker Pass Project area that is of potentially economic grade. This mineralization would appear to be suited to open-pit mining operations and economic recovery of lithium.

25.2 Risks

Risks identified for the project include:

- As this project would be the first of its kind with respect to lithium extraction, unforeseen technical challenges could occur, both in terms of mining and processing, and the project is likely to be sensitive to processing costs.
- While lithium has enjoyed a spectacular rise in price over the last decade, project economics might be sensitive to the normal boom-and-bust cycle, which is entering a new and unknown paradigm for lithium after the increase in demand.
- Environmental permitting risks related to prospective processing methodologies.

25.3 Conclusions

The project is viable at this stage of development based on the findings in this report, provided that the above-mentioned risks are mitigated and a normal design development process shows continued favorable results. The recommendations as described in Section 26 are typical design development tasks and/or are studies with potential to optimize efficiency or lower capital cost.

25.3.1 Environmental Permitting

A multi-agency permitting and approvals process will be completed by LNC to construct, operate and close the Project in accordance with all applicable Federal, State and local regulations. This program will include the acquisition of numerous permits and approvals from various regulatory agencies. Advisian's analysis of the permitting process, proposed path or work done to date suggests no permitting issues are presented that would halt the proposed project.

25.3.2 Mining

Mining Plus was engaged to complete the Mineral Reserve Estimate and associated Mine Planning as part of the Thacker Pass Project Pre-Feasibility Study. The study concludes that there is sufficient Mineral Resource which can be extracted in a practical, efficient and economic method to support the definition of a Mineral Reserve that satisfies the NI 43-101 requirements.

25.3.3 Process

The test work undertaken with LNC and their partners confirms the flowsheet proposed for the pre-feasibility study. This flowsheet uses industrially-proven process equipment with world-class providers that can assist in developing the final flowsheet. Further optimization should be undertaken by LNC, the selected equipment providers, and LNC's partners in the lithium space.

25.4 Infrastructure

The vehicle traffic to and from the site will be through the existing road. All required consumables for Phase 1 will be trucked delivered to site. A rail line has been considered for the Phase 2 of the project to provide the larger quantity of the raw material for 60,000 tpa Li_2CO_3 production.

The required utilities such as power and water are available in the vicinity of the Project. The existing power line has the capacity to feed the plant consumption. The power generated from the acid plant will be sold to the grid and all the consumption will be purchased from the existing power line. Water consumption required will be supplied from the wells east of the plant through a pipeline. The tailings for the project are dried and stored in piles north of the process plant in the space allocated for two phases.

Based on the outcome of the study, the infrastructure required for the operation of the mine and process plant are available and accessible to the project. Capital and operating expenditure has been estimated for delivery of the required utilities and development of the infrastructure.

26. Recommendations

Based on the project parameters presented in this report, the following recommendations are provided below. The following recommendations are typical design development tasks and/or are studies with potential to optimize efficiency or lower capital cost.

26.1 Environmental Permitting

It is recommended LNC continue their current permitting strategy to develop positive community support and streamline final project approval as outlined below:

- 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, including the City of Winnemucca, and the community of Orovada. These meetings are beneficial in developing and maintaining community support by being transparent on social and economic aspects of the project. They also provide a forum to identify and address concerns, which will allow LNC to address these issues at the earliest possible opportunity and avoid potential delays.
- Hold regular meetings with appointed and elected local, State and Federal officials. These types of meetings provide LNC with the opportunity to keep key officials updated on Project development, and set the stage for political assistance, if needed, at the local, State and national levels.

26.2 Mining

Mining Plus recommends that further work be completed on the following aspect in the next phase of the project:

- **Running Surface for Surface Miner** – It is recommended that a running surface be designed, a test area cut to that surface, and a test of the performance of the surface miner on that surface is conducted. This will result in better defined surface miner tonnage, excavator tonnage, and mining recovery.
- **Pit Design Strategy** – It is recommended to investigate an option to reduce mine life to improve mining efficiency and compare it to the current design to determine the optimum mining strategy and mine life.
- **Excavator vs Surface Miner** – It is recommended that as future rock mechanics and moisture testwork is completed, a detailed tradeoff study between an excavator and a surface miner is completed for mining the ore material. Although the excavator has known issues with claystone materials, Mine Plus feels the potential productivity of an excavator warrants a comparison to the planned surface miner.
- **Ore Overland Conveyor** – It is recommended that a tradeoff study be completed for the overland ore conveyor vs. truck haulage. The haul route is relatively flat and the cost for additional trucks could potentially be less than the cost for the conveyor, although the operating cost of truck is significantly higher.

- **Panel Widths** – The panel width included was assumed at 150 m. It is recommended that a range of panel widths be analyzed to optimize this design.
- **Life of Mine Schedule** – The sequence of phased pits was evaluated at a PFS-level. It is recommended that additional pit sequences are analyzed as the project advances towards more detailed engineering design. It is also recommended that the schedules be analyzed, and reevaluated if required, to optimize both a steady feed and product feed through the plant. Mining and stockpiling strategies should also be optimized. Alternate strategies such as advance stripping should also be evaluated which could result in a deferral/reduction of capital purchases over the mine life.

26.3 Exploration

Continued exploration to the northwest of the pit area, as well as in the southwest of the basin is recommended in order to increase the Resource.

26.4 Process

Further process investigation is recommended to fully understand the impact on the process design and reagent consumption, including:

- Running at higher leach slurry densities is advantageous from a mass throughput perspective because it reduces operating costs. A high density was assumed for the process flow sheet; however, optimization testing to determine the upper limit of slurry density is recommended.
- Confirm the process flowsheet selected and metallurgical parameters through a basic and detailed engineering program that includes additional testwork.
- Conduct additional test work to optimize leach feed size and reagent consumption.
- It is recommended that additional crystallization vendor test work be conducted.
- It is recommended that bench and vendor test work be done for the attrition circuit.
- The Aspen model used to develop the mass and chemical balance will need to be updated with the revised operating conditions from the additional test work and design information from vendors as it becomes available.

26.5 Infrastructure

The following activities are recommended to be included in the next phase of the project:

- A detailed geotechnical investigation needs to be performed for the process plant, mine facilities, water pipeline and pump station to finalize the foundation and earthwork design.
- Power agreement with Harney Electric Cooperative Inc. for purchase and potential sale of the power must be finalized. Power agreements with other offtakers should also be explored to obtain the highest price possible.
- Detail design of the roads (haul roads and in plant access roads) to be finalized based on the geotechnical information.
- Further investigations of logistics partners and opportunities for handling products and raw materials.

26.5.1 Tailings

The proposed preliminary design for the CTFS should be updated with the input of LNC and other stakeholders participating in the next design phase. The filter stack design discussed in this report should be detailed in the next phase of study, which will require further evaluation of physical and chemical stability, construction, and closure procedures. The recommended next steps envisaged to be undertaken during the next study are as follows:

- Conduct a further program of geotechnical laboratory testing.
- Conduct slope stability modeling for the tailings disposal site.
- Finalize CTFS geometry and refine estimated tailings storage capacity.
- Determine tailings chemistry and seepage assessment.
- Review and update geochemical test results.
- Conduct tailings saturation and leachate quality modeling.
- Apply a two-dimensional infiltration and seepage model of the TMF (VADOSE/W or similar) to estimate evaporation, seepage, and tailings moisture contents.
- Review the receiving environments (groundwater and surface water) and regulatory requirements.
- Finalize the design of the bottom liner.
- Perform a construction and constructability assessment for summer and winter season tailings disposal, including methods for transporting and placing tailings during the respective seasons and comparing conveyor versus truck haul for placement.
- Analyze life of mine Tailings storage construction plan with appropriate staging based on market analysis of potential sales of salts.
- Confirm waste rock and tailings production schedules.
- Closure assessment, develop cover criteria, review cover options and develop a progressive reclamation plan.

27. References

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