TONOPAH LITHIUM CLAIMS PROJECT NI 43-101 TECHNICAL REPORT - PRELIMINARY ECONOMIC ASSESSMENT

Prepared for:

AMERICAN LITHIUM CORP.

Effective Date: 31 JANUARY 2023

Report Date: 17 MARCH 2023

Prepared By:

DRA PACIFIC

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Perth, Western Australia, 6000

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Tonopah Lithium Project Claims
Nevada USA

Project No: GUSPPR6424
GUS6424-000-REP-PM-001

Important Notice

DRA Note

This report was prepared as a National Instrument 43-101 Technical Report for American Lithium by DRA Pacific (DRA). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in DRA's services, based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by American Lithium subject to the terms and conditions of its contract with DRA and relevant securities legislation. The contract permits American Lithium to file this report as a Technical Report with Canadian securities regulatory authorities pursuant to National Instrument 43-101, Standards of Disclosure for Mineral Projects. Except for the purposes legislated under provincial securities law, any other uses of this report by any third party is at that party's sole risk. The responsibility for this disclosure remains with American Lithium. The user of this document should ensure that this is the most recent Technical Report for the property as it is not valid if a new Technical Report has been issued.

Stantec Note

This notice is an integral component of the Tonopah Lithium Claims Technical Report ("Technical Report" or "Report") and should be read in its entirety and must accompany every copy made of the Technical Report. The Technical Report has been prepared in accordance with the requirements of National Instrument 43-101 Standards of Disclosure for Mineral Projects.

The Technical Report has been prepared for American Lithium Corporation by Stantec Consulting Services Inc. (Stantec). The Technical Report is based on information and data supplied to Stantec by American Lithium Corporation. The quality of information, conclusions, and estimates contained herein are consistent with the level of effort involved in the services of Stantec, based on i) information available at the time of preparation of the Report, and ii) the assumptions, conditions, and qualifications set forth in this Report.

Each portion of the Technical Report is intended for use by American Lithium Corporation subject to the terms and conditions of its contract (November 22, 2021) with Stantec. Except for the purposes legislated under Canadian provincial and territorial securities law, any other uses of the Technical Report, by any third party, is at that party's sole risk.

The Qualified Person has used their experience and industry expertise to produce this Technical Report. Readers are cautioned that the results of the Technical Report include forward-looking information. The factors and assumptions used to develop the forward-looking information, and the risks that could cause the actual results to differ materially, are presented in the body of this Report.

CERTIFICATE OF QUALIFIED PERSON

I, John Joseph Riordan, BSc, CEng, FAusIMM, MIChemE, RPEQ do hereby certify that:

1. I am Process Engineering Manager for DRA Pacific Limited of 256 Adelaide Terrace, Perth, Western Australia.
2. This certificate applies to the technical report titled "Tonopah Lithium Claims Project NI43-101 Technical Report – Preliminary Economic Assessment," (the "Technical Report"), prepared for American Lithium Corporation.
3. The Effective Date of the Technical Report is 31 January 2023.
4. I am a graduate of Cork Institute of Technology with a Bachelor of Science degree in Chemical Engineering (1986). I have worked as a metallurgist and process engineer continuously for a total of 36 years since my graduation and have been involved in the design, construction, commissioning, operation and optimisation of mineral processing and hydrometallurgical plants.
5. I am a Fellow of the Australasian Institute of Mining and Metallurgy (No. 229194), a Chartered Engineer (No. 461184), a Chartered Chemical Engineer (No. 256480), and a Registered Professional Engineer of Queensland (RPEQ No. 22426).
6. I have read the definition of "Qualified Person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be, a "Qualified Person" for the purposes of NI 43-101.
7. I am the coordinating author of the Technical Report and have carried out or supervised the work done by other DRA professionals for DRA's contribution to the Technical Report. I take responsibility for sections 1.1, 1.5, 1.6, 1.9, 1.10, 1.13, 1.14, 2, 3, 13, 17, 19, 21, 25 and 26, unless subsections are specifically identified by another Qualified Person.
8. I have not visited the property.
9. I am independent of American Lithium Corporation applying all the tests in section 1.5 of NI 43-101.
10. I have not had prior involvement with the property that is the subject of the Technical Report.
11. I have read NI 43-101 and Form 43-101F1; the sections of the Technical Report I am responsible for have been prepared in compliance with that instrument and form.
12. As of the aforementioned Effective Date, to the best of my knowledge, information and belief, the sections of the Technical Report I am responsible for contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 17th day of March 2023.

Signed
/John Joseph Riordan/

John Joseph Riordan, FAusIMM (No. 229194)
DRA Pacific Pty Ltd

CERTIFICATE OF QUALIFIED PERSON

I, Valentine Coetzee, do hereby certify that:

1. I am SVP: Process and Technology for DRA South Africa Projects (Pty) Ltd of Building 33, Woodlands Office Park, 20 Woodlands Drive, Woodlands, Sandton, 2080.
2. This certificate applies to the technical report titled "Tonopah Lithium Claims Project NI43-101 Technical Report – Preliminary Economic Assessment," (the "Technical Report"), prepared for American Lithium Corporation.
3. The Effective Date of the Technical Report is 31 January 2023.
4. I am a registered Professional Engineer with the Engineering Council of South Africa (No. 20070076) and graduated from the University of Stellenbosch, South Africa with a Bachelor of Engineering in Chemical Engineering (Mineral Process) and Master of Engineering in Mining Engineering (Mineral Economics). I have practiced my profession continuously since 2001.
5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be, a "Qualified Person" for the purposes of NI 43-101.
6. Responsibilities: Section 22.
7. I am independent of American Lithium Corporation applying all the tests in section 1.5 of NI 43-101.
8. I have not visited the property.
9. I am independent of Ivanhoe Mines Ltd. in accordance with the application of Section 1.5 of National Instrument 43-101.
10. I have not had prior involvement with the property that is the subject of the Technical Report.
11. I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.
12. As of the aforementioned Effective Date, to the best of my knowledge, information and belief, the sections of the Technical Report I am responsible for contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 17th day of March 2023.

Signed

/Valentine Eugene Coetzee/

Valentine Coetzee (PrEng 20070076)
DRA South Africa Projects (PTY) Ltd

CERTIFICATE OF QUALIFIED PERSON

Derek J. Loveday, P. Geo.

This certificate applies to NI 43-101 Technical Report titled "Tonopah Lithium Claims Project NI 43-101 Technical Report– Preliminary Economic Assessment" prepared for American Lithium Corporation issued on March 17, 2023 (the "Technical Report") and effective as of March 17, 2023.

I, Derek J. Loveday, P.Geo., do hereby certify that:

1. I am currently employed as a Project Manager by Stantec Services Inc., 2890 East Cottonwood Parkway Suite 300, Salt Lake City UT 84121-7283.
2. I graduated with a Bachelor of Science Honors Degree in Geology from Rhodes University, Grahamstown, South Africa in 1992.
3. I am a licensed Professional Geoscientist in the Province of Alberta, Canada, #159394. I am registered with the South African Council for Natural Scientific Professions (SACNASP) as a Geological Scientist #400022/03.
4. I have worked as a geologist for a total of thirty years since my graduation from university, both for mining and exploration companies and as a consultant specializing in resource evaluation for precious metals and industrial minerals. I have many years' experience exploring and modelling stratiform sediment-hosted industrial mineral deposits in the western United States and Australia of naturally low-concentration elements including potassium (potash), uranium and lithium. I have worked on two other lithium claystone projects in the vicinity of Tonopah, Nevada.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101), and past relevant work experience, I meet the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I am responsible for preparation of Section 13 and 14 and portions of Sections 1 through 12 and Portions Sections 15 through 27 of the Technical Report titled "Tonopah Lithium Claims Project NI 43-101 Technical Report– Preliminary Economic Assessment" prepared for American Lithium Corporation issued on March 17, 2023 (the "Technical Report") and effective as of March 17, 2023.
7. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
8. I personally inspected the property on February 3, 2020 and again in December 16th and 17th, 2021.
9. I was the author of the properties previous Technical Report titled "Technical Report TLC Property, Nye County, Nevada, USA" (the "Technical Report") dated October 21, 2021, Effective Date April 15, 2020.
10. At the effective date of the Technical Report, 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 make the Technical Report not misleading.
11. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Report, the omission to disclose which makes the Report misleading.
12. I am independent of the issuer applying all of the tests in Part 1.5 of NI 43-101CP.

"**Original Signed and Sealed By Author**"

Dated March 17, 2023

____

Derek J. Loveday, P.Geo.

Project Manager

CERTIFICATE OF QUALIFICATIONS

I, Satjeet Pandher, P. Eng., do hereby certify that:

1. I am currently employed as Senior Mining Engineer by Stantec Consulting Ltd., 1100-111 Dunsmuir St., Vancouver, British Columbia, Canada, V6B 6A3.
2. I graduated with a Bachelor of Science degree in Mining Engineering from the University of Alberta in 2008.
3. I am a member in-good-standing of the Engineers and Geoscientists of British Columbia (Member # 37942).
4. I have worked as an Engineer for 15 years since graduating from my undergraduate degree in Mining Engineering. I have 15 years of project experience in the complete evaluation and analysis of surface mineable projects. This experience includes the evaluation of surficial sedimentary materials including coal and oilsands.
5. I have read the definition of “qualified person” set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101), and past relevant work experience, I meet the requirements to be a “qualified person” for the purposes of NI 43-101.
6. I am responsible for the preparation of portions of Section 16, Section 20, and 21 of the “Tonopah Lithium Claims Project NI 43-101 Technical Report Preliminary Economic Assessment” dated March 17th, 2023.
7. I have no prior involvement with the property that is the subject of the Technical Report.
8. I have not personally visited the project property.
9. At the effective date of the Preliminary Economic Assessment, to the best of my knowledge, information, and belief, the Preliminary Economic Assessment contains all scientific and technical information that is required to be disclosed to make the Preliminary Economic Assessment not misleading.
10. I am not aware of any material fact or material change with respect to the subject matter of the Preliminary Economic Assessment that is not reflected in the Report, the omission to disclose which makes the Report misleading.
11. I am independent of the issuer applying all of the tests in Section 1.5 of NI 43-101.

Dated March 15th, 2023

“Original Signed and Sealed by Author”

Satjeet Pandher, P. Eng.
Senior Mining Engineer

CERTIFICATE OF QUALIFIED PERSON

Joan C. Kester, P. Geo.

This certificate applies to NI 43-101 Technical Report titled "Tonopah Lithium Claims Project NI 43-101 Technical Report– Preliminary Economic Assessment" prepared for American Lithium Corporation issued on March 17, 2023 (the "Technical Report") and effective as of March 17, 2023.

I, Joan C. Kester, P.Geo., do hereby certify that:

1. I am currently employed as a Resource Geologist by Stantec Services Inc., 2890 East Cottonwood Parkway Suite 300, Salt Lake City UT 84121-7283.
2. I graduated with a Master of Science Degree in Geology from the University of Louisiana at Lafayette, Lafayette, Louisiana in 2004.
3. I am a registered Society for Mining, Metallurgy & Exploration (SME) member #04294447 and a licensed Professional Geologist in the State of Utah #6695640-2250 and Wyoming #PG-4063 USA.
4. I have worked as a geologist for a total of sixteen years since my graduation from university, both for geotechnical, environmental, and mining consultant companies specializing in quality control, water resources, and resource evaluation for industrial minerals. I have years of experience with many types of drilling, well installation, GIS mapping of active and inactive mining operations and detailed sampling efforts in addition to recent modelling of stratiform sediment-hosted industrial mineral deposits in the western United States
5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101), and past relevant work experience, I meet the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I am responsible for preparation of portions of Sections 1 to 12 and portions of Sections 14 to 27 of the Technical Report titled "Tonopah Lithium Claims Project NI 43-101 Technical Report– Preliminary Economic Assessment" prepared for American Lithium Corporation issued on March 17, 2023 (the "Technical Report") and effective as of March 17, 2023.
7. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
8. I personally inspected the property and sample storage facilities on July 20th and 21st, 2022.
9. I have not had any prior involvement with the property that is the subject of this Technical Report.
10. At the effective date of the Technical Report, 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 make the Technical Report not misleading.
11. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Report, the omission to disclose which makes the Report misleading.
12. I am independent of the issuer applying all of the tests in Part 1.5 of NI 43-101CP.

"**Original Signed and Sealed By Author**"

Dated March 17, 2023

Joan C. Kester, P.Geo.
Resource Geologist

CERTIFICATE OF QUALIFIED PERSON

Sean Ennis, P. Eng.

This certificate applies to NI 43-101 Technical Report titled "Tonopah Lithium Claims Project NI 43-101 Technical Report– Preliminary Economic Assessment" prepared for American Lithium Corporation issued on March 17, 2023 (the "Technical Report") and effective as of March 17, 2023.

I, Sean Ennis, P. Eng., do hereby certify that:

1. I am currently employed as Vice President, Mining, Minerals and Metals with Stantec Consulting Ltd., 1100-111 Dunsmuir St., Vancouver, British Columbia, Canada, V6B 6A3.
2. I graduated with a Bachelor of Science degree in Mining Engineering from the University of Alberta in 1991 and with a Master's in Engineering Degree in Geo-Environmental Engineering from the University of Alberta in 1997.
3. I am a member in-good-standing of the Engineers and Geoscientists of British Columbia (Member # 24279).
4. I have worked as a Mining Engineer for 32 years. My on-site experience has included working at gold, base metals, coal and oil sands operations. I have been involved in the evaluation of open pit projects, including base, precious and battery metals and industrial minerals projects, from the preliminary economic assessment through to feasibility level and I have provided operations support to projects. My experience includes the investigation, evaluation, design and operational support for mine tailings facilities for a range of commodities and includes tailings management methods for conventional slurry, thickened and filtered tailings deposits. I have been involved with the evaluation and design of filtered tailings storage facilities since 2009.
5. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 ("NI 43 101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I am independent of the issuer as described in Section 1.5 of NI 43-101.
7. I am responsible for the portions of Sections 1, 16 and 26 of the Report. I have not personally visited the property.
8. I have had no prior involvement with the Property that is the subject of the Technical Report.
9. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.
10. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Report, the omission to disclose which makes the Report misleading.

Signed this 17th day of March 2023.

"*Original Signed and Sealed by Author*"

Sean Ennis, P.Eng.

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1 SUMMARY

1.1 Introduction

The Tonopah Lithium Claims Project (TLC) is located 10 kilometres northwest of Tonopah, Nye County, Nevada, United States. The property is registered with the Department of the Interior Bureau of Land Management (BLM) and Nye County and is wholly owned by American Lithium.

This Preliminary Economic Assessment Technical Report presents a Base Case scenario which envisions an initial 4.4 Mt/y processing throughput expanding to 8.8 Mt/y (corresponding to nominal lithium carbonate (LC) production of 24,000 and 48,000 t/y, respectively). The PEA Alternative Case is identical, but with added production of high purity magnesium sulfate monohydrate as a by-product over life of operations.

1.2 Geology & Mineralization

Surficial geology within the Property boundary is mapped as a Quaternary-aged flat alluvial outwash plane. The outwash plane is interspersed with shallow washes draining towards the west. The shallow washes partially expose underlying fines-dominant sediments and lithic tuffs of the Tertiary Miocene-age Siebert Formation. Exploration drilling on the Property shows the outwash plane surface alluvium to have an average thickness of 22 feet (ft) (6.7 metres (m)). Bordering the Property are rhyolite intrusions in the east and andesite in the north that are exposed on the high ground.

1.3 Mineral Resource Estimation

The TLC Property geologic model is a 3D block model using the Nevada State Plane Central Zone NAD83 coordinate system and U.S. customary units. The geologic model was separated into four stratigraphic zones, which from top to bottom included the following units: surface weathering alluvium, upper claystone, lower claystone, and basement.

The resource estimates are contained within an economic pit shell at constant 45° pit slope to a maximum vertical depth of 970 ft (296 m) below surface. Lithium resources are presented for a range of cut-off grades to a maximum of 1,200 ppm lithium. All lithium resources on the TLC Property are surface mineable at a stripping ratio of 2.4 waste yd3/ton (0.8 m3/t) at the base case cut-off grade of 500 ppm lithium. The effective date of the lithium resource estimate is October 6, 2022.

1.4 Mining Methods

The characteristics and relatively shallow depth from surface of the mineralized material make it suitable for open pit mining. The mine plan utilizes an open pit truck/shovel mining method and no drilling or blasting activities are envisioned. The mining sequence has been optimized to minimize the stripping ratio while maximizing the grade being mined from the open pit.

The base case ramp-up mine plan for the project is based on an initial LC production target of 24,000 t/y (4.4 Mt/y RoM) for the first six years at an average crusher feed grade of approximately 1,400 ppm. It then steps up to a LC production target of 48,000 t/y (8.8 Mt/y RoM) at an average feed grade of approximately 1,400 ppm until the end of mining from the open pit in year 19. The remainder of the mine plan for the next 21 years is the stockpile drawdown phase where material stockpiled during active mining operations is re-handled to the primary crusher. LC production ranges from 34,000 – 41,200 t/y as the average feed grade ranges from 1,010-1,210 ppm.

The mine plan addresses the pit design criteria, production sequence, material balances, stockpiling, tailings disposal, utilization of disposal areas, and reclamation. The mine plan also addresses waste material being stored in external rock dumps or backfilled within the pits. Waste rock dumps would be constructed by end-dumping using large capacity rear-dump haul trucks.

Pit Optimisation was carried out using the inputs in Table 1-1.

Table 1-1 Economic Optimization Inputs

Input Parameter	**Value**	**Units & Notes**
Mining Units Cost	2.00	$/t
Mining Recovery Rate	100%	Recovered mineralized material / In-situ mineralized material
Mining Dilution Rate	0%	Waste mined with mineralized material as a percentage of mineralized material
Mineralization & Waste Density	1.7	g/cm^3
Stockpile Reclaim Cost	1.00	$/t
Stockpile Grade Recovery Rate	90%	Percentage of lithium grade recovered from the stockpiles
Overall Pit Slope Angle	40	Degrees
Maximum Benches Mined per Year	12	Benches per phase
General & Administrative Costs	1.00	$/t RoM
Tailings Production and Transportation Costs	1.50	$/t ROM

Input Parameter	Value	Units & Notes
Processing Plant Recovery Rate	73.3%	
Product Ratio	5.323	kg of LC per kg of Li processed
Target Plant Feed Grade	1,400	ppm Lithium
Processing Unit Cost	40.06	$/t
LC Selling Price	20,000	$/t of Li_2CO_3
Pit Shell Price Increments	500	$/t of Li_2CO_3
Discount Rate	8%	Per year

1.5 Mineral Processing & Metallurgical Testing

1.5.1 Metallurgical Testing

A substantial body of metallurgical testwork has been carried out on the Tonopah lithium-bearing material. The testwork has been carried by the laboratories and companies listed below and is detailed in the Tonopah Lithium Trade-Off Study Report that informed this PEA.

Table 1-2 Testwork Laboratory Information

Laboratory	Location	Dates
McClelland Laboratories Inc.	NV USA	2019 - 2022
SGS Minerals	ONT, Canada	2021 - 2022
Hazen Research Inc.	CO, USA	2021 - 2022
Australia's Nuclear Science and Technology Organisation (ANSTO)	NSW, Australia	2022
Lawrence Berkeley National Laboratory	CA, USA	2020
Multotec Process equipment	South Africa	2022
TECMMINE	Lima, Peru	2021 - 2022
Sturtevant	MA, USA	2022
McLanahan	PA, USA	2022
FLSmidth	PA, USA	2022
Pocock Industrial Inc	UT USA	2020-2022
RSG Inc.	AL USA	2021-2022

The metallurgical testing program, which at the time of writing this report is still on-going, is managed by American Lithium Corporation and was supported by DRA Global (DRA) during the PEA phase. As a pre-cursor to the PEA, DRA was tasked to address three process routes in a trade-off study and to select one option to develop further in the PEA. The three routes considered were Sulfuric Acid Leach, Sulfuric Acid Bake, and Sulfation Roast. The trade-off studies commenced before the testwork results were available and this required several design assumptions to be made that were later confirmed or corrected once the results became available. Based on the testwork results and a preliminary economic analysis, the Sulfuric Acid Leach was deemed to be the most suitable option for the PEA. There were several options within the Sulfuric Acid Leach flowsheet that were also considered, primarily to address the high concentration of acid-consuming components in the plant feed material. To minimize sulfuric acid consumption, it is essential to upgrade the run-of-mine claystone mineralized material. The flowsheet also includes a counter current acid leach and a customized impurity removal circuit to provide a process solution of a suitable quality for precipitation of a high purity LC. The various options considered are shown in Table 1-3 and the Base Case for this PEA as described above was given the working title of Option 11.

Table 1-3 Process Routes and Option Considered

Option	Product	Process Route	Pre-Con	Leach	Grade (ppm)	Sodium/Potassium SO4 Crystallization	$MgSO_4$ Recovery
1	$LiOH.H_2O$	Acid Bake	No		1200	Separate	No
2	$LiOH.H_2O$	Salt Roast	No		1200	Separate	No
3	$LiOH.H_2O$	Acid leach	No	Co-Current	1200	Separate	No
4	Li_2CO_3	Acid Bake	No		1200	Separate	No
5	Li_2CO_3	Salt Roast	No		1200	Mixed	No
6	Li_2CO_3	Acid leach	No	Co-Current	1200	Separate	No
7	Li_2CO_3	Salt Roast	Yes	Co-Current	1200	Mixed	No
8	Li_2CO_3	Acid leach	Yes	Co-Current	1200	Separate	No
9	Li_2CO_3	Acid leach	Yes	Counter Current	1200	Separate	No
10	Li_2CO_3	Acid leach	Yes	Counter Current	1200	Mixed	No
11	**Li_2CO_3**	**Acid leach**	**Yes**	**Counter Current**	**1400**	**Mixed**	**No**
12	Li_2CO_3	Acid leach	Yes	Counter Current	1400	Mixed	Yes

1.5.2 Mineral Processing

The Acid Leach testwork provided the basis and the development of the block flowsheet shown in Figure 1-1 and provided key design parameters for the process design summarised in Table 1-5.

The Project consists of an open pit mine and an associated processing facility along with on-site and off-site infrastructure to support the operation. The Base Case design for the process plant is based on achieving a nameplate process tonnage of 8.8Mt/y over two phases. An overview of the phased production strategy is presented in Table 1-4**.**

Table 1-4 Process Rate and Expansion Phases – Base Case

Description	Years	Process Plant Feed Rate
Phase 1	1 – 5	4.4 Mt/y
Phase 2	6 - 40	8.8 Mt/y

A total of 1.46 Mt of high purity LC is produced over life of mine at an overall lithium recovery of 73.3%.

The Tonopah Lithium Clay Process plant consists of the following steps:

- Mineralized material comminution and screening
- Gravity Concentration;
- Counter-Current leaching;
- Acid leach filtration;
- Neutralisation;
- Magnesium Sulfate Crystallisation;
- Epsom Salt Adiabatic Flash
- Impurity Removal;
- Softening;
- Two stage lithium carbonate precipitation and Product Handling;
- Mixed Sulfate Crystallisation;
- Filtered stacked tailings;
- Sulphuric acid plant
- Reagent storage
- Services and Utilities.

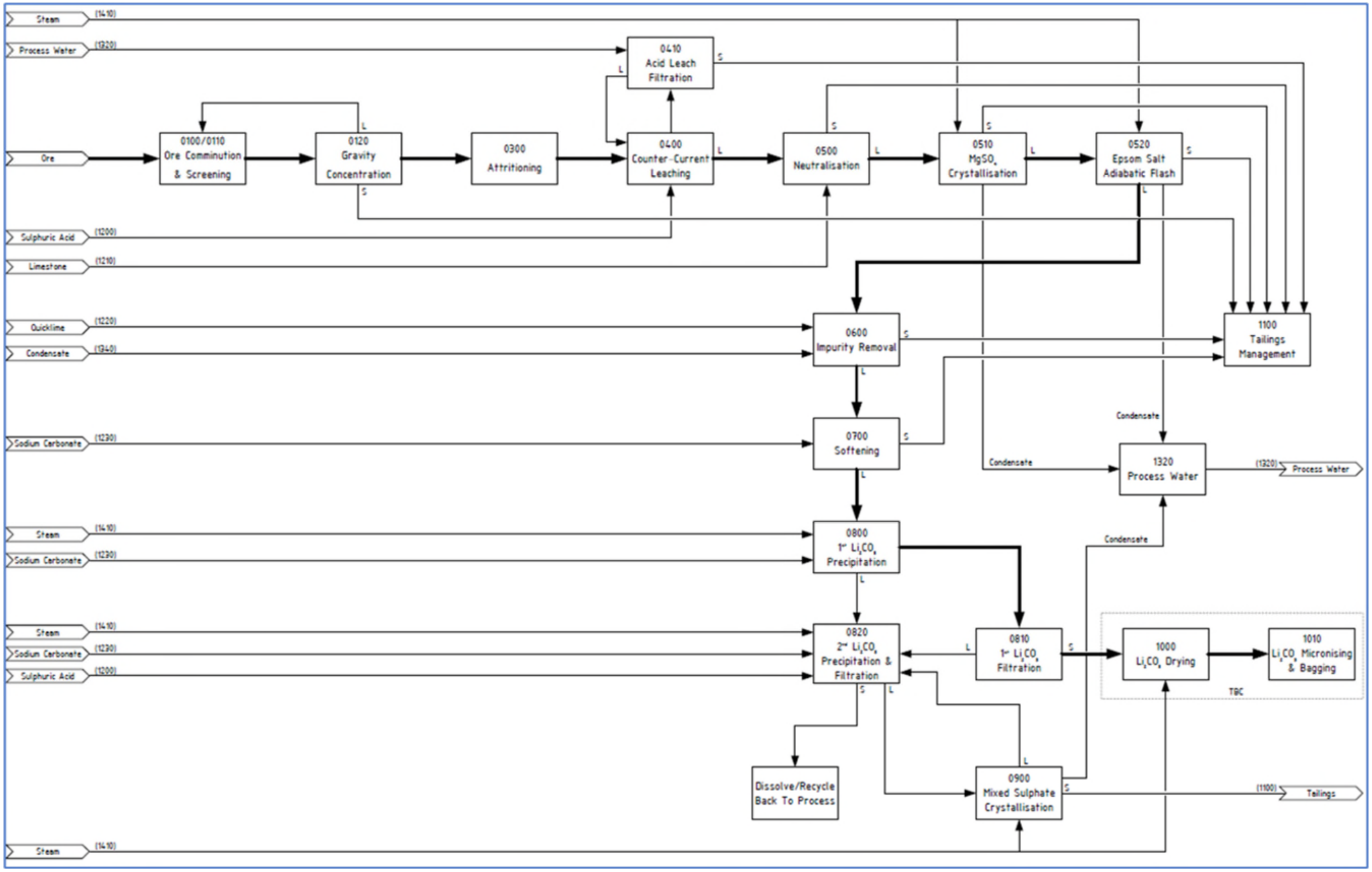

Figure 1-1 Acid Leach Block Flow Diagram

1.5.3 Design Criteria

The key project design criteria are shown in Table 1-5.

Table 1-5 TLC Design Criteria

Description	Unit	Value
Life of Mine	y	40
Plant Design Throughput (Phase 1 - Year 1 to 5)	Mt/y	4.4
Plant Design Throughput (Phase 2 - Year 6 to 40)	Mt/y	8.8
Operating Hours Per Year	h/y	7,884
Lithium Head grade (Phase 1)	ppm Li	1,400
Lithium Head grade (Phase 2)	ppm Li	1,400 – 1,000
Lithium Production as LC (Phase 1)	t/y	24,000
Lithium Production as LC (Phase 2)	t/y	48,000 – 34,000
Lithium extraction Method		Counter-current sulfuric acid leach
Acid addition/ t Run of Mine (RoM)	Kg/t	298
Acid addition/ t Concentrate	Kg/t	542
Lithium recovery – Feed Material preparation	%	82.58
Lithium Recovery – Hydro metallurgical plant	%	88.76
Lithium Recovery – Overall	%	73.30

1.6 Market Studies and Contracts

The Tonopah Lithium Project is not currently in production and has no operational sales contracts in place. To evaluate the market for its lithium product, American Lithium subscribed to the Lithium Forecast Service of Benchmark Mineral Intelligence (BMI). BMI's Q4 2022 forecast describes the lithium supply chain, long-term supply forecasts for lithium to 2040 and long-term supply cost curves for lithium to 2040. Forecast prices for the same period for battery grade LC and hydroxide are also provided, and these have formed the basis for the economic analysis undertaken for the PEA.

There is an ongoing need for capacity investments in lithium raw material extraction, chemical processing and cathode manufacturing as shown in the BMI forecast to 2040. Given the direction of travel and level of investment in the downstream of the electric vehicle supply chain, at an automobile manufacture and battery cell level, there is an impending shortfall in all areas of the upstream supply chain which needs to be addressed.

The forecast market deficit will incentivise investment in both raw material and chemical processing capacity. For LC, BMI forecasts long-term pricing to settle in the region of $ 20,750 per tonne and for lithium hydroxide $22,750 per tonne.

An opportunity exists for the Tonopah project to become a significant supplier of magnesium sulfate products. American Lithium has engaged with Ameropa, a reputable and accredited European-based fertiliser trader to provide insights into likely future market capacity and pricing for magnesium sulfate products. A value of $150/t of magnesium sulfate monohydrate was used in the financial modelling of the Alternative Case. No contracts have been entered into so pricing and market size should be considered prospective at this stage.

Lithium raw material projects in stable jurisdictions close to areas of future high demand, namely Europe and North America, are at a distinct advantage in terms of potential for development. Battery cell manufacturers are planning capacity investments closer to where their key customers, automotive manufacturers, are located, and will wish to source at least part of their supply from regional sources to cut down on lead times, freight costs and default risks.

It is noted that the outlook for the battery cathode chemistry mix indicates a move towards high-nickel NCM technologies, which favours the use of lithium hydroxide in the production of these cathodes and TLC is well-positioned to take advantage of this by converting its high purity LC to lithium hydroxide with an investment in future capital equipment.

1.7 Environmental Studies, Permitting & Social Considerations

1.7.1 Environmental Assessment

An Environmental Assessment (EA) was completed in 2021 in accordance with the National Environmental Policy Act (NEPA) for the TLC Exploration Project (BLM, 2021). Another NEPA evaluation will need to be completed for the commercial-scale Project activities and area. Environmental justice, migratory birds, Native American religious and cultural concerns, rangeland management, recreation, social values and economics, soils, special status species (including bald and golden eagles), surface and groundwater resources, vegetation, and general wildlife were identified as being potentially affected by Project activities. Areas of critical environmental concern such farmlands, fish habitat, floodplains, forests and rangelands, human health and safety, wetlands and riparian zones, wild and scenic rivers, wilderness/wilderness study areas, lands and realty, paleontological resources, and wild horses and burros were identified as not being present within the Project Area. Air quality, cultural resources, noxious weeds and invasive and non-native species, hazardous/solid wastes, climate change, geology and mineral resources, and visual resources were identified as being present but not affected within the Project Area.

1.7.2 Permitting

The NDEP-BMRR largely defines the engineering and design requirements around disposal of mine wastes, water management, and mine closure aspects. However, the BLM may have additional requirements associated with any activities located on public lands.

The permitting requirements for the Project are detailed in Section 20 of this report.

1.7.3 Social Or Community-Related Requirements

American Lithium acknowledges that the Newe (Western Shoshone) have lived in the great basin of Nevada and has the deepest respect for and gratitude to this indigenous group, the original caretakers of the land, for their enduring stewardship of these shared lands.

The Bureau of Land Management (BLM) Tonopah Field Office administrative boundary contains spiritual, traditional, and cultural resources and sites to engage in social practices that aid in maintaining and strengthening the social, cultural, and spiritual integrity of the tribes.

EPMs have been implemented to immediately halt activities in the event of a discovery of a cultural resource.

American Lithium hired tribal cultural monitors, under the direct supervision of the Shoshone Tribal Council(s) to survey exploration project bulk sample sites and drill pads in 2023. A survey buffer to all sites to be surveyed was added out of an abundance of caution. No issues were identified with the site surveys to date.

American Lithium will utilize tribal cultural monitors from the Timbisha Shoshone Tribe, the Duckwater Shoshone Tribe and/or the Yomba Shoshone Tribe, as available.

Pursuant to government-to-government tribal consultation, there were no known impacts related to Native American religious and cultural concerns identified by the tribes for the exploration Project Area. Tribal Consultation will continue throughout the life of the Project

The Project Area is primarily in Nye County, with a small portion of the Project Area in Esmeralda County; since the Project activities would be occurring primarily in Nye County, and the town of Tonopah is in Nye County, the socioeconomics analysis area for the Project is Nye County. During exploration, a temporary workforce of up to 25 employees or contractors could work in the Project Area at any given time, primarily utilizing services such as dining and lodging, primarily in Tonopah. In addition, the temporary workforce would not create a demand for additional public or private services and would not impact public schools, the permanent housing market, or other services associated with permanent workers. The Project would create minor and sporadic beneficial impacts that would be negligible, short-term, and localized.

The rural communities located in Nevada are primarily dependent upon the mining industry for employment and economic security. This has created a supportive, pro-mining culture in these communities where most employees live. Company involvement and improvement in the community is vital in rural areas. Sponsorship has a significant impact on the community by helping fund programs that directly benefit the local community and American Lithium plays a significant role by sponsoring a number of local functions and events.

The Project is located on public lands traditionally used by the Western Shoshone Tribes and Bands, and operations need to demonstrate respect for indigenous cultural resources, environmental stewardship, and shared benefits to receive support from Native American communities. These communities will be involved in the mine permitting process via required government-to-government consultation with the BLM. Water resources, air quality, restrictions to land use, and public safety are key concerns for both the rural and Native American communities. Furthermore, agricultural water users throughout Nevada routinely express interest in new water allocations and uses within the area and insist on protection of established water rights.

Community impacts associated with the proposed Project potentially include the following:

- Mine development and operation would increase local employment and tax revenues; and
- Mining and ore processing activities would increase water consumption by mine operations, generate air emissions that would require mitigating controls, increase truck traffic over area roadways, disturb grounds with potential cultural resources and/or wildlife habitat, and restrict access to the mining area.

While not a legal or permitting requirement, community expectations for mining projects in Nevada include implementation of a grievance process whereby issues raised by community members regarding the Project can be brought to the attention of the relevant mine management in a way that they understand the issue and can engage in practical measures to achieve a mutually agreeable resolution.

Communities also expect mining projects to participate in community development (e.g., workforce development, educational programs, public health programs, local hiring, and local procurement) and to provide updates regarding Project status. While not legal or permitting requirements, community development efforts assist in maintaining public support for the Project and mining in general.

The Company desires to build positive, mutually beneficial, working relationships with the tribal communities related to its active mineral exploration and development at the Tonopah Lithium Project, including cultural resource monitoring, employment, and business supply agreements, as applicable.

1.8 Project Infrastructure

The conceptual site general arrangement is illustrated in Figure 1-2. The mining pit is located on the northern side of the TLC lease area and includes an external waste rock dump as well as in-pit waste rock and tailings storage areas.

The mine facilities and process plant site are located immediately to the southeast of the mine pit area. Further details related to the process plant are discussed in Section 17.

An area immediately to the south of the mine pit area has been designated as the location for multiple lower-grade stockpiles that are developed during the 19-year mining operation. These piles are required to ensure the plant feed grade remains at or above 1,400 ppm Li during the first 17 years of processing. The majority of these piles are consumed during the subsequent 21 years as the plan targets a feed grade at or above 1,000 ppm Li. Some of the material placed in the lowest grade stockpiles (500 – 800 ppm Li) may remain for further consideration beyond the currently planned 40 years of operation.

The external tailings facility (TSF1) is located to the south of the plant site along the eastern extent of the TLC area. The external TSF is planned to be operational for Year 1 until in-pit tailings disposal commences in Year 15. The by-product tailings area (TSF2) is located south of the stockpile area and serves as the storage location of magnesium sulfate, a by-product of the lithium extraction process, for the entire 40-year processing period. Further details related to the tailings disposal plan are discussed in Section 16.7

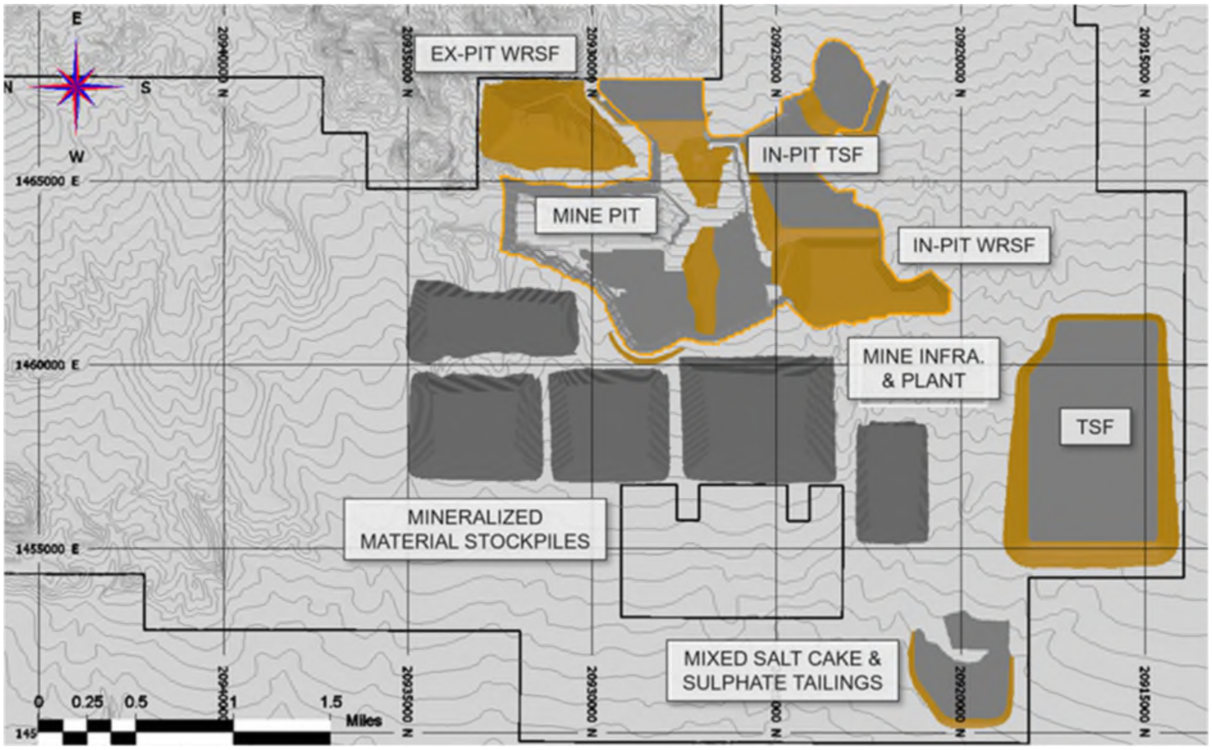

Figure 1-2 Conceptual Site General Arrangements

1.8.1 Site Facilities

The facilities are composed of the following components typical of most mining and process operations:

- Office administration building
- Personnel dry facilities
- Mine and plant warehouse
- Bulk reagents storage
- Mine equipment maintenance facilities. It is envisioned that the mine maintenance facilities will be constructed in two phases with the second phase coinciding with the mine expansion in Year-7
- Emergency vehicle facilities and medical clinic
- Site laboratory
- Fuel deports for both heavy mine equipment and light vehicles
- Site security facilities

1.8.2 Roads

The site will be accessed via a 7 km exploration trail that connects to paved State Highway 89 (also called Gabbs Pole Line Road). This intersection is approximately 4 km north of junction State Highway 89 and United States Highway US 95 (US 6). This junction occurs 2.5 miles (4 km) west of the town on Tonopah. The existing exploration trail will be upgraded to two-lane paved road suitable for all construction, raw material and product traffic that is expected to occur over the life of the project.

The development of the mine facilities will include all of material movement or rough grading required to support all the facility development and the associated water management features required to ensure the effective management of surface water.

1.8.3 Power Supply

The project will require a substation and approximately 7 km of distribution powerline to be constructed to provide the necessary power supply to the project. At present the project has assumed that this line will be constructed from the existing NV Energy transmission line that operates at 120 kV. A routing for this powerline has yet to be determined.

1.8.4 Gas Supply

The gas consumption (0.007 t/h) is relatively low, and it is assumed that the gas supplier will use gas bullets on site that will be replenished by road transport.

1.8.5 Water Supply

The lithium extraction process will require significant water that is not available on site. American Lithium has secured the required water rights to the north of the project area. A 30 km buried pipeline will be constructed from the Water Permit areas. This pipeline will parallel State Highway 89 until it reaches the upgraded access road. At this point it will parallel the access road into the project area

1.9 Capital Cost Estimate

For mining, an owner-operated fleet has been adopted for the purposes of the project and capital requirements relating to mining cover a two-year pre-production period. Mine infrastructure capital cost estimates were calculated based on previously designed facilities that were at a more detailed stage than this project. $/unit area costs as well as past budgetary quotes were used when developing capital costs for mine buildings, mine roads and electrical power for the site.

Tailings Storage Facility (TSF) capital costs were developed using berm construction volumetrics, foundation grading and preparation, water management structures, supply of mine rock fill and engineering/design costs. As well as the geosynthetic cost for the lined facility.

Mining, infrastructure and TSF costs in US$ are shown in Table 1-6, Table 1-7 and Table 1-8.

Table 1-6 Mining Equipment Capital Cost

Mining Equipment	Initial $M	LoM $M
Trucks	9.49	41.44
Shovel/Loaders	5.30	21.53
Support and Auxiliary	20.45	31.79
Total	**35.23**	**94.75**

Table 1-7 Infrastructure Capital Cost

Item	Initial $M	LoM $M
Mine Maintenance Shop	18.75	
Office & Dry Facilities	3.00	
Washbay, Tireshop & Warehouse	4.00	
Roads, Security & miscellaneous	5.00	
Power/Electrical	20.00	
Total	**50.75**	**22.19**

Table 1-8 TSF Capital Cost

Facility	Capital $M	Comments
TSF 1 (Primary tailings storage facility)	26.20	External facility – construction for two years capacity is capitalized
TSF 2 (Sulfate tailings)	18.30	Lined storage facility
Total	**44.50**	

The Base Case design for the process plant achieves a peak processing tonnage of 8.8 Mt/y over two Phases. Phase 1 is designed for 4.4Mt/y for 6 years and Phase 2 is designed for 8.8Mt/y for the balance of LoM.

The process plant capital for Phase 2 is factored from the Phase 1 capital costs estimate. Similarly, bulk infrastructure capital expenditure has also been factored.

The capital cost estimate for the plant was compiled based on a priced mechanical equipment list. Factors were applied to the equipment cost to derive a total plant cost which includes costs for earthworks, civils, steel, piping and valves, electrical and control equipment, instrumentation, freight, equipment installation and for Project indirects. Quotations from suppliers have accounted for approximately 84% of total equipment costs. Non-process infrastructure costs were provided by Stantec.

The prepared estimate is classified by DRA as a Class 4 estimate with a +40 % / -40 % accuracy, similar to an AACE International Class 4 (+50 % / -30 %) and deemed suitable for a PEA level study.

Process Plant Direct Costs

The breakdown of direct costs for the process plant Phase 1 is shown in Table 1-9. Capital costs associated with the outlay required for reagents, notably the acid plant, form the largest single cost driver accounting for 54% of total direct costs. Capital required for the construction of a sulfuric acid plant has been included in this total.

Table 1-9 Process Plant Direct Costs Phase 1

Area Code	Plant Area mount	$M	% of Total
100	Comminution	3.10	1.2
120	Gravity Concentration	24.60	9.7
400	Leaching	30.00	11.8
500	Neutralisation	4.30	1.7
510	Magnesium Sulfate Crystallization	13.10	5.2
520	Epsom Salt Adiabatic Flash	12.30	4.8
600/700	Impurity removal and Softening	4.80	1.9
800/810/820	Product Drying and Packaging	3.90	1.5
900	Mixed Sulfate Crystallization	10.60	4.2
1200	Reagents (including acid plant)	143.40	56.4
1300/1400	Services	4.10	1.6
	Total directs	**254.20**	**100**

Process Plant Indirect Costs

Indirect costs include all temporary installations, on-site vendor support, initial spares, first fills and EPCM costs. Owner's costs are excluded from this estimate. Total indirect costs amount to $181.90 M which is 27% of the total process plant cost.

An overview of the capital cost phasing strategy over LoM for each phase is presented Table 1-10.

Table 1-10 Project Capital Cost Summary

Area	Units	Initial	(LoM)
Mining Capital	$ '000	56 264	56 264
Process Plant	$ '000	667 000	1 267 300
Tailings and Infrastructure	$ '000	95 250	107 288
Closure Costs	$ '000	-	25 000
Total Capital Expenditure	**$ '000**	**818 514**	**1 455 852**

1.10 Operating Cost Estimate

The operating cost estimate was completed from a zero base and presented in $. Costs associated with power, labor, materials, consumables and general and administration have been included in this estimate.

The prepared estimate is classified by DRA as a Class 4 estimate with a +40 % / -40 % accuracy, similar to an AACE International Class 4 (+50 % / -30 %) and deemed suitable for a PEA level study.

The overall operating cost estimate is presented in Table 1-11 for the Base Case. The breakdown shows all the costs associated with mine and plant operation covering costs for contractor mining, labor, power, maintenance, reagents, consumables and general administration. The reduction in unit operating costs, relative to Phase I, are realised due to economies of scale. Key cost drivers for both options reside with the process plant of which reagents constitute the largest single cost category overall.

Table 1-11 Life of Mine Operating Cost Breakdown

Description	Units	Life of Mine
G&A Costs	$ '000	531 300
Mining Costs	$ '000	1 296 561
Processing Costs	$ '000	8 902 113
Other Costs	$ '000	611 075
Life of Mine Operating Cost	$ '000	11 341 049
G&A Costs	$/LC tonne	363
Mining Costs	$/LC tonne	886
Processing Costs	$/t LC	6 085
Other Costs	$/t LC	418
Unit Operating Cost (No Power Credits)	$/t LC	7 752
Unit Operating Cost (With Power Credits)	$/t LC	7 443

1.11 Economic Outcomes

1.11.1 Introduction

This PEA economic analysis is preliminary in nature and includes inferred mineral resources. The analysis presents the determination of the net present value (NPV), payback period (time in years to recapture the initial capital investment), and the internal rate of return (IRR) for the project. Annual cash flow projections are estimated over the life of the mine based on the estimates of capital expenditures, production cost, and sales revenue.

The PEA economic model was developed using information and estimates detailed in subsequent chapters of the technical report. Due to the preliminary nature of the model, there is no certainty that the economic assessment will be realized.

All production is given in terms of LC. Revenues, for the base-case scenario, are based on the production of LC product for export, whilst the alternative case presents the speculative economics for additional by-product (magnesium sulfate) recovery in addition to LC.

The analysis has been conducted in constant terms with no consideration given to inflation or cost escalation of costs or product prices over the life of the project. In addition, the analysis is prepared on a 100% equity project basis and does not consider financing scenarios. Financing related costs such as interest expense, and in-country withholding taxes on dividends and interest income, are excluded from the economic model.

1.11.2 Production Profile

The design basis for the process facility is 4.4 Mt/y, whilst the economic analysis is based on increasing output over two phases. The schedule is based on processing circa 4.4 Mt/y during phase 1, with a process plant expansion to circa 8.9 Mt/y in phase 2.

Table 1-12 Milling Rate and Expansion Phases – Base Case

Description	Years	Milling Rate
Phase I	5	4.4 Mt/y
Phase II	6+	8.8 Mt/y

During both phases, the model assumes that 75% of steady state production will be achieved in the first year to account for commissioning ramp-up of the processing facilities.

1.11.3 Input Costs and Taxes

The operating costs over life of mine used in the model include mining operations, process facility operations, estimate for general and administrative costs and estimates for tailings disposal and tailings management.

The total initial capital estimate for the project includes pre-stripping for mine development, construction, direct cost, indirect costs and contingency.

The model uses an assumed closure cost of $ 25m at the end of life of mine.

Mining Tax Plan LLC has prepared the U.S federal and state income tax computation based on the Internal Revenue Code of 1986. The computation has been done subject to a variety of preliminary assumptions relating to classified revenue, expenses and capital expenditures consistent with federal and state income tax statutes, regulations and case law.

1.11.4 Revenue

Project revenues are estimated based on producing saleable LC products, as it relates to grade and impurity levels, with no consideration for any by-product revenue in the base-case. Annual revenue is determined by applying a constant product price over life of mine. The economic analysis has been based on a constant price of $ 20,000 per tonne of LC produced over the life of mine. The sensitivity to price variances is also presented.

1.11.5 Discounted Cash Flow Summary

The economic analysis is prepared on a 100% equity project basis and does not consider financing scenarios. An 8% real discount rate has been used in the analysis. The analysis includes credits for excess power generation which is fed back into the grid.

Table 1-13 Discounted Cashflow Summary – Base Case

Description	Units	Pre-TAX	Post-TAX
Total Cash Flow	$ '000	16 147 433	14 581 623
NPV (8%)	$ '000	3 641 708	3 260 848
IRR	%	28.8	27.5
Payback **	Years	3.6	3.7

** Payback is based on Phase 1 capital alone, with undiscounted cashflows. Positive undiscounted cashflows, inclusive of Phase 2 capital spend, are realised in 5.4 years and 5.6 years for pre-tax and post-tax scenarios respectively.

A summary of the life of mine cash flows for the base-case scenario is presented in Figure 1-3.

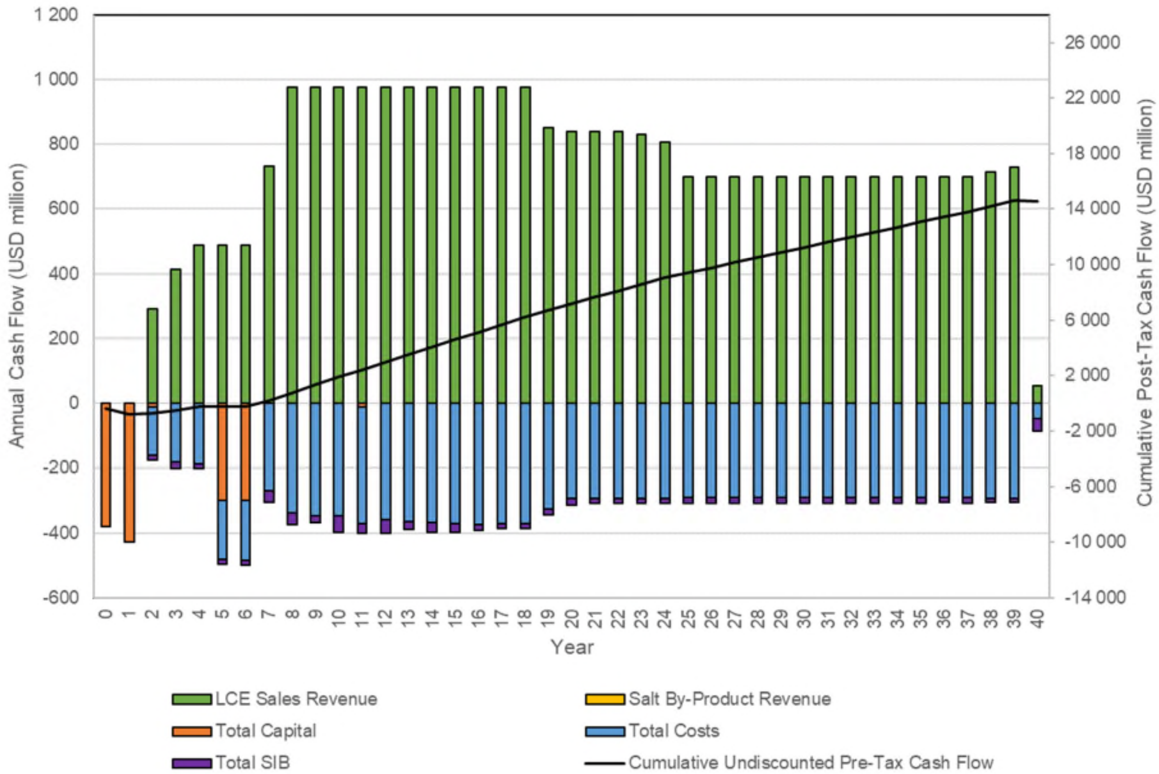

Figure 1-3 LoM Cash Flow – Base Case

1.11.6 Sensitivity

The results of the sensitivity analysis for the project after taxes are shown in Figure **1-4**.

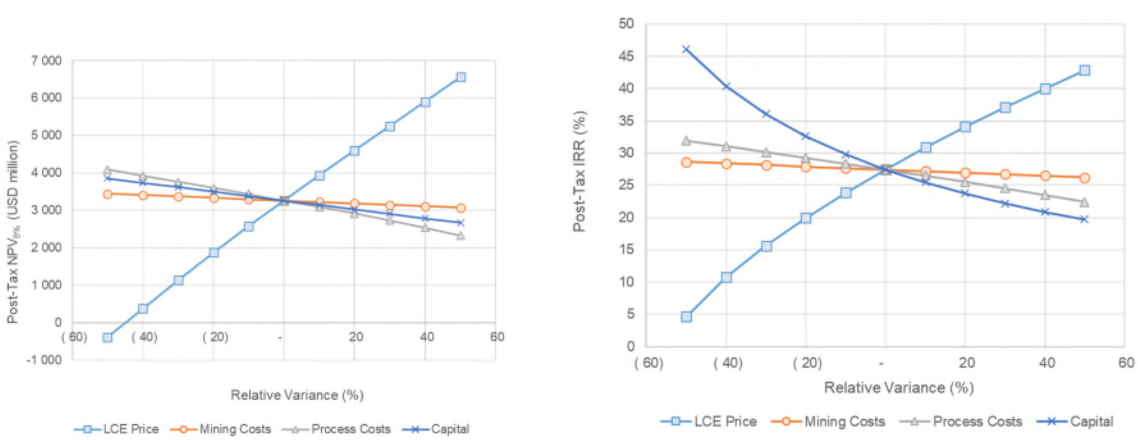

Figure 1-4 Sensitivity Analysis Summary – Base Case

1.11.7 Alternative Case: By-Product Recovery

The possibility exists for recovery of magnesium sulfate monohydrate. This section presents the potential overall economic outlook for the project should by-product recovery be pursued and realised.

Additional initial capital of $21.6 M is estimated to be required for the additional processing elements in the process facility. Additionally, the incremental annual operating cost, at steady state, is estimated at $2 M per year, with a sustaining capital allowance $15.8 M over life of mine. Table 1-14 presents the speculative discounted cashflow summary should the recovery and sale of magnesium sulfate monohydrate be realised. The economic potential is based on a sales price of $150 per tonne of magnesium sulfate monohydrate, whilst the sensitivity to this assumed price is presented graphically in Figure 1-5.

Table 1-14 Discounted Cashflow Summary – Alternative Case (With Magnesium Sulfate Monohydrate)

Description	Units	Pre-TAX	Post-TAX
Total Cash Flow	$ '000	25 859 833	22 129 558
NPV (8%)	$ '000	6 055 592	5 156 602
IRR	%	38.6	36.0
Payback	Years	2.6	2.8

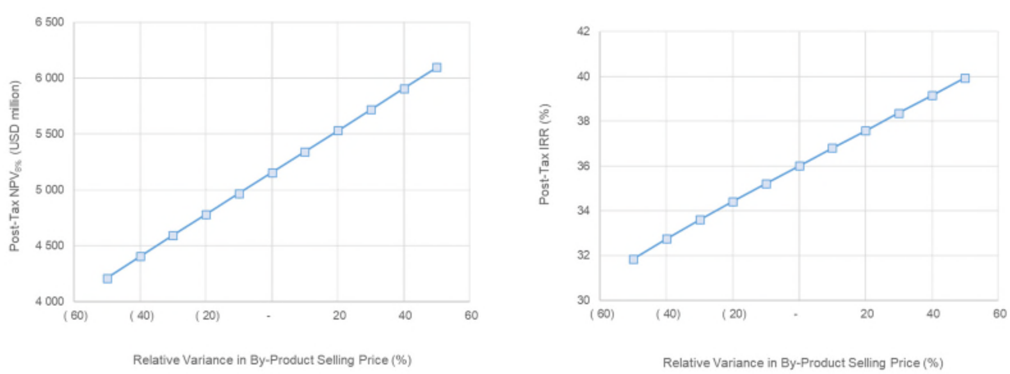

Figure 1-5 Sensitivity Analysis for Magnesium Sulfate Monohydrate Price Variances

1.12 Adjacent Properties

To the northwest of the TLC Property is the Ray Property owned by Mogul Mountain Holdings Corporation. The Ray Property consists of 186 unpatented mining claims under the name Raye and 65 unpatented mining claims under the name Dustbowl. Within the claim block boundary there are two patented lode claim areas and four unpatented lode claims, all of which are held by third party entities. Exploration efforts on this property indicate evidence to support both an epithermal and Carlin-style Ag-Au deposit (Loveday, 2022).

Directly east of the TLC property are five active unpatented claims held by NV Gold Corporation constituting part of their Frazier Dome Project. This project area is undergoing exploration of a low-sulfidation, volcanic-hosted epithermal gold system with high-grade mineralization (NV Gold Corporation, 2023).

Blackrock Silver Corporation's (Blackrock) Tonopah North Project, whose claims are located 1.9 miles (3 km) southeast of the TLC Property, have reported that a broad lithium zone has been intersected from drilling encompassing an area 5,200 acres (2,100 hectares). They reported that the lithium zone was similar profile to the lithium mineralization encountered at the TLC deposit. (Blackrock, 2022).

1.13 Interpretations and Conclusions

The PEA for the TLC Project is based upon limited and time-sensitive information, such as LC, fuel, utility and reagent pricing. Changes in the understanding of the Project such as access to power, social/environmental issues, the ability to convert Mineral Resources to Mineral Reserves and market demand conditions could have significant effects on the Project's overall economic viability.

However, based on the current information, the Base Case project economics have revealed an after-tax Net Present Value (NPV) of $3.26 billion with an after-tax internal rate of return (IRR) of 27.5% and an after-tax payback period of 3.7 years based on an average LoM price of $20,000/tonne of LC.

1.14 Recommendations

It is recommended that a Pre-feasibility Study (PFS) be completed to further demonstrate the Project's technical and economic viability and to provide a greater degree of confidence in the capital and operating cost estimates. Further definition of the Project is required to allow a PFS to be completed and the following is recommended to further develop the Project and reduce its technical uncertainty and risk:

- Infill drilling to upgrade the category of the Mineral Resources;
- Geotechnical drilling and material testing to provide data to support future design of pit slopes, mine rock storage facilities, stockpiles, TSF's and mine infrastructure

- Mineralized material characterisation (to better define the design data for the crushing and milling circuits);
- Geotechnical characterization of the proposed filtered tailings materials to support future design and placement planning for external and in-pit TSF's. This work should be coordinated with process development activities
- Mineralized material variability (to understand how variability across the orebody may impact on plant performance and to make design allowances accordingly);
- Process optimisation testwork (to optimise operating parameters and reagent consumptions);
- Equipment Sizing (to allow equipment vendors to size their equipment and provide performance guarantees);
- Magnesium sulfate monohydrate recovery (to define the design conditions for the recovery of valuable by-products)
- Engage with equipment vendors to carry out testwork (for example, thickeners, filters, crystallisers) to allow them to offer performance guarantees;
- Engage with vendors of the major packages to better define their scope and investigate possibilities for build, own, operate commercial arrangements.

Most of the work above can be incorporated into the Pre-feasibility Study, in two research and development categories that should allow, if displaying positive results, a decision in moving the project forward, as follows:

Phase I: Environmental, drilling and geotechnical work: $1.4 million

- Drilling and laboratory rock mechanics test work: $1.0 million
- Environmental permitting and hydrology: $0.4 million

Phase II: Various test work, optimisation, pilot plant studies, and byproduct marketing studies: $2.1 million

- Test work and optimisation: $0.5 million
- Pilot Plant: $1.4 million
- Byproduct Marketing Study: $0.2 million

2 INTRODUCTION

2.1 Background

The Tonopah Lithium Claims Project (TLC) is located 10 kilometres northwest of Tonopah in Big Smoky Valley, Nye County, Nevada, United States. The Property is registered with the Department of the Interior Bureau of Land Management (BLM) and Nye County and is wholly owned by American Lithium.

This Technical Report presents a Base Case scenario which envisions an initial 4.4 Mt/y processing throughput expanding to 8.8 Mt/y (corresponding to nominal LC production of 24,000 and 48,000 t/y, respectively). The PEA Alternative Case is identical, but with added production of high purity magnesium sulfate as a by-product over life of operations.

2.2 Project Scope and Terms of Reference

The Project consists of an open pit mine and an associated processing facility along with onsite and off-site infrastructure to support the operation with a mine life of 40 years.

This technical report has been prepared by DRA Pacific Pty Ltd and DRA EMEA (DRA) on behalf of American Lithium Corp., a company listed on the TSX Venture Exchange: LI, NASDAQ: AMLI and Frankfurt: 5LA1. The technical report documents the results of a Preliminary Economic Assessment (PEA) for the TLC Project.

2.3 Study Participants

DRA is an independent company specialising in the development, design, construction and operation of mining and metallurgical projects globally. DRA was commissioned by American Lithium to carry out a PEA to design and cost a process facility, with associated infrastructure, to treat the TLC lithium-bearing material to produce high purity LC. Stantec Consulting Services Inc. (Stantec) is a leading advisory firm and amongst other areas of expertise, focused on the provision of geological and mining engineering services and has prepared the Mineral Resource estimates and completed data verification for the project. Stantec prepared the report sections detailed in Table 2-1.

The prepared capital estimate is classified by DRA as a Class 4 estimate with a +40 % / -40 % accuracy, similar to an AACE International Class 4 (+50 % / -30 %) and deemed suitable for a PEA-level study.

2.4 Primary Information Sources

This report makes use of the following primary information sources:

The technical report titled "Technical Report – Mineral Resource Estimate – Tonopah Lithium Claims Property, Nye County, Nevada, USA" dated January 16, 2023, with an effective date of October 6, 2022, prepared by Stantec Consulting Inc.

ANSTO Minerals, Various TLC Testwork Data Packs, February to December 2022

"American Lithium TLC Project Trade-off Study Report," DRA, Perth, 2023.

Benchmark Mineral Intelligence, "Lithium Forecast Q4 2022".

DRA has also used various other information sources which are referenced where applicable in this report.

2.5 Qualified Persons

The DRA Qualified persons are:

John Riordan BSc, CEng, FAusIMM, MIChemE, RPEQ

Valentine Eugene Coetzee MEng, PrEng

The Stantec Qualified persons are:

Derek J. Loveday, P.Geo.

Joan C. Kester, P.Geo.

Sean Ennis, P.Eng., P.E.

Satjeet Pandher, P.Eng.

This PEA was prepared by, or under the supervision of, the Qualified Person(s) identified in Table 2-1.

Table 2-1 Report Sections and Qualified Persons

Section #	Section Title	Qualified Person(s)
1	Summary	DRA (John Riordan)
2	Introduction	DRA (John Riordan)
3	Reliance on Other Experts	DRA (John Riordan)
4	Property Description and Location	Stantec (Derek Loveday)
5	Accessibility, Climate, Local Resources, Infrastructure and Physiography	Stantec (Derek Loveday)
6	History	Stantec (Derek Loveday)
7	Geological Setting and Mineralization	Stantec (Derek Loveday)
8	Deposit Types	Stantec (Derek Loveday)

Section #	Section Title	Qualified Person(s)
9	Exploration	Stantec (Derek Loveday)
10	Drilling	Stantec (Derek Loveday)
11	Sample Preparation, Analyses and Security	Stantec (Derek Loveday)
12	Data Verification	Stantec (Derek Loveday)
13	Metallurgy and Metallurgical Testing	DRA (John Riordan)
14	Mineral Resource Estimates	Stantec (Derek Loveday)
15	Mineral Reserve Estimates	Stantec (Derek Loveday)
16	Mining Methods	Stantec (Satjeet Pandher) Stantec (Sean Ennis)
17	Recovery Methods	DRA (John Riordan)
18	Project Infrastructure	Stantec (Satjeet Pandher)
19	Market Studies and Contracts	DRA (John Riordan)
20	Environmental Studies, Permitting and Social or Community Impact	Stantec (Satjeet Pandher)
21	Capital and Operating Costs	DRA (John Riordan) Stantec (Satjeet Pandher)
22	Economic Analysis	DRA (Val Coetzee)
23	Adjacent Properties	Stantec (Derek Loveday)
24	Other Relevant Data and Information	DRA (John Riordan)
25	Interpretation and Conclusions	DRA (John Riordan)
26	Recommendations	DRA (John Riordan)
27	References	DRA (John Riordan)

2.6 Qualified Person Site Visit

None of the DRA QPs have visited the site but have reviewed all relevant reports and associated annexures. DRA was given full access to relevant data on the Project areas.

Stantec visited the property collecting samples on February 3, 2020, with a return visit December 16th and 17th, 2021 including the core shed. Stantec again visited the property, collar locations, and core shed facility July 20th and 21st, 2022.

2.7 Financial Interest Disclaimer

Neither DRA, Stantec nor any of their agents or consultants employed in the preparation of this report have any beneficial interest in the assets of American Lithium.

2.8 Frequently Used Abbreviations, Acronyms and Units of Measure

Table 2-2 Abbreviations, Acronyms and Units of Measure

Abbreviation	Description
A	Ampere
AACE	AACE International
AAL	American Assay Laboratory (Sparks Nevada)
amyl	Above Mean Sea Level
ANSTO	Australian Nuclear Science and Technology Organisation
BCM	Bulk Cubic Metre
BG	Battery Grade
BLM	Bureau of Land Management
BMI	Benchmark Mineral Intelligence
BOO	Build Own Operate
°C	Degrees Celsius
Capex	Capital Expenditure
cm	Centimetre
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CRM	Certified Reference Material
COC	Chain of Custody
COG	Cut-off grade
d	Day
d/y	Days per year
Datamine	Datamine Strat3D™ modelling software
DEM	Digital Elevation Model
DRA	DRA Pacific
EA	Environmental Evaluation
EBITDA	Earnings before interest, taxes, depreciation and amortisation
edds	electronic data deliverables
EIA	Environmental Impact Assessment
EIA-d	Detail Environmental Impact Assessment
EIA-sd	Semi-detail Environmental Impact Assessment
EIS	Environmental Impact Statement
EPC	Engineering, Procurement, Construction
EPCM	Engineering, Procurement & Construction Management
EREA	Environmental Regulation on Exploration Activities (020-2008-EM)
FEED	Front End Engineering and Design
FEL	Front End Loader
FS	Feasibility study
ft	Foot
GL	Giga liter
h	Hour

Abbreviation	Description
h/d	Hours per day
ha	Hectare
HV	High Voltage
hhv	Higher heating value
ICP-ES	
ICP-OES	Inductively Coupled Plasma Optical Emission Spectrometry
ICP-MS	Inductively Coupled Plasma Mass Spectrometer
IDW	Inverse-distance weighted algorithm
INGEMMET	Institute of Geology, Mining and Metallurgy
IRR	Internal rate of return
IR	Impurity removal
J	Joule (energy)
k	Kilo or thousand
kg	Kilogram
km	Kilometre
kt	Kilo tonne (thousand metric tonne)
kW	Kilowatt (power)
kWh	Kilowatt hour
L	Liter
lb	Pounds
LC	Lithium Carbonate
LCE	Lithium Carbonate Equivalent
LCT	Locked Cycle Testwork
LIBS	Laser Induced Breakdown Spectroscopy
LoM	Life of Mine
LV	Low voltage
m	Metre
M	Million
m^2	Square metre
m^3	Cubic metre
METSIM	METSIM metallurgical modelling software
MCC	Motor control center
MEG	Moment Exploration and Environmental Geochemistry Inc.
mm	Millimetre
MM	Mineralized Material
m/h	Miles per hour
MRE	Mineral Resource Estimate
MSP	Mixed Sulfate Product
MSSO	MineSight Schedule Optimizer
Mst	Million std tonnes

Abbreviation	Description
Mt	Million tonnes (metric)
Mt/y	Million tonnes per year
MVR	Mechanical Vapour Re-compressor's
MW	Megawatt
NDPE	Nevada Division of Environmental Protection
NPV	Net present value
OK	Ordinary kriging
P80	80% passing size
PAMA	Program for Environmental Management and Adjustment
PEA	Preliminary Economic Assessment
PFS	Pre-Feasibility Study
PPM	Parts Per Million
PLS	Pregnant Leach Solution
QA/QC	Quality Assurance and Quality Control
QP	Qualified Person as defined in NI43-101
RC	Reverse Circulation drilling
RoM	Run-of-Mine
RQD	Rock Quality Designation
s	Second
SAP	Sulfuric Acid Plant
t	Tonne (metric)
t/h	Tonnes per hour
t/m3	Tonnes per cubic metre
t/y	Tonnes per year
TLC	Tonopah Lithium Claims Project
TMI-RTP	Total Magnetic Intensity – Reduced to the Pole
TSF 1	Tailings Storage Facility – Primary material
TSF 2	Tailings Storage Facility – Lined Sodium and Potassium Sulfate Facility
$	United States Dollar
µm	Micrometre or micron
UTM	Universal Transverse Mercator
UV	Ultra Violet
UVA	Unmanned Aerial Vehicle
V	Volt
VAT	Value added tax
VSD	Variable speed drive
WMSF	Waste Material Storage Facility
WRSF	Waste Rock Storage Facility
XRD	X-Ray Diffraction
XRF	X-Ray Fluorescence

Abbreviation	Description
y	Years
Kieserite	Magnesium sulfate monohydrate $MgSO_4.H_2O$
Epsom Salt	Magnesium sulfate heptahydrate $MgSO_4.7H_2O$
Glauber Salt	Sodium sulfate decahydrate $Na_2SO_4.10H_2O$
Glaserite	$K_6Na_2O_{16}S_4$
Sodium Sulfate	Na_2SO_4
Potassium Sulfate	K_2SO_4

3 RELIANCE ON OTHER EXPERTS

The Qualified Persons have relied on expert opinions and information provided by American Lithium pertaining to environmental considerations, taxation matters and legal matters including mineral tenure, and surface rights.

For the purposes of Section 19 (Market Studies and Contracts) of this report, the Qualified Person has relied on information pertaining to market forecasts provided by Benchmark Minerals Intelligence as referenced within the section. The Qualified Person has reviewed the information provided by American Lithium and believes this information to be correct and adequate for use in this report.

For the purposes of Section 20 (Environmental Studies, Permitting, and Social or Community Impact) of this report the Qualified Person has relied on information provided by American Lithium as referenced within the section. The Qualified Person has reviewed the information provided by American Lithium and believes this information to be correct and adequate for use in this report.

For the purposes of Section 22 (Economic Analysis) of this report the Qualified Person has relied on information provided by American Lithium and other sources as referenced within the section, pertaining to taxation. The Qualified Person has reviewed the taxation information provided and believes it to be correct and adequate for use in this report.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Description and Location

The Property is located approximately 10 km northwest of the town of Tonopah, east of the Big Smoky Valley and west of the San Antonio Mountain range, Nye County, Nevada as shown on Figures 4-1 and 4-2. The geographic coordinates of the Property's approximate center are N-38°9'57" and W-117°17'44" (20929115 N, 1459590 E; NAD 83 State Plane Nevada Central Feet). Figure 4-2 shows the location of the Property relative to the town of Tonopah and the Township, Range and Sections.

4.2 Property Concessions

The Property consists of 614 unpatented lode mining claims located in Township and Range T4N, R41E; TN4, R42E; T3N, R41E; and T3N, R42E of the Mount Diablo Meridian (21) and covers an area of 12,511 acres (5,063 hectares). Table 4.1 (TLC Property Lode Claims) lists the claims, associated claimants and status. Figure 4-3 (Land Tenure Map) shows the claim locations.

The Property is registered with the Department of the Interior Bureau of Land Management (BLM) and Nye County under the following claimant names: Tonopah Lithium Corp. (formerly 1074654 Nevada (NV) Ltd or Corp), 1301420 Nevada Corporation, Big Smoky Holdings Inc., and Esoteric Consulting Ltd. All claimants are wholly-owned subsidiaries of American Lithium Holdings Corp. which is itself a wholly-owned subsidiary of American Lithium Corp. TLC is in the process of listing all claims under Tonopah Lithium Corp. or Big Smoky Holdings Inc. owned by American Lithium Holdings Corp. On August 19, 2021 a British Columbia certificate of amalgamation (BC1320524) was filed beginning the merger process of all claimants under American Lithium Holdings Corp. Nevada Secretary of State Certificate of Amendment filing number #20211716952 (August 30, 2021) and Article of Conversion #20222396457 (June 13, 2022) are respective documents converting 1074654 Nevada Ltd and 1301420 Nevada Corporation into Tonopah Lithium Corp. The Big Smoky Holdings Corp acquisition took place on September 7, 2021.

To maintain the claims in good standing, a payment of $165/claim to the BLM and $12/claim to Nye County must be made by September 1 of each year.

Figure 4-1 General Location Map

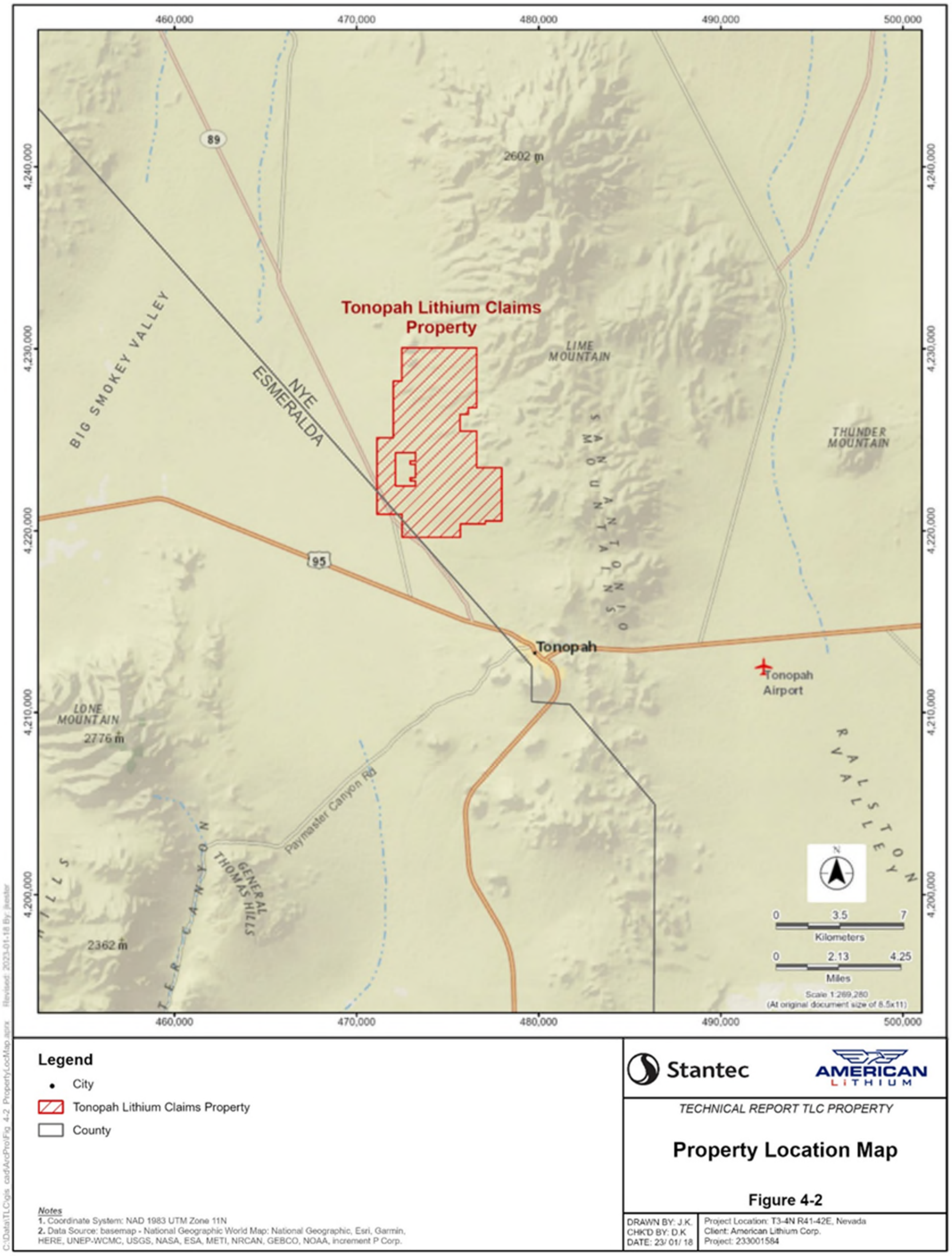

Figure 4-2 Property Location Map

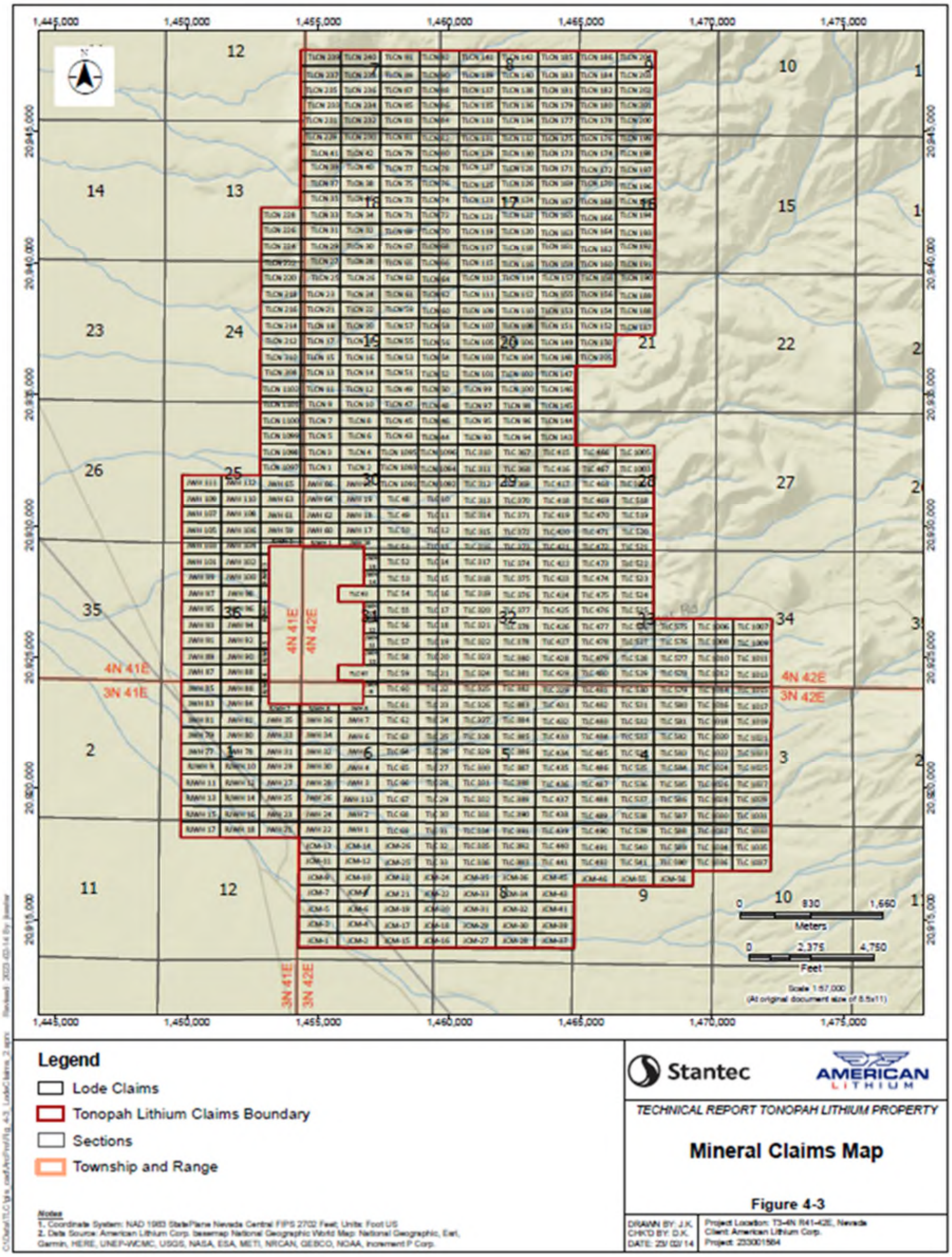

Figure 4-3 Mineral Claims Map

4.3 Option Agreements, Royalties and Encumbrances

As of January 24, 2023, there are no royalties covering any of the TLC project claims. A summary of the claims on the property are listed in Table 4-1.

Table 4-1 TLC Project Claims

Claim Number	Serial Number	Date of Location	Claimant Name (Owner)	Expiration Date	Status
RJWH 1	NV105771500	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 2	NV105771501	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 3	NV105771502	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 4	NV105771503	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 5	NV105771504	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 6	NV105771505	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 7	NV105771506	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 8	NV105771507	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 9	NV105771508	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 10	NV105771509	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 11	NV105771510	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 12	NV105771511	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 13	NV105771512	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 14	NV105771513	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 15	NV105771514	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 16	NV105771515	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 17	NV105771516	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
RJWH 18	NV105771517	5/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
TLC 10	NV101818163	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 11	NV101818164	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE

Claim Number	Serial Number	Date of Location	Claimant Name (Owner)	Expiration Date	Status
TLC 12	NV101818165	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 13	NV101818166	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 14	NV101818167	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 15	NV101818168	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 16	NV101818169	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 17	NV101818170	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 18	NV101818171	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 19	NV101704412	11/2/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 20	NV101704413	11/2/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 21	NV101704414	11/2/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 22	NV101704415	11/2/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 23	NV101704416	11/2/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 24	NV101704417	11/2/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 25	NV101704418	11/2/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 26	NV101704419	11/2/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 27	NV101704420	11/2/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 28	NV101704421	11/2/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 29	NV101818172	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 30	NV101818173	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 31	NV101818174	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 32	NV101818175	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 33	NV101819021	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 48	NV101819022	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 49	NV101819023	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 50	NV101819024	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 51	NV101819025	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 52	NV101819026	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE

Claim Number	Serial Number	Date of Location	Claimant Name (Owner)	Expiration Date	Status
TLC 53	NV101819027	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 54	NV101819028	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 55	NV101819029	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 56	NV101819030	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 57	NV101819031	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 58	NV101819032	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 59	NV101819033	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 60	NV101819034	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 61	NV101819035	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 62	NV101819036	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 63	NV101819037	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 64	NV101819038	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 65	NV101819039	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 66	NV101819040	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 67	NV101819864	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 68	NV101819865	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 69	NV101819866	3/8/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 310	NV101819867	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 311	NV101819868	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 312	NV101819869	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 313	NV101819870	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 314	NV101819871	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 315	NV101819872	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 316	NV101819873	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 317	NV101819874	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 318	NV101590664	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 319	NV101590665	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE

Claim Number	Serial Number	Date of Location	Claimant Name (Owner)	Expiration Date	Status
TLC 320	NV101590666	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 321	NV101590667	3/6/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 322	NV101703325	11/1/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 323	NV101703326	11/1/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 324	NV101703327	11/1/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 325	NV101703328	11/1/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 326	NV101703329	11/1/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 327	NV101704407	11/1/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 328	NV101704408	11/1/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 329	NV101704409	11/1/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 330	NV101704410	11/1/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 331	NV101704411	11/1/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 332	NV101590672	3/9/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 333	NV101590673	3/9/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 334	NV101591464	3/9/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 335	NV101591465	3/9/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 336	NV101591466	3/9/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 367	NV101590668	3/24/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 368	NV101590670	3/24/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 369	NV101590671	3/24/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 370	NV101704422	9/24/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 371	NV101704423	9/24/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 372	NV101704424	9/24/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 373	NV101560065	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 374	NV101560066	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 375	NV101560067	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 376	NV101560068	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE

Claim Number	Serial Number	Date of Location	Claimant Name (Owner)	Expiration Date	Status
TLC 377	NV101560069	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 378	NV101560070	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 379	NV101560071	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 380	NV101560072	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 381	NV101560073	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 382	NV101560074	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 383	NV101560075	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 384	NV101560076	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 385	NV101560077	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 386	NV101560078	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 387	NV101560079	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 388	NV101560080	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 389	NV101705476	9/25/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 390	NV101705477	9/25/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 391	NV101705478	9/25/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 392	NV101591467	3/10/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 393	NV101591468	3/10/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 415	NV101591469	3/24/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 416	NV101591470	3/24/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 417	NV105263051	7/1/2021	1074654 NEVADA LTD	9/1/2023	ACTIVE
TLC 418	NV101704425	9/24/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 419	NV101704426	9/24/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 420	NV101704427	9/24/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 421	NV101560081	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 422	NV101560082	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 423	NV101560083	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 424	NV101560084	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE

Claim Number	Serial Number	Date of Location	Claimant Name (Owner)	Expiration Date	Status
TLC 425	NV101711264	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 426	NV101711265	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 427	NV101711266	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 428	NV101711267	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 429	NV101711268	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 430	NV101711269	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 431	NV101711270	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 432	NV101711271	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 433	NV101711272	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 434	NV101711273	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 435	NV101711274	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 436	NV101711275	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 437	NV101705479	9/25/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 438	NV101706493	9/25/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 439	NV101706494	9/25/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 440	NV101591474	3/10/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 441	NV101592264	3/10/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 470	NV101591471	3/24/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 471	NV101591472	3/24/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 472	NV101591473	3/24/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 1001	NV101592405	3/23/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 1003	NV101593238	3/23/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 1005	NV101593239	3/23/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 469	NV101705470	9/24/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 470	NV101705471	9/24/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 471	NV101705472	9/24/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 518	NV101705473	9/24/2018	1074654 NV LTD	9/1/2023	ACTIVE

Claim Number	Serial Number	Date of Location	Claimant Name (Owner)	Expiration Date	Status
TLC 519	NV101705474	9/24/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 520	NV101705475	9/24/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 472	NV101711276	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 473	NV101711277	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 474	NV101711278	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 475	NV101711279	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 476	NV101711280	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 477	NV101711281	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 478	NV101711282	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 479	NV101711283	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 480	NV101711284	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 481	NV101712429	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 482	NV101712430	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 483	NV101712431	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 484	NV101712432	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 485	NV101712433	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 486	NV101712434	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 487	NV101712435	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 488	NV101712436	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 489	NV101706495	9/25/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 490	NV101706496	9/25/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 491	NV101592265	3/11/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 492	NV101592266	3/11/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 526	NV101712442	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 527	NV101712443	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 528	NV101712444	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 529	NV101712445	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE

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TLC 530	NV101712446	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 531	NV101712447	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 532	NV101712448	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 533	NV101712449	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 534	NV101713491	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 535	NV101713492	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 536	NV101713493	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 537	NV101713494	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 538	NV101706497	9/25/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 539	NV101706498	9/25/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 540	NV101592267	3/11/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 541	NV101592268	3/11/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 575	NV101713495	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 576	NV101713496	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 577	NV101713497	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 578	NV101713498	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 579	NV101713499	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 580	NV101713500	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 581	NV101713501	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 582	NV101713502	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 583	NV101713503	6/27/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 584	NV101592269	3/11/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 585	NV101592270	3/11/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 586	NV101592271	3/11/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 587	NV101592401	3/11/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 588	NV101592402	3/11/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 589	NV101592403	3/11/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE

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TLC 590	NV101592404	3/11/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 521	NV101712437	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 522	NV101712438	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 523	NV101712439	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 524	NV101712440	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 525	NV101712441	6/26/2018	1074654 NV LTD	9/1/2023	ACTIVE
TLC 97	NV101557302	7/18/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 92	NV101557303	7/18/2019	1074654 NEVADA CORP	9/1/2023	ACTIVE
TLC 1006	NV105263053	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1007	NV105263054	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1008	NV105263055	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1009	NV105263056	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1010	NV105263057	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1011	NV105263058	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1012	NV105263059	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1013	NV105263060	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1014	NV105263061	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1015	NV105263062	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1016	NV105263063	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1017	NV105263064	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1018	NV105263065	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1019	NV105263066	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1020	NV105263067	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1021	NV105263068	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1022	NV105263069	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1023	NV105263070	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1024	NV105263071	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE

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TLC 1025	NV105263072	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1026	NV105263073	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1027	NV105263074	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1028	NV105263075	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1029	NV105263076	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1030	NV105263077	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1031	NV105263078	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1032	NV105263079	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1033	NV105263080	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1034	NV105263081	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1035	NV105263082	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1036	NV105263083	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLC 1037	NV105263084	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLCN 1	NV101875412	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 2	NV101875413	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 3	NV101875414	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 4	NV101875415	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 5	NV101875416	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 6	NV101875417	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 7	NV101875418	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 8	NV101875419	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 9	NV101875420	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 10	NV101875421	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 11	NV101875422	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 12	NV101875423	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 93	NV101876255	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 94	NV101876256	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE

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TLCN 95	NV101876257	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 96	NV101876258	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 97	NV101876259	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 98	NV101876260	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 99	NV101876261	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 100	NV101876262	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 13	NV101875424	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 14	NV101875425	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 101	NV101876263	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 102	NV101876264	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 43	NV101875426	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 44	NV101875427	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 45	NV101875428	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 46	NV101875429	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 47	NV101876249	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 48	NV101876250	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 49	NV101876251	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 50	NV101876252	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 51	NV101876253	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 52	NV101876254	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 143	NV101876265	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 144	NV101876266	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 145	NV105263052	7/1/2021	1074654 NV LTD	9/1/2023	ACTIVE
TLCN 146	NV101876267	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 147	NV101876268	3/14/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 208	NV101876269	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE

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TLCN 1097	NV101877084	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 1098	NV101877085	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 1099	NV101877086	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 1100	NV101877087	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 1101	NV101877088	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 1102	NV101877089	3/13/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 1091	NV101877078	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 1092	NV101877079	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 1093	NV101877080	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 1094	NV101877081	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 1095	NV101877082	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN 1096	NV101877083	3/15/2020	ESOTERIC CONSULTING LTD	9/1/2023	ACTIVE
TLCN-15	NV105230772	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 16	NV105230773	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 17	NV105230774	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 18	NV105230775	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 19	NV105230776	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 20	NV105230777	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 21	NV105230778	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 22	NV105230779	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 23	NV105230780	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 24	NV105230781	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 25	NV105230782	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 26	NV105230783	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 27	NV105230784	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 28	NV105230785	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 29	NV105230786	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE

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TLCN 30	NV105230787	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 31	NV105230788	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 32	NV105230789	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 33	NV105230790	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 34	NV105230791	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 53	NV105230800	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 54	NV105230801	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 55	NV105230802	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 56	NV105230803	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 57	NV105230804	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 58	NV105230805	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 59	NV105230806	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLNC 60	NV105230807	3/22/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 61	NV105230808	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 62	NV105230809	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 63	NV105230810	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 64	NV105230811	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 65	NV105230812	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 66	NV105230813	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 67	NV105230814	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 68	NV105230815	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 69	NV105230816	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 70	NV105230817	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 71	NV105230818	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 72	NV105230819	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 103	NV105230840	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 104	NV105230841	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE

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TLCN 105	NV105230842	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 106	NV105230843	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 107	NV105230844	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 108	NV105230845	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 109	NV105230846	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 110	NV105230847	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 111	NV105230848	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 112	NV105230849	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 113	NV105230850	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 114	NV105230851	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 115	NV105230852	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 116	NV105230853	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 117	NV105230854	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 118	NV105230855	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 119	NV105230856	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 120	NV105230857	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 121	NV105230858	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 122	NV105230859	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 148	NV105230880	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 149	NV105230881	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 150	NV105230882	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 151	NV105230883	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 152	NV105230884	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 153	NV105230885	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 154	NV105230886	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 155	NV105230887	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 156	NV105230888	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE

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TLCN 157	NV105230889	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 158	NV105230890	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 159	NV105230891	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 160	NV105230892	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 161	NV105230893	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 162	NV105230894	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 163	NV105230895	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 164	NV105230896	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 165	NV105230897	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 166	NV105230898	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 187	NV105230919	3/22/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 188	NV105230920	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 189	NV105230921	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 190	NV105230922	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 191	NV105230923	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 192	NV105230924	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 193	NV105230925	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 194	NV105230926	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 205	NV105230937	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 210	NV105230938	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 212	NV105230939	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 214	NV105230940	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 216	NV105230941	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 218	NV105230942	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 220	NV105230943	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 222	NV105230944	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 224	NV105230945	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE

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TLCN 226	NV105230946	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 228	NV105230947	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 35	NV105230792	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 36	NV105230793	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 37	NV105230794	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 38	NV105230795	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 39	NV105230796	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 40	NV105230797	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 41	NV105230798	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 42	NV105230799	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 73	NV105230820	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 74	NV105230821	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 75	NV105230822	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 76	NV105230823	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 77	NV105230824	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 78	NV105230825	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 79	NV105230826	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 80	NV105230827	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 81	NV105230828	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 82	NV105230829	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 83	NV105230830	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 84	NV105230831	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 85	NV105230832	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 86	NV105230833	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 87	NV105230834	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 88	NV105230835	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 89	NV105230836	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE

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TLCN 90	NV105230837	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 91	NV105230838	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 92	NV105230839	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 123	NV105230860	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 124	NV105230861	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 125	NV105230862	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 126	NV105230863	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 127	NV105230864	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 128	NV105230865	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 129	NV105230866	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 130	NV105230867	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 131	NV105230868	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 132	NV105230869	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 133	NV105230870	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 134	NV105230871	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 135	NV105230872	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 136	NV105230873	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 137	NV105230874	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 138	NV105230875	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 139	NV105230876	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 140	NV105230877	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 141	NV105230878	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 142	NV105230879	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 167	NV105230899	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 168	NV105230900	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 169	NV105230901	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 170	NV105230902	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE

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TLCN 171	NV105230903	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 172	NV105230904	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 173	NV105230905	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 174	NV105230906	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 175	NV105230907	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 176	NV105230908	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 177	NV105230909	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 178	NV105230910	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 179	NV105230911	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 180	NV105230912	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 181	NV105230913	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 182	NV105230914	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 183	NV105230915	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 184	NV105230916	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 185	NV105230917	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 186	NV105230918	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 195	NV105230927	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 196	NV105230928	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 197	NV105230929	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 198	NV105230930	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 199	NV105230931	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 200	NV105230932	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 201	NV105230933	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 202	NV105230934	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 203	NV105230935	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 204	NV105230936	2/28/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 229	NV105230948	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE

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TLCN 230	NV105230949	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 231	NV105230950	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 232	NV105230951	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 233	NV105230952	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 234	NV105230953	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 235	NV105230954	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 236	NV105230955	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 237	NV105230956	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 238	NV105230957	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 239	NV105230958	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
TLCN 240	NV105230959	2/27/2021	BIG SMOKY HOLDINGS INC	9/1/2023	ACTIVE
JWH-1	NV105237340	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-2	NV105237341	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-3	NV105237342	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-4	NV105237343	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-5	NV105237344	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-6	NV105237345	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-7	NV105237346	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-8	NV105237347	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-9	NV105237348	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-10	NV105237349	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-11	NV105237350	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-12	NV105237351	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-13	NV105237352	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-14	NV105237353	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-15	NV105237354	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-16	NV105237355	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE

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JWH-17	NV105237356	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-18	NV105237357	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-19	NV105237358	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-20	NV105237359	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-21	NV105237360	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-22	NV105237361	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-23	NV105237362	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-24	NV105237363	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-25	NV105237364	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-26	NV105237365	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-27	NV105237366	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-28	NV105237367	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-29	NV105237368	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-30	NV105237369	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-31	NV105237370	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-32	NV105237371	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-33	NV105237372	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-34	NV105237373	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-35	NV105237374	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-36	NV105237375	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-59	NV105237398	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-60	NV105237399	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-61	NV105237400	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-62	NV105237401	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-63	NV105237402	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-64	NV105237403	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-65	NV105237404	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE

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JWH-66	NV105237405	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-77	NV105237416	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-78	NV105237417	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-79	NV105237418	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-80	NV105237419	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-81	NV105237420	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-82	NV105237421	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-83	NV105237422	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-84	NV105237423	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-85	NV105237424	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-86	NV105237425	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-87	NV105237426	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-88	NV105237427	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-89	NV105237428	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-90	NV105237429	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-91	NV105237430	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-92	NV105237431	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-93	NV105237432	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-94	NV105237433	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-95	NV105237434	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-96	NV105237435	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-97	NV105237436	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-98	NV105237437	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-99	NV105237438	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-100	NV105237439	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-101	NV105237440	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-102	NV105237441	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE

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JWH-103	NV105237442	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-104	NV105237443	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-105	NV105237444	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-106	NV105237445	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-107	NV105237446	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-108	NV105237447	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-109	NV105237448	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-110	NV105237449	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-111	NV105237450	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-112	NV105237451	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JWH-113	NV105237452	5/1/2021	1301420 NEVADA CORPORATION	9/1/2023	ACTIVE
JCM 9	NV105263093	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 10	NV105263094	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 11	NV105263095	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 12	NV105263096	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 13	NV105263097	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 14	NV105263098	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 15	NV105263099	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 16	NV105263100	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 17	NV105263101	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 18	NV105263102	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 19	NV105263103	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 20	NV105263104	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 21	NV105263105	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 22	NV105263106	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 23	NV105263107	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 24	NV105263108	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE

Claim Number	Serial Number	Date of Location	Claimant Name (Owner)	Expiration Date	Status
JCM 25	NV105263109	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 26	NV105263110	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 27	NV105263111	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 28	NV105263112	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 29	NV105263113	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 30	NV105263114	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 31	NV105263115	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 32	NV105263116	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 33	NV105263117	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 34	NV105263118	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 35	NV105263119	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 36	NV105263120	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 37	NV105263121	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 39	NV105263122	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 41	NV105263123	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 43	NV105263124	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 45	NV105263125	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 1	NV105789949	8/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
JCM 2	NV105789950	8/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
JCM 3	NV105789951	8/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
JCM 4	NV105789952	8/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
JCM 5	NV105789953	8/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
JCM 6	NV105789954	8/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
JCM 7	NV105789955	8/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
JCM 8	NV105789956	8/15/2022	TONOPAH LITHIUM CORP	9/1/2023	FILED
JCM 46	NV105263126	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE
JCM 55	NV105263127	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE

Claim Number	Serial Number	Date of Location	Claimant Name (Owner)	Expiration Date	Status
JCM 56	NV105263128	9/3/2021	1074654 NV LTD	9/1/2023	ACTIVE

4.4 Permits, Surface Use and Royalties

American Lithium operated under an Exploration Plan of Operations (EPO) drilling permit with the Bureau of Land Management (BLM) to complete the 2022 drilling. The EPO was finalized December 2021 in accordance with BLM Surface Management Regulation 43 Code of Federal Regulations (CFR) 3809, as amended, under BLM case file number NVN-100125. A bond in the amount of $1,500,000 was placed and accepted by the BLM Nevada State Office (NVB002644) on August 29, 2022 for surface reclamation. The EPO permitted 1074654 Nevada Corp (Now Tonopah Lithium Corp) the allowable disturbance of up to 111.4 acres to conduct mineral exploration-related activities within the Project area. The total disturbance included acres associated with previous TLC Notice NVN-097429. The EPO requires annual updates in April and continued exploration is planned.

Should the project proceed to a notice level of operations (production) an updated Plan of Operations with all the construction and mining details will need to be agreed upon with BLM, likely requiring additional environmental studies and conditions. For operations at the production level, the State of Nevada requires royalty obligations based on a sliding-scale tax between 2% and 5% of profits.

4.5 Environmental Liabilities

An EA (#DOI-BLM-NV-BO20-2022-0003-EA) and a Finding of No Significant Impact (FONSI) were considered during the approval of the EPO. The BLM's approval of the EPO is subject to compliance with the operating, reclamation, and monitoring measures identified in the EPO, the performance standards set forth in 43 CFR 3809.420, and the Applicant-Committed Environmental Protection Measures (EPMs) as set forth in the EA and restated in the EPO's Decision under Conditions of Approval.

A report is required annually in April by the BLM on Project activates and plans. All 2022 drill holes were sealed as per regulations prior to the drill rig moving off site and at present approximately 70% of all drill pads and sumps have been back filled and regraded beginning the reclamation process.

4.6 Other Significant Factors and Risks

The Authors is unaware of significant factors or risks that may materially restrict American Lithium from its right and ability to perform work on the Property.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The Property is approximately 6.2 miles (10 km) to the northwest of Tonopah, Nevada, and 81 miles (130 km) to the northeast of Bishop, California (Figures 4-1 and 5-1). The Property can be accessed from several different directions, but the most common access is from paved State Highway 89 (also called Gabbs Pole Line Road) via two dirt roads that travel into the project area. These dirt roads are approximately 4.2 miles (7 km) (Radar Road) and 6.4 miles (10.3 km) to the north of junction State Highway 89 and United States Highway US 95 (US 6). This junction occurs 2.5 miles (4 km) west of the town on Tonopah. State Highway 89 continues north toward the Crescent Dunes Picnic Area and Crescent Dunes solar project. There are several dirt roads offering good four-wheel drive and ATV access throughout the Property. A good four-wheel drive is recommended as many of the dirt roads have deep sand sections.

5.2 Climate

The town of Tonopah, Nevada, is located 1,840 m (6,036.7 ft) above mean sea level (amsl) and the project area ranges from 5,180 to 5,880 ft amsl (Climate-Data.org, 2020, para. 1). The Köppen- Geiger Climate Classification system designates this area as BWk: B – arid; W – desert; and k – cold arid, thus making the Tonopah area effectively a cold high desert area (Climate Change & Infectious Diseases, 2019; Weatherbase, 2020, para. 2).

July is the warmest month in the Tonopah region, with an average temperature of 21.6°C, (70.89°F) while the coldest month of the year is January, with an average temperature of -1.3°C (29.66°F). August has the highest average precipitation, with 18 mm (0.7 inches), and December has the lowest at 7 mm (0.27 inches) (Climate-Data.org, 2020, paras. 3-5). April is the windiest month with average winds as high as 9 miles per hour. (Weatherspark, 1993).

Recent climate data can be collected at the Quima Peak (Western Regional Climate Center [WRCC] 2020) Remote Automatic Weather Station (RAWS) and Desert Research Institute. (BLM, 2021)

5.3 Local Resources and Infrastructure

The town of Tonopah is approximately 6.2 miles (10 km) southeast of the Property. A range of services are available, such as: hotel accommodation, schools, restaurants, fuel, tourism, and general shopping. Mount Grant General Hospital, located in Hawthorn, Nevada, is the closest hospital, and is located approximately 105.6 miles (170 km) from Tonopah. There is a history of mining and exploration in the Tonopah area, and as such, skilled labor and equipment is available in the area, as well as throughout Nevada.

Tonopah is located on highways US 95 and US 6. US 95 connects Reno, Nevada, from Interstate 80, to Las Vegas, Nevada, on Interstate 15. Highway US 6 runs east/west to the regional airfield which can accommodate east/west air transportation. (Tonopah, Nevada, 2020, para. 3).

Tonopah is equidistant between two international airports: McCarran International Airport, located in Las Vegas, Nevada, and Reno International Airport, located in Reno, Nevada. Both centers have major car and truck rental options available, as well as any necessary amenities.

Infrastructure is available in the general area of the Property. Power is available along the west side of US 95, which runs northwest to southeast, approximately 4.9 miles (8 km) to the southwest of the Property, or from a powerline that runs past the Crescent Dunes solar plant approximately 7.4 miles (12 km) to the northwest of the Property along the Gabbs Pole Line Road. Cell service is available through much of the Project area with most cell providers.

Union Pacific Railroad, which ships commodities such as non-metallic minerals, has two main lines that run through Nevada. One in the northern part of the state, with stops at Reno, Flanigan, Winnemucca, Elko, and Wells, linking central California with Salt Lake City, Utah. The other runs through Las Vegas, in the southern part of the state, and connects Los Angeles/Long Beach, CA with Salt Lake City, Utah, and onwards to the Union Pacific transcontinental line and destinations east (Union Pacific, 2019, paras. 2, 4, and 6).

Local water supply options have not been thoroughly studied. Surface waters in the Project Area are ephemeral where the local topographic relief creates a network of dry creeks and washes. There are no intermittent or perennial streams and surface water is dependent on seasonal precipitation. Eleven springs were identified in the approximate five-mile radius of the Property. Some of the springs have water rights and are used for commercial, stock watering, or other uses. (BLM, 2021)

Groundwater was encountered during the 2022 drilling campaign at approximately 470 feet (Water Monitor well GW6 at Hole TLC-2205C) in the extreme eastern Property and at 580 feet (Hole TLC-2214) in the extreme west the Property.

5.4 Physiography

The Property is within the Basin and Range Region of western North America. The Property is on the flanks of the San Antonio Mountain Range grading into the Big Smoky Valley (a large basinal playa like complex). The claim blocks slope gently to the west with the upper portion lying at an elevation of approximately 5,905 ft (1,800 m) amsl, and the lower portions in the vicinity of the Gabbs Pole Line Road being approximately 4,839 ft (1,475 m) amsl. The topography can best be characterized as gentle pediment incised by anastomosing drainages. The Property has typical desert vegetation with sagebrush and greasewood with occasional grasses in the spring months of wetter years.

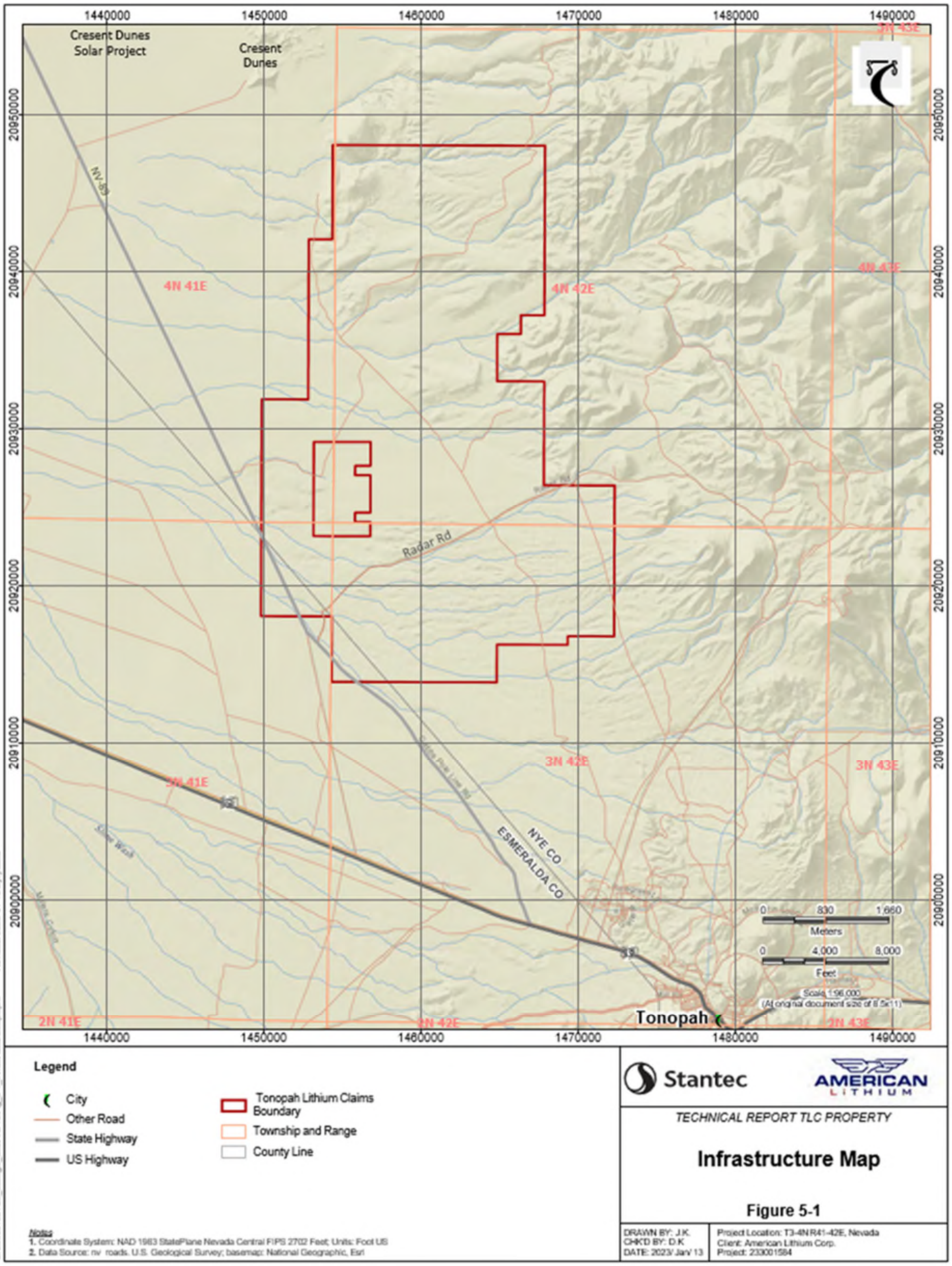

Figure 5-1 Infrastructure Map

6 HISTORY

6.1 Introduction

A summary of historical work completed on the TLC Property has been compiled through discussions with American Lithium, and prior technical reports published by Stantec (Turner, 2021; Loveday, 2021). The following is a list of exploration activity organized in chronological order.

6.2 Exploration

Prior to 2017

There is limited information on property activity and ownership prior to 2017. There is some evidence that indicates claims may have been held briefly in the middle area of the property in the 1960s and 1970s, and again in 2006. There are no records of work being completed on the claims during these periods. In the northern area of the Property, records from Nye County Recorder plat maps show that the only previous claims on the Property was a claim block from the early 1980s that was termed the “Ant” claims (Turner, 2021).

2017 to 2018

In 2017, Nevada Alaska completed reconnaissance sampling of outcrops from the Property area. All analyses were completed by ALS laboratories (ALS) in Reno, Nevada. To assess the optimal analytical method to use, three duplicate samples were analyzed by two different analytical methods; standard Aqua Regia (ME-ICP41), and 4 acid digestion followed by ICP (ME-ICP61). The results from the two analytical methods were remarkably similar with the results from ME-ICP 41 averaging 1,346 ppm Li, while the results from ME-ICP 61 averaged 1,296 ppm Li. It was determined that there was greater consistency with respect to the results from ME-ICP 41, and therefore this was the method selected for sample testing. Samples were tested in three batches with results shown below:

February 2017: Ten samples were analyzed that ranged in concentrations from 50 to 1,810 ppm Li with an average of 695 ppm Li;

Early March 2017: Thirty-four samples were analyzed that ranged in concentrations from 220 to 1810 ppm Li with an average of 840 ppm Li; and

Late March 2017: Nine samples were analyzed that ranged in lithium concentrations from 120 to 950 ppm Li with an average of 501 ppm Li.

2018 to 2019

American Lithium completed a surface sampling program on the Property in the Fall of 2018 collecting a total of 24 rock samples. Samples were collected from either outcrop or float, labelled Accordingly, logged with geological detail, GPS location recorded and lastly, delivered to an ISO 9001 and ISO/IEC 17025 certified commercial laboratory, ALS laboratories in Reno, Nevada for analyses. The analytical results from the sampling program ranged from 129.5 to 1,380 ppm Li, and the average grade of the samples taken was 656.5 ppm Li. The float samples ranged from 129.5 to 1,380 ppm Li, with a mean grade of 608.5 ppm, while the outcrop samples graded from 131 to 1,340 ppm Li, with a mean grade of 704.5 ppm.

In the fall of 2019, Jana Campbell Mineral Exploration completed a semi qualitative assessment in the northern area of the Property with a handheld instrument that implemented Laser Induced Breakdown Spectroscopy (LIBS) to explore for lithium. Following confirmation of lithium in the project area, two trenches were excavated by hand, logged, and sampled in November 2019. A total of 89 samples were collected from the trenches using a gas Hand Auger and each sample weighed approximately 1 to 2 pounds. Samples were analyzed by American Assay Laboratory (AAL) located in Sparks Nevada. Further details on the 2019 trenching program and analyses can be found in the 2021 Technical Report on the Crescent Dunes Lithium Property by Turner (Turner, 2021).

2019 to 2020

American Lithium completed a Diamond drill core and Reverse Circulation (RC) drilling campaign from February 2019-2020. The first campaign totaled 23 vertical holes; 18 RC holes and 5 core holes, and the campaign in the winter of 2020 completed an additional 6 vertical RC holes.

All drilling on the Property was completed by Harris Exploration Drilling and Associates (Harris) of San Diego, California. The 2019 drilling was completed using a 5 ½ inch (in) (13.5 cm) hammer bit and the 2020 drilling was completed using standard reverse circulation (RC) method. An American Lithium geologist was on site during the drilling and sampling operations and the water table was not encountered. All drilling completed was documented with location, depth, date, and hole type. The 2019-2020 campaign hole collar locations were recorded using a handheld GPS device and collar elevations were adjusted to closely match the elevations of US Geological survey open- source topography data received as raster digital data (1 arc-second resolution).

RC chip samples were transported daily by American Lithium geologists to the core logging facility in Tonopah, Nevada. At the rig, five-foot (5 ft) (1.52 m) intervals were collected as a single sample, assigned a unique sample number by drill hole and footage. Detail logging and LIBS analyses was completed from select material and chip trays. Once received at the warehouse, sample count and sequence were verified and logged. Core was boxed, labeled, and transported by the drilling crew daily to American Lithium's core logging facility in Tonopah, Nevada. American Lithium personnel inventoried and logged the core at the facility and sample intervals were selected by geologic or alteration breaks, or by 5 ft (1.5 m) breaks. The core was also split whereby one half of the core was sent for analyses and the remaining half retained for archive.

American Lithium had a QA/QC program in place for both RC and core samples, and analyses was completed by an ISO 17025-2005 accredited lab, AAL located in Sparks, Nevada. A total insertion rate of QC samples was 12.8% which was divided as follows: 60% CRM; 20% blank; and 20% repeats. Rig duplicates were collected every 50 ft (15 m), nominally 10%, and used for a second laboratory comparison by similar analytical methods. In addition, an assessment of twinned RC holes relative to core holes was completed to compare the lithium concentrations by depth for the two styles of drilling. Further details on the sample handling, QA/QC and laboratory analyses methods can be found in the prior Technical Report (Loveday, 2021).

In 2020, the Stantec completed confirmation sampling on the Property. Samples were approximately 1-3 kg in weight, were sealed in a plastic bag in the field and then transported to Bureau Veritas Mineral Laboratories (Bureau Veritas) in Reno, Nevada. A total of twelve samples were analyzed by 4 acid digestion through ICP-ES/ICP-MS analyses, and two core samples were analyzed for specific gravity. Further details on the QA/QC and laboratory analyses methods can be found in the prior Technical Report (Loveday, 2021).

2021

Jana Campbell Mineral Exploration completed a surface mapping program during Summer 2021. The results of the mapping program can be found in the 2021 Technical Report on the Crescent Dunes Lithium Property by Turner (Turner, 2021).

6.3 Historic estimates

Historic estimates of lithium have been reported from lithium clay deposits within the Property. Loveday (2021) reported the base case estimates shown in Table 6. 1., effective April 15, 2020

Table 6. 1 Historic Lithium Estimates – U.S. Customary Units

Cutoff Li (ppm)	Volume (Myd^3)	Tons (Mst)	Li (ppm)	Million short tons (Mst)		
				Li	Li_2CO_3	$LiOH.H_2O$
				Measured		
400	523	749	932	0.70	3.72	4.24

Cutoff Li (ppm)	Volume (Myd^3)	Tons (Mst)	Li (ppm)	Million short tons (Mst)		
				Li	Li_2CO_3	$LiOH.H_2O$
				Indicated		
400	328	470	898	0.42	2.23	2.54
				Measured plus Indicated		
400	851	1,219	919	1.12	5.95	6.78
				Inferred		
400	279	400	912	0.36	1.92	2.18

- CIM definitions are followed for classification of Mineral Resource.
- Mineral Resource surface pit extent has been estimated using a LC price of US10,000 $/tonne and mining cost of $2.00 per tonne, a lithium recovery of 80%, fixed density of 1.70 g/cm^3 (1.43 tons/yd^3)
- Conversions: 1 metric tonne = 1.102 short tons, metric m^3 = 1.308 yd^3, Li_2CO_3:Li ratio = 5.32, $LiOH.H_2O$:Li ratio = 6.05
- Totals may not represent the sum of the parts due to rounding.

The estimates presented in Table 6.1 were prepared from a 3D block model of the lithium clay deposit found near surface of the Property. The model was built using available surface mapping and the results from 24 reverse circulation (RC) holes and 5 diamond core holes, totalling 29 drill holes. Estimates were constrained to the southeast of the current footprint of the Property due to ownership being limited to this area at the time. The geologic model was built by separating the model area into five fault blocks and estimating lithium grades across fault boundaries using a grade trend surface and an inverse distance squared algorithm.

The estimates were reported from an economic pit shell using a base case cutoff grade of 400 ppm lithium. The cutoff grade calculation reflected the expected mining and processing costs as well as expected revenue generated from lithium to produce a battery-grade LC product at the effective date of April 15, 2020. The author is of the opinion that the estimates were reasonable and reflected the available information and market conditions for lithium at the time.

The Authors has not done sufficient work to classify these historical estimates as current mineral resources and the issuer is not treating the historical estimate as current mineral resources.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

The Tonopah mining district lies to the east of a zone of disrupted structure, known as the Walker Lane tectonic belt, which separates the Sierra Nevada batholith from the Basin and Range province in the Great Basin of Nevada (Bonham and Garside, 1979). The Great Basin is a tectonic region west of the Rocky Mountains, that spans from southern Oregon to southern California and Arizona that underwent crustal extension and elevated thermal activity in the mid-Tertiary that developed the basin and range physiography. The ranges were comprised of fault-bounded mountain ranges that were dominantly composed of Proterozoic and Paleozoic sedimentary rocks, while the basins were filled with volcanic deposits and erosional detritus from the ranges.

The TLC Property is in the Tonopah mining district, which is centred around the town of Tonopah in Nye and Esmeralda Counties, Nevada. Within the mining district is the San Antonio Mountain range, a Tertiary aged complex that underwent intermittent volcanism between 35 M.y. and 10 M.y (Bonham and Garside, 1979). The TLC Property is directly to the west of this mountain range and has undergone several episodes of plutonic and volcanic activity. Plutonism in this area date to the Late Cretaceous, with intrusion of the Fraziers Well pluton and associated porphyry dykes (Bonham and Garside, 1979). These intrusions are shown as Kmi on Figure 7-1. Basin and Range faulting in the Tonopah area is estimated to have commenced approximately 16 to 17 M.y. ago, as indicated by the age of basinal deposits of the Siebert Formation, and the extrusion of olivine trachyandesite (Bonham and Garside, 1979). The Siebert Formation is composed of fluvatile and lacustrine epiclastic conglomerates, sandstone, siltstone, and lesser quantities of subaerially and subaqueously deposited tuffs (Bonham and Garside, 1979). Outcrops of the Siebert Formation are shown on Figure 7-1 as Ts3. North-trending faults in the area are estimated to be coeval with Basin and Range faulting (Bonham and Garside, 1979). There is evidence in the general areas of additional plutonism as the Siebert Formation is cut by intermediate (Ta2) to felsic plutons (Tr3) as shown on Figure 7-1.

7.2 Local Geology

The local geology of the Property, as it is currently known, is shown on Figure 7-2. Surface mapping conducted at the southern half of the Property and throughout most of the Property is generally a Quaternary-aged flat alluvial outwash plane. The outwash plane is interspersed with shallow washes draining towards the west. The shallow washes partially expose underlying fines-dominant sediments and lithic tuffs of the Miocene-age Siebert Formation. Exploration drilling on the Property shows the outwash plane surface alluvium to have an average thickness of 22 ft (6.7 m). Alluvium ranges from 3 to 157 ft, with the thicker alluvium in the north regions of the property. Bordering the Property along the east-central edge is a predominant rhyolite intrusion, other volcanics occur at the southeast, northeast, and northwest Property edges.

The dominant lithology below the alluvial cap varies throughout the Property. Below the alluvial cap, lithology as observed from drill hole records, are finely laminated claystone beds with lenses of sandstone and conglomerate with occasional volcanic tuff and ash layers. Collectively, this mixed unit of lacustrine sedimentary beds and minor volcanics is referred to as claystone or “upper claystone”. Underlying the upper claystone are tuffaceous sandstones and conglomerates collectively referred to as the basal tuff marker beds, which are grouped with additional lower claystone units. The basal tuff marker beds are more pronounced in the east and southeast areas of the Property. New drilling to the west and northwest demonstrated a continuation of the alternating clays and tuffs with additional claystone below the basal tuff marker bed. These claystone’s below and including the basal tuff marker beds are collectively referred to as “lower claystone”. The lower claystone’s suggests a deepening of a paleo basin westward. Below the lower claystone (basal tuff marker bed and deeper claystone) drilling has intercepted both tuffaceous crystalline basement and limestone (referred to as basement).

Ten (10) significant regional fault blocks were interpreted from the exploration data on the Property. Blocks 1 through 5 (southern blocks) are at the south end of the property, 6 and 7 (central blocks) at the center, and 8 through 10 (northern blocks) at the north. Regional blocks are more complex (additional smaller structural faults and/or features exist) and further review and studies are needed to better define the Property. The stratigraphy is additionally complex with Tertiary volcanic intrusions and tuffs occurring simultaneously with clastic paleo basin deposition within a region of ongoing typical Basin and Range faulting.

The northern blocks are divided from the central blocks by a normal fault (F2) with possible east-west strike-slip displacement as shown in Figure 7-2. The northern blocks are further separated by two normal high angle (northeast-southwest trending) faults that envelope a central downthrown block (block 9) that is interpreted as a paleo sub basin with a thickening of clay deposits.

South of the F2 fault, the central and southern regional blocks are separated by sets of both north-south and east-west trending high angle faults. The central and southern blocks are divided east to west by a dominant north-south trending fault (F1) with an average displacement of approximately 500 ft (152.4 m) of displacement in the south. Here the F1 fault separates shallower higher grade (greater than 500 ppm Li) lithium claystone in the east from same high grade lithium claystone in the west.

Eastern blocks (central block 7 and southern block 2) have elevated lithium concentrations occurring in the surficial alluvial, underlying claystone (upper claystone), and the basal tuff conglomerate units (grouped with lower claystone's for modeling purpose). Here lithium grades are highest and most consistent in the upper claystone beds. In the western blocks (central block 6 and south block 1) there are additional elevated lithium concentrations at depth in lower claystone. The southern block 3 is a horst type block of volcanics interpreted as containing no claystone. Southern block 5 contains a shallow basal tuff conglomerate and block 4 appears to be a down dropped graben.

The claystone and basal tuff conglomerate units are interpreted to be generally flat lying with a southwest dip. In surficial outcrops dips ranged from 29° southeast, 10° south, and 5° southwest with the variation interpreted as soft sediment deformation and local fault flexure. Figure 7-3 shows two generalized geological cross sections (A-A' and B-B') through the Property. Cross Section A-A' is oriented looking northeast, and Cross Section B-B' is oriented looking towards the north-northwest. The cross sections have a vertical exaggeration of 2:1.

Fault displacement on the property is estimated using bedding trends from available drill holes and displacement can vary up to hundreds of feet on the same fault plane for some. On Figure 7-2 the Property's faults displacements are the estimated averages along the faults' length. The northern interpreted graben (block 9) has an average displacement of approximately 300 ft (91.4 m) on the east and approximately 75 ft (22.9 m) on the west. The F2 fault dividing the north and central blocks has an average displacement of approximately 250 ft (76.2 m) where labelled in Figure 7-2. The F1 fault separating the central and southern block from east to west varies in displacement from only 10 ft (3.0 m) of displacement in the central block to approximately 500 ft (152.4 m) in the south. Other approximate relative displacements from high-angle faults enveloping fault blocks are labelled in Figure 7-2.

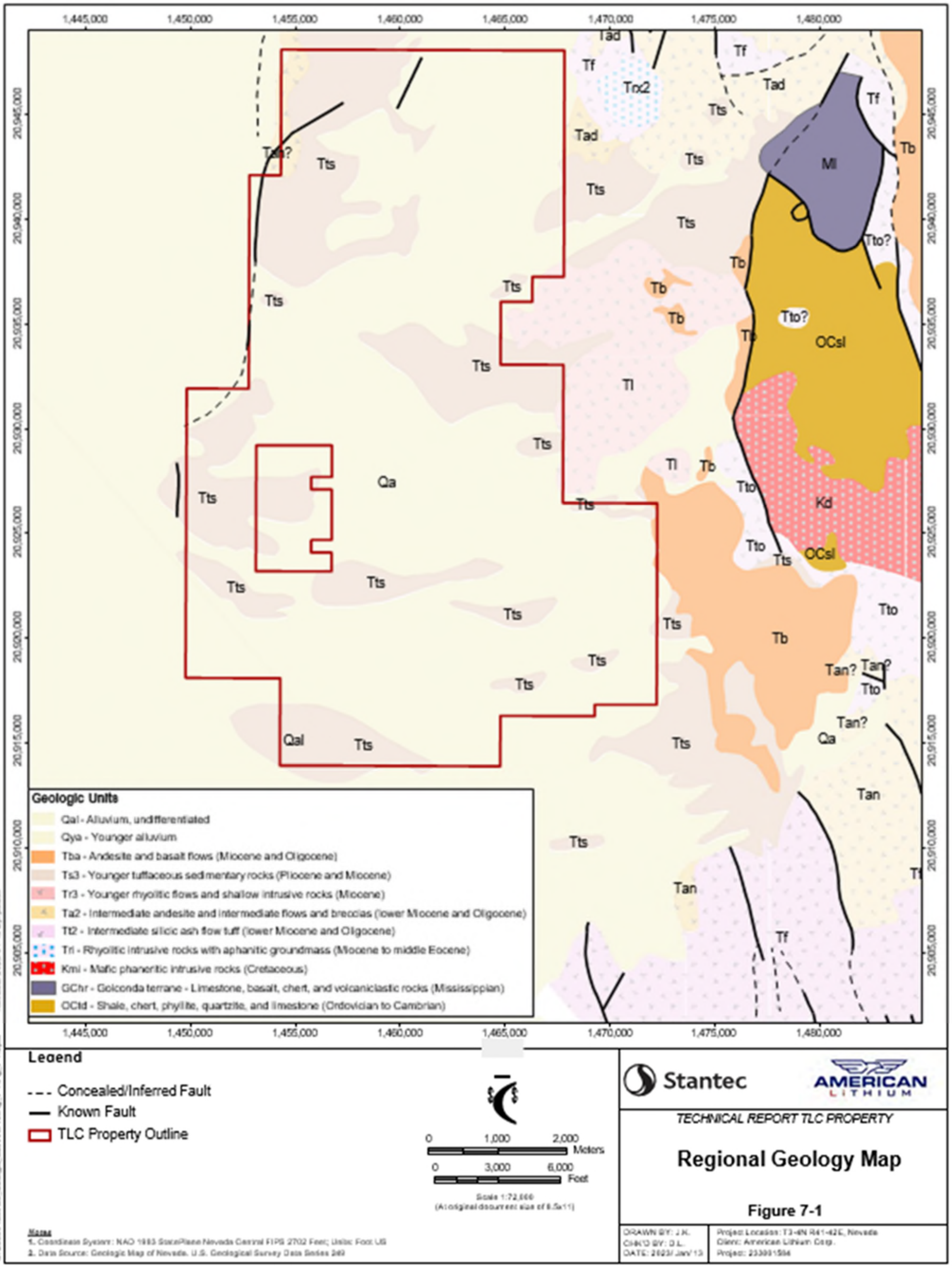

Figure 7-1 Regional Geology Map

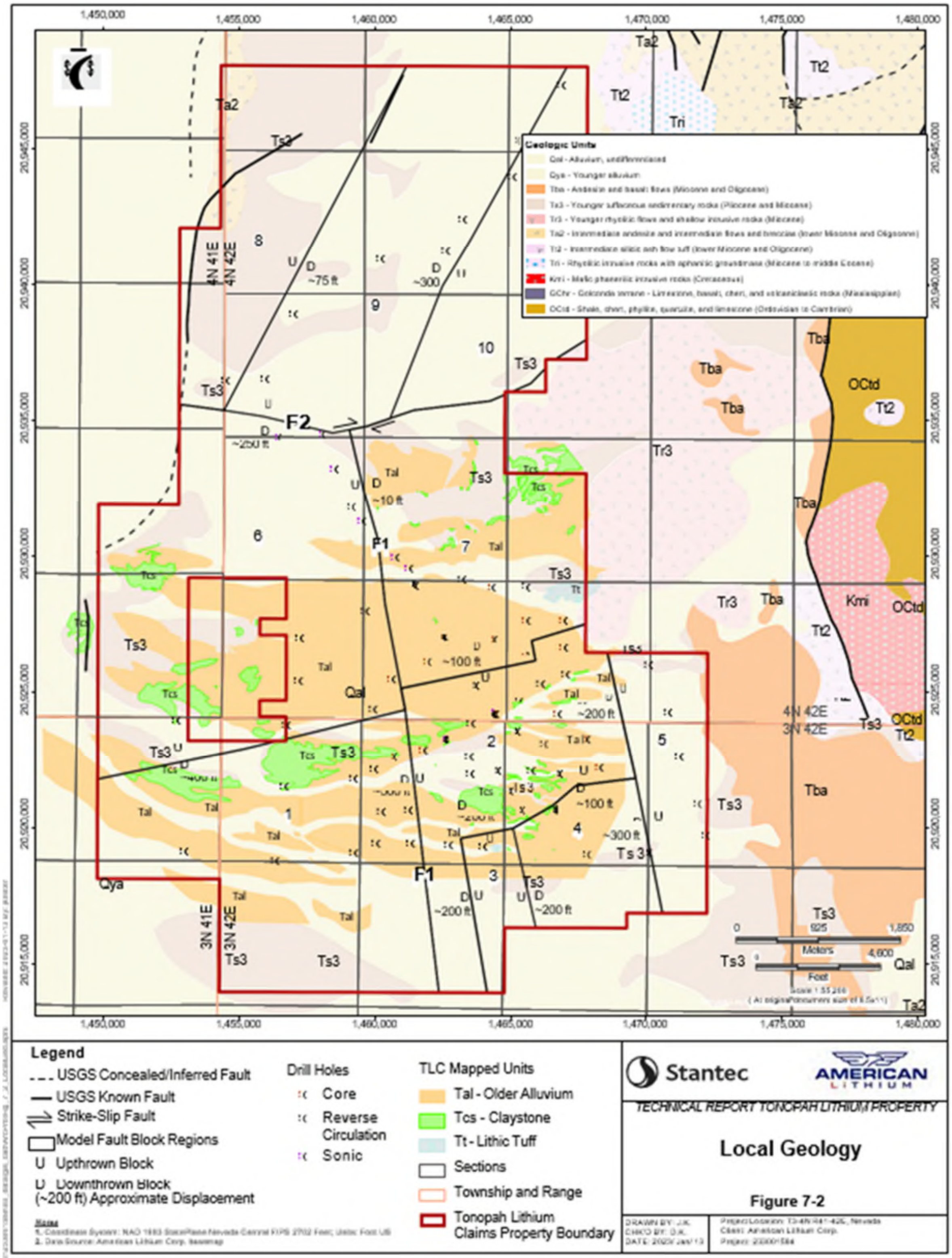

Figure 7-2 Local Geology

7.3 Mineralization

Elevated lithium concentrations occur in eastern regional blocks on the property in the surface alluvial, underlying claystone (upper claystone), and basal tuff unit. Elevated lithium concentrations also occur within deeper clay units (lower claystone) in the western blocks 1 and 6 and northern block 9. The highest and most consistent lithium grades occur in the upper claystone beds that are located east of the F1 fault. Samples taken from the claystone at similar depths located west of the F1 Fault contain significantly less lithium (less than 400 ppm). East of the F1 fault, the lithium concentration is highest in a zone of about 150 ft (45.7 m) above the basal tuff; the lithium concentration tends to decrease higher in the sequence to the base of the alluvium. The overall footprint of mineralized clays, with lithium concentrations greater than 500 ppm, is 7,500 acres (3,035 hectares) extending from just below surface weathering to a depth of approximately 1,000 ft (304.8 m) below surface.

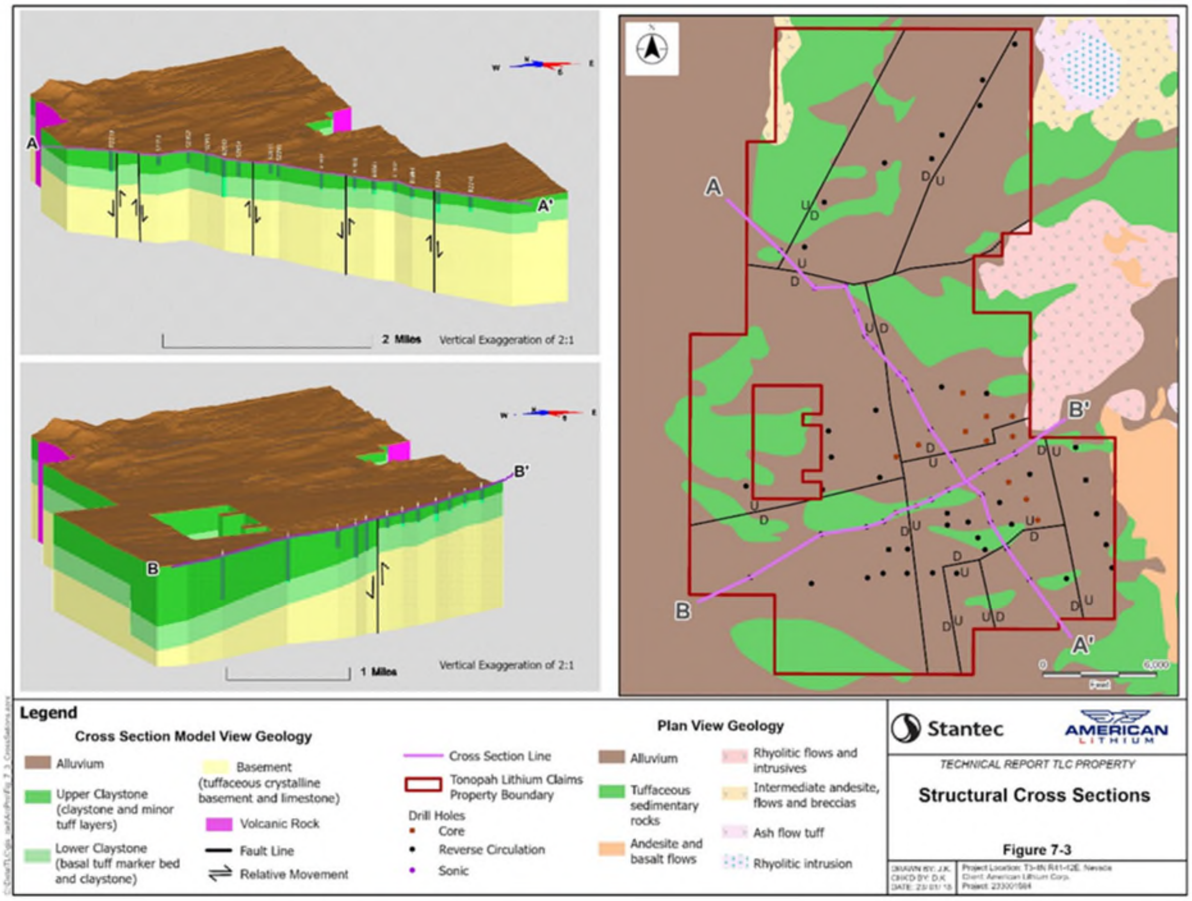

Figure 7-3 Structural Cross section

8 DEPOSIT TYPES

Lithium deposits are hosted in pegmatites, continental brines, and clays. Where observed, elevated lithium concentrations in clay deposits occur in hydrologically closed basins that contain silicic volcanic rocks. These deposits are commonly ash-rich, lacustrine rocks that contain swelling clays (Asher-Bolinder, 1991). Common accessory rocks include volcanic flows and detritus, alluvial-fan and -flat and lacustrine rocks (Asher-Bolinder, 1991).

The USGS presented a descriptive model of lithium in smectites of closed basins in the 2011 Open File 11A. This model, identified as Model 25l.3(T) in the publication, proposed three forms of genesis for clay lithium deposits: the alteration of volcanic glass to lithium-rich smectite; precipitation from lacustrine waters; and incorporation of lithium into existing smectites. In each case, the depositional/diagenetic model is characterized by abundant magnesium, silicic volcanics, and an arid environment (Asher-Bolinder, 1991).

Recent publications on the relationship between lacustrine sediments and brines in the Clayton Valley area by Coffey et al (2022) indicate the release of lithium in source rock clays within sedimentary basin fill bulk sediments upon hydration and increasing temperatures at depth. The experimental findings also indicate an increase in lithium concentrations within the bulk sediments with increasing depth. A 3-D schematic of the lithostratigraphic units that generally constitute the closed sedimentary basin of Clayton Valley is shown in Figure 8-1 (Coffey et al., 2022). Lithium enrichment within the subsurface sediments is hypothesized to occur through ionic exchange and ion adsorption under water-rock interactions.

Typical mineralized body dimensions for this deposit type are proposed to be up to several metres in thickness and to extend laterally by a few kilometres. The structural setting, host lithologies, and mineralization observed on the TLC Property is similar to the lithium in smectite clay model proposed by Asher-Bolinder (1991).

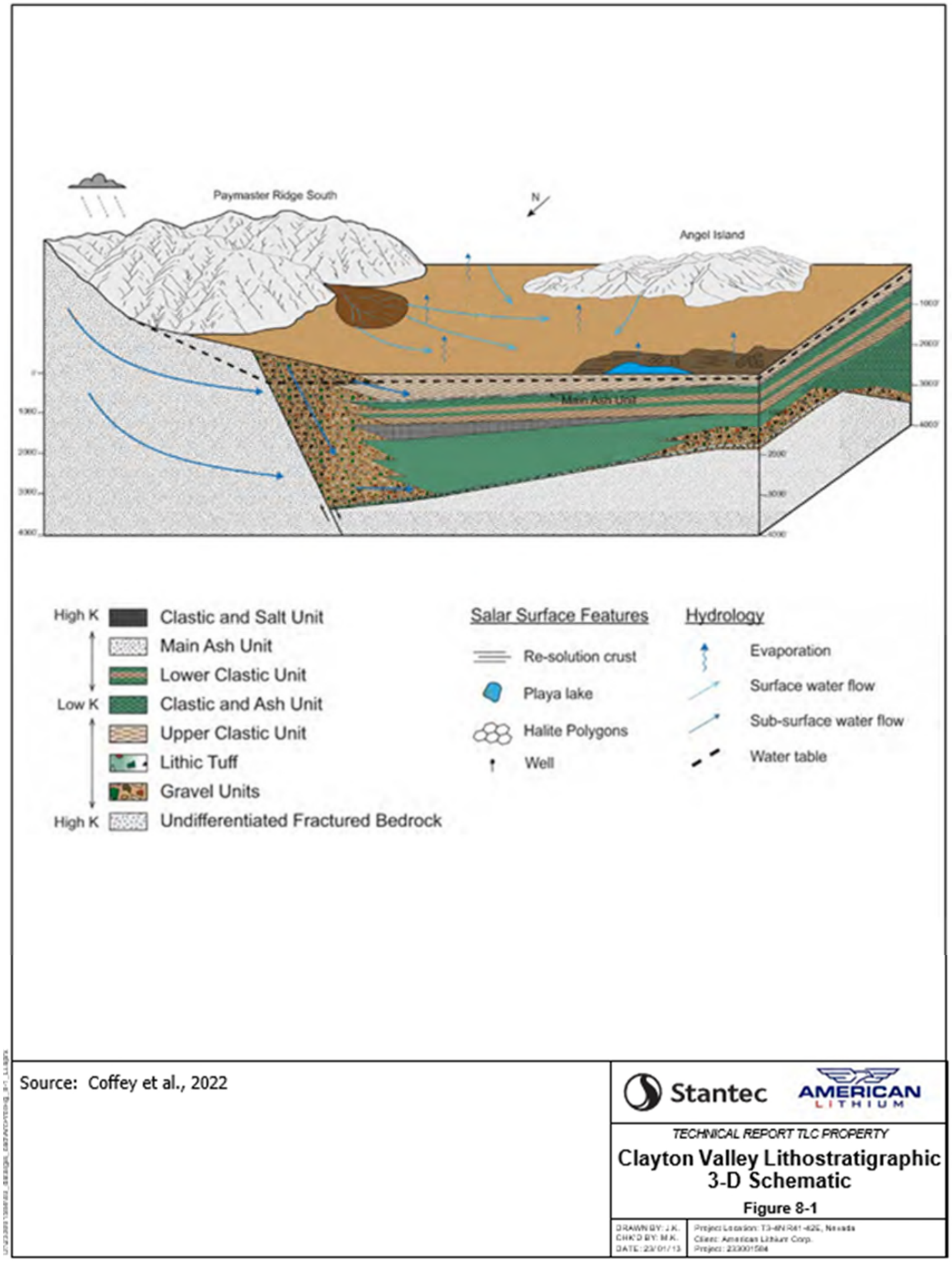

Figure 8-1 Clayton Valley Lithostratigraphic 3-D Schematic

9 EXPLORATION

The exploration and data that has occurred since the previous Technical Report (Loveday, 2021) is described in this section. Prior exploration is summarized in Section 6.

In 2020 a sonic drilling campaign completed 7 holes between November 1, 2020 and December 18, 2020. Five (5) holes were drilled central to the property and the remaining 2 were twins of older holes. The 2020 sonic holes were drilled by Boart Longyear using a 7" diameter sonic tool.

In 2021 a reverse circulation (RC) drilling campaign of 6 holes was undertaken on the north end of the property between October 26, 2021 and December 2, 2021. The 2021 RC holes were drilled by Harris Exploration Drilling and Associates (Harris) of San Diego, California using a T-685 Schramm rig completing 5.5" diameter holes using standard RC methods.

In 2022 there were 29 RC holes, 10 diamond core holes, and 1 sonic core hole completed between January 8, 2022 and June 26, 2022. Additional holes to those listed above were completed in 2022 but not all information was available at the time of the effective date of this Technical Report. The 2022 RC holes were drilled by Harris, diamond core holes by First Drilling LLC of Montrose, Colorado using a LF-100 rig coring at either PQ3 (3.3" (122.6mm)) or HQ (2.5" (63.5 mm) diameter. The sonic core hole was drilled by Q&D Construction of Sparks, Nevada using a 6" diameter tool. During the drilling campaign an American Lithium geologist oversaw the drilling and sampling operations. In 2022 some drill holes encountered groundwater in the deeper western RC holes and sonic holes where water was assumed to perched. Four (4) piezometers were being installed late in 2022 and the hydrogeologic details are not yet available.

In November 2021 Pioneer Exploration Consultants Ltd. (Pioneer) completed an airborne magnetic survey using an Unmanned Aerial Vehicle (UAV) over the TLC claims at the request of American Lithium. The details of the magnetic survey were recorded in an American Lithium UAV Aeromagnetic Survey Logistics Report (Pioneer, 2021). Three Levelled and Microlevelled Drone Magnetic Survey maps were generated from this report: Total Magnetic Intensity (TMI-RTP) in nT units, First Vertical Derivative (1VD) in nT/m units, and Analytical Signal (AS) in nT/m units. The magnetic survey covered only the southern half of the property and was not utilized for the purpose of resource estimation in this Technical Report.

10 DRILLING

A combination of reverse circulation (RC), sonic core, and diamond core holes have been drilled on the TLC Property. Drilling began in 2019 and is planned to continue in the next few years. The previous technical report (Loveday, 2021) drillhole database included holes from the 2019 and 2020 winter drilling campaigns and consisted of 24 RC holes and 5 core holes totaling 29 drill holes. For this Technical Report update, an additional 53 drill holes were completed for a total of 82 drill holes used to define the mineral resource estimate as outlined in Section 14.

The additional 53 drill holes considered for this technical report includes the following: 7 sonic core drill holes during the 2020 summer campaign, 6 RC drill holes during the 2021 drilling campaign, and during the 2022 campaign: 1 sonic core, ten (10) diamond core, and twenty-nine (29) RC drill holes. Table 10.1 shows the list of drill hole locations used within the model with their details on year, depth, and type.

Data for the added 53 drillholes were provided as individual files for both lithology and laboratory assays by American Lithium staff. Lithology was received by either Excel or .dat files exported from Rock Ware Inc. software. The assay data was provided by excel spreadsheets often accompanied by the original laboratory PDF certificates. Information on sample depths and QA/QC samples were acquired from a combination of the files mentioned above and follow up communications with American Lithium staff. Stantec complied the individual data files into an Excel and MinePlan software (v16.0.4) Torque database for insertion into a MinePlan geologic model.

Table 10.1 lists the drill hole collar locations in Nevada State Plane Central Zone NAD83 coordinates. Hole locations are shown on Figure 10-1. The initial drill hole collar information was recorded using a handheld GPS device and collar elevations in UTM NAD83 or NAD27 metres. In Table 10.1 the hole original hole locations have been converted to State Plane NAD83 using either ESRI GIS or Expert GPS software. Elevations were adjusted to match the elevations of US Geological survey open-source topography data received as raster digital data (1 arc-second (10 metre) resolution). All holes are vertical.

Table 10-1 Drill Hole Locations

Hole Name	Year	Report	Easting (X) NAD83 SP Central	Northing (Y) NAD83 SP Central	Elevation (ft)	Total Depth (ft)	Hole Type	Azimuth and Dip
** Used in Loveday (2021) Technical Report Model * Additional drilling								
C1901	2019	**	1464408.474	20924110.99	5601.0	393	Core	0 / -90
C1917	2019	**	1462501.784	20926891.11	5540.7	408	Core	0 / -90
C1919	2019	**	1461758.623	20922837.24	5503.5	248	Core	0 / -90
C1920	2019	**	1464355.666	20926769.58	5614.0	343	Core	0 / -90
C1921	2019	**	1466849.019	20926504.63	5699.1	208	Core	0 / -90
R1901	2019	**	1464388.744	20924101.21	5601.0	345	RC	0 / -90
R1902	2019	**	1465233.08	20923428.65	5630.0	300	RC	0 / -90
R1903	2019	**	1466160.377	20923008.51	5669.9	340	RC	0 / -90
R1904	2019	**	1465670.961	20921983	5640.4	300	RC	0 / -90
R1905	2019	**	1464492.681	20921970.82	5589.1	300	RC	0 / -90
R1906	2019	**	1466796.23	20921857.52	5692.0	300	RC	0 / -90
R1907	2019	**	1465011.542	20921141.9	5626.0	300	RC	0 / -90
R1908	2019	**	1466545.409	20920555.48	5680.2	300	RC	0 / -90
R1909	2019	**	1465386.69	20920507.12	5644.3	255	RC	0 / -90
R1910	2019	**	1463391.622	20922440.83	5552.1	300	RC	0 / -90
R1911	2019	**	1463399.204	20921810.66	5544.9	300	RC	0 / -90
R1912	2019	**	1463445.319	20923684.5	5567.8	320	RC	0 / -90
R1913	2019	**	1465217.846	20924669.3	5638.3	300	RC	0 / -90
R1914	2019	**	1466069.639	20925158.54	5681.3	300	RC	0 / -90
R1915	2019	**	1466993.524	20925617.98	5707.8	300	RC	0 / -90
R1916	2019	**	1463716.6	20925199.81	5589.7	340	RC	0 / -90
R1917	2019	**	1462511.625	20926891.08	5541.2	440	RC	0 / -90

Hole Name	Year	Report	Easting (X) NAD83 SP Central	Northing (Y) NAD83 SP Central	Elevation (ft)	Total Depth (ft)	Hole Type	Azimuth and Dip
R1918	2019	**	1462563.926	20923175.68	5532.6	300	RC	0 / -90
R2001	2020	**	1459125.693	20921711.13	5401.5	400	RC	0 / -90
R2002	2020	**	1461429.281	20928916.67	5493.4	400	RC	0 / -90
R2003	2020	**	1463094.029	20929133.86	5536.6	400	RC	0 / -90
R2004	2020	**	1467757.51	20924505.91	5723.9	295	RC	0 / -90
R2005	2020	**	1459827.607	20924330.92	5448.8	455	RC	0 / -90
R2006	2020	**	1461422.781	20928936.39	5491.7	115	RC	0 / -90
S20S1	2020	*	1456384.801	20934379.6	5314.9	247	Sonic	0 / -90
S20S2	2020	*	1458022.806	20934462.35	5343.3	307	Sonic	0 / -90
S20S3	2020	*	1458577.613	20933183.95	5395.5	526	Sonic	0 / -90
S20S4	2020	*	1459582.087	20931249.26	5420.5	400	Sonic	0 / -90
S20S5	2020	*	1460806.099	20929831.33	5482.7	267	Sonic	0 / -90
S20S6	2020	*	1464372.375	20924115.06	5601.1	393	Sonic	0 / -90
S20S7	2020	*	1462534.605	20923165.52	5531.0	300	Sonic	0 / -90
R2101	2021	*	1466961.193	20947283.92	5851.2	540	RC	0 / -90
R2102	2021	*	1465262.189	20945380.31	5752.5	700	RC	0 / -90
R2103	2021	*	1465118.535	20944029.5	5719.9	600	RC	0 / -90
R2104	2021	*	1463111.389	20942464.9	5589.1	410	RC	0 / -90
R2105	2021	*	1462576.017	20941213.21	5617.0	800	RC	0 / -90
R2106	2021	*	1460083.344	20940998.38	5548.8	855	RC	0 / -90
C2201	2022	*	1466628.946	20924091.52	5680.7	301	Core	0 / -90
C2202	2022	*	1467577.74	20923183.34	5727.0	260	Core	0 / -90
C2203	2022	*	1468175.648	20922080.1	5747.4	261	Core	0 / -90

Hole Name	Year	Report	Easting (X) NAD83 SP Central	Northing (Y) NAD83 SP Central	Elevation (ft)	Total Depth (ft)	Hole Type	Azimuth and Dip
C2204	2022	*	1465473.232	20926277.81	5653.3	350	Core	0 / -90
C2205	2022	*	1466840.245	20927572.55	5690.6	342	Core	0 / -90
C2206	2022	*	1465466.746	20927567.69	5638.9	351	Core	0 / -90
C2208	2022	*	1460688.686	20922477.26	5467.6	647	Core	0 / -90
C2209	2022	*	1460698.966	20925438.01	5484.4	300	Core	0 / -90
C2210	2022	*	1461874.52	20926052.09	5530.0	350	Core	0 / -90
C2211	2022	*	1464213.237	20928823.42	5577.0	500	Core	0 / -90
R2201	2022	*	1455845.02	20936542.8	5293.3	700	RC	0 / -90
R2202	2022	*	1456892.321	20938910.24	5389.9	955	RC	0 / -90
R2203	2022	*	1454567.273	20936355.77	5258.0	540	RC	0 / -90
R2204	2022	*	1466546.756	20920569.96	5681.0	540	RC	0 / -90
R2205	2022	*	1470180.18	20925929.8	5834.7	400	RC	0 / -90
R2206	2022	*	1470711.173	20924200.33	5863.6	300	RC	0 / -90
R2207	2022	*	1471284.114	20922408.33	5895.0	300	RC	0 / -90
R2208	2022	*	1471785.936	20920772.3	5899.4	580	RC	0 / -90
R2209	2022	*	1472102.027	20919546.39	5867.0	600	RC	0 / -90
R2210	2022	*	1469693.733	20918975.4	5771.6	540	RC	0 / -90
R2211	2022	*	1467728.145	20918920.32	5717.1	400	RC	0 / -90
R2212	2022	*	1459048.002	20931848.29	5423.8	1000	RC	0 / -90
R2213	2022	*	1460043.384	20922011.13	5445.4	725	RC	0 / -90
R2214	2022	*	1452758.37	20923883.27	5210.8	635	RC	0 / -90
R2215	2022	*	1456726.364	20921330.58	5338.0	980	RC	0 / -90
R2216	2022	*	1465473.034	20928789.03	5620.5	440	RC	0 / -90

Hole Name	Year	Report	Easting (X) NAD83 SP Central	Northing (Y) NAD83 SP Central	Elevation (ft)	Total Depth (ft)	Hole Type	Azimuth and Dip
R2217	2022	*	1456217.707	20918718.35	5336.4	975	RC	0 / -90
R2218	2022	*	1463885.861	20919252.81	5586.0	500	RC	0 / -90
R2219	2022	*	1452966.403	20919031.23	5256.7	955	RC	0 / -90
R2220	2022	*	1459999.14	20919253.68	5451.5	700	RC	0 / -90
R2221	2022	*	1456796.718	20923696.38	5330.8	645	RC	0 / -90
R2222	2022	*	1457266.01	20925411.61	5361.9	600	RC	0 / -90
R2223	2022	*	1457117.724	20926804.44	5359.3	700	RC	0 / -90
R2224	2022	*	1459622.347	20927903.11	5441.0	780	RC	0 / -90
R2225	2022	*	1460301.014	20920514.53	5465.8	680	RC	0 / -90
R2226	2022	*	1461274.989	20919256.37	5493.4	1000	RC	0 / -90
R2227	2022	*	1462621.165	20919282.69	5537.5	600	RC	0 / -90
R2228	2022	*	1459180.762	20919022.16	5426.6	720	RC	0 / -90
R2229	2022	*	1461302.324	20920543.47	5500.7	940	RC	0 / -90
S2201	2022	*	1461136.643	20929521.03	5483.8	320	Sonic	0 / -90

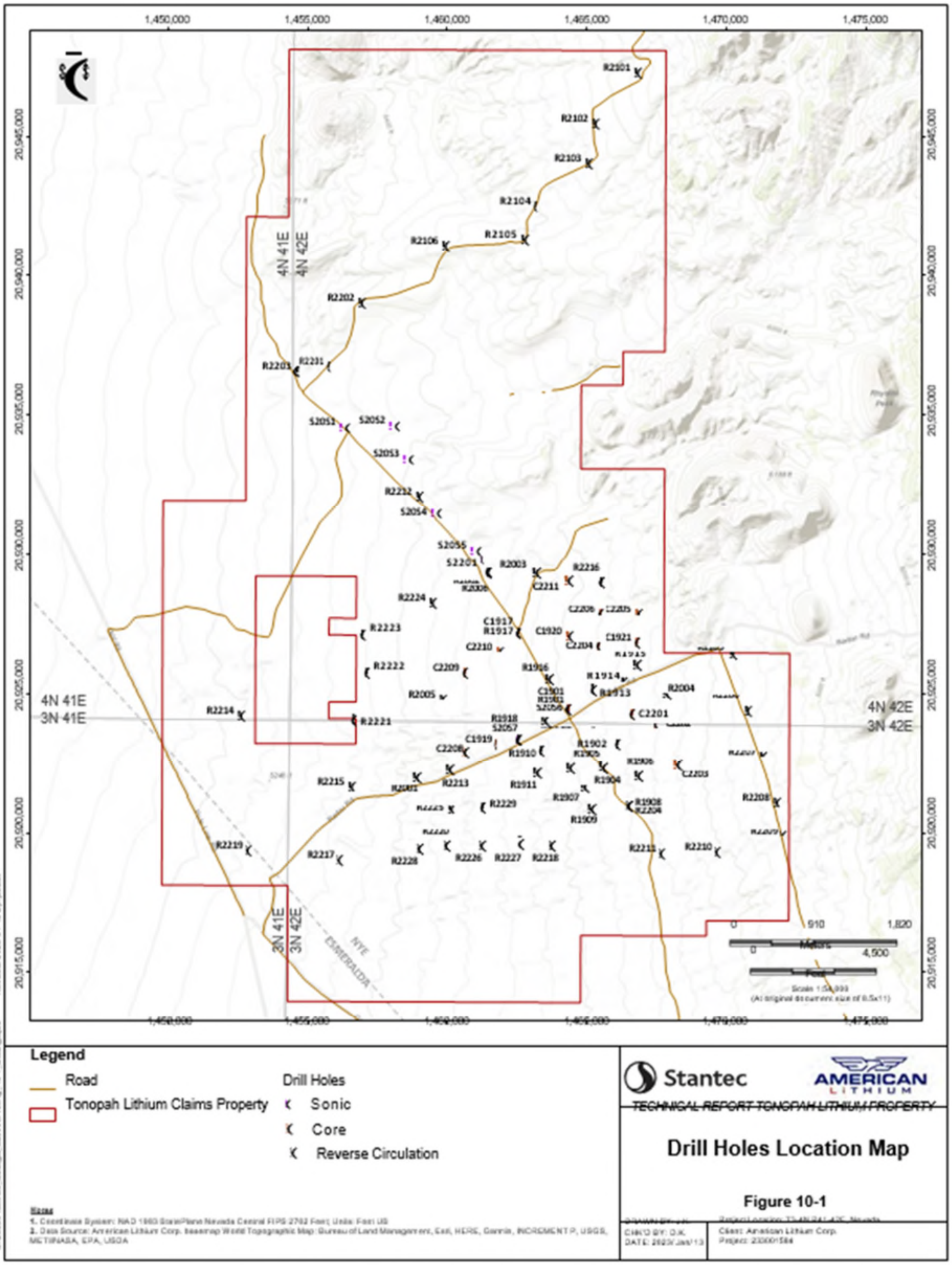

Figure 10-1 Drill Holes Location Map

Drilling was completed by the operators discussed in Section 9 and TLC geologists completed logging and sampling activities. Field drilling, logging, and sampling actives are described below. Further sampling details are discussed in Section 11.

Reverse Circulation Drilling and Field Sampling

RC drilling was performed with hammer-bit drilling and dual tube recovery system using injected drill fluids to maintain drill cutting flow to the surface, without contact with drill hole walls. All RC cuttings and fluids were passed through a cyclone equipped with an adjustable rotary splitter. This splitter produced one outlet for the sample with the remaining drill fluids and cuttings discharged to the drill sump. The drillers and/or samplers monitor the standard five-foot (1.5 m) sample run length including cutting surface lag and drill hole volume. Other parameters monitored and logged by the drill sampler include penetration rates, hole conditions, and fluid color. Rig lubricants were specified to exclude Li-bearing material.

Samples are collected in a numbered sturdy cloth bag stabilized in a bucket below the splitter sample outlet and are set and removed by the rig sampler as directed by the geologist and driller. Five-foot (5 ft) (1.52 metre) intervals are collected as a single sample, assigned a number by drill hole and footage, for example “TLC1901-220-225”. A 2-3 kg sample volume was maintained. A rig duplicate sample, marked with the suffix “D,” is collected every 50 ft. A 2mm wash screen is placed in the splitter discharge and retrieved with each sample. For each hole, chip trays with compartments assigned with consecutive 5-foot intervals are filled with screen washed chips and labeled with footages onsite by the drill sampler or American Lithium geologist.

Diamond Core Drilling

Drill core was boxed at the drill rig and footages labeled by the drillers. Footage blocks are also inserted within boxes between the approximate 5-foot (5 ft) runs for further reference. An American Lithium geologist monitored field processes early in the drill campaign and when onsite. Boxed core was retrieved and transported from the drill rig by American Lithium personnel and occasionally by the drillers to the TLC storage facility in Tonopah, Nevada for further QC and logging.

Sonic Drilling

Sonic core samples arrive at the surface via plastic sheathing in approximate 3 ft lengths with footage labeled by the driller. The bags are then split length wise and laid down in a row for logging by the American Lithium geologist. After logging the continuous samples were placed in a numbered sturdy cloth bag and later samples are chosen for analysis. Extra samples were either staged onsite or transported to the TLC storage facility.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Sampling Method and Approach

The drill samples were transported daily by the American Lithium geologist to the TLC storage facility (TLC facility) in Tonopah, Nevada where all final sample preparations were completed. This facility is east of town in a fenced, secured yard with a tall and 800 sq ft warehouse. All samples were either transported by American Lithium personnel to the laboratories in Reno, Nevada or picked up by laboratory personnel. No independent couriers were involved and sample submittal forms were generated with the lab deliveries. Specifics on the separate drill type samples are discussed below. Blank samples and certified reference material (CRM) standards are either stored at the facility or securely off-site. After analysis, extra samples including core, pulps, RC chips, and rejects were returned and archived at the TLC facility or a second secured storage facility in Tonopah.

Reverse Circulation Samples

Once onsite bagged samples were sealed, they are committed to analyses, with no splitting, logging, or examination allowed. The daily samples, once at the facility, were verified for sample count and sequence, logged in binders, and reviewed against the drill sampler's paper records. QA/QC samples including CRM standards, blank material, or sample duplicates were inserted about every tenth sample. RC chips are stored at the storage facilities for further detail logging as needed.

Diamond Drill Core Samples

Once the labeled drill core boxes arrive at the TLC facility, an American Lithium geologist cross checks and inventories the received boxes and footages. After box numbering is checked, core is first rinsed if needed, photographed, then measured for recovery and footages, and assessed for RQD properties.

Geologic logging is performed by American Lithium geologists in a mix of natural and artificial light. Lithology, color, grain size, hardness, and texture are recorded, and sedimentary structures, bedding details, sorting, and grading are described when present. This data is recorded on paper log forms and later entered into Rockware software by the geologist.

Sample intervals are assigned by the geologist after logging, based on either geologic breaks or approximate 5 ft (1.52m) lengths. Unique drill hole sample numbers are assigned with consecutive numbers. Consecutive numbers allow for the insertion of QA/QC materials throughout the drill hole sample stream, and all sample numbers are recorded. Core is given a brief examination with short wave UV light at this time, and color and intensity of any fluorescence is noted in the log.

After core is logged, samples are split on site by sawing longitudinally with a diamond saw utilizing fresh water supply. One half of the core is placed in numbered sturdy cloth bags and the other half retained in the core box and stored for future reference or metallurgical sampling.

Quality assurance (QA) material was inserted approximately every tenth sample for an effective 10% insertion rate. Coarse prep blank material, duplicate samples, and CRM standards are used about equally. Coarse blanks provide a test on both sample preparation and analysis, and are composed of crushed cinder blocks, manufactured in Reno from quarried rhyolite. CRM standards are purchased from Moment Exploration Geochemistry (MEG) of Spring Creek, Nevada. Two CRM standards are used: Li.10.11 and Li.10.15. These are both quantified natural claystone from Clayton Valley, not synthetic material. Duplicate samples are cut as quarter-core from the assigned interval and submitted in the sample stream.

Sonic Samples

Sonic samples were collected after sonic core was logged at the drill site. Sample were labeled consecutively with QA/QC inserts located at either 20-foot or 50-foot intervals. Duplicates were not generated for the sonic samples. Both blanks and CRM Standard were inserted at 8% of total samples.

11.2 Laboratory Analysis

Two laboratories were used for the 2020 summer and 2022 drilling campaigns, American Assay Laboratory (AAL) and Paragon Geochemical (Paragon). Both laboratories submitted certified PDFs and electronic data deliverables (edd's) of sample test results to American Lithium after completion.

AAL of 1500 Glendale Ave, Sparks, Nevada, is an ISO 17025 accredited, Nevada Division of Environmental Protection (NDEP) approved laboratory and is independent of the issuer. AAL conducts in house quality control with suitable blanks, CRM standards and duplicates. At the laboratory samples were crushed by fine crushing of dried sample to 90% passing 2 mm (0.07 in) (method FC-90), pulverize 1 kg (2.2 pounds) split to 85% passing 75 micron (method PV-1) and a 0.5 g (.017 oz) subsample under goes a 5 acid (HNO3, HF, HClO4,HCl and H3BO3) digestion and analyzed for 48 elements by Inductively Coupled Plasma -Optical Emission Spectroscopy and Mass Spectrometry (ICP-OES+ICP-MS; method ICP5AM48).

Paragon laboratory of 1555 Industrial Way Sparks, Nevada is an ISO/IEC17025 certified commercial laboratory with over 50 years of experience analyzing geological material and is independent of the issuer. Paragon conducts in house quality control with suitable blanks, CRM standards and duplicates. The analytical procedure used a 48-element suite; 0.25g Multi-Acid dig/ICP-MS with similar preparations as describe above.

Stantec entered the primary analysis test results into a MinePlan software Torque database to be used to build the geologic model and resource estimate described in Section 14. No analyses were performed on five sonic holes (S20S1, S20S2, S20S5, S20S6, S20S7) and RC hole R2006. Analysis for hole R2219 was received after geologic modeling was completed though assay results from this hole were assessed as part of an overall QA/QC check.

11.3 Quality Control

The MinePlan Torque database primary assay for the new drill holes were generated directly from cut and paste insertion of lab edds and then footages appended from drilling records. This database was then given to American Lithium for review and again reviewed by the Qualified person with a 10% audit for lithology entries and a 20% audit for assays. The QA/QC database i.e. blanks, duplicates and CRM's, were similarly developed and reviewed. The QA/QC database consist of 5,560 samples from 53 additional drill holes completed since the prior Technical Report (Loveday, 2021) and 543 associated QA/QC samples.

Sample submittal forms were used as chain of custody (COC) documentation upon lab deliveries at each lab. Additional relevant security included emails that were generated from AAL that provided a more detail list of each sample received once they were confirmed, checked in and logged into their system. For Paragon one COC was available for review which included four drill holes.

The QA/QC database included an insertion rate of 9.8% QA/QC samples divided as follows: 3.5% CRM standards; 3.4% blanks; and 2.9% duplicates. RC rig duplicates were collected every 50 ft (15 m), nominally 10%, with many swapped for a CRM standard or blank. For core samples a QA/QC sample was inserted every 10^{th} sample and for sonic samples QA/QC samples were inserted at 8% semi-randomly and did not include duplicates.

CRM standards used for QA/QC were purchased from Minerals Exploration and Environmental Geochemistry, Inc (MEG), of Reno, Nevada. CRM's include standard references for analytical accuracy confirmation and are made up of MEG-Li.10.11 (field label SRM1) and MEG-Li.10.15 (field label SRM2) and MEG-BLANK.14.03. On receipt of standards and blanks they are generally noted for their specified values and confidence range. A statistical 95% confidence range (approximately 2 standard deviations) is used for CRM standards. Lithium concentrations less than 50 ppm is acceptable for blank samples. Repeat samples (duplicates) were considered best within 10% of the original value but acceptable if root mean squared analysis (R2) is above 0.95.

Blanks and Duplicates

For the additional 53 drill holes American Lithium assayed 186 blanks and all where below 50 ppm, with one exception at 54.2 ppm and 77% of the blank samples were at or below 15 ppm. The blank lithium assay results are displayed in Figure 11-1 and arranged in order of date. A color strip in Figure 11-1 denotes which laboratory the analysis was conducted. One item of note is samples run between 96-157 as shown in Figure 11-1 (May 12, 2022-August 1, 2022) did not show any detectable lithium which is in contrast with the rest of the sample stream that detected some, though very small quantities of lithium. This same sample range is noted again within the CRM standards results described below.

Duplicate analysis showed positive repeatability, with a R^2 value of 0.9856 on 161 duplicate pairs as shown in Figure 11-2. Ninety percent (90%) of all duplicates were within 20% of the original assay result, and 71% were within 10% of the original assay result.

CRM Standards

Table 11.1 displays the CRM standards used for the sample stream. There are three acceptable target grades published for the two CRM's arranged by date from oldest to most recent at the bottom of Table 11.1. The Qualified Person is of the opinion that the CRM standards ranges used in the prior technical report (Loveday, 2021), dated May 1, 2017 in Table 11.1, are most reasonable given the large differences in ranges between more recently published standards as shown in Table 11.1. All three sets of these ranges are plotted with the CRM standards QA/QC data on Figures 11.3 and 11.4 for reference.

Table 11.1Vendor Certified Reference Material Ranges

Standard	Lithium Low 2SD (ppm)	Lithium Mean (ppm)	Lithium High 2SD (ppm)	Reference Li/Br CRM
SRM1 (MEG10.11)	630	720	810	MEG May 1, 2017
SRM2 (MEG10.15)	1,304	1,600	1,870	MEG May 1, 2017
SRM1 (MEG10.11)	448	744	1,040	MEG Aug 31, 2022
SRM2 (MEG10.15)	929	1,579	2,229	MEG Aug 31, 2022
SRM1 (MEG10.11)	665.1	723.1	781.1	MEG Sept 1, 2022
SRM2 (MEG10.15)	1396.8	1606.4	1816.0	MEG Sept 1, 2022

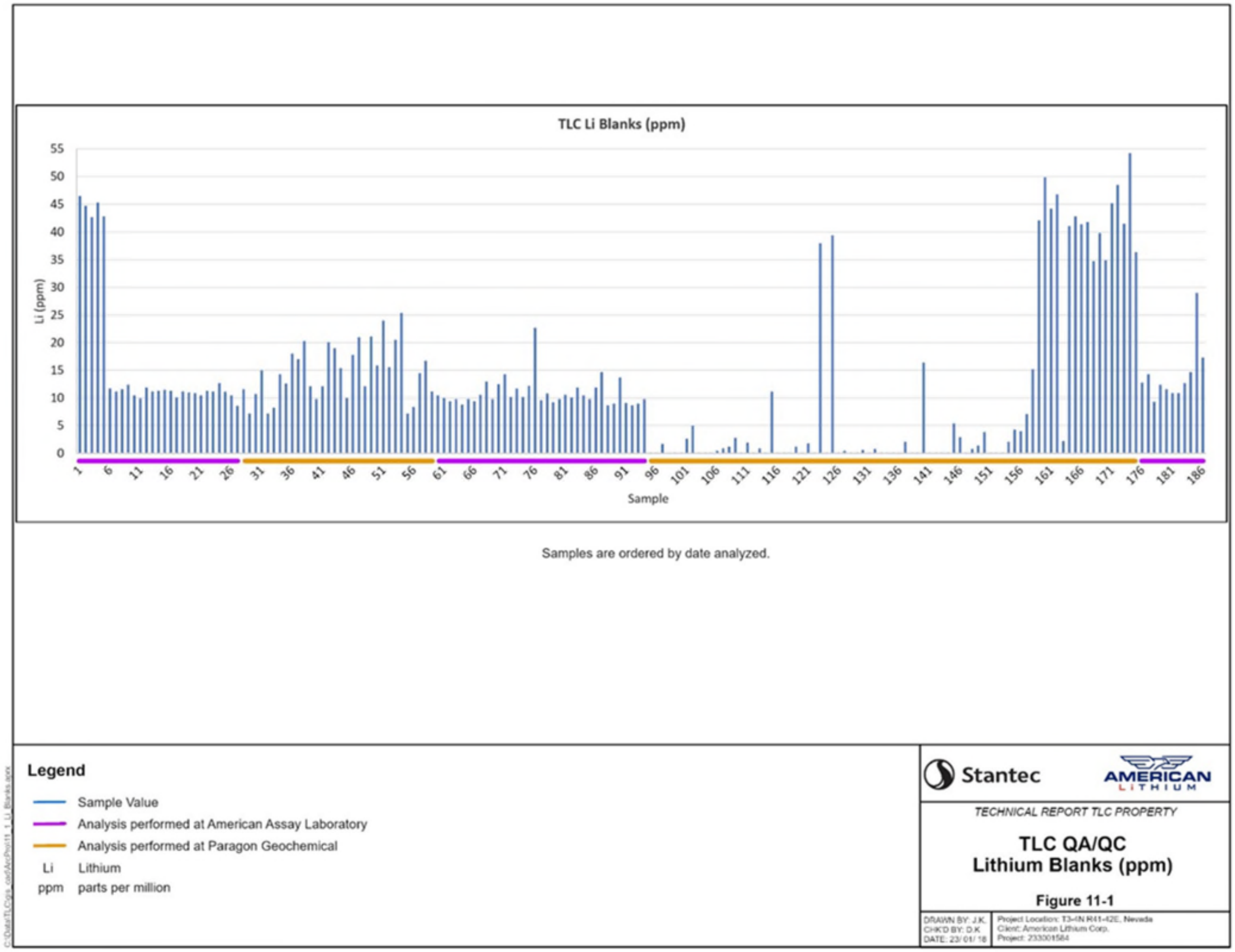

Figure 11-1 TLC QA/QC Lithium Blanks

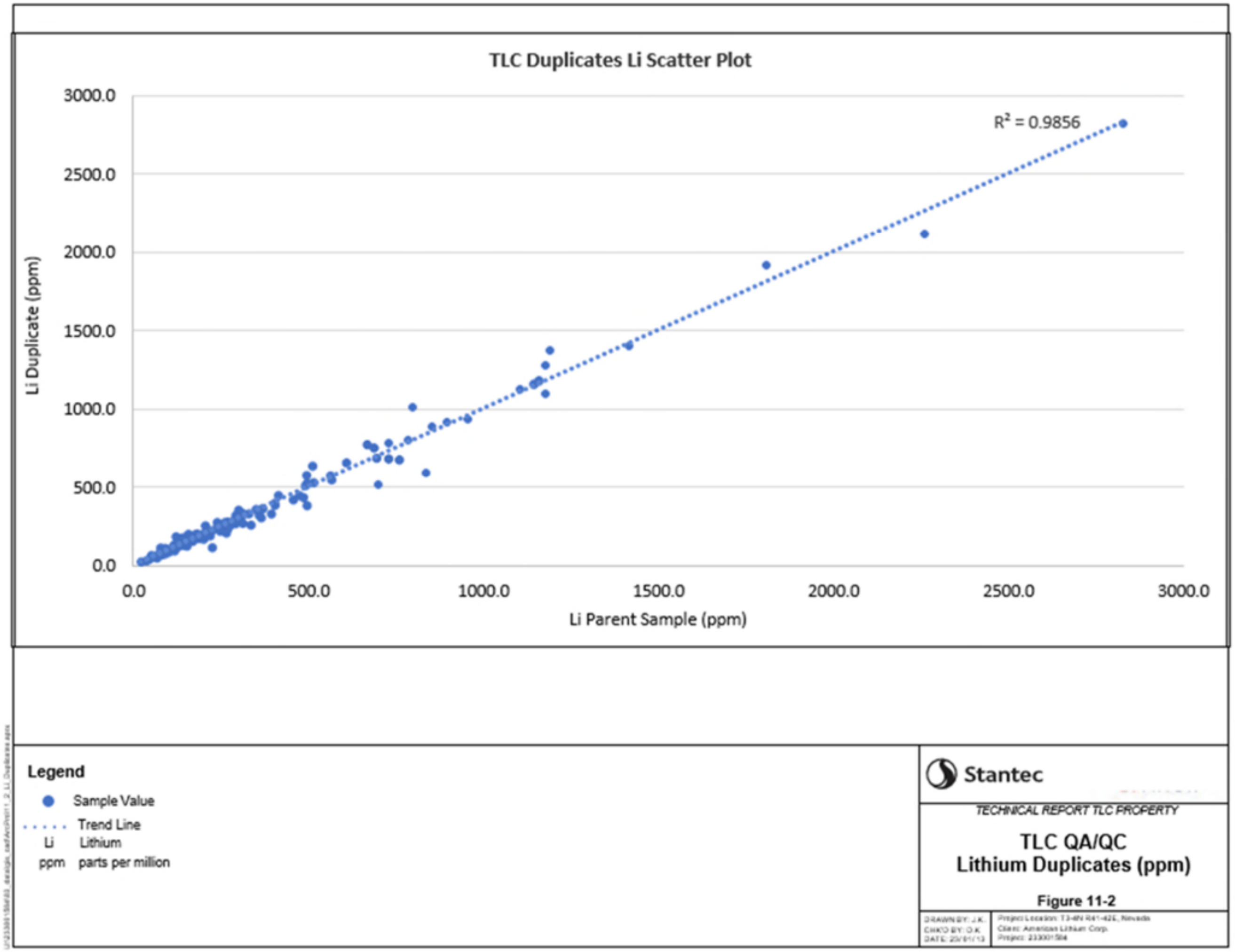

Figure 11-2 TLC QA/QC Lithium Duplicates

The CRMs inserted at the AAL laboratory showed good adherence to CRM Standard ranges of Table 11.1 for both the MEG-Li.10.11 and MEG-Li.10.15 Standards. At AAL Lab, of the 50 samples run for MEG-Li.10.11 all but three were within tolerance and of the 43 samples run for MEG- Li.10.15 all were within tolerance with two on the 95 % confidence limit line. At Paragon labs the CRMs inserted did not show consistent adherence to reference ranges, specifically during the second sample batch. The time frame of sampling for Paragon lab is shown on figures 11.4 and 11.5 and discussed below.

Paragons first batch of sampling was processed from March through April, 2022. The March sample (drill hole S2201) does adhere well to both standards as shown in figure 11.4 and 11.5. Samples in April (which include drill holes R2207 through R2213) show some outliers, but most fall within two standard deviations of the target CRM grade.

The second batch of Paragon labs samples processed from May through August, 2022. Results were reasonable for both standards at the start and end of this period. However, as shown in figure 11.4 and 11.5, significant outliers can be observed in CRM results between June and early August 2022 (which includes drill holes R2218 through R2224 and C2201 through C2206). CRM from hole C2204 was analyzed toward the end of August also had an outlier spike in the MEG-Li.10.15 standard as shown in Figure 11-4.

Further investigation is required to pinpoint this QA/QC deviation. The drillholes analyzed at Paragon during this timeframe should be flagged and further investigation conducted to validate the results. The blank standard also showed inconsistencies in their results during the same period as discussed above.

11.4 Adequacy of Laboratory Procedures and Sample Security

It is the opinion of the Qualified Person, following an audit of QA/QC assay data, that the exploration data is adequate for the basis for building a geologic model and estimation of lithium resources. However, drill hole samples analyzed at Paragon lab between the dates of June through August 2022 should be retested and or other investigations conducted to verify their results

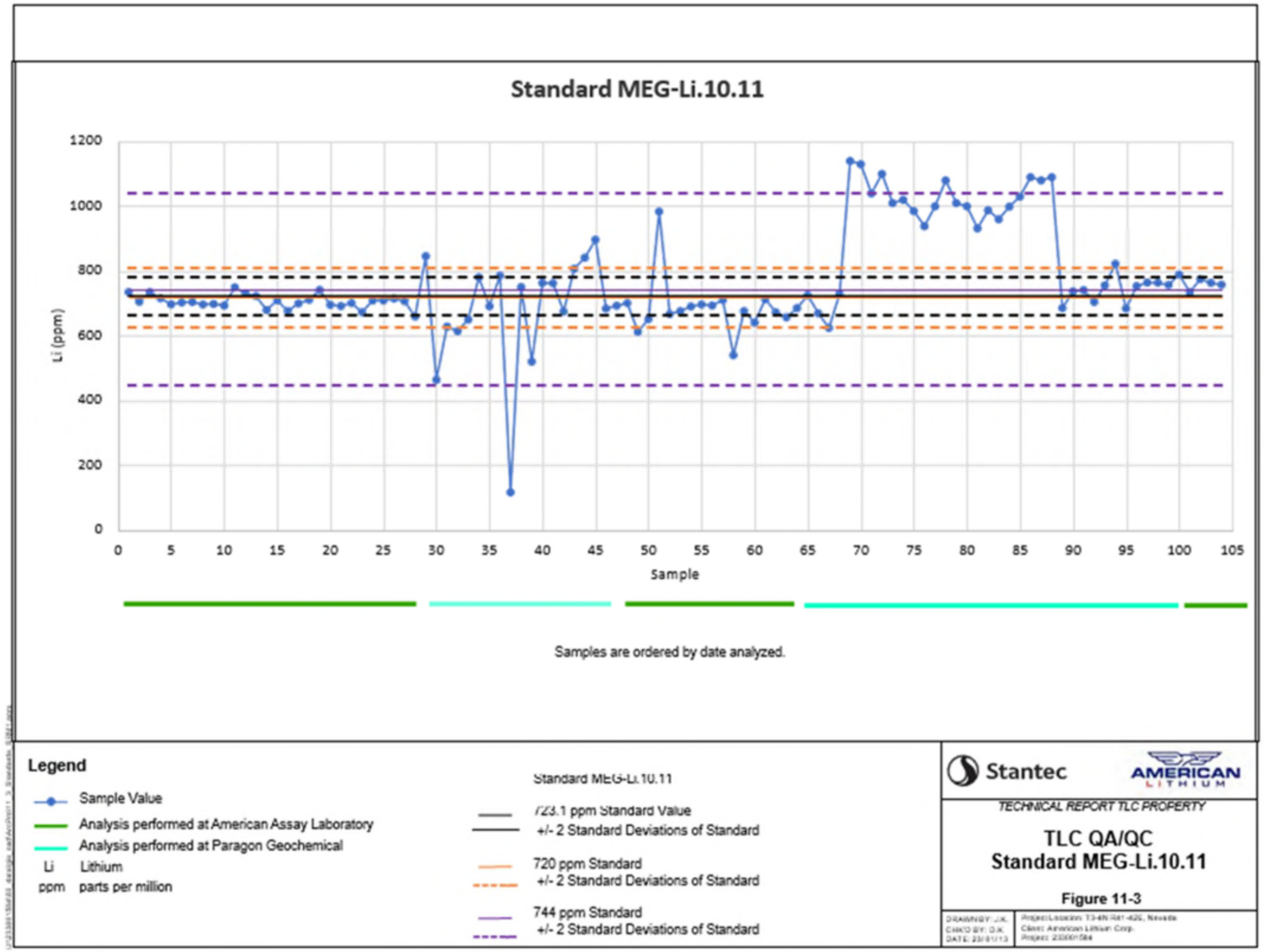

Figure 11-3 TLC QA/QC Standard MEG Li.10.11

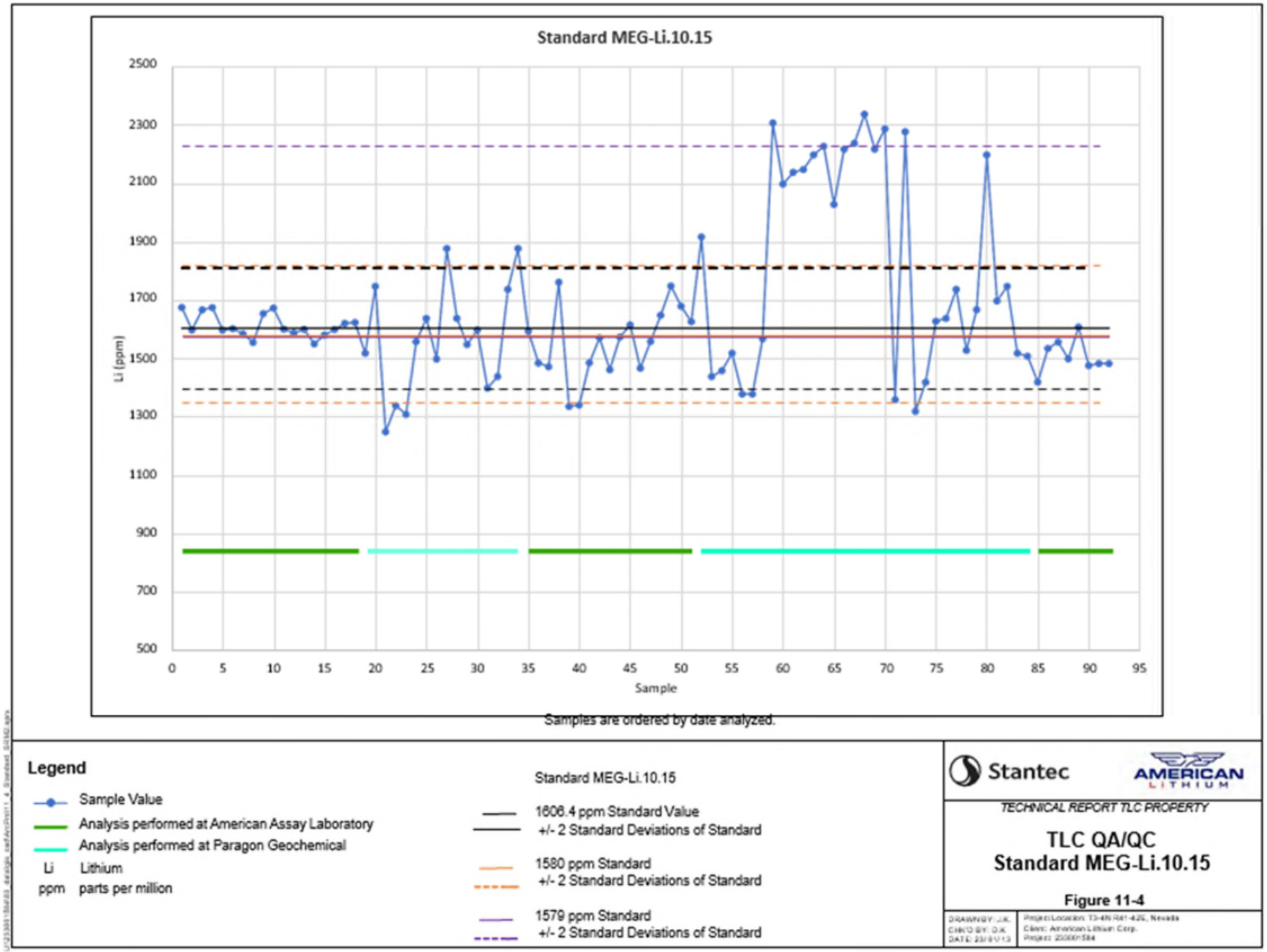
Standard MEG-Li.10.15
2500
2300
2100
1900
1700
1500
1300
1100
900
700
500
Li (ppm)
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95
Sample
Samples are ordered by date analyzed.
Legend
Sample Value
Analysis performed at American Assay Laboratory
Analysis performed at Paragon Geochemical
Li Lithium
ppm parts per million
Standard MEG-Li.10.15
1606.4 ppm Standard Value
+/- 2 Standard Deviations of Standard
1580 ppm Standard
+/- 2 Standard Deviations of Standard
1579 ppm Standard
+/- 2 Standard Deviations of Standard
Stantec
AMERICAN LITHIUM
TECHNICAL REPORT TLC PROPERTY
TLC QA/QC
Standard MEG-Li.10.15
Figure 11-4

Figure 11-4 TLC QA/QC Standard MEG Li.10.15

12 DATA VERIFICATION

An audit of the 53 additional drill holes since the prior Technical Report (Loveday, 2021) has been completed by the Authors and Qualified Persons. Only lithium analyses were reviewed in detail during the QA/QC.

12.1 Property Inspection 2021 and 2022

While on-site, the Authors conducted general geological inspection of the TLC Property, including a review of the surface formations, downhole lithologies and rock types, historical diggings, and drill collar locations. The Authors reviewed the TLC storage faculties and field data collection procedures on going at the time. At the storage facilities the TLC core boxes and RC chip trays were found to be well labeled and organized by footage. The Authors were accompanied by American Lithium representatives. Figures 12-1 and 12-2 display information and photographs from the two sites visits discussed below.

An initial property investigation was completed by Qualified Person Derek Loveday on December 16th and 17th, 2021 which included a visit to the sample storage facilities and the verification of a few drill hole locations and assay grades. The Property visit was limited due to poor weather conditions. Mr. Loveday was able to verify select high- and low-grade intervals using American Lithium's portable LIBS tool for drill holes R2104 and R2106.

A second site visit was completed by Qualified Person Joan Kester on July 20th and 21st, 2022. For the second visit the property was easily accessible by 4x4 via both paved and dirt roads. Active drilling was ongoing during the field visit and at the recently completed sites the sumps were being evaporated before backfilling and BLM reclamation efforts. Where outcrops were available surficial structural features were documented. At the warehouse facility active core drilling and logging was ongoing. Several sets of core boxes were awaiting detailed logging and were all well organized and labeled. While at site drill hole C2211 was actively being logged. Field documents for QA/QC insertion was reviewed for C2206, C2209 (samples in process of being split for analysis), and C2211. C2208 samples were being made ready for laboratory delivery.

Ms. Kester was able to photograph and review several available core, RC and sonic chips. Select RC, core and sonic holes (S20S5, R1901, R2105, R2201, R2204, R2211, R2218, C1917, and C2211) were reviewed for accurate lithologic reporting and completeness. Samples were chosen to represent a wide spatial location across the Property. Chip observations against original geologists' descriptions and assay certificates indicated no material discrepancies or concerns.

12.2 Drill Hole Location Validation

The site inspection confirmed that drill hole collars provided by American Lithium staff were accurate and verified by using both real time ArcGIS Field Maps software, a hand-held Garmin GPSmap 62S GPS and a Trimble GeoXT 6000 series GPS. Recent drill hole locations visited all had visible drill hole marker tags, and at older sites in reclamations there was clear evidence of drilling activity.

During the site investigation of the Property, the Qualified Persons located at least one drill collar from all the new drilling campaigns (Sonic 2020, RC 2021, and 2202 Sonic, Core, and RC). The tracks from the first field visit (blue) and locations from the second field visit (yellow) is shown in Figure 12-1. Some the drill hole pads visited include: S20S5, S2201, R2101, R2102, R2201, R2203, R2207, R2212, R2217, and C2206.

12.3 Data Validation Limitation

The Qualified Persons did not complete the following:

- Laboratory inspections of AAL and Paragon labs were not completed by the Qualified Person.
- The Qualified Person did not independently witness sample collection and methodology at the drill pads.

12.4 Opinion of the Independent Qualified Person

In the Qualified Person's opinion, that the field procedures, sample preparation and log documentation, security, and analytical methods meet industry standards. The quality of the warehouse organization and in process documentation are adequate. The Qualified Person is confident that the samples and associated laboratory datasets, with the exceptions noted in Section 11, used in this Technical Report are accurate

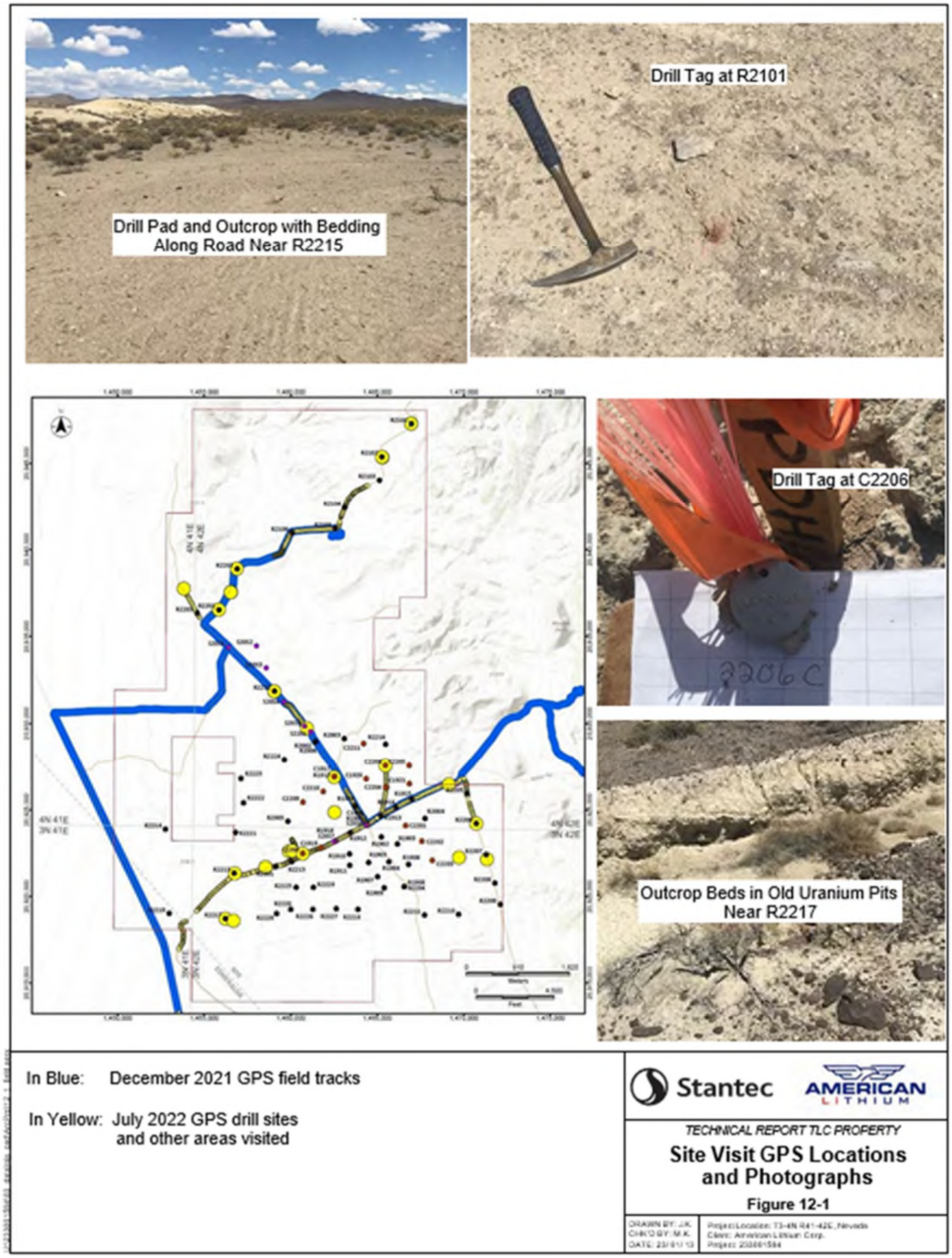

Figure 12-1 Site Visit GPS Locations and Photographs

Figure 12-2 Site Visit Photographs

13 METALLURGY AND METALLURGICAL TESTING

13.1 Sampling Background

From 2019 sample batches were generated from drill cores and reverse circulation drilling. The samples were dispatched to laboratories (Table 13-1) for metallurgical scoping, sighter, and investigative testwork. The sample numbers with corresponding drill samples and the lithium head grades are shown in Table 13-2 **.**The site location of the drill holes are illustrated in Figure 13-1 and the sample analyses shown in Table 13-3.

Table 13-1 Testwork Laboratory Information

Laboratory	Location	Dates
McClelland Laboratories Inc.	NV USA	2019 - 2022
SGS Minerals	ONT, Canada	2021 - 2022
Hazen Research Inc.	CO, USA	2021 - 2022
Australia's Nuclear Science and Technology Organisation (ANSTO)	NSW, Australia	2022
Lawrence Berkeley National Laboratory	CA, USA	2020
Multotec Process equipment	South Africa	2022
TECMMINE	Lima, Peru	2021 - 2022
Sturtevant	MA, USA	2022
McLanahan	PA, USA	2022
FLSmidth	PA, USA	2022
Pocock Industrial Inc	UT USA	2020-2022
RSG Inc.	AL USA	2021-2022

Table 13-2 Drill Hole and Sample Information

	Samples Batches									
Hole no	**4406**	**4462**	**4525**	**4548**	**4560**	**1020**	**S6**	**4742 (S7)**	**XXXX**	**Type of sample**
R1901	●									Selected Interval composites
R1901			●							Composite
1901C	●									Selected Interval composites
R1902						●				Selected Interval composites
R1903						●				Selected Interval composites
R1904						●				Selected Interval composites
R1908						●				Selected Interval composites
R1908										Composite
R1910						●				Selected Interval composites
R1911						●				Selected Interval composites
R1912						●				Selected Interval composites
R1913						●				Selected Interval composites
R1914						●				Selected Interval composites
R1915						●				Selected Interval composites
R1916						●				Selected Interval composites
R1917			●			●				Composite
1917C		●		●	●					Interval composites (**155'-335'**)
R1918			●							Composite
1919C										Composite
R1921			●							Composite
1921C										Composite
R2002						●				Selected Interval composites
R2003						●				Selected Interval composites
2216C									●	Interval composites (**264'-268'**)
2222									●	Composite (sump outcrop)
2223C									●	Interval composites (**182'-198.7'**)
20S6							●			Selected Interval composite
20S7								●		Total composite
ppm Li	1,157	1,330	1,218	1,330	1,330	1,210	1,172	1,050		

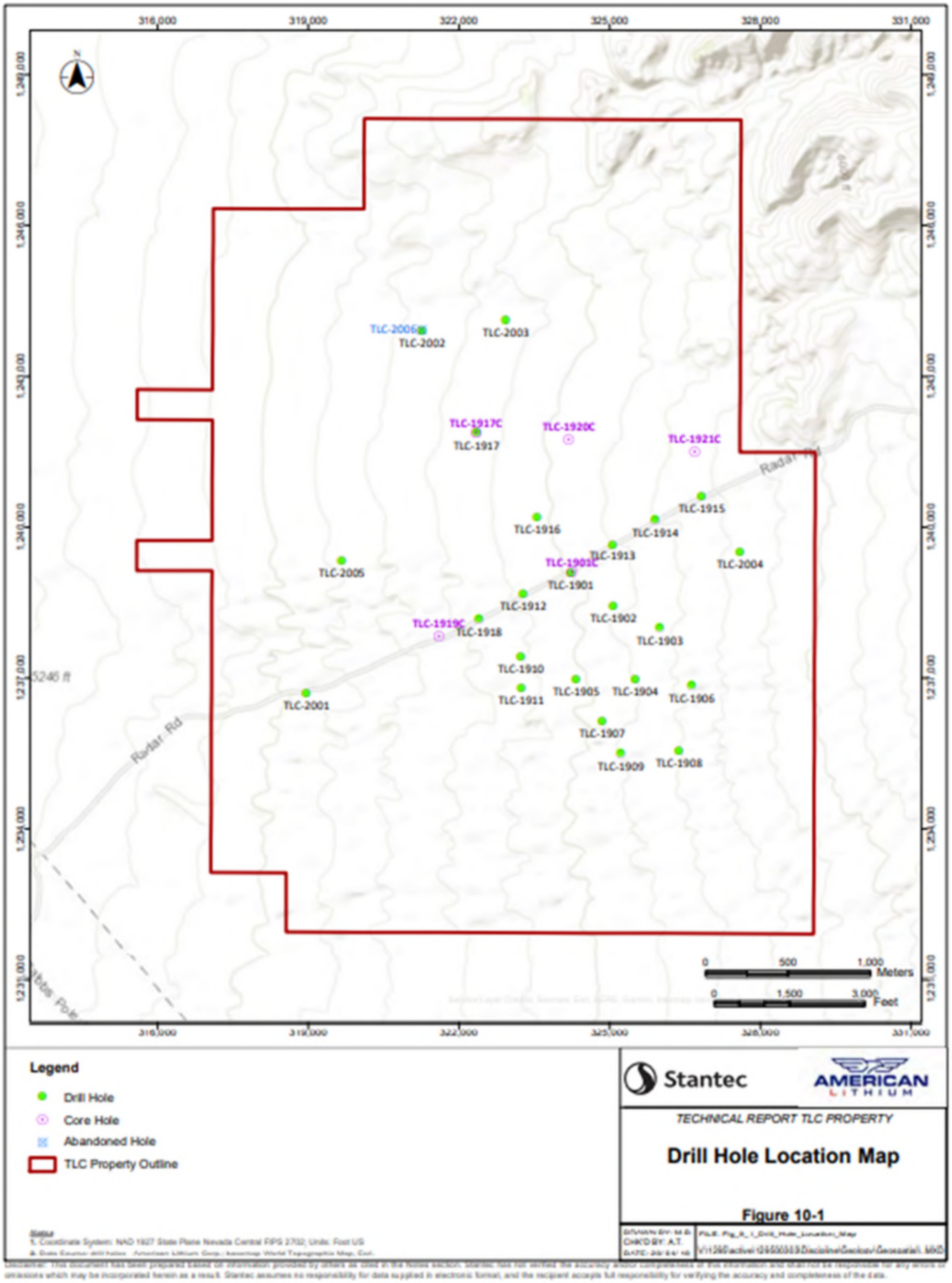

Figure 13-1Site Drill Hole location

Table 13-3 Head Analysis

Element	ANSTO S20S6 Weight %	SGS 1020a Weight	SGS 1020b Weight	SGS 4560 Weight
Al	4.56%	3.87%	3.87%	4.31%
Ca	8.03%	9.51%	9.43%	7.93%
C	3.98%	3.99%	3.86%	3.18%
F	0.79%	0.60%	0.60%	0.60%
Fe	1.74%	1.58%	1.57%	1.67%
K	3.71%	3.49%	3.49%	4.03%
Li	0.116%	0.119%	0.130%	0.140%
Mg	4.79%	5.76%	5.66%	5.69%
Mn	0.06%	0.05%	0.06%	0.05%
Na	0.59%	0.50%	0.50%	0.68%
P	0.02%	0.02%	0.02%	0.02%
S	0.42%	0.56%	0.00%	0.07%
Si	20.48%	18.42%	18.37%	20.24%
Ti	0.19%	0.16%	0.15%	0.17%

13.2 Test Work Scope PEA

The metallurgical testing program, which at the time of writing this report is still on-going, is managed by American Lithium Corporation and was supported by DRA Global (DRA) during the PEA phase. As a pre-cursor to the PEA, DRA was tasked to address three process routes in a trade-off study and then select one option to develop further in the PEA. The three routes considered were Sulfuric Acid Leach, Sulfuric Acid Bake, and Sulfation Roast. The trade-off studies commenced before the testwork results were available requiring several assumptions to be made that were later confirmed or corrected once the results were available. Based on the testwork results, capital costs and operating costs the Sulfuric Acid Leach was deemed to be the most suitable option for the PEA. There were several options within the Sulfuric Acid Leach flowsheet that were also considered. To minimize sulfuric acid consumption, it is essential to upgrade the run-of-mine clay ore. The flowsheet also includes a counter current acid leach and a customized impurity removal circuit to provide a process solution of a suitable quality for precipitation of a high purity LC. The various options considered are shown in Table 13-4 and the Base Case for this PEA as described above was given the working title of Option 11.

13.3 Completed Testwork Summary

A summary of the historical testwork conducted prior to the PEA during 2019 to 2021 can be found in Table 13-5. More detailed test work programs were completed to support the PEA in 2022 and a summary of this work can be found in Table 13-6

Table 13-4 Process Routes and Options Considered

Option	Product	Process Route	Pre-Con	Leach	Grade (ppm)	Potassium and Sodium Sulfate Crystallization	$MgSO_4$ Recovery
1	$LiOH.H_2O$	Acid Bake	No		1200	Separate	No
2	$LiOH.H_2O$	Salt Roast	No		1200	Separate	N/A
3	$LiOH.H_2O$	Acid leach	No	Co-Current	1200	Separate	No
4	Li_2CO_3	Acid Bake	No		1200	Separate	TSF 2
5	Li_2CO_3	Salt Roast	No		1200	Mixed	N/A
6	Li_2CO_3	Acid leach	No	Co-Current	1200	Separate	TSF 2
7	Li_2CO_3	Salt Roast	Yes	Co-Current	1200	Mixed	N/A
8	Li_2CO_3	Acid leach	Yes	Co-Current	1200	Separate	TSF 2
9	Li_2CO_3	Acid leach	Yes	Counter Current	1200	Separate	TSF 2
10	Li_2CO_3	Acid leach	Yes	Counter Current	1200	Mixed	TSF 2
11	Li_2CO_3	Acid leach	Yes	Counter Current	1400	Mixed	TSF 2
12	Li_2CO_3	Acid leach	Yes	Counter Current	1400	Mixed	Yes

Table 13-5 Testwork Summary 2019 - 2021

Item	Company	Experiment	Key Findings
1	McClelland (4406,4462,4548)	Ambient & hot sulfuric acid leach	High lithium extractions with H_2SO_4 are achieved with acid addition in of 500 – 600 kg acid/t ore. Rapid leach kinetics confirmed. Attrition scrubbing was not effective in size reduction in high density acid leach slurries. Ore particles smaller than 37µm provided higher lithium concentrations. Leach retention of 30 minutes is adequate.
2	McClelland (4462)	Counter – current sulfuric acid Leach	Two-stage counter current leach is effective in providing a filtered partially neutralized leach PLS and reduce the neutralization reagent requirements. Third counter-current leach do not provide any significant additional lithium extraction. Problematic foaming when acidic PLS is added into 1st counter current learn reactor.
3	McClelland (4462)	Attrition scrubbing	Attrition scrubbing was not effective in generating additional fines or increasing the lithium content of the finer fractions.
4	McClelland (4462)	Size by size analysis	Ore particles in -37µm range provided higher lithium concentrations. Potential for ore upgrading is found to be limited.
5	McClelland (4406,4462,4548)	Sulfuric acid leach of size fractions	Size acid leach test indicated very high lithium extraction in the – 25µm fraction.
6	McClelland (4548)	Centrifugal separation	Multiple stage centrifugal separation was effective in upgrading the ore and provided an "light fraction" containing 78.5% of the lithium and 31.2% of carbonates with discarding 51.21% of the starting mass to "heavy fraction". Acid leaching of the "light fraction" required 500 kg acid/t light material but will reduce the overall acid requirements.
7	McClelland (4548)	Flotation of ore	Flotation of ore was not effective in providing an upgraded concentrate.
8	McClelland (4560)	Leach PLS neutralization and pH adjustment	Lithium losses observed in the pH adjustment stage (pH 5 – 7). Neutralization conducted with sodium hydroxide or hydrated lime. Solid-liquid separation testing was conducted on partially neutralized leach slurries. Staged approach to pH adjustment provided lower lithium losses. 99.9% removal of Al, Fe and Mg.

Item	Company	Experiment	Key Findings
9	McClelland (4560)	Clean PLS evaporation	75% of the volume of the PLS was evaporated and crystallization occurred when the evaporated solution was cooled down. Ineffective filtration resulted in high amount of liquor entrainment in the filtered-out crystals. Crystals formed contained Al, K and SO_4.
10	McClelland (4560)	Softening PLS	Incomplete calcium precipitation observed
11	McClelland (4560)	Lithium carbonate precipitation	Lithium precipitation with sodium carbonate was effective in recovering the lithium. Initial result indicated low levels of AL, Ca, Fe, K and Na in the lithium carbonate.
12	McClelland (4548)	Comminution test work	Results indicated ore is lightly abrasive (Ai 0.0018g) and very soft (Ball mill work index of 5.1 kWh/t)
13	SGS (4548,1020)	Minerology, characterization	Similar lithium grade and composition of Composites 1020 and 4560(4548). Main lithium carriers identified. Ore consists mainly of moderate amounts of K-feldspars, dolomite, calcite, Clinoenstatite, albite, ferroan diopside, quartz and other trace minerals. Minerals occur well consolidated very fine-grained micas/clays in association with silicates and carbonates
14	SGS (4548,1020)	Size by size analysis	Indicated that 80% of lithium deported to the -11µm fraction which account for 62% of the mass
15	SGS (4548,1020)	Hydro-cyclone separation	Good lithium upgrading potential by rejection of 34-61% of mass containing low grade lithium. Concentrate 37 % (% w/w) containing 55 % of Li, Middling's 17 % (%w/w) containing 17 % of Li, Tails 37 % (%w/w) containing 28 % of Li.
16	SGS (4548,1020)	Centrifugal separation	-53µm showed good potential for upgrading using two stages of separation and increasing the lithium recovery.
17	SGS (4548,1020)	Sulfuric acid leach	Acid addition below 500 kg provide low extractions. Leach slurry density ≈ 45 % (w/w) provide lower lithium extraction than slurries at 25% (w/w).
18	Pocock (4560)	Liquid solid separation on Partially neutralized leach slurry	Report on slurry rheology, filterability on vacuum filter and filter press etc.
19	Lawrence Berkley National Laboratories (4560)	Mineralogical review	Optically dark layer - consistent with the composition of K-fluorohectorite. Optically 'light' clay mineral with a composition like that of K-saponite. Lithium is likely concentrated in K-fluorohectorite, which swells when hydrated and may facilitate the ingress of sulfuric acid during leaching.

Item	Company	Experiment	Key Findings
20	SGS (1020)	Attrition scrubbing	Attrition scrubbing and screening was done prior to hydro cyclone test work. Initial analysis indicated that 62% of the contained lithium in the sample was present in the -11 µm fraction. It was reported that after scrubbing and screening the lithium in the -11 µm fraction increased to 80%. Cannot quantify if this change was due to screening of the sample or scrubbing.
21	SGS (1020)	Magnetic separation	No potential shown in using this method
22	SGS (1020)	Hydro float separation	No potential shown in using this method
23	TECMMINE (S20S6)	Sulfuric acid leach	95% plus lithium extractions achieved where acid addition is equal or exceeded 500 kg H_2SO_4 /t Ore resulting in an acidic leach pH < 1.5. Other elements that also leached out is Mg (90%), Mn (90%) P (70%), Fe (50%), Na (30%) and K (10%). Hot, low-density slurries in tests. Significant amount of foaming observed, increasing the acid addition time to the slurry.

Table 13-6 Testwork Summary 2022

Item	Company	Experiment	Key Findings
1	McClelland (XXX)	Ore moisture determination	Interval core sample from TLC-C2216, TLC - 2222 (Sump outcrop) and TLC - C2223 were tested. Higher than expected %moisture was measured, and test is inconclusive. Moisture variation possibly due to core drilling technique and may not be a true presentation of the actual values.
2	McLanahan (4742)	Wet attrition scrubbing	Soaking and vigorous 30 seconds stirring of the TLC clay samples did not result in significant reduction of the solids to minus 1mm. Attritioning will not produce a suitable -1mm product for downstream processing.
3	McClelland (4742)	Decanter centrifuge pilot plant trial	Test work not conclusive, “Heavy” and “upgraded %Li light” fractions were separated but results not consistent. Generalized indicative results: 20% mass loss, 90% Li recovery, 1,600 ppm; 30% mass loss, 84% Li recovery, 1,600 ppm; 40% mass loss, 80% Li recovery, 1,650 ppm; 50% mass loss, 75% Li recovery, 1,520 ppm

Item	Company	Experiment	Key Findings
4	Multotec (4742)	Hydro-Cyclone pilot plant trail	Two cyclones were tested. Overall results: FC40 – 66% mass loss, 48.8% Li recovery FC75 – 48% mass loss, 76.3% Li recovery. The FC75 cyclones set-up 3 in series with the diluted U/F from no.1 feeding no.2. 1st stage - 66% mass loss, 52% Li recovery, 2nd stage – 35% mass loss, 89% Li recovery. 3rd stage – 31% mass loss, 95% recovery.
5	Sturtevant (4742)	Air classifiers Pilot plant	Different models were tested but very limited separation was achieved between lithium minerals and gangue.
6	RSG Inc. (S6)	Air classification test	As per other vendors very limited separation was achieved between lithium minerals and gangue.
7	TECMMINE (S6)	Centrifuge gravity concentrator	Initial testing indicated a single Falcon concentrator unit would provide a 50% mass loss and 70% Li recovery. Addition of a second unit would provide an overall 40% mass loss and 88% Li recovery. Adding a 2nd unit on the rejects from the 1st concentrator can improve the lithium recovery to 88% with a 30 % mass loss.
8	ANSTO (S6)	Acid leach	Acid leach sighter test with very dilute slurries provided >95% Li extractions. Free acid concentration in leach slurry maintained at 100 g/L and leach temperatures at 80°C. Reaction kinetics very fast and mostly complete within first 15 to 20 minutes. 30% (w/w) solids in leach slurry provide >90% Lithium extractions but a reduction in Li extractions in 40% solid slurries. Initial ore addition creates foaming. Acid consumption >480kg/ton RoM.
9	ANSTO (S6)	Acid Leach Counter Current	RoM was mixed with acid leach filtrate (pH 0.15, 106 g/L free acid) that provided a 40% (w/w) slurry that was mixed for 1 hour to simulate counter-current leach conditions. The filtrate was partially neutralized resulting in filtrate pH of 4.62. Slurry density increase was observed. Decrease in filtrate dissolved components, indicating that additional precipitation took place during partial neutralization. The following precipitated out of solution: Al (70%), Fe (45%), Li (17%), S (20%), F (52%). The following increased in filtrate: Mg (44%). This indicate that dolomite and calcite has reacted with free acid in filtrate. Major reaction Mg, S (gypsum formation)

Item	Company	Experiment	Key Findings
13	ANSTO (S6)	Acid leach neutralization	Acidic filtrate was neutralized with limestone. 40% Lithium reduction is observed when pH is adjusted from pH 0.1 to 6. No lithium reduction from pH adjustment pH 0.15 to 1. 22% lithium reduction from pH 1 to 4. 10 % reduction when pH is adjusted from pH 4 to 6. In the pH range 3 to 5 a buffer effect is observed due to Al and Fe precipitating out.
14	ANSTO (S6)	Magnesium removal via evaporation	Magnesium sulfate removal by cooling have been investigated. Un-neutralized leach solution was cooled down to -5°C overnight and 79% of the magnesium sulfate were removed. Test work is still ongoing. Neutralized PLS to be evaporated to crystallize out $MgSO_4.H_2O$ followed by a cooling step.
16	McClelland (4742)	Acid leach sighter test	97% lithium extraction in bulk tests
17	McClelland (7424)	Acid leach Neutralization sighter test	Acidic filtrate was neutralized in two stages, first with limestone to pH 4-5 and then with hydrated lime to pH 6.5. Lithium reduction/loss of 3.9% was recorded over the first stage and a lithium reduction loss of 0.2% over the second stage.
18	McClelland (7424)	Magnesium recovery (evaporation + impurity removal) sighter test	> 85% (w/w) neutralized PLS was evaporated, and magnesium sulfate was crystallized out. Hydrated lime was added to the evaporated solution and the remaining magnesium was precipitated out. Formed crystals were not washed and Lithium contained in moisture was considered recovered. Impurity removal residue was washed and Li reduction/loss of 4.8%.
19	McClelland (7424)	Calcium removal sighter test	Na_2CO_3 added and $CaCO_3$ precipitated. Sample too small for analyses. Lithium carbonate precipitated.
20	Pocock Industrial	Liquid solid separation on upgrade material	Determine liquid solid separation design parameters for Primary Ore, Upgrade Ore and Reject ore samples.

13.4 Pre-Concentration

As discussed above, pre-concentration of the RoM mineralized material improves the viability of the project by reducing sulfuric acid consumption and improving the lithium feed grade to the leaching circuit. Both dry and wet pre-concentration testwork covering flotation, hydro cycloning, magnetic separation, centrifuge and gravity separation was performed by the following laboratories or organisations:

- Multotec
- TECMMINE
- RSG
- Sturtevant
- SGS
- TLC

In summary, the dry upgrade testwork performed by RSG and Sturtevant failed to produce any upgrading worth considering further. The wet upgrade testwork had mixed results but some of the methods provided positive results. The TECMMINE Falcon gravity test results of 55% mass recovery, 82.6% Li recovery were used and resulted in a theoretical feed upgrade from 1400ppm to 2100ppm.

13.5 Liquid Solid Separation

Pocock Industrial conducted two sets of solid liquid separation testwork to provide equipment design data based on the testwork outcomes. The testwork conducted is briefly described below.

13.5.1 Partial Neutralized Leach Slurry

The partially neutralised leach slurry samples as supplied by McClelland Laboratories who had performed the leach testwork.

Prior to conducting formal equipment sizing procedures, flocculant screening tests were performed on the sample. These tests aided in the selection of flocculants able to provide the best overall performance with respect to overflow clarity, decantation rates, and underflow viscosity characteristics. After selecting the correct flocculant, both static and dynamic thickening tests were performed. These tests developed a general set of data for thickener design that included optimum flocculant type and dose requirements as well as the underflow and overflow characteristics that impact downstream operations.

Viscosity tests performed on samples of underflow generated from the thickening tests evaluated the rheological properties of the material. Results of this testing established maximum recommended underflow density for conventional and high-rate thickeners as well as provide the required profiles for pump, pipeline, and agitated tank design. Finally, vacuum and pressure filtration tests performed on specified samples of thickened underflow established a general set of data for horizontal belt vacuum filter design, and for both standard and membrane type recessed plate pressure filter design. On select vacuum and pressure filtration samples, the effect of displacement washing on soluble value removal efficiency as well as the effect of membrane squeezing on cake moisture was also examined.

13.5.2 Ore Upgrade Project

The second set of tests were for the "Ore Upgrade Project" where three samples were labelled as Primary Ore, Upgrade Ore and Reject ore were supplied by McClelland Laboratories who has conducted all the sample preparation.

Prior to conducting formal equipment sizing procedures, flocculant screening tests were performed. These tests aided in the selection of flocculants able to provide the best overall performance with respect to overflow clarity, decantation rates, and underflow viscosity characteristics. After selecting the correct flocculant, thickening tests were performed. These tests developed a general set of data for thickener design that included optimum flocculant type and dose requirements as well as the underflow and overflow characteristics that impact downstream operations.

Viscosity tests performed on samples of underflow generated from the thickening tests evaluated the rheological properties of each material. Results of this testing established maximum recommended underflow density for conventional and high-rate thickeners. Similarly, viscosity tests performed on unthickened slurry evaluated the rheological properties of each material for pump, pipeline, and agitated tank design.

Vacuum filtration tests performed on underflow established a general set of data to design and size horizontal belt type vacuum filters. Similarly, pressure filtration tests developed a general set of data to aid in the design and operation of various types of pressure filtration equipment.

13.6 Acid Leach to Lithium Carbonate Precipitation

The following sections discuss the testwork results performed at various laboratories that support the design criteria for the Acid Leach process selected for the PEA.

13.6.1 Australian Nuclear Science and Technology Organisation (ANSTO)

ANSTO was engaged to perform a work program on a sample of the Tonopah clay, with the aim of confirming the results obtained in previous work, as well as optimising the conditions, with the results to be inputted into the PEA being prepared by DRA.

The initial diagnostic leach testwork provided the following information with regards to the sulfuric acid leach.

Lithium extraction

The diagnostic leach test indicated higher lithium extraction with acid 100 g/l free sulfuric acid in the leach slurry. Calculated extraction for the leach were based on liquor assays and repeat duplicate head assay. The three diagnostic leaches results for AL1, AL3 and AL6, are presented in Table 13. 1 and Table 13. 2.

Table 13. 1 Completed ANSTO Testwork Summary

Test ID	AL-1	AL-3	AL-6
	Diagnostic Leach	Diagnostic Leach	Diagnostic Leach
Leach Temp (ºC)	80	80	80
Leach Duration (h)	8	8	8
Leach H_2SO_4 (g/L)	50	75	100
Acid Addn. (kg/t)	288	215	592
Final pH	0.54	0.36	0.21
Mass Loss (%)	46	47	44

Table 13. 2 Completed ANSTO Testwork Summary

Test ID		AL-1		AL-3		AL-6	
Element	Feed (wt.%)	PF (mg/L)	Residue (wt.%)	PF (mg/L)	Residue (wt.%)	PF (mg/L)	Residue (wt.%)
Al	4.557	201	6.033	226	5.87	258	5.58
B	0.029	1	0.038	1	0.036	2	0.0.38
Ba	0.062	1	0.109	1	0.107	1	0.105
Ca	8.031	1,481	0.627	1,524	0.609	1,575	0.558
Fe	1.744	234	1.072	247	1.05	262	1.03
K	3.710	129	5.180	142	5.07	157	4.99
Li	**0.116**	**23**	**<0.02**	**24**	**<0.02**	**26**	**<0.02**
Mg	4.790	964	0.101	998	0.084	1,043	0.066
Mn	0.059	11	0.010	12	0.010	12	0.009
Na	0.594	40	0.732	41	0.661	44	0.619
P	0.023	4	0.008	4	0.008	5	0.007
S	0.415	18,317	0.789	25,822	0.770	35,065	0.981
Si	20.483	182	32.204	158	32.4	136	32.4
Sr	0.233	31	0.106	35	0.094	38	0.075
Ti	0.186	15	0.195	17	0.183	18	0.180
Zr	0.011	1	0.020	1	0.022	1	0.020
F	0.785	11	0.140	13	0.07	15	0.09
*Li Extraction (%)		91		94		97	

Leach Conditions

Based on the diagnostic leach tests the leach reaction kinetics are fast and it can be observed that free acid concentration and temperature are parameters that impact performance. The higher the concentration of free acid and the higher the temperature, the faster the reaction kinetics. Residence time of 60 minutes are more than adequate at leach temperature above 60°C. In Table 13. 9 – Table 13. 11 the effect of temperature on the leach kinetics are clearly indicated and Table 13. 12 - Table 13. 14 the effect of free acid concentration on the leach kinetics is also clearly indicated.

Table 13. 3 Diagnostic Leach Test AL5 - 60°C and 100g Free Sulfuric Acid

Time	**Solution Concentration (mg/L)**					
(h)	Al	Li	Fe	Ca	Mg	Si
0.5	87	23	130	1408	957	171
1	106	24	156	1502	999	150
2	138	24	185	1519	1021	131
4	170	25	211	1521	1009	120
8	210	25	222	1582	1026	110

Table 13. 4 Diagnostic Leach Test AL6 - 80C and 100g Free Sulfuric Acid

Time	**Solution Concentration (mg/L)**					
(h)	**Al**	**Li**	**Fe**	**Ca**	**Mg**	**Si**
0.5	128	**24**	181	1548	1020	198
1	147	**24**	201	1537	1021	180
2	179	**25**	228	1549	1024	164
4	212	**25**	240	1542	1025	144
8	258	**26**	262	1575	1043	136

Table 13. 5 Diagnostic Leach Test AL7 - 80°C and 100g Free Sulfuric Acid

Time	Solution Concentration (mg/L)					
(h)	**Al**	**Li**	**Fe**	**Ca**	**Mg**	**Si**
0.5	128	**24**	181	1548	1020	198
1	147	**24**	201	1537	1021	180
2	179	**25**	228	1549	1024	164
4	212	**25**	240	1542	1025	144
8	258	**26**	262	1575	1043	136

Table 13. 6 Diagnostic Leach Test AL2 - 60°C and 50g Free Sulfuric Acid

Time	Solution Concentration (mg/L)					
(h)	**Al**	**Li**	**Fe**	**Ca**	**Mg**	**Si**
0.5	110	**23**	158	1446	955	276
1	135	**23**	184	1456	939	252
2	164	**24**	211	1493	959	231
4	193	**23**	232	1494	953	213
8	226	**24**	252	1521	977	198

Table 13. 7 Diagnostic Leach Test AL4 - 60°C and 75g Free Sulfuric Acid

Time	Solution Concentration (mg/L)					
(h)	Al	Li	Fe	Ca	Mg	Si
0.5	135	24	185	1495	981	244
1	164	24	206	1518	984	223
2	191	24	224	1526	992	205
4	217	24	243	1514	997	187
8	249	25	261	1508	1018	172

Table 13. 8 Diagnostic Leach Test AL7 - 60°C and 100g Free Sulfuric Acid

Time	Solution Concentration (mg/L)					
(h)	Al	Li	Fe	Ca	Mg	Si
0.5	148	25	197	1562	1022	218
1	179	25	220	1587	1030	198
2	199	25	235	1535	1021	180
4	234	26	257	1569	1049	164
8	280	25	270	1578	1049	150

Slurry density

Initial starting-densities of 30 wt.% provided 95% recovery which resulted in a final density of 26%. The mass loss during acid leach is due to CO_2 release and elements in the feed material being dissolved. Pocock testwork on partially neutralized slurries indicated that when the density exceeds 50% the slurry becomes difficult to handle. To maximize the lithium concentration in the leach slurry, the starting density was increased to 40% (w/w) which resulted in lower lithium extraction. In Table 13. 9 and Table 13. 10 results from AL-9 (30wt.% starting density), AL-15 (40wt.% starting density) and the counter-current AL-17 (40 wt.% starting density) is presented:

Table 13. 9 Results from Test 9, 15 and 17

Test ID	AL-9	AL-15	AL-17
Diagnostic Leach	*Slurry Leach*	*Slurry Leach*	*C-Cur (AL-15 PLS)*
Leach Temp (ºC)	80	80	80
Leach Duration (h)	8	8	1
Leach H_2SO_4 (g/L)	100	100	Not controlled
Initial Solids (wt%)	30	41	41
Final Solids (wt%)	26	39	90
Acid Addn. (kg/t)	643	602	106
Acid Cons. (kg/t)	469	482	0.21
Final pH	0.39	0.15	4.62
Mass Loss (%)	16	9	*

* Very thick slurry, little liquor recovered

Table 13. 10 Elemental Analysis from Test 9, 15 and 17

Test ID		AL-9		AL-15		AL-17	
Element	**Feed**	**PF**	**Residue**	**PF**	**Residue**	**PF**	**Residue**
	(wt.%)	(mg/L)	(wt.%)	(mg/L)	(wt.%)	(mg/L)	(wt.%)
Al	4.56	4595	3.84	6825	3.95	1966	5.125
B	0.03	23	0.03	31	0.04	34	0.036
Ba	0.06	1	0.06	<1	0.07	<1	0.078
Ca	8.03	473	8.39	530	8.22	667	7.542
Fe	1.74	5277	0.76	8236	0.82	4509	2.284
K	3.71	2527	3.40	3458	3.41	3097	3.725
Li	**0.12**	**553**	**<0.02**	**850**	**<0.02**	**705**	**0.147**
Mg	4.79	23933	0.08	37086	0.39	53384	3.566
Mn	0.06	247	0.01	372	0.01	759	0.030
Na	0.59	836	0.45	1205	0.43	2283	0.481
P	0.02	70	0.01	157	0.01	9	0.039
S	0.42	76229	6.93	101895	9.88	80483	5.099
Si	20.48	55	21.7	46	21.3	43	19.977
Sr	0.23	24	0.20	11	0.24	64	0.227
Ti	0.19	290	0.13	434	0.13	12	0.227
Zr	0.01	18	0.02	26	0.01	1	0.014
F	0.79	1950		5880	0.39	2810	0.860
***Li Extraction (%)**		**95**		**89**		**17**	

A counter-current acid leach test was also conducted at starting density of 40 wt.% and this resulted in a very viscous slurry that was very difficult to filter. From a review of the filtrate and the residue analyses, the Al, Fe, Li, Mg, Mn, S and F may have precipitated out in the residue. The optimum feed density required for counter-current leaching will be determined during further testwork with upgraded RoM ore

Acid addition and consumption

Acid addition of more than 500 kg (98% (w/w) sulfuric acid /t RoM is required to maintain sufficient free acidity in the leach slurry to maximize the extraction of lithium. Acid slurries with 100 g/L free acid, pH 0.1 to 0.2, provide the highest recoveries as illustrated in Table 13. 10.

With feed material upgrading, the acid consumption is reduced to 400 kg Acid (98%) /t RoM. Using a counter-current acid leach the acid consumption is further reduced to 300 kg Acid (98%) / t RoM.

Another way to express the acid consumption is on the basis of tonnes of H_2SO_4 (98%(w/w)) per tonne of LC produced. For normal (not upgraded) RoM this is 111t acid / t LC. With upgraded RoM it is 85 t acid/ t LC. With upgraded RoM and a counter-current leach configuration the number becomes 55 t acid/ t LC. This value will be confirmed during further tests using upgraded material in counter-current leach circuit. This number is based on assumptions and theoretical calculations on upgraded RoM concentrate composition and applied to the counter-current acid leach.

Counter – Current Leach

Acid Leach filtrate containing 100 g/L free acid was used as starting liquor. The RoM partially neutralised the acid solution resulting in a pH of 4.62. During this neutralisation reaction, Ca (25%), Mg (45%), Mn (100%), Na (90%), Sr (100%) were dissolved into the PLS with the main reactants being mostly Dolomite ($CaMg(CO_3)_2$), and Calcite ($CaCO_3$). Table 13. 9 and Table 13. 10 show the results of acid leach test AL-15 with the generated acidic (100 g/L free sulfuric acid) filtrate mixed with the RoM sample to simulate the (first thickener overflow) partially neutralized PLS solution*:*

The high initial density was already discussed and requires additional testwork but with a pH change from 0.15 to 4.62.

When the sulfuric acid leach solution is neutralised a smaller buffer effect is observed between pH 1 to 3 and larger buffer effect between pH 3 to 5. The smaller buffer effect can be contributed to ferric (Iron III) sulfate precipitating as iron hydroxide, hydrated titanium dioxide precipitating as titanium oxide and ferrous (Iron II) sulfate reacting with phosphoric acid and precipitating as vivianite.

The large buffer effect is caused by aluminium sulfate (Al_2SO_4) precipitating as gelatinous aluminium hydroxide ($Al(OH)_3$).

Comparing filtrates and residues from AL-15 and AL-17, it is evident that Al, Fe, P, Ti, and F precipitated, shown by the reduced concentrations in the filtrate and increased mass contribution in the residue. The increased lithium and sulfates contained in the residue are a result of partially neutralised leach solution that could not be filtered and the residue not being thoroughly washed. It is concluded that lower starting densities for counter-current leach are required and this will be assessed during further testwork on upgraded RoM. The addition of the acidic (100 g/L free sulfuric acid) leach solution will be tested and a staged approach may need to be followed e.g., feed (concentrate) to leach thickener to be slurried over a series of overflow attritioner tanks; acidic leach solution from leach thickener (II) overflow is added to the first attrition tank; controlled addition of the wet concentrate cake (upgraded RoM) to each of the overflow attrition tanks.

This approach will create a slow increase in density, allowing the slurry to be vigorously agitated to facilitate CO_2 dispersal and capture, before partially neutralised slurry is pumped to the leach thickener.

Completed Neutralisation Testwork

The testwork objective was to neutralize acid leached solution (containing 100g/L free sulfuric acid) at 80°C, with 20 wt.% limestone slurry to a final pH between 6.5 to 7 and allowing 60 minutes residence time after limestone slurry addition. The initial neutralization test (AL20) resulted in a high lithium deportment to the residue of >70% and was a result of insufficient dewatering as was confirmed by the first wash solution lithium concentration. The residue after the 2nd wash was also insufficiently dewatered. This initial test was discarded and the neutralization strategy was adjusted to a staged approach for the next set of tests. For the subsequent tests (AL21, AL22, AL23a and AL23b) the neutralization was also conducted with 20 wt.% limestone slurry but targeting an initial pH of 1 to neutralize most of the free acid and filtering of the resulting slurry, containing mostly gypsum. In the second neutralizing step the filtrate pH was adjusted to 6.5 with 20 wt.% limestone slurry. The results of these tests are shown in Table 13. 11 and Table 13. 12.

Table 13. 11 Neutralization Testwork Conditions

Test ID	AL-21	AL-22	AL-23A	AL-23B
AL PLS Neutralisation	Stage 1 -pH 0.32 to 1	Stage2a pH 1 to 6	Stage 2(b) pH 1 to 4	Stage3 pH 4 to 6
Temperature (°C)	80	80	80	80
Time (h)	1	1	1	1
Feed Solution	AL-15 PLS	AL-21 PLS	AL-21 PLS	AL-23A PLS
Initial Feed pH	0.32 @ 80C	1.04 @ 80C	1.10 @ 80C	3.06 @ 80C
Final Slurry pH	1.10 @ 80C	6.18 @ 80C	4.66 @ 80C	6.38 @ 80C
Final PLS pH	1.04 @ 80C	6.50	Not measured	Not measured
CaCO3 Addition(g/L)	76	515	113	294
Final Slurry (g/L)	87	220	153	146

Table 13. 12 Analysis from Neutralization Test Work

Test ID		AL-21			AL-22			AL-23A			AL-23B		
Element	**Feed** (mg/L)	**PF*** (mg/L)	**Res.**** (wt.%)	**Precip.***** (%)	**PF** (mg/L)	**Res.** (wt.%)	**Precip.** (%)	**PF** (mg/L)	**Res.** (wt.%)	**Precip.** (%)	**PF** (mg/L)	**Res.** (wt.%)	**Precip.** (%)
Al	6,221	5,231	0.07	1	2	0.966	98	278	3.173	98	<1	0.206	100
B	31	26	<0.001	0	8	<0.02	3	20	<0.02	2	9	<0.02	5
Ba	<1	<1	<0.002	0	<1	<0.001	0	<1	<0.001		<1	<0.001	0
Ca	446	795	28.23	96	599	34.527	99	747	24.422	97	656	38.369	99
Fe	7,765	6,517	0.04	0	0	1.157	100	1,293	3.119	75	282	0.318	66
K	3,325	2,754	0.03	1	926	0.010	2	2,059	0.024	1	970	0.010	8
Li	**814**	**674**	**<0.002**	**- 0**	**124**	**0.063**	**42**	**400**	**0.133**	**22**	**180**	**<0.02**	**10**
Mg	35,733	30,278	0.24	1	10,090	0.876	15	22,440	0.619	6	11,132	0.949	13
Mn	374	343	<0.001	0	105	0.031	38	284	0.004	4	129	0.034	32
Na	1,091	939	0.08	7	303	<0.05	5	704	0.051	4	335	<0.05	6
P	139	128	0.00	1	<10	0.028	0	<10	0.086	0	<5	0.008	0
S	99,382	67,952	19.61	17	14,798	4.122	35	33,300	14.174	35	16,570	0.172	1
Si	36	38		0	<5		100	13	0.220	65	5		21
Sr	18	6		62	2		17	3		35	2		0
Ti	414	356	0.00	0	<1	0.056	100	<1	0.220	100	<1	<0.001	100
Zr	27	23	0.02	0	<1	0.012	100	<1	0.030	100	<1	0.002	100
F	3,260	2,910	0.01	0	318	0.050	66	744	0.220	66	300	<0.0199	18

* PF – Primary Filtrate Assay
** Res – % of Feed Element in Residue Solids
***Precip – % of Feed Element Precipitated in the Solids

For stage 1 test (AL-21), gypsum (mostly) precipitated along with 60% of the Strontium. No Li losses were evident. Stage 2 test (AL-22), a significant lithium deportment to solids of 42% was recorded, from pH 1 to 6 nearly all the Al, C, P, Si, and Zr is precipitated together with 66% F and 40% Mn.

The test was repeated but with a few more stages added. pH adjustment from 1 to 4 (AL-23A) and then adjustment from pH 4 to 6 (AL-23B). As discussed previously it was expected that Al, P and Fe would precipitate in the pH range 2 to 4 where a buffer effect is experienced as sulfuric acid is released from sulfate converted into hydroxides. The results of these tests are shown in Table 13. 11 and Table 13. 12,

The metals concentration in the solution is reduced as the pH of the leached solution increased. The initial observed drop in concentration (see Figure 13-2) between pH 0.32 to pH 1 is due to dilution of the PLS by the water in the limestone slurry. Most metal precipitation occurs in pH range of 1 to 4. It is important to note that the neutralization test work was not conducted on hot newly generated PLS but on a PLS sample that had been stored for a period at room temperature. Subsequent sighter testwork conducted by McClelland on sample 4742 resulted in lower lithium deportment to solids (4.7% Li) during tests on hot fresh PLS.

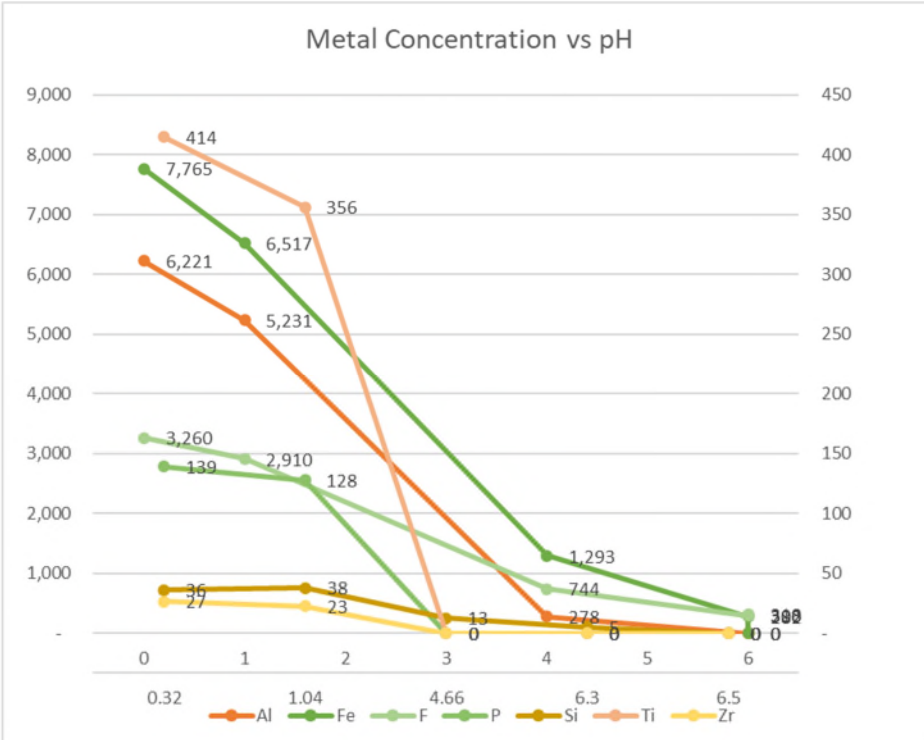

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Figure 13-2 PLS Metal Concentration with pH Adjustments

13.6.2 McClelland Testwork

Lithium Carbonate Precipitation

McClelland, July 2020, conducted metallurgical testing on a lithium bearing bulk PLS sample generated from sulfuric acid cure leaching of composite sample 4560. Testwork consisted of bench scale batch testing for neutralisation, evaporation, impurity removal and LC precipitation. Testing demonstrated that it was possible to recover lithium from the sulfuric acid leach PLS. The lithium product was determined to be LC with no substantial impurities. Results indicated that the LC precipitate had Al, Ca, Fe, K, Mg, and Na concentrations of 0.1% or less with a reported 98.1% Li_2CO_3 content.

McClelland, October 2022, conducted a test work program on lithium bearing bulk PLS sample generated from sulfuric acid leach of composite sample 4742. Testwork consisted of bench scale batch testing for bulk acid leach, neutralization, evaporation of PLS, impurity removal and precipitation of a LC product. Two LC precipitated products were generated, one product leached in a stainless-steel flask and one product leached in a clean glassware flask. Possible leaching of Iron (Fe) and Chromium (Cr) from the stainless-steel flask was observed. Table 13. 1 shows product purities of 99.37% and 99.68% Li_2CO_3 were obtained as reported by McClelland.

Figure 13-3 Photo of McClelland LC Precipitate

Table 13-7 McClelland Product Purity Analysis

Date	Jul-20	Dec-22	Dec-22
Li extraction	**Acid cure**	**Acid Leach (Stainless)**	**Acid Leach (Glass)**
Sample	**4560**	**4742**	**4742**
% Li_2CO_3*	98.14%	99.37%	99.68%
	ppm	ppm	ppm
Ag	< 1	< 1	< 1
Al	4	70	21
As	< 30	< 30	< 30
Ba	6	6	15
Be	< 0.02	< 0.02	< 0.02
Bi	< 10	< 10	< 10
Ca	342	340	112
Cd	< 0.9	< 0.9	< 0.9
Co	< 3	< 3	< 3
Cr	< 1	< 1	< 1
Cu	< 1	< 1	< 1
Fe	4	195	12
K	552	444	407
Li	**189,000**	**179,000**	**184,000**
Mg	26	74	98
Mn	2	4	4
Mo	< 6	< 6	< 6
Na	1,340	523	502
Ni	< 6	< 6	< 6
P	< 50	< 50	< 50
Pb	< 20	< 20	< 20
Sb	< 10	< 10	< 10
Se	< 30	< 30	< 30
Sn	< 20	< 20	< 20
Sr	28	10	21
Ti	< 0.4	< 0.4	< 0.4

Date	Jul-20	Dec-22	Dec-22
Tl	< 30	< 30	< 30
U	< 10	< 10	< 10
V	< 2	< 2	< 2
Y	< 0.2	< 0.2	< 0.2
Zn	< 7	< 7	< 7
Si	119	268	224
S	4,900	1,200	400
SO_4	14,679	3,595	1,198
Cl		10	10
F	1,300	470	330

Figure 13-4 McClelland Product Purity Analysis

* Calculated % Lithium based on impurities (SGS Lakefield)

13.6.3 Future Neutralization Testwork

Future test work on upgraded RoM will address the excessive lithium deportment to the solids stream during neutralization. The full suite of parameters will be evaluated such as temperatures, mixing methodology of the neutralization agent with the slurry, agitation speed, PSD of limestone used for neutralization, rate of addition, rheology of the neutralization slurry, alternative neutralization reagents (quicklime, hydrated lime, sodium hydroxide).

It is noted that by using the counter-current acid leach configuration the majority of the neutralization from pH 0.15 to pH 4.5 will occur in the attrition tanks with the remaining pH adjustment in neutralization and this is expected to yield further improvements in performance as wet concentrate filter cake will have reduced concentrations of Al, C, Ca, Fe and P in the counter current leach which are the components that precipitate out of the acidic PLS when neutralized.

14 MINERAL RESOURCE ESTIMATES

14.1 Approach

In accordance with the requirements of NI 43-101 and the Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards, the Qualified Persons employed at Stantec validated the drill hole and sample data set and created a geologic model for the purposes of generating lithium resource estimates from the lithium clay deposit within the TLC Property.

The geologic model described below was used as the basis for estimating mineral resources on the TLC Property.

14.2 Basis for Resource Estimation

NI 43-101 specifies that the definitions of the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Guidelines be used for the identification of resources. The CIM Resource and Reserve Definition Committee have produced the following statements which are restated here in the format originally provided in the CIM Reserve Resource Definition document:

"Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource."

The Definition of Resources is as follows:

"A Mineral Resource is a concentration or occurrence of material of economic interest in or on the Earth's crust in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling."

"Material of economic interest refers to diamonds, natural inorganic material, or natural fossilized organic material including base and precious metals, coal, and industrial minerals." Lithium falls under the industrial minerals' category.

The committee went on to state that:

"The term Mineral Resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of technical, economic, legal, environmental, socioeconomic and governmental factors. The phrase 'reasonable prospects for eventual economic extraction' implies a judgment by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. Interpretation of the word 'eventual' in this context may vary depending on the commodity or mineral involved. For example, for some coal, iron, potash deposits and other bulk minerals or commodities, it may be reasonable to envisage 'eventual economic extraction' as covering time periods in excess of 50 years. However, for many gold deposits, application of the concept would normally be restricted to perhaps 10 to 15 years, and frequently to much shorter periods of time."

Extraction of lithium from lithium clay deposits is most similar to bulk mineral commodities such as coal and potash and as such eventual economic extraction can cover time periods in excess of 50 years depending on the size and concentration of lithium in the clay.

14.3 Data Sources

Information used to compile the geologic models used for resource estimation included the following data provided by American Lithium:

- exploration drill hole logs;
- drill hole sample data;
- surface geologic maps;
- geologic cross sections;
- 2018 Technical Report (Chapman, 2018);
- 2020 Technical Report (Loveday, 2021); and
- 2021 Technical Report (Turner, 2021).

The drill hole sample data included chip and core samples. Details on drilling and sampling methods are detailed in Section 10 and 11 of this report. Although surface grab samples have been taken in the past, as described by (Chapman, 2018), these sample results were not used in this geologic model for resource estimation due to the inconsistencies in lithium concentrations due to surface weathering. The locations of the drill holes used in the geologic model are shown on Figure 14-1.

Surface geologic maps provided by American Lithium included surface mapping undertaken by American Lithium geologists in combination with mapping recorded with the U.S. Geological Survey that is freely available through open sources and mapping described by Turner (2021). Additional information acquired by Stantec and used in the development of this geologic model included surface topography data also available through open sources. The surface topography data was received as raster digital data with 1 arc-second resolution. The data was deemed accurate for the purposes of estimating resources on the Property considering the generally flat topography as can be observed on Figure 14-1.

14.4 Model

The geologic model used for reporting of lithium resources was developed using Hexagon Mining's geological modelling and mine planning software, MinePlan version 16.0.4. MinePlan is widely used throughout the mining industry for digital resource model development. Hexagon Mining's suite of interpretive and modelling tools is well-suited to meet the resource estimation requirements for the TLC Property.

The geologic model from which lithium resources are reported is a 3D block model. The model limits and block size are outlined in Table 14.1 and the plan view extent of the geologic model is shown on Figure 14-1. The model was developed using the Nevada State Plane Central Zone NAD83 coordinate system and U.S. customary units.

Table 14.1 Block Model Parameters

Coordinate	Minimum	Maximum	Range (ft)	Block (ft)
Easting	1,449,600	1,472,300	22,700	50
Northing	20,913,800	20,948,300	34,500	50
Elevation	3,750	6,350	2,600	20

14.4.1 Model Inputs

Inputs used in the construction of the geologic model and resource estimation include the following:

- Surface topography;
- Surface geologic maps and cross sections;
- Drill hole locations for 59 RC holes, 15 core holes and 8 sonic holes;
- Drill hole chip and core log descriptions;
- 5,939 chip samples from 57 RC holes;
- 1,076 core samples from 15 core holes;
- 187 core samples from 3 sonic holes and;
- 27 rock density test results (g/cm3).

14.4.2 Surface Topography and Weathering

Public domain surface topography data was used to generate a 2D grid of surface topography using a triangulation algorithm. The 2D grid origin and resolution was the same as that used in the 3D block model as shown in Table 14.1. All model grid files used the same origin and resolution. Depth of surface weathering was recorded from the log descriptions and estimated into a 2D-grid using an inverse distance square (IDW2) algorithm. A base of surface weathering elevation grid was generated by subtracting depth of the surface weathering estimates from the surface topography elevation. Lithium samples taken within this weathering zone, recorded as alluvium in drill holes, were not considered for resource estimation due to inconsistencies in lithium concentrations due to surface weathering. Surface mapping of outcrop was not used to further constrain the depth of surface weathering as these contacts were determined to be soft boundaries from field observations.

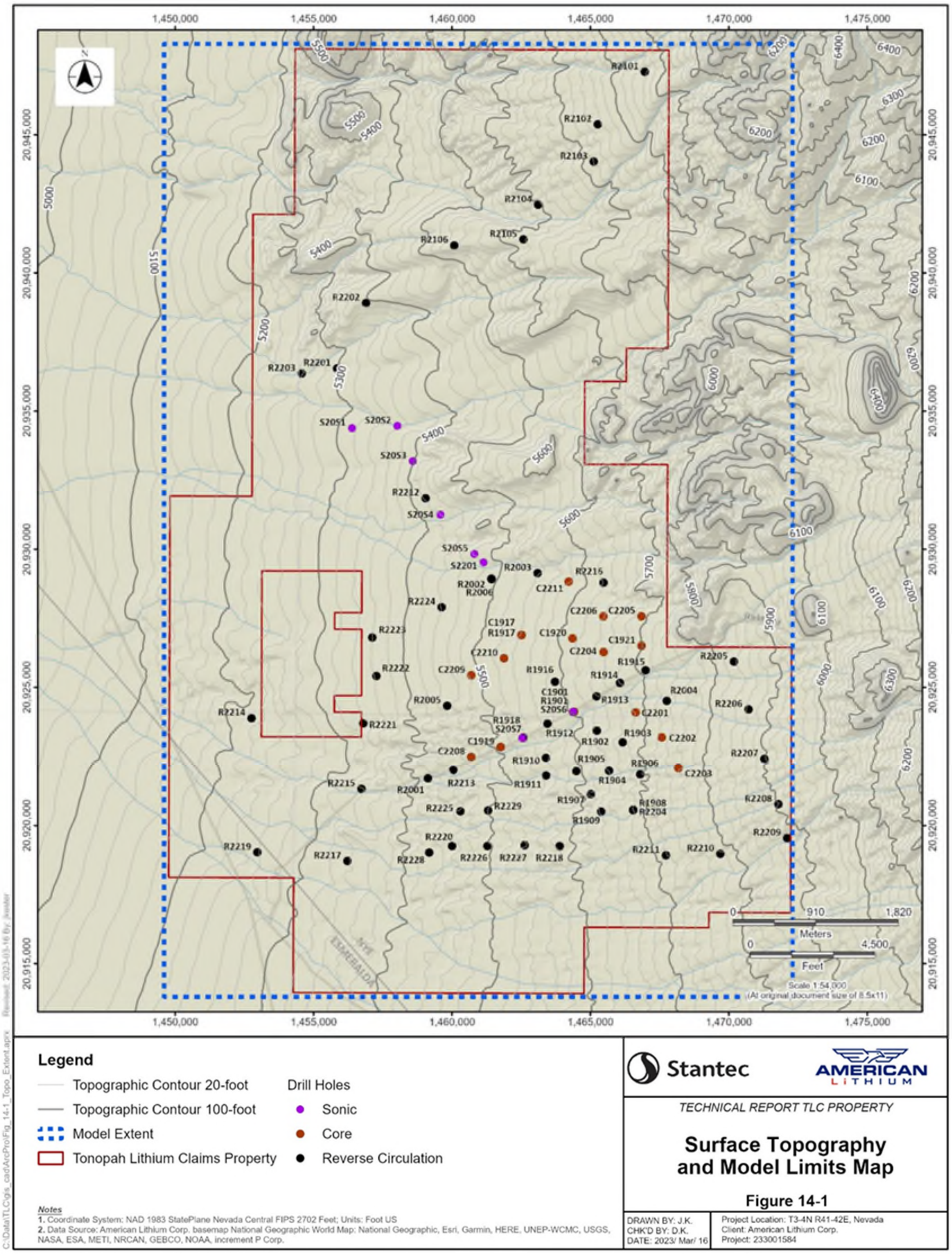

Figure 14-1 Surface Topography and Model Limit Map

14.4.3 Structural features

The Property is separated into ten (10) fault blocks that are split by north-south trending high-angle normal faults and to a lesser extent west-east trending normal faults that likely have some strike-slip movement. The location of the faults and fault blocks are illustrated in Figure 7-2 and structural cross sections A-A’ and B-B’ shown in Figure 7-3. Mineralized claystone has been observed within all of the fault blocks with the exception of fault block 3, an uplifted block exposing unmineralized basal crystal tuff near the surface as observed from drill hole R2218. The mineralized claystone continues eastward and is partially cut off by the presence of a rhyolite intrusion that borders the east-central edge of the Property. Various volcanics and breccias border the Property at the southeast and the far northeast and northwest edges. The surface footprint of the rhyolite intrusion is shown on Figure 7-2 and Figure 7-3. Description of the local geology and further discussion on the impacts of the faulting on the lateral extent of the lithium-bearing claystone is detailed in Section 7.

14.4.4 Model Zones

The geologic model is separated into four stratigraphic zones, as indicated below, from top to bottom:

1. Weathered alluvium;
2. Upper Li mineralized claystone;
3. Lower Li mineralized claystone (includes basal tuff marker beds); and
4. Basement (tuffaceous crystalline basement or limestone).

Additional igneous bodies in the north are not observed in drill hole records and their occurrence are based on public domain USGS geologic mapping. Wireframe solids generated from these four zones are presented on Figure 14-2 showing an oblique view of the geologic model looking towards the northwest. Table 14.2 provides composite vertical thickness statistics of the four stratigraphic horizons as penetrated from the drill hole records. Only the upper and lower Li mineralized claystone are considered resource.

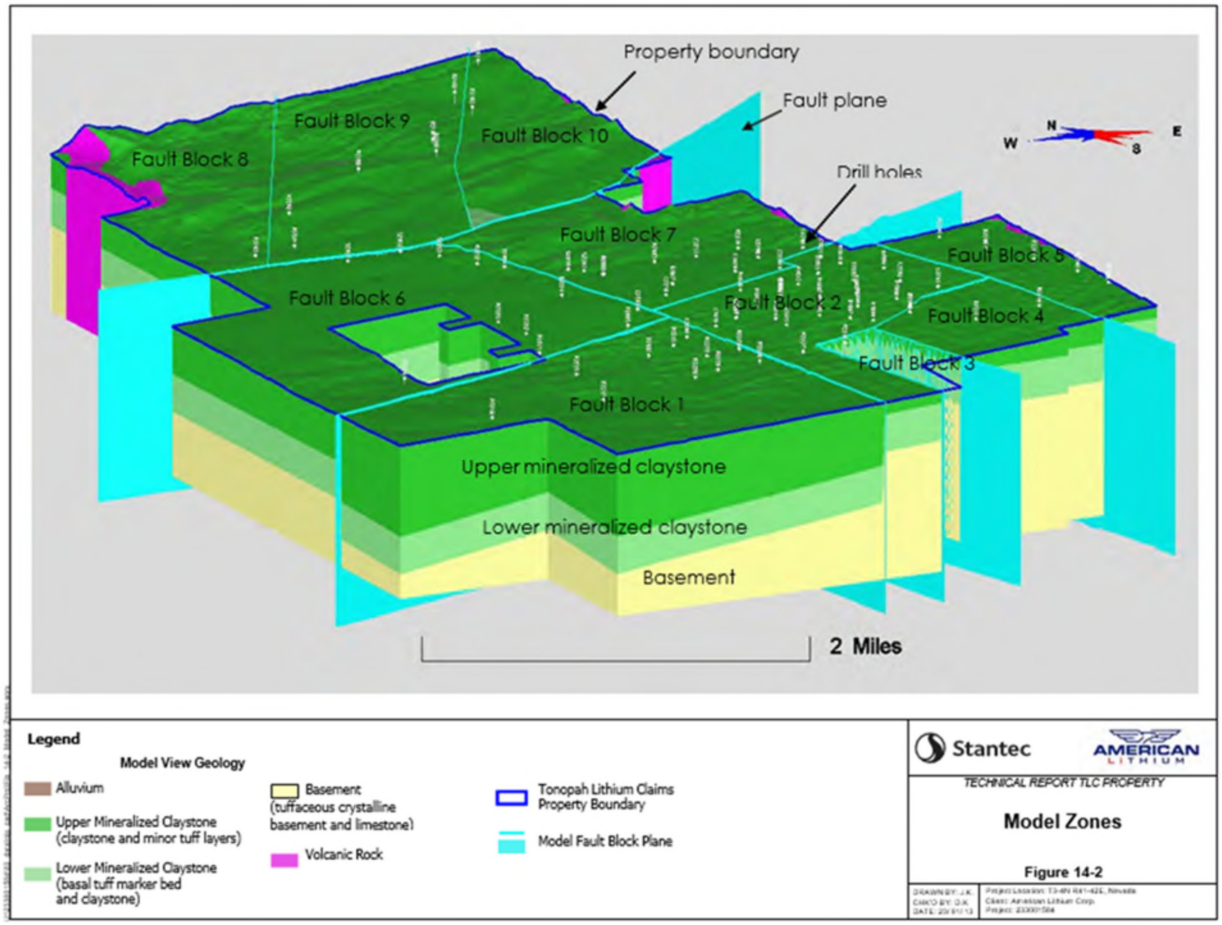

Figure 14-2 Model Zones

Table 14.2 Vertical Zone Thickness from Drill Holes

Zone	Vertical Length (ft) [2]			
	Count	Minimum	Maximum	Average
Weathered (Alluvium)	82	3	157	22
Upper Li Claystone	81	65	940	359
Lower Li Claystone	25	2	525	129
Crystalline basement	1	467	467	467

The unweathered Li claystone and crystalline basement are offset by normal faults that are shown on Figure 14-2. There is only a single penetration of the crystalline basement with most holes ending in the lower Li claystone zone. The upper and lower lithium claystone zones are separated by a narrow more tuffaceous sedimentary unit (basal tuff marker bed) of lower lithium concentration (< 400 ppm) that is transitory and not easily recognised in all drill holes. As such, this transitory zone was not modelled separately and forms part of the lower lithium claystone.

14.4.5 Lithium Mineralization Statistics

Prior to estimation drillhole samples were composited at regular intervals of 5 ft given that the majority (83%) of the drill hole samples assessed for lithium resource were derived from 5 ft interval RC chip samples. Statistics on the number of 5ft composites, together with lithium concentrations from drill hole records for each mineralized zone, are shown in Table 14.3. A frequency distribution chart (histogram) generated from the regular 5ft composites is shown in Figure 14-3 for both mineralized zones. No outliers in lithium grades were observed to be material and no capping of grades is deemed necessary for grade estimation.

Table 14.3 Composite Lithium Grades from Drill Holes

Zone	Composite Lithium (ppm)			
	Count	Minimum	Maximum	Average
Upper Li Claystone	5,311	26	2,950	497
Lower Li Claystone	1,580	13	2,048	318

A global semi-variogram was generated from 5 ft (1.5 m) composite samples through the two Li mineralized zones is shown on Figure 14-4. This semi-variogram represents the combined variances from multi-direction semi-variograms at 30-degree directional increments. Maximum global range for the lithium grades is interpreted from the semi-variograms to be 5,000 ft (1,524 m).

Observation of the lithium grade profiles from samples taken within the mineralized zone show separate concentrations of dissipated lithium ranging from around 500 ppm to more than 1,000 ppm. Correlation of lithium grade intervals to individual beds was not possible within the mineralized zones, as these grade intervals were observed to be more lens-like as opposed to continuous beds. Instead, broad intervals of high and low grade were modelled by limiting the number of composites per block estimate and using the upper-lower Li claystone contact as a relative elevation surface to account for fault offsets.

14.4.6 Density

In situ densities do not vary significantly from observations of samples taken from drill cores. The dominant lithology on the Property and within the mineralized zone is claystone. In situ densities for claystone averaged 1.67 g/cm^3. Lenses of conglomerate and sandstone that occur in the claystone averaged 1.88 g/ cm^3. A fixed density of 1.7 g/ cm^3 was identified as most representative of the mineralized zone given that the primary lithotype is claystone

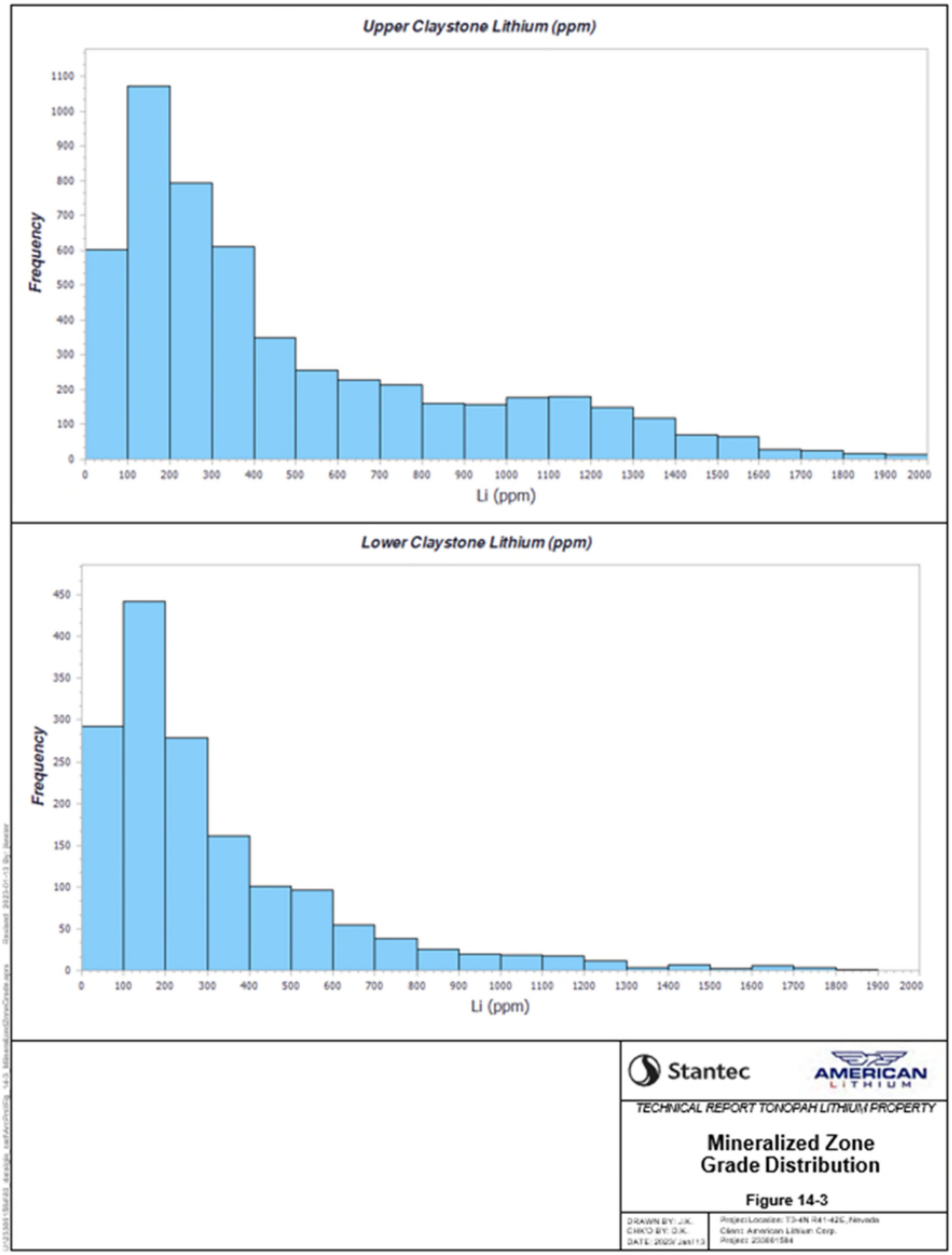

Figure 14-3 Mineralized Zone Grade Distribution

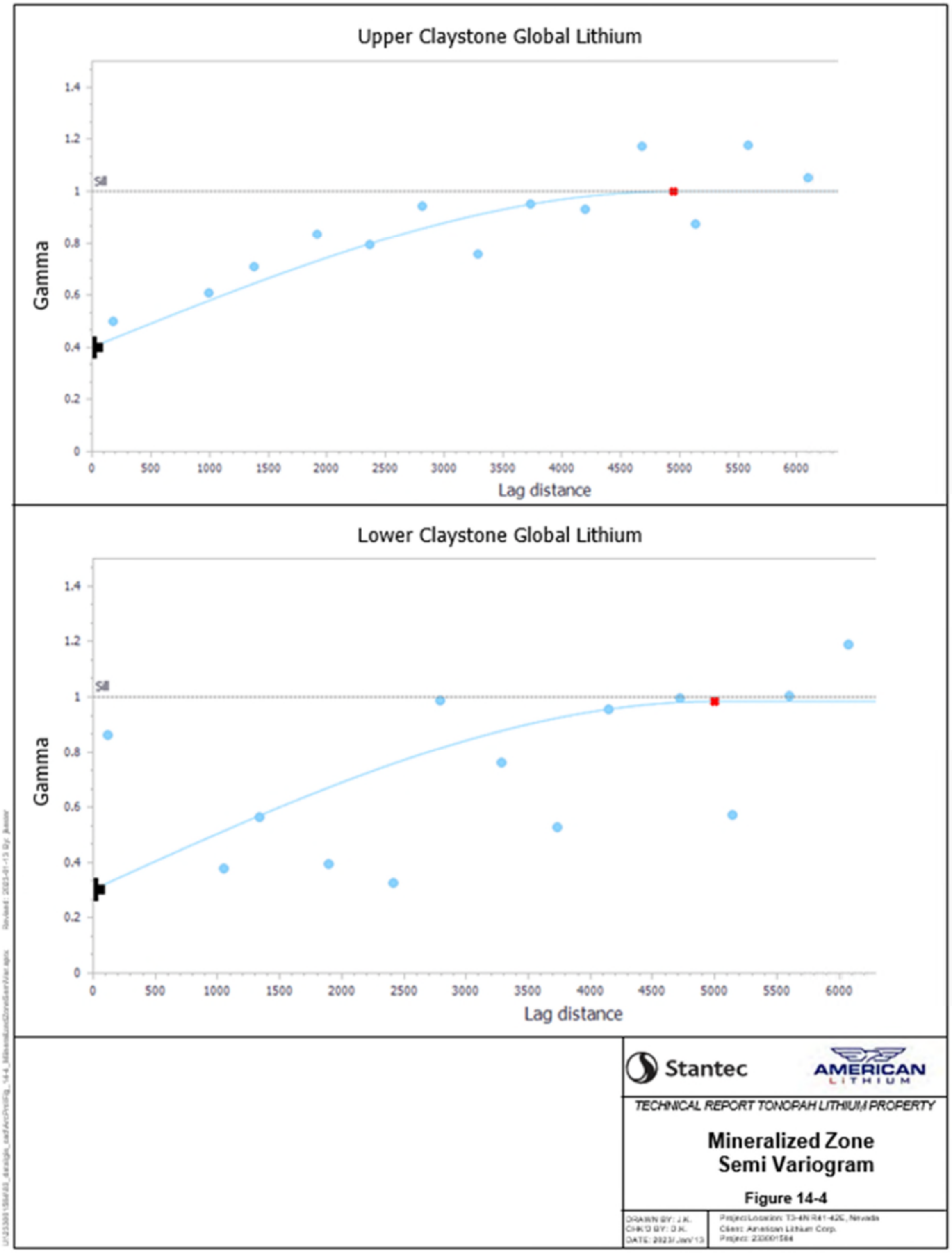

Figure 14-4 Mineralized Zone Semi-Variogram

14.4.7 Model Build

The procedures followed in building the resource model are outlined below:

- Topography was coded as a block percent using a wireframe generated from open-source surface topography.
- The two mineralized zone solids (upper and lower Li claystone) were coded into blocks as a percentage item and zone item.
- Regular 5 ft (1.5 m) composites from within the mineralized zone were estimated into mineralized zone blocks using an inverse distance squared (IDW2) algorithm and isotropic search.
- The maximum range for lithium grade estimates for resource determination was set at 5,000 ft (1,524 m) as determined from semi-variogram analyses of the lithium grade data.
- The upper-lower Li claystone contact was used as a relative elevation surface to trend lithium grade estimates across fault offsets.
- Maximum number of samples for block estimates was set to the nearest nine(9) samples with a maximum of six (6) samples per hole to simulate the tabular lens-like grade trends as observed from drill hole records.
- Mineralized zone blocks within 5,000 ft (1,524 m) of nearest valid samples were tagged as inferred, 2,500 ft (1,524 m) indicated, and 1,250 ft (1,524 m) measured.
- Model grade estimates were validated against input drill hole grades using cross-sections through the block model.

Model estimation parameters are summarized in Table 14.4.

Table 14.4 Lithium Grade Estimation Parameters

Maximum Search		No. Composites		
Direction	**Range (ft)** [1]	**Minimum**	**Maximum**	**Maximum per hole**
East	5,000	1	9	6
North	5,000	1	9	6
Vertical	2,000	1	9	6

[1] – 1 ft = 0.3 m

Figure 14-5 illustrates the lithium grade distribution along two cross-section lines (A-A' and B-B') through the mineralized zone in the resource block model.

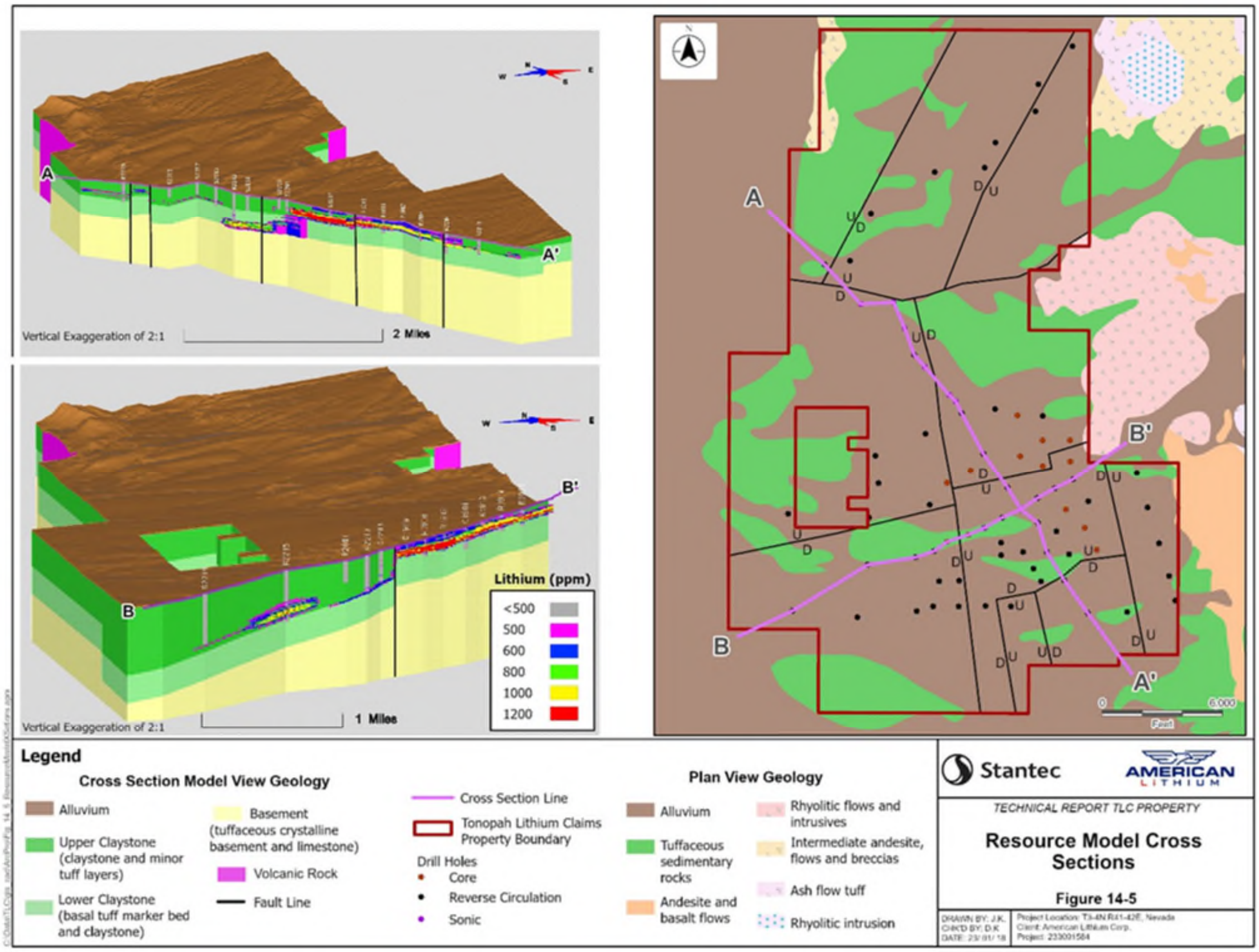

Figure 14-5 Resource Model Cross Section

14.5 Assessment of Reasonable Prospects for Economic Extraction

A base case lithium resource cutoff grade has been determined based on the economics of a medium size (100 Mt/y) run-of-mine (RoM) surface mining operation that does not require blasting. Processing of the mineralized material would be onsite extracting lithium from claystone using an acid digestion method.

The following mining, processing, royalty, and recovery costs, in $, were used to derive a base case cutoff grade for an eventual LC product:

- Mining costs $3/tonne;
- Processing costs $43/tonne;
- General and administration $1/tonne;
- Royalties $1/tonne; and

- Processing recovery 90%.

Revenue from a LC product is estimated to be $20,000/tonne for the cutoff grade calculation. Using the above inputs and Li_2CO_3:Li ratio of 5.32, a base case cutoff grade for lithium is estimated to be 500 ppm, rounded from 501 ppm.

The most variable costs impacting the cutoff grade is processing costs, which given the available information, is based on published estimates for similar deposit types (Eshani et al., 2018). Higher processing costs may be realized following metallurgical testing of the mineralized claystone that may increase the cutoff grade to as high as 1,000 ppm lithium. Similarly, lower prices for LC would also increase the cutoff grade, though this is viewed as lower risk in current market conditions.

An alternative product to LC that could be produced from the resource is lithium hydroxide monohydrate ($LiOH.H_20$) that sells at a slightly higher premium than LC and has the benefit of a higher $LiOH.H_2O$:Li ratio at 6.05 when compared with the Li_2CO_3:Li ratio of 5.32. As such, a cutoff grade of 500 ppm is considered reasonable as a base case resource estimate for either a LC or lithium hydroxide monohydrate product.

An economic pit shell at a constant 45 degrees slope was developed using 500 ppm lithium as a cutoff grade to separate resource blocks from waste blocks in the model. A $20,000/tonne revenue for an equivalent LC product and a mining cost of $3/tonne was used in the derivation of the pit shell. Figure 14-6 shows an oblique view of the pit shell looking towards the northwest.

The factors noted above, in combination with the results of this Preliminary Economic Assessment, lead the Author to conclude that the TLC Property is amenable to development that could be competitive in the LC market. As such, the Author believes that the deposit is a reasonable prospect for eventual economic extraction.

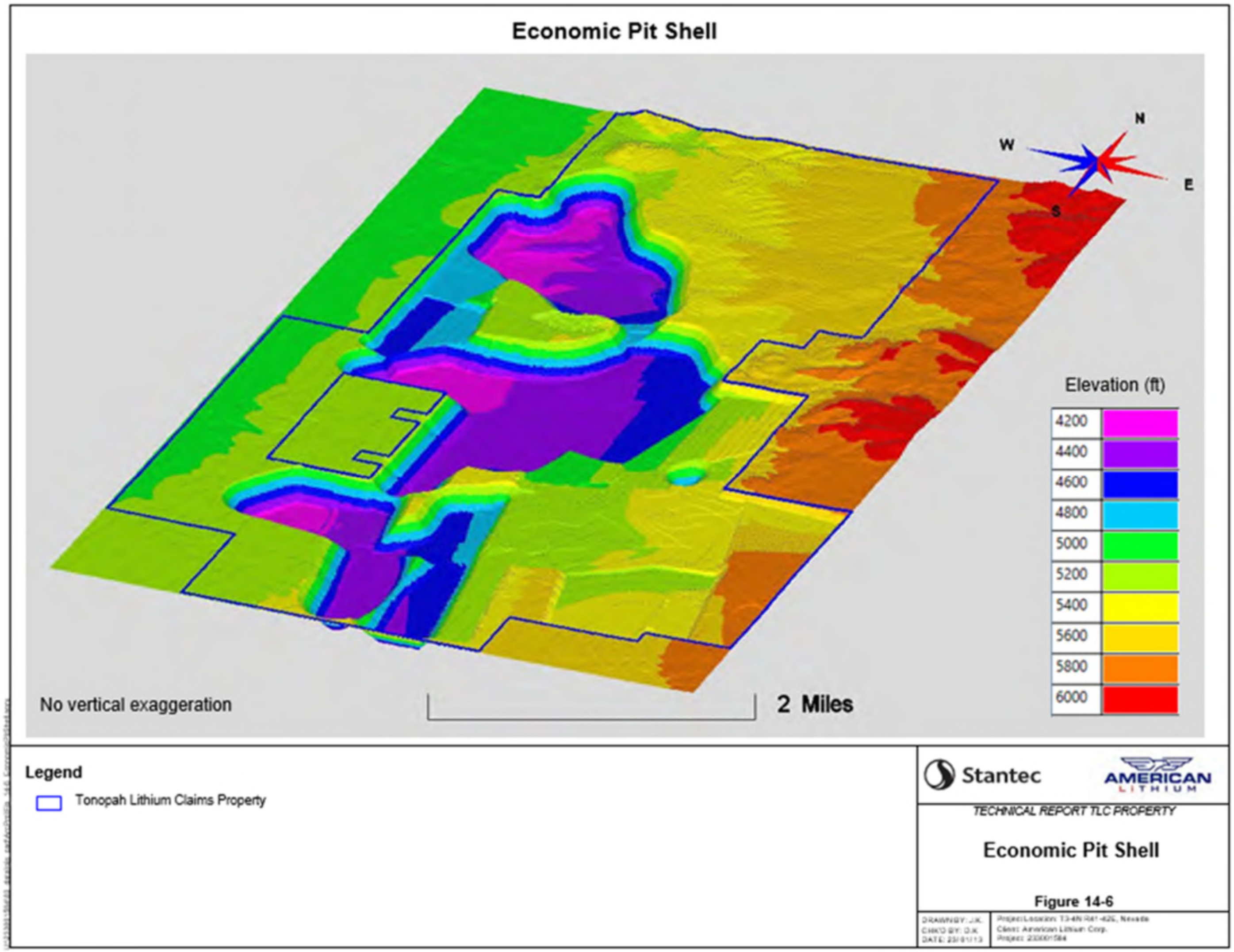

Figure 14-6 Economic Pit Shell

14.6 Lithium Resource Estimates

As noted above in Section 14.4, the upper and lower mineralized claystone units appear to be continuous over the majority of the TLC Property. The current sampling density is not sufficient to extend the resource classification area over the entire property. However the data that does exist, along with the geological interpretation, lead the Author to conclude that lithium mineralization is likely widespread throughout the mineralized claystone units, albeit at levels below the current base case cutoff grade of 500 ppm lithium.

Lithium resources are contained within the upper and lower claystone beds deposited on top of a crystalline basement. This mineralized zone is further constrained to within nine (9) faults blocks bounded by near vertical normal displacement faults and by intrusions in the northeast and northern extremities of the Property, as shown on Figure 14-7, Resource Classification Map. Mineral resources are classified by distance from nearest valid drill hole sample up to maximum distance of 5,000 ft (1,524 m) for Inferred, 2,500 ft (762 m) for Indicated and 1,250 ft (381 m) for Measured.

The lithium mineral resource estimates are presented in Table 14.5 in U.S. customary units and Table 14.6 in metric units. The resource estimates are contained within an economic pit shell at constant 45° pit slope to a maximum vertical depth of 970 ft (296 m) below surface. The crest of the pit shell is shown on Figure 14-6 and pit shell depth is shown on Figure 14-8. Lithium resources are presented for a range of cutoff grades to a maximum of 1,200 ppm lithium. The base case lithium resource estimates are highlighted in bold type in Table 14.5 and Table 14.6. All lithium resources on the TLC Property are surface mineable at a stripping ratio of 2.4 waste yd^3/ton (0.8 m^3/tonne) at the base case cutoff grade of 500 ppm lithium. The effective date of the lithium resource estimate is October 6, 2022.

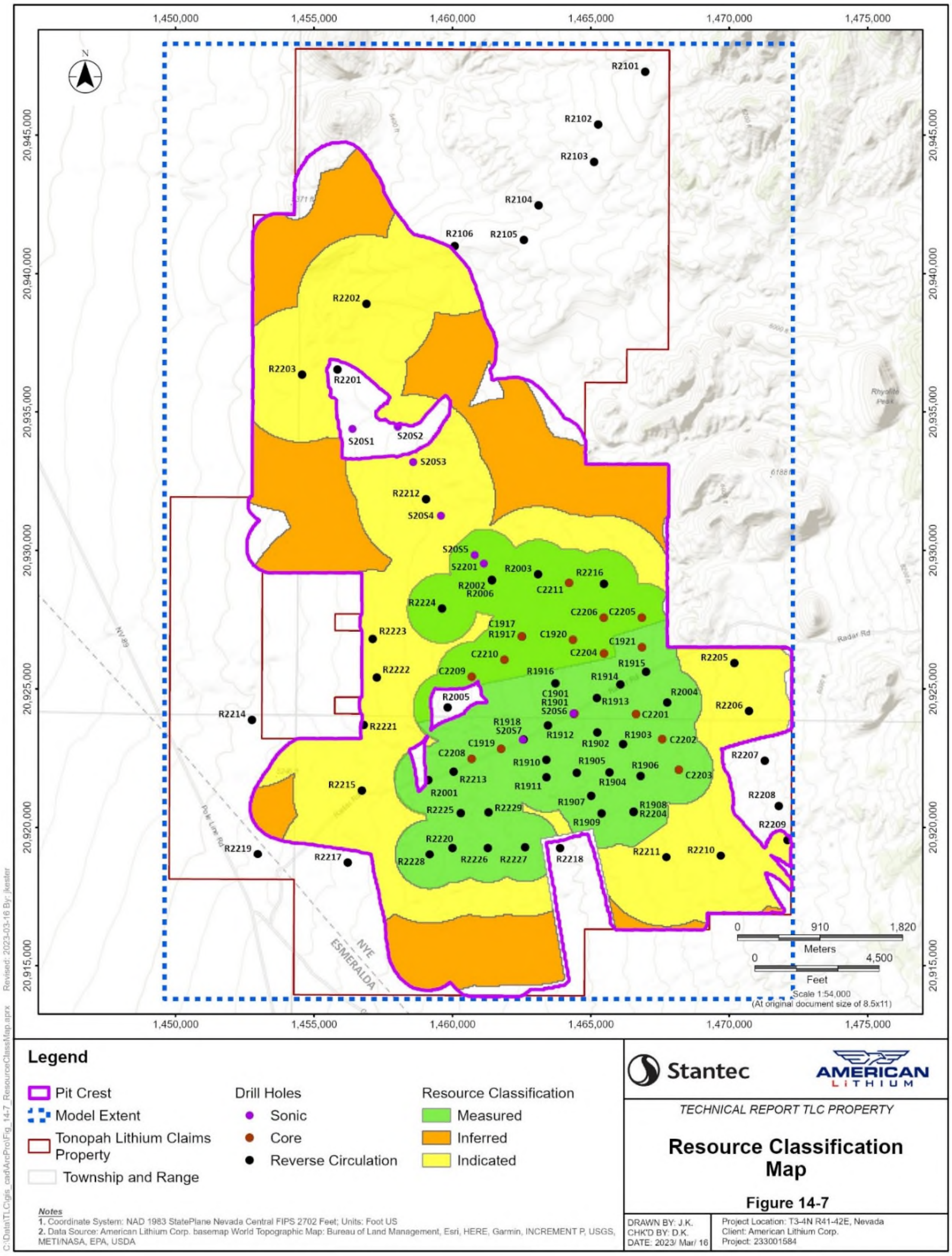

Figure 14-7 resource Classification Map

Table 14-1 Lithium resource estimates - U S Customary Units

Cutoff	Volume	Tons	Li	Million short tons (Mst)		
Li (ppm)	(Myd^3)	(Mst)	(ppm)	Li	Li_2CO_3	$LiOH.H_2O$
			Measured			
500	**662**	**948**	**924**	**0.88**	**4.68**	**5.32**
600	545	781	1006	0.79	4.2	4.78
800	371	532	1153	0.61	3.25	3.69
1000	265	380	1255	0.48	2.55	2.9
1200	136	195	1401	0.27	1.44	1.63
			Indicated			
500	**917**	**1314**	**727**	**0.96**	**5.11**	**5.81**
600	573	821	835	0.69	3.67	4.17
800	285	408	987	0.4	2.13	2.42
1000	105	150	1148	0.17	0.9	1.03
1200	29	42	1328	0.06	0.32	0.36
			Measured plus Indicated			
500	**1579**	**2262**	**813**	**1.84**	**9.79**	**11.13**
600	1118	1602	924	1.48	7.87	8.95
800	656	940	1074	1.01	5.38	6.11
1000	370	530	1226	0.65	3.45	3.93
1200	165	237	1392	0.33	1.76	1.99
			Inferred			
500	**374**	**536**	**713**	**0.38**	**2.02**	**2.3**
600	227	325	827	0.27	1.44	1.63
800	101	145	995	0.14	0.74	0.85
1000	40	57	1151	0.07	0.37	0.42
1200	10	14	1315	0.02	0.11	0.12

- CIM definitions are followed for classification of Mineral Resource.
- Mineral Resource surface pit extent has been estimated using a LC price of US20,000 $/tonne and mining cost of $3.00 per tonne, a lithium recovery of 90%, fixed density of 1.70 g/cm^3 (1.43 tons/yd^3)
- Conversions: 1 metric tonne = 1.102 short tons, metric m^3 = 1.308 yd^3, Li_2CO_3:Li ratio = 5.32, $LiOH.H_2O$:Li ratio =6.05
- Totals may not represent the sum of the parts due to rounding.
- The Mineral Resource estimate has been prepared by Joan Kester, PG and Derek Loveday, P. Geo. of Stantec Consulting Services Inc. in conformity with CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines and are reported in accordance with the Canadian Securities Administrators NI 43-101. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that any mineral resource will be converted into mineral reserve.

Table 14-2 Lithium Resource Estimates - Metric Units

Cutoff	Volume	Tonnes	Li	Million Tonnes (Mt)		
Li (ppm)	(Mm^3)	(Mt)	(ppm)	Li	Li_2CO_3	$LiOH.H_2O$
Measured						
500	**506**	**860**	**924**	**0.79**	**4.2**	**4.78**
600	416	707	1006	0.71	3.78	4.3
800	283	481	1153	0.55	2.93	3.33
1000	203	345	1255	0.43	2.29	2.6
1200	104	177	1401	0.25	1.33	1.51
Indicated						
500	**701**	**1192**	**727**	**0.87**	**4.63**	**5.26**
600	438	745	835	0.62	3.3	3.75
800	218	371	987	0.37	1.97	2.24
1000	80	136	1148	0.16	0.85	0.97
1200	22	37	1328	0.05	0.27	0.3
Measured plus Indicated						
500	**1207**	**2052**	**809**	**1.66**	**8.83**	**10.04**
600	854	1452	916	1.33	7.08	8.05
800	501	852	1080	0.92	4.9	5.57
1000	283	481	1227	0.59	3.14	3.57
1200	126	214	1402	0.3	1.6	1.81
Inferred						
500	**286**	**486**	**713**	**0.35**	**1.86**	**2.12**
600	173	294	827	0.24	1.28	1.45
800	77	131	995	0.13	0.69	0.79
1000	31	53	1151	0.06	0.32	0.36
1200	8	14	1315	0.02	0.11	0.12

- CIM definitions are followed for classification of Mineral Resource.
- Mineral Resource surface pit extent has been estimated using a LC price of US20,000 $/tonne and mining cost of $3.00 per tonne, a lithium recovery of 90%, fixed density of 1.70 g/cm^3 (1.43 tons/yd^3)
- Conversions: 1 metric tonne = 1.102 short tons, metric m^3 = 1.308 yd^3, Li_2CO_3:Li ratio = 5.32, $LiOH.H_2O$:Li ratio =6.05
- Totals may not represent the sum of the parts due to rounding.
- The Mineral Resource estimate has been prepared by Joan Kester, PG and Derek Loveday, P. Geo. of Stantec Consulting Services Inc. in conformity with CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines and are reported in accordance with the Canadian Securities Administrators NI 43-101. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that any mineral resource will be converted into mineral reserve.

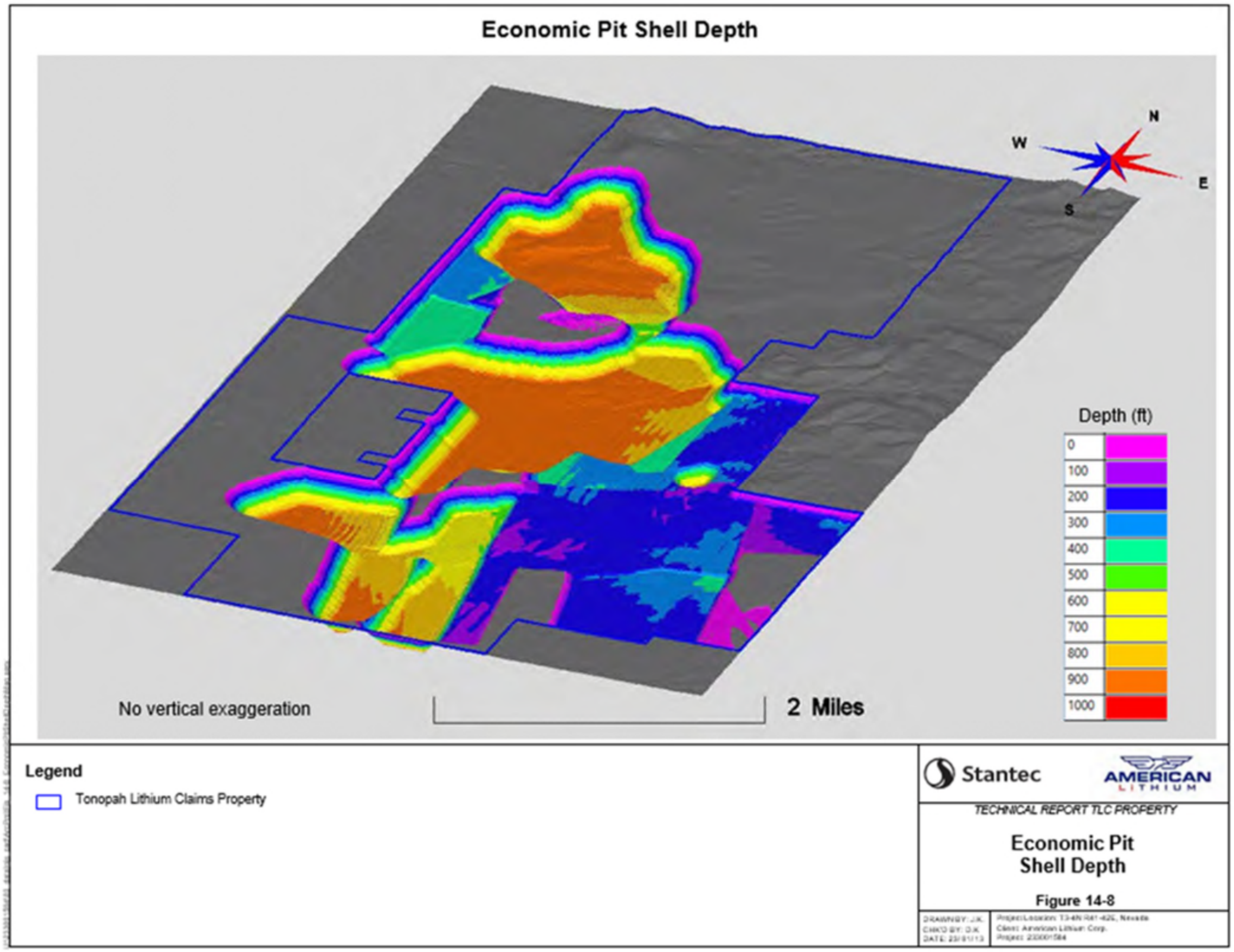

Figure 14-8 Economic Pit Shell Depth Map

14.7 Potential Risks

The accuracy of resource estimates is, in part, a function of the quality and quantity of available data and of engineering and geological interpretation and judgment. Given the data available at the time; the estimates presented herein are considered reasonable. However, they should be accepted with the understanding that additional data and analysis available after the date of the estimates may necessitate revision. These revisions may be material.

Mineral resources are not mineral reserves and there is no assurance that any mineral resources will ultimately be reclassified as Proven or Probable reserves. Mineral resources which are not mineral reserves do not have demonstrated economic viability.

Potential risks that may impact accuracy of the mineral resource estimates are:

- The resource is limited to within nine (9) fault blocks that may shift location given further exploration. Should new supporting data support a significant shift in the fault locations this may have a material impact on the resource estimates.
- The intrusions and the other volcanics around the extremities of the Property are only recognized from surface mapping. Future exploration drilling in these areas of the Property may show these intrusions and other volcanics extending into the Property below surface. This may have a material impact on the resource estimates in these regions of the deposit.
- QA/QC records of assay blanks and standards indicate that there is potential for inconsistencies in the predicted reliability of the lithium assay results received from Paragon laboratories when compared to assay results received from other laboratories as described Section 11 of the Technical Report.
- Metallurgical test currently under the control of DRA may indicate that the input costs for the practical extraction of lithium to be higher than anticipated. Since processing costs are a significant component of LC (or lithium hydroxide monohydrate) production, the lithium cutoff grade may be higher than the base case cutoff grade of 500 ppm used for the lithium resource estimates.

15 MINERAL RESERVE ESTIMATES

This Technical Report does not include an estimate of reserves. The level of engineering does not support the preparation of a Pre-Feasibility Study; therefore, in accordance with the requirements of NI 43-101, the reported resources cannot be classified as reserves.

This section of the report includes estimates of recoverable LC tonnage for the TLC Property based on preliminary mine plans, production schedules and processing plans. These estimates are only intended for the purpose of completion of the cash flow forecasts presented in Section 22. These recoverable estimates are not, and should not be construed to be, estimates of reserves for the TLC Property. They do not comply with the Classification of Reserves as required under NI 43-101 and the C.I.M. Guidelines for the classification of reserves. The economic analysis has been prepared in compliance with Article 2.3 (3) of NI 43-101. It should be noted that there is no certainty that the preliminary economic assessment will be realized.

15.1 Development Plan

The 40-year development plan, that is discussed in more detail in Section 16, results in 1.46 Mt of saleable LC from the resource estimate. Stantec notes that the 40-year development plan only addresses a portion of the TLC Property resource. The remaining resource is available for development in further planning efforts.

This estimate of saleable LC is considered to be inclusive of the in-place mineral resource estimate detailed in Section 14 and cannot be added to the resource totals.

The accuracy of resource estimates is, in part, a function of the quality and quantity of available data and of engineering and geological interpretation and judgment. Given the data available at the time this report was prepared, the estimates presented herein are considered reasonable. However, they should be accepted with the understanding that additional data and analysis available subsequent to the date of the estimates may necessitate revision. These revisions may be material. There is no guarantee that all or any part of the estimated resources will be recoverable.

16 MINING METHODS

16.1 Introduction

The characteristics and relatively shallow depth from surface of the mineralized material make it suitable for open pit mining. The mine plan utilizes an open pit truck/shovel mining method and no drilling or blasting activities are envisioned. The mining sequence has been optimized to minimize the stripping ratio while maximizing the grade being mined from the open pit.

The base case ramp-up mine plan for the TLC project is based on an initial LC (LC) production target of 24,000 t/y at an average crusher feed grade of approximately 1,400 ppm. It then steps up to a LC production target of 48,000 t/y at an average feed grade of approximately 1,400 ppm until the end of mining from the open pit. The remainder of the mine plan is the stockpile drawdown phase where material stockpiled during active mining operations is re-handled to the primary crusher. LC production ranges from 34,000 – 41,200 t/y as the average feed grade ranges from 1,010-1,210 ppm.

The mine plan addresses the pit design criteria, production sequence, material balances, tailings disposal, utilization of disposal areas, and reclamation.

16.2 Geotechnical Design

The TLC property is located directly west of the San Antonio Mountain range and has undergone several episodes of plutonic and volcanic activity. Surface mapping shows the property to be generally a flat alluvial outwash plane, interspersed with shallow washes draining towards the west. Drill hole records identify the dominant lithology below the alluvial cap as finely laminated claystone beds with lenses of sandstone and conglomerate, and occasional thin volcanic tuff and ash layers. Underlying the claystone are tuffaceous sandstones and conglomerates, collectively referred to as the basal tuff. Lithium concentrations occur in the surface alluvial, underlying claystone and basal tuff units, with the highest and most consistent lithium grades occurring in the lower claystone beds. More detailed information regarding the geological setting and mineralization can be found in the Technical Report developed by Stantec in January 2023.

The mine plan involves mining of the mineralized claystone by surface methods with the mineralized material being sent for processing and waste material being stored in external rock dumps or backfilled within the pits. Current evaluations show that the waste and mineralized rock can be excavated without blasting which will improve pit slope conditions. However, the configuration and overall slope angle of the pit walls will be influenced by the geological structure and strength of the rock mass making up the pit wall. Waste rock dumps would be constructed by end-dumping using large capacity rear-dump haul trucks. Another key aspect of large-scale mining and haulage is the ability to construct and maintain roads which support large mine vehicles.

American Lithium carried out several exploration and core drilling programs in Q1 2019 and Q1 & Q4 2020. In Q1 2021, Stantec Consulting (Stantec) requested a series of geotechnical laboratory tests to be completed on remaining diamond drill and sonic core samples from the previous drill programs. The geotechnical laboratory testing data was collected to support the preliminary geotechnical characterization of the site's rock types and inform further geotechnical investigations but is not defined enough to provide specific geotechnical design criteria for pits and material storage facilities.

Based on the geotechnical data available and a regional understanding of the material being mined an overall slope angle of 45 degrees was used for pit design criteria. A sensitivity analysis was done to see what impact a shallower or steeper slope would have on the optimized pit shells. This analysis confirmed that the pit slope angle did not significantly impact the result of the pit shells due to the relatively shallow pits. More geotechnical data will need to be collected to develop more detailed pit design criteria.

Waste Rock Storage Facility (WRSF) design criteria was developed using a similar approach and an overall angle of 18 degrees was assumed. This design criteria was the same for both ex-pit and in-pit waste storage facilities (Table 16-1).

Table 16-1 Waste Material Storage Design Criteria

Waste Material Storage Design Criteria	
Overall Angle	18 Degrees
Inter-bench Angle	33 Degrees
Bench Height	10 metres
Bench Width	10.5 metres
Resloped Inter-bench Angle	22 degrees
Resloped Bench Width	5 metres

In addition to the WRSF there are several mineralized material stockpiles (MM Stockpiles) above cut-off grade. The design criteria was adjusted to account for the temporary nature of the structures as they will be re-handled throughout the mine life and hauled to the primary crusher. The design criteria shown in Table 16-2 was used for MM stockpiles.

Table 16-2 Mineralized Material Stockpile Design Criteria

Mineralized Material Stockpile Design Criteria	
Overall Angle	26.6 Degrees
Inter-bench Angle	37 Degrees
Bench Height	10 metres
Bench Width	7.5 metres
Max Height	105 metres

In order to minimize the project footprint, backfilling of the pit is prioritized for waste material and tailings. Due to the unknown characteristics of the tailings material a conservative approach was used where cells were created using waste material to store in-pit tailings. These are not dams as the tailings material have been filtered such that they can be handled as a soil like material and therefore will not be impounded. The design criteria shown in Table 16-3 was used for the in-pit berms.

Table 16-3 In-pit Berm Design Criteria

In-pit Berm Design Criteria	
Downstream Slope	20 Degrees
Upstream Slope	28 Degrees
Construction Type	Centreline

16.3 Pit Optimization

The geological model used for the economic pit optimization was prepared by Derek Loveday P. Geo. QP CP of Stantec Consulting Ltd. (Stantec) The model (named "TC15.DAT") was provided for the purpose of conducting an economic pit optimization on November 2, 2022. The block model was received as part of a Hexagon's MinePlan® directory that was accompanied by the following information:

- Property boundary (updated on November 29, 2022)
- Drill hole collars and 3D plots
- Geological geometry files (lines, surfaces, and solids) used to model the deposit
- Topography surface

The pit optimization was conducted on the basis of producing LC. Inputs for the optimization (presented in Table 16-4) were specified with direction from personnel at American Lithium Corp., Stantec, and DRA Global. Only material classified as a measured, indicated, or an inferred resource was considered as mine feed for the optimization. Inputs were converted from metric to imperial because the geological model and accompanying files used imperial units.

Table 16-4 Economic Pit Optimization Inputs

Input Parameter	Value	Units & Notes
Mining Units Cost	2.00	$/t
Mining Recovery Rate	100%	Recovered mineralized material / In-situ mineralized material
Mining Dilution Rate	0%	Waste mined with mineralized material as a percentage of mineralized material
Mineralization & Waste Density	1.7	g/cm^3
Stockpile Reclaim Cost	1.00	$/t
Stockpile Grade Recovery Rate	90%	Percentage of lithium grade recovered from the stockpiles
Overall Pit Slope Angle	40	Degrees
Maximum Benches Mined per Year	12	Benches per phase
General & Administrative Costs	1.00	$/t RoM
Tailings Production and Transportation Costs	1.50	$/t RoM
Processing Plant Recovery Rate	72%	
Product Ratio	5.323	kg of LC per kg of Li processed
Target Plant Feed Grade	1,400	ppm Lithium
Processing Unit Cost	40.06	$/t
LC Selling Price	20,000	$/t of Li_2CO_3
Pit Shell Price Increments	500	$/t of Li_2CO_3
Discount Rate	8%	Per year

Mining recovery and dilution rates are often inversely related. The greater the quantity of mineralized material recovered usually means that more waste material is included in the ore stream because some waste along the mineralized material-waste contact is mined with ore. Dilution is anticipated to be interbedded with mineralized material, but the mineralized material grade in the model already includes interbedded dilution because rock chip samples recovered from RC drilling are not segregated by mineralized material and waste.

It is the opinion of Stantec that it is reasonable at a PEA level pit optimization to include 100% recovery and 0% dilution because most of the dilution is anticipated to be present as mineralized material that contains lithium in concentrations below cut-off-grade. Material below COG may still be economically viable and would not impact the processing plant in the same manner that completely unmineralized material would.

16.3.1 Mineral Processing Inputs

A tailings unit cost of $1.50/t has been estimated by Stantec for filter pressing and transporting tailings. Filter pressing tailings allows for most of the contained water to be recovered at the process facility. It is assumed that filtered tailings would be conveyed to a TSF discharge bins with trucking for a final placement for the purpose of this optimization.

Using an end-product cost of $7,000/t of LC produced an average input processing cost was calculated using the formula below. The formula back-calculates the processing cost to be in terms of mineralized material tonnes processed rather than in terms of product produced.

$$\left(\frac{Feed\ Grade}{1+\ Dilution\ Rate}\right) \times Process\ Recovery\ Rate \times Product\ Ratio \times Product\ Cost + Tailings\ Cost + G\&A$$

It is important to note that some parameters and assumptions in Table 16-4 were revised for the final mine plan.

The optimization was conducted with the pseudoflow pit optimization algorithm in GEOVIA Whittle™. The pseudoflow algorithm is essentially a more efficient alternative to the conventional Lerch-Grossman algorithm that allows the optimization process to be conducted faster.

The geological model had to be re-blocked because the file was too large for the pit optimization software to process. The geological model was comprised of blocks measuring 50 ft long, 50 ft wide, and 20 ft high. Blocks were combined to be 100 ft long, 100 ft wide, and 20 ft high.

Stantec evaluated two production scenarios as part of the pit optimization process:

Base Case - Initial production rate of 24,000 t/y of LC, which increases to 48,000 t/y after five years of production.

Flat Rate Case - Constant production rate of 24,000 t/y of LC

Both scenarios begin with one year of pre-production mining where mineralized material is stockpiled for future processing to allow time for constructing processing facilities and other site infrastructure. Both cases follow a similar pit development sequence, but the progression occurs at different revenue factors.

The pit-by-pit graph created in Whittle is presented in Figure 16-1. The discounted value for each pit is calculated for the best, the specified, and the worst-case scenario. All three scenarios are described as follows:

Best case – Discounted value is determined by scheduling every preceding pit as a pushback to create as many mining phases as possible.

Specified case – Discounted value is determined by scheduling the pit with selected pit phases.

Worst case – Discounted value is determined by mining the ultimate pit without any mining phases.

Using fine revenue factor increments, the best-case scenario is unachievable in practice because it often requires mining in very narrow pushbacks (usually 1-2 block model blocks wide).

The worst-case scenario is achievable if a pit is mined without any phasing. This is possible but unrealistic for the TLC deposit. The actual indicative value is estimated using the specified case. The value of the specified case is always between the best and worst-case scenarios.

The specified case uses pits 2, 4, and 5-8 as interim pushbacks to increase the estimated discounted value during the pit optimization process. Interim pushbacks were selected based on the value added and the practicality of mining them. The actual mining sequence will be different, but it will be guided by the phases produced from the pit optimization.

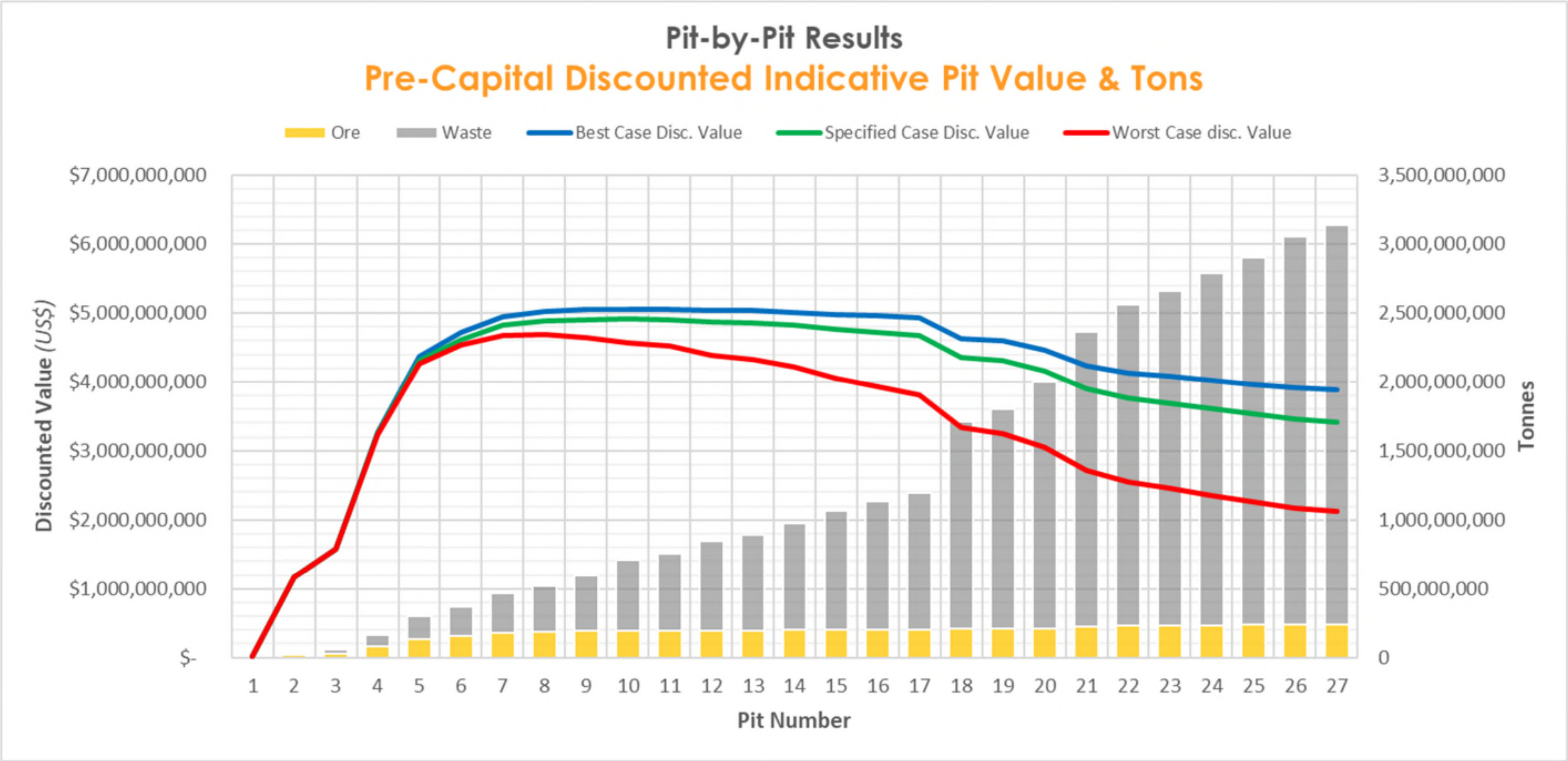

Figure 16-1 Pit by Pit Graph

16.3.2 Pit Shell Selection

The primary goal of this pit optimization process was to produce as much LC as possible while achieve an average plant feed grade of 1,400 ppm Li. As shown in Figure 16-2, pit no.9 achieves the approximate peak discounted value for the specified case and was chosen as the ultimate pit. Pit no.10 achieves a marginally greater NPV (0.1% higher) but mines much more material. Expanding from pits 9 to 10 requires mining an additional 109 M tonnes of waste to acquire an addition 5 M tonnes of mineralized material, which is equivalent to an incremental strip ratio of 27:1. With reference to the grade-tonnage curve in Figure 16-2, a processing COG of 1,200 ppm Li is required to achieve the desired average plant feed grade of 1,400 ppm Li.

The grade-tonnage curve uses data from the entire pit, but the lithium grades in the TLC deposit are not uniformly dispersed. Certain areas near the perimeter of pit no.9 are below COG and should not be mined because they will not contribute material at a feed grade of 1,400 PPM Li. The vast majority of additional mineralization within pit no.10 is below a COG of 1,200 PPM Li and will not contribute significant value to the project.

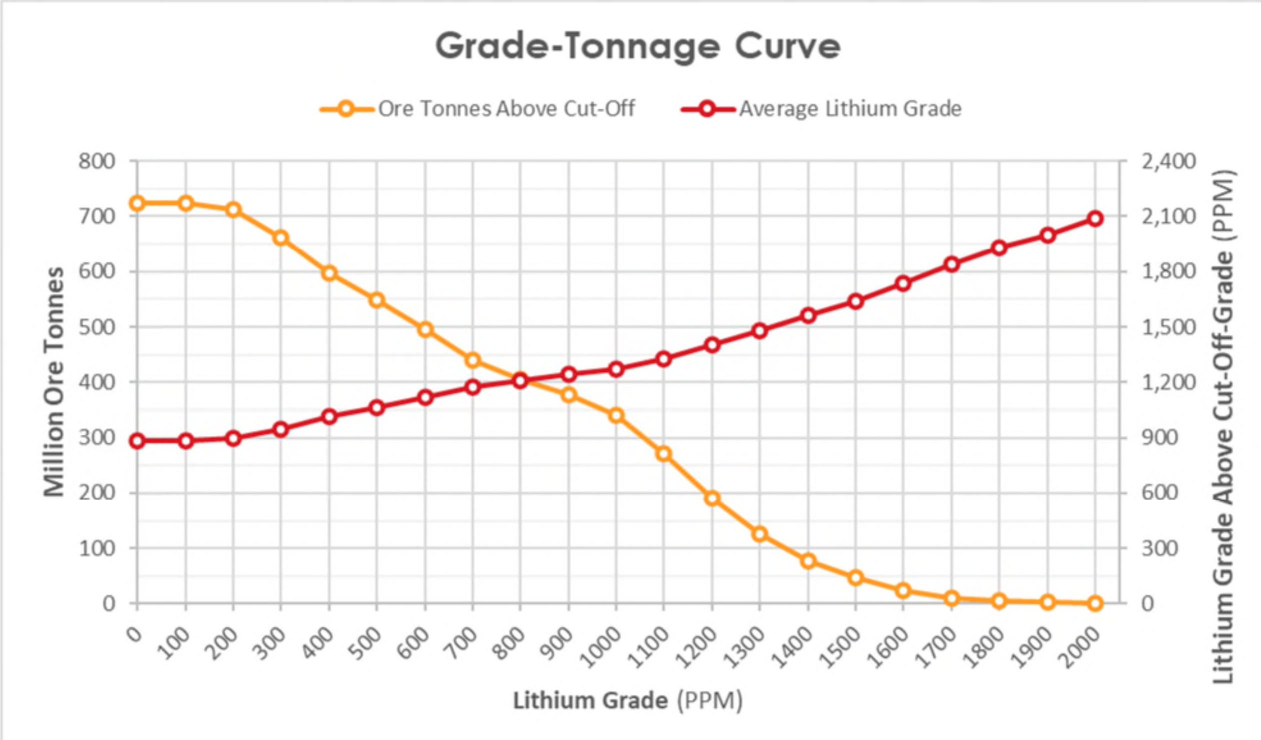

Figure 16-2 Grade-Tonnage Curve for Pit No.9

16.4 Pre-Mining Development

The relatively shallow depth form surface lithium mineralization results in a short pre-mining development period for pre-stripping and material movement. Pre-mining development activities are primarily concentrated to the construction of access roads, site services, mine buildings, expit tailings facility, and commissioning of equipment. There is approximately 7.7M t mined that goes to the WRSF and 1.3M t of mineralized material that is stockpiled for plant commissioning.

16.5 Production Schedule

16.5.1 Base Case Step-Up Production Scenario

The mining schedule for the base case step-up mine plan was completed using Hexagon's MineSight Schedule Optimizer (MSSO) tool. MSSO is used by hundreds of mines worldwide to determine the most productive cut mining sequence to achieve the highest project profitability. The selected pit shell was used as the design pit and was split into phases and benches and imported into MSSO. A reserve logic was created and quantities verified with spot block checks as well as overall solids volume checks. Solids were verified prior to importing into MSSO to ensure they closed and did not have any intersecting faces.

The objective of MSSO was to optimize based on grade so that the highest-grade material is targeted initially. Due to the requirement to have a feed grade to the primary crusher of 1,400ppm, which is a lot higher than the actual economic cut-off grade of ~ 600ppm, a stockpiling strategy was used. Several grade bins were created to virtually stockpile material to ensure that the blend going to the primary crusher was approximately 1,400ppm for as long as possible.

This resulted in the base case mining schedule shown in Figure 16-3.

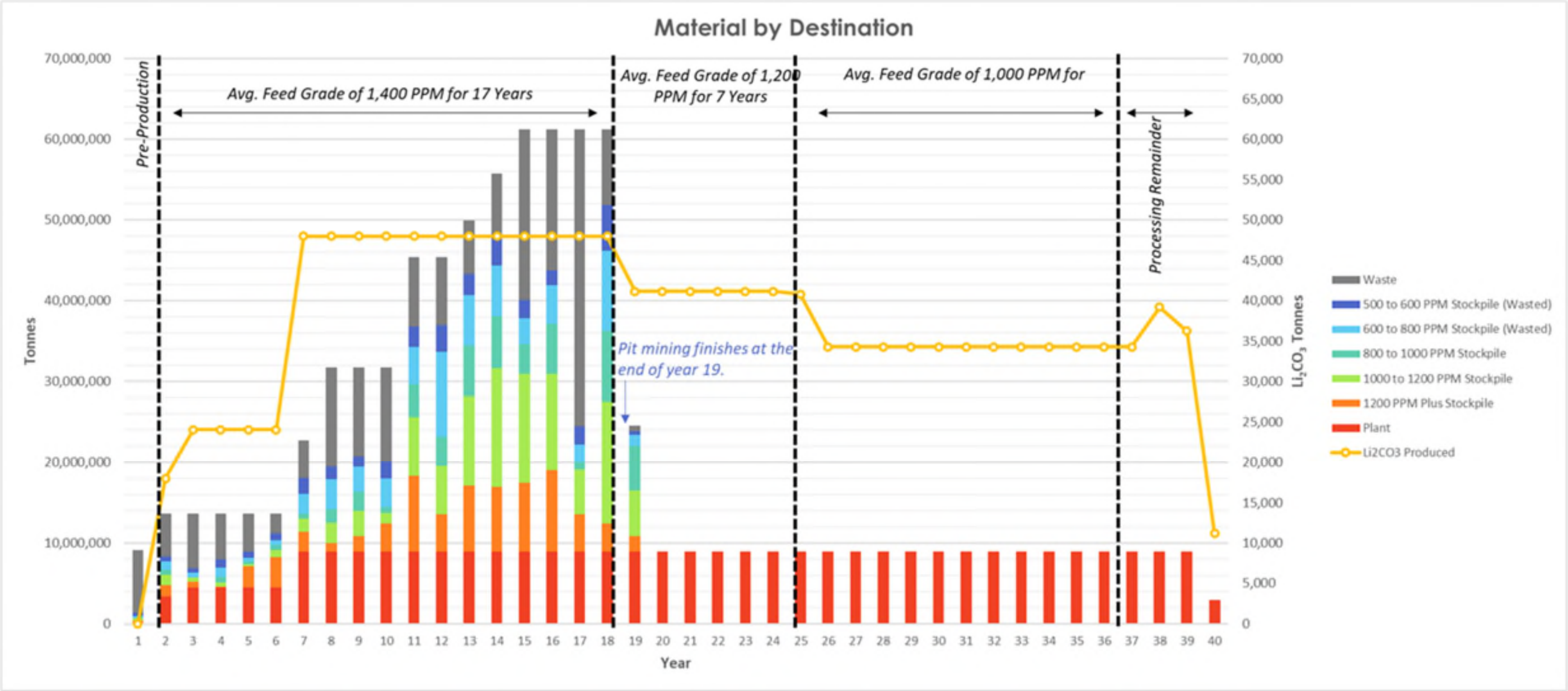

Figure 16-3 Base Case Mine Plan Annual Production Schedule

The schedule has an initial LC production target of 24,000 t/y for the first 6 years and then steps up to 48,000 t of LC/y. until the end of year 17 (note that year 1 is a pre-production year) This is achieved through an average feed grade of 1,400 ppm to the primary crusher for the first 17 years of mineralized material mining followed by 7 years of 1,200ppm feed grade. Once mining operations from the open pit are completed in year 20, then the MM stockpiles are drawn down to continue to feed the primary crusher with material to the end of the mine life in year 40. The grade continues to drop as the MM stockpiles are drawn down, but the feed grade stays well above the cut off feed grade of approximately 500ppm. Grade bins below 800ppm are not reclaimed in this mine schedule but have been stockpiled separately from waste material as they may be utilized for blending of higher-grade material in future phases of the project. See Figure 16-4Table 16-6 for annual stockpile quantities by destination and Table 16-6 for annual mine material quantities. Life of mine (LoM) quantities for the base case step-up mine plan are shown in Table 16-5.

Table 16-5 LoM Mine Material Quantities

	Units	***Total***
Pit to Waste Rock Storage Facility (WRSF)	Mt	189
Pit to Plant Direct (feed)	Mt	97
Direct Pit to Stockpile	Mt	321
Total Tonnes Mined from Pit	Mt	607
SP to Plant (Reclaim)	Mt	217
Total Tonnes Moved	Mt	824
Feed to the Plant (Pit + Stockpile reclaim)	Mt	315
Post-Pit Stockpile Reclaim to Plant	Mt	178
Stripping Ratio	Waste: Mineralized Material	0.93

Table 16-6 Mine Material Quantities – Base Case

	Units	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
Pit to Waste Rock Storage Facility (WRSF)	tonnes	***188,815,724***	7,727,188	4,361,688	7,533,601	4,620,297	3,772,055	5,299,281	3,716,208	12,253,897	11,205,041	10,959,416	10,222,385	7,257,419	7,736,383	6,364,891	21,046,049	17,851,153	36,707,051	9,709,107	472,614	0	0
Pit to Plant Direct (ore)	tonnes	***97,349,058***	0	2,898,520	2,805,030	4,434,812	3,186,702	2,626,776	4,847,476	4,607,181	8,472,427	6,583,199	6,186,064	4,826,296	6,350,891	7,715,495	6,061,743	4,131,123	4,094,204	7,171,868	10,349,251	0	0
Direct Pit To Stockpile	tonnes	***320,883,445***	1,344,671	4,804,951	1,633,038	4,546,283	5,394,585	3,867,359	10,080,974	10,615,143	11,664,000	11,909,624	26,254,443	29,219,409	33,204,035	34,520,101	31,306,487	34,407,037	15,645,529	42,516,573	7,949,202	0	0
Total Tonnes Mined from Pit	**tonnes**	***607,048,227***	**9,071,858**	**12,065,160**	**11,971,670**	**13,601,393**	**12,353,341**	**11,793,416**	**18,644,658**	**27,476,222**	**31,341,468**	**29,452,240**	**42,662,892**	**41,303,123**	**47,291,309**	**48,600,487**	**58,414,280**	**56,389,313**	**56,446,783**	**59,397,548**	**18,771,067**	**0**	**0**
SP to Plant (Reclaim)	tonnes	***217,198,809***	0	432,341	1,636,117	6,395	1,254,446	1,814,372	1,814,372	4,275,282	410,036	2,299,264	2,696,399	4,056,168	2,603,911	1,294,733	2,820,763	4,845,730	4,788,259	1,837,495	1,478	8,882,463	8,882,463
Total Tonnes Moved	**tonnes**	***824,247,036***	**9,071,858**	**12,497,500**	**13,607,787**	**13,607,787**	**13,607,787**	**13,607,787**	**20,459,030**	**31,751,504**	**31,751,504**	**31,751,504**	**45,359,291**	**45,359,291**	**49,895,220**	**49,895,220**	**61,235,043**	**61,235,043**	**61,235,043**	**61,235,043**	**18,772,546**	**8,882,463**	**8,882,463**
Feed to the Plant (Pit + Stockpile reclaim)	**tonnes**	***315,300,216***	-	3,330,861	4,441,148	4,441,206	4,441,148	4,441,148	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,954,803	9,010,228	8,882,506	8,976,853	8,882,463	9,009,363	8,882,463	8,882,463	8,882,463
Post-Pit Stockpile Reclaim to Plant	tonnes	***178,311,248***																				8,882,463	8,882,463

	Units		Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30	Year 31	Year 32	Year 33	Year 34	Year 35	Year 36	Year 37	Year 38	Year 39	Year 40
Pit to Waste Rock Storage Facility (WRSF)	tonnes		0	0	-	-	-	-	-	-	-	-	-	-	-	-							
Pit to Plant Direct (ore)	tonnes		0	0	-	-	-	-	-	-	-	-	-	-	-	-							
Direct Pit To Stockpile	tonnes		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Tonnes Mined from Pit	**tonnes**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SP to Plant (Reclaim)	tonnes		8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,464	661,986
Total Tonnes Moved	**tonnes**		**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,463**	**8,882,464**	**661,986**
Feed to the Plant (Pit + Stockpile reclaim)	**tonnes**		8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	661,986
Post-Pit Stockpile Reclaim to Plant	tonnes		8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	8,882,463	661,986

	1000 to 1200 PPM Stockpile- (Withdrawal)			1000 to 1200 PPM Stockpile+ (Deposited)			1200 Plus Stockpile- (Withdrawal)			1200 Plus Stockpile+ (Deposited)			Wasted - 500 to 600 PPM Stockpile+ (Deposited)		
Years	Destination Tonne	Li Grade Diluted	Li_2CO_3 Recovered	Destination Tonne	Li Grade Diluted	Li_2CO_3 Recovered	Destination Tonne	Li Grade Diluted	Li_2CO_3 Recovered	Destination Tonne	Li Grade Diluted	Li_2CO_3 Recovered	Destination Tonne	Li Grade Diluted	Li_2CO_3 Recovered
1	0		0	208,531	1,065	851	0		0	432,341	1,526	2,529	434,550	534	889
2	0		0	989,807	1,079	4,082	432,341	1,526	2,529	1,642,512	1,541	9,698	648,544	540	1,340
3	0		0	110,981	1,060	451	1,636,117	1,542	9,668	0		0	581,588	555	1,235
4	0		0	494,524	1,100	2,084	6,395	1,217	30	1,254,446	1,305	6,276	1,022,531	546	2,139
5	0		0	123,227	1,095	517	1,254,446	1,305	6,276	5,019,974	1,651	31,764	69,010	555	147
6	0		0	145,773	1,089	608	1,814,372	1,783	12,402	0		0	2,022,808	561	4,348
7	0		0	1,886,056	1,109	8,020	1,814,372	1,602	11,139	2,918,072	1,335	14,932	2,040,597	545	4,261
8	0		0	2,839,166	1,096	11,921	4,275,282	1,403	22,986	376,015	1,259	1,814	1,616,742	544	3,352
9	0		0	2,932,582	1,090	12,250	410,036	1,262	1,983	2,299,264	1,307	11,520	1,141,136	542	2,370
10	0		0	1,587,455	1,089	6,627	2,299,264	1,307	11,520	2,696,399	1,308	13,512	2,277,518	552	4,812
11	0		0	6,369,729	1,108	27,040	2,696,399	1,308	13,512	7,022,256	1,281	34,486	2,966,271	558	6,339
12	0		0	7,603,168	1,114	32,455	4,056,168	1,309	20,351	6,865,554	1,283	33,772	2,062,760	555	4,381
13	0		0	11,500,574	1,111	48,972	2,603,911	1,340	13,374	5,120,565	1,255	24,631	3,501,735	555	7,434
14	0		0	13,134,329	1,111	55,937	1,294,733	1,303	6,466	6,748,051	1,241	32,090	3,532,944	548	7,412
15	0		0	14,394,316	1,114	61,451	2,820,763	1,262	13,641	7,036,205	1,263	34,067	2,556,416	544	5,328
16	0		0	12,508,764	1,104	52,924	4,845,730	1,279	23,761	9,276,170	1,285	45,667	1,627,122	553	3,449
17	0		0	6,182,600	1,099	26,051	4,788,259	1,327	24,346	3,360,565	1,286	16,563	1,959,266	536	4,021
18	0		0	12,784,826	1,086	53,195	1,837,495	1,321	9,300	733,321	1,238	3,478	6,380,107	550	13,447
19	0		0	5,574,602	1,068	22,821	1,478	1,274	7	232,780	1,221	1,090	0		0
20	3,826,387	1,163	17,052	0		0	6,524,252	1,238	30,948	0		0	0		0
21	3,637,476	1,152	16,064	0		0	6,713,163	1,241	31,936	0		0	0		0
22	3,901,263	1,163	17,390	0		0	6,449,376	1,238	30,610	0		0	0		0
23	5,982,526	1,173	26,894	0		0	4,460,139	1,235	21,106	0		0	0		0
24	8,054,792	1,062	32,771	0		0	0		0	0		0	0		0
25	6,987,798	1,079	28,902	0		0	0		0	0		0	0		0
26	7,062,249	1,101	29,807	0		0	0		0	0		0	0		0
27	7,076,109	1,097	29,757	0		0	0		0	0		0	0		0
28	6,267,613	1,093	26,252	0		0	0		0	0		0	0		0
29	7,384,611	1,084	30,672	0		0	0		0	0		0	0		0
30	6,574,791	1,101	27,755	0		0	0		0	0		0	0		0
31	6,699,236	1,091	28,009	0		0	0		0	0		0	0		0
32	6,293,859	1,089	26,259	0		0	0		0	0		0	0		0
33	7,603,795	1,042	30,363	0		0	0		0	0		0	0		0
34															
35															
36															
37															
38															
39															
40															
Grand Total	87,352,506	1,099	367,948	101,371,009	1,102	428,257	63,034,489	1,316	317,891	63,034,489	1,316	317,891	36,441,645	550	76,705

	Wasted - 600 to 800 PPM Stockpile+ (Deposited)			800 to 1000 PPM Stockpile- (Withdrawal)			800 to 1000 PPM Stockpile+ (Deposited)			Waste			Plant			Grand Total		
Years	Destination Tonne	Li Grade Diluted	Li_2CO_3 Recovered	Destination Tonne	Li Grade Diluted	Li_2CO_3 Recovered	Destination Tonne	Li Grade Diluted	Li_2CO_3 Recovered	Destination Tonne	Li Grade Diluted	Li_2CO_3 Recovered	Destination Tonne	Li Grade Diluted	Li_2CO_3 Recovered	Destination Tonne	Li Grade Diluted	Li_2CO_3 Recovered
1	199,467	673	515	0		0	69,782	894	239	7,727,188	228	6,731	0		0	9,071,858	339	11,755
2	933,390	691	2,466	0		0	590,698	912	2,056	4,361,688	280	4,652	3,330,861	1,410	18,000	13,607,787	927	48,293
3	835,446	659	2,112	0		0	105,023	919	370	7,533,601	268	7,731	4,441,148	1,410	24,000	13,607,787	689	35,897
4	1,127,796	687	2,968	0		0	646,987	907	2,249	4,620,297	318	5,622	4,441,206	1,410	24,000	13,607,787	869	45,337
5	72,564	671	187	0		0	109,810	935	393	3,772,055	200	2,866	4,441,148	1,410	24,000	13,607,787	1,148	59,873
6	1,190,858	664	3,029	0		0	507,920	893	1,738	5,299,281	341	6,917	4,441,148	1,410	24,000	13,607,787	779	40,640
7	2,559,787	680	6,674	0		0	676,461	927	2,402	3,716,208	340	4,840	8,882,463	1,410	48,000	22,679,645	1,025	89,130
8	3,933,693	696	10,427	0		0	1,849,528	907	6,427	12,253,897	253	11,873	8,882,463	1,410	48,000	31,751,504	772	93,815
9	3,071,450	679	7,994	0		0	2,219,568	918	7,811	11,205,041	275	11,825	8,882,463	1,410	48,000	31,751,504	836	101,770
10	4,581,651	671	11,775	0		0	766,601	889	2,612	10,959,416	202	8,502	8,882,463	1,410	48,000	31,751,504	788	95,840
11	6,268,736	672	16,125	0		0	3,627,451	916	12,737	10,222,385	195	7,645	8,882,463	1,410	48,000	45,359,291	877	152,371
12	7,374,038	680	19,157	0		0	5,313,888	895	18,222	7,257,419	241	6,669	8,882,463	1,410	48,000	45,359,291	936	162,657
13	7,552,998	682	19,706	0		0	5,528,163	903	19,138	7,736,383	257	7,609	8,954,803	1,399	48,000	49,895,220	918	175,491
14	5,458,039	692	14,457	0		0	5,646,737	915	19,807	6,364,891	242	5,873	9,010,228	1,390	48,000	49,895,220	960	183,577
15	3,464,221	694	9,208	0		0	3,855,329	922	13,629	21,046,049	241	19,361	8,882,506	1,410	48,000	61,235,043	814	191,045
16	4,672,357	702	12,568	0		0	6,322,624	915	22,171	17,851,153	239	16,351	8,976,853	1,395	48,000	61,235,043	857	201,131
17	2,736,201	695	7,291	0		0	1,406,898	933	5,032	36,707,051	269	37,744	8,882,463	1,410	48,000	61,235,043	617	144,703
18	10,594,135	681	27,645	0		0	12,024,185	916	42,201	9,709,107	330	12,270	9,009,363	1,390	48,000	61,235,043	853	200,235
19	180,937	753	522	0		0	1,960,884	961	7,223	472,614	2	3	8,882,463	1,210	41,191	18,772,546	1,107	79,659
20	0		0	0		0	0		0	0		0	8,882,463	1,210	41,192	10,350,639	1,210	48,000
21	0		0	0		0	0		0	0		0	8,882,463	1,210	41,192	10,350,639	1,210	48,000
22	0		0	0		0	0		0	0		0	8,882,463	1,210	41,192	10,350,639	1,210	48,000
23	0		0	0		0	0		0	0		0	8,882,463	1,199	40,829	10,442,665	1,199	48,000
24	0		0	4,345,478	914	15,229	0		0	0		0	8,882,463	1,163	39,594	12,400,270	1,010	48,000
25	0		0	5,412,473	921	19,098	0		0	0		0	8,882,463	1,010	34,383	12,400,270	1,010	48,000
26	0		0	5,338,021	889	18,193	0		0	0		0	8,882,463	1,010	34,383	12,400,270	1,010	48,000
27	0		0	5,324,161	894	18,243	0		0	0		0	8,882,463	1,010	34,383	12,400,270	1,010	48,000
28	0		0	6,132,657	925	21,748	0		0	0		0	8,882,463	1,010	34,383	12,400,270	1,010	48,000
29	0		0	5,015,659	901	17,328	0		0	0		0	8,882,463	1,010	34,383	12,400,270	1,010	48,000
30	0		0	5,825,479	907	20,245	0		0	0		0	8,882,463	1,010	34,383	12,400,270	1,010	48,000
31	0		0	5,701,034	915	19,991	0		0	0		0	8,882,463	1,010	34,383	12,400,270	1,010	48,000
32	0		0	6,106,411	929	21,741	0		0	0		0	8,882,463	1,010	34,383	12,400,270	1,010	48,000
33	0		0	4,027,164	949	14,641	0		0	0		0	8,882,463	1,010	34,383	11,630,959	1,010	45,004
34													8,882,463	1,010	34,383			
35													8,882,463	1,010	34,383			
36													8,882,463	1,010	34,383			
37													8,882,463	1,010	34,383			
38													8,882,463	1,030	34,383			
39													8,882,463	1,050	35,120			
40													661,986	1,050	2,617			
Grand Total	66,807,764	684	174,826	53,228,537	914	186,457	53,228,537	914	186,457	188,815,724	256	185,084	300,964,591	1,209	1,407,080	813,994,663	892	2,782,225

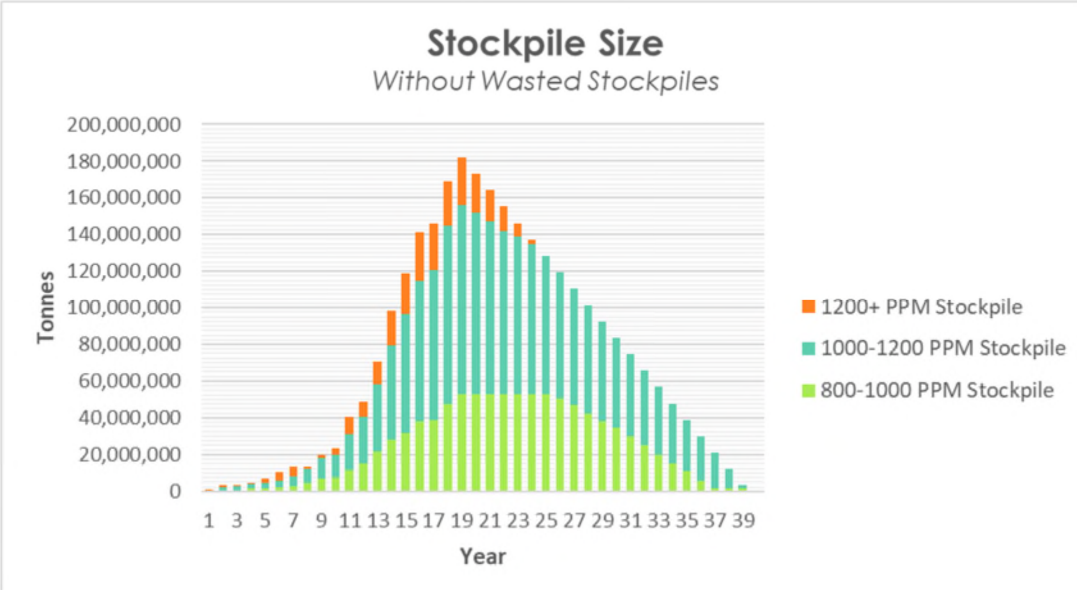

Figure 16-4 LoM Stockpile Quantities

The following figures (Figure 16-5 to Figure 16-14) show the annual mine plan progression annually for the first five years and then every 5 years to the end of mining and then stockpile drawdown.

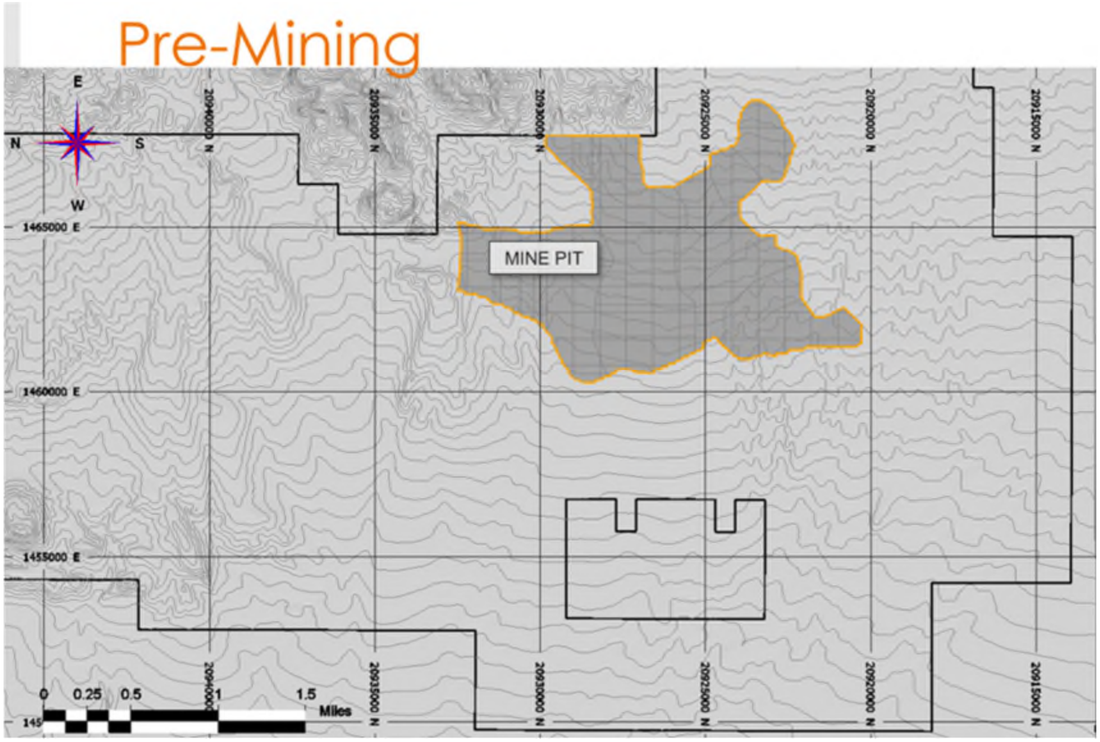

Figure 16-5 Pre-Mining

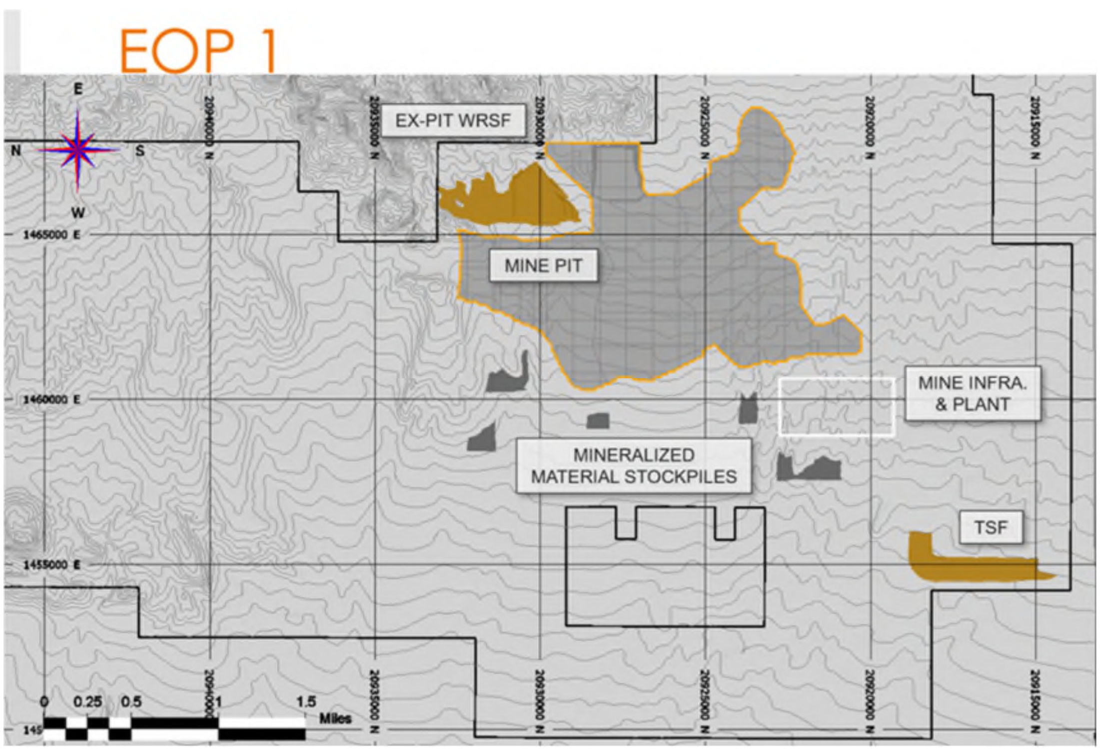

Figure 16-6 Layout End of Period 1

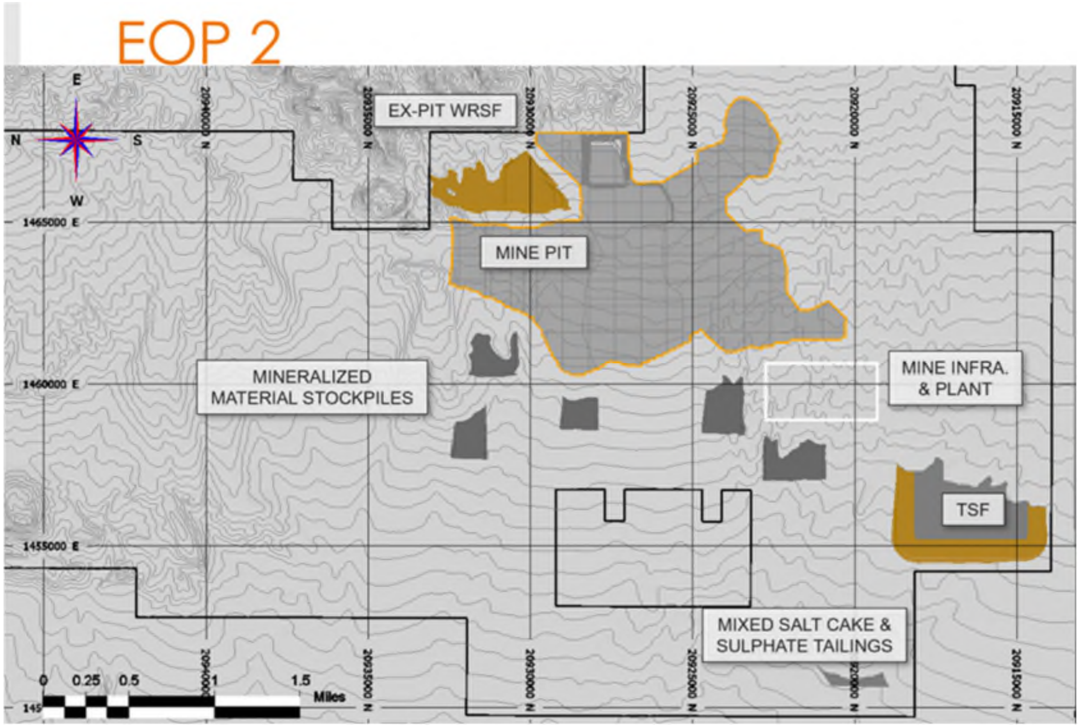

Figure 16-7 Layout End of Period 2

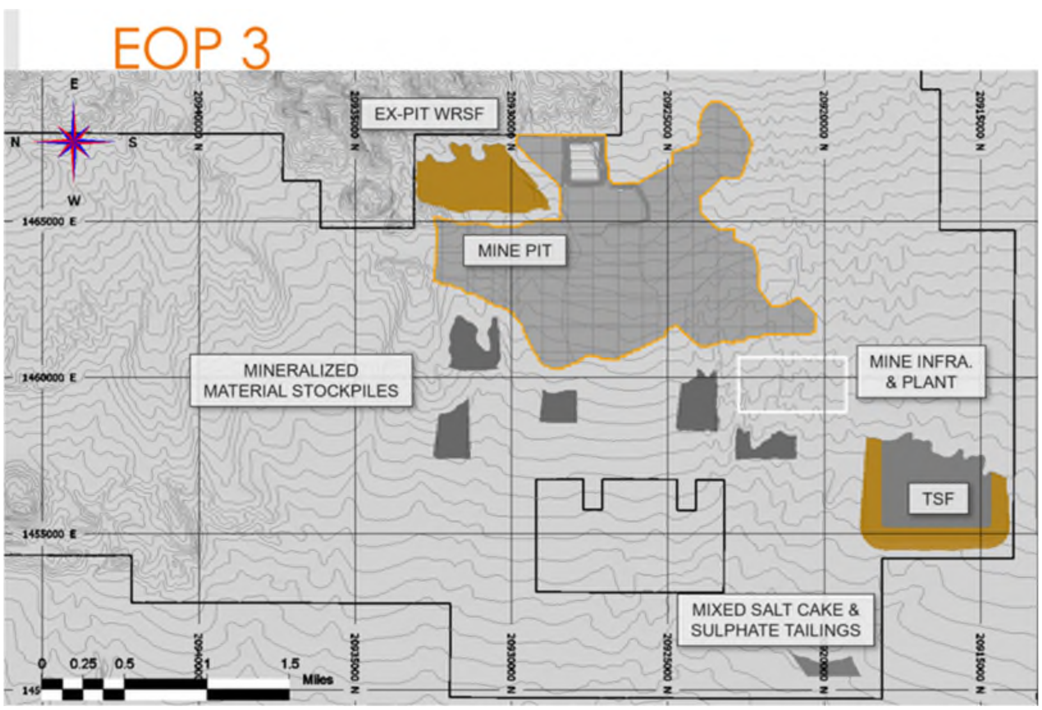

Figure 16-8 Layout End of Period 3

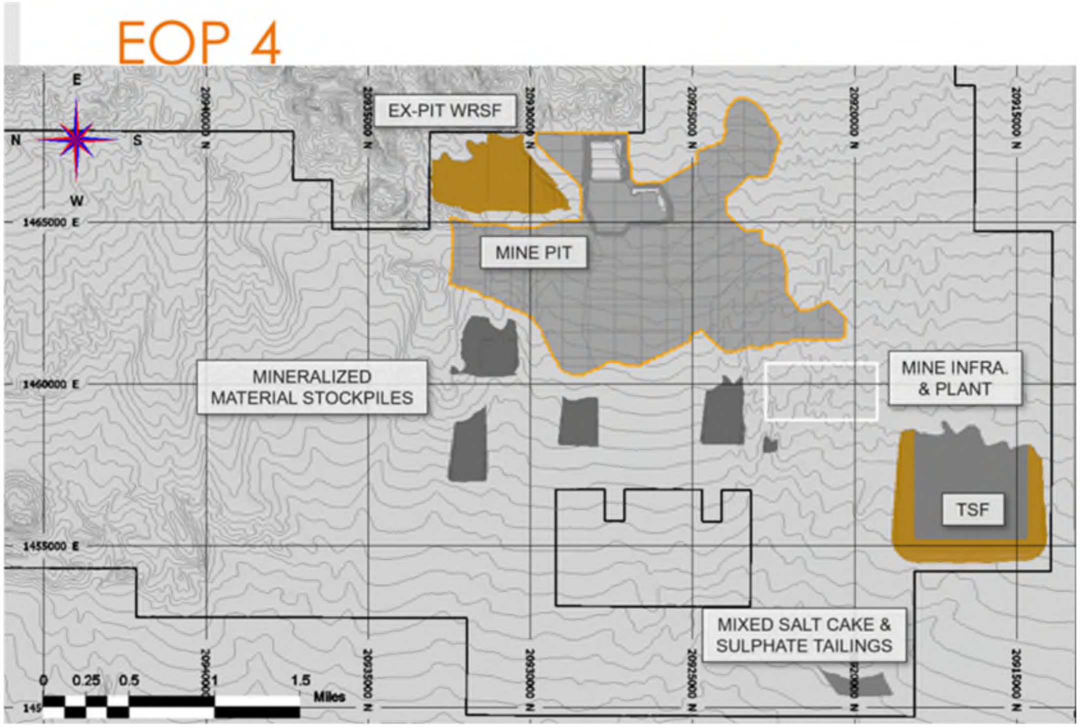

Figure 16-9 Layout End of Period 4

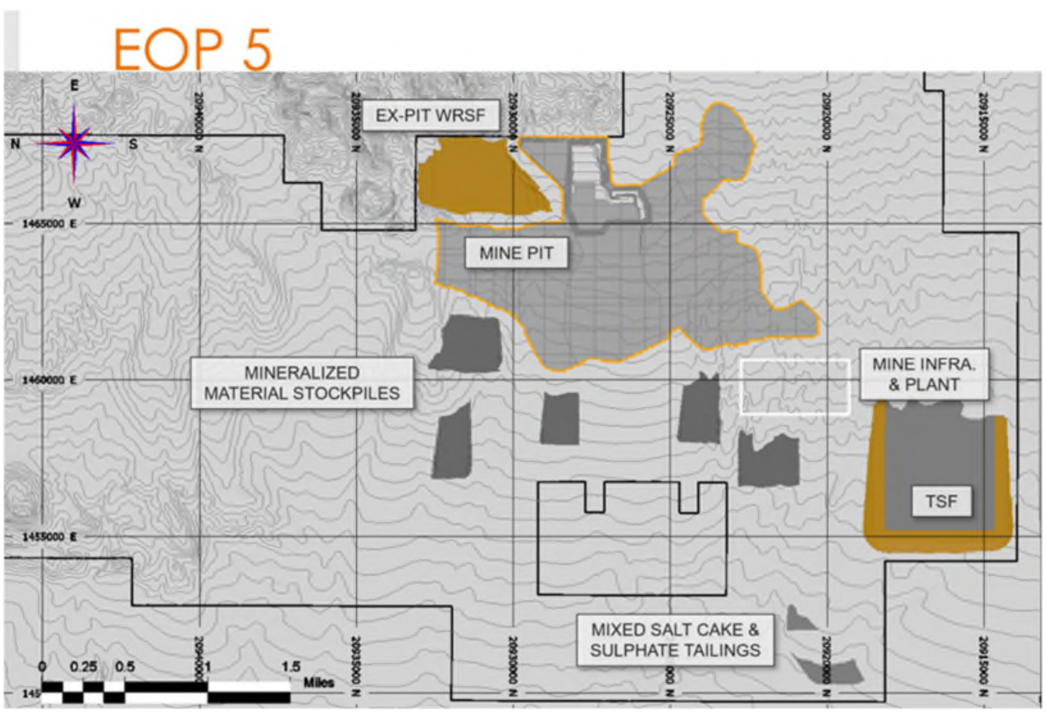

Figure 16-10 Layout End of Period 5

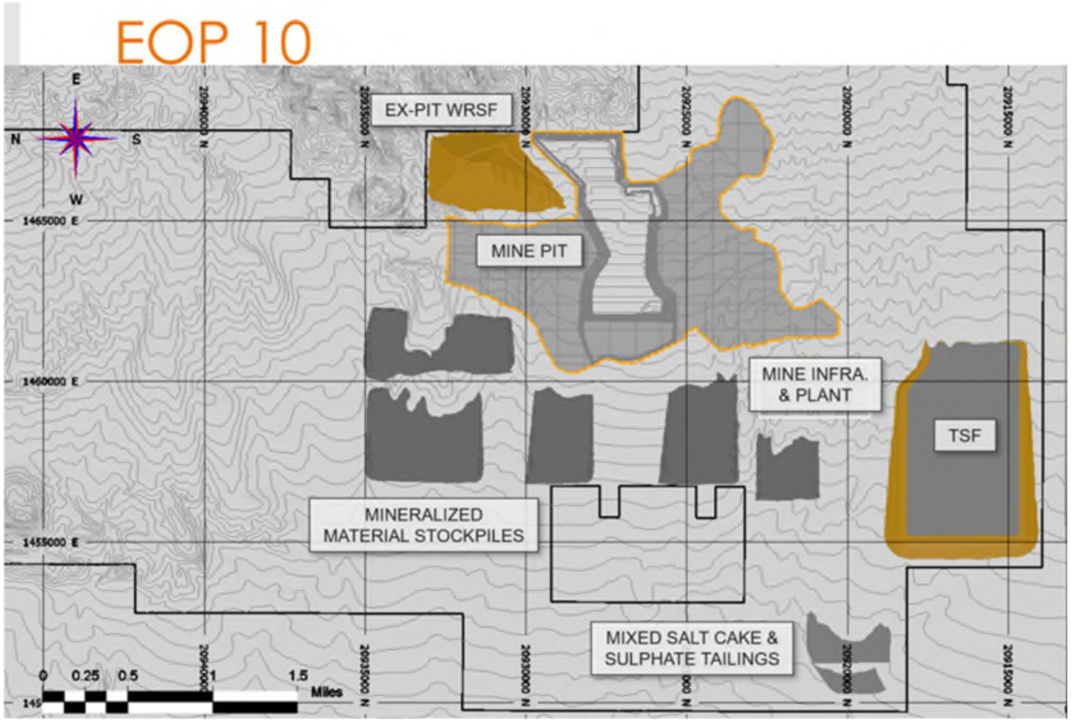

Figure 16-11 Layout End of Period 10

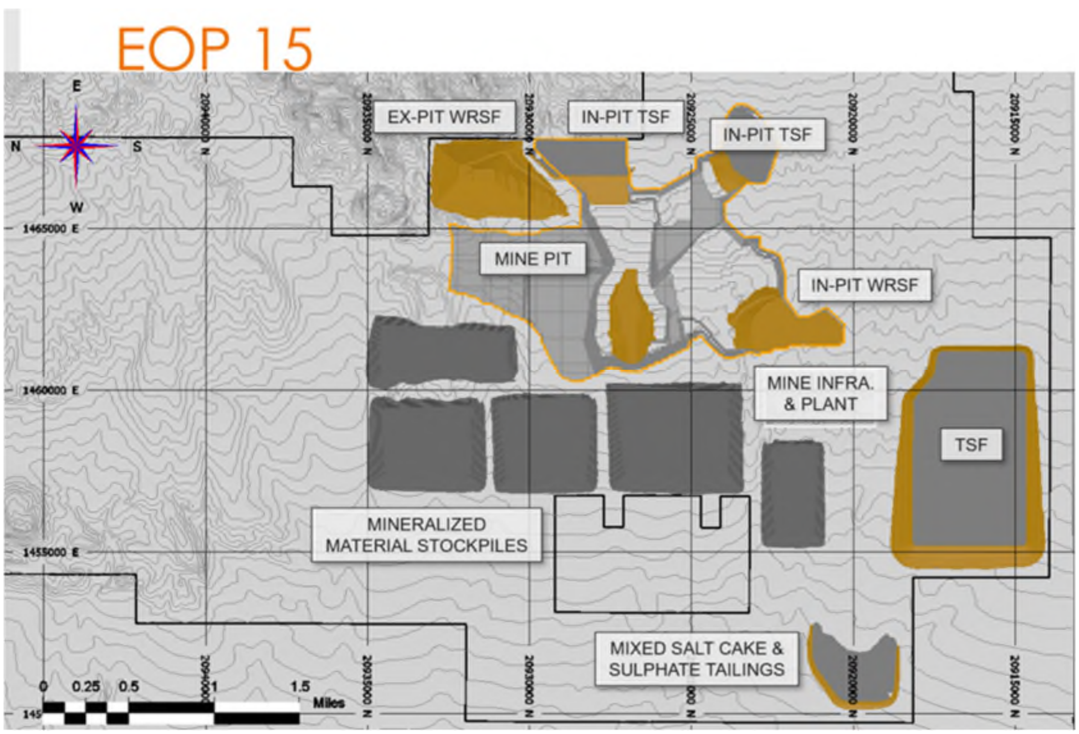

Figure 16-12 Layout End of Period 15

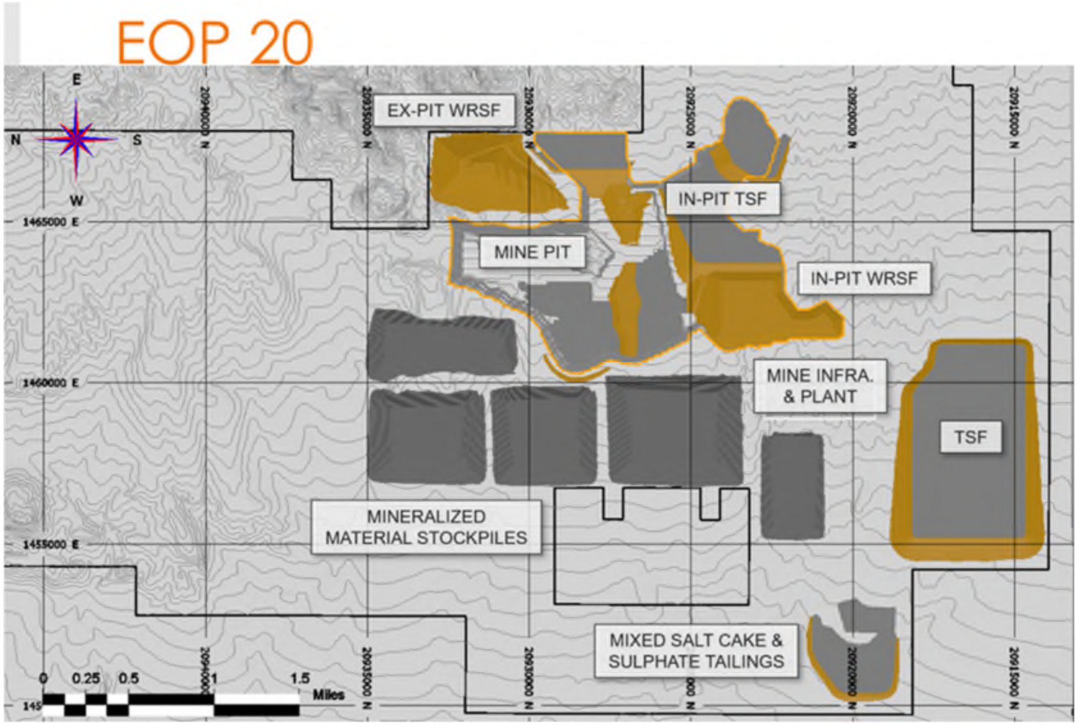

Figure 16-13 Layout End of Period 20

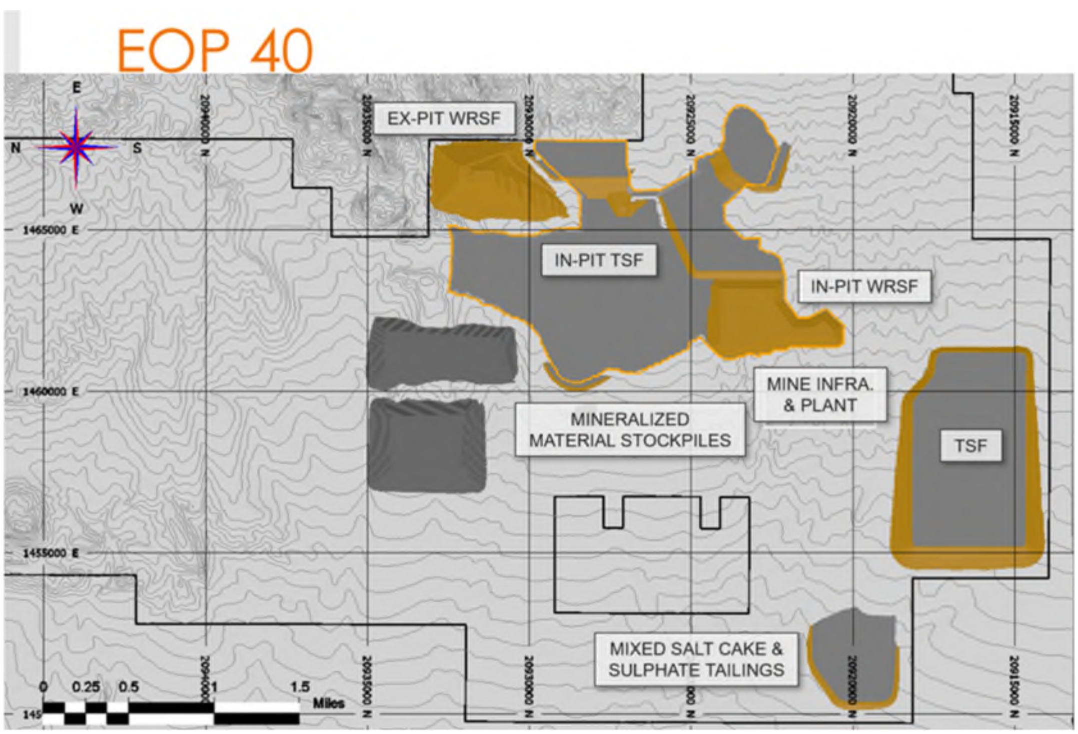

Figure 16-14 Layout End of Period 40

16.5.2 Flat 24kt/y Production Scenario

A second mining schedule was generated using MSSO that used a target LC production of 24,000 t/y while keeping the feed grade at 1,400 ppm for as long as possible.

This schedule as developed with the same design criteria as the base case and resulted in a mining production schedule as shown in Figure 16-15.

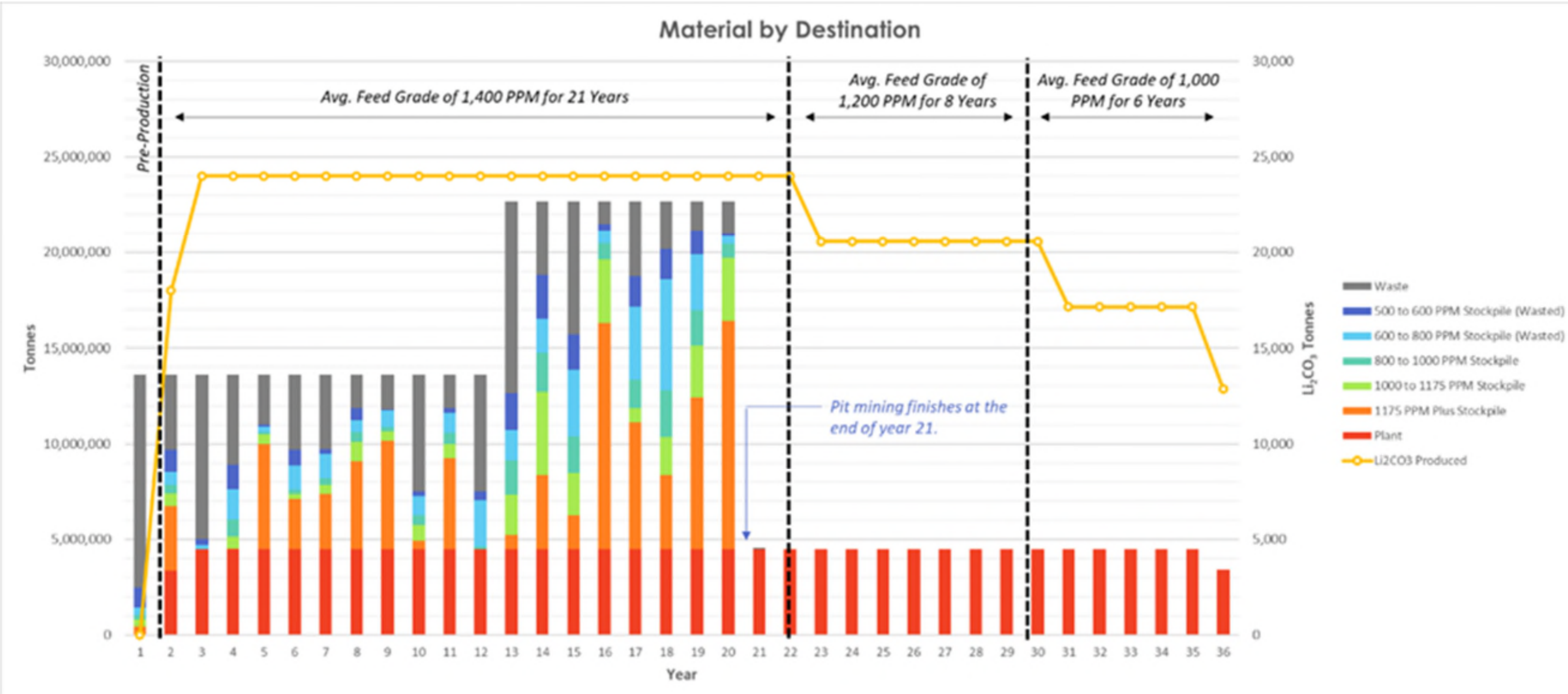

Figure 16-15 Flat Case Mine Plan Annual Production Schedule

16.6 Waste Storage Facilities

Mined material that is waste is placed either in the ex-pit waste rock storage facility (WRSF) or as backfill in-pit. Additionally, some waste material is used to build berms for the tailings storage facility. There is one primary WRSF that is located outside of the open pit footprint. It is located north-east of the pit and sterilizes potential mineralized material l due to its location being within the revenue factor 1 pit shell. The material underneath the WRSF is of low grade and is the lowest grade area anywhere just outside of the edge of the open pit. It is also close by to where the open pit mining begins and so allows for short hauls and is utilized for the first 10 years of mining until the pit opens up enough to allow for back-fill in-pit. The WRSF has been designed using the geotechnical design criteria and the required storage volume based on the mine plan. There are several in-pit WRSF structures and in-pit waste material storage begins as soon as the mine plan allows for it. Material is used for both berm construction to aid with in-pit tailings placement as well as general storage to minimize project footprint. Additionally, waste material is used to build ex-pit tailings berms.

A break down of the waste material by destination is shown in Figure 16-16.

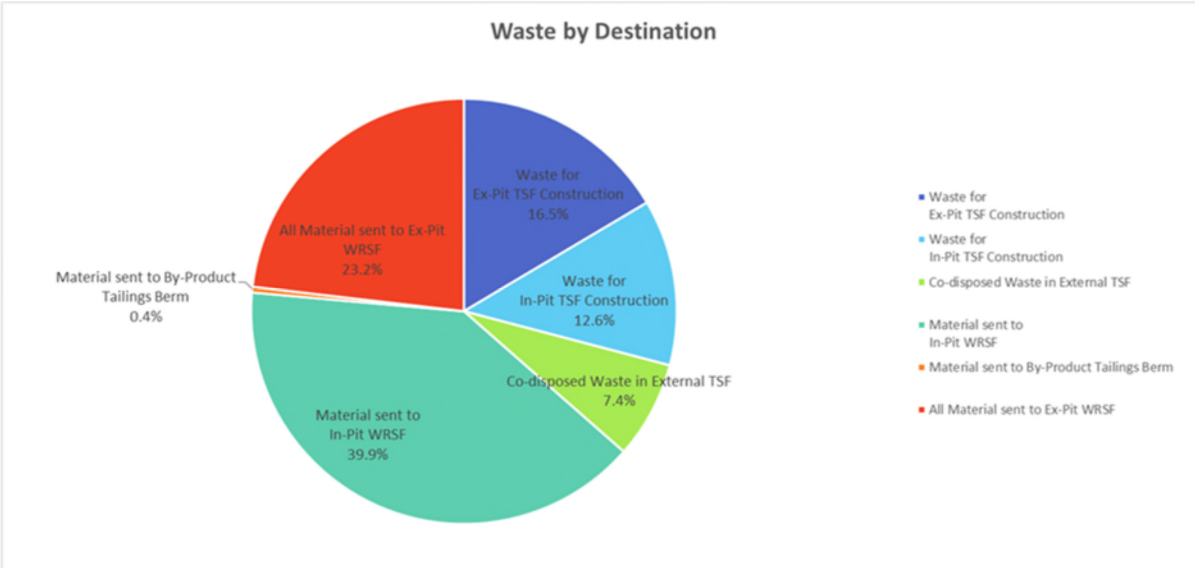

Figure 16-16 Waste Material by Destination

16.7 Mine Tailings Management

The safe and sustainable storage of tailings from the processing of the lithium mineralized material is a key component of the TLC development plan. The tailings management strategy for the TLC project is based several key goals:

- Dewatering of the multiple tailings streams to produce a filtered tailings material which is amenable to stockpiling and avoids the use of slurried tailings containment.
- Advancing to in-pit storage of tailings material as soon as reasonably practical in the overall mine development sequence.
- Use of mine rock in the construction of starter berms and for closure structures related to tailings storage
- Utilizing fully lined, low permeability containment areas for tailings materials where control of seepage is needed.
- Planning for the closure of the facilities from the initial construction stage to reduce future liabilities and to allow for progressive reclamation.
- Incorporating water management plans and structures for the tailings management areas.

In addition to providing for a more sustainable long-term storage solution, the filtered tailings management approach also allows for improved recovery of process water lowering losses to the environment and reducing overall make-up water requirements.

16.7.1 Tailing Materials and Properties

The proposed TLC lithium processing and upgrading flowsheet developed by DRA results in the generation of multiple tailings streams with varying properties and storage requirements. Table 16-7 summarizes the tailings materials and their basic properties. The current tailings management plan for the primary tailings assumes spreading of the tailings upon placement to allow additional drying to prior to compaction to design density. The footprint of the external TSF has been developed with this approach in mind.

The current tailings management approach assumes the blending and/or co-disposal of tailings materials for storage to simplify placement of the tailings. Blending or co-disposal also has the potential and to improve overall blended tailings properties as some the low volume tailings streams have lower as-received moisture contents and will benefit from blending with other materials with higher percentage solids/lower initial moisture contents.

The current processing plan results in the production of four tailings materials:

- Primary tailings – this stream represent the largest proportion of the tailings materials and is a blend of multiple filtered clay and salt-rich materials from processing. These materials are combined and treated as one material type for tailings storage planning.
- Magnesium sulfate monohydrate (Kieserite) – this material is a magnesium rich by-product of the process which has potential commercial value and in some mining scenarios is sold and shipped off-site. In scenarios where the by-product is not sold, it is stored in lined facilities.
- Magnesium sulfate heptahydrate (Epsom salts) – similar to the kieserite by-product, the Epsom salts by-product has potential commercial value and may be sold and shipped off-site or converted to Kieserite. It requires storage in lined facilities if kept on-site.
- Glaserite, potassium sulfate and sodium sulfate – minor volumes of filtered materials are generated during processing of the mineralized material. These materials are produced at a higher measured moisture content because of the inclusion of water within their crystal structure. They will be stored in lined facilities.

Table 16-7 Estimated Tailings Properties

Tailings Type	As-Received Solids Content (%)	Particle S.G.	Estimated Placed Density (t/m3)
Primary Tailings	70 - 80%	2.59	1.75 – 1.8
Kieserite - Magnesium Sulfate Monohydrate	95 – 97%	2.45	1.55
Epsom Salts - Magnesium Sulfate Heptahydrate	95 – 97%	1.68	1.1
Sodium and Potassium Sulfate	95%	2.22	1.46

* *Note – Blended placed density of 1.5t/m3 used for combined storage cases based on typical annual production of each tailings type*

It is important to note that these properties are based on initial process testing completed by DRA and geotechnical characterization of the tailings materials has not been carried out. This characterization will be required to support future prefeasibility and feasibility level evaluations.

16.7.2 Design Criteria

Currently, there is limited foundation information for the proposed external tailings storage facilities beyond that provided by the geological logging completed in the exploration drillholes and review of regional information. Design criteria are based on publicly available information and engineering judgement based on current understanding of the tailings materials and foundation conditions. The following criteria have been used to develop the configuration and sizing of the tailings storage facilities for the purposes of the mining sequence and PEA level costing. Design criteria for the various tailings facilities is as follows:

- External primary tailings facilities will include a supporting buttress constructed of mine rock fill at an overall slope of 20 degrees using a centerline raise method.
- In-pit storage of primary tailings will be separated from active mining areas with a mine rock supporting buttress with slopes of 20 degrees.
- Lined facilities will be constructed using a single layer geosynthetic liner with drainage systems.
- Magnesium sulfate monohydrate and heptahydrate and sodium and potassium sulfate tailings stockpiles will be constructed in lifts with overall slopes of 3H:1V (18 degrees).
- Magnesium sulfate monohydrate and heptahydrate and sodium and potassium sulfate tailings stockpiles will have buttresses of mine rock constructed around their perimeters prior to closure to provide long-term stability.
- All tailings stockpiles will have a minimum 30cm layer of reclamation material placed over them as part of the reclamation plan to limit dust generation. Depending on closure criteria, a cover system may be required for the lined facilities.
- Surface water management channels and structures will be constructed to manage and contain run-off from the tailings stockpiles. The stockpiles will be graded to promote run-off but will include best management practices to limit erosion and control sediment loss/erosion.

16.7.3 Description of Tailings Storage Facilities

This section describes the development of the various filtered tailings facilities. The mining sequence figures include the development and progression of the various stockpile areas described below.

Tailings Storage Facility 1 (TSF 1)

During the initial 10 – 15 years of mining (depending upon the mining scenario selected), primary tailings will need to be stored in an external containment facility. A starter berm of compacted rockfill will be constructed around the perimeter of the tailings stockpile area sufficient to provide

12 – 18 months of storage capacity. Subsequent raises of the tailings stockpile will be placed in conjunction with centerline raises of the mine rock berm until the ultimate height is reached.

Once sufficient in-pit area is opened, primary tailing will be placed in designated cells within the mined-out pit but supported by compacted berms of mine rock. Multiple in-pit cells will be constructed over the life of the mine as the pit develops. Once processing of stockpiled low-grade material begins, the remaining open pit void will be used for storage of the primary tailings until the stockpiled material is exhausted.

It is planned to transport the filtered primary tailings from the processing plant to near the external tailings facility where a bin will load dedicated haul trucks that will haul the filter cake onto the tailings pile. The tailings will be spread by dozer to allow for additional drying prior to compaction by a roller compactor. The perimeter mine rock buttress will use waste hauled from the pit by the large mine fleet haul trucks and placed in lifts to be spread by dozers. Compaction of the mine rock will be provided by the truck traffic.

Once volume is available for in-pit primary tailings storage, the conveyor and bin system will be relocated to discharge adjacent to the pit and similar placement methods will be utilized.

Tailings Storage Facility 2 (TSF 2)

The Base Case will require long-term onsite storage of the magnesium sulphate monohydrate and heptahydrate in lined facilities along with the sodium and potassium sulfate discussed below. Given the lower as-received moisture content of the by-product tailings, it is judged that initial bermed support will not be required for these materials.

Similar to the primary tailings, these materials will be conveyed to a bin near the tailings facility for loading dedicated trucks which will haul the tailings to the lined facility. A protective base layer will need to be constructed over the liner prior to tailings placement to allow for haul truck traffic. The by-product tailings will be dumped and then spread in low lifts 0.3 – 0.5m using dozers and compacted by roller compactors.

A final perimeter berm of dumped mine rock will be constructed in lifts around the tailings stockpile using mine haul trucks. This berm would support the long-term closure stability and reclamation of the structure. Based on the current mine schedules, placement of berm rock could start within 10 years of initial stockpile construction and continue to the end of operations.

For the Alternative Case production scenarios, where the magnesium sulfate monohydrate and or heptahydrate are sold and shipped off-site, an allowance has been made for small lined separate stockpile areas adjacent to the plant to be constructed which would contain the materials until they are sold. Stockpile capacity in the range of 3 – 4 months production has been assumed to be sufficient but specific sizing and configuration should be developed with a better understanding of the market for these products.

While production volumes of the sodium sulfate and potassium sulphate tailings are a relatively minor portion of the overall tailings material balance (<5% by weight), these materials are required to be stored on lined facilities. Given the lower as-received moisture content of the by-product tailings, it is judged that initial bermed support will not be required for these materials.

These materials will be conveyed to a bin near the tailings facility for loading dedicated trucks which will haul the tailings to the lined facility. A protective base layer will need to be constructed over the liner prior to tailings placement to allow for haul truck traffic. The mixed sulphates tailings will be dumped and then spread in low lifts 0.3 – 0.5m using dozers and compacted by roller compactors.

A final perimeter berm of dumped mine rock will be constructed in lifts around the tailings stockpile using mine haul trucks. This berm would support the long-term closure stability and reclamation of the structure. Based on the current mine schedules, placement of berm rock could start within 10 years of initial stockpile construction and continue to the end of operations.

A benefit of the filtered tailings management strategy is that the final structures are dry landforms which do not require long-term maintenance of fluid impounding structures. The current mine plans include progressive reclamation of the multiple stockpile structures as areas become available as well as placement of final stabilizing buttresses to meet long-term stability needs.

The dry landforms allow for rapid placement of reclamation materials over the tailings stockpiles to mitigate against dusting, limit erosion of the tailings during rainfall events and promote revegetation. As noted previously, future evaluation work will determine if some type of cover system (store-and-release soil cover, geosynthetic material) is required for the lined tailings facilities.

Reclamation and closure activities will also include development of a closure surface water management system. This will include construction of channels to control and direct run-off from the tailings stockpiles to the surrounding natural drainages in a manner which prevents erosion of the reclamation materials and underlying tailings materials. The outer slopes of the stockpiles may require the construction of armoured or reinforced channels to manage higher velocity flows during storm run-off events. The sediment control sumps required during mining and reclamation operations would be deactivated (backfilled or breached) once the final landforms have reached a stable condition in terms of erosion potential.

16.7.4 Future Work

The current tailings management strategy is based upon the current flowsheets and process testing which indicates that filtered tailings cake can be produced for all the tailings streams. The tailings management plan also assumes that blending of certain streams is possible to create a filtered tailings material (ex. primary tailings) which can be conveyed, hauled and spread to be compacted in lifts. As noted earlier, geotechnical and geochemical characterization of the tailings materials has not been completed and the design developed to date are based on engineering judgement and estimates of tailings behaviour. The following work should be completed in order to support future project development (i.e. prefeasibility and feasibility level studies):

- Foundation investigations for the proposed tailings stockpile areas are required to determine acceptable slope angles and ultimate heights for the facilities. Investigations would include test pits and drillholes (sonic, rotary and coring) as well as the installation of additional piezometers to measure groundwater levels (if present).
- Laboratory testing of foundation materials to determine strength and hydrogeological parameters would be required.
- Characterization of the proposed filtered tailings materials would be required to determine their material handling and geotechnical characteristics including consolidation, strength, moisture retention (soil water characteristic curve), compaction and trafficability. Sample quantities at the scale of >30kg would be required for a full testing suite.
- Characterization of foundation and borrow materials for berm and liner base layers is required to determine the suitability of these materials for construction. Testing would include compaction, strength and hydraulic conductivity.
- Testing of borrow materials for suitability for use as underliner and overliner layers around the geosynthetic liner is required. Testing would include grainsize, strength and specific testing to determine interface strengths between the geosynthetic and over/underline soils.
- Delineation and testing of rock materials that might be suitable for drainage layers for liner systems as well as for use as riprap armouring in water management channels. Ideally, a source of suitable durable rock could be found within the planned pit areas

16.8 Primary Equipment

Equipment selection was calculated using the annual mine plan production quantities, equipment costs, and equipment specifications for haul trucks and loading units. Operational suitability was also considered to ensure that the correct size class of equipment was selected. A range of haul trucks from 50 tonnes to 150 tonnes was assessed along with appropriately sized loading units. It was determined that a mixed fleet of 90-tonne and 140-tonne class haul trucks was the most optimum selection for the TLC project. This mixed fleet allows for more operational flexibility and fleet matching with loading units.

Once a fleet class was selected, detailed haulage routes were designed in Hexagon's MineSight software program. Haulage routes for waste and mineralized material by source and destination were created annually based on the mine plan. These haulage routes were then exported into Talpac to determine haulage cycle times and then ultimately total truck hours on an annual basis. The Talpac parameters used are shown in Table 16-8.

Table 16-8 Talpac Parameters

Parameter	Units	Value
Rolling Resistance	%	4
Rolling Resistance	%	2
Maximum Speed	m/h	35
Maximum Speed	m/h	10
Maximum Speed	m/h	10
Maximum Speed at	m/h	6
Maximum Speed	m/h	12.5
Maximum Speed	m/h	12.5

This resulted in a LoM average haul cycle time of 20 minutes. This includes load, haul, spot, dump, and queuing times.

Once truck hours were calculated then loading units were determined and equipment unit requirements were calculated annually for the LoM plan. The annual time usage breakdown is shown in Table 16-9.

Table 16-9 Truck Time Usage Breakdown

Item	Unit	Value	Annual Hours
Scheduled Time			
Calendar Time	days/year	365	8,760
Non-Scheduled Time			
Stat Holidays	days/year	8	192
Scheduled Days	days/year	357	8,568
Downtime			
Mechanical Downtime			
Planned Maintenance	500-h PM/year	12	144
Annual Maintenance	days/year avg	20	480
Unplanned Maintenance	days/year	10	240
Mechanical Availability			88%
Non-Mechanical Downtime			
Weather Stoppages	days/year	5	120
Misc Delays	h/month	15	144
Blasting delays	h/month	0	0
Shift Change	h/shift	0.5	357
Safety Meetings	h/month	1	12
Available Running Hours			7,071
Availability			80%
Standby			
Operating Standby	hours/month	0	0
External Standby	hours/month	0	0
Breaks / Lunch	h/shift	1	714
Fuel & Lube	h/shift	0.5	357
Engine idling during standby	%	25%	
Operating Time			6,000
Engine Hours			6,268
Utilization when available			85%
Overall Utilization			68%
Operating Delay			
Queuing	h/shift	0.15	107
Waiting on Support Equip	h/shift	0	0
Productive Hours			5,893

Table 16-10 Shovel Time Usage Breakdown

Item	Unit	Value	Annual Hours
Scheduled Time			
Calendar Time	days/year	365	8,760
Non-Scheduled Time			
Stat Holidays	days/year	8	192
Scheduled Days	days/year	357	8,568
Downtime			
Mechanical Downtime			
Planned Maintenance	500-h PM/year	12	144
Annual Maintenance	days/year avg	20	480
Unplanned Maintenance	days/year	10	240
Mechanical Availability			88%
Non-Mechanical Downtime			
Weather Stoppages	days/year	5	120
Misc Delays	h/month	5	144
Blasting delays	h/month	0	0
Shift Change	h/shift	0.5	714
Safety Meetings	h/month	1	12
Available Running Hours			6,714
Availability			77%
Standby			
Operating Standby	h/month	0	0
External Standby	h/month	5	60
Breaks / Lunch	h/shift	1	714
Fuel & Lube	h/shift	0	0
Engine idling during standby	%	25%	
Operating Time			5,940
Engine Hours			6,134
Utilization when available			88%
Overall Utilization			68%
Operating Delay			
Shovel Hanging	h/shift	0.15	107
Waiting on Support Equip	h/shift	0.15	107
5min Shovel Move	moves/month	150	150
1h Shovel Move	moves/month	2	24
4h Shovel Move	moves/month	0.5	24
Productive Hours			5,528

Table 16-11 Loader Time Usage Breakdown

Item	Unit	Value	Annual Hours
Scheduled Time			
Calendar Time	days/year	365	8,760
Non-Scheduled Time			
Stat Holidays	days/year	8	192
Scheduled Days	days/year	357	8,568
Downtime			
Mechanical Downtime			
Planned Maintenance	500-h PM/year	12	144
Annual Maintenance	days/year avg	25	600
Unplanned Maintenance	days/year	10	240
Mechanical Availability			87%
Non-Mechanical Downtime			
Weather Stoppages	days/year	5	120
Misc Delays	h/month	5	144
Blasting delays	h/month	0	0
Shift Change	h/shift	1	714
Safety Meetings	h/month	1	12
Available Running Hours			6,594
Availability			75%
Standby			
Operating Standby	h/month	0	0
External Standby	h/month	0	0
Breaks / Lunch	h/shift	1	714
Fuel & Lube	h/shift	0.5	357
Engine idling during standby	%	25%	
Operating Time			5,523
Engine Hours			5,791
Utilization when available			84%
Overall Utilization			63%
Operating Delay			
Shovel Hanging	h/shift	0.15	107
Waiting on Support Equip	h/shift	0.1	71
5min Shovel Move	moves/month	60	60
1h Shovel Move	moves/month	15	180
4h Shovel Move	moves/month	0.5	24
Productive Hours			5,081

The loading units class that resulted in a good fleet match was a 25 tonne class front end loader and a 30 tonne class front shovel. Front end loaders were selected due to their maneuverability which allows for operational flexibility. The front shovel was selected for its low operating cost per tonne and productivity. The 25 tonne class loader results in approximately 3 pass loading for the 90 tonne truck and the 30 tonne shovel results in approximately 5 pass loading for the 140 tonne class haul truck. This resulted in the following haulage truck and loading unit requirements for the LoM.

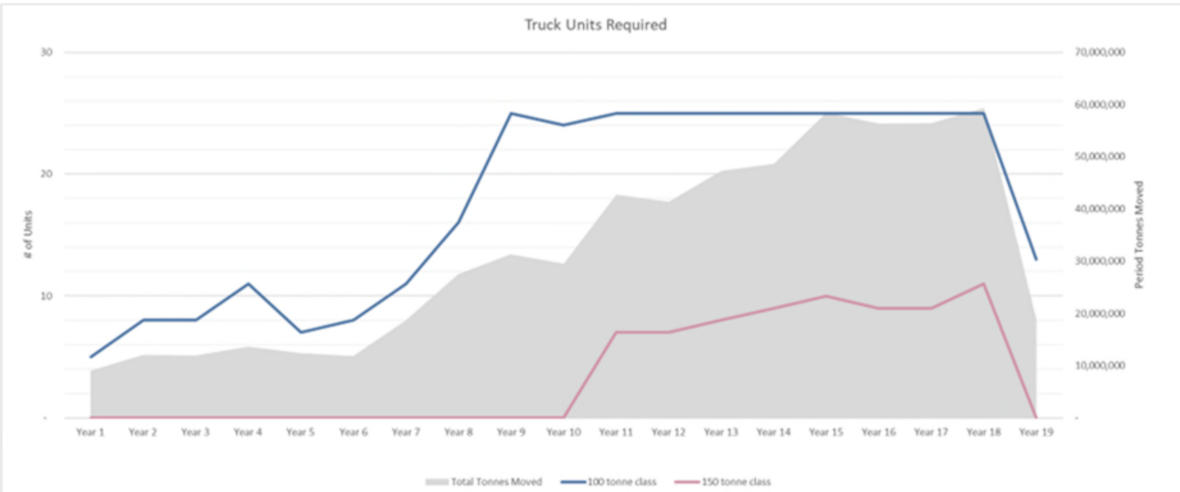

Figure 16-17 Haul Truck Units

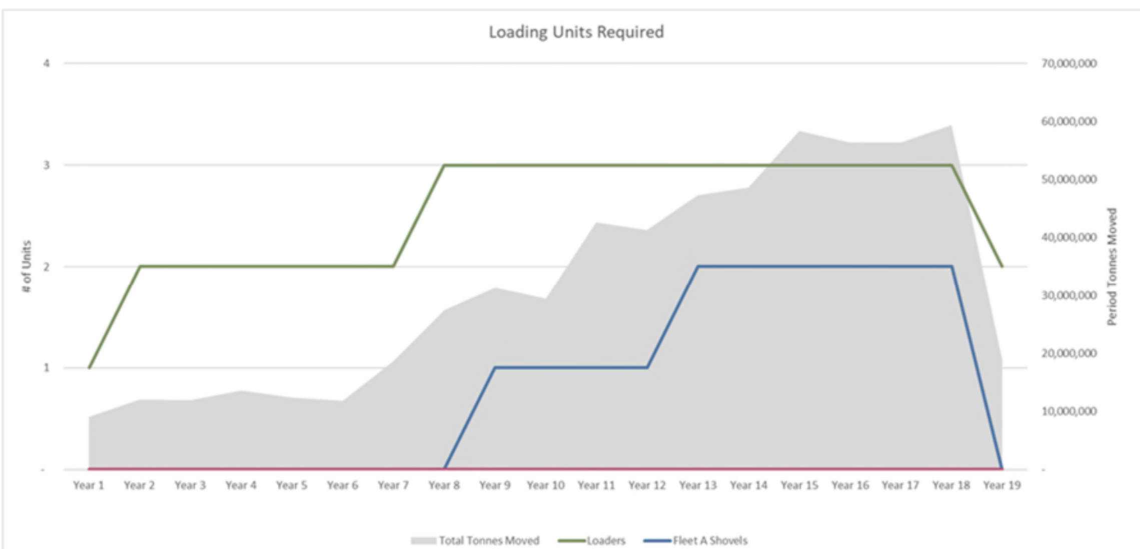

Figure 16-18 Loading Units

16.9 Support Equipment

A list of support equipment was developed based on typical open pit mining requirements and engineering judgment on the number of units needed to support operations.

Table 16-12 Support Equipment

Number of Units		Initial	Max LoM
	Dozers		
	D10	2	4
	D8	2	2
	Excavators		
	Cat 390 Excavator	2	2
	Graders		
	18M	1	4
	16M	1	3
	Other		
	Fuel Lube Truck	1	3
	Water Truck	1	4
	Tire Manipulator	1	2
	Tractor/Trailer Lowbed	0	1
	Crew Cab Pickup	5	15
	Mechanic Truck	1	2
	Maintenance Truck	1	2
	Welders Truck	1	2
	Mine Rescue Fire Truck	1	1
	Mine Rescue Ambulance	1	1
	Utility backhoe	1	4
	Boom Truck (Powerline)	1	2
	Small Forklift	1	2
	Medium Forklift	1	1
	Crew Bus	2	4
	Crew Bus (in-pit)	2	3
	Pit Dewatering Pumps	4	8
	Misc + Spares	1	3
	Lighting Plant	8	12
	90kw Generator	2	4
	600kw Generator	2	2
	Flat Deck with Crane	1	1

16.10 Mine Water Management

Based on the existing climate, weather, and drilling data to date, it is assumed that all mining activities take place above the water table and mine water management requirements are minimal. No resource drill holes have encountered water and the average annual rainfall in the Tonopah Nevada region is 6 inches, so mine dewatering will be based on annual rainfall events that may require dewatering operations to take place. It is assumed that water pumped from the pit would either be routed to the processing facility or tailings facility where evaporation would significantly reduce the impact of a rainfall event. All other mine affected water will be stored in a settling pond and pumped to the tailings facility to allow for natural evaporation to occur.

16.11 Reclamation and Closure

Planning for mine reclamation and closure of the associated facilities as early as possible in the planning and design stages ensures that environmental and social considerations of the project are adequately addressed. The initial Reclamation and Closure (R&C) plan has been completed at a conceptual level and provides the basis for further development of the plan as the project proceeds though the next phases of study.

The conceptual R&C plan considers physical stability, chemical stability, and future land use following the completion of mining and processing activities on site at TLC. The overall objective of the conceptual R&C plan is to ensure public safety and environmental protection by minimizing the long term physical, chemical and biological impacts of the Project (to the extent possible) through rehabilitation of the operational site according to the completion criteria that will be established by state and federal permits and laws.

The specific objectives of R&R that will continue to be developed are:

- Compliance with or exceed regulatory requirements, international standards and Project commitments.
- Protection of the environment, public health and safety, property over the long term.
- Conduct mine development and operations in a manner that allows progressive rehabilitation to minimize post-operational closure activities and related costs.
- Achieve physical stability thereby reducing or eliminating long term environmental impacts.
- Minimize long-term requirements for active site care and maintenance during the post closure period (e.g. water collection and treatment).
- Reclaim disturbed land surfaces to a stable condition, including the revegetation with native species (where possible), that are compatible with the land uses prior to project development.
- Restore watercourses to a stable condition to achieve water quantity and quality objectives in the long term.
- Encourage third party stewardship of the property to promote sustainable use by providing social and economic benefits to the local communities.
- Development of closure plans to include information obtained from public consultations with the local communities and regulatory authorities; and
- Provide an acceptable end use plan.

At this stage of the project, reclamation activities for site closure include re-grading of the WRSF, tailings, and general site, deconstruction of site infrastructure such as the processing plant, shop, offices etc, and re-seeding the site.

17 RECOVERY METHODS

17.1 Introduction

The Acid Leach testwork discussed in Section 13 provided the basis and the development of the block flowsheet shown in Figure 17-1 and provided key design parameters (Ore requirements, recoveries, reagent consumptions, temperatures) for the process design.

The Project consists of an open pit mine and an associated processing facility along with on-site and off-site infrastructure to support the operation. The Base Case design for the process plant is based on achieving a nameplate process tonnage of 8.8Mt/y over two phases. An overview of the phased production strategy is presented in Table 17-1.

Table 17-1 Process Rate and Expansion Phases – Base Case

Description	Years	Process Rate
Phase 1	1 – 5	4.4 Mt/y
Phase 2	6 - 40	8.8 Mt/y

A total of 1.46 M tonnes of high purity LC is produced over life of mine at an overall lithium recovery of 73.3%.

The Tonopah Lithium Clay Process plant consists of the following steps:

- Mineralized material comminution and screening
- Gravity Concentration;
- Counter-Current leaching;
- Acid leach filtration;
- Neutralisation;
- Magnesium Sulfate Crystallisation;
- Epsom Salt Adiabatic Flash
- Impurity Removal;
- Softening;
- Two stage lithium carbonate precipitation and Product Handling;
- Mixed Sodium and Potassium Sulfate Crystallisation;
- Dry stacked filtered tailings;
- Sulphuric acid plant
- Reagent storage
- Services and Utilities.

17.2 Design Criteria

The key Project design criteria are shown in Table 17-2.

Table 17-2 Design Criteria

Description	Unit	Value
Life of Mine	y	40
Plant Design Throughput (Phase 1 - Year 1 to 5)	Mt/y	4.4
Plant Design Throughput (Phase 2 - Year 6 to 40)	Mt/y	8.8
Operating Hours Per Year	h/y	7,884
Lithium Head grade (Phase 1)	ppm Li	1,400
Lithium Head grade (Phase 2)	ppm Li	1,400 – 1,000
Lithium Production as LC (Phase 1)	t/y	24,000
Lithium Production as LC (Phase 2)	t/y	48,000 – 34,000
Lithium extraction Method		Counter-current sulfuric acid leach
Acid addition/ tonne Run of Mine (RoM)	Kg/t	298
Acid addition/ tonne Concentrate	Kg/t	542
Lithium recovery – Ore preparation	%	82.58
Lithium Recovery – Hydro metallurgical plant	%	88.76
Lithium Recovery – Overall	%	73.30

17.3 Power and Water Consumption

For Phase 1 of the Base Case an estimated power draw for the major equipment including the acid plant is 48.7MW. For the balance of equipment an estimated power draw of 14.5MW has been used giving an overall estimated power draw of 62.2MW. The acid plant will generate 73.4MW of power allowing for 11.2MW to be exported. For Phase 2 of the Alternative case the site power draw will be higher at an estimated 126 MW and the two acid plants' power generation will be approximately 145MW, allowing for 19.3MW to be exported

The raw water make-up requirement is 0.76 m^3/t of feed to the plant. This quantity is account for the acid plant water requirements. No tailings return water is included in this figure.

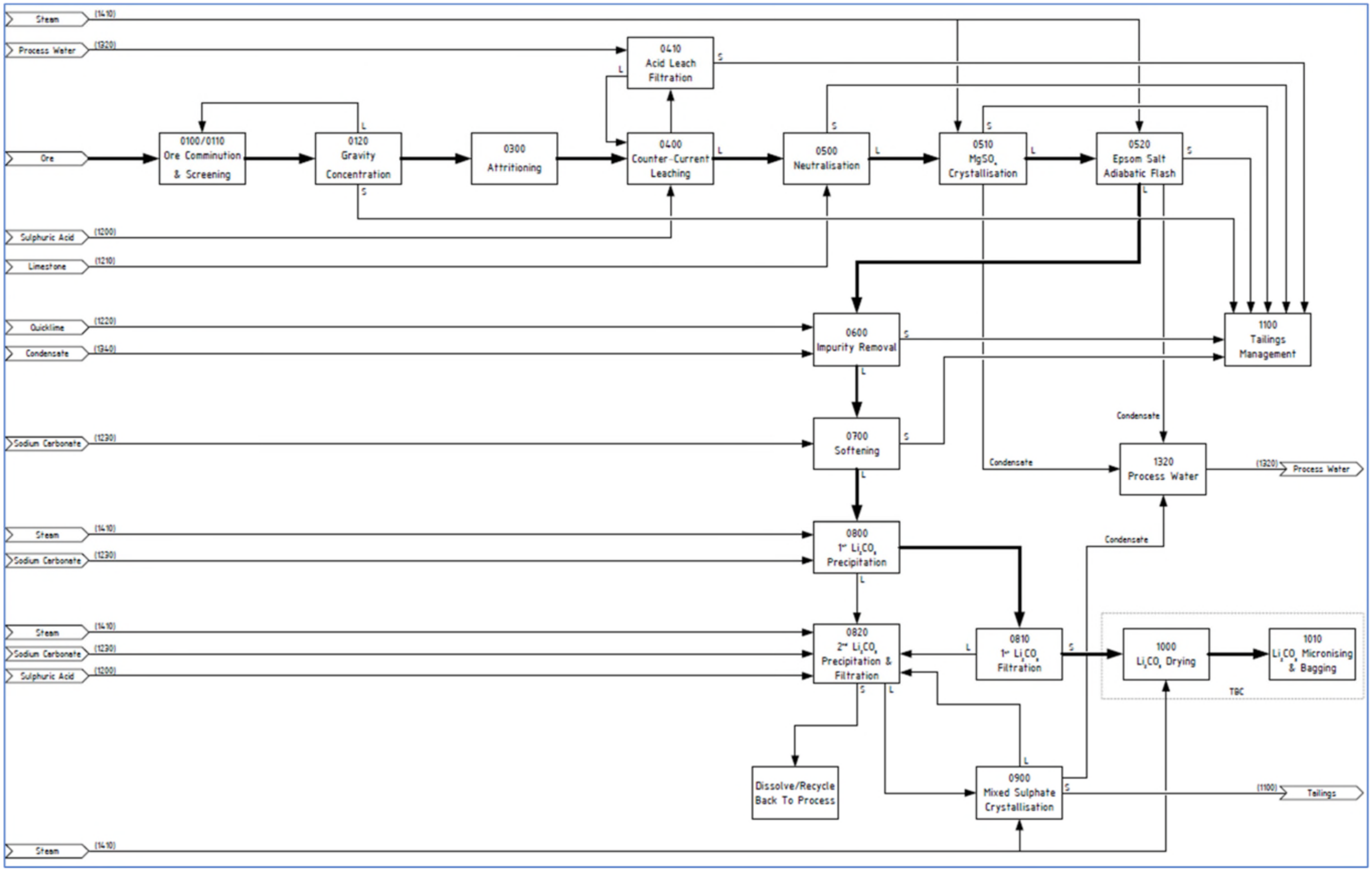

Figure 17-1 Process Block Flow Diagram

17.4 Process Description

17.4.1 Area 0100 – Mineralized Material Comminution

Mined lithium-bearing mineralized material is stockpiled on the run-of-mine (RoM) pad. The RoM material is fed onto a sloped oversize static grizzly, sitting over the ore feed hopper, using a Front-End Loader (FEL). Oversize material will be diverted to an oversize bunker, from where it can be reduced in size by a rock breaker and re-fed to the RoM pad or recycled back to the mine.

An apron feeder conveys the mineralized material out the ore feed hopper to the crusher system with consist of roller crushers in series. The crushed product is conveyed to a mill feed bin from where it will feed to the impact mills, to further reduce the particle size of the material. The impact mill mineralized material product is conveyed to the fine ore stockpile.

17.4.2 Area 0110 – Mineralized Material Preparation Screening

A FEL will be used to transfer milled mineralized material, from the fine ore stockpile to the fine ore bins. Dry milled mineralized material is conveyed from the fine ore bins to the fine ore mixing tanks. Recycled water is added into the mixing tanks to produce a density controlled dilute slurry. The diluted slurry is pumped to a series of wet screens where the +2mm size fraction is diverted into a bunker from where it can be recycled or returned to the mine. The screen underflow is pumped to the gravity concentrator feed tank.

17.4.3 Area 0120 – Gravity Concentration

The screened dilute slurry is pumped from the feed tank to several rougher concentrators (in parallel) where the fine ore are separated into a diluted (lithium rich) concentrate and a dense rejected (grade reduced) tails fraction.

The dense rougher tails are diverted to a 2nd feed tank to be repulped with recycled water to a (density controlled) diluted rougher tails slurry. The diluted rougher tails slurry is pumped to several scavenger concentrators (in parallel) and separated into a dilute (upgraded lithium) concentrate and a dense (depleted) tails fraction.

The diluted concentrate from the roughers and scavengers are collected in the concentrate thickener feed tank, pumped to the concentrate thickener, thickened, and pumped to the concentrate filter feed tanks. From the filter feed tank, it is distributed to a few concentrate filters to be dewatered. Wet concentrate filter cake is discharged onto a feed conveyer feeding the attrition tank prior to acid leach.

The dense scavenger tails are diverted to the concentrator tails filter feed tank to be repulped with recycled water to a (density controlled) tails filter feed slurry. The tails filter feed slurry is distributed to a few concentrate tails filters to be dewatered. Wet Tails filter cake is discharged onto a tailing conveyer to be conveyed to the tail's storage facility (TSF1).

The overflow from the concentrate thickener, concentrate filter filtrate and concentrator tails filter flow to the c concentrate filter filtrate tanks and is recycled back into the ore mixing tanks, rougher tailing repulp tank, concentrator tailing filter re-pulp tank.

17.4.4 Area 0300 – Attritioning

The wet concentrate filter cake is discharged into enclosed agitated overflow attrition tanks along with acidic 2nd leach thickener overflow. The free acid in the liquor would react with the dolomite and calcite in the concentrate solids and CO_2 formation and foaming is expected. The slurry is vigorously agitated to drive off the CO_2 and provide some foaming control. The attritioned slurry overflows into the 1st thickener feed tank. Sweep air from the attrition tanks is fed to the acid leach scrubber for treatment and then vented to atmosphere.

17.4.5 Area 0400 – Counter-Current Leaching

The feed tank attritioned slurry is pumped to the primary thickener where the remaining free acid in the feed solution reacts with predominately dolomite and calcite in the concentrated material resulting in a partially neutralised overflow that is pumped to the neutralisation circuit for further processing.

The primary thickener underflow is pumped to a secondary thickener feed tank, where concentrated sulfuric acid, leach and plant recycle solutions are added and pumped to the secondary thickener. Most of the lithium extraction takes place in the secondary thickener where a 100 g/L free acid concentration, in the overflow, is maintained to ensure high lithium extractions. The overflow from the secondary thickener, containing 100 g/L free acid, is used in the attrition tanks to repulp the concentrated ore fed into the leach circuit.

Secondary and tertiary thickeners, provide the required residence for the acid leach. The underflow of the tertiary thickener, containing the resulting residue from the acid leach reactions, is pumped to the acid leach filters feed tank for dewatering and washing of the residue.

17.4.6 Area 0410 – Acid Leach Filtration

The acidic slurry is distributed to the acid leach filters where the leach residue is filtered and washed. The leach filtrate and wash water are recycled back to tertiary thickener feed. The wet filter cake is discharged and conveyed to TSF 1 where it will be blended and neutralised with the concentrator tails solids.

17.4.7 Area 0500 – Neutralisation

The pregnant leach solution (PLS) is pumped to the three overflow neutralisation tanks in series where limestone slurry is added to the 1st tank. The pH is raised to neutral and impurities, e.g., aluminium, iron, and calcium are precipitated out.

The neutralized slurry is pumped to the neutralisation filter feed tanks from where it is distributed to the neutralisation filters. The precipitated impurities are filtered, washed, and discharged. The wet neutralisation filter cake, composed mostly of calcium sulfate dihydrate (gypsum) is conveyed to TSF1 for dry stacking.

The filtrated PLS is collected in filtrate tank where it is pumped to magnesium sulfate crystallization for further processing. The filter washate is collected and recycled back to make-up limestone slurry.

17.4.8 Area 0510 & 0520– Magnesium Sulfate Crystallisation

The neutralisation PLS and impurity removal washate are collected and pumped to the magnesium sulfate crystalliser feed tank. The neutralized process liquor stream is concentrated in the forced circulation crystalliser unit and hydrous magnesium sulfate is formed. The energy for evaporation supplied by two Mechanical Vapour Re-compressor's (MVR) units and a quantity of low-pressure steam supplied from the Sulfuric Acid Plant (SAP).

A concentrated slurry is purged out of the crystalliser and the crystalised anhydrous magnesium sulfate is removed from the solution via a centrifuge. The hydrous magnesium sulfate solids are transported, to a TSF 2 for dry stacking.

The saturated centrifuge centrate is cooled to ambient temperatures and Epsom salt ($MgSO_4.7H_2O$) is crystalised out of the process solution and separated with a centrifuge. The wet Epsom salt solids are transported to TSF 2 for dry stacking. The centrate is collected and pumped to the impurity removal feed tank.

17.4.9 Area 0600 – Impurity Removal

The PLS is pumped via the feed tank to a series of overflow impurity removal tanks. The pH of the process solution is raised by addition of quicklime and the remaining impurities, mainly magnesium, manganese, and calcium sulfate, are precipitated out.

The diluted impurity removal slurry is pumped to the impurity removal filters. The precipitated impurities are filtered, washed, and discharged. The wet impurity removal filter cake, composed mostly of calcium sulfate dihydrate (gypsum) is conveyed to TSF 1 for dry stacking.

The impurity removal filtrate is collected in the IR filter filtrate tank where it is pumped to the softening tank. The filter washate is collected and is recycled to the neutralisation filtrate storage tanks.

17.4.10 Area 0700 – Softening

The PLS with impurities removed is pumped to the softening tank where it is mixed with sodium carbonate solution to precipitate the last remaining calcium out as calcium carbonate. The resultant dilute slurry is fed to the softening filter feed tank from where it is pumped to the softening filter followed by polishing filter. The softened PLS is discharged from the filters into the softened PLS tank and pumped to the 1st product precipitation. The softening filter cake containing 50% solids is transferred to TSF 1 for dry stacking.

17.4.11 Area 0800 – Lithium Carbonate Precipitation

The softened clean PLS is pumped to the Li_2CO_3 precipitation tanks. Sodium carbonate solution is added to the PLS and LC precipitates out.

The dilute resultant slurry is pumped to the LC thickener, where the underflow is pumped to the LC cyclone for dewatering followed by a centrifuge. The cyclone overflow is recycled back to the LC thickener, with the underflow feeding the centrifuge. The Li_2CO_3 is washed in the centrifuge with Reverse Osmosis (RO) water.

The wash water is collected and recycled to make-up the sodium carbonate solution. The wet washed centrifuge cake is collected in a hopper before being transferred to the LC dryer feed bin. The Li_2CO_3 thickener overflow and centrifuge centrate are collected and sent to the 2nd LC precipitation feed tank where recycled mixed sulfate centrifuge purge is added. The feed tank solution undergoes the same process as the 1st precipitation before being pumped to a filter press to separate the crude LC solids from the liquid.

The filter filtrate is discharged into pH adjustment tanks where concentrated sulfuric acid is added to neutralise the solution. The adjusted filtrate is then pumped to the mixed sulfate crystalliser feed tank.

The LC solids are collected in a tank and dissolved using the leach filter filtrate before being recycled back to the leach filter filtrate tank.

17.4.12 Area 900 – Sodium and Potassium Sulfate Crystallisation

The barren liquor is concentrated in a forced circulation crystalliser and potassium sulfate, sodium sulfate crystals and glaserite (potassium, sodium double salt) are formed. The energy for evaporation supplied by two Mechanical Vapour Recompressor (MVR) units and a small quantity of low-pressure steam supplied from the Sulfuric Acid Plant (SAP).

A concentrated slurry is purged out of the crystalliser and the crystalised mixed sulfate is removed from the solution via a centrifuge. The mixed sulfate solids are transported to TSF 2 for dry stacking.

A small quantity of centrate is purge out of the system to remove dissolved lithium sulfates and recycle it back to the process or to control impurity build-up e.g., chlorides. The chloride bleed is pumped to tailings.

17.4.13 Area 1000 & 1010 – Lithium Carbonate Drying and Packaging

The wet LC centrifuge cake is transferred to the natural gas fired LC dryer. The dryer discharges onto a product conveyor where it is then conveyed to the dry product bin. The dried LC product is then pneumatically transferred to a micronizing plant before discharging to a product bin. The dried product is fed to a bagging plant, where it is bagged into 1 tonne bulk bags and sold.

17.4.14 Area 1100 – Tailings Management

The solids waste from the gravity concentration rejects, leach, neutralisation, impurity removal and softening filters will be stored in TSF 1. Magnesium sulfate monohydrate and Epsom salt solids will be deposited in a separate suitably designed dry stacking facility (TSF 2). The mixed sulfate solids will also be transported to a lined area within TSF 2.

The waste solution from the cooling towers and water treatment plants will be pumped from the tailings tank to an evaporation pond.

17.4.15 Reagents

Sulfur

Pelletized sulfur will be delivered to site in bulk and stored in the sulfur storage shed. A front-end loader will be used to fill the sulfuric acid plant's feed hopper. The solid sulfur will then be converted to sulfuric acid in a dual catalyst double absorption sulfuric acid plant.

The ~98% sulfuric acid produced by the sulfuric acid plant is then pumped and stored in sulfuric acid storage tanks. The storage tanks will hold at least the minimum quantity required for plant start-up. As required, the concentrated sulfuric acid will be pumped to the processing plant in a duty/standby configuration.

Limestone

Limestone rock will be delivered to site in back-tip trucks and stored on a concrete pad. A front-end loader will be used to fill the limestone feed bin from the limestone stockpile. A feeder at the bottom of the feed bin will control the feed rate of limestone into the wet limestone grinding mill. The milled slurry would be stored in a slurry storage tank and supplied into the plant in a ring main.

Quicklime

Quicklime powder will be delivered to site in bulk tankers. Once on site, the quicklime will be pneumatically pumped and stored in the quicklime silo. Quicklime will be pneumatically pumped to the impurity removal area into a small day bin. Quicklime addition to the impurity removal plant will be in dry form. Rotary valve discharge lime to vortex mixer where a recycled stream is used to mix the lime into the process stream.

Sodium Carbonate

Sodium carbonate will be delivered to site in bulk tankers and pneumatically offloaded into a silo. Sodium carbonate will be discharged to a mixing tank where recycled LC centrifuge washate and clean RO water is used to make-up a sodium carbonate solution. Once homogeneously mixed, the sodium carbonate solution is transferred via a pump through a polishing filter to the sodium carbonate storage tank. From the storage tank the sodium carbonate is pumped and distributed through a ring main.

17.4.16 Services and Utilities

Steam

Low pressure steam required for the magnesium sulfate, Epsom salt, and mixed sulfate crystallisers, SAP, boiler feed water and various heat exchangers in the processing plant will be supplied from the acid plant. A standby natural gas fired boiler will be installed to supply steam during acid plant planned maintenance shutdown and outages and for the acid plant start-up.

Water

The water requirements for the process plant have been broadly addressed and cover:

- raw water
- potable water,
- process water,
- condensate

- Reverse osmosis water
- fire water and
- cooling towers.

Air

Air compressors and air receivers will be installed on site to supply suitably dry air for general plant air and instrumentation air requirements.

Gas

Natural gas bullets will be used to supply the gas for the LC dryer. The gas bullets will be replenished by road deliveries.

18 PROJECT INFRASTRUCTURE

18.1 Introduction

As discussed in previous sections, the TLC project has been planned as an open pit mining operation utilizing conventional truck and shovel technology. The mine will produce 24,000 t/y of LC (4.4 Mt/y RoM) for the first six years and then expands to produce 48,000 t/y of LC (8.8 Mt/y RoM ore) for the remainder of the 19-year mining operation. The site will continue to process lower grade stockpiled material for the next 21 years. Sulfuric acid leaching will be utilized to produce high purity LC.

18.2 Site General Arrangements

The conceptual site general arrangement is illustrated in Figure 18-1. The mining pit is located on the northern side of the TLC lease area and includes an external waste rock dump as well as in-pit waste rock and tailings storage areas.

The mine facilities and process plant site are located immediately to the southeast of the mine pit area. Further details related to the process plant are discussed in Section 17.

An area immediately to the south of the mine pit area has been designated as the location for multiple low-grade stockpiles that are developed during the 19-year mining operation. These piles are required to ensure the plant feed grade remains at or above 1,400 ppm Li during the first 19 years. The majority of these piles are consumed during the subsequent 21 years as the plan targets a feed grade at or above 1,000 ppm Li. Some of the material placed in the lowest grade stockpiles (500 – 800 ppm Li) may remain for further consideration beyond the currently planned 40 years of operation. Further details related to the development and subsequent consumption of these stockpiles are discussed in Section 16.

The external tailings facility is located to the south of the plant site along the east extend of the TLC area. The TSF is planned to be operational for Year 1 until in-pit tailings disposal commences in Year 15. The by-product tailings area is located south of the stockpile area and serves as the storage location of magnesium sulfate, a by-product of the lithium extraction process, for the entire 40-year processing period. Further details related to the tailings disposal plan are discussed in Section 16.7

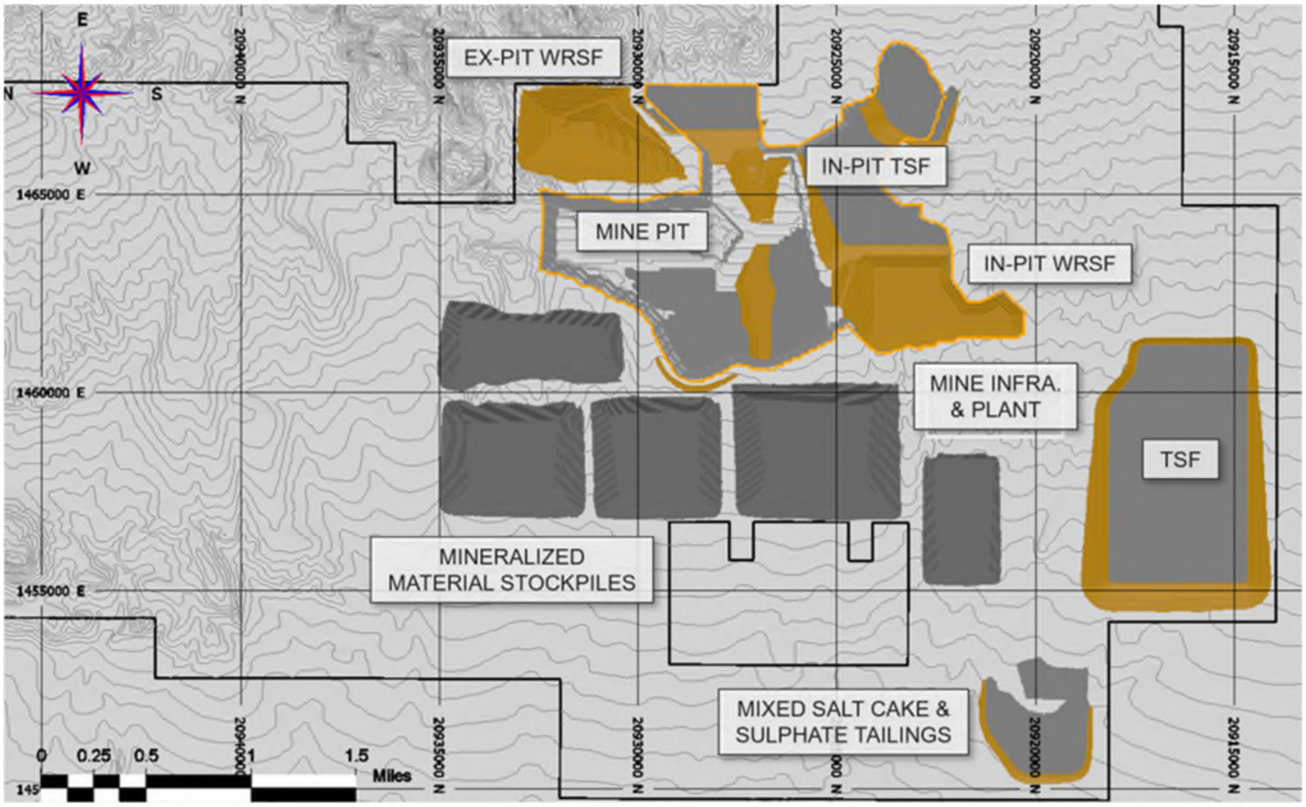

Figure 18-1 Conceptual Site General Arrangement

18.3 Raw Material Requirements

Reagents required for the process will be stored in specifically designed areas within the process plant area. The sodium carbonate and quicklime will be stored in reagents silos. The sulphur and limestone will be stored as stockpiles in suitably design sheds.

18.4 Product Material Requirements

The LC produced will be bagged and stored in one-tonne bags in a shed in the process area. The bags will be dispatched once the quality has been confirmed and there is enough to make up a shipment. Assuming the product will be dispatched in 20 t loads, there will be three to four shipments per day

In the Alternative Case the site will produce magnesium sulfate to be sold. The magnesium sulfate will be stored in a storage silo from where it will be transferred to an offloading silo that will bulk off load the product into containers or other transport vessels to be determined in the next phase of the study. Any excess production will be transported to a designated temporary storage facility within the process plant area.

18.5 Site Facilities

The mine facilities are composed of the following components typical of most mining and process operations:

- Office administration building
- Personnel dry facilities
- Mine and plant warehouse
- Bulk reagents storage
- Mine equipment maintenance facilities. It is envisioned that the mine maintenance facilities will be constructed in two phases with the second phase coinciding with the mine expansion in Year-7
- Emergency vehicle facilities and medical clinic
- Site laboratory
- Fuel deports for both heavy mine equipment and light vehicles
- Site security facilities

The site will be accessed via a 7 km exploration trail that connects to paved State Highway 89 (also called Gabbs Pole Line Road). This intersection is approximately 4 km north of junction State Highway 89 and United States Highway US 95 (US 6). This junction occurs 2.5 miles (4 km) west of the town on Tonopah. The existing exploration trail will be upgraded to two-lane paved road suitable for all construction, raw material and product traffic that is expected to occur over the life of the project.

The development of the mine facilities will include all of material movement or rough grading required to support all the facility development and the associated water management features required to ensure the effective management of surface water.

18.6 Power Supply

The project will require a substation and approximately 7 km of distribution powerline to be constructed to provide the necessary power supply to the project. At present the project has assumed that this line will be constructed from the existing NV Energy transmission line that operates at 120 kV. A routing for this powerline has yet to be determined.

18.7 Gas Supply

The gas consumption (0.007 t/h) is relatively low, and it is assumed that the gas supplier will use gas bullets on site that will be replenished by road transport.

18.8 Water Supply

The lithium extraction process will require significant water that is not available on site. American Lithium has secured the required water rights to the north of the project area. A 30 km buried pipeline will be constructed from the Water Permit areas. This pipeline will parallel State Highway 89 until it reaches the upgraded access road. At this point it will parallel the access road into the project area

19 MARKET STUDIES AND CONTRACTS

19.1 Market Studies

The Tonopah Lithium Project is not currently in production and has no operational sales contracts in place. To evaluate the market for its lithium product, American Lithium subscribed to the Lithium Forecast Service of Benchmark Mineral Intelligence (BMI). BMI's Q4 2022 forecast describes the lithium supply chain, long-term supply forecasts for lithium to 2040 and long-term supply cost curves for lithium to 2040. Forecast prices for the same period for battery grade LC and hydroxide are also provided, and these have formed the basis for the economic analysis undertaken for the PEA. The figures contained in this section use data provided by BMI.

19.2 Lithium Demand Outlook

The battery sector is the key driver for the growth in lithium demand and this itself is driven primarily by environmental legislation, upheld by government strategies that provide financial incentives to mine developers, producers and end users of battery products.

Prior to the relatively recent uptake in electric vehicles (EV), the bulk of global lithium supply was consumed in industrial applications unrelated to the battery sector. As recently as 2015, more than two thirds of lithium demand came from an assorted group of end uses, including glass, ceramics and lubricants. By contrast, in 2022 almost 80% of lithium demand, approximately 529Kt/y LC, is estimated to come from the battery sector (EVs, portable electronics and stationary storage) and these values are forecast to increase to 96% and 5,480 Kt/y LC respectively by 2040. Within the battery sector itself, driven by increases in the EV adoption rate, NCM and LFP lithium-ion batteries have been the fastest growing contributor to the increase in demand in recent years and together are forecast to maintain a market share of approximately 90% to 2032.

Looking ahead, BMI forecasts EV demand will increase by a CAGR of 18.8% over the next decade.

Figure 19-1 to Figure 19-4 show overall lithium demand by end use, lithium battery demand by cathode chemistry and end use and the global EV penetration rate.

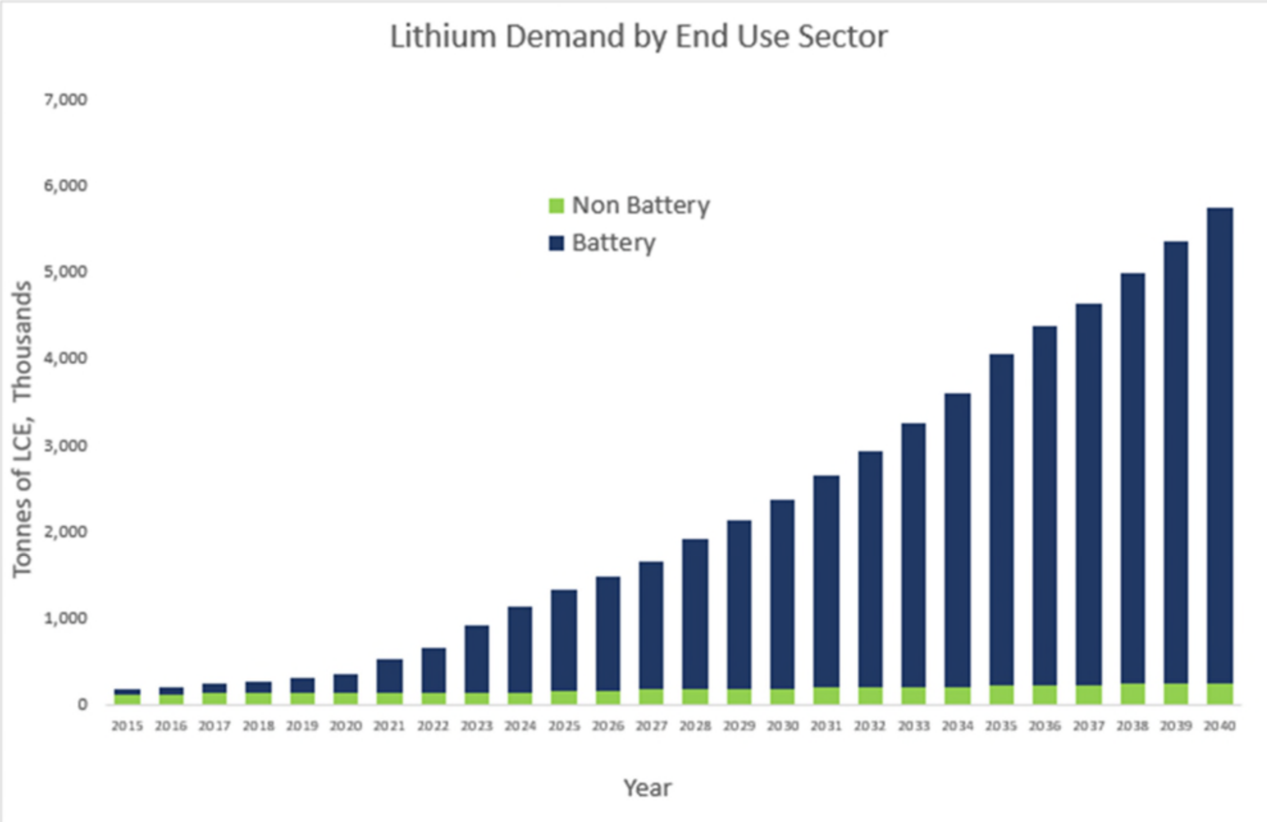

Figure 19-1 Lithium Demand By Sector [Source: BMI]

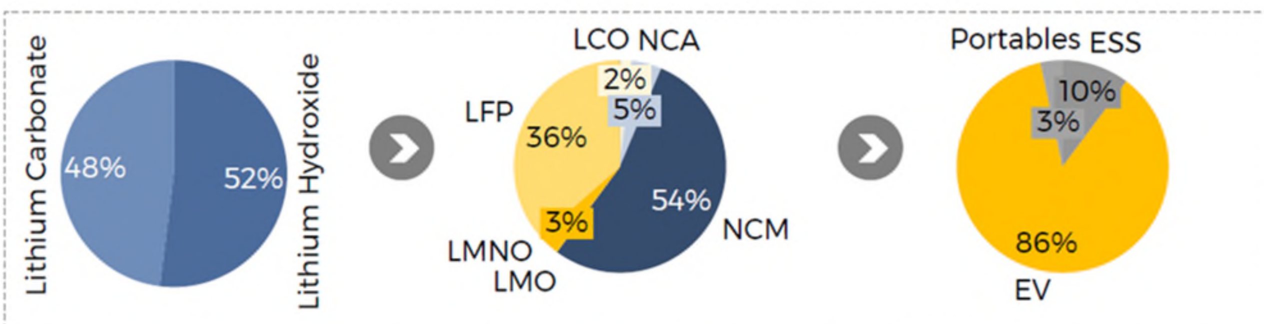

Figure 19-2 Lithium Battery Demand Breakdown by Cathode Chemistry and End Source, 2030 [Source BMI]

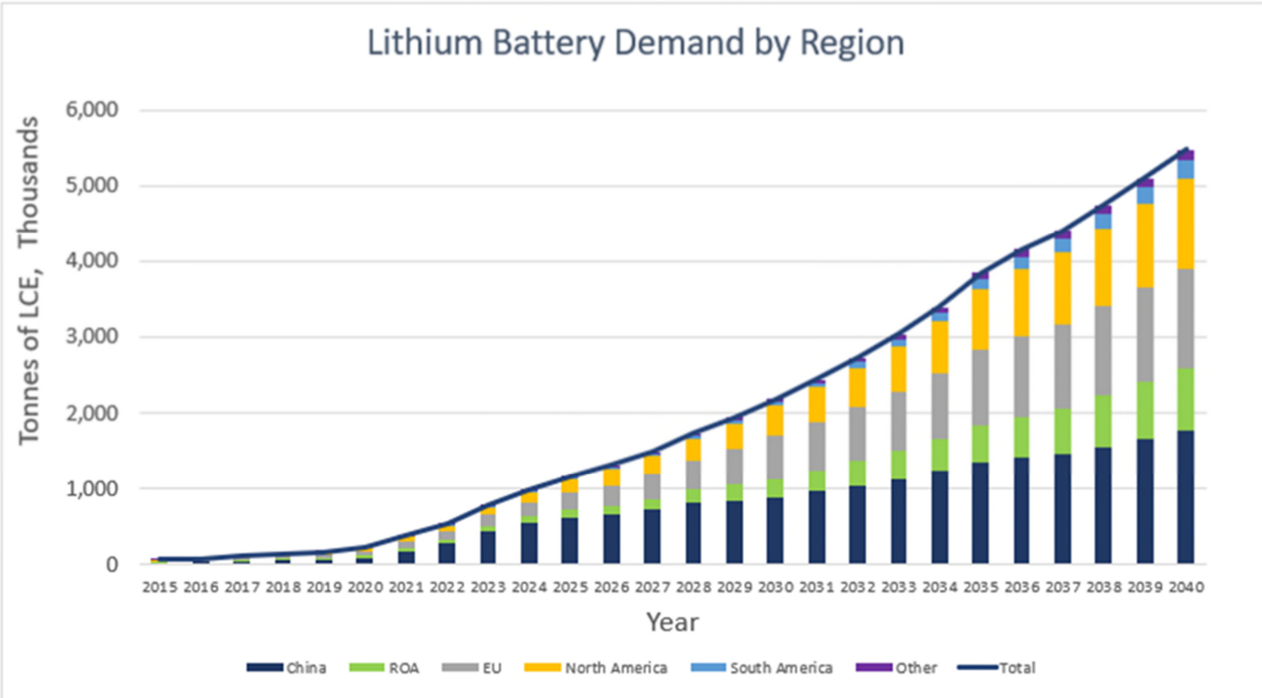

Figure 19-3 Lithium Battery Demand Breakdown by Region [Source BMI]

It is noted that battery demand in North America is forecast to increase from 73kt/y LC in 2022 to 1,195 kt/y LC in 2040.

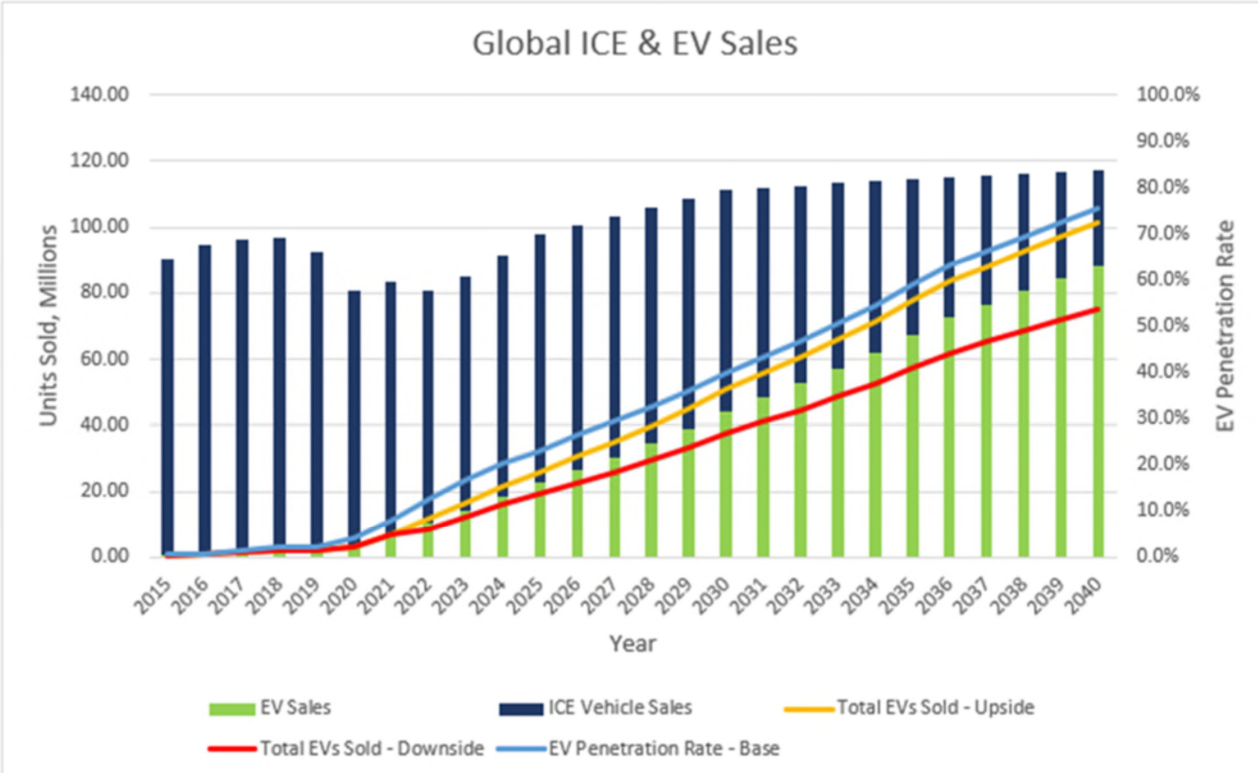

Figure 19-4 Global EV Sales and Penetration Rate Forecast, 2015-40 [Source: BMI, rho motion]

19.3 Lithium Supply Outlook

At any time, there are several brownfield and greenfield lithium capacity projects announced and undergoing development. Some of that number will either never come to fruition and some will proceed at a faster or slower pace than projected.

BMI designates greenfields projects as either 'Highly probable', 'Probable' or 'Possible', based on the criteria below. This is a subjective analysis that aims to identify the relative strengths of each project at a given time, with factors subject to change.

Highly probable: a project that has completed necessary public market requirements and government approvals, is fully funded and expected to place their product in the market in the next 24 months.

Probable: a project that has secured a significant proportion of its funding, and completed certain feasibility milestones that would support production within the next 5 years.

Possible: a project in the earlier stages of development with only a small portion of financing secured.

The following chart details the lithium supply forecast to 2040 for operating plants, greenfields projects and secondary (recycling) sources.

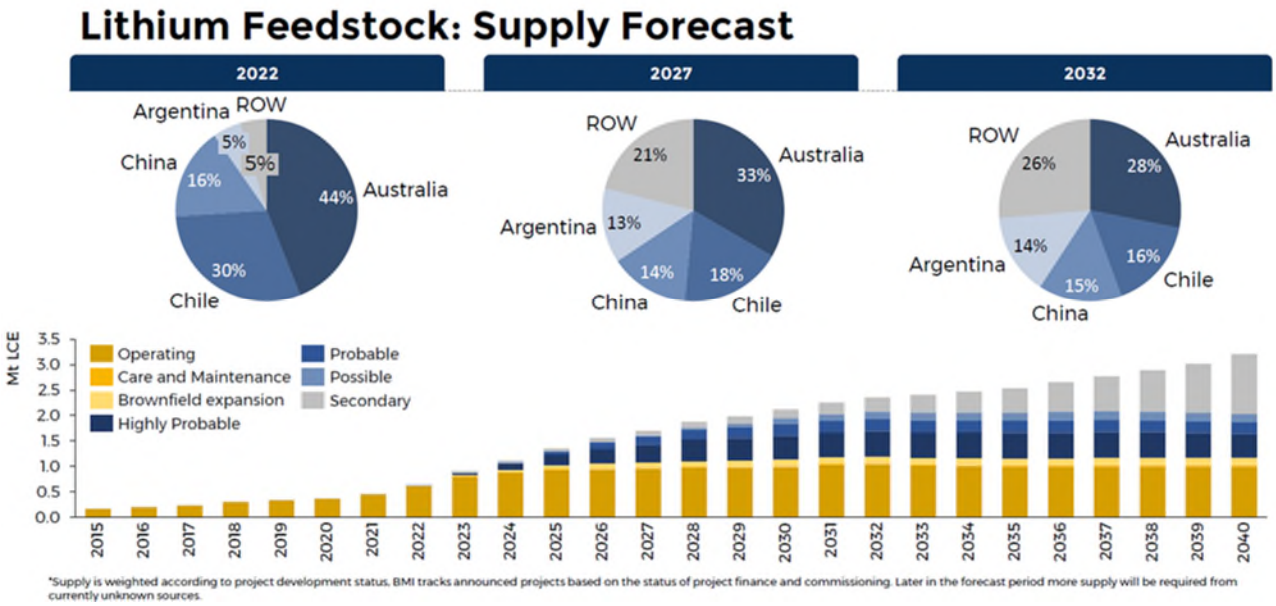

Figure 19-5 Lithium Supply Forecast to 2040 [Source: BMI]

A key source of future supply will come from recycling of end-of-life batteries. The chart that follows illustrates BMI's expectations for this supply. Feedstock for recycling will be predominantly composed of process scrap from gigafactories until the mid-2030s, at which point batteries reaching end-of-life will return to the market for recycling as a meaningful source of supply. At present, it is mostly the economics of recovering nickel and cobalt that drives recycling. This is due to the higher success rates of recovering these materials from end-of-life batteries and process scrap. However, increasingly, recyclers are reporting higher recovery rates of lithium via newer hydrometallurgical processes. Lithium available via secondary supplies is forecast to increase across the coming years and decades, in line with the growth of recyclable material. The forecast for the next decade is that lithium supply from recycling will increase from 3% to 12% by 2032.

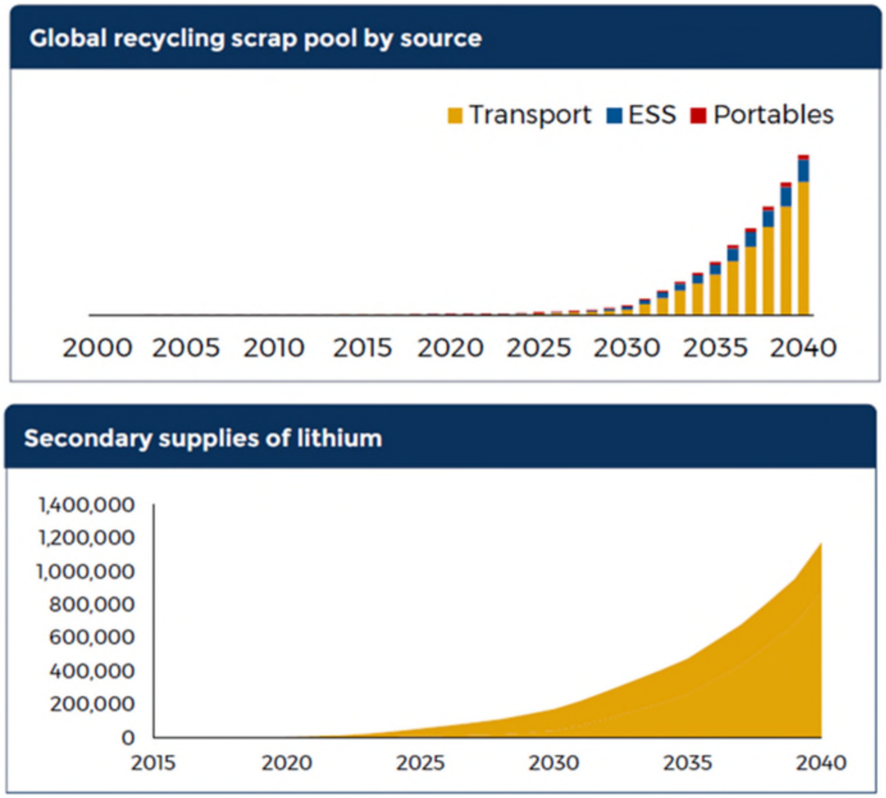

Figure 19-6 Recycled Lithium Supply Forecast, tonnes LC [Source: BMI]

19.4 Lithium Supply Demand Balance Forecast

Figure 19-7 outlines BMI's supply/demand forecast based on their analysis and assumptions for market demand. In recent years relatively high prices for lithium, coupled with increased awareness of the prospects for lithium-ion battery technology has led to increased investment activity in new lithium supply. Notwithstanding this investment, a significant deficit in supply is forecast from 2028.

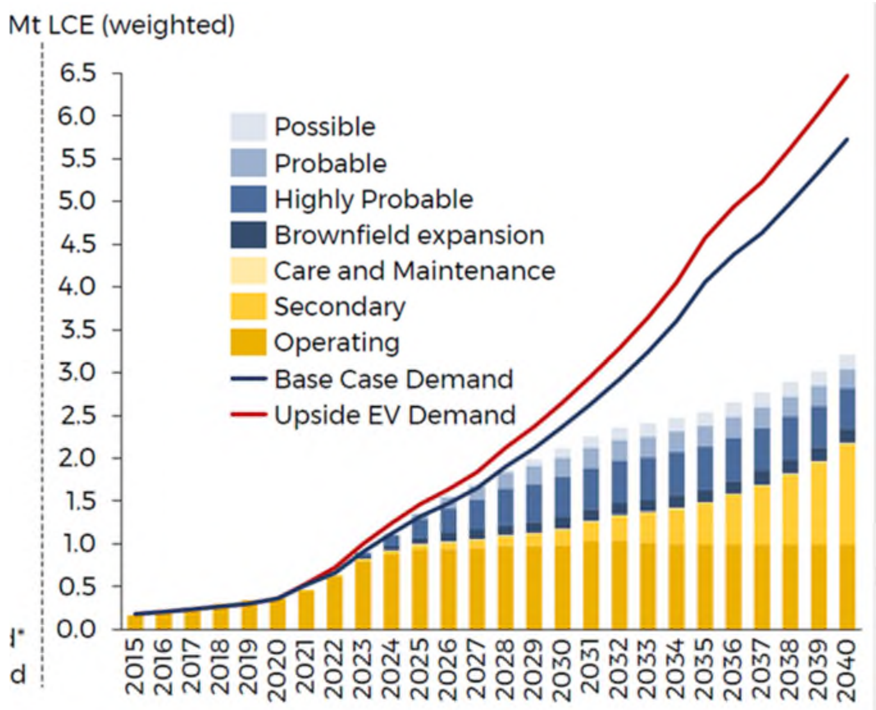

Figure 19-7 Long-Term Supply Forecast [Source: BMI]

19.5 Lithium Chemical and Battery Cathode Demand And Capacity Outlook

Figure 19-8 and Figure 19-9 present the outlook for lithium supply and demand by chemical product. As has been discussed previously, most future demand growth will be for EV batteries. As the market for EVs expands and the balance of chemistry shifts towards high-nickel cathodes, cathode manufacturers will increasingly move towards the use of lithium hydroxide. This preference for lithium hydroxide for the manufacture of nickel-rich cathodes results from the faster degradation of hydroxide versus carbonate in the cathode manufacturing process, which requires less energy and is therefore more cost efficient.

Lithium hydroxide also allows for improved material crystallinity, greater structural purity and less mixing of lithium and nickel in the lithium layer relative to LC. When using lithium hydroxide, lithium content is incorporated within the structure of the NCM hydroxide, while use of LC results in excess free lithium, leading to an increase in material pH that can cause gelling of the cathode slurry and swelling of the cell upon cycling. For these reasons it is forecast that lithium hydroxide will contribute a greater portion of the lithium chemical deficit.

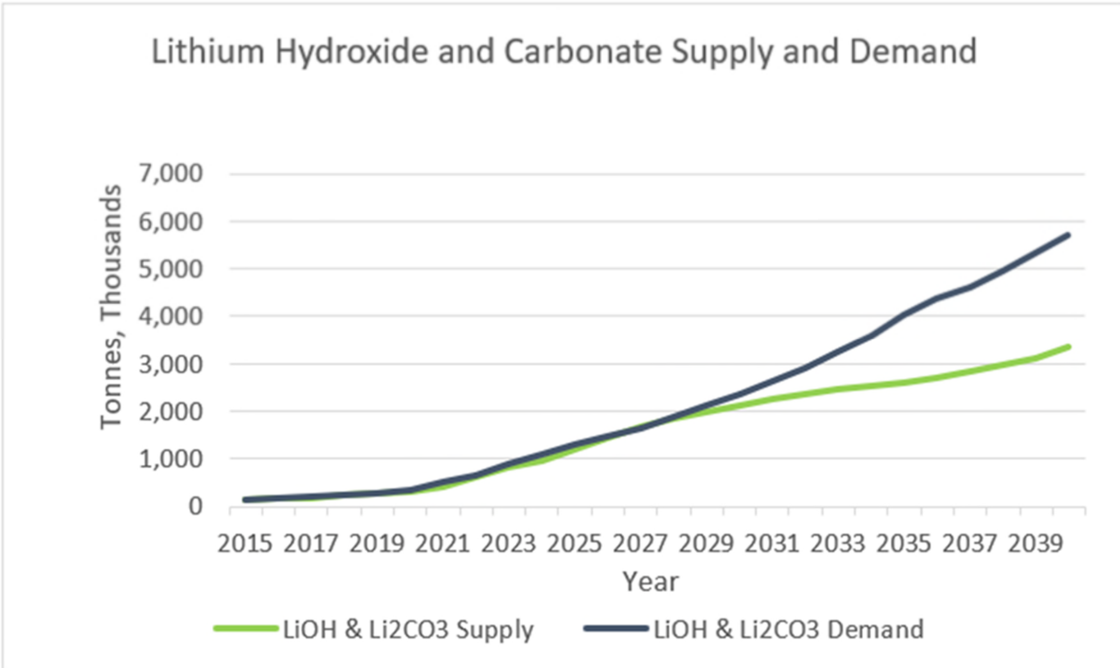

Figure 19-8 Lithium Supply & Demand by Chemical Product [Source: BMI]

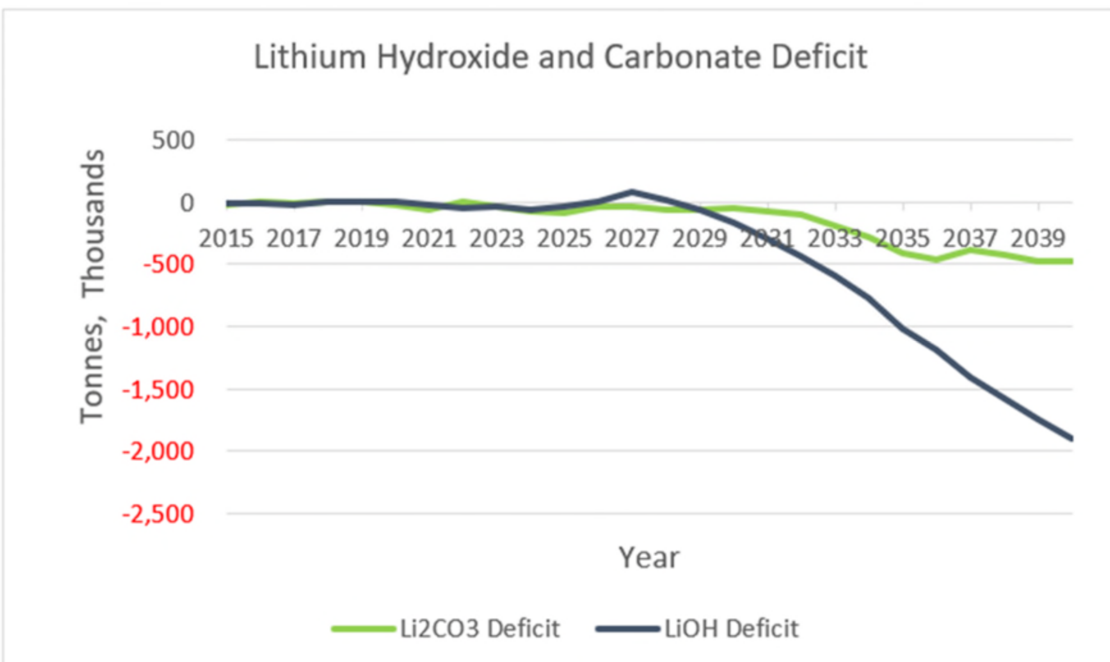

Figure 19-9 Forecast Lithium Chemical Deficit, 2015-2040 [Source: BMI]

As discussed earlier, the lithium market is forecast to go into deficit in 2028 and there is a pronounced risk of a continued deficit in cathode supply in the years thereafter. With China heavily dominant in cathode manufacture, other cell manufacturers, as well as OEMs, are locating new capacity in regions closer to consumption, namely Europe and North America, and this will benefit raw materials projects that are well located to serve these geographies, including Tonopah.

19.6 Long-term Supply Cost Curves for Lithium to 2035

BMI use a bottom-up cost modelling analysis to reach their industry costs for lithium, and cross-references these with top-down down information sources, including company financial reports and primary research utilising their network of industry contacts and mining and chemical processing engineers.

The data is presented as C1 and C3 cost data.

C1 costs include mining, processing, reagents, transport, loading & storage, G&A, energy, labor, maintenance and other costs where relevant.

C2 costs are C1 costs plus depreciation.

C3 costs are C2 costs plus royalties, interest costs and extraordinary items.

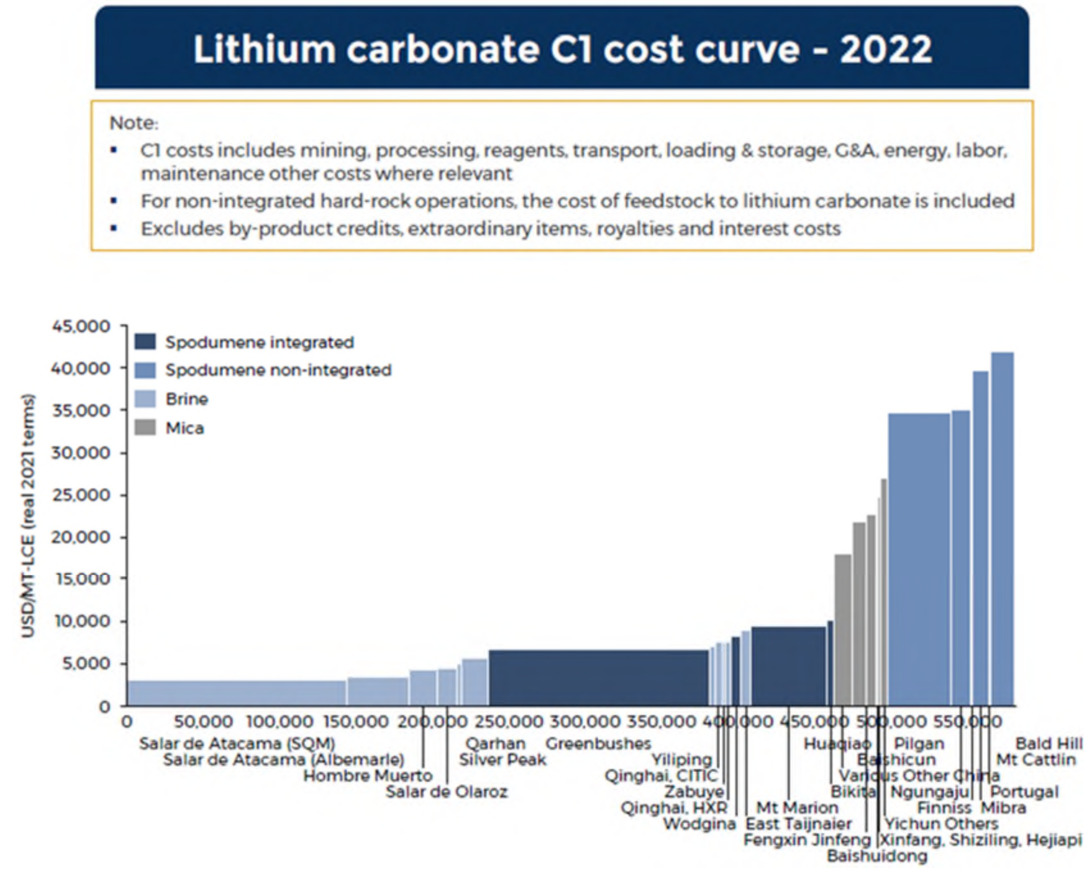

Figure 19-10 C1 Supply Cost for Lithium Carbonate - 2022 [Source: BMI]

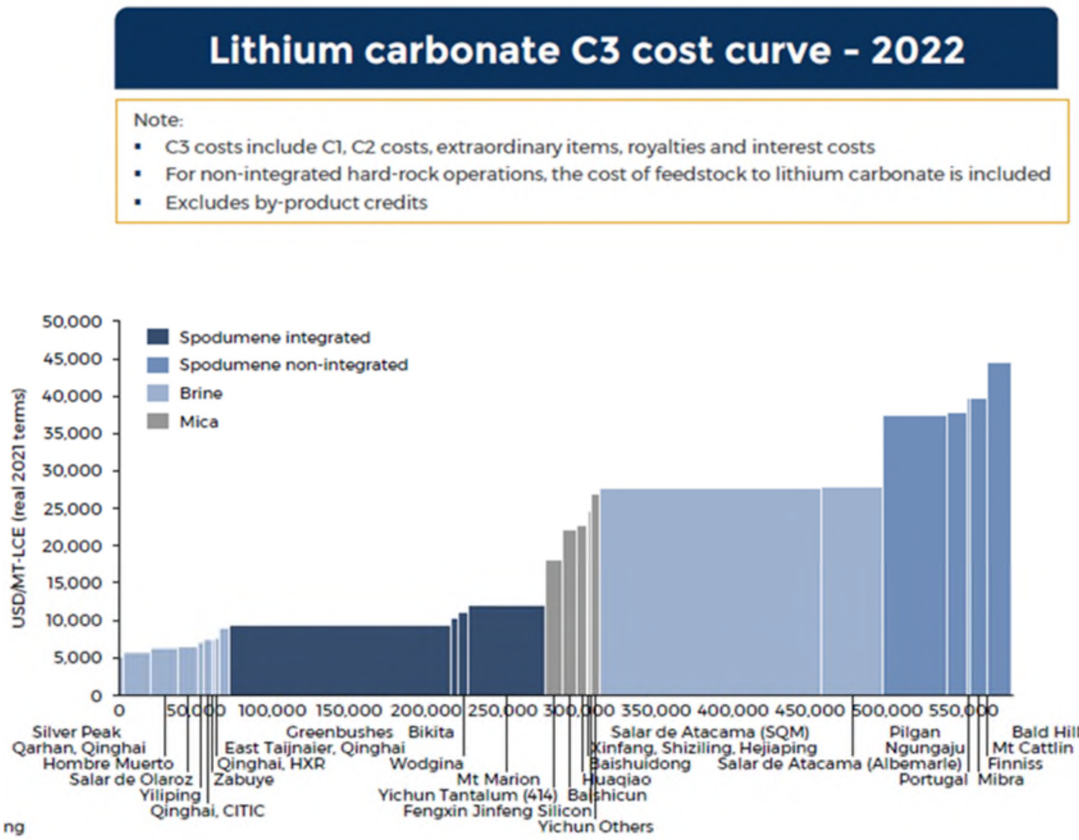

Figure 19-11 C3 Supply Cost for Lithium Carbonate - 2022 [Source: BMI]

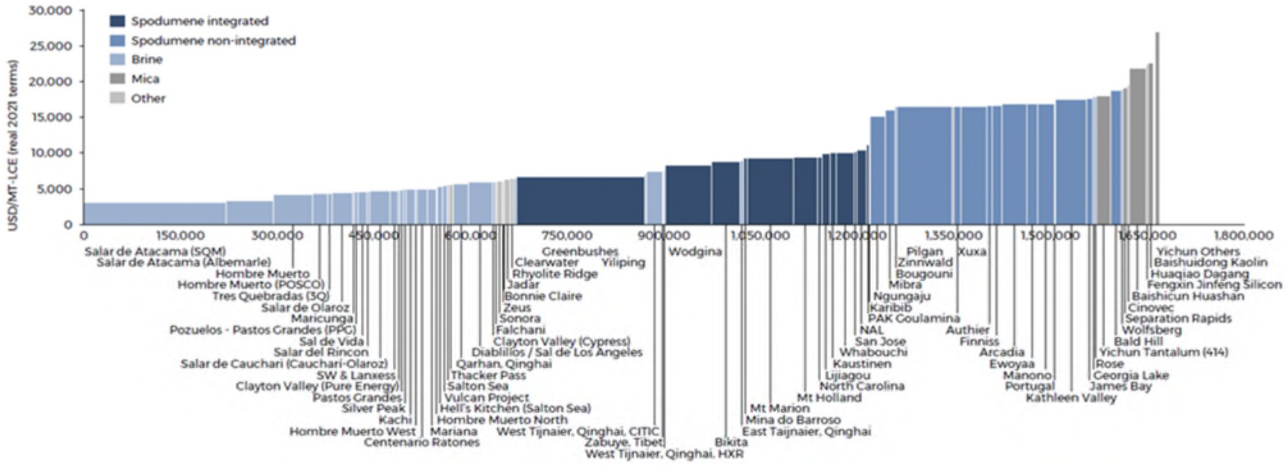

Figure 19-12 C3 Supply Cost for Lithium Carbonate - 2022 [Source: BMI]

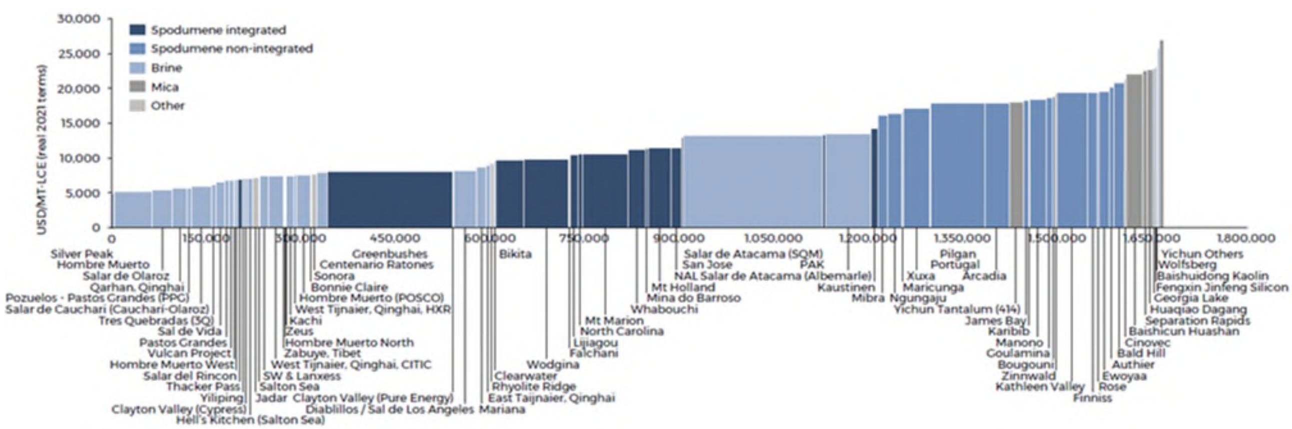

Figure 19-13 Long Term Supply C3 Cost for Lithium Carbonate - 2030 [Source: BMI]

19.7 Lithium Price Forecast

BMI's forecast methodology for lithium considers the following factors:

- Market Sentiment - The short-term outlook is broken down into quarters. Developments are guided by primary price research conducted by BMI analysts to ascertain the current direction of market pricing.
- Balance of supply and demand – Based on the analysis of the development of demand over time, and their understanding of the pipeline of new greenfield and brownfield capacity, BMI assesses the extent of over and under supply in the market over time, and how this is likely to impact prices
- Incentive pricing for new greenfield and brownfield capacity investment – As stated, there will be an ongoing requirement for new greenfield capacity over the course of the forecast period. BMI has conducted an Internal Rate of Return (IRR) analysis for a

‘Typical’ greenfield lithium project, which suggests that at a price level of $ 20,750 per tonne LC the IRR would be 30%. This is approximately the level that junior miners are using for their assessment of project economics and reflects the fact that as the lower cost new supply comes online there will be a need for the development of higher capex projects over time.

In order to better illustrate the pricing dynamics for lithium over time BMI has broken down their price forecast into three key pricing phases, short-term (2022-2025), medium-term (2026-2023) and long-term (2023-2040), as shown in Figure 19-4.

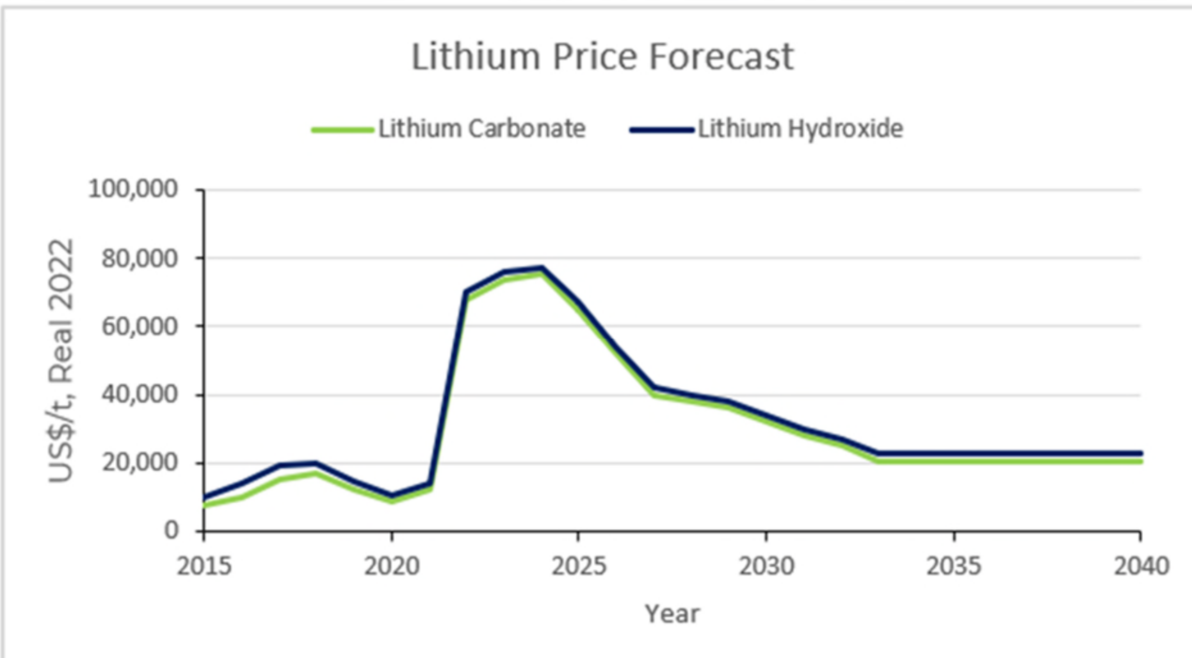

Figure 19-14 Lithium Carbonate Price Forecast [Source: BMI]

19.8 Magnesium Sulfate Monohydrate Pricing

An opportunity exists for the Tonopah project to become a significant supplier of magnesium sulfate products. American Lithium has engaged with Ameropa, a reputable and accredited European-based fertiliser trader to provide insights into likely future market capacity and pricing for magnesium sulfate products. A value of $150/t of magnesium sulfate monohydrate was used in the financial modelling of the Alternative Case. No contracts have been entered into so pricing and market size should be considered prospective at this stage.

19.9 Conclusions

There is an ongoing need for capacity investments in lithium raw material extraction, chemical processing and cathode manufacturing throughout the life of the BMI forecast to 2040. Given the direction of travel and level of investment in the downstream of the electric vehicle supply chain, at an automobile manufacture and battery cell level, there is an impending shortfall in all areas of the upstream supply chain which needs to be addressed.

The level of financing needed to bridge this gap is relatively small compared to the investment being made in vehicle and battery cell manufacturing, so it is highly likely that actors in these areas of the supply chain will take steps to ensure supply availability, as has started to happen already.

The forecast market deficit will incentivise investment in both raw material and chemical processing capacity. For LC BMI forecasts long-term pricing to settle in the region of $ 20,750 per tonne and for lithium hydroxide $22,750 per tonne.

Lithium raw material projects in stable jurisdictions close to areas of future high demand, namely Europe and North America, are at a distinct advantage in terms of potential for development.

Battery cell manufacturers are planning capacity investments closer to where their key customers, automotive manufacturers, are located, and will wish to source at least part of their supply from regional sources to cut down on lead times, freight costs and default risks.

The outlook for the battery cathode chemistry mix indicates a move towards high-nickel NCM technologies, which favours the use of lithium hydroxide in the production of these cathodes.

20 ENVIRONMENTAL STUDIES, PERMITTING & SOCIAL OR COMMUNITY

20.1 Introduction

An Environmental Assessment (EA) was completed in 2021 in accordance with the National Environmental Policy Act (NEPA) for the TLC Exploration Project (BLM, 2021). Another NEPA evaluation will need to be completed for the commercial-scale Project activities and area. Environmental justice, migratory birds, Native American religious and cultural concerns, rangeland management, recreation, social values and economics, soils, special status species (including bald and golden eagles), surface and groundwater resources, vegetation, and general wildlife were identified as being potentially affected by Project activities. Areas of critical environmental concern, farmlands, fish habitat, floodplains, forests and rangelands, human health and safety, wetlands and riparian zones, wild and scenic rivers, wilderness/wilderness study areas, lands and realty, paleontological resources, and wild horses and burros were identified as not being present within the Project Area. Air quality, cultural resources, noxious weeds and invasive and non-native species, hazardous/solid wastes, climate change, geology and mineral resources, and visual resources were identified as being present but not affected within the Project Area.

20.2 Vegetation

The Natural Resources Conservation Service mapped four ecological sites and one area with no dominant ecological site within the Project Area: Gravelly Loam 5-8" P.Z. (R029XY087NV), Loamy Slope 5-8" P.Z. (R029XY022NV), Sandy 5-8" P.Z. (R029XY012NV), and Dry Wash (R029XY041NV). Reclamation and reseeding would occur concurrently whenever feasible using a BLM-approved seed mixture. Impacts to vegetation would be minor, long-term, and localized. Continued drought conditions would result in vegetation drying out, resulting in the Project's impacts to the loss of vegetation being even more negligible.

20.3 Soils

The soil associations within the Project Area consist of the following: Unsel-Belted-Orphant association; Dobel-Bluewing association; Badland-Belcher association; Tybo-Stumble association; Malpais-Rock outcrop association; Vigus-Koyen association; and Koyen fine sandy loam, two to four percent slopes. These potential impacts to soils would be reduced by an EPM requiring the use of best management practices (BMPs) to limit soil erosion and reduce sediment runoff from disturbed areas during construction and operations. Furthermore, as a result of reclamation of all drill sites, sumps, bulk sample test pits, overland travel, and new road construction, the post-exploration topography is expected to be similar to pre-Project conditions, which would re-establish the site characteristics of slope and aspect of soil associations within the Project Area. As a result of the implementation of the EPM, soil loss due to the surface-disturbing activities associated with implementation of the Project would be minor, long-term, and localized.

20.4 General Wildlife

The NDOW identified the presence of pronghorn antelope (Antilocapra americana) and mule deer (Odocoileus hemionus) distributions within the Project Area and the vicinity of the Project Area. Impacts to these large mammals would be considered minor, short-term, and localized. Additionally, as outlined in an EPM, sumps associated with drill sites would be built with an incline on one end so that entrapped animals could exit the sump, and fences would be constructed as necessary around sumps that would restrict wildlife access.

The Nevada Division of Minerals reported that there are no known abandoned mine land hazards within the Project Area or within a 0.25-mile buffer. Impacts to reptile species are considered minor, short-term, and localized.

No noxious weeds were observed within the Project Area. Russian thistle (Salsola tragus), saltlover (Halogeton glomeratus), and cheatgrass (Bromus tectorum) were observed invasive weeds within the Project Area. EPMs would be implemented for noxious weeds, which would minimize the impact of noxious weeds and invasive species to special status wildlife species habitat.

A total of six bird, three reptile, and seven mammal species were directly observed or detected by sign (e.g., tracks, burrows, scat) within the Project Area (Table 20-1), two of which are BLM Sensitive Wildlife Species (Brewer's sparrow and desert horned lizard). No species or habitat protected under the ESA were present within the Project Area.

Table 20-1 Wildlife Species Observed within the Project Area

Common Name	Scientific Name	BLM Sensitive Species
Black-throated sparrow	Amphispizaa bilineata	N
Brewer's sparrow	Spizella breweri	Y
Common raven	Corvus corax	N
Horned lark	Eremphila alpestris	N

Common Name	Scientific Name	BLM Sensitive Species
House finch	Haemorhous mexicanus	N
Rock wren	Salpinctes obsoletus	N
Black-tailed jackrabbit	Lepus californicus	N
Coyote*	Canis latrans	N
Desert kangaroo rat	Dipodomys deserti	N
Long-tailed pocket mouse	Chaetodipus formosus	N
Merriam's kangaroo rat	Duoidinys merriami	N
Pronghorn antelope*	Antilocapra americana	N
White-tailed antelope ground squirrel	Ammnospermophilus leucurus	N
Desert horned lizard	Phrynosoma platyrhinos	Y
Leopard lizard	Gambelia wislizenii	N
Zebra-tailed lizard	Callisaurus draconoides	N

*Detected by sign such as scat, bones, tracks, feathers, etc.

20.5 Tailings Disposal

Disposal of tailings is regulated by the BLM under 43 Code of Federal Regulations (CFR) 3809, NEPA, the Nevada Division of Environmental Protection – Bureau of Mining Regulation and Reclamation (NDEP-BMRR) NAC 445A, Water Controls, and the NDWR as part of Dams and Other Obstructions, NAC 535.

The primary consideration for tailings disposal is the protection of surface water and groundwater resources and the prevention of degradation of Waters of the State of Nevada. The primary regulatory instrument for protecting these resources is the Water Pollution Control Permit, which is issued by the NDEP-BMRR. This permit adopts the design of an engineered facility for long-term containment of the tailings developed by the mine and approved by the state. The facility design specifies measures for constructing the tailings facility and then characterizing, handling, placing, and monitoring tailings in a manner that is protective of water resources.

The other primary consideration for tailings disposal is the physical stability of the tailings impoundment. The facility must be designed with sufficient factors of safety to remain competent under pseudo-static seismic conditions. The design of any embankment requires the approval of the NDWR, which will inspect the facility annually. Impoundment of water by the embankment also requires a Nevada J-Permit with an associated annual fee based on the volume of water impounded.

20.6 Waste Rock Disposal

Disposal of waste rock is regulated by the BLM under 43 CFR 3809, NEPA, and the NDEP-BMRR under the Clean Water Act. The primary consideration for waste rock disposal is the protection of surface water and groundwater resources and the prevention of degradation of Waters of the State of Nevada. The primary regulatory instrument for protecting these resources is the Water Pollution Control Permit, which is issued by the NDEP-BMRR. This permit adopts a Waste Rock Management Plan developed by the mine and approved by the state. The Plan specifies measures for characterizing, handling, placing, covering, and monitoring waste rock in a manner that is protective of water resources.

20.7 Water Management

American Lithium has secured water rights to the north of the project area. Management of water (i.e., pumping, storage, handling, and disposal) is regulated by the BLM under 43 CFR 3809, NEPA, the NDEP-BMRR under the Clean Water Act, and the NDWR via water rights adjudication. If the mine is not a zero-discharge facility and discharges water to the environment by design, the NDEP and the U.S. Environmental Protection Agency (EPA) would also regulate that discharge via the national pollutant discharge elimination system (NPDES).

A primary consideration for water management is the protection of surface water and groundwater resources and the prevention of degradation of Waters of the State of Nevada. The primary regulatory instrument for protecting these resources is the Water Pollution Control Permit, which is issued by the NDEP-BMRR. This permit adopts the design of an engineered water management system (including production wells, conveyance pipelines and channels, storage ponds, infiltration ponds, etc.) developed by the mine and approved by the state. The facility design specifies measures for handling, storing, and monitoring water in a manner that is protective of water resources.

Installation of water production wells requires a water right issued by the NDWR. Because Nevada is in an arid region, water usage is allocated among multiple users and rationed by the state in order to prevent depletion of the resource through overuse.

Finally, NEPA requires analysis and public disclosure of the effects of groundwater withdrawal and water usage on other water resources including streams, seeps, springs, and other groundwater production wells. In the event that potential impacts of groundwater withdrawal and water usage are predicted or observed, the BLM may opt to mitigate those impacts primarily through the development of alternative water supplies.

Best practices in mining call for construction and operation of a zero-discharge facility. However, discharges are allowable under the NPDES program but require onerous permitting, monitoring, and compliance conformance.

20.8 Permitting Requirements and Status

The NDEP-BMRR largely defines the engineering and design requirements around disposal of mine wastes, water management, and mine closure aspects. However, the BLM may have additional requirements associated with any activities located on public lands.

The permitting requirements for the Project are provided in Table 20-2.

Table 20-2 Permitting Path for a New Mine in Nevada

Document/Permit	Agencies Involved	Estimated Preparation/Approval Timeline	Submittal Timing
Baseline Data Collection in Support of Environmental Impact Statement (Additional Details Below)	BLM, State Historic Preservation Office, Nevada Department of Wildlife	2 to 4 years	Begin approximately two to four years prior to anticipated Plan submittal.
Plan of Operations (Additional Details Below)	BLM, Battle Mountain District Office	1 to 3 years	Submittal of the Plan will initiate the remaining permits.
Environmental Impact Statement (Additional Details Below)	BLM, Battle Mountain District Office	2 years	Begin following determination baseline is completed and Plan deemed complete.
Water Pollution Control Permit	NDEP-BMRR and Bureau of Water Pollution Control	1 to 2 years preparation time and 6 months approval time	Submit at least six months prior to construction of process components, mining, or bulk sampling.
Waters of the U.S. and Wetlands	U.S. Army Corps of Engineers	3 months for field work and reporting/1+ year for USACE decision	Submit one year before start of NEPA.
Mine Registry Forms	Nevada Division of Minerals	Up to 30 days	Submit within 30 days after operations begin.
Fees for Abatement of Hazardous Conditions at Abandoned Mines	Nevada Division of Minerals	Up to 30 days	Submit within 30 days of Plan approval.
Notification of Opening/Closing Mine	Nevada Division of Industrial Relations, Mine Safety and Training Section	1 or 2 days	Submit before opening/closing.
Air Quality Operating Permit	NDEP Bureau of Air Pollution Control	1 to 12 months	Submit before beginning construction.

Document/Permit	Agencies Involved	Estimated Preparation/Approval Timeline	Submittal Timing
Small Quantity Hazardous Waste Generator (ID Number)	NDEP and U.S. Environmental Protection Agency	2 to 4 months	Prior to site operation.
State Groundwater Permit	NDEP-BMRR	3 months	Submit prior to construction.
Mining Reclamation Permit	NDEP-BMRR	3 months	Submit prior to initiation of exploration or mining.
NPDES Permit	NDEP Bureau of Water Pollution Control	3 months	Submit prior to construction.
Stormwater NPDES General Permit	NDEP Bureau of Water Pollution Control	2 days	Submit two days prior to discharge.
Drinking Water Supply Facilities	NDEP Bureau of Safe Drinking Water	30 days	Submit prior to construction.
Permit to Appropriate Public Waters	Nevada Division of Water Resources	4 months to 1 year	Submit prior to construction.
Permit to Construct Dam	Nevada Division of Water Resources	45 days to 1 year	Submit prior to construction.
Industrial Artificial Pond Permit	Nevada Department of Wildlife	30 days	Submit prior to operation.
Permit for Sanitation Facilities	Nevada Department of Human Resources, Division of Public and Behavioral Health, Environmental Health Section	5 to 30 days	Submit prior to operation.
Hazardous Materials Permit	Nevada State Fire Marshal Division, Hazardous Materials Section	Up to 30 days	Submit 30 days prior to construction.

Document/Permit	Agencies Involved	Estimated Preparation/Approval Timeline	Submittal Timing
Approval for Construction/Operation of Solid Waste Landfill	NDEP Bureau of Waste Management	Up to 4 months	Submit 180 days prior to landfill operation or construction.
Hazardous Waste Management Permit	NDEP Bureau of Waste Management	1 to 3 months	Submit prior to construction of facility for management or recycling of hazardous waste.
Fire and Life Safety	Nevada State Fire Marshal Division, Fire Protection Engineering Bureau	1 to 3 months	Submit prior to construction.
County Special Use Permit	Nye County	3 to 6 months	Submit prior to construction.
License/Permit to Purchase, Transport, or Storage of Explosives	U.S. Bureau of Alcohol, Tobacco, Firearms, and Explosives	1 to 3 months	Submit prior to purchasing explosives.
Notification of Commencement of Mining Operations	U.S. Department of Labor, Mine Safety and Health Administration	1 to 2 weeks	Submit prior to start-up.
Permit for Activities in Wetlands/Waters of the U.S.	U.S. Army Corps of Engineers	Dependent on impacts to Waters of the U.S. and the level of permit necessary	Dependent on the level of permit necessary.

Note: Permitting for the operational-scale Project has not begun yet at the time of producing this memorandum.

BLM = Bureau of Land Management

NDEP = Nevada Division of Environmental Protection

NPDES = National Pollutant Discharge Elimination System

U.S. = United States

20.9 Environmental Justice

One low-income and an American Indian environmental justice population are present. Impacts to environmental justice are considered negligible, short-term, and localized (BLM, 2021), however, American Lithium recognizes that any impacts to an environmental justice population is important and will convey this at meetings of employees, contractors, sub-contractors and suppliers.

American Lithium will do its best to employ environmental justice population peoples during its exploration project activities.

20.9.1 Native American Religious and Cultural Concerns

American Lithium acknowledges that the Newe (Western Shoshone) have lived in the great basin of Nevada. American Lithium has the deepest respect and gratitude of this indigenous group – the original caretakers of the land -- and for their enduring stewardship of these shared lands.

The Bureau of Land Management (BLM) Tonopah Field Office administrative boundary contains spiritual, traditional, and cultural resources and sites to engage in social practices that aid in maintaining and strengthening the social, cultural, and spiritual integrity of the tribes.

EPMs have been implemented to immediately halt activities in the event of a discovery of a cultural resource.

American Lithium hired tribal cultural monitors, under the direct supervision of the Shoshone Tribal Council(s) to survey exploration project bulk sample sites and drill pads in 2023. A survey buffer to all sites to be surveyed was added out of an abundance of caution. No issues were identified with the site surveys to date.

American Lithium will utilize tribal cultural monitors from the Timbisha Shoshone Tribe, the Duckwater Shoshone Tribe and/or the Yomba Shoshone Tribe, as available.

Pursuant to government-to-government tribal consultation, there were no known impacts related to Native American religious and cultural concerns identified by the tribes for the exploration Project Area. Tribal Consultation will continue throughout the life of the Project.

20.9.2 Rangeland Management

The Project Area resides primarily within the San Antone Grazing Allotment, with a small portion within the Monte Cristo Grazing Allotment. Surface disturbance from the Project would cause for active grazing opportunities to be temporarily removed from the San Antone Grazing Allotment. Impacts would be negligible, long-term, and localized. There would be no reduction in animal unit months due to exploration activities, evaluation of animal unit months will later be evaluated for the Project activities.

20.9.3 Recreation

Historical and present recreational activities that have occurred and are occurring within the vicinity of the Project Area primarily include hunting, primitive camping, and off-highway vehicle travel. Surface disturbance from the Project would reduce opportunities for dispersed recreation within the Project Area. All Project Area roads would remain open during exploration activities, and there would be no fencing to preclude use, except for fences around sumps, the laydown area, and the meteorological station to protect wildlife and humans. Any potential impacts to recreation would be negligible, short-term, and localized.

20.10 Social Values and Economics

The Project Area is primarily in Nye County, with a small portion of the Project Area in Esmeralda County; since the Project activities would be occurring primarily in Nye County, and the town of Tonopah is in Nye County, the socioeconomics analysis area for the Project is Nye County. During exploration, a temporary workforce of up to 25 employees or contractors could work in the Project Area at any given time, primarily utilizing services such as dining and lodging, primarily in Tonopah. In addition, the temporary workforce would not create a demand for additional public or private services and would not impact public schools, the permanent housing market, or other services associated with permanent workers. The Project would create minor and sporadic beneficial impacts that would be negligible, short-term, and localized.

20.11 Social or Community-Related Requirements

The proposed Project is located approximately five miles northwest of Tonopah, Nevada, in Nye County. According to the U.S. Census Bureau, the total population of Nye County in 2020 was reported to be 51,591. Tonopah is the county seat of Nye County, but much of the county's population resides in Pahrump at the southern end of the county. Mining was identified as the largest non-service-related industry in the county.

The rural communities located in Nevada are primarily dependent upon the mining industry for employment and economic security. This has created a supportive, pro-mining culture in these communities where most employees live. American Lithium involvement and improvement in the community is vital in rural areas. Sponsorship has a significant impact on the community by helping fund programs that directly benefit the local community. Locally, Company sponsored functions and events include Jim Butler Days, Tonopah's Summer Rodeo, the Tonopah Main Street Development Project, Tonopah Boys & Girls Club, and the Tonopah High School Athletic Department.

As discussed in 20.9.1 the Project is located on public lands traditionally used by the Western Shoshone Tribes and Bands, and operations need to demonstrate respect for indigenous cultural resources, environmental stewardship, and shared benefits to receive support from Native American communities. These communities will be involved in the mine permitting process via required government-to-government consultation with the BLM.

Water resources, air quality, restrictions to land use, and public safety are key concerns for both the rural and Native American communities. Furthermore, agricultural water users throughout Nevada routinely express interest in new water allocations and uses within the area and insist on protection of established water rights.

Community impacts associated with the proposed Project would include the following:

- Mine development and operation would increase local employment and tax revenues; and
- Mining and ore processing activities would increase water consumption by mine operations, generate air emissions that would require mitigating controls, increase truck traffic over area roadways, disturb grounds with potential cultural resources and/or wildlife habitat, and restrict access to the mining area.

While not a legal or permitting requirement, community expectations for mining projects in Nevada include implementation of a grievance process whereby issues raised by community members regarding the Project can be brought to the attention of the relevant mine management in a way that they understand the issue and can engage in practical measures to achieve a mutually agreeable resolution.

Communities also expect mining projects to participate in community development (e.g., workforce development, educational programs, public health programs, local hiring, and local procurement) and to provide updates regarding Project status. While not legal or permitting requirements, community development efforts assist in maintaining public support for the Project and mining in general.

The Company desires to build positive, mutually beneficial, working relationships with the tribal communities related to its active mineral exploration and development at the Tonopah Lithium Project, including cultural resource monitoring, employment, and business supply agreements, as applicable.

21 CAPEX AND OPEX

21.1 Capital Cost

21.1.1 Estimate Classification

The prepared estimate is classified by DRA as a Class 4 estimate with a +40 % / -40 % accuracy, similar to an AACE International Class 4 (+50 % / -30 %) and deemed suitable for a PEA level study

21.1.2 Assumptions

The following assumptions underlie this estimate:

- The design is as detailed in the relevant sections of this report;
- Suitably qualified and experienced construction labor will be available at the time of execution of the Project;
- All geotechnical design data was assumed due to the lack of geotechnical information at the proposed plant site and access road corridor;
- A capital provision has been included to account for costs associated with plant closure and rehabilitation;
- The Project currently assumes additional land acquisition and surface rights will be obtained in the future to accommodate proposed infrastructure such as access roads, powerline and water servitudes as well as the processing facilities themselves. The potential costs of such an acquisition are not included within the estimate.

21.1.3 Exclusions

The following items are specifically excluded from the estimate at this level of study:

- Owner's Costs prior to Project approval;
- Exploration drilling;
- Permits, licences or legal and administrative costs associated with government mining and environmental regulations. This includes reporting requirements during operation and related administrative costs;
- Cost escalation;
- Currency fluctuations;
- Finance charges and interest during construction;
- Sunk costs;
- Insurance;
- Container demurrage costs;
- Containment, monitoring or treatment of waste rock in the event that acid rock drainage or metal leaching are applicable;
- Hydrogeological monitoring, dewatering or stormwater control measures;
- Allowances for special incentives (schedule, safety or others);
- Force majeure issues;
- Future scope changes;
- Costs for community relations and services;

- Relocation or preservation costs, delays and redesign work associated with any antiquities and sacred sites;
- All duties and taxes;
- All costs associated with weather delays including flooding or resulting construction labor stand-down costs;

All other costs not explicitly mentioned in this report.

21.1.4 Contingency

Contingency is defined by AACE International as “a specific provision for unforeseeable elements of cost within the defined scope of work; particularly important where previous experience relating to estimates and actual costs has shown that unforeseeable events that will increase costs are likely to occur”. The contingency is not used for scope changes but for unforeseeable events such as:

- Inaccuracy of material quantities (particularly relevant in early stage studies due to the inherent lack of engineering definition);
- Inaccuracy of material and construction unit rates;
- Buried services ;
- Industrial relations issues;
- HSE issues;
- Approval delays;
- Performance of suppliers and contractors;
- Freight and handling issues;
- Commissioning and start-up delays;
- Inclement weather over and above average weather conditions.

An 10% contingency, relative to total process plant cost and exclusive of non-process infrastructure, has been allocated to the direct and indirect costs.

21.1.5 Mining Costs

Capital cost estimates for mine equipment and infrastructure were developed from a combination of data from InfoMine USA, Inc’s CostMine mining cost service and Stantec’s experience on past projects. Recognizing that there is inflationary pressure on costs, the most up to date costs were used where possible.

Equipment hours for haul trucks and primary loading equipment was calculated using the annual mine plan production quantities, equipment costs, and equipment specifications for haul trucks and loading units. A list of support equipment was developed based on typical open pit mining requirements and engineering judgment on the number of units needed to support operations.

The first two years of pre-production was used as the initial capital period for mining equipment. Initial capital cost breakdown is shown in Table 21-1.

Table 21-1 Mine Equipment Capital Cost Summary

Mining Equipment	Initial $M	LoM $M
Trucks	9.49	41.44
Shovel/Loaders	5.30	21.53
Support and Auxiliary	20.45	31.79
Total	**35.23**	**94.75**

Mine infrastructure capital cost estimates were calculated based on previously designed facilities that were at a more detailed stage than TLC. $/sqft costs as well as past budgetary quotes were utilized when developing capital costs for mine buildings, mine roads, and electrical power for the site. Capital cost estimate is summarized in Table 21-2

Table 21-2 Mine Infrastructure Capital Cost Summary

Item	Initial $M	LoM $M
Mine Maintenance Shop	18.75	
Office & Dry Faciliies	3.00	
Washbay,Tireshop & Warehouse	4.00	
Roads,Security & miscellaneous	5.00	
Power/Electrical	20.00	
Total	**50.75**	**22.19**

21.1.6 Process Costs

A priced mechanical equipment list is the foundation of the capital cost estimate for the processing plant Phase 1. Factors were applied to the equipment cost to derive the other direct costs such as earthworks, civils, structural steel, piping and valves, electrical and instrumentation, freight, equipment installation and indirect costs.

The cost estimate used information from the following sources:

- Current and historical cost information from DRA databases;
- Quotations from equipment suppliers / external consulting firms.

Quotations from suppliers have accounted for approximately 84% of total equipment costs. For Phase 2 of the tonnage ramp up it was assumed that the process plant costs would be 90% of the Phase 1 capital cost. Both capital and operating cost estimates were prepared in United States Dollars ($) and Australian Dollar (AU$) and reported in United States dollars ($). The currency exchange rates used for the cost estimate is 1.4925 ($:AU$) and is based on data from XE.com, dated 16 December 2022.

Process Direct Costs

The breakdown of direct costs for the process plant Phase 1. Are shown in Table 21-3. Capital costs associated with the outlay required for reagents, notably the acid plant, form the largest single cost driver accounting for 54% of total direct costs. Capital required for the construction of a sulfuric acid plant has been included in this total.

Table 21-3 Process Direct Capital Costs

Area Code	Plant Area mount	$M	% of Total
100	Comminution	3.10	1.2
120	Gravity Concentration	24.60	9.7
400	Leaching	30.00	11.8
500	Neutralisation	4.30	1.7
510	Magnesium Sulfate Crystallization	13.10	5.2
520	Epsom Salt Adiabatic Flash	12.30	4.8
600/700	Impurity removal and Softening	4.80	1.9
800/810/820	Product Drying and Packaging	3.90	1.5
900	Mixed Sulfate Crystallization	10.60	4.2
1200	Reagents (including acid plant)	143.40	56.4
1300/1400	Services	4.10	1.6
	Total directs	**254.20**	**100**

Process Indirect Costs

Indirect costs include all temporary installations, on-site vendor support, initial spares, first fills and EPCM costs. Owner's costs are excluded from this estimate. Total indirect costs amount to $ 181.90m which is 27% of the total process plant cost.

21.1.7 Tailings Costs

During the initial 10 – 15 years of mining primary tailings will need to be stored in an external containment facility. A starter berm of compacted rockfill will be constructed around the perimeter of the tailings stockpile area sufficient to provide 12 – 18 months of storage capacity. Subsequent raises of the tailings stockpile will be placed in conjunction with centerline raises of the mine rock berm until the ultimate height is reached.

Once sufficient in-pit area is opened, primary tailing will be placed in designated cells within the mined out pit but supported by compacted berms of mine rock. Multiple in-pit cells will be constructed over the life of the mine as the pit develops. Once processing of stockpiled low-grade material begins, the remaining open pit void will be used for storage of the primary tailings until the stockpiled material is exhausted.

Tailings containment capital costs were developed using berm construction volumetrics, foundation grading and preparation, water management structures, supply of mine rock fill and engineering/design costs. As well as the geosynthetic cost for the lined facility.

Initial Capital costs for the base case external tailings berm construction are shown in Table 21-4.

Table 21-4 Tailings Initial Capital Cost

Facility	Capital $M	Comments
TSF1 (Primary Tailings)	26.20	External facility – construction for two years capacity is capitalized
TSF 2 (Sodium and Potassium Sulfate Tailings)	18.30	Lined storage facility
Total	44.50	

o

Sustaining capital costs for the base case external tailings berm are shown in Table 21-5.

Table 21-5 Tailings Sustaining Capital Costs

Tailings Stream	Period (years)	Annual Sustaining Cost ($M)	Comments
Primary filter cake	2 - 15	5600	Sustaining costs cease after in-pit backfill starts
Sodium and Potassium Sulfate Tailings	3 – 10+	1850	Constant cost until 5 years before end of mine life

The design includes two tailings storage facilities (TSF). The TSF 1 contains the combined Concentrator cake, Leach Filter Cake, Neutralisation filter Cake, IR Filter Cake, and Softening Filter Cake. The TSF 2 contains the Kieserite Cake, Epsomite Cake, Sulfate and the Sodium and Potassium Sulfate Product.

21.1.8 Capital Cost Summary

The Base Case design for the process plant achieves a peak processes tonnage of 8.8 Mt/y over two Phases. Phase 1 is designed for 4.4Mt/y over 6 years and Phase 2 is designed for 8.8Mt/y for the balance of LoM.

The process plant capital for Phase 2 is factored from the Phase 1 capital costs estimate. Similarly, bulk infrastructure capital expenditure has also been factored. Mining costs have been derived from the mobile fleet required to move the volume of material required for both Phases. The tailings capital costs applied to both phases are as described in section 16 of the report. The LoM Capital is presented in Table 21-6.

Table 21-6 LoM Capital Costs

Area	Units	Initial	(LoM)
Mining Capital	$'000	56 264	56 264
Process Plant	$'000	667 000	1 267 300
Tailings and Infrastructure	$'000	95 250	107 288
Closure Costs	$'000		25 000
Total Capital Expenditure	$'000	818 514	1 455 852

21.2 Operating Costs

21.2.1 Estimate Classification

The prepared estimate is classified by DRA as a Class 4 estimate with a +40 % / -40 % accuracy, similar to an AACE International Class 4 (+50 % / -30 %) and deemed suitable for a PEA I study.

21.2.2 Mining Operating Costs

Operating cost estimates for mine equipment were developed from a combination of data from InfoMine USA, Inc's CostMine mining cost service and Stantec's experience on past projects. Labour and fuel rates were applied separately to build up costs specific for TLC.

Mine operating costs were developed using unit rates for all equipment types. Costs were built up including fuel, maintenance, wear parts, maintenance labour, and operator labour. Diesel fuel price was $1.30/l and a fully burdened operator and maintenance personnel cost of $105,000 was used to determine a $ cost per operating hour for each piece of equipment. Using the productivities and mine schedule tonnes this resulted in operating costs shown in Table 21-7

Table 21-7 Mine Operating costs LoM

Description	**OPEX $/t**
Loading	0.24
Hauling	0.61
Dozing	0.35
Grading	0.12
Support Equipment	0.41
Mining Total	**1.74**

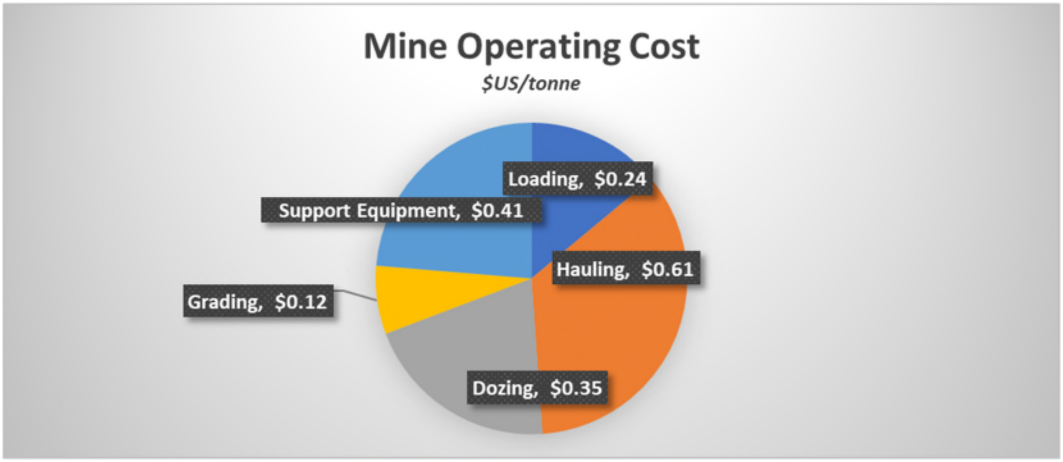

Figure 21-1 Mine Operating Cost Breakdown

Additionally, a stockpile reclaim cost of $1.07/t was used for material re-handled from the mineralized material stockpiles to the primary crusher. This cost was determined by assigning the appropriate truck and loader hours as well as 25% of the LoM support equipment costs on a $/t basis. This is a high-level estimate at this stage of the project. Further analysis will be required as the stockpiling strategy is refined at the next stage of study.

21.2.3 Process Plant Operating Costs

The operating cost estimate is based on a combination of market pricing, client input and DRA database information for similar projects and presented in $. Costs associated with power, labor, materials and consumables have been included in this estimate. The basis of the estimate has been defined in the sub-sections below. Both capital and operating cost estimates were prepared in United States Dollars ($) and Australian Dollars (AU$) and reported in United States dollars ($). The currency exchange rates used for the cost estimate is 1.4925 ($:AU$) and is based on data from XE.com, dated 16 December 2022.

Reagents and Services

Presented in Table 21-8 is a summary of the expected nominal reagent consumption rates, based on results obtained from test work, vendor specifications and mass balance outcomes. Unless otherwise specified, reagent unit supply costs shown in TABLE X include all clearance charges and taxes that may be incurred.

Table 21-8 Process Reagent Costs

Description	Consumption	Unit Supply Cost $/t	Supply Price Source
Reagent Freight (Lime)	-	3 $/t	TLC
Reagent Freight (Other)	-	48 $/t	Benchmarked
Sulfur	96.00 kg/t RoM	100 $/t	Market price
Sodium Carbonate	9.18 kg/t RoM	270 $/t	Market price
Limestone	22.70 kg/t RoM	35 $/t	TLC
Quicklime	25.35 kg/t RoM	121 $/t	TLC
Flocculant	0.14 kg/t RoM	4 960 $/t	Benchmarked
Methanol	0.001 kg/t RoM	1 154 $/t	Benchmarked
Natural Gas	0.694 GJ/t RoM	6.5 $/GJ	TLC
Raw water	0.804 m^3/t RoM	0.5 $/$m^3$	TLC

Power

Base Case Phase 1 an estimated power draw for the major equipment including the acid plant is 47 MW. For the balance of equipment an estimated power draw of 14.5 MW has been used giving an overall estimated power draw of 62.2 MW. The acid plant will generate 73.4 MW of power allowing for 11.2 MW to be exported.as shown in Table 21-9.

Table 21-9 Process Power Demand

Description	Base Case Phase 1	Base Case Phase 2
Power Generated	73.4 MW	146.8 MW
Power Draw	62.2 MW	124.4 MW
Export Power	11.2 MW	22.4 MW
Value of Export Power @ 0.07$/kWh	$6.2 M/y	$12.4 M/y

Labor

Plant labor costs have been based on the organogram developed for the processing plant broken down into operations, maintenance, and laboratory services. Labor costs were based on historic data and compared to similar regional projects. The costs presented in Table 21-11 are the total costs per area and are largely based on 2 shifts of 12 hours per day with certain positions requiring 8- or 12-hour single shifts only. Labor requirements for the progressive capacity increase over LoM has been factored to allow for additional labor resourcing. An overview of the labor breakdown for Phase 1 is presented

Table 21-10 Process Labor Costs

Position	No. Staff	$/t RoM
Operations	65	1.50
Maintenance	53	1.29
Laboratory	9	0.16

Position	No. Staff	$/t RoM
Total	127	2.95

Maintenance

An annual maintenance cost is estimated as 4% of mechanical equipment capital costs.

Consumables

The replacement rates and costs for the consumables have been supplied by the various vendors and is based on typical replacements in the industry. Unit replacements costs are show in Table 21-11.

Table 21-11 Process Consumable Costs

Description	$/t RoM	Source
Crusher Liners	0.030	Vendor
Cage Mill Wear Parts	0.048	Vendor
Scalping Screens Panels	0.013	Vendor
Filter Cloths	0.450	Vendor
Product bags and Pallets	0.130	Data base

Laboratory

Laboratory costs are based on study costs from similar previous studies. The estimate covers all laboratory consumables needed to carry out analyses on 1 250 samples per month. An annual fixed cost allowance of $602 880 has been assumed. The variable cost component has been recalculated $4 per sample. An overview of fixed and variable costs associated with sample analysis is presented in Table 21-12.

Table 21-12 Laboratory Operating Costs

Description	Value $/y	Source
Lab Fixed Cost	602 880	Assumed
Lab Variable Cost	60 000	Previous Study
Laboratory Maintenance	20 000	Previous Study

Mobile Equipment

Operational expenditure associated with diesel consumption and maintenance of light vehicles, mobile equipment, generators, and small engines has been included in the estimate of $ 1.24 M/y

21.2.4 Tailings Handling and Storage

It is planned to transport the filtered primary tailings from the processing plant to near the external tailings facility where a bin will load dedicated haul trucks that will haul the filter cake onto the tailings pile. The tailings will be spread by dozer to allow for additional drying prior to compaction by a roller compactor. The perimeter mine rock buttress will use waste hauled from the pit by the large mine fleet haul trucks and placed in lifts to be spread by dozers. Compaction of the mine rock will be provided by the truck traffic.

Once volume is available for in-pit primary tailings storage, the conveyor and bin system will be relocated to discharge adjacent to the pit and similar placement methods will be utilized. Operating costs for the base case are shown in Table 21-13.

Table 21-13 Tailings Operating Costs

Description	Unit Cost $/t to TSF	Source
TSF 1	1.05	Stantec
TSF 2	1.35	Stantec

21.2.5 General and Administration

General and administration costs include allowances for administrative personnel, general office supplies, building and grounds, travel (both on site and off site), independent contractors, donations, software, head office. These costs have been estimated to be $ 13 800 000 /y and are applied over LoM for both Phase 1 and Phase 2.

Mine general and administrative (G&A) costs were calculated using the following cost categories:

- Salaries
- Staff Travel
- Office Supplies
- Software
- Municipal Taxes
- Donations
- Consulting/Contracting
- Buildings & Grounds
- Head Office

Total mine personnel numbers are shown in Table 21-14.

Table 21-14 G&A Labor Costs

Position	Year 1	Year 6	Year 15
Mine Operations: Supervision & Labour	70	80	124
Mine Maintenance: Supervision & Labour	52	84	76
Salary – Mining Personnel	65	85	65
Sub-total Mine Department	**187**	**209**	**265**
Management	2	2	2
Human Resources	9	9	9
Safety	7	7	7
Accounting	4	4	4
Purchasing	4	4	4

Position	Year 1	Year 6	Year 15
Processing: Supervision	13	13	13
Total Personnel	**226**	**248**	**304**

Note: hourly mine operations and maintenance personnel are not included in G&A costs. They are captures in mine operations costs.

Weighted average personnel costs are approximately $91,000 /y and LoM G&A costs are a weighted average of $0.91/t. Annual G&A cost breakdown is shown in Table 21-15.

Table 21-15 G&A Total Costs

G&A cost	M$/y
Total Salaries	18.40
Staff Travel	0.40
Office Supplies	0.25
Software	0.75
Donations	0.25
Consulting/Contracting	0.40
Buildings and Grounds	0.35
Head Office	0.75
Total Annual	**21.55**

21.2.6 Operating Costs Summary

The overall project operating cost estimate is presented in

The breakdown shows (Table 21-16) all the costs associated with mine and plant operation covering costs for contractor mining, labor, power, maintenance, reagents, consumables, and general administration. The reduction in unit operating costs, relative to Phase I, are realised due to economies of scale. Key cost drivers for both options reside with the process plant of which reagents constitute the largest single cost category overall.

Table 21-16 Operating Cost Summary

Description	$/t	
Mine - Loading	0.24	$/t moved
Mine - Hauling	0.61	$/t moved
Mine - Dozing	0.35	$/t moved
Mine - Grading	0.12	$/t moved
Mine - Support Equipment	0.41	$/t moved
Mining Total	1.74	$/t moved
Stockpile Rehandle Cost	1.07	$/t rehandled
G&A	0.91	$/t moved
Tailings – TSF 1 Primary filter cake	**1.05**	$/t to tailings
Tailings – TSF 2	1.35	$/t to tailings
Process – Reagent costs	21.85	$/t RoM
Process – Labor	2.95	$/t RoM

Description	$/t	
Process - Maintenance	2.35	$/t RoM
Process – Consumables	1.05	$/t RoM
Process – Product Transport	0.26	$/t RoM
Process – Mobile Equipment	0.28	$/t RoM
Process - Laboratory	0.16	$/t RoM

22 ECONOMIC ANALYSIS

22.1 Introduction

This PEA economic analysis is preliminary in nature and includes inferred mineral resources. The analysis presents the determination of the net present value (NPV), payback period (time in years to recapture the initial capital investment), and the internal rate of return (IRR) for the project. Annual cash flow projections are estimated over the life of the mine based on the estimates of capital expenditures, production cost, and sales revenue.

The PEA economic model is developed using information and estimates from the previous chapters of the technical report. Due to the preliminary nature of the model, there is no certainty that the economic assessment will be realized.

All production is given in terms of LC. Revenues, for the base-case scenario, are based on the production of LC product for export, whilst the alternative case presents the speculative economics for additional by-product (magnesium sulfate product) recovery in addition to LC.

The analysis has been conducted in constant terms with no consideration given to inflation or cost escalation of costs or product prices over the life of the project. In addition, the analysis is prepared on a 100% equity project basis and does not consider financing scenarios. Financing related costs such as interest expense, and in-country withholding taxes on dividends and interest income, are excluded from the economic model.

22.2 Mine Production Profile

Mine production is reported as material and waste from the open cast mining operation. The mine schedule over life of mine is presented in Figure 22-1 and the process plant feed schedule, over life of mine, is presented in Figure 22-2.

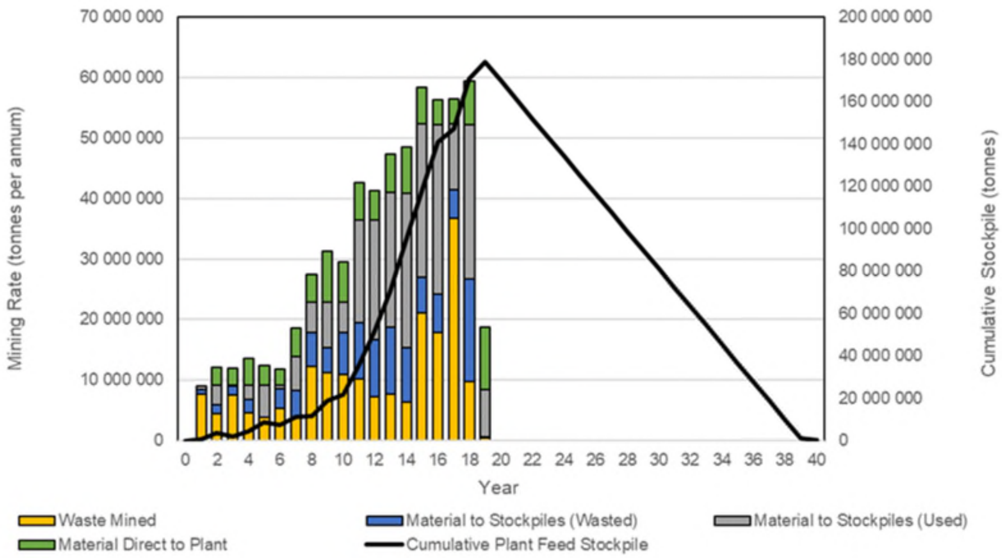

Figure 22-1 Mine Schedule – Base Case

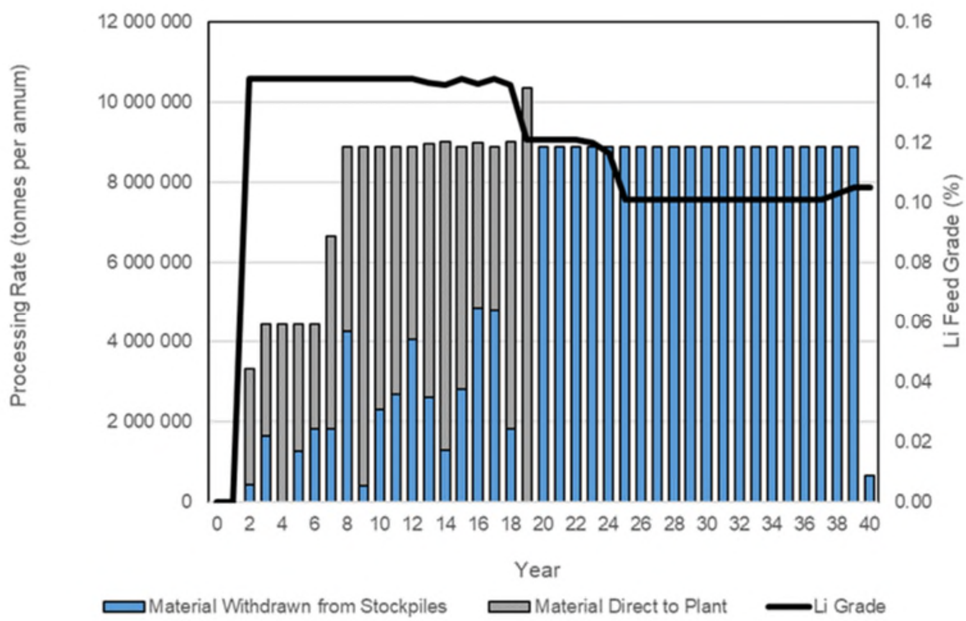

Figure 22-2 Process Plant Feed Schedule

Over life of mine, a total of 313.2 M tonnes of material is delivered to the processing facility, with 292.1 M tonnes of waste removed over the same period. The average grade over life of mine is estimated at 1200 ppm Lithium, with higher grades of around 1410 ppm Lithium delivered during the first 17 years of operation. The overall Lithium grade envelope applied in the economic model varies between 1010 ppm and 1410 ppm Lithium.

22.3 Process Production Profile

The design basis for the process facility is 4.4 M tonnes /y, whilst the economic analysis is based on increasing output over two phases. The schedule is based on processing circa 4.4 Mt/y during phase 1, with a process plant expansion to circa.8.9 M t/y in phase 2

Table 22-1 Milling Rate and Expansion Phases – Base Case

Description	Years	Milling Rate
Phase I	5	4.4 Mt/y
Phase II	6+	8.8 Mt/y

During both expansion phases, the model assumes that 75% of steady state production will be achieved in the first year to account for commissioning ramp-up of the processing facilities.

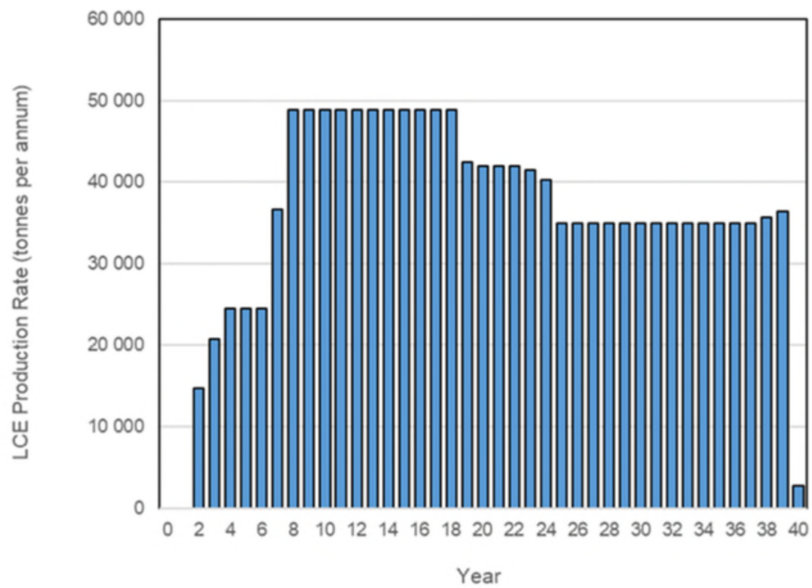

Figure 22-3 LC Production Schedule

A total of 1.463 M tonnes of LC product is modelled to be produced over life of mine, as shown in Figure 22-3.

22.4 Revenue

Project revenues are estimated based on producing saleable LC products, as it relates to grade and impurity levels, with no consideration for any by-product revenue in the base-case. Annual revenue is determined by applying a constant product price over life of mine.

The Tonopah Lithium Project is not currently in production and has no operational sales contracts in place. American Lithium subscribed to the Lithium Forecast Service of Benchmark Mineral Intelligence (BMI), summarised in Section 19, who's price forecast guidance has informed the preliminary economic analysis. For LC BMI forecasts long-term pricing to settle in the region of $ 20,750 per tonne and for Lithium Hydroxide $ 22,750 per tonne.

The economic analysis has been based on a constant price of $ 20,000 per tonne of LC produced over the life of mine. The sensitivity to price variances is also presented.

As mentioned in Section 19, an opportunity exists for the Tonopah project to become a significant supplier of magnesium sulfate products. American Lithium has engaged with Ameropa, a reputable and accredited European-based fertiliser trader to provide insights into likely future market capacity and pricing for magnesium sulfate products. A value of $150/t of magnesium sulfate monohydrate was used in the financial modelling of the Alternative Case. No contracts have been entered into so pricing and market size should be considered prospective at this stage.

22.5 Operating Costs

The operating costs over life of mine include mining operations, process facility operations, estimate for general and administrative costs and estimates for tailings disposal and tailings management. The cost reported excludes the cost of capitalized mine pre-stripping. Table 22-2 shows the estimated total and unit operating cost by area.

Table 22-2 Life of Mine Operating Costs

Description	Units	Life of Mine
G&A Costs	$ '000	531 300
Mining Costs	$ '000	1 296 561
Processing Costs	$ '000	8 902 113
Other Costs	$ '000	611 075
Life of Mine Operating Cost	**$ '000**	**11 341 049**
G&A Costs	$/t LC	363
Mining Costs	$/t LC	886
Processing Costs	$/t LC	6 085
Other Costs	$/t LC	418
Unit Operating Cost (No Power Credits)	**$/t LC**	**7 752**
Unit Operating Cost (With Power Credits)	**$/t LC**	**7 443**

The costs presented in Table 22-2 are presented as costs that are both inclusive and exclusive of electrical power credits derived.

Energy recovery is extremely important in the economics of sulphur burning acid plants. Heat recovery systems of a conventional sulfuric acid plant recovers most of the heat produced during sulphur combustion, which in turn feeds a turbogenerator for electric power production. Surplus power is expected to be generated providing the opportunity to be fed back into the grid as described in earlier chapters of the technical report.

22.6 Capital Expenditure

The total initial capital estimate for the project, which includes pre-stripping for mine development, construction, direct cost, indirect costs and contingency is $ 818.5 M. A breakout of the capital cost is discussed in the Capital Estimate chapters and is summarised in Table 22-3.

The modelled process plant capital expenditure for Phase 2 is based on 90% of Phase 1 capital due to the expectation that cost reductions will be realised for plant infrastructure, earthworks and other common areas. A two year construction period is assumed for all project phases.

Table 22-3 Capital Expenditure

Description	Units	Initial	Life of Mine
Mining Capital	$ '000	56 264	56 264
Process Plant	$ '000	667 000	1 267 300
Tailings and Infrastructure	$ '000	95 250	107 288
Closure Costs	$ '000	-	25 000
Total Capital Expenditure	**$ '000**	**818 514**	**1 455 852**

The PEA economic model includes an allowance for process plant sustaining capital of 1% of capital expenditure over life of mine. Over life of mine, an allowance of $ 487M is included for process plant sustaining capital.

Sustaining capital for mining, tailings and others is included in the model and phased as per the recommendations of Stantec. Over life of mine an allowance of $ 130.7M for sustaining capital is included for mining, $ 139M for tailings disposal and $ 10.1M for infrastructure capital.

No allowance for working capital is included.

22.6.1 Salvage Value

No allowance for salvage is included in the model.

22.6.2 Reclamation and Closure

The model is based on an assumed closure cost of $ 25M at the end of life of mine. This estimate requires confirmation by the appointed environmental consultant in future study phases.

22.7 Taxation

Mining Tax Plan LLC located in Greenwood Village, Colorado was consulted and has prepared the U.S federal and state income tax computations based on the Internal Revenue Code of 1986, as amended and the regulations thereunder. The computation has been done subject to a variety of preliminary assumptions relating to classified revenue, expenses and capital expenditures consistent with federal and state income tax statutes, regulations and case law.

The following is a summary of tax elections incorporated into the tax computation:

- The Tonopah Mine Project consists of a single mine and property under Section 614.
- The Tonopah Mine Project will elect to expense exploration expenditures as incurred under Section 617(a).
- The Tonopah Mine Project will deduct mine development costs as incurred under Section 616(a).
- The Tonopah Mine Project will elect out of Section 168(k) bonus depreciation.
- For computing percentage depletion under the proportional profit's method, twenty-five (25) percent of processing plant costs will be deemed non-mining costs.
- LC should meet the definition of an "applicable critical mineral" within the meaning of Section 45X for the Advanced Manufacturing and Production Credit. The credit is based on an amount equal to ten (10) percent of the costs incurred by the taxpayer with respect to production of such material as determined under Section 471.
- Fifty (50) percent of metal sales will be delivered outside of the United States and are therefore eligible for the Foreign Derived Intangible Income ("FDII") deduction under Section 250.
- No Section 382 ownership change will occur either directly or indirectly to the entity which owns the Tonopah Mine during the construction or operation of the mine. Otherwise, Section 382 could limit the future utilization of the tax attributes including net operating losses reflected in this PEA.
- The NV Office of Economic Development will certify the project will qualify for the property abatement of real and personal property taxes under NRS 360.750.

22.8 Discounted Cash Flow Summary

The economic analysis is prepared on a 100% equity project basis and does not consider financing scenarios. An 8% real discount rate has been used in the analysis. The analysis includes credits for excess power generation which is fed back into the grid. The discounted cash flow is shown in Table 22-4.

Table 22-4 Discounted Cash Flow Summary – Base Case

Description	Units	Pre-TAX	Post-TAX
Total Cash Flow	$ '000	16 147 433	14 581 623
NPV (8%)	$ '000	3 641 708	3 260 848
IRR	%	28.8	27.5
Payback **	Years	3.6	3.7

** Payback is based on Phase 1 capital alone, with undiscounted cashflows. Positive undiscounted cashflows, inclusive of Phase 2 capital spend, are realised in 5.4 years and 5.6 years for pre-tax and post-tax scenarios respectively.

A summary of the life of mine cash flows for the base-case scenario is presented in Figure 22-4.

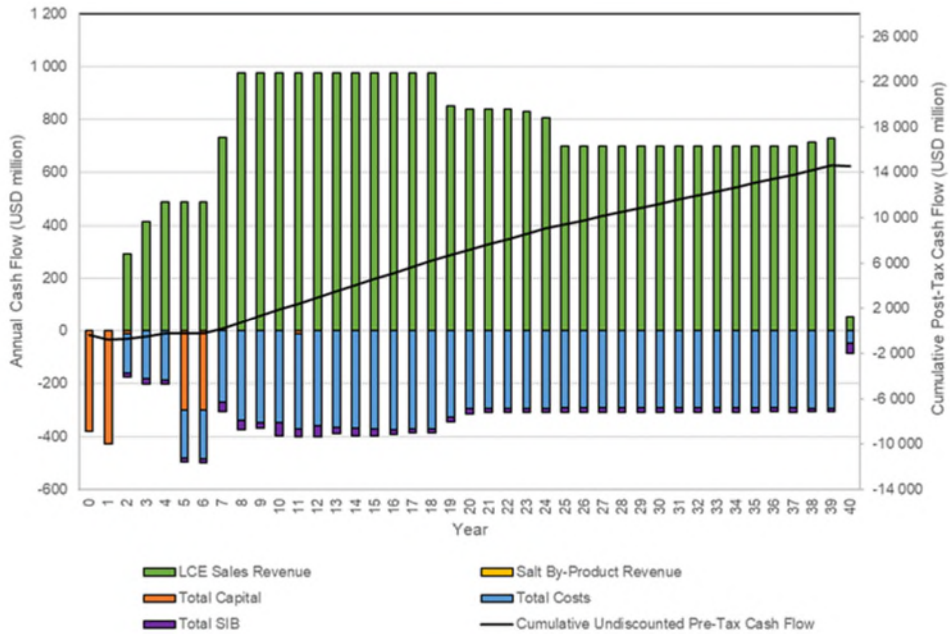

Figure 22-4 Life of Mine Cashflow – Base Case

22.9 Sensitivity

The results of the sensitivity analysis for the project after taxes are shown in Figure 22-5.

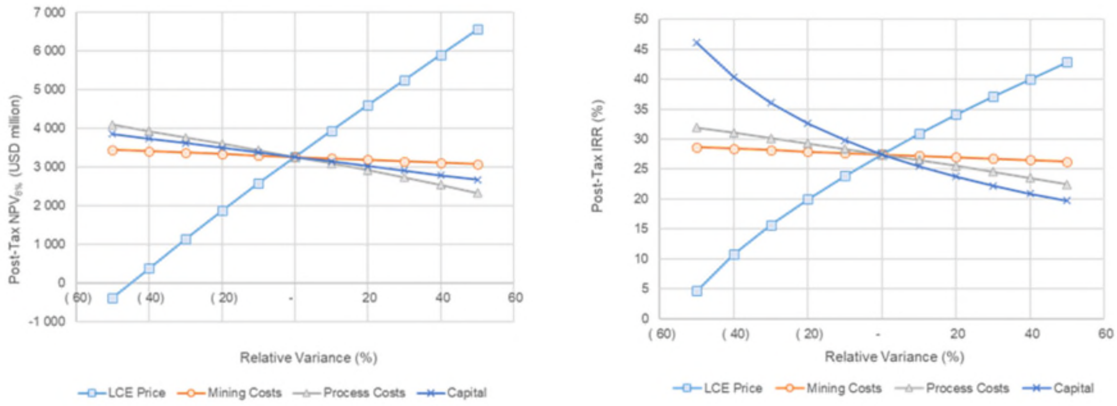

Figure 22-5 Sensitivity Analysis Summary – Base Case

22.10 Alternative Case: By-Product Recovery

The possibility exists for by-product recovery of magnesium sulfate by-products after Lithium recovery. This section presents the potential overall economic potential for the project should by-product recovery be pursued and realised.

Additional initial capital of $21.6 M is estimated to be required for the additional processing elements in the process facility. Additionally, the incremental annual operating cost, at steady state, is estimated at $2 M/y, with a sustaining capital allowance $15.8 M over life of mine. Table 22-5 presents the speculative discounted cashflow summary should the recovery and sale of mixed sulfate by-products be realised. The economic potential is based on a sales price of $150 per tonne of magnesium sulfate by-product, whilst the sensitivity to this assumed price is presented graphically in Figure 22-6

Table 22-5 Discounted Cashflow Summary – Alternative Case

Description	Units	Pre-TAX	Post-TAX
Total Cash Flow	$ '000	25 859 833	22 129 558
NPV (8%)	$ '000	6 055 592	5 156 602
IRR	%	38.6	36.0
Payback	Years	2.6	2.8

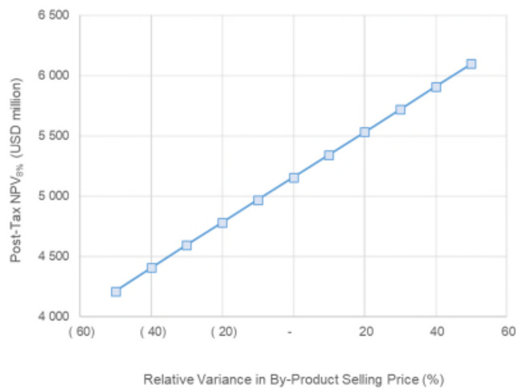

Figure 22-6 **Sensitivity Analysis for By-Product Selling Price Variances**

22.11 Alternative Case: Without Production Expansion

The economics for the scenario without any expansion in production was assessed as an alternative in the PEA study. For this scenario, the initial capital is estimated at $ 813 M, with life of mine operating costs of $ 7,543 per tonne LC produced, excluding the sale of any by-product. A summary of the financial modelling outcomes for the scenario of no production expansion, with and without by-product recovery is summarised below.in Table 22-6.

Table 22-6: Alternative Case: Without Production Expansion

Description		No By-Product		With By-Product	
	Units	Pre-TAX	Post-TAX	Pre-TAX	Post-TAX
NPV (8%)	$ '000	2,136	1,906	3,592	3,047
IRR	%	27.5	26.1	38.2	35.3
Payback	Years	3.5	3.6	2.5	2.6

22.12 Comments on Section 22

In this technical report, the QP has included the economic data presented, by others, for the project under consideration and believes that the analysis is sufficient to meet the requirements of a Preliminary Economic Assessment (PEA). The economic analysis presented in the report provides a preliminary evaluation of the project's economic viability, including capital and operating costs, cash flow projections, and economic indicators.

However, it is worth highlighting that the economic analysis for the alternative case, which includes magnesium sulfate by-product recovery, is speculative due to the uncertainty in both off-take market and sales price. While the potential for magnesium sulfate by-product recovery could add significant value to the project, there is currently limited market data available, and there is a lack of certainty regarding the sales price that can be achieved for this by-product. As a result, the economic analysis for this alternative case should be considered speculative until further data is available to confirm the off-take market and sales price

Overall, the QP believes that the economic analysis presented in this report provides a solid foundation for the project's economic assessment and highlights the potential for value creation through the alternative case of mixed sulfate by-product recovery. However, further analysis and evaluation are required to confirm the potential of this alternative case and reduce the uncertainty associated with it.

23 ADJACENT PROPERTIES

The Qualified Person has not verified the information associated with the adjacent properties, inclusive of active claims; the information associated with these adjacent properties may not be indicative of the mineralization on the Property.

To the northwest of the TLC Property is the Ray Property owned by Mogul Mountain Holdings Corporation. The Ray Property consists of 186 unpatented mining claims under the name Raye and 65 unpatented mining claims under the name Dustbowl. Within the claim block boundary there are two patented lode claim areas and four unpatented lode claims, all of which are held by third party entities. Exploration efforts on this property indicate evidence to support both an epithermal and Carlin-style Ag-Au deposit (Loveday, 2022).

Directly east of the TLC property are five active unpatented claims held by NV Gold Corporation constituting part of their Frazier Dome Project. This project area is undergoing exploration of a low-sulfidation, volcanic-hosted epithermal gold system with high-grade mineralization (NV Gold Corporation, 2023).

Blackrock Silver Corporation's (Blackrock) Tonopah North Project, whose claims are located 1.9 miles (3 km) southeast of the TLC Property, have reported that a broad lithium zone has been intersected from drilling encompassing an area 5,200 acres (2,100 hectares). They reported that the lithium zone was similar profile to the lithium mineralization encountered at the TLC deposit. (Blackrock, 2022).

24 OTHER RELEVANT DATA AND INFORMATION

24.1 Introduction

Due to the lack of identified biological or cultural concerns to date, American Lithium's TLC Project is in a great position for project development and permitting timelines. Further development, optimization and piloting of the metallurgical process to advance TLC to a pre-feasibility and feasibility level are planned in conjunction with a proactive permitting plan.

TLC also benefits from other Nevada Lithium Claystone Projects leading the way towards permitting and production. Both Lithium Americas at their Thacker Pass project near Winnemucca and Ioneer at their Rhyolite Ridge project have had recent successes highlighting the techno-economic feasibility of Nevada Lithium Claystone projects.

24.2 TLC Project Development and Permitting Timeline

As outlined in Sections 13 and 17, process development at TLC has been significant as the project moved towards selecting sulfuric acid counter-current leaching on beneficiated clays. While focusing on standardized equipment, a great deal of project specific knowledge has been gained and the advancement to pre-feasibility and feasibility levels is planned to be efficient.

Section 20 outlines the major permitting milestones to reach, and in conjunction with the processing progress, the following approximate schedule has been developed.

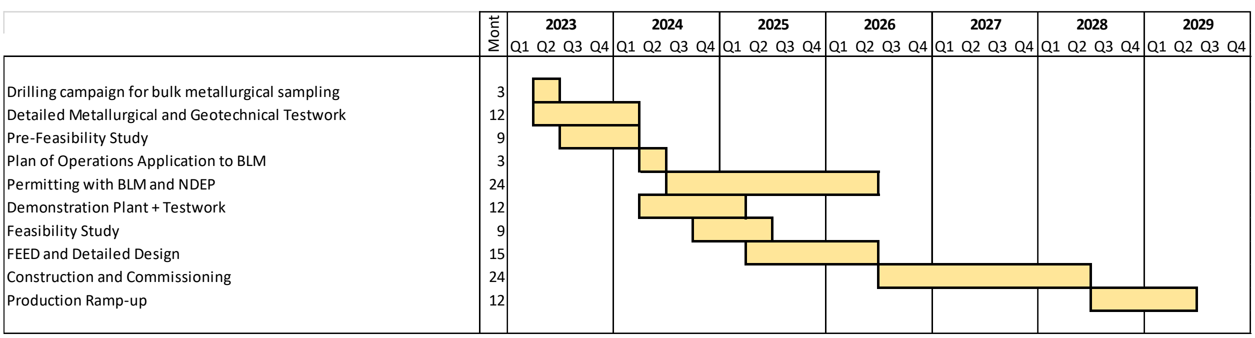

Figure 24-1 Estimated Schedule

24.3 Nevada Lithium Claystone Project Successes

The recent commencement of construction by Lithium Americas at their Thacker Pass project after the favorable ruling on the BLM permitting process confirms that lithium claystone projects in Nevada do get constructed and move towards production and revenue. Moreover, General Motors' $650 M investment into Thacker Pass shows the eagerness of automakers moving towards increased electric vehicle manufacturing to support lithium production from claystones in Nevada to secure their domestic supply of this critical mineral.

Ioneer's Rhyolite Ridge project, located near TLC in neighboring Esmerelda County, Nevada has received a conditional commitment from the US Department of Energy for a loan of up to $700 M for project development. The loan demonstrates the strong support from the US Government for the Rhyolite Ridge project, which highlights the eagerness of to develop strategically located domestic lithium projects, including lithium claystone projects in Nevada.

25 INTERPRETATION AND CONCLUSIONS

25.1 Introduction

This PEA report, with the current operating costs and product pricing, supports the economic viability of the TLC project . The PEA is based upon limited and time-sensitive information, such as LC, fuel, utility and reagent pricing. Changes in the understanding of the Project such as access to power, social/environmental issues, the ability to convert Mineral Resources to Mineral Reserves and market demand conditions could have significant effects on the Project's overall economic viability.

25.2 LC Production

The project has a 40-year mine plan that processes 4.4 mt/y for the first 6 years and there after a process expansion will double the capacity to 8.8 Mt/y. The feed grade is approximately 1,400 ppm for the first 17 years of processing followed by 7 years of 1,200 ppm lithium and the final 16 years 1,000 ppm.

The targeted LC product is averaged at 24,000t/y for the first 6 years, 48,000 t/y up to year 18, dropping to 41,000 t/y up to year 24, thereafter to year 40 approximately 35,000 t/y.

Mining operations are planned to run for 20 years thereafter treatment of low grade stockpiles will commence.

25.3 Capital and Operating Costs

The capital expenditure for the initial stage (4.4mt/y) is $818 M and an additional cost of $637M for the balance of the years providing a total of $1,456M.

The LoM operating costs average is $7,443/t LC, inclusive of electrical power credits, with the reagents costs making up 78% of the costs.

25.4 Financial Evaluation

Based on a LC price of $20,000/t, the Base Case project economics have revealed an after-tax Net Present Value (NPV) of $3.26 billion with an after-tax internal rate of return (IRR) of 27.5% and an after-tax payback period of 3.7 years on initial capital.

25.5 Environment

The 2021 Environmental Assessment has not revealed any sensitive issues or areas that would impede the development of the project.

26 RECOMMENDATIONS

It is recommended that a Pre-feasibility Study (PFS) be completed to further demonstrate the Project's technical and economic viability and to provide a greater degree of confidence in the capital and operating cost estimates. Further definition of the Project is required to allow a PFS to be completed and the following is recommended to further develop the Project and reduce its technical uncertainty and risk: It is recommended to continue with the following work to advance the TLC project.

- Foundation investigations for the proposed tailings stockpile areas are required to determine acceptable slope angles and ultimate heights for the facilities. Investigations would include test pits and drillholes (sonic, rotary and coring) as well as the installation of additional piezometers to measure groundwater levels (if present).
- Laboratory testing of foundation materials to determine strength and hydrogeological parameters would be required.
- Characterization of the proposed filtered tailings materials would be required to determine their material handling and geotechnical characteristics including consolidation, strength, moisture retention (soil water characteristic curve), compaction and trafficability. Sample quantities at the scale of >30kg would be required for a full testing suite.
- Characterization of foundation and borrow materials for berm and liner base layers is required to determine the suitability of these materials for construction. Testing would include compaction, strength and hydraulic conductivity.
- Testing of borrow materials for suitability for use as underliner and overliner layers around the geosynthetic liner is required. Testing would include grainsize, strength and specific testing to determine interface strengths between the geosynthetic and over/underline soils.
- Delineation and testing of rock materials that might be suitable for drainage layers for liner systems as well as for use as riprap armouring in water management channels. Ideally, a source of suitable durable rock could be found within the planned pit areas
- Geotechnical drilling and material testing to provide data to support future design of pit slopes, mine rock storage facilities, stockpiles, tailings facilities and mine infrastructure
- Mineralized material characterisation (to better define the design data for the crushing and milling circuits).
- Geotechnical characterization of the proposed filtered tailings materials to support future design and placement planning for external and in-pit tailings facilities. This work should be coordinated with process development activities
- Mineralized material variability (to understand how variability across the orebody may impact on plant performance and to make design allowances accordingly);
- Process optimisation testwork (to optimise operating parameters and reagent consumptions.
- Equipment Sizing (to allow equipment vendors to size their equipment and provide performance guarantees).
- Magnesium sulfate monohydrate recovery (to define the design conditions for the recovery of valuable by-products)

- Engage with equipment vendors to carry out testwork (for example, thickeners, filters, crystallisers) to allow them to offer performance guarantees.
- Engage with vendors of the major packages to better define their scope and investigate possibilities for build, own, operate commercial arrangements.

Most of the work above can be incorporated into the Pre-feasibility Study, in two research and development categories that should allow, if displaying positive results, a decision in moving the project forward, as follows:

Phase I: Environmental, drilling and geotechnical work: $1.4 million

- Drilling and laboratory rock mechanics test work: $1.0 million
- Environmental permitting and hydrology: $0.4 million

Phase II: Various test work, optimisation, pilot plant studies, and byproduct marketing studies: $2.1 million

- Test work and optimisation: $0.5 million
- Pilot Plant: $1.4 million
- Byproduct Marketing Study: $0.2 million

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