Ausenco

LITHIUM CHILE

Salar de Arizaro Project

NI 43-101 Technical Report and Preliminary Economic Assessment

Salta, Argentina

Effective Date: August 04, 2023

Prepared for: Lithium Chile Inc.

700, 903 8th Ave. SW, Calgary, Canada AB T2P 0P7

Prepared by: Ausenco Chile Limitada

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List of Qualified Persons:

James Millard, P.Geo., Ausenco Sustainability Inc.
Patricio Pinto, R.M., Ausenco Chile Ltda.
Michael Rosko, R.M. – SME, Montgomery & Associates Consultores Ltda.
Murray Brooker, MAIG, Hydrominex Geoscience Pty Ltd.

CERTIFICATE OF QUALIFIED PERSON

James Millard, P. Geo.

I, James Millard, P. Geo., certify that:

1. I am employed as a Director, Strategic Projects with Ausenco Sustainability Inc., a wholly owned subsidiary of Ausenco Engineering Canada ("Ausenco"), with an office address of Suite 100, 2 Ralston Avenue, Dartmouth, NS, B3B 1H7, Canada.
2. This certificate applies to the technical report titled "*Salar de Arizaro Project NI 43-101 Technical Report on Preliminary Economic Assessment, Salta Argentina*" (the "Technical Report"), prepared for Lithium Chile Inc. (the "Company") with an effective date of August 4, 2023 (the "Effective Date").
3. I graduated from Brock University in St. Catharines, Ontario in 1986 with a Bachelor of Science in Geological Sciences, and from Queen's University in Kingston, Ontario in 1995 with a Master of Science in Environmental Engineering.
4. I am a member (P. Geo.) of the Association of Professional Geoscientists of Nova Scotia, Membership No. 021.
5. I have practiced my profession for 25 years. I have worked for mid- and large-size mining companies where I have acted in senior technical and management roles, in senior environmental consulting roles, and provided advise and/or expertise in a number of key subject areas. These key areas included: feasibility-level study reviews; NI 43-101 report writing and review; due diligence review of environmental, social, and governance areas for proposed mining operations and acquisitions, and directing environmental impact assessments and permitting applications to support construction, operations, and closure of mining projects. In addition to the above, I have been responsible for conducting baseline data assessments, surface and groundwater quantity and quality studies, mine rock geochemistry and water quality predictions, mine reclamation and closure plan development, and community stakeholder and Indigenous peoples' engagement initiatives. Recently, I acted in the following project roles: Qualified Person for the environmental/sustainability aspects for "Puquios Project, Feasibility Study Report, La Higuera, Coquimbo Region, Chile", "Volcan Project, NI 43-101 Technical Report on Preliminary Economic Assessment, Tierra Amarilla, Atacama Region, Chile" and, "Colomac Gold Project, NI 43-101 Technical Report and Preliminary Economic Assessment, Northwest Territories, Canada"; and principal author for the environmental/sustainability sections for the "Kwanika-Stardust Project, NI 43-101 Technical Report and, Preliminary Economic Assessment, British Columbia, Canada".
6. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
7. I have not visited the Salar de Arizaro Project.
8. I am responsible for 1.18, 1.21.1.5, 1.21.2.5, 1.21.3, 1.22.1, 1.22.6, 20, 25.7, 25.10.1.7, 25.10.2.6, 26.1, 26.6 and 27 of the Technical Report.
9. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.
10. I have had no previous involvement with the Salar de Arizaro Project.
11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 15, 2023.

"Signed and sealed"

James Millard, P. Geo.

CERTIFICATE OF QUALIFIED PERSON
Patricio Pinto Gallardo, C.P.

I, Patricio Pinto Gallardo, C.P., certify that:

12. I am employed as a process manager with Ausenco Chile Ltda. ("Ausenco"), with an office address of Avenida Las Condes 11283, Floor 6, Las Condes, Santiago, Chile CP 75550000.
13. This certificate applies to the technical report titled "*Salar de Arizaro Project NI 43-101 Technical Report on Preliminary Economic Assessment, Salta Argentina*" (the "Technical Report"), prepared for Lithium Chile Inc. (the "Company") with an effective date of August 4, 2023 (the "Effective Date").
14. I graduated from the University of Santiago de Chile in 1987 with a bachelor's in civil chemical engineering, and from Adolfo Ibañez University with a postgraduate diploma in business administration in 2004.
15. I am a Competent Person with the Qualifying Commission for Competencies in Mining Resources and Reserves (Registration No. 0440).
16. I have practiced my profession for 35 years in which I have held virtually every position in the mining industry, such as Process Engineer, Head of Research and Development, and Project Manager, focusing on mineral recovery projects from salt flats. I have been directly involved in research of new processes and detailed plant design. I have participated in all stages of engineering: conceptual engineering, basic engineering, and detailed engineering, as well as in the construction, pre-commissioning, commissioning, and start-up stages. As a Consultant, I have done Due Diligences for the purchase or agreement between companies. As a Process Audit Engineer, I have participated in the review of lithium carbonate plants in Chile and Argentina. In addition to the above, in several lithium carbonate production projects from brines, I have been responsible for the definition of the salt matrix and preparation of the fundamental process design data together with the development of an optimal pipeline configuration, the well field configuration and the design of the brine reservoirs, the definition of the extraction capacity of each well, construction geometry, definition of pond depths and other works and estimate exploitation costs. Recently, I acted as Qualified Person for the process metallurgical, recovery methods, infrastructure, and economic analysis aspects for "Pozuelos-Pastos Grandes Project (Li_2CO_3), Preliminary Economic Assessment update, in the Salta province, northwest Argentina in 2022" and for "Sal de Vida Project (Li_2CO_3), NI 43-101 Technical Report, in Catamarca Province, Argentina in 2022. Examples of other experiences I have domestic and internationally include White Project in Maricunga Salar, Lithium Carbonate Plant Audit in Olaroz Salar, Clayton Valley Lithium PFS, Rhyolite Ridge Project, Capricornio Project in Atacama Salar, Aguas Blancas Project, Pascua-Lama Project, and La Negra Project in Atacama Salar.
17. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
18. I visited the Salar de Arizaro Project on March 28-29, 2023.
19. I am responsible for 1.1 to 1.4, 1.11.2, 1.12, 1.15 to 1.17, 1.19, 1.20, 1.21.1.1, 1.21.1.4, 1.21.1.6 to 1.21.1.8, 1.21.2.1, 1.21.2.4, 1.21.2.6, 1.21.2.7, 1.21.3, 1.22.1, 1.22.4, 1.22.5, 2 to 5, 12.2, 13, 17 to 19, 21, 22, 24, 25.1, 25.2, 25.5, 25.6, 25.8, 25.9, 25.10.1.2, 25.10.1.4 to 25.10.1.6, 25.10.1.8, 25.10.2.1, 25.10.2.4, 25.10.2.5, 25.10.2.7, 26.1, 26.4, 26.5 and 27 of the Technical Report.
20. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.
21. I have had no previous involvement with the Salar de Arizaro Project.
22. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 15, 2023

"Signed and sealed"

Patricio Pinto Gallardo, C.P.

CERTIFICATE OF QUALIFIED PERSON
Michael J. Rosko, MSc., P.G.

I, Michael J. Rosko, MSc., P.G., certify that:

23. I am employed as principal hydrogeologist and general manager with Montgomery & Associates, Consultores, Ltda., with an office address of Avenida Vitacura 2771, Of. 404, Las Condes, Santiago, Chile.
24. This certificate applies to the technical report titled *"Salar de Arizaro Project NI 43-101 Technical Report on Preliminary Economic Assessment, Salta Argentina"* (the "Technical Report"), prepared for Lithium Chile Inc. (the "Company") with an effective date of August 4, 2023 (the "Effective Date").
25. I graduated from the University of Illinois in 1983 with a Bachelor of Science degree in Geology. I obtained a Master of Science in Geology (Sedimentary Petrology focus) from University of Arizona in 1986.
26. I am a registered professional geologist in the states of Arizona (license no. 25065), California (license no. 5236), and Texas (license no. 6359). I am a registered member in good standing of Society for Mining, Metallurgy, and Exploration (license no. 4064687), and a member of the National Ground Water Association, Arizona Hydrological Society, and International Association of Hydrogeologists.
27. I have practiced my profession for 37 years, with much of this time designing groundwater exploration programs in salar basins in Chile and Argentina, and estimating lithium resources similar to the Tolillar Project since 2010. Similar projects and roles have included functioning as the Qualified Person (or Competent Person for JORC projects) for Lithium One's Sal de Vida project, Millennial Lithium's Pastos Grandes project, Lithium Chile's Salar de Arizaro project, NOA Lithium's Rio Grande project, SQM's Salar de Arizaro project, Lithium America's Cauchari project, Wealth Minerals' Salar de Ollaguue project, Gangfeng's Mariana project, Eramine's Centenario/Ratones project, Oasco Lithium's Sal de Oro project, Pepennini's Salar de Pular project, and other smaller projects, as well preparation of numerous third party due diligence and independent geologist reports in Argentina, Chile, and the United States. The main responsibilities and tasks have included design and oversight of hydrogeologic exploration programs, estimation of lithium resource and reserve estimates, and support of production wellfield design.
28. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
29. I visited the Salar de Arizaro Project on March 22, 2022.
30. I am responsible for 1.5 to 1.10, 1.11.1, 1.13, 1.21.1.2, 1.21.2.2, 1.21.3, 1.22.1 to 1.22.3, 6 to 11, 12.1, 14, 23, 25.3, 25.10.1.1, 25.10.2.2, 26.1 to 26.3 and 27 of the Technical Report.
31. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.
32. I have had previous involvement with the Salar de Arizaro Project acting as Qualified Person in three Technical Reports of Exploration Activities and Preliminary Lithium Resource Estimate in 2022 and 2023.
33. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 15, 2023.

"Signed and sealed"

Michael J. Rosko, M.Sc., P.G.

CERTIFICATE OF QUALIFIED PERSON
Murray Brooker, M.Sc. Geo., M.Sc. Hydro.

I, Murray Brooker, M.Sc. Geo., M.Sc. Hydro., certify that:

1. I am an independent consultant with Hydrominex Geoscience Pty Ltd., with an office address of 63 Carlotta St, Greenwich, NSW 2065, Australia.
2. This certificate applies to the technical report titled "*Salar de Arizaro Project NI 43-101 Technical Report on Preliminary Economic Assessment, Salta Argentina"* (the "Technical Report"), prepared for Lithium Chile Inc. (the "Company") with an effective date of August 4, 2023 (the "Effective Date").
3. I graduated from Victoria University of Wellington, New Zealand in 1988 with a Bachelor of Science (Honours) degree in Geology. I graduated from James Cook University of North Queensland, Australia, in 1992 with a Master of Science degree in Geology. I also obtained a Master of Science degree in Hydrogeology from the University of Technology, Sydney, Australia, in 2002.
4. I am an Australian Registered Professional Geoscientist (RPGeo) in the fields of mineral exploration and hydrogeology (license no. 10086). I am also a member of the Australian Institute of Geoscientists (MAIG), and a member of the International Association of Hydrogeologists (MIAH).
5. I have practiced my profession continuously for over 30 years with experience in the evaluation of lithium brine projects from exploration through feasibility and production. I have been involved as the QP on the Olaroz project of Allkem since 2010 and was responsible for the planning and optimisation of the Stage 2 wellfield location. This involved assessment of the location of wells, potential flow rates and zones for the installation of filters in the production wells, using downhole geophysics and drilling lithological information. I was also involved in assessment of the planned wellfield layout for the Cauchari project (now owned by Allkem) and the Maricunga project of Lithium Power International (Located in Chile).
6. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
7. I have not visited the Salar de Arizaro Project.
8. I am responsible for 1.11.3, 1.14, 1.21.1.3, 1.21.2.3, 1.21.3, 12.3, 15, 16, 25.4, 25.10.1.3, 25.10.2.3 and 27 of the Technical Report.
9. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.
10. I have had no previous involvement with the Salar de Arizaro Project.
11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 15, 2023

"Signed and sealed"

Murray Brooker, M.Sc. Geo., M.Sc. Hydro.

Important Notice

This report was prepared as National Instrument 43-101 Technical Report for Lithium Chile Inc. *(*Lithium Chile*)* by Ausenco Chile Limitada and Ausenco Sustainability Inc. (Ausenco), Montgomery & Associates Consultores Limitada, and Hydrominex Geoscience Pty Ltd., collectively the "Report Authors." The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in the Report Authors' 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 Lithium Chile subject to terms and conditions of its contracts with each of the Report Authors. Except for the purposes legislated under Canadian provincial and territorial securities law, any other uses of this report by any third party are at that party's sole risk.

Table of Contents

List of Tables

List of Figures

1 SUMMARY

1.1 Introduction

This technical report has been prepared for Lithium Chile Corporation (Lithium Chile) to conform to the regulatory requirements of Canadian National Instrument (NI) 43-101 using the form 43-101 F1 Standards of Disclosure for Mineral Projects. This report is an update to the NI 43-101 report dated January 27, 2023, with an effective date of December 15, 2022 (Montgomery & Associates, 2023). The Arizaro Project (the Project) is found in the Central Andes of Argentina and "Lithium Triangle" of Argentina, Bolivia, and Chile. Specifically, the Project is located in the Salar de Arizaro Basin (the Salar) and within the Salta provincial boundaries of the Puna Region, northwestern Argentina. The Salar is a mature evaporite basin with demonstrated brine that is enriched with lithium.

The responsibilities of the engineering companies contracted by Lithium Chile to prepare this report are as follows:

- Ausenco managed and coordinated the work related to the report, reviewed the metallurgical test results and developed a PEA-level design and cost estimate for the process plant infrastructure, general site infrastructure, environmental and economic analysis.
- Montgomery & Associates Consultores Limitada (M&A) completed the work related to geological setting, deposit type, exploration work, drilling, sample preparation and analysis, data verification and developed the mineral resource estimate for the Project.
- Hydrominex Geoscience Pty Ltd completed the mine production schedule.

1.2 Terms of Reference

The report supports disclosures by Lithium Chile in a news release dated August 08, 2023, entitled, "Lithium Chile delivers positive Preliminary Economic Assessment for the Arizaro Project in Argentina".

This report has been prepared in accordance with NI 43-101 Standards of Disclosure for Mineral Projects and with the requirements of Form 43-101 F1.

Mineral resources are reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (CIM, 2014) and the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (CIM, 2019).The estimates also incorporate guidance provided in the 2011 Ontario Securities Commission (OSC) document entitled OSC Staff Notice 43-704 – Mineral Brine Projects and National Instrument 43-101 Standards of Disclosure for Mineral Projects (2011 OSC Staff Notice).

Units used in the report are metric units unless otherwise noted. Monetary units are in United States dollars (US$) unless otherwise stated.

1.2.1 Effective Dates

This Technical Report has a number of significant dates, as follows:

- Mineral resource estimate: June 27, 2023
- Mineral tenure: June 06, 2023.
- Financial analysis: August 04, 2023

The effective date of this report is based on the date of the financial analysis, which is August 04, 2023.

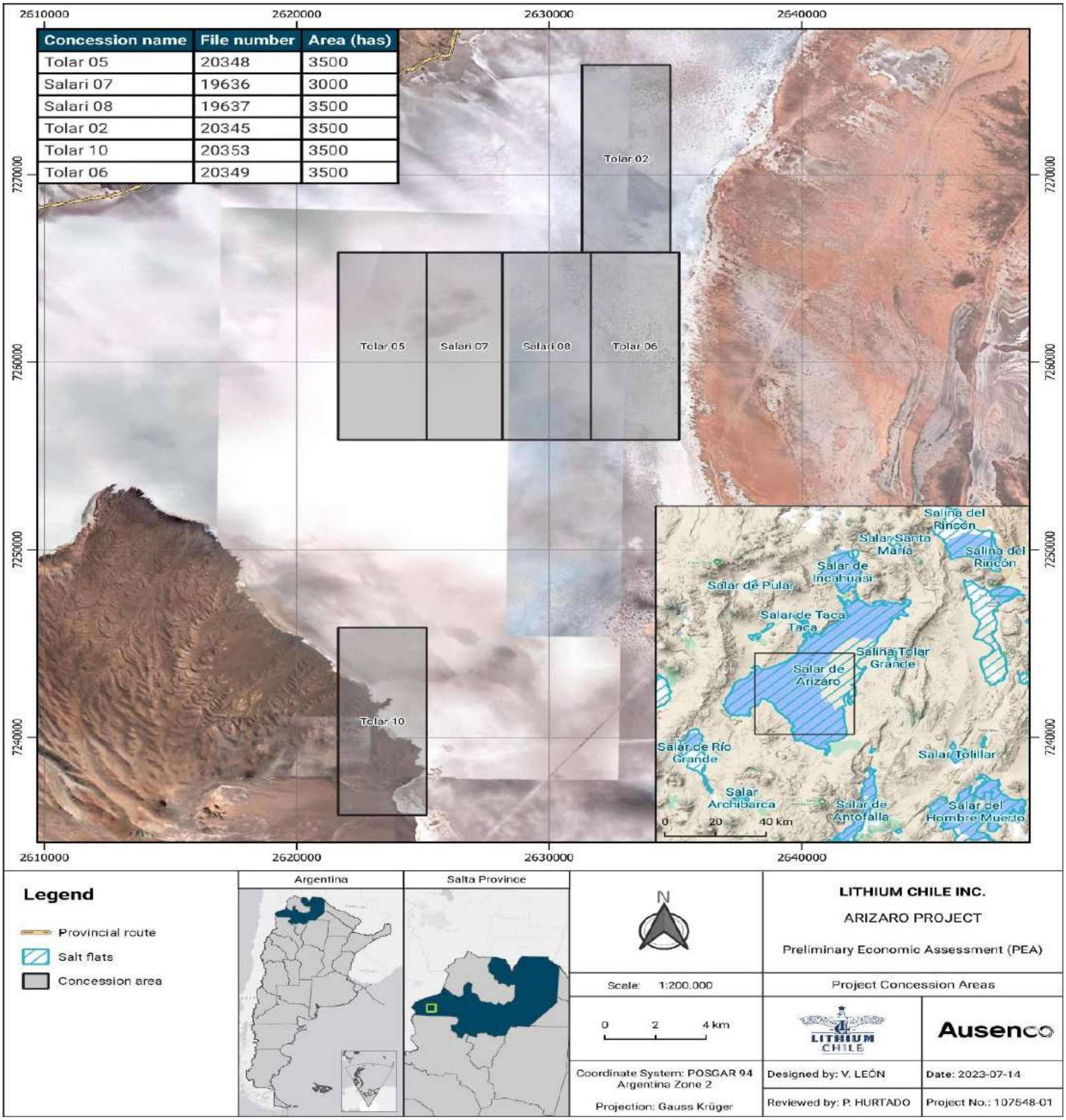
1.3 Property Location and Description

The Project is located in the Salar de Arizaro basin (the Salar), within the Salta province of northwest Argentina, about 230 kilometers (km) from Salta and approximately 38 km southwest of the town of Tolar Grande. The Project is in the Argentinean Puna, at an elevation of approximately 3,475 meters above sea level (masl).

Lithium Chile Inc. (LITH) is the majority shareholder of Argentum, owning 99% of its capital stock. LITH and Argentum entered into a Definitive Agreement with SMG and Litiar S.A. on August 24, 2021, to develop and eventually exploit and commercialize mineral products obtained from the Properties. The Parties have incorporated an Argentine company in Joint Venture called ARLI S.A., and have been complying with their obligations under the Definitive Agreement. SMG has transferred the Properties to ARLI S.A., and Mario Luis Castelli will formally present in all the files of the Properties on behalf of SMG to process them before the Mining Court and governmental mining authorities of the Province of Salta.

The Properties or mineral tenures are in “Salar de Arizaro,” Los Andes Department, Salta Province, Argentina Republic, integrated by six (6) mining concessions whose respective files are in process before the Mining Court of the Province of Salta. Mining properties are shown in Figure 1-1. Total area is 20,500 Ha.

Figure 1-1: Location Map of The Project Concession Areas



Concession name	File number	Area (has)
Tolar 05	20348	3500
Salari 07	19636	3000
Salari 08	19637	3500
Tolar 02	20345	3500
Tolar 10	20353	3500
Tolar 06	20349	3500

Source: Ausenco, 2023

1.4 Accessibility, Physiography, Climate, Local Resources, and infrastructure

The project area is located in the Salta Province, in the northwest region of Argentina. The operating season for the area is year-round, with no times of the year where access is restricted. The nearest town with services is Tolar Grande, which is about 38 km southwest, along the mining track (road to Lindero Project) and continuing on Salta provincial road, RP-27. The nearest large city is Salta, located about 234 km northeast of the project area.

Local resources in the area are very basic. Most supplies are brought from Salta or San Antonio de Los Cobres. Several mine camps occur in the area and are powered locally. There are no people living in the vicinity of the Project. Main infrastructure in the zone consists of a 375-kilovolt (kV) electrical power line, a natural gas pipeline (Gasoducto de la Puna) between Salta (Argentina) and Mejillones (Chile), and Belgrano Cargas railway between Antofagasta (Chile) and Salta (Argentina). The Project is connected to Salta, Tolar Grande, and San Antonio de Los Cobres by the way of a well-maintained paved and unpaved road network. The Project can be accessed through a mining track going south to Lindero Project after leaving RP- 27, which connects with Tolar Grande. The nearest port is the port of Antofagasta, in the Republic of Chile, with a distance of 250 km away from the Project site. Another alternative is the port of Buenos Aires, 1,734 km away by land, which is the main container port in Argentina.

The physiography of the region is characterized by extensive depressions and basins separated by mountain ranges, with marginal canyons cutting through the Western and Eastern Cordilleras and numerous volcanic centers, particularly in the Western Cordillera. The Altiplano-Puna magmatic volcanic arc complex (commonly APVC in literature) is located between the Altiplano and Puna. It is associated with numerous stratovolcanoes and calderas. Locally, mine concessions of the Project are located in the central part of the Salar de Arizaro. The elevation at the surface of the salar in the concession area is approximately 3,475 masl.

Both in the ecoregion where the Project is located (Puna) and in the ecoregion corresponding to the surrounding areas (High Andean), vegetation is scarce and often does not occur over large areas. The dominant vegetation in the Puna ecoregion is the shrub-steppe and in the High Andean ecoregion are the herbaceous or grassy steppe like *Festuca orthophylla, Festuca* chrysophylla, and *Poa gymnantha.*

The climate in the project area is characterized as a cold, high-altitude desert. The main rainy season is between December and March. Solar radiation is intense, leading to extremely high evaporation rates. Strong winds are frequent in the Puna, reaching speeds of up to 80 km/h during the dry season. During summer, warm to cool winds are generally pronounced after midday and winds are usually calm during the night.

Regarding infrastructure, Arizaro Project will primarily consist of various civil works, on-site facilities and buildings, and infrastructure for water, gas, electricity, and steam generation. The project will also include roadways and logistics.

The on-site facilities and buildings will encompass a well field, two raw brine receiving ponds, a direct lithium extraction (DLE) plant, reverse osmosis, mechanical evaporation, a chemical plant, purification facilities, dry product handling areas, a general utilities area, and other necessary infrastructure. These additional facilities will include an administration office, a camp area, a casino, warehouses for reagents and spare parts, a metallurgy laboratory, maintenance workshops, warehouses for products, a first-aid policlinic, and a gatehouse.

Additionally, there will be ponds, a contour channel, and a safety berm to enhance the safety and efficiency of the Project. A main electrical substation will be established to ensure that a stable power supply, and water supply infrastructure will also be put in place to meet the Project's needs.

1.5 History

Several exploration activities have occurred on the Project during the last several years prior to Lithium Chile's acquisition of a majority stake in the concession in 2021. These have included the following activities developed at the instruction of the previous owner Argentina Lithium.

- A sub-surface brine sampling campaign was carried out in 2017 by Aminco (2017a) and consisted of the construction of 23 trenches; 15 in the central part of the Salar and 8 in the southern part, near the Cono de Arita.
- During the first months of 2017, Conhidro (2017) conducted a Vertical Electrical Sounding (VES) geophysical survey in the Salar de Arizaro. Twenty-five VES points were surveyed, with 17 in the northern part of the Salar and 8 in the southern part.
- An exploration drilling and testing program was conducted in 2017 to obtain depth-specific brine samples using an inflatable packer system. Three wells were drilled, using the Diamond Drill Hole (DDH) method, with total depths varying from 250.55 to 398 meters (Aminco, 2017b).
- During the months of May and June of 2018, Geophysical Exploration & Consulting S.A (GEC, 2018) conducted a CSAMT exploration survey consisting of 122 stations.

1.6 Geological Setting

The Salar de Arizaro is located in the Geological Province of La Puna (Turner, 1972), within the Puna Austral Geological Sub-province (Alonso et al., 1984). One of the most important characteristics that define the Geological Province of La Puna is the presence of evaporitic basins, or "salars" where important deposits of borates, sodium sulfate, and lithium can concentrate. Salars near the project area include Hombre Muerto, Antofalla, Ratones, Pocitos, Centenario, and Diablillos. Lithium Chile's properties are found within the Salar de Arizaro, which represents one of these endorheic (internally drained) basins.

The northern concession area, which is surrounded by Holocene alluvial and colluvial deposits, is located over recent evaporitic deposits; entire tenements are located over the Salar de Arizaro and toward the eastern side, surrounded by Holocene clay deposits. Older sediments from this northeastern area belong to Oligocene-Lower Miocene Vizcachera Formation and include sandstones, volcanic sandstones, pelites, tuffs, gypsum, and halites. Toward the northwest, older granodiorites belonging to the Upper Ordovician, Taca Taca formation, dacites, ignimbrites, and dacitic tuffs belonging to Eocene Santa Ines Volcanic Complex form the boundary of the Salar. The central mining concessions are located over recent evaporitic deposits.

1.7 Deposit Type

The deposit consists of a lithium-rich brine aquifer located in a salar basin. Based on the available information, Salar de Arizaro is a mature salar, and one of the larger salars in the Argentinean altiplano. A thick halite core exists in the basin. Basin margins are interpreted to be fault controlled. The principal source of water entering the Project area is from surface water coming into the basin from the basin margins.

Salar basins are characterized by closed topography and interior drainage. Typically, there is not a significant amount of groundwater discharge from these basins as underflow. Effectively, all groundwater discharge that occurs within the basin is via evapotranspiration. All surface water that flows into the basin is either evaporated directly or enters the groundwater circulation system and is evaporated at a later time. Water levels tend to be relatively shallow in the flat part of the Salar.

1.8 Exploration

On May 03, 2019, NORLAB (2019a) conducted a resampling of previously drilled well AR-01 (Aminco, 2017b). This work was requested by Lithium Chile. Later in May 2019, NORLAB (2019b) returned to take additional near-surface samples.

Furthermore, a passive seismic survey was undertaken in part of the Salar de Arizaro during the period from December 01 to December 09, 2022. The purpose of this survey was to characterize and identify geophysical indicators of resources below the surface and at great depths, as well as to estimate the depth to basement rock.

1.9 Drilling

The preliminary results of the 2021, 2022 and 2023 drilling and testing programs are being reported as of the date of this report; exploration sampling activities are still ongoing. The current exploration well program is designed to obtain aquifer hydraulic parameters in support of the development of a conceptual hydrogeological model, and to update the previously reported lithium resource for the mining concessions.

Drilling activities for exploration well Argento-1 started on September 05, 2021, reaching a depth of 470 meters below land surface (bls) on November 28, 2021. Pumping tests were conducted at exploration well Argento-1 in December 2021 and included step-discharge and constant discharge tests. The Borehole Magnetic Resonance (BMR) survey conducted by Zelandez agrees reasonably well with the field lithologic descriptions of the units encountered during drilling. In addition, we believe that the ranges of the specific yield values obtained from the BMR survey are reasonable and consistent with values for similar units defined in other altiplanic salars for different projects.

Drilling activities for exploration well Argento-2 started on September 07, 2022, reaching a depth of 650 meters bls on October 30, 2022. Pumping tests were conducted at exploration well Argento-2 in April 2023 and included step-discharge and constant discharge tests.

Drilling activities for exploration well Argento-3 started on January 05, 2023, reaching a depth of 577 meters bls on March 18, 2023. Pumping tests were conducted at exploration well Argento-3 in May 2023 and included step-discharge and constant discharge tests.

In years 2022 and 2023, five diamond drill hole (DDH) coreholes were drilled and completed: ARDDH-01, -02, -03, -04, and -05. Core samples were described and collected for drainable porosity analysis, and depth-specific brine samples were obtained. Favorable aquifer conditions were observed at exploration coreholes ARDDH-01, -04 and -05, and brine chemistry and drainable porosity results from this corehole were used to update the estimated lithium brine resource.

1.10 Sample Preparation, Analyses and Security

Brine samples were obtained for laboratory analyses during drilling, during the pumping test, and after well construction. Two methods were used to obtain brine samples during the exploration drilling program. Brine samples were used to support the reliability of the depth-specific samples included analyses of the following:

- Pumped samples obtained at variable depths during drilling using a downhole sampling pump;
- Brine samples obtained during and at the end of the pumping test in exploration well Argento-1, Argento-2 and Argento-3;
- Hydrasleeve samples obtained at specific depths after the well was cased; and

- Packer brine samples obtained during drilling at corehole ARDDH-01 and -04.

Samples were taken during drilling, during the pumping test, and after well construction. Samples taken during well pumping represent a composite brine sample taken over the entire screened interval of the well and resemble the chemistry that would be expected from that well during production pumping.

After the brine samples were sealed on site, they were stored in a cool location and shipped in sealed containers to the laboratory for analysis. Chemistry samples (brine) were not subjected to any further preparation prior to shipment to participating laboratories. Duplicate brine samples and remaining brine are stored at the ASA laboratory in Jujuy. ASA was the laboratory used for the analysis of brine samples during the 2021 exploration program, and samples were analyzed for metals using the Inductively Coupled Plasma (ICP) spectrometry analytical method. The ASA laboratories are independent of Lithium Chile, and are International Standards Organization (ISO) 9001 accredited and operate according to Alex Stewart Group international standards, consistent with ISO 17025 standards.

All samples were labeled with permanent marker, sealed with tape, and stored at a secure site, both in the field, and in Salta, Argentina. Remaining sample brine and duplicates samples obtained during drilling and testing are currently being stored in the Alex Stewart NOA laboratory in Jujuy. The field sampling of brines from the pumping tests was done in accordance with generally accepted industry standards. The brine sampling program included Quality Assurance and Quality Control (QA/QC) standard elements such as including duplicate samples. Formal traffic reports and chain of custody documents were prepared for every sample obtained and submitted for laboratory analysis.

Regarding porosity samples, retrieved core was analyzed at the LCV Laboratory in Buenos Aires, Argentina. The drainable porosity measurement procedure involved saturating the core sample with brine solution and placing them in test cells where a pressure differential was applied and the proportion of brine which can be drained was estimated. LCV is an ISO 9001-2015 accredited laboratory and is independent of Lithium Chile.

In the opinion of the QP, sample preparation, security, and analytical procedures were acceptable and results from the laboratory analyses are considered adequate.

1.11 Data Verification

1.11.1 Drilling and Data Management

Michael Rosko (independent QP) conducted the following forms of data verification:

- Provided QA/QC and protocol documents for brine sampling in accordance with industry standards.
- Provided methods for pumping test and brine sampling; verified their implementation.
- Instructed Salta-based M&A geologists to conduct a site visit during drilling and obtain an independent brine sample; the QP was unable to travel to Argentina due to Covid travel restrictions. On March 22, 2022, the QP visited the site and confirmed well locations and the depth to water. Additionally, he most recently visited site to review exploration activities on February 17, 2023.
- Instructed Salta-based M&A geologists to review cuttings and verify that lithologic descriptions were accurate.
- Reviewed regular correspondence from the field to ensure that recommended drilling and testing methods were being adhered to.
- Cross-checked all values in the summary chemistry tables in the report against original laboratory reports.

- Verified adequacy of the laboratory based on comparison of duplicate sample results.
- In the opinion of the QP, data presented in this report is accurate and adequate for estimating the Indicated and Inferred resources.

1.11.2 Mineral Processing and Infrastructure

Patricio Pinto (independent QP) conducted a visit to the Lithium Chile head office in Salta on March 27, 2023, followed by a visit to the Project site on March 28 and 29, 2023. During his time at the project site, Mr. Pinto examined the current wells, road accessibility, site office, exploration camps, as well as potential areas for constructing the processing plant and other necessary infrastructure.

The QP conducted a verification of the information provided by Lithium Chile, finding that the data provided is reasonable and the information obtained is in accordance with industry standards.

1.11.3 Mining Methods

Murray Brooker (independent QP) conducted a verification of the information provided by Lithium Chile and the criteria used for planning the number of extraction wells. He indicated that the findings of the PEA with regards to mining (brine extraction) appear reasonable for this level of study and have been conceptually verified. However, the number of wells and pumping rates will need to be reviewed with the results of additional future drilling and geophysics, to improve the understanding of the brine concentration and porosity distribution for the next level of study, as well flow rates are unique, vary from well to well and are likely to show some differences from the predicted flow rates for different resource areas.

1.12 Mineral Processing and Metallurgical Testwork

Lithium Chile previously studied lithium extraction technologies, selecting direct extraction using resins as best suited to the chemistry of the Salar de Arizaro brine and the investment costs for this type of plant in order to obtain a battery quality product.

The direct extraction of lithium using resins has an adsorption stage and a desorption (elution) stage. In the first stage, the lithium adsorption mechanism occurs during contact between the brine and the resins where Li^+ ions are adsorbed, and in the second stage, the adsorbed lithium is recovered by circulating a stream of water through the resin.

The results obtained in the first single-column test in 2022 provide valuable information for the design of the process where the amount of lithium adsorbed on the resin stabilizes at around 2,500 milligrams per liter (mg/L). This data was corroborated in the second one-column test performed in May 2023 where the resin is stable in adsorption and with even higher resin saturations (3,100 - 3,200 mg/L), while the desorption data show that the elution is stable with a lithium concentration in the eluate higher than 850 mg/L, and it is confirmed that the displacement or washing operation ends at around 8 BV.

With regard to the adsorption tests carried out continuously for 6 days, it was possible to obtain an average lithium concentration of 11.0 mg/L in the depleted brine, an adsorption yield for the lithium ions in the brine of more than 90%, and it was also possible to demonstrate that the adsorption of lithium on the resin is stable over time. For the product solution (eluate) the average concentration value achieved for lithium ions was 613 mg/L, for magnesium ions was 35.9 mg/L and for sodium ions was 187 mg/L.

From the direct lithium extraction (DLE) tests developed by Sunresin it is feasible to consider this technology to extract lithium from the raw brine of the Salar de Arizaro.

Under the consideration that the tests developed as of the date of this report only contemplate the direct lithium extraction stage, benchmark data are used to support the development of the design of the lithium concentration stages subsequent to the DLE stage, while waiting for Lithium Chile to carry out the metallurgical tests of the unit operations involved in the proposed design.

1.13 Mineral Resource Estimate

The updated resource estimate for the Salar de Arizaro Project consists of Indicated and Inferred resources, and key parameters used for the estimation correspond to brine concentration and drainable porosity. The utilized method consisted of constructing two concentric circles around the exploration wells and dividing them into horizontal layers as hydrogeologic units, with each layer assigned an aerial extent, lithium concentration, and drainable porosity value. Consistent with the Houston et. al (2011) recommendations, a 3.5 km circle closest to the well was used to estimate an Indicated resource, while the area between the 3.5 km circle and a second 5 km circle was used as the areal extent to estimate an Inferred resource. Depending on the polygon, indicated polygons are present in the shallowest portion of the aquifer based on the existence of brine chemistry and drainable porosity (or pumping test) data, while most Inferred polygons are found at depth, below the Indicated polygons.

Table 1-1 summarizes the current Salar de Arizaro resource estimate for lithium. The mass values represent the theoretical amount of lithium that can be drained in the defined polygon area, and it is not a projected amount extracted from the reservoir. These estimates were calculated by multiplying the (circle area) x (unit thickness) x (drainable porosity) by (average lithium grade). Subsequently, the resulting value was summed for each hydrogeologic unit for each area, for each assigned resource category.

A cut-off grade of 200 mg/L was used based on the current processing and economic studies, as well as on other similar brine projects. The reader is cautioned that mineral resources are not mineral reserves and do not have demonstrated economic viability.

Table 1-1: Summary of the Indicated and Inferred Resource Estimate (Effective June 27, 2023)

Resource Category	Brine Volume (m^3)	Avg. Li (mg/L)	In situ Li (t)	Li_2CO_3 Equivalent (t)
Indicated	1.17E+09	278	326,000	1,737,000
Inferred	8.25E+08	360	297,000	1,583,000

Notes:
1. The conversion factors used to calculate the equivalents from their metal ions is simple and based on the molar weight for the elements added to generate the equivalent. The equations are as follows: Li x 5.3228 = lithium carbonate equivalent.
2. The assumed cut-off grade for lithium is 200 mg/L based on similar projects and the expected processing method.
3. The comparison of values may not be exact due to rounding.

It is the QP's opinion that the resource estimation methodology complies with the Canadian Institute of Mining's Best Practice Guidelines for Resource and Reserve Estimation for Lithium Brines (2012).

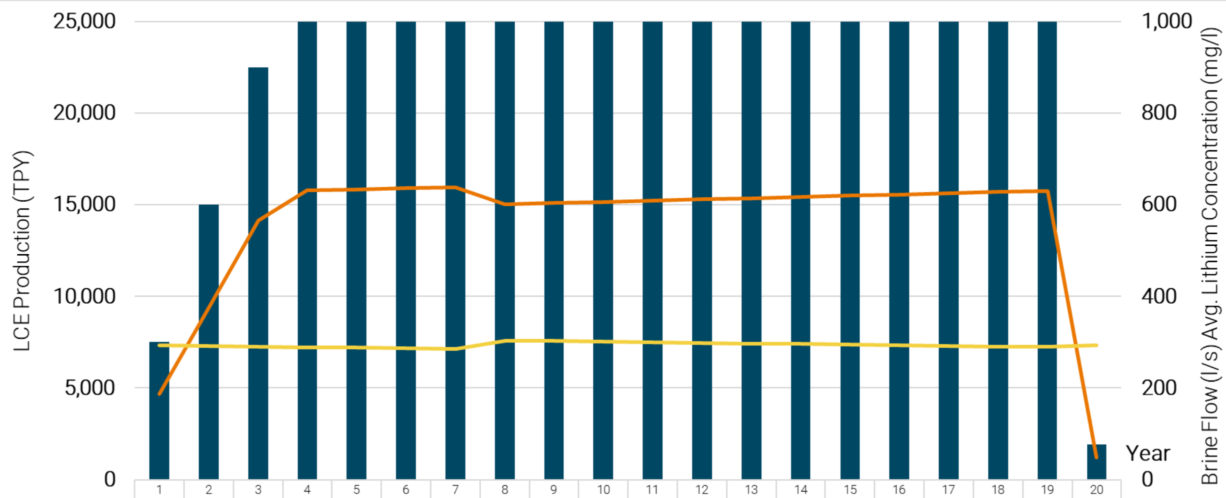
1.14 Mining Methods

In the Arizaro Salar, LCE production will operate using a conventional brine extraction wellfield. The extracted brine will be accumulated in collection ponds and then boosted to the DLE plant. A maximum operating lifespan of 19.1 years has been estimated for an LCE production target of 25,000 t/y (Figure 1-2). From Year 1 to Year 7, brine from areas most distant to the salar margins will be extracted, followed by the incorporation of the eastern area (well ARDDH-05 polygons) from Year 8 onwards.

The considerations adopted for the estimation of the production plan are the following:

- The maximum extractable brine will be 18% of the estimated resource.
- The plant's efficiency is estimated at an average value of 81.5%.
- An annual dilution factor of 0.4% is considered for the lithium concentration in most of the resource polygons, whereas in the eastern part (well ARDDH-05 polygons) a dilution factor of 0.6% is considered.
- A production ramp-up, which consists of 30% of the annual LCE production target (25,000 t/y) in Year 1, followed by 60% in Year 2, 90% in Year 3, and 100% from Year 4 onwards.

Figure 1-2: Production Estimation for The Arizaro Salar



Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Total LCE Production (TPY)	7,500	15,000	22,500	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	1,929
Total brine flow (l/s)	187	376	566	631	634	636	639	601	604	607	609	612	615	617	620	623	626	628	631	48
Weighted Li Concentration (mg/l)	293	292	291	289	288	287	286	304	303	301	300	299	297	296	295	293	292	291	290	294

Total LCE Production (TPY) — Total brine flow (l/s) — Weighted Li Concentration (mg/l)

Source: Ausenco, 2023.

According to pumping tests results, the pumping rates of individual future brine production wells will be of 20 L/s for the resource polygons in the inner part of the concession and 10 L/s for those closer to the margins of the salar (well ARDDH-05 polygons). Approximately 32 wells are required to be drilled from Year 1 to Year 4, and around 42 wells will have been constructed over the project's lifespan. A maximum depth of 650 m is estimated for the production wells and 8- to 10-inch diameter stainless steel casing is considered.

Areas with an average lithium concentration close to the cut-off grade (200 mg/L) have not been identified. Grade control and production monitoring remarks have been made, as well as considerations regarding freshwater interaction monitoring and infiltration ponds optimization.

Future work recommended comprises further pumping tests, diamond coreholes and packer tests to better characterize the hydraulic conductivity and brine chemistry of the different units encountered. It is also advised to construct a numerical flow and transport model to simulate brine extraction in different scenarios, and brine chemistry mix simulations to identify potential precipitation of salts inside lines and ponds. Additionally, new geophysical studies should be conducted to determine the basement topography in greater detail, and wellfield design optimization and a monitoring well network is advisable to assess the risk of interaction with brackish or freshwater in the margins of the Salar.

1.15 Recovery Methods

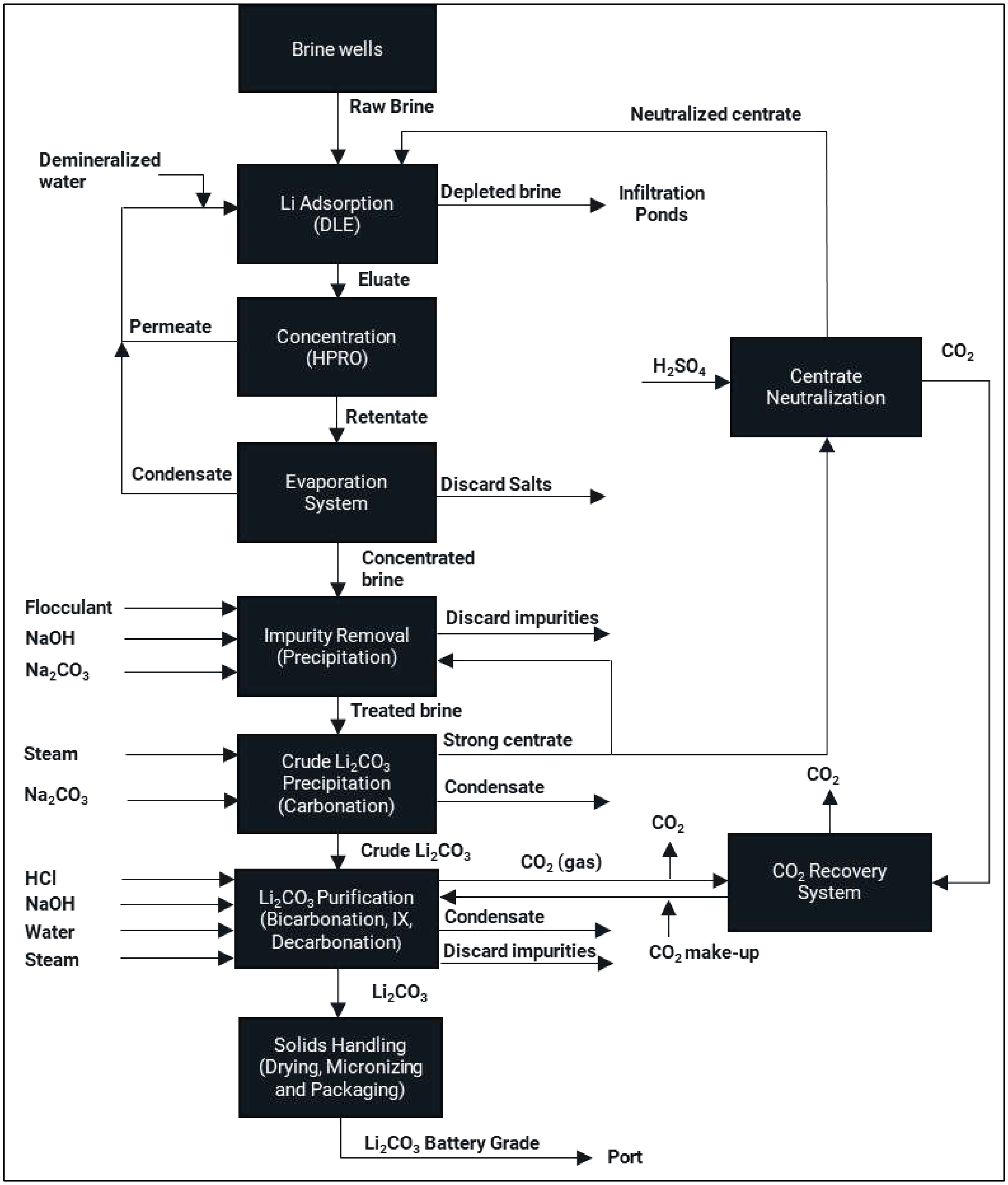
The Project considers a production of 25,000 tonnes per year (t/y) of battery-grade lithium carbonate (Li_2CO_3). To meet this objective, a raw brine flow of 64,080 m^3/d is required, which is extracted from wells located in the Salar de Arizaro. This brine is then transported to the process plant which, considering shutdowns, has an availability of 85%.

The selected process for this PEA combines direct lithium extraction (DLE), reverse osmosis (RO), mechanical evaporation, chemical plant, purification and dry product.

The process is shown in Figure 1-3 and comprises the following areas:

- Brine Extraction Wells Area: The raw brine is extracted from different wells and collected to ensure a continuous feed to the process plant.
- Direct Lithium Extraction Area: As much lithium as possible is extracted from the raw brine area using resins as a highly selective adsorbent.
- Reverse Osmosis Area: The lithium-enriched solution from the DLE columns passes through membranes, thus increasing the lithium concentration and recovering water.
- Mechanical Evaporation Area: The retentate from the reverse osmosis is passed through a second concentration stage by vapor recompression evaporation, obtaining a concentrated lithium solution and recovering condensate.
- Chemical Plant Area (divided into three stages):
    1) Ca/Mg Removal: The concentrated brine is treated removing impurities such as Ca^{+2} and Mg^{+2}.
    2) Carbonation: Lithium carbonate is obtained employing sodium carbonate.
    3) Neutralization: Strong centrate (from carbonation) is neutralized with sulphuric acid eliminating carbonates.
- Purification area (divided into three stages):
    1) Bicarbonation: The lithium carbonate reacts with carbon dioxide producing highly soluble lithium bicarbonate.
    2) Ion Exchange (IX): The lithium bicarbonate passes trough IX resins removing traces of Ca^{+2}, Mg^{+2}, and B.
    3) Decarbonation: The lithium bicarbonate undergoes a second lithium precipitation in crystallization reactors obtaining wet lithium carbonate.
- Dry product handling area: The product undergoes moisture reduction by drying, size reduction by micronizing and then final packaging for export.

Figure 1-3: Process Block Diagram.



Source: Ausenco, 2023.

1.16 Project Infrastructure

The infrastructure present in the Salar de Arizaro Project will consist mainly of civil works, site facilities and buildings, water management systems, diesel power generation, and steam generation. Figure 1-4 shows the location of the plant, ponds, well field, freshwater main pipelines, freshwater wells, along with the access roads to these sites within the boundaries of the salar and the Project concession areas. In addition, Figure 1-5 presents details of the layout and dimensions of the main required plant facilities and buildings.

The process area will consist of a direct lithium extraction plant, reverse osmosis, mechanical evaporation, chemical plant, purification, dry product handling, general utilities area, administration office, camp, casino, reagents warehouses, metallurgy laboratory, spare warehouse, workshop of maintenance, warehouse for SAS and product, policlinic for first aid and gatehouse. Ponds, contour channel and safety berms and water supply.

The Salar de Arizaro is accessed by National Route No. 51 (RN 51) which, from Salta Capital, heads west until it reaches the town of San Antonio de Los Cobres, after traveling approximately 160 km.

The town of San Antonio de Los Cobres has a paved road to get from the Salta capital via RN 51. Except for some short stretches, the road has good trafficability in general; however, during the rainy seasons, the water coming down from the mountains will stop traffic for some hours. A 3-km long airstrip, certified by the Argentina Air Force is located at the Lindero Mine camp, but it is not a commercial airstrip.

As for the railroad lines, the Belgrano Cargas connects the capital of Salta with San Antonio de Los Cobres through the C-14 branch line. The C-14 branch is a very important corridor of the country's railroad line. With regard to ports, the nearest one is the port of Antofagasta, Chile, which is 250 km away. As for the airports, Martín Miguel de Guemes International Airport (FAA: SLA - IATA: SLA - ICAO: SASA), commonly known as El Aybal Airport, is at a distance of 338 km by land, and is located 7 km southwest of the center of the city of Salta, capital of the homonymous province, in the Argentine Republic. The airport is located next to RN 51.

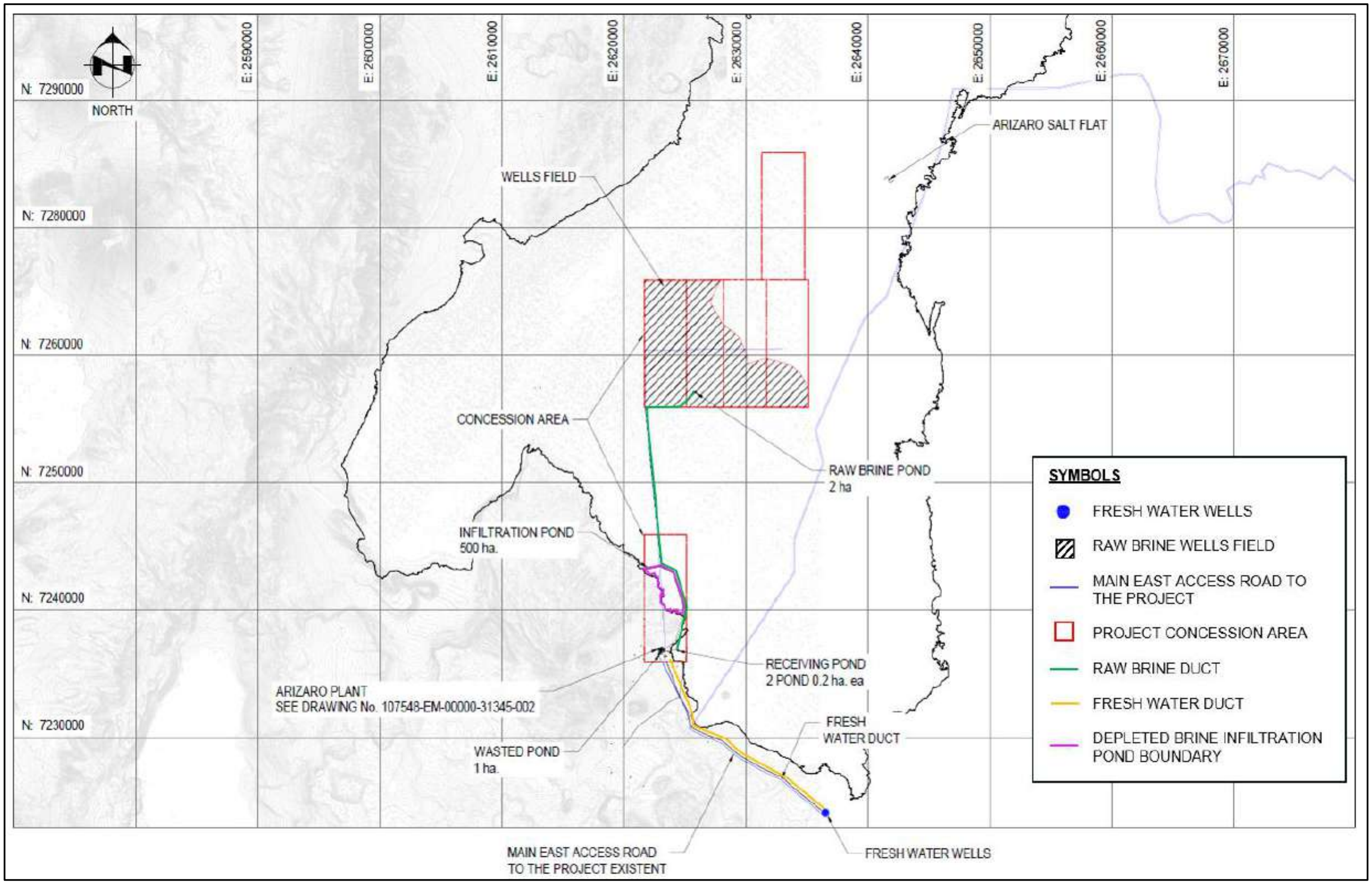
The Project envisages different types of ponds varying in location, function and dimensions. One pond is required to receive the raw brine from different brine extraction wells from the Salar de Arizaro at a common central point (Raw Brine Receiving Pond); this brine then is sent to two receiving ponds close to the plant (Receiving Ponds 01 & 02). The depleted brine obtained in the process requires a pond for its evaporation-infiltration (Depleted Brine Infiltration Pond); and another pond is required for disposal of the liquid waste from the process (Waste Pond). A waterproofing system has been considered for every pond.

The main power source for the Project will be a diesel electric power plant, which will be capable of supplying approximately 34.4 MW, which responds to the sum of the electrical power requirement, equal to 18.7 MW, and the heat power requirement, equal to 15.7 MW. The required electrical power includes a maximum demand of 17.3 MW and the power required for per capita energy consumption.

The supply of fuel (diesel) will be done through haulage trucks from an external property to the Project according to the Project's requirements, using relevant cargo vehicles and machinery.

As of the water supply, it considers 9 freshwater wells, which have been estimated based on the total water requirement for the plant (485 m^3/h) divided by a reasonable rate according to pumping tests, therefore this quantity could be modified if it is required. At the date of this report one freshwater well (Chascha Sur 01) has been drilled. To transport freshwater from Chascha Sur 01 well to the process plant a 6” HDPE pipeline must be implemented, with intermediate pump stations.

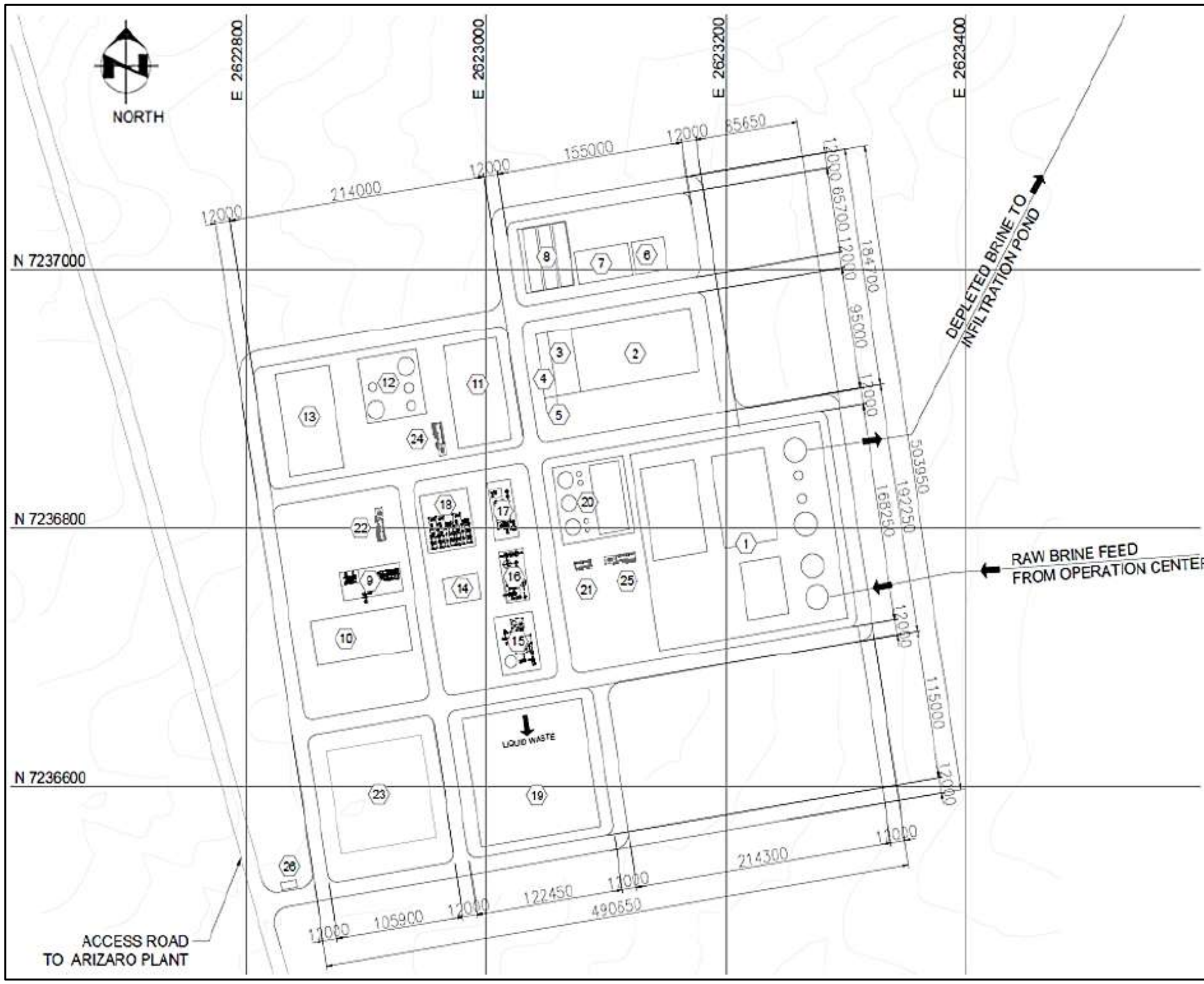
Figure 1-4: Plot Plan Layout



Source: Ausenco, 2023.

Note: Dimensions in millimeter, elevations, and coordinates in meters. Coordinate system POSGAR 94/Argentina FAJA 2.

Figure 1-5: Plant Layout



AREA AND MAIN BUILDINGS LIST

ITEM	AREA	DESCRIPTION
1	2000	DLE PLANT
2	9200	WORKSHOP
	9170	SPARE WAREHOUSE
3	9160	METALLURGY LABORATORY
4	9110	ADMINISTRATION OFFICE
5	9400	POLICLINIC
6	9140	CHANGE HOUSE
7	9130	CASINO
8	9120	CAMP
9	7300	PACKAGING
	7200	MICRONIZER
	7100	DRYER
10	9300	WAREHOUSE FOR SAS AND PRODUCT
11	8000	GENERAL UTILITIES AREA
12	8300	WATER SUPPLY
13	9150	REAGENTS WAREHOUSE
14	8600	STEAM
15	4000	MECHANICAL EVAPORATION
16	5100	Ca/Mg REMOVAL
17	5200	CARBONATION
	5300	NEUTRALIZATION
18	6000	PURIFICATION
19	5100	WASTED POND 1 ha.
20	3000	REVERSE OSMOSIS
21		ELECTRICAL ROOM UNITARY SUBSTATION
22		ELECTRICAL ROOM UNITARY SUBSTATION
23	8100	MAIN ELECTRICAL SUBSTATION
24		ELECTRICAL ROOM UNITARY SUBSTATION
25		ELECTRICAL ROOM UNITARY SUBSTATION
26		GATEHOUSE AND WEIGHING

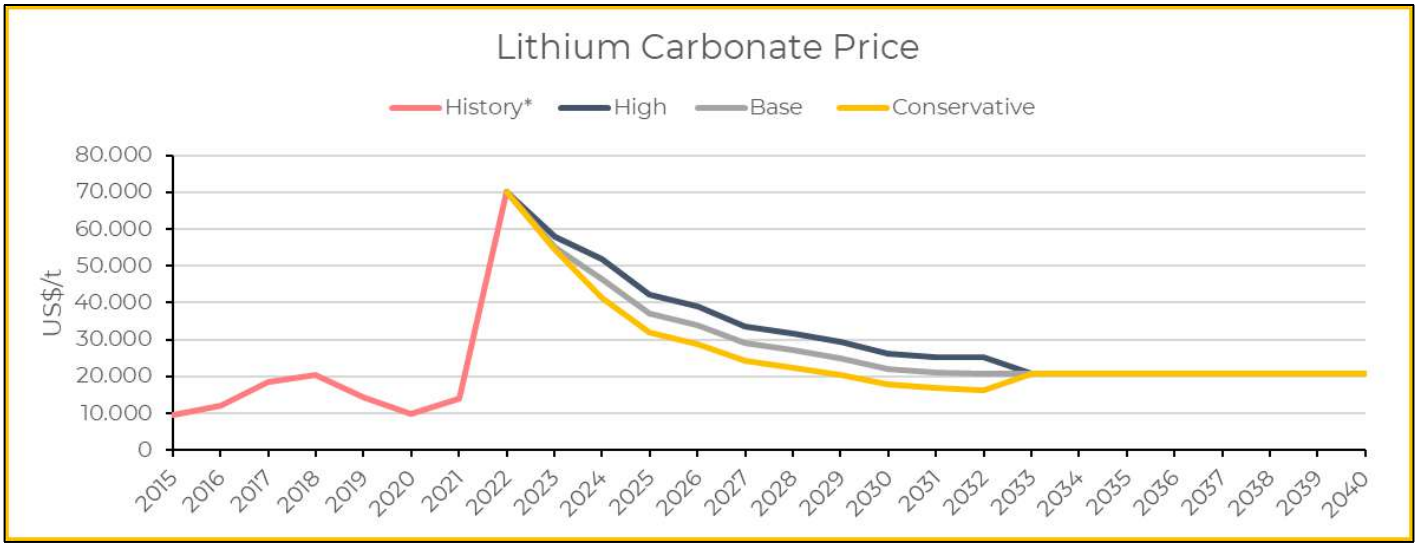
Source: Ausenco, 2023.

Note: Dimensions in millimeter, elevations, and coordinates in meters. Coordinate system POSGAR 94/Argentina FAJA 2.

1.17 Markets and Contracts

The methodology of price estimate considers the short-term outlook is broken down into quarters. Developments are guided by primary price research conducted by Benchmark Minerals analysts to ascertain the current direction of market pricing. Based the analysis of the development of demand over time, and the understanding of the pipeline of new greenfield and brownfield capacity, there is assessed the extent of over and under supply in the market over time, and how this is likely to impact prices. In the long term. there will be an ongoing requirement for new greenfield capacity over the course of the forecast period. Figure 1-6 presents the lithium carbonate deck price for the high, base and conservative cases.

Figure 1-6: Lithium Carbonate, Annual, High, Base and Conservative Case US$/t, Real 2023 by Forecast Methodology



Source: Benchmark Mineral Intelligence, 2023

1.18 Environmental, Permitting and Social Considerations

Arizaro Project is located within the Puna and High Andean ecoregion in Los Andes Department in Salta Province, Argentina. This area is arid and windy; solar radiation is intense, especially from October to March. Both Indigenous and non-Indigenous communities are located in proximity to the Project. The main economic activities for the region include mining, farming, and tourism.

1.18.1 Environmental Considerations

Lithium Chile has submitted two Environmental Impact Studies, in 2019 and 2022, which presented desktop environmental information based on publicly available information to characterize the Project area and its surroundings. Fieldwork studies have recently been completed to support an environmental baseline for the next EIS to be presented in 2024 to comply with the Argentinian regulation.

The Project area is located in an endorheic basin, and the rivers that feed it have a low flow with seasonal runoff fed by melting snow from the surrounding mountains, rainfall during the summer, and groundwater recharge in the highest elevation areas. In the summer, water inflow is usually torrential, producing flooded conditions along the riverbeds that diminish rapidly once precipitation ends. As detailed previously, the Project is located in the Puna ecoregion, however, project surroundings areas are also part of the high Andean ecoregion. In both of these ecoregions the vegetation is scarce and is often not present in widespread areas. However, their importance lies in that they serve as the principal food source for many wildlife species, and therefore form the basis of Puna ecosytem. In particular, two azonal areas of high Andean wetlands have been identified. The first one is Vega Arita, located in the southwest region of the Arizaro salt flat, within the project concession area. The second is the Vega Chascha, located in the southern sector of the salt flat, which is not within the project concession area, but was characterized as an area indirectly potentially influenced by the project activities.

Los Andes department has several protected areas to support the preservation of flora and fauna. The closest to Arizaro Project is the Los Andes Natural Wildlife Reserve, which overlaps with part of the concession area. The reserve's objectives are to preserve the area's wildlife, especially the vicuña (Vicugna vicugna), the flora and soil resources, and study and apply development techniques and rational use of these natural resources. Also, near the Project are “Ojos de Mar de Tolar Grande” Provincial Wildlife Refuge, 44 km from the project area, and the Socompa Lagoon Provincial Wildlife Refuge, located 52 km from the project area. Their purpose is the conservation of stromatolites, mainly because of rarity and scientific value, and the conservation of fauna species. Socompa Lagoon is also a high Andean wetland, with a high conservation value due to its significant biodiversity and its important environmental processes.

Four archaeological sites were registered close to the Project area, consisting of rock structures that could be related to hunter-gatherer groups to demarcate the space and provide a safe spot to observe and hunt, or may have marked strategic points in the area to guide the movements of the groups that traveled through the region.

In terms of water management, the company will provide water for human consumption using public potable water stations, from which it will be transported using portable water containers. Process water for the operation phase the Project will be provided from the Chascha aquifer and which will be recirculated to minimize freshwater use. A preliminary assessment indicates the recharge of this aquifer is between 3.9 and 7.1 hm^3/year, but more data is necessary to obtain a more accurate rate of recharge. Currently, Lithium Chile has developed one well, with a maximum capacity of 75 m^3/h. The permit for this well is currently in process but expected to be approved within the upcoming months.

Monitoring and control activities for the exploration phase were identified in the 2022 EIS resulting in the development of environmental controls to mitigate against potential environmental effects for drilling activities, fuel management, and waste management, among other activities. Control measures include speed reduction, equipment maintenance, use of appropriate containers for substance storage and waste management, specially designated storage areas, and restricting vehicle usage to existing roads and routes.

Arizaro project has a Waste Management Plan to manage emissions and wastes and to minimize and manage waste generation. Solid wastes are classified in accordance with their nature as domestic or hazardous. Domestic waste is collected, properly bagged/packaged, and transported to the nearest town (San Antonio de los Cobres). If hazardous waste is generated, it is kept in appropriate containers until final disposal. All wastes are transported by authorized external companies for their final disposal. A sewage treatment plant manages sanitary effluents and the sludge from the plant is periodically removed and transported by Aguas del Norte (water company) for their final disposal. Regarding effluents from the exploration wells, these are spread out in the salt flat. For the next EIS, the Project will include quantification of wastes and emissions for the construction and operation phases, as required by Argentinian regulations.

1.18.2 Closure and Reclamation Considerations

Currently, Salta Province does not have any law that requires an exclusive permit for closure and reclamation and Arizaro Project has not yet provided a closure plan to the authority, which needs to be included in the 2024 EIS. Closure considerations are required for the different project phases, from exploration to construction and operation, according to the Good Practice Resource Guide for Mine Closure (Guía de Recursos de Buenas Prácticas para el Cierre de Minas) released in August 2019 by the Ministry of Production and Labor (Ministerio de Producción y Trabajo).

The guide identifies seven aspects that should be addressed in the closure plan: physical stability, chemical stability, management of tailings, water management, biodiversity management, rehabilitation and restoration, and social management of closure. Moreover, the guide indicates that the Project should design the closure and post-closure measures and activities using a risk assessment approach.

Project facilities include infrastructure such as processing plants, a cafeteria, mine dry (changing facilities), and brine ponds for storage, distribution, and plant feeding. According to the guideline, these facilities should be dismantled at the closure stage, and the ponds must be dried. Dry ponds should be tested to assess if there are any risks to the environment. Most of the closure activities will be carried out at the end of the mine operation phase; however, it is possible that some activities will be carried out in parallel with the operation stage as concurrent progressive reclamation. Once the closure plan has been executed, post-closure environmental monitoring will continue, before definitive closure is achieved.

The closure costs estimation is presented in Chapter 21. This cost will be refined further during the PFS and FS stage of the Project, since a detailed closure cost will need to meet applicable regulatory requirements, supported by feasibility level design.

1.18.3 Permitting Considerations

Argentina, being a federation, has a first level set of regulations corresponding to the National Law and a second level corresponding to the Provincial Law, which in this case corresponds to the Salta Province. For a mining operation, the National Law requires obtaining an environmental permit and other specific ones, such as water permits, waste generation registration, chemical precursors registration, and municipal qualification for the infrastructure. All provinces in Argentina can add requirements to the national laws in terms of the information necessary to obtain these permits. Currently, the Salta Province does not have additional specific requirements.

The Environmental Impact Assessment (EIS) permit is the instrument that regulates all exploration, construction, and exploitation activities of a project and must be updated every two years as set by Federal Law No. 24,585. This law is also part of the Argentinian Mining Code, thus, the main permit for a mining operation is the Environmental Impact Study, without any other specific permits for mining activities coming from the provincial level law in the case of Salta. The approval of the EIS generates a series of commitments and obligations, including, but not limited to, schedules, investment commitments, social obligations, environmental monitoring and audits, and safety conditions.

On January 17, 2020, Salta Province authorized the EIS "Exploration and Exploitation Stage of Lithium-Rich Brine Wells" for the exploration phase of project, through an Environmental Impact Declaration (Declaración de Impacto Ambiental). In February 2022, an Environmental Impact Study was submitted to the provincial mining authorities for the Project's prefeasibility stage, including environmental, social and community aspects, providing general information on the Project area. The approval of this EIS is still in process, and the company has submitted four addendums to answer the authority´s questions and include some project updates. The authority delivered the most recent set of questions on February 14, 2023, and the responses were submitted in March 2023. As required by law, Lithium Chile will submit a new EIS every two years to update the Project and baseline studies and analyses.

Additional permits are required for the project: the water permit for industrial water and the registration in the Registry of Hazardous Waste Generators has already been approved; the water permit for potable water and the municipal qualification are still in process and expected to be obtained in the short term. Additionally, the registration in the National Register of Chemical Precursors (RNPQ) will be required at a latter stage.

1.18.4 Social Considerations

Social baseline studies were conducted as part of the 2022 EIS and the baseline for the 2024 EIS (still underway), that show the presence of non-Indigenous and Indigenous communities. Los Andes Department, part of the Salta Province, has seven communities that are part of the Kolla ethnic group, all of which are legal entities. Comunidad Aborigen Kolla de Tolar Grande is the closest Indigenous community, which resides in Tolar Grande town. Non- Indigenous and Indigenous people live together in the town, and there is no clear separation between them. According to 2010 census data, Tolar Grande has a total population of 236, organized into 54 families.

Concerning socio-economic dynamics, Tolar Grande's main activities are mining, tourism, and subsistence livestock farming. Within this community, mining activities generate a high expectation of employment and promotion of the local economy; however, the community is also concerned about potential environmental problems, such as noise, vibration, suspended dust, and combustion gases from equipment and vehicles.

Regarding the rural part of the community, the main economic activity is arable and livestock farming. People perform transhumance, which is a type of nomadism, a seasonal movement of livestock between places with better summer and winter pastures. Within this group, people have positive and negative perceptions about mining; on the one hand, the people perceive that benefits are targeted at the towns, and they therefore receive fewer benefits, on the other hand, they recognize that the help from mining companies has changed their daily life positively.

Lithium Chile has a Corporate Social Responsibility (CSR) Plan that aims to establish a relationship between the company and the Tolar Grande and rural communities. The main objective of this plan is to maintain open and honest relationships with the community and other stakeholders and to develop economic and social opportunities, maintaining fluent community participation in the decision-making process, and achieving sustainable agreements, among others. The relationship with the community will be considered a priority for Lithium Chile and will be considered in all the company's corporate policies.

1.19 Capital and Operating Cost Estimates

1.19.1 Capital Cost Estimate

The overall capital cost estimate was developed by Ausenco. Estimate accuracy is reflective of the stage of project development and classified as an AACE International (AACE) Class 5 Order of Magnitude/Conceptual Study estimate with an expected accuracy range of -20% to 50% on the lower range, and +30% to +100 on the higher range.

The capital cost estimate is based on preliminary mechanical and electrical equipment list, material take-off for massive earthworks, concrete and structural buildings. Other commodities quantities were factored from mechanical direct costs based on benchmark projects in the region with similar technology and region within the Ausenco database.

Unit rates and pricing were based on the Ausenco's database for similar projects in the region. The cost estimates include the initial investment and sustaining capital for a lithium concentration plant with a capacity of 25,000 t/y LCE. The capital is split into direct costs, project indirect costs and contingency costs. The total initial capital cost is US$823 M.

Sustaining capital was based on the number of wells required to continue with production over the life of mine (LOM). The cumulative total LOM sustaining capital cost is US$184 M.

Table 1-2 presents the capital cost summary.

Table 1-2: Summary of Capital Costs

Description	Initial Capital Cost (US$M)	Sustaining Capital Cost (US$M)	Total Capital Cost Project (US$M)
Mine Capital Cost	45	63	108
Plant Capital Cost	294	-	294
General Utilities	75	-	75
On-Site Infrastructure	39	-	39
Project Direct Cost	**452**	**63**	**516**
Project Indirect Cost (Including Owners)	152	13	165
Resin DLE (First Fill)	28	66	94
Total Indirect	**633**	**142**	**775**
Contingency	190	43	232
Total CAPEX	**823**	**184**	**1,007**

Note: Numbers may not add up due to rounding.

1.19.2 Operating Cost Estimate

The operating cost estimate for the Salar de Arizaro Project was developed to a level of accuracy of ±30% and with a base date of Q3 2023 using Ausenco's in-house database of projects and studies and experience from similar operations. The estimate includes direct and indirect costs.

The distribution of the operating costs, shown in Table 1-3. The most relevant cost is reagents consumption (51%) followed by energy (17%). Both costs add up to US$86 M meaning 68% of the operating direct cost.

Table 1-3: Summary of Operating Costs

Description	US$M/a	US$/t Li_2CO_3
Direct Costs		
Chemical Reactive Substances and Reagents	64.56	2,583
Resin & Membrane replacement	13.31	533
Energy	21.14	846
Manpower	8.88	355
Catering and Camp Services	6.85	274
Maintenance	5.61	224
Site Vehicle Costs	0.29	11
Bus – In /Bus – Out Transportation	0.55	22
Consumables	0.63	25
Li_2CO_3 Transport to Antofagasta Port	5.20	208
Direct Cost Subtotal	**127.02**	**5,081**
Indirect Costs		
General and Administration	2.92	117
Indirect Costs Subtotal	**2.92**	**117**
Total Operating Cost	**129.94**	**5,197**

*Numbers may not add up due to rounding.

1.20 Economic Analysis

An engineering economic model was developed to estimate annual pre-tax and post-tax cash flows and sensitivities of the Project based on an 8% discount rate. It must be noted, however, that tax estimates involve many complex variables that can only be accurately calculated during operations and, as such, the after-tax results are only approximations. Sensitivity analyses were performed to assess the impact of variations in battery-grade lithium carbonate prices, operating costs, and capital costs.

The preliminary economic assessment is preliminary in nature, that it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized.

The economic analysis was performed using the following assumptions:

- Construction starts January 01, 2025;
- Ramp-up production start-up in 2027 and full process plant production will be achieved in 2029;
- Mine life of 19.1 years;
- Cost estimates in constant Q3 2023 US$;
- No price inflation or escalation factors were taken into account;
- Results are based on 100% ownership;

- Capital costs funded with 100% equity (i.e., no financing costs assumed);
- All cash flows discounted to beginning of construction January 01, 2025;
- All lithium carbonate products are assumed sold in the same year they are produced;
- Project revenue is derived from the sale of battery-grade lithium carbonate FOB Antofagasta; and
- No binding contractual arrangements currently in place.

The pre-tax net present value discounted at 8% (NPV8%) is US$1,846 M, the internal rate of return (IRR) is 29.3%, and payback is 3.5 years. On an after-tax basis, the NPV8% is US$1,138 M, the IRR is 24.1%, and the payback period is 3.6 years. A summary of the Project economics is included in Table 1-4.

Table 1-4: Economic Analysis Summary

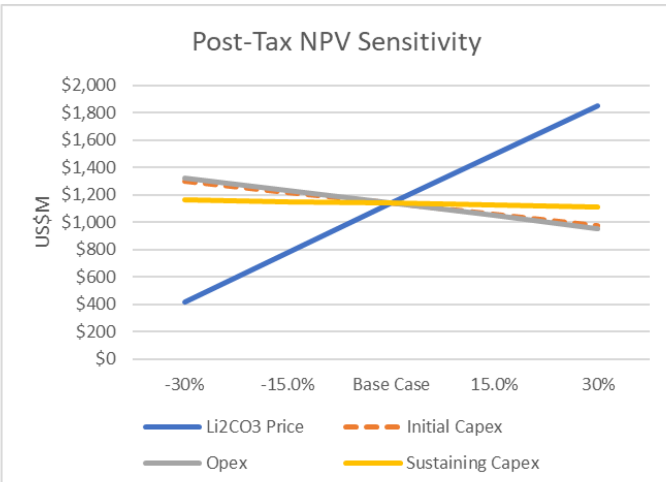
	LOM Total / Avg.		
	Base Case	**High Case**	**Conservative Case**
General			
Li_2CO_3 Price (US$/t)	$21,396	$22,566	$20,225
Operational Years (years)	19.1	19.1	19.1
Production - LOM			
Process Efficiency (%)	81.5%	81.5%	81.5%
LOM Li_2CO_3 Battery Grade (t/y)	23,420	23,420	23,420
Full Production Li_2CO_3 Battery Grade (t/y)	25,000	25,000	25,000
Total Payable Li_2CO_3 Battery Grade (t)	446,907	446,907	446,907
Operating Costs			
Processing Cost (US$/t Li_2CO_3)	$5,042	$5,042	$5,042
Transport Cost (US$/t Li_2CO_3)	$208	$208	$208
Total Operating Cost (Processing Cost + Transport Cost) (US$/t Li_2CO_3)	$5,250	$5,250	$5,250
Cash Costs (US$/t Li_2CO_3)*	$5,946	$5,993	$5,899
AISC (US$/t Li_2CO_3)**	$6,472	$6,519	$6,425
Capital Costs			
Initial Capital (US$M)	$823	$823	$823
Sustaining Capital (US$M)	$184	$184	$184
Closure Capital (US$M)	$50	$50	$50
Financials - Pre Tax			
Pre-Tax NPV (8%) (US$M)	$1,846	$2,148	$1,543
Pre-Tax IRR (%)	29.3%	34.1%	24.7%
Pre-Tax Payback (years)	3.5	3.0	4.3
Financials - Post Tax			
Post-Tax NPV (8%) (US$M)	$1,138	$1,338	$935
Post-Tax IRR (%)	24.1%	27.9%	20.5%
Post-Tax Payback (years)	3.6	3.1	4.4

* Cash costs consist of mining costs, processing costs, G&A, transport cost and royalties
** AISC includes cash costs plus sustaining capital and closure cost

1.20.1 Sensitivity Analysis

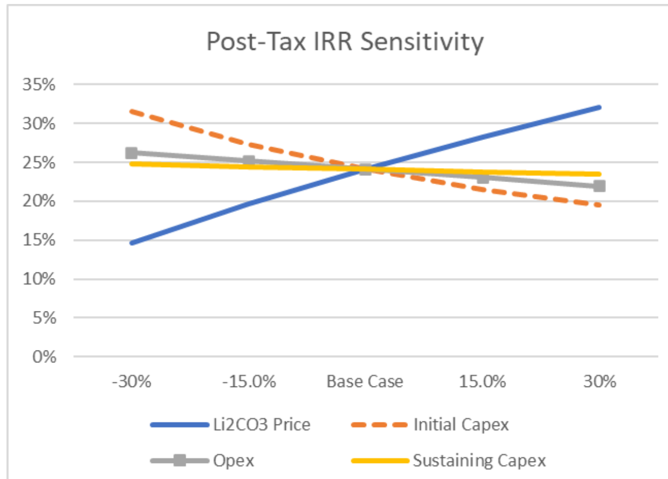
A sensitivity analysis was conducted on pre-tax and after-tax NPV and IRR of the Project, using the following variables: battery-grade lithium carbonate price, discount rate, initial capital costs and operating costs. The analysis revealed that the Project is most sensitive to changes in lithium carbonate price, and to a lesser extent initial capital, operating cost, and sustaining capital as shown in Figure 1-7 to Figure 1-9, that the Project most sensitive to changes in lithium carbonate price, and to a lesser extent initial capital, operating cost, and sustaining capital.

Figure 1-7: NPV Sensitivity Analysis Post-Tax - Base Case Scenario



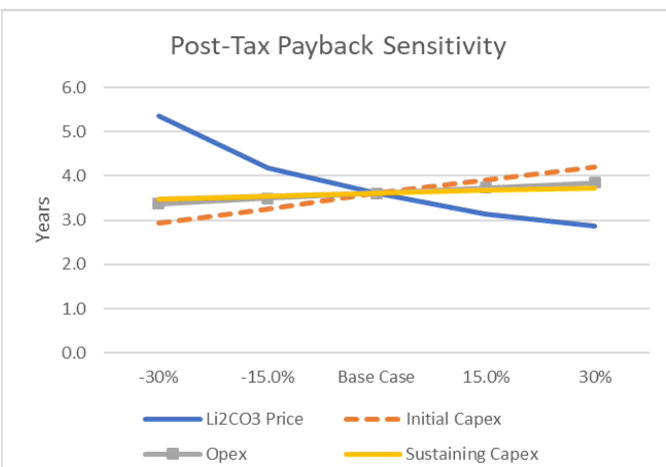
Source: Ausenco, 2023.

Figure 1-8: IRR Sensitivity Analysis Post-Tax - Base Case Scenario



Source: Ausenco, 2023.

Figure 1-9: Payback Sensitivity Analysis Post-Tax - Base Case Scenario



Source: Ausenco, 2023.

1.21 Interpretations and Conclusions

1.21.1 Risks

1.21.1.1 Metallurgical Testing

From the tests performed by Sunresin of direct lithium extraction using adsorption resins and brine samples from the Arizaro Salar it is identified as a risk that there is insufficient information to confirm the representativeness of the sample used versus the brine that will feed the processing plant.

At the day of this report new DLE tests are being carried out with Sunresin adsorption resins and representative samples of brine from the Arizaro Salar in Salta, Argentina. Due to this resin is still in the study phase, the results of the adsorption tests carried out are preliminary and there is a risk that these tests may not achieve the expected results making it necessary to carry out tests with other resins available on the market.

Laboratory tests are required to support the other unit operations that make up the design, such as reverse osmosis, mechanical evaporation, removal of impurities, carbonation, and purification. As a consequence of the lack of metallurgical test data, the process design was carried out using benchmark data from the Ausenco database, thus generating the risk that the proposed design with brine from the Arizaro Salar and the defined unit operations may not be the optimal process to obtain the desired product of battery grade lithium carbonate.

1.21.1.2 Resource Estimate

Risks and uncertainties to the Project are currently related to the unknown nature of the hydraulic characteristics for the rest of the concession area. However, based on the experience of the QP and because Salar de Arizaro is a mature salar system, it is likely that hydrogeologic conditions and chemistry of the brine in the other concession areas is likely to be similar to that observed at the current exploration wells, or better with respect to the lithium content of the deeper brine.

1.21.1.3 Mining Methods

As brine is extracted from the production wells, it is likely that a mixing of brines will occur, and their chemical interaction could lead to the precipitation of salts in the wells. This could cause the clogging of their slots, affecting the extraction capacity, and it is also possible that corrosion may occur on their walls, potentially resulting in the loss of wells in the long term, considering the projected extensive operational period (19.1 years).

On the other hand, the extraction of brine is likely to promote interaction with freshwater at the margins of the salar. This poses a risk of dilution of the brine, reducing its lithium concentration as it is extracted.

No numerical flow model has been developed to evaluate the interaction between brines or with the brackish water mentioned above, or to simulate and optimize the extraction of brine from the project, which causes uncertainty regarding the possible impact on production.

Finally, the deposition of spent brine in infiltration ponds implies a risk of salt precipitation at the base of the ponds due to evaporation, which is likely to significantly reduce the permeability and interfere with the planned infiltration.

1.21.1.4 Recovery Methods

The feed to the plant consists of a mixture of brine extracted from wells located in different parts of the Arizaro Salar, therefore their compositions have a percentage of variability, due to this, the mixture of them can produce unforeseen crystallizations that have an impact on the final concentration of the brine mixture that feeds the plant, producing the risk of not complying with the proposed mining plan.

The proposed lithium recovery flowsheet was selected based on available benchmark data and therefore there is a risk that it may not be optimal and should be reviewed and supported by vendor testing and/or information. For example, for the direct lithium extraction stage, benchmark information was used regarding a resin that has a specific lithium retention capacity, if the retention efficiency varies this may impact the selection of the unit operations of the process modifying the proposed flowsheet.

Another risk identified is that at the date of the report the available water is not sufficient yet to meet the water requirement indicated for the proposed process, therefore availability of freshwater supply by water wells needs to be probed.

1.21.1.5 Environmental Studies, Permitting and Social Considerations

Lack of detailed information about the terrestrial environment within and adjacent to the study area. The current data for the general area indicate a locally fragile ecosystem and some wildlife species that are in a sensitive conservation state and the presence of two high Andean wetlands. Therefore, there is a potential that the project will require measures to avoid, mitigate, or potentially compensate impacts to ecosystems from the operation.

There is a lack of hydrological and hydrogeological baseline studies and modelling efforts for the Project that could help determine quantitative and qualitative impacts to freshwater (groundwater and seasonal surface water) arising from current and future operations. Impacts could include changes to local freshwater aquifers that could affect human health and cause ecological impacts to plants and wildlife.

The other risk is associated with the interactions of the Project with the local Indigenous and non-Indigenous communities in the area. The available data indicates non-Indigenous and Indigenous communities that are largely habituated to mining operations in the area and without apparent opposition to the Arizaro Project. The data indicates that the company has been working on a CSR Plan for this year; however, there is no information about proposed CSR activities for subsequent years. The specific risk is losing the social license, which can occur at any stage of the Project, resulting in difficulties in obtaining permits and maintaining site activities.

1.21.1.6 Project Infrastructure

In order to calculate the area of the infiltration ponds of the depleted brine, it is necessary to know the infiltration rate of the depleted brine in the specific conditions of the site. Due to lack of data, a benchmark value for the infiltration rate was used for the Project to calculate the required infiltration area, so there is a risk that there may be a difference between the rates that could have an impact on the footprint of the infiltration ponds.

There is a risk related to the lack of a water balance of the entire basin, that is needed to estimate freshwater availability. A full basin hydrogeological model and water balance should be developed in order to improve freshwater availability estimate.

1.21.1.7 Capital and Operating Cost Estimates

The logistics and transportation of the reagents from the supply sites to the plant can be affected by different factors, which can influence the prices of the reagents, generating increases that can have an impact on the estimated operating costs, thus representing a risk for the project.

1.21.1.8 Market Studies and Contracts

Commodity prices can be volatile, and there is the potential for deviation from the forecast.

1.21.2 Opportunities

1.21.2.1 Metallurgical Testing

There is an opportunity to develop studies and laboratory tests to produce an own selective lithium adsorption resin in order to obtain better results than those currently available on the market, improving lithium capture and reducing water requirements and contaminant generation.

There is an opportunity to carry out continuous tests in the operating ranges, these tests should be related to the other unit operations of the process in order to achieve the desired product.

1.21.2.2 Resource Estimate

The estimated resource is expected to increase as more information becomes available. Additional drilling with depth-specific sampling in the Salar de Arizaro could increase the resource estimate appreciably. In particular, a potential upside includes drilling in deeper portions of the southern and western area of the property. The ARDDH-05 results to date are positive in terms of the high lithium concentrations and fractured halite encountered. Furthermore, the western portion hosts deep clastic sediments which underlie the halite unit and are expected to have a relatively high drainable porosity and permeability.

1.21.2.3 Mining Methods

At a later stage, there is an opportunity to develop a numerical flow and transport model to optimize wellfield layout and to evaluate interaction with brackish water and associated dilution. This is particularly important in the eastern sector of the basin, where an interaction with brackish or freshwater at the basin margins is deemed more probable due to the sustained extraction of brines from the production wells. To control mixing with brackish water from the margins of the salar, a wellfield layout that minimizes the brine extracted from the upper levels of the salar should be considered, along with taking advantage of the natural confining layers to reduce the effect of pumping close to the surface. Additionally, a network of monitoring wells installed on the margins of the salar would allow controlling this possible interaction.

Additionally, it is recommended to conduct brine chemistry mixing simulations to identify potential precipitation of salts inside lines or ponds.

As to infiltration ponds, on-site and numerical modeling studies are required to evaluate what volumes of brine can be infiltrated without causing surface flooding and runoff. It is also recommendable to consider processed brine reinjection, which involves evaluating reinjection rates and a location that minimizes the risk of dilution of the extractable brine.

1.21.2.4 Recovery Methods

Since the process proposed for the Project is mostly based on benchmark data, there is the possibility of modifying part of it by selecting different unit operations or changing its components. For example, a resin with better lithium recovery could be selected for the direct lithium extraction (DLE) process, or the possibility of eliminating the purification step could be verified and by substituting some unit operations the desired battery grade product could be obtained directly from the carbonation step (first crystallization). Other component of the process which could be modified are the reactors, by using for example Draft-Tube (DT) Reactor Crystallizer for lithium carbonation and Draft-Tube-Baffle (DTB) Crystallizer for lithium bicarbonation.

1.21.2.5 Environmental Studies, Permitting and Social Considerations

The key identified opportunities are as follows:

- Keep working and progressing environmental and socio-economic baseline studies and complement with data from other seasons (for biotic environments) so that construction and operational constraints can be identified early.
- Cost savings can be realized if the environment team collaborates closely with the exploration and hydrogeological drilling teams to identify opportunities where hydrogeological and hydrological monitoring and testing to support environmental studies can be incorporated into a single program.
- Working closely with the feasibility design team to ensure that required environmental measures are identified early, adopted and integrated into the Project so that avoidance or mitigation of potential impacts can be achieved.

1.21.2.6 Project Infrastructure

There is opportunity to locate the purification plant near to the place of shipment of the product in order to reduce the construction, operation, storage, transport, logistic and administration costs.

1.21.2.7 Capital and Operating Cost Estimates

Since the process proposed for the Project is based on benchmark data, it is possible to modify part of it by selecting different unit operations, therefore there is an opportunity to eliminate the purification area diminishing the estimated capital cost.

In the lithium carbonate production process, pumps and compressors with motors are used generating heat that can be recovered and used in other areas such as heating process streams. The implementation of heat recovery combined cycles represents an opportunity for the Project. Among the advantages of heat recovery systems, the reduction of energy consumption, profitability and sustainability can be highlighted.

There is an opportunity to study the transport logistics of lithium carbonate from the plant to the port, to select the best option to reduce operating costs. Among the study alternatives are the use of trucks or trains.

Another opportunity to reduce operating costs consists of selecting a single vendor for lithium adsorption resins supply which comprises the first filling load of DLE adsorption columns and resin replacement. The advantages of this opportunity consist of ensure process guarantees, negotiating the price and obtain a reliable delivery of the supply.

1.21.3 Conclusions

Based on the assumptions and parameters presented in this report, the PEA shows positive economics (i.e., $1,138 million post-tax NPV (8%) and 24.1% post-tax IRR). The PEA supports a decision to carry out additional detailed studies.

1.22 Recommendations

1.22.1 Summary of Recommendations

There is a recommended work program totalling $4.77 million including recommendations pertaining to geology and exploration, mining engineering, metallurgical testwork, geotechnical and infrastructure studies, environmental and community impact studies, which are outlined below.

1.22.2 Drilling

To support the upcoming pre-feasibility study, additional diamond drill holes with depth-specific sampling for brine chemistry and drainable porosity are needed to potentially increase the resource. Furthermore, additional pumping tests with brine sampling are required to demonstrate that feasible pumping of lithium-rich brine can occur. To accompany these new exploration activities, continuation of QA/QC for brine chemistry (e.g., duplicates, blanks, and secondary laboratories) as well as drainable porosity (two independent methodologies) is recommended to increase confidence in the obtained field data.

In terms of drilling, additional deep drilling is recommended in the western and southern areas of the mine concessions based on the favorable lithologic characteristics and brine chemistry results of Argento-01, Argento-02, and ARDDH-05. As a first priority, a 400-m deep pumping well with a short-term (3-day) test and brine sampling is recommended in the near vicinity of ARDDH-05 to confirm the high-grade lithium values. As a second priority, two 400-m deep pumping wells with short-term (3-day) pumping tests are also proposed in the southern area of the properties: (i) one pumping well in the vicinity of ARDDH-04, and (ii) another pumping well in between ARDDH-01 and ARDDH-05. At least one long-term (30-day) pumping test with daily brine sampling is recommended to support the future reserve estimate, preferably where favorable short-term testing occurred (e.g., Argento-01).

1.22.3 Reserve Modelling

The construction of a numerical groundwater flow and transport model will be required to estimate an initial (probable) lithium reserve. The initial construction of the groundwater/brine flow and transport model and subsequent calibration to available field data will make it possible to simulate future wellfield pumping. Using the future production simulation, the recoverable lithium carbonate equivalent (LCE) production capacity of the Project can be estimated. The model would be used to design the initial wellfields and simulate long-term extraction. Estimated cost for the groundwater model development and simulations is about U.S. $90,000.

1.22.4 Metallurgical Testwork Program

Due to the novel nature of the proposed process technology in the direct lithium extraction and downstream unit operation to obtain battery grade lithium carbonate it is recommended to simulate the proposed process design on a laboratory scale vendor in order to verify parameters and variables considered in the evaluation of the process recovery method.

Metallurgical recommended testwork is detailed below.

1.22.4.1 Laboratory recommended testwork

1.22.4.1.1 Impurity removal

- Verify the reduction of calcium and magnesium of the HPRO brine product;
- Verify calcium and magnesium solubility data; and
- Verify the use of ion exchange for the reduction of calcium, magnesium and boron.

1.22.4.1.2 Carbonation

- Verify the parameters used in process design;
- Verify the solubility of lithium once lithium carbonate has precipitated; and
- Verify if the precipitated product meets battery grade quality to avoid purification stage through carbon dioxide use.

1.22.4.2 Vendor recommended testwork

1.22.4.2.1 Direct Lithium Extraction (DLE)

- Verify the direct extraction of lithium from brine;
- Verify the drag of impurities and deleterious elements;
- Verify the composition of lithium and impurities in eluent and depleted brine;
- Verify water consumption in lithium recovery;
- Selection of the resin that maximizes lithium recovery and consumes the least amount of freshwater;
- Verify the lithium retention capacity in the resin; and
- Verify the ability to remove lithium by washing.

1.22.4.2.2 High Pressure Reverse Osmosis (HPRO)

- Verify performance, energy consumption and the composition of lithium obtained along with impurities.

1.22.4.2.3 Evaporator

- Verify performance, energy consumption and crystals formation.

1.22.4.2.4 Nanofiltration

- Verify efficiency of particle removal.

1.22.4.2.5 Purification

- Verify solubility of CO_2 in liquid, lithium bicarbonate and temperature.

1.22.5 Infrastructure Studies

Prior to the pre-feasibility study it is recommended to perform the following investigation:

- Geotechnical and Soil Mechanics Studies
  - Identify sites for extraction of backfill material for the construction;
  - Determine the bearing capacity of the soil for the different sites;
  - Recommendations for foundations;
  - Geological study of the site;
  - Schedule a geologist site visit to take a soil sample for lab analysis; and
  - Processing of soil laboratory data and geotechnical report.
- Perform a site test for infiltration rates in the potential locations to build the Infiltration Rate Studies.
- Analyze the alternative to a different location for the purification plant. Alternatives should include the location of the purification plan at site, close to Salta and a port in Argentina and Chile in order to have logistics, energy and manpower savings.
- Topographical survey

1.22.6 Environmental Studies

The following recommendations are made with regard to the design and implementation of environmental and socio-economic baseline studies. Qualified professionals should be retained to design and oversea the implementation of each of these studies. A review of available data should be undertaken as part of the design and scoping of these studies, prior to field implementation:

- Environmental baseline field studies and analyses should be completed in the following subject areas:
  - Hydrological and Hydrogeological Water Balance: Completing a quantitative surface and groundwater monitoring and testing program for the Project area that will support a hydrogeological and water balance model. The model should provide emphasis on seasonal recharge of the freshwater aquifers within and near the Project area and the potential drawdown from ongoing freshwater extraction as planned for the operation and the determination of sustainable yields that will be protective of sensitive ecosystems and human use and health. There is potential to work closely and collaborate with the hydrogeological production teams on the above initiatives, especially in regard to developing a conceptual and numerical three-dimensional groundwater model.
  - Water Quality Studies and Predictions: The groundwater and seasonal surface water (if present) of the study area should be sampled and analyzed for water quality to use for modelling and to establish a baseline that can be used as an early warning to predict the potential for freshwater – saltwater mixing.
  - Air Quality: Baseline conditions for air quality should be established for near field and further afield operations.

- Near Surface Soil Characterizations: Near surface soil textures and chemistry should be established as part of the baseline program.
- Flora, Fauna, and sensitive ecosystems: Additional surveys of flora and fauna throughout the Project area should be conducted with an emphasis on the sensitive areas of Arita and Chascha wetlands and the monitoring of the already identified endangered species. Studies should cover different seasons to determine species abundance and their relation to other variables such as surface and groundwater fluctuations.

- Additional socio-economic and cultural baseline studies should also be considered:
  - A gap analysis should be completed on current understanding of socio-economic conditions related to Indigenous and non-Indigenous communities near the site. The purpose of the gap assessment would be to identify current socio-economic information gaps related to nearby populations and community land use activities around the site and any potential future conflicts. Land use activities could include local harvesting of plants, wildlife, cattle grazing, and human/agricultural water use.
  - Studies to understand how best to provide benefits to the community and consideration of establishing Impact Benefit or Cooperation agreements with nearby communities.
  - A conflict resolution procedure should be established that allows individuals in communities to lay complaints against the company and requires a prompt and meaningful response from the Company and action as warranted.
  - Ongoing engagement with the local communities should continue with regular community meetings as determined by local community needs and requests.
  - The current SCR plan should be regularly reviewed and updated based on the results of studies and feedback from the community. A system of recording community comments along with company response and feedback should be implemented.

Additional archaeological studies to provide the exact location of these findings and a mitigation plan to avoid any impact on these cultural artifacts.

2 INTRODUCTION

2.1 Introduction

Lithium Chile Inc. (Lithium Chile) commissioned Ausenco Chile Limitada (Ausenco) to compile a Preliminary Economic Assessment (PEA) of the Arizaro Project. The PEA was prepared in accordance with the Canadian disclosure requirements of National Instrument 43-101 (NI 43-101) and in accordance with the requirements of Form 43-101 F1.

The Project area is located in the Salar de Arizaro basin (the Salar) within the Salta provincial boundaries of the Puna Region in northwest Argentina.

The responsibilities of the engineering companies who were contracted by Lithium Chile to prepare this report are as follows:

- Ausenco managed and coordinated the work related to the report, reviewed the metallurgical test results and developed a PEA-level design and cost estimate for the process plant infrastructure, general site infrastructure, environmental and economic analysis.
- Montgomery & Associates Consultores Limitada (M&A) completed the work related to geological setting, deposit type, exploration work, drilling, sample preparation and analysis, data verification and developed the mineral resource estimate for the Project.
- Hydrominex Geoscience Pty Ltd completed the mine production schedule.

2.2 Terms of Reference

The report supports disclosures by Lithium Chile in a news release dated August 8, 2023, entitled, “Lithium Chile Delivers Positive Preliminary Economic Assessment for The Arizaro Project in Argentina”.

This report has been prepared in accordance with NI 43-101 Standards of Disclosure for Mineral Projects and with the requirements of Form 43-101 F1.

Mineral resources are reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (CIM, 2014) and the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (CIM, 2019).The estimates also incorporate guidance provided in the 2011 Ontario Securities Commission (OSC) document entitled OSC Staff Notice 43-704 – Mineral Brine Projects and National Instrument 43-101 Standards of Disclosure for Mineral Projects (2011 OSC Staff Notice).

Units used in the report are metric units unless otherwise noted. Monetary units are in United States dollars (US$) unless otherwise stated.

2.3 Qualified Persons

The Qualified Person’s for the report are listed in Table 2-1. By virtue of their education, experience and professional association membership, they are considered Qualified Person as defined by NI 43-10.

Table 2-1: Report Contributors

Qualified Person	Professional Designation	Position	Employer	Independent of Lithium Chile	Report Section
James Millard	P.Geo.	Director, Strategic Projects	Ausenco Sustainability Inc.	Yes	1.18, 1.21.1.5, 1.21.2.5, 1.21.3, 1.22.1, 1.22.6, 20, 25.7, 25.10.1.7, 25.10.2.6, 26.1, 26.6 and 27
Patricio Pinto	C.P., R.M.	Principal Process Engineer	Ausenco Chile Limitada	Yes	1.1 to 1.4, 1.11.2, 1.12, 1.15 to 1.17, 1.19, 1.20, 1.21.1.1, 1.21.1.4, 1.21.1.6 to 1.21.1.8, 1.21.2.1, 1.21.2.4, 1.21.2.6, 1.21.2.7, 1.21.3, 1.22.1, 1.22.4, 1.22.5, 2 to 5, 12.2, 13, 17 to 19, 21, 22, 24, 25.1, 25.2, 25.5, 25.6, 25.8, 25.9, 25.10.1.2, 25.10.1.4 to 25.10.1.6, 25.10.1.8, 25.10.2.1, 25.10.2.4, 25.10.2.5, 25.10.2.7, 26.1, 26.4, 26.5 and 27
Michael J. Rosko	R.M.-SME	Principal Hydrogeologist	Montgomery & Associates Consultores Limitada	Yes	1.5 to 1.10, 1.11.1, 1.13, 1.21.1.2, 1.21.2.2, 1.21.3, 1.22.1 to 1.22.3, 6 to 11, 12.1, 14, 23, 25.3, 25.10.1.1, 25.10.2.2, 26.1 to 26.3 and 27
Murray Brooker	MAIG	Geologist and Hydrogeologist	Hydrominex Geoscience Pty Ltd.	Yes	1.11.3, 1.14, 1.21.1.3, 1.21.2.3, 1.21.3, 12.3, 15, 16, 25.4, 25.10.1.3, 25.10.2.3 and 27

2.4 Site Visits and Scope of Personal Inspection

Mr. Patricio Pinto conducted a visit to the Lithium Chile head office in Salta on March 27, 2023, followed by a visit to the Project site on March 28 and 29, 2023. During his time at the project site, Mr. Pinto examined the current wells, road accessibility, site office, exploration camps, as well as potential areas for constructing the processing plant and other necessary infrastructure.

Mr. Rosko has been to the Salar de Arizaro multiple times in the past, but not during drilling of exploration well Argento-1. Because of travel restrictions due to the Covid global pandemic, visiting the site during the ongoing exploration program has not been possible. However, M&A employees in Argentina were able to visit the site on November 10, 2021, and confirm exploration activities. Drill cuttings were reviewed by M&A geologists in Salta. Since then, Mr. Rosko, as QP, completed a personal inspection of the concession on March 22, 2022. The site visit consisted of visiting the well location, measuring depth to water, and obtaining a duplicate sample for future laboratory analysis, if needed.

2.5 Effective Dates

This Technical Report has a number of significant dates, as follows:

- Mineral resource estimate: June 27, 2023
- Mineral tenure: June 06, 2023.
- Financial analysis: August 04, 2023

The effective date of this report is based on the date of the financial analysis, which is August 04, 2023.

2.6 Information Sources and References

This Technical Report is based on internal reports provided by the client, maps, published government reports, and other public information as listed in Section 27. Additionally, it is based on information cited in Section 3.

2.6.1 Previous Technical Reports

The following Technical Reports related to the Salar de Arizaro Project were filed on SEDAR:

- Rosko. (2023). Results of Years 2021, 2022 and 2023 Exploration Activities and Preliminary Lithium Resource Estimate Salar de Arizaro Project Salta Province, Argentina. Prepared for Lithium Chile Corporation. Effective date is June 27, 2023.
- Rosko. (2022). Results of Years 2021 and 2022 Exploration Activities and Preliminary Lithium Resource Estimate Salar de Arizaro Project Salta Province, Argentina. Prepared for Lithium Chile Corporation. Effective date is December 15, 2022.
- Rosko. (2022). Results of Years 2021 Exploration Activities and Preliminary Lithium Resource Estimate Salar de Arizaro Project Salta Province, Argentina. Prepared for Lithium Chile Corporation. Effective date is February 08, 2022.

2.7 Definitions

Common standard abbreviations and unit of measurements were used wherever possible as it follows in Table 2-2 and Table 2-3.

Table 2-2: Abbreviations and Acronyms

Abbreviation	Description
A&A	Argañaraz & Associates
AACE	Association for the Advancement of Cost Engineering
ADJ	Adjacent
AIS	Air-Insulated Switchgear
AISC	All-in sustaining costs
APVC	Altiplano-Puna magmatic volcanic arc complex
ASA	Alex Stewart Laboratories
B	Boron
BG	Battery-grade

Abbreviation	Description
bls	below land surface
BMR	Borehole magnetic resonance
BV	Bed volume or resin filling volume
Ca	Calcium
Capex	Capital Expenditures
CIM	Canadian Institute of Mining
CF	Cash flow
CSAMT	Controlled-Source Audio-frequency Magnetotelluric
DDH	Diamond drill hole
DL	Detection limit
DLE	Direct lithium extraction
E	East, indicating a directional trend
E & C	Engineering and Contingency
EA	Economic assessment
EC	Electrical Conductivity
EIR	Environmental Impact Report
EIS	Environmental Impact Study
EMP	Environmental Management Plan
Eramet	Établissements Peugeot Frères Company
EU	European Union
EVs	Electric vehicles
FAA	Federal Aviation Administration
FFCC	Ferrocarril (Railway)
FIBC	Flexible intermediate bulk containers
FLI	Forward-Looking Information
FOB	Free on Board
GIS	Gas-Insulated Switchgear
LPG	Liquid Petroleum Gas
GPS	Global Positioning System
HDPE	High-Density Polyethylene
HMN	Hombre Muerto Norte
HMW	Hombre Muerto West
HSE	Health, Safety, and Environment
ICP	Inductively coupled plasma
In situ	In its original place
IRR	Internal Rate of Return
ISO	International Standards Organization

Abbreviation	Description
JUJ	Gobernador Horacio Guzmán International Airport
K	Potassium
KCl	Potassium Chloride
LAT	Latitude
LCE	Lithium Carbonate Equivalent
Li	Lithium
Li_2CO_3	Lithium carbonate
LOI	Letter of Intent
LOM	Life of Mine
LONG	Longitude
M&A	Mergers and Acquisitions
Mg	Magnesium
MR	Mineral Resource
NA	Not Applicable
NE	Northeast, indicating a directional trend
NE-SW	Northeast-southwest, indicating a directional trend
NI 43-101	National Instrument 43-101
Nº	Number
NPV	Net Present Value
N-S	North-south, indicating a directional trend
NSR	Net Smelter Return
NT	Sample ID for Brine samples
NW-SE	Abbreviation for northwest-southeast, indicating a directional trend
OC	Ownership Certificate
OR	Ownership Report
PEA	Preliminary Economic Assessment
POSGAR	Geodetic reference system used in Argentina
Q1	First quarter
Q2	Second quarter
QA/QC	Quality Assurance/Quality Control
QP	Qualified Person
REMSa	Energy and Mining Resources of Salta
RN	National Route
RNPQ	National Register of Chemical Precursors
RP	Provincial Route (highway)
SAC	San Antonio de Los Cobres
SASA - ICAO	Code for Martín Miguel de Guemes International Airport

Abbreviation	Description
SEDAR	System for Electric Document Analysis and Retrieval
SEV	Survey point code
SGS	SGS Laboratory of Salta
SGS	Société Générale de Surveillance
SLA	Martín Miguel de Guemes International Airport
SLTO	Social licence to operate
SME	Society for Mining, Metallurgy, and Exploration
ST	Sample ID for Brine and Soil samples
STC	Station code
SW	Southwest
TBD	To be determined
TDS	Total dissolved solids
TL	Station code
US	United States
USD/US$	United States Dollars
UTM	Universal Transverse Mercator
VES	Vertical Electrical Sounding
W	West, indicating a directional trend.
WBALT	Well name or identifier
WBS	Work Breakdown Structure
W-E	West-east, indicating a directional trend.
X	Coordinate
Y	Coordinate

Table 2-3: Unit Abbreviations

Abbreviation	Description
%	percent
°C	degrees Celsius
BV/h	bed volume (expressed in milliliters) per hour
d	day
g/cm^3	grams per cubic centimeter
g/L	grams per liter
GWh	gigawatt hour
ha	hectare
h	hour
hm^3	cubic hectometer
hm^3/a	cubic hectometers per annum
kg	kilogram

Abbreviation	Description
km	kilometer
km^2	square kilometer
kPa	kilopascal
kt	kilotonne
kV	kilovolt
kW	kilowatt
L/s	liters per second
L/s/m	liters per second per meter
M	million
m	meter
m^2	square meter
m^2/d	square meters per day
m^3	cubic meter
m^3/a	cubic meters per annum
m^3/d	cubic meters per day
m^3/h	cubic meters per hour
Ma	mega-annum (unit of geological time equal to one million years)
masl	meters above sea level
mamsl	meters above mean sea level
mbmp	meters below measuring point
mbls	meters below land surface
mg/L	milligrams per liter
Mg/Li	magnesium to lithium ratio
mL	milliliter
mm	millimeter
mm/y	millimeters per year
Mt	million metric tonnes
t	metric tonne
MW	megawatt
MWh	megawatt hour
ppb	parts per billion
ppm	parts per million
t/a	metric tonnes per annum
t/y	metric tonnes per year
% w/w	weight/weight percentage
y	year

3 RELIANCE ON OTHER EXPERTS

3.1 Introduction

The QPs have relied upon the following other expert reports, which provided information regarding mineral rights, surface rights, property agreements, royalties, environmental, permitting, social licence, taxation, and marketing for sections of this Report.

3.2 Property Agreements, Mineral Tenure, Surface Rights and Royalties

The QPs have not independently reviewed ownership of the Project area and any underlying property agreements, mineral tenure, surface rights, or royalties. The QPs have fully relied upon, and disclaim responsibility for, information derived from Lithium Chile and legal experts retained by Lithium Chile for this information through the following documents:

- Lopez Arias, Castelli Reston & Asociados Abogados, June 08, 2023. Arli S.A. - Legal Opinion for Lithium Chile - MLC-DNR - June 8, 2023 Auenco, June, 2023. 8 pp.

This information is used in Section 4 of the Report. The information is also used in support of sections 1.3, 14, 20, 22 of the Report.

3.3 Environmental, Permitting, Closure, Social and Community Impacts

The QPs have fully relied upon, and disclaim responsibility for, information supplied by Lithium Chile and experts retained by Lithium Chile for information related to environmental (including tailings and water management) permitting, permitting, closure planning and related cost estimation, and social and community impacts as follows:

- Conhidro S.R.L. (2023). Estudio de la Recarga en Salar de Arizaro. Internal document prepared for Lithium Chile.
- EC & Asociados (2023). Línea de Base Ambiental y Social, Proyecto Arizaro, Salar de Arizaro, Departamento Los Andes. Internal document prepared for Lithium Chile.
- Olañeta, M and Jakoniuk, M. (2022). Estudio de Impacto Ambiental y Social, etapa Prefactibilidad. Prepared for the Secretary of Mining, Salta Province. February, 2022.
- Lithium Chile (2023). Plan de Relacionamiento Comunitario de la Empresa. Internal document.
- Lithium Chile (2022). Procedimiento de Gestión de Residuos y Efluentes en Campamento Arizaro. Internal document.

This information is used in Section 20 of this Report. The information is also used in support of sections 1.18, 14 and 22 of the report.

3.4 Taxation

The QPs have fully relied upon, and disclaim responsibility for, information supplied by Lithium Chile for information related to taxation as applied to the financial model as follows:

- "Opinion Legal - Ausenco" received by email sent by Lithium Chile on August 03, 2023.

This information is used in Section 22 of the Report. The information is also used in support of Sections 1.20 and 25.

3.5 Markets

The QPs have not independently reviewed the marketing or price projection information. The QPs have fully relied upon, and disclaim responsibility for, information derived from Lithium Chile and experts retained by Lithium Chile for this information through the following documents:

- Benchmark Mineral Intelligence (2023), Lithium-Forecast-Report-Q2-2023-Benchmark-Mineral-Intelligence. Report prepared for Lithium Chile., July 04, 2023.84 pp.
- Benchmark Mineral Intelligence (2023), Lithium-Price-Forecast-Q2-2023-Benchmark-Mineral-Intelligence. Spreadsheet prepared for Lithium Chile., July 04, 2023.
- Benchmark Mineral Intelligence (2023), Lithium-Total-Cost-Model-Q2-2023-Benchmark-Mineral-Intelligence. Spreadsheet prepared for Lithium Chile., July 04, 2023.
- Benchmark Mineral Intelligence (2023), Lithium-Forecast-Q2-2023-Benchmark-Mineral-Intelligence. Spreadsheet prepared for Lithium Chile., July 04, 2023.
- Benchmark Mineral Intelligence, founded in 2014 by industry experts, is a company that specializes in assessing market prices, supply chain data, forecasting, and strategic advisory for technologies and supply chains central to the energy transition.
- The qualified person has reviewed these analyses and that the results support the assumptions in the Technical Report. It must be noted that commodity prices can be volatile, and there is the potential for deviation from the forecast.

This information is used in Section 19 of this Report. The information is also used in support of Sections 1.17, and 22 of the Report.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Introduction

The Project is located in the Salar de Arizaro Basin, “the Salar” within the Salta province, in northwest Argentina, about 230 km from Salta, and approximately 38 km southwest of the town of Tolar Grande. Arizaro coordinates are shown in Table 4-1.

The Project is in the Argentinean Puna, at an elevation of approximately 3,475 masl. Project location is shown on Figure 4-1.

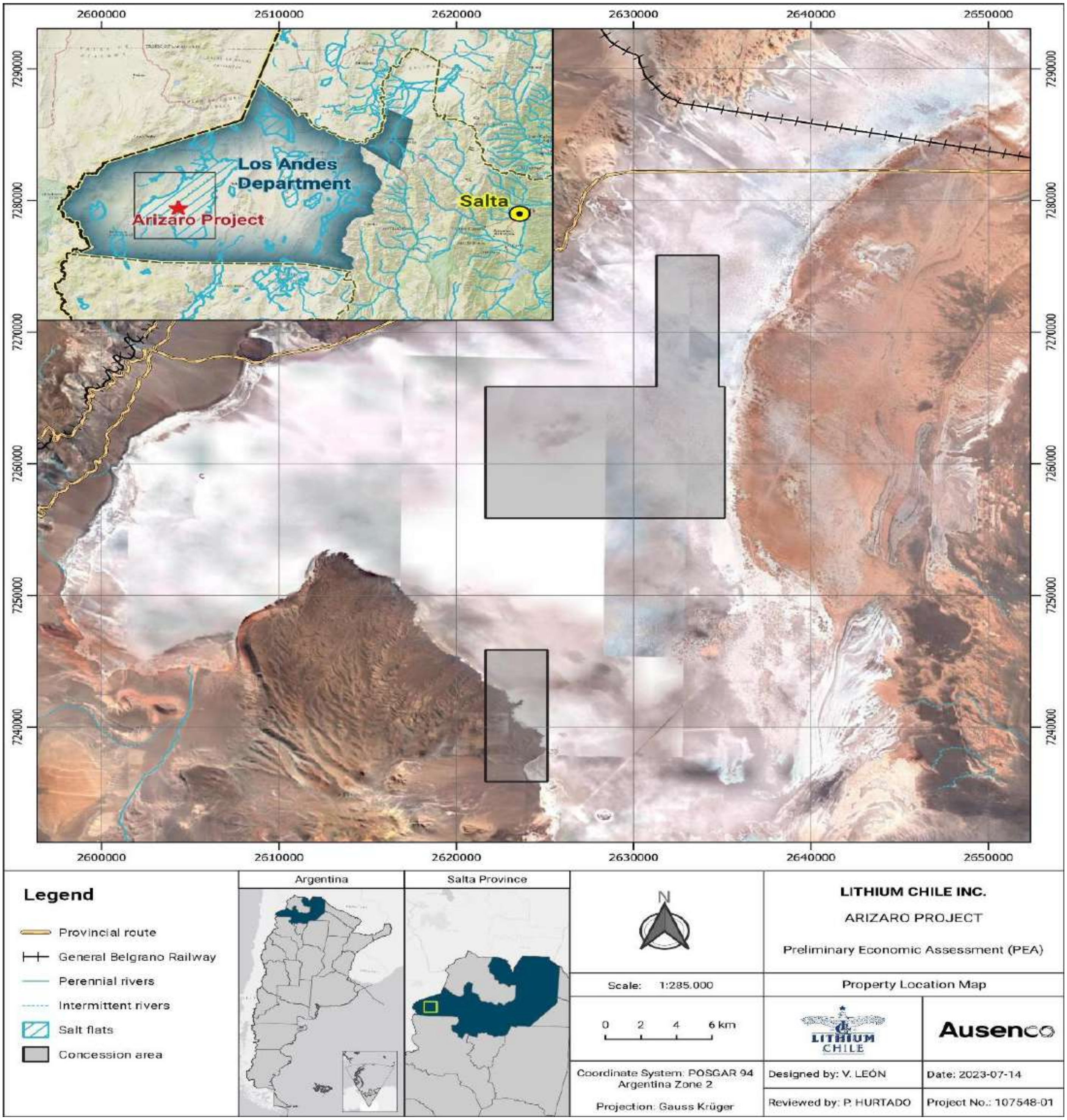
To access the project area, travel from Salta on the national route N°51 to the town of San Antonio de Los Cobres. From there, continue along the aforementioned route to the Paraje de Cauchari, then travel along provincial route N° 27 passing through Tolar Grande. From this last town, the road runs southwest, about 38 km to the Salar area where the mining concessions are located.

Table 4-1: Salar de Arizaro Coordinates

Description	Unit	Value
UTM Zone	-	19 J
UTM East Coordinate	M	632,074.0 m E
UTM North Coordinate	M	7,263,850.0 m S
Latitude	°	-24.77 °
Longitude	°	-67.54 °

The Salar de Arizaro Project currently consists of six exploration and exploitation concessions (minas) and exploration permits (cateos) totaling 20,500 ha registered in the Province of Salta.

Figure 4-1: Regional Location Map of The Project Concession Areas



Source: Ausenco, 2023

4.2 Project Ownership Background

Argentum Lithium S.A. is a duly organized and validly corporation existing under the laws of Argentina, addressed in Avenida del Bicentenario de la Batalla de Salta number 863, First Floor, Office 2 of Salta City, the Province of Salta, Argentina Republic.

Argentum's majority shareholder (direct and exclusive owner of 990 shares of Argentum, 99% of Argentum's capital stock) is Lithium Chile Inc.(LITH), a corporation duly incorporated under the laws of the Province of Alberta, Canada, registered by Certificate of Registration issued pursuant to the Alberta Business Companies Act on October 18, 2010, No. 20156511330, with registered office at 900,903 – 8th Avenue SW, Calgary, Alberta, Canada, T2P 0P7, registered in the Argentine Republic as a foreign company by Resolution Nº 1042 dated on September 16, 2021, issued by the General Inspection of Legal Entities of the Province of Salta.

SMG S.R.L. (herein after "SMG" or "SMG Group") is a company organized and existing under the laws of Argentina.

By the "Definitive Agreement" dated on August 24, 2021, LITH and Argentum per one hand, and for the other hand SMG and Litiar S.A. (an Argentinian corporation were SMG Group is shareholder) (Collectively LITH, Argentum, SMG and Litiar S.A., the "Parties) have agreed obligations in respect to the Properties, whose subject is its continued development and eventual exploitation and commercialization of the mineral products obtained there.

In compliance with the Definitive Agreement (i) the Parties have incorporated an Argentine company in Joint Venture called ARLI S.A., CUIT 30-71767171-2; (ii) LITH and Argentum have been complying to date with their obligations under the Definitive Agreement, making to SMG the payments established as consideration, and executing exploratory mining activities on the Properties; (iii) SMG through a notarial deed dated December 19, 2022 has transferred to ARLI S.A. the Properties, located in the Salar de Arizaro, Department of Los Andes, Province of Salta, Argentina; and (iv) Mario Luis Castelli in his character of lawyer, following instructions of LITH and Argentum, and based on a special power of attorney granted by SMG, will formally presented in all the files of the Properties on behalf of SMG, in order to process them before the Mining Court and before the governmental mining authorities of the Province of Salta, until the notary deed of assignment of the Properties from SMG to Arli will be registered by the Mining Court, been ARLI S.A. registered as its new owner.

4.3 Mineral Tenure

The Properties or mineral tenures are in "Salar de Arizaro," Los Andes Department, Salta Province, Argentina Republic, integrated by six (6) mining concessions whose respective files are in process before the Mining Court of the Province of Salta. Mining properties are shown in Table 4-2.

Table 4-2: File Information for The Project Property Areas

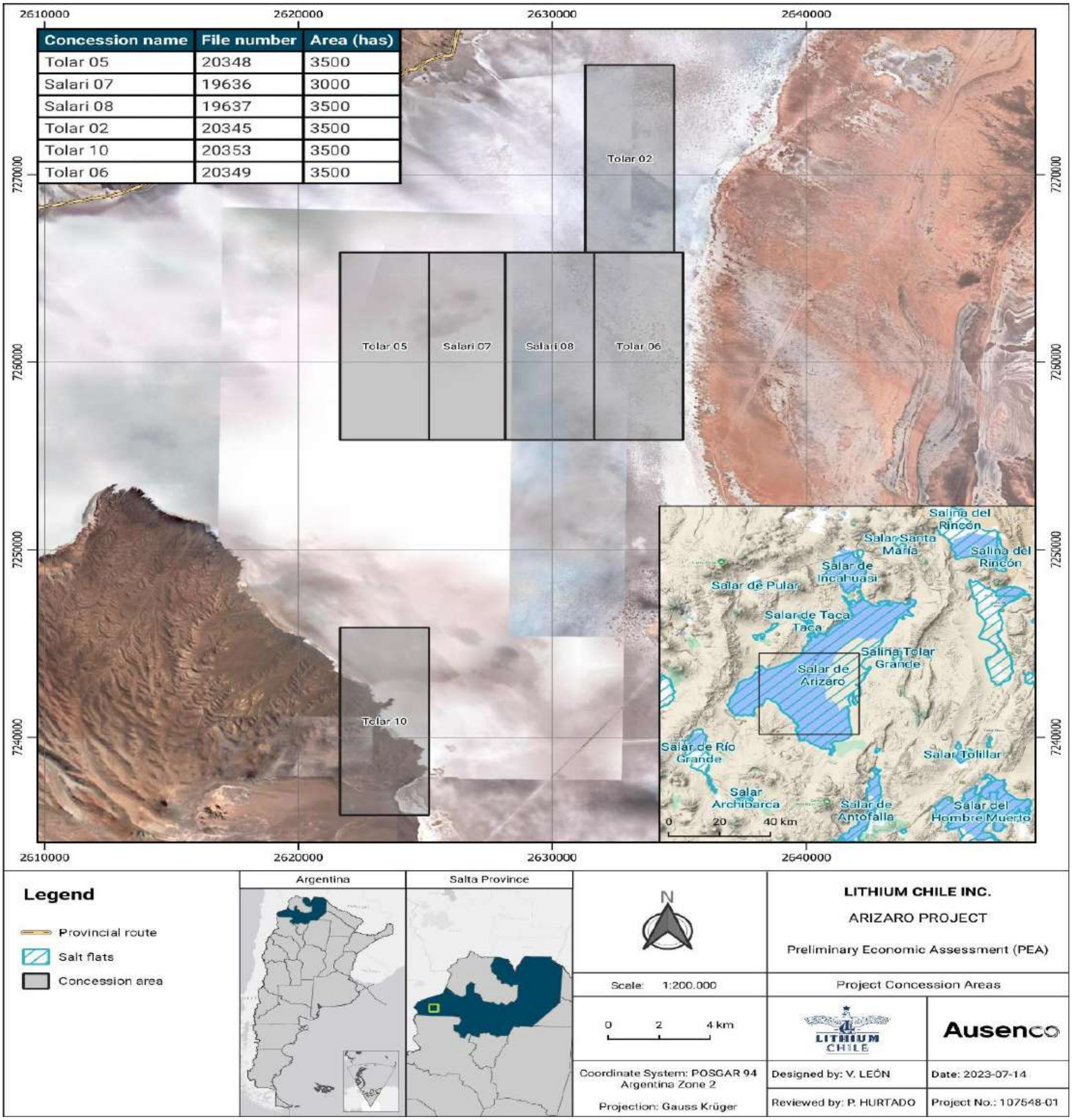
No.	Mining Properties	Record #	Class of Mineral	Area (Ha)	Units
1	Tolar 05	20,348	First And Second Class of Minerals	3,500	35
2	Salari 07	19,636	First And Second Class of Minerals	3,000	30
3	Salari 08	19,637	First And Second Class of Minerals	3,500	35
4	Tolar 02	20,345	First And Second Class of Minerals	3,500	35
5	Tolar 10	20,353	First And Second Class of Minerals	3,500	35
6	Tolar 06	20,349	First And Second Class of Minerals	3,500	35
	Total			**20,500**	

The coordinates for each concession are shown in Table 4-3 and their location in Figure 4-2.

Table 4-3: Gauss Krüger – Posgar Coordinates for The Project

No.	File No.	Concession Name	Area (has)	Property Coordinates	
				X	Y
1	20,348	Tolar 05	3,500	2,625,147	7,265,850
				2,625,147	7,255,850
				2,621,647	7,255,850
				2,621,647	7,265,850
2	19,636	Salari 07	3,000	2,628,147	7,265,850
				2,628,147	7,255,850
				2,625,147	7,255,850
				2,625,147	7,265,850
3	19,637	Salari 08	3,500	2631647	7265850
				2631647	7255850
				2628147	7255850
				2628147	7265850
4	20,345	Tolar 02	3,500	2,634,800	7,275,850
				2,634,800	7,265,850
				2,631,300	7,265,850
				2,631,300	7,275,850
5	20,353	Tolar 10	3,500	2,625,147	7,245,850
				2,625,147	7,235,850
				2,621,647	7,235,850
				2,621,647	7,245,850
6	20,349	Tolar 06	3,500	2,635,147	7,265,850
				2,635,147	7,255,850
				2,631,647	7,255,850
				2,631,647	7,265,850

Figure 4-2: Location Map of The Project Concession Areas



Source: Ausenco, 2023

4.3.1 Registration of Property Rights before the Mining Court.

Tolar 05 File N° 20,348: This Mine was requested by Ramón Núñez as a vacant mine. It was granted to him by the authority on September 10, 2014. Ramón Núñez transferred the Mine to SMG, by an assignment on September 20, 2016, the inscription of the assignment processed by file N° 22,793 before the Mining Court, and the assignment was register N° 33 in the Mining Court records of sales and transfers N° 14, the Mining Court registered the transfer in the file of the Mine on October 12, 2016.

Salari 07 File N° 19,636: This Mine was requested by Ramón Núñez as a vacant mine. It was granted to him by the authority on September 10, 2014. Ramón Núñez transferred the Mine to SMG, by an assignment on September 20, 2016, the inscription of the assignment processed by file N° 22,793 before the Mining Court, and the assignment was register N° 33 in the Mining Court records of sales and transfers N° 14, the Mining Court registered the transfer in the file of the Mine on October 12, 2016.

Salari 08 File N° 19,637: This Mine was requested by Ramón Núñez as a vacant mine. It was granted to him by the authority on March 30, 2015. Ramón Núñez transferred the Mine to SMG, by an assignment on September 20, 2016, the inscription of the assignment processed by file N° 22,793 before the Mining Court, and the assignment was register N° 33 in the Mining Court records of sales and transfers N° 14, the Mining Court registered the transfer in the file of the Mine on October 12, 2016.

Tolar 02 File N° 20,345: This mine was requested by Ramón Núñez as a vacant mine. It was granted to him by the authority on May 21, 2014. Ramón Núñez transferred the Mine to SMG, by an assignment on September 20, 2016, the inscription of the assignment processed by file N° 22,793 before the Mining Court, and the assignment was register by N° 33 in the Mining Court records of sales and transfers N° 14, the Mining Court registered the transfer in the file of the Mine on October 12, 2016.

On March 2023 the Mining Court, -at a request of the Mining Secretary-, legally intimate to SMG on the judicial file “Tolar 02 – File N° 20.345” to SMG to prove with technical and accounting documentation for the 4th and 5th periods of investments made, which runs between December 2018 and December 2020.

On March, 2023, SMG presented the required accounting and technical documentation before the Mining Court, and request to the authority that the investment be taken for the entire Properties, and not for each Mine individually. That presentation and documentation attached by SMG is currently under analysis by the authority, not yet resolved.

Tolar 10 File N° 20,353: This Mine was requested by Ramón Núñez as a vacant mine. It was granted to him by the authority on September 10, 2014. Ramón Núñez transferred the Mine to SMG, by an assignment on September 20, 2016, the inscription of the assignment processed by file N° 22,793 before the Mining Court, and the assignment was register by N° 33 in the Mining Court records of sales and transfers N° 14, the Mining Court registered the transfer in the file of the Mine on October 12, 2016.

Tolar 06 File N° 20,349: This Mine was requested by Ramón Núñez as a vacant mine. It was granted to him by the authority on September 10, 2014. Ramón Núñez transferred the Mine to SMG, by an assignment on September 20, 2016, the inscription of the assignment processed by file N° 22,793 before the Mining Court, and the assignment was register by N° 33 in the Mining Court records of sales and transfers N° 14, the Mining Court registered the transfer in the file of the Mine on October 12, 2016.

On December 29, 2020, as expressed in an affidavit that SMG declared before the authority, the committed investments were all fulfilled, which comprise the 5 periods. Notwithstanding this, the investments made are subject to control by the authority.

Regarding information provided by SMG, on September 07, 2022 the Mining Court, -at a request of the Mining Secretary-, legally intimate on the judicial file “Tolar 06 – File N° 20.349” to SMG to prove with technical and accounting documentation for the 4th and 5th periods of investments made of the five-years investment plan, which runs between December 2018 and December 2020.

On October 20, 2022, SMG presented the required accounting and technical documentation before the Mining Court, and request to the authority that the investment be taken for the entire Properties, and not for each Mine individually. That presentation and documentation attached by SMG is currently under analysis by the authority, not yet resolved.

4.3.2 Mining Easements:

Arli as the new titular holder of the Properties requested, two Mining Easement on May 2023 before the Mining Court, is in process of granting:

- ArLi S.A. – Camp site easement. N° 809580/23
- ArLi S.A. – Roads easement File N° 806592/23

4.4 Surface Rights

Provinces in Argentina control property mineral resources, so they have authority to grant mining rights to private applicant entities and have the authority to implement the National Mining Code and to regulate its procedural aspects and to organize each enforcement authority within its territory. Two types of mineral tenure granted by provinces according to Argentina mining laws are Exploitation Concessions and Exploration Permits.

1. Exploitation Concessions, sometimes referred to as “Minas” or “Mining Permits,” are licenses that allow the property holder to exploit the mineral resources of the property, providing environmental approval is obtained. These permits have no time limit as long as obligations in the National Mining Code are abided.
2. Exploration Permits referred to as “Cateos” have time limits that allow the property holder to explore the property for a period of time that is related to the size of the property. Exploration Permits also require environmental permitting.

Depending on the province, Exploitation Concessions are granted by either a judicial or administrative decision. An Exploration Permit can be transformed into an Exploitation Concession any time before its expiration period by filing a report and paying a canon fee. The condition under which Exploitation Concessions are held is indefinite providing that annual payments are made.

Neither exploitation nor exploration cannot start without obtaining the EIA permit. Permitting for drilling in areas of both types of mineral tenure must specify the type of mineral the holder is seeking to explore and exploit. Claims cannot be over-staked by new claims specifying different minerals.

There are no private owners of the surface rights in the project area, and the surface area is therefore owned by the province, in which each concession is located.

4.5 Water Rights

According to the Provincial Water Code, a natural or legal person can request: 1) water use permits, subject to revocation by the authority without any compensation, and 2) water concession, understood as a legal-administrative act or law, that grant to their titular the subjective right the use of public waters, is granted by the authority and cannot be revoked without just cause. The right-obligation granted by concessions to individuals is for the "productive use" of water, as in the case of "mining use".

The competent authority regarding all the requests of water issues, is the Secretary of Water Resources.

In order to obtain water concessions, the regulations on the matter allow, with prior authorization from the Secretary of Water Resources, to carry out Exploratory Water Wells.

Ownership of the Mining Property implies the right to explore and exploit exclusively the mineralized material found there, listed in the National Mining Code. Ownership of the Mining Property does not imply ownership of the water resource, which is regulated under the purview of the Secretary of Water Resources, as the granting authority.

The public water concession will entitle its holder to request the easements that are necessary for the due exercise of his rights in relation to the granted concession.

Lithium Chile, through its subsidiaries, currently have the following rights or requests in process related to water:

- Water Use Permit granted under Res. 132/23 for 1,460 m^3 (4 m^3/d) to supply the operation of the Arizaro Project with potable water (for sanitary uses).
- Permit to execute water exploratory wells (SRH 1678 and SRH 1679), granted on August 23, 2023.
- Application for a water concession for Pozo Chascha Sur 01, which is being processed under file No. 0090034-254783/2022-0.

4.6 Canon

According to article 216 of the Mining Code, the canon is annual, and must be paid in advance, it is divided into two semesters, which are paid in equal parts, and expire on June 30, and December 31 of each year.

The Mining Court will declare the expiration of the rights over the Properties, for non-payment of an annuity (two semesters), after two months have elapsed from the expiration date.

All the Properties has fulfilled the canon payment until second semester of 2023, and that was informed in timely manner in all the files of the Properties.

4.7 Royalties and Encumbrances

Litiar shall have a royalty right on net smelter return derived from the products mined, extracted, and commercialized by JV Corporation from the mining project containing the Properties (the "Royalty"), to be paid by JV Corporation, annually to the Royalty holder. The Royalty shall be equal to 1% of net smelter returns on the Properties, and LITHARG shall have an option right to purchase such Royalty, which can be exercised for a purchase price of $1,500,000 (one million five hundred thousand U.S. Dollars), by giving written notice and paying such amount to the Galli Company within a period of 2 (two) years after Production has started.

All titles set out in Table 4-2 are subject to a 3% NSR royalty payable to the Province of Salta.

4.8 Environmental Impact Report:

Environmental Impact Report (EIR) of the Properties was presented in one document in all Mines, and it was approved by the Mining and Energy Secretary of Salta by Resolution of DIA (Impact Environmental Approval) N° 26 on 17 January 2020, notified to the holder in February 2020.

For the purposes of art. 256 of the Mining Code, on February, 2022 SMG submitted an EIR updated to the Court of Mines. That Court -complying with the procedural laws- has sent this update to the Secretary of Mining and Energy, so that it can evaluate it and decide on a DIA that approves that update.

On June, 2022 SMG submitted an addendum, to the EIR referred to in the previous point, where activities related to the installation of mining camps and water wells were included.

On December, 2022 SMG submitted another addendum to the EIR referred to in point “ii.”, where activities regarding to Pre-Concentration Demo Ponds for Brine Evaporation were included.

On February 2023, SMG received a notification by the Mining Court with a Legal Report of the Secretary of Mining Energy that considered insufficient our EIR.

On March 2023, SMG presented before the Mining Court the answered comply with the requests of the Secretary of Mining and Energy.

4.9 Environmental Considerations

There are no known environmental liabilities on the property. Detailed information on the environmental studies and management measures is provided in Item 20 of this report.

4.10 Permitting Considerations

Additional environmental permits and other authorizations required for operation. Information on the environmental permits can be found in Item 20.1 of this report.

The other authorizations are:

- Permit for the consumption of water for process and human consumption.
- Registration in the Registry of Hazardous Waste Generators.
- Registration in the National Register of Chemical Precursors (RNPQ).

More information can be found in Section 20.4 of this report.

4.11 Social License Considerations

Indigenous communities have been identified near the project area. Social License Considerations and community related activities are included in Section 20.5 of this report.

4.12 Project risks and uncertainties

To the extent known, there are not any foreseeable risks or uncertainties regarding property ownership, surface/legal access, environmental issues, and social license.

5 ACESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Physiography

The Project is located in a Puna environment corresponding to a high elevated plateau within the Central Andes that covers parts of the Argentinean provinces of Jujuy, Salta, and Catamarca. It is characterized as a high Andean desert with elevations that ranged between 3,600 masl in the depressions to about 6,000 masl in the high mountains of the volcanic arc. The physiography of the region is characterized by extensive depressions and basins separated by mountain ranges, with marginal canyons cutting through the Western and Eastern Cordilleras and numerous volcanic centers, particularly in the Western Cordillera. The Altiplano-Puna magmatic volcanic arc complex (commonly APVC in literature) is located between the Altiplano and Puna. It is associated with numerous stratovolcanoes and calderas. Studies have shown that the APVC is underlain by an extensive magma chamber at 4 to 8 km deep (de Silva, 1989) and potentially the ultimate source of anomalously high values of lithium in the region. In general terms, it is a zone with low humidity and limited soil development.

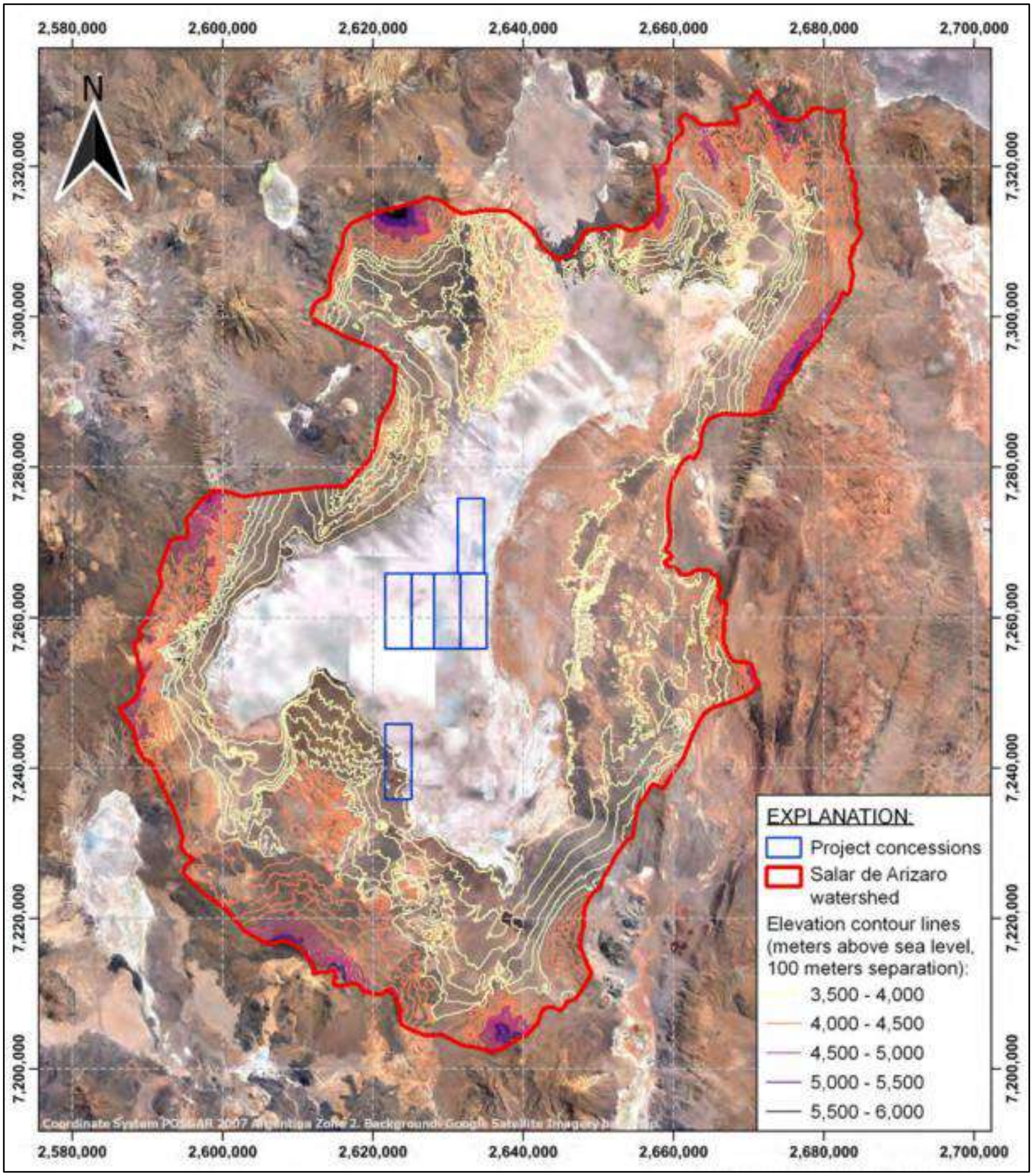
Locally, the Project is in the Salar de Arizaro basin. The Salar is located within a closed endorheic basin. Surface water inflow to the Salar is marked by seasonal precipitation events, mainly in the period between October and March.

Both in the ecoregion where the Project is located (Puna) and in the ecoregion corresponding to the surrounding areas (High Andean), vegetation is scarce and often does not occur over large areas. For each ecoregion the following is highlighted:

- Puna Ecoregion: The dominant vegetation is the shrub-steppe. In the Project area, the typical vegetation includes *Acantholippia punensis Botta* (“rica rica”), *Adesmia horridiuscula* (“añagua”); *Atriplex microphylla* (“cachiyuyo”), *Baccharis incarum* (“lejía”), and *Artemisia copa* (“copa copa”).
- High Andean Ecoregion: The dominant vegetation in these areas are the herbaceous or grassy steppe like *Festuca orthophylla, Festuca* chrysophylla, and *Poa gymnantha*, which are sometimes associated with woody plants such as *Baccharis incarum*, *Senecio punae*, *Adesmia patancana* (“cuernos de cabra”), *Azorella compacta* (“yareta”), and *Parastrephia quadrangularis*. Circular or crescent-shaped thickets, plants in cushions or plates attached to the ground are frequently observed and are related to factors such as the accumulation of sediments or the effect of snow. All plants are highly adapted to extreme conditions and are resistant to cold and wind.

A digital elevation model which data documentation reports a horizontal resolution of 30 meters (ALOS PALSAR, Nicoll et al., 2014) was used to prepare contour levels and delineate the Salar de Arizaro basin watershed. Elevation within the watershed ranges from 3,450 to 6,100 masl, with an estimated total area of about 6,770 km^2 and an approximate mean elevation of 3,760 masl. The elevation at the surface of the Salar is approximately between 3,450 and 3,500 masl (Figure 5-1) in the project concession areas.

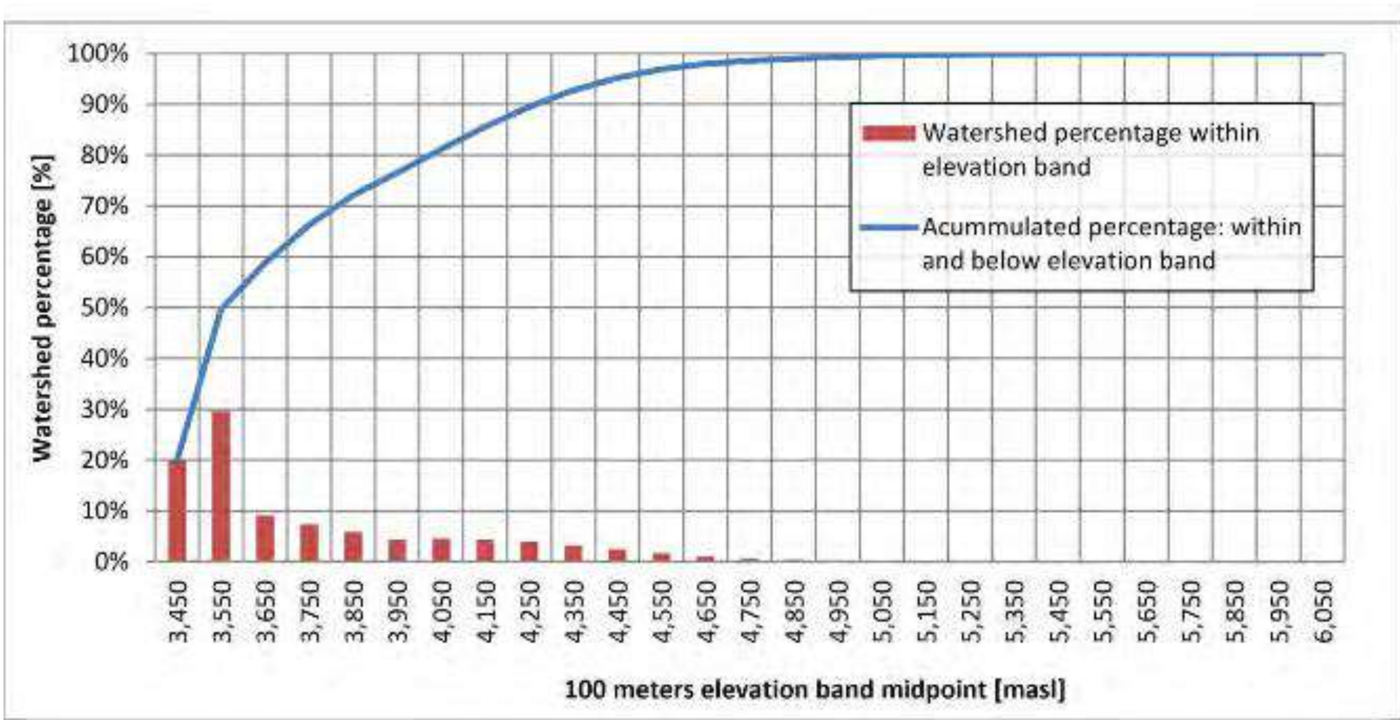
Figure 5-1: Salar de Arizaro Watershed Elevation Ranges and Project Concessions



Source: Montgomery & Associates Technical Report, 2022.

The basin was divided in 100-m elevation bands for hypsometry an analysis (Figure 5-2) from which can be inferred that about a 50% of the basin is located in the range 3,450 to 3,600 masl, 90% of the basin is below 4,300 masl.

Figure 5-2: Salar de Arizaro Watershed Hypsometry



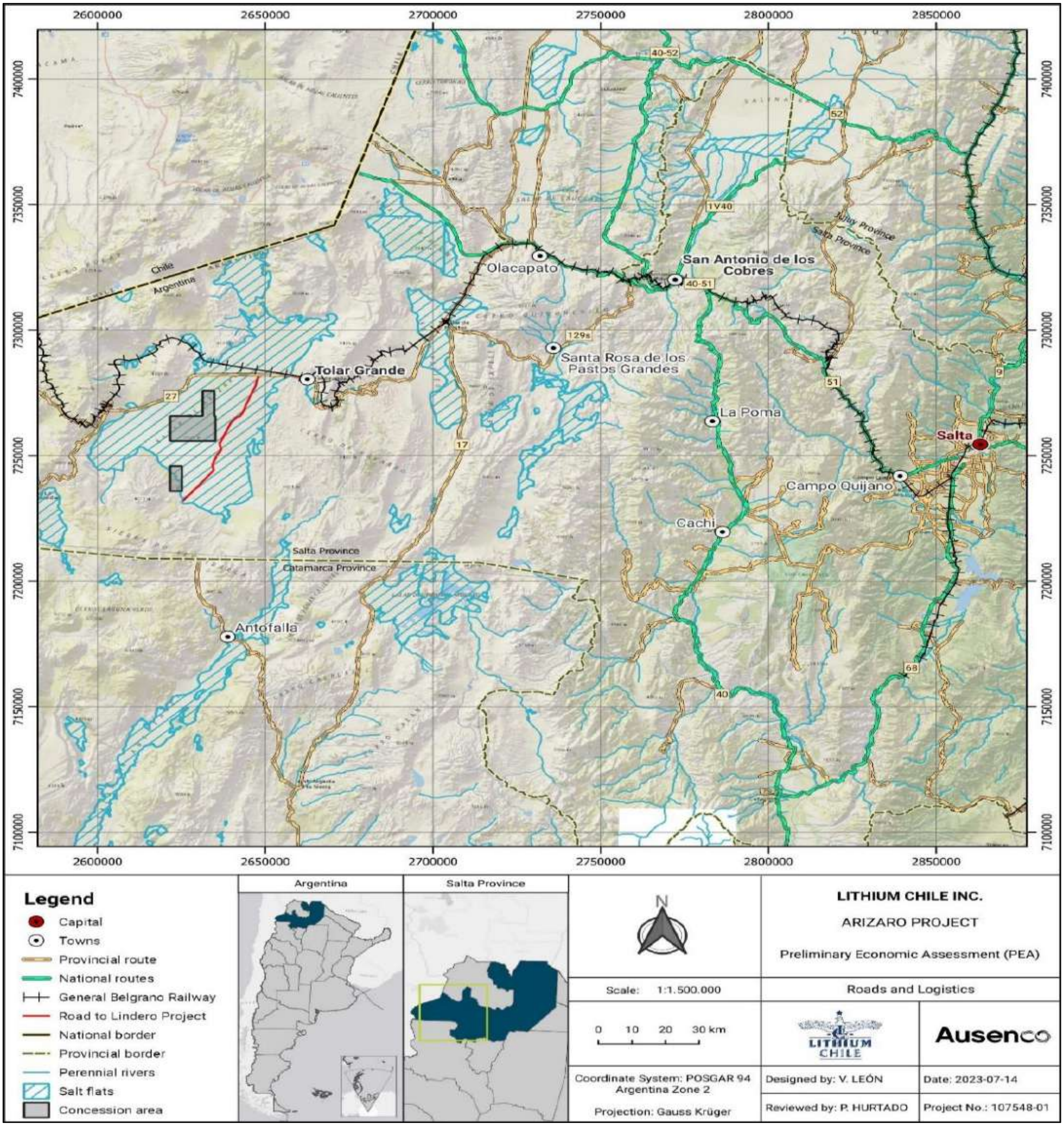
Source: Montgomery & Associates Technical Report, 2022.

5.2 Accessibility

The Project area is located in the Salta province. The operating season for the area is year-round, with no times of the year where access is restricted. The nearest town with services is Tolar Grande, which is about 50 km north along mining track (road to Lindero Project) and continuing on Salta provincial road RP-27. Tolar Grande has a population of 240 inhabitants with services such as a health clinic, lodging facilities, and a school. The nearest large city is Salta, located about 170 km to the northeast of the Project area. Local resources in the area are very basic.

Most supplies are brought from Salta or San Antonio de Los Cobres. Several mine camps occur in the area and are powered locally. There are no people living in the vicinity of the Project. A 3-km long airstrip, certified by the Argentina Air Force, is located at the Lindero Mine camp but it is not a commercial airstrip. The most common access to the Project is from the city of Salta along national route RN-51, passing through the towns of Campo Quijano and San Antonio de Los Cobres. About 70% of Route 51 is paved and the remainder is in fairly good condition.

Figure 5-3: Salar de Arizaro Project Access Routes



Source: Ausenco, 2023.

5.3 Climate

The climate in the Project area is characterized as a cold, high altitude desert, with scarce vegetation. Solar radiation is intense, particularly during the summer months of October through March, leading to extremely high evaporation rates. Strong winds are frequent in the Puna, reaching speeds of up to 80 km/h during the dry season. During summer, warm to cool winds are generally pronounced after midday and winds are usually calm during the night.

The main rainy season is between December and March. The period between April and November is typically dry. Key features of the seasonal precipitation during December through March period are the intense surface heating and the establishment of upper-level easterly winds that convey moist air from the interior of the continent (Garreaud, 2009). Regional precipitation trends in the Argentinean and Chilean Puna include a general decline to the southwest because of the increased distance from the moisture source, and the moisture lost to orographic rainfall over the N-S trending mountain ranges. A positive correlation between elevation and precipitation (Minetti and others, 2005) can be also observed.

During the rest of the year, the prevailing westerly winds are too dry to support convective precipitation. Monthly precipitation data was obtained from a database published by Instituto Nacional de Tecnología Agropecuaria (INTA) (Bianchi and others, 2005), public NI 43-101 technical reports for other projects in the vicinity, and historic information from nearby meteorological stations including Salar de Pocitos and El Fenix. Average annual rainfall at these stations is given in Table 5-1.

Snow precipitation records in the Puna are scarce, but anecdotal evidence and remote sensed snow-covered areas indicates that multiple snowstorms are not uncommon during the austral winter, and its accumulation is often enough to cause roads to close at the international border for several days. Snowfall is likely underestimated or missed by the meteorological stations in the region because the rain gauges used to measure rainfall are not designed to measure snowfall. As an example, within the region, Vuille (1996) reported snowmelt and sublimation depths for 15 snowstorms in El Laco, located at 4,200 masl approximately 50 km west of Salar del Rincon from 1990 to 1993. On average, snow precipitation amounted to 61 millimeters per year (mm/y), of which about 60% was lost to sublimation leaving about 25 mm/y to snowmelt. The fraction of the snow precipitation that can become aquifer recharge is limited to snowmelt because sublimation is a direct loss to the atmosphere.

Table 5-1: Project Average Rainfall - Climatological Conditions

Station	Elevation (masl)	Easting (m)	Northing (m)	Record Length of Time	Percent Record Complete	Annual Rainfall (mm)
Unquillal	4,000	3,737,330	7,287,070	1950-1990	79%	44
Salar de Pocitos	3,600	3,398,980	7,304,890	1950-1990	78%	46
Olacapato	3,820	3,427,140	7,333,570	1950-1990	88%	74
Mina Concordia	3,770	3,459,360	7,324,470	1950-1990	95%	115
San Antonio de los Cobres	3,775	3,467,830	7,322,640	1950-1990	100%	115
El Fénix Camp	3,990	3,388,550	7,181,910	1992-2016	100%	77
Tincalayu	4,000	3,393,770	7,204,800	1979-2003	45%	64
Salar del Rincón	3,730	3,393,700	7,344,690	2007-2015	-	64

5.4 Local Resources and Infrastructure

5.4.1 Electrical Power

A 600-megawatt (MW), 375 kilovolt (kV) power line between Salta and Mejillones in Chile passes about 180 km north of the Property. The line reportedly transmits 110 MW from Mejillones to the Argentina Interconnection System. Also, two photovoltaic plants, La Puna Solar and Altiplano, are located near the town of Olacapato (east from Pocitos), in the department of Los Andes. Since October 2021, both plants are connected to the Argentina Interconnection System.

The new power stations add 500 MW to the system. The closest power source is located in the town of Tolar Grande via diesel generators. The TermoAndes high-voltage line, with a transport capacity of 600 MW, which feeds the national interconnected system, is 100 km north of the Company's Project. Two solar power generating plants were recently commissioned: one near the town of Olacapato in the Province of Jujuy, and another immediately south of the edge of the Salar de Cauchari in the Province of Salta. Both of these are connected to the TermoAndes line.

5.4.2 Natural Gas Pipeline

A natural gas line (Gasoducto de la Puna) passes along provincial highway RP-17 south from Salar de Pocitos. The Puna gas pipeline is 80 km to the east of the Company’s Project, which supplies dual generators (gas and diesel) to the Minera del Altiplano Plant and camp in the Salar del Hombre Muerto.

5.4.3 Railway Line Antofagasta-Salta

The nearest rail line in the region is an existing narrow-gauge railway between Salta, Argentina and Antofagasta, Chile. Figure 5-4 shows the location of the track. Two companies manage it: the Chilean Ferrocarril Antofagasta – Bolivia (Chilean Luksic Group) and the Argentinian state owned Ferrocarril General Belgrano. Currently, the track from La Polvorilla to Salta is operated by the Tren de las Nubes and is not currently in use east from San Antonio de Los Cobres.

Figure 5-4: Railway Line From Mejillones To Salta

Source: Montgomery & Associates Technical Report, 2022.

5.4.4 Road Connections

The Project is connected to Salta, Salar de Pocitos and San Antonio de Los Cobres by the way of a well-maintained, paved and unpaved road network. The project can be accessed through a mining track going to Lindero Project after leaving RP-27, which connects with Tolar Grande.

5.4.5 General Services

Communities: The nearest community with services is the town of Tolar Grande, located northeast of the Project along RP-27. The nearest town with full services, including fuel and medical services, is San Antonio de Los Cobres, which is a 4-hour drive from the site, and Salta, located about 6 hours from the site.

Water Supply: Potential supply of freshwater is restricted to the alluvial cones at edges of the Salar de Arizaro; there are no public studies on the exploration and exploitation of freshwater. Further, there are no permanent surface water courses that contribute to the basin of the salt flat. At the moment, the only known source of groundwater in the basin is located in the alluvial fan of the Chascha sub-basin, which supplies freshwater through a battery of wells to the Lindero Gold Deposit at the southern end of the Salar de Arizaro.

Camp: There is currently a camp on site (Tolar 10) to support ongoing activities with facilities for 70 workers.

Communications: Currently, only satellite phone communication is available at the project location.

Nearby mining operations: Currently, there is a gold mine operating in the southern part of the Salar basin, and a world class copper project located 15 km to the northwest of the concessions.

Sufficiency of surface rights: Lithium Chile's exploration target covers a surface of 233 km^2 and has sufficient surface rights, particularly compared to its peers, for future potential mining operations.

5.5 Seismicity

In accordance with the IMPRES-CIRSOC 103 Standard, which establishes the requirements of constructions that can be subjected to loads dynamics due to seismic actions, zoning the territory of the Republic Argentina in five (5) zones depending on the danger generated by the events, the area under study would be in Zone II, classified as moderately dangerous seismic.

6 HISTORY

Prior to Lithium Chile maintaining majority control of the concessions, Argentina Lithium and Energy Corporation was the previous owner. As described in Section 4, Lithium Chile acquired control of the concessions in 2021.

6.1 Sub-Surface Brine Sampling - 2017

A sub-surface brine sampling campaign was undertaken in 2017 by Aminco (2017a) at the instruction of the previous owner, Argentina Lithium. The campaign consisted of the construction of 23 trenches; 15 of them in the central part of the Salar and eight in the southern part, near the Cono de Arita. The size of each one is approximately 1.5x1.5 to 2x4 meters; detailed lithological descriptions were completed by Aminco geologists. The depth of those trenches varied from 0.7 to 3 m. According to the lithological descriptions, the Salar has an evaporitic crust (mostly halite) with depths of 0.2 to 0.5 m, and an underlying clastic unit of sand and clay to the total depth. The water depth ranged from 0.2 to 0.5 m, except in trenches 14 and 15, where water level was not reached. Locations for the samples are given in Table 6-1. In trenches where water level was reached, field parameters were measured on site (temperature in Celsius (Cº), Electrical Conductance (EC), pH, Total Dissolved Solids (TDS), density and NaCl (%). Field parameters measured on site varied with a pH of 6.48 to 7.02, and a temperature between 15 and 23 ºC. The reports do not indicate if the samples obtained were sent to a lab for chemical results.

Table 6-1: Locations for 2017 Trench Sampling Program

Sample ID	Latitude	Longitude
Ari 1	S 24º48’51.17”	W 67º41’2.6”
Ari 2	S 24º47’30.06”	W 67º41’3.81”
Ari 3	S 24º46’8.71”	W 67º41’4.31”
Ari 4	S 24º46’8.21”	W 67º39’49.5”
Ari 5	S 24º44’47.93”	W 67º41’4.92”
Ari 6	S 24º43’26.69”	W 67º41’5.87”
Ari 7	S 24º42’5.58”	W 67º41’7.68”
Ari 8	S 24º40’43.6”	W 67º41’7.98”
Ari 9	S 24º39’22.2”	W 67º41’8.85”
Ari 10	S 24º38’1.85”	W 67º41’9.97”
Ari 11	S 24º46’9.17”	W 67º42’32.95”
Ari 12	S 24º46’10”	W 67º44’2.02”
Ari 13	S 24º46’11.36”	W 67º45’31.02”
Ari 14	S 24º46’13”	W 67º47’14.39”
Ari 15	S 24º46’14.22”	W 67º47’49.73”
Ari 16	S 24º55’45.87”	W 67º47’1.63”
Ari 17	S 24º56’26.12”	W 67º46’5.87”
Ari 18	S 24º56’44.03”	W 67º45’40.6”
Ari 19	S 24º57’11.6”	W 67º45’39.7”

Sample ID	Latitude	Longitude
Ari 20	S 24º57'38.12"	W 67º45'38.8"
Ari 21	S 24º58'4.63"	W 67º45'38.9"
Ari 22	S 24º58'53.68"	W 67º45'38.6"
Ari 23	S 24º98'28.97"	W 67º45'37.6"
Ari 24	S 24º59'43.4"	W 67º45'37.6"

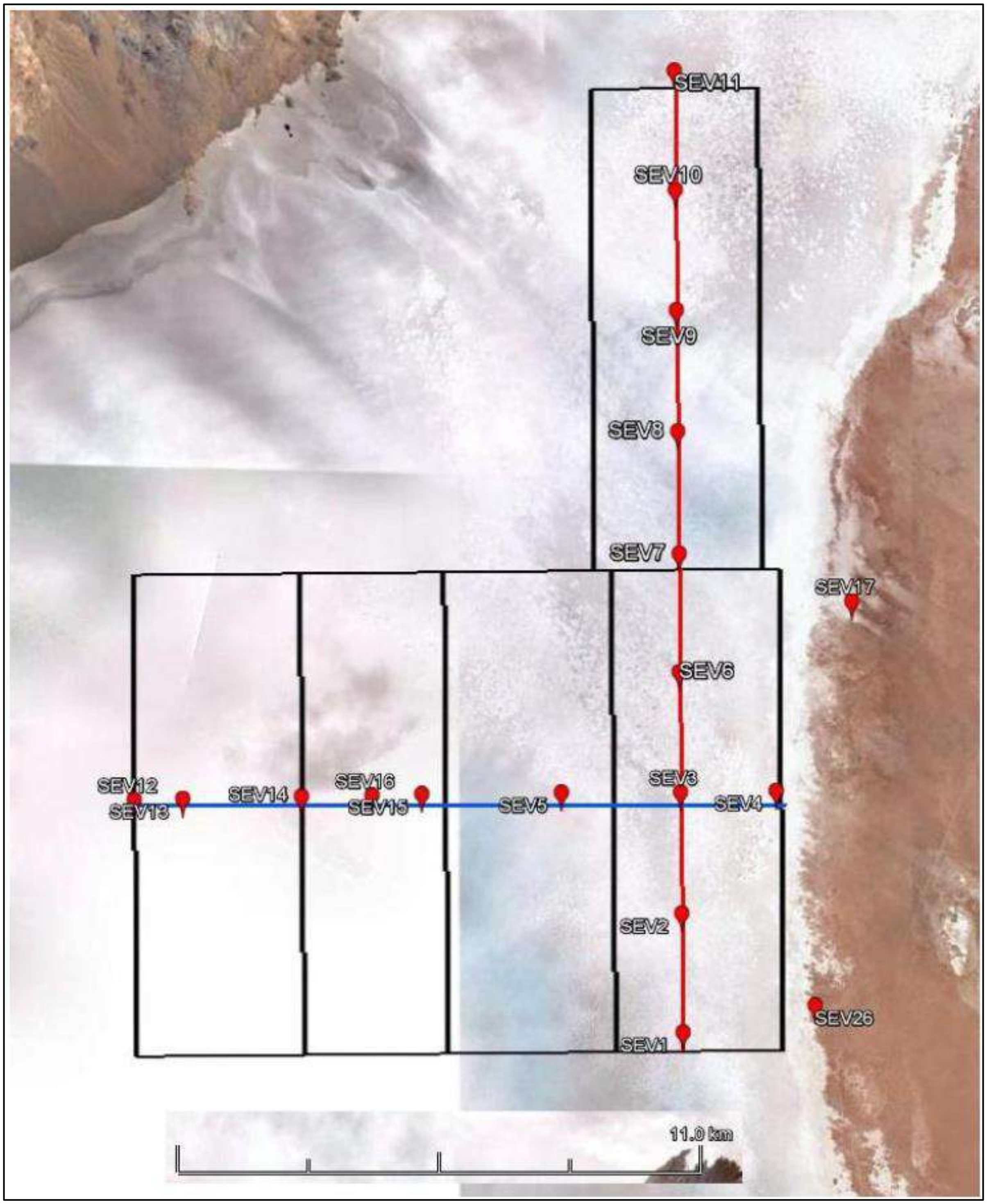
Source: Aminco, 2017a

6.2 2017 VES Geophysical Survey

During the first months of 2017, Conhidro (2017) conducted a Vertical Electrical Sound (VES) geophysical survey in the Salar de Arizaro. Twenty-five VES points were surveyed; 17 of them were in the northern part of the Salar (Figure 6-1) and the other 8 were located in the southern portion. Two profiles were prepared and are shown in Figure 6-2 and Figure 6-3. The first profile had a N-S orientation and the second one a E–W orientation. The N-S profile has a length of approximately 20 km, and according to the geophysical results, four zones can be identified:

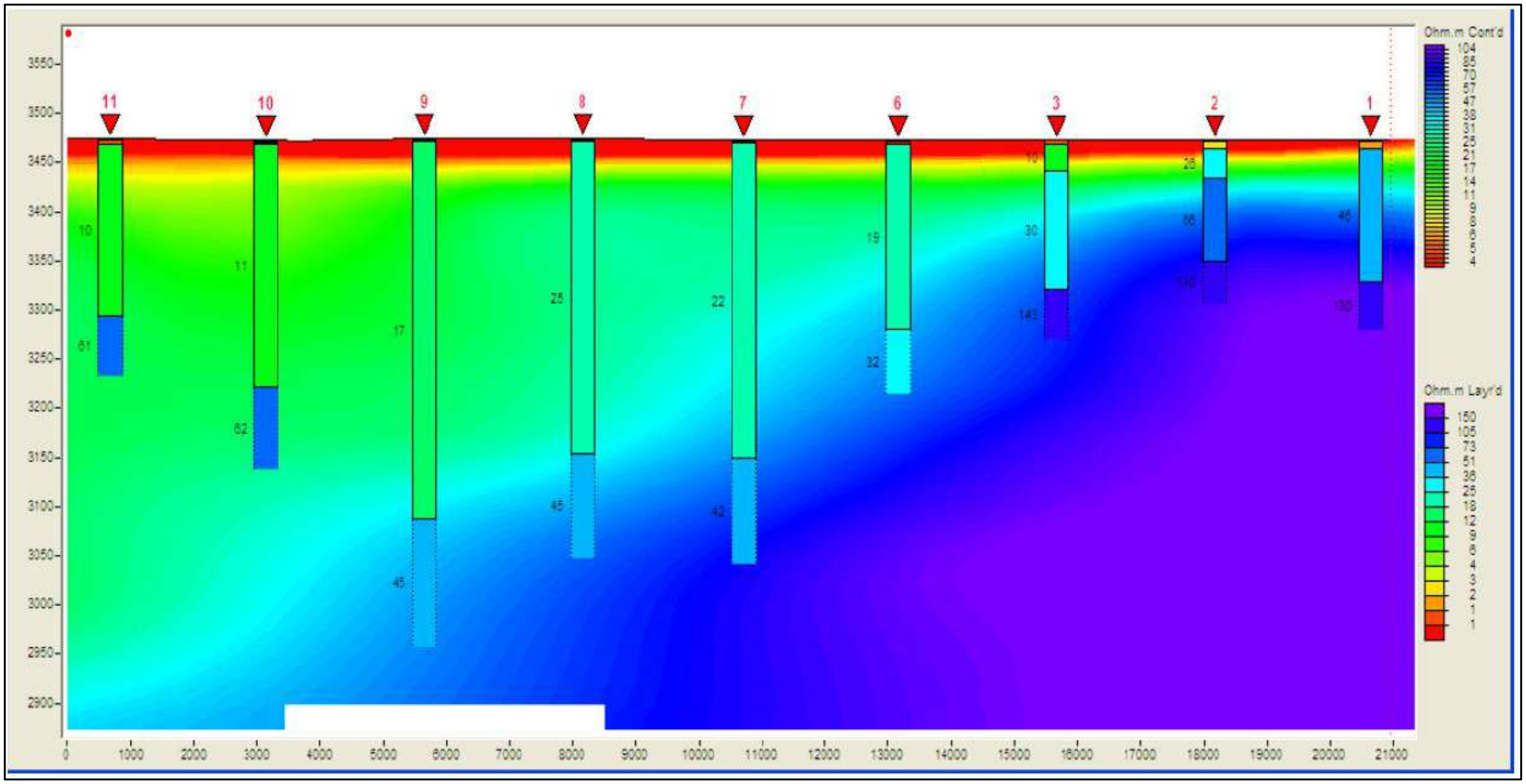
1. Upper conductive zone: very low resistivity values, interpreted to be evaporitic facies with minor presence of clastic.
2. Semi-conductive zone: low resistivity values interpreted to be mostly fractured halite.
3. Semi-resistive zone: moderate resistivity values interpreted as weakly fractured evaporitic facies.
4. Resistivity zone: high resistivity values; recognized mostly in the southern part of the profile. It was interpreted as evaporitic facies consisting mostly of low permeable halite (Figure 6-2).

Figure 6-1: Location of VES Profiles In The North Part of The Salar



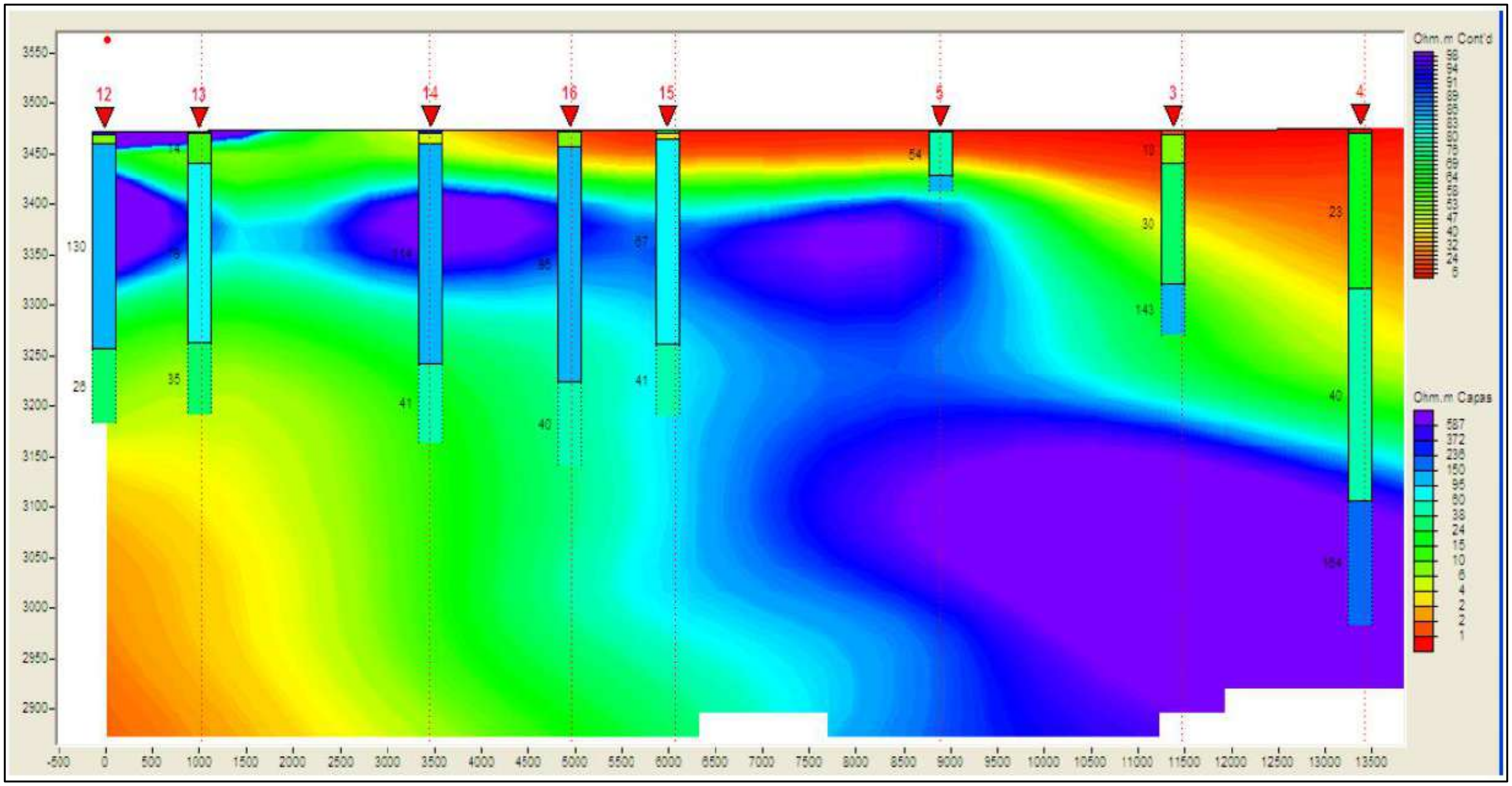
Source: Conhidro, 2017.

Figure 6-2: North – South VES Profile



Source: Conhidro, 2017.

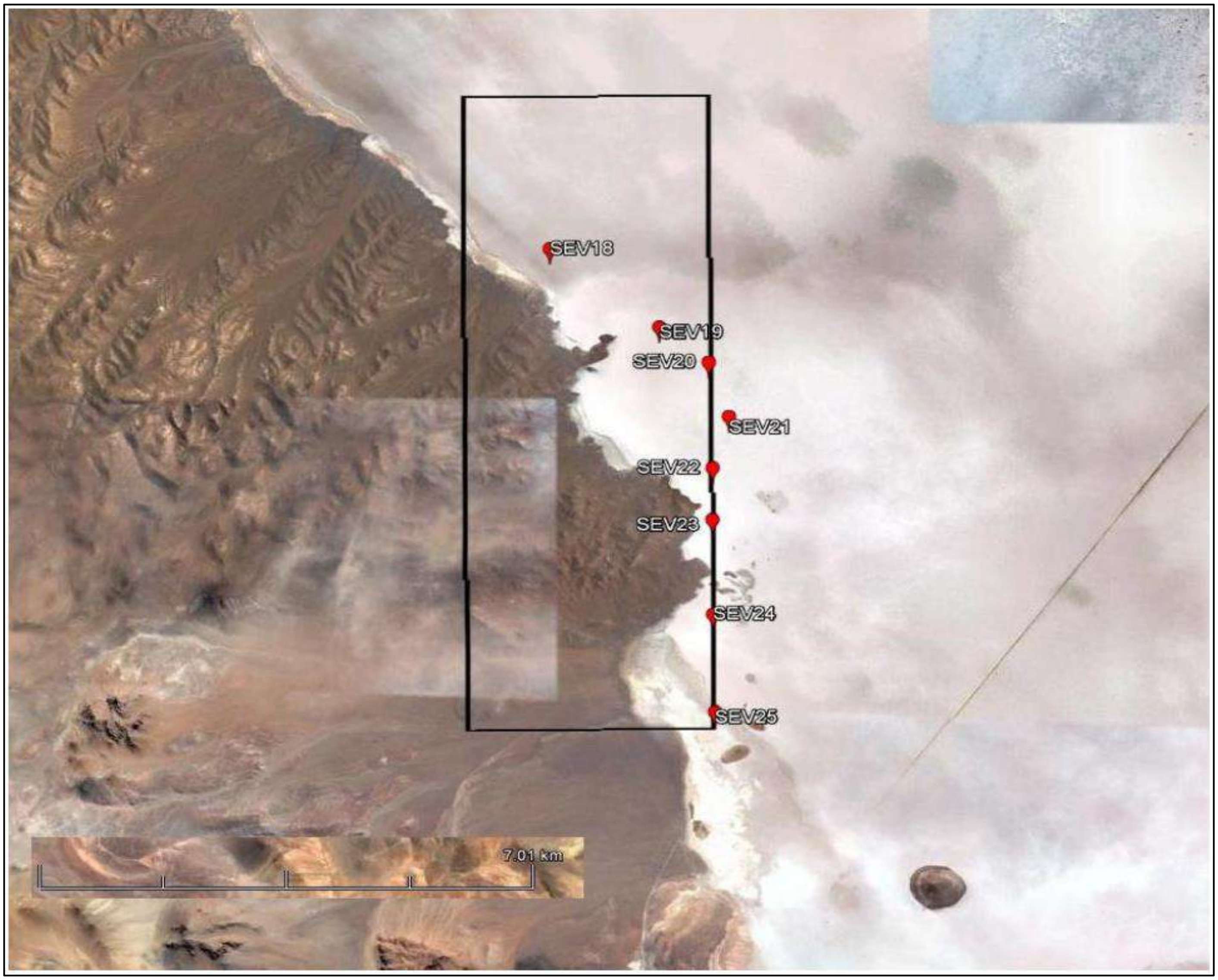
Figure 6-3: East – West VES Profile



Source: Conhidro, 2017.

Eight (8) VES points were measured in the southern part of the Salar (Figure 6-4).

Figure 6-4: VES Station Locations In The South Part of The Salar

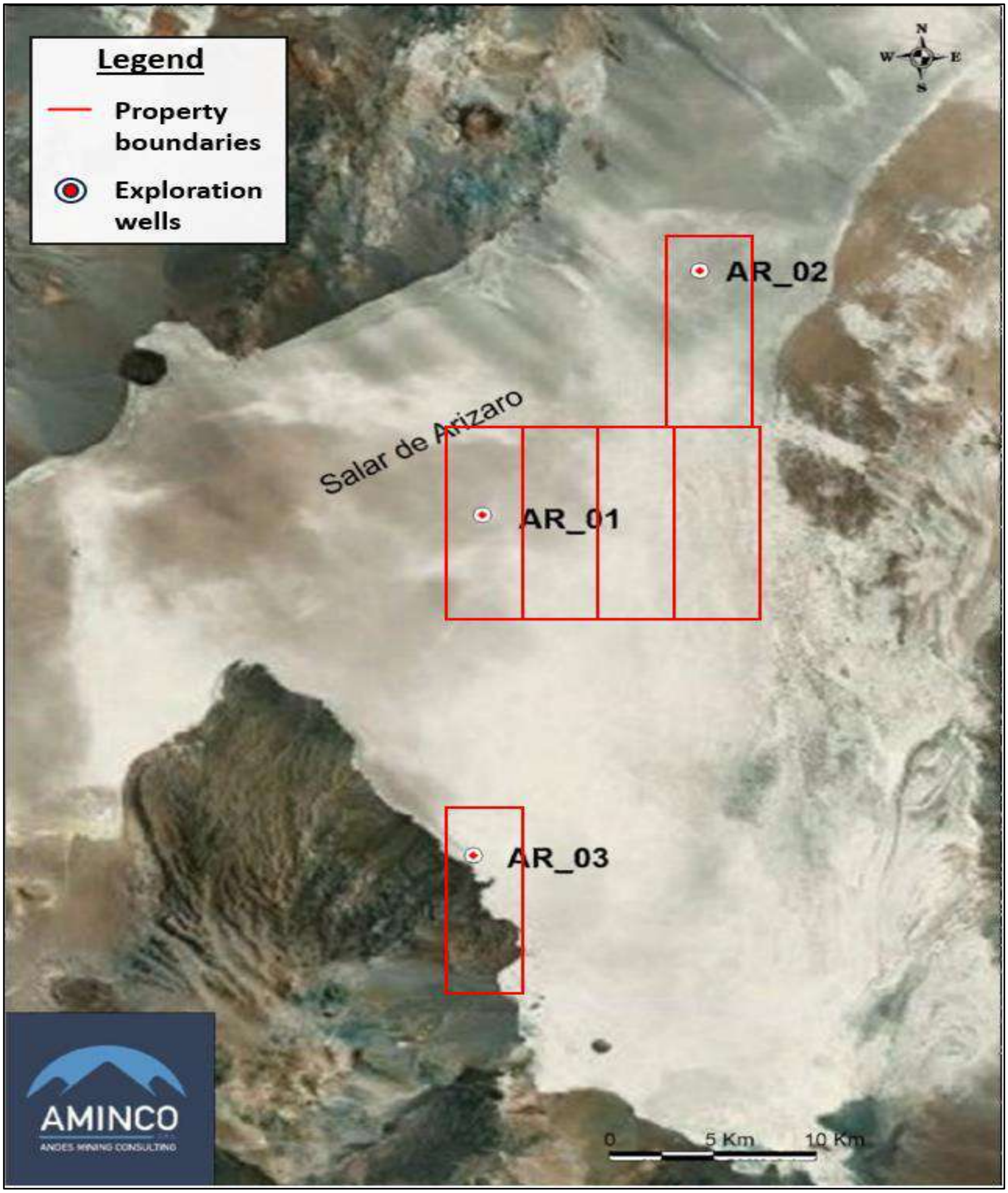


Source: Conhidro, 2017.

6.3 2017 Drilling and Testing Program

The 2017 exploration drilling and testing program was designed to obtain depth-specific brine samples using an inflatable packer system. Three wells were drilled using the Diamond Drill Hole (DDH) method, with total depths varying from 250.55 to 398 meters (Aminco, 2017b). Locations for the wells are given in Table 6-2 and shown on Figure 6-5.

Figure 6-5: Location Map for 2017 Exploration Wells



Source: Aminco, 2017b (property boundaries added by Ausenco, 2023).

Table 6-2: **Location Map for 2017 Exploration Wells**

ID	Coordinates[1]		Elevation (mamsl)[2]	Depth (m)[3]
	East	North		
AR-01	2,623,400	7,260,800	3,495	398.0
AR-02	2,633,050	7,273,350	3,495	298.4
AR-03	2,622,870	7,243,100	3,495	250.55

1: Coordinates in Posgar 94, Zone 2.
2: Elevation in meters above mean sea level.
3: Depth, in meters.

The following represents a brief summary of the equipment and methods utilized during construction of the well:

- Drilled using the DDH method, with HQ and NQ diameter, conventional circulation and with drilling fluid (polymer-based).
- Cores samples were obtained, 1.5 m in length, and described by Aminco's geologist.
- Eighteen (18) brine samples were obtained in well AR-01, 41 samples in well AR-02, and 15 samples in well AR-03. Not all samples appear to have been submitted for laboratory analysis. The laboratory results for lithium concentrations are shown in Table 6-3.
- Water levels were measured in each well; 0.9 m for well AR-01, 1.23 m for well AR-02, and 1.05 m for well AR-03.

Table 6-3: **Summary of Lithium Concentrations for Depth-Specific Samples at Exploration Wells AR-01 and AR-02**

Well ID	Sample ID	Date	Depth (mbls)	Li (mg/L)
AR-02	61251	26/10/2017	298	17
AR-02	61255	26/10/2017	205	50
AR-02	61259	26/10/2017	108	19
AR-02	61263	26/10/2017	76.3	230
AR-02	61266	26/10/2017	15.25	125
AR-01	61269	30/10/2017	368	26
AR-01	61273	30/10/2017	356	179
AR-01	61277	30/10/2017	326	204
AR-01	61281	30/10/2017	308	225
AR-01	61284	30/10/2017	238	236
AR-01	61287	30/10/2017	190	217

Because the results are not consistent in regard to increasing lithium concentrations with depth, and they are not consistent at similar depths or adjacent samples (for example, 179 mg/L at 356 m, and then dropping to 17 mg/L at 30 m below), the QP does not place a high degree of confidence in these results.

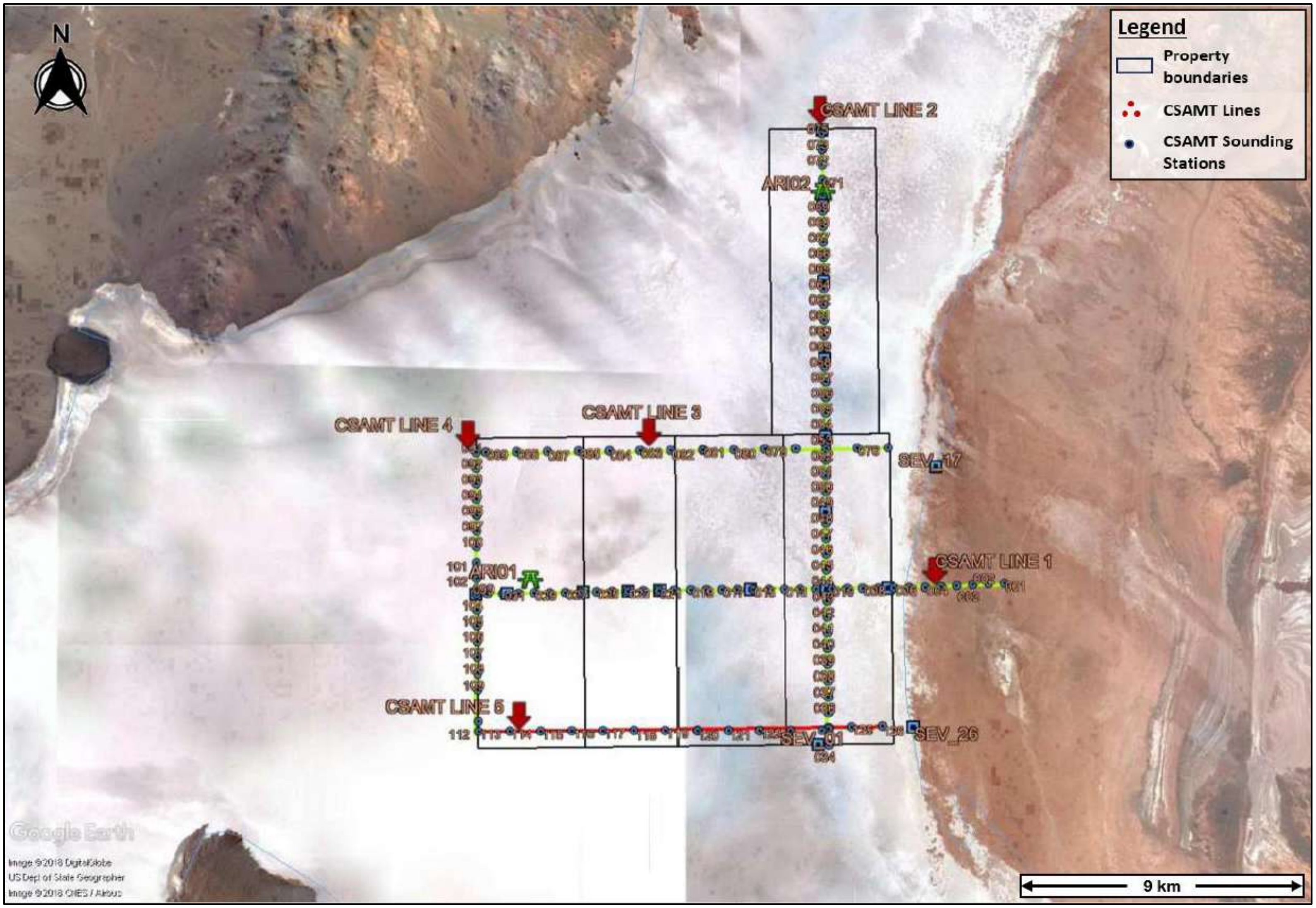
6.4 2018 CSAMT Exploration Survey

During the months of May and June 2018, at the request of Argentina Lithium, GEC – Geophysical Exploration & Consulting S.A (GEC, 2018) conducted a Controlled-Source Audio-frequency Magnetotelluric (CSAMT) exploration survey consisting of 122 stations. Station locations are shown on Figure 6-6.

The CSAMT technique is one of the most common methods for investigating shallow geological structures and subsoil conditions. This technique allows for the identification of brine bearing formations and geologic units. Five profiles were made; three in the E - W direction and two in the N-S direction (Figure 6-7 through Figure 6-11).

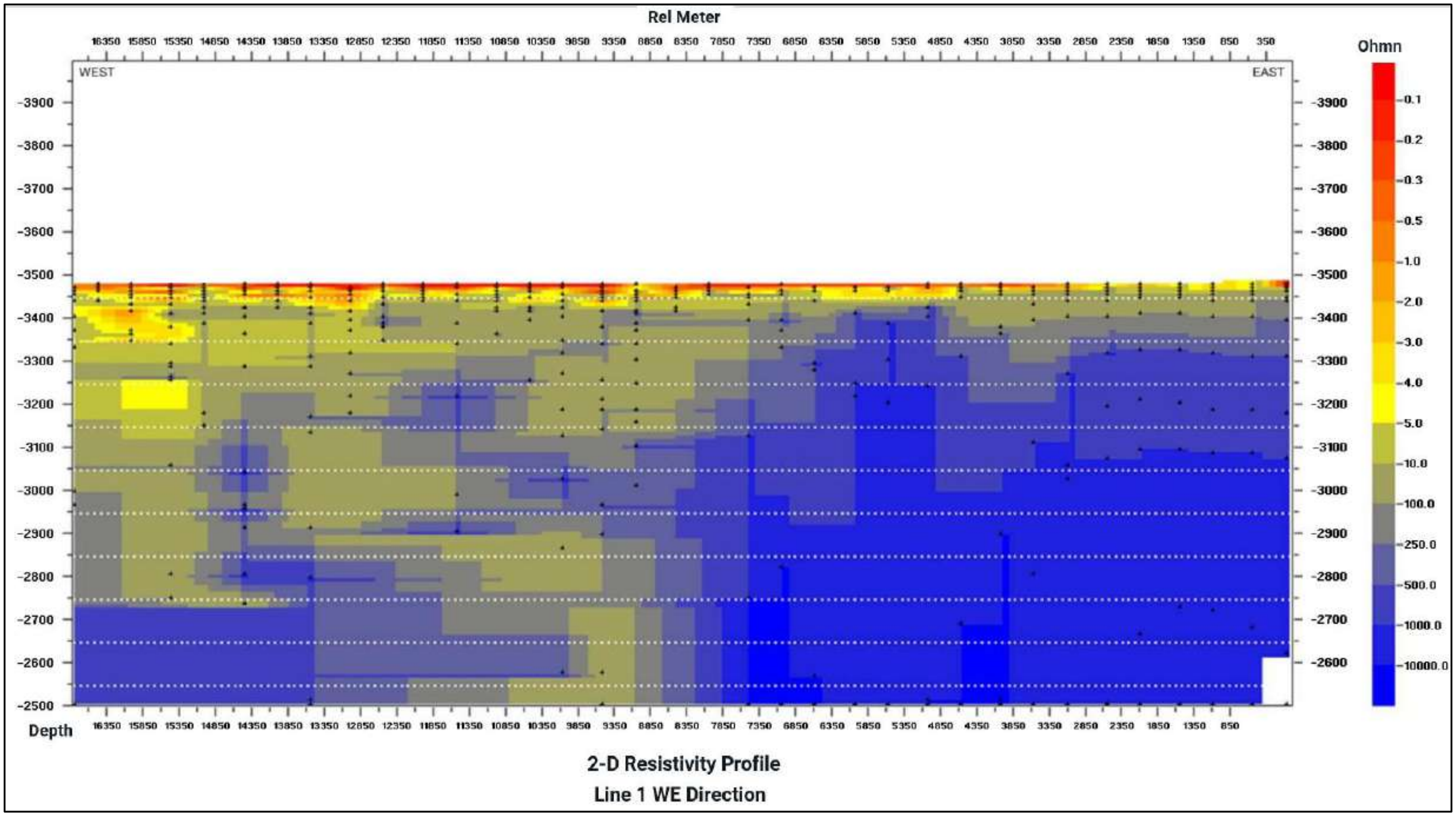
The results of the surveys indicate the presence of brine at depth and the presence of freshwater or unsaturated material in the upper part. Without additional exploration well information to help calibrate the results, most of the results are somewhat inconclusive.

Figure 6-6: CSAMT Grid and CSAMT Station Locations



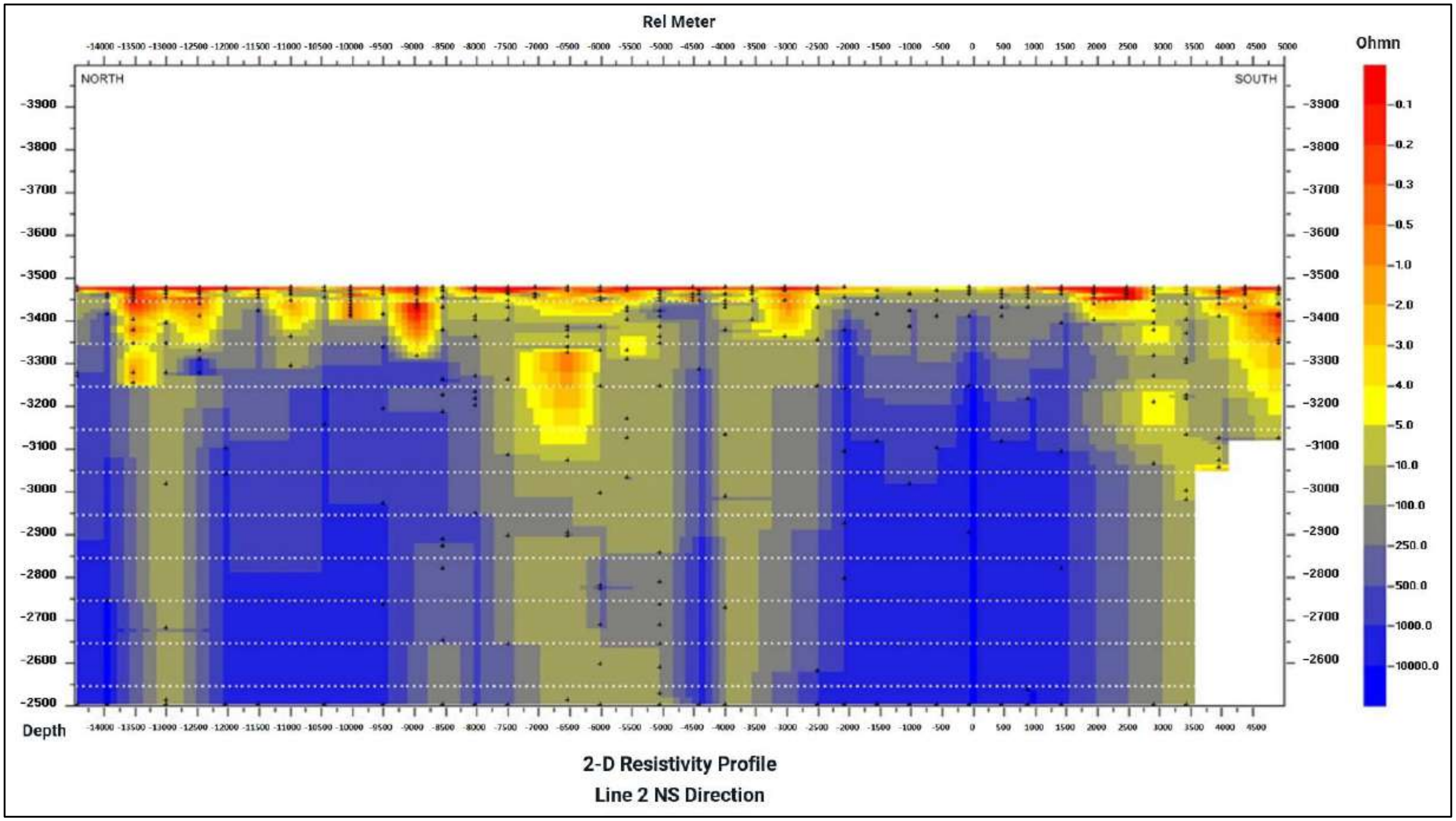
Source: GEC, 2018.

Figure 6-7: CSAMT Line 1. W – E Direction



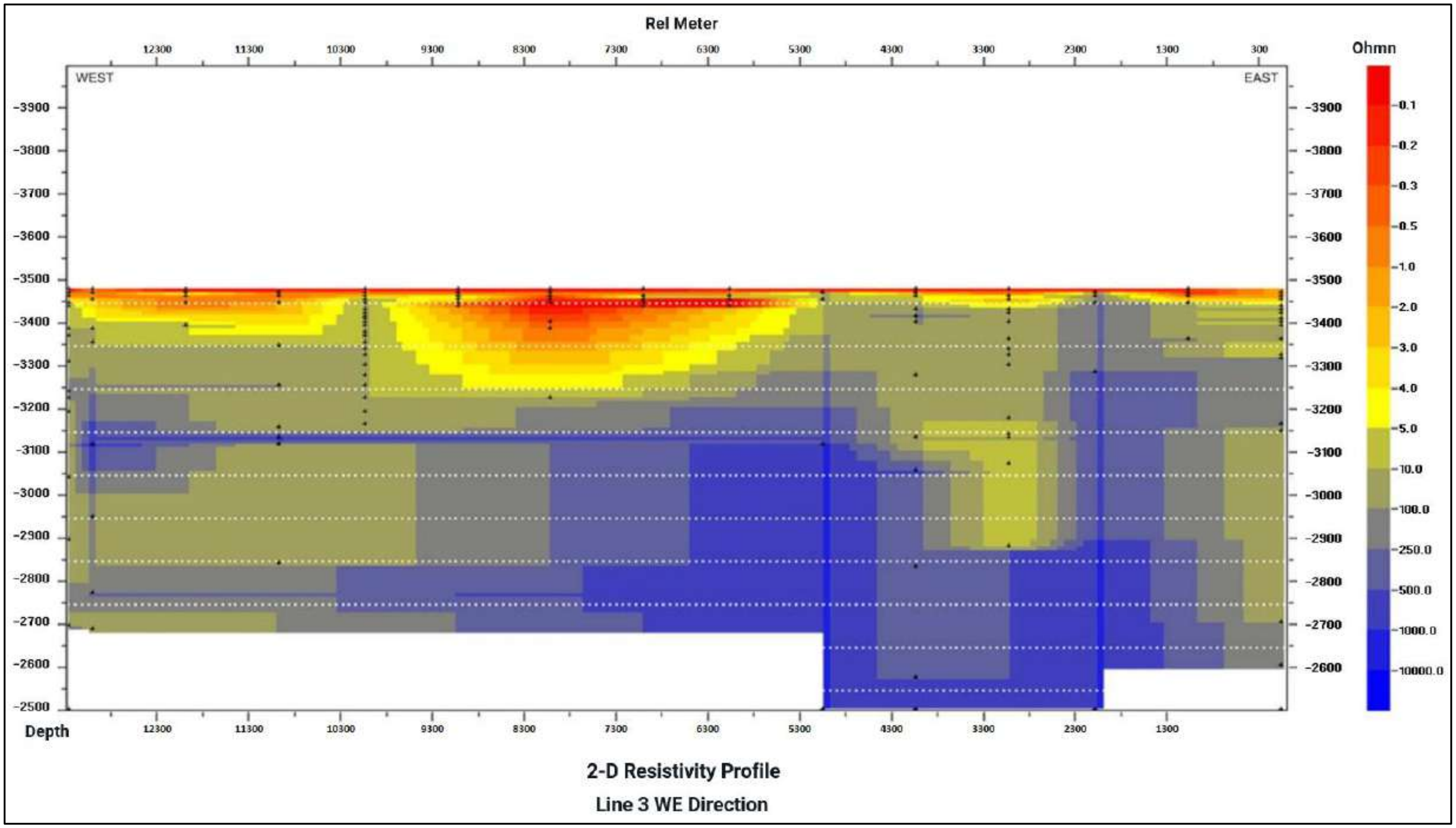
Source: GEC, 2018.
Note: Land surface at approximately 3,470 masl; vertical scale extends to approximately 2,500 masl.

Figure 6-8: CSAMT Line 2. N – S Direction



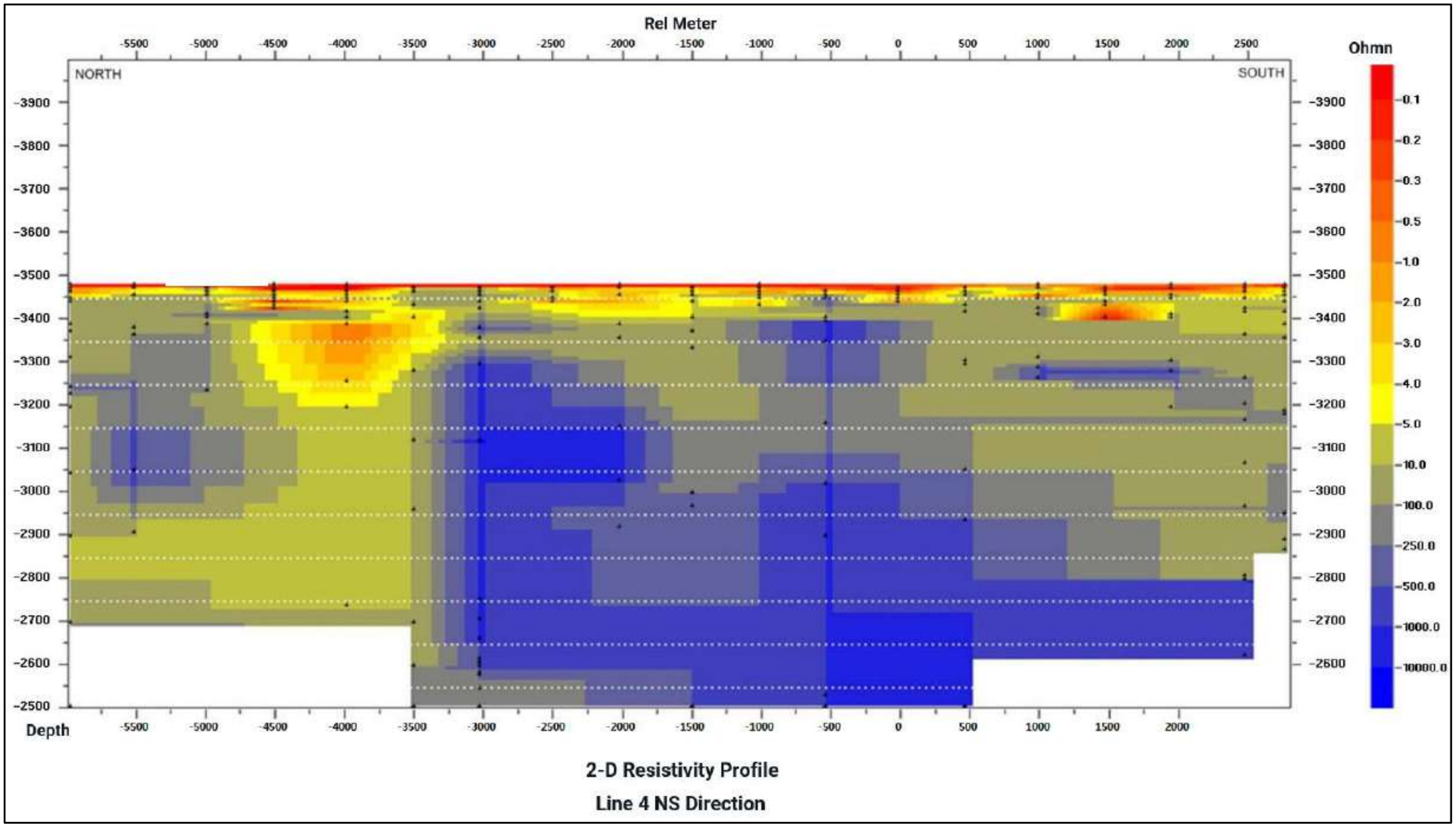
Source: GEC, 2018.
Note: Land surface at approximately 3470 masl; vertical scale extends to approximately 2500 masl.

Figure 6-9: CSAMT Line 3. W – E Direction



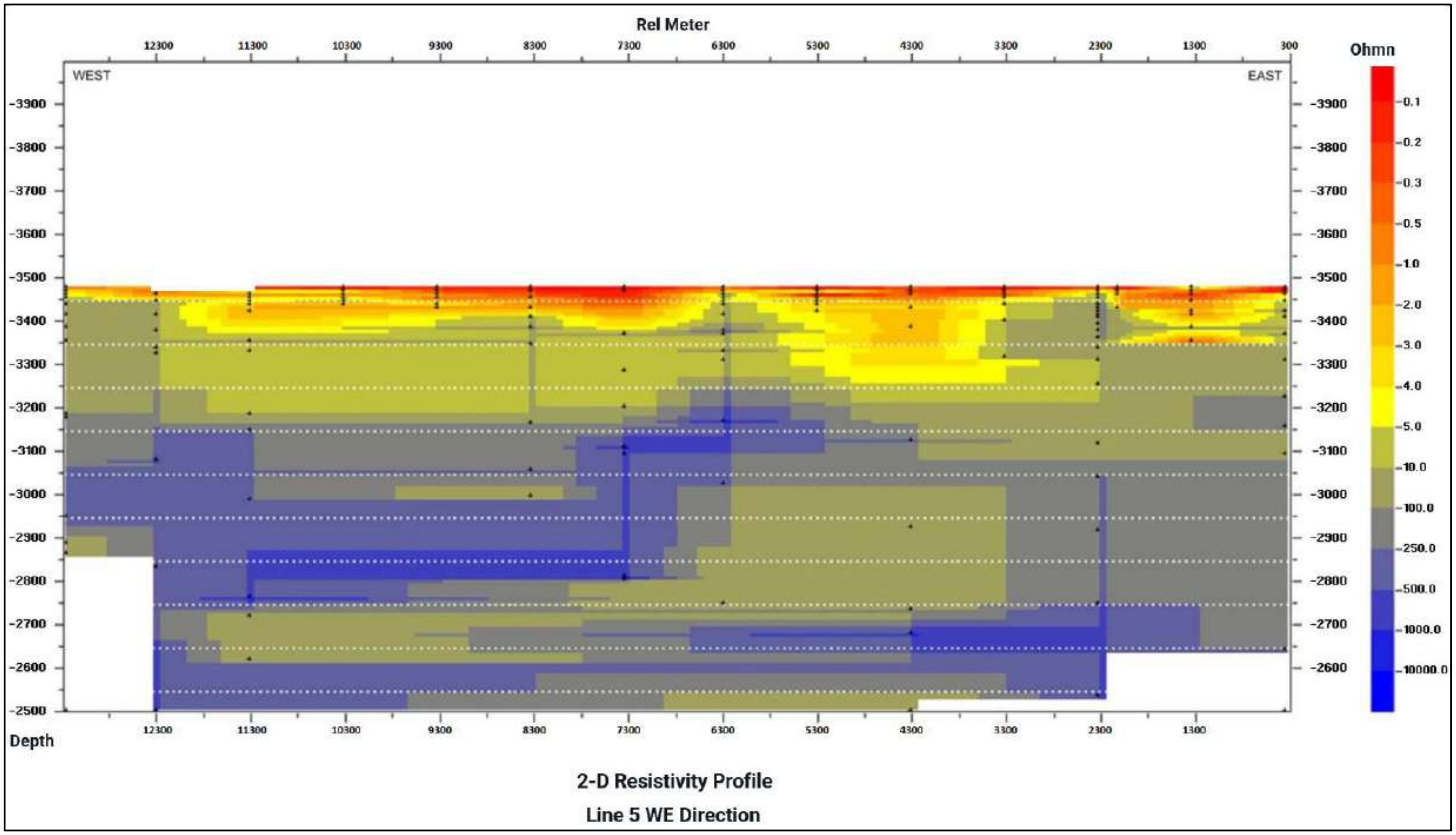
Source: GEC, 2018.
Note: land surface at approximately 3470 masl; vertical scale extends to approximately 2500 masl.

Figure 6-10: CSAMT Line 4. N – S Direction



Source: GEC, 2018.
Note: land surface at approximately 3470 masl; vertical scale extends to approximately 2500 masl.

Figure 6-11: CSAMT Line 5. W – E Direction



Source: GEC, 2018.
Note: land surface at approximately 3470 masl; vertical scale extends to approximately 2500 masl.

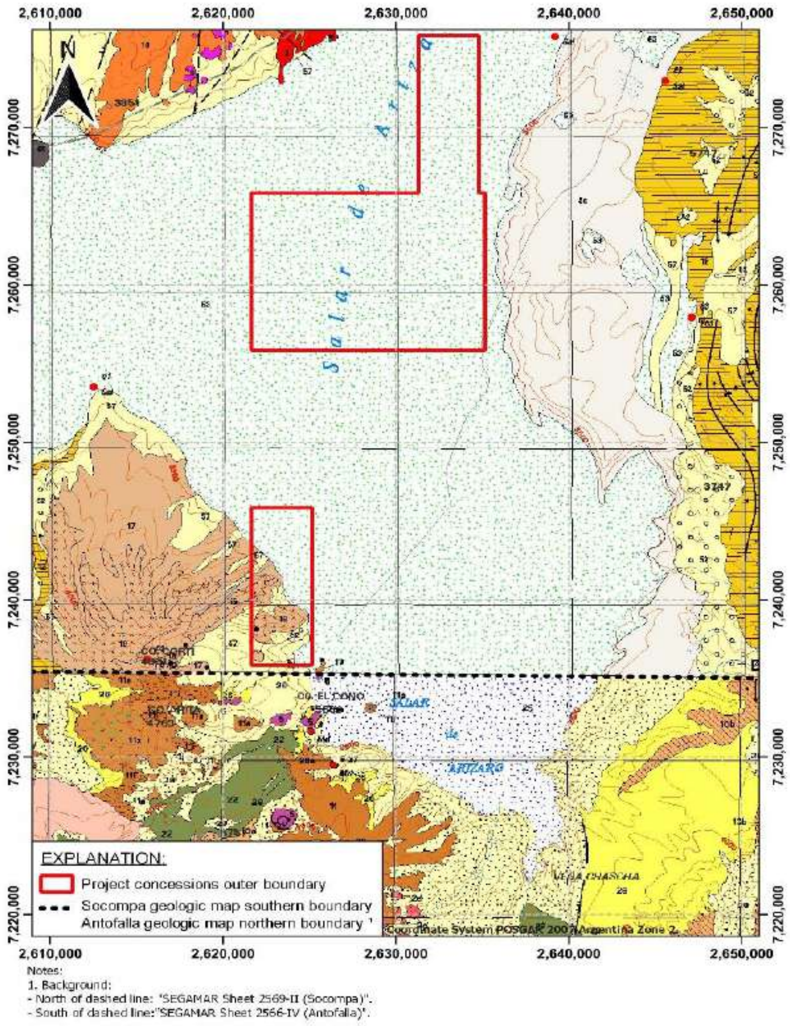
7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

The Salar de Arizaro is located in the Geological Province of La Puna (Turner, 1972) and within the Puna Austral Geological Sub-province (Alonso et al., 1984). One of the most important characteristics that define the Geological Province of Puna, is the presence of evaporitic basins, or "salars," where important deposits of borates, sodium sulfate, and lithium can concentrate. Salars near the Project area, not within the property boundaries, include Salar del Hombre Muerto, Antofalla, Ratones, Pocitos, Centenario, and Diablillos. The Arizaro Salar occupies one of these endorheic (internally drained) basins. Figure 7-1 shows the surface geology map for the area and associated stratigraphic explanations for the units.

The geology of the Project area (Figure 7-1) was described based on two sources: Segemar (2001) Sheet 2569-II (Socompa), and from Segemar (2007) Sheet 2569-IV (Antofalla).

Figure 7-1: Geological Map of The Project Area



Lithologic descriptions and symbology based on "SEGEMAR Sheet 2569-II (Socompa)"

NUMBER	DESCRIPTION	SYMBOLOGY
60	HOLOCENE, MONOGENIC ERUPTIVE CENTERS. Basalt.	60
57	HOLOCENE. DETRITICS, ALUVIAL, AND COLUVIAL DEPOSITS. Boulders, sands and clays.	57
56	HOLOCENE. SALAR BOUNDARY CLAY DEPOSITS. Red clays.	56
54	HOLOCENE. LANDSLIDE DEPOSITS. Fanglomerate.	54
53	HOLOCENE. EVAPORITIC DEPOSITS. Halites, borates, sufates with interbedded clays.	53
52	PLEISTOCENE. OLD PIEDMONT DEPOSITS. Medium to coarse fanglomerates.	52
19	OLIGOCENO-LOWER MIOCENE. CORI VOLCANIC COMPLEX. Andesites	19
17	OLIGOCENO-LOWER MIOCENE. CORI VOLCANIC COMPLEX. Tuffs and conglomerates.	17
12	OLIGOCENO-LOWER MIOCENE. SEDIMENTARY VIZCACHERA. Sandstones, volcanic sandstones, siltstones, pelites, tuffs, gypsums, halitas.	12
10	EOCENE. SANTA INÉS VOLCANIC COMPLEX. Dacites, ignimbrites, dacitic tuffs. 10a, Rhyodacidic and Rhyophysical dikes and porphyries	10
6	PERMIC LLULLAILLACO PLUTONIC COMPLEX. Granites and granitic porphyries.	6
3	UPPER ORDOVICIAN. TACA-TACA FORMATION. Granodiorite	3

Lithologic descriptions and symbology based on "SEGEMAR Sheet 2566-IV (Antofalla)"

NUMBER	DESCRIPTION	SYMBOLOGY
29	HOLOCENE. COLUVIAL DEPOSITS. Deposits of silt, sand and conglomerates with little transport, not connected, on slopes of hills and piedmont flats.	29
26	HOLOCENE. OLD TERRACE DEPOSITS	26
26a	HOLOCENE. TERRACE DEPOSITS WITH TRAVERTINES. Deposits with travertines. Very coarse conglomerates, polymictic, moderate consolidation. Around the formation of Arita is cemented by carbonates and travertines.	26a
25	HOLOCENE. EVAPORITIC DEPOSITS: Saline and chloride deposits and minor proportion of sulphates and borates.	25
22	PLEISTOCENE BASALTS. Olivines basalts with xenocryst of quartz and plagioclases located in lavaflows of small extensions produced by eruptions of monogenic volcanic apparatus and by eruptions through fissures.	22
11a	LOWER MIOCENE VOLCANICS. Deeply eroded volcanoes, porphyritic lavas, dykes and volcanic necks, participation of tuffs, agglomerates, ignimbrites and dacitic porphyries. It is included olivine basalts from Cerro Leon Muerto and located to the west of Cerro Plegado. 11a: Lower member: Complexes of Santa Ines, Cori and Cavi.	11a
11i	LOWER MIOCENE VOLCANICS. Deeply eroded volcanoes, porphyritic lavas, dykes and volcanic necks, participation of tuffs, agglomerates, ignimbrites and dacitic porphyries. It is included olivine basalts from Cerro Leon Muerto and located to the west of Cerro Plegado. 11i: Ignimbrites facies.	11i
10b	MID MIOCEN. VIZCACHERA FORMATION. 10b Upper member, Pelites, sandstones and red conglomerates with interlayers of gypsum. Pellites show biodisturbances and cracks from dehydration. Sandy banks show erosion at its base and asymmetric waves of water flow.	10b
10a	MID MIOCEN. VIZCACHERA FORMATION. 10a Lower member. Conglomerate sandstones and fine to medium conglomerates of reddish to grayish colors arranged in medium stratification.	10a
5	UPPER PALEOZOIC. LA TABLA FORMATION. Porphyries, breccias and dacitic lavas with abundant content of plagioclases phenocrysts, amphiboles and boitites, glassy matrix incruded by fine grain dacitic to andositic dykes.	5
2b	PALEOZOIC. GRANITE ANTOFALLA	2b

H:\projects\3546\48.Arizaro\01.GIS\QG_Arizaro_aux.qgz (Layout: Geologia Dic2022)

North Source: Segemar Sheet 2569-II (Socompa) - South Source: Segemar Sheet 2569-IV (Antofalla)
Note: Coordinates are presented in meters.

7.1.1 Northern Area

The northern area, which is surrounded by Holocene alluvial and colluvial deposits (Number 57 in stratigraphic description), is located over recent evaporitic deposits. The entire tenements are located over the Salar de Arizaro; toward the eastern side, they are surrounded by Holocene clay deposits or red clays (Number 56 in stratigraphic description). Older sediments in the northeastern area belong to the Oligocene-Lower Miocene Vizcachera Formation, consisting of sandstones, volcanic sandstones, pellites, tuffs, gypsum, and halites (Number 12 in stratigraphic description). Toward the northwest, older granodiorites belonging to the Upper Ordovician, Taca Taca Formation (Number 3 in the stratigraphic description), and dacites, ignimbrites, and dacitic tuffs belonging to Eocene Santa Ines Volcanic Complex (Number 10 in the stratigraphic description) form the boundary of the Salar. The central mining concessions are located over recent evaporitic deposits.

According to bibliography extracted from the Socompa geologic map, a summary of the local geologic units that outcrop in the northern area is described as follows:

Number 01: Lower Ordovician; sediments and volcanics, sandstones, shellstone, and metabasalts.

Number 03: Upper Ordovician, Taca-Taca Formation; granodioritic intrusive rocks.

Number 06: Permian Llullaillaico Plutonic Complex; granites, and granitic porphyries.

Number 10: Eocene Santa Ines Volcanic Complex; dacites, ignimbrites, dacitic tuffs.

Number 12: Oligocene-Lower Miocene Vizcachera Formation; sedimentary rocks, sandstone and volcanic sandstones, siltstones and pelites, tuffs, gypsum, and halite.

Number 17-19: Oligocene- Lower Miocene, Cori Volcanic Complex; tuffs and conglomerates (17) and andesites (19).

Number 52: Pleistocene deposits; piedmont sediments, or alluvium fans, and fanglomerates.

Number 53: Holocene evaporite deposits; halites, borates, sulfates, with interbedded clay.

Number 57: Holocene clastic deposits; alluvium and colluvium deposits, landslides, sand, and clay.

Number 56: Holocene clay deposits; reddish clay sediments common at salar borders.

Number 60: Holocene volcanic eruption centers; basaltic lavas.

7.1.2 Southern Area

In the southern area corresponding to Segemar Sheet 2569-IV (Antofalla), Holocene colluvial deposits and conglomerates (Number 29 in the stratigraphic description) occur. Toward the south, the area is bounded by Pleistocene basalts (Number 22 in the stratigraphic description). Toward the east, outcrops of Holocene terrace deposits are found (Number 26-26a in the stratigraphic description). According to bibliography extracted from Antofalla geologic map, a summary of the local geologic units that crop out in the southern area is described as follows:

Number 2a: Paleozoic Archibarca Granite.

Number 2b: Paleozoic Antofalla Granite.

Number 2d: Paleozoic Cerro Plegado Granite; granites and granodiorites cut by pegmatite and aplite veins and dikes.

Number 5: Upper Paleozoic La Tabla Formation; porphyries, breccias and dacitic lavas.

Number 8: Upper Jurassic sediments and volcanics; eolian sandstones and limestones interlayered with basaltic lavas.

Number 10b: Mid-Miocene upper member of the Vizcachera Formation; mudstones, sandstones, and red conglomerates with interlayers of gypsum.

Number 11-11a: Lower Miocene volcanics; Deeply eroded volcanoes, porphyritic lavas, dikes, tuffs, agglomerates, ignimbrites, and dacitic porphyries. It also includes basalts from Cerro Leon Muerto. Lower member 11a; Santa Ines, Cori and Cavi complexes.

Number 13b: Upper Miocene Sijes Formation; medium to fine sandstones and conglomerates.

Number 22: Pleistocene basalts; olivine basalts.

Number 25: Holocene evaporite deposits.

Number 26-26a: Holocene terrace deposits; travertine and coarse conglomerates.

Number 27: Upper Holocene alluvium; unconsolidated deposits of silt, sand, and gravel, associated with alluvial fans, rivers, and valleys.

Number 29: Holocene colluvial deposits; mostly unconsolidated silt, sand, and gravel.

7.2 Property Geology

The local geology of Lithium Chile's mine concessions is constituted by surface evaporates, namely halite, which are roughly 200 to 500 m thick from southwest to northeast, respectively. Where secondary porosity is not present, the halite is massive and exhibits a low drainable porosity, however the southernmost area of the Project concessions presents highly fractured halite based on core samples obtained from diamond drillholes. Unconsolidated clastic sediments underlie the halite unit and are characterized by silt to sand grain sizes with trace amounts of evaporites, generally with a higher drainable porosity than the overlying halite. In localized areas, clay lenses were found in addition to unconsolidated gravel mixed with the fine to medium sized sediments. At the greatest depths of drilling (roughly 500 to 600 m), the medium-coarse grained sized clastic sediments encountered on the southwestern portion of the concessions grade to a clay which can be characterized by a low drainable porosity. Crystalline or highly consolidated basement rock has not been reached by drilling to date and has only been inferred from the conducted geophysics.

7.2.1 Hydrogeological Sections

Using information from the surface geology map, results from exploration drilling, and geophysical interpretations, hydrogeological sections have been prepared for the immediate area of the Project. Figure 7-2 shows a base map with the locations of the sections. Hydrogeological sections are shown in Figure 7-3 through Figure 7-6.

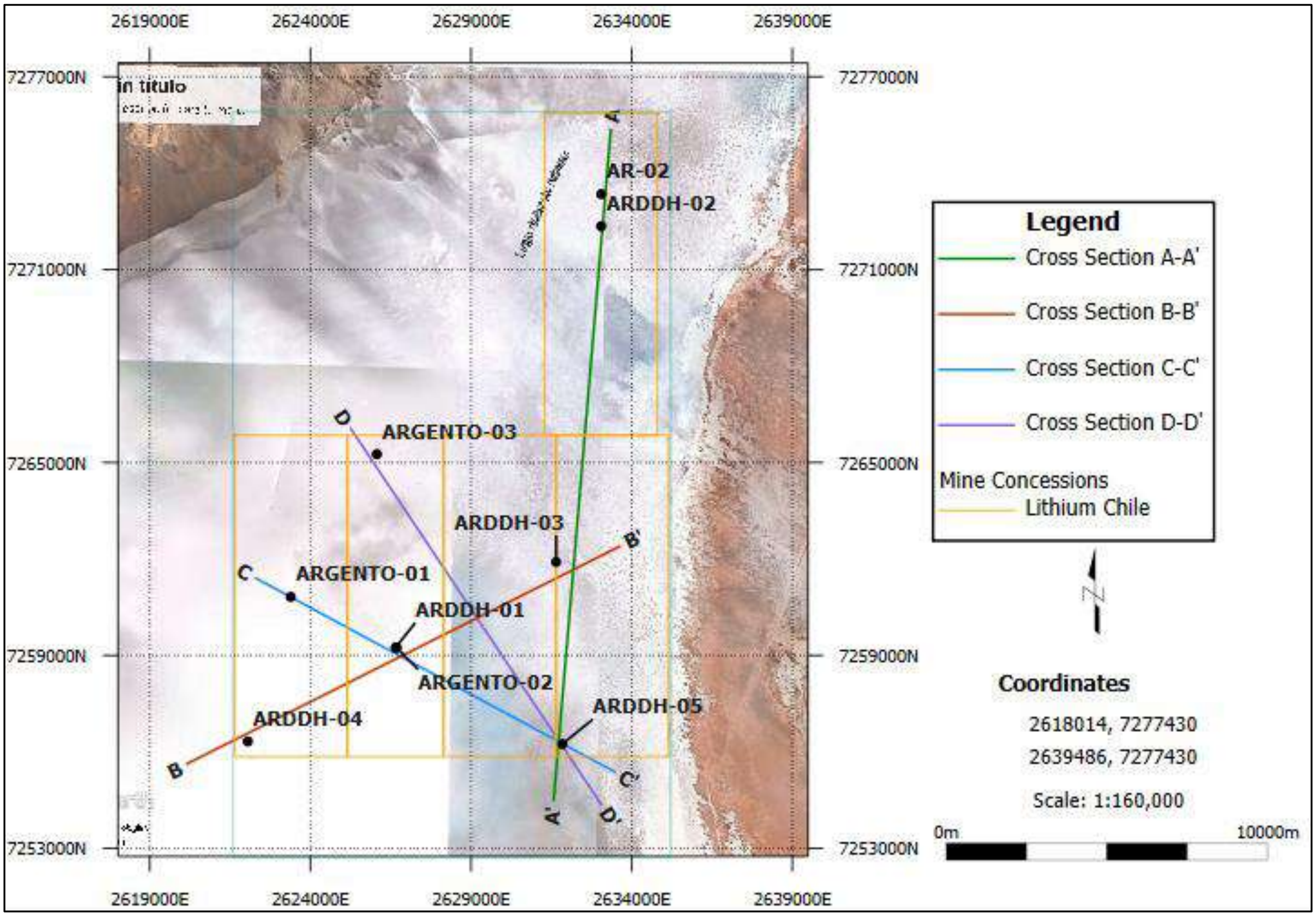
Figure 7-3 shows the relatively consistent thickness of halite that occurs in the east part of the concession area. Only in the southwest part of the concession, clastic sediments were encountered at depth. Source: Montgomery, 2023.

Note: all unit breaks are approximate and uncertain.

Figure 7-4 and Figure 7-5 show the increasing thickness of halite from west to east. Hydrogeological section D-D' (Figure 7-6) also shows a slight thickening of the halite to the east, but it is less pronounced because exploration well Argento-03 has a fairly large halite thickness. Overall, the potential for pumping large amounts of lithium brine in the northern and eastern parts of the concessions appears to be low based on the large thicknesses of halite encountered in these areas.

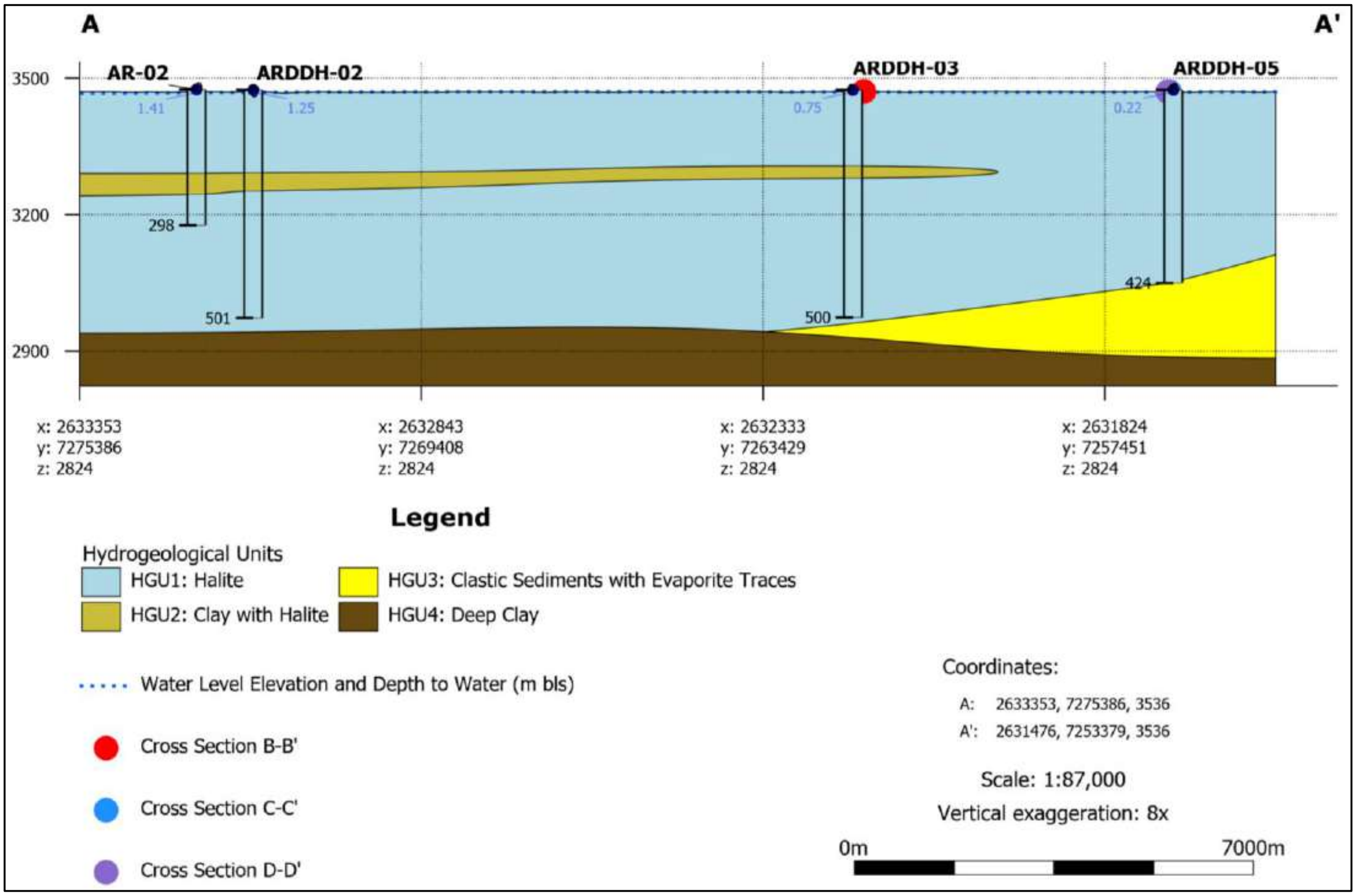
Figure 7-5 includes exploration borehole ARDDH-01 that penetrated the deeper clay unit below the clastics that underlie the halite. The deeper clay unit was penetrated by Argento-03 (Figure 7-6), but in the northern part of the concession the clastic zone is apparently missing. It is interpreted that this unit continues laterally, however it is unknown. The clastic sediments underlying the halite consistently occur in the exploration holes drilled in the southern half of the concessions.

Figure 7-2: Map Showing Locations of The Hydrogeological Sections



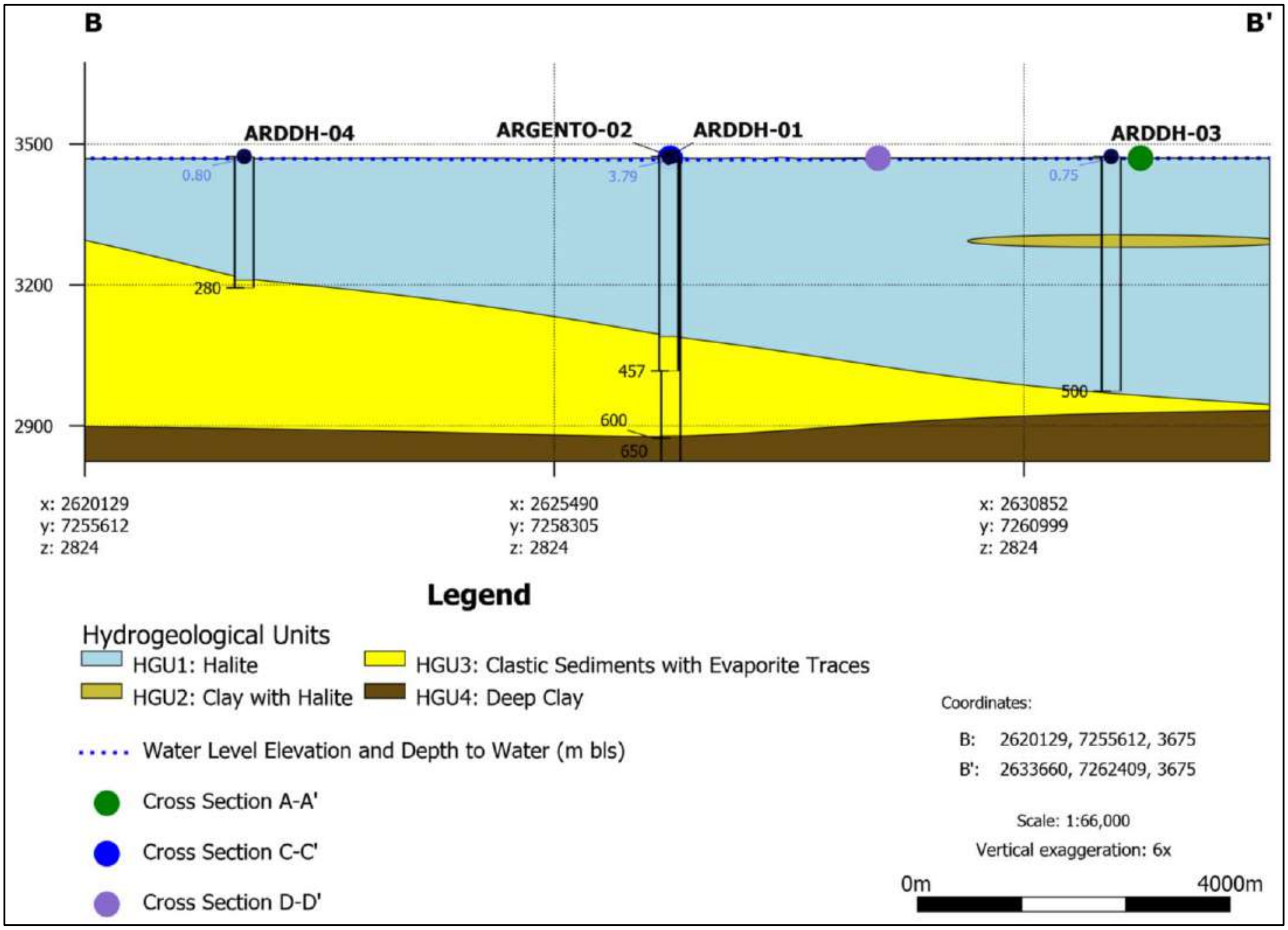
Source: Montgomery, 2023.
Note: all unit breaks are approximate and uncertain.

Figure 7-3: North-South Hydrogeological Section A”-A



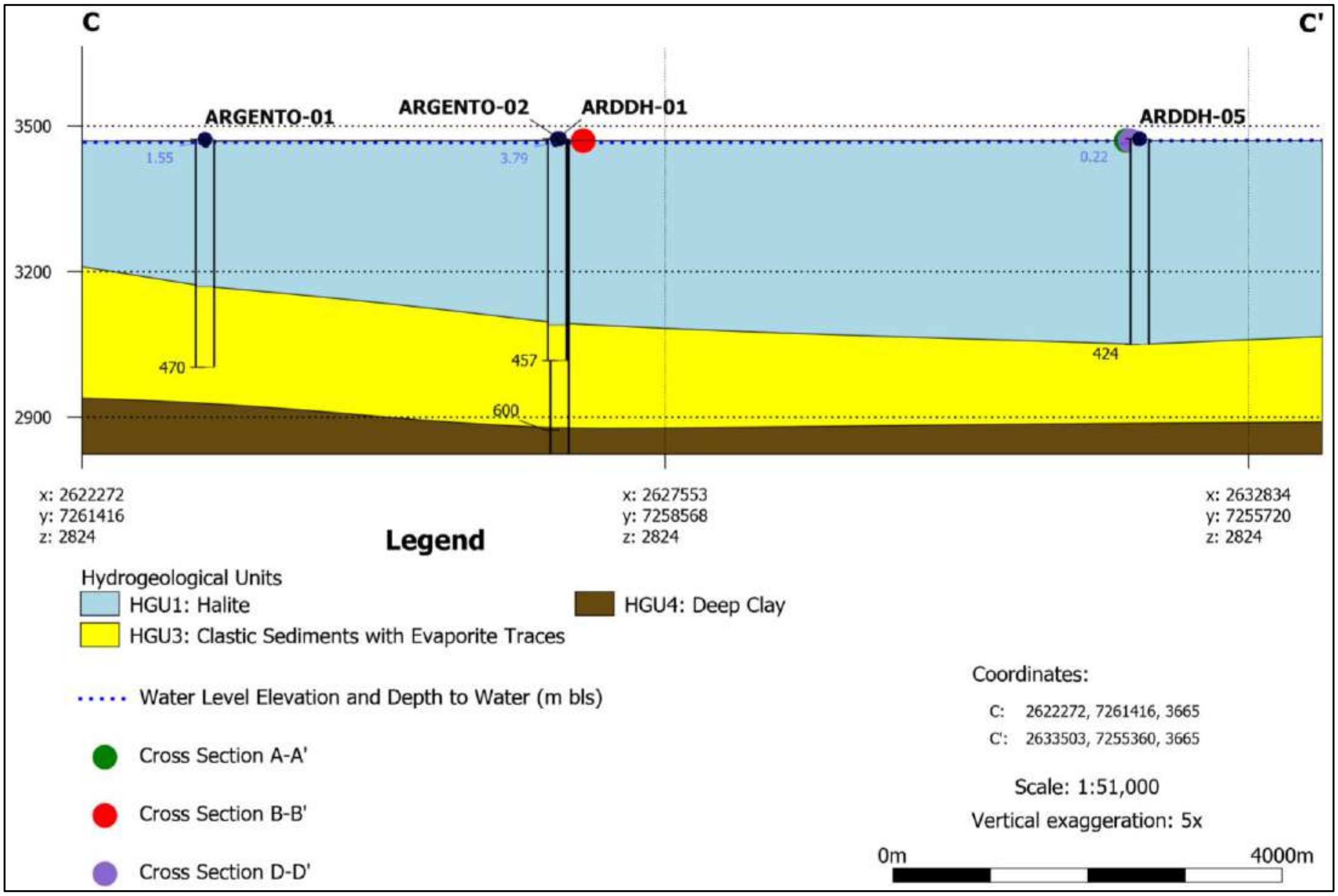
Source: Montgomery, 2023.
Note: all unit breaks are approximate and uncertain.

Figure 7-4: Southwest-Northeast Hydrogeological Section B-B"



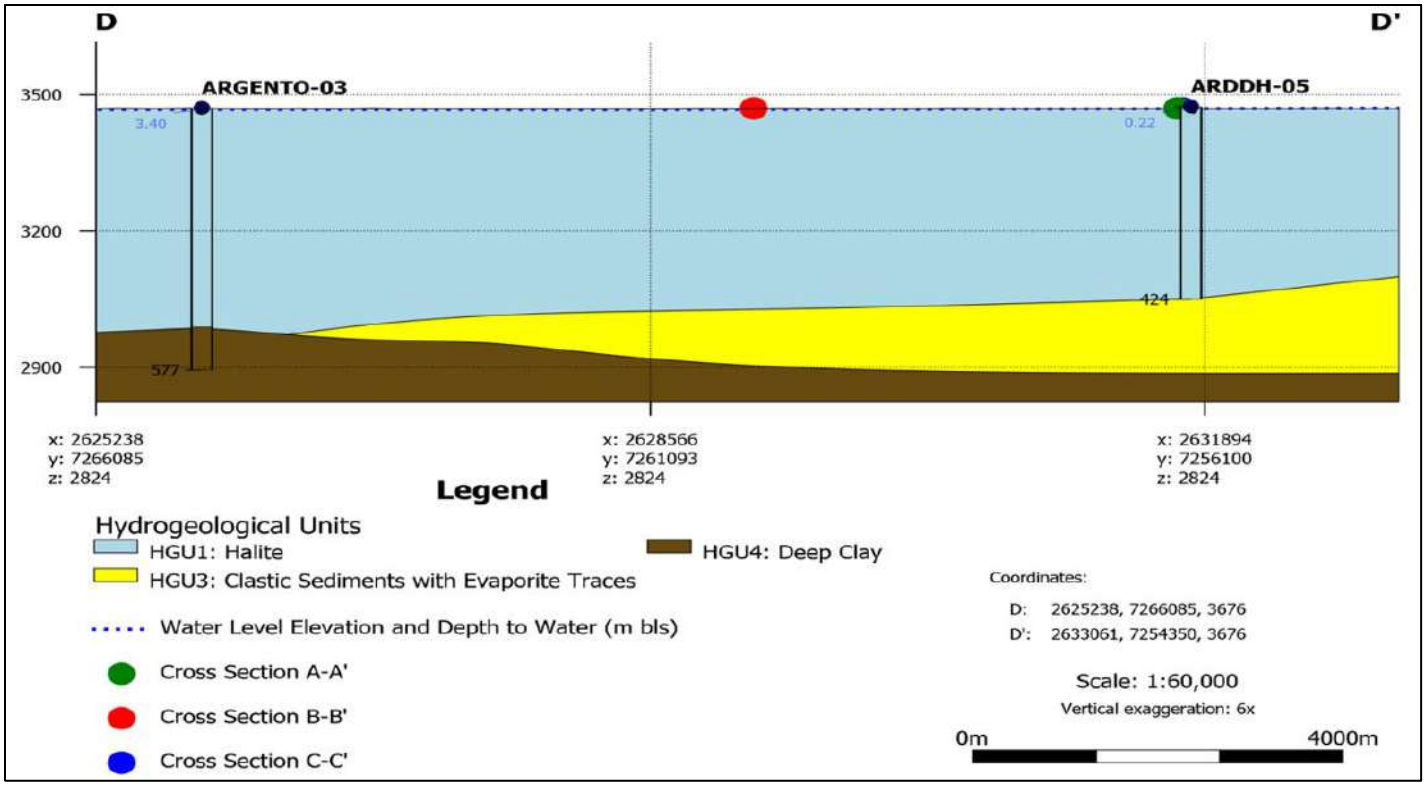
Source: Montgomery, 2023.
Note: all unit breaks are approximate and uncertain.

Figure 7-5: Northwest-Southeast Hydrogeological Section C-C’



Source: Montgomery, 2023.
Note: all unit breaks are approximate and uncertain

Figure 7-6: Northwest-Southeast Hydrogeological Section D-D’



Source: Montgomery, 2023.
Note: all unit breaks are approximate and uncertain

7.3 Mineralization

The mineralization for the project consists of a lithium-enriched brine, generally below 190 m bls, that is contained within the pore spaces of the basin-fill sedimentary strata in the salar basin. Also, with this deep brine, boron and potassium enrichment may be considered as having future potential for economic extraction. The mineralization of the brine has occurred over a long period of time via evapo-concentration in the Salar, and the near surface portion is believed to be diluted by precipitation and freshwater recharge. Laterally, the brine is continuous throughout the mine concessions given the depositional environment and topographical low point where evapo-concentration occurs.

Based on the exploration to date within the Project concessions, the aquifer system is a lithium-enriched brine with generally consistent grades that are higher at depth. Approximate average lithium concentration in undiluted brine below 190 m ranges from about 200 – 360 mg/L, with elevated values in the southeast portion of the property below 110 m bls (exceeding 500 mg/L with depth).

The boundaries of the mineralization are suspected to be the basin hard rock, fault-bounded boundaries, although some lithium-enriched brine may be contained in the fractures and/or pores of the rocks that form the basin boundary. Aside from lithium, the distribution and chemical composition of the brine in the entire salar sediments is not currently known, even though this type of information exists for the Lithium Chile concessions.

8 DEPOSIT TYPES

The deposit type corresponds to a brine aquifer within a salar basin.

8.1 Conceptual Model of Salar Basins

The conceptual model for salar basins, and associated brine aquifer, is based on exploration and studies of similar salar basins in Chile, Argentina, and Bolivia, as well as on information from the recent exploration drilling and testing. Salar basin locations and basin depths are typically structurally controlled but may be influenced by volcanism that may alter drainage patterns. Basin-fill deposits within salar basins typically contain bedded evaporite deposits, together with thin to thickly bedded low-permeability lacustrine clays. Coarser-grained, higher permeability deposits associated with active alluvial fans can typically be observed along the edges of the salar. Similar alluvial fan deposits, associated with ancient drainages, may occur buried in the basin-fill deposits.

Salar basins are characterized by closed topography and internal drainage. Typically, no significant amount of groundwater discharges from these basins as underflow. Effectively, all groundwater discharge that occurs in the basin is via evapotranspiration. All surface water that flows into the basin is either evaporated directly or enters the groundwater circulation system and is evaporated at a later time. Water levels tend to be relatively shallow in the flat part of the Salar.

8.2 Conceptual Model of The Salar de Arizaro

Based on the available information, Salar de Arizaro is a mature salar, and one of the larger salars in the Argentinean altiplano. A thick halite core exists in the basin with underlying clastic sediments, forming the basis for the planned exploration program. Basin margins are interpreted to be fault controlled. The principal sources of water entering the project area are from surface water coming into the basin from the basin margins. To date, surface water flow has not been formally measured. Some groundwater inflow from natural recharge along the mountain fronts via alluvial fans is also believed to exist. In both cases, there appears to be limited mixing of the freshwater and brine in the basin due to density differences, although the mixing is believed to be more pronounced in the shallowest portion of the aquifer. As such, the freshwater entering the Project tends to stay in the upper part of the aquifer system on the edges of the basin, without moving to the central deep portion of the salar. These freshwater discharge areas tend to support altiplanic vegetation, especially along the margin.

9 EXPLORATION

9.1 2019 Resampling

On May 3, 2019, NORLAB (2019a) conducted a resampling of previously drilled well AR-01 (Aminco 2017b). This work was requested by Lithium Chile (Issuer) prior to final purchase of the majority stake in the project from Argentina Lithium. NORLAB reported taking three samples from well AR-01; document control was maintained by Carlos Galli of NORLAB, which is a laboratory independent of the Issuer. These three samples were analyzed for common constituents. Field measurements are given in Table 9-1.

Table 9-1: Field Measurements for Samples AR19-003, -004, and -005

Sample ID	pH	Temperature (°C)	Density (g/cm³)	Date and hour
Ar19-003	5-6	16°	1.225	3/05/19 12:53
Ar19-004	4-5	16°	1.225	3/05/19 17:14
Ar19-005	4-5	16°	1.225	3/05/19 17:20

Reported lithium concentration ranged from 864 to 871 mg/L.

Later in May 2019, NORLAB (2019b) returned to take additional near-surface samples. Field measurements for these samples are given in Table 9-2.

Table 9-2: Field Measurements for Samples AR19-006, -007, -008, and -009

Sample ID	pH	Temperature (°C)	Density (g/cm³)	Date and hour
Ar19-006	5-6	12,5°	1.220	23/05/19 15:53
Ar19-007	4-5	12°	1.225	23/05/19 17:00
Ar19-008	4-5	10°	1.225	24/05/19 8:20
Ar19-009	4-5	9°	1.225	24/05/19 9:48

Reported lithium concentrations ranged from 778 to 868 mg/L.

Although these two sampling programs have similar results and appear to confirm the reported results, the QP is not convinced that these samples are representative of the aquifer because all other samples obtained from AR-01 were all less than 300 mg/L. The large lithium concentrations may be the result of near-surface evapoconcentration. Therefore, these values were not considered in the resource estimate.

9.2 Passive Seismic Survey

Argentum Lithium SA contracted Geoservicios to conduct a passive seismic survey in part of the Arizaro Salar during the period from December 01 through December 09, 2022 (Geoservicios, 2022). Passive seismic tomography is a geophysical technique that measures the propagation of seismic waves inside the Earth to infer a velocity model and interpret existing internal properties and/or anomalies. These velocity contrasts may correspond to lithological differences. The average maximum depth of these investigations is 400 meters, but they can reach a maximum of 1,000 meters if detailed data processing is achieved (Geoservicios, 2022).

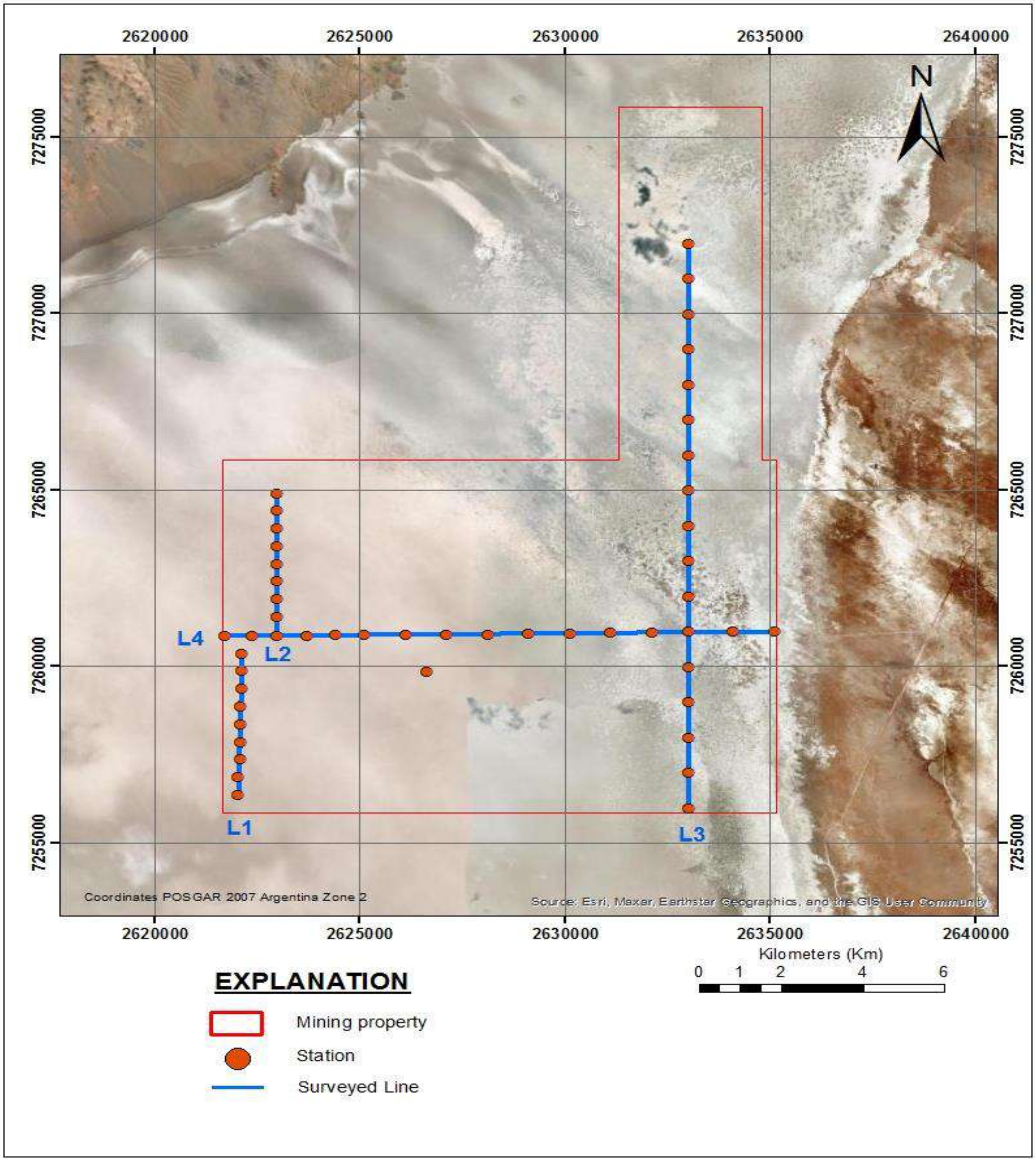
The objective of the passive seismic survey was to characterize and identify geophysical indicators of resources below the surface and also estimate the depth of the basement (Geoservicios, 2022). The horizontal-to-vertical spectral ratio (HVSR) method was used. This method allows for the characterization and zonation of the subsoil using the frequency differences that are related to the various lithologies present in a geological environment.

The survey included data acquisition along three north-south and one east-west trending lines for a total of 50 stations (Figure 9-1). A location map showing the passive seismicity survey sites and transects is shown in Figure 9-1. The distance between each measurement station varies between 500 and 1000 meters. To analyze the data, an S-wave velocity inversion model (Vs) and a depth projection model of HVSR curves were performed. The results are visualized in velocity profiles of S waves (Vs) of variable depth and moderate resolution (Figure 9-2 to Figure 9-5; Geoservicios, 2022). Interpreted results of the survey are shown on Figure 9-2 through Figure 9-5.

Inspection of the transect line sections indicates that at shallow levels, less than 100 meters, low Vs values are related to the presence of a relatively porous halite, with interbedded sand and silt, or a greater abundance or fine sediments (silt, clay).

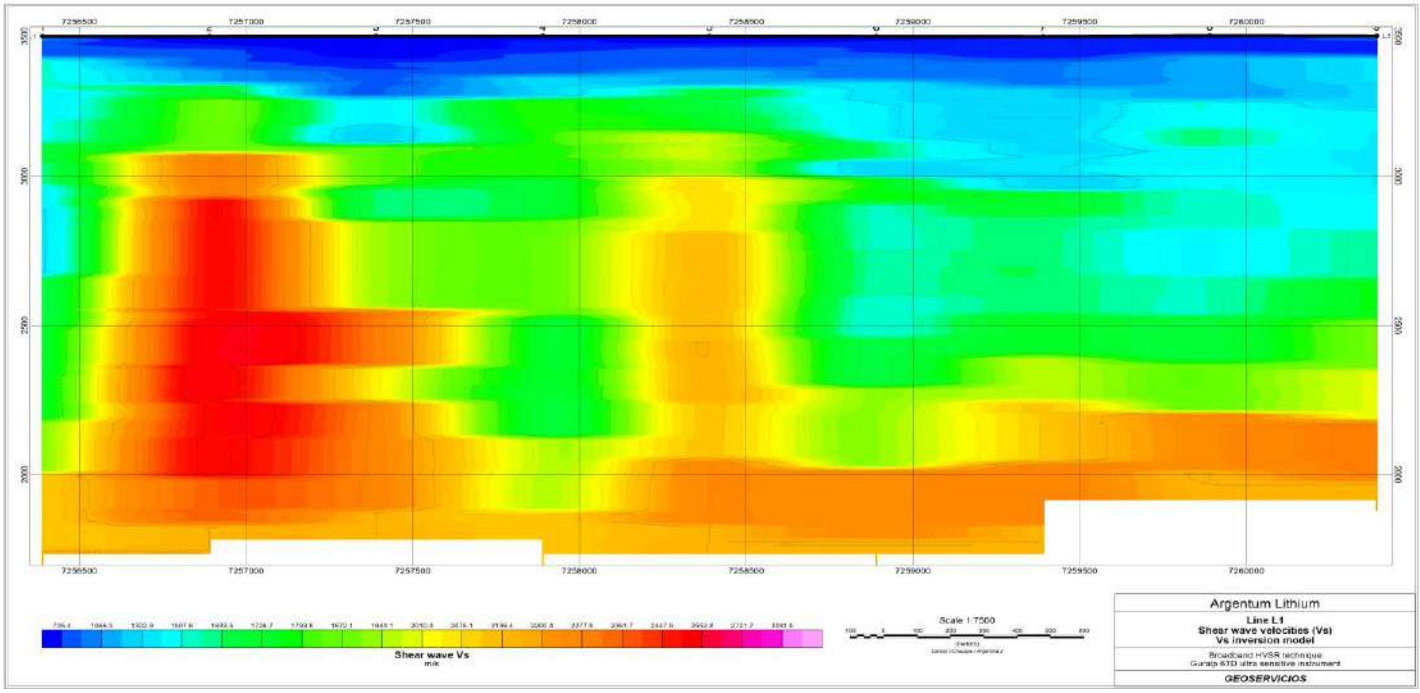
The velocities in profiles 1 and 2 (Figure 9-2 and Figure 9-3) are generally in the range of 1,500 to 2,500 m/s, which corresponds to halite with different degrees of compaction and porosity, interbedded sediments, and saturated conditions. Higher velocity values, as observed in transect 3 (Figure 9-4), could be associated with less permeable basement rock and are found at depths of approximately 1,000 meters (Geoservicios, 2022).

Figure 9-1: Location Map of Passive Seismic Stations and Survey



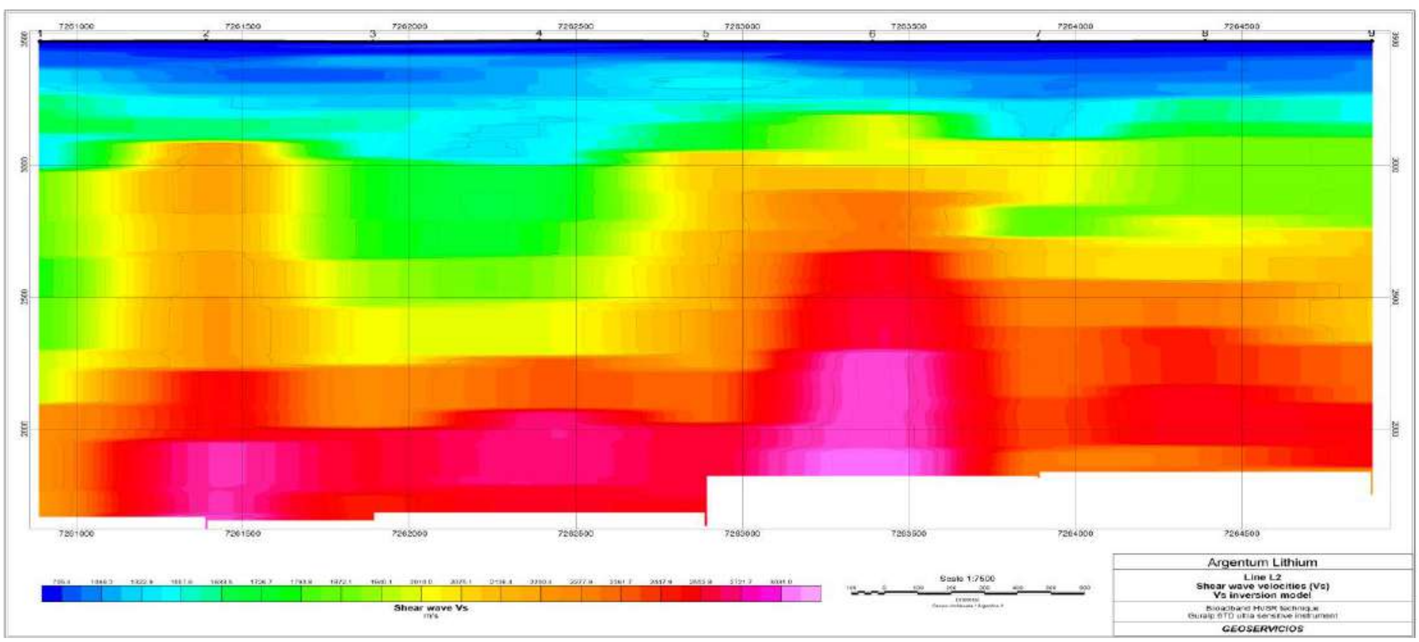
Source: Geoservicios, 2022.

Figure 9-2: Transect Line 1 of Shear Wave Velocities (Vs) Inversion Model



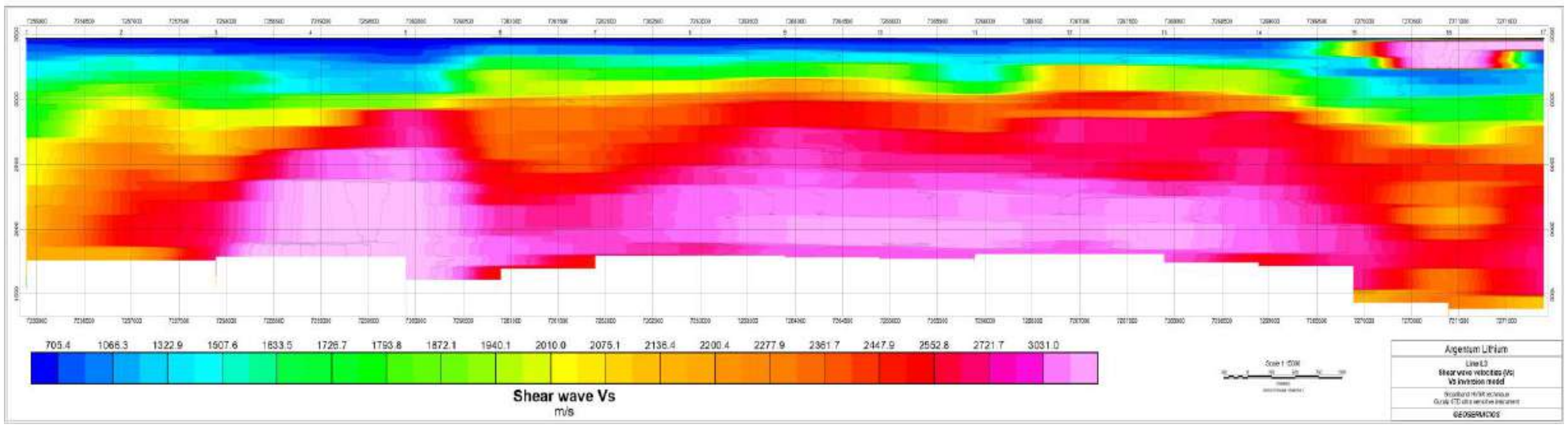
Source: Geoservicios, 2022.

Figure 9-3: Transect Line 2 of Shear Wave Velocities (Vs) Inversion Model



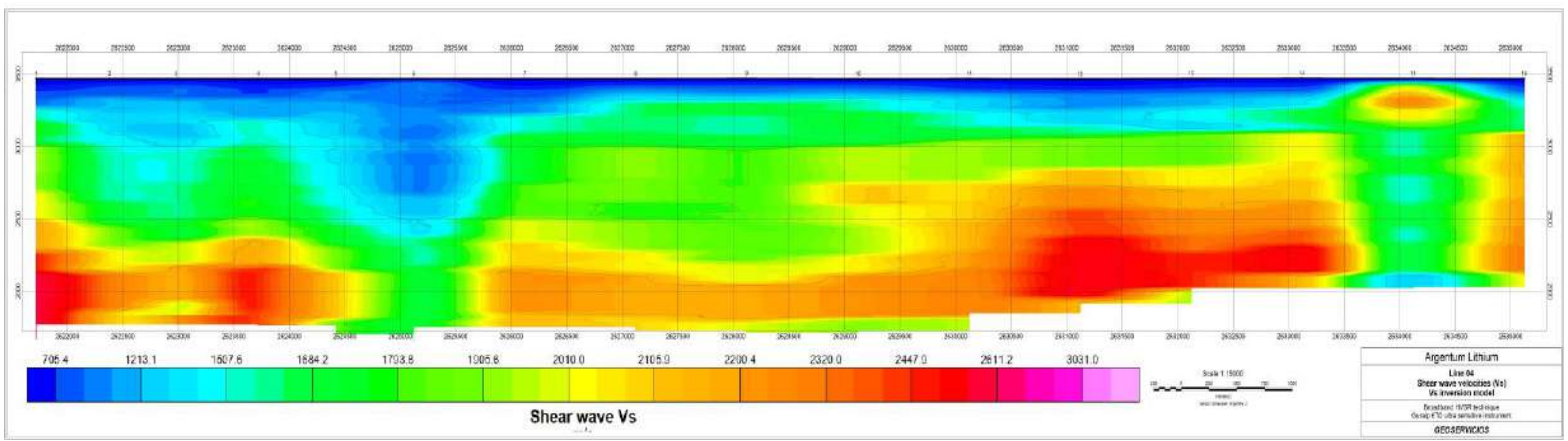
Source: Geoservicios, 2022.

Figure 9-4: Transect Line 3 of Shear Wave Velocities (Vs) Inversion Model



Source: Geoservicios, 2022.

Figure 9-5: Transect Line 4 of Shear Wave Velocities (Vs) Inversion Model



Source: Geoservicios, 2022.

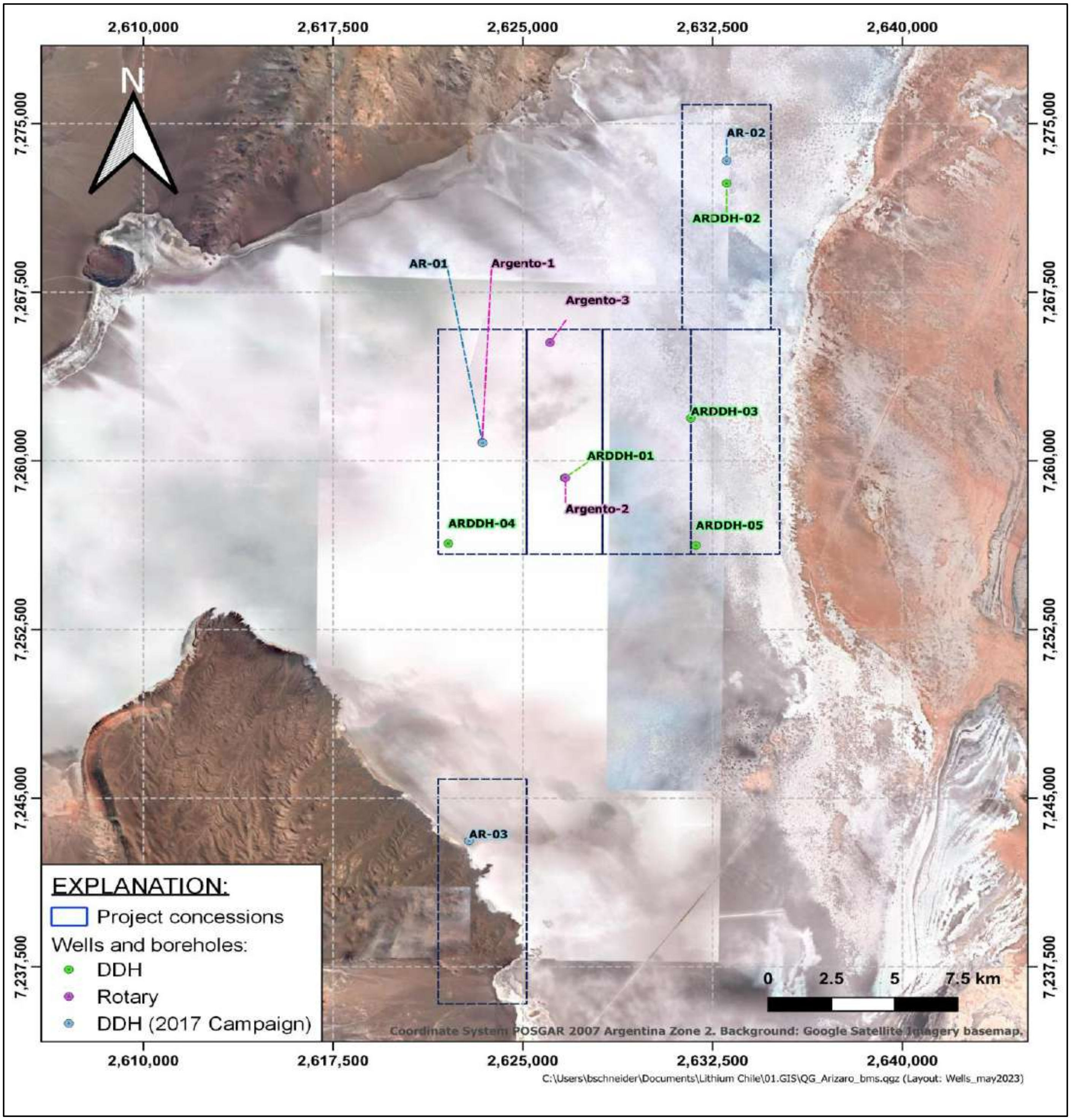
10 DRILLING

Preliminary results of 2021, 2022 and 2023 drilling and testing programs are being reported as of the date of this report; exploration sampling activities are still ongoing. The current exploration well program is designed to obtain aquifer hydraulic parameters, help support development a conceptual hydrogeological model, and determine the potential for a lithium resource within the mining concessions. Locations for the exploration wells currently drilled are shown in Figure 10-1, and location coordinates and depths for wells drilled from 2021 to 2023 are given in Table 10-1. Wells were either drilled as pumpable wells using rotary drilling methods, or as smaller diameter boreholes using diamond drill hole (DDH) methods. All boreholes and wells are vertical, and depths drilled represent true thicknesses.

Table 10-1: Location and Depth Drilled for Years 2021, 2022, and 2023 Exploration Wells

Well	Drilling Method	Northing1 (m, POSGAR 94)	Easting1 (m, POSGAR 94)	Total Depth Drilled (m)
Argento-1	Rotary	7,260,821	2,623,387	470
Argento-2	Rotary	7,259,244	2,626,683	650
Argento-3	Rotary	7,265,262	2,626,069	577
ARDDH-01	DDH	7,259,244	2,626,653	457
ARDDH-02	DDH	7,272,399	2,633,102	501
ARDDH-03	DDH	7,261,783	2,631,593	500
ARDDH-04	DDH	7,256,325	2,622,052	280
ARDDH-05	DDH	7,256,206	2,631,750	424

Figure 10-1: Exploration Well Location Map



Source: Montgomery, 2023.

10.1 Argento-01

Drilling activities for exploration well Argento-01 started on September 05, 2021, reaching a depth of 470 mbls on November 28, 2021. Drilling was done using conventional circulation mud rotary methods. Drilling fluid was a polymer mud mixed with brine. The time to drill one meter was recorded to monitor penetration rate. Drill cuttings were described by Andina personnel in the field and were reviewed by M&A hydrogeologists in Salta. Unwashed and washed drill cuttings were described and stored in labeled plastic cutting boxes. A summary of lithologic descriptions for drill cuttings samples obtained during drilling at exploration well are provided in Table 10-2. Construction schematic for well Argento-1 is shown on Figure 10-3.

Table 10-2: Summary of Lithologic Descriptions for Drill Cutting Samples

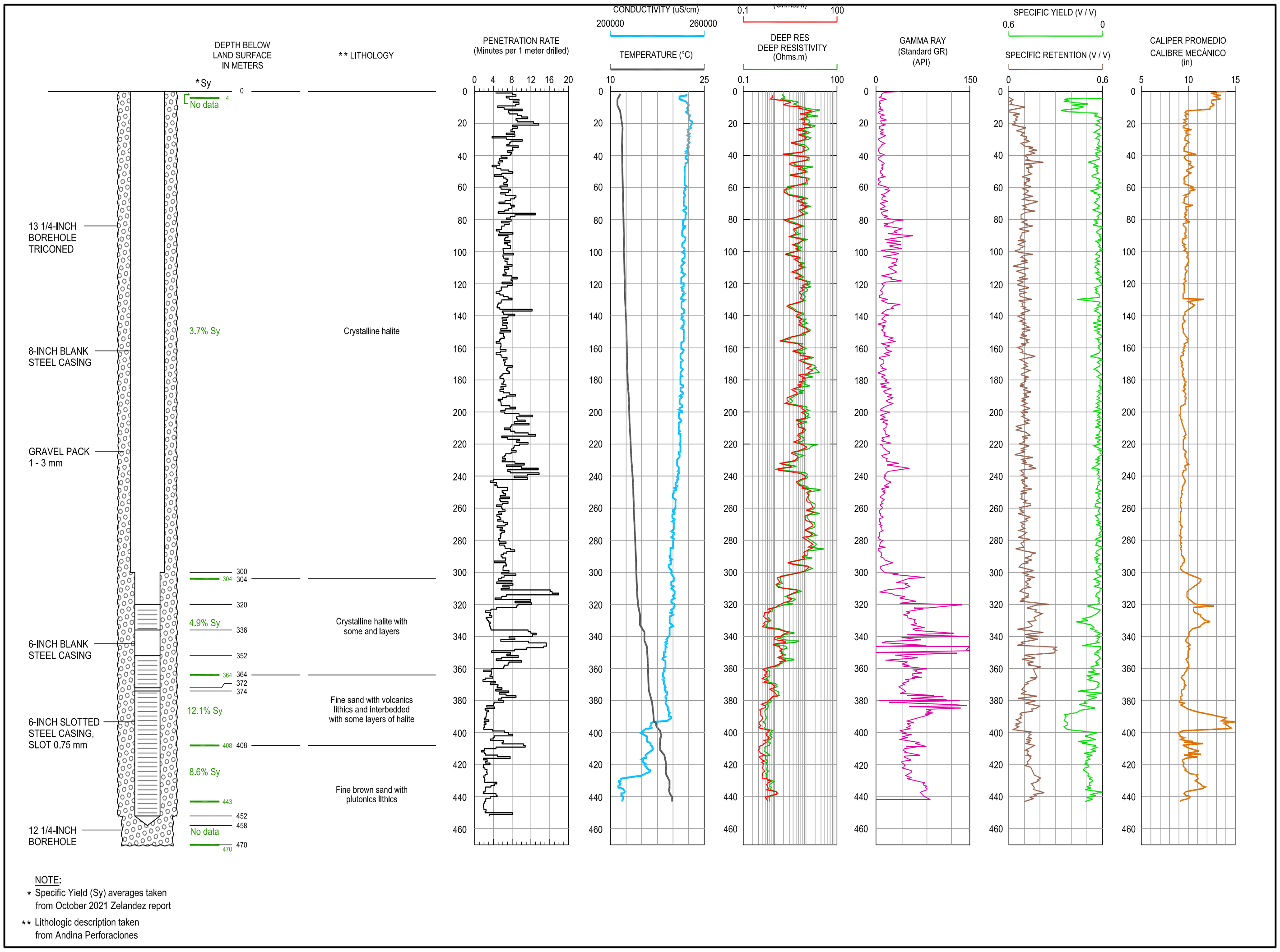
From (mbls)	To (mbls)	Summary Log
0	304	Crystalline halite
304	364	Crystalline halite with some sand interbeds
364	408	Fine sand with volcaniclastics and interbedded with halite
408	470	Fine brown sand

Example of drill cuttings obtained and used to identify the hydrogeologic units are shown on Figure 10-2.

Figure 10-2: Example of Drill Cuttings From Exploration Well Argento-01

Source: Lithium Chile, 2021.

Figure 10-3: Well Schematic Diagram for Exploration Well Argento-01



Source: Montgomery, 2021.

The following represents a brief summary of the construction of exploration well Argento-01:

- The 8½-inch diameter pilot borehole was drilled from land surface to 470 mbls. Once drilled to total depth the borehole was reamed with 13 1/4-inch from land surface to 452 m and then reamed to 12 1/4-inch to total depth.
- Geophysical surveys were conducted after the pilot borehole drilling was completed. The surveys were performed by Zelandez Services Argentina, SRL (Zelandez, 2021), a consulting firm based in Salta, Argentina. Geophysical logs performed by Zelandez included mechanical caliper, spectral gamma ray, short-normal resistivity, long-normal resistivity, electrical conductivity, temperature, and borehole magnetic resonance (BMR). Results are shown on Figure 10-2 and are detailed later in the section.

- Once drilling was completed, 8-inch blank and screened galvanized steel casing was installed (slot size 0.75 millimeters (mm)) from land surface to 458 mbls. Perforated intervals were installed from 320 to 336, 352 to 372, and from 374 to 452 mbls. Blank casing intervals were set from 0 to 320 mbls, 336 to 352 mbls, and from 372 to 374 mbls.
- Gravel pack (1-3 mm diameter) was installed in the annular space surrounding the well screen from 0 to 470 mbls.

Following gravel packing, the polymer mud was also broken-down using 400 liters of sodium hypochlorite solution and displaced with brine injection. No time was recorded during hypochlorite solution injection, but the well was allowed to rest for 36 hours after emplacement of sodium chloride mixture. The well was developed over the entire screened interval using hydrojet, airlift and pumping methods to remove drilling mud and fine sediments from the gravel pack.

10.1.1 Aquifer Testing and Analysis

Pumping tests were conducted at exploration well Argento-01 in December 2021, and included step-discharge and constant discharge tests. Pumping test equipment was provided by drilling and testing contractor Andina Perforaciones, a local drilling contractor based in Salta, Argentina.

The step-discharge test was conducted to evaluate drawdown and specific capacity at different pumping rates for determination of sustainable pumping capacity of the well, both for the constant-discharge tests, and for selection of long-term sustainable pumping rate. The constant-discharge test was conducted to further evaluate sustainable yield and also to provide data to estimate aquifer hydraulic parameters. Graphs are shown on Figure 10-3 and Figure 10-4. Brine samples were obtained during the constant-discharge test and were submitted for laboratory chemical analysis.

On December 22, 2021, a step-discharge test was conducted at the well to evaluate drawdown and well efficiency at different pumping rates for the determination of sustainable pumping capacity. Pumping for the step-discharge test commenced at 00:00. Average pumping rate, drawdown and computed specific capacity for each 180-minute step are summarized in Table 10-3. The step-discharge test consisted of three 180-minute steps; pre-pumping water level was at a depth of 6.62 m below the measuring point.

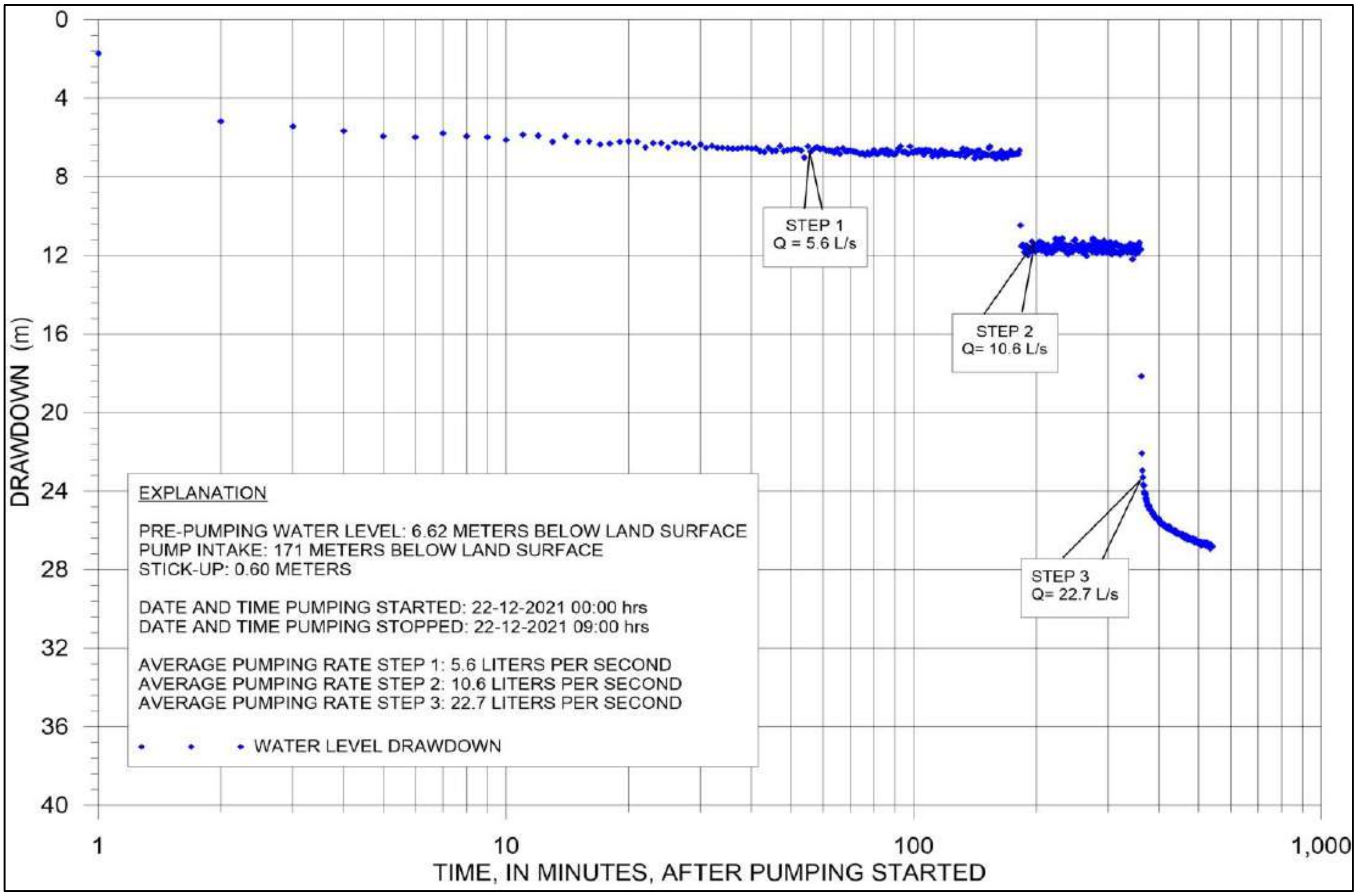
Table 10-3: Summary of The Step-Discharge Test at Exploration Well Argento-01

Well	Test Date	Step	Average Pumping Rate (L/s)[1]	Maximum Drawdown (m)	Specific Capacity (L/s/m)[2]
Argento-1	12/22/2021	1	5.6	6.54	0.86
		2	10.6	11.38	0.93
		3	22.7	26.54	0.86

1. L/s = liters per second
2. L/s/m = liters per second per meter of drawdown

Specific capacity of a well is computed by dividing the average pumping rate by the maximum water level drawdown at that rate and is expressed as liters per second per meter (L/s/m) of drawdown. A semi-logarithmic graph, showing drawdown for the step-discharge test at well Argento-01, is shown on Figure 10-4.

Figure 10-4: Semi-Logarithmic Graph, Showing Drawdown for The Step-Discharge Test at Well Argento-01



Source: Montgomery, 2021.

A constant-rate pumping test at well Argento-1 started on December 20, 2021, with an average flow rate of 21.9 liters per second (L/s); pre-pumping water level was 4.07 meters below measuring point. A summary of the test is given in Table 10-4. The pumping test stopped on December 20, 2021, after 17:40 hours; water level recovery measurements were then manually measured for 1:09 hours.

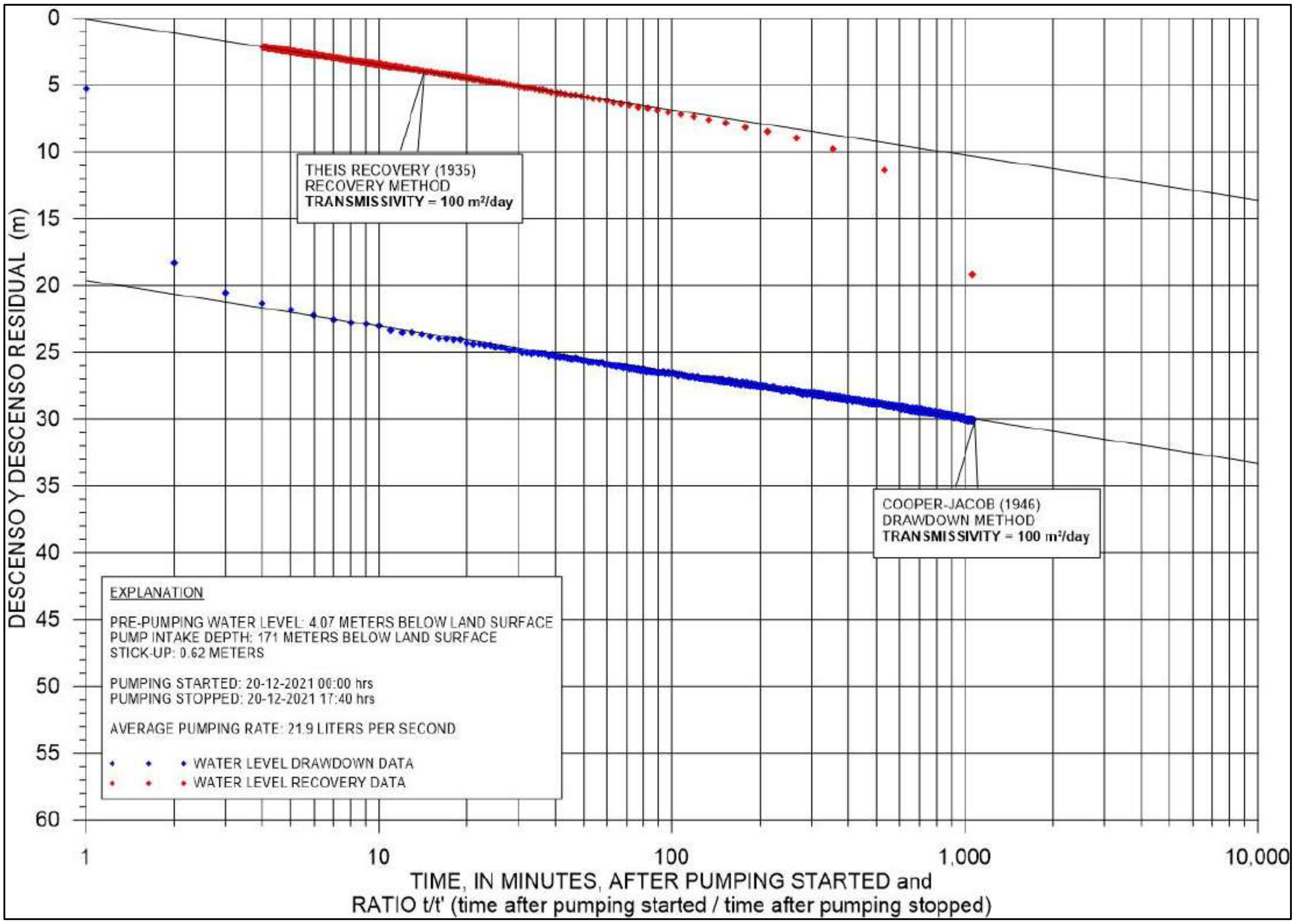
Table 10-4: Pumping Test Summary for Exploration Well Argento-01

Well Identifier	Date Pumping Started	Pumping / Recovery Duration (h)	Pre-Pumping Water Level (mbls)	Average Pumping Rate (L/s)	Drawdown After 17 Hours of Pumping (m)	Residual Drawdown After 1.09 Hours of Recovery (m)	Specific Capacity (L/s/m)
Argento-1	12-20-2021	17.40/1.09	4.07	21.9	29.96	3.78	0.73

Drawdown data was analyzed for aquifer transmissivity using the semi-logarithmic graphical method developed by Cooper and Jacob (1946), using Aqtesolv software (HydroSOLVE, 2008) and was also verified manually. The Theis (1935) recovery method was used for the recovery data. Calculated transmissivities for both the drawdown and recovery periods agree.

A semi-logarithmic drawdown and recovery graph for pumping test results is shown on Figure 10-5.

Figure 10-5: Semi-Logarithmic Drawdown and Recovery Graph for Argento-01 Pumping Test.



Source: Montgomery, 2021.

A summary of computed aquifer parameters is given in Table 10-5. Analysis of the groundwater level drawdown trend for the period 80 minutes after pumping started until end of the test indicates a transmissivity of about 100 square meters per day (m^2/d). Analysis of the trend of groundwater level recovery for the late period after pumping stopped indicates a transmissivity of about 100 m^2/d. Analysis for calculation of transmissivity was performed using recovery data only for a period of 1 hour. A reasonable estimation of the operative transmissivity for well Argento-01 is considered by M&A to be 100 m^2/d.

Table 10-5: Summary of Computed Aquifer Parameters at Well Argento-01

Pumped Well	Average Pumping Rate (L/s)[1]	Cooper-Jacob (1946) Drawdown Method Transmissivity (m^2/d)[3]	Theis (1935) Recovery Method Transmissivity (m^2d)[3]
Argento-01	21.94	100	100

10.1.2 BMR Logging and Estimate of Specific Yield

The main objective of the BMR downhole geophysical survey conducted at Argento-01 was to estimate the specific yield values for the hydrogeologic units encountered during exploration drilling. Specific yield (also referred to as drainable porosity) is one of the parameters needed to estimate the lithium resource.

Zelandez (2021) conducted the BMR survey October 19-20, 2021, at exploration well Argento-01 from land surface to a final depth of 443 mbls.

Figure 10-5 shows the results of the geophysical survey conducted at well Argento-01. Based on these results, Zelandez defined 4 distinct zones. These 4 zones are defined based on changes to gamma ray, uranium, and thorium decay, as well as total porosity, specific yield, and specific retention. Figure 10-5 (first column) also shows that the well is acceptably straight with less than 2% deviation from vertical.

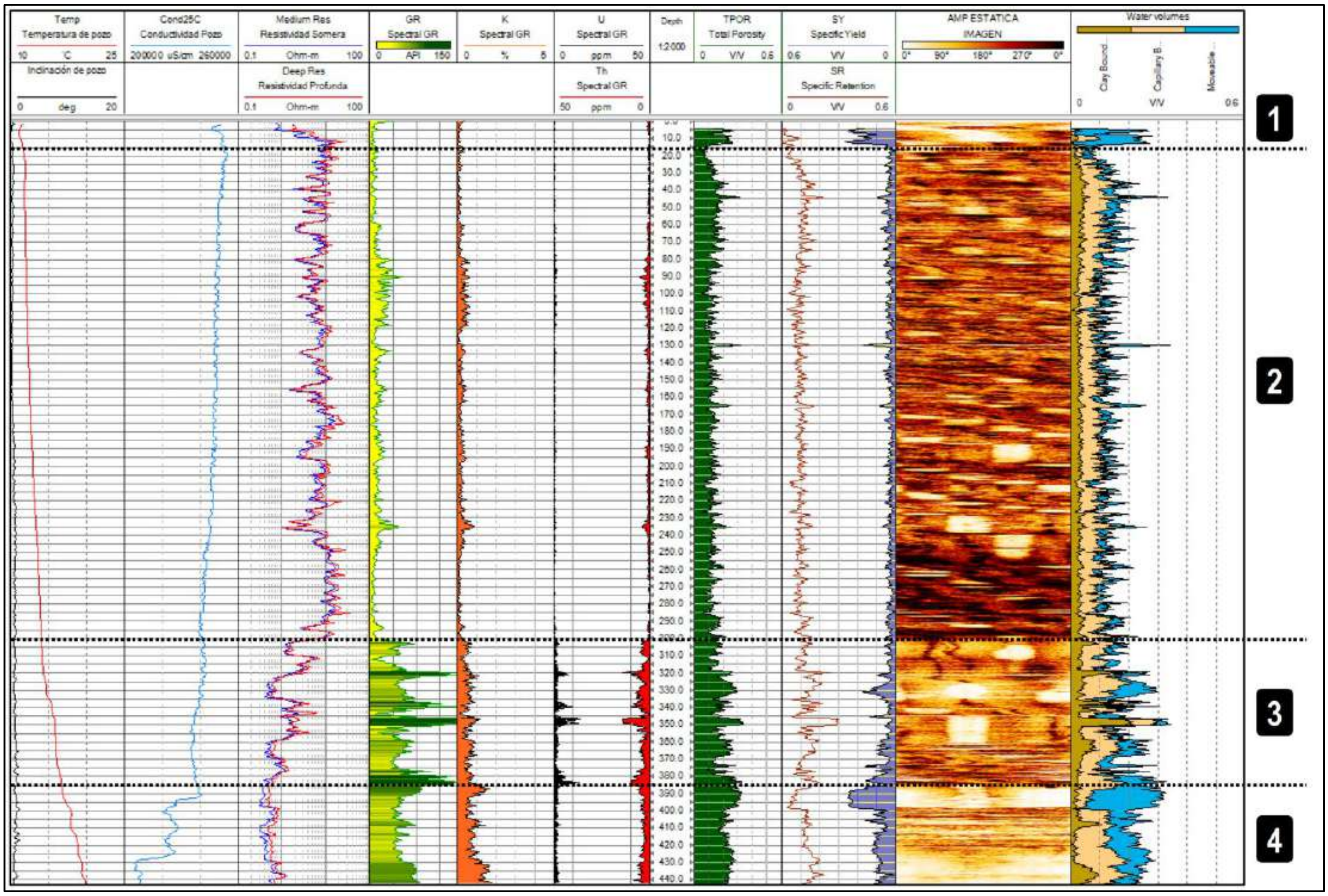
Descriptions of the lithologic units only roughly agree with the zones defined by Zelandez. Zone 1 from Zelandez is a zone of high specific yield and agrees in general with the Andina descriptions of a disaggregated halite. Porous halite occurs from land surface to about 12 m and is in agreement with Zelandez's Zone 1. It is the experience of M&A that the near surface, young halite units tend to have a large amount of inter-crystalline porosity with a relatively large permeability. The older and deeper halite gets more compact and cemented it becomes over time, decreasing the specific yield values. The BMR survey results support this conceptualization.

Zone 2 is effectively the main halite unit that was described by Andina geologists during drilling. Massive halite occurs from 12 mbls to about 225 mbls. Below 225 mbls to about 316 mbls, the halite is interbedded with silt and sand and is the lower part of Zone 2 as defined by Zelandez.

Below 316 mbls, Andina described a single unit consisting of black sand with interbedded clays. This unit was defined roughly by Zelandez as Zones 3 and 4. Zelandez separated the black sand unit based on an increase in porosity of the sand unit below a depth of about 385 mbls.

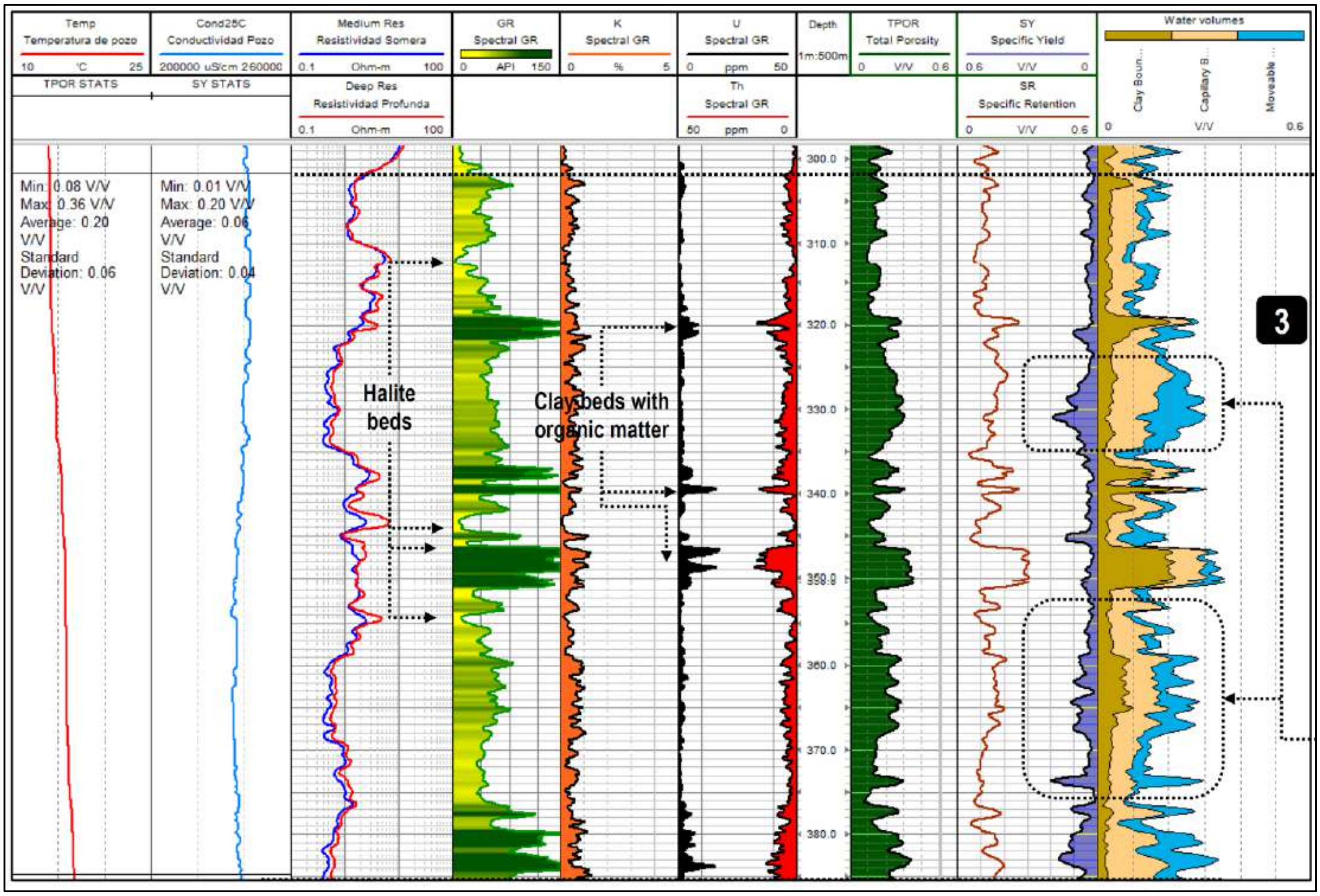
According to a more detailed evaluation of specific yield ranges, M&A believes it is justified to split Zelandez Zones 3 and 4 into 3 zones – 3, 4, and 5. Figure 10-6and Figure 10-7 show the proposed changes in units based mostly on differences in specific yield. It is possible to see with more detail, changes in gamma ray and specific yield values. For these reasons, and because of lithologic descriptions that show some breaks or changes in lithology, 5 zones are being defined by M&A, as well as slightly changed depths for the unit breaks.

Figure 10-6: Geophysical Survey Results for Well Argento-01, Showing Four Zones as Defined by Zelandez



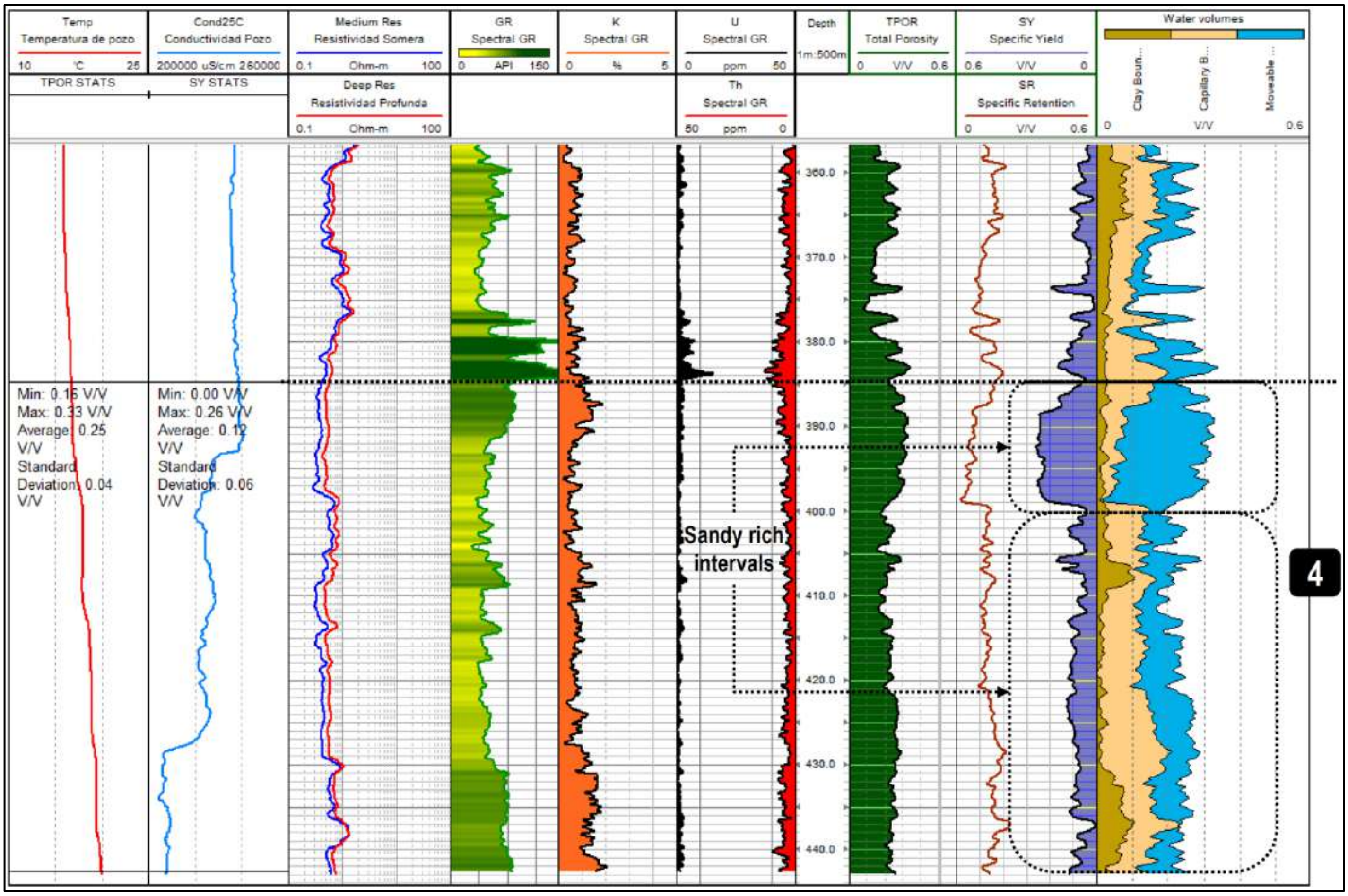
Source: Zelandez, 2021.

Figure 10-7: BMR Geophysical Survey Showing Redefined Zone 3



Source: Zelandez, 2021.

Figure 10-8: **BMR Geophysical Survey Showing Redefined Zone 4 and 5**



Source: Zelandez, 2021.

These following specific yield values were computed for the new units as defined by M&A solely based on the BMR results:

- Zone 1 (Land surface to 12 m) Sy values ranges from 15-23%; average 18%.
- Zone 2 (12 m to 320 m) Sy values ranges from 3-7%; average 3%.
- Zone 3 (320 m to 380 m) Sy values ranges from 6-12%; average 6%.
- Zone 4 (380 m to 400 m) Sy values ranges from 15-22%; average 18%.
- Zone 5 (400 m to 443 m) Sy values ranges from 7-13%; average 9%.

Although similar, different units were used to calculate the estimated lithium resource. The units used to calculate the resource included lithologic description and penetration rate data, and not solely geophysical results.

The BMR survey conducted by Zelandez agrees reasonably well with the field lithologic descriptions of the units encountered during drilling. In addition, we believe that the ranges of the specific yield values obtained from the BMR survey are reasonable and consistent with values for similar units defined in other altiplanic salars for different projects. Slight variations in depths for the units, and the number of units proposed by M&A as compared to those of Zelandez is not intended to suggest that the results of the BMR survey, or the interpretation of the survey by Zelandez is not acceptable. Furthermore, the minor differences between the field geologists, the geophysical logger, and M&A hydrogeologists is relatively small and has an immaterial affect on the resource estimate.

Based on the results, we believe that the lower clastic unit below a depth of 304 m is the most favorable unit for production pumping. We recommend that future exploration wells attempt to target these lower clastic zones, and if possible, drill to depths larger than 470 mbls. It is also recommended that core samples be obtained to compare geophysical specific yield values to laboratory drainable porosity values.

10.1.3 Brine Sample Results for Argento-01

Lithium Chile has collected and received laboratory results for composite brine samples collected from well Argento-01 obtained during the drilling of the well, during aquifer testing, after testing using a sampling pump, and using Hydrasleeve depth-specific samples as well as inflatable packers obtained after the construction and testing of the well was complete.

10.1.3.1 Brine Samples Obtained During Drilling

Table 10-6 is a summary table for the laboratory results from 27 brine samples obtained during the period September 05 through October 20, 2021. The methodology used to sample the well consisted of lowering a 5 HP pump at the depth reached while drilling and pumping the water volume from the well. Because of the open borehole conditions during sampling, the samples are not considered to be truly depth-specific samples. This operation was repeated three times before finally taking the sampling after water levels recovered.

Table 10-6: Summary of Laboratory Chemical Results for Brine Samples Obtained During Drilling at Well Argento-01

Sample ID	Date	Depth (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
1	11/9/2021		<10	102	786	<10
2 a	16/9/2021	50	11	91	837	<10
2 b	16/9/2021	50	<10	76	738	<10
3 a	23/9/2021	100	17	156	1077	<10
3 b	23/9/2021	100	14	135	981	<10
4 a	24/9/2021	150	29	253	1525	<10
4 b	24/9/2021	150	21	167	1110	<10
AR0921-01	24/9/2021	150	20	166	1093	<10
AR0921-243-01	1/10/2021	243	97	1507	3181	<10
AR0921-243-02	2/10/2021	243	52	684	2081	<10
AR0921-300-01	11/10/2021	300	87	1291	2852	<10
AR0921-300-02	11/10/2021	300	235	3621	5709	20
AR1021-300-01	21/10/2021	300	39	375	1784	<20
AR1021-300-02	21/10/2021	300	44	416	1882	<20
AR1021-300-03	21/10/2021	300	117	1778	4854	<20

Sample ID	Date	Depth (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
AR1021-300-04	21/10/2021	300	195	3127	7910	33
AR1021-300-05	21/10/2021	300	201	3193	8152	34
AR1021-300-06	22/10/2021	300	203	3227	8229	34
AR1021-300-07	22/10/2021	300	201	3205	8118	34
AR1021-300-08	22/10/2021	300	204	3273	8327	36
AR1021-300-09	22/10/2021	300	204	3255	8245	35
AR1021-300-10	22/10/2021	300	206	3301	8255	35
AR1021-300-11	22/10/2021	300	205	3309	7983	35
AR1021-300-12	22/10/2021	300	210	3347	8424	34
AR1021-300-13	22/10/2021	300	210	3407	8245	38
AR1021-300-14	23/10/2021	*300*	*208*	*3409*	*8318*	*35*
AR1021-300-15	23/10/2021	*300*	*209*	*3434*	*8346*	*36*

Our assessment of the chemistry results obtained during drilling is that the samples may have been diluted by lithium-poor brine from the upper part of the borehole. The values obtained at 300 m may also have been diluted, but are at least consistent, suggesting a better, or consistent sampling methodology at that depth. The values obtained from the pumping test (which was from brine exclusively from below 320 m) have lithium concentrations that are larger, consistent, and believed to be the most reliable samples obtained to date.

10.1.3.2 Composite Brine Samples Obtained During the Pumping Test at Argento-01

Table 10-7 is a summary table for the laboratory results from four brine samples obtained during pumping test operations conducted at pumping well Argento-01 during the testing period. Samples of pumped brine were obtained directly from the discharge pipe and are believed to be more representative of the brine chemistry in the lower units than the pumped samples obtained in an open borehole.

Table 10-7: Summary of Laboratory Chemical Results of Brine Samples Obtained During the Pumping Test at Well Argento-01

Sample ID	Date	Li (mg/L)	Mg(mg/L)	K(mg/L)	B(mg/L)	Mg/Li[1]
AZ-EE-01	Dec. 20, 2021	256	4,005	11,151	51	15.6
AZ-EE-02	Dec. 20, 2021	280	4,023	11,369	51	15.5
AZ-EE-03	Dec. 20, 2021	260	4,028	11,360	51	15.5
AZ-EE-04	Dec. 20, 2021	261	3,902	11,467	52	15.0
Duplicate	Dec. 20, 2021	258	4,033	11,349	53	15.6
AVERAGE		259	3,998	11,339	52	15.4

1. Mg/Li = magnesium to lithium ratio

10.1.4 Brine Sampling Using the Hydrasleeve Depth-Specific Sampling Tool

During January 06 and 07, 2022, depth-specific brine samples were obtained by Andina Drilling personnel using Hydrasleeve HS-2 disposable samplers. Samples were taken from top to bottom to avoid mixing of the brine within the well; this was done to obtain representative brine samples for each selected depth. The Hydrasleeve sample bags were lowered into the well using a manual winch with a 3-millimeter diameter cable marked every 5 m and mounted on an iron stand. As a cable guide, a sheave was mounted on an iron stand over the wellhead. The results of the sampling program are summarized in Table 10-8. Sometimes multiple samples were obtained at the same depth.

Table 10-8: Summary of Hydrasleeve Samples Obtained at Well Argento-01

Sample ID	Specific depth sampled (mbls)	Li (mg/L)	K (mg/L)
AZ-HS-32 7- 327	327	287	9,682
AZ-HS-327 (B) - 327	327	440	11,704
AZ-HS XXX - 327	327	446	11,735
AZ-HS-333 - 333	333	307	9,852
AZ-HS-357.5 – 357.5	357.5	300	9,759
AZ-HS-370 - 370	370	398	10,883
AZ-HS-376 - 376	376	385	11,051
AZ-HS-388 - 388	388	315	10,842
AZ-HS-400 - 400	400	326	11,267
AZ-HS-412.5 – 412.5	412.5	299	10,597
AZ-HS-425 - 425	425	324	11,141
AZ-HS-437 - 437	437	291	10,984
AZ-HS-437 – 437 (duplicate)	437	294	10,999
AZ-HS-449 (1) – 449	449	287	11,000
AZ-HS-449 (2) – 449	449	272	11,039

10.1.5 Brine Sampling Using an Inflatable Packer

Brine samples were obtained from January 15 to January 20, 2022 by Andina Drilling personnel using an inflatable packer system. Samples were taken from top to bottom. Because there was no packer seal, due to the fact that the samples were obtained in a screened well, brine from outside the packer could flow into the sampling area. Therefore, the samples are not true depth-specific samples and may have been diluted from the upper aquifer brine. The results of the sampling program are summarized in Table 10-9.

A split sample was made by the lab for the sample from the 436-meter depth sample and is a true duplicate. Results for the analyses for the 2 split samples agreed very well with each other for all analyzed constituents. A duplicate was obtained during pumping at a depth of 448 mbls by field personnel.

Table 10-9: Summary of Packer Samples Obtained at Well Argento-01

Sample ID	Specific depth sampled (mbls)	Li (mg/L)	K (mg/L)
AZ-FP-327	327	555	13,159
AZ-FP-333	333	361	12,122
AZ-FP-357	357	334	12,213
AZ-FP-369	369	314	12,131
AZ-FP-375	375	308	12,032
AZ-FP-387	387	296	11,858
AZ-FP-399	399	286	11,772
AZ-FP-411	411	281	11,696
AZ-FP-424	424	278	11,474
AZ-FP-436	436	267	11,255
AZ-FP-436 (lab duplicate)	436	271	11,451
AZ-FP-448	448	278	11,435
AZ-FP-XXX (field duplicate)	448	279	11,475

10.1.6 Summary and Conclusions of Brine Sampling at Argento-01

Many brine samples were obtained during the 2021-2022 drilling and sampling program. Each of the sampling methods were different, and all are considered to have some potential for not being representative of the brine chemistry in the aquifer due to potential mixing of water in the well or downward flow of low lithium brine from above. That said, the QP considers the sample results from the Hydrasleeve program to be most reliable and least prone to being mixed with brine from other intervals. Therefore, the brine chemistry used to estimate the lithium resource was from the Hydrasleeve sampling method.

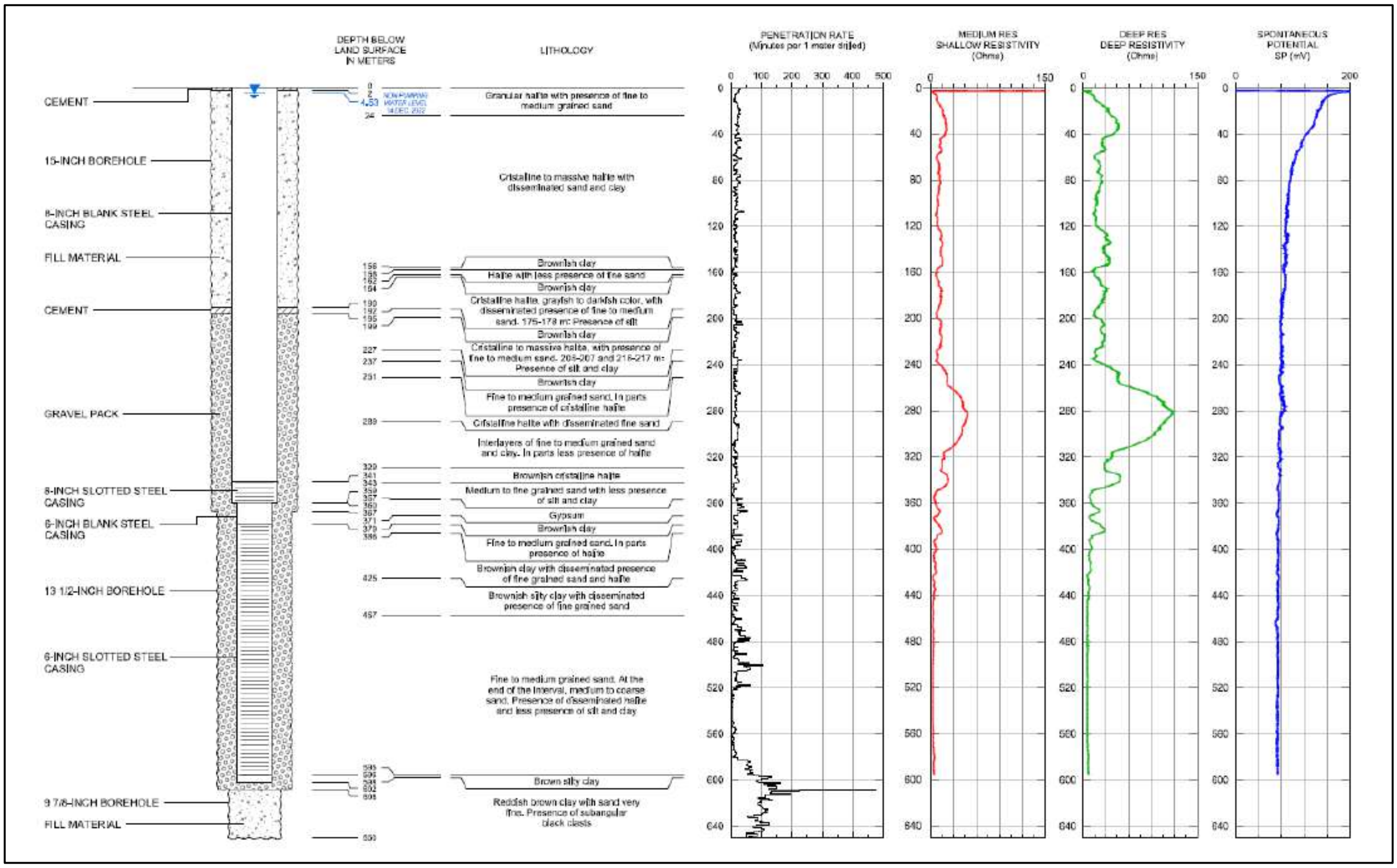
10.2 Argento-02

Drilling activities for exploration well Argento-02 started on September 07, 2022, reaching a depth of 650 mbls on October 30, 2022. Drilling was done using conventional circulation mud rotary methods. Drilling fluid was a polymer mud mixed with brine. The time to drill one meter was recorded to monitor the penetration rate. Drill cuttings were described by Lithium Chile personnel in the field and were reviewed by M&A hydrogeologists. Unwashed and washed drill cuttings were described and stored in labeled plastic cutting boxes. A summary of lithologic descriptions for drill cuttings samples obtained during drilling at exploration well Argento-02 are provided in Table 10-10. Construction schematic for well Argento-02 is shown on Figure 10-8.

Table 10-10: Summary of Lithologic Descriptions for Drill Cuttings Samples for Argento-02

From (m)	To (m)	Summary Log
0	24	Granular halite, with presence of medium and fine-grained sand.
24	96	Granular to massive halite, with presence of medium, fine and very fine-grained sand, minor presence of silt and clay.
96	146	Granular to massive halite, high presence of silt and clay, with presence of fine and very fine-grained sand.
146	227	Halite with minor presence of medium to very fine sand, interbedded with clay and silt layers.
227	237	Clay with medium sand and minor percentages of halite
237	289	Halite with medium to very fine sand interbedded with halite sand layers
289	291	Brownish clay with sand and halite
291	357	Halite with medium to fine sand interbedded with fine sand and clay layers
357	371	Very soft to touch sample, beige colored, gypsum.
371	425	Halite with medium to fine sand interbedded with clay, sand and some gypsum.
425	427	Brownish silty clay with very fine to medium sand, with predominance of dark colored subrounded grains. Presence of very fine gravel sized lithics and halite.
427	450	Brownish silty clay with very fine to medium sand with presence of very fine gravel sized, gypsum, lithics and halite crystals.
450	457	Dark brownish Clay with very fine to coarse sand with predominance of dark grains. Presence of very fine gravel sized lithics and halite.
457	462	Very fine to coarse dark brownish sand with predominance of coarse grained subrounded grains. With presence of very fine to fine gravel sized lithics and halite.
462	467	Brownish fine to very coarse subrounded sand. Presence of dark, very fine to fine sized gravel, lithics.
467	472	Dark brownish very fine to fine sand with sand, with predominance of subrounded black grains. Presence of very fine sized gravel dark colored lithics.
472	473	Brown reddish clay with very fine to medium sand. Sand grains are subrounded and black colored.

Figure 10-9: Schematic Diagram of Exploration Well Argento-02



Source: Montgomery, 2022.

Example of drill cuttings obtained and used to identify the hydrogeologic units are shown in Figure 10-10.

Figure 10-10: Example of Drill Cuttings From Exploration Well Argento-02

Source: Lithium Chile, 2022.

The following represents a brief summary of construction of exploration well Argento-02.

- The 9 7/8-inch diameter pilot borehole was drilled from land surface to the total depth. Once drilled to total depth the borehole was reamed with 13 ½ -inch from land surface to 608 m and then reamed to 15-inch from land surface to 367 m.
- Geophysical surveys were conducted after pilot borehole drilling was completed. The surveys were performed by Wichi Toledo. Geophysical logs included short-normal resistivity, long-normal resistivity and spontaneous potential (SP). Results are shown on Figure 10-2 and are detailed later in the section.
- Once drilling was completed, 8- and 6-inch blank and screened galvanized steel casing were installed (slot size 0.75 millimeters (mm)) from land surface to 602 mbls. Perforated intervals were installed from 341 to 359 and 379 to 596. Blank casing intervals were set from 0 to 341, 359 to 379, and from 596 to 602 mbls.
- Gravel pack (1-3 mm diameter) was installed in the annular space surrounding the well screen from 0 m to 195 mbls. From 195 to 192 m a cement seal was installed for then complete the annular space with drill material.
- Following gravel packing, the polymer mud was also broken-down using 400 L of sodium hypochlorite solution and displaced with brine injection. No time was recorded during hypochlorite solution injection, but the well was allowed to rest for 24 hours after emplacement of sodium chloride mixture. The well was developed over the entire screened interval using hydrojet, airlift and pumping methods to remove drilling mud and fine sediments from the gravel pack.

10.2.1 Aquifer Testing and Analysis

Pumping tests were conducted at exploration well Argento-02 in April 2023, and included step-discharge and constant discharge tests. Pumping test equipment was mostly provided by drilling and testing contractor Wichi Toledo; some of the equipment was provided by Lithium Chile.

The step-discharge test was conducted to evaluate drawdown and specific capacity at different pumping rates for determination of sustainable pumping capacity of the well, both for the constant-discharge tests and for selection of a long-term sustainable pumping rate. The constant-discharge test was conducted to further evaluate sustainable yield and to provide data an estimate of hydraulic parameters. Drawdown and recovery graphs are shown on Figure 10-10. Brine samples were obtained during the constant-discharge test and were submitted for laboratory chemical analysis.

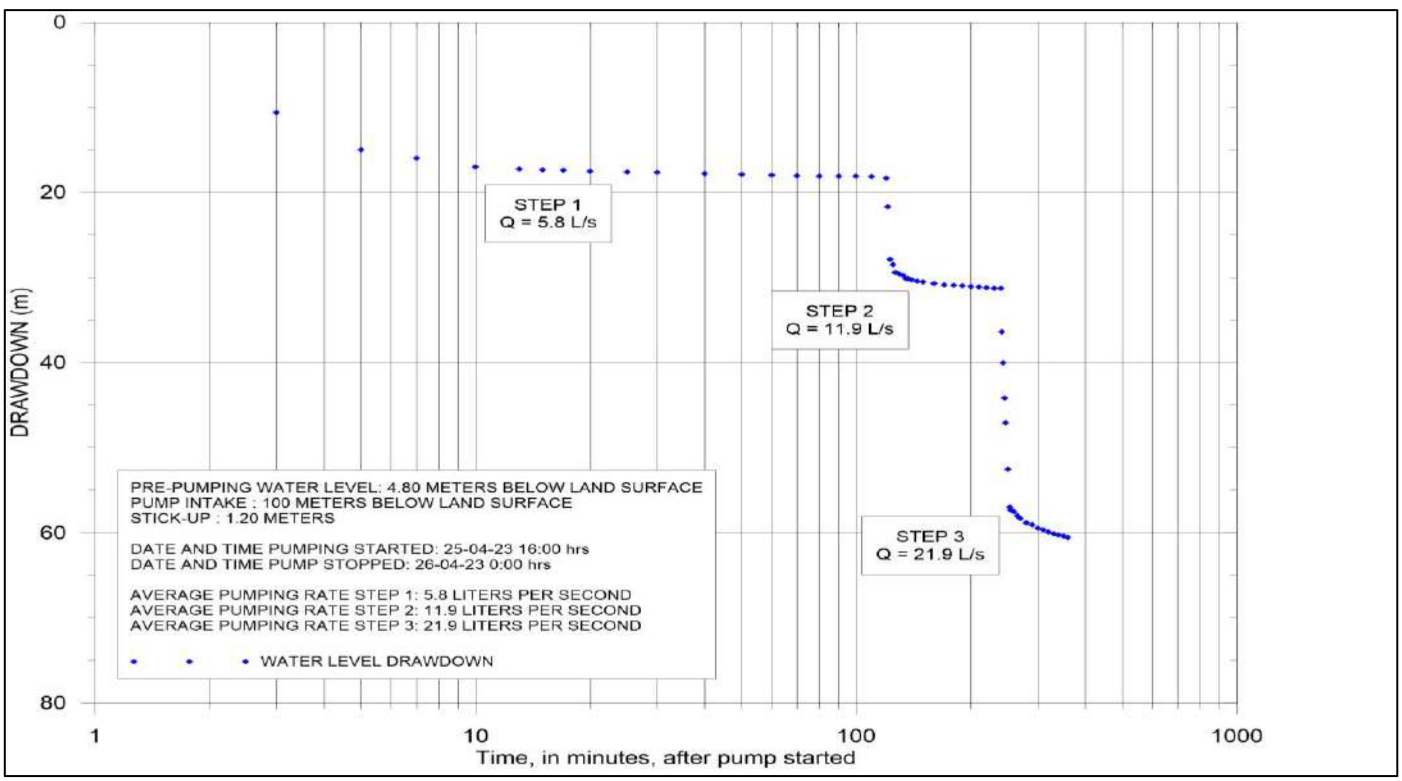
On April 25, 2023, a step-discharge test was conducted at well Argento-02 to evaluate drawdown and well efficiency at different pumping rates for determination of sustainable pumping capacity of the well for the constant-discharge test. Pumping for the step-discharge test commenced at 16:00. Average pumping rate, drawdown and computed specific capacity for each 120-minute step are summarized in Table 10-11. The step-discharge test consisted of three 120-minute steps; pre-pumping water level was at a depth of 4.80 m below measuring point.

Table 10-11: Summary of the Step-Discharge Test at Exploration Well Argento-02

Well	Test Date	Step	Average Pumping Rate (L/s)[1]	Maximum Drawdown (m)	Specific Capacity (L/s/m)[2]
Argento-2	04/25/2023	1	5.8	13.52	0.43
		2	11.9	26.48	0.45
		3	21.9	55.72	0.39

Specific capacity of a well is computed by dividing the average pumping rate by the maximum water level drawdown at that rate and is expressed as liters per second per meter of drawdown (L/s/m). A semi-logarithmic graph, showing drawdown for the step-discharge test at well Argento-02, is shown on Figure 10-11.

Figure 10-11: Semi-Logarithmic Graph, Showing Drawdown for The Step-Discharge Test at Well Argento-02



Source: Montgomery, 2023.

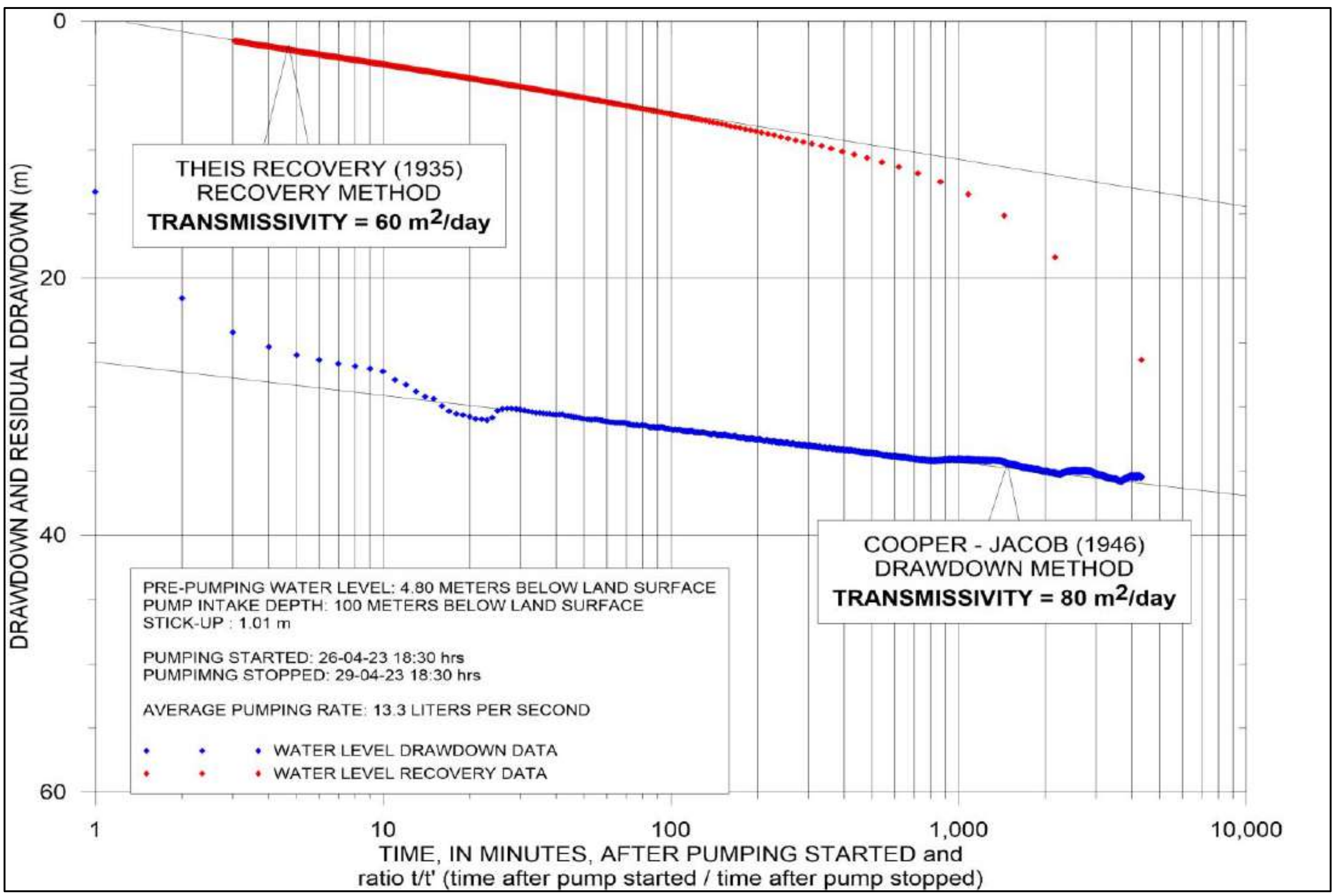
A constant-rate pumping test at well Argento-2 started on April 26, 2023, with an average flow rate of 13.3 L/s; pre-pumping water level was 4.80 m below measuring point. A summary of the test is given in Table 10-12. The pumping test stopped on April 29, 2023, after 72 hours; water level recovery measurements were then manually measured for 35 hours.

Table 10-12: Pumping Test Summary for Exploration Well Argento-02

Well	Date Pumping Started	Pumping / Recovery Duration (h)	Pre-Pumping Water Level (mbls)[1]	Average Pumping Rate (L/s)[2]	Drawdown After 72 Hours of Pumping (m)	Residual Drawdown After 35 Hours Of Recovery (m)	Specific Capacity (L/s/m)[3]
Argento-02	04-26-2023	72 / 35	4.80	13.3	35.45	1.51	0.38

Drawdown data were analyzed for aquifer transmissivity using the semi-logarithmic graphical method developed by Cooper and Jacob (1946), using Aqtesolv software (HydroSOLVE, 2008), and verified manually. The Theis (1935) recovery method was used for the recovery data. Calculated transmissivities for both the drawdown and recovery periods agree.

Figure 10-12: Semi-Logarithmic Drawdown and Recovery Graph for Argento-02 Pumping Test



Source: Montgomery, 2023.

A summary of computed aquifer parameters is given in Table 10-13. Analysis of the trend of groundwater level drawdown for the period 30 minutes after pumping started until minute 1,000 indicates a transmissivity of about 80 m^2/d. Analysis of the trend of groundwater level recovery for the late period after pumping stopped indicates a transmissivity of about 60 m^2/d. Analysis for calculation of transmissivity was performed using recovery data only for a period of one hour. A reasonable estimation of the operative transmissivity for well Argento-02 is considered by M&A to be 60 m^2/d.

Table 10-13: Summary of Computed Aquifer Parameters at Well Argento-02

Pumped Well Identifier	Average Pumping Rate (L/s)[1]	Cooper-Jacob (1946) Drawdown Method Transmissivity (m^2/d)[3]	Theis (1935) Recovery Method Transmissivity (m^2d)[3]
Argento-02	21.9	80	60

10.2.2 Brine Sample Results for Argento-02

Lithium Chile has collected and received laboratory results for composite brine samples collected from well Argento-02 obtained during aquifer testing, after testing using Hydrasleeve depth-specific samples once construction and testing of the well was complete.

10.2.2.1 Brine Sampling Using the Hydrasleeve Depth-Specific Sampling Tool

During December 22, 2022, depth-specific brine samples were obtained using Hydrasleeve HS-2 disposable samplers. Samples were taken from top to bottom to avoid mixing of the brine within the well; this was done to obtain representative brine samples for each selected depth. The Hydrasleeve sample bags were lowered into the well using a manual winch with a 3-mm diameter cable marked every 5 m and mounted on an iron stand. As a cable guide, a sheave was mounted on an iron stand over the wellhead. The results of the sampling program are summarized in Table 10-14.

Table 10-14: Summary of Hydrasleeve Samples Obtained at Well Argento-02

Sample ID	Specific depth sampled (mbls)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
AZ-HS-01-22	578	267	4,216	9,846	52
AZ-HS-04-22	428	275	4,223	9,968	54
AZ-HS-07-22	348	246	3,879	9,052	49

10.2.2.2 Composite Brine Samples Obtained During the Pumping Test at Argento-02

Table 10-15 is a summary table for the laboratory results from four brine samples obtained during pumping test operations conducted at pumping well Argento-02 during the testing period. Samples of pumped brine were obtained directly from the discharge pipe and are believed to be more representative of the brine chemistry in the lower units than the pumped samples obtained in an open borehole.

Table 10-15: Summary of Laboratory Chemical Results of Brine Samples Obtained During the Pumping Test at Well Argento-02

Sample ID	Date	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)	Mg/Li1
ARLI0027	Apr. 25, 2023	265	3833	9610	51	14.5
ARLI0030	Apr. 25, 2023	273	4057	9649	53	14.9
ARLI0033	Apr. 25, 2023	277	4172	9659	54	15.1
ARLI0035	Apr. 26, 2023	277	4173	9693	54	15.1
ARLI0038	Apr. 27, 2023	275	4148	9671	53	15.1
ARLI0041	Apr. 27, 2023	273	4139	9676	53	15.2
ARLI0044	Apr. 28, 2023	274	4121	9665	54	15.0
ARLI0047	Apr. 28, 2023	273	4105	9686	53	15.0
ARLI0050	Apr. 28, 2023	274	4085	9699	53	14.9
ARLI0053	Apr. 29, 2023	272	4077	9695	52	15.0
AVERAGE		273	4091	9670	53	15.0

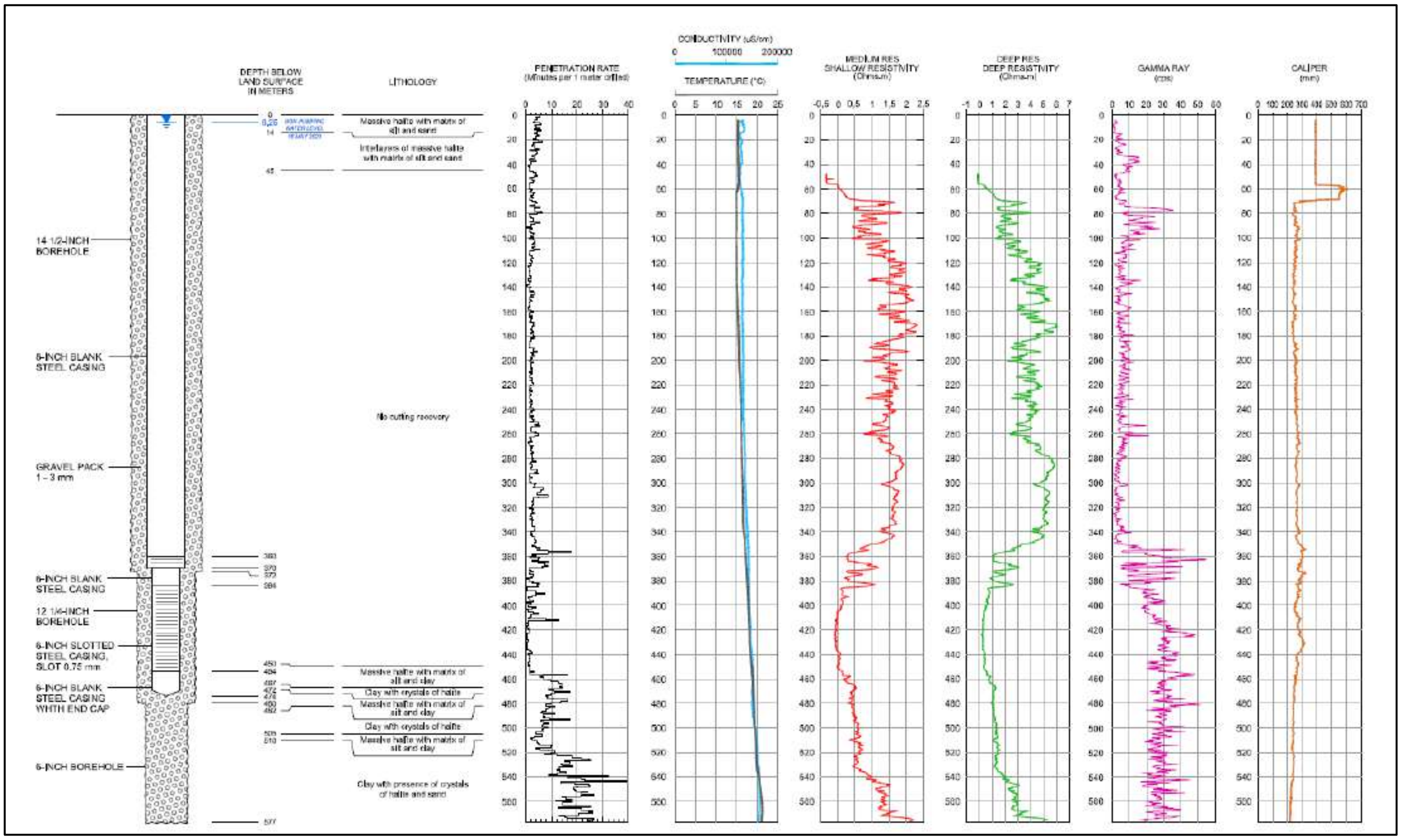
10.3 Argento-03

Drilling activities for exploration well Argento-03 started on January 05, 2023, reaching a depth of 577 mbls on March 18, 2023. Drilling was done using conventional circulation mud rotary methods. Drilling fluid was a polymer mud mixed with brine. The time to drill one meter was recorded to monitor penetration rate. Drill cuttings were described by Lithium Chile personnel in the field and were reviewed by M&A hydrogeologists. Unwashed and washed drill cuttings were described and stored in labeled plastic cutting boxes. A summary of lithologic descriptions for drill cuttings samples obtained during drilling at exploration well are provided in Table 10-16. Construction schematic for well Argento-03 is shown on Figure 10-13.

Table 10-16: Summary of Lithologic Descriptions for Drill Cuttings Samples for Argento-03

From	To	Summary Log
0	14	Massive halite with a matrix of silt and sand
14	45	Interlayers of massive halite with a matrix of silt and sand
45	450	No cutting recovery
450	467	Massive halite with a matrix of silt and clay
467	472	Clay with crystals of halite
472	482	Massive halite with a matrix of silt and clay
482	505	Clay with crystals of halite
505	510	Massive halite with a matrix of silt and clay
510	577	Clay with the presence of crystals of halite and sand

Figure 10-13: Schematic Diagram of Exploration Well Argento-03



Source: Montgomery, 2023.

The following represents a brief summary of construction of exploration well Argento-03:

- The 9 7/8-inch diameter pilot borehole was drilled from land surface to total depth. Once drilled to total depth the borehole was reamed with 12 ¼ -inch from land surface to 480 m and then reamed to 14 ½ -inch from land surface to 372 m.
- During drill operation, they were not able to obtain cutting from interval 45 – 450 m due loss of mud fluid circulation.
- Geophysical surveys were conducted after pilot borehole drilling was completed. The surveys were performed by Aminco. Geophysical logs included RLLS, RLLD, ILLS, ILLD, electrical conductivity, temperature and caliper. Results are shown on Figure 10-11.
- Once drilling was completed, 8- and 6-inch blank and screened galvanized steel casing was installed (slot size 0.75 mm) from land surface to 474 mbls. This well was drilled until 577 m, but by decision of Lithium Chile the casing was installed only to 474 m. Perforated intervals were installed from 360 to 370 and 384 to 454. Blank casing intervals were set from 0 to 360, 370 to 384, and from 454 to 474 mbls.
- Gravel pack (1-3 mm diameter) was installed in the annular space surrounding the well screen from 0 meters to land surface. No bentonite seal was installed at this well.

- Following gravel packing, the polymer mud was also broken-down using 400 L of sodium hypochlorite solution and displaced with brine injection. No time was recorded during hypochlorite solution injection, but the well was allowed to rest for 24 hours after emplacement of sodium chloride mixture. The well was developed over the entire screened interval using hydrojet, airlift, and pumping methods to remove drilling mud and fine sediments from the gravel pack.

10.3.1 Aquifer Testing and Analysis

Pumping tests were conducted at exploration well Argento-3 in May 2023, and included step-discharge and constant discharge tests. Pumping test equipment was provided by drilling and testing contractor Wichi Toledo and part of the equipment was provided by Lithium Chile.

The step-discharge test was conducted to evaluate drawdown and specific capacity at different pumping rates for determination of sustainable pumping capacity of the well, both for the constant-discharge tests, and for selection of long-term sustainable pumping rate. The constant-discharge test was conducted to further evaluate sustainable yield and to provide data to estimate aquifer hydraulic parameters. Drawdown and recovery graphs are shown on Figure 10-13. Brine samples were obtained during the constant-discharge test and were submitted for laboratory chemical analysis.

On May 15, 2023, a step-discharge test was conducted at well Argento-03 to evaluate drawdown and well efficiency at different pumping rates for determination of sustainable pumping capacity of the well for the constant-discharge test. Pumping for the step-discharge test commenced at 11:40. Average pumping rate, drawdown and computed specific capacity for each 120-minute step are summarized in Table 10-17. The step-discharge test consisted of three 120-minute steps; pre-pumping water level was at a depth of 6.33 m below the measuring point.

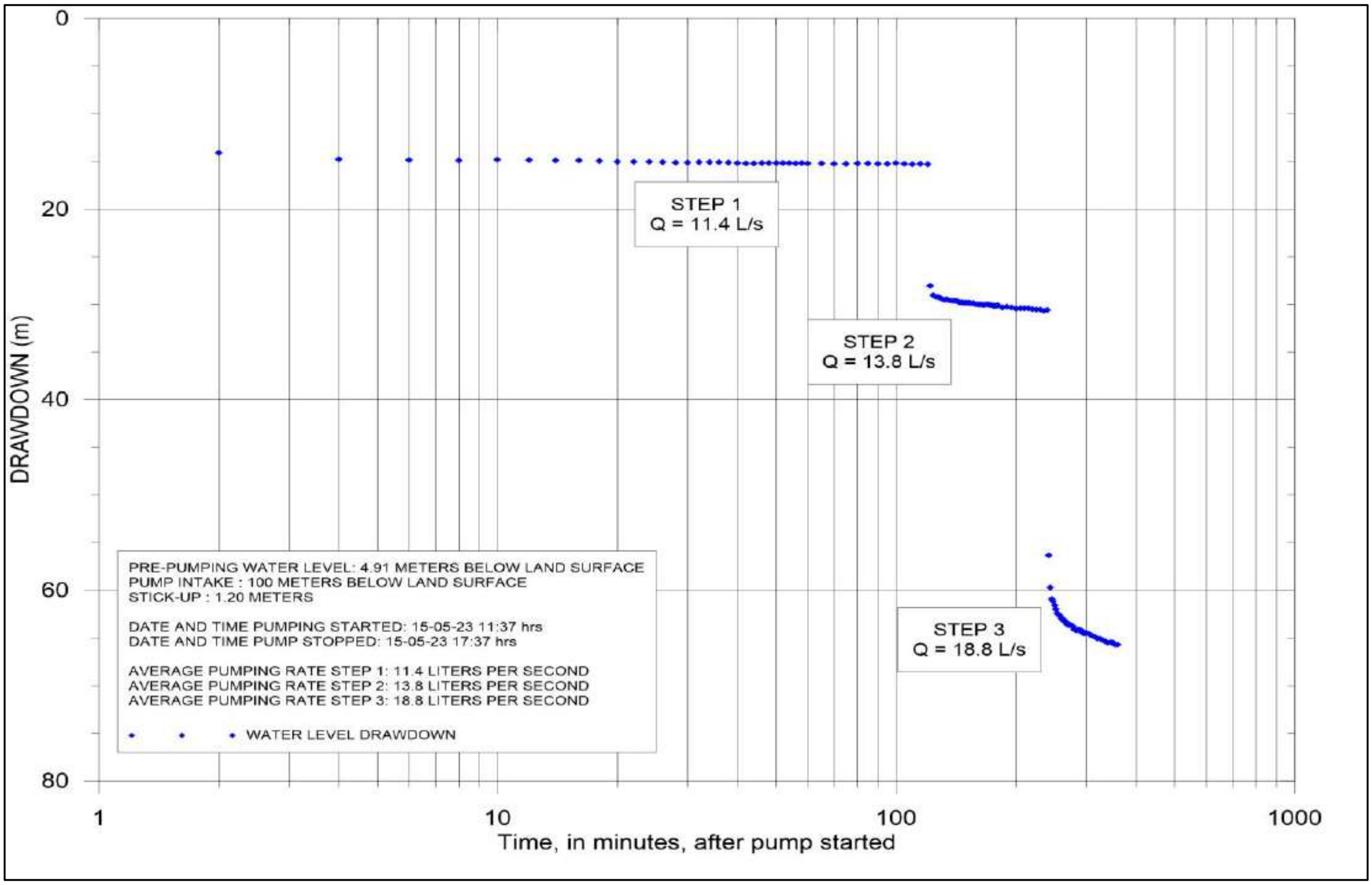
Table 10-17: Summary of The Step-Discharge Test at Exploration Well Argento-03

Well	Test Date	Step	Average Pumping Rate (L/s)[1]	Maximum Drawdown (meters)	Specific Capacity (L/s/m)[2]
Argento-3	05/15/2023	1	11.4	15.29	0.75
		2	13.8	30.57	0.45
		3	18.8	65.70	0.29

1 L/s = liters per second
2 L/s/m = liters per second per meter of drawdown

Specific capacity of a well is computed by dividing the average pumping rate by the maximum water level drawdown at that rate and is expressed as L/s/m. A semi-logarithmic graph, showing drawdown for the step-discharge test at well Argento-03, is shown on Figure 10-14.

Figure 10-14: Semi-Logarithmic Graph, Showing Drawdown for The Step-Discharge Test at Well Argento-03



Source: Montgomery, 2023.

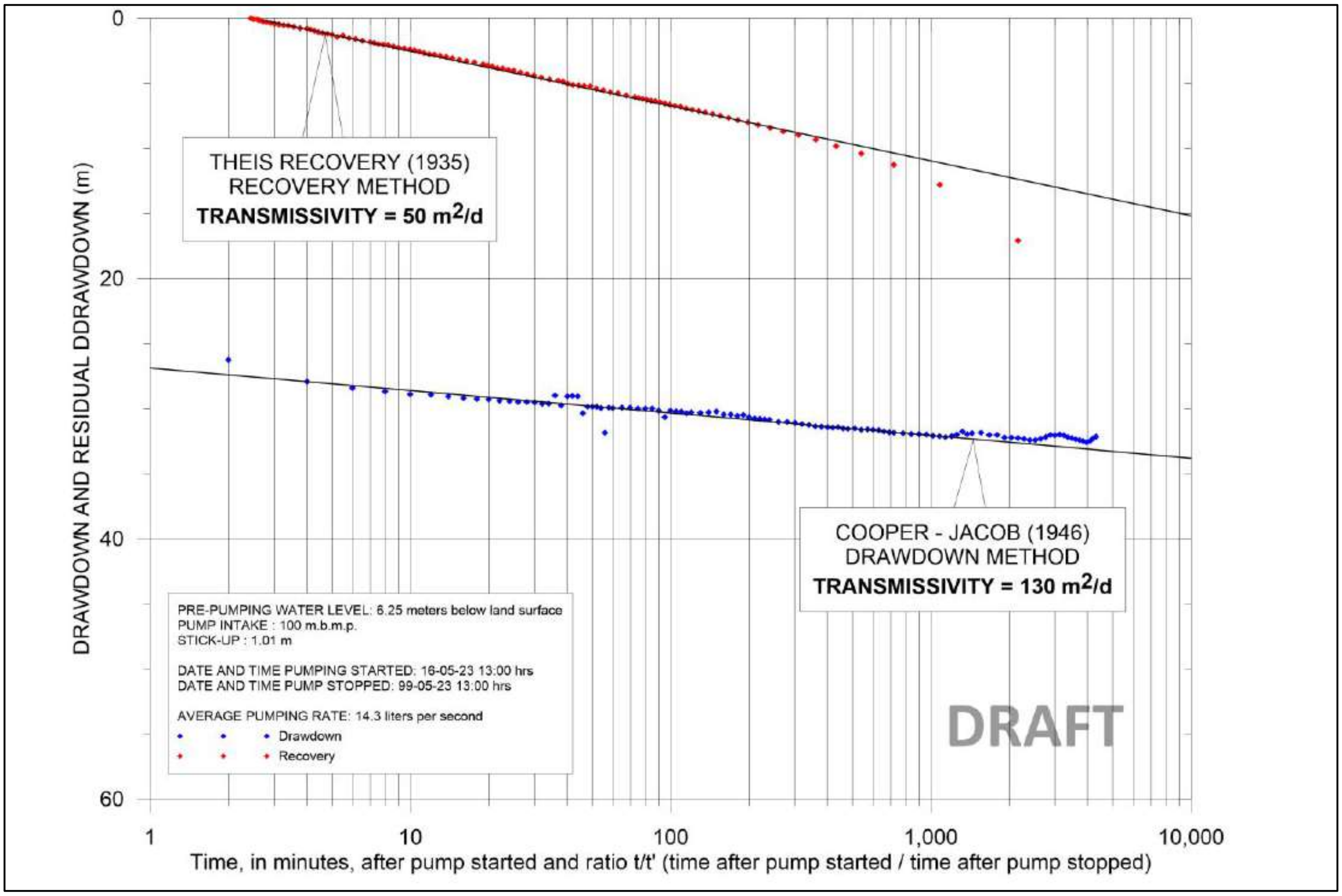
A constant-rate pumping test at well Argento-03 started on May 16, 2023, with an average flow rate of 14.3 L/s; pre-pumping water level was 6.25 m below the measuring point. A summary of the test is given in Table 10-18. The pumping test stopped on May 19, 2023, after 72 hours; water level recovery measurements were then manually measured for 50 hours. A summary of the pump test is given in Table 10-18.

Table 10-18: Pumping Test Summary for Exploration Well Argento-03

Well	Date Pumping Started	Pumping / Recovery Duration (h)	Pre-Pumping Water Level (mbls)1	Average Pumping Rate (L/s)2	Drawdown After 72 Hours of Pumping (m)	Residual Drawdown After 50 Hours Of Recovery (m)	Specific Capacity (L/s/m)3
Argento-03	04-16-2023	72 / 50	6.25	14.3	32.13	-0.02	0.45

Drawdown data was analyzed for aquifer transmissivity using the semi-logarithmic graphical method developed by Cooper and Jacob (1946), and the Aqtesolv software (HydroSOLVE, 2008) was utilized for verification purposes. The Theis (1935) recovery method was used for the recovery data. The calculated transmissivities for both the drawdown and recovery periods are not similar, likely since the recovery period was shorter and the water level trend had not stabilized completely during the measurement period. A semi-logarithmic drawdown and recovery graph for pumping test results is shown on Figure 10-15.

Figure 10-15: Semi-Logarithmic Drawdown and Recovery Graph for Argento-03 Pumping Test



Source: Montgomery, 2023.

A summary of computed aquifer parameters is given in Figure 10-19. The analysis of the trend of groundwater level drawdown for the period of three minutes after pumping started until minute 1,000, indicates a transmissivity of about 130 m^2/d. Analysis of the trend of groundwater level recovery for the late period after pumping stopped indicates a transmissivity of about 50 m^2/d. A reasonable estimation of the operative transmissivity for well Argento-03 is considered by M&A to be approximately 90 m^2/d.

Table 10-19: Summary of Computed Aquifer Parameters at Well Argento-03

Pumped Well	Average Pumping Rate (L/s)	Cooper-Jacob (1946) Drawdown Method Transmissivity (m^2/d)	Theis (1935) Recovery Method Transmissivity (m^2d)
Argento-03	14.3	130	50

10.3.2 Brine Sample Results for Argento-03

Lithium Chile has collected and received laboratory results for composite brine samples collected from well Argento-03 obtained during aquifer testing.

10.3.2.1 Composite Brine Samples Obtained During the Pumping Test at Argento-03

Table 10-20 is a summary table for the laboratory results from four brine samples obtained during pumping test operations conducted at pumping well Argento-03 during the testing period. Samples of pumped brine were obtained directly from the discharge pipe and are believed to be more representative of the brine chemistry in the lower units than the pumped samples obtained in an open borehole.

Table 10-20: Summary of Laboratory Chemical Results of Brine Samples Obtained During the Pumping Test at Well Argento-03

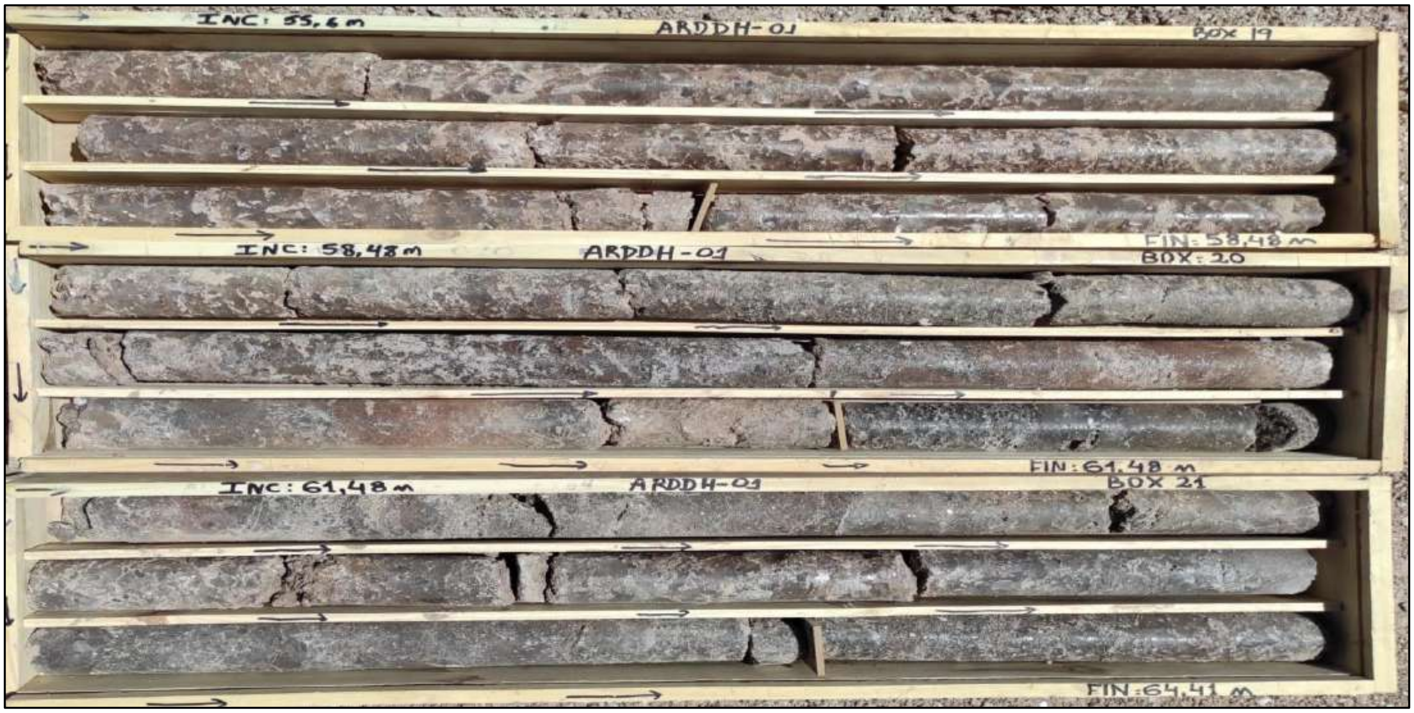
Sample ID	Date	Li (mg/L)	Mg(mg/L)	K(mg/L)	B(mg/L)	Mg/Li[1]
ARLI0067	May 15, 2023	204	2341	8518	36	11.48
ARLI0070	May 15, 2023	211	2689	8752	39	12.74
ARLI0073	May 15, 2023	211	2695	8735	39	12.77
ARLI0076	May 16, 2023	200	2259	8340	35	11.30
ARLI0079	May 17, 2023	209	2697	8674	38	12.90
ARLI0082	May 17, 2023	208	2656	8606	38	12.77
ARLI0085	May 18, 2023	208	2652	8649	38	12.75
ARLI0088	May 18, 2023	206	2594	8614	38	12.59
ARLI0091	May 19, 2023	208	2630	8753	40	12.64
ARLI0094	May 19, 2023	207	2335	8763	39	11.28
AVERAGE		207	2555	8640	38	12.32

1. Mg/Li = magnesium to lithium ratio

10.4 ARDDH-01

Drilling activities for exploration borehole ARDDH-01 started on July 07, 2022, reaching the final depth of 457 m below land surface on August 04, 2022. The drilling contractor was CR Perforaciones S.R.L., based in Salta, Argentina. This borehole was drilled using a DDH system. This well was drilled with HQ diameter from land surface to 295 m, and with NQ diameter from 295 to 457 m. No surface casing was installed in this borehole. During drilling, core samples were obtained for laboratory analysis and brine samples for chemical analysis. Core samples were stored in wooden boxes, and labeled with the borehole name and depth. Lithological descriptions were done by geologists of Lithium Chile and M&A. Figure 10-16 shows some of the drill core obtained; Table 10-21 is the summary log for this borehole and Figure 10-14 shows the construction schematic.

Figure 10-16: Core Samples Obtained From Borehole ARDDH-01



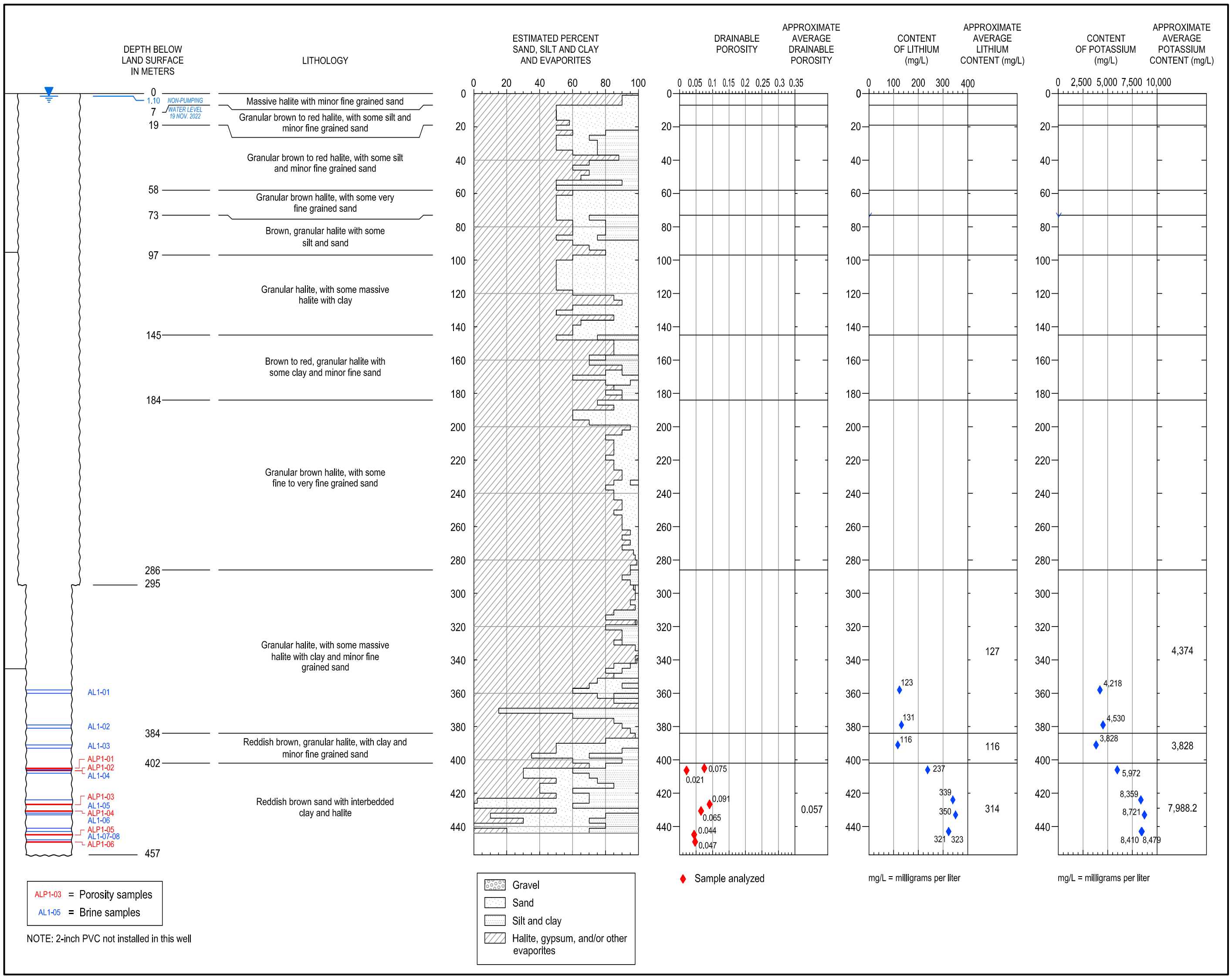
Source: Lithium Chile, 2022.

Table 10-21: Summary of Lithologic Description of Borehole ARDDH-01

From (m)	To (m)	Summary log
0	7	Massive halite with minor fine-grained sand
7	19	Granular brown to red halite, with some silt and minor fine-grained sand
19	58	Granular brown to red halite, with some silt and minor fine-grained sand
58	73	Granular brown halite, with some very fine-grained sand
73	97	Brown, granular halite with some silt and sand
97	145	Granular halite, with some massive halite with clay
145	184	Brown to red, granular halite with some clay and minor fine sand
184	286	Granular brown halite, with some fine to very fine-grained sand
286	384	Granular halite, with some massive halite with clay and minor fine-grained sand
384	402	Reddish brown, granular halite, with clay and minor fine-grained sand
402	457	Reddish brown sand with interbedded clay and halite

As of the date of this report, the exploration borehole has not been cased and borehole geophysical surveys have not been completed.

Figure 10-17: Construction Schematic for Borehole ARDDH-01



Source: Montgomery, 2022.

10.4.1 Packer Brine Sample Results for ARDDH-01

During drilling, it was possible to obtain seven brine samples. Each sample was obtained using a packer system, which allows samples to be obtained at 2 m intervals. For each case, the volume of the well was pumped at least one time before to obtain the sample. The sample was filled in 500 ml plastic bottle, labeled, and sealed for avoid any interference than can affect the results. Those samples were analyzed in Alex Stewart laboratories in Jujuy, Argentina.

For all the samples obtained, temperature and density were measured. pH was not measured in any samples due the absence of pH-meter and electrical conductivity was measured only in the last three samples. Table 10-22 summarizes field parameters measured and depth interval of the samples obtained.

Table 10-22: Field Parameters Measured During Brine Sampling at ARDDH-01

Sample ID	Interval	Type	Date	T(ºC)	pH	CE (mS/cm)
AL1-01	358 – 360	Brine	25/07/2022	5.0	---	---
AL1-02	379 - 381	Brine	27/07/2022	9.0	---	---
AL1-03	391 – 393	Brine	29/07/2022	9.0	---	---
AL1-04	406 – 408	Brine	29/07/2022	10.0	---	---
AL1-05	424 – 432	Brine	30/07/2022	10.0	---	210.2
AL1-06	433 – 441	Brine	31/07/2022	12.0	---	226.6
AL1-07	443 – 448	Brine	01/08/2022	11.0	---	232.5
AL1-08	443 - 448	Duplicate	01/08/2022	---	---	---

Lithium Chile collected and received laboratory results for depth-specific brine samples collected from well ARDDH-01 obtained during the drilling of the well using inflatable packers. Table 10-23 is a summary table for the laboratory results from brine samples obtained during the period September 05 through October 20, 2022.

Table 10-23: Summary of Laboratory Chemical Results for Brine Samples Obtained from Borehole ARDDH-01

Sample ID	Date	Interval (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
AL1-01 358 360	25/07/2022	358 – 360	123	1,557	4,218	<20
AL1-02 379 381	27/07/2022	379 - 381	131	1,523	4,530	<20
AL1-03 391 393	29/07/2022	391 – 393	116	1,198	3,828	<20
AL1-04 406 408	29/07/2022	406 – 408	237	2,824	5,972	29
AL1-05 424 432	30/07/2022	424 – 432	339	4,835	8,359	73
AL1-06 433 441	31/07/2022	433 – 441	350	5,101	8,721	76
AL1-07 443 448	01/08/2022	443 – 448	321	4,871	8,479	67
AL1-08 443 448	01/08/2022	443 - 448	323	4,861	8,410	68

Our assessment of the chemistry results obtained during drilling is that the most favorable lithium-rich brine at this location occurs below about 400 mbls. However, new samples need to be collected to determine if there is a dilution of the samples above 400 m during the sampling.

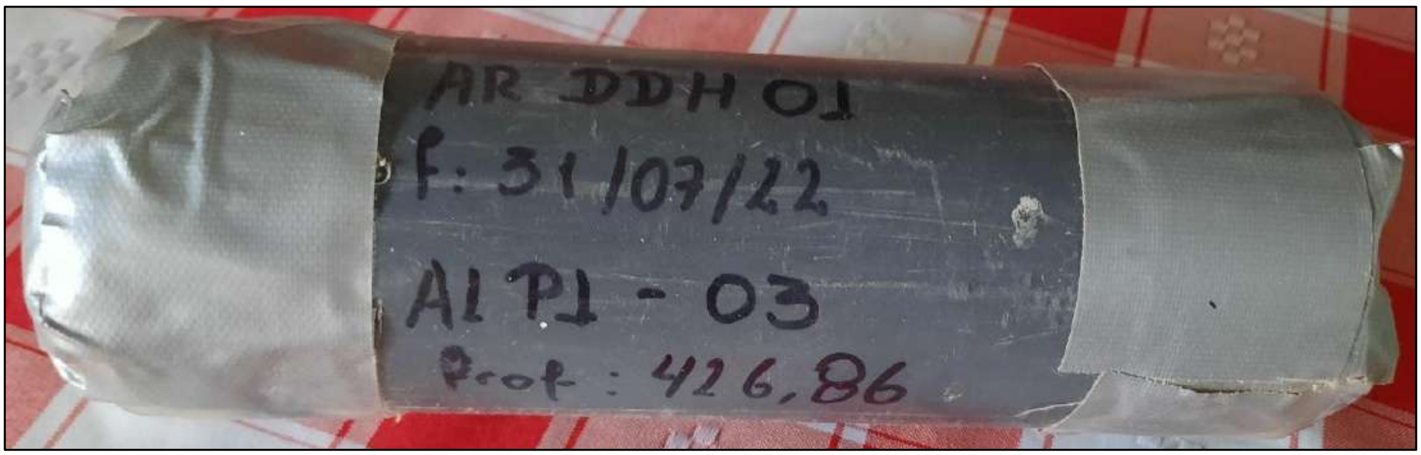
10.4.2 Porosity Sampling Results for ARDDH-01

Lithologic descriptions of the core were done by personnel of Lithium Chile. According to the different lithologic units recognized, six core samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, labeled and sealed. Table 10-24 summarizes depth intervals of the samples obtained and Figure 10-18 shows one of the sealed core samples. At the time of writing this report, laboratory results for drainable and total porosity were not available.

Table 10-24: Core Samples Obtained for Porosity Analysis from ARDDH-01

Sample ID	Interval (m)	
	From	To
ALP1-01	405.01	405.21
ALP1-02	406.3	406.5
ALP1-03	426.66	426.86
ALP1-04	430.65	430.85
ALP1-05	444.85	445
ALP1-06	449.2	449.4

Figure 10-18: Core Sample Obtained for Porosity Analysis



Source: Lithium Chile, 2022.

10.4.3 Conclusions and Recommendations for ARDDH-01

The lithology in the upper 402 m at this location is all halite with minor sand and clay layers. Below this evaporitic unit, a clastic unit of sand occurs. The brine samples obtained in this borehole indicate the best potential production zone is the clastic unit, with values of lithium of 300 mg/L or more.

It is suggested to install 2-inch slotted PVC in the borehole and use this location as an observation well for future pumping tests at other wells.

10.5 ARDDH-02

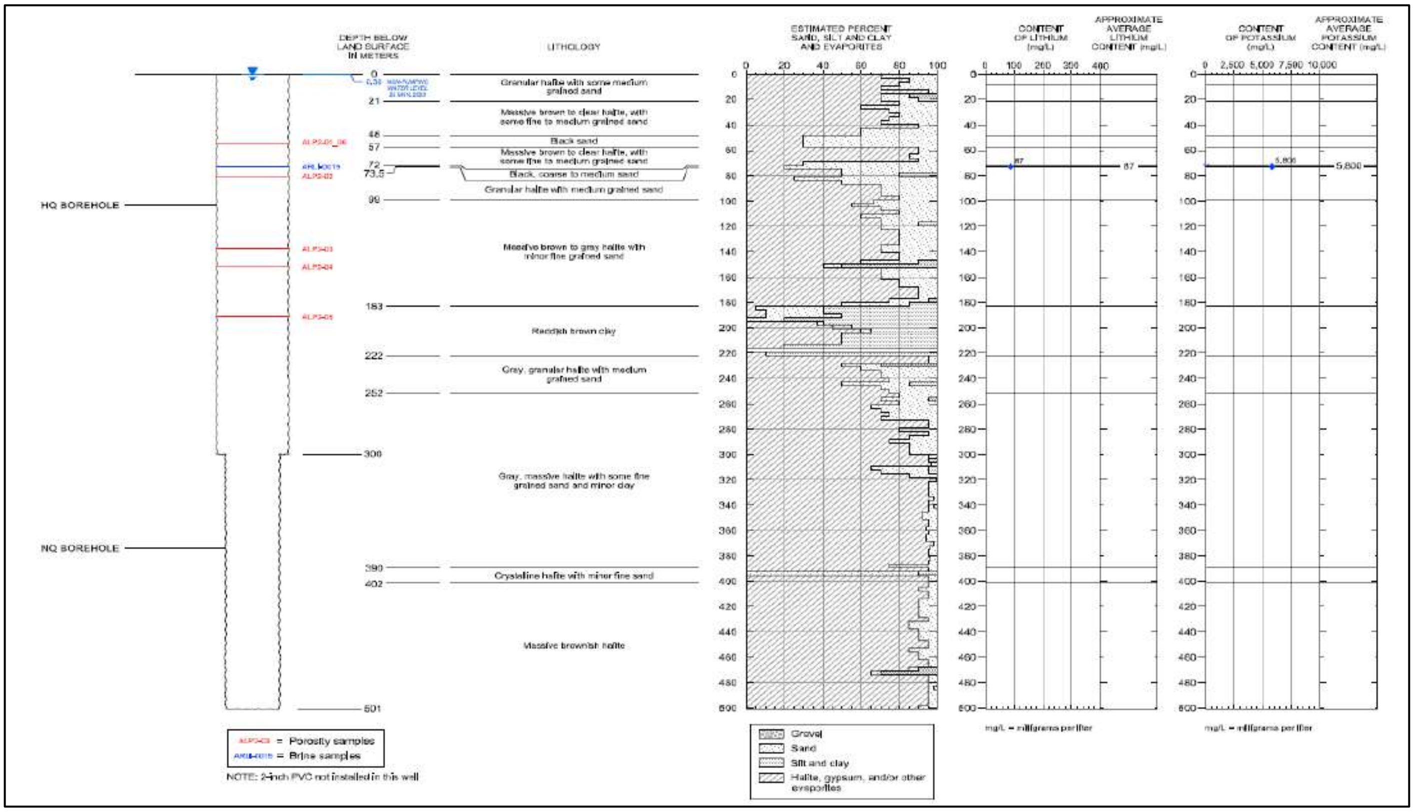
Drilling activities for exploration borehole ARDDH-02 started on September 02, 2022, reaching the final depth of 501 mbls on September 09, 2022. The drilling contractor was CR Perforaciones S.R.L., based in Salta, Argentina. This borehole was drilled using the DDH method. This borehole was drilled with HQ diameter from land surface to 300 m, and with NQ diameter from 300 to 501 m. Surface casing was not installed at this borehole. During drilling, core samples were obtained for laboratory analysis. Core samples were stored in wooden boxes and labeled with the well name and depth. Lithologic descriptions were done by geologists of Lithium Chile and M&A. Figure 10-19 shows some of the core samples obtained; Table 10-25 is the summary log for this well and Source: Lithium Chile, 2022.

Figure 10-20 shows the schematic diagram for this borehole.

Figure 10-19: Core Samples Obtained During Drilling at Borehole ARDDH-02

Source: Lithium Chile, 2022.

Figure 10-20: Schematic Diagram for Exploration Borehole ARDDH-02



Source: Montgomery, 2022.

Table 10-25: Summary of Lithologic Descriptions for ARDDH-02

From (m)	To (m)	Summary log
0	21	Granular halite with some medium-grained sand
21	48	Massive brown to clear halite, with some fine- to medium-grained sand
48	57	Black sand
57	72	Massive brown to clear halite, with some fine- to medium-grained sand
72	73.5	Black, coarse to medium sand
73.5	99	Granular halite with medium-grained sand
99	183	Massive brown to gray halite with minor fine-grained sand
183	222	Reddish brown clay
222	252	Gray, granular halite with medium-grained sand
252	390	Gray, massive halite with some fine-grained sand and minor clay
392	402	Crystalline halite with minor fine sand
402	501	Massive brownish halite

As of the date of this report, the exploration borehole has not been cased and borehole geophysical surveys have not been completed.

10.5.1 Brine Sampling for ARDDH-02

During drilling, brine samples could not be obtained. Depth-specific packers were installed at different depths, but in all cases, no brine was collected. In each case, airlift from the packer was conducted for several hours, but there was only brine flowing for a couple of minutes with a volume equivalent to the brine stored in the annular space. Several tries were done at this borehole with the same results.

On March 05, 2023, a brine sample was obtained in this well with a hydrasleeve system. The sample was filled in 500 ml plastic bottle, labeled, and sealed. That samples was analyzed at Alex Stewart laboratories in Jujuy, Argentina. Temperature, electrical conductivity, pH and density were measured in the field. Table 10-26 summarizes field parameters measured and depth interval of the samples obtained.

Table 10-26: Field Parameters Measured During Brine Sampling at ARDDH-02

Sample ID	Interval	Type	Date	T(°C)	pH	CE (mS/cm)	Density (mg/mL)
ARLI0019	71 – 73	Brine	03/05/2023	16.2	6.6	258	1.212

Lithium Chile collected and received laboratory results for depth-specific brine sample collected from well ARDDH-02 obtained with hydrasleeve. Table 10-27 is a summary table for the laboratory results from brine sample obtained.

Table 10-27: Summary of Laboratory Chemical Results for Brine Sample Obtained from Borehole ARDDH-02

Sample ID	Date	Interval (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
ARLI0019	05/03/2023	71 – 73	87	3,399	5,800	31

Our assessment of the chemistry results obtained during drilling is that the most favorable lithium-rich brine at this location occurs below about 100 – 200 mbls. However, new samples need to be collected to determine if this assessment is reliable.

10.5.2 Porosity Sampling for ARDDH-02

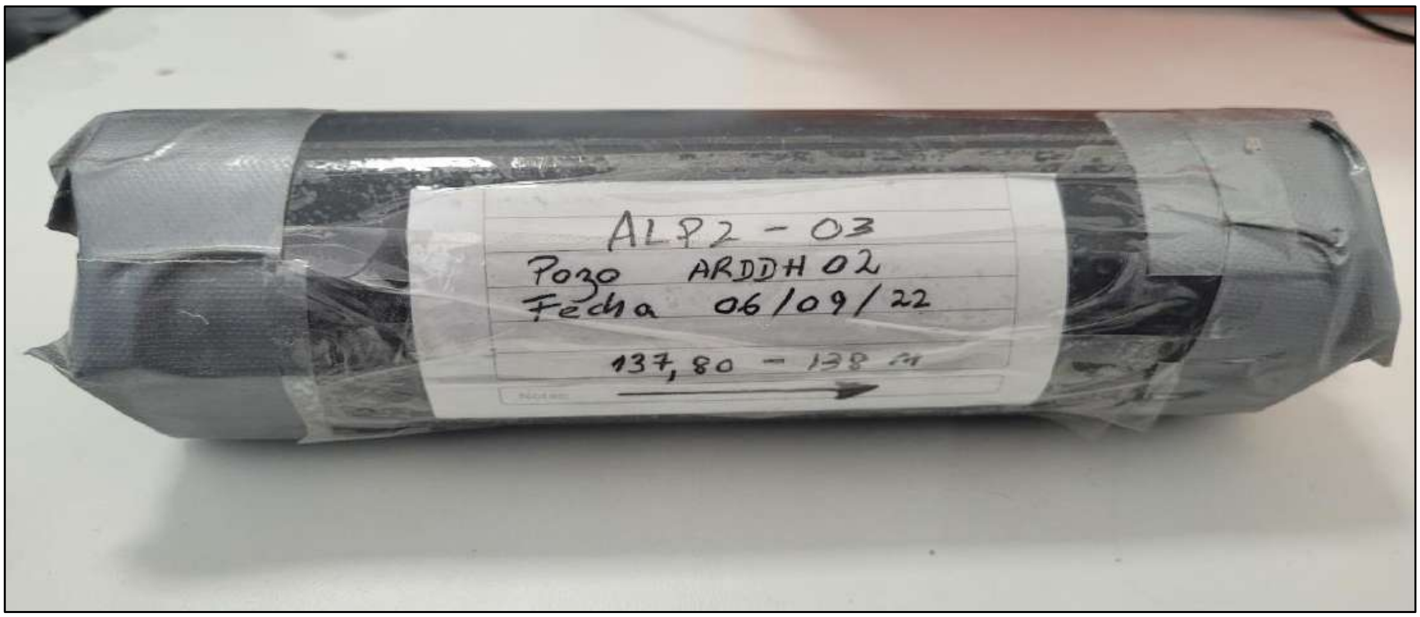
Lithologic descriptions of the core were done by personnel of Lithium Chile. According to the different lithologic units recognized, six core samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, labeled and sealed. Table 10-28 summarizes depth intervals of the samples obtained and Figure 10-21 shows one of the sealed core samples. These core samples were not submitted for laboratory analysis.

Table 10-28: Core Samples Obtained for Porosity Analysis

Sample ID	Interval (m)	
	From	To
ALP2-01	54	54.15

Sample ID	Interval (m)	
	From	To
ALP2-02	80.57	80.77
ALP2-03	137.8	138
ALP2-04	151.92	152.12
ALP2-05	191.27	191.5
ALP2-06	54	54.15

Figure 10-21: Core Sample Obtained for Porosity Analysis From ARDDH-02



Source: Lithium Chile, 2022.

10.5.3 Conclusions and Recommendations for ARDDH-02

The lithology in the upper 500 m at this location is effectively all halite with minor sand and clay layers. The presence of a clastic aquifer similar to the exploration wells farther to the west was not observed; this is the reason why brine samples could not be obtained; However, it is possible that a clastic unit could be encountered below the halite, but it is not recommended to drill this location again attempting to encounter a deep clastic unless the other parts of the Lithium Chile concessions would not be adequate for development of the Project.

It is suggested to install 2-inch slotted PVC and use this location as an observation well for future pumping tests at other wells.

10.6 ARDDH-03

Drilling activities for exploration borehole ARDDH-03 started on August 10, 2022, reaching the final depth of 500 mbls on August 31, 2022. The drilling contractor was CR Perforaciones S.R.L., based in Salta, Argentina. This well was drilled using the DDH method. This well was drilled with HQ diameter from land surface to 300 m, and with NQ diameter from 300 to 500 m. Surface casing was not installed at this borehole. During drilling, core samples were obtained for laboratory analysis. Core samples were stored in wooden boxes, and labeled with the well name and depth. Lithological descriptions were done by geologists of Lithium Chile and M&A. Figure 10-22 shows some of the core samples obtained; Table 10-29 is the summary log for this borehole and Figure 10-16 shows the construction schematic for this borehole.

Figure 10-22: Core Samples Obtained During Drilling of Borehole ARDDH-03

Source: Lithium Chile, 2022.

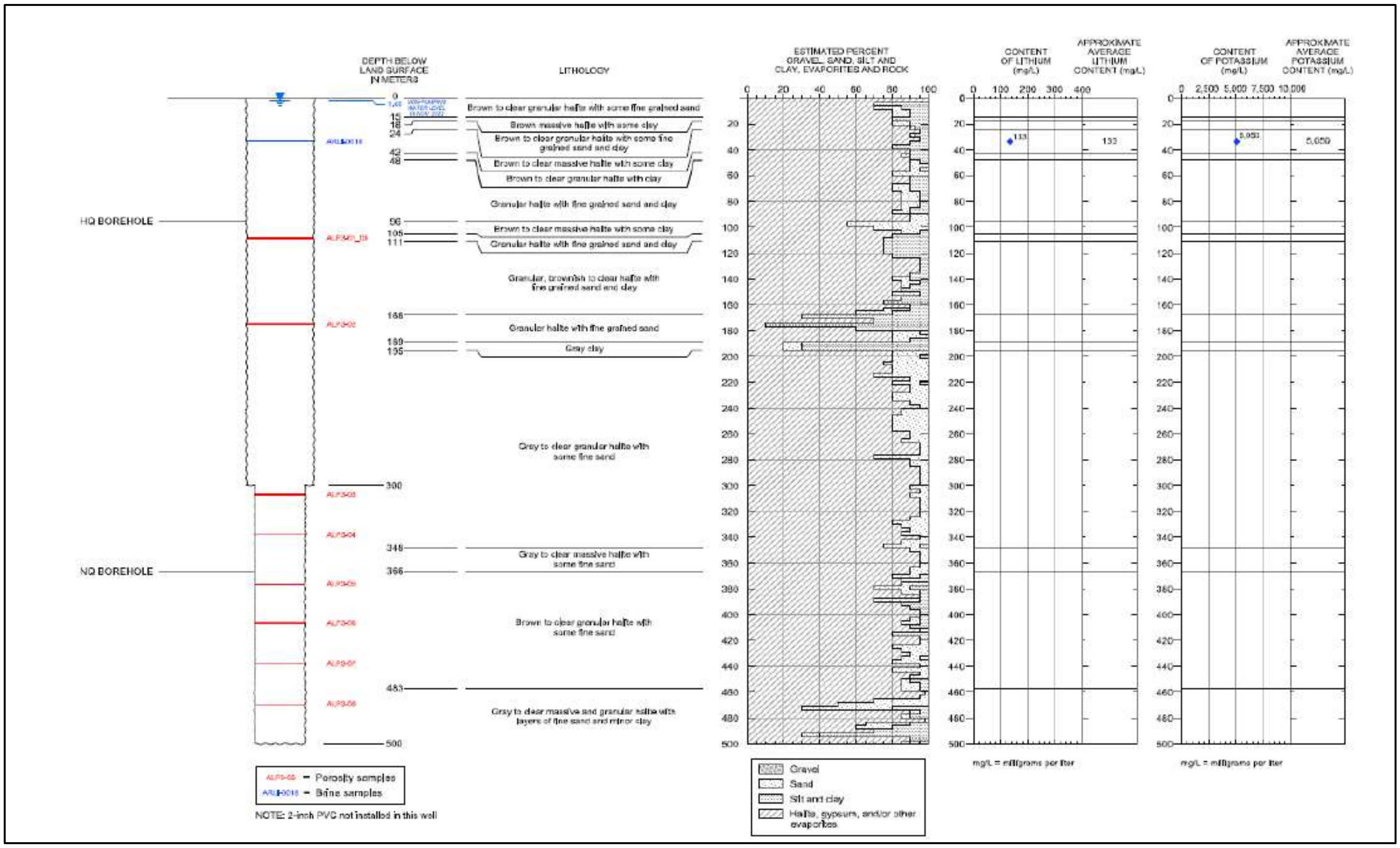
Table 10-29: Summary of Lithologic Descriptions for Borehole ARDDH-03

From (m)	To (m)	Summary log
0	15	Brown to clear granular halite with some fine-grained sand
15	18	Brown massive halite with some clay
18	24	Brown to clear granular halite with some fine-grained sand and clay
24	42	Brown to clear massive halite with some clay
42	48	Brown to clear granular halite with clay
48	96	Granular halite with fine-grained sand and clay
96	105	Brown to clear massive halite with some clay
105	111	Granular halite with fine-grained sand and clay
111	168	Granular, brownish to clear halite with fine-grained sand and clay
168	189	Granular halite with fine-grained sand
189	195	Gray clay
195	348	Gray to clear granular halite with some fine sand
348	366	Gray to clear massive halite with some fine sand

From (m)	To (m)	Summary log
366	483	Brown to clear granular halite with some fine sand
483	500	Gray to clear massive and granular halite with layers of fine sand and minor clay

As of the date of this report, the exploration borehole has not been cased and borehole geophysical surveys have not been completed.

Figure 10-23: Construction Schematic for Borehole ARDDH-03



Source: Montgomery, 2022.

10.6.1 Brine Sampling for ARDDH-03

During drilling, brine samples could not be obtained. Depth-specific packers were installed at different depths, but in all cases, brine could not be collected. In each case, the packer was airlifted for several hours, but there was only brine flowing for a couple of minutes with a volume equivalent to the brine stored in the annular space. Several tries were done in this borehole with the same negative results.

On March 04, 2023, a brine sample was obtained in this well by Lithium Chile with a Hydrasleeve system. The sample was filled in a 500 mL plastic bottle, labeled, and sealed. The sample was analyzed at Alex Stewart laboratories in Jujuy, Argentina. Temperature, electrical conductivity, pH and density were measured in the field. Table 10-30 summarizes field parameters measured and depth interval of the samples obtained.

Table 10-30: Field Parameters Measured During Brine Sampling at ARDDH-03

Sample ID	Interval	Type	Date	T(°C)	pH	CE (mS/cm)	Density (mg/mL)
ARLI0018	33 – 33.5	Brine	04/03/20223	13.9	6.8	259	1.209

Table 10-31 is a summary table for the laboratory results from brine sample obtained.

Table 10-31: Summary of Laboratory Chemical Results for Brine Sample Obtained from Borehole ARDDH-03

Sample ID	Date	Interval (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
ARLI0018	03/04/2023	33 – 33.5	113	2,129	5,050	10

Our assessment of the chemistry results obtained during drilling is that the most favorable lithium-rich brine at this location occurs below about 100 mbls. However, new samples need to be collected to determine if this assessment is reliable.

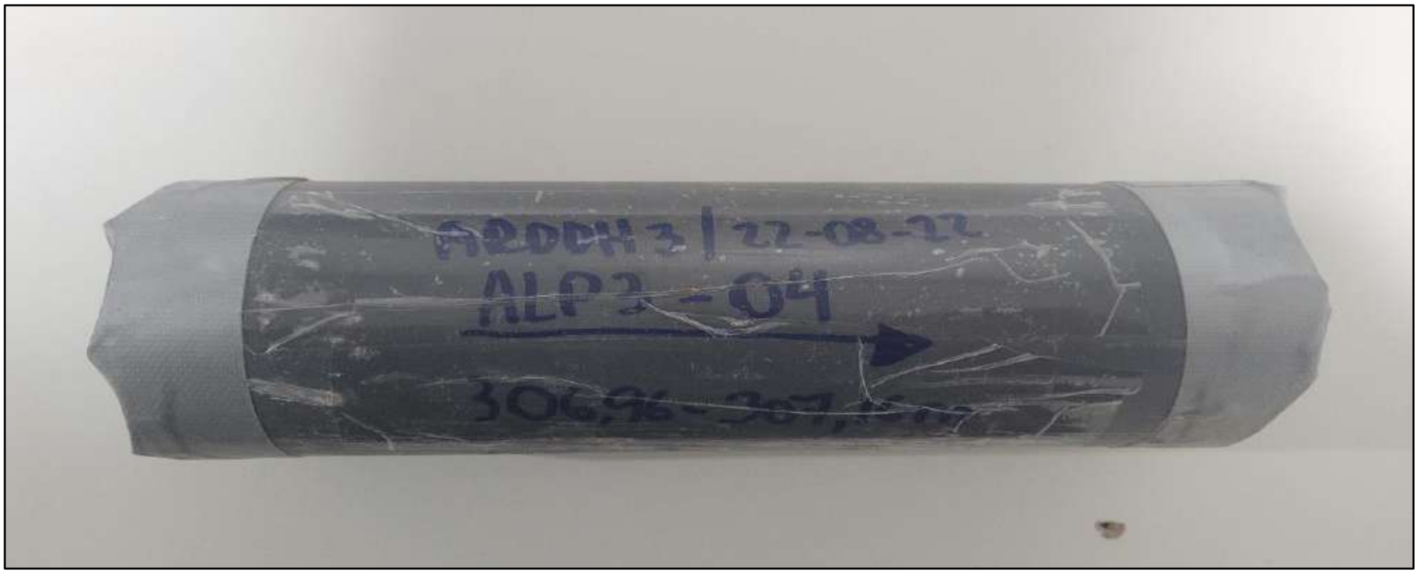
10.6.2 Porosity Sampling for ARDDH-03

Lithologic descriptions of the core were done by personnel of Lithium Chile. According to the different lithologic units recognized, nine cores samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, labeled and sealed. Table 10-32 summarizes depth intervals of the samples obtained and Figure 10-24 shows one of the sealed core samples. By decision of Lithium Chile, those core samples were not submitted for laboratory analysis.

Table 10-32: Core Samples Obtained for Porosity Analysis From ARDDH-03

Sample ID	Interval (m)	
	From	To
ALP3-01	57.34	57.51
ALP3-02	108.31	108.48
ALP3-03	174.74	174.92
ALP3-04	306.96	307.16
ALP3-05	337.96	338.14
ALP3-06	376.35	376.55
ALP3-07	406.45	406.63
ALP3-08	437.61	437.77
ALP3-09	469.24	469.43

Figure 10-24: Core Sample Obtained for Porosity Analysis



Source: Lithium Chile, 2023.

10.6.3 Conclusions and Recommendations for ARDDH-03

The lithology in the upper 500 m at this location is effectively all halite with minor sand and clay layers. The presence of a clastic unit was not observed, and is the reason why brine samples could not be obtained, However, it is possible that a clastic unit could be encountered below the halite. However, it is not recommended to drill this location again expecting a deep clastic unless the other parts of the Lithium Chile concessions would not be adequate for development of a Project.

It is suggested to install 2-inch slotted PVC and use this location as an observation well for future pumping tests at other wells. To determine the chemistry at this location, it is recommended to obtain brine sample at different depths using a hydrasleeve or a depth-specific bailer.

10.7 ARDDH-04

Drilling activities for exploration borehole ARDDH-04 started on January 05, 2023, and a final depth of 280 mbls was reached on February 21, 2023. The independent drilling contractor was AGV Falcon Drilling, based in Salta, Argentina. This well was drilled using the DDH method. This well was drilled with HQ diameter from land surface to 280 m. Surface casing was not installed at this borehole. During drilling, core samples were obtained for laboratory analysis. Core samples were stored in wooden boxes, and labeled with the well name and depth. Lithological descriptions were made by geologists of Lithium Chile and M&A. Figure 10-25 shows some of the core samples obtained; Table 10-33 is the summary log for this borehole and Figure 10-26 shows the construction schematic for this borehole.

Figure 10-25: Core Samples Obtained During Drilling of Borehole ARDDH-04

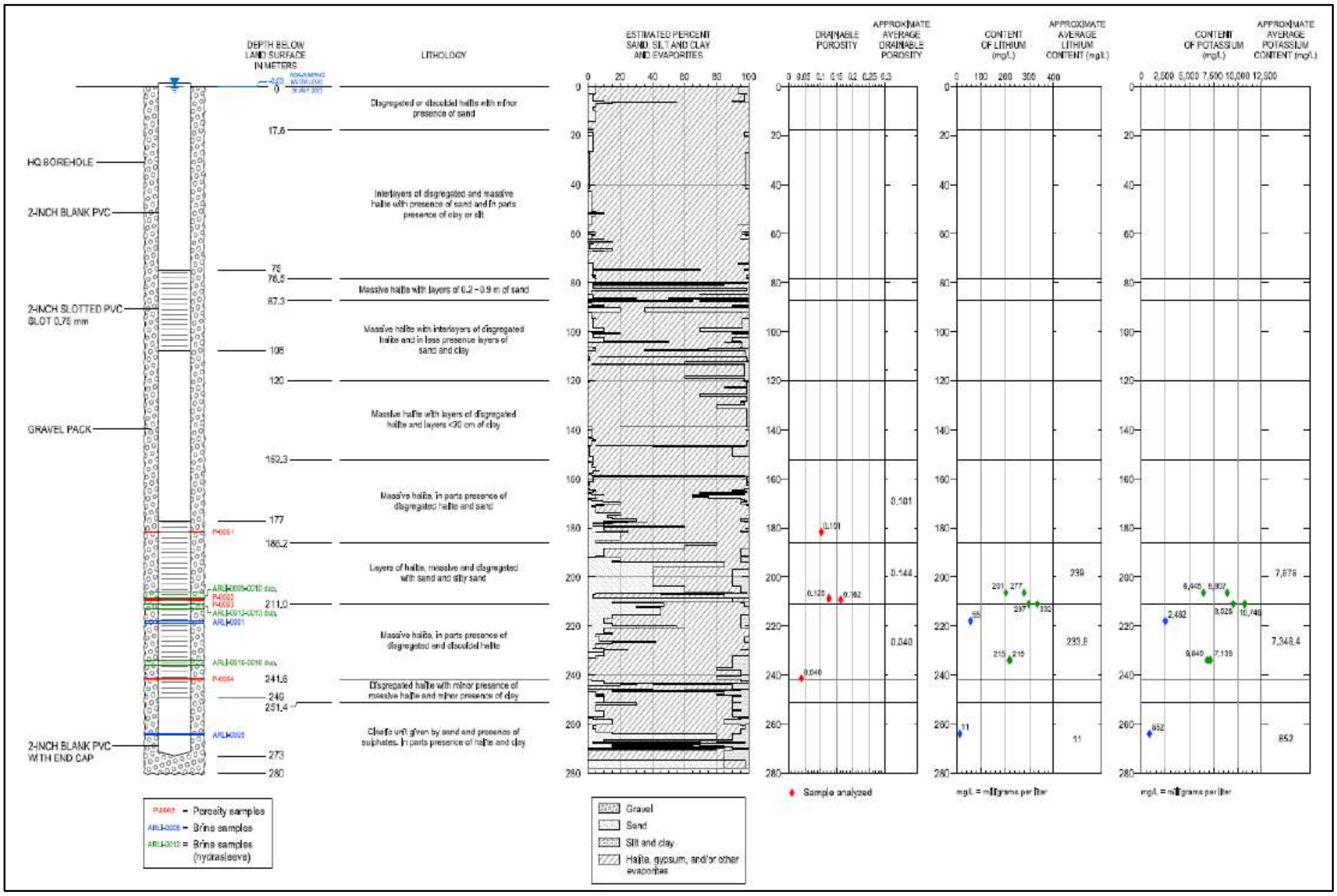
Source: Lithium Chile, 2023.

Table 10-33: Summary of Lithologic Descriptions for Borehole ARDDH-04

From (m)	To (m)	Summary log
0	17.8	Disaggregated or discoidal halite with minor sand.
17.8	78.5	Interlayers of fractured and massive halite with sand and minor clay and silt
78.5	87.3	Massive halite with layers of 0.2 – 0.9 m of sand
87.3	120.0	Massive halite with interlayers of fractured halite with minor layers of sand and clay
120	152.3	Massive halite with layers of fractured halite and layers <20 cm of clay
152.3	186.2	Massive halite with minor fractured halite and sand
186.2	211.0	Layers of halite, massive and fractured with sand and silty sand
210.0	241.6	Massive halite with minor fractured halite and sand
241.6	251.4	Fractured halite with minor massive halite and clay
251.4	280	Clastic sand unit with minor evaporites. Minor halite and clay

Once drilling was completed, 2-inch blank and screened PVC was installed (slot size 0.75 mm) from land surface to 273 mbls. Perforated intervals were installed from 75 to 108 and 177 to 249 mbls. Blank casing intervals were set from 0 to 75, 108 to 177, and from 249 to 273 mbls.

Figure 10-26: Construction Schematic for Borehole ARDDH-04



Source: Montgomery, 2023.

10.7.1 Brine Sampling for ARDDH-04

After the well was drilled, two brine samples were obtained using a packer system, which allows samples to be obtained at 0.75 m intervals. Each sample was filled in 500 ml plastic bottle, labeled, and sealed for avoid any interference than can affect the results. Those samples were analyzed in Alex Stewart laboratories in Jujuy, Argentina. Temperature, pH, electrical conductivity and density were measured in the field. Table 10-34 summarizes field parameters measured and depth interval of the samples obtained.

Table 10-34: Field Parameters Measured During Brine Sampling at ARDDH-04

Sample ID	Interval	Type	Date	T(°C)	pH	CE (mS/cm)	Density (mg/mL)
ARLI0001	218 – 218.75	Brine	02/16/2023	11.2	7.3	252	1.220
ARLI0005	264 – 264.75	Brine	02/18/2023	18.5	7.4	255	1.210

Lithium Chile collected and received laboratory results for depth-specific brine samples collected from well ARDDH-03 obtained with a Hydrasleeve bailer. Table 10-35 is a summary table for the laboratory results from brine samples obtained.

Table 10-35: Field Parameters Measured During Brine Sampling at ARDDH-04

Sample ID	Date	Interval (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
ARLI0001	02/16/2023	218 – 218.75	55	959	2,482	5
ARLI0005	02/18/2023	264 – 264.75	11	138	852	5

10.7.2 Hydrasleeve Brine Sample Results for ARDDH-04

After the well was drilled and cased, three brine samples were obtained by Lithium Chile using a Hydrasleeve bailer, which allows samples to be obtained at 2 m intervals. The samples were filled in 500 mL plastic bottle, labeled, and sealed. The samples were analyzed at Alex Stewart laboratories in Jujuy, Argentina. Temperature, pH, electrical conductivity, and density were measured in the field.

Table 10-36 summarizes field parameters measured and depth interval of the samples obtained.

Table 10-36: Field Parameters Measured During Brine Sampling at ARDDH-04

Sample ID	Interval (m)	Type	Date	T(°C)	pH	CE (mS/cm)	Density (mg/mL)
ARLI0009	206.5 – 208.5	Brine	02/26/2023	18.5	6.1	249	1.217
ARLI0012	211 – 213	Brine	02/27/2023	13.7	6.1	249	1.22
ARLI0015	234 – 236	Brine	02/28/2023	16.0	6.1	237	1.21

Table 10-37 is a summary table for the laboratory results from obtained brine samples.

Table 10-37: Summary of Laboratory Chemical Results for Brine Samples Obtained from Borehole ARDDH-04

Sample ID	Date	Interval(m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
ARLI0009	02/26/2023	206.5 – 208.5	277	7,116	8,907	10
ARLI0012	02/27/2023	211 – 213	297	7,776	9,526	10
ARLI0015	02/28/2023	234 - 236	219	5,541	7,138	10

10.7.3 Porosity Sampling for ARDDH-04

Core were collected and described by personnel of Lithium Chile. According to the different lithologic units recognized, four core samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, which was subsequently labeled and sealed. Table 10-38 summarizes depth intervals of the samples obtained for analysis as well as the laboratory results from LCV.

Table 10-38: Core Samples Obtained for Porosity Analysis from ARDDH-04

Sample ID	Interval (m)		Total Porosity	Specific Yield	General Lithology
	From	To			
P0001	181.69	181.91	0.125	0.101	Halite
P0002	208.83	208.98	0.316	0.125	Sand with halite
P0003	209.37	209.52	0.305	0.162	Sand with halite
P0004	241.48	241.62	0.049	0.040	Halite

10.7.4 Conclusions and Recommendations for ARDDH-04

The lithology in the upper 250 m at this location is effectively all halite with minor sand and clay layers. The presence of a clastic unit was observed below 250 m and consists of mostly sand with minor halite and clay. It is suggested that more brine samples be obtained with a Hydrasleeve bailer in this well, from the surface to the bottom at intervals of 20 m in order to determine if there is a zone with low lithium content. Similarly, it is suggested that new samples be obtained at 200, 210, 220 and 260 mbls to determine if the variations in measured lithium concentration are due to sampling variability.

10.8 ARDDH-05

Drilling activities for exploration borehole ARDDH-05 started on February 27, 2023, reaching the final depth of 424.8 mbls on March 25, 2023. The drilling contractor was AGV Falcon Drilling, based in Salta, Argentina. This well was drilled using the DDH method. This well was drilled with HQ diameter from land surface to 424.8 m. Surface casing was not installed at this borehole. During drilling, core samples were obtained for laboratory analysis. Core samples were stored in wooden boxes, and labeled with the well name and depth. Lithological descriptions were done by geologists of Lithium Chile and M&A.

At a depth of 413 m, the drillings rods uncoupled. AGV Falcon Drilling retreived them and continued drilling until a depth of 424.8 m. At that depth, aproximately 200 m the rods uncoupled again, and could not be retrieved from the borehole. The decision of Lithium Chile was to stop drilling and install 2-inch PVC from surface to about 215 m. Perforated intervals were installed from 99.5 to 111.5 and 177.5 to 210.5 mbls. Blank casing intervals were set from 0 to 99.5, 111.5 to 177.5, and from 210.5 to 215 mbls.

Figure 10-27 shows some of the core samples obtained; Table 10-39 is the summary log for this borehole and Figure 10-28 shows the construction schematic for this borehole.

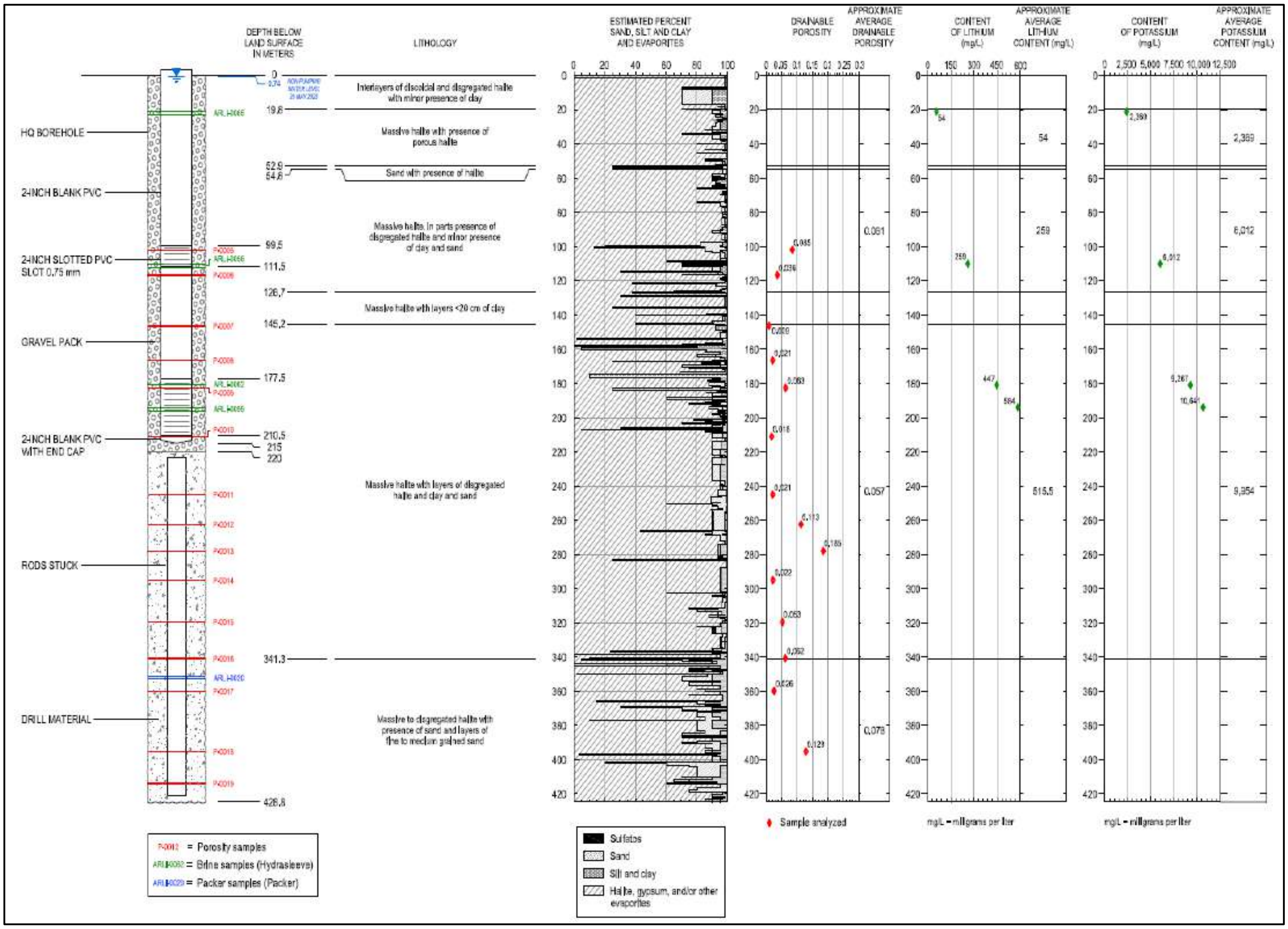
Figure 10-27: Core Samples Obtained During Drilling of Borehole ARDDH-05

Source: Lithium Chile, 2023.

Table 10-39: Summary of Lithologic Descriptions for Borehole ARDDH-05

From (m)	To (m)	Summary log
0	19.8	Interlayers of massive and fractured halite with minor presence of clay
19.8	52.9	Massive halite with some porous halite
52.9	54.8	Sand with minor halite
54.8	126.7	Massive halite, with minor fractured halite and clay and sand
126.7	145.2	Massive halite with <20 cm layers of clay
145.2	341.3	Massive halite with layers of fractured halite and minor clay and sand
341.3	424.2	Massive to fractured halite with sand and layers of fine to medium grained sand

Figure 10-28: Construction Schematic for Borehole ARDDH-05



Source: Montgomery, 2023.

10.8.1 Brine Sampling for ARDDH-05

After the well was drilled, one brine sample was obtained using a packer system, which allows samples to be obtained at 0.75 m intervals. Each sample was filled in 500 ml plastic bottle, labeled, and sealed for avoid any interference than can affect the results. That sample was analyzed in Alex Stewart laboratories in Jujuy, Argentina. At the time this report is written, laboratory results from the packer system are not available. Temperature, pH, electrical conductivity, and density were measured in the field. Table 10-40 summarizes field parameters measured and depth interval of the sample obtained.

Table 10-40: Construction Schematic for Borehole ARDDH-05

Sample ID	Interval (m)	Type	Date	T(°C)	pH	CE (mS/cm)	Density (mg/mL)
ARLI0020	351.5 - 353	Brine	23/03/2023	12.1	6.9	260	1.210

10.8.2 Hydrasleeve Brine Sample Results for ARDDH-05

After the well was drilled and cased, four brine samples were obtained using a Hydrasleeve system, which allows samples to be obtained at 2 m intervals. The samples were filled in 500 mL plastic bottle, labeled, and sealed. The samples were analyzed at Alex Stewart laboratories in Jujuy, Argentina. Temperature, pH, electrical conductivity, and density were measured in the field. Table 10-41 summarizes field parameters measured and depth interval of the samples obtained.

Table 10-41: Construction Schematic for Borehole ARDDH-05

Sample ID	Interval (m)	Type	Date	T(°C)	pH	CE (mS/cm)	Density (mg/mL)
ARLI0056	110 – 112	Brine	28/04/2023	14.8	6.8	251	1.222
ARLI0059	194 – 196	Brine	28/04/2023	15.1	7.5	251	1.222
ARLI0062	181 – 183	Brine	28/04/2023	14.1	6.6	250	1.222
ARLI0065	21 – 23	Brine	28/04/2023	15.8	7.3	246	1.222

Lithium Chile collected and received laboratory results for depth-specific brine samples collected from well ARDDH-05 using a Hydrasleeve system. Table 10-42 is a summary table for the laboratory results from brine samples obtained.

Table 10-42: Summary of Laboratory Chemical Results for Brine Samples Obtained from Borehole ARDDH-05

Sample ID	Date	Interval (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
ARLI0056	28/04/2023	110 – 112	259	2552	6012	10
ARLI0059	28/04/2023	194 – 196	584	6462	10641	10
ARLI0062	28/04/2023	181 – 183	447	4601	9267	10
ARLI0065	28/04/2023	21 – 23	54	566	2369	10

10.8.3 Porosity Sampling for ARDDH-05

Lithologic descriptions of the core were done by personnel of Lithium Chile. According to the different lithologic units recognized, 15 cores samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, labeled and sealed. Table 10-43 summarizes depth intervals of the samples obtained and laboratory results.

Table 10-43: Core Samples Obtained for Porosity Analysis from ARDDH-05

Sample ID	Interval (m)		Total Porosity	Specific Yield	General Lithology
	From	To			
P0005	101.85	102.05	0.121	0.085	Halite
P0006	116.65	116.80	0.106	0.036	Halite
P0007	146.30	146.50	0.044	0.009	Halite
P0008	166.50	166.70	0.043	0.021	Halite
P0009	182.60	182.80	0.078	0.063	Halite
P0010	211.10	211.30	0.027	0.018	Halite
P0011	245.05	245.25	0.081	0.021	Halite
P0012	262.45	262.65	0.327	0.113	Halite
P0013	278.00	278.20	0.257	0.185	Halite
P0014	295.05	295.20	0.029	0.022	Halite
P0015	319.65	319.80	0.100	0.053	Halite
P0016	340.76	340.95	0.078	0.062	Halite
P0017	359.85	360.05	0.032	0.026	Halite
P0018	395.30	395.40	0.163	0.129	Halite
P0019	413.94	414.11	0.274	0.040	Halite

10.8.4 Conclusions and Recommendations for ARDDH-05

The lithology in this well is essentially all halite with minor sand and clay layers. According to the values obtained at this well, which are the highest obtained in Lithium Chile's concessions, it is suggested that a new exploration well be drilled in this area, with a depth of 400 m or more. This well needs to be cased and with new samples obtained. One of those samples need to be obtained at a depth of approximately 200 m for verify the lithium concentration at this depth and new samples below that depth, at regular intervals of 50 m. The results obtained in this new well will allow to verify the higher lithium values in this area and increase the resources of the project. In case of not possible to drill a new well, it is suggested to obtain new samples at depths of 180, 200 and 220 m to validate the lithium values obtained, as well as to collect samples deeper than 220 m.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

The following section applies to the sampling program that occurred during drilling and testing program of Argento-01 in 2021, Argento-02 and -03 in 2023, ARDDH-01 to -05 in 2022 and 2023. Brine samples were obtained for laboratory analyses. Samples were taken both during drilling, during the pumping test, and after well construction.

11.1 Brine Sampling Methodology

Four methods were used to obtain brine samples during the exploration drilling program. Brine samples were used to support the reliability of the depth-specific samples included analyses of the following:

- Pumped samples obtained at variable depths during drilling using a downhole sampling pump
- Brine samples obtained during and at the end of the pumping test in exploration wells Argento-01, -02 and -03
- Hydrasleeve samples obtained at specific depths after the wells were cased
- Packer brine samples obtained during drilling at corehole ARDDH-01 and -04

11.1.1 Brine Sampling During Drilling

The methodology used to sample the well consisted of lowering a 5 HP pump at the depth reached while drilling and pumping the water volume from the well. Because of the open borehole conditions during sampling, the samples are not considered to be truly depth-specific samples. This operation was repeated three times before finally taking the sampling after water levels recovered.

11.1.2 Brine Sampling During Exploration Well Pumping Test

Brine samples were collected during the pumping test conducted at Argento-01, -02 and -03. Samples were typically obtained during testing and at the end of the pumping period: brine samples were collected at approximately 12-hour intervals during pumping. The purpose of sampling was to document the chemistry of brine from pumping wells, and to document changes in chemistry, if any, during the initial pumping periods. Unlike depth-specific samples, brine samples collected during well pumping are a composite chemistry sample for the entire screened interval of the well and are more representative of the chemistry that would be expected from that well during production pumping.

Brine samples were collected directly from the discharge line. Temperature (°C), electrical conductivity (EC), pH, and brine density were monitored during pumping. Brine samples from current pumping test program along with duplicate samples were sent to ASA Laboratory, Salta, Argentina; brine samples from 2018 drilling and testing program were sent to Alex Stewart NOA Laboratory in San Salvador de Jujuy, Argentina. The laboratory is independent of the Issuer.

11.1.3 Brine Sampling using Hydrasleeve Sampling Bags

Samples were taken from top to bottom to avoid mixing of the brine within the well; this was done to obtain representative brine samples for each selected depth. The Hydrasleeve sample bags were lowered into the well using a manual winch with a 3-mm diameter cable marked every 5 m and mounted on an iron stand. As a cable guide, a sheave was mounted on an iron stand over the wellhead.

11.1.4 Brine Sampling Using an Inflatable Packer

An inflatable double packer was lowered into the cased well to the zone identified for sampling. The packer was inflated to attempt isolation of the aquifer zoned to be sampled. Brine samples were collected from the zone between the 2 packers.

11.1.5 Brine Sample Preparation

After the brine samples were sealed on site, they were stored in a cool location, then shipped in sealed containers to the laboratory for analysis. Chemistry samples (brine) were not preserved, and were not subjected to any further preparation prior to shipment to participating laboratories. Duplicate brine samples and remaining brine are stored at the Alex Stewart NOA in Jujuy.

11.1.6 Brine Sample Analyses

Alex Stewart NOA has their main offices in Mendoza, Argentina, and corporate offices in Great Britain. Alex Stewart NOA has extensive experience analyzing lithium-bearing brines. The Alex Stewart NOA laboratories are ISO 9001 accredited and operate according to Alex Stewart Group international standards, consistent with ISO 17025 standards. The laboratory is independent of the Issuer. Samples were analyzed for metals at the ASA laboratory using the Inductively Coupled Plasma (ICP) spectrometry analytical method.

11.1.7 Quality Control Results and Analyses

Analytical quality was monitored through the use of duplicate samples. Sample duplicates were obtained during sample collection in the field and also via laboratory split samples done by the laboratory. Duplicates were analyzed during each of the sampling programs during drilling, during the pumping test, during Hydrasleeve sampling, and during the inflatable packer sampling. Table 11-1 presents original and duplicate sample analytical results and statistics for selected constituents. Table 11-2 presents percentage of difference between original and duplicate samples for selected constituents.

All percentage differences between the original and the duplicate are low and considered within an acceptable range.

11.2 Core Sampling Methodology

Lithologic descriptions of the core were done by personnel of Lithium Chile. According to the different lithologic units recognized, six core samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, labeled and sealed. Table 10-24 summarizes depth intervals of the samples obtained and Figure 10-16 shows one of the sealed core samples.

To determine specific yield (i.e., drainable porosity) and total porosity, retrieved core was analyzed at the LCV Laboratory in Buenos Aires, Argentina. The measurement procedure involved saturating the core sample with brine solution and placing them in test cells where a pressure differential was applied and the proportion of brine which can be drained was estimated along with the total porosity. LCV is an ISO 9001-2015 accredited laboratory, and independent of the Issuer.

11.2.1 Quality Control Results and Analyses

For the same lithology, LCV laboratory results at ARDDH-04 and ARDDH-05 were compared with the Zelandez BMR results from Argento-01 to confirm overall consistency. The halite unit generally shows an acceptable agreement (3% average from the Zelandez results versus 4-5% average from the LCV results), and future BMR logs and drainable porosity testing is recommended to better confirm the obtained drainable porosity values.

11.3 Sample Security

All samples were labeled with permanent marker, sealed with tape, and stored at a secure site, both in the field and in Salta, Argentina. Remaining sample brine and duplicates samples obtained during drilling and testing are currently being stored in the Alex Stewart NOA laboratory in Jujuy.

11.4 QA/QC Conclusions

The field sampling of brines from the pumping tests was done in accordance with generally accepted industry standards. The brine sampling program included Quality Assurance and Quality Control (QA/QC) standard elements such as including duplicate samples. Formal traffic reports and chain of custody documents were prepared for every sample obtained and submitted for laboratory analysis. In the opinion of the QP, sample preparation, security, and analytical procedures were acceptable and results from the laboratory analyses are considered adequate.

Table 11-1: Percentage Difference Between Original and Duplicate Sample Results for Li, K, and Mg

Sample ID Original/Duplicate	Li (mg/L)	Duplicate	% Difference	K (mg/L)	Duplicate	% Difference	Mg (mg/L)	Duplicate	% Difference
[1]AR0921-01 / AR0921-01[1,6]	20	20	0.0	1,093	1,106	1.2	166	162	2.4
[1]AR0921-243-01 / AR0921-XXX(243) [1,7]	97	97	0.0	3,181	3,128	1.7	1,507	1,505	0.1
[1]AR0921-XXX / AR0921-XXX(243) [1,6]	97	97	0.0	3,128	3,135	0.2	1,505	1,498	0.5
[1]AR0921-XXX / AR0921-XXX(300) [1,6]	94	94	0.0	3,209	3,211	0.1	1,286	1,284	0.2
[1]AR1021-300-10 / AR1021-300-10[1,6]	206	201	2.4	8,255	8,058	2.4	3,301	3,345	1.3
AL1-08443448 / AL1-07443448	321	323	0.6	8,479	8,410	0.8	4,871	4,861	0.2
ARLI0009 / ARLI0010	277	201	27.4	8,907	6,445	27.6	7,116	4,556	36.0
ARLI0012 / ARLI0013	297	332	11.8	9,526	10,746	12.8	7,776	9,051	16.4
ARLI0015 / ARLI0016	219	215	1.8	7,138	6,840	4.2	5,541	5,105	7.9
[2]AZ-EE-04 / AZ-EE-04[2,6]	261	258	1.1	11,467	11,349	1.0	3,992	4,033	1.0
[3]AZ-HS-437- 437 / AZ-HS-437- 437[3,6]	291	294	1.0	10,984	10,999	0.1	4,879	4,940	1.3
[4]AZ-HS-327 (b)- 327 / AZ-HS-XXX- 327[4,7]	440	446	1.4	11,704	11,735	0.3	7,414	7,481	0.9
[5]AZ-FP-436 / AZ-FP-436[5,4]	267	271	1.5	11,255	11,451	1.7	3,967	3,976	0.2
[5]AZ-FP-448 / AZ-FP-XXX[5,7]	278	279	0.4	11,435	11,475	0.3	4,099	4,131	0.8
ARLI0076 / ARLI0077[8]	200	200	0	8,340	8,414	0.9	2,259	2,196	2.8

1. Sample taken during drilling September-October 2021
2. Sample taken during Pumping Test December 2021
3. Sample taken during Hydrasleeve on January 06, 2022
4. Sample taken during Hydrasleeve on January 07, 2022
5. Packer samples taken on January 15-20, 2022
6. Duplicate sample made by laboratory Alex Stewart NOA
7. Duplicate sample made by field personnel of Argentum Lithium
8. Sample taken during May 2023 pumping test

Table 11-2: Percentage Difference Between Original and Duplicate Sample Results for Ca, Na, and B

Sample ID Original/Duplicate	Ca (mg/L)	Duplicate	% Difference	Na (mg/L)	Duplicate	% Difference	B (mg/L)	Duplicate	% Difference
[1]AR0921-01 / AR0921-01[1,6]	819	828	1.1	118,256	118,071	0.2	<10	<10	---
[1]AR0921-243-01 / AR0921-XXX(243) [1,7]	1,206	1,225	1.6	111,770	110,570	1.1	<10	<10	---
[1]AR0921-XXX / AR0921-XXX(243) [1,6]	1,225	1,216	0.7	110,570	111,435	0.8	<10	<10	---
[1]AR0921-XXX / AR0921-XXX(300) [1,6]	1,117	1,114	0.3	114,901	113,447	1.3	13	13	0.0
[1]AR1021-300-10 / AR1021-300-10[1,6]	683	688	0.7	112,554	110,645	1.7	35	35	0.0
AL1-08443448 / AL1-07443448	849	831	2.1	109,820	112,458	2.4	67	68	1.5
ARLI0009 / ARLI0010	2704	2045	24.4	106,628	111,819	4.9	10	10	0
ARLI0012 / ARLI0013	2743	3230	17.8	105,824	103,536	2.2	10	10	0
ARLI0015 / ARLI0016	2675	2251	15.9	109,263	110,311	0.1	10	10	0
[2]AZ-EE-04 / AZ-EE-04[2,6]	483	484	0.2	104,808	105,397	0.6	52	53	1.9
[3]AZ-HS-437- 437 / AZ-HS-437- 437[3,6]	812	824	1.5	105,596	105,722	0.1	49	50	2.0
[4]AZ-HS-327 (b)- 327 / AZ-HS-XXX- 327[4,7]	2,409	2,431	0.9	98,249	101,040	2.8	44	44	0.0
[5]AZ-FP-436 / AZ-FP-436[5,4]	505	509	0.8	110,182	111,078	0.8	49	49	0.0
[5]AZ-FP-448 / AZ-FP-XXX[5,7]	557	554	0.5	109,708	108,918	0.7	49	50	2.0
ARLI0076 / ARLI0077[8]	469	466	0.6	113,560	115,272	1.5	35	35	0

1. Sample taken during drilling September-October 2021
2. Sample taken during Pumping Test December 2021
3. Sample taken during Hydrasleeve on January 06, 2022
4. Sample taken during Hydrasleeve on January 07, 2022
5. Packer samples taken on January 15-20, 2022
6. Duplicate sample made by laboratory Alex Stewart NOA
7. Duplicate sample made by field personnel of Argentum Lithium
8. Sample taken during May 2023 pumping test

12 DATA VERIFICATION

12.1 Drilling and Data Management

Michael Rosko (independent QP) conducted the following forms of data verification:

- Provided QA/QC and protocol documents for brine sampling in accordance with industry standards.
- Provided methods for pumping test and brine sampling; verified their implementation.
- Instructed Salta-based M&A geologists to conduct a site visit during drilling and obtain an independent brine sample; the QP was unable to travel to Argentina due to Covid travel restrictions. On March 22, 2022, the QP visited the site and confirmed well locations and the depth to water. Additionally, he most recently visited site to review exploration activities on February 17, 2023.
- Instructed Salta-based M&A geologists to review cuttings and verify that lithologic descriptions were accurate.
- Reviewed regular correspondence from the field to ensure that recommended drilling and testing methods were being adhered to.
- Cross-checked all values in the summary chemistry tables in the report against original laboratory reports.
- Verified adequacy of the laboratory based on comparison of duplicate sample results.
- In the opinion of the QP, data presented in this report is accurate and adequate for estimating the Indicated and Inferred resources.

12.2 Mineral Processing and Infrastructure

Patricio Pinto (independent QP) conducted a visit to the Lithium Chile head office in Salta on March 27, 2023, followed by a visit to the Project site on March 28 and 29, 2023. During his time at the project site, Mr. Pinto examined the current wells, road accessibility, site office, exploration camps, as well as potential areas for constructing the processing plant and other necessary infrastructure.

The QP conducted a verification of the information provided by Lithium Chile, finding that the data provided is reasonable and the information obtained is in accordance with industry standards.

12.3 Mining Methods

Murray Brooker (independent QP) conducted a verification of the information provided by Lithium Chile and the criteria used for planning the number of extraction wells. He indicated that the findings of the PEA with regards to mining (brine extraction) appear reasonable for this level of study and have been conceptually verified. However, the number of wells and pumping rates will need to be reviewed with the results of additional future drilling and geophysics, to improve the understanding of the brine concentration and porosity distribution for the next level of study, as well flow rates are unique, vary from well to well and are likely to show some differences from the predicted flow rates for different resource areas.

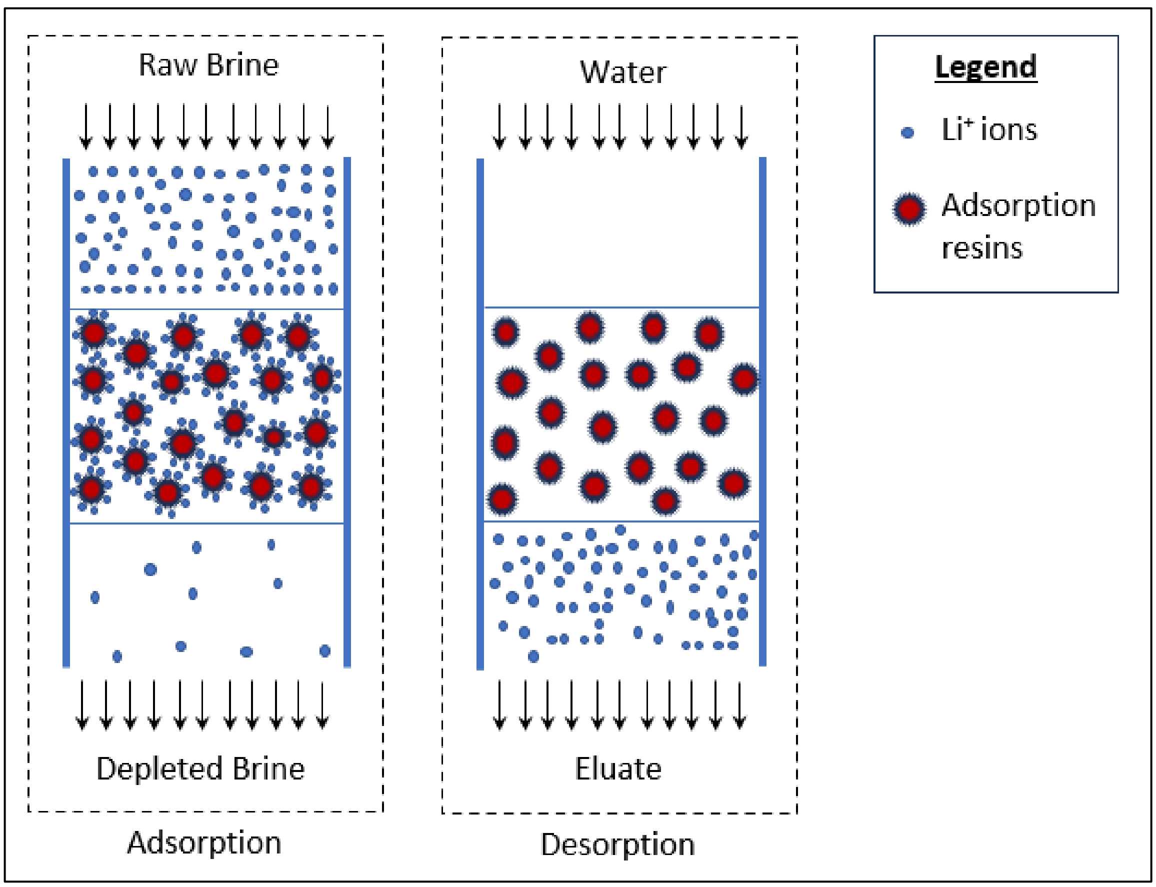
13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

Lithium Chile previously studied lithium extraction technologies, selecting direct extraction using resins as the best suited to the chemistry of the Salar de Arizaro brine and the investment costs for this type of plant in order to obtain a battery quality product.

Direct lithium extraction using resins has an adsorption step and a desorption step, as shown in Figure 13-1. The lithium adsorption mechanism occurs during contact between the brine and the resins where Li^+ ions are adsorbed and adhere to the resin surface by a weak physical force known as the Van der Waals force which allows the process to be reversible. The desorption (elution) stage, in which the adsorbed lithium is recovered, consists of circulating a stream of water through the resin, capturing the Li^+ ions from the resin and generating a dilute aqueous lithium solution with some contaminants (eluate).

Figure 13-1: Diagram of Direct Extraction Operation With Adsorption Resins



Source: Ausenco, 2023.

13.2 Metallurgical Testwork

The tests performed (Each of the tests described in this section use brine from the same point samplefrom the Salar de Arizaro so they cannot be considered representative, however, as detailed in Section 16 the mineralization of the brine does not present a significant spatial variability throughout the salar, so the contaminants in the brine and their crystallization fields in the case of solar evaporation are similar, allowing the results obtained in each test to be compared.

Table 13-1) correspond to the direct lithium extraction technology with brine from the Salar de Arizaro. In August 2022, a brine sample was extracted from the Salar through the ARGENTO-01 well and sent to Sunresin, Summit Nanotech and Mineria Positiva for laboratory testing described in this section. In the case of Adionics, a simulation was performed taking as input the characterisation of the same brine sample, supplied by Lithium Chile.

Each of the tests described in this section use brine from the same point samplefrom the Salar de Arizaro so they cannot be considered representative, however, as detailed in Section 16 the mineralization of the brine does not present a significant spatial variability throughout the salar, so the contaminants in the brine and their crystallization fields in the case of solar evaporation are similar, allowing the results obtained in each test to be compared.

Table 13-1: Metallurgical Testwork Summary

Year	Vendor Name	Laboratory/Location	Testwork performed
2022	Sunresin	Sunresin Application Laboratory/China	Direct lithium extraction with resins (adsorption and elution stages)
2023	Sunresin	Sunresin Application Laboratory/China	Direct lithium extraction with resins (adsorption and elution stages)
2022	Summit Nanotech	Summit Nanotech Laboratory/Canada	Direct lithium extraction with resins (adsorption and elution stages)
2023	Adionics	Adionics Laboratory/France, Paris	Lithium Solvent Extraction (SX)
2022	Mineria Positiva	Mineria Positiva laboratory/Jujuy, Argentina	Direct lithium extraction with resins (adsorption and elution stages)

13.2.1 Direct lithium Extraction Test with Resins, Sunresin, Oct-Nov 2022

The tests conducted by Sunresin with the brine from the Salar de Arizaro are intended to verify the adsorption and desorption process of lithium, its stability in various cycles and to provide data that will allow the design of the process (Sunresin, 2022).

The chemical analysis methods used to determine the chemical composition of the brine from the Arizaro Salar (Table 13-2) were atomic absorption for lithium, flame photometer for sodium and potassium, ion chromatography for chloride and Inductively Coupled Plasma (ICP) spectroscopy for the remaining elements. The brine appears as a clear, transparent liquid with no solids, as shown in Figure 13-2.

Table 13-2: Chemical Composition of Salar de Arizaro Brine, Sunresin Test 2022

Element Analysed	Li	Na	K	Ca	Mg	B	Cl	pH
Content (mg/L)	252	84,532	22,375	239	1,288	0.04	186,330	5.12

Figure 13-2: Arizaro Salar Brine

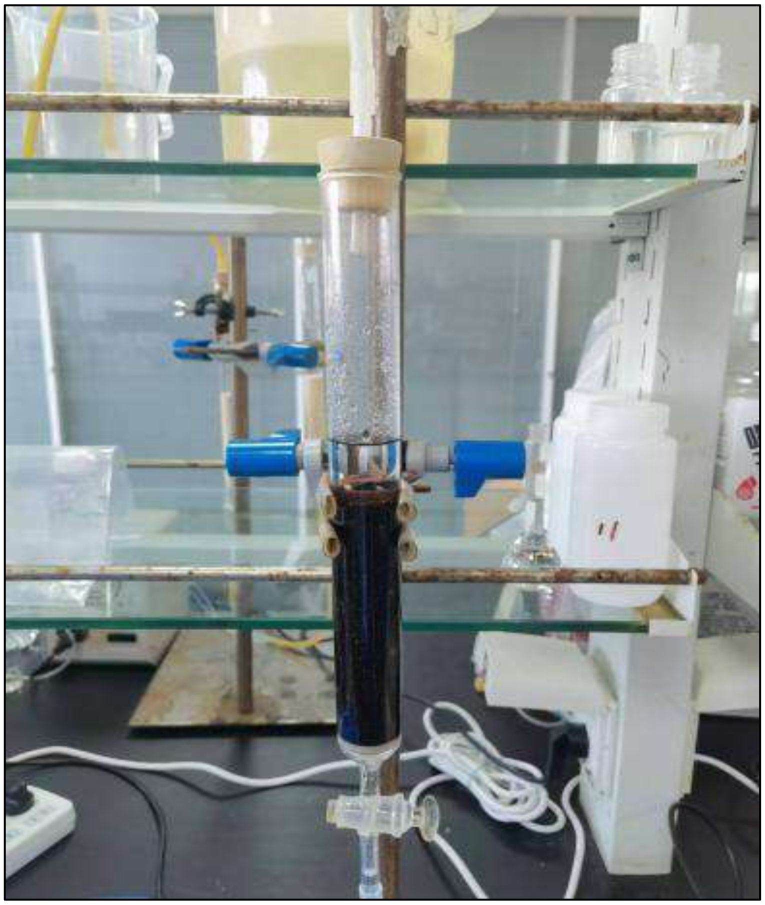
Source: Sunresin, 2022.

The tests were carried out in two stages: the first stage corresponds to the single-column test and the second stage corresponds to the continuous column test. A lithium adsorbent resin produced by Sunresin was used. The tests start with resin conditioning which is done by washing the resin with pure water for 1 hour at a flow rate of 20 BV/h (BV: resin filling volume or bed volume).

13.2.1.1 Single-column Test (test tube)

For column preparation, accurately 50 mL of lithium adsorbent resin previously treated with water is taken and placed in the test tube as shown in Figure 13-3. Approximately 20 mL of water is considered over the resin to ensure that there are no air bubbles between the resin beds.

Figure 13-3: Adsorption Column



Source: Sunresin, 2022.

The experience developed by Sunresin uses a quantitative sample load of 15 BV with a flow rate of 3 BV/h of brine, requiring a desorption water consumption of 8 BV, with a flow rate of 4 BV/h. To determine the lithium content, a sample is taken every 1 BV in both the adsorption and desorption stages. The experience is repeated for 9 cycles, taking samples in some of them to compare results, which are detailed below.

13.2.1.1.1 Cycle 1

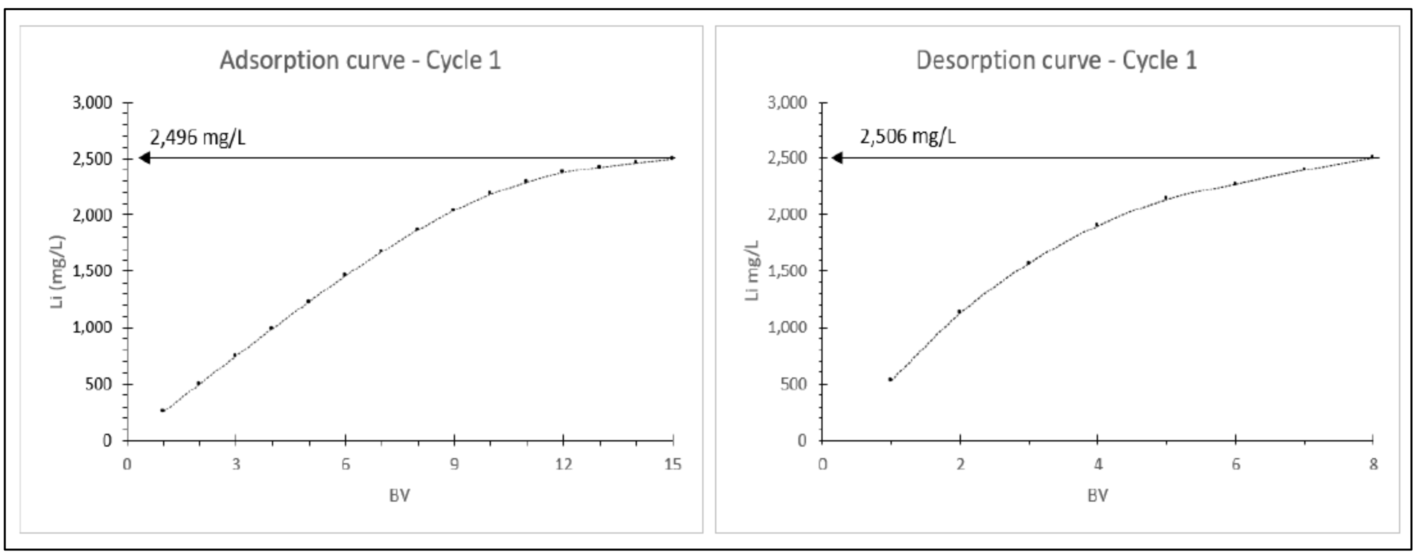
The lithium retention results of the adsorption stage and desorption stage of Cycle 1 are shown in Table 13-3.

Table 13-3: Adsorption and Desorption Results - Cycle 1

Adsorption Results				Desorption Results		
BV	Measured Li (mg/L)	Calculated Li (mg/L)	Total adsorbed Li (mg/L)	BV	Measured Li (mg/L)	Total desorbed Li (mg/L)
1	1.94	250	250	1	528	528
2	2.04	250	500	2	598	1,126
3	5.43	247	747	3	444	1,570
4	8.68	243	990	4	334	1,904
5	13.3	239	1,229	5	232	2,137
6	23.3	229	1,458	6	138	2,275
7	38.5	214	1,672	7	124	2,398
8	56.2	196	1,867	8	108	**2,506**
9	78.5	174	2,041	-	-	-
10	111	142	2,183	-	-	-
11	142	111	2,293	-	-	-
12	170	82.6	2,376	-	-	-
13	204	48.6	2,424	-	-	-
14	215	37.6	2,462	-	-	-
15	219	33.6	**2,496**	-	-	-

From the data provided in Table 13-3 it can be noted that the amount of lithium adsorbed by the resin is 2,496 mg/L and the amount of lithium desorbed with water is 2,506 mg/L, this information is illustrated in the graphs shown in Figure 13-4.

Figure 13-4: Adsorption and Desorption Curves - Cycle 1



Source: Ausenco, 2023.

13.2.1.1.2 Cycle 5

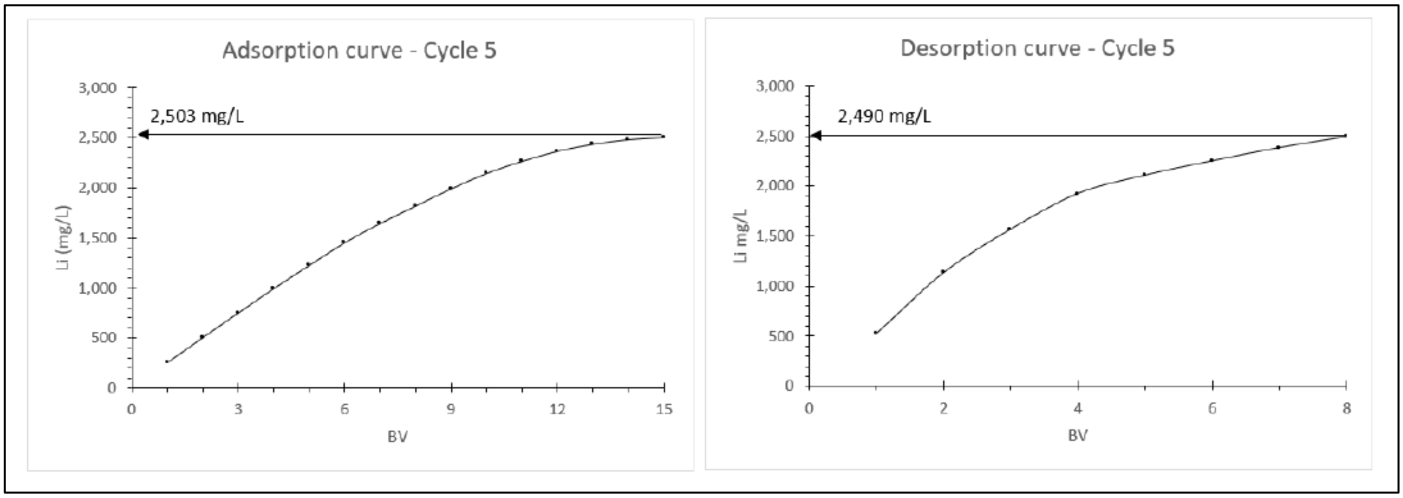
The lithium retention results of the adsorption stage and desorption stage of Cycle 5 are shown in Table 13-4.

Table 13-4: Adsorption and Desorption Results - Cycle 5

Adsorption Results				Desorption Results		
BV	Measured Li (mg/L)	Calculated Li (mg/L)	Total adsorbed Li (mg/L)	BV	Measured Li (mg/L)	Total desorbed Li (mg/L)
1	0	252	252	1	522	522
2	3.12	249	501	2	609	1,131
3	4.27	248	749	3	435	1,566
4	8.76	243	992	4	356	1,923
5	19.2	233	1,225	5	184	2,106
6	25.6	226	1,452	6	143	2,249
7	59.1	193	1,645	7	132	2,381
8	76.8	175	1,820	8	109	**2,490**
9	81.7	170	1,990	-	-	-
10	96.8	155	2,146	-	-	-
11	131	121	2,266	-	-	-
12	151	100	2,367	-	-	-
13	183	68.7	2,436	-	-	-
14	205	46.9	2,482	-	-	-
15	231	20.5	**2,503**	-	-	-

From the data provided in Table 13-4 it can be noted that the amount of lithium adsorbed by the resin is 2,503 mg/L and the amount of lithium desorbed with water is 2,490 mg/L, this information is illustrated in the graphs shown in Figure 13-5.

Figure 13-5: Adsorption and Desorption Curves - Cycle 5



Source: Ausenco, 2023.

13.2.1.1.3 Cycle 9

The lithium retention results of the adsorption stage and desorption stage of Cycle 9 are shown in Table 13-5.

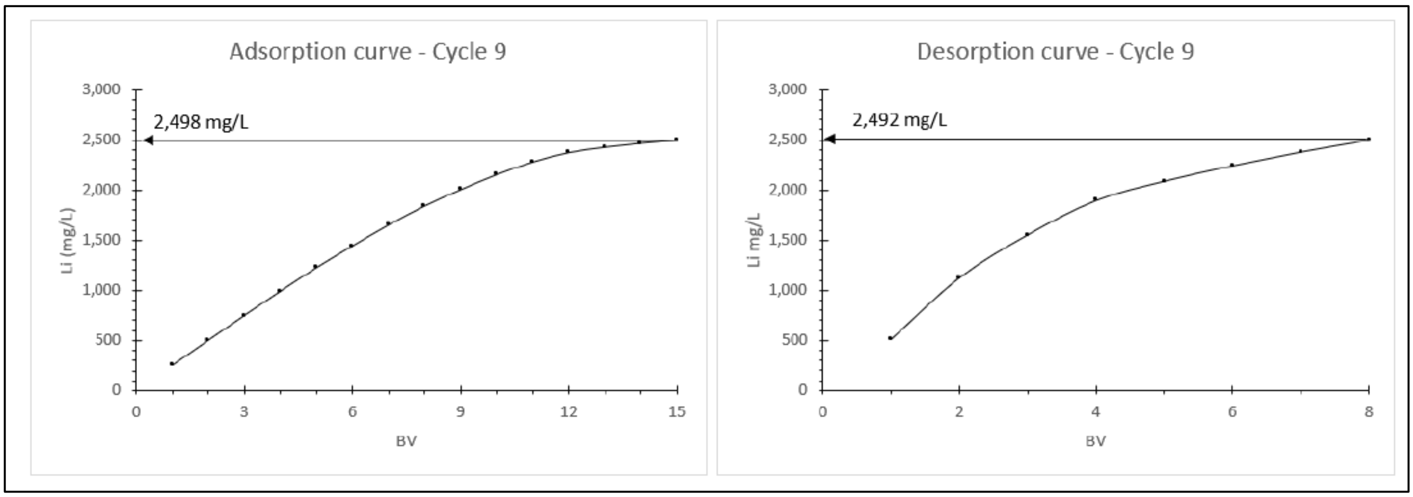
Table 13-5: Adsorption and Desorption Results - Cycle 9

Adsorption Results				Desorption Results		
BV	Measured Li (mg/L)	Calculated Li (mg/L)	Total adsorbed Li (mg/L)	BV	Measured Li (mg/L)	Total desorbed Li (mg/L)
1	1.00	251	251	1	508	508
2	1.67	250	502	2	612	1,121
3	3.89	248	750	3	428	1,549
4	9.63	242	992	4	341	1,890
5	17.8	234	1,227	5	193	2,083
6	34.8	217	1,444	6	154	2,237
7	43.1	209	1,653	7	136	2,373
8	62.8	189	1,842	8	119	**2,492**
9	89.2	163	2,005	-	-	-
10	101	150	2,155	-	-	-
11	126	125	2,280	-	-	-
12	158	93.9	2,374	-	-	-
13	199	52.7	2,427	-	-	-

Adsorption Results				Desorption Results		
BV	Measured Li (mg/L)	Calculated Li (mg/L)	Total adsorbed Li (mg/L)	BV	Measured Li (mg/L)	Total desorbed Li (mg/L)
14	211	40.4	2,467	-	-	-
15	221	30.5	**2,498**	-	-	-

From the data provided in Table 13-5 it can be noted that the amount of lithium adsorbed by the resin is 2,498 mg/L and the amount of lithium desorbed with water is 2,492 mg/L, this information is illustrated in the graphs shown in Figure 13-6.

Figure 13-6: Adsorption and Desorption Curves - Cycle 9



Source: Ausenco, 2023.

13.2.1.1.4 Conclusion of Single-column Test Results

Table 13-6 summarizes the results of the single column tests, showing that the amount of lithium adsorbed by the resin can be stabilized at around 2,500 mg/L during the process.

Table 13-6: Summary of Single-column Test Data

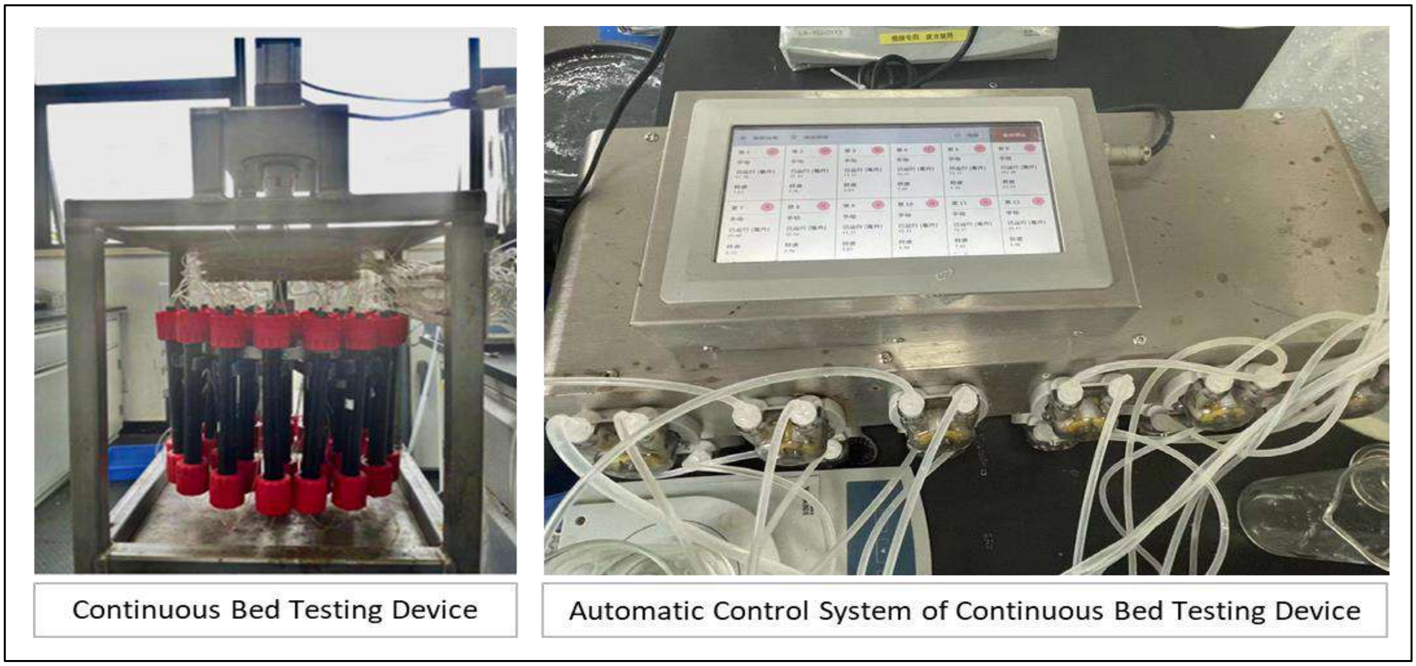
Parameter	Cycle 1	Cycle 5	Cycle 9
Adsorbed lithium (mg/L)	2,496	2,503	2,498
Desorbed lithium (mg/L)	2,506	2,490	2,492

13.2.1.2 Continuous Column Test with Multiport Valve

This test is based on single column test data (Section 13.2.1.1), simulating continuous adsorption technology in industrial production.

The equipment used, shown in Figure 13-7, has a total of 30 columns where each column is filled with 40 mL of resin. During the test, the resin column is changed in a timed manner according to a set program so that only pure water and brine need to be added during the test.

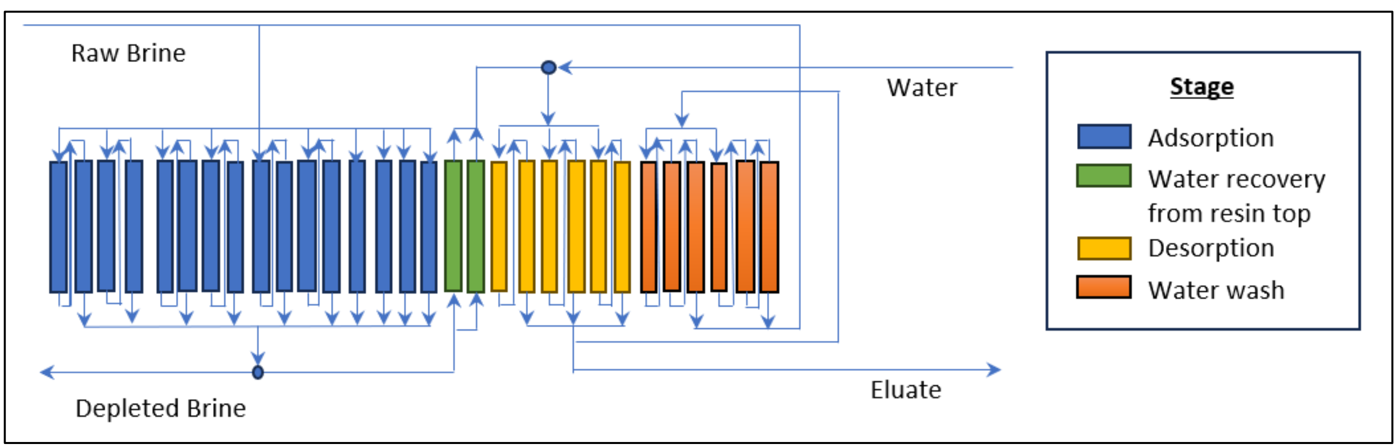
Figure 13-7: Equipment Used in Continuous Column Test with Multiport Valve



Source: Sunresin, 2022.

The process carried out in the direct extraction tests with adsorption resin in continuous columns can be divided into four main stages, which are shown in the circuit diagram in Figure 13-8 and are described below.

Figure 13-8: Circuit Diagram for Continuous Column Test



Source: Ausenco, 2023.

- **Adsorption stage:** This stage is composed of columns distributed in series and separated in groups of 8 operating in parallel. When one of the adsorption columns is saturated, it passes to the regeneration stage, and the columns with unsaturated resins advance sequentially, replacing the saturated column, so that the circuit maintains continuous operation.
- **Water recovery from resin top:** For resin regeneration the adsorption column is filled with pure water; to reduce the water consumption of the process the column water must be recycled. The specific method consists of inversely pushing the water out of the column using the adsorbent liquid.
- **Desorption stage:** This stage uses pure water as the desorbent and is composed of columns in series grouped in the same way as in the adsorption stage. The desorption in series can maximize efficiency and reduce water consumption while minimizing the amount of magnesium and sodium entering the eluate solution (product solution).
- **Water wash stage:** The column with saturated resin filled with brine is washed with water to displace the brine and then recirculate it to the adsorption process, thus recovering some of the wash water and improving the lithium recovery of the system.

The data obtained from the continuous column test with multiport valve are shown in Table 13-7.

Table 13-7: Summary of Continuous Column Test Data

Date	Sampling time	Raw Brine	Depleted Brine	Eluate		
	(hour)	Li (ppm)	Li (ppm)	Li (ppm)	Mg (ppm)	Na (ppm)
11-09-2022	18:00	278	19.1	619	43.0	192
	20:30	278	10.5	625	37.0	107
	23:00	278	11.0	607	45.0	197
11-10-2022	11:00	278	11.8	640	29.0	172
	13:30	278	10.4	625	31.0	202
	16:00	278	12.0	646	32.0	174
	18:30	278	10.8	627	30.0	187
	21:00	278	12.3	583	48.0	182
	23:30	278	0.8	621	39.0	199
11-11-2022	11:30	278	10.5	613	27.0	184
	14:00	278	12.2	596	37.0	158
	16:30	278	10.8	598	46.0	232
	19:00	278	11.7	582	41.0	181
	21:30	278	10.2	633	43.0	203
	23:50	278	11.4	612	47.0	210
11-12-2022	11:00	278	12.3	621	27.0	201
	13:30	278	10.4	635	29.0	206
	16:00	278	10.9	615	34.0	209
	18:30	278	10.3	592	33.0	200
	21:00	278	12.9	587	40.0	166

Date	Sampling time	Raw Brine	Depleted Brine	Eluate		
	(hour)	Li (ppm)	Li (ppm)	Li (ppm)	Mg (ppm)	Na (ppm)
	23:30	278	9.6	584	39.0	182
11-13-2022	11:00	278	12.0	639	33.0	179
	14:00	278	10.5	589	39.0	182
	18:30	278	10.2	626	22.0	158
	21:00	278	11.7	597	28.0	187
	23:30	278	10.8	579	35.0	157
11-14-2022	14:30	278	10.3	638	39.0	207
	17:00	278	10.2	617	37.0	209
	19:30	278	12.3	627	36.0	165
	22:00	278	10.4	646	35.0	205
	23:30	278	11.4	593	33.0	200
Average	**-**	**278**	**11.0**	**613**	**35.9**	**187**

From the continuous adsorption tests that were carried out over a period of 6 days, it was possible to obtain an average lithium concentration of 11 mg/L in the depleted brine, an adsorption yield for the lithium ions in the brine of more than 90%, and it was also possible to demonstrate that the adsorption of lithium on the resin is stable over time. For the product solution (eluate) the average concentration value achieved for lithium ions was 613 mg/L, for magnesium ions was 35.9 mg/L and for sodium ions was 187 mg/L.

13.2.2 Direct Lithium Extraction Test With Resins, Sunresin, May 2023

The purpose of this second Sunresin test was to verify the feasibility of extracting lithium from the Arizaro salt brine using the adsorption resin supplied by Sunresin and to obtain the data to enable an industrial scale design (Sunresin, 2023).

The chemical composition of the brine used for these tests is shown in Table 13-8.

Table 13-8: Chemical Composition of Salar de Arizaro Brine, Sunresin Test 2023

Element Analysed	B	Li	Na	K	Ca	Mg	SO_4^{2-}	Cl	pH
Content (mg/L)	41	263	104,800	10,600	781	3,650	9,880	189,150	6.7

The procedure carried out on a single column test is as follows:

1. The column (test tube) is loaded with 100 mL of adsorption resin previously conditioned;
2. Raw brine is added at a flow rate of 3 BV/h, starting the adsorption stage;
3. Samples are taken for chemical analysis every 2 BV;
4. After adsorption, pure water is used for desorption of lithium from the resin at a flow rate of 5 BV/h, with a water consumption of 8 BV;

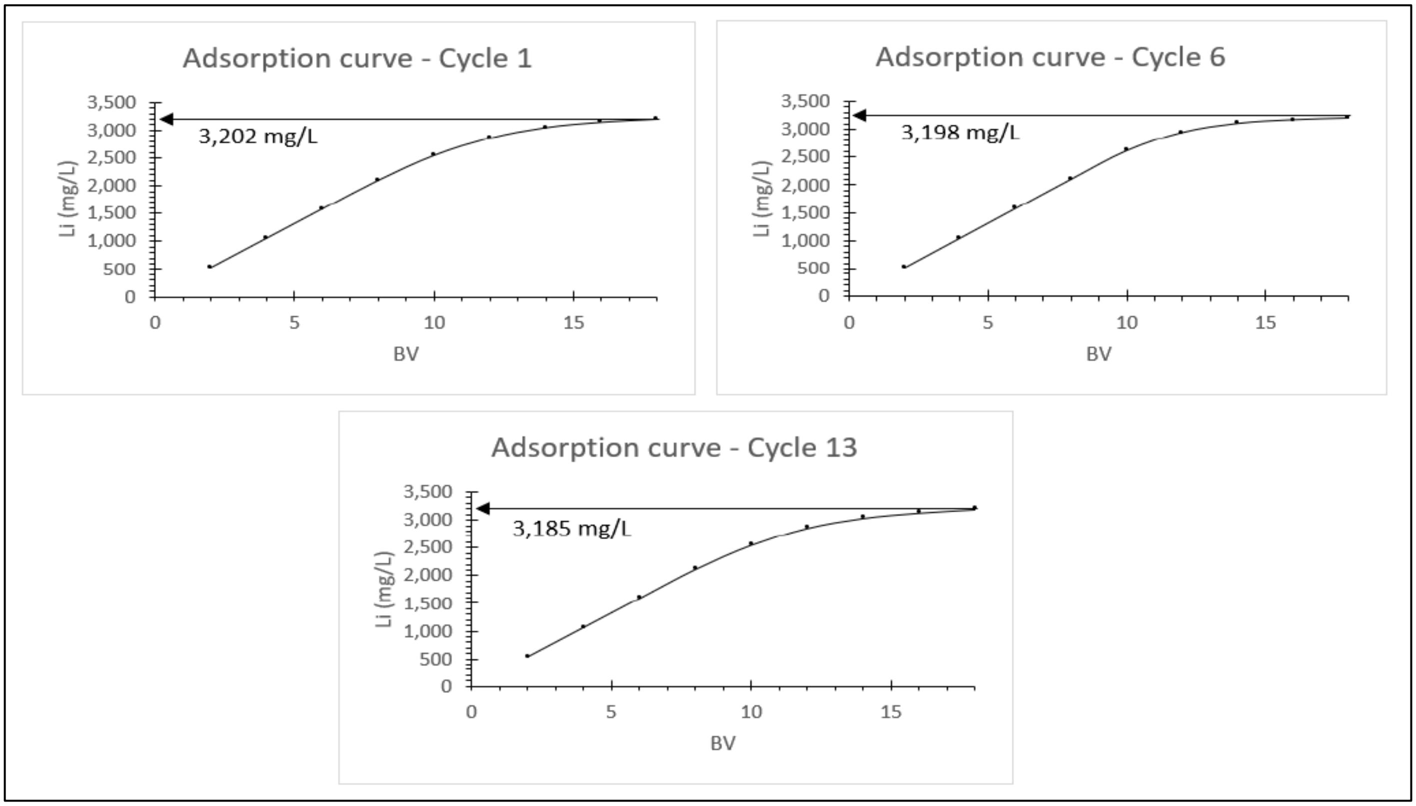
5. The lithium content is determined every 1BV; and
6. The procedure is repeated for 13 cycles and samples are taken in some of them for comparison.

Data from both the adsorption and desorption stages were obtained from the test and are shown in Table 13-9 and Table 13-10 respectively, and their curves are shown in Figure 13-9 and Figure 13-10.

Table 13-9: Adsorption Results – Sunresin, 2023

BV	Cycle 1		Cycle 6		Cycle 13	
	Measured Li (mg/L)	Measured Li (mg/L)	Measured Li (mg/L)	Measured Li (mg/L)	Measured Li (mg/L)	Measured Li (mg/L)
2	0.100	263	0.200	263	0.09	263
4	0.0400	263	0.0500	263	0.06	263
6	0.190	263	0.0900	263	0.07	263
8	4.01	259	0.290	263	1.32	262
10	39.7	223	9.78	253	45.7	217
12	105	158	97.7	165	108	155
14	167	96.2	182	81.2	173	90.3
16	213	49.6	230	32.5	215	47.8
18	236	26.8	248	15.4	232	31.0
Total	**-**	**3,202**	**-**	**3,198**	**-**	**3,185**

Figure 13-9: Adsorption Curves – Sunresin, 2023

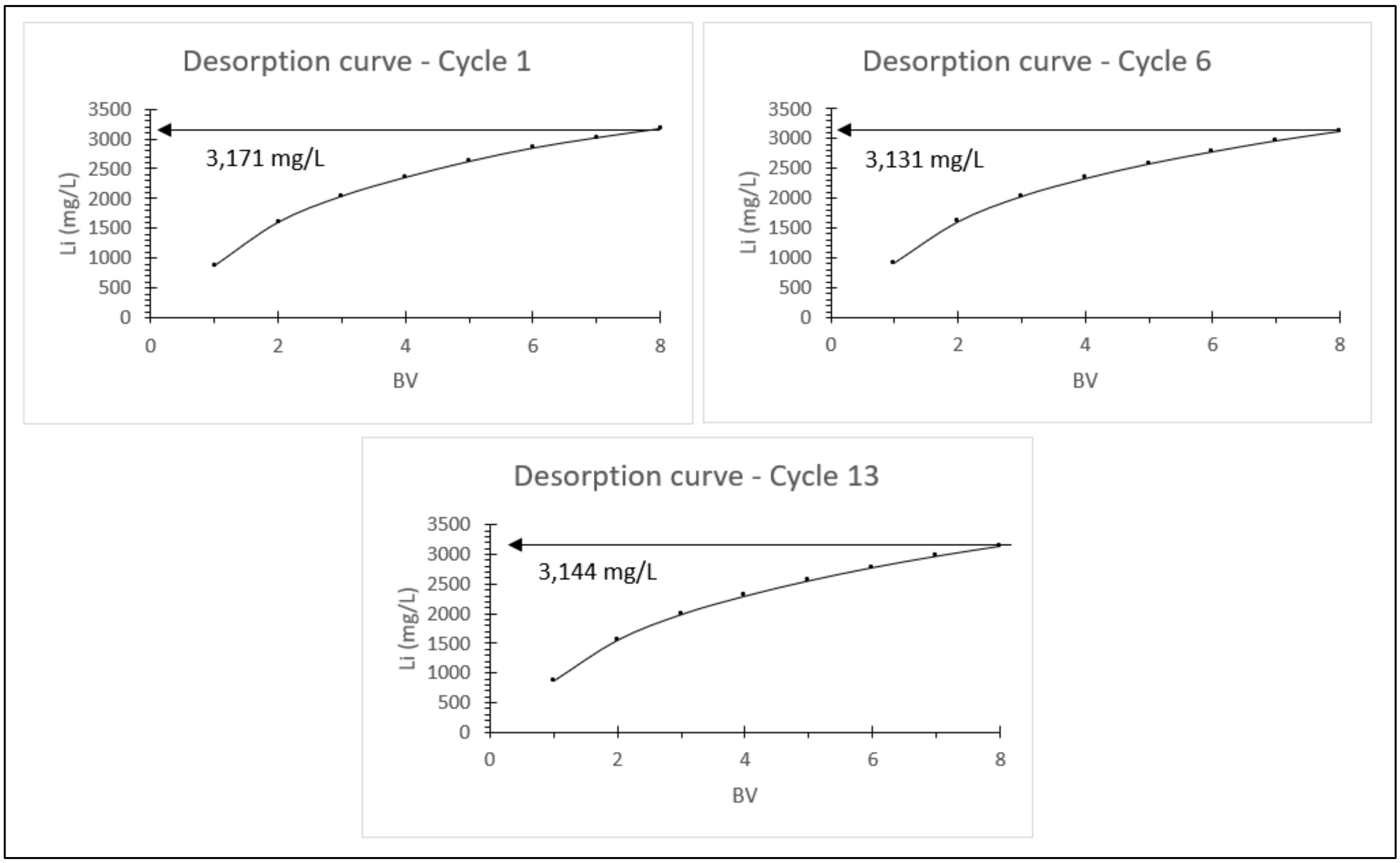


Source: Ausenco, 2023.

Table 13-10: Desorption Results – Sunresin, 2023

BV	Cycle 1		Cycle 6		Cycle 13	
	Measured Li (mg/L)	Measured Li (mg/L)	Measured Li (mg/L)	Measured Li (mg/L)	Measured Li (mg/L)	Measured Li (mg/L)
1	860	860	916	916	875	875
2	733	1,593	694	1,610	687	1,562
3	441	2,034	426	2,036	430	1,993
4	317	2,350	301	2,337	311	2,303
5	269	2,619	246	2,584	258	2,561
6	225	2,844	204	2,788	222	2,782
7	173	3,017	185	2,973	192	2,974
8	154	3,171	158	3,131	169	3,144
Total	-	**3,171**	**-**	**3,131**	**-**	**3,144**

Figure 13-10: Desorption Curves – Sunresin, 2023



Source: Ausenco, 2023.

The data obtained in the different cycles of the tests show that the resin has a stable adsorption and desorption. Additionally, the results indicate a high lithium concentration in the eluate, reaching values above 850 mg/L and that the desorption stage in which the lithium adsorbed on the resin is recovered is completed at around 8 BV.

The brine from the Arizaro Salar shows a positive behaviour with the Sunresin adsorption resin and can therefore be used for the direct lithium extraction process. The amount of lithium adsorption on the resin is stable and fluctuates in the range of 3,100 ~ 3,200 mg/L.

According to Sunresin's expertise, in an industrial operation, the adsorption yield is estimated to be higher than 97% and the amount of lithium adsorbed will be in the order of 2,800 ~ 2,900 mg/L. Regarding the chemical composition of the product solution, it is estimated that the lithium concentration will be higher than 800 mg/L, while other ions will have the following ratios: Li/Na ≥ 2; Li/K ≥ 10; Li/Ca ≥ 5; Li/Mg ≥ 5; Li/B ≥ 20.

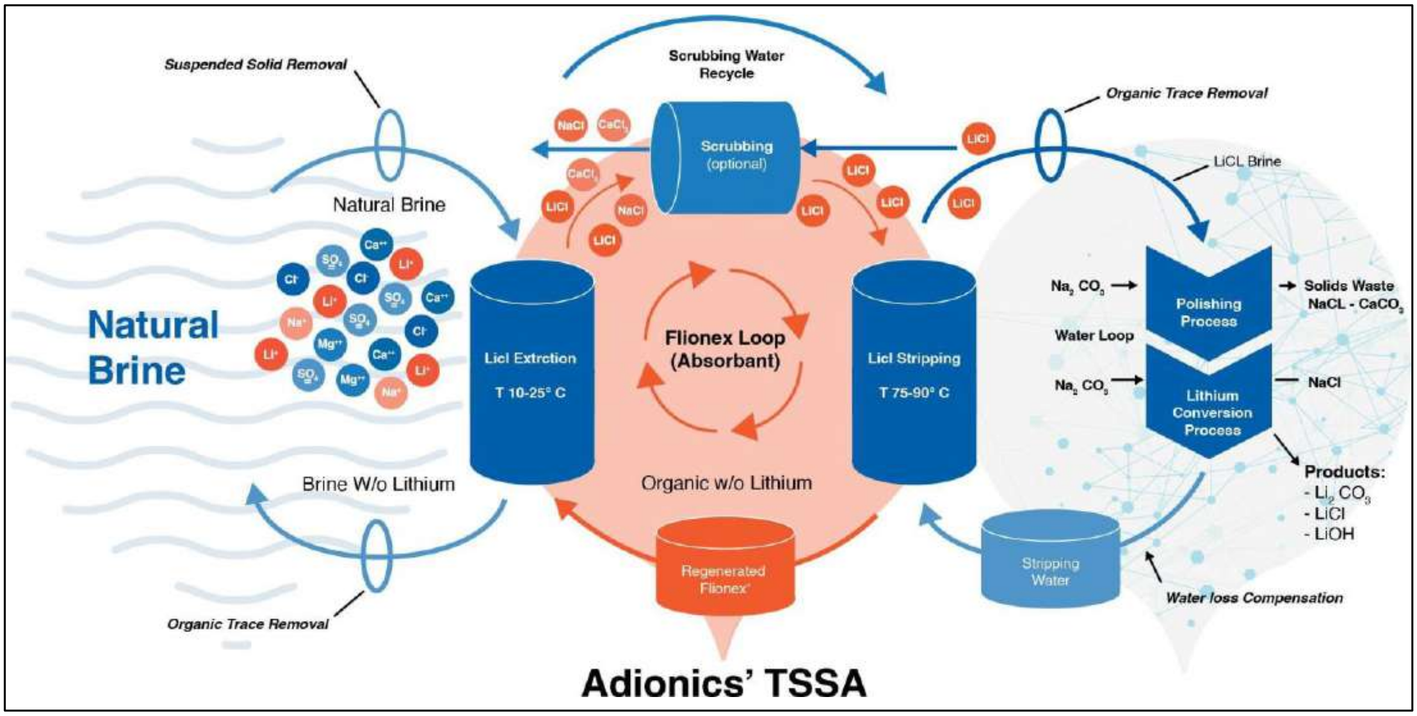
13.2.3 Other Direct Lithium Extraction Test, Summit Nanotech, Adionics, Minera Positiva

As indicated in Each of the tests described in this section use brine from the same point samplefrom the Salar de Arizaro so they cannot be considered representative, however, as detailed in Section 16 the mineralization of the brine does not present a significant spatial variability throughout the salar, so the contaminants in the brine and their crystallization fields in the case of solar evaporation are similar, allowing the results obtained in each test to be compared.

Table 13-1, other direct lithium extraction tests were developed, in the case of the tests performed by Summit Nanotech (Summit Nanotech, 2022) and Mineria Positiva (Mineria Positiva, 2022) the adsorption resin technology was used, while in the case of Adionics the solvent extraction technology was used (Adionics, 2023).

The study conducted by Adionics was based on a brine composition provided by Lithium Chile, with which it developed the process for lithium extraction by solvent extraction shown in Figure 13-11, obtaining the data shown in Table 13-11.

Figure 13-11: Adionics Proposed Process



Source: Adionics, 2023.

Table 13-11: Direct Lithium Extraction Test Results by Adionics

Parameter	Units	Test 1 Values	Test 2 Values	Test 3 Values
Design				
Number of extraction steps	-	4	4	4
Number of scrubbing steps	-	1	2	3
Number of stripping steps	-	3	3	3
Organic/Aqueous extraction	-	1	1	1
Organic/Aqueous scrubbing	-	30	30	20
Organic/Aqueous stripping	-	10	10	10
Performances				
Li-extraction yield	%	92-95	92-95	92-95
LiCl-purity	wt%	45-50	67-73	92-96
Li-concentration in produced brine	mg/L	3,000	3,100	3,100
Production	t LCE/y	5,000	5,000	5,000
Brine flowrate	m^3/h	440	440	440
Composition of feed brine				
Lithium (Li)	mg/L	286	286	286

Parameter	Units	Test 1 Values	Test 2 Values	Test 3 Values
Sodium (Na)	mg/L	110,815	110,815	110,815
Potassium (K)	mg/L	11,828	11,828	11,828
Magnesium (Mg)	mg/L	4,049	4,049	4,049
Calcium (Ca)	mg/L	527	527	527
Chloride (Cl)	mg/L	185,598	185,598	185,598
Sulphate (SO_4)	mg/L	13,397	13,397	13,397
Boron (B)	mg/L	50	50	50
Composition of produced brine				
Lithium (Li)	mg/L	3,000	3,100	3,100
Sodium (Na)	mg/L	7,600	3,100	500
Potassium (K)	mg/L	<0.1	<0.001	<0.000001
Magnesium (Mg)	mg/L	<0.1	<0.001	<0.000001
Calcium (Ca)	mg/L	180	60	10
Chloride (Cl)	mg/L	28,000	21,000	18,000
Sulphate (SO_4)	mg/L	<0.1	<0.001	<0.000001
Boron (B)	mg/L	<0.1	<0.001	<0.000001
Composition of spent brine				
Lithium (Li)	mg/L	15	14	14
Sodium (Na)	mg/L	106,860	107,204	105,935
Potassium (K)	mg/L	11,519	11,514	11,354
Magnesium (Mg)	mg/L	3,935	3,933	3,878
Calcium (Ca)	mg/L	497	507	504
Chloride (Cl)	mg/L	178,069	178,603	176,474
Sulphate (SO_4)	mg/L	12,990	12,984	12,803
Boron (B)	mg/L	48	48	48

The parameters and results of the tests performed by Summit Nanotech and Mineria Positiva are presented in Table 13-12.

Table 13-12: Direct Lithium Extraction Test Results by Summit Nanotech and Mineria Positiva

Parameter	Units	Summit Nanotech Results	Mineria Positiva Results
Temperature	°C	50.0	20.0
Bed volume (BV)	mL	72	100
Feed brine flow rate	BV/h	-	3
	mL/min	2.5	-
Feed brine volume	mL	1,800	4,080
Adsorption time (full charge)	h	-	13.0

Parameter	Units	Summit Nanotech Results	Mineria Positiva Results
Eluent flow rate	mL/min	2.5	-
	BV/h	-	3
Eluent volume	mL	700	2,280
Elution time	h	-	8.00
Eluent type	-	Water with lithium (180 mg/L LiCl)	Water with lithium (50 ppm of Li)
Resin mass	g	72	80
Internal diameter	cm	2.5	3.4
Packing eight	cm	15.2	13.0
Driving force	-	Pressure	Gravity
Lithium concentration in feed	mg/L	252	286
Lithium concentration in eluate	mg/L	804	937
Recovery factor	mg Li/g resin	-	5.60
Max. lithium recovery (during adsorption)	%	98.2	95.0
Lithium recovery (after elution)	%	77.4	76.4

13.3 Deleterious Elements

The deleterious elements and/or impurities that are usually present in brine treatment processes and that could have a potential economic impact are mainly calcium, magnesium, and boron. Although there is no data available to quantify the presence of these elements in the final product because the information available corresponds to test results from the first stage of the process, the process design considers a purification plant that aims to minimize the presence of these elements and ensure a battery quality product. The efficiency of the purification plant and the determination of the existence of deleterious elements and/or impurities in the final product requires to be verified and validated by laboratory tests.

13.4 Recovery Estimates

The lithium recovery percentage used for the mining methods (Section 16) and for the development of the economic model (Section 22) corresponds to 81.5%. This value is within the range of lithium recovery efficiency reported in the market, which has a fluctuation between 80% and 85% due to the uncertainty related to the existing reference information of this type of plants at the date of this report.

13.5 Comments on Mineral Processing and Metallurgical Testwork

The data obtained from the adsorption tests performed by Sunresin, both in the single column tests in 2022 and 2023 and for the continuous columns test in 2022, show that the brine from the Salar de Arizaro presents a positive performance with the Sunresin adsorption resin.

The results highlighted that lithium adsorption on the resin is stable over time, reaching adsorption yields for lithium ions in brine higher than 90%. The desorption stage also shows stability over time, reaching high levels of lithium concentration in the eluate, with average values of 613 mg/L for continuous columns test and over 850 mg/L for single column test.

In the continuous column test, impurities were evidenced in the eluate with magnesium and sodium concentrations of 35.9 mg/L and 187 mg/L respectively, quantities that can be treated in subsequent stages without major inconvenience to obtain the desired battery grade final product.

The direct lithium extraction (DLE) tests developed by Sunresin show that it is feasible to consider this technology to extract lithium from the raw brine of the Salar de Arizaro.

Under the consideration that the tests developed as of the date of this report only contemplate the direct lithium extraction stage, benchmark data are used to support the development of the design of the lithium concentration stages subsequent to the DLE stage, while waiting for Lithium Chile to carry out the metallurgical tests of the unit operations involved in the proposed design.

14 MINERAL RESOURCE ESTIMATE

The updated resource estimate for the Salar de Arizaro Project consists of indicated and inferred lithium resources. Key parameters used to compute the indicated and inferred resources of the Project include brine grade and drainable porosity. The Canadian Institute of Mining (CIM) Best Practice for Reporting of Lithium Brine Resources and Reserves (2012) were considered when estimating the lithium resource.

14.1 Resource Estimate

14.1.1 Methodology

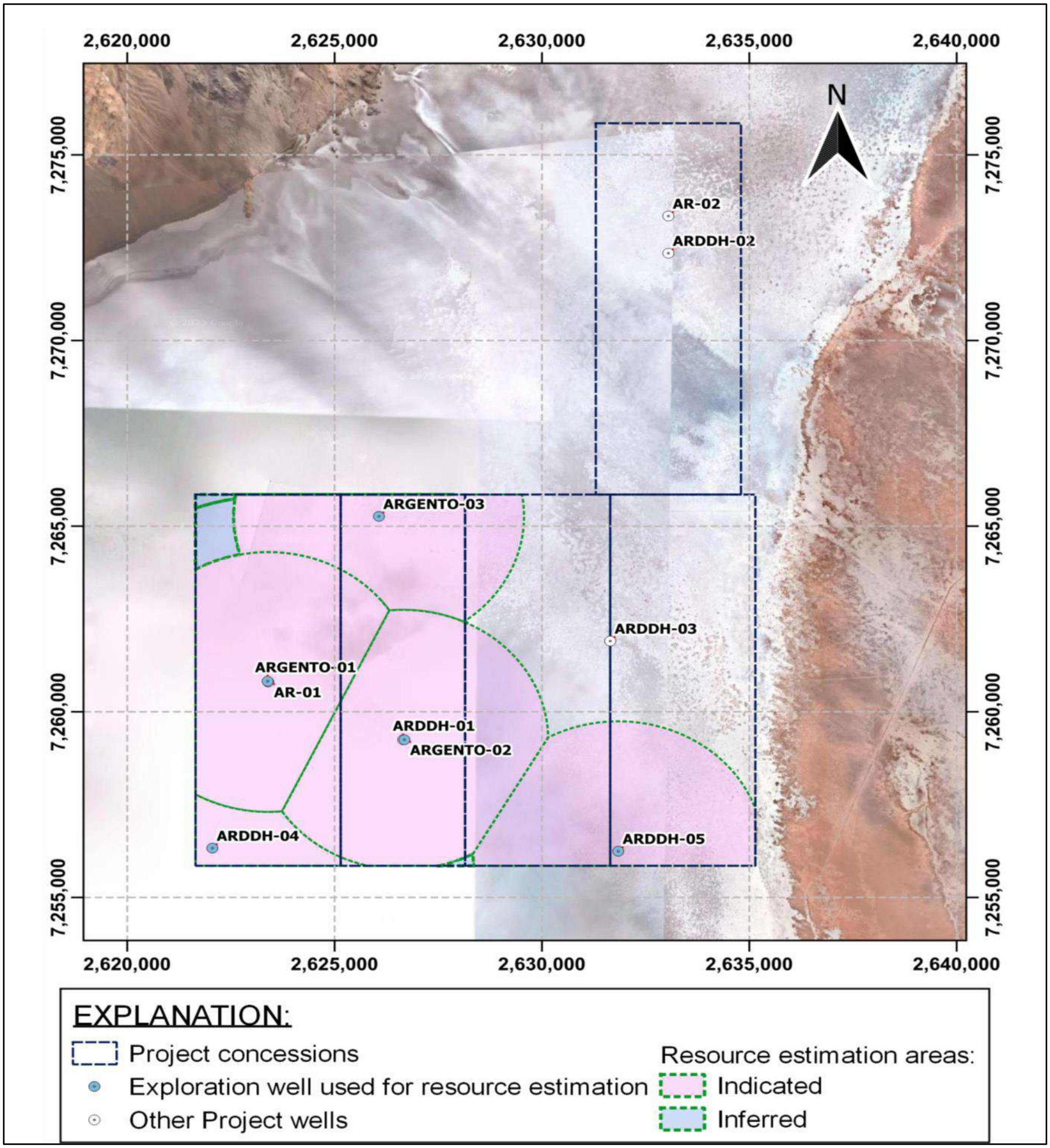
The method employed to estimate the resource corresponds to the polygon method. The overall process consisted of constructing concentric circles around the exploration wells and dividing them into horizontal layers as hydrogeologic units, with each layer assigned an aerial extent, lithium concentration, and drainable porosity value. Thus, while the same lithium concentration and drainable porosity were assumed laterally within a given polygon, distinct intervals were defined to account for depth-specific changes of either parameter based on the exploration results.

Apart from lithologic descriptions, depth-specific data for chemistry and drainable porosity were obtained during drilling. To complement the DDH data, results from pumping test composite brine samples and pumped samples obtained were also used to define the lithium concentration for the various units. Drainable porosity values were assigned to each unit largely based on the LCV specific yield results and downhole BMR surveys; these results were cross-checked with field lithologic descriptions and core photos to verify reasonableness of the assigned values.

14.1.2 Definition of Resource Areas

The total area used in for the resource calculations is approximately 97 km^2 and is shown on Figure 14-1. Only areas within the concession boundaries were considered.

Figure 14-1: Area Used for The Resource Estimate and Categorization (Shallowest Polygons)

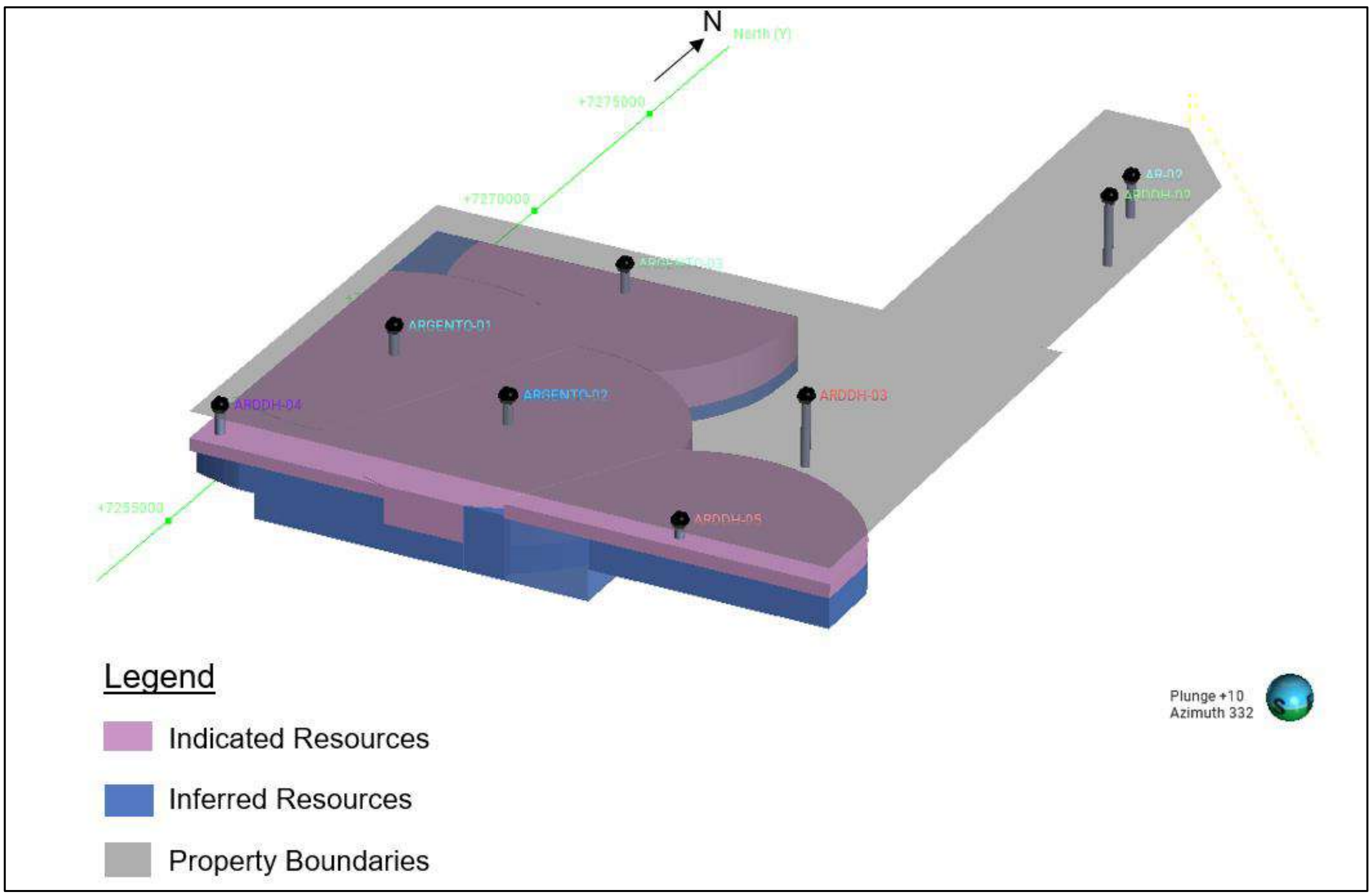


Source: Montgomery, 2023

The indicated resource polygons have a radius of 3.5 km, which was selected based on guidelines by Houston et al. (2011) for mature salar systems; the range between exploration wells is given as 7 km, translating a radius of 3.5 km. Indicated polygons are present in the shallowest portion of the aquifer based on the existence of brine chemistry and drainable porosity (or pumping test) data. Unless unknown faults occur in the basin, thicknesses are likely to be similar in the immediate area outside of the current exploration wells, supporting the use of polygons for the resource calculation. The individual polygon depths were based on the transition to Inferred Resources (at depth) or the total depth of the respective exploration well within the polygon.

The inferred resource polygons have a maximum radius of 5 km, which was selected based on guidelines by Houston et al. (2011) for mature salar systems; the range between exploration wells is given as 10 km, translating a radius of 5 km. Most Inferred polygons are found at depth, below the indicated resource polygons (Figure 14-2)), and the individual polygon depths were based on the total depth of the respective exploration wells (within that polygon). The inferred areas of ARDDH-01, ARDDH-05, and Argento-03 were not extended to the east-northeast because brine samples above the assumed cut-off grade were not obtained from the northeastern wells, and the same deep clastic unit was not encountered at ARDDH-03.

Figure 14-2: Three-Dimensional Image of The Resource Zones



Source: Montgomery, 2023

14.1.3 Drainable Porosity

Drainable porosity values are reported as a fraction of the total rock volume and are unitless. For example, if a rock has a volume of 100 milliliter (mL), and 10 mL of fluid can drain from the rock, the drainable porosity is 10/100, or 0.10. Although often determined by laboratory methods, the drainable porosity is essentially the same as specific yield as defined in classical aquifer mechanics. The purpose of defining drainable porosity is to estimate brine volume which is a necessary parameter for the mineral resource.

Drainable porosity values for the hydrogeologic units encountered in Salar de Arizaro were estimated based on the results of LCV laboratory testing as well as the BMR geophysical survey, and their reasonableness was confirmed based on lithology of the unit. In general, the BMR results are similar to the average values typically associated with the measured lithology, and LCV values vary particularly for the halite unit.

As previously described in this report, drill cuttings were reviewed by M&A for verification purposes and were compared to the values estimated by the BMR geophysics and LCV laboratory results. For some units without a direct or indirect determination of drainable porosity, the QP referenced values used for other projects to ensure that they were not significantly different from those typically used in the Altiplano for salar sediments and evaporite sequences. Laboratory values for drainable porosity values were obtained from almost 200 analyzed core samples from nearby Salar de Hombre Muerto (M&A and GAI, 2012), and resulted in a statistically robust estimate of average drainable porosity values for lithologies ranging from massive halite and clay on the low end, to sand and sandy gravel on the high end. Similar hydrogeologic units were encountered in Salar de Arizaro during the drilling of exploration well Argento-01. In addition, drainable porosity values ultimately used by the QP for the initial Resource estimate generally agreed with published values by Johnson (1967) for similar lithologies.

The average drainable porosity values assigned to each hydrogeologic unit used to estimate the lithium resource are given in Table 14-1.

Table 14-1: Assigned Drainable Porosity Values for Salar de Arizaro Hydrogeologic Units

Predominant Lithology of Hydrogeologic Unit	Assigned Drainable Porosity
Massive and fractured halite[1]	0.04 – 0.05
Halite with sandy interbeds	0.05
Fine sand with some gravel and minor halite	0.12
Fine brown sand	0.09
Deep cemented halite, clay, and sand	0.02

1. A drainable porosity of 0.04 was applied for all areas expect the Inferred (deep) portion of ARDDH-05 due to the higher average LCV specific yield (0.05) and presence of highly fractured halite.

14.1.4 Lithium Grade

The lithium grade for the lower part of the aquifer below a depth of 304 m was selected as 298 mg/L for most of the units based on the results of the Hydrasleeve sampling program from Argento-01; a larger value of 356 mg/L was selected for the zone from 368m to 408m. For the upper part of the aquifer, it appears that based on sampling of the brine during drilling, the upper 190 m of the aquifer appears to have lithium concentrations less than 200 mg/L. The chemistry was not consistent during the sampling, possibly because of mixing of different zones, but effectively, we have assumed that no lithium brine occurs in the upper 190 m, with the exception of ARDDH-05 which did show shallower grades above 200 mg/L.

In most resource polygons, the zone from 190 m to 304 m had a value of 229 mg/L. For ARDDH-01, land surface to 190 m was still assumed to have a lithium concentration below the cut-off of 200 mg/L. A value of 229 mg/L was assigned to units to a depth of 384m, with 321 mg/L being assigned below 384m. At Argento-03, lower concentrations were obtained from the step test and constant rate pumping test (average of 207 mg/L).

The newest DDH wells with brine chemistry results correspond to ARDDH-04 and ARDDH-05, where elevated lithium grades (up to 584 mg/L) were found in the deeper samples of ARDDH-05. In the Indicated polygon of ARDDH-05, an average of 259 mg/L and 516 mg/L were applied between 110 to 160 mbls and 160 to 210 mbls, respectively. The deeper Inferred polygon of ARDDH-05 assumed high grade brine continuity (516 mg/L) between 210 and 424 mbls. Sample result averages were also applied to ARDDH-04, and the values ranged between 258 and 277 mg/L.

14.1.5 Summary of Indicated and Inferred Resource

Table 14-2 summarizes the current Salar de Arizaro resource estimate for lithium. These estimates were calculated by multiplying (the area) by (the unit thickness) by (the drainable porosity) by (the average lithium grade). Subsequently, the resulting value was summed for each hydrogeologic unit for each polygon, for each assigned resource category.

A preliminary lithium cut-off grade was assigned as 200 mg/L based on the QP's experience with other projects in the region, assuming use of a direct lithium extraction (DLE) technology. As of the writing of this report, a process technology has not been selected, and economic feasibility of the project has not been determined. The reader is cautioned that mineral resources are not mineral reserves and do not have demonstrated economic viability.

Table 14-2: Summary of the Indicated and Inferred Resource Estimate (Effective June 27, 2023)

Resource Category	Brine Volume (m^3)	Avg. Li (mg/L)	In situ Li (t)	Li_2CO_3 Eq (t)
Indicated	1.17E+09	278	326,000	1,737,000
Inferred	8.25E+08	360	297,000	1,583,000

Notes:
1. The conversion factors used to calculate the equivalents from their metal ions is simple and based on the molar weight for the elements added to generate the equivalent. The equations are as follows: Li x 5.3228 = lithium carbonate equivalent.
2. The assumed cut-off grade for lithium is 200 mg/L based on similar projects and the expected processing method.
3. The comparison of values may not be exact due to rounding.

14.1.5.1 Support for Indicated Status

According to the CIM's Best Practice Guidelines for Reporting of Lithium Brine Resources and Reserves (2012), the essential elements for resource estimation include the determination of drainable porosity and brine concentration through drilling and sampling. M&A considers these two important parameters for defining an Indicated Resource, consistent with industry practice. Where drainable porosity samples were not obtained, conducted aquifer testing was also considered for the Resource categorization since it also increases confidence in the estimation. Drainable porosity, flow rates (from aquifer testing), and recoverability were considered to demonstrate Reasonable Prospects for Eventual Economic Extraction. Consistent with the Houston et al. (2011) guidelines, a 3.5 km circle closest to the well was used to estimate an Indicated resource for a mature salar.

Based on the results from recent well drilling and hydraulic testing, it is interpreted by the QP that the units encountered in exploration well Argento-01 and ARDDH-01 show continuity within the 3.5 km radius from the well which defines the estimated Indicated resource there. Furthermore, brine sampling and direct drainable porosity results (LCV) exist at

ARDDH-04 and ARDDH-05, and brine sampling occurred during the pumping tests at Argento-02 and Argento-03, supporting the Indicated Resource classification.

In the area of the defined resource, the conceptual model of the hydrogeologic system in Salar de Arizaro and observed results are consistent with anticipated stratigraphic and hydrogeologic conditions associated with mature, closed-basin, high-altitude salar systems. The only exception is the northeastern area which was not included in the resource because of the apparent lithologic transition and lack of brine chemistry samples above the assumed cut-off grade, or other information that could support an Inferred Resource.

14.1.6 Potential Upside and Reasonable Prospects for Eventual Economic Extraction

The indicated and inferred resources estimated for this interim estimate will change as more information becomes available. The work in the last year has substantially increased the understanding of the conceptual model of the basin and has allowed the estimation of an initial lithium resource. Because future exploration drilling is being planned, additional resource is likely to be added in the mineral concessions, and not solely surrounding the exploration well. Recommended activities in this report are designed to improve the conceptual hydrogeologic model but are also designed to increase the resource.

Additional drilling with depth-specific sampling in the Salar de Arizaro could increase the resource estimate appreciably. In particular, recommended future exploration includes drilling in deeper portions of the ARDDH-05 area and western area of the property. The ARDDH-05 results to date are positive in terms of the high lithium concentrations and fractured halite encountered. In addition, the western portion hosts deep clastic sediments which underlie the halite unit.

Based on the experience of the QP in other similar lithium-rich brine aquifer systems in the region, the results of the exploration activities to date support the prospect of potential future economic extraction of lithium-rich brine in amounts that could feasibly support a project. Exploration wells in Salar de Arizaro have demonstrated the ability of the aquifer to yield large amounts of lithium-rich brine to land surface. Abundant brine samples from a vast majority of the concession areas have been obtained and analyzed, and demonstrate relatively large lithium concentrations on par with other similar projects in the region. That said, additional work is needed, in particular groundwater flow and transport modeling to better understand the long-term sustainable potential for the Project.

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

15 MINERAL RESERVE ESTIMATES

This section is not relevant to this report.

16 MINING METHODS

16.1 General Description

LCE production process in Arizaro Salar will operate through brine extraction wells.

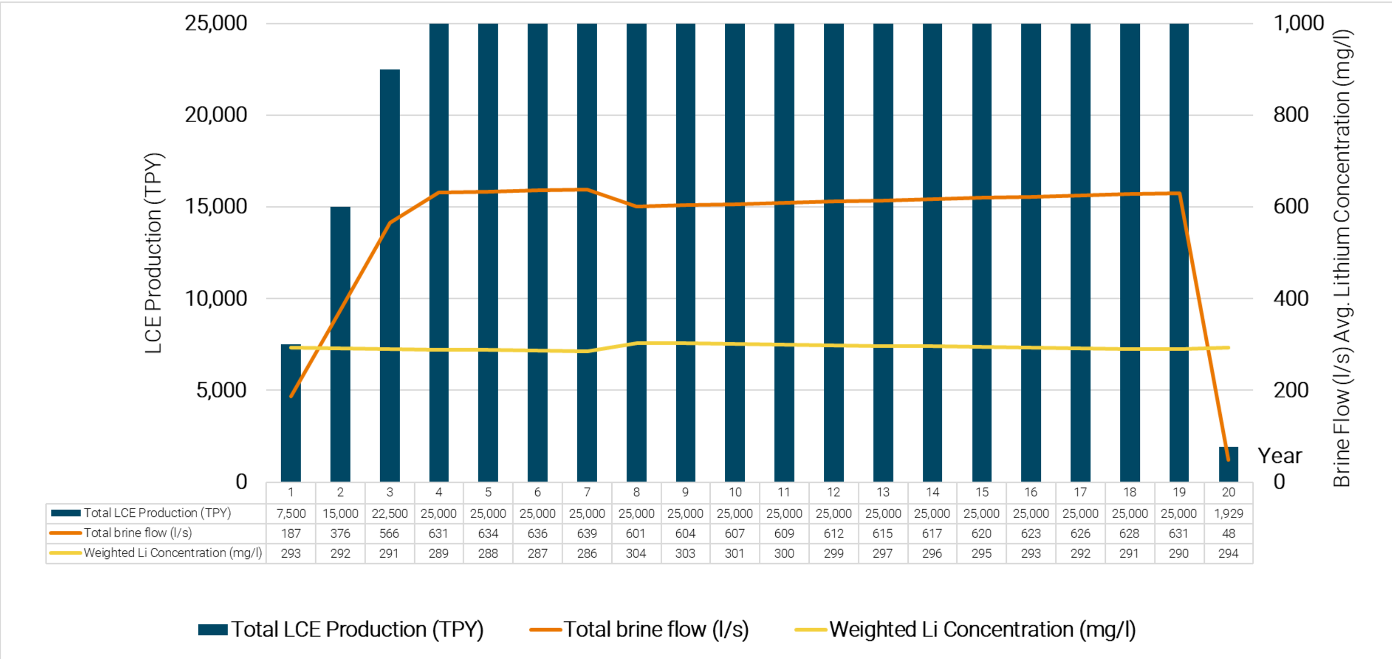
Based on the results available to date from pumping tests carried out in the Arizaro Salar, it has been determined that brine extraction will be carried out through the installation and operation of a conventional brine production wellfield. The brine extracted from each production well will be stored in one collection/transfer pond, from where it will be pumped through a main pipeline directly to the receiving ponds located near the DLE plant (Figure 18-1).

The considerations adopted for the estimation of the production plan are the following:

- The maximum extractable brine will be 18% of the brine volume declared in the resource estimation section (Section 14), as a percentage determined based on the QP's experience and Houston *et al.* (2011).
- The plant's efficiency is estimated at an average value of 81.5% used for calculation purposes.
- An annual dilution factor of 0.4% is considered for the lithium concentration in most of the resource polygons, whereas in the eastern part (well ARDDH-05 polygons) a dilution factor of 0.6% is considered. This is based on QP experience, and on the identification of zones with preferential permeability in the eastern part of the Salar.
- A production ramp-up, which consists of 30% of the annual LCE production target (25,000 t/y) in Year 1, followed by 60% in Year 2, 90% in Year 3, and 100% from Year 4 onwards.

Based on the brine volumes and lithium concentrations estimated for the Arizaro Salar (Section 14), a maximum operating life of 19.1 years has been estimated for an LCE production of 25,000 t/y from Year 4 to the end of the LOM, as shown in Figure 16-1. Overall, an annual average brine feed rate of 556 L/s is estimated, considering an average lithium concentration of 294 mg/L. More specifically, two production periods can be distinguished in Figure 16-1. The first period, from Year 1 to Year 7, contemplates brine extraction in most of the resource polygons, excluding only those closest to the margins of the Salar (well ARDDH-05 polygons) in order to monitor possible interaction with brackish or freshwater in that area during this period; in this stage, lithium concentration gradually decreases from 293 mg/L to 286 mg/L, whereas the brine flow rate increases from 187 L/s in Year 1 to 639 L/s in Year 7. In the second period, from Year 8 onwards, a relatively stable brine extraction rate and lithium concentration are maintained, with average values of 616 L/s and 297 mg/L, respectively. During this period, the lithium concentration will suffer a predicted steady progressive decrease over the years that will need to be compensated with a minor increase of extraction rate to keep the mass of lithium extracted annually constant.

Figure 16-1: Production Estimation for The Arizaro Salar.



Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Total LCE Production (TPY)	7,500	15,000	22,500	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	1,929
Total brine flow (l/s)	187	376	566	631	634	636	639	601	604	607	609	612	615	617	620	623	626	628	631	48
Weighted Li Concentration (mg/l)	293	292	291	289	288	287	286	304	303	301	300	299	297	296	295	293	292	291	290	294

Source: Ausenco, 2023

16.2 Wellfield Layout

To date, there are results from pumping tests carried out in wells Argento-01, -02 and -03, obtaining specific capacity values between 0.38-0.73 L/s/m. At this stage of the Project, a flow rate per production well of 20 L/s for most of the resource polygons has been considered based on this range. The exception corresponds to well ARDDH-05 polygons, where it is expected to have a lower specific capacity given the permeability of the layers encountered, so a flow rate per well of 10 L/s has been determined. It is recommended to conduct further pumping tests in exploratory wells at different points in the basin, particularly in areas closer to the salar margins (ARDDH-05), in order to have a better understanding of the brine extraction capacity, which is a critical variable in the estimation of the number of production wells needed.

Considering the above, it is estimated that about 32 wells will need to be drilled from Year 1 to Year 4, and around 42 production wells will have been constructed by the end of the project's lifespan. It should be noted that each well has a unique productivity and it is not possible to know with certainty the flow rates that a well will produce until it has been installed and pump tested. Consequently, some future wells will produce more and some less than anticipated at this early stage of project evaluation. It should be noted that drilling by the company has not yet reached the base of the basin in most cases, and it is likely that future drilling will provide additional data on well productivity in different parts of the basin.

A maximum depth of 650 m is contemplated for future brine production wells, with the possibility of shallower depths in areas where the basement level is closer to the surface. In general, brine catchment areas should focus mainly on sand and gravel units and evaporite layers (depending on their specific yield) and avoiding clay-dominated strata. When designing the layout of the wells, optimization should be considered to minimize dilution by water inflows from the sides of the basin. The specific locations of brine wells should be defined and optimized in later stages with the support of a numerical flow and transport reserves model.

The production wells will be completed with 8 to 10-inch diameter casing, with the possibility of using telescopic casing, which will be evaluated at a later stage. Stainless steel is considered as casing material, equipped with 380-V submersible pumping equipment. Permanent power will be supplied to the production area through electric generators connected to each well.

Pumped brine from wells will be delivered to the raw brine receiving pond located in the southern sector of the well field via 4 to 10" High Density Polyethylene (HDPE) pipelines, from where it will be pumped through a main pipeline directly to the receiving ponds near the DLE plant located further to the south.

16.3 Hydrogeological Considerations

16.3.1 Freshwater Interaction

Along the southeastern margin of the Salar de Arizaro there are records of brackish water and freshwater (well Chascha Sur-01). A similar scenario is likely to occur at the margins of the Salar closer to the production area. Commonly, as brine is extracted from the Salar, the natural hydrogeological balance is modified and lateral recharge occurs, which over time is expected to result in lower concentrations of lithium extracted from the wells, given the inflow of less concentrated brine into them. Thus, pumping is likely to cause an interaction between brackish or freshwater and brine at the edges of the Salar, particularly in the resource polygons closer to the margins, around well ARDDH-05 (because of this, a higher dilution factor has been considered conservatively for this zone; see Section 16.1). For these reasons, the construction of the extraction wells should consider a reduced extraction in the upper part of the Salar, and take advantage of the natural semiconfining levels to lessen the effects of pumping.

Additionally, a network of monitoring wells is recommended to be installed around the margins of the Salar, to control the brackish water to brine interface, with wells located based on information available from geophysical surveys.

16.3.2 Infiltration Ponds

The infiltration of brines is strongly conditioned by the precipitation of salts since the evaporation of the brine generates an increase in the TDS concentration. Precipitated salts tend to seal the base of the infiltration zone, significantly reducing the infiltration rate. In situ and numerical modeling studies of infiltration are required to evaluate what volumes of brine could infiltrate without causing flooding and runoff. It is also recommended to evaluate the possibility of re-injection of the processed brine, based on field tests to determine potential re-injection rates. Additional exploratory drilling, ideally to basement depth, is required to determine the sedimentary units present throughout the salar basin and the optimal location for reinjection, minimizing the risk of dilution of the natural resource.

16.4 Cut-off Grade

A lithium cut-off grade for economic extraction of 200 mg/L is considered based on the expected processing method. At this stage of the project, no resource polygons with a lithium concentration below this 200 mg/L cut-off value are identified.

16.4.1 Grade Control and Production Monitoring

Once in the operational period, brine sampling and measurement of brine and water levels for each well should be done weekly, increasing to monthly after the first year. Ongoing weekly to monthly monitoring of monitoring wells around the margins of the salar also needs to be considered. Additionally, video inspections and well maintenance should be carried out annually. Lastly, a calibrated groundwater model for the brine and surrounding brackish and freshwater needs to be developed to simulate brine extraction, as well as brine disposal through infiltration or reinjection.

17 RECOVERY METHODS

17.1 Overview

The process defined for the Project (Figure 17-1) consists of seven main areas: The first area corresponds to brine collection from different wells at a single common point (operational center) which consists of a pond located in the geographical center of the different wells, minimizing transport costs. The brine is sent from the operational center to two ponds used for storage and located near the chemical plant. This brine is subsequently sent to the feed tank of the process.

The second area corresponds to Direct Lithium Extraction (DLE) using highly selective adsorption resins where two main streams are obtained, a lithium-rich eluent with some contaminating elements and a depleted brine that is subsequently discarded.

The third area corresponds to High Pressure Reverse Osmosis (HPRO) where the eluent from the DLE is sent to membranes that allow water to pass through, causing the lithium to reach a concentration of around 6,000 mg/L to 7,000 mg/L and also concentrating the impurities. The recovered water is recirculated to the process.

The fourth area corresponds to mechanical evaporation where the lithium-enriched brine from HPRO is pre-heated and sent to a mechanical vapor recompression (MVR) process to concentrate the lithium to a value that fluctuates between 30 g/L and 40 g/L.

The fifth area corresponds to an elimination of bivalent elements such as calcium and magnesium by means of a chemical reaction through sodium hydroxide and sodium carbonate, generating insoluble residues that are later separated and discarded. The brine free of these elements reacts with sodium carbonate producing a slurry that is sent to a solid-liquid separation where a crude lithium carbonate product and a strong centrate are obtained. The crude product is sent to the drying process if technical grade lithium carbonate is required or to the refining process if battery grade is required. One part of the strong centrate is recirculated and the other is neutralized with sulfuric acid taking place a chemical reaction where carbon dioxide is liberated as a gas and a solution of neutral lithium sulfate is generated and recirculated to the second area of direct extraction to recuperate residual lithium.

The sixth area corresponds to the refining or purification process which consists in solubilize the lithium by a chemical reaction with carbon dioxide, transforming the insoluble lithium carbonate in highly soluble lithium bicarbonate, leaving the insoluble in solid phase, allowing its removal by filtration. The lithium bicarbonate rich brine is heated producing the liberation of carbon dioxide, precipitating once again the lithium carbonate but with higher purity, producing battery grade lithium carbonate.

The seventh area consists of handling the product (battery grade lithium carbonate) including moisture reduction by drying, size reduction by micritization and then final packaging for export.

The summary of the design criteria considered in the process described in this section is shown in Table 17-1.

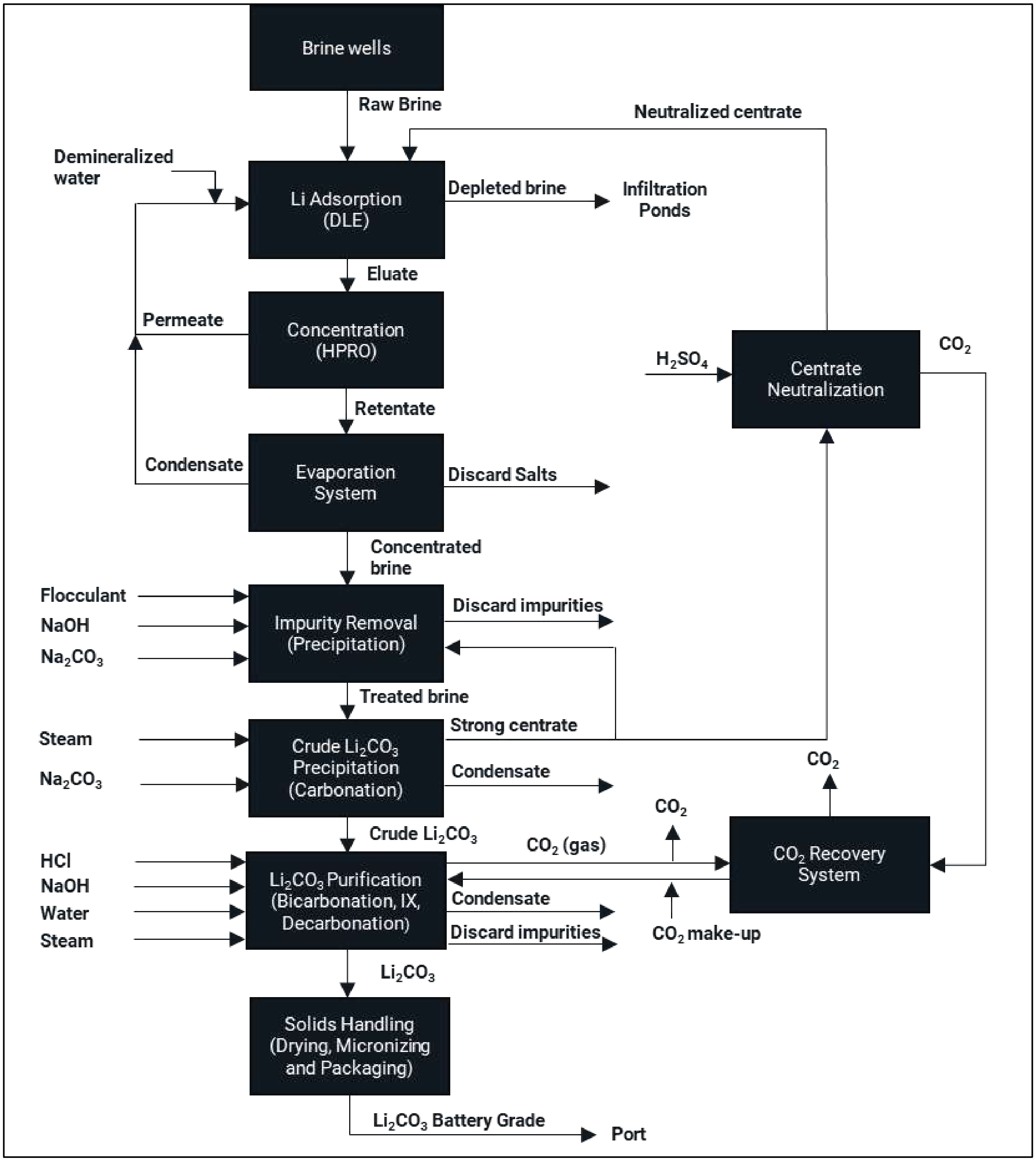
Table 17-1: Summary of Process Design Basis

Parameter	Units	Value
Annual throughput	m^3/a	19,880,820
Lithium carbonate battery grade average production	t/a	25,000
Overall yield (lithium recovery)	%	83.0
Fresh water consumption	m^3/a	3,609,919
Sodium carbonate consumption	t/a	53,666
Plant availability	%	85.0
Operational hours		
Days in a year	d	365
Annual hours	h/a	8,760
Operating hours	h/a	7,446
Maintenance plant stop	weeks	2
General design factor		
Plant	-	1.20
Reagents	-	1.20
Services (steam, water, others)	-	1.20
Equipment Isolation		
Maximum permitted temperature	°C	45
Feed raw brine composition		
Lithium	mg/L	286
Calcium	mg/L	523
Magnesium	mg/L	4,025
Boron	mg/L	50
Product (lithium carbonate battery grade) properties		
Purity	%	99.5
Moisture	%	0.10
Particle size		
D100	µm	40.0
D90	µm	12.5
D50	µm	4.00
D10	µm	1.25

17.2 Process Flow Sheet

Figure 17-1 shows the block diagram that illustrates and complements the process description with its respective unit operations and flow directions.

Figure 17-1: Process Block Diagram



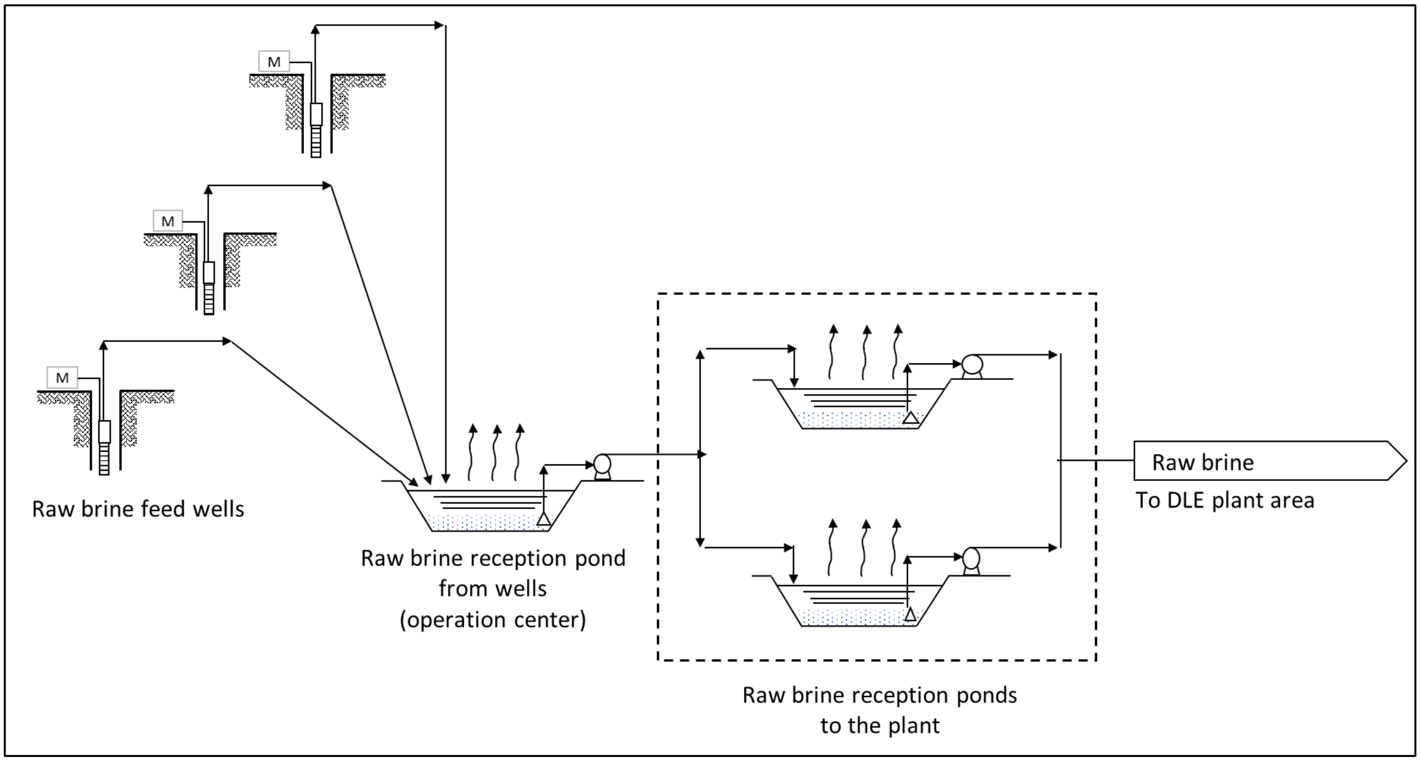
Source: Ausenco, 2023.

17.3 Plant Design

17.3.1 Brine Extraction Wells

The brine extraction wells area is shown in Figure 17-2. The raw brine from all the wells is collected in a common reception pond (operation center) within the Salar. The brine is subsequently sent to the reception ponds located next to the plant. These ponds feed the tank located in the DLE plant area which provides brine for the production process.

Figure 17-2: Brine Extraction Wells Area



Source: Ausenco, 2023.

17.3.2 Direct Lithium Extraction (DLE) Plant

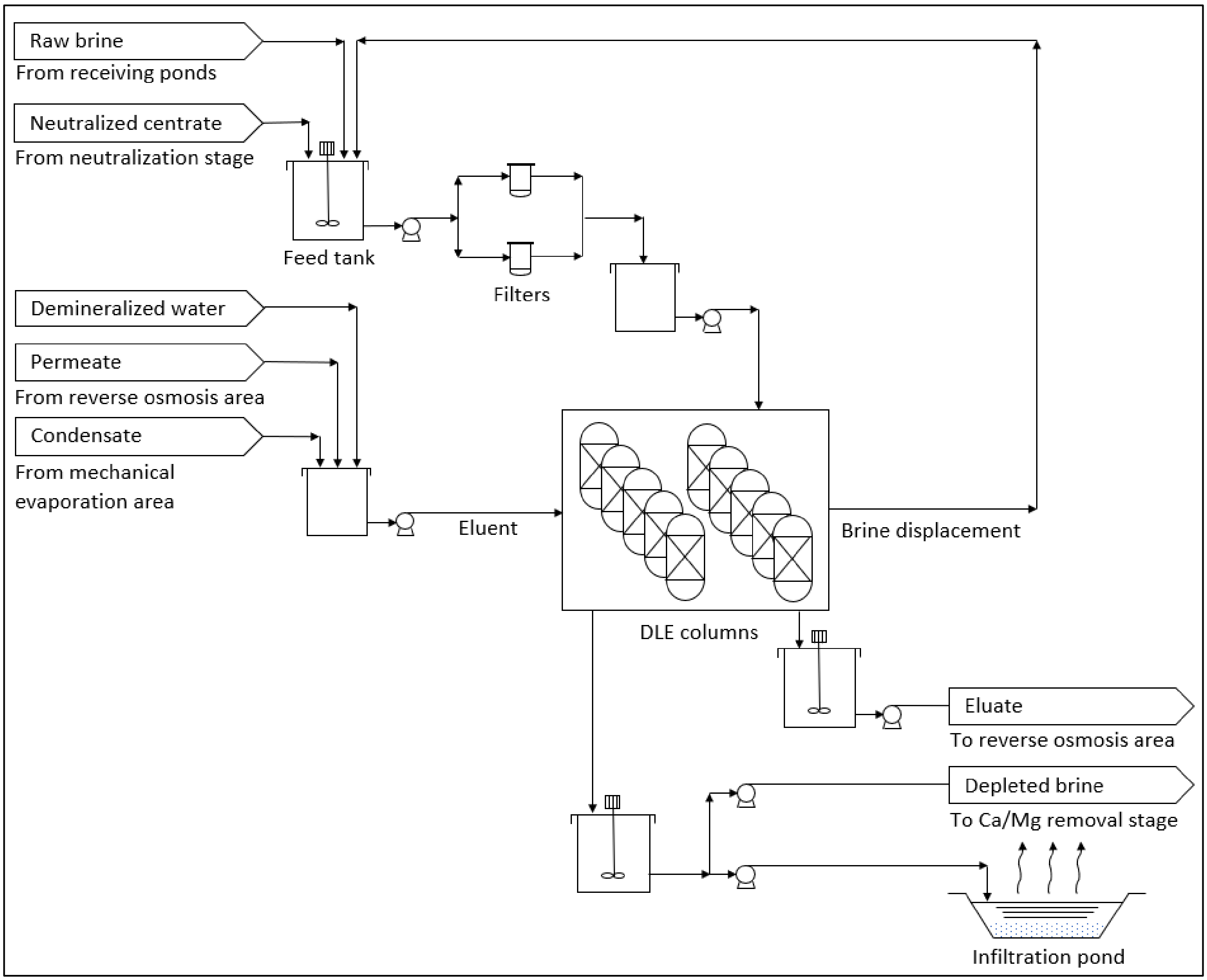
The DLE plant area (Figure 17-3) aims to extract as much lithium as possible from the raw brine using resins as a highly selective adsorbent. The solution coming from the feed tank to the plant is filtered to avoid the dragging of solids that would affect the adsorption resins. The filtered solution is sent to the DLE columns, where it is contacted with specific lithium adsorption resins producing two main streams:

- Depleted brine: Corresponds to brine without the lithium ions that were adsorbed by the resins (this is mostly water) which in turn is divided into two, one part is sent to repulp the residual solid from the calcium and magnesium removal process and the other remaining fraction is sent directly to evaporation-infiltration ponds.

- Eluate: Corresponds to a lithium rich solution obtained from the elution of the resins through the use of an eluent composed of water recovered from mechanical evaporation (condensate), water recovered from reverse osmosis (permeate) and demineralized water. This eluate is sent to the reverse osmosis process.

When the resins in the columns are saturated, the column is washed with water to displace the brine remaining in the interstices of the resins, the displaced brine is mixed with part of the eluate and recirculated to the feed tank to recover lithium.

Figure 17-3: DLE Plant Area

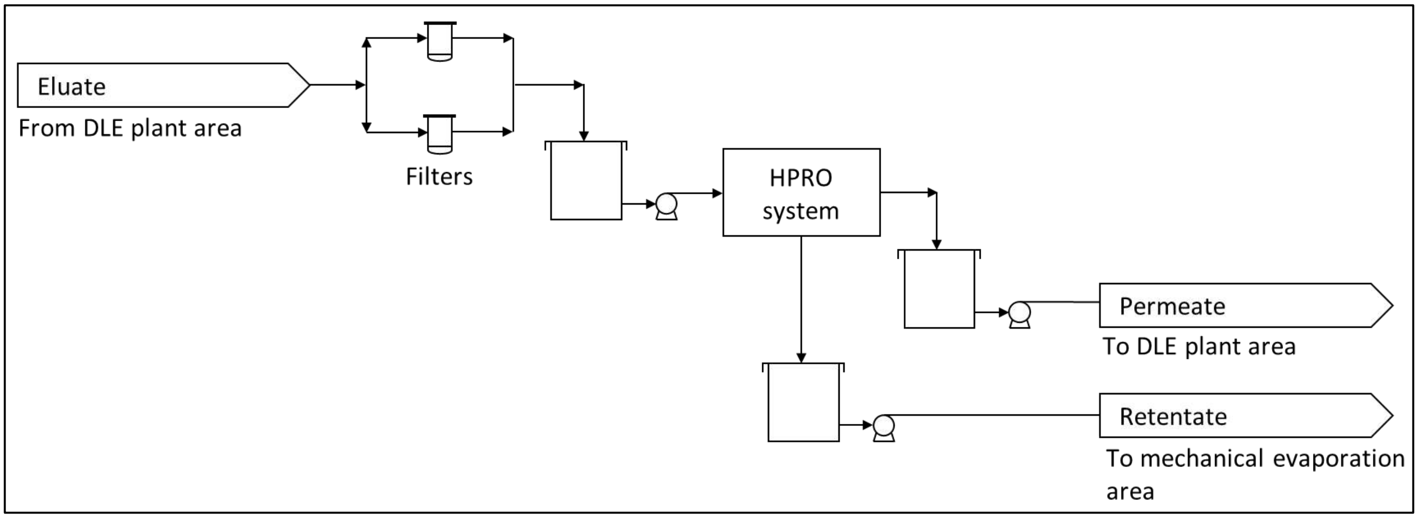


Source: Ausenco, 2023.

17.3.3 Reverse Osmosis (RO)

The reverse osmosis area (Figure 17-4) intends to concentrate the lithium in the eluate coming from the DLE columns and recover water by means of membranes. The eluate is filtered prior to entering the high pressure reverse osmosis (HPRO) system to avoid the dragging of solids that could affects the performance of its membranes. Two output streams are produced in the HPRO, a permeate that is recirculated to the elution stage of the DLE plant area, and a retentate (concentrate lithium brine) that is sent to the mechanical evaporation area.

Figure 17-4: Reverse Osmosis



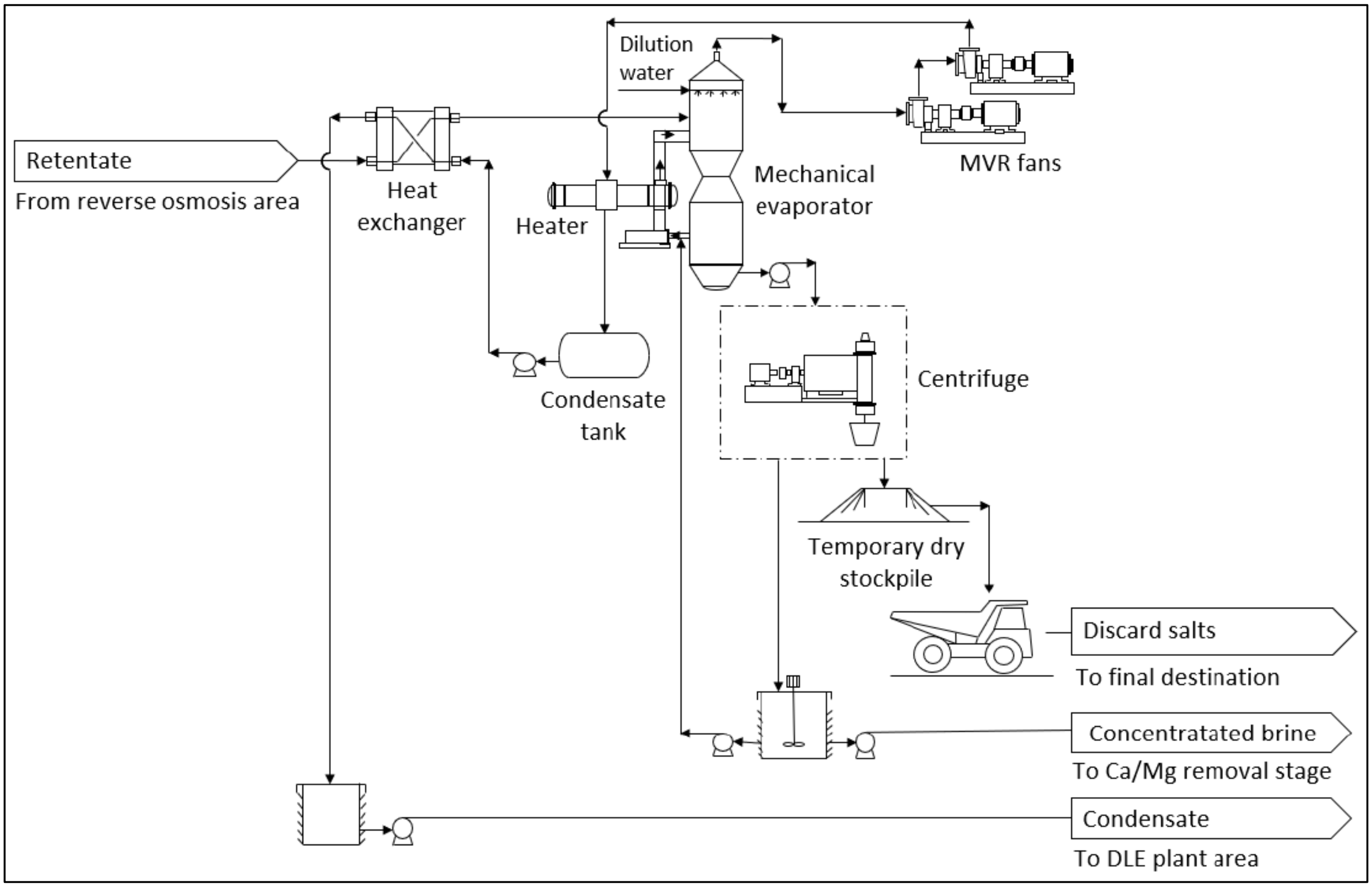
Source: Ausenco, 2023.

17.3.4 Mechanical Evaporation

The mechanical evaporation area (Figure 17-5) intends to concentrate the lithium present in the retentate obtained from the reverse osmosis area and recover water as condensate. The retentate is preheated in a heat exchanger that uses condensate recovered from the same evaporation process to increase its temperature, this condensate is then sent to the DLE plant area to be used in the elution stage. The preheated retentate enters the evaporator with mechanical vapor recompression (MVR) to reach the lithium concentration required for the carbonation stage (30 - 40 g/L). To improve the process performance, it is necessary to concentrate the retentate in stages.

The product from the evaporator is fed to the centrifuge generating two streams, a concentrated brine and a solid discard (salts). The concentrated brine stream is discharged into the centrate mixer tank, from where a part is recirculated to the mechanical evaporator and the other part is sent to Ca/Mg removal stage for further processing and lithium recovery. The solid discard stream is collected in a temporary dry stockpile for final disposal.

Figure 17-5: Mechanical Evaporation



Source: Ausenco, 2023.

17.3.5 Chemical Plant

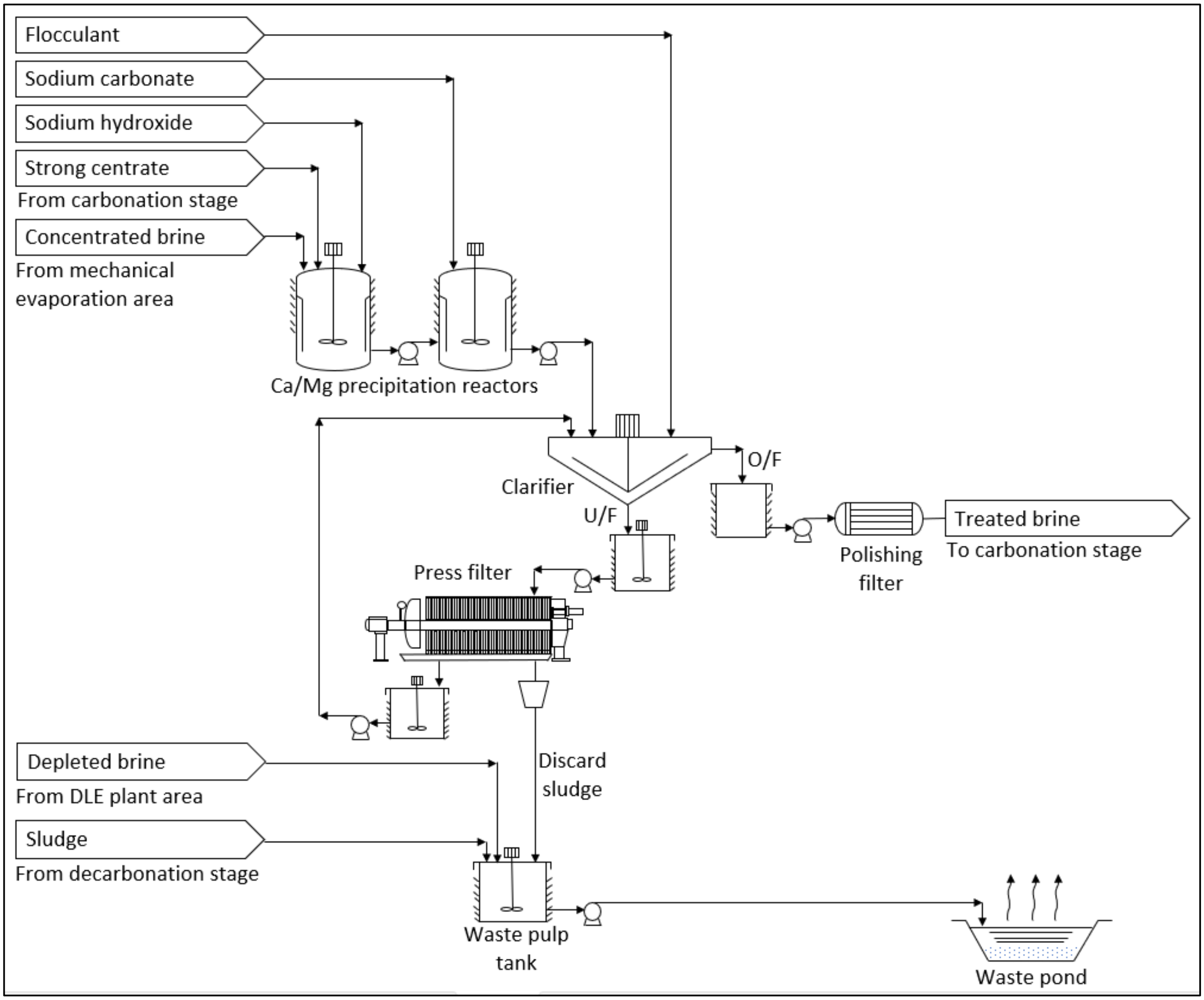
The chemical plant is divided into three stages: Ca/Mg removal, carbonation and neutralization. In the first stage, shown on Figure 17-6, concentrated brine from the mechanical evaporation area is put in contact with reagents such as sodium hydroxide (NaOH) and sodium carbonate (Na_2CO_3) to generate two insoluble products such as magnesium hydroxide and calcium carbonate, according to the following reactions:

$$2NaOH + Mg^{+2} \leftrightarrow Mg(OH)_2 + 2Na^+$$

$$Na_2CO_3 + Ca^{+2} \leftrightarrow CaCO_3 + 2Na^+$$

The pulp generated in the precipitation reactors is fed to a clarifier where flocculant is added to promote solid-liquid separation. An underflow (U/F) is obtained from the clarifier and sent to a press filter that produces a filtrate that is recirculated to the clarifier and a discard sludge that is sent to the waste pulp tank, where it is mixed with depleted brine from the DLE process and with sludge from the decarbonation process to be sent to the waste pond. The overflow (O/F) obtained from the clarifier is filtered and then sent to the carbonation stage.

Figure 17-6: Chemical Plant: Ca/Mg Removal



Source: Ausenco, 2023.

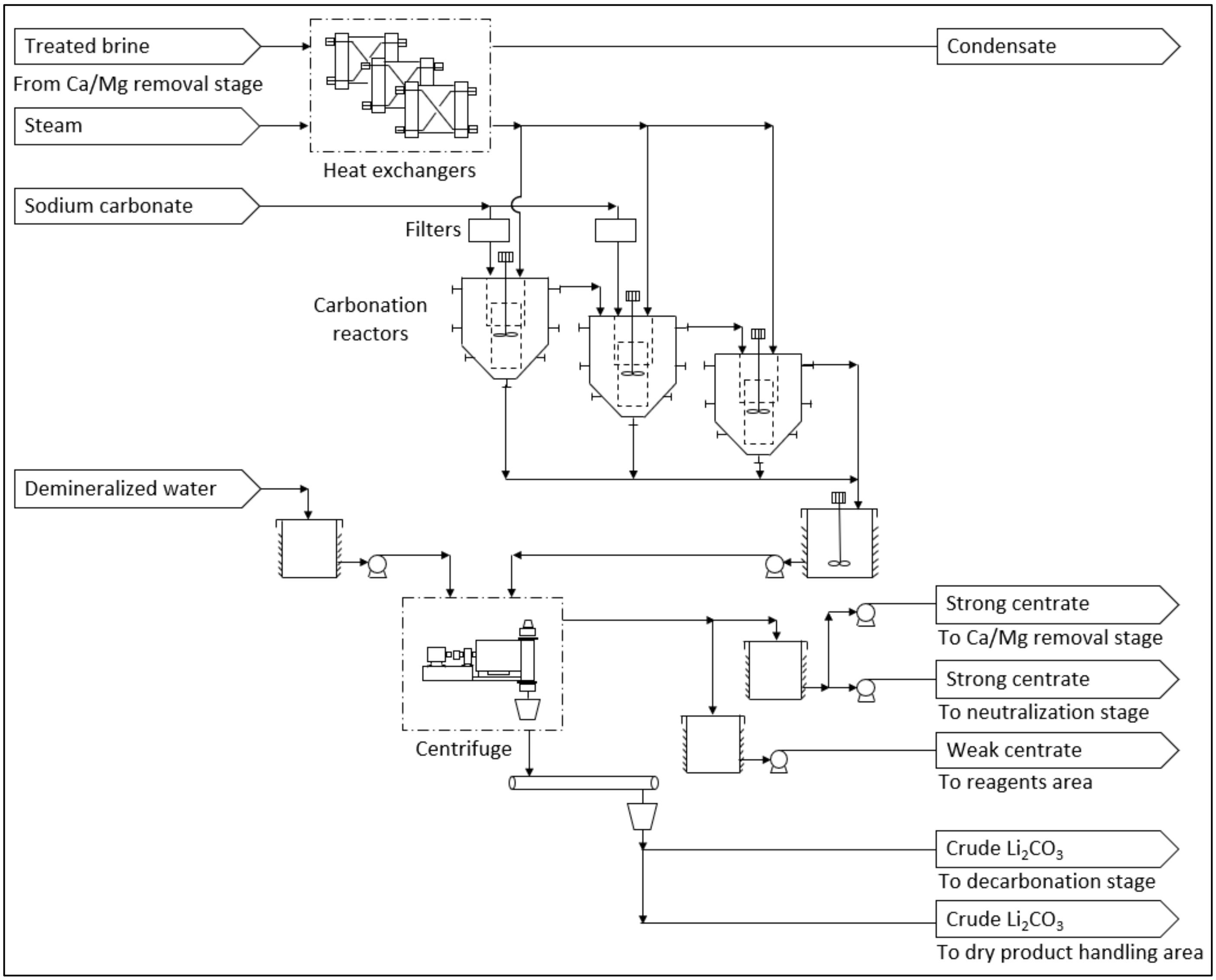
The second stage of the chemical plant, that corresponds to the carbonation process, is shown in Figure 17-7. The treated brine from Ca/Mg removal stage is sent to heat exchangers to increase its temperature using steam which undergoes a phase change obtaining condensate. The hot treated brine is filtered and then mixed with a sodium carbonate solution in stirred reactors, where the carbonation reaction takes place, generating a pulp of highly insoluble lithium carbonate as a product, according to the following reaction:

$$Na_2CO_3 + 2Li \leftrightarrow Li_2CO_3 + 2Na^+$$

The pulp produced is centrifuged, in a first squeeze a liquid solution (strong centrate) and a solid product are obtained: the strong centrate is split into two streams, one is sent to neutralization stage and the other is recirculated to the Ca/Mg removal stage; the solid product of technical grade (crude Li_2CO_3) is transported to the bicarbonation stage to continue with the refining process and thus obtain battery grade lithium carbonate. Hot demineralized water is added to the centrifuge for cake washing, a second squeeze is performed which generates another liquid solution (weak centrate) that is used for reagent preparation.

Depending on the plant production campaign the crude Li_2CO_3 could be sent to the dry product handling area to obtain technical grade lithium carbonate which is stored in a stockpile for further transportation to its final destination.

Figure 17-7: Chemical Plant: Carbonation



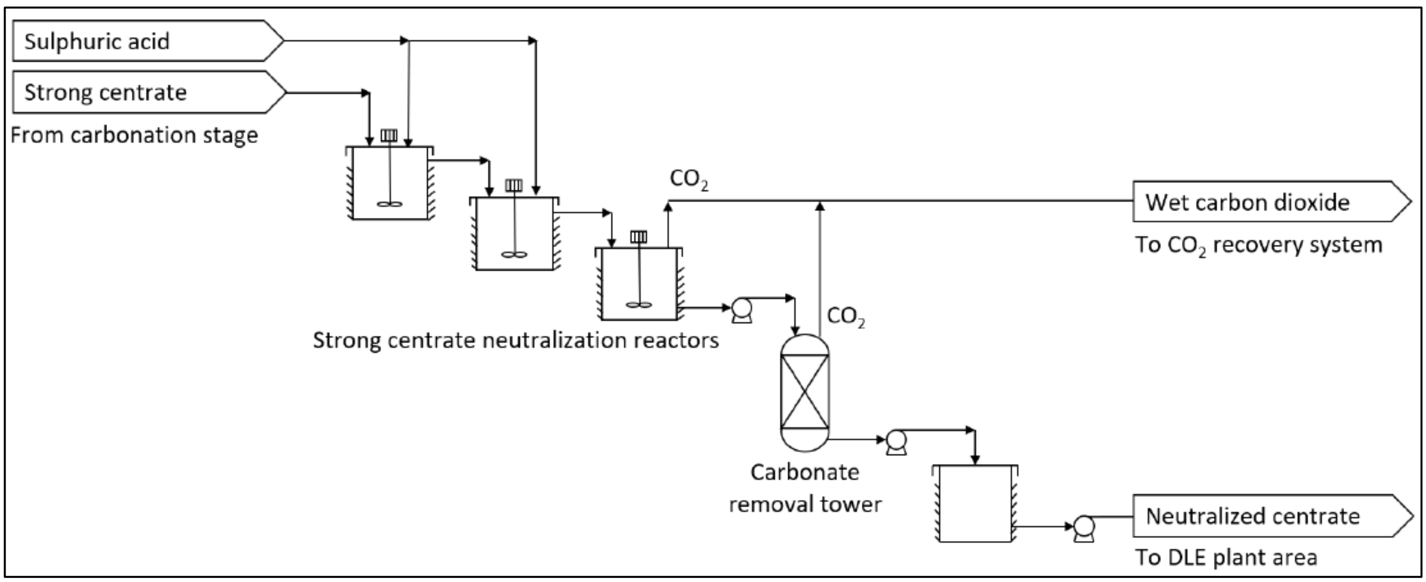
Source: Ausenco, 2023.

Figure 17-8 represents the third stage of the chemical plant, neutralization process, the strong centrate (weak lithium solution) produced by carbonation enters a series of stirred reactors, where sulfuric acid is added to adjust the pH to less than 4.5 eliminating carbonates. The reaction product is pumped to the carbonate removal tower, where carbonates are retained and the neutralized centrate is recirculated to the feed tank in the DLE plant area. The reaction that takes place is shown below.

$$Li_2CO_3 + H_2SO_4 \leftrightarrow Li_2SO_4 + CO_2 + H_2O$$

Wet carbon dioxide produced in the reactors and the removal tower is sent to the CO_2 recovery system in bicarbonation stage.

Figure 17-8: **Chemical Plant: Neutralization**



Source: Ausenco, 2023.

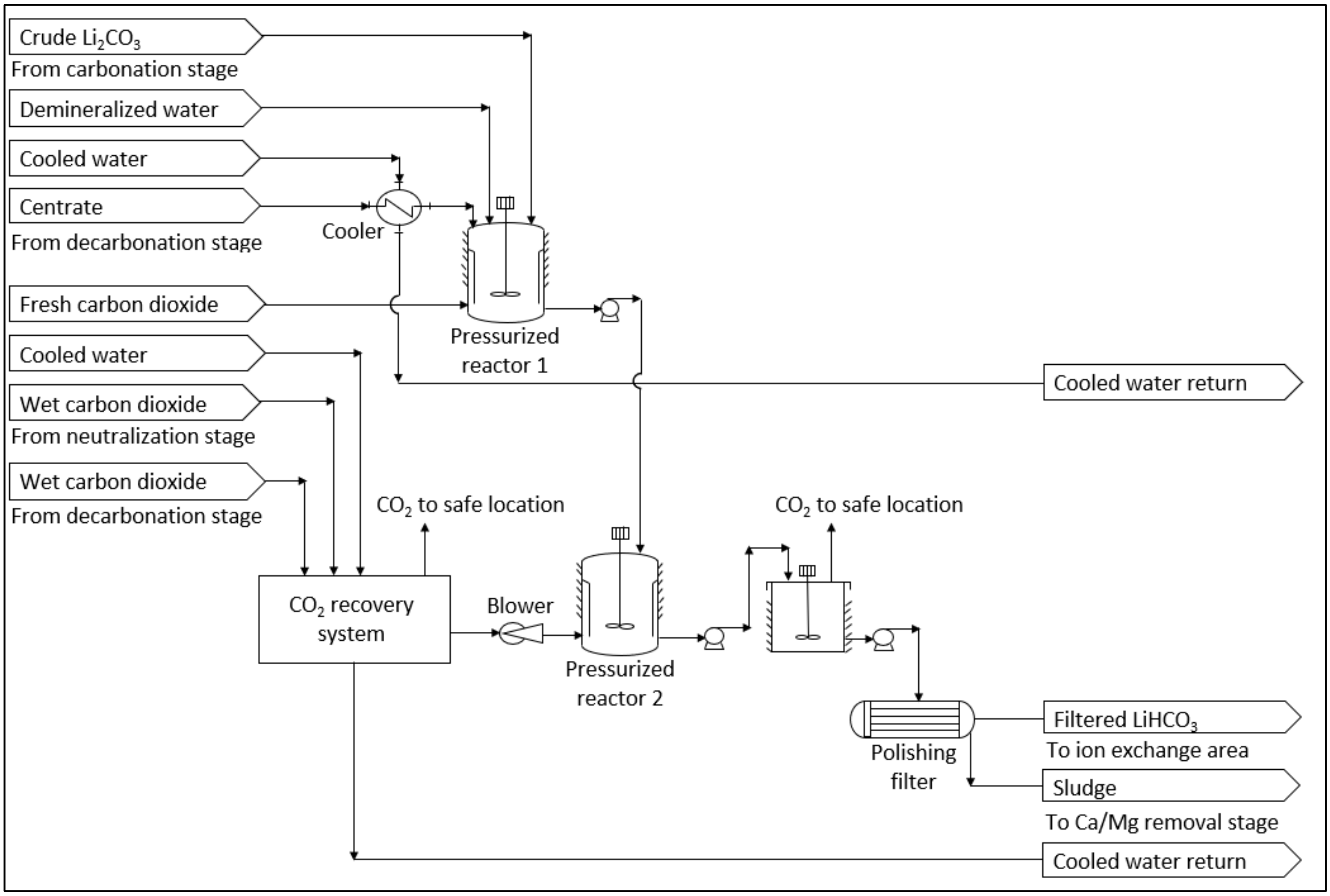
17.3.6 Purification

The purification area is divided into three stages: bicarbonation, ion exchange, and decarbonation. In the first stage, represented in Figure 17-9, the crude Li_2CO_3 together with circulating centrate are introduced into pressurized reactors where carbon dioxide is added, partly fresh and partly recovered. The carbon dioxide reacts with lithium carbonate producing highly soluble lithium bicarbonate ($LiHCO_3$), with some insoluble solids, according to the reaction shown below.

$$Li_2CO_3 + CO_2 + H_2O \leftrightarrow 2LiHCO_3$$

The lithium bicarbonate solution is filtered to discard the insoluble solids that remain in solid phase, the sludge produced is sent to the waste pulp tank in the Ca/Mg removal stage and the filtered lithium bicarbonate is sent to the next stage of ion exchange.

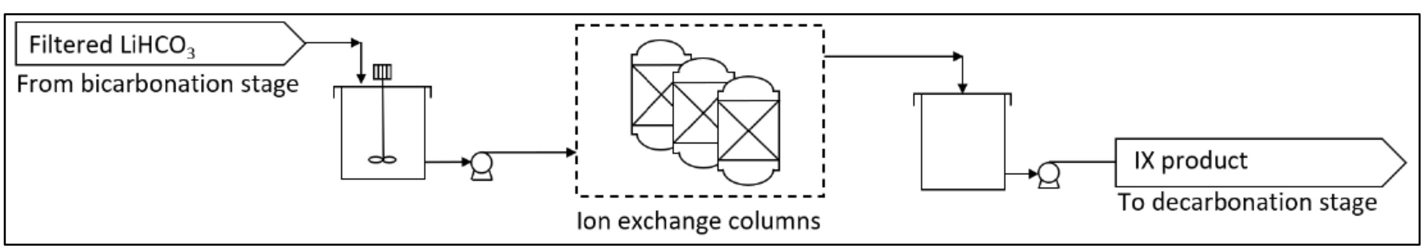
Figure 17-9: Purification: Bicarbonation



Source: Ausenco, 2023.

The second stage of purification area, that corresponds to ion exchange process, is shown in Figure 17-10. The solids free solution (filtered $LiHCO_3$) is put in contact with ion exchange resins to eliminate traces of calcium, magnesium and boron. The brine free of these contaminants continues to the decarbonation stage.

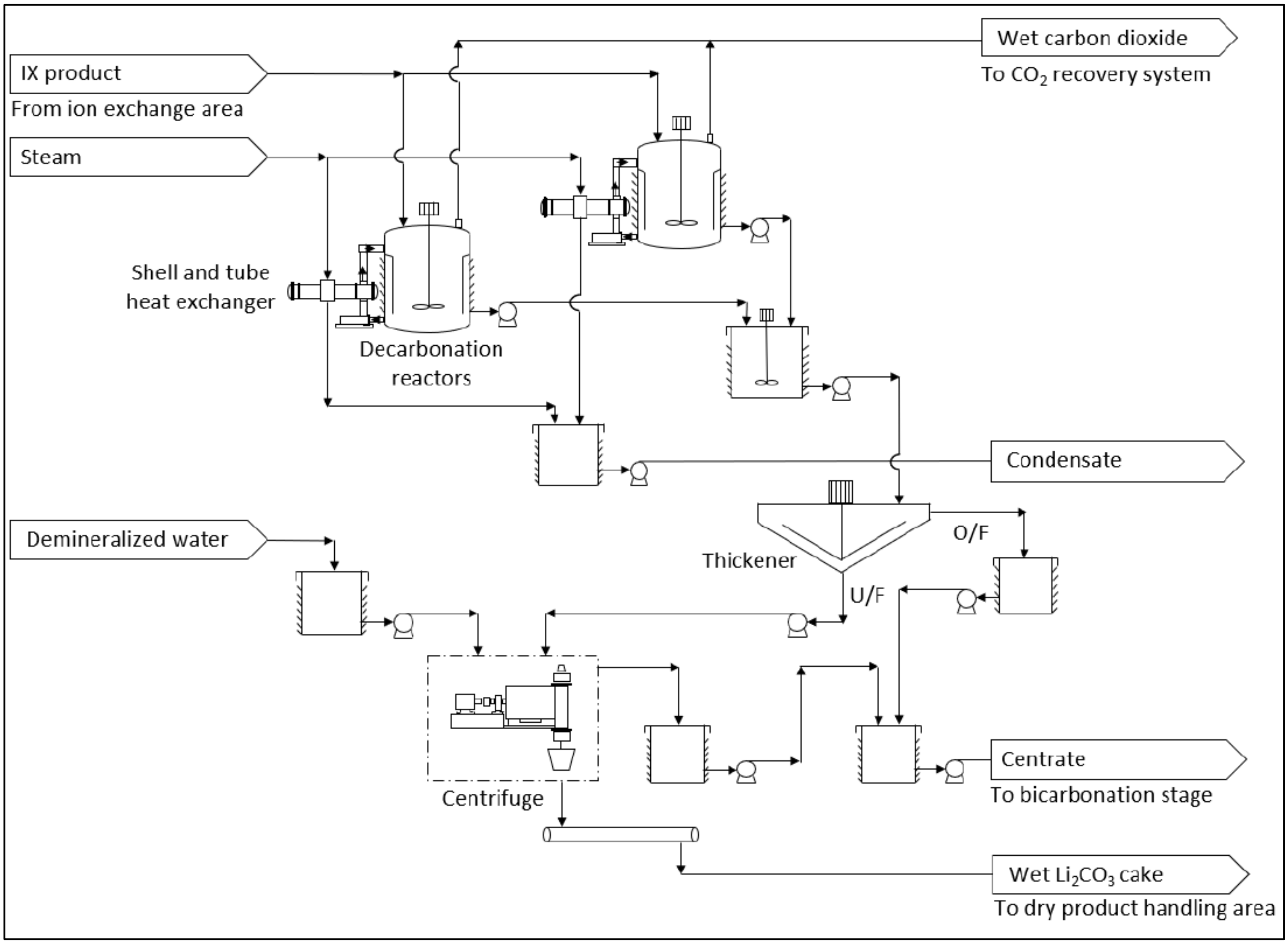
Figure 17-10: Purification - Ion Exchange



Source: Ausenco, 2023.

Figure 17-11 represents the decarbonation process, the third stage of the purification area, that consists in a second lithium precipitation carried out in crystallizing reactors by increasing the temperature with steam which undergoes a phase change obtaining condensate. The wet carbon dioxide produced by the precipitation reaction is sent to the CO_2 recovery system in bicarbonation stage. The obtained pulp is sent to a thickener where the overflow (O/F) is recirculated to the bicarbonation stage and the underflow (U/F) is sent to a solid-liquid separation process, where the liquid joins the overflow and the solid (wet Li_2CO_3 cake) continues to the dry product handling area. Additionally, hot demineralized water is used for cake washing producing part of the centrate that is sent to bicarbonation stage.

Figure 17-11: Purification - Decarbonation

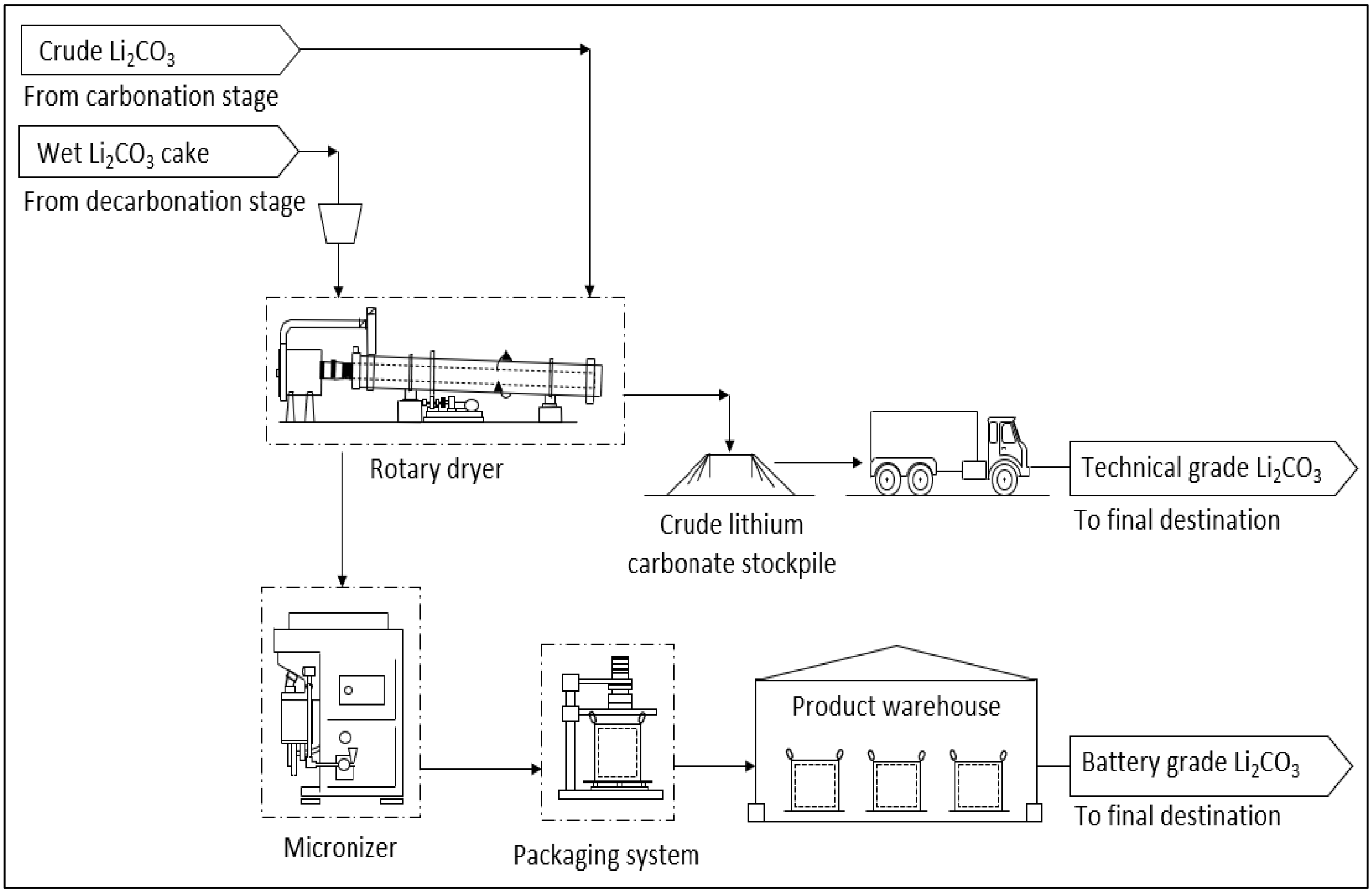


Source: Ausenco, 2023.

17.3.7 Dry Product Handling

Figure 17-12 shows the process for the dry product handling area. The wet lithium carbonate cake obtained in the purification stage is sent to a rotary dryer to reduce its moisture content and then to a micronizer where the product size is reduced to industry battery grade requirements. Finally, the fine lithium carbonate is packaged and stored in the product warehouse.

Figure 17-12: Dry Product Handling



Source: Ausenco, 2023.

17.4 Parameters and Mass Balance Results

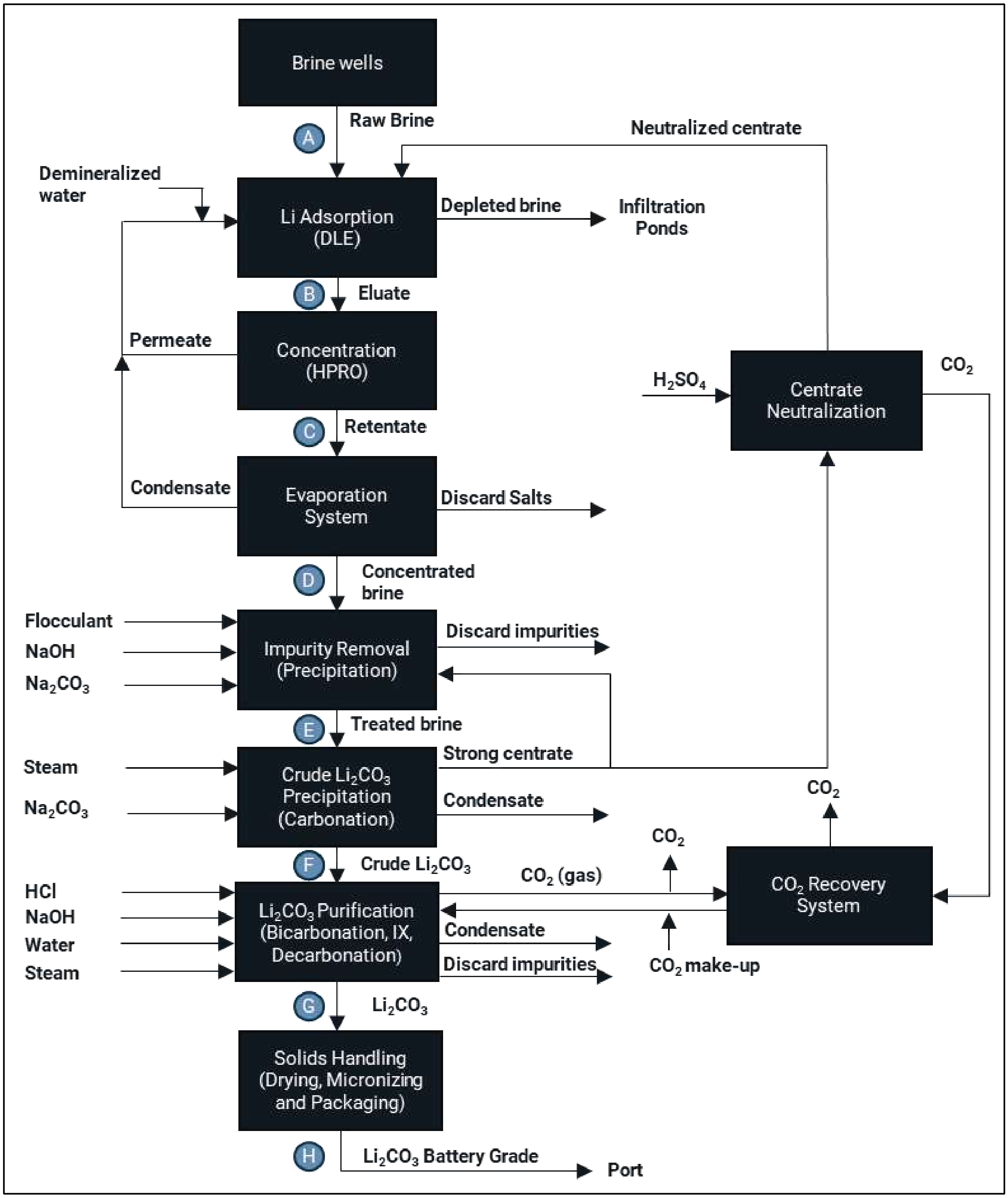
The mass balance presented in Table 17-2 highlights the main process streams indicated with letters in the block diagram shown in Figure 17-13. This theoretical balance was created based on vendors information and benchmark data of Ausenco, therefore it will need to be validated with laboratory test and complementary information from vendors.

Table 17-2: Mass Balance Process Summary

Stream Name	Code	Flow rate		Composition mg/L or (% w/w)			
		t/a	m^3/a	Li^+	Mg^{+2}	Ca^{+2}	B
Arizaro raw brine	A	-	19,880,820	286	4,025	523	50.0
Eluate	B	-	15,354,725	363	155	35.1	10.4
Concentrated brine from reverse osmosis	C	-	962,925	5,555	2,074	532	66.3
Concentrated brine from mechanical evaporation	D	-	141,791	37,502	13,998	3,593	448
Treated brine	E	-	473,142	12,077	20.9	39.6	246
Crude Li_2CO_3	F	34,546	-	(13.9)	(0.0144)	(0.0320)	(0.00114)
Li_2CO_3 from purification	G	33,659	-	(14.1)	-	-	-
Final product (BG Li_2CO_3)	H	25,297	-	(18.7)	-	-	-

The production obtained in the mass balance is 25,297 t/y of battery-grade lithium carbonate, with an overall yield of 83%.

Figure 17-13: Block Diagram for Mass Balance



Source: Ausenco, 2023.

17.5 Product/Materials Handling

Depending on plant campaign technical grade lithium carbonate or battery grade lithium carbonate is produced. The handling of these product is as follow:

- Technical grade lithium carbonate from carbonation stage is collected in a stockpile to further be charged in trucks until its destination.
- Battery grade lithium carbonate from purification area is packed and storage in the product warehouse until to be transported to its final destination.

In addition to the main product, lithium carbonate, other streams are generated as process outputs which require handling in different ways such as recirculation, treatment or elimination. The products and their handling are as follows:

- Most of the depleted brine produced in DLE plant is pumped to the evaporation-infiltration pond that is planned to be located on the beach of the Salar de Arizaro with a containment edge near the industrial process plant.
- Discard salts from the mechanical evaporation process are temporary collected in a dry stockpile to be further transported to final disposal.
- Waste pulp generated from the mixture of depleted brine from the DLE plant, filter sludge from the ion exchange stage and filter press sludge from the Ca/Mg removal stage is sent to the waste pond where the liquid is evaporated
- Reject water from the water treatment plant is usually used to floors wash or roads maintenance.

17.6 Energy, Water and Process Materials Requirements

17.6.1 Reagents

The reagents required in the lithium carbonate production process are indicated in Figure 17-14.

Figure 17-14: Reagents Consumptions Rates

Reagent	Chemical Formula	Annual Consumption (t/a)
Sodium carbonate (soda ash)	Na_2CO_3	53,666
Sodium hydroxide (caustic soda)	NaOH	6,937
Sulphuric acid	H_2SO_4	14,426
Hydrochloric acid	HCl	88.9
Carbon dioxide	CO_2	5,370
Flocculant	-	0.418

The procedures of how these reagents are used and prepared are listed below.

17.6.1.1 Sodium Carbonate

Sodium carbonate or soda ash is used in the process to reduce the calcium content and to produce lithium carbonate, the latter operation being the most important in consumption terms. The sodium carbonate solution is prepared by dissolving the soda ash in an agitated tank using weak centrate from centrifugation process and demineralized water. This tank handles an excessive sodium carbonate amount, ensuring a saturated solution at operating temperature. Once the solution is prepared, it is pumped to the sodium carbonate storage tank and then sent to the chemical plant area, specifically to the Ca/Mg removal stage and the carbonation stage.

17.6.1.2 Sodium Hydroxide

Sodium hydroxide or caustic soda is received in the plant as a bagged solid. The sodium hydroxide solution is prepared by dissolving the solid caustic soda with filtered water in an agitated tank, and then sent to the sodium hydroxide storage tank for distribution to the Ca/Mg removal stage and the ion exchange stage. For elution of the ion exchange columns the sodium hydroxide is additional diluted with demineralized water in an agitated tank.

17.6.1.3 Sulphuric Acid

Sulphuric acid is transported in a tanker truck and fed into a storage tank to be then pumped to strong centrate neutralization tanks.

17.6.1.4 Hydrochloric Acid

Hydrochloric acid is transported in a tanker truck and fed into a storage tank to be then diluted with demineralized water in an agitated tank prior to be distributed for the ion exchangers elution operation. The solution used is sent to the waste acid tank and after is pumped to the adsorption feed tank.

17.6.1.5 Carbon dioxide

Carbon dioxide is used in purification area in order to obtain a battery-grade impurity-free product.

17.6.1.6 Flocculant

Flocculant is received in the plant as a solid that is introduced into a silo. The flocculant solution is prepared with filtered water in a mixing tank and then pumped to the clarifier in the Ca/Mg removal stage.

17.6.2 Utilities

17.6.2.1 Water

The total projected raw water requirement for the Project based on the process plant design carried out is 485 m^3/h. This flow is of raw water obtained directly from freshwater wells and contemplates the requirement of both treated and demineralized water. Treated water is required in several stages in the production process of lithium carbonate, mainly in the DLE elution but also in the preparation of soda ash solution, dilution of caustic soda and hydrochloric acid, in the ion exchange operation and in the repulsion of crude lithium carbonate before purification. Demineralized water is obtained from a treatment plant that uses reverse osmosis to obtain the required water quality with the purpose of preventing contaminants from entering the process.

17.6.2.2 Steam

Steam is produced by boilers and is necessary in two instances of the process: to heat the brine that enters the carbonation stage and to recover carbon dioxide from the decarbonation process. In these two instances the steam undergoes a phase change resulting in condensate as a product, which is mixed with a water make-up to feed the boilers and produce enough steam to supply the process.

17.6.2.3 Air

Air is needed in the process plant for two main purposes. One is the supply of air lines to all areas of the plant and other is the supply of air to all instrumentation that requires it in the process.

Atmospheric air is passed through air compressors, air dryers, air filters, and then process air receivers, which distribute air to the instruments, plant hose station, and process plant plate filters.

17.6.2.4 Power

The power supply to the different areas of the Project will be provided by diesel. For further details of power supply and energy requirements refer to Section 18.5.

17.6.2.5 Fire System

Part of the freshwater taken from the wells is fed into a tank of the fire system, from there it is pumped and distributed to cover fire emergencies in the plant.

18 PROJECT INFRASTRUCTURE

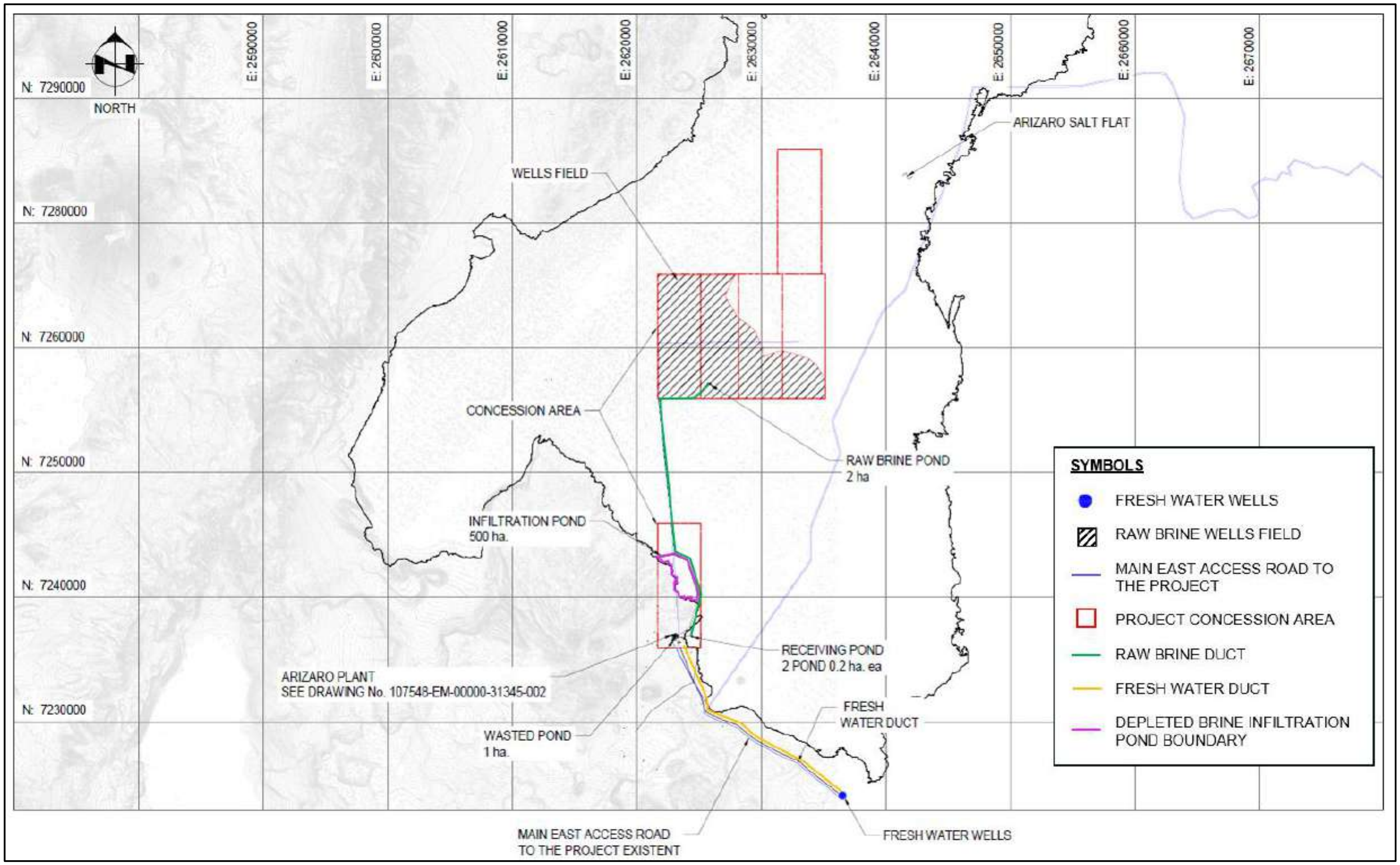
18.1 Introduction

The infrastructure present in the Salar de Arizaro Project will consist mainly of civil works, site facilities and buildings, water management systems, diesel power generation, and steam generation. Figure 18-1 shows the location of the plant, ponds, well field, freshwater main pipelines, freshwater wells, along with the access roads to these sites within the boundaries of the salar and the Project concession areas. In addition,

presents details of the layout and dimensions of the main required plant facilities and buildings. Accordingly, the infrastructure of the project includes:

- Roads and logistic;
- Site facilities/buildings:
  - Wellfield;
  - DLE plant;
  - Reverse Osmosis;
  - Mechanical evaporation;
  - Chemical plant;
  - Purification;
  - Dry product handling;
  - General utilities area (air, steam);
  - Reagents warehouses, metallurgy laboratory, spare warehouse, workshop of maintenance, warehouse for SAS and product;
  - Administration office, camp, casino, change house, policlinic for first aid and gatehouse.
- Ponds:
  - Raw brine receiving ponds (1 and 2);
  - Receiving pond;
  - Depleted brine infiltration pond;
  - Waste pond.
- Water management:
  - Watter supply;
  - Contour channel;
- Power supply.

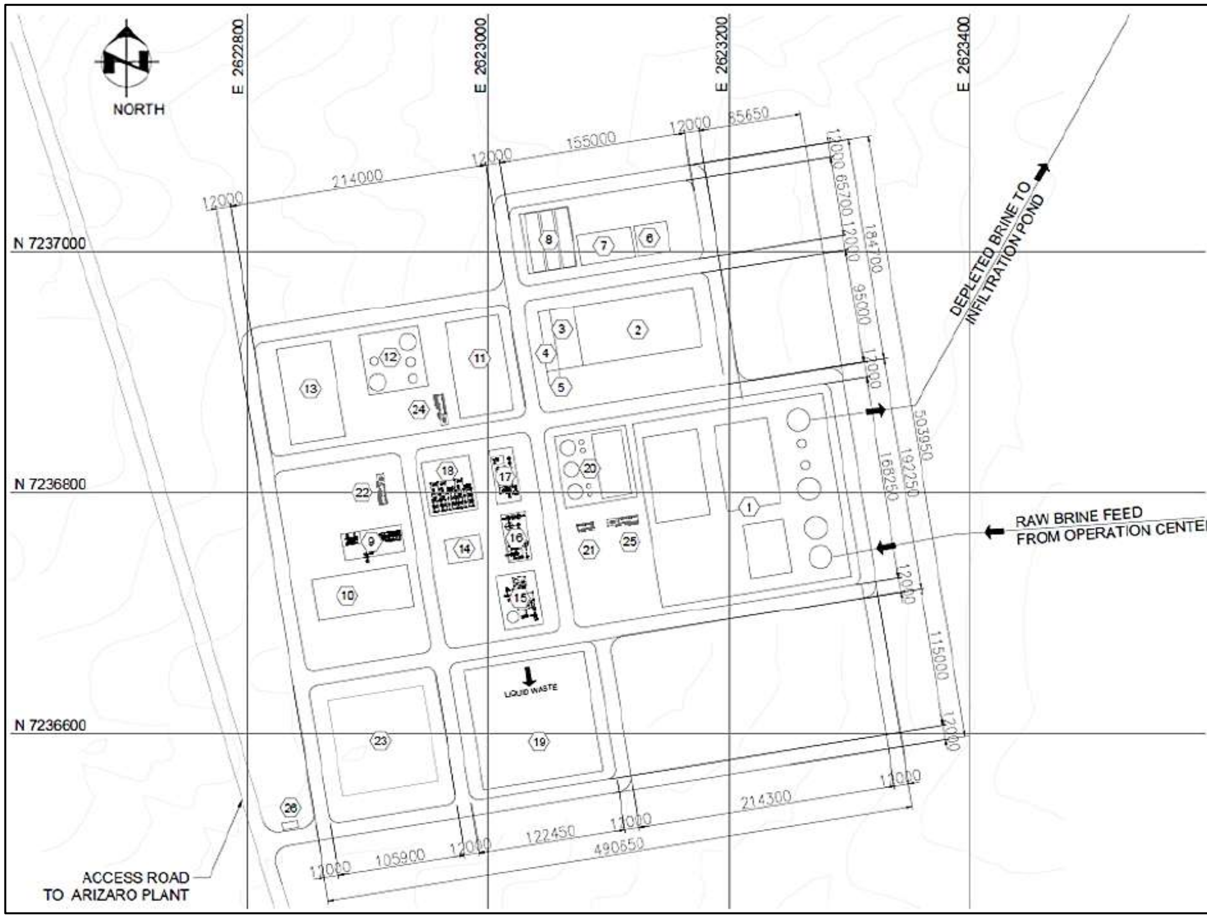
Figure 18-1: Site Layout



Source: Ausenco, 2023.

Note: Coordinates in meters. Coordinate system POSGAR 94/Argentina FAJA 2.

Figure 18-2: Plant Layout



AREA AND MAIN BUILDINGS LIST

ITEM	AREA	DESCRIPTION
1	2000	DLE PLANT
2	9200	WORKSHOP
	9170	SPARE WAREHOUSE
3	9160	METALLURGY LABORATORY
4	9110	ADMINISTRATION OFFICE
5	9400	POLICLINIC
6	9140	CHANGE HOUSE
7	9130	CASINO
8	9120	CAMP
9	7300	PACKAGING
	7200	MICRONIZER
	7100	DRYER
10	9300	WAREHOUSE FOR SAS AND PRODUCT
11	8000	GENERAL UTILITIES AREA
12	8300	WATER SUPPLY
13	9150	REAGENTS WAREHOUSE
14	8600	STEAM
15	4000	MECHANICAL EVAPORATION
16	5100	Ca/Mg REMOVAL
17	5200	CARBONATION
	5300	NEUTRALIZATION
18	6000	PURIFICATION
19	5100	WASTED POND 1 ha.
20	3000	REVERSE OSMOSIS
21		ELECTRICAL ROOM UNITARY SUBSTATION
22		ELECTRICAL ROOM UNITARY SUBSTATION
23	8100	MAIN ELECTRICAL SUBSTATION
24		ELECTRICAL ROOM UNITARY SUBSTATION
25		ELECTRICAL ROOM UNITARY SUBSTATION
26		GATEHOUSE AND WEIGHING

Source: Ausenco, 2023.

Dimensions in millimeter, elevations, and coordinates in meters. Coordinate system POSGAR 94/Argentina FAJA 2.

18.2 Road and Logistics

The Salar de Arizaro is in the department of Los Andes, province of Salta, approximately 235 km away from the city of Salta. It is accessed by National Route No. 51 (RN 51) which, from Salta Capital, heads west until it reaches the town of San Antonio de Los Cobres, after traveling approximately 160 km.

The town of San Antonio de los Cobres has a paved road to get from Salta Capital by the RN 51, except for some short stretches, with a very good trafficability in general, except for the rainy seasons when the water coming down from the mountains cuts the traffic for some hours. A 3-km long airstrip, certified by the Argentina Air Force is located at the Lindero Mine camp but is not a commercial airstrip.

This route connects the province of Salta with the neighboring country of Chile through the Sico Pass located at 4,092 masl. Passing San Antonio de Los Cobres the asphalt ends, and the RN 51 continues a dirt road. In general, the road is passable except for days of heavy rains (in summer) or heavy snowfalls (in winter) which generate the cut of this. Also, after San Antonio the road and tourist signage are poor. Once in San Antonio de Los Cobres, it is mandatory to arrange transportation to the Arizaro Salar, which is located to the southwest of the town.

As for the railroad lines, the Belgrano Cargas connects Salta Capital with SAC through the C-14 branch line. The C-14 branch is a very important corridor of the country's railroad line. It is one of the most complex in the world and its importance lies in the fact that it is a key piece of the bioceanic corridor that links Salta to the Chilean port of Antofagasta and from there to access the Asian markets. This railway network crosses the Lerna Valley, entering through the Quebrada del Toro, in the Puna, to connect to the west with Chile at the international border of Socompa. On this route, the FFCC Belgrano passes through the following stations: Salar de Pocitos, Tolar Grande, Taca Taca, Vega de Arizaro, Caipe, Choculaqui, Quebrada del Agua and Socompa.

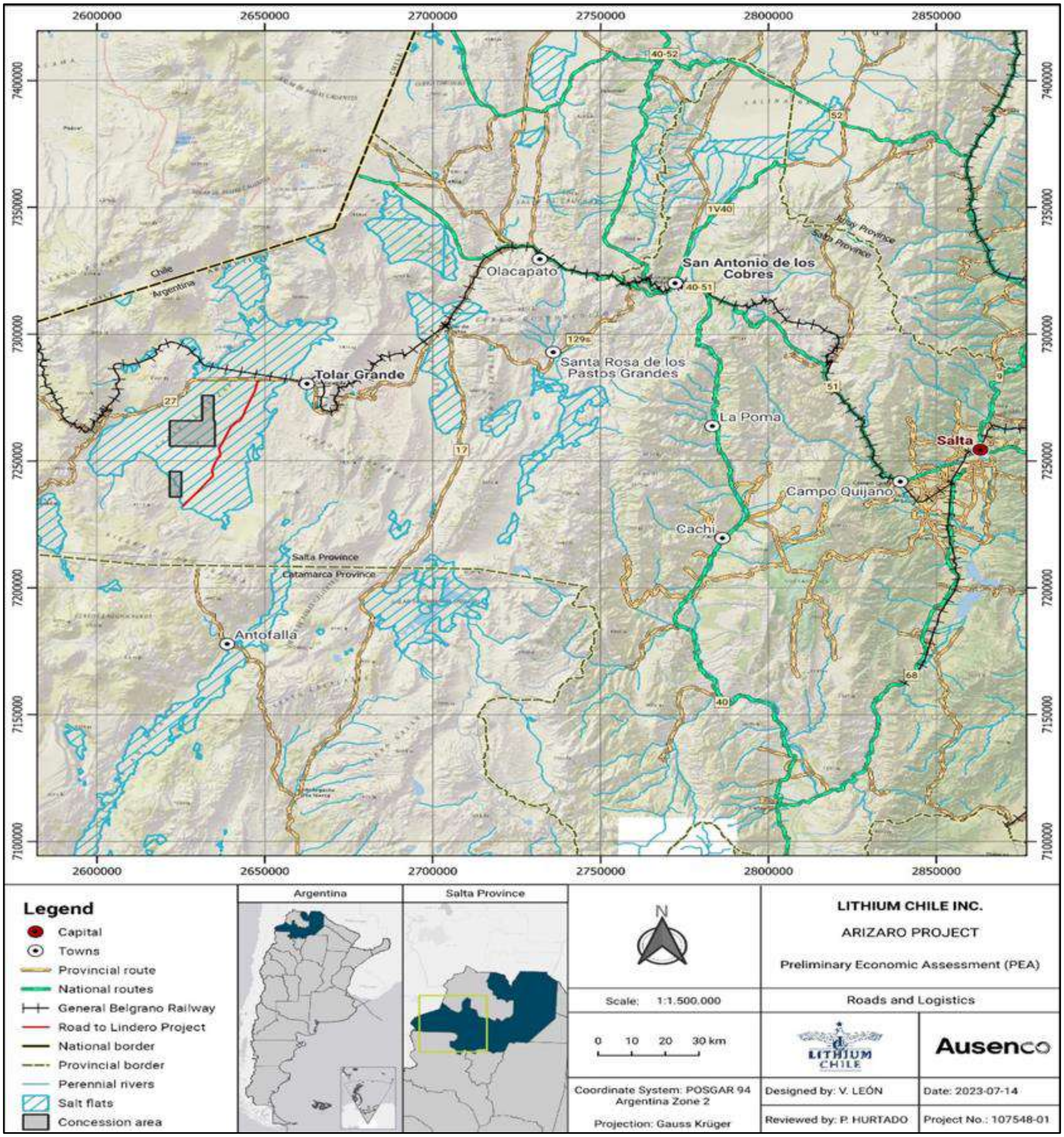
Regarding ports, the nearest one is the port of Antofagasta, Chile, 250 km away. The port has the capacity to handle vessels up to 50,000 t. Antofagasta has a deep port (10 m) with crane facilities and full berthing berths from 175 to 220 m, with holds for containers of up to 70 t. Another alternative is the port of Buenos Aires, 1,734 km away by land, which is the main container port in Argentina, concentrating approximately 90% of the country's container movement. It is where port operations are carried out, as well as the handling of overseas and coastal vessels.

As for the airports, Martín Miguel de Guemes International Airport (FAA: SLA - IATA: SLA - ICAO: SASA), commonly known as El Aybal Airport, 338 km away by land, is an airport located 7 km southwest of the center of the city of Salta, capital of the homonymous province, in the Argentine Republic. The airport is located next to RN 51, kilometer 5 and its coordinates are latitude 24° 50' 40" S and longitude 65° 28' 43" W. The airport has two asphalted runways, one main runway of

3,000 m and the other of 2,400 m .The second option is Gobernador Horacio Guzmán International Airport, 443 km by land, (FAA: JUJ - IATA: JUJ - ICAO: SASJ), is an airport located 33 km southeast of the center of the city of San Salvador de Jujuy, in the town of Perico in the department of El Carmen in the province of Jujuy. The airport has a 2,950 m paved runway. It currently operates domestic routes to the city of Cordoba and Buenos Aires with narrow-body aircraft; and finally, the Loa Airport, about 459 km by land, is located 6 km southeast of the city of Calama in Chile, being part of the primary airport network of Chile. The airport has a 2,889 m paved runway.

Figure 18-3 shows an overview of the Project roads and logistics.

Figure 18-3: Roads and Logistics Arizaro Project



Source: Ausenco, 2023.

18.3 Site Infrastructure

The facilities and buildings required to support the Project include those listed in Table 18-1 and those detailed in this subsection. The location of each of these structures and the area to which they correspond according to the Project WBS is shown in Figure 18-1and Figure 18-2.

Table 18-1: Facilities and Buildings

Infrastructure	Area (m^2)	Description
Administration office	504	50 m wide, 10 m long and 3 m high 1 floor -story container-type structure.
Camp	2,400	3 buildings (2 floors) of 50 m wide, 8 m long and 3 m high each
Casino	1,123	25 m wide, 45 m long and 4 m high 1 floor-story container-type structure.
Change house	672	25 m wide, 27 m long and 4 m high 1 floor container-type structure
Reagents warehouses	3,600	45 m wide, 80 m long and 10 m high Industrial metal structure, concrete floor, and metal wall (warehouse type).
Metallurgy laboratory	1,000	50 m wide, 20 m long and 5 m high Industrial metal structure, concrete floor, and metal wall (warehouse type).
Spare warehouse and workshop of maintenance	5,000	50 m wide, 100 m long and 10 m high Industrial metal structure, concrete floor, and metal wall (warehouse type).
Warehouses for SAS and product	2,800	35 m wide, 80 m long and 10 m high Industrial metal structure, concrete floor, and metal wall (warehouse type).
Policlinic for first aid	120	10 m wide, 12 m long and 3 m high, A container type structure.
Gatehouse	60	5 m wide, 12 m long and 3 m high 1 floor-story container-type structure.

18.3.1 Wellfield

Wellfield layout is described in Section 16.2 in the present report. Brine will be extracted from each of the wells located in the wellfield and collected in the raw brine receiving pond which is near to the field and has the purpose of maintain a brine reservoir that keeps the process plant with a constant supply. More specifications of this pond are described in Section 18.4.1 below.

Brine will be sent from the raw brine receiving pond near the wellfield to the two receiving ponds near the plant by means of a 25 km 35.4” HDPE pipeline, and from there to the plant trough a 1.2 km 28” HDPE pipeline.

18.3.2 DLE Plant

The DLE plant consists of three primary sections, each occupying a single floor. The adsorption columns are divided into two areas, one covering 3,000 m^2 (60 m wide, 50 m long, and 8 m high) and the other covering 1,750 m^2 (35 m wide, 50 m long, and 8 m high). Both areas are constructed using an industrial metal structure, a concrete floor, and metal walls. Additionally, there is a separate elution column with an area of 3,000 m^2 (60 m wide, 50 m long, and 8 m high).

From the DLE plant, a depleted brine output stream is pumped through a 3.5 km 28" HDPE pipeline to the infiltration pond, whose specifications and location are detailed in Section 18.4.3.

18.3.3 Reverse Osmosis

The reverse osmosis plant has an area of 1,500 m^2 (30 m wide, 50 m long and 5 m high), one floor, industrial metallic structure, concrete floor, metallic wall with a warehouse type distribution.

18.3.4 Mechanical Evaporation

The mechanical evaporation plant has an area of 1,300 m^2 (60 m wide, 22 m long and 25 m high) and consisting of two floors, industrial metal structure, concrete floor, and metal wall each.

18.3.5 Chemical Plant

The chemical plant has two main structures, the Ca/Mg removal plant with an area of 800 m^2 (40 m wide, 20 m long and 30 m high) and the carbonation and neutralization area with a surface of 900 m^2 (45 m wide, 20 m long and 30 m high), both with a metallic industrial structure, concrete floor, and metallic wall and four floors.

18.3.6 Purification

The purification plant has an area of 1,800 m^2 (45 m wide, 40 m long and 20 m wide) three floors and industrial metallic structure, concrete floor, and metal wall.

18.3.7 Dry Product Handling

The drying area has an area of 1,100 m^2 (22 m wide, 50 m long and 35 m high). This structure has one floor, industrial metal structure, concrete floor, and metal wall.

18.3.8 General Utilities Area

The general utilities area includes the supply of air and steam to the plant. The air supply has a structure with a surface area of 160 m^2 (8 m wide, 20 m long and 5 m high), while the steam supply has a surface area of 600 m^2 (30 m wide, 20 m long and 10 m high), both have a floor, industrial metal structure, concrete floor and metal wall distributed as a warehouse.

18.4 Project Ponds

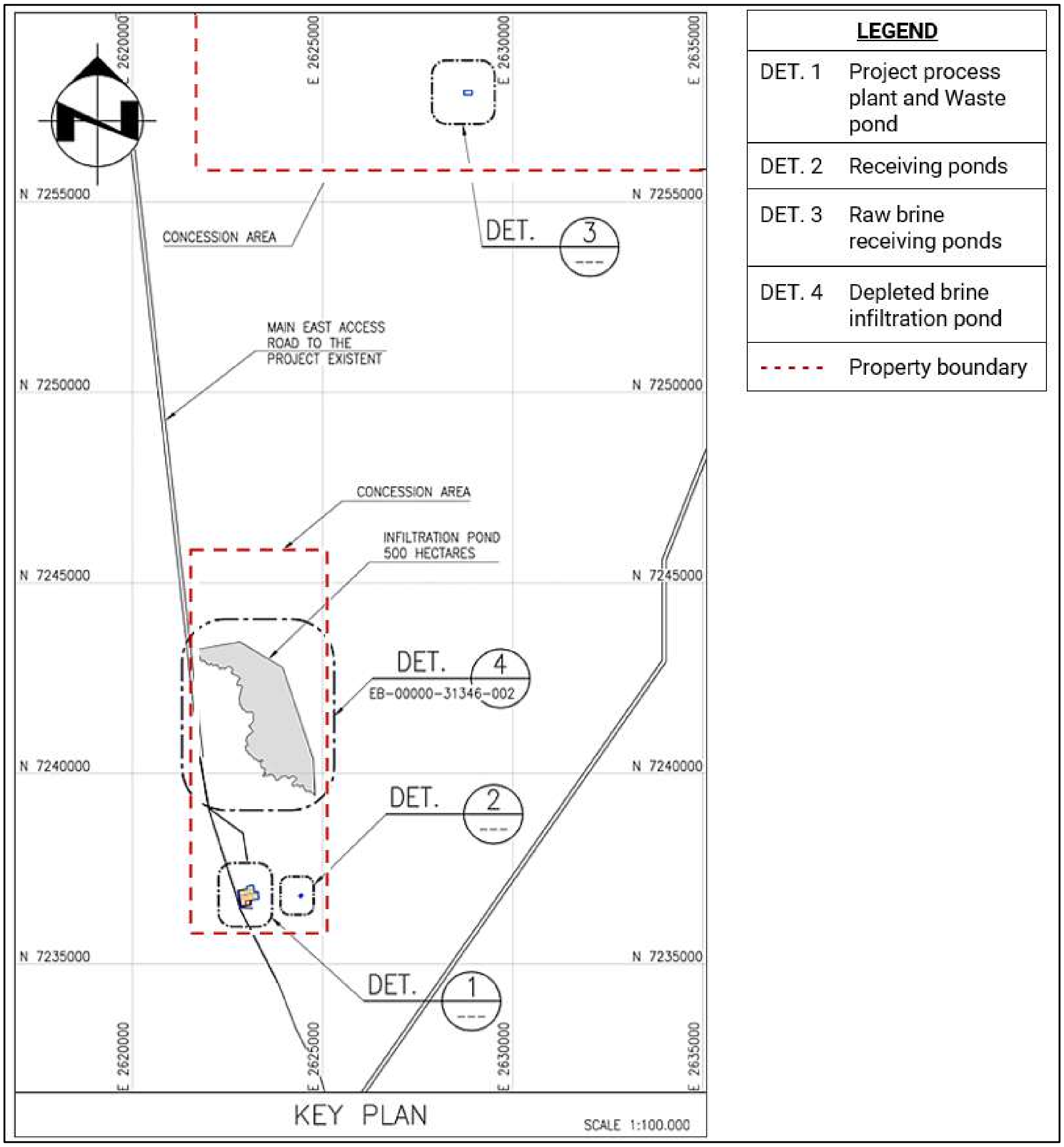
The Project envisages different types of ponds varying in location, function and dimensions. One pond is required to receive the raw brine from different brine extraction wells from the Salar de Arizaro at a common central point (Raw Brine Receiving Pond); this brine then is sent to two receiving ponds close to the plant (Receiving Ponds 01 & 02). The depleted brine obtained in the process requires a pond for its evaporation-infiltration (Depleted Brine Infiltration Pond); and another pond is required for disposal of the liquid waste from the process (Waste Pond). A waterproofing system has been considered for every pond.

Table 18-2 indicates the area of each of these ponds and Figure 18-4 shows the preliminary location of them framed within the property limits.

Table 18-2: Project Ponds

Item	Description	Área (ha)
1	Raw Brine Receiving Pond	2
2	Receiving Ponds 01 & 02	0.2 each
3	Depleted Brine Infiltration Pond	500
4	Waste Pond	1

Figure 18-4: Project Ponds Location



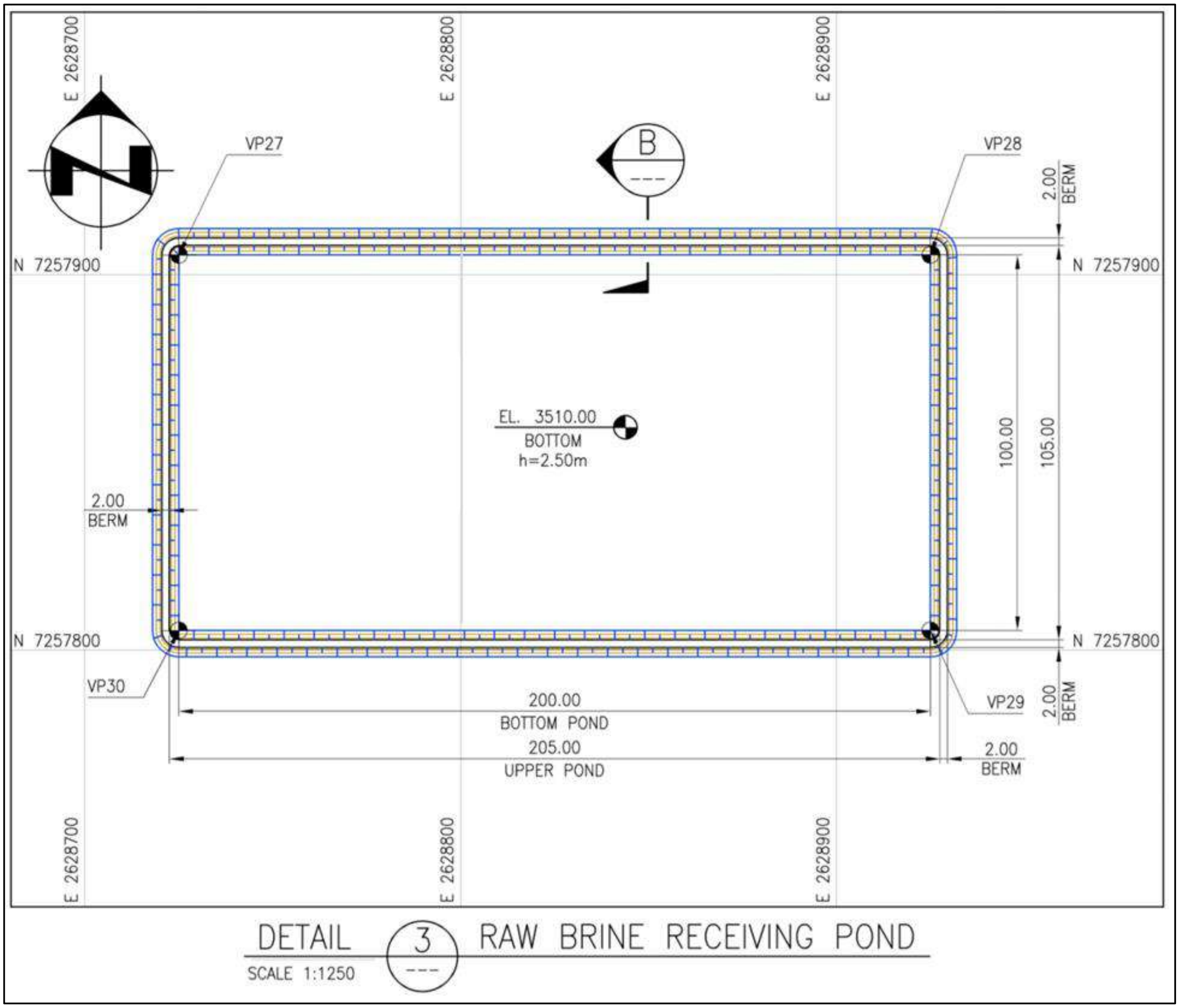
Source: Ausenco, 2023.

18.4.1 Raw Brine Receiving Pond

The raw brine receiving pond will be located in the wellfield area (see Figure 18-1). The bottom of this pond will have an elevation of 3,510 m, with a safety berm of 2 m width and 2.5 m high, as shown in Figure 18-5 and Figure 18-6. The projected area for this pond is 2 ha and for its construction it is required to add lining to both the walls and the floor.

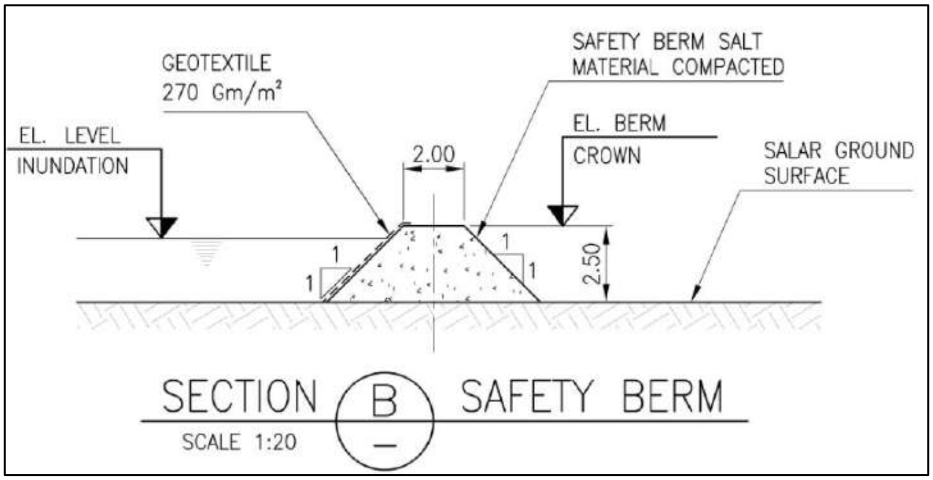
The function of this pond is to collect the brine extracted from each of the extraction wells located within the Salar and gather it in a common central point to maintain a brine reservoir that keeps the process plant with a constant supply.

Figure 18-5: Raw Brine Receiving Pond



Source: Ausenco, 2023.

Figure 18-6: Receiving Ponds Safety Berm



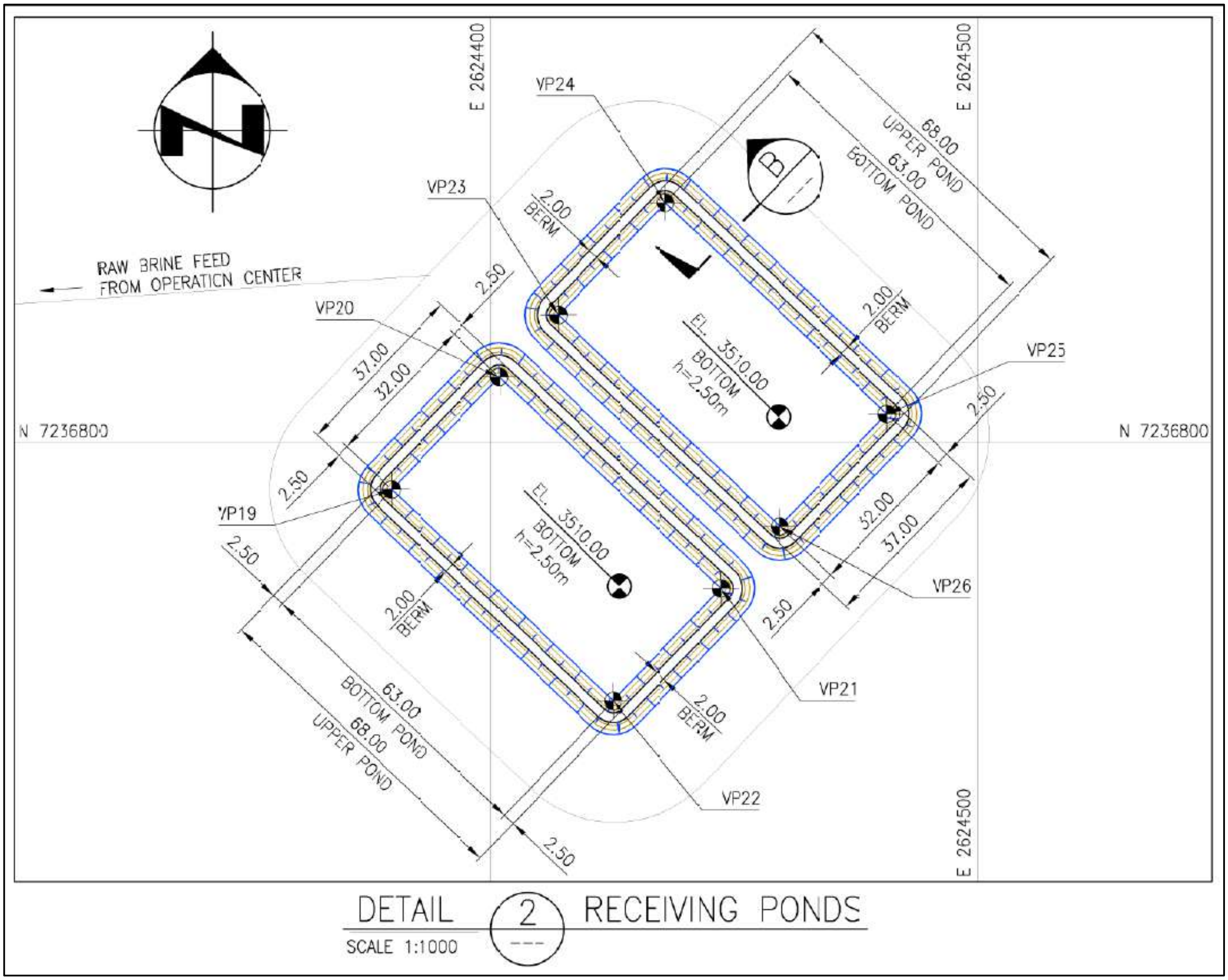
Source: Ausenco, 2023.

18.4.2 Receiving Ponds

Two receiving ponds will be located east to the process plant inside the Arizaro Salar (see Figure 18-1). The bottom of this ponds will have an elevation of 3,510 masl, with a safety berm of 2 m wide and 2.5 m high each, as shown in Figure 18-6 and Figure 18-7. The projected area for these ponds is 0.2 ha each and for its construction it is required to add lining to both the walls and the floor.

The function of this pond is to receive the brine pumped from the raw brine receiving pond and keep it at a location close to the plant.

Figure 18-7: Receiving Ponds



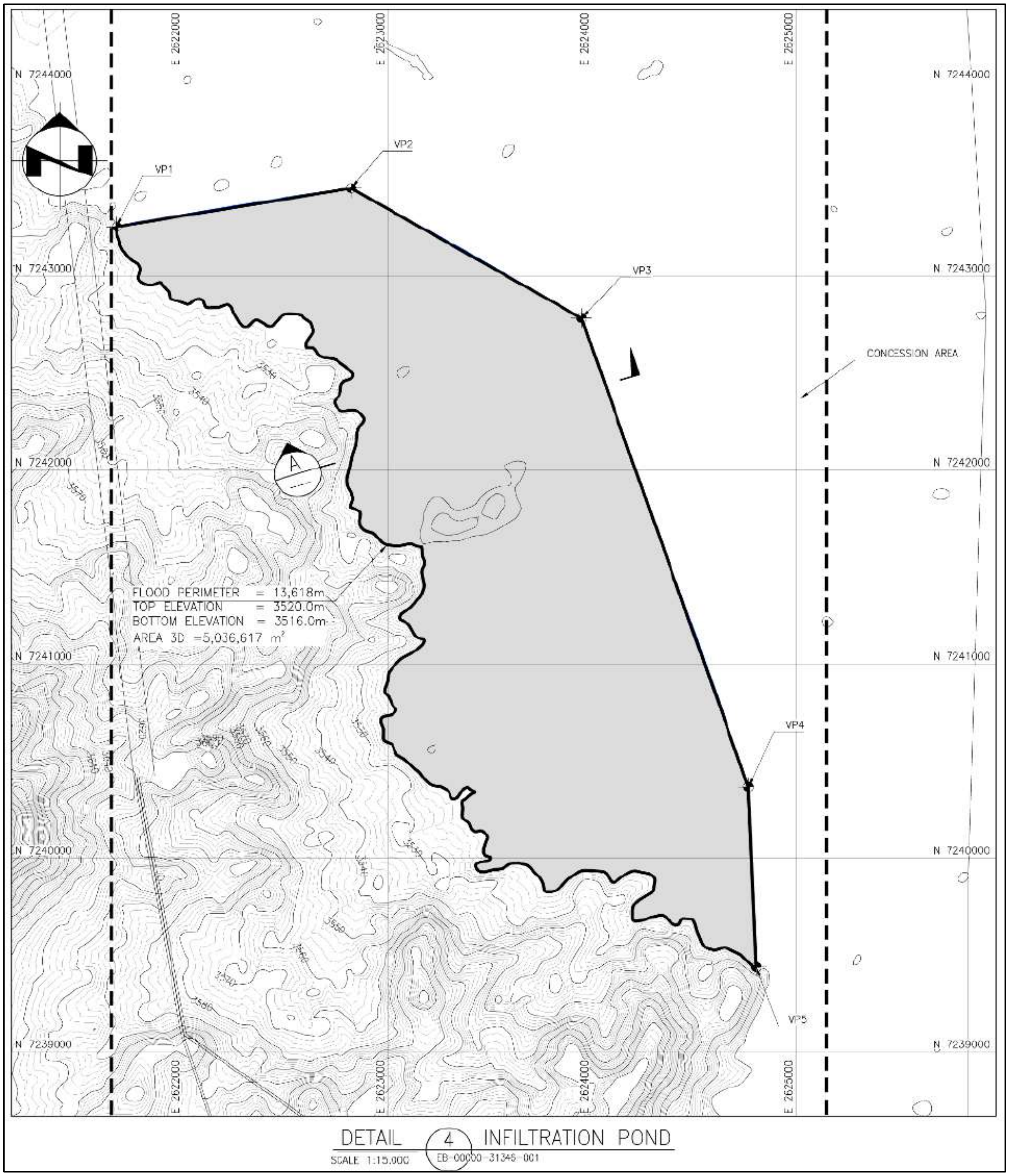
Source: Ausenco, 2023.

18.4.3 Depleted Brine Infiltration Pond

The depleted brine infiltration pond will be located inside the Arizaro Salar (see Figure 18-1) within an area of 5,036,617 m^2 with a upper elevation: 3,520 m and lower elevation 3,516 m, as shown in Figure 18-8.

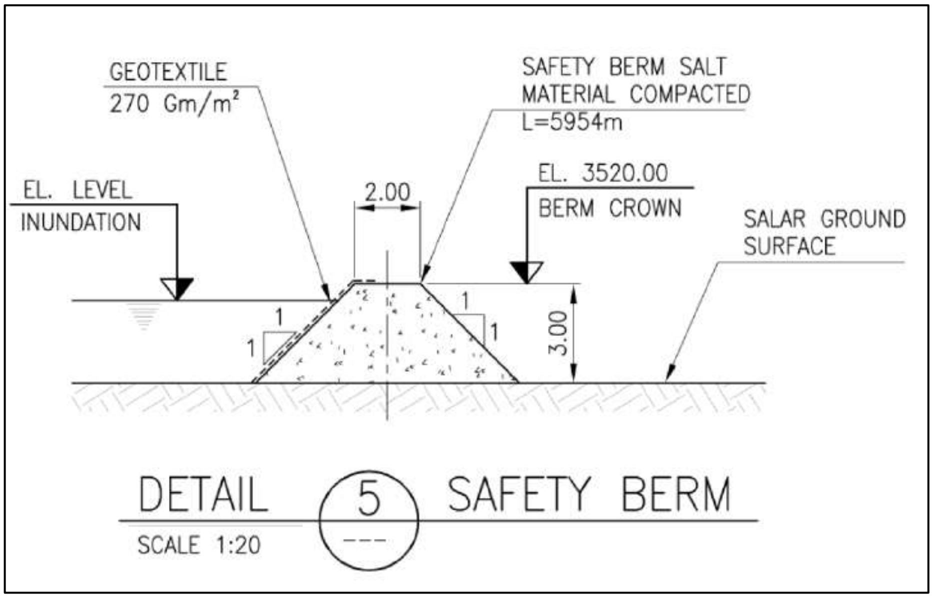
Due to the infiltration pond lies inside the salar, a safety berm has been considered made of salt material compacted from Arizaro Salar and waterproofing the barrier on the inside face, it will have a longitude of 5,914 m, 2 m width and 3 m high as indicated in Figure 18-9 .

Figure 18-8: Depleted Brine Infiltration Pond



Source: Ausenco, 2023.

Figure 18-9: Infiltration Pond Safety Berm



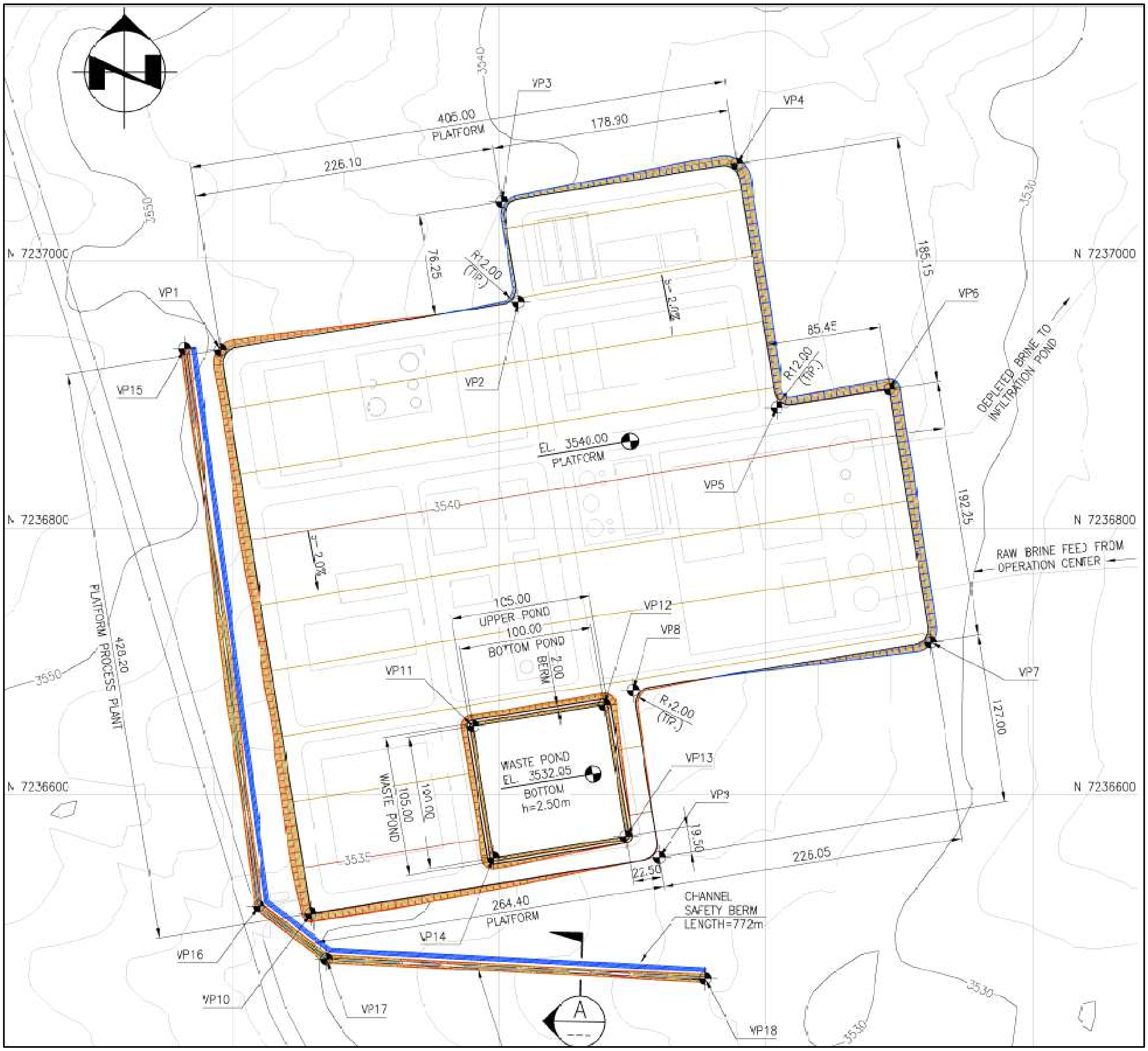
Source: Ausenco, 2023.

18.4.4 Wasted Pond

The wasted pond is located inside the process plant area (see Figure 18-2) and considers a massive cut of 40,774 m^3 of earthworks and a surface of 1 ha. Waterproofing system is considered only in the inside wall face and the bottom elevation 3,532.05 masl as indicated in Figure 18-10.

The waste pond is intended to evaporate the water present in the liquid waste from the process plant, which is pumped from the pulp waste tank located in the chemical plant area.

Figure 18-10: Process Plant and Wasted Pond



Source: Ausenco, 2023.

18.5 Power and Electrical

The main power source for the Project will be a diesel electric power plant, which will be capable of supplying approximately 34.4 MW, which responds to the sum of the electrical power requirement, equal to 18.7 MW, and the heat power requirement, equal to 15.7 MW. The required electrical power includes the maximum demand power indicated in Table 18-3 and the power required for per capita energy consumption.

The power distribution for the Project will be a dedicated power supply from the medium voltage distribution switchgear in the main electrical room.

The power generation plant will use diesel for its operation and will comply with the national regulations. The necessary electrical and mechanical protections will be included to ensure safe operation for the operators. This plant shall be highly efficient, shall have the possibility of being operated remotely from the operations room and shall be designed so that maintenance times are as short as possible.

Table 18-3 and Table 18-4 present a summary of the power consumption of the Project.

Table 18-3: Summary of Power Consumption

Mechanical Installed Power (MW)	Electrical Installed Power (MW)	Maximum Demand Power (MW)	Average Demand Power (MW)
26.0	20.9	17.3	11.7

Table 18-4: Power Consumption by Area.

Area	Name Area	Mechanical Installed Power (kW)	Electrical Installed Power (kW)	Maximum Demand Power (kW)	Average Demand Power (kW)
1000	Brine Extraction Wells	3,800	1,053	895	711
2000	DLE Plant	3,525	2,148	1,826	1,461
3000	Reverse Osmosis	8,224	7,515	6,381	5,067
4000	Mechanical Evaporation	4,400	5,055	3,908	1,049
5000	Chemical Plant	868	589	501	409
7000	Dry Product Handling	200	210	178	142
6000	Purification	968	577	490	397
8000	General Utilities	4,015	3,716	3,159	2,511
TOTAL		**26,000**	**20,862**	**17,338**	**11,746**

18.6 Fuel

The supply of diesel fuel will be done through transport trucks from an external property according to the Project requirements, using relevant cargo vehicles and machinery.

18.7 Water Management

18.7.1 Water Balance

In June 2023, a "Study of Recharge in Chascha Aquifer System" was carried out, where a first estimate of the water balance of the area was made, at a conceptual scale. This study estimated an extractable volume of 2,760 hm^3 and a recharge flow of between 3.9 to 7.1 hm^3/a. There is no current estimate of the extractable flow without affecting the system's reserves. The study emphasises the need to obtain a wider range of data and more characterisation points.

18.7.2 Water Supply

The water supply for the Project considers 9 freshwater wells, which have been estimated based on the total water requirement for the plant (485 m^3/h) divided by a reasonable rate according to pumping tests, therefore this quantity could be modified if it is required. The proposed location for these wells is indicated in Figure 18-1.

At the date of this report, one freshwater well (Chascha Sur 01) has been drilled. To transport freshwater from Chascha Sur 01 well to the process plant a 6" HDPE pipeline must be implemented, with intermediate pump stations.

Regarding water rights, the information reviewed shows an application for a right for industrial water use (fresh) on the Chascha Sur 01. According to the technical documentation of pumping test after the construction of the Chascha Sur 01 well, the maximum flow rate for extraction from this location is 75 m^3/h. That application was granted on July 06, 23 by the authority.

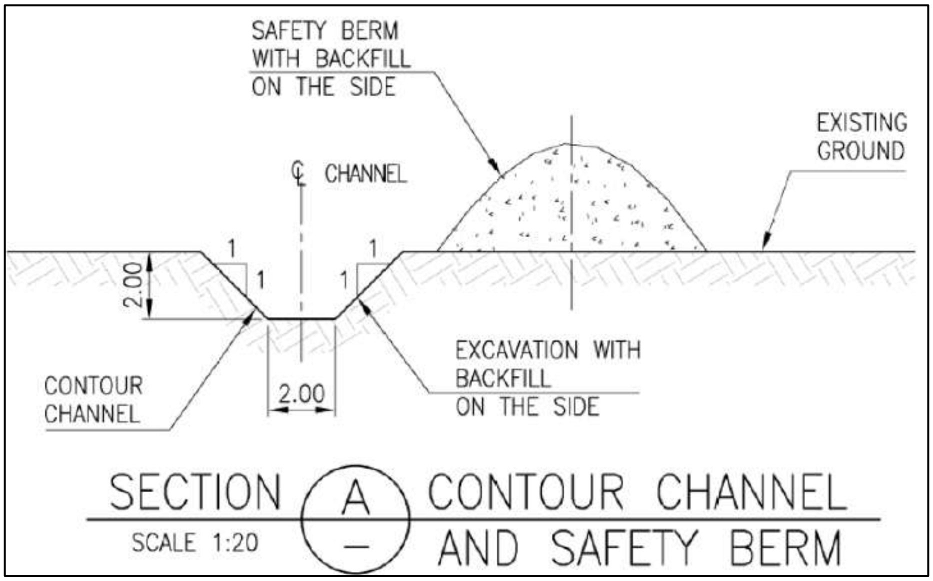
Water supply includes treated water and fire emergency system requirements. Treated water needed in the different areas of the plant considers filtered water, demineralized water and potable water, which are obtained from a filter system, a water treatment plant and a potabilization unit, respectively. Potable water will be used only for sanitary services (bathrooms, showers, and for washing clothes and food utensils).

Bottled water for human consumption will be brought in from the city of Salta.

18.7.3 Water Management Structure

The Project considers the construction of a contour channel and safety berm with backfill for the process plant shown in Figure 18-10 which will require 5,381 m^3 of earthworks and will have a longitude of 772 m, whit 2 m in depth and 2 m width (Figure 18-11).

Figure 18-11: Contour Channel and Safety Berm



Source: Ausenco, 2023.

18.8 Hazard Considerations

The main risk to the environment, design, operation, and project production schedule includes the following contingencies:

- Seismic activity from available seismic data;
- Fuel and/or oil spills;
- Brine spill;
- Fires; and
- Precipitations or snow.

As a measure of action in the event of spills of various magnitudes, the main objective will be to provide a quick response and prevent the rapid dispersion of these products. In addition to protecting human life, the threatened property or population center will be protected, keeping the area suitable for investigation, and quickly restoring normal operating activities in that area.

Fires can be emergencies with dangerous consequences for the Project, causing serious loss of equipment and even human lives. The formation of brigades in each area of operation is a top priority for fire prevention and control. Fire prevention procedures include training all personnel in fire prevention measures and evacuation drills as a regular practice.

19 MARKET STUDIES AND CONTRACTS

19.1 Market Studies

The consulting company Benchmark Minerals Intelligence Lithium has provided a forecast that summarizes the latest supply, demand, cost and pricing assumptions out to 2040. Volatile lithium prices will remain a characteristic of the market for the foreseeable future due to:

- swing supply in Jiangxi, China;
- sodium-ion battery cost competitiveness;
- exposure to technical risk and geological risks associated with supply; and
- influence of incentives on demand.

The market is set to balance in 2024-2026 but will enter a period of undersupply in 2027.

While several new projects have been announced or built in 2023 (e.g. Zulu, which was completed in Q2, after just nine months of construction), the material from these projects is unlikely to make it into the market until 2024. The expectation is that the balanced market in second half of 2024 will remain unchanged. The flexibility that Chinese converters have in their ability to produce lithium hydroxide or carbonate from hard-rock feedstock, combined with the ability to convert carbonate to hydroxide for around US$2/kg, means that any chemical imbalance is likely to be short and will quickly regress to the mean.

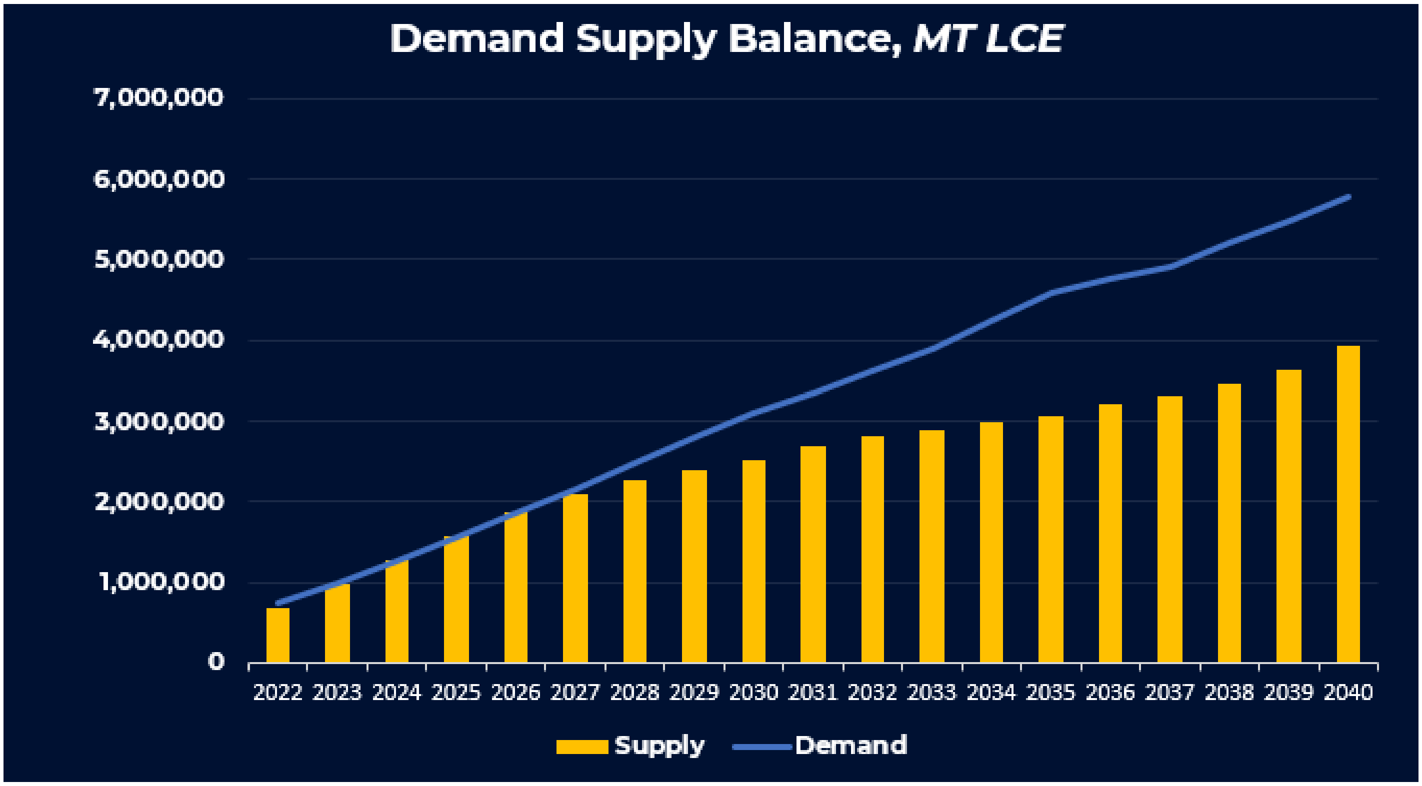
Australia, the world's largest producer of mined lithium feedstock, is forecasted to add around 100kt LCE of production year after year, representing an increase of around 25%. Albemarle/Tianqi/IGO-owned Greenbushes is expected to produce 183kt LCE in 2023, which will contribute to over 40% of the country's overall supply. Followed by Mt Marion, Mineral Resources, and Ganfeng Lithium's JV, which is forecasted to make up 19%, by producing 85kt LCE.

In China anecdotal reports RMB 60,000/t (US$8,300/t) of lithium carbonate (LC) costs estimated around $500-600/t attributable to spodumene concentrate 6 (SC6) in Xinjiang were reported, while independent modeling carried out in the Q2 2023 cost curve suggests $600-700/t is more realistic. Producers indicated costs of between RMB 100,000-130,000/t LC (around $14,000-18,000/t) in Jiangxi; Benchmark's independent modeling suggests realistic costs of around $20/kg. Benchmark expects 57kt LCE of supply from locally derived mica-supply in Jiangxi in 2023, representing just 22% capacity utilization, which is about 255kt LCE of conversion capacity exists in 2023. By 2033, about 150kt LCE of mica is set to be produced; a further 380kt LCE of conversion capacity is planned or in construction, meaning feedstock will continue to be the bottleneck in Jiangxi.

19.2 Lithium Supply and Demand

Lithium is undersupplied in 2023, despite soft prices in first half. Prices are expected to climb in second half 2023 but will not reach all time highs. Several new projects entering the market in 2024 will likely result in a balanced market lasting until 2026. Global plug-in electric vehicle (PEV) penetration rates will grow from about 27% in 2026 to 76% in 2040, supporting underlying demand for lithium. Therefore, lithium is expected to be in a deficit position from 2027. The demand supply balance is shown in Figure 19-1.

Figure 19-1: LCE Demand Supply Balance



Source: Benchmark Mineral Intelligence, 2023b.

19.2.1 Lithium Supply

Supply is anticipated to reach the 1-million-tonne milestone in 2024, primarily due to lower output from Mt Marion and Wodgina. Chilean DLE policy presents supply risks for greenfield projects and incumbents. There is further uncertainty post-2030 when SQM's lithium contract with Chile expires.

Several new projects have began producing or commissioning: Sigma Lithium's Grota do Cirililo spodumene mine in Brazil. In Zimbabwe, Huayou's Arcadia mine & Sinomine's Bikita expansion have commenced production, while Chengxin's Sabi Star is expected in August. Premier's Zulu mine is now fully constructed but delayed by technical issues and subsequent dispute between JV partners. In China, Zhicun's Xinjiang project become operational. Xinjiang Non-Ferrous, who operate a pilot plant at its Xinjiang project, are looking to begin full scale production in Q4. Lithium America and Ganfeng'sJV Salar de Cauchari project in Argentina started production and is expected to start producing battery-grade lithium carbonate in second half 2023.

The secondary supplies of lithium, until the early-to-mid 2030s, which is process scrap will continue to be the primary source of feedstock for recyclers. Longer-term batteries retiring from use will be the main supply of recyclable material, with the majority of these batteries retiring from transport applications.

The continued efforts at policy level to drive higher recovery rates for lithium, for example via mandates in Europe, means more recyclers are innovating hydrometallurgical recycling routes. Other technologies, such as direct recycling –also referred to as “cathode-to-cathode” recycling –are being explored. Though, such technologies are yet to be commercialised or proven at scale.

China’s recycling market is considerably more mature and well-established than that of any other region: preliminary patents for lithium-ion battery recycling in China were filed in 2005 by Shenzhen-based GEM. The majority of recycling capacity lies within China, with major players including GEM, Brunp (CATL subsidiary) and Ganfeng Recycling Technology Co (part of Ganfeng Lithium). These operate facilities with significant capacity/are planning significant expansions in China.

19.2.2 Lithium Demand

Forecast on when the market is likely to re-enter a deficit position has been significantly shortened to 2026. This is primarily the result of higher demand. China’s New Energy Vehicle (NEV) production has been slower than expected in Q1 and Q2. There is now an expectation of 35% global growth and 33% China growth in 2023 compared to 2022; down from 46% and 54% growth respectively.

General macro-economic weakness globally persists, despite China's central bank cutting its benchmark loan prime rates (LPR) for the first time in 10 months on June 20. China has delayed its transition to 6b emissions standards for internal combustion engine (ICE) vehicles to the end of December, previously end of June. China has extended its NEV tax-exemption to the end of 2025, effectively lowering the purchase price of a NEV by up to 30,000 yuan (around $4,000)

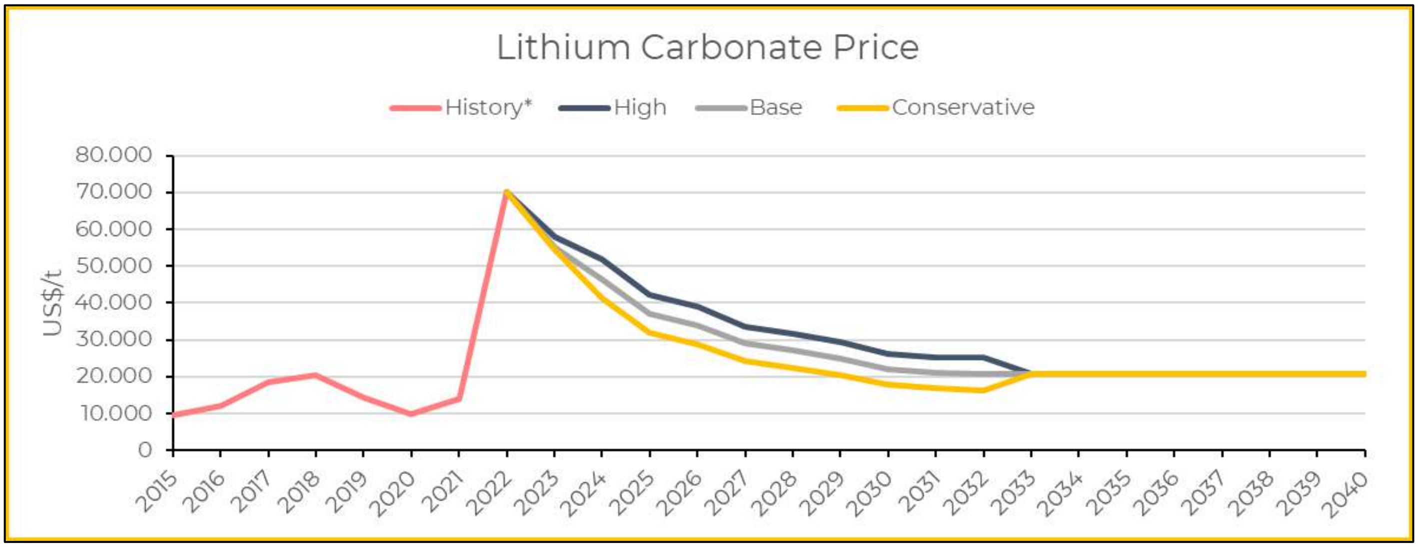
Demand in 2023 has been revised down 59 GWh to account for weaker EV sales than expected in China, as well as delays caused by planning permission and electricity connection approvals for grid level ESS projects. The medium-term EV demand forecast increased primarily due to US EPA emission standard proposal that could drive EV penetration rates in the US market. Overall, underlying demand remains strong with relatively low global plug-in EV (PEV) penetration rates about 17.7% in 2023 set to grow to 53% in the next 10 years.

Demand growth rates from portable electronics have gradually slowed since the mid-2000s. While growth will continue from these markets the rate will be limited due to the maturity of key application markets. The stability, density and availability of the LCO cathode means this will remain the primary chemistry choice in these markets, although some high-nickel chemistries are being deployed in power tools and powerpack application.

19.3 Lithium Carbonate Price

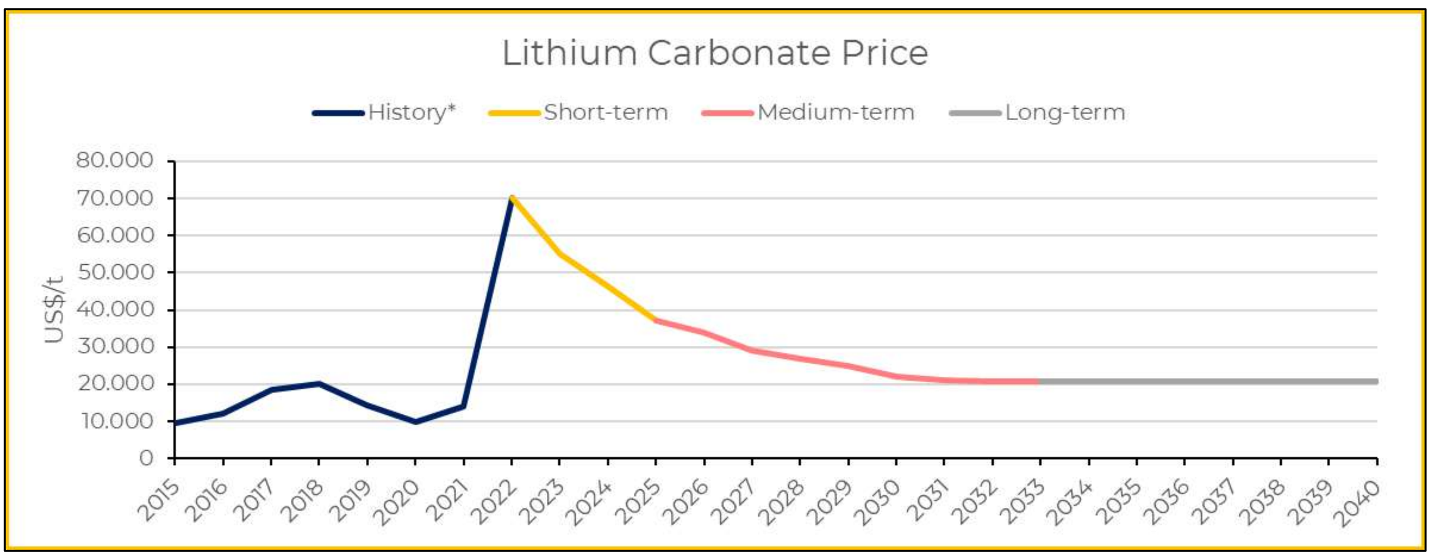
The methodology of price estimate considers the short-term outlook is broken down into quarters. Developments are guided by primary price research conducted by Benchmark Minerals analysts to ascertain the current direction of market pricing. Based the analysis of the development of demand over time, and the understanding of the pipeline of new greenfield and brownfield capacity, there is assessed the extent of over and under supply in the market over time, and how this is likely to impact prices. In the long term. there will be an ongoing requirement for new greenfield capacity over the course of the forecast period. According to Benchmark Minerals Lithium an Initial Rate of Return (IRR) analysis for a ‘Typical’ greenfield project suggests that at a price level of $20,750/t 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.

Figure 19-2: Lithium Carbonate, Annual, High, Base and Conservative Case US$/t, Real 2023 by Forecast Methodology



Source: Benchmark Mineral Intelligence, 2023c.

Figure 19-3: Lithium Carbonate, Annual, Base Case: US$/t, Real 2023 by Forecast Methodology



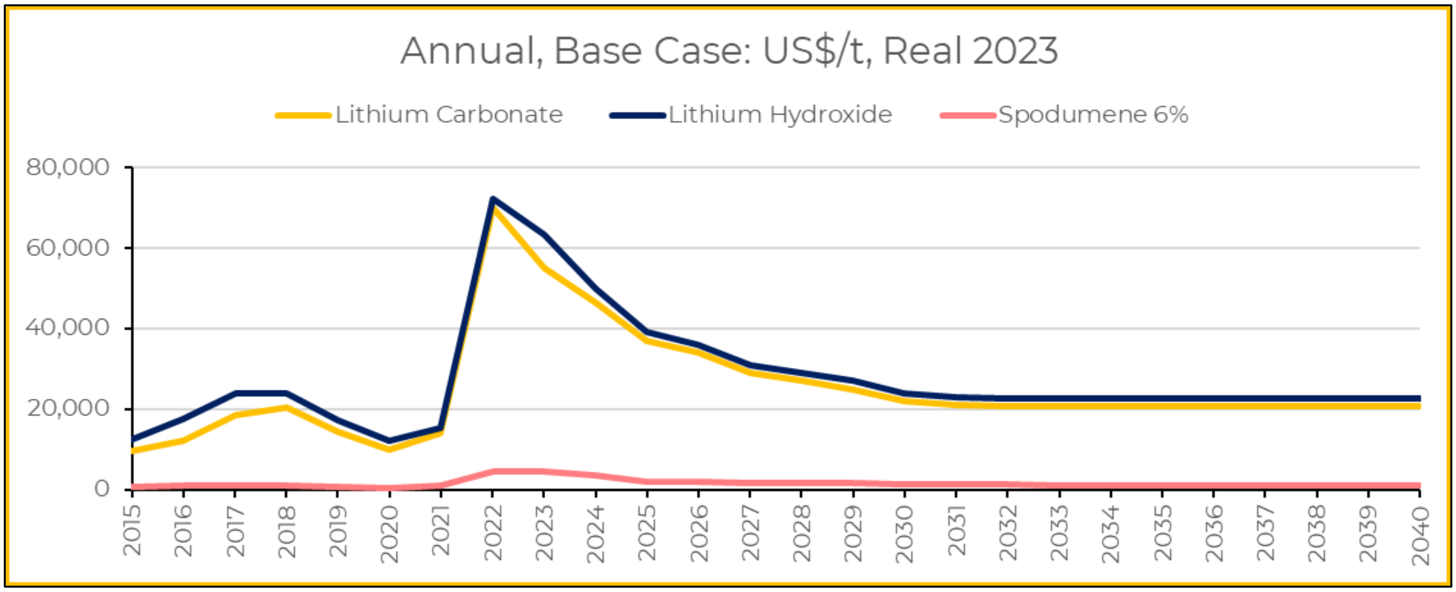
Source: Benchmark Mineral Intelligence, 2023c.

The lithium carbonate price is shown in Figure 19-2, Figure 19-3 and Figure 19-4. The short-term outlook reflected in CIF Asia spot price is, as expected, affected by demand in China strengthened throughout Q2. Uplift in prices has been somewhat slowed by higher summer-time supply from Qinghai. Demand and prices are forecast to continue gain strength into 2023 Q4, but, all-time highs will not be reached this year.

Expectation for 2024 Q1 seasonally lower Neighbourhood Electric Vehicle (NEV) sales to result in softening prices. Off the back of a seasonal low would come a balanced market in the second half of 2024. It is expected that prices will remain elevated above the long term incentive price.

Contracts price typically lag behind spot prices by 3-12 months, meaning that contract prices are in many cases still declining. With discounts, ceilings and rebates, contract and spot prices are not expected to converge completely but diverge by 5-10%. Floors and ceilings are becoming less common, but being replaced by other mechanisms such as an increasing discount with higher prices.

Figure 19-4: Annual, Base Case Pricing: US$/t, Real 2023



Source: Benchmark Mineral Intelligence, 2023a.

19.4 Contracts

The company has no relevant contracts in place.

19.5 Comments on Market Studies and Contracts

The qualified person has reviewed these analyses and that the results support the assumptions in the Technical Report. Commodity prices can be volatile, and there is the potential for deviation from the forecast.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

This Section describes the environmental, social, and permitting contexts of the Salar de Arizaro Project. The physical and biological baseline data for the Project have been collected by means of baseline studies and review of publicly available information. Specific impact studies will need to be implemented to inform future permitting requirements that will support the construction and operations phases of the Project.

This Section is structured as follows:

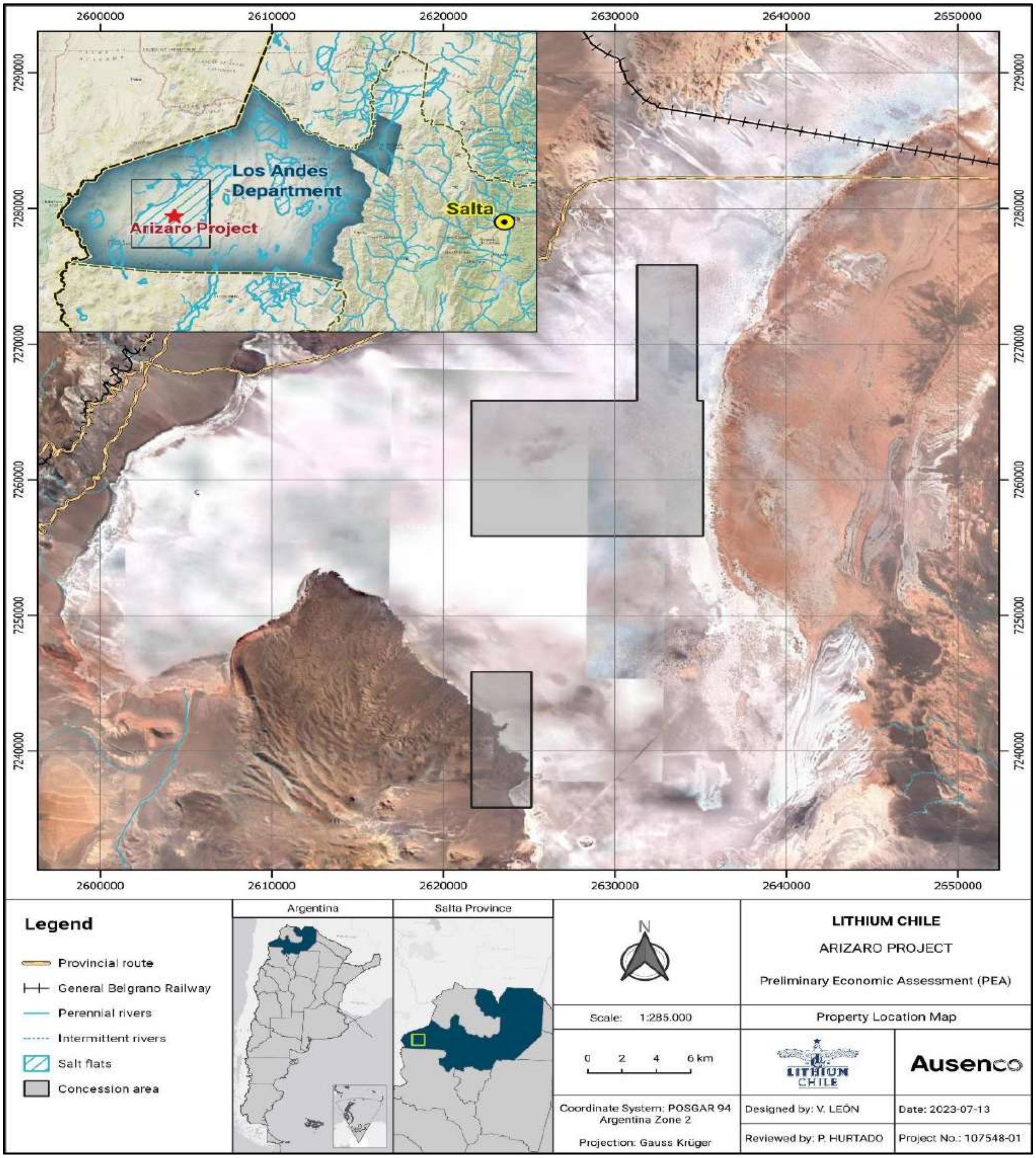
- Environmental considerations: baseline and supporting studies, monitoring, protected areas, water management and emissions and wastes.
- Closure and reclamation planning: closure and reclamation plans and costs.
- Permitting Considerations: environmental, mining and other permits.
- Social Considerations: local communities and communication plans.

20.1 Environmental Considerations

The Salar de Arizaro Project is located in the Los Andes department of Salta Province, Argentina (Figure 20-1), within the Puna ecoregion, which is part of the Andean Mountain Range. The Puna is defined as a highland plateau which can be found in Argentina, Chile and Bolivia, characterized by its salt flats and shallow brackish lagoons, accompanied by low shrub-steppe vegetation. Figure 20-1 shows the Lithium Chile concessions located in the middle and the edge of the salt flat.

The Project is in its exploration phase, with 11 wells currently exploring the aquifers in the Project area. The objective of this phase is to characterize the Salar, searching for concentrated lithium areas. The Argentinian regulation requires that all mining operations submit an Environmental Impact Study (EIS) every two years, that includes a project description, the environmental components and social aspects, and presents additional information as the project progresses from exploration through to construction and operation phases. The first EIS entitled "*Etapa de Exploración y Explotación de Pozos de Salmueras Ricas en Litio*" for the Project was submitted in July of 2019. It presented preliminary information based almost entirely on a desktop review. In February 2022, a second EIS based on a desktop review was submitted to the provincial mining authorities for the Project's prefeasibility stage. It included environmental, social and community aspects, providing general information on the Project area. This 2022 EIS process has yet to be approved and is currently in its fourth round of questions from the authority. The company expects to complete this process in the next few months. Lithium Chile has recently finished fieldwork studies to generate an environmental baseline for the next EIS to be presented in 2024 to comply with the Argentinian regulation.

Figure 20-1: Salar de Arizaro Project Location



Source: Ausenco, 2023.

20.1.1 Baseline and Supporting Studies

The 2022 EIS presented environmental information that was bibliographic in nature and consisted only of publicly available information to characterize the Project area and its surroundings. However, the company initiated fieldwork studies last year to obtain more detailed site-specific information for the 2024 EIS, to assess environmental impacts and define monitoring activities and mitigation measures to address any negative impacts. The sections below reiterate the 2022 EIS and the updated baseline report, including climate, air quality, noise, surface water and groundwater, flora and vegetation, wildlife, limnology, protected areas, and cultural heritage.

20.1.1.1 Climate and Meteorology

The baseline study uses records from the Salar de Arizaro Project meteorological station from 2010 to 2022, and data provided by the General Belgrano Railroad (*FCGB, Ferrocarril General Belgrano*), company that operated from 1993 to 1999, from the Olacapato, Salar de Pocitos, and Unquillal stations from 1950 to 2000, due to the proximity of these stations to the project area. There is no data between 2000 and 2010.

The region's climatic conditions are typical of the Puna ecoregion. Snowfall events are common from June to August, and hailstorms occur from April to May and September to October. In the summer, there is very little rainfall; total annual rainfall usually does not exceed 100 mm, with relative humidity typically very low. Statistical data from meteorological stations indicate that almost all precipitation occurs in December, January, February, and March. January is the rainiest month, with an average of 50% of the average annual rainfall. There are exceptionally wet years with records of over 100 mm of average annual precipitation, the highest being 133 mm for the Unquillal meteorological station in 1979.

The coldest months of the year are June and July, which can reach temperatures of -20ºC, and the highest temperatures are measured in December and January, reaching up to 30ºC. The daily thermal amplitude is wide, with minimum temperatures reaching -10ºC at night and a maximum of up to 30ºC during the day. There is minimal cloud cover, with intense radiation and irradiation.

Throughout the region, prevailing winds blow from the west, west-northwest, and west-southwest. Due to its climatic conditions (high dryness, high radiation, and strong thermal amplitude), the wind is the principal agent of erosion, sediment transport and accumulation. The average wind speed is 28 km/h with occasional strong winds of over 80 km per hour. Winter and early spring (June to October) are the windiest and driest months with temperatures that typically range between 5° and 20°C.

20.1.1.2 Air Quality

The baseline study for the 2024 EIS includes air quality monitoring which was carried out on April 22 and 23, 2023. Two samples were obtained at two different locations: one located in the brine extraction area in the Salar (Tolar 10) and the second where the operating facilities are planned (Campamento Viejo). The purpose of the air quality monitoring was to determine the levels of carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, suspended particulate matter (PM10), ozone, and hydrogen sulfide in the Salar de Arizaro. The results obtained were compared with National Law 24.585 Environmental Protection for Mining Activities (*Protección Ambiental para la Actividad Minera*), which regulates air quality in mining operations. The results did not show any exceedances.

20.1.1.3 Noise

The baseline study included noise readings at five different locations within the current exploration facilities area and where the next facilities, such as the new camp, the infiltration pond and the wells area, are planned. The readings took place during daylight hours, between 1.2 m and 1.5 m above ground level and at a minimum distance of 3.5 m from any sound-reflecting structure. Currently, Argentina does not have national or provincial legislation regulating noise generation and limits for permissible noise levels. For this reason, the results obtained were compared with standards for industrial areas from international organizations such as the World Bank (WB) and the US EPA. The analysis shows that the noise is within the limits established by those organizations.

20.1.1.4 Surface Water and Groundwater

The baseline study indicates that the Salar de Arizaro basin covers an area of approximately 10,629 km^2, with a perimeter of 832.9 km. It is an endorheic basin, and the rivers that feed it have a low flow with seasonal runoff fed by melting snow from the surrounding mountains, rainfall during the summer, and groundwater recharge in the highest elevation areas. The fluvial layout is adapted to the topography, running in a parallel direction between two different mountain systems. In the summer, water inflow is usually torrential, producing flooded conditions along the riverbeds. These floods typically occur suddenly with the onset of rainfall and quickly diminish shortly after it ends.

The 2022 EIS distinguishes three aquifer systems In the Salar de Arizaro area: Chascha, Taca, and Salar de Arizaro aquifer systems. The Chascha aquifer system is located on the southern end of the salt flat, with a recharge of between 4 and 7 hm^3/y. The water in this aquifer system is salt water, with a productive flow rate of up to 100 m^3/h. Underground water in some wetlands that are part of this unit have low salinity values, indicating the existence of different sub-environments. The Taca aquifer system is located on the east side of the Salar de Arizaro and has a low hydrogeological potential, with low pumping flow rates of up to 3 m^3/h. The water has low salinity and is mostly composed of sodium chloride. The Salar de Arizaro aquifer system is the least known, therefore, the chemical characteristic of the brines, especially those related to lithium and potassium anomalies, are unknown. The recent baseline study did not provide any additional information for the underground water system in the Salar de Arizaro Basin.

A water sample was taken from the project's area of influence in the Chascha wetland area during a sampling campaign carried out on April 22 and 23, 2023, as part of the fieldwork for the baseline study.The results were compared with the National Law 24.585 Environmental Protection for Mining Activities (*Protección Ambiental para la Actividad Minera*), which establishes a series of threshold parameters for the protection of aquatic life in surface saline waters in mining operations. Monitoring results are below the Maximum Permissible Limits for most parameters, except for arsenic, boron, and copper. These exceedances are estimated to be of natural origin due to the mineral nature of the soil through which surface water drains and accumulates.

20.1.1.5 Flora and Vegetation

As indicated previously, the Project is located in the Puna ecoregion. However, in Los Andes department there is also the High Andean ecoregion, which covers the Project surrounding areas. In both ecoregions the vegetation is scarce and is often not present in widespread areas. However, their importance lies in that they serve as the sole food source for many wildlife species and are therefore the basis of the Puna ecosystem.

20.1.1.5.1 Puna Ecoregion

This zone covers most of the study area and is present between 3,400 and 4,400 masl, although in many areas it is limited to elevations below 3,900 masl altitude, at which there is often a gradual transition and coexistence of floristic elements with the high Andean Ecoregion. Vast unvegetated mountainous sectors with extreme aridity can also be distinguished. The absence of vegetation in alluvial cones and low slopes is thought to be associated with the action of burrowing rodents that feed mainly on roots.

The dominant vegetation is the shrub-steppe. In the project area, the typical vegetation includes *Acantholippia punensis Botta* ("rica rica"), *Adesmia horridiuscula* ("añagua"); *Atriplex microphylla* ("cachiyuyo"), *Baccharis incarum* ("lejía"), and *Artemisia copa* ("copa copa"). The locals use many of these species for their medicinal properties and for use as firewood.

20.1.1.5.2 High Andean Ecoregion

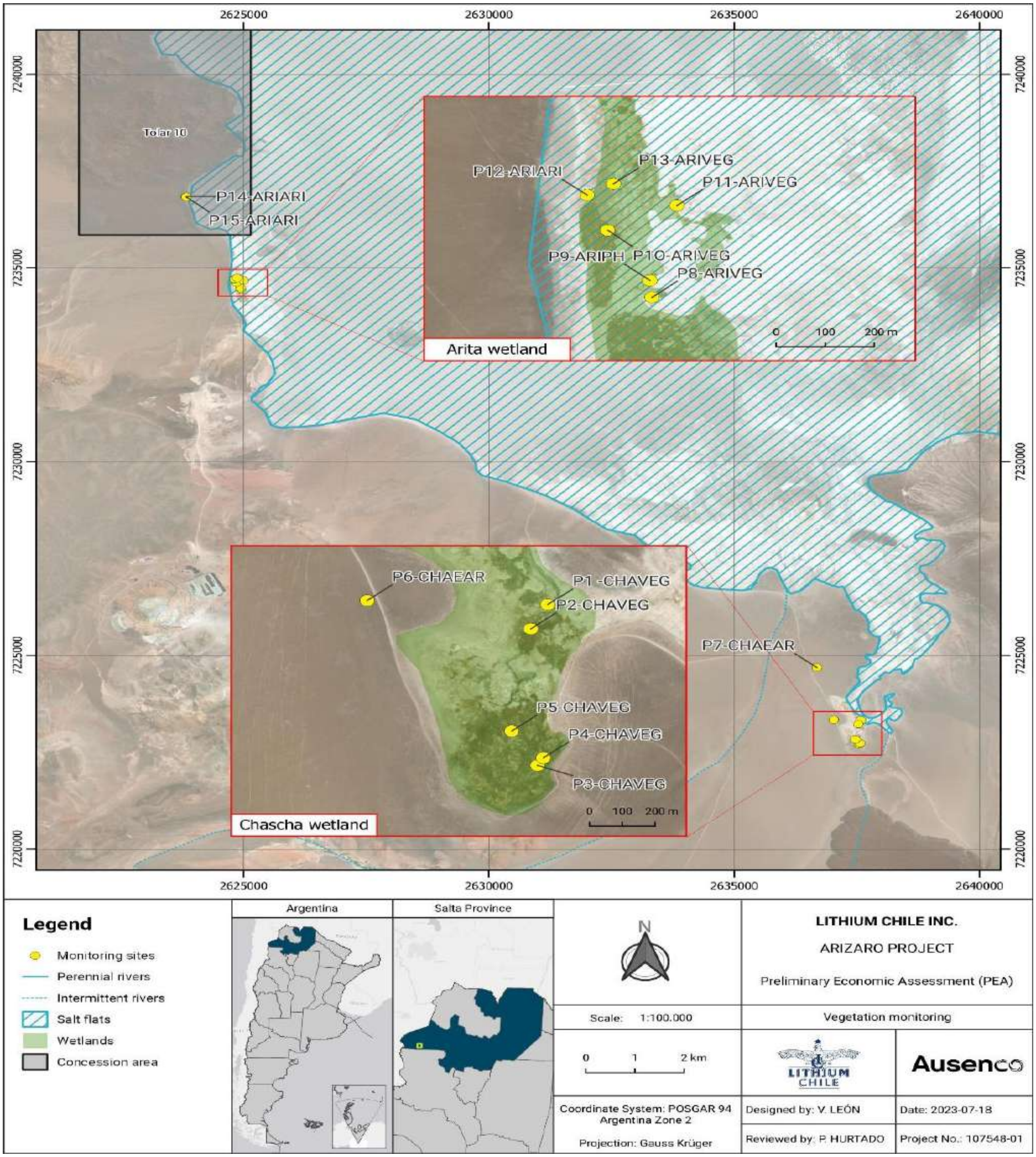
The High Andean Ecoregion occupies the highest elevation zones, above 4,400 m.a.s.l. In this zone, green meadows occur where water accumulates in depressions, with a thin layer of water saturated soil. The dominant vegetation in these areas are the herbaceous or grassy steppe like *Festuca orthophylla, Festuca* chrysophylla, and *Poa gymnantha*, which are sometimes associated with woody plants such as *Baccharis incarum*, *Senecio punae*, *Adesmia patancana* ("cuernos de cabra"), *Azorella compacta* ("yareta"), and *Parastrephia quadrangularis*. Circular or crescent-shaped thickets, plants in cushions or plates attached to the ground are frequently observed and are related to factors such as the accumulation of sediments or the effect of snow. All plants are highly adapted to extreme conditions and are resistant to cold and wind.

20.1.1.5.3 Baseline Study

Field studies were conducted in February and April 2023, with the objective of describing and quantifying flora in the project area and its surroundings, which mainly corresponds to specific areas represented in azonal sectors of high Andean wetlands. The first one is Vega Arita, located in the southwest region of the Arizaro salt flat, within the project concession area. The second is the Vega Chascha, located in the southern sector of the salt flat, which is not within the project concession area, but was characterized as an area indirectly influenced by the project activities. Survey locations are shown in Figure 20-2.

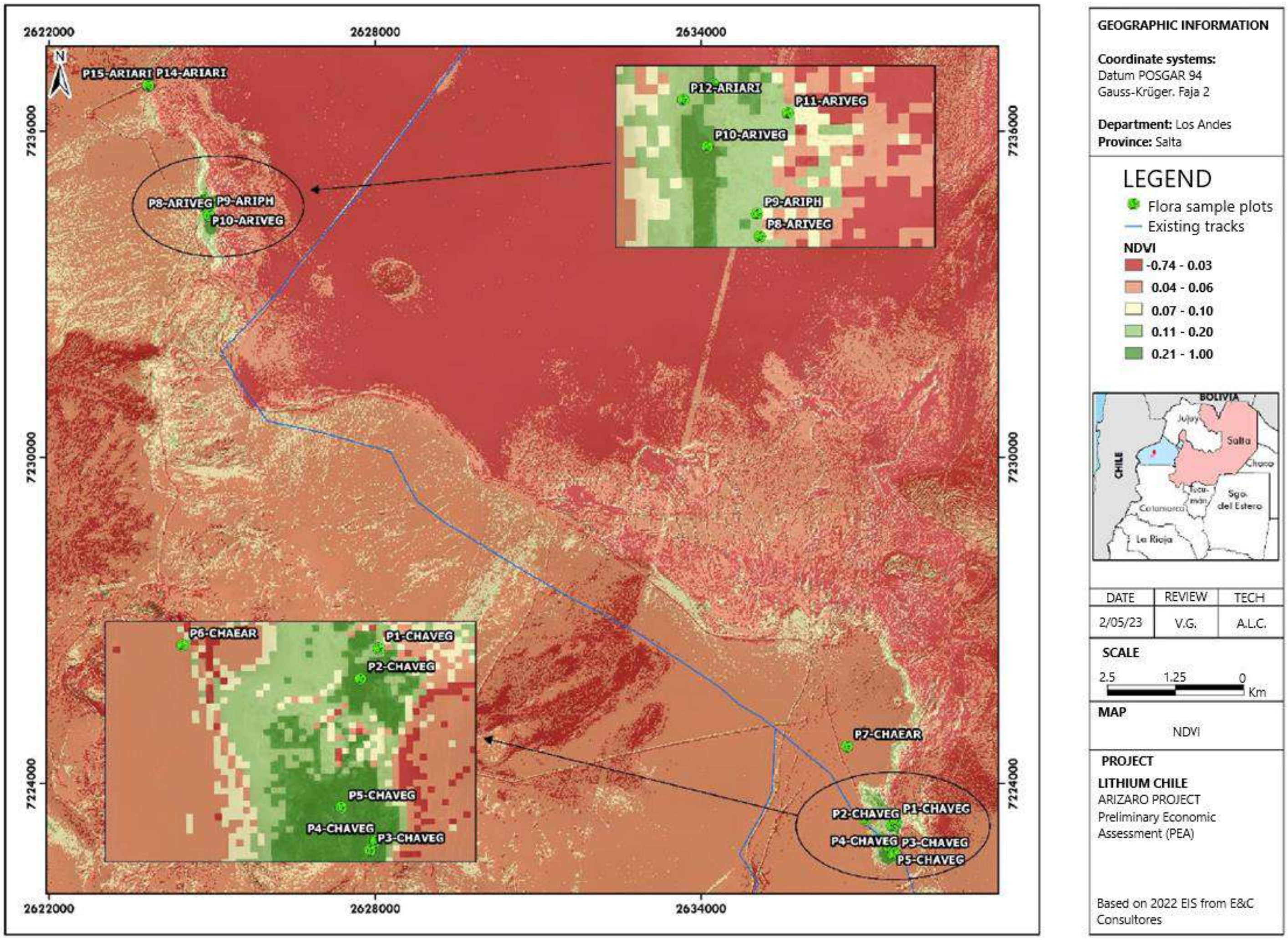
A total of 17 plant species, distributed within 12 families, were recorded on the project properties. Among the 12 families recorded, Poaceae was the best represented, with five species. In contrast, the rest of the families were only represented by one species, except for *Juncacacea*, which was represented by two species. The Normalized Difference Vegetation Index (NDVI) map is shown in Figure 20-3. All observations were made within the study area except for one record of the Cactaceae family, which was visually identified outside of the area. The species is Mahueniopsis glomerata, which has conservation status according to the Convention on International Trade in Endangered Species of Wild Fauna and Flora CITES (*Convención sobre el Comercio Internacional de Especies Amenazadas de Fauna y Flora Silvestres*).

Figure 20-2: Sample Plots for Flora and Vegetation



Source: Ausenco, 2023.

Figure 20-3: NDVI Map with The Location of Vegetation Plots in The Project Area



Source: Argentum Lithium, 2023.

20.1.1.6 Wildlife

Fauna in the Puna ecoregion is composed of mammals, birds, reptiles, and amphibians. During preliminary visits to the project area for the preparation of the Environmental Impact Study submitted in 2022, animals observed in the project area were vicuñas, guanacos, Andean mice, foxes, falcons, flamingos, goldfinches and ducks.

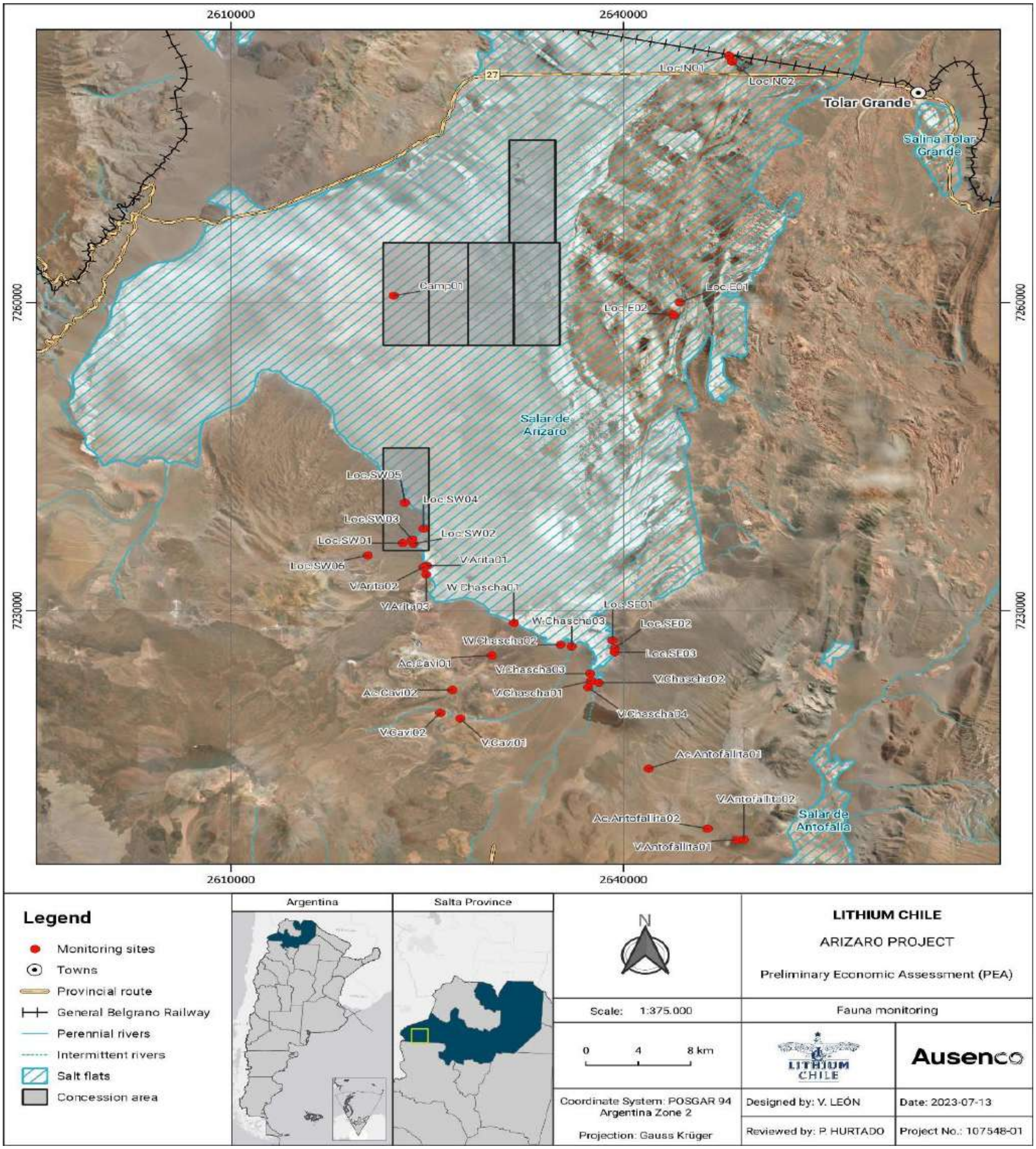
The baseline study fieldwork for the 2024 EIS, conducted on January 29 and 30, 2023, aimed to identify the endangered species potentially present in the project area. Monitoring locations for wildlife are shown in Figure 20-4. At the southern end of the Arizaro Salt Flat seven species of mammals, 28 birds, one reptile, one amphibian, one *Lepidoptera Papilionoidea*, and two *Odonata* species were registered. Together with the previous information (December 2022 site visits and the consultant's previous experience), the species richness for the area is 13 species of mammals (8 of them native), 41 species of birds, two species of reptiles, one species of amphibians, eight species of *Lepidoptera Papilionoidea* and two species of *Odonata*. Of these, the species included in a conservation category are the following:

Table 20-1: Endangered Species In The Project Area

Class	Species	Common Name	
		Spanish	English
Mammal	*Oreailurus jacobita*	Gato andino	Andean mountain cat
Mammal	*Lynchailurus pajeros*	Gato del Pajonal	Pampas cat
Mammal	*Puma concolor*	Puma	Cougar
Mammal	*Chinchilla chinchilla*	Chinchilla	Short-tailed chinchilla
Mammal	*Lagidium viscacia*	Vizcacha de la sierra	Southern viscacha
Mammal	*Lycalopex culpaeus*	Zorro culpeo	Culpeo zorro
Mammal	*Vicugna vicugna*	Vicuña	Vicuna
Birds	*Pterocnemia tarapacensis*	Ñandú de la puna	Ñandu of the Puna
Birds	*Phoenicoparrus andinus*	Flamenco andino	Andean flamingo
Birds	*Chloephaga melanoptera*	Cauquén	Andean goose
Birds	*Phrygilus dorsalis*	Comesebo puneño	Red-backed sierra finch
Reptile	*Liolaemus cazianae*	Lagartija Tolareña	Lizard
Reptile	*Liolaemus halonastes*	Lagartija del Arizaro	Lizard

Source: Argentum Lithium, 2023.

Figure 20-4: Monitoring Locations for Wildlife



Source: Ausenco, 2023.

20.1.1.7 Limnology

Limnological monitoring fieldwork for the baseline study included three aquatic environments in the Chascha wetland and was carried out on December 03, 2022, and February 24, 2023. The following physicochemical parameters were measured: dissolved oxygen (ppm), pH, conductivity (µS/cm), water and ambient temperature (°C), and depth (cm). In addition, hydrological parameters were measured, such as estimated water velocity and channel width, which influence the structure and diversity of the biota of the site. Monitoring included collecting samples of macroinvertebrates, zooplankton, phytoplankton, and phytobenthos.

Water quality results in the Chascha Sur wetland show changes between the 2022 and 2023 parameters due to the change of season between surveys. The December 2022 limnological monitoring was carried out towards the end of the spring season, a season characterized by drought and increased temperatures, hence, the environment is still under extreme conditions due to reduced water flow and velocity. This condition accentuates the parameters assessed in saline and high conductivity environments, so only highly tolerant species can colonize these habitats. On the other hand, the February 2023 monitoring was carried out during the summer season, so the environment was under conditions of increased precipitation and sediment in the channels, changing the properties of the water in the valley.

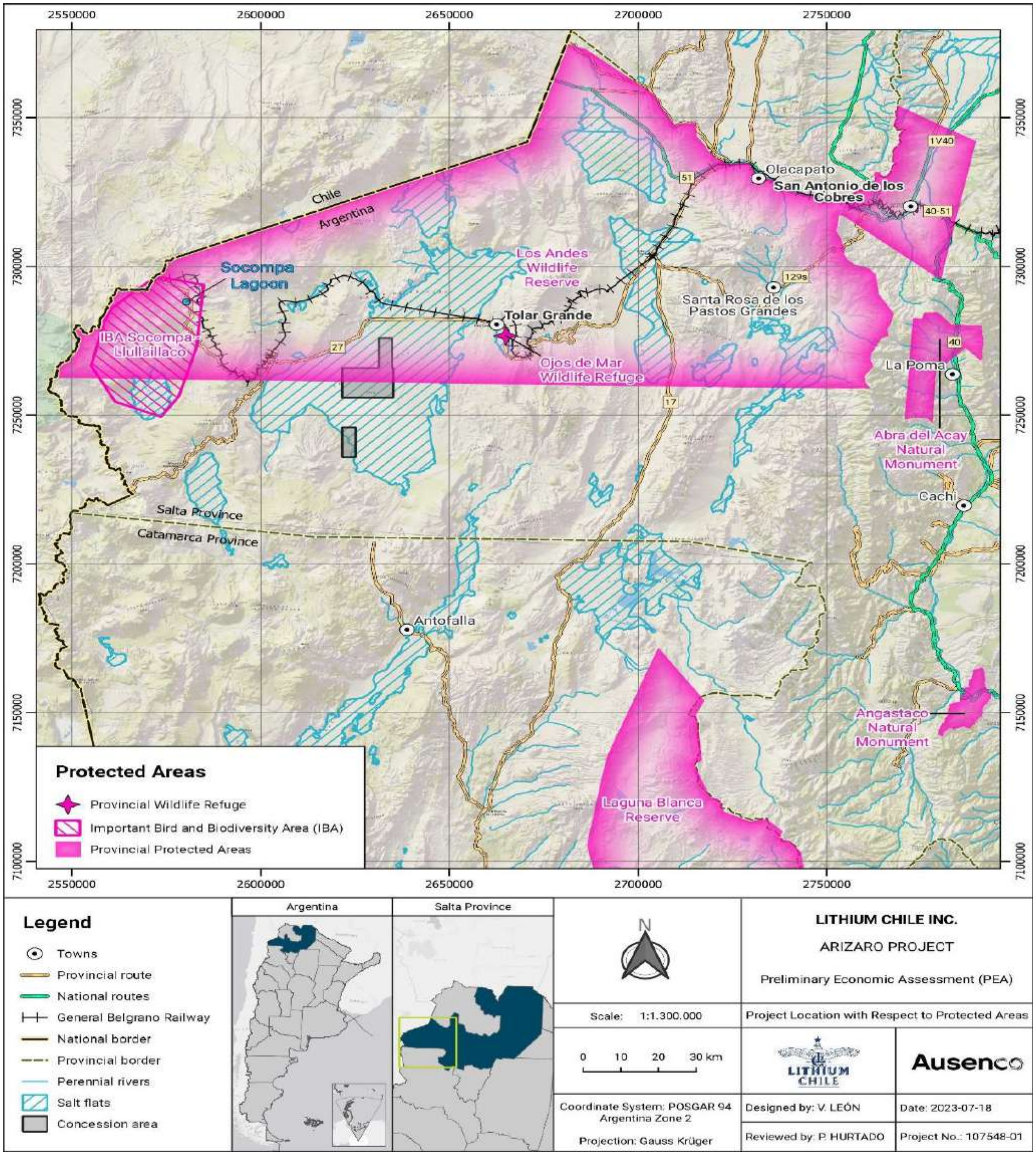
Macroinvertebrate samples recorded a total of 14 species in the December 2022 survey. The most abundant taxon was the *Ostracoda*, recognized crustacean inhabitants of the benthos, followed in abundance by the *Hyalellidae* and the *Chironomidae*. During the February 2023 survey, 16 species were recorded, maintaining the same abundance as the December survey. No zooplankton taxa were recorded.

The phytoplankton community is poorly developed in high-altitude lotic environments (rivers, streams). The February 2023 survey found fewer phytoplankton species than the December 2022 survey. The most representative species are *Cyanophytas Merismopedia sp*, *Chlamydomonas sp*, *Ulnaria aff.*, and *Chrooccocus minutus*. Concerning phytobenthos, more than 50% of the species found correspond to diatoms, species which are successful in colonizing, and biofilm-forming in the sediments of the benthic zone, which directly receive the light that passes through the shallow depth of the water column.

20.1.1.8 Protected Areas

Los Andes department has several protected areas to support the preservation of flora and fauna. The closest to Arizaro Project are Los Andes Natural Wildlife Reserve, which overlaps with part of the concession area, “Ojos de Mar de Tolar Grande” Provincial Wildlife Refuge, and the Socompa Lagoon Provincial Wildlife Refuge (Figure 20-5). Other protected areas in Los Andes department are the Socompa-Llullallaico Important Bird Conservation Area.

Figure 20-5: Protected Areas Near Arizaro Project



Source: Ausenco, 2023.

Los Andes Natural Wildlife Reserve has an area of 1,440,000 ha, and its objectives are to preserve local wild fauna, especially vicuna (*Vicugna vicugna*); conserve flora and soil resources, and to study and apply development techniques and rational use of these natural resources. It was created by Provincial Decree No. 308 of 1980 of Salta Province. The reserve is located west of the provincial territory and occupies the entire northern section of the Los Andes Department.

Ojos de Mar de Tolar Grande Provincial Wildlife Refuge is located near Tolar Grande, 44 km from the project area, and corresponds to salted lagoons with small water mirrors (Figure 20-6). This protected area is part of the Provincial System of Protected Areas and was declared by Decree No.1192 of 2011 together with the *Laguna Socompa* Provincial Wildlife Refuge. The latter is located 52 km from the project area and comprises a small lake at the foot of the Socompa volcano, covering an area of about 200 ha. Figure 20-7 shows the location of the Socompa Lagoon. Both areas have important lagoons, which host rare high elevation (4,000 masl) stromatolites.

Both refuges have similar objectives. The primary purpose is the conservation of stromatolites, mainly because of rarity and scientific value. Among the conservation objectives for fauna species, James's flamingo (*Phoenicoparrus jamesi*) and the Andean flamingo (*P. andinus*) are highlighted. In addition, the Socompa Lagoon is considered a high Andean wetland, and is considered a highly fragile environment. This lagoon has a high conservation value due to its significant biodiversity and its important environmental processes, such as concentrating water in desert environments.

Figure 20-6: Lagoons in *Ojos de Mar de Tolar Grande* Provincial Wildlife Refuge

Source: Argentum Lithium, 2022.

Figure 20-7: Socompa Lagoon

Source: Argentum Lithium, 2023.

20.1.1.9 Cultural Heritage

To support the EIS submission for approval in 2024, Lithium Chile generated a new social baseline study that includes information about archaeological and anthropological heritage sites.

Tolar Grande has two anthropological heritage sites: C-14 Branch Railway Project (*Proyecto Ferroviario Ramal C-14*) and Cave Houses ("Casas Cuevas"). The C-14 Branch Railway is one of the most important railway engineering works carried out in the 20th century in Argentina, which is currently closed but in a good state of conservation and has a high patrimonial value for its political, social, and economic implications for the Puna Region. Currently, parts of the railway section are included in the Argentine Industrial Heritage (*Patrimonio Industrial Argentino*) program, which aims to identify, protect, and disseminate cultural heritage. In recent years, the National Commission of Monuments, Places and Historical Assets (*Comisión Nacional de Monumentos, Lugares y Bienes Históricos*), dependent on the National Government, has initiated the project for the declaration of the C-14 Branch Railway as a National Historical Monument.

The C-14 Branch Railway Project has seven train stations in the proximity to the project area. The most important and best preserved is the Tolar Grande station, which includes a train station, a stone and mudbrick house, and a warehouse workshop to repair and maintain the trains, which is currently in use. The other stations are: Taca Taca, Vega de Arizaro, Caipe, Chuculaqui, Quebrada del Agua, and Socompa, which are in total disuse, and their annexed towns are uninhabited. These stations also have an important patrimonial value.

The Cave homes ("*Casas Cuevas*") were part of a former working-class neighborhood during the region's railroad and mining development (Figure 20-8). These "homes" are structures that use the site's ecological and protective advantages since they are optimally protected against strong storms because they cannot be blown away or overturned by the winds. Their earth-covered roofs blend in naturally with the surroundings, protecting the landscape. Currently, the cave homes are preserved by the Tolar Grande municipality as part of the town's architectural heritage and constituting an important tourist attraction. During the night, they can be seen illuminated at the foot of Cerro de la Cruz, where the community celebrates during Holy Week.

Figure 20-8: Cave House In Tolar Grande.

Source: Areal, R., 2019.

As for archaeological sites, two simple structures (Parz1 and Parz2) and two more complex rock structures (Marz1 and Marz2) were discovered during fieldwork close to the project property. The simple structures (Parz1 and Parz2) could be related to hunter-gatherer groups to demarcate the space and provide a safe spot to observe and hunt. These structures mainly use the edges of the wetlands, high riverbed terraces, and ravines. The man-made rock structures (Marz1 and Marz2) may have marked strategic points in the area. These "marks" could have guided the movements of the groups that traveled through the region. Figure 20-9 shows the archaeological sites found close to the Project area and Figure 20-10 show the location of these findings, one of which is located inside the southern site of the project property.

Figure 20-9: Archaeological Sites

Parz1

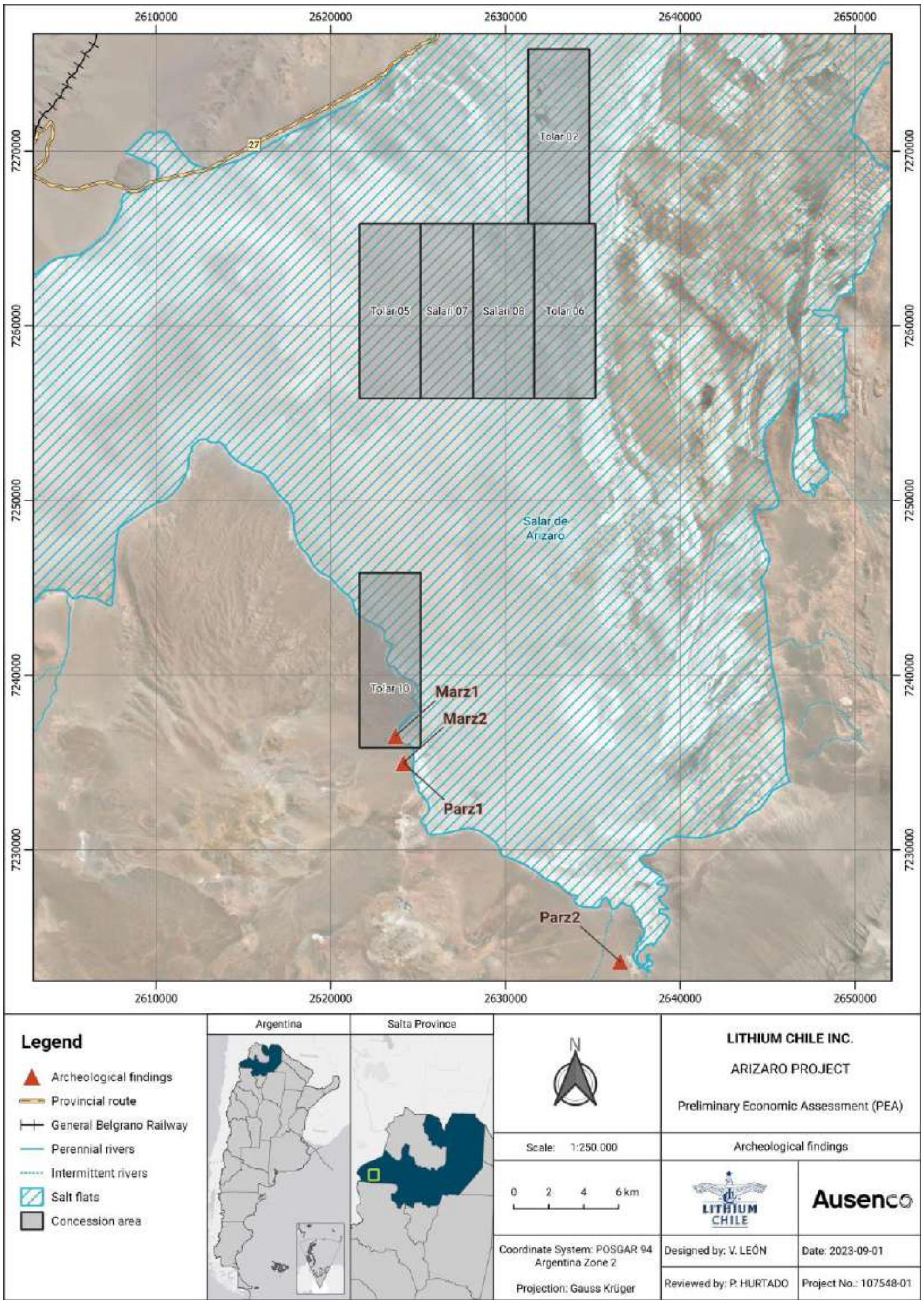
Parz2

Marz1

Marz2

Source: Argentum Lithium, 2023.

Figure 20-10: Location of Archaeological Sites



Source: Ausenco, 2023.

20.2 Current Environmental Risks and Monitoring Programs

Potential environmental risks and impacts from the exploration phase of the Salar de Arizaro Project were assessed in the 2022 EIS, resulting in the development of environmental controls to mitigate against potential environmental effects and establish monitoring measures to assess effectiveness of controls. This environmental management plan supports drilling activities, fuel management, and waste management, among others. Table 20-2 lists aspects of the project assessed at this stage of project development, the associated mitigation measure and recommended monitoring activities. At the time of this report, monitoring data related to potential Project impacts for the exploration phase of the Project were not available for review.

The advancement of the Project's baseline studies and data collection to support the future EIS will also provide an improved and updated impact analysis and recommendations for environmental management, control, and monitoring measures.

Table 20-2: Measures and Monitoring for Project Aspects

Project Aspect	Measure	Monitoring Indicator
Drilling operation	The drilling contractor will be required to have its equipment in good state and maintenance, to avoid contamination due to fluid spills.	Before contracting, verify the correct working condition of the equipment and its maintenance.
	The contractor must comply with the requirements for waste treatment for equipment and motors.	Verify that waste from equipment and motors is stored in appropriately identified containers.
	Hydrocarbon wastes will be stored in containers and removed from the area in tanks by an authorized contractor for final disposal.	Verify delivery of certificates, if applicable.
	Biodegradable waste produced during the operation will be transported to the nearest municipal landfill (Tolar Grande).	Verify waste transfer certificates.
	Liquid fuels shall be stored in adequate containers and placed in the loading and unloading sector to avoid leaks or spills.	Verify that the storage of fuels and hydrocarbons is carried out in steel tanks with adequate capacity.
Fuel and/or oil handling	Fuel and lubricant storage facilities will have the capacity to contain possible spills and protect the area's resources.	Verify the tank's condition and capacity to contain possible spills.
	Surface connections for loading, unloading, and filling fuel tanks to immediately visualize leaks or filtrations.	Check for fuel leaks or filtrations.
	A plastic sheet or collecting tray shall be placed under the motors to avoid contamination that could cause small leaks and/or spills.	Verify the condition of the collecting trays.
	Oil containment drums shall be identified with their contents.	Verify the identification of the oil drums.
	During fuel discharge, the operator must ensure no leaks at the connections.	Check for fuel and/or oil spills.
	In the event of leaks and/or spills, operations personnel will immediately remove the impacted material and restore previous conditions.	Verify the drums' condition and the accident's place at the end of the tasks.

Project Aspect	Measure	Monitoring Indicator
	Used equipment and engine oils will be stored in drums and transported off-site and delivered to local companies, authorized to handle them.	Verify the existence of contaminating fluids
	Any part of infrastructure and soil that have been contaminated with fuel and oil residues from leaks and/or spills shall be removed.	Verify the removal of fixed installations and possibly contaminated soils.
Chemical and sludge handling	All chemical products during storage, handling, use or transport shall be correctly identified.	Verify the storage area and the correct identification of chemical products.
	Chemical products shall be placed in the open air in their original packaging. The top and base of the product shall be waterproofed.	Verify the disposition of chemical products and their protections.
	All personal protection equipment for operators involved in the handling of chemical products will be available at the location.	Verify that personal protective equipment is available to personnel.
	Each product received will be provided with a Material Safety and Toxicology Data Sheet (MSDS).	Verify that the products have their safety and toxicology data sheet.
	In the event of solid chemical spills, the affected soil must be remediated immediately after the environmental incident is detected. The waste will be temporarily placed in containers until final disposal.	Verify that the soil is not affected by chemical products.
Waste disposal	Precautions will be taken to avoid the dispersion of any waste at the project location and access road.	Verify that the location and access roads are free of debris.
	Solid wastes generated during well drilling will be sorted and disposed of in drums and periodically removed from the site.	Verify the provision of differentiated containers and waste removal.
	Personnel handling waste for transfer to disposal sites will use appropriate personal protective equipment.	Verify the existence of Personal Protective Equipment.
Management of differentiated solid waste	An authorized contractor will transport disused engine oil filters for final disposal.	Verify waste removal.
	Hazardous waste will be delivered to the company registered in the Registry of Generators, Transporters, and Operators of Hazardous Waste of the Province of Salta.	Verify the delivery of hazardous waste to the corresponding company.
Noise emission	Periodic maintenance control of the engines and vehicles will be carried out to verify their correct operation, thus reducing the noise levels generated.	Verify the existence and condition of engine mufflers.
	Road equipment and drilling rigs must comply with all law requirements.	Make a checklist of the equipment that will work on the project.
Heat emission	Work equipment shall be adequately located, taking into consideration the prevailing winds.	Verify equipment location.
	Temporary fuel storage will be isolated from heat sources to prevent fires.	Verify the location of fuel tanks.
	Driving vehicles along existing tracks.	Verify required entry permits.

Project Aspect	Measure	Monitoring Indicator
Vehicle and machinery movement	Drive cautiously and at reduced speeds (20 km/h) to minimize dust and noise production due to vehicular movement.	Awareness-raising talks to ensure that the permitted speeds are respected.
	Vehicles in good mechanical condition to avoid contamination from fuel or oil spills. Keep a maintenance record of the company's vehicles.	Verify maintenance records of each vehicle.
	Equipment and vehicles controls before entering the work area.	Verify equipment conditions before entering the well.
Personnel	Train and motivate employees to comply with all relevant safety regulations and guidelines.	Records of health and safety courses taken by each employee.
	The work area must be appropriately marked to avoid accidents and/or personal injury.	Verify the correct marking of the work area with signs and tapes.
	Provide workers with Personal Protective Equipment (PPE).	Verify that workers have personal protective equipment.
	To have drinking water to consume during the working day.	Verify that drinking water consumption in the camp is through mineral water bottles.
	Prohibit alcohol consumption.	Verify with personal interviews the prohibition of alcohol consumption.
	Raise awareness of environmental issues among personnel.	Verify through personal interviews the implementation of awareness talks by the company's environmental manager.
Location	Periodically irrigate the ponds area with water from the salt flat to speed up the salt crust developing process.	Verify the pond irrigation with salt water.

Source: Argentum Lithium, 2022.

20.2.1 Water Management

Water is an essential resource for the project, which is used for the exploration and operation processes and human consumption. The Argentinian regulation requires that the company obtains permits for the extraction of water for industrial purposes, which is a different process than acquiring water rights. More information about this permit is available in section 20.4.3.

20.2.1.1 Freshwater Supply

The company will provide water for sanitary purposes through the use of public potable water stations in Tolar Grande (Caipe Station), from which it will be transported using portable water containers, but bottled water will be used for drinking water. The Project will use this system for the exploration, construction, and operation stages. It is estimated that 5 m^3/d will be used for human consumption in the exploration phase.

During the operation phase, the project will use freshwater for the DLE (direct lithium extraction) process that will be extracted from wells in the Chascha aquifer. The process will recirculate water to decrease the use of freshwater. The recharge of this aquifer is estimated to be between 3.9 and 7.1 hm^3/year, as indicated in the Arizaro Salar Recharge Study (*Estudio de la Recarga en Salar de Arizaro*) done in June 2023. However, this is a preliminary assessment, and more data is necessary to obtain a more precise recharge. Currently, Lithium Chile has developed one well (Chascha Sur 01), with a maximum capacity of 75 m^3/h. The water extraction permit for this well is currently in process but expected to be approved within the upcoming months.

20.2.1.2 Surface Water, Runoff and Contact Water Management

The Project has not yet identified the need or defined any measures related to the control and management of contact water or surface runoff at the exploration phase. The EIS to be presented in 2024 will study the need for any measures to manage surface and runoff water for the construction and operation phases.

20.2.1.3 Process Water

For the exploration phase, the water supply is provided from the salt flat aquifer and, together with appropriate drill additives, is used to drill the brine exploration wells. According to the 2022 EIS, the project estimates that 6 m^3/d of salt water is required for the exploration wells.

For the operation phase, brine extracted from the Arizaro salar passes through the first process of DLE (direct lithium extraction), where lithium is extracted. The residue from this process (salt water) will be passively infiltrate into the infiltration pond. The quality of this saltwater and its effects on the salt flat ecosystem will be evaluated in the upcoming EIS. The DLE process also requires freshwater, which will come from wells in the Chascha aquifer, as indicated in section 20.2.1.1.

20.2.2 Emissions and Wastes

Arizaro project has a Waste Management Plan for the exploration phase to manage emissions and wastes, minimizing and preventing their generation. Solid wastes are classified in accordance with their nature as domestic or hazardous. Domestic waste is collected, properly bagged/packaged, and transported to the nearest town (San Antonio de los Cobres), where it is disposed off as urban solid waste. If hazardous waste is generated, it is kept in appropriate containers until final disposal. All wastes are transported by authorized external companies for their final disposal.

Liquid effluents are generated by the sanitary system and the exploration wells. Most of the effluents originate from the sanitary system, which are treated in the sewage effluent treatment plant in the project area. The sludge from the plant is periodically removed and transported by *Aguas del Norte* (water company) for their final disposal. Regarding effluents from the exploration wells, these are spread out in the salt flat.

The 2022 EIS indicated that the exploration phase will produce minimal gaseous emissions, particulate matter, noise, and heat emissions. The Project expects that these emissions will quickly dissipate in the environment, therefore no control measures have been set, apart from speed limits on roads and preventive maintenance of equipment.

For the next EIS, the Project will include quantification of wastes and emissions for the construction and operation phases, as required by Argentinian regulations.

20.3 Closure and Reclamation Planning

Currently, Salta Province does not have any law that requires an exclusive permit for closure and reclamation. However, the EIS process requires that a section about closure and reclamation be included when a project is in its operation phase. In consideration of the above, the Arizaro Project has not yet provided a closure plan to the authority. This will need to be included in the 2024 EIS. Closure considerations cover the different Project phases, from exploration, to construction and operations.

20.3.1 Closure and Reclamation Plans

The Ministry of Production and Labor (*Ministerio de Producción y Trabajo*) released The Good Practice Resource Guide for Mine Closure (*Guía de Recursos de Buenas Prácticas para el Cierre de Minas*) in August 2019, providing definitions and guidance on how to define and value a closure plan. However, this guide does not provide a specific methodology or standard for this purpose.

The guide identifies seven aspects that should be addressed in the closure plan: physical stability, chemical stability, management of tailings, water management, biodiversity management, rehabilitation and restoration, and social management of closure. Moreover, the guide indicates that the Project should design the closure measures and activities using a risk assessment approach.

Project facilities include infrastructure such as processing plants, a cafeteria, mine dry (changing facilities), and brine ponds for storage, distribution, and plant feeding. According to the guideline, these facilities should be dismantled at the closure stage, and the ponds must be dried. Dry ponds should be tested to assess if there are any risks to the environment. Most of the closure activities will be carried out at the end of the mine operation phase; however, it is possible that some activities will be carried out in parallel with the operation stage as concurrent, progressive reclamation. Once the closure plan has been executed, post-closure environmental monitoring will continue, before definitive closure is achieved.

The Arizaro Project will be required to take into account all applicable recommendations outlined in the guide provided by the Ministry of Production and Labor and will need to produce a detailed closure and post-closure monitoring plan that is in line with the authorities' expectations and industry best practice.

20.3.2 Closure Cost Estimates

The closure costs estimation is presented in Section 21. This cost will be refined further during the PFS and FS stage of the Project, since a detailed closure cost will need to meet applicable regulatory requirements, supported by feasibility level design.

The next EIS to be submitted to the environmental authority will include a closure plan that will consider the recommendations provided by the Ministry of Production and Labor and Catamarca Closure Plan regulation as described in the previous section.

20.4 Permitting Considerations

Argentina, being a federation, has a first level set of regulations corresponding to the National Law and a second level corresponding to the Provincial Law, which in this case corresponds to the Salta Province. For a mining operation, the National Law requires obtaining an environmental permit and other specific ones, such as water permits, waste generation registration, chemical precursors registration, and municipal qualification for the infrastructure. All provinces in Argentina can add requirements to the national laws in terms of the information necessary to obtain these permits. Currently, the Salta Province does not have additional specific requirements.

20.4.1 Environmental Permits

The Environmental Impact Assessment (EIA) permit is the instrument that regulates all exploration, construction, and exploitation activities of a project and must be updated every two years (Article 11 of National Law No. 24,585). The approval of the EIA generates a series of commitments and obligations, including, but not limited to, schedules, investment commitments, social obligations, environmental monitoring and audits, and safety conditions. Failure to comply with these commitments and obligations may result in penalties, fines, project suspensions and, following an administrative procedure, cancellation of the environmental permit.

The scope of the EIA will depend on the phase of the Project. The regulation has three types of scope: Prospecting, Exploration, and Operation (named as exploitation in the law). For the prospecting stage, the requirements are simple and involve general information about the environment, a project description, and a simple impact assessment. In the case of the exploration phase, the regulation requires more information about the environment; however, it is still acceptable to have only bibliographic input. It also requires measures to protect the environment, which must be based on the impact analysis results. Finally, the operation phase requires information based on fieldwork, so the impact analysis and the measures to protect the environment are very detailed in relation to the Project's potential effects.

On January 17, 2020, Salta Province authorized the EIA “Exploration and Exploitation Stage of Lithium-Rich Brine Wells” for the exploration phase of project, through a Declaration of Environmental Impact (*Declaración de Impacto Ambiental*). In February 2022, an Environmental Impact Study (EIS) was submitted to the provincial mining authorities for the Project's prefeasibility stage, including environmental, social and community aspects, providing general information on the Project area. The approval of this EIS is still in process, and the company has submitted four addendums to answer the authority´s questions and include some project updates. The authority delivered the most recent set of questions on February 14, 2023 and the answers were submitted in March 2023. As required by law, Lithium Chile will submit a new EIS every two years to update the Project and baseline studies and analyses.

20.4.2 Mining Permits

As detailed in the previous section, the environmental permit is a requirement of Federal Law No. 24,585, which is part of the Argentinian Mining Code. Thus, the main permit for a mining operation is the Environmental Impact Study, without any other specific permits for mining activities coming from the provincial level law in the case of Salta.

20.4.3 Additional Permits and Authorizations

The additional permits required for the project area are water permits, waste generation registration, chemical precursors registration, and municipal qualification for the installations. Table 20-1 shows the current status of these permits; two of them already approved, and the other two are still in process. The Project expects to obtain them in the short term, although no specific dates have been indicated by the authority.

Table 20-1: Permits status for the Arizaro Project

No.	Permit	File No.	Date of Approval	Status	Permit Issued to	Remarks
1	Water permit for industrial water	0090034-85154/2022-0 (Note Nº096)	April 21, 2022	Approved	SMG S.R.L.	This permit approved the drilling of the well Chascha Sur 01.
		0090034-254783/2022-0	-	In process	Argentum Lithium	This permit is for water extraction at well Chascha Sur 01.
		0090034-160547 and 0090034-160549	August 23, 2023	Approved	Arli S.A.	This permit approved the drilling of water exploratory wells SRH 1678 and SRH 1679.
2	Water permit for potable water	EXPDTE 0090034 – 125395/2022 –0 Granted by Resolution 132/23	July 6, 2023	Approved	Argentum Lithium	Permit is for sanitary uses. Extraction point at Estación Caipe.
3	Registration in the Registry of Hazardous Waste Generators	Resolution No. 000171	March 07, 2023	Approved	Argentum Lithium	The permit lasts one year, the renewal will be processed next year
4	Registration in the National Register of Chemical Precursors (RNPQ)	-	-	-	-	At this stage, the company does not require this permit. It will be processed in the next phase.
5	Municipal qualification	-	-	In process	-	Applicable to project camp. Due to project updates, the permit is still in process.

20.5 Social Considerations

The province of Salta requires any EIS to include social aspects, which can vary depending on the project stage. As part of the exploration phase study, the 2022 EIS provided a general location map and characteristics of the surrounding communities, that show the presence of indigenous and non-indigenous communities in the surrounding area, and a Community Relations Plan and activities. As part of the work being developed for the 2024 EIS, Lithium Chile generated a new social baseline study that includes updated information about the communities in the area.

20.5.1 Local Communities Description

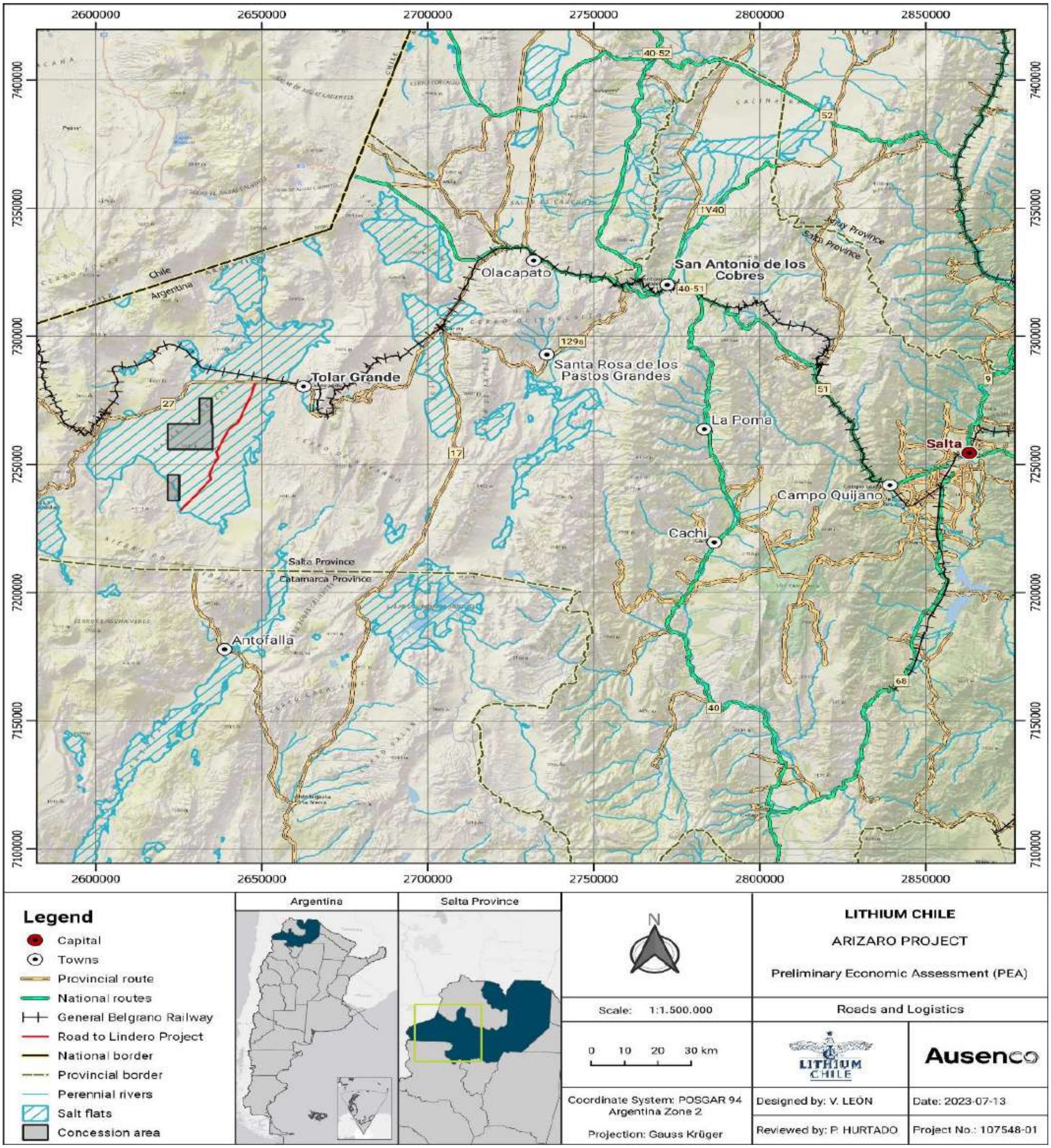
The closest town to the Project is Tolar Grande (40 km) and the closest city is *San Antonio de Los Cobres,* where the authorities and primary services are located. Figure 20-11 shows the location of these and other populated areas in relation to the Project location.

According to 2010 census data*,* Tolar Grande has a total population of 236, organized into 54 families. Administratively, it is a municipal delegation that depends on the municipality of San Antonio de Los Cobres, which has a population of 4.763. The main route that connects San Antonio de Los Cobres with *Salta* (the capital city) is route RN 51, which is also the international connection to Chile. RN 51 connects with RN 27, the route to Tolar Grande. RN 51 can be used all year round except when climate conditions make it difficult, for example, with snowstorms or heavy precipitation. The condition of Route RN 27 is poorer than RN 51, therefore during the year there are more traffic stoppages on RN27.

Concerning socio-economic dynamics, Tolar Grande's main activities are mining, tourism, and subsistence livestock farming. Mining activities generate a high expectation of employment and promotion of the local economy; however, the community is also concerned about environmental problems, such as noise, vibration, suspended dust, and combustion gases from equipment and vehicles. Due to several mining operations in the area, initiatives have been created to connect the Mining Secretariat, mining companies, and the Puna area municipalities to promote local work. *San Antonio de Los Cobres* also has tourism-related activities and handcrafted products. People from Tolar Grande and other small towns come to San Antonio de Los Cobres to buy consumer goods, to then resell them in their town.

Regarding the rural part of the community, the main economic activity is arable and livestock farming. People perform transhumance, which is a type of nomadism, a seasonal movement of livestock between places with better summer and winter pastures. Herders have a permanent home and one or a few other temporary homes, which they call *puestos* (herding stations). Closest to Salar de Arizaro Project are the *puestos* Cavi and Antofallita. People from the rural community have positive and negative perceptions about mining; on the one hand, they perceive that benefits are targeted at the towns, therefore they receive fewer benefits. On the other hand, they recognize that the help from mining companies has changed their daily life positively.

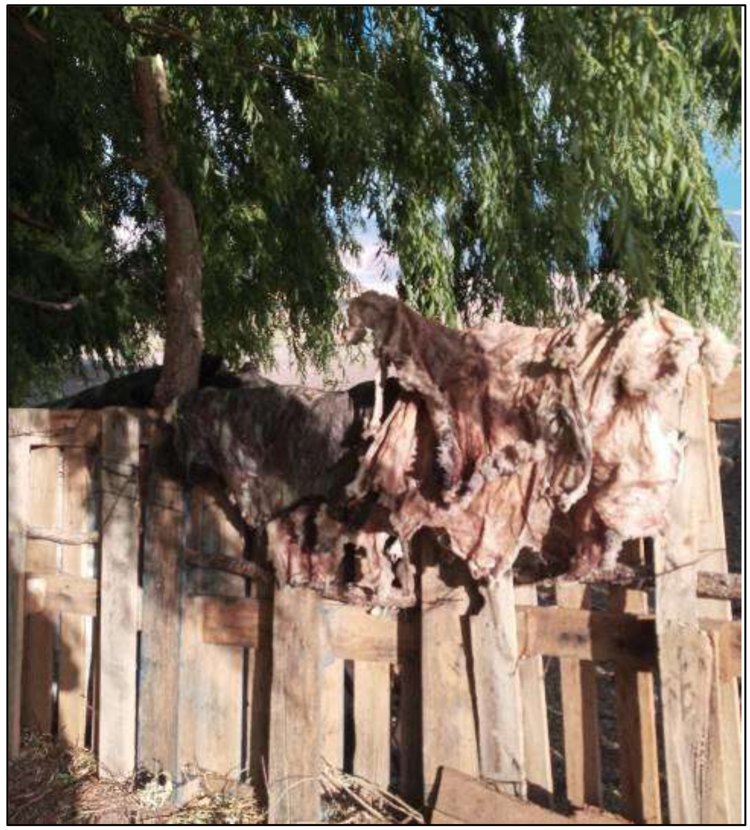
Figure 20-11: Communities Close to the Salar de Arizaro Project.



Source: Ausenco, 2023.

Figure 20-12: Images From *Antofallita* and *Cavi puestos*

A) Fruit trees in Antofallita.



B) Drying of goat hides in Cavi.

Source: Argentum Lithium, 2023.

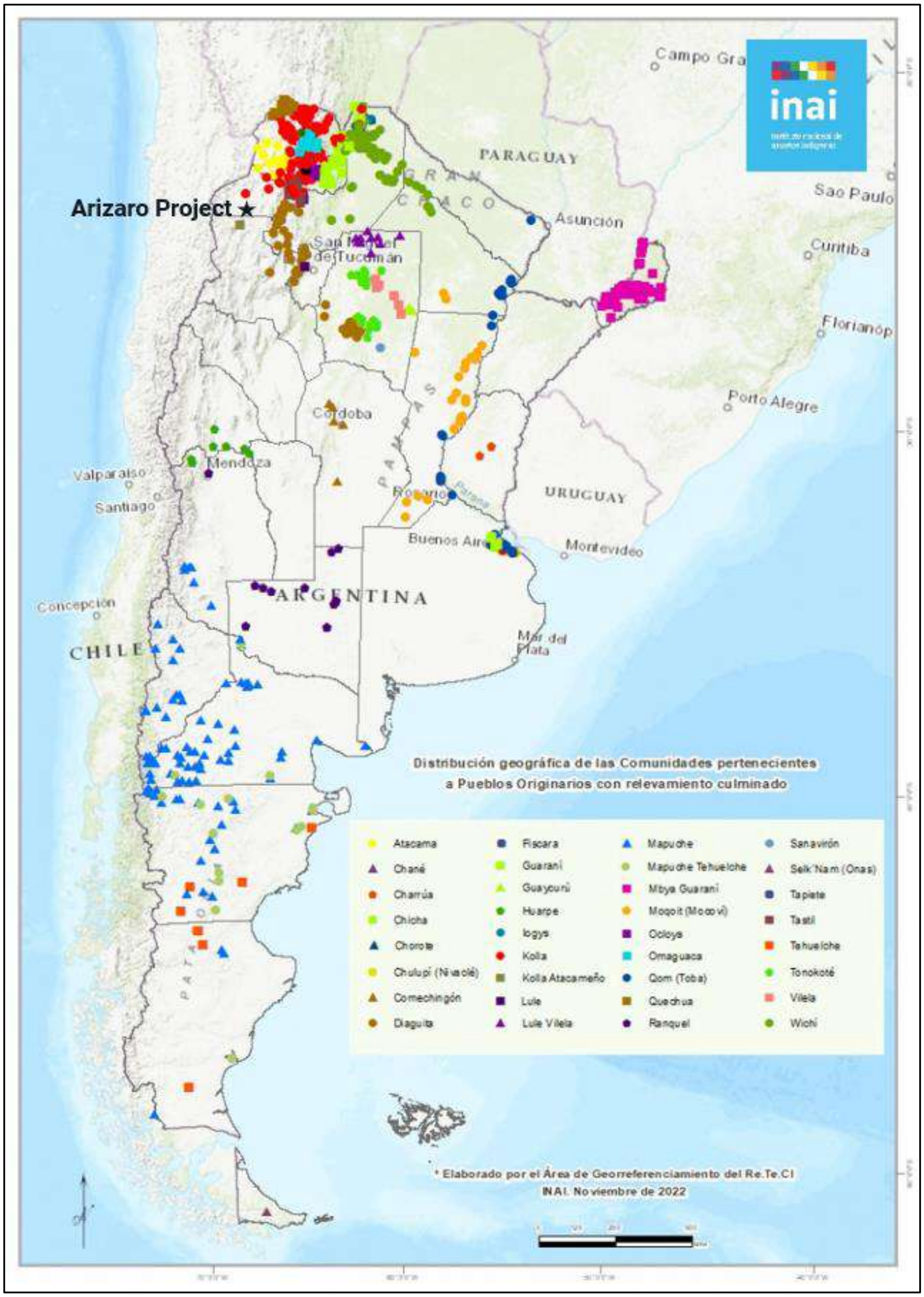
The 2022 EIS identifies seven Indigenous communities in Los Andes Department. However, the National Institute of Indigenous Affairs (*Instituto Nacional de Asuntos Indígenas*) identifies ten Indigenous communities in the same area. The table below lists the ten communities and, in blue, highlights the seven communities identified in the 2022 EIS. Figure 20-13 shows the location of Indigenous communities throughout Argentina, circling the Project area and surroundings. *Comunidad Aborigen Kolla de Tolar Grande* is the closest Indigenous community, which resides in *Tolar Grande* town. Non- Indigenous and Indigenous people live together in the town, and there is no clear separation between them.

Table 20-3: Indigenous Communities In The Andes Department (Social Baseline, 2023)

Name	Ethnicity	Department	Municipality	Legal Inscription
Comunidad Kolla del Desierto	*Kolla*	*Los Andes*	*San Antonio de los Cobres*	RES INAI 066/06/12/02
Comunidad Indígena Collas Unidos	*Kolla*	*Los Andes*	*San Antonio de los Cobres*	RES 336/30/12/02
Comunidad Kolla del Salar de Pocitos	*Kolla*	*Los Andes*	*San Antonio de los Cobres*	RES 278/11/09/09
Comunidad Kolla Quewar de Olacapato	*Kolla*	*Los Andes*	*San Antonio de los Cobres*	RES 281/11/09/09
Comunidad Aborigen Kolla de Tolar Grande	***Kolla***	***Los Andes***	***Tolar Grande***	**RES 164/22/07/02**
Comunidad Aborigen de Hurcuro	*Kolla*	*Los Andes*	*San Antonio de los Cobres*	RES 166/08/07/09
Comunidad Andina de Santa Rosa de los Pastos Grandes	*Kolla*	*Los Andes*	*San Antonio de los Cobres*	RES 573/13/07/10
Asociación Kolla Centro Comunitario Casa de los Niños de Llullaillaco	*Kolla*	*Los Andes*	*San Antonio de los Cobres*	RES 091/16/04/02
Comunidad Aborigen de Matancillas	*Atacama*	*Los Andes*	*San Antonio de los Cobres*	-
Comunidad Kolla De Peña Alta	*Kolla*	*Los Andes*	*San Antonio de los Cobres*	RES 010 D (Registry of Indigenous Communities of the Province of Salta)

Source: Argentum Lithium, 2023. National Institute of Indigenous Affairs, 2003.

Figure 20-13: Communities Map, Argentina



Source: National Institute of Indigenous Affairs, 2023.

20.5.2 Communications plan

The social perception (through interviews) of the community to mining activity is positive, according to the 2022 EIS. The expectation of generating employment is strong and offsets the fear of environmental problems, such as noise, vibrations, suspended dust, and combustion gases from equipment and vehicles. The 2023 social baseline update indicates that mining is still considered valuable in Tolar Grande. People from the *puestos* have positive and negative perceptions because they perceive that benefits are targeted at the town, so they receive fewer, but they also recognize the positive impact on their daily life that comes from the help from mining companies.

The primary demand from the community is employment for both Tolar Grande and the *puestos*. Tolar Grande also requires economic support for community projects and maintains community participation during all project stages. The *puestos* ask for assistance during natural disasters and economic support for their productive activities' projects.

The Salta Mining Secretariat (*Secretaría de Minería de Salta)* carried out meetings with different mining companies and authorities to coordinate efforts for the community, naming this instance as Tolar Grande Social Roundtable (*Mesa Social de Tolar Grande*). Lithium Chile has participated in all the meetings, the last one being held on November 2021. As part of this instance, the company completed the following actions:

- The company helped to install a waste yard in an area of the Municipality of Tolar Grande.
- Meetings were held with the Mayor of *Tolar Grande* and other government and indigenous communities' authorities to inform them about the geophysics program to be implemented. The lead from the *Kolla* Community visited the site with people from Lithium Chile.
- The company provided an economic contribution to construct the Tolar Grande Mining Interpretation Center in 2018. The objective of this center is to promote the mining industry through mining and geological exhibits and other activities.

Regarding the Communications Plan, the 2022 EIS provided some preliminary guidelines that will direct the final plan. The purpose of this plan is to keep open and honest relationships with the community and other stakeholders. The relationship with the community will be considered a priority for Lithium Chile and will be considered in all the company's corporate policies.

Lithium Chile has a Corporate Social Responsibility (CSR) Plan for this year that aims to establish a relationship between Tolar Grande, Antofallita, Cavi, and the company. The objectives include developing economic and social opportunities, maintaining fluent community participation in the decision-making process, and achieving sustainable agreements, among others. The CSR Plan has 25 activities classified into seven key areas: health, education, infrastructure, environment, economic development, culture, and transparency. Health is the area with the largest number of activities, followed by culture.

Table 20-4: CSR Plan Activities and Objectives

Area	Objective	Activity
Health	Provide the community with opportunities to learn more about health recommendations for their daily life.	CPR Workshop
		Addiction Awareness and Prevention Workshop
		Adolescent unintended pregnancy awareness campaign
		Awareness and good practices workshop on Bromatology
		Campaign for the management of the Individual Disability Certificate
		Skin and eye care campaign
Education	Provide students with better materials and incentivize them to finish school.	Develop an extension of the elementary school's public library and create a public library in the high school.
		Implementation of the *FinEs* Program (to help students finish school)
		Award five Manuela Martínez de Tineo School graduates.
Infrastructure	Collaborate with the municipality and other authorities in important activities for the community	Collaborate in the road maintenance from *Chascha Sur* to *Antofallita* and *Cavi*
		Help gas recharge delivery for families in *Tolar Grande*
		Overhaul of water cistern supplying the town
Environment	Collaborate with the municipality and other authorities with the domestic waste and provide the community with information about recycling.	Collaboration in the construction and placement of waste containers on Route 51
		Participation in the *Tolar Grande* Environmental Minga event for waste management
		Waste separation and circular economy workshop
Economic development	Help local entrepreneurs in their businesses and financially assist a member of the community	Truck rental to local entrepreneur
		Monthly financial assistance and wheelchair for a member of the community
		Collaborating with electronic payment terminals for entrepreneurial families
Culture	Value the communities' traditions and promote mountain sports.	Participate in Ceremony of the Pachamama, August 01
		Sponsor the Sacred Mountain Macon Climbing activity
		Participate in the Patronal Feast "Virgin of the Valley", December 08, 2023.
		Participate in the celebration of Children's Day
Transparency	Keep the community informed and actively engage in participatory activities.	Guided tours of Tolar residents to show them the project's progress
		Meetings with to *Tolar Grande*, *Antofallita*, and *Cavi* communities to present the project's progress.
		Participate in *Tolar Grande* Social Roundtable organized by Salta Mining Secretariat

Source: Lithium Chile, 2023.

20.6 Comments on Environmental Studies, Permitting and Social or Community Impact

Based on the above discussion, the following comments are provided:

- The 2022 EIS included environmental data only from bibliographic sources about the project area and its surroundings, as the Argentinian regulation does not require detailed information from fieldwork at this stage of project development. As part of the next EIS, to be submitted for approval in 2024, fieldwork was carried out for the environmental and social baseline, during December 2022, January, February, and April 2023. The baseline study provides detailed information about the project area, showing an ecosystem with flora and fauna typical of this type of climate and the presence of 13 endangered species at the project site. The sensitive areas that could be affected by the project are located at the southern end of the salt flat, Vega Chascha and Vega Arita, the first located close to the industrial water extraction wells and the second one located immediately south of the property, at the future plant location. Despite being located within the Los Andes Wildlife Reserve, the baseline information provided so far indicates that the property where the brine extraction wells will be located does not present flora and fauna species.
- Indigenous and non-indigenous communities exist near the project location. A social perception study, made through interviews, shows no opposition to the project. However, it also indicates that worries about environmental problems exist in the Tolar Grande community. In the case of the people in *puestos*, they have mixed perceptions. On the one hand, they feel the benefits are targeted to Tolar Grande; on the other, they recognize the support from the mining activities in the area. For 2023, Lithium Chile has implemented a CSR Plan for Tolar Grande and *puestos* people.
- The Arizaro project is in its exploration phase, which Salta Province has authorized through the approval of the 2019 EIS. The 2022 EIS is still under review by the authority, who is evaluating the pre-feasibility phase of the Project. However, the Project is still processing other permits, such as water permits, chemical precursors registration, and municipal qualification for the facilities. At this stage, the Project does not appear to have any significant impediments to obtain these operating permits or the subsequent environmental ones.
- The impact assessment in the 2022 EIS resulted in minimal effects on the environment due to the small size of the operation and the current state of project development (exploration) at the time of evaluation. Nevertheless, the project will assess the operation phase for the subsequent EIS, which can result in more complex mitigation measures.
- The 2022 EIS does not include a description of the closure phase, as it is not required by the Argentinian regulation. However, the Project should design closure measures for the next EIS in 2024, which will be a significant input to update the closure cost for the Project.

Further comments regarding environmental and social aspects are included in Section 25.

21 CAPITAL AND OPERATING COSTS

The Capital and Operating cost estimates presented in this report provides substantiated costs that can be used to assess the preliminary economics of the Arizaro Project. The estimates are based on the development of a lithium deposit through brine extraction wells and the construction of a process plant, infrastructure, as well as indirect costs and contingency.

The following basic information pertains to the estimate of both capital and operating cost:

- Base date for these estimates is Q3 – 2023.
- All costs are expressed in United States dollars (US$), with no allowance for escalation.
- Estimate accuracy is reflective of the stage of project development and classified as an AACE International (AACE) Class 5 Order of Magnitude/Conceptual Study estimate with an expected accuracy range of -20% to 50% on the lower range, and +30% to +100 on the higher range.
- Units of measurement is metric (unless otherwise indicated).
- Operating and sustaining capital costs are based on an estimated mine of 19.1 years.

21.1 Capital Costs

21.1.1 Overview

The overall capital cost estimate was developed by Ausenco. Capital cost estimate is based on preliminary equipment list and preliminary quantities obtained by factorization of similar facilities preliminary material take offs (MTO's). Pricing is based on cost for similar projects in the region. Unit rates, material cost, and electrical costs were based on typical values for comparative sites (not contractor quotations or bids). The cost estimates include the initial investment and sustaining capital for a lithium concentration plant with a capacity of 25,000 t/y LCE. The capital is split into direct cost, project indirect cost and contingency. The cumulative total initial capital cost is US$823 M.

Sustaining capital was based to number of wells required to continue with production over the LOM. The cumulative total LOM sustaining capital cost is US$184 M.

The Table 21-1 presents the capital cost summary.

Table 21-1: Summary of Capital Costs

Description	Initial Capital Cost (US$M)	Sustaining Capital Cost (US$M)	Total Capital Cost Project (US$M)
Mine Capital Cost	45	63	108
Plant Capital Cost	294	-	294
General Utilities	75	-	75
On-Site Infrastructure	39	-	39
Project Direct Cost	**452**	**63**	**516**
Project Indirect Cost (Including Owners)	152	13	165
Resin DLE (First Fill)	28	66	94
Total Indirect	**633**	**142**	**775**
Contingency	190	43	232
Total CAPEX	**823**	**184**	**1,007**

Note: Numbers may not add up due to rounding.

21.1.2 Basis of Estimate

The Capital cost estimate was developed in Q3 2023 United States dollars (US$) based on Ausenco's in-house database projects and studies as well as experience from similar operations. Due to the methodology used to develop the capital estimate and the conceptual level of engineering definition, the estimate has an accuracy of -20% to -50% on the lower range, and +30% to +100% on the higher range in accordance with the Association for the Advancement of Cost Engineering International (AACE International) guidelines for a PEA study.

Data input for the estimates has been obtained from numerous sources, including the following:

- Conceptual engineering design by Ausenco.
- Mechanical equipment cost and main electrical equipment determined from first principles and Ausenco's database of historical projects.
- Material take-off for massive earthworks, concrete and structural buildings.
- Electrical bulks, plateworks, instrumentation, concrete and structural steel for equipment support were factored from mechanical equipment direct cost based on benchmark projects in the region with similar technology and region within the Ausenco's database.

21.1.3 Mine Capital Costs

Mine capital includes wells construction and HDPE pipelines from well fields to DLE Plant. Mining initial capital is summarized in Table 21-2.

Table 21-2: Mine Capital Cost

WBS	Description	Initial Capital Cost US$M	Sustaining Capital Cost US$M	Total Capital Cost Project US$M
1100	Wells	11	55	66
1200	Brine Transport	5	8	13
1300	Storage and Distribution Pond	24	-	24
1400	Plant Feeding Ponds	5	-	5
1000	**Mine Capital Cost Total**	**45**	**63**	**108**

Note: Numbers may not add up due to rounding.

21.1.4 Process Capital Costs

Process plant initial capital is presented in Table 21-3. Direct costs include all direct and indirect labour, permanent equipment, materials, and mobile equipment associated with the physical construction of the areas.

Table 21-3: Plant Capital Cost

WBS	WBS Description	Initial Capital Cost US$M	Sustaining Capital Cost US$M	Total Capital Cost Project US$M
2000	DLE Plant Total	108	-	108
3000	Reverse Osmosis	70	-	70
4000	Mechanical Evaporation	33	-	33
5000	Chemical Plant	31	-	31
6000	Purification	24	-	24
7000	Dry Product Handling	28	-	28
	Plant Capital Cost Total	**294**	**-**	**294**

Note: Numbers may not add up due to rounding.

Table 21-4 presents the distribution of General Utilities of capital costs (WBS 8000).

Table 21-4: General Utilities Capital Cost

WBS	WBS Description	Initial Capital Cost US$M	Sustaining Capital Cost US$M	Total Capital Cost Project US$M
8100	Power Supply	28	-	28
8200	Fuel Storage and Handling	0.6	-	0.6
8300	Water supply	31	-	31
8400	Air	3	-	3
8500	Reagents	7	-	7
8600	Steams	5	-	5
8000	**General Utilities Total**	**75**	**-**	**75**

Note: Numbers may not add up due to rounding.

21.1.5 Infrastructure Capital Costs

General costs include on-site infrastructure and equipment are shown in Table 21-5 (power generators, piping general, electric grid, general, subcontractor camp, pipe rack, among others).

Table 21-5: Infrastructure Capital Costs

WBS	WBS Description	Initial Capital Cost US$M	Sustaining Capital Cost US$M	Total Capital Cost Project US$M
9110	Administration Office	2	-	2
9120	Camp	8	-	8
9130	Casino	4	-	4
9140	Change house	2	-	2
9150	Reagents warehouses	6	-	6
9160	Metallurgy laboratory	2	-	2
9170	Spare warehouse	7	-	7
9180	Gatehouse	0.2	-	0.2
9190	Contour Channel	0.3	-	0.3
9300	Warehouses for sas and product	5	-	5
9400	Policlinic for first aid	0.4	-	0.4
9900	Waste Management	1	-	1
9000	**Infrastructure Total**	**39**		**39**

Note: Numbers may not add up due to rounding.

21.1.6 Sustaining Capital

Sustaining capital includes well construction which involves the installation of HDPE pipelines from wells to receiving ponds over the LOM. Sustaining capital is summarized in Table 21-6.

Table 21-6: Sustaining Capital Cost Summary

AREA Lv4	Area Name	Y1	Y2	Y3	Y7	Y13	Y17	Sustaining Capital Cost (US$ M)
1100	Wells	20	16	3	13	2	2	55
1200	Brine Transport	3	2	0.5	2	0.2	0.2	8
	Total Direct Cost	**23**	**18**	**4**	**14**	**2**	**2**	**63**
	Project Indirect Cost	5	4	0.7	3	0.4	0.4	13
	Total Direct + Indirect Costs	**28**	**22**	**5**	**17**	**2**	**2**	**76**
	First Fill (DLE Resin)	28	28	9				66
	Total Cost + First Fill	**56**	**50**	**14**	**17**	**2**	**2**	**142**
	Contingency	17	15	4	5	0.6	0.7	43
	Total CAPEX	**73**	**65**	**18**	**23**	**3**	**3**	**184**

Note: Numbers may not add up due to rounding.

21.1.7 Indirect Capital Costs

Indirect costs are those that are required during the Project delivery period to enable and support the construction activities.

In accordance with a class 5 estimate, the indirect costs of the Project were factored using references from similar projects. These percentages consider that earthworks and wells construction require less indirect supervision than electromechanical works during its execution.

Table 21-7 shows the factors considered and the estimation basis. Factors are based on projects with similar characteristics.

Table 21-7: Indirect Project Cost Factors

Description	Factor (Electromechanical)	Factor (Earthworks- Early Work and Wells construction)
EPCM	12%	8%
Temporary Facilities	1%	1%
Third Party Services	6%	5%
Catering and Lodging	1%	1%
Freights & Logistics	4.5%	0%
Vendor Representatives	1.5%	0%
Spares	0.5%	0%
Commissioning & Start-up	1%	0%
Owner Costs	7.5%	5%
Total	**35%**	**20%**

Note: Numbers may not add up due to rounding.

Table 21-8: Summary of Indirect Costs

Description	Total Direct Cost (US$M)	Factor	Indirect Cost (US$M)
Electromechanical	411	35%	144
Earthworks	42	20%	8
Total	**-**	**-**	**152**

Note: Numbers may not add up due to rounding.

21.1.8 Resin DLE (First Fill)

First fill for the direct lithium extraction plat were estimated by first principles. Quantity was derived from the mass balance, and price from recent quotations on the Ausenco database. Total resin cost including the initial capital cost plus sustaining capital cost is US$94 M.

The initial capex included 30% of the total resins due to the ramp-up.

21.1.9 Contingency

Contingency was estimated deterministically as 30% of the sum of direct and indirect costs. This percentage is in the range expected for a class 5 estimate. Initial Capex contingency for the project has been estimated at US$190 M and total contingency cost for the LOM at US$232 M.

The estimate contingency does not allow for the following:

- Abnormal weather conditions;
- Changes to market conditions affecting the cost of labour or materials;
- Changes of scope within the general production and operating parameters;
- Effects of industrial disputations;
- Financial modelling;
- Technical engineering refinement; and
- Estimate inaccuracy.

21.1.10 Exclusions

The following costs and scope are excluded from the capital cost estimate:

- Land acquisitions;
- Taxes not listed in the financial analysis;
- Sales taxes;
- Scope changes and Project schedule changes and the associated costs;
- Any facilities/structures not mentioned in the Project summary description;
- Costs to advance the Project from preliminary economic assessment to pre-feasibility study;
- Costs of pre-feasibility and feasibility studies;
- Geotechnical unknowns/risks;
- Financing charges and interest during the construction period;
- Any costs for demolition or decontamination for the current site;
- Escalation;
- Budgetary quotations; and
- Permitting or environmental compensation costs.

21.2 Operating Costs

21.2.1 Overview

The operating cost estimate for Arizaro Project was developed to a level of accuracy of ±30% and with a base date of Q3 2023 using Ausenco's in-house database of projects and studies and experience from similar operations. The estimate includes direct and indirect costs.

The distribution of the operating costs, shown in Table 21-9. The most relevant cost is reagents consumption (50.8%) followed by energy (16.6%). Both costs add up to US$ 85.71 M, meaning 67.4% of the operating direct costs.

Table 21-9: Summary of Operating Costs

Description	US$ M/a	US$/t Li_2CO_3
Direct Costs		
Chemical Reactive Substances and Reagents	64.56	2,583
Resin & Membrane replacement	13.31	533
Energy	21.14	846
Manpower	8.88	355
Catering and Camp Services	6.85	274
Maintenance	5.61	224
Site Vehicle Costs	0.29	11
Bus – In /Bus – Out Transportation	0.55	22
Consumables	0.63	25
Li_2CO_3 Transport to Antofagasta Port	5.20	208
Direct Cost Subtotal	**127.02**	**5,081**
Indirect Costs		
General and Administration	2.92	117
Indirect Costs Subtotal	**2.92**	**117**
Total Production Costs	**129.94**	**5,197**

Note: Numbers may not add up due to rounding.

21.2.2 Basis of Estimate

Cost estimates are based on the following assumptions:

- Cost estimates are based on Q3 2023 pricing without allowances for inflation. Costs are expressed in United Sates dollars (US$).
- Production of Li_2CO_3 at 25,000 t/y LCE.
- Majority of labour requirement is assumed to come from surrounding communities.
- Ausenco developed the material balance for the Ausenco's proposed design for the Arizaro Project to estimate reagent consumption.

- Equipment and materials will be purchased as new.
- Prices based on the Ausenco's database and by Lithium Chile.
- Lithium feed grade for the processing plant at 286 mg/L Li.

21.2.3 Operating Costs Breakdown

21.2.3.1 Chemical Reactive and Reagents

The consumption of chemical reagents was determined by mass balance for 25,000 t/y of BG lithium carbonate production.

The total reagents cost for annual consumption is US$64.56 M/a for Arizaro Project and its unit cost is US$2,583/t Li_2CO_3. More details are presented in Table 21-10.

Table 21-10: Chemical Reactive and Reagents

Description	Formula	t/a	US$ M/a	US$/t Li_2CO_3
Sodium carbonate (soda ash)	Na_2CO_3	53,666	41.26	1,650
Sodium hydroxide (caustic soda)	NaOH Dry	6,937	6.19	248
Sulfuric acid	H_2SO_4	14,426	7.00	280
Hydrochloric acid	HCl	89	0.074	2.94
Carbon dioxide	CO_2	5,370	4.01	161
Others	-	-	6.03	241
Total		**80,488**	**64.56**	**2,583**

21.2.3.2 Resin & Membrane replacement

Resin and membrane are considered as consumable provisions. The estimate cost for resin replacement was express as a factor of adsorption equipment with 5% plus softening IX Ca/Mg and IX B. Regarding membrane replacement, it is estimated considering the membrane lifetime.

The total resin and membrane replacement cost for annual consumption is US$13.31 M/a for Arizaro Project and its unit cost is US$533/t Li_2CO_3. More details are presented in Table 21-11.

Table 21-11: Resin & Membrane Replacement

Description	Units Required per Annum	US$ M/a	US$/t Li_2CO_3
Resin Replacement			
Adsorption	1	4.71	188
Softening IX Ca/Mg	1	3.71	149
Softening IX B	1	3.75	150
Membrane Replacement			
HP RO	476	0.476	19.0
UHP RO	75	0.243	9.71
UHP NF	78	0.281	11.2
Demin Water treatment plant RO	140	0.070	2.80
Demin Water treatment plant UF	21	0.076	3.02
Total		**13.31**	**533**

Note: Numbers may not add up due to rounding.

21.2.3.3 Energy

Energy costs consider the generation of electricity through diesel power generation plant. Using a steam generation with a heat recovery system allows for more efficient use of diesel and significantly reduces its consumption while meeting the heat and power requirements of the plant.

The power cost is calculated from the overall plant power draw determined from the mechanical equipment list. Diesel price provided by Lithium Chile is US$0.65/L. The total energy cost for annual consumption is US$21.14 M/a and US$846/t Li_2CO_3.

Table 21-12: Energy Costs

Description	m^3/a	US$M/a	US$/t Li_2CO_3
Diesel Consumption Process Plant + Camp	14,145	11.49	460
Diesel Calorific Power	11,877	9.65	386
Total	**26,022**	**21.14**	**846**

21.2.3.4 Manpower

The opex calculation involves utilizing the projected amount of labor needed for a yearly production of 25,000 tonnes. The required salaries and personnel correspond to the industry standards in Argentina. A breakdown of the labor cost is shown in Table 21-13.

Table 21-13: Manpower Costs

Description	No. of employees	US$ M/a	US$/t Li_2CO_3
Operation	238	6.65	266
Sustainability	28	1.18	47
People development	8	0.29	12
Resources and geology	12	0.75	30
Total	**286**	**8.88**	**355**

21.2.3.5 Catering and Camp Services

All costs related to lodging and food for Project staff which includes catering and camps services are shown in Table 21-14.

Table 21-14: Catering and Camp Services Costs

Description	US$M/a	US$/t Li_2CO_3
Catering	3.65	146
Cleaning and Accommodation	2.31	92
Clothes, Security, Nursing, etc	0.894	36
Total	**6.85**	**274**

Note: Numbers may not add up due to rounding.

21.2.3.6 Maintenance

The annual maintenance costs were derived from the total installed mechanical cost using a factor based on similar projects in the region extracted from the Ausenco database and are summarised in Table 21-15.

The annual maintenance costs were estimated at US$5.61 M/a which represent a 2.6% of the total installed mechanical costs. Considering the production of 25,000 t/y the resulting value of maintenance costs is US$224/t Li_2CO_3.

Table 21-15: Maintenance Costs

Area	Total Installed Mechanical Cost (US$M)	Factor (%)	US$M/a	US$/t Li_2CO_3
Brine extraction	3.42	1.0%	0.03	1
Lithium Adsorption	68.43	3.0%	2.05	82
Lithium Concentration (HPRO)	55.42	2.5%	1.39	55
Mechanical Evaporation	22.03	2.5%	0.55	22
Brine Treatment & Carbonatation	11.13	2.5%	0.28	11
Lithium Refining	11.75	3.0%	0.35	14
Product Drying	16.22	3.0%	0.49	19
General Utilities	23.45	2.0%	0.47	19
Total	**211.84**	**2.6%**	**5.61**	**224**

21.2.3.7 Site Vehicle Costs

Site vehicle cost includes diesel and maintenance and have been estimated at US$0.29 M/a.

21.2.3.8 Bus – In /Bus – Out Transportation

Transportation of personal from Salta to Arizaro has been estimated at US$0.55 M/a.

21.2.3.9 Consumables Cost

The consumables cost related to bags, water treatment, resins, and lubricants, were estimated from benchmarking from Ausenco database based on similar projects in the region for a production of 25,000 t/a, resulting in a value of US$25/t Li_2CO_3, consumables cost of US$0.63 M/a is obtained.

21.2.3.10 Li_2CO_3 Transport to Antofagasta Port

In relation to the transportation cost of the product (Li_2CO_3), Lithium Chile's database cost is US$208/t Li_2CO_3. Considering a production of 25,000 t/a of lithium carbonate BG, a transportation cost of US$5.2 M/a is obtained.

21.2.4 Indirect Costs

21.2.3.11 General and Administration

The general and administration costs were estimate from the information obtained in the Ausenco database. This includes management compensation, environment, communications, and other expenses. The costs are shown in Table 21-16.

Table 21-16: General and Administration Cost

Description	US$ M/a	US$/t Li_2CO_3
General & Administration	2.92	117

21.3 Closure Cost

An allowance for closure cost have been assumed based on a 5% of the total capital cost of the Project and included in the economic analysis the year after the end of the operation. Further investigation will need to be required to estimate the closure cost. Total closure costs were estimated as US$50 M at the end of the LOM.

22 ECONOMIC ANALYSIS

22.1 Forward-Looking Information Cautionary Statements

The results of the economic analyses discussed in this section represent forward-looking information as the results depend on inputs that are subject to known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from those presented here.

The preliminary economic assessment is preliminary in nature, that it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized.

Forward-looking information includes:

- Mineral Resource estimates;
- Assumed lithium carbonate prices and exchange rates;
- The proposed mine production plan;
- Projected mining and process recovery rates;
- Sustaining costs and proposed operating costs;
- Assumptions as to closure costs; and
- Assumptions as to environmental, permitting, and social risks.

Additional risks related to forward-looking information include:

- Changes to costs of production from what is assumed;
- Unrecognized environmental risks;
- Unanticipated reclamation expenses;
- Unexpected variations in the quantity of mineralized material, grade, or recovery rates;
- Geotechnical or hydrogeological considerations being different during mining from what was assumed;
- Failure of mining methods to operate as anticipated;
- Failure of plant, equipment, or processes to operate as anticipated;
- Changes to assumptions as to the availability of electrical power, and the power rates used in the operating cost estimates and financial analysis;
- Ability to maintain the social licence to operate;
- Accidents, labor disputes, and other mining industry related risks;
- Changes to interest rates; and
- Changes to tax rates.

Calendar years used in the financial analysis are provided for conceptual purposes only. Permits still have to be obtained in support of operations, and approval for development must be granted by the Lithium Chile's Board.

22.2 Methodologies Used

An engineering economic model was developed to estimate annual pre-tax and post-tax cash flows and sensitivities of the Project based on an 8% discount rate. It must be noted, however, that tax estimates involve many complex variables that can only be accurately calculated during operations and, as such, the after-tax results are only approximations. Sensitivity analysis was performed to assess the impact of variations in lithium carbonate price, operating costs, and capital costs. The economic analysis has been run with no inflation (constant dollar basis).

22.3 Financial Model Parameters

The economic analysis was performed using the following assumptions:

- Construction starts on January 01, 2025;
- Ramp-up production start-up in 2027 and full process plant production will be achieved in 2030;
- Mine life of 19.1 years;
- Cost estimates in constant Q3 2023 US$;
- No price inflation or escalation factors were taken into account;
- Results are based on 100% ownership;
- Capital costs funded with 100% equity (i.e., no financing costs assumed);
- All cash flows discounted to beginning of construction January 01, 2025;
- All lithium carbonate products are assumed sold in the same year they are produced;
- Project revenue is derived from the sale of battery-grade lithium carbonate FOB Antofagasta; and
- No binding contractual arrangements currently in place.

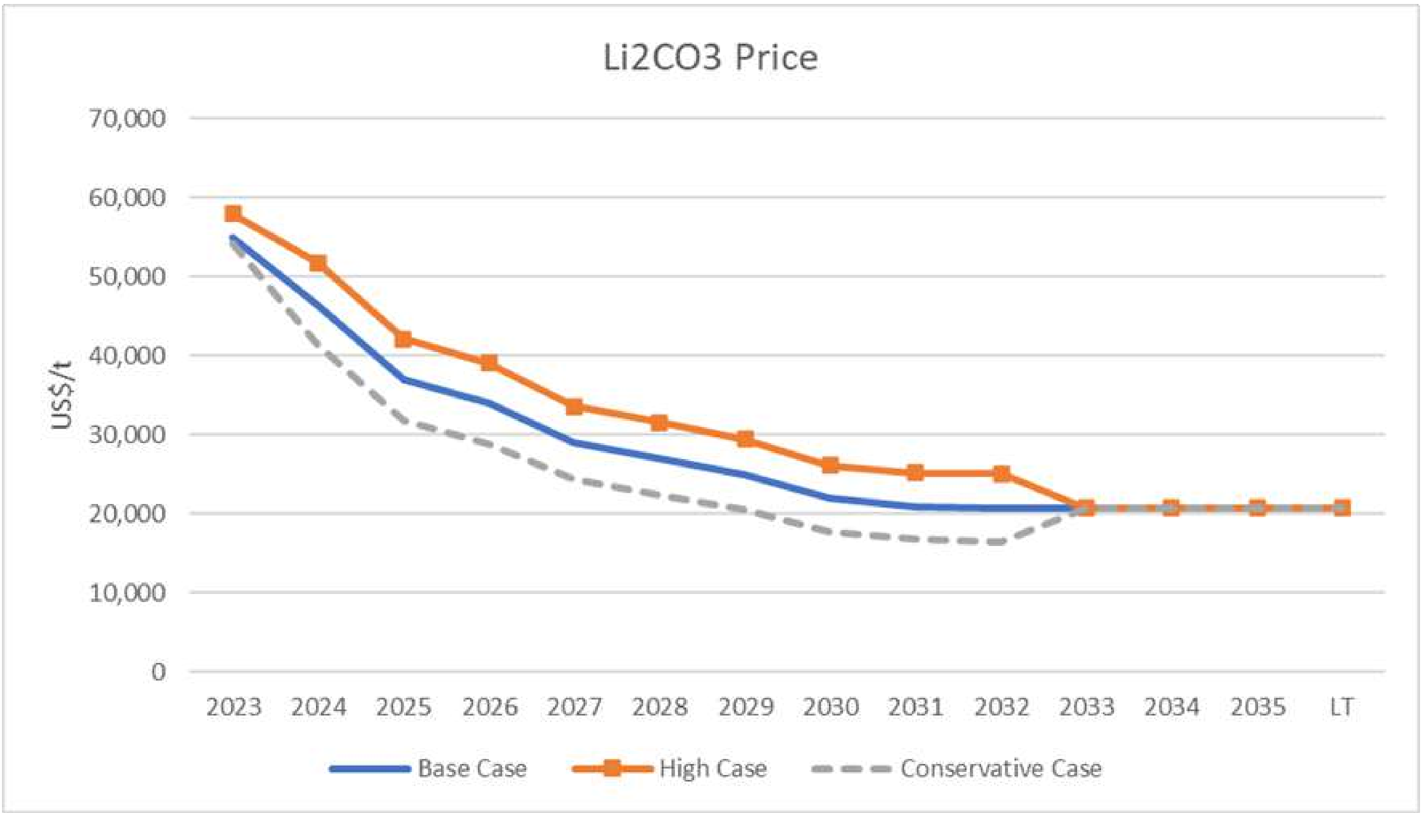
22.3.1 Lithium Carbonate Pricing

Battery-grade lithium carbonate prices were based on market prices obtained from Lithium-Price-Forecast-Q2-2023-Benchmark-Mineral-Intelligence. The forecasts used are meant to reflect the battery-grade lithium carbonate prices expectation over the life of the Project, considering three scenarios:

- Base case
- High case
- Conservative case

Pricing used in the economic evaluation is shown in Figure 22-1.

Figure 22-1: Lithium Carbonate Pricing – Three Scenarios



Source: Benchmark Mineral Intelligence, 2023c.

22.3.2 Working Capital

A high-level estimation of working capital has been incorporated into the cash flow based on accounts receivable (30 days), inventories (30 days) and accounts payable (60 days).

22.3.3 Closure Costs

Closure costs are applied at the end of the LOM. Closure costs were estimated at US$50 M at the end of the LOM.

22.3.4 Royalties

A 1% rate on the Net Smelter Return (revenue less transport cost) has been considered for the payment to the mining property royalties.

A 3% over revenue less transport cost, operation cost, general and administrative expenses, has been considered for the payment to the Province of Salta.

Total royalty payments are estimated to be US$311 M over the LOM.

22.3.5 Export Duty

A 4.5% rate on the Revenue has been considered for the payment to the export duty fees.

Total export duty payments are estimated to be US$430 M over the LOM.

22.3.6 Taxes

The Project has been evaluated on an after-tax basis to provide an approximate value of the potential economics. The tax model was compiled by Lithium Chile with assistance from third-party retained by Lithium Chile. The calculations are based on the tax regime as of the date of the PEA study.

As of the effective date of this report, the Project was assumed to be subject to the following tax regime:

- The Argentinian corporate income tax system of 35% income tax.
- The total undiscounted tax payments which were estimated to be US$1,913 M over the LOM.

22.4 Economic Analysis

The economic analysis was performed assuming an 8% discount rate. Cash flows have been discounted to the beginning of the construction January 01, 2025, assuming that the Project execution decision will be made, and major project financing would be carried out at this time.

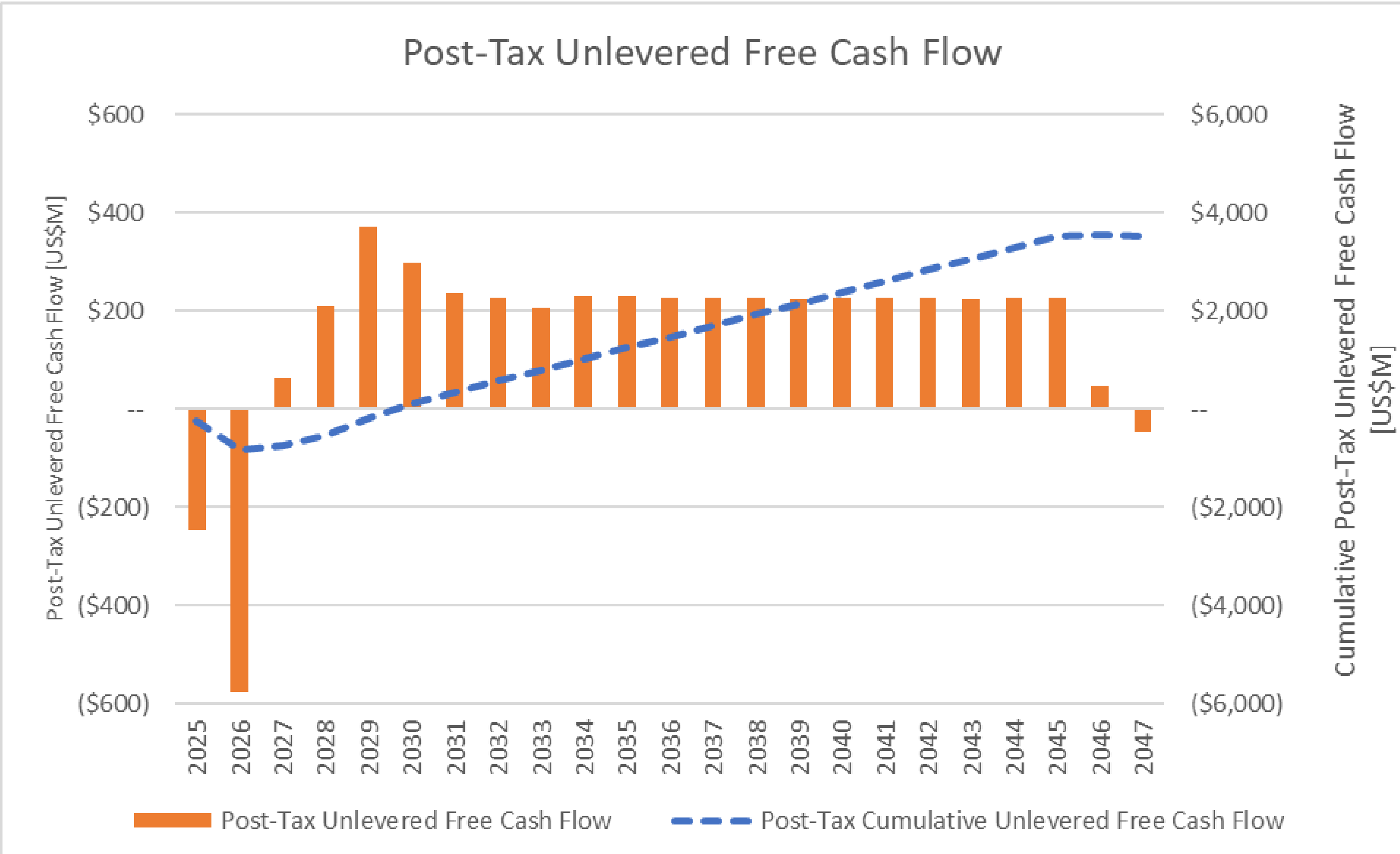
The pre-tax net present value discounted at 8% (NPV8%) is US$ 1,846 M, the internal rate of return (IRR) is 29.3%, and payback is 3.5 years. On an after-tax basis, the NPV 8% is US$ 1,138 M, the IRR is 24.1%, and the payback period is 3.6 years. A summary of the Project economics is included in Table 22-1 and shown graphically in Figure 22-2. Table 22-2 presents a cash flow forecast on an annual basis for the base case scenario.

Table 22-1: Economic Analysis Summary

	LOM Total / Avg.		
	Base Case	High Case	Conservative Case
General			
Li_2CO_3 Price (US$/t)	$21,396	$22,566	$20,225
Operational Years (years)	19.1	19.1	19.1
Production - LOM			
Process Efficiency (%)	81.5%	81.5%	81.5%
LOM Li_2CO_3 Battery Grade (t/a)	23,420	23,420	23,420
Full Production Li_2CO_3 Battery Grade (t/a)	25,000	25,000	25,000
Total Payable Li_2CO_3 Battery Grade (t)	446,907	446,907	446,907
Operating Costs			
Processing Cost (US$/t Li_2CO_3)	$5,042	$5,042	$5,042
Transport Cost (US$/t Li_2CO_3)	$208	$208	$208
Total Operating Cost (Processing Cost + Transport Cost) (US$/t Li_2CO_3)	$5,250	$5,250	$5,250
Cash Costs (US$/t Li_2CO_3)*	$5,946	$5,993	$5,899
AISC (US$/t Li_2CO_3)**	$6,472	$6,519	$6,425
Capital Costs			
Initial Capital (US$M)	$823	$823	$823
Sustaining Capital (US$M)	$184	$184	$184
Closure Capital (US$M)	$50	$50	$50
Financials - Pre Tax			
Pre-Tax NPV (8%) (US$M)	$1,846	$2,148	$1,543
Pre-Tax IRR (%)	29.3%	34.1%	24.7%
Pre-Tax Payback (years)	3.5	3.0	4.3
Financials - Post Tax			
Post-Tax NPV (8%) (US$M)	$1,138	$1,338	$935
Post-Tax IRR (%)	24.1%	27.9%	20.5%
Post-Tax Payback (years)	3.6	3.1	4.4

* Cash costs consist of mining costs, processing costs, G&A, transport cost and royalties
** AISC includes cash costs plus sustaining capital and closure cost

Figure 22-2: Post-Tax-Free Cash Flow Post-Tax – Base Case Scenario



Source: Ausenco, 2023.

Table 22-2: Cash Flow Forecast on an Annual Basis - Base Case Scenario

General	Unit	-2	-1	1	2	3	4	5	6	7	8	9	10
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Production - Li_2CO_3 Battery Grade	t	--	--	7,478	15,000	22,500	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Li_2CO_3 Price Battery Grade	US$/t Li_2CO_3	$37,000	$34,000	$29,000	$27,000	$25,000	$22,000	$21,000	$20,750	$20,750	$20,750	$20,750	$20,750
Total Revenue	US$M	--	--	$217	$405	$563	$550	$525	$519	$519	$519	$519	$519
Operating Costs	US$M	--	--	($51)	($83)	($114)	($125)	($125)	($125)	($125)	($125)	($125)	($125)
Transportation	US$M	--	--	($2)	($3)	($5)	($5)	($5)	($5)	($5)	($5)	($5)	($5)
Export Duty	US$M	--	--	($10)	($18)	($25)	($25)	($24)	($23)	($23)	($23)	($23)	($23)
Royalty	US$M	--	--	($7)	($14)	($19)	($18)	($17)	($17)	($17)	($17)	($17)	($17)
EBITDA	US$M	--	--	$147	$287	$399	$377	$354	$349	$349	$349	$349	$349
Initial Capex	US$M	($247)	($576)	--	--	--	--	--	--	--	--	--	--
Sustaining Capex	US$M	--	--	($73)	($65)	($18)	--	--	--	($23)	--	--	--
Closure Capex	US$M	--	--	--	--	--	--	--	--	--	--	--	--
Change in Working Capital	US$M	--	--	($14)	($13)	($10)	$2	$2	$1	--	--	--	--
Pre-Tax Unlevered Free Cash Flow	US$M	($247)	($576)	$61	$210	$371	$379	$356	$349	$326	$349	$349	$349
Unlevered Cash Taxes	US$M	--	--	--	--	--	($84)	($122)	($122)	($119)	($119)	($119)	($122)
Post-Tax Unlevered Free Cash Flow	US$M	($247)	($576)	$61	$210	$371	$296	$234	$227	$207	$229	$229	$227

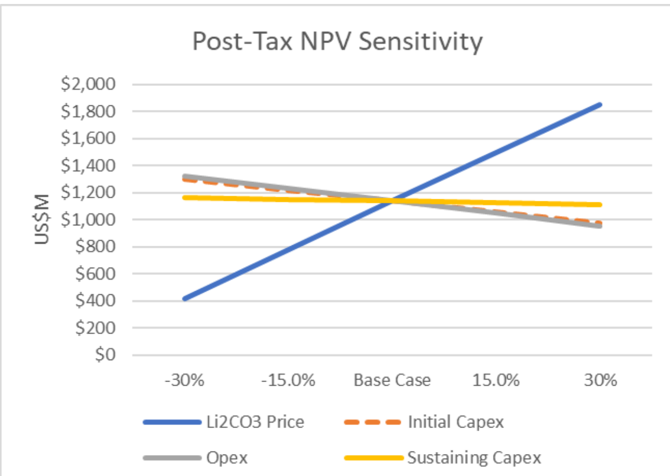
General	Unit	11	12	13	14	15	16	17	18	19	20	21
		2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Production - Li_2CO_3 Battery Grade	t	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	1,929	--
Li_2CO_3 Price Battery Grade	US$/t Li_2CO_3	$20,750	$20,750	$20,750	$20,750	$20,750	$20,750	$20,750	$20,750	$20,750	$20,750	$20,750
Total Revenue	US$M	$519	$519	$519	$519	$519	$519	$519	$519	$519	$40	--
Operating Costs	US$M	($125)	($125)	($125)	($125)	($125)	($125)	($125)	($125)	($125)	($10)	--
Transportation	US$M	($5)	($5)	($5)	($5)	($5)	($5)	($5)	($5)	($5)	($0)	--
Export Duty	US$M	($23)	($23)	($23)	($23)	($23)	($23)	($23)	($23)	($23)	($2)	--
Royalty	US$M	($17)	($17)	($17)	($17)	($17)	($17)	($17)	($17)	($17)	($1)	--
EBITDA	US$M	$349	$349	$349	$349	$349	$349	$349	$349	$349	$27	--
Initial Capex	US$M	--	--	--	--	--	--	--	--	--	--	--
Sustaining Capex	US$M	--	--	($3)	--	--	--	($3)	--	--	--	--
Closure Capex	US$M	--	--	--	--	--	--	--	--	--	--	($50)
Change in Working Capital	US$M	--	--	--	--	--	--	--	--	--	$29	$2
Pre-Tax Unlevered Free Cash Flow	US$M	$349	$349	$346	$349	$349	$349	$346	$349	$349	$56	($48)
Unlevered Cash Taxes	US$M	($122)	($122)	($122)	($122)	($122)	($122)	($122)	($122)	($122)	($9)	--
Post-Tax Unlevered Free Cash Flow	US$M	$227	$227	$224	$227	$227	$227	$224	$227	$227	$47	($48)

22.5 Sensitivity Analysis

A sensitivity analysis was conducted on pre-tax and after-tax NPV and IRR of the Project, using the following variables: battery-grade lithium carbonate price, discount rate, initial capital costs and operating costs. The analysis revealed that the Project is most sensitive to changes in lithium carbonate price, and to a lesser extent initial capital, operating cost, and sustaining capital as shown in Figure 22-3 to Figure 22-5.

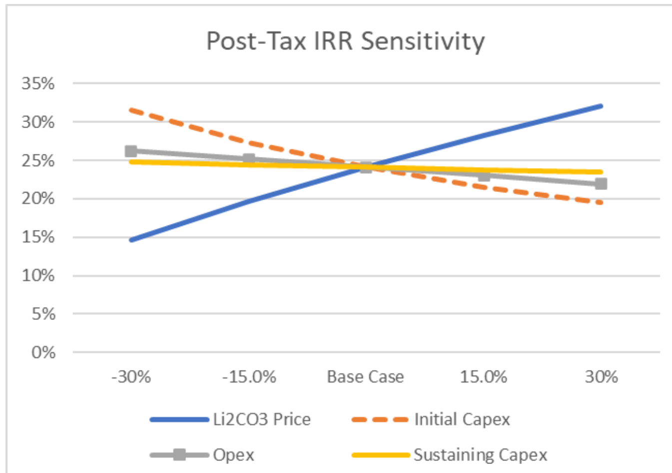
Table 22-3 shows the pre-tax sensitivity analysis findings, and Table 22-4 shows the results post-tax.

Figure 22-3: NPV Sensitivity Analysis Post-Tax – Base Case Scenario



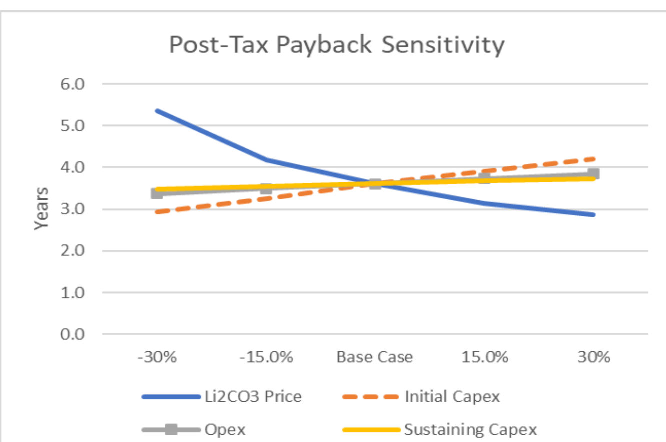
Source: Ausenco, 2023.

Figure 22-4: IRR Sensitivity Analysis Post-Tax - Base Case Scenario



Source: Ausenco, 2023.

Figure 22-5: Payback Sensitivity Analysis Post-Tax - Base Case Scenario



Source: Ausenco, 2023.

Table 22-3: Pre-Tax Sensitivity Analysis

Pre-Tax NPV Sensitivity To Discount Rate

Discount Rate	Li$_2$CO$_3$ (US$/t) (30.0%)	(15.0%)	--	15.0%	30.0%
3.0%	$1,735	$2,654	$3,574	$4,493	$5,412
5.0%	$1,256	$1,995	$2,734	$3,473	$4,212
8.0%	$753	$1,299	$1,846	$2,392	$2,938
10.0%	$517	$971	$1,424	$1,878	$2,332
12.0%	$336	$717	$1,098	$1,479	$1,861

Pre-Tax IRR Sensitivity To Discount Rate

Discount Rate	Li$_2$CO$_3$ (US$/t) (30.0%)	(15.0%)	--	15.0%	30.0%
3.0%	18.0%	23.9%	29.3%	34.2%	38.9%
5.0%	18.0%	23.9%	29.3%	34.2%	38.9%
8.0%	18.0%	23.9%	29.3%	34.2%	38.9%
10.0%	18.0%	23.9%	29.3%	34.2%	38.9%
12.0%	18.0%	23.9%	29.3%	34.2%	38.9%

Pre-Tax Payback Sensitivity To Discount Rate

Discount Rate	Li$_2$CO$_3$ (US$/t) (30.0%)	(15.0%)	--	15.0%	30.0%
3.0%	5.3	4.1	3.5	3.1	2.8
5.0%	5.3	4.1	3.5	3.1	2.8
8.0%	5.3	4.1	3.5	3.1	2.8
10.0%	5.3	4.1	3.5	3.1	2.8
12.0%	5.3	4.1	3.5	3.1	2.8

Pre-Tax NPV Sensitivity To Opex

Opex	Li$_2$CO$_3$ (US$/t) (30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	$938	$1,485	$2,031	$2,577	$3,124
(10.0%)	$846	$1,392	$1,938	$2,485	$3,031
--	$753	$1,299	$1,846	$2,392	$2,938
10.0%	$660	$1,207	$1,753	$2,300	$2,846
20.0%	$568	$1,114	$1,661	$2,207	$2,753

Pre-Tax IRR Sensitivity To Opex

Opex	Li$_2$CO$_3$ (US$/t) (30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	20.1%	25.7%	30.9%	35.8%	40.4%
(10.0%)	19.0%	24.8%	30.1%	35.0%	39.7%
--	18.0%	23.9%	29.3%	34.2%	38.9%
10.0%	16.9%	23.0%	28.4%	33.5%	38.2%
20.0%	15.8%	22.0%	27.6%	32.7%	37.4%

Pre-Tax Payback Sensitivity To Opex

Opex	Li$_2$CO$_3$ (US$/t) (30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	4.8	3.9	3.3	3.0	2.7
(10.0%)	5.0	4.0	3.4	3.0	2.7
--	5.3	4.1	3.5	3.1	2.8
10.0%	5.5	4.3	3.6	3.1	2.8
20.0%	5.8	4.4	3.6	3.2	2.8

Pre-Tax NPV Sensitivity To Capex

Initial Capex	Li$_2$CO$_3$ (US$/t) (30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	$899	445	$1,992	$2,538	$3,084
(10.0%)	$826	$1,372	$1,919	$2,465	$3,011
--	$753	$1,299	$1,846	$2,392	$2,938
10.0%	$680	$1,227	$1,773	$2,319	$2,866
20.0%	$607	$1,154	$1,700	$2,246	$2,793

Pre-Tax IRR Sensitivity To Capex

Initial Capex	Li$_2$CO$_3$ (US$/t) (30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	21.9%	28.6%	34.7%	40.4%	45.8%
(10.0%)	19.8%	26.1%	31.8%	37.1%	42.1%
--	18.0%	23.9%	29.3%	34.2%	38.9%
10.0%	16.5%	22.1%	27.1%	31.8%	36.2%
20.0%	15.1%	20.5%	25.3%	29.7%	33.9%

Pre-Tax Payback Sensitivity To Capex

Initial Capex	Li$_2$CO$_3$ (US$/t) (30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	4.5	3.6	3.0	2.7	2.4
(10.0%)	4.9	3.8	3.3	2.9	2.6
--	5.3	4.1	3.5	3.1	2.8
10.0%	5.7	4.4	3.7	3.2	2.9
20.0%	6.1	4.7	3.9	3.4	3.1

Pre-Tax NPV Sensitivity To Sustaining Capex

Sustaining CAPE	Li$_2$CO$_3$ (US$/t) (30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	$780	$1,326	$1,872	$2,419	$2,965
(10.0%)	$766	$1,313	$1,859	$2,405	$2,952
--	$753	$1,299	$1,846	$2,392	$2,938
10.0%	$740	$1,286	$1,833	$2,379	$2,925
20.0%	$727	$1,273	$1,819	$2,366	$2,912

Pre-Tax IRR Sensitivity To Sustaining Capex

Sustaining CAPE	Li$_2$CO$_3$ (US$/t) (30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	18.5%	24.5%	29.8%	34.8%	39.5%
(10.0%)	18.2%	24.2%	29.6%	34.5%	39.2%
--	18.0%	23.9%	29.3%	34.2%	38.9%
10.0%	17.8%	23.7%	29.0%	34.0%	38.6%
20.0%	17.5%	23.4%	28.7%	33.7%	38.3%

Pre-Tax Payback Sensitivity To Sustaining Capex

Sustaining CAPE	Li$_2$CO$_3$ (US$/t) (30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	5.1	4.0	3.4	3.0	2.7
(10.0%)	5.2	4.1	3.4	3.0	2.7
--	5.3	4.1	3.5	3.1	2.8
10.0%	5.3	4.2	3.5	3.1	2.8
20.0%	5.4	4.2	3.6	3.1	2.8

Table 22-4: Post-Tax Sensitivity Analysis

Post-Tax NPV Sensitivity To Discount Rate

Li_2CO_3 (US$/t)

Discount Rate	(30.0%)	(15.0%)	--	15.0%	30.0%
3.0%	$1,085	$1,687	$2,286	$2,885	$3,483
5.0%	$760	$1,246	$1,729	$2,211	$2,692
8.0%	$415	$779	$1,138	$1,496	$1,852
10.0%	$252	$556	$856	$1,154	$1,450
12.0%	$126	$384	$637	$889	$1,138

Post-Tax IRR Sensitivity To Discount Rate

Li_2CO_3 (US$/t)

Discount Rate	(30.0%)	(15.0%)	--	15.0%	30.0%
3.0%	14.7%	19.7%	24.1%	28.2%	32.0%
5.0%	14.7%	19.7%	24.1%	28.2%	32.0%
8.0%	14.7%	19.7%	24.1%	28.2%	32.0%
10.0%	14.7%	19.7%	24.1%	28.2%	32.0%
12.0%	14.7%	19.7%	24.1%	28.2%	32.0%

Post-Tax Payback Sensitivity To Discount Rate

Li_2CO_3 (US$/t)

Discount Rate	(30.0%)	(15.0%)	--	15.0%	30.0%
3.0%	5.4	4.2	3.6	3.1	2.9
5.0%	5.4	4.2	3.6	3.1	2.9
8.0%	5.4	4.2	3.6	3.1	2.9
10.0%	5.4	4.2	3.6	3.1	2.9
12.0%	5.4	4.2	3.6	3.1	2.9

Post-Tax NPV Sensitivity To Opex

Li_2CO_3 (US$/t)

Opex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	$539	$900	$1,259	$1,616	$1,972
(10.0%)	$477	$839	$1,198	$1,556	$1,912
--	$415	$779	$1,138	$1,496	$1,852
10.0%	$353	$717	$1,077	$1,435	$1,791
20.0%	$291	$656	$1,016	$1,375	$1,731

Post-Tax IRR Sensitivity To Opex

Li_2CO_3 (US$/t)

Opex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	16.4%	21.2%	25.5%	29.5%	33.2%
(10.0%)	15.6%	20.5%	24.8%	28.9%	32.6%
--	14.7%	19.7%	24.1%	28.2%	32.0%
10.0%	13.8%	18.9%	23.4%	27.6%	31.4%
20.0%	12.8%	18.1%	22.7%	26.9%	30.8%

Post-Tax Payback Sensitivity To Opex

Li_2CO_3 (US$/t)

Opex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	4.9	4.0	3.5	3.0	2.8
(10.0%)	5.1	4.1	3.5	3.1	2.8
--	5.4	4.2	3.6	3.1	2.9
10.0%	5.7	4.4	3.7	3.2	2.9
20.0%	5.9	4.5	3.8	3.3	2.9

Post-Tax NPV Sensitivity To Capex

Li_2CO_3 (US$/t)

Initial Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	$528	$888	$1,246	$1,602	$1,957
(10.0%)	$472	$833	$1,192	$1,549	$1,904
--	$415	$779	$1,138	$1,496	$1,852
10.0%	$358	$723	$1,083	$1,442	$1,798
20.0%	$301	$666	$1,028	$1,387	$1,745

Post-Tax IRR Sensitivity To Capex

Li_2CO_3 (US$/t)

Initial Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	17.9%	23.6%	28.6%	33.2%	37.4%
(10.0%)	16.2%	21.5%	26.2%	30.5%	34.5%
--	14.7%	19.7%	24.1%	28.2%	32.0%
10.0%	13.4%	18.1%	22.4%	26.3%	29.9%
20.0%	12.2%	16.8%	20.8%	24.5%	28.0%

Post-Tax Payback Sensitivity To Capex

Li_2CO_3 (US$/t)

Initial Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	4.6	3.7	3.1	2.8	2.6
(10.0%)	4.9	3.9	3.4	3.0	2.7
--	5.4	4.2	3.6	3.1	2.9
10.0%	5.8	4.5	3.8	3.3	3.0
20.0%	6.1	4.8	4.0	3.5	3.1

Post-Tax NPV Sensitivity To Sustaining Capex

Li_2CO_3 (US$/t)

Sustaining CAPE	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	$435	$797	$1,156	$1,514	$1,870
(10.0%)	$426	$789	$1,148	$1,506	$1,862
--	$415	$779	$1,138	$1,496	$1,852
10.0%	$405	$769	$1,128	$1,486	$1,843
20.0%	$396	$759	$1,119	$1,477	$1,833

Post-Tax IRR Sensitivity To Sustaining Capex

Li_2CO_3 (US$/t)

Sustaining CAPE	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	15.1%	20.1%	24.6%	28.7%	32.5%
(10.0%)	14.9%	19.9%	24.4%	28.5%	32.3%
--	14.7%	19.7%	24.1%	28.2%	32.0%
10.0%	14.5%	19.5%	23.9%	28.0%	31.8%
20.0%	14.3%	19.3%	23.7%	27.8%	31.5%

Post-Tax Payback Sensitivity To Sustaining Capex

Li_2CO_3 (US$/t)

Sustaining CAPE	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	5.2	4.1	3.5	3.1	2.8
(10.0%)	5.3	4.1	3.6	3.1	2.9
--	5.4	4.2	3.6	3.1	2.9
10.0%	5.5	4.3	3.7	3.2	2.9
20.0%	5.5	4.3	3.7	3.2	2.9

23 ADJACENT PROPERTIES

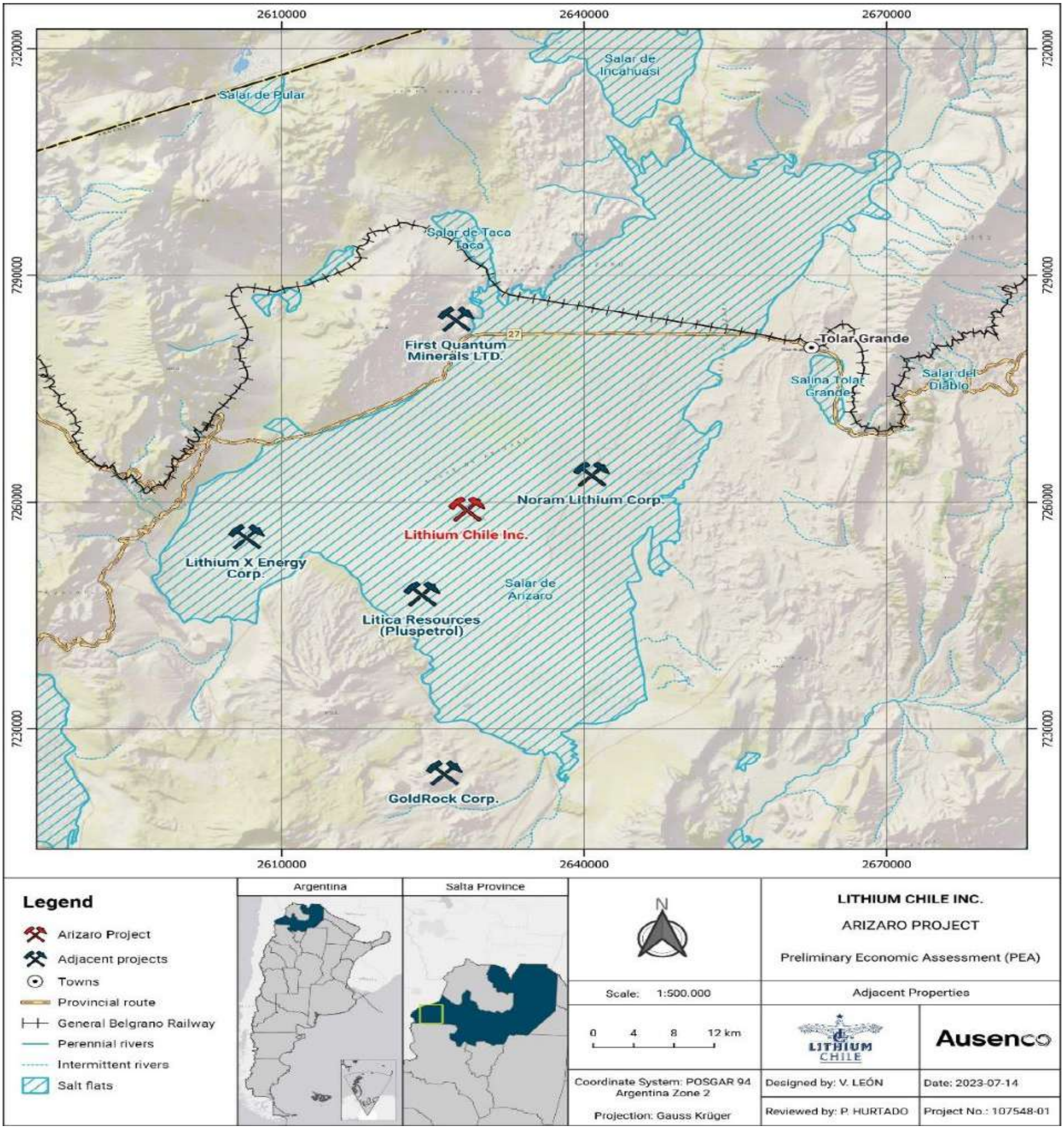
Physically adjacent properties to the Salar de Arizaro Project are not associated with potential lithium production. However, there are several projects in the area that have reported subsurface brines with elevated concentrations of lithium located nearby Arizaro which are shown in Figure 23-1 and described below.

Overall, there are many projects in the vicinity of the Salar de Arizaro Project but they are not hydraulically connected to Salar de Arizaro. Therefore, despite their close proximity, they do not provide site-specific information that is relevant for the ongoing exploration in Salar de Arizaro.

The current resources and information on the adjacent properties are reported on the corporate websites and SEDAR filings of the holding companies. These data have not been verified by the authors and are not reported herein. The authors have not visited any of these adjacent properties. The information presented may not necessarily be indicative of the geology or mineralization on the Arizaro Project that is the subject of this technical report. The information provided in this section is simply intended to describe examples of the type and tenor of mineralization that exists in the region and may or may not be an exploration target for Arizaro Project.

Investors are cautioned that this information is taken from the publicly available sources, has not been independently verified by the Company and it is not known if it conforms to the standards of NI 43-101. Furthermore, proximity to a discovery, mine, or mineral resource, does not indicate that mineralization will occur at the Company's Project, and if mineralization does occur, that it will occur in sufficient quantity or grade that would result in an economic extraction scenario.

Figure 23-1: Projects Near Arizaro Project



Source: Ausenco, 2023

23.1 Salar de Arizaro Project- Lithium X Energy Corporation

The Project is located within 75 km of Pocitos, location of an industrial park and natural gas pipeline, 490 km northwest of Salta Province and 26.7 km southwest of Lithium Chile project on the Salar de Arizaro.

Salar de Arizaro Project is owned by Lithium X, a company headquartered in Vancouver, Canada. Lithium X currently has mineral rights over 33,846 ha at Salar de Arizaro which are held by 11 mining concessions, covering part of the western and eastern portions of the Salar. All concessions are in good standing with all statutory annual payments (mining canon) and reporting obligation up to date.

The Project has shown significant potential due to their location, and the company is currently conducting extensive exploration programs to further delineate the resources.

Up to date, Salar de Arizaro Project is on exploration stage (Lithium X Energy Corp., 2023).

23.2 Arizaro East Project – Noram Lithium Corporation

The Arizaro East Property is located in the northeastern sector of the Salar de Arizaro, 8.6 km east of Lithium Chile project, and 22 km approximately to the southwest of the Tolar Grande Village, Los Andes Department in the Province of Salta, Argentina.

The project is owned by Noram Lithium Corp, a company headquartered in Vancouver, Canada, since July 27th, 2017 when the company purchased a 100% interest of the Arizaro East Property, which hosts disseminated lithium in 2,709 hectares of lithium brine-clay prospects.

An initial surface sampling campaign was completed in January 2018 and showed anomalies occurring within the property, so to get a better understanding of the extended presence of lithium, the company was encouraged to determine the potential for hosting lithium baring subsurface layers by carrying out a geoelectrical survey within the area. Furthermore, by extending the survey to the wider area of the Arizaro Salar, it was possible to establish whether the sub-basin - a significant part of which the property is covering - is hydrologically connected or isolated with respect to the main basin. This survey could also provide relevant data on the depth, thickness and resistivities of subsurface strata, which, inferably, could be associated with brine saturation of the sediments.

Up to date, Arizaro East Property is on exploration stage (Noram Venture Inc., 2017).

23.3 Arizaro Project –Litica Resources, a Plus Petrol Company

The Arizaro Project is located in the southern sector of the Salar de Arizaro, 18.2 km southwest of Lithium Chile project,

The Arizaro Project started with LSC Lithium Corporation, a northamerican company on 2017, however on January 2019 Litica Resources (A Plus Petrol Company) adquired 100% ownership due to LSC Lithium Corp. acknowledged that, since February 2018, capital markets had been difficult for junior lithium explorers in Argentina.

Litica Resources explorations activities and brine sampling activities will cover 22,376 ha in the centre of the Salar de Arizaro, Salta, Argentina. It is expected the completion of the initial resource estimate at the Arizaro Project will be anticipated at the end of the three-stage exploration work program (Panorama minero, 2018).

23.4 Lindero Project – GoldRock Corporation

The Lindero Project is located in the southern sector of the Salar de Arizaro, 40.4 km south of Lithium Chile project.

The Lindero mine is an open pit mining operation located in the Argentinean puna, 260 kilometers west of the city of Salta, Argentina. It is operated by Mansfield Minera S.A., a wholly owned subsidiary of Fortuna Silver.

The Lindero project was acquired by Fortuna in July 2016, when it was already in the development stage and had all the necessary authorizations to start excavation. Following optimization of the feasibility study, a positive decision was made to commence construction in September 2017. During the following year, massive earthmoving activities were carried out. Finally, on October 20, 2020, the first gold extraction took place at the Lindero mine. In 2022, production reached 118,418 ounces of gold.

The Lindero deposit is a porphyry gold deposit and, based on reserves reported through December 31, 2021, the project is estimated to have a mine life of 12.2 years. The extent of the mining operation covers approximately 3,500 hectares.

In terms of production, the Lindero crushing circuit has a capacity to process 18,750 metric tons of ore per day. After crushing, the ore is placed on a leach pad, and the resulting charged solution is pumped to the SART (sulfidization, acidification, recycling and thickening) and ADR (adsorption, desorption and regeneration) plants. Subsequently, electrowinning and refining take place, where the gold is poured as doré bars.

Up to date, the Lindero project continues its operation and plays an important role in the region's mining industry (Fortuna Silver Mines Inc., 2022) (Fortuna Silver Mines Inc., 2023).

23.5 Taca Taca Project – First Quantum Minerals LTD

The Taca Taca Project is a copper, molybdenum and gold project located in Tolar Grande, within the Puna (Altiplano), region of Salta Province, in northwest Argentina. It is located in the northwestern sector of the Salar de Arizaro, 20 km north of Lithium Chile project.

The Taca Taca Project (the Project) is 100% owned by First Quantum Minerals Ltd (FQM) through its Argentinian subsidiary Corriente Argentina SA (CASA). FQM, which is an international mining company listed on the Toronto stock exchange, acquired the Project from previous owners Lumina Copper Corporation (Lumina), in August 2014.

The Company holds 75 mining concessions (minas). The main Project area is contained within a composite package of 13 concessions (minas) over the deposit and adjacent areas comprising the Taca Taca Mining Group. Two of the mining concessions have a 50% ownership with third party groups, though these are not over commercially material areas of the known deposit. The other concessions are held 100% by the Company.

At the end of 2020, FQM announced the filing of an updated National Instrument 43-101, where there was updated the Mineral Resource model and a significant maiden Mineral Reserve estimate derived from an open pit mine design and plan which contemplates processing throughput of up to 60 million tonnes per annum through a conventional flotation circuit with a mine life of approximately 32 years. The recovered copper reaches a peak of approximately 275,000 tonnes within the first ten years of operations. The design is based on the process plants which the Company has successfully constructed and operated at its Sentinel and Cobre Panama operations.

The copper mine with gold and molybdenum by-products could produce 275,000 ton/year of copper concentrate, 110,000 oz/year of gold and 4,100 ton/year of molybdenum concentrate. A decision to proceed with the construction of Taca Taca is not expected until sometime in 2023 or 2024 (First Quantum Minerals Ltd., 2023).

24 OTHER RELEVANT DATA AND INFORMATION

This section is not relevant to this Report.

25 INTERPRETATION AND CONCLUSIONS

25.1 Mineral Tenure, Surface Rights, Water Rights, Royalties and Agreements

The Project is located in the Salar de Arizaro basin (the Salar), within the Salta province of northwest Argentina, about 230 kilometers (km) from Salta and approximately 38 km southwest of the town of Tolar Grande. The Project is in the Argentinean Puna, at an elevation of approximately 3,475 meters above sea level (masl).

Lithium Chile Inc. (LITH) is the majority shareholder of Argentum, owning 99% of its capital stock. LITH and Argentum entered into a Definitive Agreement with SMG and Litiar S.A. on August 24, 2021, to develop and eventually exploit and commercialize mineral products obtained from the Properties. The Parties have incorporated an Argentine company in Joint Venture called ARLI S.A., and have been complying with their obligations under the Definitive Agreement. SMG has transferred the Properties to ARLI S.A., and Mario Luis Castelli will formally present in all the files of the Properties on behalf of SMG to process them before the Mining Court and governmental mining authorities of the Province of Salta.

The Properties or mineral tenures are in “Salar de Arizaro,” Los Andes Department, Salta Province, Argentina Republic, integrated by six (6) mines whose respective files are in process before the Mining Court of the Province of Salta. Total area of mineral tenures is 20,500 Ha.

Litiar shall have a royalty right on net smelter return derived from the products mined, extracted, and commercialized by JV Corporation from the mining project containing the Properties (the "Royalty"), to be paid by JV Corporation, annually to the Royalty holder. The Royalty shall be equal to 1% of net smelter returns on the Properties, and LITHARG shall have an option right to purchase such Royalty, which can be exercised for a purchase price of $1,500,000 (one million five hundred thousand U.S. Dollars), by giving written notice and paying such amount to the Galli Company within a period of 2 (two) years after Production has started.

All titles are subject to a 3% NSR royalty payable to the Province of Salta.

25.2 Mineral Processing and Metallurgical Testwork

The data obtained from the direct lithium extraction (DLE) tests performed by Sunresin, both in the single column tests in 2022 and 2023 and for the continuous columns test in 2022, show that the brine from the Arizaro Salar presents a positive performance with the Sunresin adsorption resin, and that it is feasible to consider this technology to extract lithium from the raw brine of the Arizaro Salar.

Under the consideration that the tests developed as of the date of this report only contemplate the direct lithium extraction stage, benchmark data are used to support the development of the design of the lithium concentration stages subsequent to the DLE stage, while waiting for Lithium Chile to carry out the metallurgical tests of the unit operations involved in the proposed design.

25.3 Mineral Resources Estimates

The Arizaro Lithium Project is at an early stage of exploration. The initial results for lithium concentrations from aquifer sampling from pumping tests and depth-specific sampling support the concept that brine enriched in lithium occur in the Lithium Chile concession area and may be favorable for production.

In the opinion of the QP, the elevated concentrations of lithium observed in the Project area, favorable thickness and transmissivity of the sandy aquifer below the massive halite, and fractured halite (southern portion) justify continued development of the project.

Based on the experience of the QP in other similar lithium-rich brine aquifer systems in the region, the results of the exploration activities to date support the prospect of potential future economic extraction of lithium-rich brine in amounts that could feasibly support a project. Exploration wells in Salar de Arizaro have demonstrated the ability of the aquifer to yield large amounts of lithium-rich brine to land surface. Abundant brine samples from a vast majority of the concession areas have been obtain and analyzed, and they demonstrate relatively large lithium concentrations which are on par with other similar projects in the region. That said, additional work is needed, in particular groundwater flow and transport modeling to better understand the long-term sustainable potential for the Project.

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

25.4 Mining Methods

The production process in the Arizaro Salar will operate through a conventional brine production wellfield. A maximum operating lifespan of 19.1 years has been estimated for an LCE production of 25,000 t/y from Year 4 to the end of the LOM. The average annual brine feed rate is estimated at 556 L/s, and the average lithium concentration of the extracted brine is estimated at 294 mg/L.

Pumping rates of individual future brine production wells is estimated at 20 L/s for the majority of the resource polygons, and 10 L/s at the zone closer to the margins of the salar (well ARDDH-05 polygons). Therefore, approximately 32 wells are required to be drilled in the first four years, and then at the end of the project's lifespan around 42 wells will have been constructed. A maximum depth of 650 m is estimated for production wells, with brine capture zones primarily focused on sand and gravel units.

25.5 Recovery Methods

Commercially available technologies for brine concentration include solar evaporation, adsorption resins and solvent extraction (SX). Conventional solar evaporation requires a larger area than direct lithium extraction (DLE) with adsorption resins impacting the environment due to the earthworks and materials needed for the evaporation ponds infrastructure. In addition to that, solar evaporation process depends on the evaporation rate to get to the expected brine concentration and due to this is a gradual process, the total time required is variable and longer than the one required for adsorption with resins. On the other side, SX technology generates an undesirable solid waste that requires a collecting area and subsequent transportation and logistics for its final disposal, making it a more polluting process than DLE.

The information available so far in the market shows that for both environmental and economic reasons DLE technology is increasingly becoming a viable option for obtaining lithium from raw brines, which is why it is part of the proposed design.

Finally, based on the analysis of the information available and complemented with benchmark data, the proposed flowsheet considers a design which combine DLE with other brines concentration technologies followed by chemical treatment and purification, showing it is feasible to produce battery grade lithium carbonate.

25.6 Project Infrastructure

The infrastructure to support the Arizaro Project during the LOM will consist of the listing of process buildings, buildings for personnel, ponds, power supply and water supply.

The process area infrastructure includes, DLE Plant, Reverse Osmosis, Mechanical Evaporation, Chemical Plant, Purification, Dry Product Handling, Air and Steam, Ca/Mg Removal, Workshop, Spare Warehouse, Metallurgy Warehouse, Warehouse for SAS and Product and a Gatehouse.

The personnel buildings located in the process plant area of the Project consist of administrative offices, a dining room, a change house, a polyclinic, and camp.

The Project envisages different types of ponds varying in location, function and dimensions. Raw Brine Receiving Pond is required to receive the raw brine from different brine extraction wells from the Salar de Arizaro at a common central point; two receiving ponds located close to the plant collect the brine from the Raw Brine Receiving Pond. The Depleted Brine Infiltration Pond is needed for evaporation-infiltration of the depleted brine obtained in the process; it will be located to the north of the Project with an area of 5,036,617 m^2. Finally, the Waste Pond is needed for disposal of the liquid waste from the process. A waterproofing system has been considered for every pond.

The main power source for the Project will be a diesel electric power plant, which will be capable of supplying approximately 34.4 MW, which responds to the sum of the electrical power requirement, equal to 18.7 MW, and the heat power requirement, equal to 15.7 MW.

The water supply for the Project considers 9 freshwater wells, which have been estimated based on the total water requirement for the plant (485 m^3/h) divided by a reasonable rate according to pumping tests, therefore this quantity could be modified if it is required. The proposed location for these wells is indicated in Figure 18-1.

At the date of this report, one freshwater well (Chascha Sur 01) has been drilled. To transport freshwater from Chascha Sur 01 well to the process plant a 6” HDPE pipeline must be implemented, with intermediate pump stations.

Complementary infrastructure includes freshwater supply system, drinking water system, wastewater treatment system, access roads and internal roads.

25.7 Environmental, Permitting and Social Considerations

The Project, located in the Salta Province, has one approved EIS from the province’s environmental authority and one EIS that is still in process for approval. Regarding additional permits, the company already obtained the Water Permit for Industrial Water and the Registration in the Registry of Hazard Waste Generators approved. The other permits required are still in process, and the company expects to gain their approval in the short term, most likely in the course of 2023.

The baseline data and desktop data review provide key information about the ecosystem in the project area and its surroundings. The reports show that the wetlands Arita and Chascha are fragile ecosystems, including wildlife in conservation states. Furthermore, the project is partially located in the Los Andes Wildlife Reserve, which aims to protect the vicuna, an animal present in the project area. It is important to notice that the baseline includes information from only one season and does not include wildlife, flora, or vegetation abundance. Therefore, it is not currently possible to define the risk to wildlife and flora from the future operation. Accordingly, the project may need to compensate for habitat loss.

Potential impact to the quality and quantity of freshwater (both groundwater and seasonal surface water) is a risk to the project that should be included in future hydrological and hydrogeological baseline studies and modelling efforts for the Project. This risk has not yet been adequately assessed for the purposes of future operations.

Local communities and indigenous communities are located near the Project area. The Company has been working with the communities this year as part of the CSR Plan, which aims to engage with the communities and maintain ongoing fluent and meaningful engagement and communication. However, there is no information about a CSR Plan for future years.

The completion of additional environmental and socio-economic baseline studies and modeling/analyses will support the further refinement of project designs to the feasibility level by means of a better understanding of environmental and community constraints. Recommendations for designing and implementing environmental baseline studies are provided in Section 26.2.3. Environmental management plans can be developed based on the understanding of key project risks and interaction of the project with environmental components.

25.8 Capital and Operating Cost Estimates

The capital and operating cost estimates presented in this PEA provide substantiated costs that can be used to assess the preliminary economics of the Arizaro Project. The estimates are based on well field, construction of a process plant, and infrastructure, as well as indirect cost, first fills, owner's costs and contingency. Estimate accuracy is reflective of the stage of project development and classified as an AACE International Class 5 Order of Magnitude/Conceptual Study estimate with an expected accuracy range of -20% to -50% on the lower range, and +30% to +100% on the higher range.

25.9 Economic Analysis

The Arizaro Project PEA has provided a robust design and positive economics on which to further advance the Project.

The preliminary economic assessment is preliminary in nature, that it includes Inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized.

25.10 Risks and Opportunities

25.10.1 Risks

25.10.1.1 Mineral Resource Estimates

Risks and uncertainties to the Project are currently related to the unknown nature of the hydraulic characteristics for the rest of the concession area. However, based on the experience of the QP and because Salar de Arizaro is a mature salar system, it is likely that hydrogeologic conditions and chemistry of the brine in the other concession areas is likely to be similar to that observed at the current exploration wells, or better with respect to the lithium content of the deeper brine.

25.10.1.2 Mineral Processing and Metallurgical Testing

From the tests performed by Sunresin of direct lithium extraction using adsorption resins and brine samples from the Arizaro Salar it is identified as a risk that there is insufficient information to confirm the representativeness of the sample used versus the brine that will feed the processing plant.

At the day of this report new DLE tests are being carried out with Sunresin adsorption resins and representative samples of brine from the Arizaro Salar in Salta, Argentina. Due to this resin is still in the study phase, the results of the adsorption tests carried out are preliminary and there is a risk that these tests may not achieve the expected results making it necessary to carry out tests with other resins available on the market.

Laboratory tests are required to support the other unit operations that make up the design, such as reverse osmosis, mechanical evaporation, removal of impurities, carbonation, and purification. As a consequence of the lack of metallurgical test data, the process design was carried out using benchmark data from the Ausenco database, thus generating the risk that the proposed design with brine from the Arizaro Salar and the defined unit operations may not be the optimal process to obtain the desired product of battery grade lithium carbonate.

25.10.1.3 Mining Methods

As brine is extracted from the production wells, it is likely that a mixing of brines will occur, and their chemical interaction could lead to the precipitation of salts in the wells. This could cause the clogging of their slots, affecting the extraction capacity, and it is also possible that corrosion may occur on their walls, potentially resulting in the loss of wells in the long term, considering the projected extensive operational period (19.1 years).

On the other hand, the extraction of brine is likely to promote interaction with freshwater at the margins of the salar. This poses a risk of dilution of the brine, reducing its lithium concentration as it is extracted.

No numerical flow model has been developed to evaluate the interaction between brines or with the brackish water mentioned above, or to simulate and optimize the extraction of brine from the project, which causes uncertainty regarding the possible impact on production.

Finally, the deposition of spent brine in infiltration ponds implies a risk of salt precipitation at the base of the ponds due to evaporation, which is likely to significantly reduce the permeability and interfere with the planned infiltration.

25.10.1.4 Recovery Methods

The feed to the plant consists of a mixture of brine extracted from wells located in different parts of the Arizaro Salar, therefore their compositions have a percentage of variability, due to this, the mixture of them can produce unforeseen crystallizations that have an impact on the final concentration of the brine mixture that feeds the plant, producing the risk of not complying with the proposed mining plan.

The proposed lithium recovery flowsheet was selected based on available benchmark data and therefore there is a risk that it may not be optimal and should be reviewed and supported by vendor testing and/or information. For example, for the direct lithium extraction stage, benchmark information was used regarding a resin that has a specific lithium retention capacity, if the retention efficiency varies this may impact the selection of the unit operations of the process modifying the proposed flowsheet.

Another risk identified is that at the date of the report the available water is not sufficient yet to meet the water requirement indicated for the proposed process, therefore availability of freshwater supply by water wells needs to be probed.

25.10.1.5 Project Infrastructure

In order to calculate the area of the infiltration ponds of the depleted brine, it is necessary to know the infiltration rate of the depleted brine in the specific conditions of the site. Due to lack of data, a benchmark value for the infiltration rate was used for the Project to calculate the required infiltration area, so there is a risk that there may be a difference between the rates that could have an impact on the footprint of the infiltration ponds.

There is a risk related to the lack of a water balance of the entire basin, that is needed to estimate freshwater availability. A full basin hydrogeological model and water balance should be developed in order to improve freshwater availability estimate.

25.10.1.6 Market Studies and Contracts

Commodity prices can be volatile, and there is the potential for deviation from the forecast.

25.10.1.7 Environmental, Permitting and Social Considerations

The key environmental and socio-economic risks to the Project are identified below. These risks can be mitigated and addressed by means of implementing the recommendations provided in Section 26:

- The company completed a baseline study between December 2022 and March 2023, which does not include detailed information about wildlife or flora quantity in the project area or specifically for the wetlands area. The available information shows that the Project is located in a fragile ecosystem with some wildlife species in a sensitive conservation state. Therefore, there is a strong potential that the Project will require measures to avoid, mitigate, and compensate for impacts on ecosystems from the operation. Furthermore, the Project is partially located in the Los Andes Wildlife Reserve, which can increase the complexity of the measures to protect the vicunas.
- There is a lack of hydrological and hydrogeological baseline studies and modelling efforts for the Project that could help determine quantitative and qualitative impacts to freshwater (groundwater and seasonal surface water) arising from current and future operations. Impacts could include changes to local freshwater aquifers that could affect human health and cause ecological impacts to plants and wildlife.
- The other risk is associated with the interactions of the Project with the local Indigenous and non-Indigenous communities in the area. The available data indicates non-Indigenous and Indigenous communities that are largely habituated to mining operations in the area and without apparent opposition to the Arizaro Project. The data indicates that the company has been working on a CSR Plan for this year; however, there is no information about proposed CSR activities for subsequent years. The specific risk is losing the social license, which can occur at any stage of the Project, resulting in difficulties in obtaining permits and maintaining site activities.

25.10.1.8 Capital and Operating Cost Estimates

The logistics and transportation of the reagents from the supply sites to the plant can be affected by different factors, which can influence the prices of the reagents, generating increases that can have an impact on the estimated operating costs, thus representing a risk for the project.

25.10.2 Opportunities

25.10.2.1 Mineral Processing and Metallurgical Testing

There is an opportunity to develop studies and laboratory tests to produce an own selective lithium adsorption resin in order to obtain better results than those currently available on the market, improving lithium capture and reducing water requirements and contaminant generation.

There is an opportunity to carry out continuous tests in the operating ranges, these tests should be related to the other unit operations of the process in order to achieve the desired product.

25.10.2.2 Mineral Resource Estimates

The estimated resource is expected to increase as more information becomes available. Additional drilling with depth-specific sampling in the Salar de Arizaro could increase the resource estimate appreciably. In particular, a potential upside includes drilling in deeper portions of the southern and western area of the property. The ARDDH-05 results to date are positive in terms of the high lithium concentrations and fractured halite encountered. Furthermore, the western portion hosts deep clastic sediments which underlie the halite unit and are expected to have a relatively high drainable porosity and permeability.

25.10.2.3 Mining Methods

At a later stage, there is an opportunity to develop a numerical flow and transport model to optimize wellfield layout and to evaluate interaction with brackish water and associated dilution. This is particularly important in the eastern sector of the basin, where an interaction with brackish or freshwater at the basin margins is deemed more probable due to the sustained extraction of brines from the production wells. To control mixing with brackish water from the margins of the salar, a wellfield layout that minimizes the brine extracted from the upper levels of the salar should be considered, along with taking advantage of the natural confining layers to reduce the effect of pumping close to the surface. Additionally, a network of monitoring wells installed on the margins of the salar would allow controlling this possible interaction.

Additionally, it is recommended to conduct brine chemistry mixing simulations to identify potential precipitation of salts inside lines or ponds.

As to infiltration ponds, on-site and numerical modeling studies are required to evaluate what volumes of brine can be infiltrated without causing surface flooding and runoff. It is also recommendable to consider processed brine reinjection, which involves evaluating reinjection rates and a location that minimizes the risk of dilution of the extractable brine.

25.10.2.4 Recovery Methods

Since the process proposed for the Project is mostly based on benchmark data, there is the possibility of modifying part of it by selecting different unit operations or changing its components. For example, a resin with better lithium recovery could be selected for the direct lithium extraction (DLE) process, or the possibility of eliminating the purification step could be verified and by substituting some unit operations the desired battery grade product could be obtained directly from the carbonation step (first crystallization). Other component of the process which could be modified are the reactors, by using for example Draft-Tube (DT) Reactor Crystallizer for lithium carbonation and Draft-Tube-Baffle (DTB) Crystallizer for lithium bicarbonation.

25.10.2.5 Project Infrastructure

There is opportunity to locate the purification plant near to the place of shipment of the product in order to reduce the construction, operation, storage, transport, logistic and administration costs.

25.10.2.6 Environmental, Permitting and Social Considerations

The key identified opportunities are as follows:

- Keep working in environmental and socio-economic baselines and complement with data from other seasons (for biotic environments) so that any construction and operational constraints can be identified early.
- Cost savings can be realized if the environment team collaborates closely with the exploration and hydrogeological drilling teams to identify opportunities where hydrogeological and hydrological monitoring and testing to support environmental studies can be incorporated into a single program.
- Working closely with the feasibility design team to ensure that required environmental measures are identified early, adopted and integrated into the Project so that avoidance or mitigation of potential impacts can be achieved.

25.10.2.7 Capital and Operating Cost Estimates

Since the process proposed for the Project is based on benchmark data, it is possible to modify part of it by selecting different unit operations, therefore there is an opportunity to eliminate the purification area diminishing the estimated capital cost.

In the lithium carbonate production process, pumps and compressors with motors are used generating heat that can be recovered and used in other areas such as heating process streams. The implementation of heat recovery combined cycles represents an opportunity for the Project. Among the advantages of heat recovery systems, the reduction of energy consumption, profitability and sustainability can be highlighted.

There is an opportunity to study the transport logistics of lithium carbonate from the plant to the port, in order to select the best option to reduce operating costs. Among the study alternatives are the use of trucks or trains.

Another opportunity to reduce operating costs consists of selecting a single vendor for lithium adsorption resins supply which comprises the first filling load of DLE adsorption columns and resin replacement. The advantages of this opportunity consist of ensure process guarantees, negotiating the price and obtain a reliable delivery of the supply.

26 RECOMMENDATIONS

26.1 Introduction

The financial analysis of this PEA demonstrates positive economics. It is recommended to continue developing the project through additional studies, including a pre-feasibility study. Items required to be completed in advance of, and as inputs to, a pre-feasibility study are indicated as such in the respective sections below.

Table 26-1summarises the proposed budget to advance the project through the pre-feasibility study stage, considering the recommendations discussed in this Section and a pre-feasibility study budget of $1,300,000.

Table 26-1: Budget for Recommendations

Program Component	Estimated Total Cost ($M)
Drilling	1.80
Reserve Modelling	0.13
Metallurgical Testwork Program	0.25
Infrastructure Studies	0.54
Environmental Studies	0.75
Pre-Feasibility Study	1.30
Total	**4.77**

26.2 Drilling

To support the upcoming pre-feasibility study, additional diamond drill holes with depth-specific sampling for brine chemistry and drainable porosity are needed to potentially increase the resource. Furthermore, additional pumping tests with brine sampling are required to demonstrate that feasible pumping of lithium-rich brine can occur. To accompany these new exploration activities, continuation of QA/QC for brine chemistry (e.g., duplicates, blanks, and secondary laboratories) as well as drainable porosity (two independent methodologies) is recommended to increase confidence in the obtained field data.

In terms of drilling, additional deep drilling is recommended in the western and southern areas of the mine concessions based on the favorable lithologic characteristics and brine chemistry results of Argento-01, Argento-02, and ARDDH-05. As a first priority, a 400-m deep pumping well with a short-term (3-day) test and brine sampling is recommended in the near vicinity of ARDDH-05 to confirm the high-grade lithium values. As a second priority, two 400-m deep pumping wells with short-term (3-day) pumping tests are also proposed in the southern area of the properties: (i) one pumping well in the vicinity of ARDDH-04, and (ii) another pumping well in between ARDDH-01 and ARDDH-05. At least one long-term (30-day) pumping test with daily brine sampling is recommended to support the future reserve estimate, preferably where favorable short-term testing occurred (e.g., Argento-01).

26.3 Reserve Modelling

The construction of a numerical groundwater flow and transport model will be required to estimate an initial (probable) lithium reserve. The initial construction of the groundwater/brine flow and transport model and subsequent calibration to available field data will make it possible to simulate future wellfield pumping. Using the future production simulation, the recoverable lithium carbonate equivalent (LCE) production capacity of the Project can be estimated. The model would be used to design the initial wellfields and simulate long-term extraction. Estimated cost for the groundwater model development and simulations is about U.S. $90,000.

26.4 Metallurgical Testwork Program

Due to the novel nature of the proposed process technology in the direct lithium extraction and downstream unit operation to obtain battery grade lithium carbonate it is recommended to simulate the proposed process design on a laboratory scale vendor in order to verify parameters and variables considered in the evaluation of the process recovery method.

Metallurgical recommended testwork is detailed below.

26.4.1 Laboratory recommended testwork

26.4.1.1 Impurity removal

- Verify the reduction of calcium and magnesium of the HPRO brine product;
- Verify calcium and magnesium solubility data; and
- Verify the use of ion exchange for the reduction of calcium, magnesium and boron.

26.4.1.2 Carbonation

- Verify the parameters used in process design;
- Verify the solubility of lithium once lithium carbonate has precipitated; and
- Verify if the precipitated product meets battery grade quality to avoid purification stage through carbon dioxide use.

26.4.2 Vendor recommended testwork

26.4.2.1 Direct Lithium Extraction (DLE)

- Verify the direct extraction of lithium from brine;
- Verify the drag of impurities and deleterious elements;
- Verify the composition of lithium and impurities in eluent and depleted brine;
- Verify water consumption in lithium recovery;
- Selection of the resin that maximizes lithium recovery and consumes the least amount of freshwater;
- Verify the lithium retention capacity in the resin; and

- Verify the ability to remove lithium by washing.

26.4.2.2 High Pressure Reverse Osmosis (HPRO)

- Verify performance, energy consumption and the composition of lithium obtained along with impurities.

26.4.2.3 Evaporator

- Verify performance, energy consumption and crystals formation.

26.4.2.4 Nanofiltration

- Verify efficiency of particle removal.

26.4.2.5 Purification

- Verify solubility of CO_2 in liquid, lithium bicarbonate and temperature.

26.5 Infrastructure Studies

Prior to the pre-feasibility study it is recommended to perform the following investigation:

- Geotechnical and Soil Mechanics Studies
  - Identify sites for extraction of backfill material for the construction;
  - Determine the bearing capacity of the soil for the different sites;
  - Recommendations for foundations;
  - Geological study of the site;
  - Schedule a geologist site visit to take a soil sample for lab analysis; and
  - Processing of soil laboratory data and geotechnical report.
- Perform a site test for infiltration rates in the potential locations to build the Infiltration Rate Studies.
- Analyze the alternative to a different location for the purification plant. Alternatives should include the location of the purification plan at site, close to Salta and a port in Argentina and Chile in order to have logistics, energy and manpower savings.
- Topographical survey

26.6 Environmental Studies

The following recommendations are made with regard to the design and implementation of environmental and socio-economic baseline studies. Qualified professionals should be retained to design and oversea the implementation of each of these studies. A review of available data should be undertaken as part of the design and scoping of these studies, prior to field implementation:

- Environmental baseline field studies and analyses should be completed in the following subject areas:

- Hydrological and Hydrogeological Water Balance: Completing a quantitative surface and groundwater monitoring and testing program for the Project area that will support a hydrogeological and water balance model. The model should provide emphasis on seasonal recharge of the freshwater aquifers within and near the Project area and the potential drawdown from ongoing freshwater extraction as planned for the operation and the determination of sustainable yields that will be protective of sensitive ecosystems and human use and health. There is potential to work closely and collaborate with the hydrogeological production teams on the above initiatives, especially in regard to developing a conceptual and numerical three-dimensional groundwater model.
- Water Quality Studies and Predictions: The groundwater and seasonal surface water (if present) of the study area should be sampled and analyzed for water quality to use for modelling and to establish a baseline that can be used as an early warning to predict the potential for freshwater – saltwater mixing.
- Air Quality: Baseline conditions for air quality should be established for near field and further afield operations.
- Near Surface Soil Characterizations: Near surface soil textures and chemistry should be established as part of the baseline program.
- Flora, Fauna, and sensitive ecosystems: Additional surveys of flora and fauna throughout the Project area should be conducted with an emphasis on the sensitive areas of Arita and Chascha wetlands and the monitoring of the already identified endangered species. Studies should cover different seasons to determine species abundance and their relation to other variables such as surface and groundwater fluctuations.

- Additional socio-economic and cultural baseline studies should also be considered:
  - A gap analysis should be completed on current understanding of socio-economic conditions related to Indigenous and non-Indigenous communities near the site. The purpose of the gap assessment would be to identify current socio-economic information gaps related to nearby populations and community land use activities around the site and any potential future conflicts. Land use activities could include local harvesting of plants, wildlife, cattle grazing, and human/agricultural water use.
  - Studies to understand how best to provide benefits to the community and consideration of establishing Impact Benefit or Cooperation agreements with nearby communities.
  - A conflict resolution procedure should be established that allows individuals in communities to lay complaints against the company and requires a prompt and meaningful response from the Company and action as warranted.
  - Ongoing engagement with the local communities should continue with regular community meetings as determined by local community needs and requests.
  - The current SCR plan should be regularly reviewed and updated based on the results of studies and feedback from the community. A system of recording community comments along with company response and feedback should be implemented.
  - Additional archaeological studies to provide the exact location of these findings and a mitigation plan to avoid any impact on these cultural artifacts.

27 REFERENCES

Adionics. (2023). Adionics DLE – Desktop study. Presentation prepared by Adionics Society for Argentum Lithium, January 26, 2023.

Alonzo, R.N., Gutíerrez, R. y Viramonte, J. (1984). Puna Austral bases para el subprovincialismo geológico de la Puna Argentina. Actas IX Congreso Geológico Argentino, Actas1: 43-63, Bariloche.

Amaru Mining Services. (2022). Ensayo de bombeo, Pozo Chascha Sur 01. Technical report prepared for Lithium Chile, November, 2022. 18 pp.

Aminco (2017a). Informe Técnico. Campaña de exploración de litio. Tolar Grande – Departamento Los Andes. Provincia de Salta. 57 pp.

_____, (2017b). Informe Técnico. Campaña de perforación, Salar de Arizaro, Tolar Grande Salta, Argentina. Internal report prepared for Argentina Lithium & Energy Corp. 11pp.

Aramayo, C. (1986). Geología y petrología del borde NE del salar del Hombre Muerto (provincia de Catamarca). Tesis Profesional Facultad de Ciencias Naturales, Universidad Nacional de Salta (inédita), 122 p., Salta.

Areal, R. (2019). ¿Puede un pueblo desaparecer del mapa?; LATE online magazine. https://www.revistalate.net/2019/02/22/tolar-grande-mas-aca-de-la-frontera/

Argentum Lithium (2022). Environmental Impact Study: "Estudio de Impacto Ambiental y Social, Etapa Prefactibilidad", February 2022.

_____, (2023). Baseline Study: "Línea de Base Ambiental y Social. Proyecto Arizaro. Salar de Arizaro. Dpto. Los Andes", June 2023.

Benchmark Mineral Intelligence. (2023a). Lithium-Forecast-Q2-2023-Benchmark-Mineral-Intelligence. Spreadsheet prepared for Lithium Chile., July 04, 2023.

_____, (2023b). Lithium-Forecast-Report-Q2-2023-Benchmark-Mineral-Intelligence. Report prepared for Lithium Chile., July 04, 2023.84 pp.

_____, (2023c), Lithium-Price-Forecast-Q2-2023-Benchmark-Mineral-Intelligence. Spreadsheet prepared for Lithium Chile., July 04, 2023.

_____, (2023d), Lithium-Total-Cost-Model-Q2-2023-Benchmark-Mineral-Intelligence. Spreadsheet prepared for Lithium Chile., July 04, 2023.

Bianchi, A.R., Yáñez, C.E., Acuña, L.R. (2005). Base de datos mensuales de precipitaciones del noroeste Argentino: report prepared by Instituto Nacional de Tecnología Agropecuaria, Centro Regional Salta-Jujuy, Argentina.

Cabrera, A. L., and A. Willink. (1980). Biogeografía de América Latina. O.E.A. Serie de Biología, Monografía 13. Washington, D.C.: General Secretariat of the Organization of American States.

Cabrera, A. L. (1994). Regiones fitogeográficas Argentinas. Fascículo 1. Enciclopedia Argentina de Agricultura y Jardinería. Tomo II. Primera Reimpresión. Editorial ACME S.A.C.I. Buenos Aires. 85 pp.

Canadian Institute of Mining, Metallurgy and Petroleum (CIM). (2003). Estimation of Mineral Resources and Mineral Reserves, Best Practice Guidelines: Canadian Institute of Mining, Metallurgy and Petroleum, November 23, 2003.

_____, (2010). Definition Standards on Mineral Resources and Mineral Reserves, Resources and Reserves Definitions: Canadian Institute of Mining, Metallurgy and Petroleum, November 27, 2010.

_____, (2012). Best Practice Guidelines for Resource and Reserve Estimation for Lithium Brines. November 01, 2012.

Castelli. M.L. Reston & Associates Abogados. (2023). Legal Opinion for Lithium Chile. Internal document prepared for Lithium Chile

Conhidro S.R.L. (2017). Estudio Geofísico e Hidrogeológico Propiedades Mineras en el Salar de Arizaro. Departamento de los Andes, Provincia de Salta. Internal report for Argentina Litio y Energía S.A. 109 pp.

_____, (2019). Estudio Hidrogeológico Cuenca Río de Los Patos - Salar del Hombre Muerto. Report prepared for Consejo Federal de Inversiones, December 2019.

_____, (2023). Estudio de la Recarga en Salar de Arizaro. Internal document prepared for Lithium Chile.

Cooper, H.H. and Jacob, C.E. (1946). A generalized graphical method for evaluating formation constants and summarizing well field history: American Geophysical Union Transactions, vol. 27, pp. 526-534.

de Silva, S.L. (1989). Altiplano-Puna volcanic complex of the Central Andes: Geology, v. 17, pp. 1102-1106.

EC & Asociados. (2023). *Línea de Base Ambiental y Social, Proyecto Arizaro, Salar de Arizaro, Departamento Los Andes*. Internal document prepared for Lithium Chile.

First Quantum Minerals Ltd. (2023) Nuestras operaciones-Taca Taca. (https://www.first-quantum.com/spanish/nuestras-operaciones/default.aspx). Visited on August 18, 2023.

Fortuna Silver Mines Inc. (2022) Lindero Mine and Arizaro Project, Salta Province, Argentina Technical Report Effective Date: December 31, 2022

_____, (2023) Lindero Mine, Argentina (https://fortunasilver.com/mines/lindero-mine-argentina/). Visited on August 18, 2023

Garreaud, R.D., 2009, The Andes climate and weather: in Advances in Geosciences, vol. 9, pp. 3-11, August 2009.

GEC, 2018. CSAMT Exploration Survey, Salar de Arizaro 2018, Salta province, Argentina. Internal report for Argentina Lithium & Energy. 73 pp.

Hermosilla E., (2023a), Electrical Load List, Ausenco, July.

_____, (2023b): Electrical Equipment List, Ausenco, July.

Houston, J., and Jaacks, J. 2010. Technical report on the Sal de Vida lithium project, Salar del Hombre Muerto, Catamarca, Argentina. Report for NI 43-101 prepared on behalf of Lithium One, Inc.

Houston, J., Butcher, A., Ehren, P., Evans, K., and Godfrey, L., 2011, The evaluation of brine prospects and the requirement for modifications to filing standards. Economic Geology, 106 (7).

HydroSOLVE, Inc., 2008, AQTESOLV for Windows 95/98/NT/2000/XP/Vista: HydroSOLVE, Inc., Reston, Virginia, version 4.50.004 – Professional.

Lithium Chile (2022). Procedimiento de Gestión de Residuos y Efluentes en Campamento Arizaro. Internal document.

_____, (2023). Plan de Relacionamiento Comunitario de la Empresa. Internal document.

Lithium X Energy Corp. (2023.). Salar de Arizaro Project Overview. (https://lithium-x.com/arizaro/). Visited on August 18, 2023.

Lopez Arias, Castelli Reston & Asociados Abogados. (2023). Arli S.A. - Legal Opinion for Lithium Chile - MLC - DNR - 8Jun23 Ausenco, June, 2023. 8 pp.

Mineria Positiva (2022). Technology Assessment for Direct Lithium Extraction. Technical report prepared by Mineria Positiva for Argentum Lithium, October 2022.

Minetti, J.L. (2005). El clima del Noroeste Argentino: Editorial Magma, 449 p.

Ministerio de Economia. (2022). Portfolio of Advanced Project. Lithium

Ministry of Production and Labour. (2019). Guía de Recursos de Buenas Prácticas para el Cierre de Minas. https://www.argentina.gob.ar/sites/default/files/1cierre_de_minas_1._guia_de_recursos_buenas_practicas_cierre_de_minas_2019_spm.pdf

Montgomery & Associates. (2022). Results of Year 2021 Exploration Activities and Preliminary Lithium Resource Estimate, Salar de Arizaro Project, Salta Province, Argentina. Interim NI 43-101 report dated February 8, 2022.

Montgomery & Associates, and Geochemical Applications International. (2012). Measured, indicated and inferred lithium and potassium resource estimate for lithium and potassium resource, Sal de Vida project. Report for NI 43-101 prepared on behalf of Lithium One, Inc., 332 p.

National Institute of Indigenous Affairs. (2023). Mapa de pueblos originarios. https://www.argentina.gob.ar/derechoshumanos/inai/mapa.

Nicoll, J., Logan, T.A., Laurencelle, J., Hogenson, K., Gens, R., Buechler, B., Barton, B., Shreve, W., Stern, T., Drew, L. and Guritz, R. (2014). Radiometrically Terrain Corrected ALOS

Noram Venture Inc. (2017). Noram to acquire Arizaro East Project in the Lithium triangle. Vancouver, British Columbia – July 21st, 2017 – Noram Ventures Inc.

NORLAB. (2019a). Muestreo del Pozo AR-01. Independent report prepared for Lithium Chile. May 3, 2019

_____, (2019b). Muestreo del Pozo AR-01. Independent report prepared for Lithium Chile. May 23-24, 2019.

Olañeta, M., Jakoniuk, M. (2016). Estudio de Impacto Ambiental y Social “Perforación de 12 Pozos Profundos”

_____, (2022). Estudio de Impacto Ambiental y Social, etapa Prefactibilidad. Prepared for the Secretary of Mining, Salta Province. February, 2022.

Ontario Securities Commission (OSC). (2011). Standards of Disclosure for Mineral Projects. Mineral Brine Projects and National Instrument, 43-101. July 22, 2011.

Panorama minero. (2018). LSC Lithium – Joint Venture Partnership With Litica Resources, a Pluspetrol Company, Salar de Arizaro (https://panorama-minero.com/ingles/lsc-lithium-joint-venture-partnership-with-litica-resources-a-pluspetrol-company/)

Perez, C. (2023a). Arizaro PEA Building List, July.

_____, (2023b). Arizaro PEA Bulk Earthworks MTO, July.

Rosko, M. Montgomery & Associates, (2023), Results of Year 2021 and 2022 Exploration Activities and Preliminary Lithium Resource Estimate, Salar de Arizaro Project, Salta Province, Argentina. Interim NI 43-101 report dated December 15, 2022.

Segemar. (2001). Hoja Geologica 2569-II Socompa, Provincias de Salta, Scale 1:250,000. Bulletin 260.

_____, (2007). Hoja Geologica 2569-IV Antofalla, Provincias de Catamarca y Salta, Scale 1:250,000. Bulletin 343.

Servicios Mineros Gali (SMG). (2019). Informe de Impacto Ambiental "Etapa de Exploración Y Explotación de Pozos de Salmueras Ricas en Litio" Proyecto Arizaro Tolar 02 (Expte. 20.345), Tolar 06 (Expte. 20.349), Salari 08 (Expte. 19.637), Salari 07 (Expte. 19.636), Tolar 05 (Expte. 20.348), Tolar 10 (Expte. 20.353) Y Chascha Sur (Expte. 21.375). Salar de Arizaro Departamento Los Andes, Provincia De Salta. Unpublished.

SMG SRL. (2014). Estudio De Impacto Ambiental Etapa Exploración Mina Salari 08 - Expte:19.637 Salar de Arizaro Dpto. Los Andes – Salta. Unpublished.

______, (2016). Estudio de Impacto Ambiental y Social "Perforación de Pozos Profundos" Minas: Tolar 02 - Expte: 20.345, Tolar 05 – Expte: 20.348, Tolar 06 - Expte: 20.349, Tolar 10 – Expte: 20.353, Salari 07 - Expte: 19.636 y Salari 08 - Expte: 19.637"). Salar de Arizaro, Departamento Los Andes, Provincia De Salta. Unpublished.

SRK Consulting, Schlumberger Water Services, ANSTO, and Prudentia Process Consulting. (2016). NI 43-101 Technical Report Salar del Rincón Project Salta, Argentina. Prepared for ADY Resources Ltd., June 03, 2016. 380 p.

Summit Nanotech. (2022). Technology Verification for Extracting Lithium from Lithium Chile's Arizaro Brine. Report prepared by Summit Nanotech Corporation for Lithium Chile, November 04, 2022.

Sunresin. (2022). Informe de Pruebas - Prueba de Extracción de Litio de la Salmuera de Chengxin Lithium. Report prepared by Sunresin New Materials Co. Ltda. for Lithium Chile, November 2022.

Sunresin. (2023). Testing Summary of DLE test for Lithium Chile brine. Report prepared by Sunresin New Materials Co. Ltda. for Lithium Chile, May 31, 2023.

Theis, C.V. (1935). The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using groundwater storage: American Geophysical Union Transactions, vol. 16, pp. 519-524.

Turner, J.C. (1972). Puna. En Leanza, A.F. (ed.) Academia Nacional de Ciencias, Primer Simposio de Geología Regional Argentina: 91-116, Córdoba.

Urra. M. (2023). Arizaro PEA Earthworks Platforms and ponds – General Plan and Details, July.

_____, (2023). Arizaro PEA General Infiltration Pond – General Plan, July.

Vuille M. (1996). Zur raumzeitlichen Dynamik von Schneefall und Ausaperung im Bereich des sudlichen Altiplano, Sudamerika: in Geographica Bernensia vol. 45: 1–118.

Zelandez Services Argentina. (2021). Smart Report: Well ARI-001-Arizaro, Brinefield Services. Interpreted by Fernando J. Lourenco Cidades.