TECHNICAL REPORT SUMMARY

OPERATION REPORT

NUEVA VICTORIA

Sociedad Química y Minera de Chile

Date: April, 2022

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Sociedad Química y Minera de Chile

WSP-SQM0011-TRS-NUEVA VICTORIA-Rev0

April, 2022

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1 EXECUTIVE SUMMARY

1.1 Property Summary and Ownership

The Nueva Victoria Property, situated 145 kilometers (km) southeast of the city of Iquique, covers an area of 75,802 hectares (ha) of low topographic relief terrain. The property boundary includes several nitrate and iodine deposits of economic value, including Hermosa Oeste, Tente en el Aire, Pampa Hermosa, & Pampa Engañadora. The Nueva Victoria Property also has substantial potential for metallic mineralization, notably copper and gold, which could in the future sustain exploitation by SQM, or generate royalties. Several properties adjacent to the Nueva Victoria Project host mineral deposits with geological characteristics like those at Nueva Victoria, including mining lots held by ACF Minera S.A., owned by the Urruticoechea family.

1.2 Geology and Mineralization

Nueva Victoria is a nitrate-iodine deposit located in the Intermediate Basin (Central Depression) of northern Chile, limited to the west by the Coastal Range (representing the Jurassic magmatic arc) and to the east by the Precordillera (associated with the Cenozoic magmatic activity, which gave rise to the large Cu-Au deposits of northern Chile), generating a natural barrier for their deposition and concentration.

The regional geology in which the Nueva Victoria deposits are situated corresponds to Paleogene clastic sedimentary rocks deposited over a volcanic basement, associated with lavas of intermediate composition (mainly andesites - tuffs) representing Jurassic volcanism. In turn, the volcanic rocks overly a series of intrusive rocks belonging to the Cretaceous, which mostly outcrops outside the property area.

The mineralization at Nueva Victoria is mantiform, with a wide areal distribution, forming deposits several km in extension. The mineralization thicknesses are variable, with mantles of approximately 1.0 meter (m) to 6.0 m. As a result of geological activity, over time (volcanism, weathering, faulting) the deposits can be found as continuous mantles, thin salt crusts, and superficial caliche and “Stacked" caliche. The mineralogical association identified corresponds mainly to soluble sulfates of Na - K, less soluble sulfates of Ca, chlorides, nitrates, and iodates.

Within the mineral species of interest, for nitrates; nitratine ($NaNO_3$) - KNO_3 (potassium nitrate); hectorfloresite, lautarite, and bruggenite as iodates.

In 2021, there was a detailed exploration program of 4,100 Has in the Hermosa Oeste and Tente sector in Aire Oeste. Currently, drilling totals 90,527 reverse circulation (RC) drill holes (360,115). The majority of the drill holes were vertical. Drilling is carried out with wide-grid in the first reconnaissance stage (1000 x 1000; 800 x 800; 400 x 400); to later reduce this spacing to define the resources in their different categories.

1.3 Mineral Resource Statement

This sub-section contains forward-looking information related to Mineral Resource estimates for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including geological and grade interpretations and controls and assumptions and forecasts associated with establishing the prospects for economic extraction.

All available samples were used without compositing and no capping, or other outlier restriction, to develop a geological model in support of estimating Mineral Resources. Hard contacts were used between different geological units. Areas with a drill hole grid of 50-x-50 m and up to 100-x-100 m were estimated in a three-dimensional- (3D) block model using the Ordinary Kriging (OK) interpolation method in one pass. Additionally, variograms were constructed and used to support the search for ellipsoid anisotropy and linear trends observed in the data. Iodine and nitrate grade interpolation was performed using the same variogram model calculated for iodine. In the case of sectors with drill hole grids greater than 100-x-100 m, a gross economic evaluation at the database level was carried out that selected the area with economic and operational potential to be extracted.

Mineral Resources were classified using the drill hole exploration grid. Zones with an exploration grid of 50-x-50 m up to 100-x-100 m were classified as Measured. For Indicated Mineral Resources, the zone should have a 200-x-200-m drill hole grid. To define Inferred Mineral Resources a 400-x-400-m drill hole grid was used.

The Mineral Resource Estimate, exclusive of Mineral Reserves, is reported in Table 1-1. Note that based on the application of modifying factors, all Measured and Indicated Mineral Resources have been converted into Mineral Reserves; as a result, only Inferred Mineral Resources are reported in this Technical Report Summary (TRS). Note that because the caliche deposit is at the surface, all Measured and Indicated Mineral Resources have been converted into Mineral Reserves.

Table 1-1. Mineral Resource Estimate, Exclusive of Mineral Reserves, effective December 31, 2021

Nueva Victoria	Inferred Resource		
	Tonnage (Mt)	Iodine (ppm)	Nitrate (%)
Hermosa Sur	31.1	430	5.5
Tente en el Aire	2.4	441	4.7
Total	33.4	431	5.4

Notes:

(a) Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resource will be converted into Mineral Reserves upon the application of modifying factors.

(b) Mineral Resources are reported as in-situ and exclusive of Mineral Reserves, where the estimated Mineral Reserve without processing losses during the reported LOM was subtracted from the Mineral Resource inclusive of Mineral Reserves. All Measured and Indicated Mineral Resources have been converted into Mineral Reserves; as a result, only Inferred Mineral Resources are reported in this TRS.

(c) Comparisons of values may not add due to rounding of numbers and the differences caused by use of averaging methods.

(d) The units "Mt", "ppm" and % refer to million tonnes, parts per million, and weight percent respectively.

(e) The Mineral Resource estimate considers an iodine cut-off grade of 300 ppm, based on accumulated cut-off iodine grades and operational average grades, as well as caliche thickness ≥ 2.0 m and overburden thickness ≤ 3.0 m. The iodine cut-off grade considers the cost and medium- and long-term price forecasts of generating iodine as discussed in Sections 11, 16 and 19 of this TRS.

(f) Donald Hulse is the QP responsible for the Mineral Resources.

Density was assigned to all materials with a default value of 2.1 (tonnes per cubic meter (t/m^3), this value is based on several analysis made by SQM in Nueva Victoria and other operations. Resource Estimate considers a cut-off grade of Iodine of 300 ppm, this value takes into account the corresponding operational, financial and planned investment costs, depreciation, profit margin, and taxes. The iodine price used was to determine reasonable prospects for economic extraction is 35,000 USD/tonne the same as that used to estimate Mineral Reserves.

The Qualified Person (QP) is not aware of any environmental, permitting, legal, title, taxation, socioeconomic, marketing, political or other relevant factors that could materially affect the Mineral Resource Estimate that are not discussed in this TRS.

1.4 Mineral Reserve Statement

This sub-section contains forward-looking information related to Mineral Reserve estimates for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including Mineral Resource model tonnes and grade, modifying factors including mining and recovery factors, production rate and schedule, mining equipment productivity, commodity market and prices and projected operating and capital costs.

The Measured Mineral Resources defined by prospecting grid RGM100T -~70-x-70 m- and RGM50 -50-x-50 m-; and evaluated through the use of 3D blocks and kriging are considered to represent a high level of geological confidence are converted to Proven Mineral Reserves with unit conversion coefficients for tonnage and grades (iodine and nitrates, see Table 12-2).

The Indicated Mineral Resources, defined by prospecting grids RGM100 -100-x-100 m, RGM200 -200-x-200-m, and evaluated through the use of a script executed on the drill database (geometric method) are considered to be at a medium level of geological confidence and converted to Probable Mineral Reserves. Conversion factors used are less than one for iodine (0.90) and nitrate (0.85) grades.

Mineral Reserves are based on an Iodine cut-off grade of 300 ppm, iodine price of USD35/kg, nitrate price of USD295/t. and based on economic viability as demonstrated in an after-tax discounted cashflow (see Section 19) All Mineral Reserves are defined in sectors with environmental permits (RCA).

Based on these criteria, Proven Mineral Reserves at Nueva Victoria are estimated to be 268.1 million tonnes (Mt) with an estimated average iodine grade of 436 ppm and 5.2% nitrate.

Probable Mineral Reserves at the Nueva Victoria site are estimated to be 649.3 Mt with an estimated average iodine grade of 414 ppm and 4.8% nitrate.

Mineral Reserves are stated as in-situ ore.

Table 1-2. Mineral Reserves at the Nueva Victoria Mine (Effective 31 December 2021)

	PROVEN RESERVES	PROBABLE RESERVES	TOTAL RESERVES
Tonnage (Mt)	268.1	649.3	917.4
Iodine Grade (ppm)	436	414	420
Nitrate Grade (%)	5.2	4.8	4.9
Iodine (kt)	116.8	268.9	385.7
Nitrate (kt)	14,021	30,926	44,947

Notes:

(a) Mineral Reserves are based on Measured and Indicated Mineral Resources at an operating cutoff of 300 ppm iodine. Operating constraints of caliche thickness ≥ 2.0 m; overburden thickness ≤3.0 m; and waste / caliche ratio ≤ 1.5 are applied.

(b) Proven Mineral Reserves are based on Measured Mineral Resources at the criteria described in (a) above.

(c) Probable Mineral Reserves are based on Indicated Mineral Resources at the criteria described in (a) above with a grade call factor of 0.9 for iodine and 0.85 for nitrates confirmed by operating experience.

(d) Mineral Reserves are stated as in-situ ore (caliche) as the point of reference.

(e) The units "Mt", "kt", "ppm" and % refer to million tonnes, kilotonnes, parts per million, and weight percent respectively.

(f) Mineral Reserves are based on an Iodine price of USD35/kg and a Nitrate price of USD295/t. Mineral Reserves are also based on economic viability as demonstrated in an after-tax discounted cashflow (see Section 19)..

(g) Donald Hulse is the QP responsible for the Mineral Reserves.

(h) The QP is not aware of any environmental, permitting, legal, title, taxation, socioeconomic, marketing, political or other relevant factors that could materially affect the Mineral Reserve estimate that are not discussed in this TRS.

(i) Comparisons of values may not total due to rounding of numbers and the differences caused by use of averaging methods.

1.5 Mine Design and Scheduling

At Nueva Victoria, the total amount of Caliche extraction in 2021 was 41.400 million tonnes (Mt). Caliche production for the life-of-mine (LOM) from 2022 through 2040 ranges between 44 Mt per year to 58.80 Mt per year for a total ore production of 917.4 Mt with an average iodine grade of 420 ppm and a nitrate grade of 4.9%.

The mining procedure at Nueva Victoria involves the following processes:

- Removal of the surface layer and overburden (between 0.50 m to 1.5 m thick).
- Caliche extraction, up to a maximum depth of 6 m, through explosives (drill & blast), or surface miner (continuous miner [CM].

- Caliche loading, using front-end loaders and/or shovels.
- Transport of the mineral to heap leach, using mining trucks (rigid hopper) of high tonnage (100 t to 150 t).
- Construction of heap leach to accumulate a total of 1 Mt, with heights of 7 to 15 m and a crown area of 65,000 square meters (m^2)

  The physical stability analysis performed by SQM indicates that these heaps are stab;e for long-term stable and no slope modification is required for closure.
- Continuous irrigation of heap leach is conducted to complete the leach cycle. The cycle of each heap lasts approximately 400 days to 500 days and during this time, heap height decreases by 15% to 20%.

The criteria set by SQM to establish the mining plan correspond to the following:

- Caliche thickness ≥ 2.0 m.
- Overburden thickness ≤ 3.0 m.
- Barren / Mineral Ratio < 1.5.
- Iodine (300 ppm) cut-off grade.
- Unit sales Price for prilled Iodine of 35,000 US$/tonne and a unit total cost of 27,500 US$/tonne (mining, leaching, seawater pipeline and plant processing).

Approximately 76% of the caliche will be extracted using traditional methods of drill & blast while the remaining 24% will be extracted using CMs.

In the mining processes, SQM considers an efficiency of 92% (losses of mineral and grades dilution in the integral process of mineral extraction, load and transport; and heap leach construction).

Given the production factors set in mining and leaching processes (72% for iodine and 75% for nitrates that are average values-), a total production of 257.1 kt of iodine and 30,462 kt of nitrate salts is expected for this period (2022 to 2040) from lixiviation process to treatment plants.

1.6 Metallurgy and Mineral Processing

1.6.1 Metallurgical Testing Summary

The testwork developed is aimed at determining the susceptibility of raw materials to production by means of separation and recovery methods established in the plant, evaluating deleterious elements, to establish mechanisms in the operations and optimize the process to guarantee a recovery that will be intrinsically linked to the mineralogical and chemical characterization, as well as physical and granulometric of the mineral to be treated.

Historically, SQM Nitrates, through its Research and Development area, has conducted tests at plant and/or pilot scale that have allowed improving the knowledge about the recovery process and product quality through chemical oxidation tests, solution cleaning and recently, optimization tests of leaching heap operations, through the prior categorization of the ore to be leached.

SQM's analysis laboratories located in the city of Antofagasta and the Iris Pilot Plant Laboratory (Nueva Victoria) perform physicochemical, mineralogical, and metallurgical tests. The latter allow to know the behavior of the caliche bed against water leaching and thus support future performance. In addition, the knowledge generated contributes to the selection of the best irrigation strategy to maximize profit and a and the estimation of recovery at industrial scale by means of empirical correlations between the soluble content of caliches and the metallurgical yields of the processes.

1.6.2 Mining and Mineral Processing Summary

The Nueva Victoria Operation comprises the sectors of Nueva Victoria, Iris and Sur Viejo. The production process begins with mining of "caliche" ore. The ore is heap-leached to generate iodate- & nitrate-rich leaching solutions referred to by SQM as "brines". The brines are piped to processing plants where the iodate is converted to iodide, which is then processed to obtain pelleted ("prilled") iodine. The iodide-depleted brine which exits the iodide plant is referred to as brine Feble (BF) by SQM, literally feeble brine in the sense of depleted, weakened. A proportion of the BF is recirculated to the heap-leaching stage of the process., the remaining BF is routed to the evaporation ponds at Sur Viejo. The solar evaporation ponds produce salts rich in sodium nitrate and potassium nitrate. These nitrate-rich salts are sent to the SQM Coya Sur mine (located 160 km to the south of Nueva Victoria, and 7 km southeast of the town of María Elena in the Antofagasta Region of northern Chile) where they are refined to produce commercial sodium nitrate and potassium nitrate.

The surface area authorized for mining at Nueva Victoria is 408.5 square kilometers (km^2), this will increase to a total of 890 km^2, when the TEA expansion is approved. The surface area authorized for mining at Iris is 45.5 km^2. No expansion is planned at Iris.

Caliche extraction at Nueva Victoria is 37 million tonnes per year (Mtpy), with an additional 6.48 Mtpy at Iris. The overall mining rate at Nueva Victoria and Iris will increase to a total of 71.48 Mtpy with the incorporation of the TEA expansion.

1.7 Capital and Operating Costs

This section contains forward-looking information related to capital and operating cost estimates for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this section including prevailing economic conditions continue such that projected capital costs, labor and equipment productivity levels and that contingency is sufficient to account for changes in material factors or assumptions.

The annual production estimates were used to determine annual estimates of capital and operating costs. All cost estimates were in Q4 2021 US$. Total capital costs are estimated to be about USD933 million for seawater pipelines, new facilities for the TEA expansion project, as well as sustaining and expansion capital for current operations. Annual operating costs were based on historical operating costs, material movements and estimated unit costs provided by SQM. These included mining, leaching, iodine production, and nitrate production. Other capital costs include working capital and closure costs. Annual total operating costs varied from USD 9.00/t caliche to USD 12.2/t of caliche, with an average total operating cost of USD 11.3/t of caliche over the life-of-mine.

1.8 Economic Analysis

This section contains forward-looking information related to economic analysis for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including estimated capital and operating costs, project schedule and approvals timing, availability of funding, projected commodities markets and prices.

All costs were assumed to be at Q4 2021 US$.

For the economic analysis, a Discounted Cashflow (DCF) model was developed. An iodine sales price of USD 35,000/t and a nitrate price of US$295/t was used in the discounted cashflow based on information provided by SQM. The imputed nitrate sales price of USD 295/t was estimated based on an average sales price of USD 680/t for finished fertilizer products sold at Coya Sur, less USD 275/t for production costs at Coya Sur and the remaining margin distributed amongst the various operations which supply nitrates and potassium to the Coya Sur facilities.

QP is of the opinion that these prices reasonably reflect current market prices and are reasonable to use as sales prices for the purpose of the economic analysis for this Study.

The discounted cashflow establishes that the Mineral Reserves estimate provided in this report are economically viable. The base case NPV_{10} is estimated to be USD 1.6 billion. The Net Present Value for this study is most sensitive to operating costs and sales prices of both iodine and nitrates.

The QP considers the accuracy and contingency of cost estimates to be well within a Prefeasibility Study (PFS) standard and sufficient for the economic analysis supporting the Mineral Reserve estimate for SQM.

1.9 Conclusions and Recommendations

Mr. Donald Hulse QP of Mineral Resources and Mineral Reserves, concludes that the work done in the preparation of this TRS includes adequate detail and information to declare the Mineral Reserves. In relation to the resource treatment processes, the conclusion of the responsible QP, Gino Slanzi, is that appropriate work practices and equipment, design methods and processing equipment selection criteria have been used. In addition, the company has developed new processes that have continuously and systematically optimized its operations.

Some recommendations are given in the following areas:

- Improvements are required for the QA/QC program to align with industry best practice and facilitate more meaningful QC.
- Maintain original and/or digitized records of collar surveys, geological, and geochemical data in a secure database.
- It is considered important to evaluate the leachable material through heap leaching simulation, which allows the construction of a conceptual model of caliche leaching with a view to secondary processing of the riprap to increase the overall recovery.
- It is contributive and relevant to work on the generation of models that represent heap leaching, the decrease in particle size (ROM versus Scarious granulometry) and, therefore, of the whole heap and the simultaneous dissolution of different species at different rates of nitrate iodine extraction.
- Environmental issues include leachate or acid water management, air emissions management, tailings dump management, and leachate riprap.

All the above recommendations are considered within the declared CAPEX/OPEX and do not imply additional costs for their execution.

2 INTRODUCTION

This Technical Report Summary (TRS) was prepared by WSP Consulting Chile (WSP) for Sociedad Química y Minera de Chile (SQM), in accordance with the requirements of Regulation S-K, Subpart 1300 of the Securities Exchange Commission of the United States (SEC), hereafter referred to as S-K 1300.

2.1 Terms of Reference and Purpose of the Report

At Nueva Victoria SQM produces nitrate salts (sodium nitrate and potassium nitrate) and iodine, by heap leaching and evaporation.

The effective date of this TRS report is December 31, 2021.

This TRS uses English spelling and Metric units of measure. Grades are presented in weight percent (wt.%). Costs are presented in constant US Dollars as of December 31, 2021.

Except where noted, coordinates in this TRS are presented in metric units using the World Geodetic System (WGS) 1984 Universal Transverse Mercator (UTM) ZONE 19 South (19S).

The purpose of this TRS is to report Mineral Resources and Mineral Reserves for SQM's Nueva Victoria operation.

2.2 Source of Data and Information

This TRS is based on information provided to WSP by SQM and public domain data. All information is cited throughout this document and is listed in the final "References" section at the end of this report.

Table 2-1 provides the abbreviations (abbv.) and acronyms used in this TRS.

Table 2-1. Abbreviations and Acronyms

Acronym/Abbv.	Definition
'	minute
"	second
%	percent
°	degrees
°C	degrees Celsius
100T	100 truncated grid
AA	Atomic absorption
AAA	Andes Analytical Assay
AFA	weakly acidic water
AFN	Feble Neutral Water
Ajay	Ajay Chemicals Inc.

Acronym/Abbv.	Definition
AS	Auxiliary Station
ASG	Ajay-SQM Group
BF	Brine Feble
BFN	Neutral Brine Feble
BWn	abundant cloudiness
CIM	Centro de Investigación Minera y Metalúrgica
cm	centimeter
CM	continuous miner
CU	Water consumption
COM	Mining Operations Center
CSP	Concentrated solar power
CONAF	National Forestry Development Corporation
DDH	diamond drill hole
DGA	General Directorate of Water
DTH	down-the-hole
EB 1	Pumping Station No. 1
EB2	Pumping Station No. 2
EIA	environmental impact statement
EW	east-west
FC	financial cost
FNW	feble neutral water
g	gram
GU	geological unit
g/cc	grams per centimeter
g/mL	grams per milliliter
g/tonne	grams per tonne
g/L	grams per liter
GPS	global positioning system
h	hour
ha	hectare
ha/y	hectares per year
HDPE	High-density Polyethylene
ICH	industrial chemicals
ICP	inductively coupled plasma
ISO	International Organization for Standardization
kg	kilogram
k_h	horizontal seismic coefficient
kg/m^3	kilogram per cubic meter

Acronym/Abbv.	Definition
km	kilometer
k_v	vertical seismic coefficient
kN/m^3	kilonewton per cubic meter
km^2	square kilometer
kPa	kiloPascal
kt	kilotonne
ktpd	thousand tonnes per day
ktpy	kilotonne per year
kUSD	thousand USD
kV	kilovolt
kVa	kilovolt-amperes
L/h-m^2	liters per hour square meter
L/m^2/d	liters per square meter per day
L/s	liters per second
LR	Leaching rate
LCD/LED	liquid crystal displays/light-emitting diode
LCY	Caliche and Iodine Laboratories
LdTE	medium voltage electrical transmission line
LIMS	Laboratory Information Management System
LOM	life-of-mine
m	meter
M&A	mergers and acquisitions
m/km^2	meters per square kilometer
m/s	meters per second
m^2	square meter
m^3	cubic meter
m^3/d	cubic meter per day
m^3/h	cubic meter per hour
m^3/tonne	cubic meter per tonne
masl	meters above sea level
mbgl	meter below ground level
mbsl	meters below sea level
mm	millimeter
mm/y	millimeters per year
Mpa	megapascal
Mt	million tonne
Mtpy	million tonnes per year
MW	megawatt

Acronym/Abbv.	Definition
MWh/y	Megawatt hour per year
NNE	north-northeast
NNW	north-northwest
NPV	net present value
NS	north-south
O_3	ozone
ORP	oxidation reduction potential
PLS	pregnant leach solution
PMA	particle mineral analysis
ppbv	parts per billion volume
ppm	parts per million
PVC	Polyvinyl chloride
QA	Quality assurance
QA/QC	Quality Assurance/Quality Control
QC	Quality control
QP	Qualified Person
RC	reverse circulation
RCA	environmental qualification resolution
RMR	Rock Mass Rating
ROM	run-of-mine
RPM	revolutions per minute
RQD	rock quality index
SG	Specific gravity
SEC	Securities Exchange Commission of the United States
SSE	South-southeast
SEIA	Environmental Impact Assessment System
MMA	Ministry of Environment
SMA	Environmental Superintendency
SNIFA	National Environmental Qualification Information System (SMA onlyne System)
PSA	Environmental Following Plan (Plan de Seguimiento Ambiental)
SEM	Terrain Leveler Surface Excavation Machine
SFF	specialty field fertilizer
SI	intermediate solution
SING	Norte Grande Interconnected System
S-K 1300	of Regulation S-K, Subpart 1300 of the Securities Exchange Commission of the United States
SM	salt matrix

Acronym/Abbv.	Definition
SPM	sedimentable particulate matter
Sr	relief value, or maximum elevation difference in an area of 1 km^2
SS	soluble salt
SX	solvent extraction
t	tonne
TR	Irrigation rate
TAS	sewage treatment plant
TEA project	Tente en el Aire project
tpy	tonnes per year
t/m^3	tonnes per cubic meter
the Project or Orcoma Project	Pampa Orcoma Project
tpd	tonnes per day
TRS	Technical Report Summary
ug/m^3	microgram per cubic meter
USD	United States Dollars
USD/kg	United States Dollars per kilogram
USD/tonne	United States Dollars per tonne
UTM	Universal Transverse Mercator
UV	ultraviolet
VEC	Voluntary Environmental Commitments
WGS	World Geodetic System
WSF	Water soluble fertilizer
wt.%	weight percent
XRD	X-Ray diffraction
XRF	X-ray fluorescence

2.3 Details of Inspection

The most recent site visit dates for each QP are listed in Table 2-2.

Table 2-2. Summary of Site Visits Made by QPs to Nueva Victoria in Support of TRS Preparation

Qualified Person (QP)	Expertise	Date of Visit	Detail of Visit
Gino Slanzi Guerra	Metallurgy and Mineral Processing	22 Nov 2021	Inspection of the iodide/iodine plants, mine site and mine leaching sectors, and visit to laboratories and the Iris pilot plant.
Alvaro Henriquez	Geology	06 Dic 2021	Nueva Victoria Mine and facilities
Donald Hulse	Mining	06 Dic 2021	Nueva Victoria Mine and facilities

During the site visits to the Nueva Victoria Property, the QPs, accompanied by SQM technical personnel:

- Visited the mineral deposit (caliche) areas.
- Inspected drilling operations and reviewed sampling protocols.
- Reviewed core samples and drill holes logs.
- Assessed access to future drilling locations.
- Viewed the process through mining and heap leaching to the finished prilled iodine (spherical pellet) product.
- Reviewed and collated data and information with SQM personnel for inclusion in the TRS.

2.4 Previous Reports on Project

This is the first version of a TRS of the SQM Nueva Victoria Property.

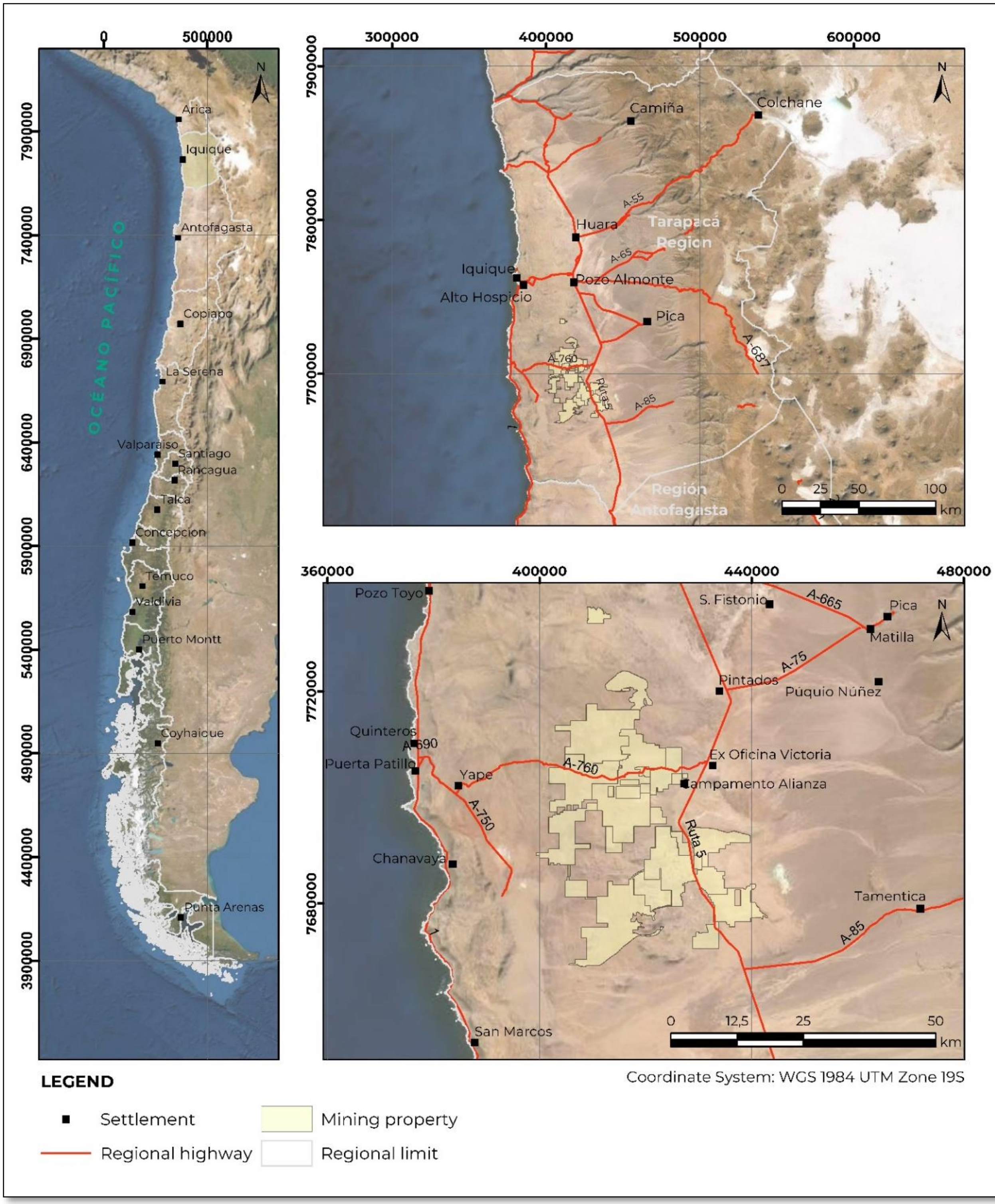
3 DESCRIPTION AND LOCATION

3.1 Location

The Nueva Victoria Property is located in the Commune of Pozo Almonte, in the Province of Tamarugal, within the Region of Tarapacá of northern Chile (Figure 3-1). The center of the property is situated 80 km south-southeast (SSE) of the City of Iquique and 70 km south of the City of Pozo Almonte.

The access control checkpoint to the Property is located on the eastern side of the Ruta 5 South trunk road (the Panamericana Highway), 83 km south of the City of Pozo Almonte. The Nueva Victoria Property is approximately 55 km north-south by 40 km east-west.

Figure 3-1. General Location Map



3.2 Mineral Titles, Claims, Rights, Leases and Options

SQM currently has 4 properties located in the north of Chile, in the First Region of Tarapacá(I) and Second Region of Antofagasta (II). These are the Nueva Victoria, María Elena, Pedro de Valdivia and Pampa Blanca properties. All properties cover a combined area of approximately 289,781 ha, and has been make prospecting with a grid resolution of 400-x-400 m, or finer.

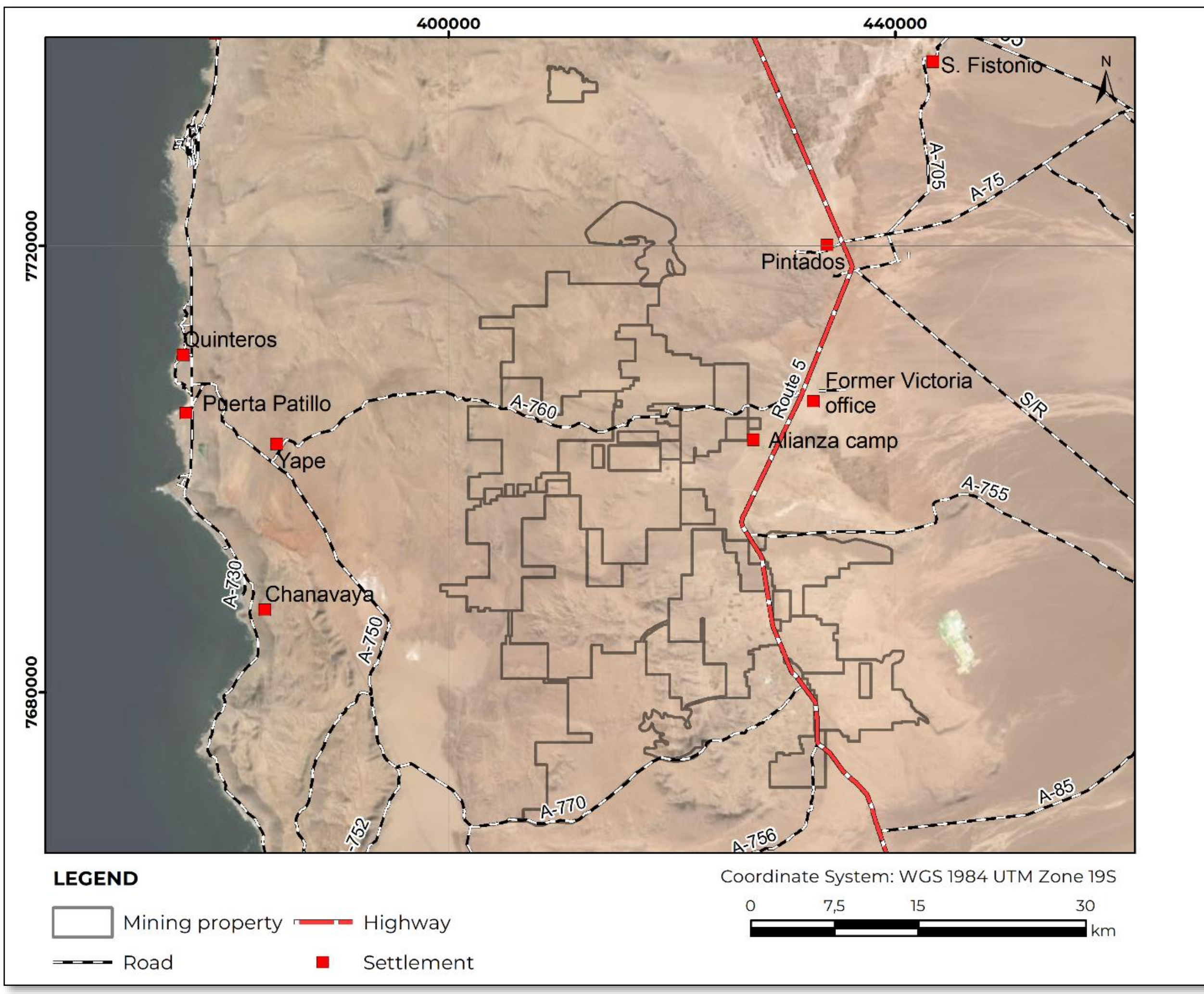
The Nueva Victoria Property covers an area of approximately 75,802 ha.

3.3 Mineral Rights

SQM owns mineral exploration rights over 1,565,781 ha of land in the I and II Regions of northern Chile and is currently exploiting about 1% of this area (as of Dec 2021).

Detailed information on concessions is not available to date.

Figure 3-2. Location of Nueva Victoria Project



3.4 Environmental Impacts and Permitting

Since 1997, SQM has completed numerous Environmental Impact Assessments (EIA) (*Estudio de Impacto Ambiental)* and Environmental Impact Statements (EIS) (*Declaración de Impacto Ambiental, DIA*) in support of the development and ongoing expansion of the Nueva Victoria Property (including the "Pampa Hermosa" and "TEA" Projects). These environmental assessments are completed within the Chilean regulatory platform Sistema de Evaluación de Impacto Ambiental (SEIA), which is managed by the Chilean Regulatory Authority, the Servicio de Evaluación Ambiental (SEA, https://www.sea.gob.cl/).

Section 17.1 of this TRS details these environmental studies and the environmental approvals (permits), termed Resoluciones de Calificación Ambiental (RCA), issued by SEA.

3.5 Other Significant Factors and Risks

SQM's operations are subject to certain risk factors that may affect the business, financial conditions, cash flow, or SQM's operational results. The list of potential risk factors is summarized below:

- Risks related to being a company based in Chile; potential political risks as well as changes to the Chilean Constitution and legislation that could conceivably affect development plans, production levels, royalties, and other costs.
- Risks related to financial markets.

3.6 Royalties and Agreements

Apart from paying standard mineral royalties to the Government of Chile, in compliance with the Chilean Royalty Law, SQM has no obligations to any third party in respect of payments related to licenses, franchises, or royalties for its Nueva Victoria Property.

4 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

This Section of the TRS provides a summary of the physical setting of the Nueva Victoria Property, access to the property and relevant civil infrastructure.

4.1 Topography

The Nueva Victoria Property is located in the Intermediate Basin (Central Depression) of the Atacama Desert. The property constitutes an area of gentle topographic relief with an average elevation of 1,500 masl (ARVI 2016, 2018).

Figure 4-1 presents a topographic map developed from a digital elevation model (DEM) corresponding to a 30 m resolution ASTER satellite image. The lower part of the figure presents a topographic cross-section through the DEM. The figure categorizes the topographic slope into the six categories summarized in Table 4-1

Table 4-1. Slope Categories Applied in the Analysis of the ASTER DEM

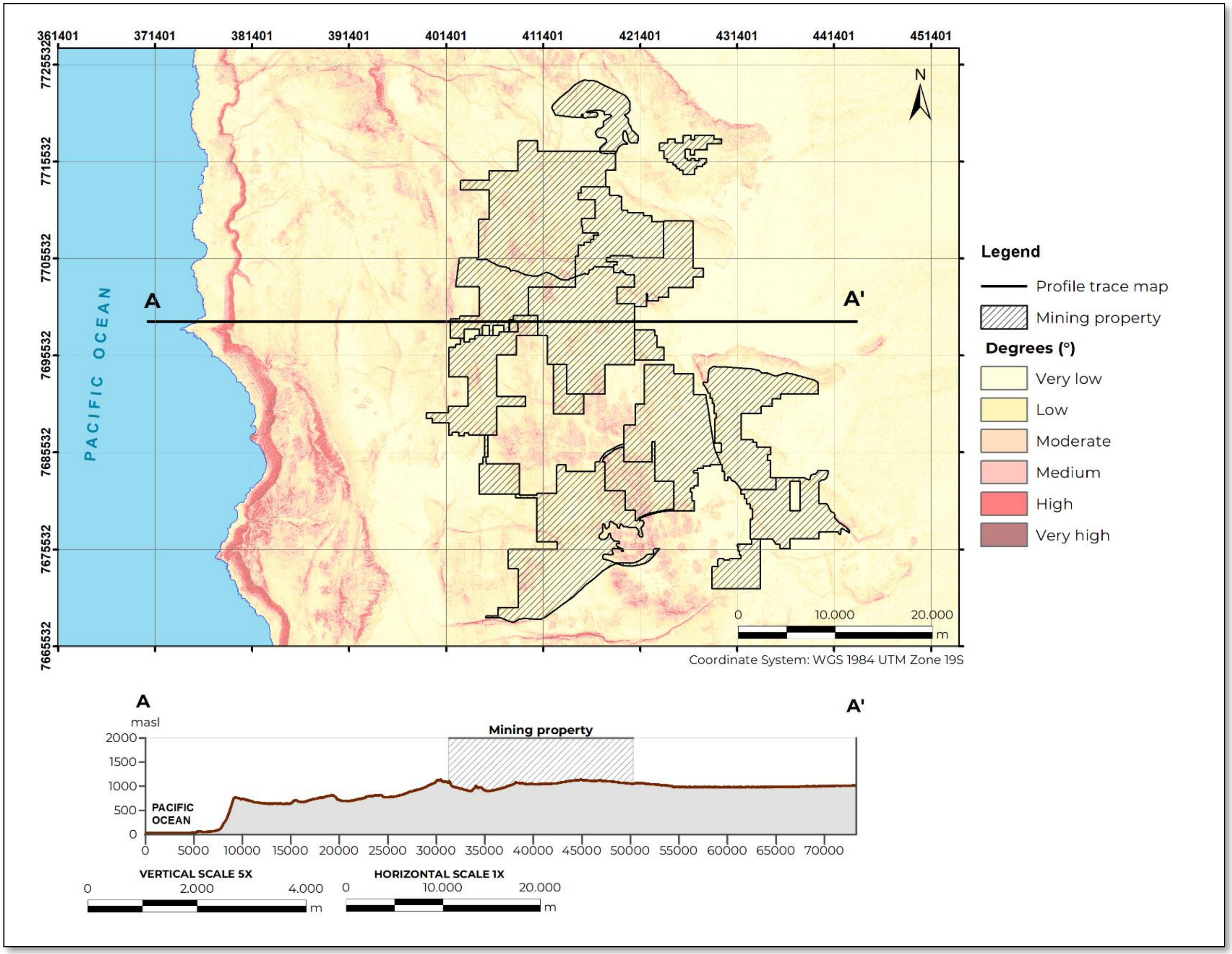
Slope category	From	To
Very low	0°	4.3°
Low	4.3°	9.94°
Moderate	9.94°	16.71°
Medium	16.71°	26.57°
High	26.58°	
Very high	Slopes greater than 38.66°	

From inspection of Figure 4-1, it can be appreciated that the Nueva Victoria Property presents slopes that vary from very low (near flat) to moderate or medium. The steepest slopes are observed in the western sector, close to the coast, due to the coastal scarp.

4.2 Vegetation

The Nueva Victoria Property is a desert landscape devoid of vegetation cover (EIA, 2007).

Figure 4-1. Slope Parameter Map Sr and Elevation Profile Trace BB"



4.3 Access to the Property

As detailed in Section 3.1 of this TRS, the Nueva Victoria Property is situated 80 km SSE the City of Iquique and 70 km south of the City of Pozo Almonte. The principal route to the property from Diego Aracena International Airport (IATA airport code IQQ) is as follows:

1. Drive 28 km north on Ruta 1 [classified as motorway on Open Street Map (OSM)) from IQQ to the City of Iquique.
2. Travel northeast through the City of Iquique on primary roads to take Ruta 16 (motorway) to reach the settlement of Alto Hospicio at 44 km total distance driven.
3. Continue East on Ruta 16 (motorway) for 83 km to reach the deserted mining town of Humberstone. Humberstone is a Chilean National Monument and part of a UNESCO World Heritage Site where saltpeter (KNO_3) was formerly mined.
4. At Humberstone, turn south on the trunk road of Ruta 5, reaching the City of Pozo Almonte 87 km from Humberstone.
5. Continue south on the trunk road of Ruta 5, reaching the SQM access control checkpoint (*garita*) of the Nueva Victoria property (171 km).

4.4 Climate and Length of Operating Season

Nueva Victoria is in the Intermediate Basin (Central Depression) of the hyperarid Atacama Desert at a latitude of approximately 21°S The topographic relief at the property is gentle and much of the area is essentially flat with an average elevation of 1,500 masl. Long-term annual rainfall is close to 0 mm, and the annual average temperature is 18° C. Relative humidity of the air is low. On very rare occasions, the convective summer rains which occur from November to February over land above 4,000 m on the Altiplano of the Andes may extend west to bring very infrequent rain to the Intermediate Basin and Nueva Victoria.

The climate of the study area is classed as a low marginal desert climate within the Köppen climate classification (EIA, 2007).

Nueva Victoria operates all year, there are no climate constraints which would force the operations to shut down during any part of the year. However, in the event of a very rare thunderstorm, precautions must be taken to eliminate the risk to life that that lightning strikes could present.

4.5 Infrastructure

In the Nueva Victoria mining area and, the following facilities and infrastructure can be found:

The main facilities at Nueva Victoria are as follows:

- Caliche mining areas.
- Industrial water supply.

- Heap leaching operation.
- Iodide plants (Nueva Victoria and Iris properties).
- Industrial water supply.
- Evaporation ponds (Sur Viejo).
- Iodine production & prilling Plant NV (Nueva Victoria).
- Administrative and technical offices and training rooms.
- Medical facilities.
- Camp and associated facilities (gym, restaurant, etc.).
- Domestic waste disposal site.
- Hazardous waste yard.
- Non-hazardous industrial waste yard.

5 HISTORY

Commercial exploitation of caliche mineral deposits in northern Chile began in 1830s when sodium nitrate was extracted from the mineral for use in explosives and fertilizers production. By the end nineteenth century, nitrate production had become Chile's leading industry, and, with it, Chile became a world leader in nitrates production and supply. This boom brought a surge of direct foreign investment and the development of the Nitrate "Offices" or "Oficinas Salitreras" as they were called.

Synthetic nitrates' commercial development in 1920s and global economic depression in l930s caused a serious contraction of the Chilean nitrate business, which did not recover in any significant way until shortly after World War II. Post-war, widely expanded commercial production of synthetic nitrates resulted in a further contraction in Chile's natural nitrate industry, which continued to operate at depressed levels into their 1960s.

The Victoria "Office" was first established between 1941 and 1944 by the "Compañía Salitrera de Tarapacá". At its peak, Victoria produced 150,000 metric tons of nitrates with over 2,000 employees. In 1960, CORFO, Chile's Production Development Corporation, took over the operation, and in 1968 a merger of Compañía Salitrera Anglo Lautaro S.A. ("Anglo Lautaro") and CORFO Chile's state-owned development corporation. Formed the roots of SQM. In 1971, Anglo Lautaro sold all its shares to Corfo and SQM became wholly owned by the Chilean government Since SQM's inception, nitrates and iodine have been produced from caliche deposits in northern Chile.

In late 2002, Nueva Victoria East was re-established as a mining operation. Nueva Victoria mineral is transported by trucks to heap leach facilities where iodine is produced. This site is made up of facilities located in three sectors corresponding to Nueva Victoria, Sur Viejo and Iris. The overall site layout is shown in Figure 6-4.

In 2014, there was investment into developing new mining sectors and increased production of both nitrates and iodine at Nueva Victoria, achieving a production capacity (including Iris facility) of approximately 8,500 metric tons per year of iodine at the site.

In 2015, SQM company focused on increasing the efficiency of its operations. This included a plan to restructure our iodine and nitrates operations. To take advantage of highly efficient production facilities at Nueva Victoria, it was decided to suspend mining and nitrates operations and reduce iodine production at Pedro de Valdivia site. During 2017, production capacity for iodine was increased at Nueva Victoria, with current effective iodine capacity at approximately 14,000 metric tons per year.

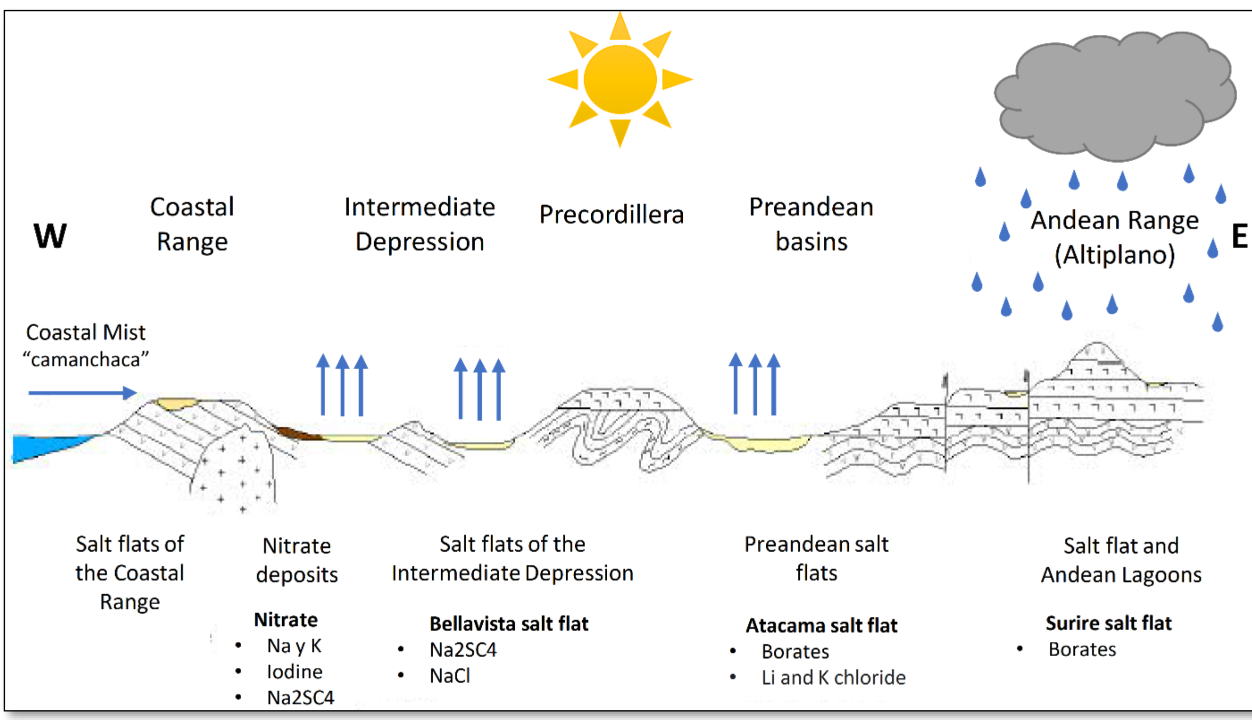
6 GEOLOGICAL SETTING, MINERALIZATION AND DEPOSIT

6.1 Regional Geological Setting

In Chile, the nitrate-iodine deposits are located in the intermediate basin, limited to the east by the Coastal Range (representing the Jurassic magmatic arc) and the Precordillera (associated to the magmatic activity originating from the mega Cu-Au deposits in northern Chile), generating a natural barrier for their deposition and concentration (Figure 6-1).

The salt and nitrate deposits of northern Chile occur in all topographic positions from hilltops and ridges to the centers of broad valleys (Ericksen, 1981). They are hosted in rocks of different ages and present very varied lithologies; however, a distinctive feature is that they are always related in some way to a key unit known as the Saline Clastic Series (CSS: late Oligocene to Neogene). The CSS comprises mainly siliciclastic and volcanoclastic sandstones and conglomerates produced by erosion and re-sedimentation of pre-existing rocks of the Late Cretaceous-Eocene volcanic arc. This key stratigraphic unit includes rocks deposited under a range of sedimentary environments including fluvial, eolian, lacustrine, and alluvial, but all were developed primarily under arid conditions. The upper parts of CSS include lacustrine and evaporitic rocks composed mainly of sulfates and chlorides. The outcrop of CSS always lies to the west of the ancient Late Cretaceous-Eocene volcanic arc, covering the present-day topography (Chong et al., 2007).

Figure 6-1. Geomorphological Scheme of Saline Deposits in Northern Chile



Note: Nitrate deposits are restricted to the eastern edge of the Coastal Range and in the Central Basin (Taken from Gajardo, A. & Carrasco, R. (2010). Salares del Norte de Chile: Potential Lithium Source. SERNAGEOMIN, Chile).

Most of the nitrate deposits in Chile are found in the provinces of Tarapacá and Antofagasta, with more northerly occurrences in Tarapacá largely restricted to a narrow band along the eastern side of the Coastal Range; while, to the south they extended extensively not only in the Coastal Range, but also in the Central Valley and the Andean Front (Garret, 1983). Extremely rare minerals are present in this type of deposits, among which we find nitrates, nitrate-sulfates, chlorides, perchlorates, iodates, borates, carbonates and chromates. The mineralization occurs as veins or impregnations filling pores, cavities, desiccation polygons and fractures of unconsolidated sedimentary deposits, or as a massive deposit forming a consolidated to semi-consolidated cement as extensive uniform mantles cementing the regolith, called caliche.

The regional geology in which the Nueva Victoria nitrate-iodine deposits are situated corresponds to Paleogene clastic sedimentary rocks, over a volcanic basement, associated with lavas of intermediate composition (mainly andesites - tuffs) representing Jurassic volcanism. The area of influence of the geological component includes the coastal plain, the coastal Farellón, the coastal mountain range and the central Gran pampa. The oldest rocks outcropping in the area correspond to Upper Carboniferous Granitoids. This unit is covered by rocks of the Sierra de Lagunas Strata, which correspond to Upper Triassic-Lower Jurassic volcano-sedimentary products and affected by associated hypabyssal intrusive rocks. The Sierra de Lagunas strata are covered in apparent concordance by rocks of the Oficina Viz Formation, which represent the volcanic products of the Lower and Middle Jurassic magmatic arc.

The Cerro Vetarrón Monzonite outcrops in the central sector of the Cordillera de la Costa, it is partly contemporaneous with the Oficina Viz Formation. The Oficina Viz Formation is concordantly covered by marine sedimentary rocks of the Huantajaya Group: the Lígate Cove Formation and the El Godo Formation.

Plutonic rocks originated in the arc magmatism during the Upper Jurassic-Lower Cretaceous, represented by the Patache Diorite, the Cerro Carrasco Intrusive Complex and the Oyarbide Intrusive Complex, as well as by hypabyssal bodies associated with the latter unit. These complexes outcrop in the coastal strip and in the western edge of the Coastal Range.

The deformation processes of north-south faults associated with the Atacama Fault System caused structural basins (tensional basins and gabbens) where the Cerro Rojo Formation and Punta Barranco Formation were continentally deposited. These Mesozoic units are intruded by Lower Cretaceous subvolcanic intrusives and granitoids of the Montevideo Intrusive Complex. These intrusive bodies outcrop in the easternmost portion of the Cordillera de la Costa and the second unit presents ages that decrease towards the east. On the other hand, in the eastern limit of the Coastal Range, isolated rocks of Upper Cretaceous intrusives outcrop, which represent the magmatism of that period and evidence the migration of the magmatism axis towards the east.

The Great Coastal Escarpment, generated during the Pleistocene-Holocene by the combined action of eustatic, tectonic and erosive events, limits the western edge of the Coastal Range with the Coastal Strip. Attached to the Great Coastal Escarpment there are large volumes of colluvial deposits, which are also found on a smaller scale along escarpments associated with east-west faults and on the slopes of some mountain fronts. After the generation of the Great Coastal Escarpment, sedimentation of littoral deposits occurs at its foot. Massive landslide deposits caused by various gravitational displacements of material from the western edge of the Coastal Mountain Range.

In the Pleistocene-Holocene, the deposition of the Alto Hospicio Gravels and the alluvial deposits occur in the Coastal Range in the Pleistocene-Holocene, which are restricted to the bottoms of the ravines and locally form alluvial fans. These deposits have a considerably smaller extension than the Oligocene-Pliocene deposits, which shows a reduction in the contribution of alluvial clastic material. On the other hand, in the Central Basin there are large extensions of Pleistocene-Holocene alluvial deposits, whose components come from the erosion of rocks from the Precordillera. These alluvial deposits are cut and covered by active alluvial deposits, of lesser extension and made up of clays, silts and fine sands.

6.2 Local Geology

The geology of the Nueva Victoria Property is presented in Figure 6-2. The geological units are described below.

6.2.1 Intrusive Igneous Rocks

Granites, diorites, quartz monzonites and gabbros of Cretaceous age, intruded as sills and dikes. Denoted as Jg on the geological map.

6.2.2 Volcanic and Marine Sedimentary Sequences

Jurassic age marine sedimentary rocks (sandstones, glauconitic breccias, shales and limestones) with intercalations of continental andesites and andesitic breccias. Denoted as Jm(m) on the geological map.

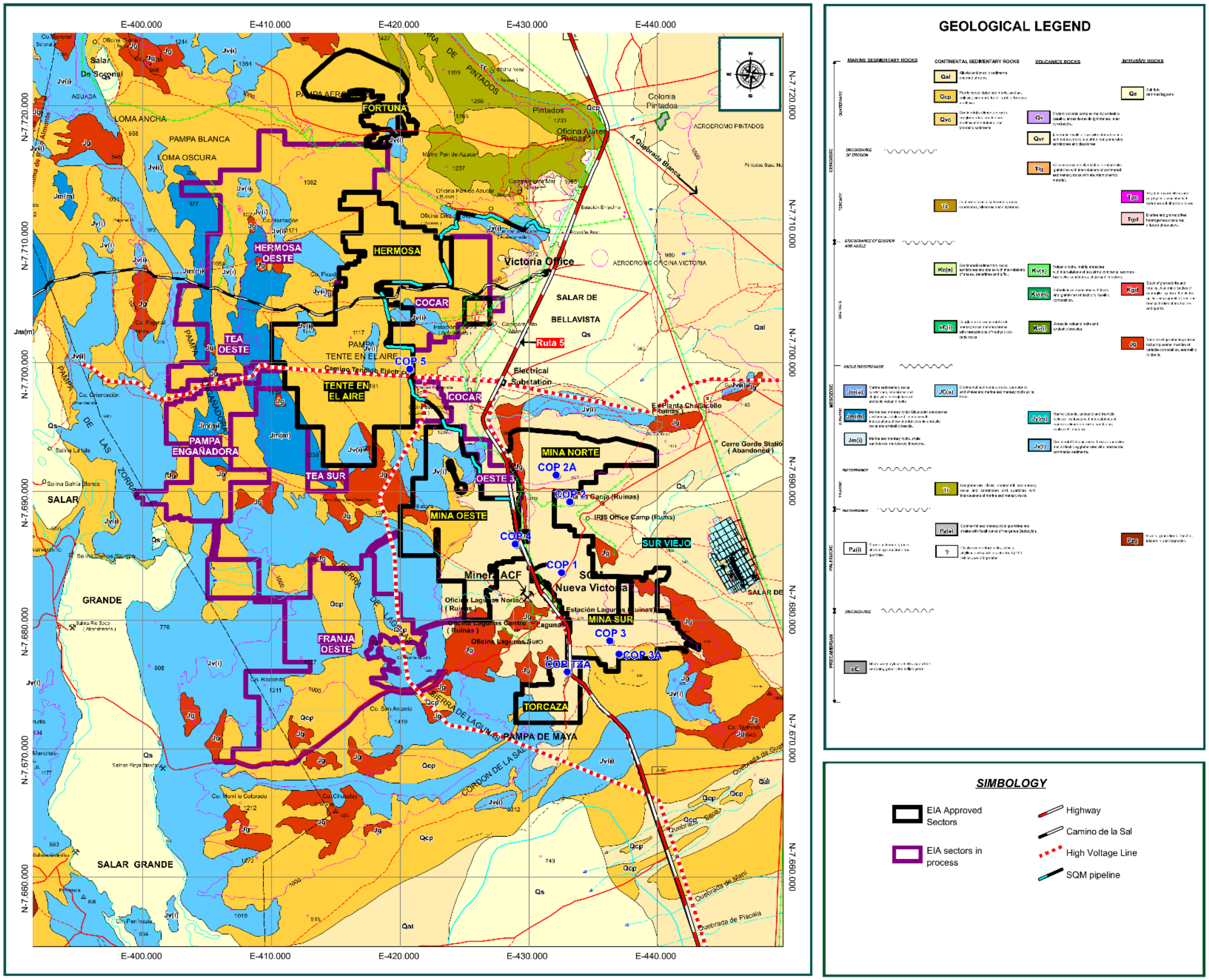
6.2.3 Stratified Sedimentary and Volcaniclastic Rocks

This category comprises Mesozoic to Cenozoic sedimentary & volcaniclastic units comprising:

- Continental volcanoclastic rocks of Jurassic age comprising andesites, breccias & andesitic agglomerates with intercalations of continental sediments. Denoted as Jv (i) on the geological map.
- Continental clastic sedimentary rocks of Triassic age comprising conglomerates, sandstones & quartzites with intercalations of marine sedimentary rocks. Denoted as Tr on the geological map.
- Poorly to well consolidated sediments of Quaternary age comprising aeolian sediments, colluvial deposits, alluvial fans, terraces, and sedimentary debris flows. Denoted as Qcp on the geological map.

- Evaporitic salts forming salt pans, salt flats, saline & gypsiferous crusts, associated with modern and former wetlands and brackish or saline lagoons and areas of former or current shallow water tables. Denoted as Qs on the geological map.
- Recent alluvial sediments, sedimentary debris flows and aeolian deposits. Denoted as Qal on the geological map.

Figure 6-2. Geological Map at Nueva Victoria. Internal Document-SQM



6.3 Property Geology

Through the collection of geological information by logging of drill holes and surface mapping, five stratified subunits have been identified within the Quaternary Unit (Qcp) (Units A to E). (Figure 6-3) These units correspond to sediments and sedimentary rocks that host the non-metallic or industrial minerals of interest, i.e., iodine and nitrate. Each of the units is described below:

6.3.1 Unit A

Forms the upper part of the profile. It corresponds to a sulfated soil or petrogypsic saline detrital horizon of light brown color. It has an average thickness of approximately 0.4 m. It consists mainly of sand and silt-sized grains, and to a lesser extent gravel-sized clast. It presents as a well-cemented horizon at depth, while higher in the profile, within 0.2 m of ground surface, weathering and leaching of the more soluble components have rendered it porous and friable. At ground surface it presents as loose fine sand to silt-sized sediment, referred to locally as "chuca" or "chusca" which is readily transported by the wind or lofted by dust devils. Below the chusca, the competent part of the unit may present subvertical cracks vertical cracks, which may become filled with chusca o aeolian sediments.

6.3.2 Unit B

Underlies Unit A. It corresponds to a light brown detrital sulfate soil characterized by anhydrite nodules in a medium to coarse sand matrix. Its thicknesses may vary laterally. It is typically between 0.5 to 1.0 m, but may become laterally impersistent.

6.3.3 Unit C

Underlies Unit B. It comprises fine to medium dark brown sandstones, with intercalations of sedimentary breccias. The thickness of this unit varies between 0.5 m to 2.0 m. The sandstones and breccias are well consolidated and cemented by salts comprising sulfates, chlorides & nitrates. The salts occur as envelopes around the sedimentary clasts (sand and gravel grains), fill cavities between the sedimentary clasts and also form saline aggregates due to saline efflorescence, (the deposition of salts from the evaporation of water from the capillary fringe of shallow water tables).

6.3.4 Unit D

Underlies Unit C. It comprises dark brown matrix-supported polymictic breccias. The thickness of this units varies between 1 m to 5 m. The clasts are angular, tending towards subrounded with depth. They range from 2 mm (very fine gravel) to 80 mm (small cobble) in diameter. Lithologically, the clasts comprise porphyritic andesites, amygdaloidal andesites, intrusives and highly altered lithics. The matrix of the breccias consists of medium to coarse sand-sized grains.

The breccia is well consolidated and cemented by salts. As in the case of Unit C, the salts comprise sulfates, chlorides and nitrates, which occur as envelopes around the clasts, fill cavities and present as saline aggregates resulting from saline efflorescence.

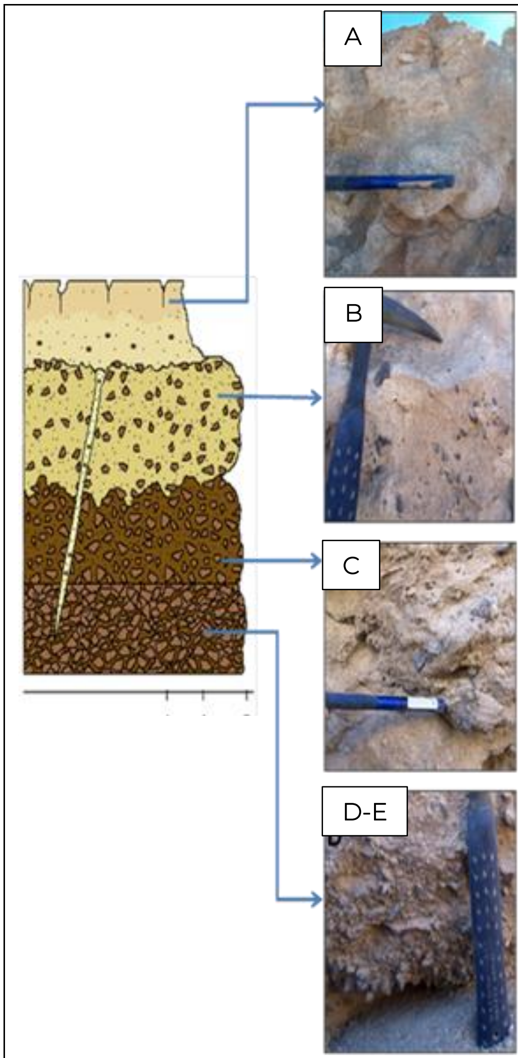
6.3.5 Unit E

This unit is similar to Unit D, except for the sedimentary fabric and structure. It comprises dark brown clast-supported polymictic conglomerates. The clasts are subrounded, and present a wide range of sizes, with some clasts exceeding 100 mm in diameter. Their composition includes porphyritic andesites, intensely epidotized and chloritized porphyritic andesites, fragments of indeterminate altered intrusive rocks and clasts with abundant iron oxide. The deposit is well cemented by salts, which, as in the case of Units C & D envelope the clasts, fill cavities and occur as aggregates or accumulations of salts formed by saline efflorescence.

6.3.6 Unit F

Corresponds to the igneous basement of the sedimentary sequence. At Nueva Victoria this corresponds mainly to Cretaceous volcanic rocks, andesitic to dioritic lavas, and granitic bodies. The basement presents little mineralization of economic interest, this being restricted to fracture infills, where present.

Figure 6-3. Typical Profile of the Qcp Unit at Nueva Victoria

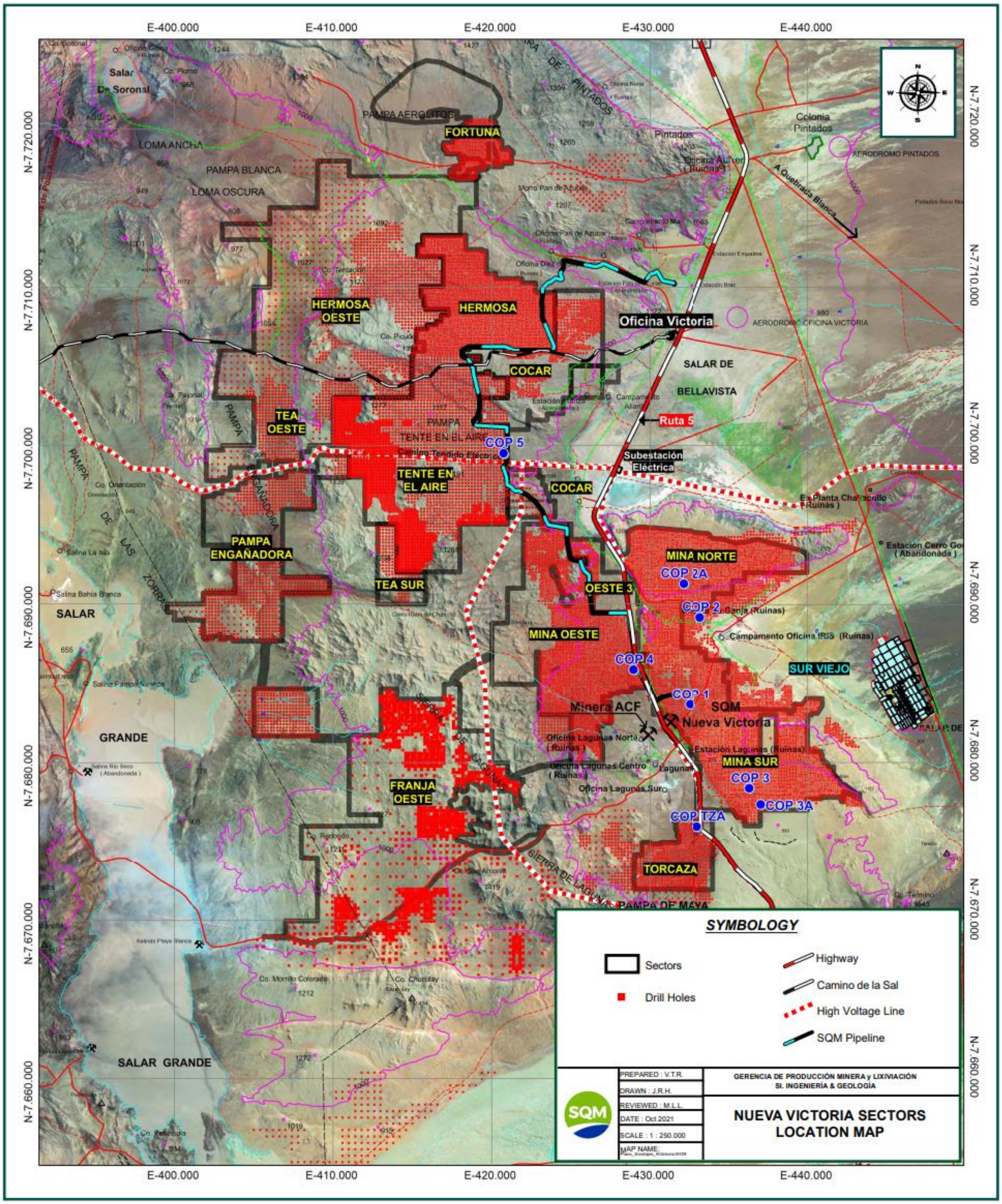


Source: Internal document-SQM.

The geology of the different sectors of Nueva Victoria corresponds mainly to sedimentary and volcano-sedimentary associations, on a Jurassic igneous crystalline Jurassic basement; related through sedimentation cycles, which could correspond to the distal facies of an alluvial fan, which vary in size from medium sand to fine gravel. In general, the facies found correspond to breccias, sandstones, andesites, intrusives, and tuffs. In the TEA and Hermosa sectors, salt crusts can be observed encasing sandstones, as well as a cover of anhydrite, which is present in an irregular manner and with variable thicknesses. In the West Mine sector, the anhydrite crust is much more anhydrite crust is much more frequent, reaching maximum thicknesses, of the order of metric

Figure 6-4 shows the location of the sectors that are described in detail.

Figure 6-4. Nueva Victoria Sectors



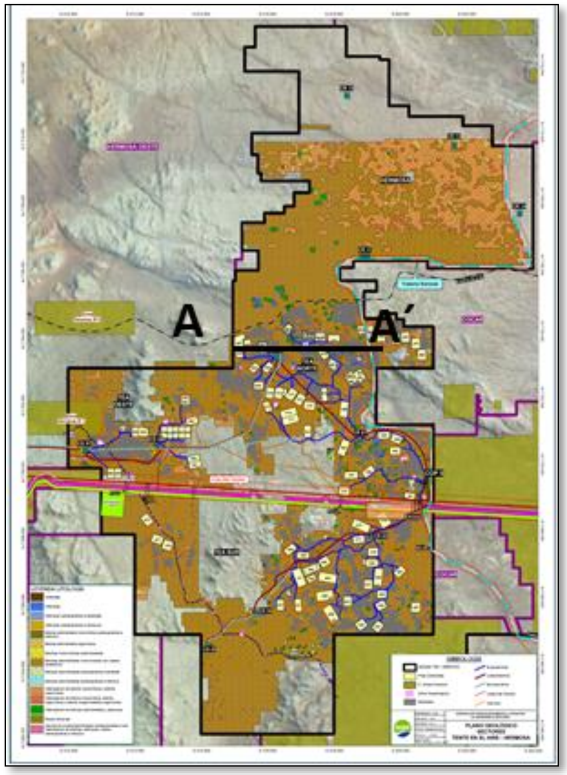
6.3.7 Tente en el Aire (TEA)

Morphologically, this deposit area is in a flat area (pampa) crossed by a NW-SE fault system and surrounded by volcanic outcrops. The low topographic relief has protected the evaporite deposits against erosive processes, particularly in the south and northeast of TEA. The western part of TEA has been affected by surface runoff that leached the caliche, making it soft, friable and porous and reducing its nitrate content. Lithologically TEA presents a sequence of sandstones and polymictic breccias over a volcanic basement. Salt crusts and variable thicknesses of anhydrite cover the sandstones (Figure 6-5).

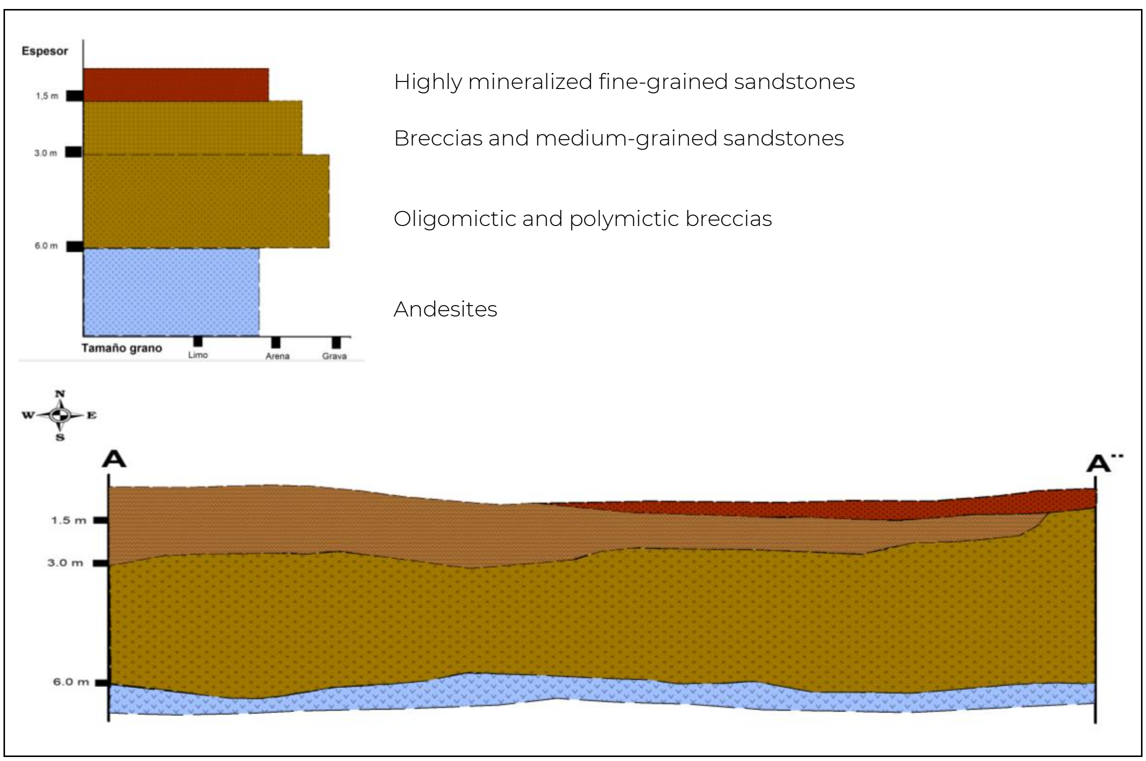
The occurrence of mineralization corresponds to mineralized mantles (caliche) which typically vary in thickness in the range 3.0 m- 3.5 m. 70% of TEA is covered by high-nitrate content, competent caliche, cemented by a high content of soluble salts. The remaining 30% of TEA is covered by reduced nitrate leached caliche of lower geomechanically quality.

Nitrate mineralization in TEA caliche is in the range 5.5 - 6.5% $NaN0_3$) with iodine is in the range (400 - 430 ppm I_2).

Figure 6-5. Representative Stratigraphic Column and Schematic Cross-section of TEA Deposit



Source: Internal document-SQM

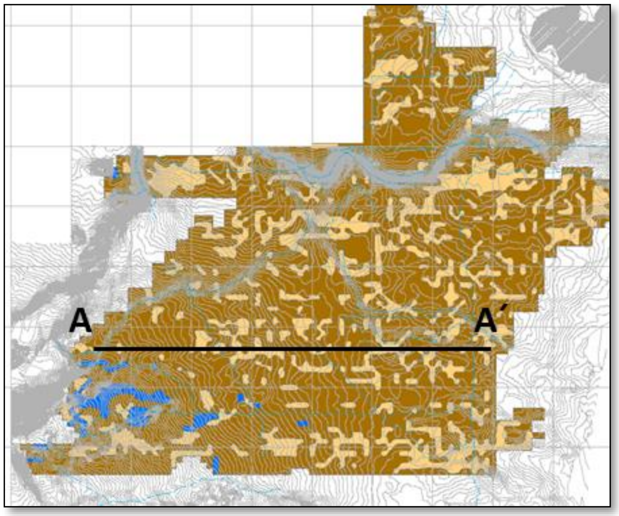


6.3.8 Torcaza

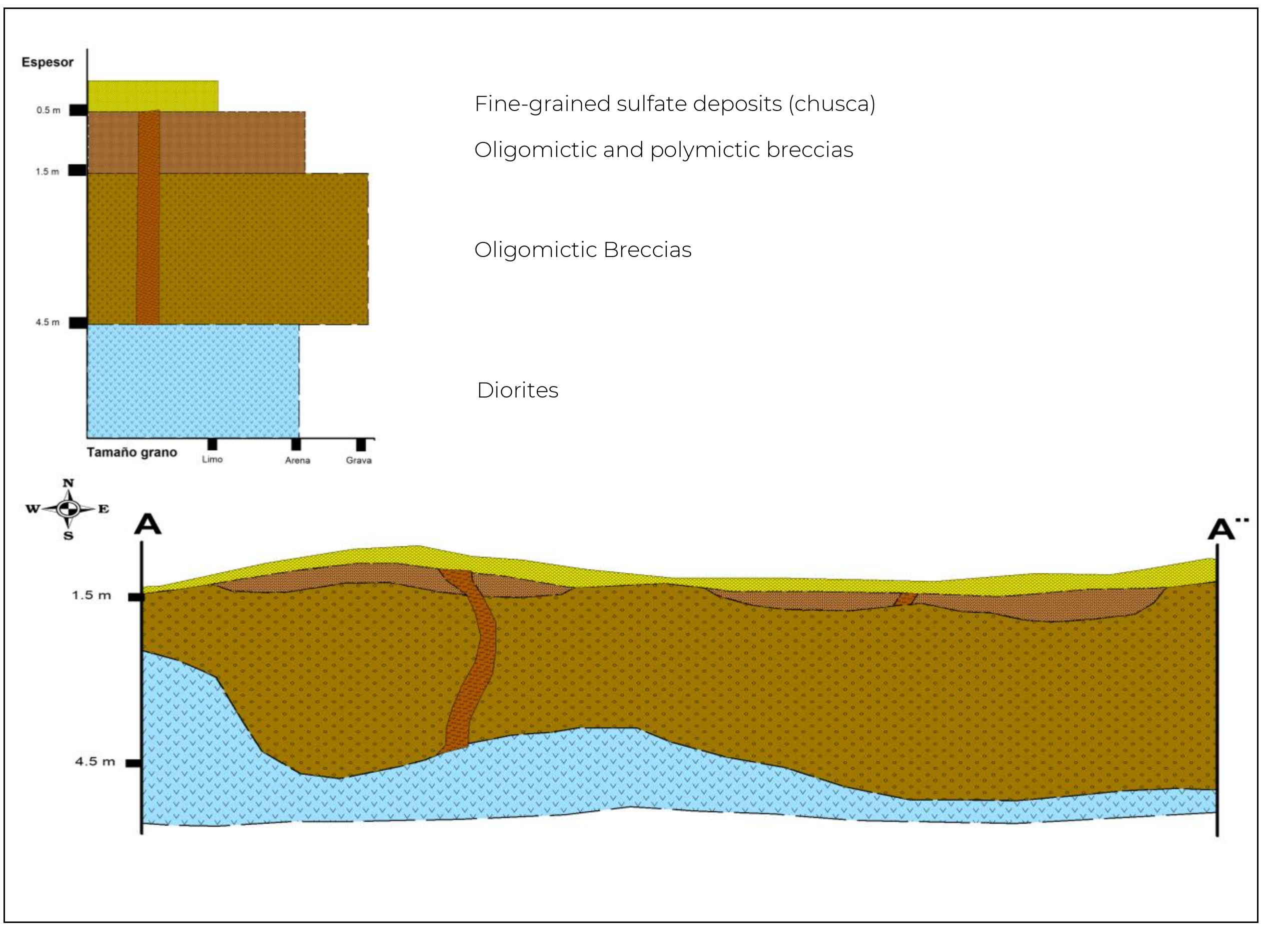
The Torcaza deposit area comprises an open pampa in the southeast, limited by volcanic outcrops to the west and by fluvial deposits to the east. Its geology comprises a sequence of fine-grained sandstones and medium-grained breccias, with a tendency to an increase in clast sizes with depth. The mineralized mantles of caliche are typically 2.5 - 3.2 m in thickness. Nitrate content is spatially variable. A nitratine ($NaNO_3$) horizon can be identified in the stratigraphic sequence between the sandstone and breccia subunits, deposited by mineral-rich groundwaters (Figure 6-6).

The nitrate grade at Torcaza is in the range 4.0 - 6.0 % $NaN0_3$ and the iodine grade is in the range 400 - 430 ppm.

Figure 6-6. Stratigraphic Column and Schematic Cross-section of Torcaza Sector



Source: Internal document-SQM



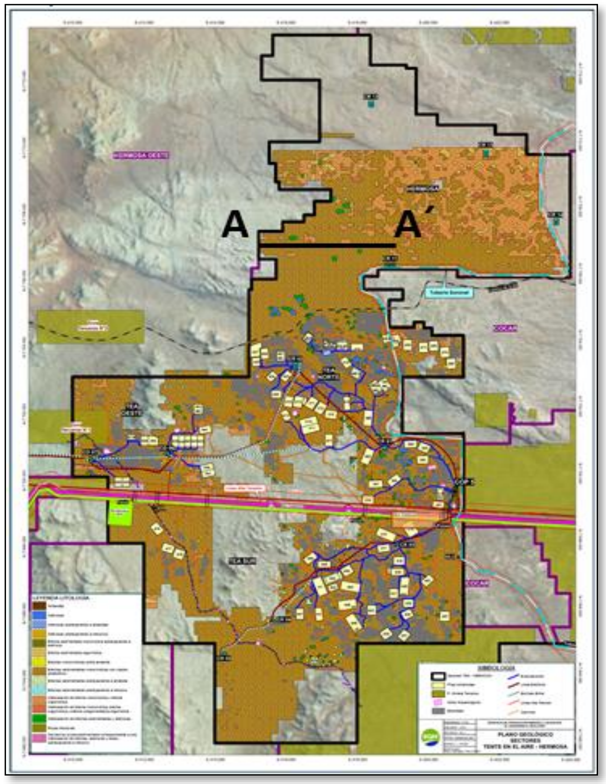
6.3.9 Hermosa

The Hermosa deposit area comprises a closed basin crossed by a system of NW-SE faults. It is an area of gently undulating relief with areas of salt accumulation. It is limited by volcanic outcrops to the west and north. The gentle topographic relief has limited erosion. The geology at Hermosa comprises a sequence of medium-grained sandstones and polymictic breccias over oligomictic breccias resting on volcanic basement (Figure 6-7).

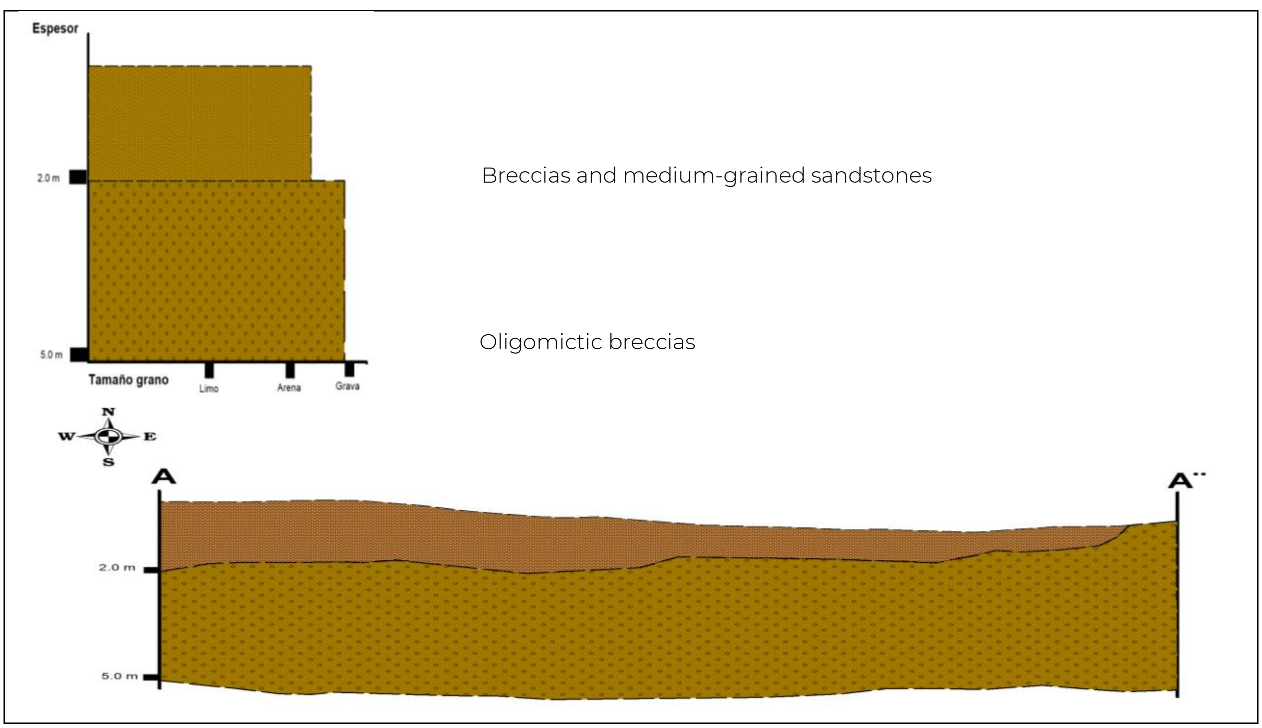
The mineralized mantles (caliche) at Hermosa typically vary in thickness from 3.5 – 4.0 m. 90% of Hermosa is covered by high-nitrate content, competent caliche, cemented by a high content of soluble salts. The remaining 10% of Hermosa is covered by reduced-nitrate leached caliche of lower geomechanically quality.

Nitrate mineralization in Hermosa caliche is in the range 5.5 - 6.0% $NaN0_3$, with iodine grade in the range (400 - 450 ppm I_2).

Figure 6-7. Stratigraphic Column and Schematic Cross-section of Hermosa Sector



Source: Internal Document-SQM.



6.3.10 West Mine

The West Mine corresponds to an open Pampa to the southeast located in an alluvial environment, limited by volcanic outcrops to the west and by fluvial deposits to the east. Lithologically, the sector is formed by a sequence of fine sandstones and medium breccias with an increase of clasts at depth. And anhydrite crust is present in this sector and is much more frequent than in other sectors, reaching the maximum thicknesses, of order metric (Figure 6-8).

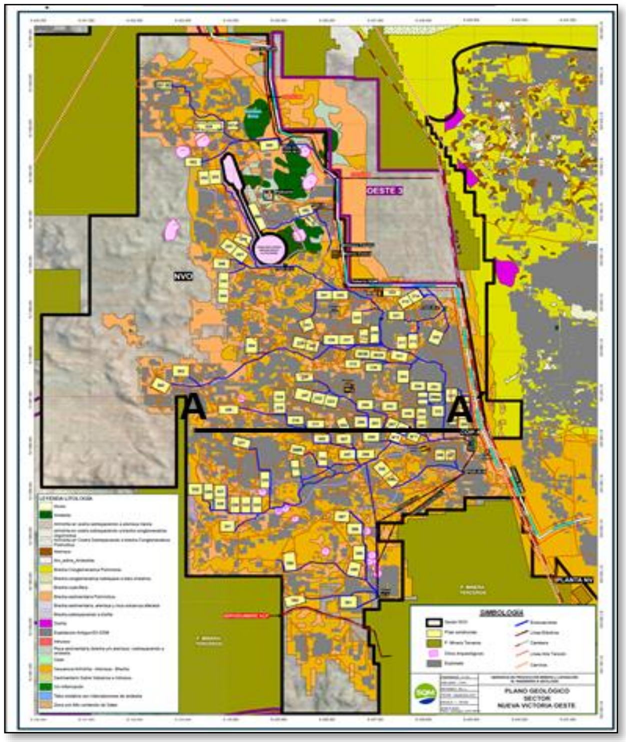
Similar to the Torcaza deposit area, the West Mine deposit area comprises an open pampa in the southeast, limited by volcanic outcrops to the west and by fluvial deposits to the east. Its geology comprises a sequence of fine-grained sandstones and medium-grained breccias, with a tendency to an increase in clast sizes with depth.

At West Mine, the anhydrite crust is more prominent and laterally persistent than in the other deposit areas and may attain a thickness of the order of 1 m.

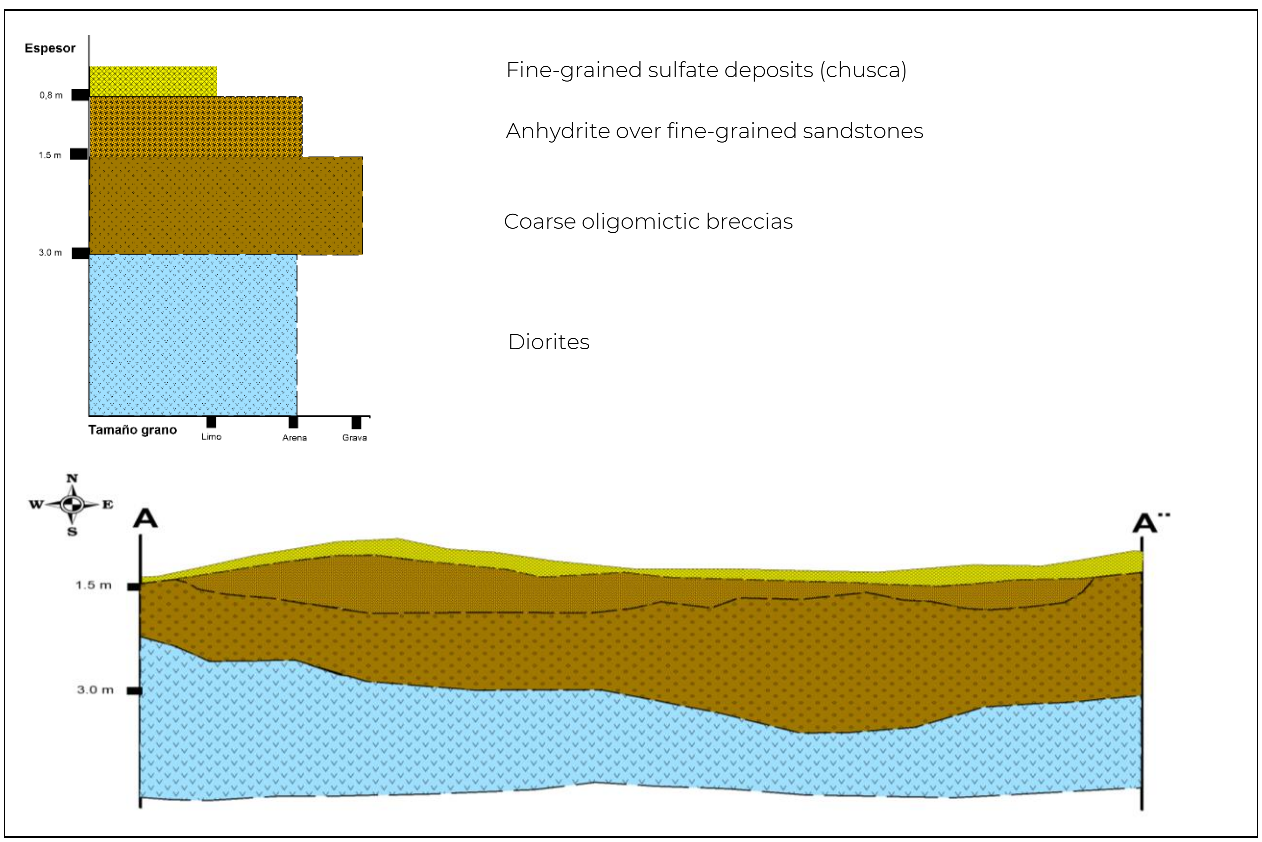
The mineralized mantles of caliche are a little thinner than in TEA and Hermosa, generally attaining a thickness in the range 2.0 - 2.5 m. The caliche has been subject to leaching which has reduced its nitrate content and geomechanical competence.

The nitrate grade at West Mine is in the range 3.5 – 4.5 % $NaN0_3$ and the iodine grade is in the range of 400 - 450 ppm.

Figure 6-8. Stratigraphic Column and Schematic Cross-section of West Mine Sector



Source: Internal document-SQM



6.3.11 North Mine

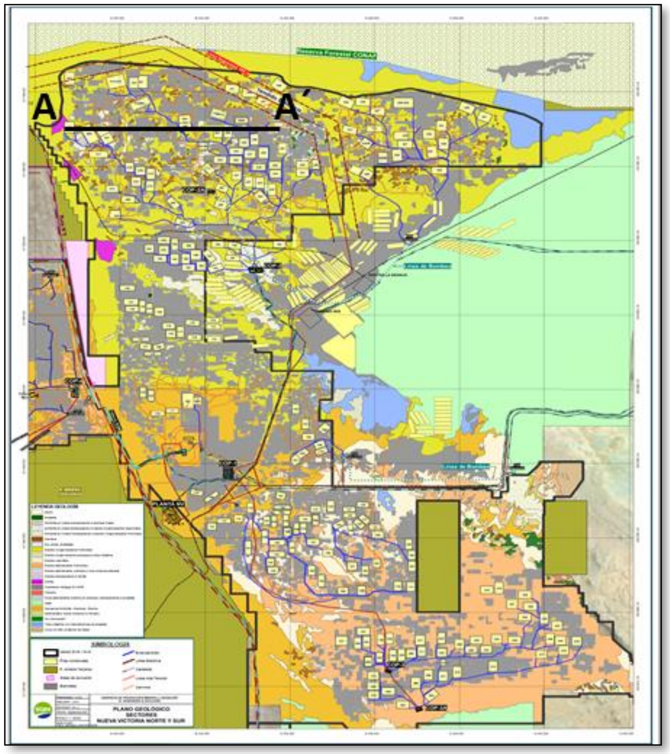
The North Mine deposit area corresponds to a raised block, bounded to the east by the Sur Viejo salt flat.

The caliches of this sector have suffered salt remobilization and erosion, reflected in the lower nitrate content and reduced thickness of the caliche. Lithologically, the caliches correspond to sandstones and breccias with high quartz contents, which makes them highly abrasive. Figure 6-9 presents the stratigraphic column and a cross-section for North Mine.

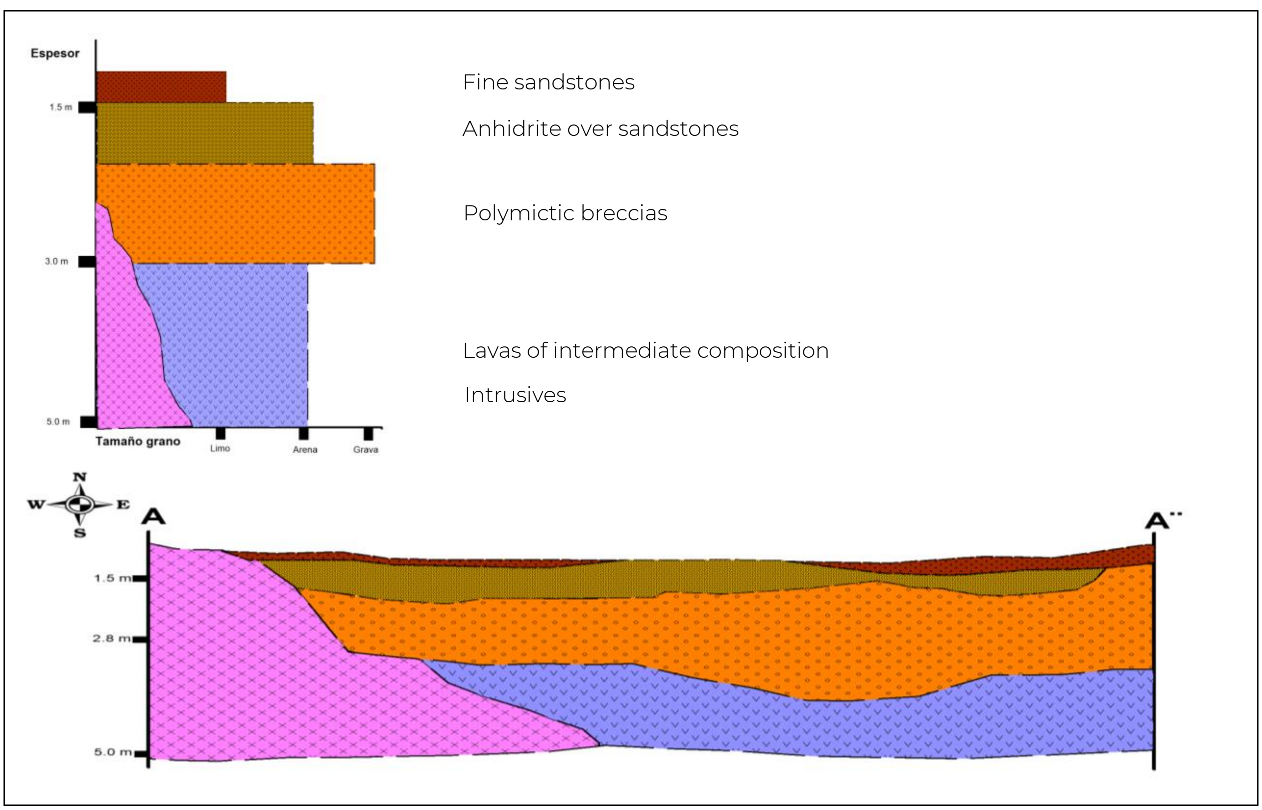
The caliche mantles present average thicknesses of 2.0 - 2.2 m. The geomechanical quality of the caliches in this sector is generally high, except locally where they are cut by faults which may result in significant clay content.

As for the West Mine deposit area, the nitrate grade at North Mine is in the range 3.5 – 4.5 % $NaN0_3$ and the iodine grade is in the range 400 - 450 ppm.

Figure 6-9. Stratigraphic Column and Schematic Cross-section of North Mine Sector



Source: . Internal document-SQM



6.3.12 South Mine

The South Mine deposit area corresponds to a tectonically uplifted basin, bounded to the east by the Sur Viejo salt flat. The South Mine deposit area was enriched by surface water runoff after mineralization which favored the remobilization of soluble salts and enrichment with chlorides, sulfates, potassium, calcium and sodium. The geology of South Mine comprises a sequence of anhydrites, sandstones and polymictic breccias over siltstones with variable clay content.

The caliche mantles reach average thicknesses of 2.0 m. Their geomechanical quality is generally high, except locally where they are cut by faults which may result in significant clay content.

The nitrate grade at South Mine is lower than at North Mine and West Mine, being in the range 2.5 – 3.5 % $NaN0_3$, although the iodine grade is a little higher at 400 ppm to 500 ppm.

6.4 Mineralization

Table 6-1 presents a summary of the mineralogy of the Nueva Victoria Property. The number of samples included in the database on which the table is based are indicated by the "n = "value in the table header. TEA has by far the greatest number of samples with n = 226. An "X" indicates the presence of the mineral in the samples of the area. In the case of TEA, the proportion of the 226 samples analyzed in which the mineral of intertest was recorded are indicated as percentage. The table uses the following color coding to indicate the percentage content by mass of dry sample of each mineral of interest:

- Red fill indicates that the mineral accounts for 10% or greater of the mass of the dry samples.
- Orange fill indicates that the mineral accounts for between 5% and 10% of the mass of the dry samples.
- Yellow fill indicates that the mineral accounts for between 1% and 5% of the mass of the dry samples.
- An "X" in a cell with no color fill indicates that the mineral of interest accounts for less than 1% of the mass of the dry samples.

Table 6-1. Mineralogy of Nueva Victoria Caliches

Group	Mineral (Spanish name in brackets)	Formula	South Mine (n = 21)	West Mine (n = 6)	North Mine (n = 21)	North Mine Gravels (n = 2)	TEA (n = 226)	TEA Gravels (n = 3)
Nitrates	Nitratine (Nitratina)	$NaNO_3$	X	X	X	X	X (79%)	X
	Darapskite (Darapskita)	$Na_3(SO_4)(NO_3).H2O$	X				X (6%)	
	Saltpetre (Nitrato potasico)	KNO_3	X					
Iodates	Lautarite (Lautarita)	$Ca(IO_3)_2$	X				X (9%)	X
	Hectorfloresite (Hectorfloresita)	$Na_9(IO_3)(SO_4)_4$	X				X (59%)	X
	Fuenzalidaite (Fuenzalidaita)	$K_6(Na,K)_4Na_6Mg_{10}(SO_4)_{12}(IO_3)_{12}.12H_2O$					X (8%)	
	Brüggenite (Brueggenita)	$Ca(IO_3)2.H_2O$					X (25%)	
Chlorides	Halite (Halita)	NaCl	X	X	X	X	X (82%)	X
	Sylvite (Silvita)	KCl	X					
	Potassium-rich halite (Halita Potasica)	(K, Na)Cl	X					
Sulfates	Anhydrite (Anhidrita)	$CaSO_4$	X	X	X		X (76%)	
	Glauberite (Glauberita)	$Na_2Ca(SO_4)_2$	X	X	X	X	X (21%)	X
	Loeweite, Löweite (Loeweita)	$Na_{12}Mg_7(SO_4)_{13}.15H_2O$	X	X			X (13%)	
	Polyhalite (Polihalita)	$K_2Ca_2Mg(SO_4)_4.2H_2O$	X	X	X	X	X (81%)	X
	Kieserite (Kieserita)	$MgSO_4.H_2O$	X				X (55%)	
	Astrakanit, Blödite (Astrakanita)	$Na_2Mg(SO_4)_2.4H_2O$	X	X	X	X	X (78%)	X

Group	Mineral (Spanish name in brackets)	Formula	South Mine (n = 21)	West Mine (n = 6)	North Mine (n = 21)	North Mine Gravels (n = 2)	TEA (n = 226)	TEA Gravels (n = 3)
	Humberstonite (Humberstonita)	$K_3Na_7Mg_2(SO_4)_6(NO_3)_2.6H_2O$	X		X	X	X (8%)	
	Hexahydrite (Hexahidrita)	$MgSO_4.6H_2O$	X			X	X (55%)	
	Epsomite (Epsomita)	$MgSO_4.7H_2O$					X (4%)	
	Gypsum (Yeso)	$CaSO_4.2H_2O$	X		X	X	X (15%)	X
	D'Ansite (D'ansita)	$Na_{21}Mg(SO_4)10Cl_3$					X (0.4%)	
	Bassanite (Bassanita)	$2(CaSO_4).H_2O$	X					
	Mirabilite (Mirabilita)	$Na_2SO_4.10H_20)$						X
	Cesanite (Cesanita)	$Ca_2Na_3(OH)(SO_4)_3$						X
	Thenardite (Thenardita)	Na_2SO_4	X					
	Pentahydrite (Pentahidrita)	$MgSO_4.5H_2O$	X					
	Vanthoffite (Vanthoffita)	$Na_6Mg(SO_4)_4$	X					
Silicates	Silicate minerals generally		X	X	X	X	X	X

Source: Internal document-SQM

6.5 Deposit Types

6.5.1 Genesis of Caliche Deposits

Wetzel (1961) postulated that nitrate deposits are enriched in salts by mudflow events. Mueller (1960) supported the theory of Singewald and Miller (1916) which cited accumulation by capillary rise and evaporation of groundwater at the margins of salt flats. Fiestas (1966) suggested that reactions between acids from volcanic gas clouds and the rocks and soils of the nitrate fields was important in the genesis of the mineral salts concentrated within the caliche deposits. Ericksen (1975) proposed that the mineral salts have a mainly atmospheric origin, the product of dry atmospheric precipitation of mineral salt aerosols carried inland from the coast; the aerosols being derived from marine spray at the ocean surface / atmosphere interface, particularly from waves in the breaker zone of the coast. In 1963, working with condensed fog samples, he demonstrated that the coastal fogs of northern Chile contain mineral salts which could be an important source of mineral salts that subsequently become concentrated over time by leaching and evaporation, forming economic caliche deposits.

Authors such as Pueyo et al. (1998) and Reich et al. (2003) describe mechanisms for the genesis of saline groundwaters and brines, which can give rise to the generation of caliche deposits in porous host rocks, such as sandstones and breccias, though the processes of concentration, primarily evapo-concentration, by the evaporation of water from the capillary fringe of shallow water tables. The soluble mineral salts first enter the source water via the leaching of altered rocks and pre-existing saline materials. They emphasize the role the hydrological system operating over long periods of time in the leaching and transport of the salts, including during periods of former wetter climate (hydrological paleosystem).

Current thinking is that the mineral salts of the majority of economic caliche deposits in the arid north of Chile, except for a few specific cases of marine evaporite deposits, have a dominantly volcanic origin. Chong (1991) noted that the leaching of volcanic materials would have been favored by thermal processes related to the middle Tertiary volcanic arc. Álvarez (2016) explained how groundwater leaching of iodine from iodine bearing organic-rich rocks may constitute an important origin of iodine in caliche deposits.

6.5.2 Nueva Victoria

The mineralization at Nueva Victoria is mantiform, with distinct deposit areas of several kilometers in extension. Mineralized mantle (caliche) thicknesses vary between deposit areas, falling within the range 1.0 - 6.0 m. As a result of the action of geological processes over time (weathering, erosion, faulting, volcanism) the caliche deposits can take a variety of forms, including, as detailed below.

6.5.3 Continuous Mantles

Laterally continuous mineralization hosted in sandstones and breccias; presenting caliche thicknesses generally in the range of 2.0 - 4.0 m, but occasionally reaching up to 6.0 m. Nitrate grades tend to be highest where the caliche is thickest. Iodine grades tend to reduce at depth. The caliche mantles may be cut by fractures filled with cemented sands (sand dikes). Secondary deposition of mineral salts may be observed along bedding plane contacts.

6.5.4 Thin Salt Crusts and Superficial Caliche

Evaporite deposits presenting as thin (0.5 to 1.2 m), laterally discontinuous mineralization, often developed within and over fine-grained sandstones of high competence. Nitrate grades in these thin deposits can reach 20% and iodine can attain values of 1,500 ppm.

6.5.5 Stacked Caliches

This type of deposit is found in sectors with a high degree of leaching. It is particularly associated with alluvial fans. The leaching of the overlying material reduces its degree of cementation and geomechanical competence and reduces the grade of economic mineralization that it contains. Reprecipitation of the leached minerals at depth in the formation (eg alluvial fan) results in better-cemented, geomechanically more competent, more mineralized caliches at depth. The thickness of these mineralized caliches is variable, but is generally around 2.0 m. Generally, the mineral grades of these caliches are lower than the other caliche deposit styles.

6.5.6 Other Economic Mineralization

Most of the economic nitrate and iodine mineralization associated with caliche mantles occurs as:

1. Envelopes around the sedimentary clasts (sand and gravel grains) of host sandstones, breccias and conglomerates.
2. Filling of the pore space between the sedimentary clasts.
3. Evaporite aggregates due to saline efflorescence.

Economic mineralization may also manifest itself in the following ways:

1. Cutting the caliche mantles as fracture infills (sand dikes).
2. Veins of 0.5 to 1.0 m thickness associated with sediment - lava contact surfaces.
3. As veins of 0.5 to 1.0 m thickness in volcanic rocks.
4. As veins in altered or fractured volcanic rocks.

The nitrate deposits at Nueva Victoria are located on the western edge of the Intermediate Basin, formed mainly by surface or shallow horizontal to sub-horizontal strata of clastic sedimentary rocks (sandstones, breccias and conglomerates), which have been mineralized by solutions rich in mineral salts (nitrates, chlorides, iodates) to form caliche deposits found in large horizontal layers, ranging in thickness from 1 m to 4 m, with barren material (overburden) ranging from 0 m to 2 m at the top.

7 EXPLORATION

Nueva Victoria is an active mine operation. Ongoing exploration is conducted by SQM with the primary purpose of supporting mine operations and increasing estimated Mineral Resources. The exploration strategy is focused on have preliminary background information on the tonnage and grade of the ore bodies and will be the basis for decision making for the next Recategorization campaigns. Exploration work was completed by mine personnel.

7.1 Surface Samples

SQM does not collect surface samples.

7.2 Topographic Survey

Detailed topographic mapping was created in the different sectors of Nueva Victoria by aerial photography, using an unmanned aircraft operated by remote control, Wingtra One (Figure 7-1); equipment with 42 Mega pixels resolution, maximum flight altitude 600 m, flight autonomy 40 minutes. The accuracy in the survey is 15 to 10 cm.

The measurement was contracted to STG since 2015.

Figure 7-1. Wingtra One Fixed-wing Aircraft

Prior to 2015, the topography survey was done by data measurement profiles every 25 m; these profiles were done by walking and collecting information from points as the land surveyor made the profile. With this information, the corresponding interpolations were generated to obtain sector surfaces and contour lines.

7.3 Drilling Methods and Results

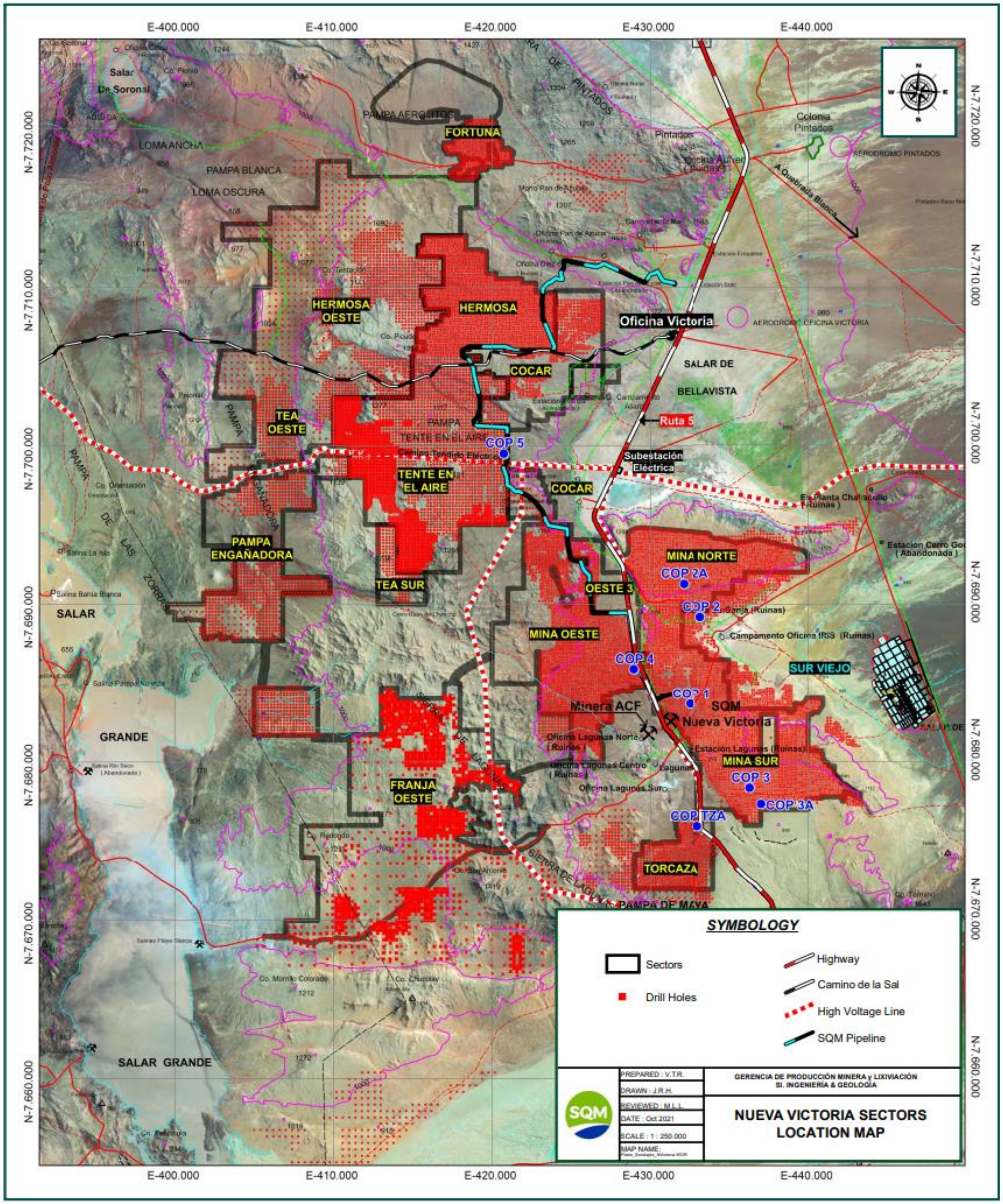
The Nueva Victoria geologic and drill hole database was provided to WSP for review and included 90,527 holes that represented 360,115 m of drilling. Table 7-1 summarizes the drilling by propoerty. Figure 7-2 shows the drill hole locations. As for the type of drilling used, it corresponds to RC holes, with a maximum depth of 7 m. All of the Nueva Victoria drilling was done with vertical holes.

Table 7-1. Detail of the Number of Drill Holes and Total Meters Drilled by Sector in the SQM Nueva Victoria, Iris, and Soronal Properties

SQM Property	Sector	EIA	Grid	N° of Drill holes	Total Meters	Core recovery (%)
Soronal	Fortuna	Hermosa	100	1,021	5,105	No data
	Hermosa - Hermosa Sur	Hermosa	100 - 100T	8,066	40,330	87
	Tente en el Aire (TEA)	Hermosa	100 - 100T - 200	7,313	36,565	89
	Hermosa Oeste	TEA	200 - 400	1,212	7,272	82
	Coruña	Hermosa	100	1,038	6,228	No data
	TEA Oeste	TEA	200 - 400	560	3,360	85
	TEA Sur (Oeste)	TEA	200	170	1,020	84
	Cocar	TEA	100 - 200	1,015	5,075	No data
	Pampa Engañadora	TEA	200 - 400	1,225	7,350	82
	Franja Oeste	TEA	200 - 800	1,430	7,150	80
Nueva Victoria & Iris	Oeste 3	TEA	50 - 100	485	2,183	84
	Mina Oeste	Nueva Victoria	50 - 100	18,350	64,225	90
	Mina Norte	Nueva Victoria	50 - 100	21,165	74,078	83.5
	Mina Sur	Nueva Victoria	50 - 100	24,115	84,403	94
	Torcaza	Torcaza	50 - 100 - 200	4,400	22,000	88.1
				91,565	366,343	

The drilling campaigns were carried out according to the Mineral Resource projection priorities of the Superintendent of Mineral Resources and LP Planning. Subsequently, this prospecting plan was presented to the respective VPs to ratify if they comply with the Mineral Reserve projections to be planned, if they do not coincide, the prospecting plan was modified.

Figure 7-2. Drill Hole Location Map



Source: provided by SQM

Drilling at Nueva Victoria was completed with prospecting grids of 400 x 400 m, 200 x 200 m, 100-x-100 m, 100 locked and 50-x-50 m. The various prospecting grids are discussed in the sections below.

7.3.1 Grid > 400 m

Areas that have been recognized and that present some mineralization potential are initially prospected in wide spaced reverse air holes, generally spaced greater than 400 m with variable depths of 6 to 8 m depending on the depth at which the mineralization is encountered. In consideration of the type of mesh and the fact that the estimations of tonnage and grades are affected in accuracy, this resource is defined as an exploration target grid > 400 m.

7.3.2 400-m Grid

Once the hypothetical sectors with expectations are identified, 400-x-400-m prospecting grids are carried out. In areas of recognized presence of caliche or areas where 400-x-400-m grid drilling is accompanied by localized closer spaced drilling that confirms the continuity of mineralization, the 400-m grid drilling provides a reasonable level of confidence and therefore define dimensions, thickness, tonnages and grades of the mineralized bodies, used for defining exploration targets and future development. The information obtained is complemented by surface geology and the definition of geological units. In other cases when there is no reasonable level of confidence the 400-x-400-m grid will be defined as an exploration target.

7.3.3 200-m grid

Subsequently, the potential sectors are redefined, and the 200-x-200 m prospecting grid is carried out, thus defining with a reasonable level of confidence the dimensions, thicknesses, tonnages and grades of the mineralized bodies as well as the continuity of the mineralization, continuing to complement the geology of the sector and the definition of geological units. This area is used to estimate Inferred Mineral Resources.

7.3.4 Grid 100 m and 100 Locked

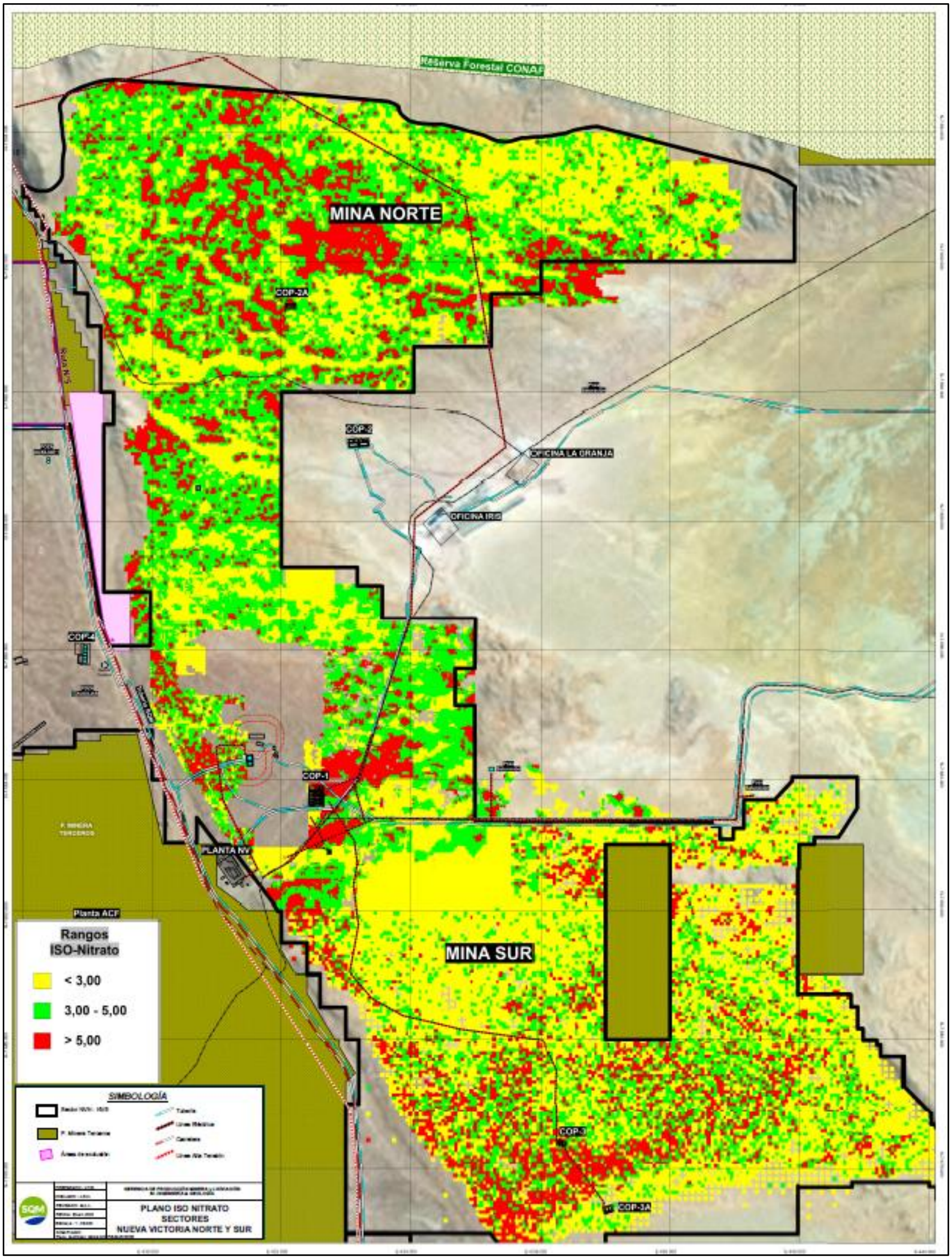
Subsequently, the prospecting grid 100-x-100 m, or 100 locked, which, in some cases, allows to delimit, with a significant level of confidence, the dimensions, thickness, tonnage, and grades of the mineralized bodies as well as the continuity of the mineralization. At this stage, detailed geology is initiated, the definition of geological units on surface continues to be complemented and sectors are defined to carry out geometallurgical assays. This area is used to estimate indicated Mineral Resources.

7.3.5 50-m Grid

The 50-x-50-m prospecting grid allows for delimiting with a significant level of confidence (amount of information associated to the drilling grid) the dimensions, thickness, tonnages and grades of the mineralized bodies as well as the continuity of the mineralization. The definition of geological units and collect information on geometallurgical assays from the pilot plants depending on the prospecting site is then continued. This area is used to estimate Measured Mineral Resources.

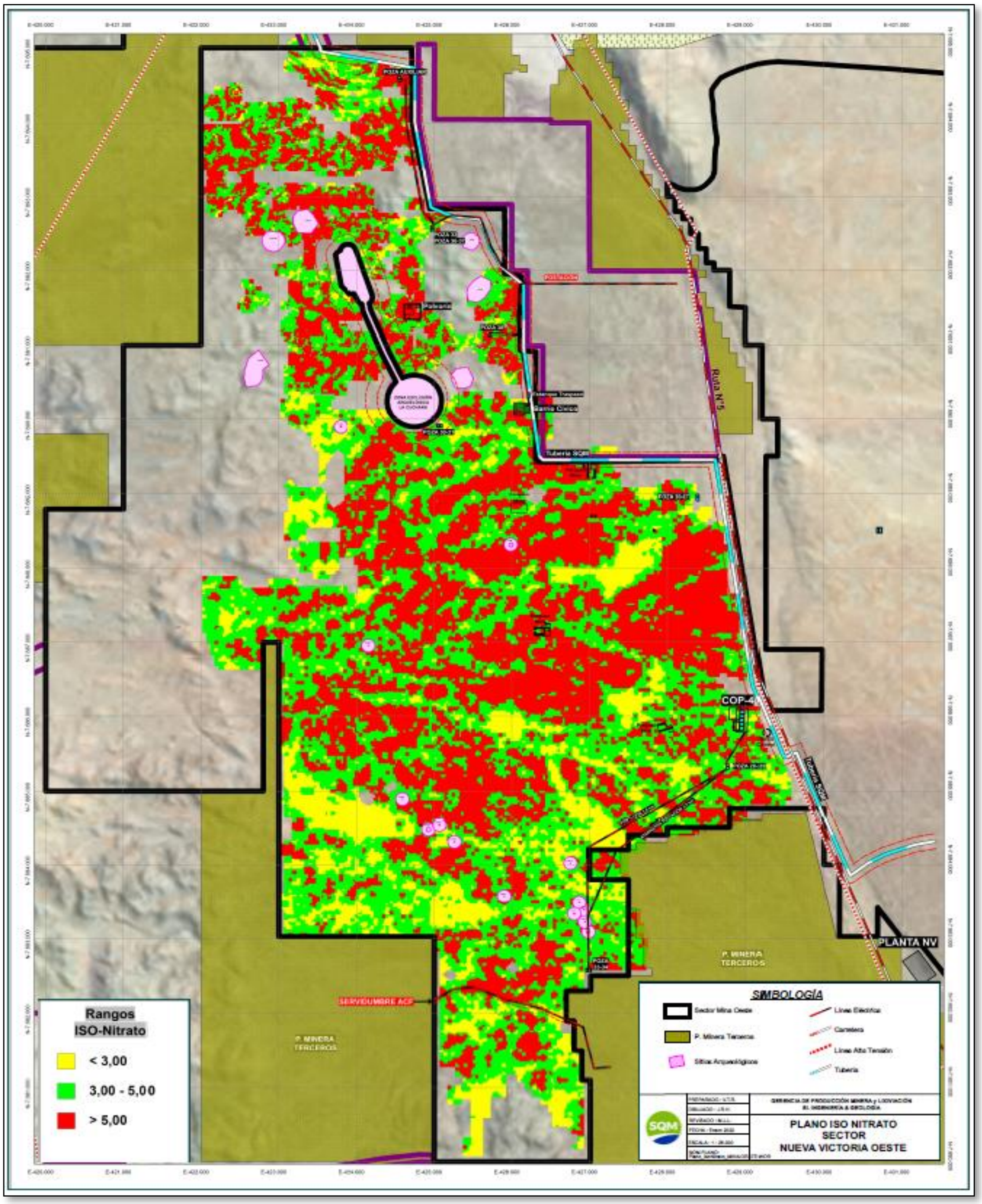
The results of the drilling campaigns in the sector of North Mine and South Mine can be seen in Figure 7-3, where it is highlighted in red the sectors with nitrates greater than 5.0%, in green the nitrates between 3.0% - 5.0% and in yellow the nitrates less than 3.0%. The mineralized bodies at Mina Norte and Sur are distributed in a discontinuous and irregular distribution, with a higher concentration of nitrate mineralization in the central and western portion of the North mine, as well as in the southern and south-western part of the South Mine.

Figure 7-3. Iso-nitrate Map Nueva Victoria of North and South Mines



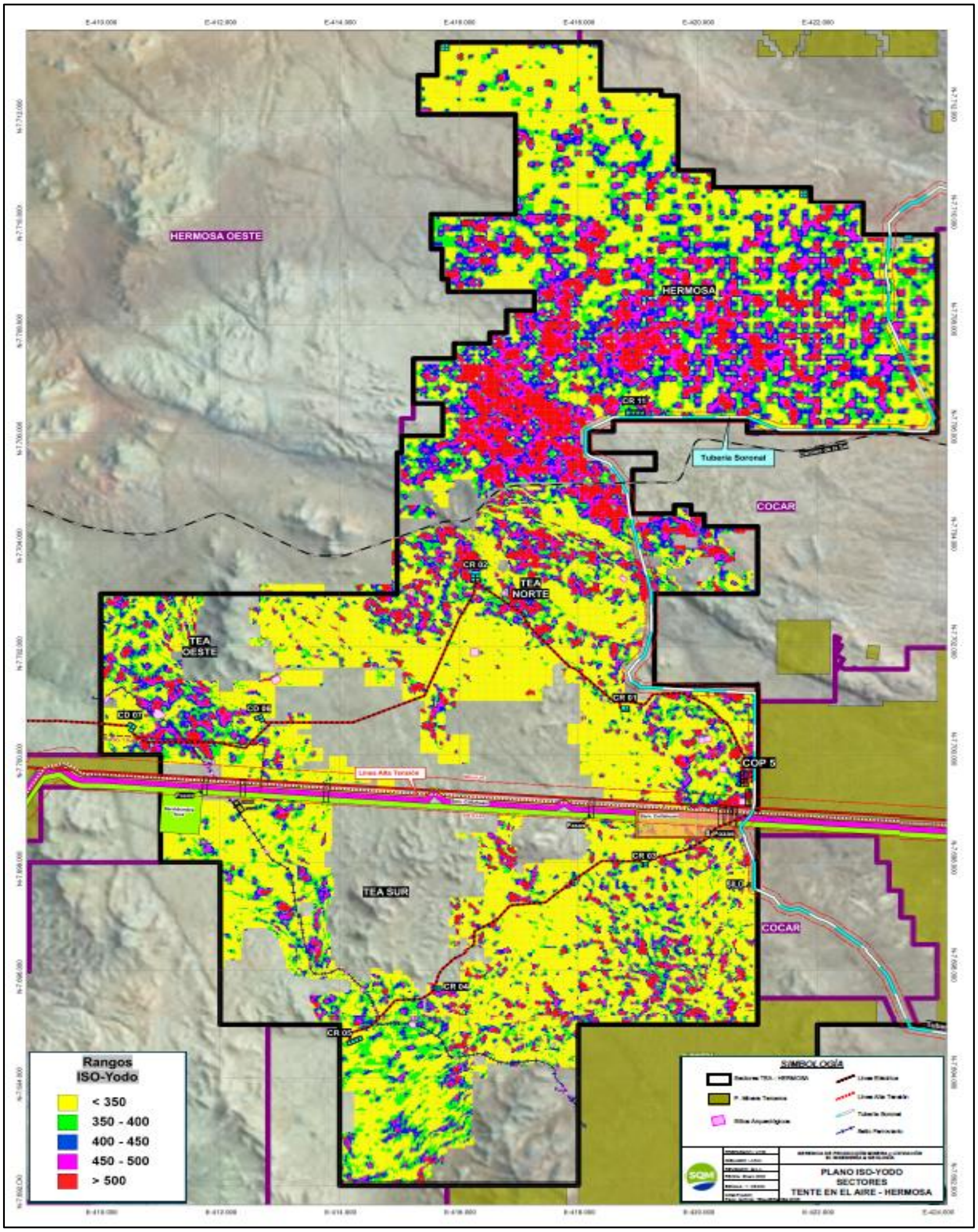
The results of the drilling campaigns in the West Mine sector are shown in Figure 7-4. As shown, the red highlight represent sectors with nitrates greater than 5.0%. The green highlight represents the nitrates between 3.0% - 5.0%, and the yellow highlight denotes the nitrates less than 3.0%. The mineralized bodies in West Mine are distributed in a discontinuous and irregular way in almost its totality, presenting a greater mineralized volume in the central portion.

Figure 7-4. Iso-nitrate Map Nueva Victoria West Mine Sector



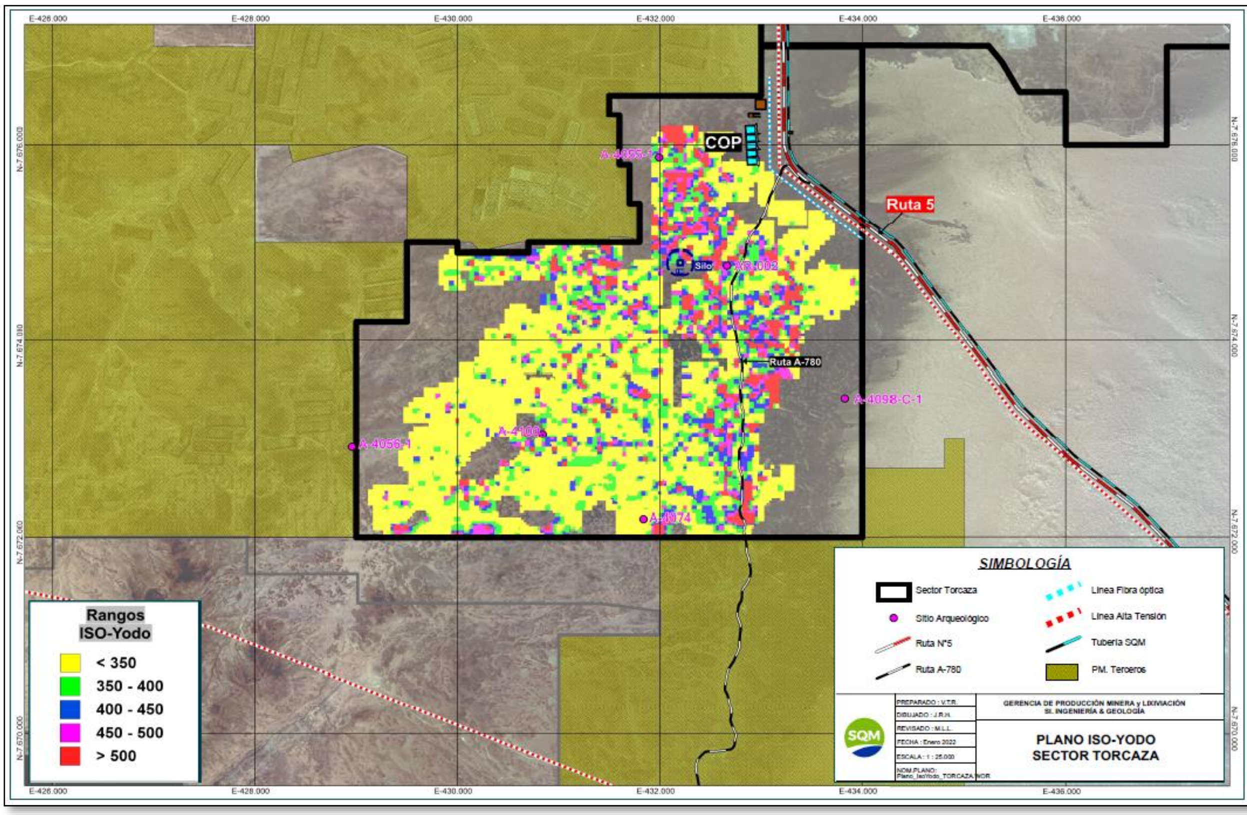
The results of the drilling campaigns, in the TEA and Hermosa sectors, are shown in Figure 7-5. Sectors with nitrates greater than 5.0% are highlighted in red, nitrates between 3.0% - 5.0% in green, and nitrates less than 3.0% in yellow. The mineralized bodies in TEA and Hermosa show greater continuity in nitrate mineralization in the central, north-east and south-east portions, being the west sector of low continuity and greater irregularity.

Figure 7-5. Iso-Iodine Map Nueva Victoria TEA in the Hermosa Sector



The results of the drilling campaigns in the Torcaza sector are shown in Figure 7-6. Sectors with nitrates greater than 5.0% are highlighted in red, nitrates between 3.0% - 5.0% in green and nitrates less than 3.0% in yellow. The mineralized bodies at Torcaza are continuous and regular in the eastern portion; while in the western portion, the mineralization is discontinuous and irregular.

Figure 7-6. Iso-Iodine Map Nueva Victoria TEA in the Torcaza Sector



7.3.6 2021 Campaigns

SQM has an ongoing program of exploration, recategorization, and resource evaluation in the areas surrounding the Nueva Victoria mine currently in operation. SQM has performed reconnaissance drilling at 400-m spacing or lower, in 18.5% of the area covered by its mining properties over the areas with caliche interest (Table 7-2 and Table 7-3).

In 2021, a Mineral Resource recategorization project was carried out in the TEA sector and its surroundings, to have exploitable Mineral Reserves for the development of the Five-Year Plan. For this purpose, 2,400 RC drill holes representing 12,000 m were carried out, at an estimated cost of 115.7 USD per m; obtaining total salt analysis sample by sample. With this information, the Torcaza, TEA Central and West Mine sectors will be recategorized, expecting to obtain resources for 14 Mt.

Table 7-2. M Drilled in Pampa Hermosa

Project /Area	Holes Drilled	Total Meters
Hermosa	4,880	22,000

Table 7-3. Pampa Hermosa Average $NaNO_3$ and I_2

Project /Area	Holes Drilled	Average $NaNO_3$ (%)	Average I_2 (ppm)
Hermosa	4,880	6.2	430

7.3.7 Exploration Drill Sample Recovery

Core recovery has been calculated for all RC holes completed to date. In historical campaigns, the recovery was lower due to the type of drilling rig used.

Since 2015, the drilling equipment was adapted, which allowed a decrease in the loss of material and consequently an improvement in sample recoveries. It should be noted that the recoveries are above 80%, a value that fluctuates in direct relation to the degree of competence of the rock to be drilled, having for example lower recoveries in Franja Oeste and Pampa Engañadora, which present semi-soft caliches of low compaction. Sectors such as Hermosa and TEA have recoveries close to 90% as they correspond to caliche sectors with high competition and mineralization. Table 7-4 details the recovery percentages by sector in Nueva Victoria. Recoveries in sectors such as Fortuna and Cocar correspond to historical campaigns where there is no recovery information.

Table 7-4. Recovery Percentages at Nueva Victoria by Sector

Sector	EIA	Drill Grid	N° of Drill Holes	Total Meters	Recovery %
Fortuna	Hermosa	100	1,021	5,105	No data
Hermosa	Hermosa	100 - 100T	8,066	40,330	87
TEA	Hermosa	100 - 100T - 200	7,313	36,565	89
Hermosa Oeste	TEA	200 - 400	1,212	7,272	82
TEA Oeste	TEA	200 - 400	560	3,360	85
TEA Sur	TEA	200	170	1,020	84
Cocar	TEA	100 - 200	1,015	5,075	No data
Pampa Engañadora	TEA	200 - 400	1,225	7,350	82
Oeste 3	TEA	50 - 100	485	2,183	84
Franja Oeste	TEA	200 - 800	1,430	7,150	80
Mina Oeste	Nueva Victoria	50 - 100	18,350	64,225	90
Mina Norte	Nueva Victoria	50 - 100	21,165	74,078	83.5
Mina Sur	Nueva Victoria	50 - 100	24,115	84,403	94
Torcaza	Torcaza	50 - 100 - 200	4,400	22,000	88.1
Total			90,527	360,115	

7.3.8 Exploration Drill Hole Logging

For all the samples drill hole logging was carried out by external personnel, which was done in the field. Since 2015 ARVI Mining Limitada is the company in charge of logging activities in Nueva Victoria. SQM personnel validated the logs through periodic reviews. Logging procedures used documented protocols. Geology logging recorded information about rock type, mineralogy, alteration and geomechanics

The logging process included the following steps:

1. Measurement of the “destace” and drill hole using a tool graduated in cm.
2. Mapping of cutting (RC) and/or drill hole cores (DDH), defining their color, lithology, type and intensity of alteration, and/or mineralization.
3. Determination of geomechanical units: Leached, smooth, rough, and intercalations.

The information was recorded physically in a predefined format by printed forms and/or the data was digitized on a tablet and/or computer, using the data validation and control system for drill hole logging, through a macro in Microsoft Excel. A validation of the digitalization was performed one day a week, exchanging the information collected physically for a crossed digitization.

The Supervisor Logging Geologist from external contractor was responsible for:

- Generate geological data of the highest possible quality and internal consistency, using established procedures and employing technological devices.
- Locate and verify information of work to be mapped.
- Execute geomechanical and lithological drill hole mapping procedures.
- Supervise field activities. And coordinate and report permanently to SQM personnel on the progress and execution of the work carried out according to the program.

7.3.9 Exploration Drill Hole Location of Data Points

The process of measuring the coordinates of drill holes collars was performed, in 2 stages. Prior to the drilling of the drill holes, the geology area generates a plan and list with the number of drill holes to be marked and coordinates to the personnel of the external contractor of the STG company. A Land surveyor measured the point in the field and identifies the point with a wooden stake and an identification card with coordinates and elevation.

Holes are surveyed, after drilling, with GNSS equipment, for subsequent processing by specialized software with all the required information. Once the complete campaign is finished, the surveyed data was reviewed, and a list was sent with the drill id information and its coordinates.

Collar coordinates were entered into Microsoft® Excel sheets and later aggregated into a final database by external personnel from the STG company.

At the completion of drilling, the drill casing was removed, and the drill collars were marked with a permanent concrete monument with the drill hole name recorded on a metal tag on the monument.

7.3.10 Qualified Person's Statement on Exploration Drilling

The Qualified Person believes that the selection of sampling grids of gradually decreasing spacing as Mineral Resource areas are upgrades from Inferred to Measured Mineral Resources and as they are further converted to Proven, and Probable Mineral Reserves where production plans have been applied, is appropriate and consistent with good business practices for caliche mining. The level of detail in data collection is appropriate for the geology and mining method of these deposits.

8 SAMPLE PREPARATION, ANALYSIS AND SECURITY

8.1 Site Sample Preparation Methods and Security

Analytical samples informing Nueva Victoria Mineral Resources were prepared and assayed at the Iris plan and Internal Laboratory located at Nueva Victoria mine site.

All sampling was completed by the external operators. The QP was not directly involved during the exploration drilling programs or sample selection. Based on review of the procedures during the site visit and subsequent review of the data, it is the opinion of the QP that the measures taken to ensure sample representativeness were reasonable for the purpose of estimating Mineral Resources.

8.1.1 RC Drilling

The RC drilling was focused on collecting lithological and grade data from the “Caliche mantle”. RC drilling was carried out with a 5 ½-inch diameter by an external company "Perforaciones RMuñoz" under the supervision of SQM, both parties were coordinate to establish the drilling points. Once the drilling point was designated, the positioning of the drilling machine was surveyed and the drill rig was set up on the surveyed drill hole location (Figure 8-1 A and B).

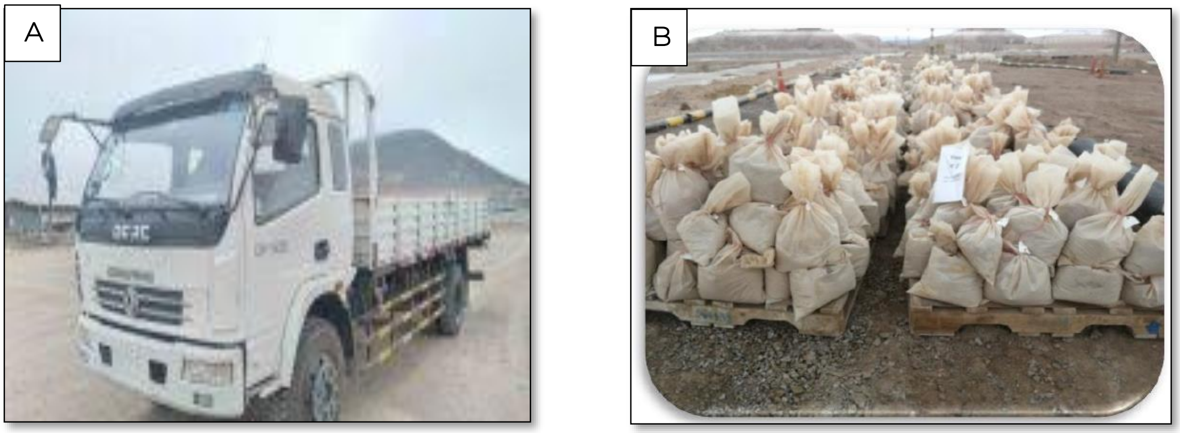
Once set up, drilling commenced (Figure 8-1 C). At the beginning of each drill hole, the drilling point was cleaned or uncovered, eliminating the soft overburden, or chusca, with a backhoe.

Samples were collected from the cyclone at continuous 50 cm intervals in plastic bags. The samples were weighed and quartered at the platform. A cutting sample was taken and left on the floor as a control sample. The sample bag was tied and a sample number card was inserted (Figure 8-1 D).

Figure 8-1. A) Drilling Point Marking B) Drill Rig Positioning C) RC Drilling D) RC Samples at Platform

Samples were transported by truck to the plant for mechanical preparation and chemical analysis. Samples were unloaded from the truck in the correct correlative order and positioned on pallets supplied by the plant manager (Figure 8-2).

Figure 8-2. A) Transportation Truck B) Pallets with RC Samples



8.1.2 Sample Preparation

Mechanical sample preparation was carried out by Pilot Plant Iris V7 located at Nueva Victoria, that has no international certification. Sample preparation includes (Figure 8-3):

- Division of the sample in a cone splitter into 2 parts; one portion was retained for analyses while the other was discarded. The analysis sample should weigh between 1.0 to 1.8 kg.
- Drying of the sample in case of humidity.
- Sample size reduction using cone crushers to produce an approximately 800 gram (g) sample passing a number 8 mesh (-#8).
- Division of the sample in a Riffle cutter of 12 slots of ½-inch each. The sample is separated in 2, one of them corresponds to rejection and the other sample must weigh at least 500 g.
- Sample pulverizing.
- Sample pulp homogenization and splitting into analytical samples.
- Packaging and labeling, generating 2 bags of samples, one will be for the composites in which 200 g are required (original) and the other will be for the laboratory, in which 150 g are required (sample) (Figure 8-4).

Insertion points for quality control samples in the sample stream were determined. Standards samples were incorporated every 60 samples and duplicates every 20 samples, including the first sample. Samples were shipped in boxes containing a maximum of 65 samples (weighing approximately 15 kg) to the internal Caliche Iodine Laboratory.

Figure 8-3. Sample Preparation Flow Diagram

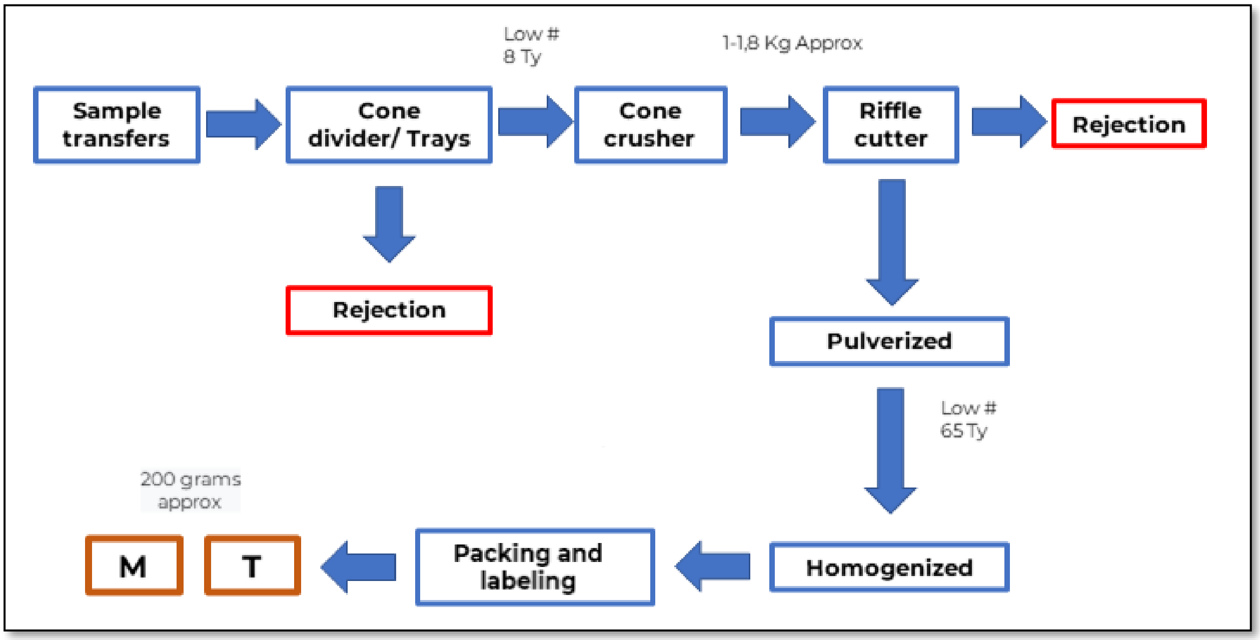


Figure 8-4. A) Sample Division B) Cone Crusher C) Riffle Cutter D) Sample Pulverizing E) Packaging

8.2 Laboratories, Assaying, and Analytical Procedures

Chemical analysis for NO_3 and iodine was performed at the Caliche Iodine laboratory, located in Antofagasta, which is ISO 9001:2015 certified in shippable iodine, replicated in caliche and drill holes.

The Caliche Iodine Laboratory has capacity to analyze 200 samples/day for nitrate and iodine analysis. Sample handling, from receipt to analysis, is performed in 3 areas:

- Receiving and pressing area.
- Nitrate area.
- XRF Equipment Area.

Nitrate analysis was performed by UV-Visible Molecular Absorption Spectroscopy. The minimum concentration entered into the Laboratory Information Management System (LIMS) system was 0.001 g/L, the result was expressed in g/L of $NaNO_3$. Iodine analysis was performed by Redox volumetry. The minimum concentration reported to the LIMS system was 0.002 g/L.

8.3 Results, QC Procedures and QA Actions

8.3.1 Laboratory quality control

To validate the results of the laboratory analysis, the following control measures were carried out (Figure 8-5):

<u>Iodine:</u>

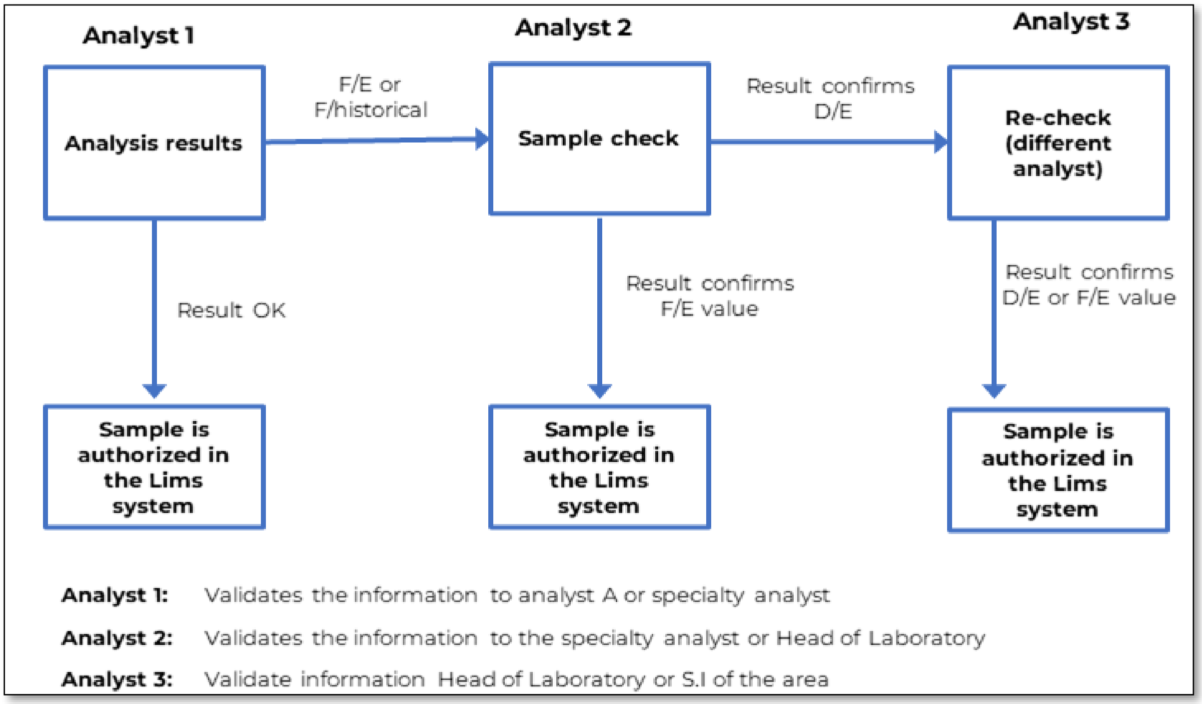
- Prepare a reference standard.
- Measure the reference standard and the reagent blank to ensure the quality of the reagents used.
- Verify that the results are within the 2-sigma range of the standard control chart. control of the standard.

<u>Nitrate:</u>

Analyze at the beginning of the sample set a standard solution.

- Every 5 samples a QC of 8g/L prepared with a solution of 1mg/L of a $NaNO_3$ salt is measured, the variation of the obtained result should not exceed 5% of the nominal value of the QC, otherwise the variables should be revised, and the analysis of the batch should start from the beginning.

Figure 8-5. Flow Chart for Approval of Laboratory Chemical Analysis Results



8.3.2 Quality Control and Quality Assurance Programs (QA/QC)

QA/QC programs were typically set in place to ensure the reliability and trustworthiness of the exploration data. They include written field procedures of aspects such as drilling, surveying, sampling and assaying, data management, and database integrity.

Analytical control measures typically involved the internal laboratory control measures implemented to monitor the precision and accuracy of the sampling, preparation, and assaying. Assaying protocols typically involve regular duplicate assays and insertion of QC samples

SQM has a systematic QA/QC program, which included the insertion of different control samples into the sampling stream:

- Coarse duplicate: 2% (1 every 50).
- Analytical duplicate: 5% (1 per 20).
- Standard: 1.7% (1 per 60).

LIMS software managed the quality control by automatically checking the refined control samples and the Standards entered into the system, generating warnings at the time of analysis.

Pre 2017

No information exists about the analytical quality control procedures at Nueva Victoria, prior to 2017.

2017 to 2020

The results of the QA/QC program for the TEA from 2017 to 2019 and Hermosa sectors from 2019 to 2020 are detailed below. Table 8-1 details the number of samples inserted for each of the controls and the variables analyzed.

Table 8-1. Number of Control Samples for Campaigns from 2017 to 2020 for Hermosa and TEA Sectors

Sector	Year	Control Type			Variable	
		Coarse Duplicate	Standard	Duplicates	Nitrate	Iodine
TEA Oeste	2017	297		297	x	x
TEA Oeste Sur	2018	492	630	1,815	x	x
Pampa Hermosa	2019 - 2020			555	x	x

a) <u>TEA 2017</u>

For the 2017 campaign, 297 coarse duplicates were inserted. Nitrate gives a good precision without bias (Figure 8-6 and Table 8-2). Iodine presents low concentrations (ppm), so a lower precision is observed probably due to a nugget-type effect; however, no bias is observed (Figure 8-7 and Table 8-3).

Table 8-2. Coarse Duplicates for Nitrate-TEA 2017

Statisticians	Nitrate grade %		Difference	Error
	Original	Check	Original-Check	
Number	297	297		
Mean	4.0	4.2	0.135	0.091
Stand. Deviation	3.39	3.46	1.56	
% Difference	103.35			
Test T	0.137			
Minimum	1.0	1.0		
Percentile 25	2.0	2.1		
Median	2.9	3.1		
Percentile 75	4.6	4.8		
Maximum	20.0	20.0		
Correlation index		0.90		

Figure 8-6. Scatterplot for Nitrate - Coarse Duplicates- TEA 2017

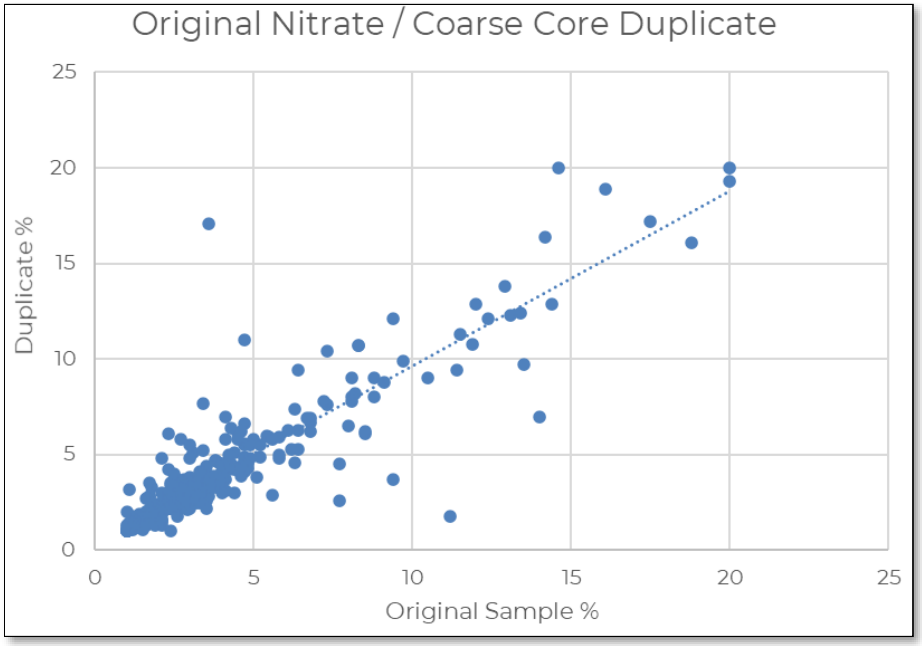
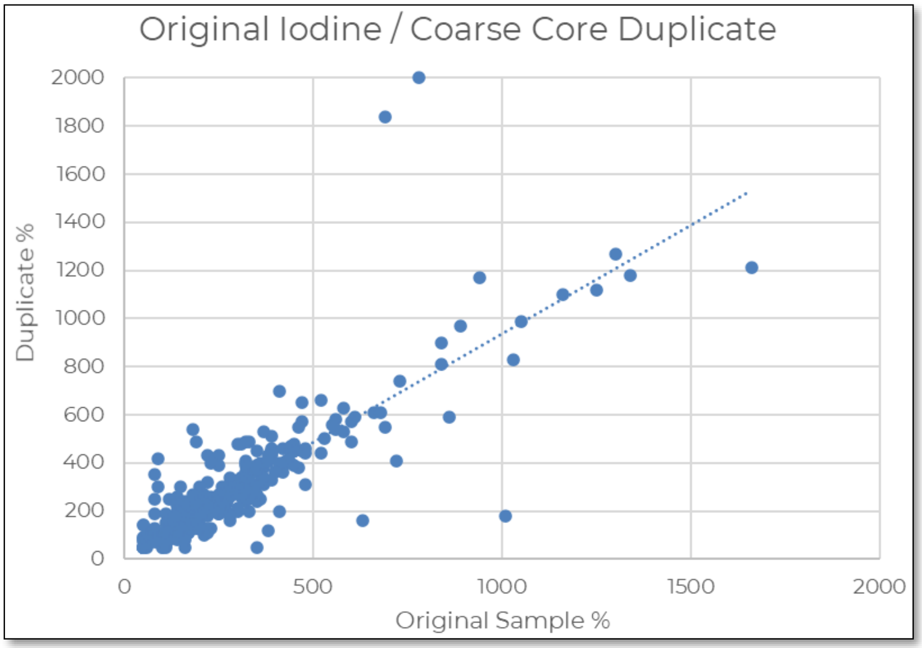


Table 8-3. Coarse Duplicates for Iodine-TEA 2017

Statisticians	Nitrate grade %		Difference	Rel Error
	Original	Check	Original-Check	
Number	297	297		
Mean	285.1	285.0	-0.067	6.03
Stand. Deviation	229.86	213.83	103.94	
% Difference	99.98			
TestT	0.99			
Minimum	50.0	50.0		
Percentile 25	140.0	130.0		
Median	220.0	230.0		
Percentile 75	360.0	390.0		
Maximum	1,660.0	1,270.0		
Correlation index		0.89		

Figure 8-7. Plots for Iodine - Coarse Duplicates- TEA 2017



b) <u>TEA 2018 -2019</u>

For the 2018 to 2019 campaign, controls for coarse duplicates, fine duplicates, and standards were inserted.

<u>Coarse Duplicate:</u>

The analysis of the drilling campaign conducted at TEA shows that for Nitrate good precision is observed with no apparent bias. Iodine shows low concentrations (ppm), with lower precision, probably due to a nugget-type effect; however, no bias is observed (Figure 8-8 and Table 8-4).

Table 8-4. Coarse Duplicates for Iodine and Nitrate TEA 2018-2019

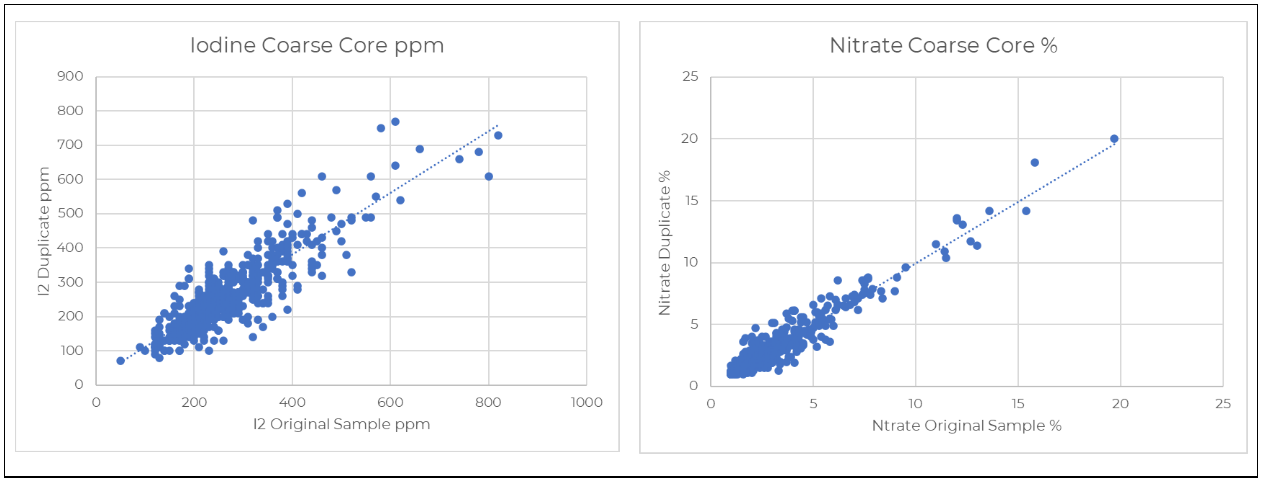
Statisticians			
Iodine ppm	Original	Duplicate	Difference
Data Number	492	492	
Average	277.1	269.5	7.6
Median	260.0	250.0	10.0
Variance	10,967.7	11,821.3	2,986.4
Max	820.0	770.0	190.0
Min	50.0	70.0	-170.0

Test Student	-0.001
Corr. Coefficient	0.87

Statisticians			
Nitrate %	Original	Duplicate	Difference
Data Number	492	492	
Average	3.1	3.1	0.0
Median	2.4	2.4	0.0
Variance	5.5	5.9	0.5
Max	19.7	20.0	2.2
Min	1.0	1.0	-2.5

Test Student	-0.277
Corr. Coefficient	0.96

Figure 8-8. Plots for Iodine and Nitrate - Coarse Duplicates- TEA 2018-2019



Standard:

The ranges of variation of the analyses with respect to the standards used by SQM vary in nitrate by ± 0.35 to ± 0.53 % and for iodine ± 50 to ± 60 ppm. (Table 8-5).

Table 8-5. Standards Results - TEA 2018-2019

Nitrate	%	
Date	Rank +/-	Data
Sept-18	0.35	87
Oct-18	0.53	87
Nov-18	0.45	66
Dec-18	0.46	114
Jan-19	0.46	163
Feb-19	0.46	113
Total Data		630

Iodine	ppm	
Date	Rank +/-	Data
Sept-18	60	87
Oct-18	60	87
Nov-18	50	66
Dec-18	50	114
Jan-19	50	163
Feb-19	50	113
Total Data		630

Fine Duplicates

The ranges of variation of the analyses present a very good performance for nitrate and for iodine, showing no biases and a very good correlation between the original sample and the duplicate sample (Figure 8-9 and Table 8-6).

Table 8-6. Fine Duplicates for Iodine-and Nitrate TEA 2018-2019

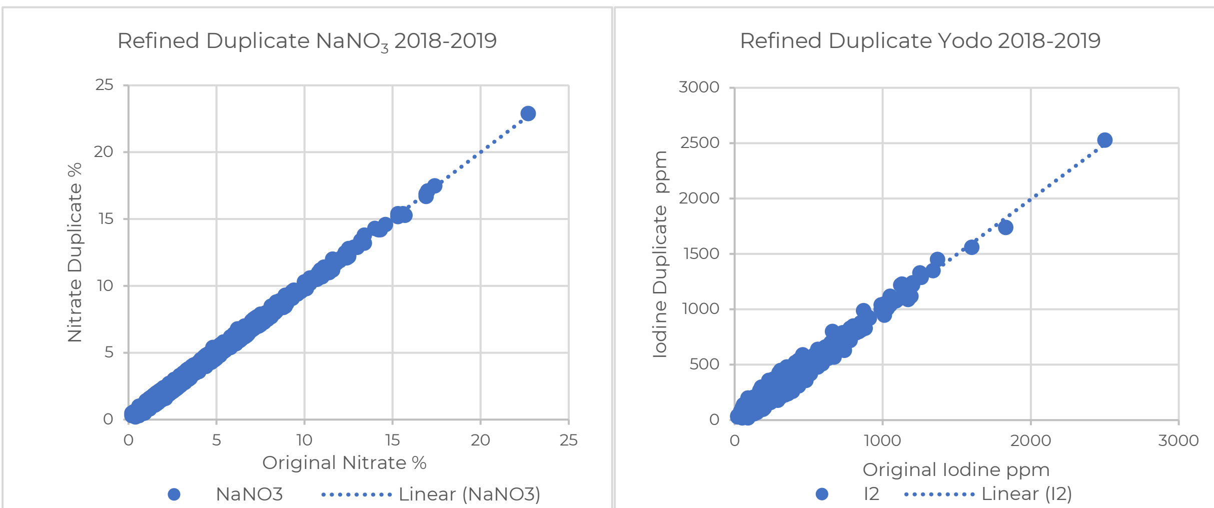
Nitrate %	Original	Duplicate	Difference
Data Number	1,835	1,815	
Average	3.38	3.38	-0.01
Median	2.50	2.50	0.00
Variance	6.75	6.78	0.03
Max	22.70	22.90	0.50
Min	0.20	0.20	-0.60

Test Student	-0.062
Correlation Coef.	1.00

Iodine ppm	Original	Duplicate	Difference
Data Number	1,865	1,865	
Average	290	290	0
Median	260.00	250.00	0.00
Variance	33,106	33,968	1,141
Max	2,500	2,530	130
Min	20	20	-140

Test Student	-0.411
Correlation Coef.	0.98

Figure 8-9. Plots for Iodine and Nitrate - Fine Duplicates- TEA 2018-2019



c) Hermosa 2019

For the 2019 campaign in the Hermosa sector, fine duplicates were inserted, as shown in the tables and graphs in the Figure 8-10 and Figure 8-11, where the ranges of variation of the analyses with respect to the refined cores have a very good performance for nitrate and for iodine, showing no biases and with very good original duplicate correlation.

Figure 8-10. Fine Duplicates Iodine - Hermosa 2019

Desv_I2	
Mean ABS	**85**
Typical error	6.929
Median	10
Mode	**10**
Standard deviation	164.124
Sample variance	26936.572
Kurtosis	26.920
Assymetry coeffient	-1.752
Range	2740
Minimum	**-1550**
Maximum	**1190**
Sum	3090
Account	561

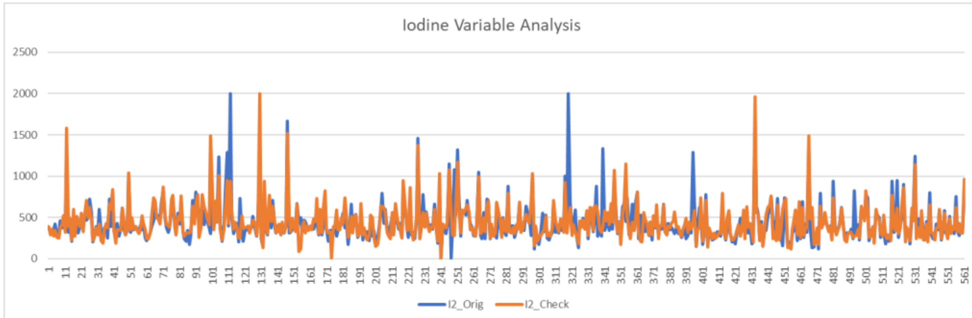
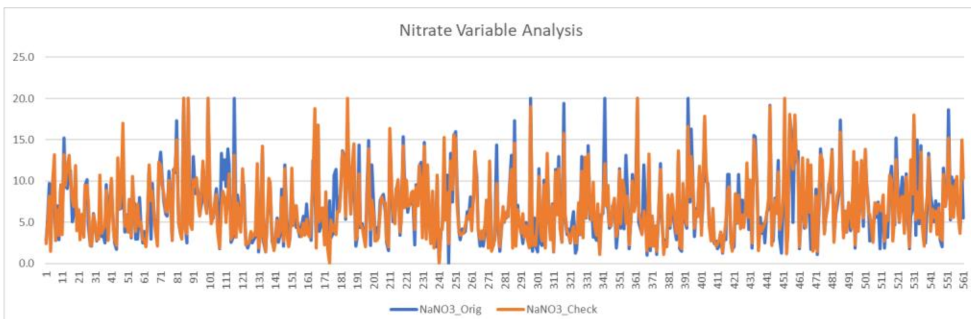


Figure 8-11. Fine Duplicates Nitrate - Hermosa 2019

Desv_NaNO3	
Mean ABS	**1.17**
Typical error	0.081
Median	0
Mode	**0**
Standard deviation	1.910
Sample variance	3.648
Kurtosis	6.320
Assymetry coeffient	0.230
Range	18.5
Minimum	**-8.2**
Maximum	**10.3**
Sum	5.5
Account	561



8.3.3 Sample Security

SQM maintains strict control over sampling, mechanical sample preparation, and chemical analysis. In each of the stages, the safety and chain of custody of the samples was safeguarded, using protocols that describe the steps to be followed for this purpose.

In the drilling stage, before drilling begins, the drill rod was marked with chalk to indicate the distance for sampling. The drilling machine was equipped with a cyclone to slow down the particle velocity, under it, a bag is placed to collect the samples.

The collected sample from the cyclone is carefully stored in a plastic bag, then it was identified with a sequential card and tied. The Supervisor was in charge of requesting a revision to a determined sample of the drilling (coarse sample), originating another sample and of noting the weights obtained in the balance for each cut sample.

The samples were loaded daily onto the truck that will transport them to the sample plant, the following steps are followed:

- SQM Supervisor delivers a dispatch guide with the drill holes and the total number of samples to be collected and delivers a memo to the person in charge of the sample plant, indicating the number of samples and the number of samples without recovery, if any.
- Samples are loaded sequentially according to the drilling and unloaded in the same way.
- Upon arrival at the plant, the corresponding permit must be requested from the area manager, who will provide an unloading guideline, which contemplates how the samples should be positioned on the pallets.
- The pallets with samples are moved to the sample preparation area from their storage place to the place where the Cone Splitter is located.

During all stages of sample preparation, special care was taken to maintain the identification of the samples and to clean the equipment after use. The samples already packed and labeled were collected following the instructions for filling boxes of non-metallic samples, respecting the correlative order of the samples, the order in which they must be deposited in the box and the quantity of samples according to the capacity of the box.

The trays were labeled indicating the corresponding data and date (Figure 8-12) are then transferred to the storage place at Testigoteca (core Warehouse) Iris and Testigoteca TEA located at Nueva Victoria (Figure 8-13), either transitory, or final, before being sent to the laboratory.

Figure 8-12. A) Samples Storage B) Samples Labeling

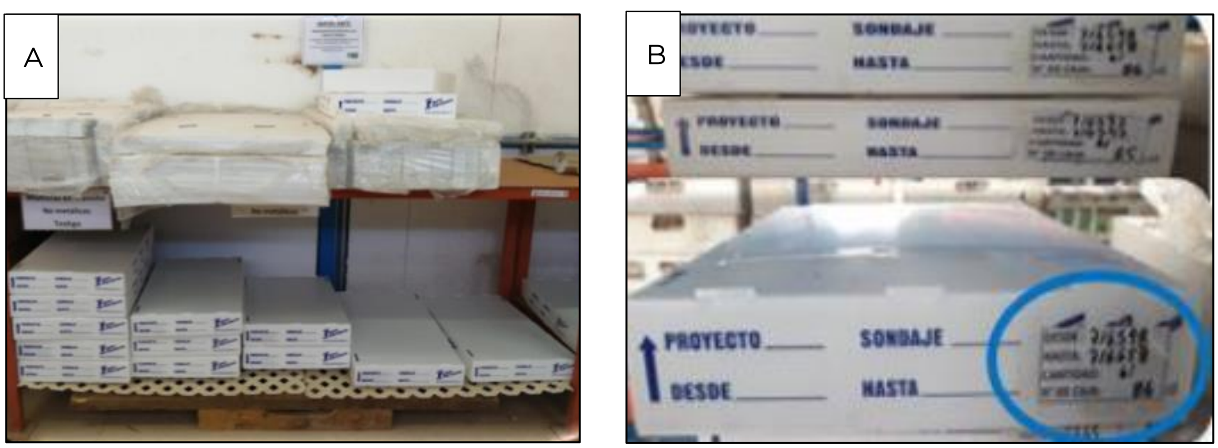


Figure 8-13. Iris Warehouse at Nueva Victoria

Assay samples were collected by appropriately qualified staff at the laboratories. The analysis results of the samples were reported by the specialty analyst to the LIMS software system, automatically triggering an e-mail to the users and only to those who are authorized to send the information.

8.4 Opinion of Adequacy

In the QP's opinion, sample preparation, sample security, and analytical procedures used by SQM in Nueva Victoria, follow industry standards with no relevant issues that suggest insufficiency. SQM has detailed procedures that allow for the viable execution of the necessary activities, both in the field and in the laboratory, for an adequate assurance of the results.

9 DATA VERIFICATION

9.1 Procedures

Verification by the QP focuses on drilling, sample collection, handling and QC procedures, geological mapping of drill cores and cuttings, and analytical and QA laboratory procedures. Based on the review of SQM's procedures and standards, the protocols are considered adequate to guarantee the quality of the data obtained from the drilling campaigns and laboratory analysis.

9.2 Data Management

Using the drillings, the recognition of the deposit is carried out in depth and to this is used prospecting grids 400x400 m, 200-x-200 m, 100-x-100 m, 100T, and 50-x-50 m. For the wide grids (> 100-x-100 m), the evaluation used consists of the generation of polygons that allow including the preliminary records of tonnage and grade of mineralized bodies.

The samples obtained from these reverse air drilling campaigns are sent to the internal laboratory of SQM who have quality control standards regarding its mechanical and chemical treatment. QA/QC analyzes are performed on horrid control samples in the 400x400 m mesh, 200-x-200 m for Pampa Hermosa and 100 T for TEA and TEA Sur. This QA/QC consists of the analysis of $NaNO_3$ and Iodine concentrations in duplicate vs. original (or primary) samples.

9.3 Technical Procedures

The QP reviewed data collection procedures, associated to drilling, sample handling, and laboratory analysis. The set of procedures seek to establish a technical and security standard that allows field and lab data to be optimally obtained, while guaranteeing worker safety.

9.4 Quality Control Procedures

The QP reviewed quality control procedures that consider the analysis of duplicate samples, of adequate rates of repetition for this type of control. Standard/pattern samples are also obtained, but do not have a specified procedure for frequency of sampling. Procedures mention internal standard samples of which frequency of sampling is indicated; however, criteria for selection of the sample are not specified.

9.5 Precision Evaluation

The QP reviewed results of iodine and nitrate grades from duplicate sampling in the 400x400 m, 200-x-200 m, and the 100T drill hole grids. Duplicate samples' relative errors are within acceptable margins with a high correlation index with corresponding original samples (Informe 20 F, 2021).

9.6 Accuracy Evaluation

A QA/QC analysis of the 2018 campaign is carried out in the TEA Sur project for standard/pattern samples, which were performed and analyzed by the laboratory. The results obtained show that the variation of the analysis with respect to the standards used by SQM show acceptable margins with a maximum of ± 0.53% of $NaNO_3$ and 60 ppm of Iodine (Informe 20 F, 2021).

9.7 Qualified Person's Opinion of Data Adequacy

The results of the chemical and geotechnical analyzes from the samples available from 400-x-400-m and 200-x-200-m grids define with a reasonable level of confidence the dimensions, potencies, tonnages, and Caliche grades, as well as the continuity of the mineralization, permitting the Resource to be Inferred. As for the 100-x-100-m and 100T grids, these define the geology in greater detail, allowing to complement the definition of geological units on the surface, as well as allowing sectors to be defined to carry out geometallurgical testing. For its part, the 50-x-50-m grid allows for greater precision in answering these questions. In conclusion, the methodologies used to estimate geological resources and reserves, present in Nueva Victoria project are adequate.

10 MINERAL PROCESSING AND METALLURGICAL TESTING

Since 2009, research has been developed through laboratory tests to continuously improve yield estimations and element recovery for iodine and nitrate. These efforts, focused on caliche chemical and physical characterization, made it possible to develop a set of strategies that provide a better prediction and recovery projection for each caliche mining area identified, which are to be processed at Nueva Victoria's plant.

It should be noted that, before Nueva Victoria started operations in 2002, SQM explored options to expand and/or optimize iodine production through a trial plan developed at Pedro de Valdivia's process plant to establish an oxidative treatment of the concentrate. These tests demonstrated that it is possible to avoid flotation stage in the conventional process, iodine production process works well using an external oxidizer, and it is economically viable and less costly to build and operate. As such, extensive tests were completed with different iodine brines from different resources to confirm these results, as well as considering the oxidation stages applicable at Nueva Victoria Process Plant.

In 2016, given water scarcity in the north of Chile, industry investigated new sustainable sources of water for its processes. A caliche leaching test plan was performed with seawater, in order to determine its technical feasibility, impacts on metallurgical recovery and performance equivalence. A pilot plant at the plant site demonstrated the feasibility of the leaching process.

The historical development of testing has made it possible to differentiate the main categories of caliche types according to their composition and physical behavior. These tests are designed to optimize the process to guarantee compliance with the customer's product specifications and to ensure that deleterious elements can be kept below the established limits.

More than a decade of research on multiple systems has provided a foundation for the leaching process, recovery, and production of iodine. This includes a review of trials which have contributed to the development and build-up of current operating procedures.

10.1 Historical Development of Metallurgical Tests

In 2009, the heap & ponds management department created a working group that to develop tests to continuously improve yield estimation and valuable elements recovery, such as iodine and nitrate, from heaps and evaporation ponds. In early February 2010, the first metallurgical testwork program was presented at the Pilot Plant facility located at the Iris sector. Its main objective was to provide, through pilot scale tests, all the necessary data to guide, simulate, strengthen and generate enough knowledge to understand the phenomenology behind production processes in leaching heaps and evaporation ponds.

The initial work program was framed around the following topics:

- Reviewing constructive aspects of heaps.
- Study thermodynamic, kinetic, and hydraulic phenomena of the heap.
- Designing a configuration in terms of performance and production level.

Work program activities were divided into specializations and the objectives of each activity and the methodology followed are summarized in Table 10-1.

Table 10-1. Methodologies of the Test Plan Initially Developed for the Study of Caliche Behavior

Activity		Objective	Methodology
Heap physical aspects	Pile geometry and height	Optimum dimensions and the effect of height on performance	Mathematical methods and column leaching tests at different heights.
	Granulometry	Impact of size and determination of maximum optimum	Leaching tests at three levels of granulometry.
	Loading	Impact of loading shape and optimization of the operation.	Column percolability with different size segregation in loading.
	Wetting requirements	Determination of impact on yield due to wetting effect.	Column tests, dry and wet ore
	Caliche characterization	Characterization by mining sector	Chemical analysis, XRD and treatability tests.
Hydraulics	Impregnation rate, irrigation, and irrigation system configuration	Establish optimums	Mathematical methods and industrial level tests.
Kinetics	Species solubilities	Establish concentrations of interferents in iodine and nitrate leaching.	Successive leaching tests
	Effect of irrigation configuration	Effect of type of lixiviant	Column tests
	Sequestering phases	Impact of clays on leaching	Stirred reactor tests
System configuration	Pile reworking study	Evaluate impact on yield	Column tests
Solar evaporation ponds	AFN/brine mixture study	Reduction of salt harvesting times.	Stirred and tray reactor tests
Routine	Sample processing	Preparation and segregation of test samples	---
	Treatability tests	Data on the behavior of caliche available in heaps according to the exploited sector.	Column tests
	Quality control of irrigation elements and flowmeters	review of irrigation assurance control on a homogeneous basis	

This first metallurgical testwork plan results in the establishment of appropriate heap dimensions, maximum ROM size and heap irrigation configuration. In addition to giving way to studies of caliche solubilities and their behavior towards leaching. Diagram of chemical, physical, mineralogical, and metallurgical characterization tests applied to all company resources.

SQM, through its Research and Development area, has carried out the following tests at plant and/or pilot scale that have allowed improving the recovery process and product quality:

- Iodide solution cleaning tests.
- Iodide oxidation tests with Hydrogen and/or Chlorine in the Iodine Plant.

The cleaning test made it possible to establish two preliminary cleaning stages to the oxidation The first stage consists of filtering the solution with a filtering aid, which allows trapping and removal of the solid particles that remain in suspension. The second stage, sequential to the first one, also corresponds to a filtration with activated carbon, material that allows the extraction of the organic impurities contained in the iodide solution. Additionally, to intensify the cleaning work of this stage, it is necessary to add traces of sulfur dioxide to the iodide solution. Meanwhile, the iodide oxidation tests allowed incorporating the use of hydrogen peroxide and/or chlorine in adequate proportions to dispense with the iodine concentration stage by flotation, obtaining a pulp with a high content of iodine crystals.

Currently, the metallurgical tests performed are related to the physicochemical properties of the material and the behavior during leaching. The procedures associated with these tests are described below.

10.2 Metallurgical Testing

The main objective of the tests developed is to be assessing different minerals' response to leaching. In the pilot plant-laboratory, test data collection for the characterization and recovery database of composites are generated. Tests detailed below have the following specific objectives:

- Determine whether analyzed material is sufficiently amenable to concentration production by established separation and recovery methods in plant.
- Optimize this process to guarantee a recovery that will be linked intrinsically to mineralogical and chemical characterization, as well as physical and granulometric characterization of mineral to be treated.
- Determine deleterious elements, to establish mechanisms for operations to keep them below certain limits that guarantee a certain product quality.

SQM's analytical and pilot test laboratories perform the following chemical, mineralogical and metallurgical tests:

- Microscopy and chemical composition
- Physical properties: Tail Test, Borra test, Laboratory granulometry, Embedding tests, Permeability
- Leaching test

Currently, SQM is conducting plant-scale tests to optimize heap leach operations through categorization of the mineral to be leached. Metallurgical studies are conducted on mining method called continuous mining (CM), which consists of breaking and extracting the "caliche mantos" material through a tractor with a cutting drum, which allows obtaining a smaller mineral with more homogeneous size distribution. Preliminary leaching tests of this material under identical conditions to ROM material have resulted in higher recoveries of approximately 10% of the recovery in ROM heaps.

In order develop these tests, two different CM teams have acquired and evaluated:

- Rolling system availability.
- Cutting system design.
- Sensitivity to rock conditions.
- Productivity variability.
- Consumption and replacement of components.

The 2022 mining plan aims to treat 18% of mineral caliche by CM in order to obtain, through quarry selection, a maximum recovery estimated at +12% in iodine and +6% in nitrate. At the operational level, recoveries will be monitored to establish annual sequential exploitation levels. Through this work it is hoped to determine an optimal proportion of CM mineral to be incorporated into ROM stockpiles to increase recovery.

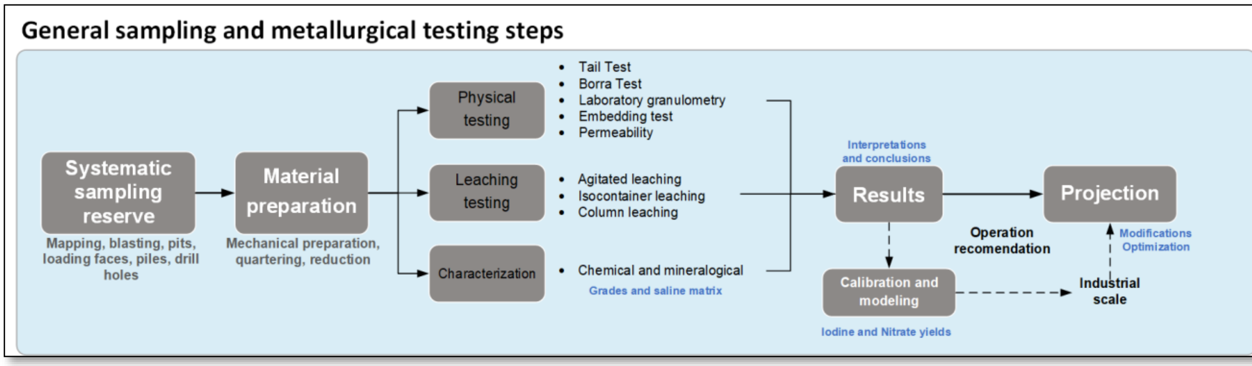
In the following sections, a description of sample preparation and characterization procedures, for metallurgical tests, and process and product monitoring/control activities of the operations through chemical analysis is given.

10.2.1 Sample Preparation

Samples for metallurgical testing are obtained through a sampling campaign. The methods used are related to the different drilling methodologies used in the different campaigns to obtain core samples for analysis through a 100T-200T mesh drilling campaign and diamond drilling (more details in section 7.3 Drilling Methods and Results). With the material sorted from the trial pits (calicatas), loading faces, piles, drill holes and diamond piles, composite samples are prepared to determine iodine and nitrate grades, and to determine physicochemical properties of the material to predict its behavior during leaching.

Samples are segregated according to a mechanical preparation guide, which aims to provide an effective guideline for minimum required mass and characteristic sizes for each test, to optimize the use of available material. This allows successful metallurgical testing, ensuring validity of results and reproducibility. The method of sampling and development of metallurgical tests on samples from Nueva Victoria property, for the projection of future mineral resources, consists in summary of the stages outlined in the Figure 10-1.

Figure 10-1. General Stages of the Sampling Methodology and Development of Metallurgical Tests at Nueva Victoria

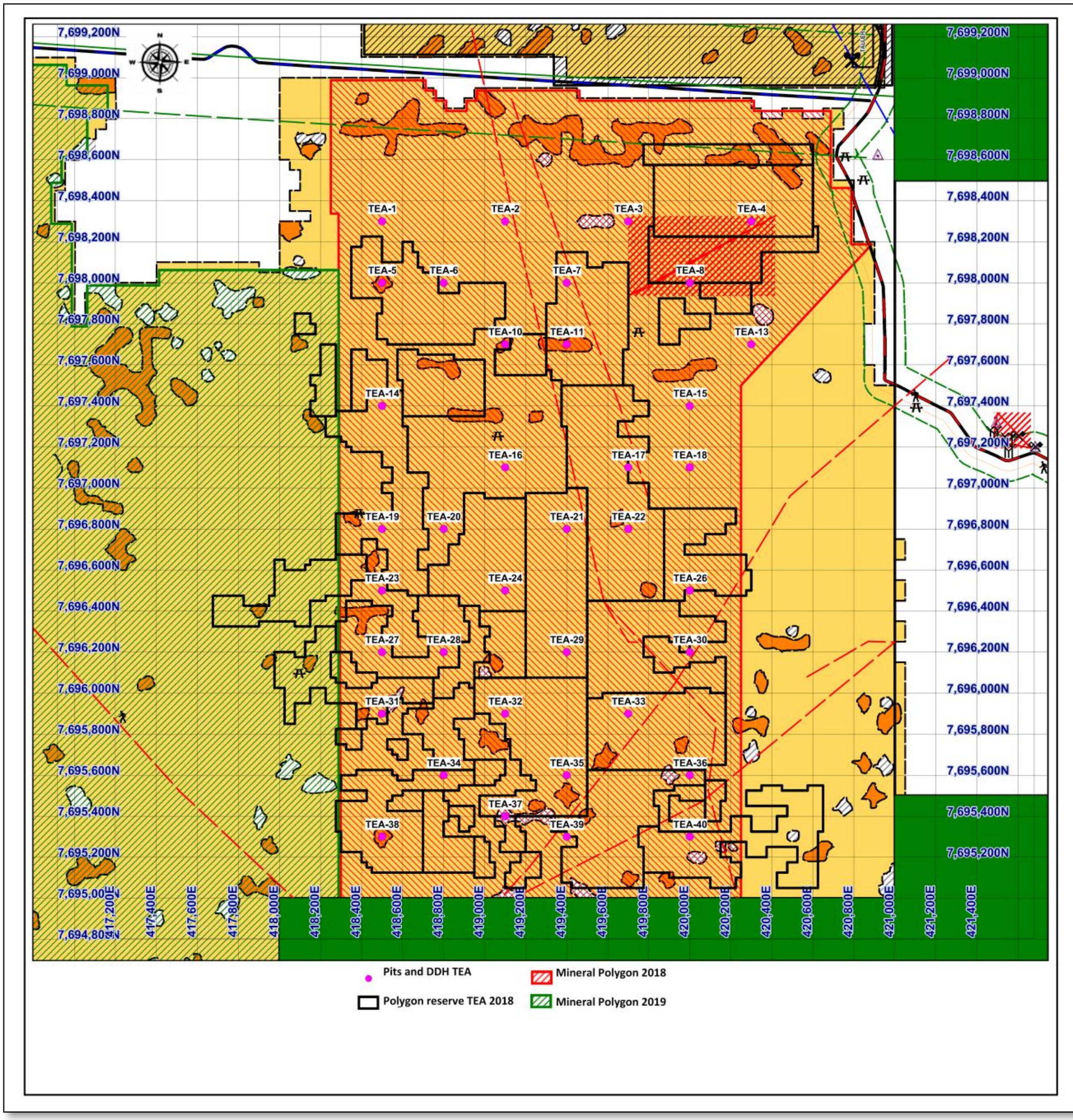


As for the development of metallurgical, characterization, leaching and physical properties tests, these are developed by teams of specialized professionals with extensive experience in the mining-geo-metallurgical field. The work program in metallurgical tests contemplates that the samples are sent to internal laboratories to perform the analysis and test work according to the following detail:

- Analysis Laboratories located in Antofagasta provide chemical and mineralogical analysis.
- Pilot Plant Laboratory, located in Iris- Nueva Victoria, for completion of the physical and leaching response tests.

Details of the names, locations and responsibilities of each laboratory involved in the development of the metallurgical tests are reported in section 10.4 Analytical and Testing Laboratories .The reports documenting the drilling programs provide detailed descriptions of sampling and sample preparation methodologies, analytical procedures meeting current industry standards. Quality control is implemented at all stages to ensure and verify that the collection process occurs at each stage successfully and is representative. To establish the representativeness of the samples, a map of a diamond drilling campaign in the TEA sector is shown below to estimate the physical and chemical properties of the caliche of the resource to be exploited (Figure 10-2).

Figure 10-2. Diamond Drilling Campaign Map for Composite Samples from the TEA Sector for Metallurgical Testing



10.2.2 Caliche Mineralogical and Chemical Characterization

As part of SQM nitrate test work, mineralogical tests were conducted on composite samples. To develop its mineralogical characteristics and its alterations, a study of the elemental composition is conducted by X-Ray Diffraction (XRD). A particle mineral analysis (PMA) to determine mineral content of the sample is carried out.

Caliche mineralogical characterization are done for the components Nitrate, Chloride Iodate, Sulfate and Silicate.

Additionally, caliche chemical characterization in iodine, nitrate and Na_2SO_4 (%), Ca (%), K (%), Mg (%), $KClO_4$ (%), NaCl (%), Na (%), Na (%), H_3BO_3 (%), and SO_4 were obtained from chemical analyses obtained from an internal laboratory of the company. The analysis methods are shown in Table 10-2. More details on SQM's in-house and staff-operated laboratories can be found in the section 10.4 Analytical and Testing Laboratories.

The protocols used for each of the methods are properly documented with respect to materials, equipment, procedures, and control measures. Details of the procedure used to calculate iodine and nitrate grades are provided in Section 10.2.3.

Table 10-2. Applied Methods for the Characterization of Caliche or Composite

Parameter	Unit	Method
Iodine grade	(ppm)	Volumetric redox
Nitrate grade	(%)	UV-Vis
Na_2SO_4	(%)	Gravimetric/ICP
Ca	(%)	Potentiometric/Direct Aspiration-AA or ICP Finish
Mg	(%)	Potentiometric/Direct Aspiration-AA or ICP Finish
K	(%)	Direct Aspiration-AA or ICP Finish
SO_4	(%)	Gravimetric/ICP
$KClO_4$	(%)	Potentiometric
NaCl	(%)	Volumetric
Na	(%)	Direct Aspiration-AA/ICP or ICP Finish
H_3BO_3	(%)	Volumetric or ICP Finish

In-house analytical laboratories operated by company personnel are responsible for the chemical and mineralogical analysis of samples. These laboratories are located in the city of Antofagasta and correspond to the following four sub-facilities:

- Caliche-Iodine Laboratory
- Research and Development Laboratory
- Quality Control Laboratory
- SEM and XRD Laboratory

Results of the chemical and mineralogical characterization reported by the company are conclusive on the following points:

- The most soluble part of the saline matrix is composed of sulfates, nitrates and chlorides.
- There are differences in the ion compositions present in salt matrix (SM).
- Anhydrite, polyhalite and glauberite, and less soluble minerals, have calcium sulfate associations.
- From a chemical-salt point of view, this deposit is favourable in terms of the extraction process, as it contains an average of 49% of soluble salts, high calcium content (>2.5%), and good concentrations of chlorides and sulfates (about 11% and 13% respectively).
- Being a mostly semi-soft deposit CM methods can be applied in almost all the deposit. The geomechanical characteristic of the deposit together with a low clastic content and low abrasiveness (proven by calicatas) allows low mining costs applying CM technology.

10.2.3 Caliche Nitrate and Iodine Grade Determination

Composite samples (material sorted from the trial pits (calicatas), loading faces, piles, drill holes and diamond piles) are analyzed by iodine and nitrate grades. The analyses are conducted by Caliche and Iodine laboratory located in the city of Antofagasta. Facilities for iodine and nitrate analysis have qualified under ISO- 9001:2015 for which TÜV Rheinland provides quality management system certification. The latest recertification process was approved in November 2020 and is valid until March 15, 2023.

<u>Iodine Determination</u>

There are two methods to determine iodine in caliche, redox volumetry and XRF. Redox volumetry is based on titration of an exactly known concentration solution, called standard solution, which is gradually added to another solution of unknown concentration, until chemical reaction between both solutions is complete (equivalence point).

Iodine determination by XRF uses XRF Spectro ASOMA equipment, in which a pressed mineral sample is placed in a reading cell.

QA controls consist of equipment status checks, sample reagent blanks, titrant concentration checks, repeat analysis for a standard with sample set to confirm its value.

Nitrate Determination

Nitrate grade in caliches is determined by UV-visible molecular absorption spectroscopy. This technique allows to quantify parameters in solution, based on their absorption at a certain wavelength of the UV-visible spectrum (between 100 and 800 nm).

This determination uses a Molecular Absorption Spectrophotometer POE-011-01, or POE-17-01, in which a glass test tube containing a filtered solution obtained by leaching with filtered distilled water is used. Results obtained are expressed in percent nitrate.

QA criteria and result validity are achieved through:

- Prior equipment verification.
- Performing comparative nitrate analysis once a shift, by contrasting readings of the same samples with other UV-visible equipment and checking readings in Kjeldahl method distillation equipment, for nitrogen determination.
- Conducting standard and QC sample input every 10 samples.

Although the certification is specific to iodine and nitrate grade determination, this laboratory is specialized in chemical and mineralogical analysis of mineral resources, with long-standing experience in this field. It is the QP's opinion that quality control and analytical procedures used at the Antofagasta Caliches and Iodine laboratory are of high quality.

10.2.4 Caliche Physical Properties

To measure, identify, and describe mineral physical tests of mineral properties are developed to predict how it will react under certain treatment conditions. The tests performed are summarized in Table 10-3. During the site visit it was possible to verify the development of embedding, sedimentation and compaction tests in the Iris Pilot Plant Laboratory, which are shown in Figure 10-3.

Table 10-3. Determination of Physical Properties of Caliche Minerals

Test	Parameter	Procedure	Objective	Impact
Tails test	Sedimentation and Compaction	Sedimentation test, measuring the clearance and riprap cake every hour for a period of about 12 hours.	Obtain the rate of sedimentation and compaction of fines.	Evidence of crown instability and mud generation. Irrigation rate
Borra test	% of fine material	The retained material is measured between the - #35 #+100 and -#100 after a flocculation and decantation process. flocculation and decantation of ore	To obtain the amount of ore flocculation and decantation process	% of fine that could delay irrigation. Irrigation rate. Canalizations.
Size distribution	% of microfine	Standard test of granulometry, the percentage under 200 mesh is given.	Obtain % microfine	% Water retention and yield losses
Permeability	K (cm/h)	Using constant load permeameter and Darcy's law	To measure the degree of permeability of ore	Decrease in extraction kinetics of extraction
Embedded	alpha	Wettability measurement procedure of rock	To measure the degree of wettability of the ore	Variability in impregnation times

Figure 10-3. Embedding, Compaction, and Sedimentation Tests Performed in the Iris Pilot Plant Laboratory

Table 10-4 provides a summary of physical test results comparing the conditions of TEA and another project.

Table 10-4. Comparative Results of Physical Tests for Pampa Orcoma and TEA Exploitation Project

Sector	Sedimentation	Compaction	%Fines	#-200	Alpha
TEA	0.024	7.37	29.47	10.89	2.72
Orcoma	0.025	10.05	32.98	12.29	2.29

According to the results, it is possible to highlight the following points:

- Sedimentation: Both have medium sedimentation velocity, which implies the need for impregnation and prolonged resting for stabilization.
- Compaction: Orcoma has a good compaction, which indicates a greater uniformity in the porous bed, which allows reaching high irrigation rates and therefore better kinetics.
- Fines: Both sectors present high percentage of fines, this implies that the best impregnant to use should be a solution other than water. The negative impact of this condition could be increased depending on the type of fine material (e.g., clays) generating water pockets and channeling.
- Material #-200: Corresponds to the microfines and are the ones that give rise to channeling and exhibit very high value in both sectors
- Parameter Alpha: At medium levels, these imply acceptable embedding speed which can be improved with a slow controlled impregnation.

As the physical properties measured are directly related to the irrigation strategy, the conclusion is that both caliches should be treated in a similar way considering a standard impregnation stage of mixed drip and sprinkler irrigation.

10.2.5 Agitated Leaching Tests

Leaching tests are performed at the company's in-house laboratory facilities located at the Iris Pilot Plant. The following is a brief description of the agitated and successive leaching test procedure.

Leaching in Stirred Reactors

Leaching experiments are conducted at atmospheric pressure and temperature in a glass reactor without baffles. A propeller agitator at 400 RPM was used to agitate leach suspension. In short, all the experiments were executed with:

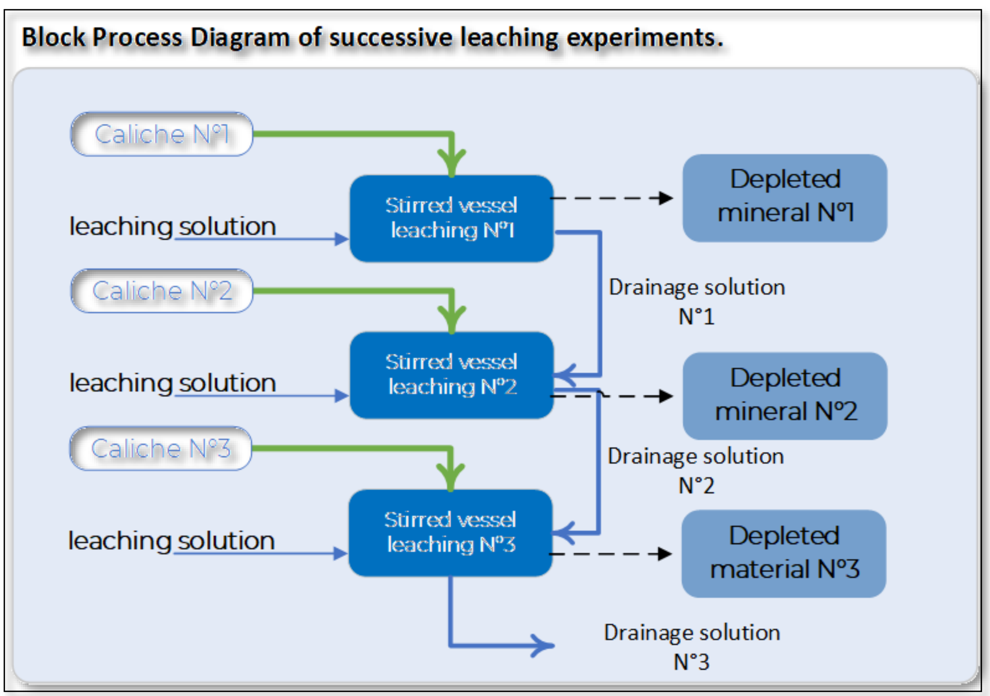
- Ambient conditions.
- Caliche sample particle size 100% mesh -65# mesh.
- Caliche mass 500 g.
- L/S ratio 2:1.
- Leaching time 2 h.
- Three contact leaching including use of drainage solution.

To start up the leaching experiment, a reactor was initially filled with distilled water and then the solution is gently agitated. After a few minutes, pH and ORP values were set, caliche concentrate added to the solution and agitation increased to the final rate.

Once finished, the product was filtered and the brine solution analyzed by checking the extraction of analytes and minerals by contact with the leaching agent, consumption per unit and iodine extraction response.

Successive leachings are complementary to stirred vessel leaching, and also performed in a stirred vessel with the same parameters explained above. However, it contemplates leaching three caliche samples successively with the resulting drainage solution of each stage. The objective of this test is to enrich this solution of an element of interest such as iodine and nitrates to evaluate heap performance as this solution percolates through the heap. The representative scheme of successive leaching in stirred vessel reactors is shown in Figure 10-4.

Figure 10-4. Successive Leach Test Development Procedure



The extraction of each analyte and minerals per contact is analyzed. These results reported by the laboratory are conclusive on the following points:

- Higher quantity of soluble salts, lower is the extraction.
- Higher proportion of calcium in salt matrix results in higher extraction.
- Physical and chemical quality for leaching is determined by a soluble salts content of less than 50%.

For a caliche of TEA sector, the chemical characterization and leaching results show in Table 10-5, that an average salt matrix of 63.7% soluble salts and iodine has a yield of 56.4%.

Table 10-5. Chemical Characterization of Samples Obtained from TEA and Successive Leach Test Results

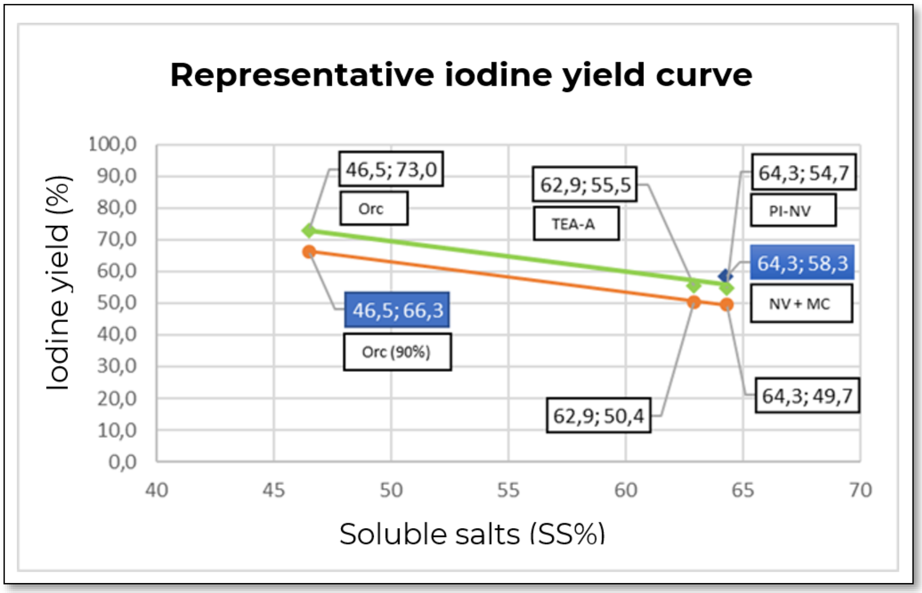
TEA sectors	Iodine (ppm)	Nitrate (%)	Soluble salts	Iodine yield
Hermosa	408	6.7	66.5	53.4
TEA norte	428	5.8	63.5	56.6
TEA Sur	412	4.7	51.1	69.9
TEA Oeste	407	5.4	61.9	58.3
Average	412	6.1	63.7	56.4

The following graphs, included in Figure 10-5, show the results of the agitated leaching tests of two resources from TEA and Pampa Orcoma. The graphs represent the Nitrate and Iodine yield achieved as a function of soluble salt content.

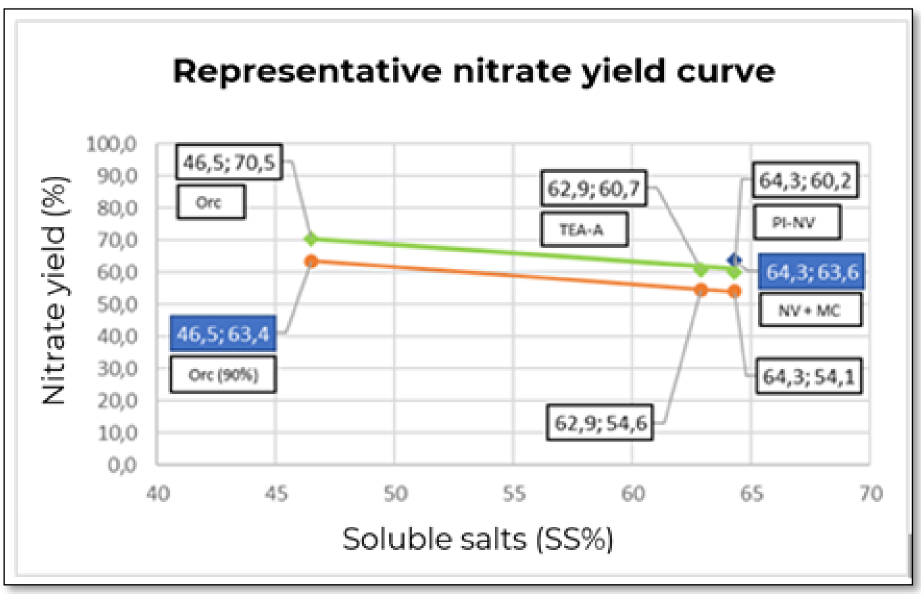
In the graphs, the green line corresponds to the experimental yield result, while the orange line indicates a modeling result of the Pampa Orcoma yield factored at 90%. The yield equivalent to 90% of what the model indicates is 66.3% for Iodine and 63.4% for Nitrate. These factored yields are conservatively used for the economic evaluation of the project.

The green line, which corresponds to the experimental results, shows that an ore from Pampa Orcoma with a content of soluble salts of 46.5% has a yield of 73% in iodine and 70.5% in nitrate, while an ore from TEA, with a content of 62.9% of soluble salts, has a yield of 55.5% in iodine and 60.7% in nitrate. Both resources show a difference in Nitrate yield of 70.5% vs 60.7% and Iodine yield, 73% vs 55.5%. Nitrate and iodine yield difference is the 9% and 17%, respectively.

Figure 10-5. Nitrate and Iodine Yield Obtained by Successive Agitated Leaching Test



Experimental result
Factorized model



Experimental result
Factorized model

10.2.6 Column Leach Test using Seawater

Water availability is limited, being a critical issue for the mining industries and, therefore, other leaching agents such as seawater can be a viable alternative. Therefore, experimental studies of caliche leaching in mini-columns were conducted to evaluate seawater's effect.

This study aims to analyze seawater's effect on caliche leaching from different sectors of nitrate-iodine mining properties, using seawater sampled in Mejillones Bay at 100 m offshore and below 15 m deep.

The types of tests executed are in duplicate under the following impregnation-irrigation strategy and conditions:

- Water Impregnation - Irrigation with Water (MC 1-MC2)
- Water Impregnation - Irrigation with 60%v/v Water - 40%v/v with a recirculated weakly acidic water (agua feble ácida, AFA). (MC 3-MC 4)
- Seawater Impregnation - Irrigation with Seawater (MC 5-MC 6)
- Seawater Impregnation - Irrigation with Mixed 60%v/v Seawater - 40%v/v AFA (MC 7-MC 8)
- The test development conditions are indicated in Table 10-6.
- Composition determined by granulometry of the material disposed in the columns.

Table 10-6. Conditions for Leaching Experiments with Seawater

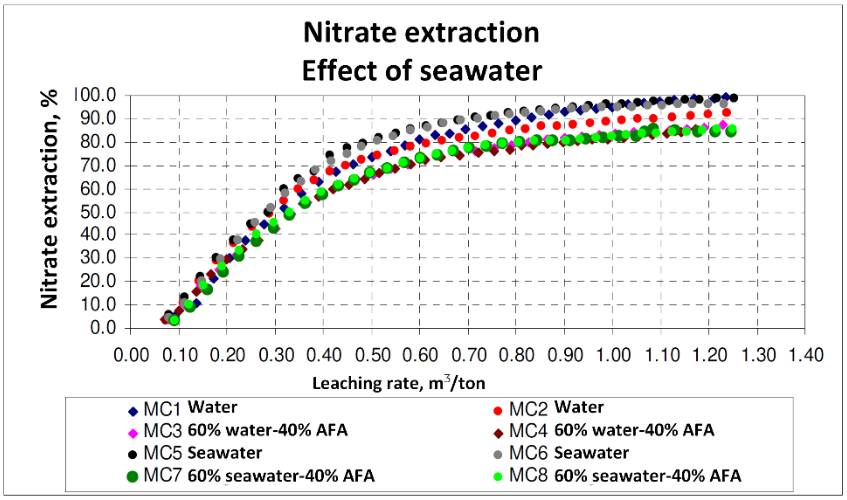
Parámeter	Detall
Mass	3,031.3 g
Granulometry	1" - ¾" - ½" - ¼" - ¼" - 20" mesh
Test Duration	7 days
Total impregnation	19 hours
Regime watering/rest	1 hour to watering /2 hours to rest 1 hour to watering /2 hours to rest 1 hour to watering /2 hours to rest 1 hour to watering h/1 h hours to rest 1 hour to watering h/1 h hours to rest 2 hour to watering h/1 h hours to rest 2 hour to watering h/1 h hours to rest
Continuous irrigation	5 days and 20 hours

The results of the experiments show that highly soluble minerals, such as nitrate and iodate, are rapidly leached with seawater without much difference with respect to the raw water method.

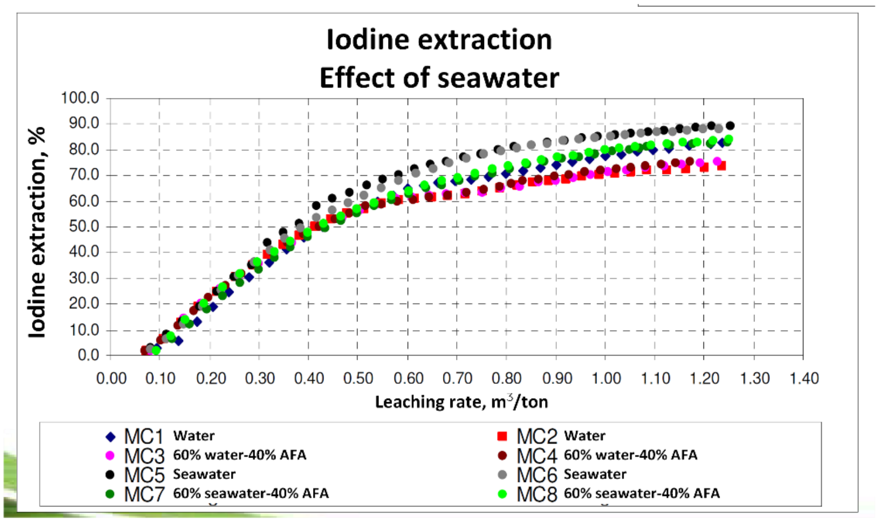
Regarding nitrate and iodine extraction, a higher NO_3 extraction, in Figure 10-6, is observed when leaching with seawater as well as a higher IO_3 extraction is observed when leaching with seawater (MC5- 5 and MC 6 curves versus MC1 and MC 2 curves).

In addition to the above, when comparing the extractions achieved in iodine leaching by water/AFA and seawater/AFA, curves MC 3, and MC 4 versus MC 7 and MC 8, it is clear that the seawater/AFA mixture is better (MC 7 and MC 8). While, for nitrate, there is no appreciable difference in increase when using seawater as a mixture and extraction is similar to that of iodine.

Figure 10-6. Results of Nitrate and Iodine Extraction by Seawater Leaching



a) Nitrate extraction with seawater



b) Iodine extraction with seawater

Source: Provided by SQM- Reporte-Efecto Agua de Mar 231208

In the future heap behavior will be studies through column leaching tests using seawater, including different irrigation rates and bed heights in the column, and analyzing the experimental concentrations of each species.

10.2.7 Laboratory Control Procedures

Currently, there is a quality control system in place to monitor iodine production operations, which consists of monitoring processes starting with inlet brine characterization, followed by sampling and characterization of the cutting and oxidation brine, as well as the prill product obtained. From the product obtained from the iodine prill plant, a series of analyses are conducted to quantify purity, chloride/bromine ratio, sulfate, mercury, residues, and color index.

The analyses, on liquid and solid samples, are performed in the laboratory facilities located in the city of Antofagasta, Analysis laboratory, involving two installations:

- Caliche-Iodine Laboratory: Determination of iodine and nitrate in caliches
- Research and Development Laboratory: Facility in charge of performing determination by AAS, ICP-OES, potentiometry, conventional titration, solution density.

More details on SQM's in-house and staff-operated laboratories can be found in the section 10.4 Analytical and Testing Laboratories.

Table 10-7 shows the basic set of analyses requested from laboratories and the methodologies used for their determination.

Table 10-7. List of Requested Analyses for Caliche Leach Brines and Iodine Prill

Parameter	Method
Iodine solutions	
Iodine grade	Volumetric redox
Nitrate grade	UV-Vis
pH	Potentiometric
Acidity	Volumetric acid-base
Alkalinity	Volumetric acid-base
H_3BO_3	Volumetric or ICP Finish
Na_2SO_4	Gravimetric/ICP
Ca	Potentiometric/Direct Aspiration-AA or ICP Finish
Mg	Potentiometric/Direct Aspiration-AA or ICP Finish
K	Direct Aspiration-AA or ICP Finish
SO_4	Gravimetric/ICP
$KClO_4$	Potentiometric
NaCl	Volumetric
Na	Direct Aspiration-AA/ICP or ICP Finish

Parameter	Method
Iodine Prill	
Purity or iodine count	Potentiometric
Bromide and chloride	Volumetric
Non-volatile material (residue)	Gravimetric
Sulfate	Turbidimetry
Mercury	Spectrophotometry
Coloration index	Colorimetric

SQM's nitrate and iodine processing plants have been in production for many years and metallurgical requirements for processing and recovering the nitrate from evaporation ponds from iodine process remaining solution are well known. Consequently, no new metallurgical studies related to evaporation studies have recently been carried out. However, once pond systems are in operation, sampling and assay procedures for evaporation tests are as follows:

- Brine sample collection is conducted on a periodic basis to measure brine properties, such as chemical analysis, density, brine activity, etc. Samples are taken by an internal company laboratory using the same methods and quality control procedures as those applied to other brine samples.
- Precipitated salts are collected from ponds for chemical analysis to evaluate evaporation pathways, brine evolution, and physical and chemical properties of the salts.

10.3 Samples representativeness

The company has established Quality Assurance/Quality Control (QA/QC) measures to ensure the reliability and accuracy of sampling, preparation, and assays, as well as the results obtained from assays. These measures include field procedures and checks that cover aspects such as monitoring to detect and correct any errors during drilling, prospecting, sampling and assaying, as well as data management and database integrity. This is done to ensure that the data generated are reliable and can be used in both resource estimation and prediction of recovery estimates.

According to the sampling protocol, the samples, once logged by the technical staff in charge of the campaign, are delivered from the drilling site to a secure and private facility. Analytical samples are prepared and assayed at the in-house " Pilot Plant Laboratory" located at the Nueva Victoria site and Iris sector.The protocol ensures the correct entry in the database by tracking the samples from their sampling or collection points, identifying them with an ID, and recording what has been done for the samples delivered/received. The set of procedures and instructions for traceability corresponds to a document called "Caliche AR Sample Preparation Procedure".

The company applies a quality control protocol established in the laboratory to receive caliche samples from all the areas developed according to the campaign, preparing the dispatches together with the documentation for sending the samples, preparing, and inserting the quality controls, which will be the verification of the precision and accuracy of the results. The LIMS data management system is used to randomly order the standards and duplicates in the corresponding request. By chemical species analysis, an insertion rate of standard or standard QA/QC samples and duplicates is established.

The following criteria are established for the handling of results:

- Numbers of samples that are above and below the lower detection limits.
- Differences of values in duplicates are evaluated. For example, when comparing duplicates of nitrate and iodine grades, a maximum difference, calculated in absolute value, of 0.4% for $NaNO_3$ and 0.014% for iodine is accepted.
- For standards measured, results with a tolerance of +/- 2 standard deviations from the certified value are accepted.

In the case of any deviation, the laboratory manager reviews and requests checks of the samples, in case the duplicate or standard is non-compliant.

As for physical characterization and leaching tests, all tests are developed in duplicate. Determination results are accepted with a difference of values in the duplicates of 2%.

Given the QA/QC controls and documentation described above the QP considers that the test samples are representative of the different types and styles of mineralization and of the mineral deposit as a whole. Sampling for operations control is representative of caliche as they are obtained directly from the areas being mined or scheduled for mining. The caliche analysis and characterization tests are appropriate for a good planning of operations based on a recovery estimation.

10.4 Analytical and Testing Laboratories

The metallurgical testing program directs samples to be sent to internal laboratories in charge of analysis and testing:

- Analysis laboratory located in Antofagasta, in charge of chemical and mineralogical analysis and composed of four laboratories (see Table 10-8).
- Pilot Plant Laboratory, located at Iris- Nueva Victoria responsible for sample reception and physical and leaching response tests.

The following table details the available facilities and the analyses performed in each one of them.

Table 10-8. Summary List of Laboratories Available for Analysis

Laboratory	Location	Analyses
Caliche-Iodine Laboratory	Antofagasta	Determination of iodine and nitrate in caliches, probing.
Research and Development Laboratory	Antofagasta	AAS, ICP-OES, potentiometry, conventional titration, solution density.
Quality Control Laboratory	Antofagasta	Polarized light microscopy, particle size distribution.
SEM and XRD Laboratory	Antofagasta	SEM and XRD
Pilot Plant Laboratory	Nueva Victoria	Physical characterization and ore leaching tests.

Iodine and nitrate testing facilities available at Caliche and Iodine Laboratories (LCY) in Antofagasta are certified under ISO-9001:2015. Certification was granted by TÜV Rheinland and is valid from 2020-2023.

It should be noted that part of the exploration efforts is focused on possible gold and copper metallic mineralization underneath the caliche. Therefore, samples are sent to external analytical laboratories that are independent from SQM and accredited and/or certified by the International Standards Organization (ISO):

- Andes Analytical Assay (AAA) (ISO 9001 Certification).
- ALS Global Chile (ISO/IEC 17025).
- Centro de Investigación Minera y Metalúrgica (CIMM) (ISO/IEC 17025).

10.5 Testing and Relevant Results

10.5.1 Metallurgical Recovery Estimation

Caliche characterization results are contrasted with metallurgical results to formulate relationships between elemental concentrations and recovery rates of the elements of interest or valuable elements and reagent consumption.

The relationships between reported analyses and recoveries achieved are as follows:

- It is possible to establish an impact regarding recovery based on the type of salt matrix and the effect of salts in the leaching solution. With higher amounts of soluble salts, extraction is lower while higher calcium in SM results in higher extraction.
- Caliches with better recovery performance tend to decant faster (speed) and compact better.
- The higher presence of fines hinders bed percolation, compromising the ability to leach and ultrafine that could delay irrigation or cause areas to avoid being irrigated.
- The higher hydraulic conductivity or permeability coefficient, better the leachability behavior of the bed.

For metallurgical recovery estimation, the formulated model contains the following elements:

- Chemical-mineralogical composition.
- Yield.
- Physical characteristics: sedimentation velocity, compaction, percentage of fines and ultrafines, uniformity coefficient, and wetting.

The metallurgical analysis is focused on determining the relationships associated with these variables, since the relationships can be applied to the blocks to determine deposit results. From a chemical and yield point of view, a relationship is established between unit consumption (UC, amount of water) or total irrigation salts (salt concentration, g/L) and iodine extraction. The best subset of the regressions was used to determine the optimal linear relationships between these predictors and metallurgical results. A linear relationship between yield and total salts depending on soluble salts concentration was established. Thus, iodine and nitrate recovery equations are represented by the following formulas and Figure 10-7:

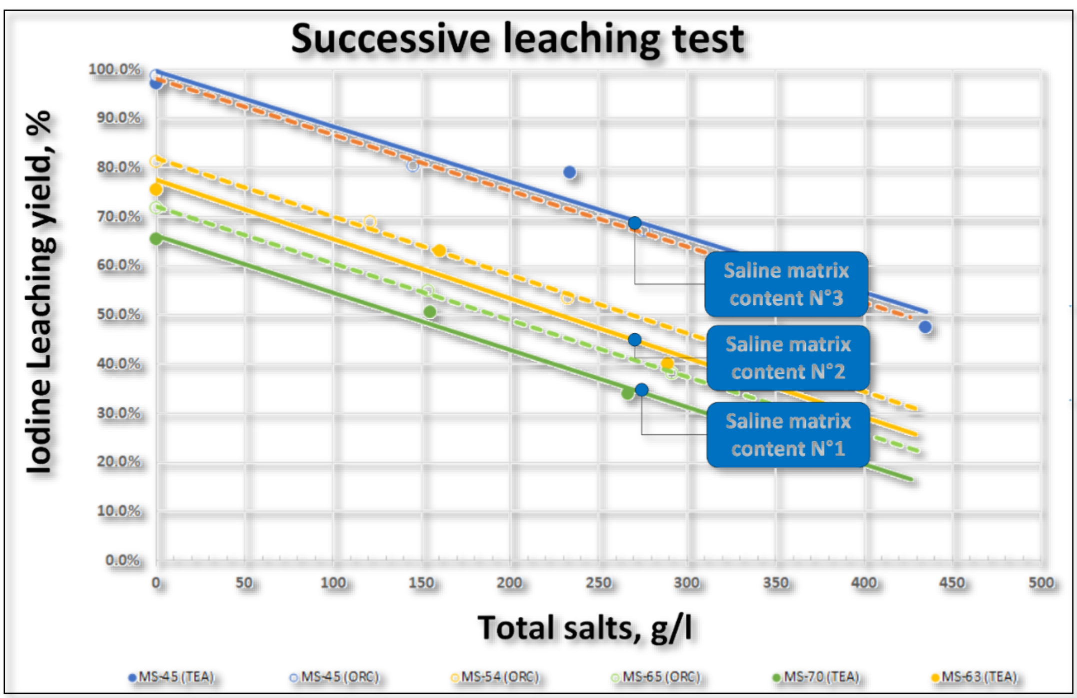
$$\boldsymbol{Iodine\ yield = A * \left[total\ salts\ \left(\frac{g}{l}\right)\right] + B_n}\ ;$$

$$where{:}\ B_n = f(\%soluble\ salts)\ and\ A = constant$$

$$\boldsymbol{Nitrate\ yield = C + D * \left[total\ salts\ \left(\frac{g}{l}\right)\right] + F_n};$$

$$where{:}\ F_n = g\ (\%soluble\ salts\ \%Nitrate)\ and\ C, D = constants$$

Figure 10-7. Iodine Recovery as a Function of Total Salts Content



Note: Test work with samples from two different resource sectors to be exploited by the company.

The graph of Figure 10-7 compares iodine yield results for samples from two SQM resources, TEA and Pampa Orcoma (abbreviated as ORC), as a function of total salts. The mineral samples (MS) are differentiated by their percentage soluble salt content, so that sample MS-45 (TEA), for example, corresponds to a mineral sample from the TEA sector characterized by 45% soluble salts. Following this logic, MS-45 (ORC), corresponds to a mineral sample from Pampa Orcoma, which has a soluble salt content of 45%. As can be seen, an output matrix content of 65% implies a lower recovery compared to an ore content of 45%.

In conclusion, the metallurgical tests, as previously stated, have allowed establishing baseline relationships between caliche characteristics and recovery. In the case of iodine, a relationship is established between unit consumption and soluble salt content, while for nitrate, a relationship is established depending on the degree of nitrate, unit consumption and the salt matrix. Relationships that allow estimating the yield at industrial scale.

10.5.2 Irrigation Strategy Selection

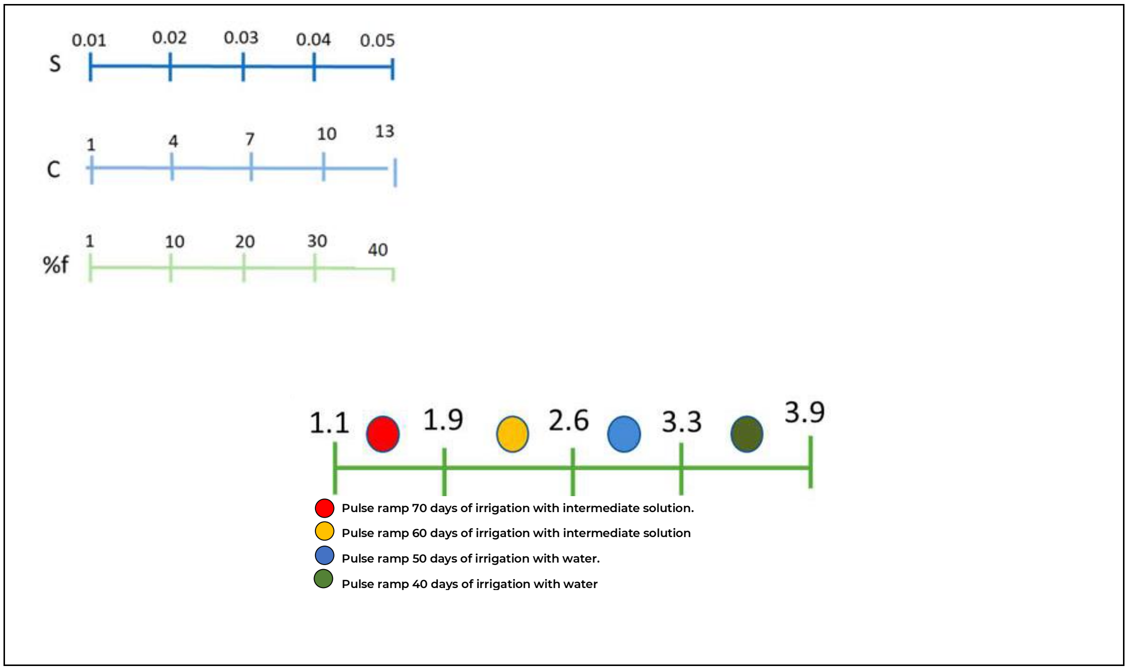
In terms of physical properties, the metallurgical analysis allows to determine caliche classification as unstable, very unstable, stable and very stable, which gives rise to an irrigation strategy in the impregnation stage. As a result, a parameter impact ranking is established in caliche classification, in the order indicated below (from higher to lower impact):

1. Compaction degree (C).
2. Sedimentation velocity (S).
3. Fines and ultrafines percentage (%f; percent passing #200) with wetting degree (A, Alpha).
4. Uniformity degree (Cu).

The weighting establishes a value to be placed on a scale of selection depending on the type of impregnation for the highest yield (see Figure 10-8):

- Scale 1.1 to 1.9; pulse ramp 70 days of irrigation with intermediate solution.
- Scale 1.9 to 2.6; pulse ramp 60 days of irrigation with intermediate solution.
- Scale 2.6 to 3.3; pulse ramp 50 days of irrigation with water.
- Scale 3.3 to 3.9; pulse ramp 40 days of irrigation with water.

Figure 10-8. Parameter Scales and Irrigation Strategy in the Impregnation Stage



10.5.3 Industrial Scale Yield Estimation

All the knowledge generated from the metallurgical tests carried out, is translated into the execution of a procedure for the estimation of the industrial scale performance of the pile. Heap yield estimation and irrigation strategy selection procedure is as follows:

- A review of the actual heap Salt Matrix were compared to results obtained from diamond drill hole samples from the different mining polygons. The correlation factor between the two is obtained, which allows determining, from the tests applied to diamond drill hole samples, how the heap performs in a more precise way.
- With the salt matrix value, a yield per exploitation polygon is estimated and then, through a percentage contribution of each polygon's material to heap construction, a heap yield is estimated.
- Based on percentage physical quality results for each polygon, i.e., C m/min, compaction, % fine material, Alpha, #-200, an irrigation strategy is selected for each heap.

For example, for Pile 476, the physical test showed that the pile tends to generate mud in the crown and was instable. A 60-day wetting was recommended to avoid generating turbidity. The recommendation was to irrigate at design rate.

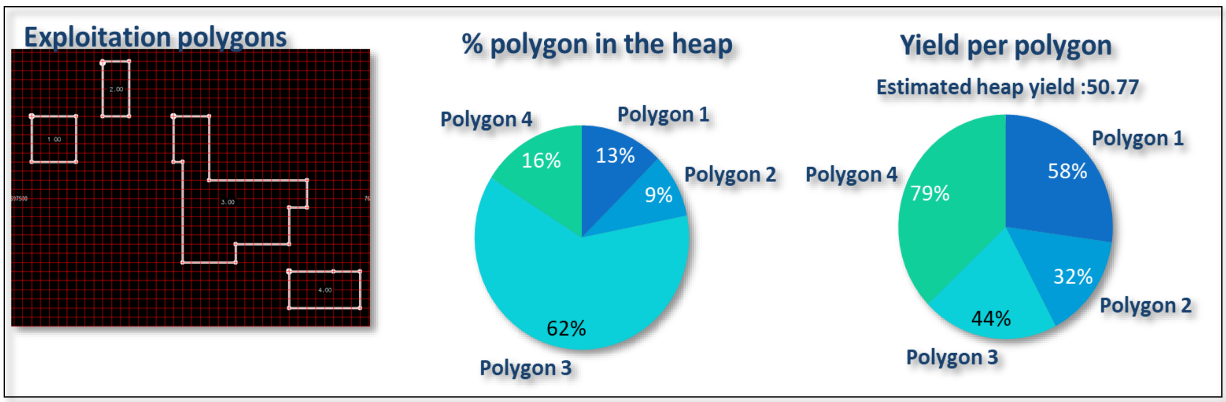
The real composition for Pile 476, determined by the diamond drilling campaign by polygon is shown in the Table 10-9 in which some differences can be observed.

Table 10-9. Comparison of the Composition Determined for the 476 Heap Leaching Pile in Operation at Nueva Victoria

Real vs. diamond salts matrix											
Type	Iodine grade (ppm)	Nitrate grade (%)	Na_2SO_4	Ca	Mg	K	$KClO_4$	NaCl	Na	H_3BO_3	Saline Matrix
Sample	411	4.71	19.6	2.32	1.09	0.83	0.68	12.96	7.39	0.31	64.4
Real	422	5.40	19.6	1.98	1.25	0.81	0.68	12.62	7.04	0.27	60.1

Through the established methodology, composition and physical properties, the resulting 476 pile yield estimate is 50.77%. The estimation scheme is as shown in Figure 10-9 .

Figure 10-9. Heap Yield Characterization and Irrigation Strategy Selection



Following the example and in relation to the observed yield values contrasted with the values predicted by the model, the following graphs shows the annual yield of Nueva Victoria plant, both for iodine and nitrate, for the period 2008-2020.

The annual industrial throughput values with the values predicted by the model are shown in the Figure 10-10 in which a good degree of correlation is observed.

Figure 10-10. Nitrate and Iodine Yield Estimation and Industrial Correlation for the Period 2008-2020

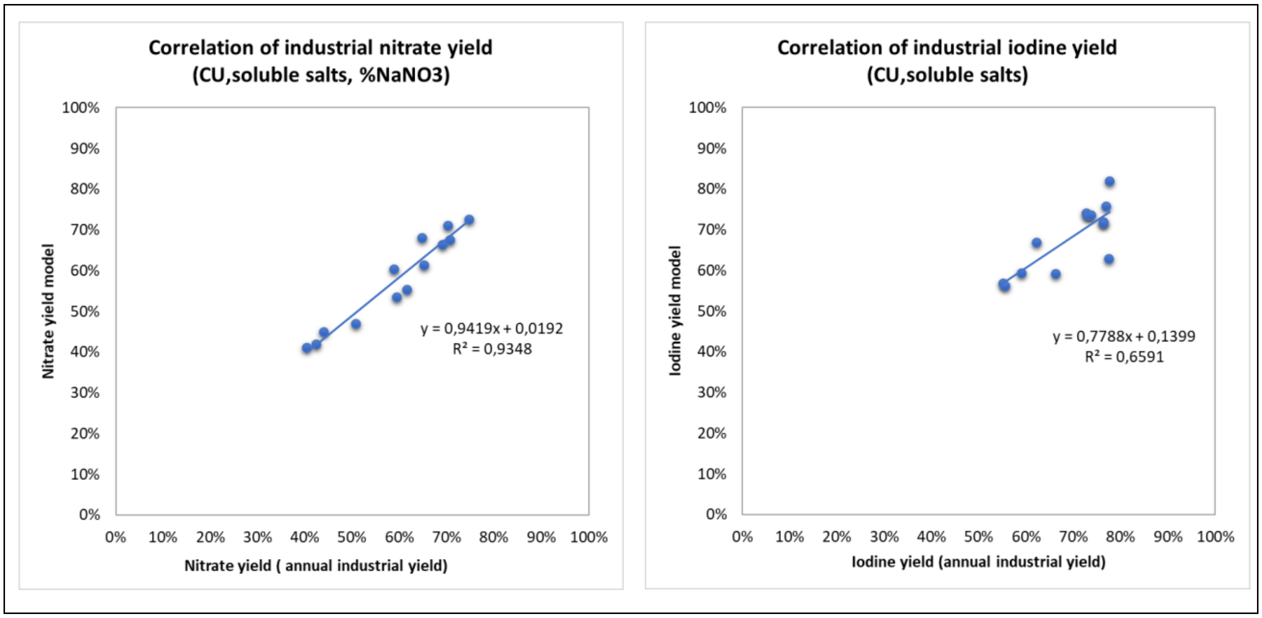


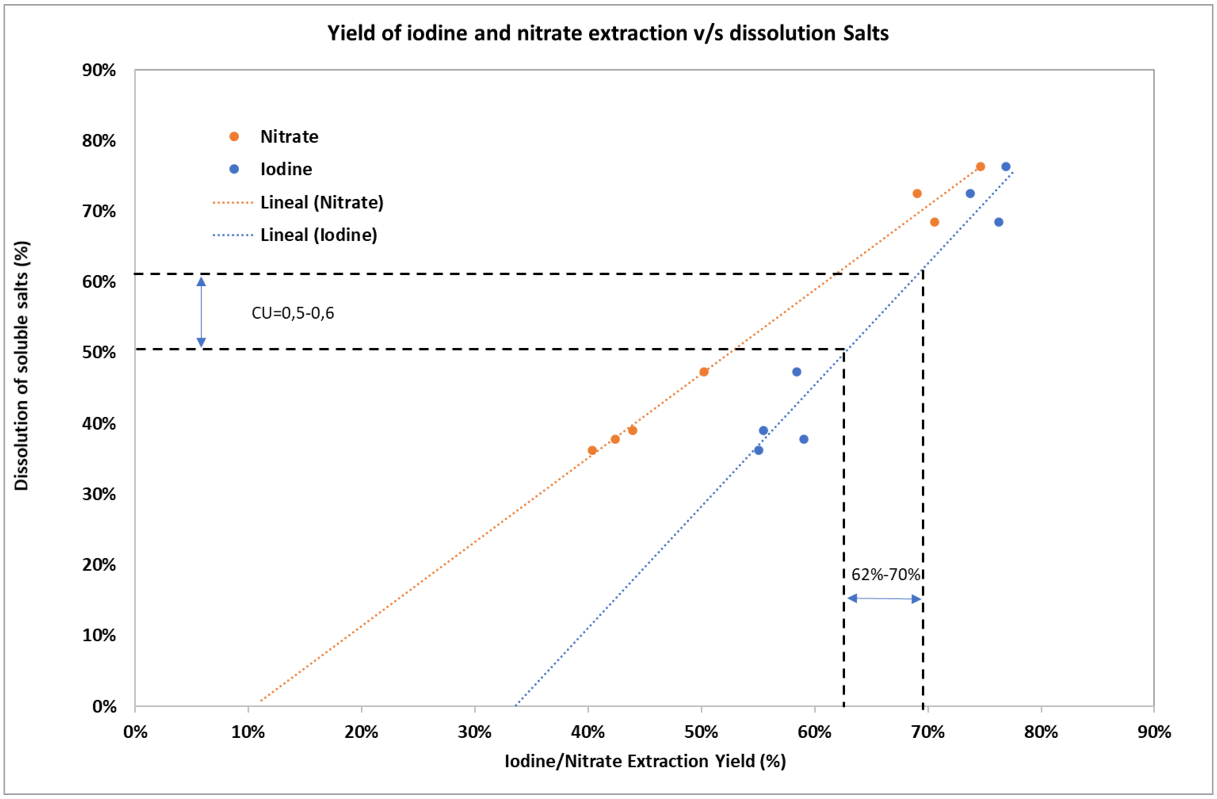
Table 10-10 summarizes the annual yield for iodine and nitrate for the period 2008-2020.

Table 10-10. Comparison of Industrial Yield with the Values Predicted by the Model

Nitrate and iodine yield correlation														
Parameter	Unit	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Iodine grade	ppm	476	470	460	457	465	461	466	459	456	456	460	459	460
Nitrate grade	%	3.2%	3.9 %	4.1 %	5.0%	5.2%	4.5%	5.1%	5.8%	6.2%	6.2%	6.4%	6.2%	5.1%
CU water (unit consumption)	m^3/tonne	0.407	0.433	0.482	0.470	0.411	0.408	0.540	0.537	0.602	0.578	0.386	0.390	0.408
Caliche (SS)														
Industrial yield														
Industrial iodine yield	%	72.7%	76.2%	77.6%	77.4%	66.2%	62.2%	73.0%	73.7%	76.9%	76.3%	59.0%	55.0%	55.5%
Industrial nitrate yield	%	65.2%	58.8%	70.3%	61.5 %	50.8%	59.4%	64.8%	69.0%	74.6%	70.6%	42.4%	40.3%	44.0%
Model yield														
Iodine yield correlation	%	74.1%	71.9%	82.0%	63.0%	59.2%	66.9%	73.5%	73.6%	75.8%	71.5%	59.3%	56.9%	56.2%
Nitrate yield correlation	%	61.4%	60.4%	71.0%	55.4%	47.0%	53.6%	68.0%	66.4%	72.6%	67.6%	41.9%	41.1%	45.1%

Complementary analysis has been carried out on the yield results, establishing that the CU is the determining factor for the increase in yield. The yield improvement is because there is an increase in the dissolution of salts due to the availability of more fresh water in the leaching process, reaching values of 70%. That is historically reflected in the years 2014 to 2017, for an average salt matrix material of 54.7%. The unit consumption for that period was in the range of 0.54-0.60 m^3/tonne, resulting in yields of 73-77%. This is graphically reflected in Figure 10-11, which correlates the degree of salt dissolution and the yield achieved:

Figure 10-11. Nitrate and Iodine Yield Extraction and Dissolutions of Salts



Consequently, an increase in prill iodine production will be possible by making improvements at the operational level of the irrigation solutions, so that the replacement of recirculated water by fresh seawater in the process occurs. From the graph it is possible to infer that a salt dilution in the range of 50-60% would give way to a real increase in iodine yield of 60-70% by the exchange of seawater in the irrigation.

10.5.4 Piloting Campaigns

The reserve pilots for industrial exploitation, carried out from 2014 for heaps 2015 onwards, until 2018, consist of tests developed so that the resulting complete piloting to projection process is:

- Isocontainer leaching.
- Simulation of isocontainer.
- Parameter scaling from isocontainer to heap.
- Correlation pit-stack from the loading polygons.
- Weighting" of simulation parameters: grades, granulometry, drainage curve, iodine adjustment factor.
- Pile simulation according to the weighted parameters.

The company's piling campaigns have been:

- Isocontainer 2015, for piles 2016.
- 2016-2017 pilot campaigns
- 2017-2018 pilot campaign

The isocontainers are plastic receptacles that are loaded in such a way as to replicate the segregation presented by industrial piles because of their loading method, and therefore the material is stacked in layers inside the reactor, as illustrated Figure 10-12.

Figure 10-12. Loaded Isocontainer and Distribution of Material by Particle Size

a) Isocontainer test.

Layer 4: (-2")
Layer 3: (-6"+2")-
Layer 2: (-12"+6")-
Layer 1: (+12")
Dreanflex

b) Iso container loading diagram

The tests were carried out with parameters corresponding to those of the Nueva Victoria industrial process on the test date, using seawater obtained from Caleta Buena, the point foreseen for future extraction. The test development conditions are as indicated in Table 10-11.

Table 10-11. Conditions for Leaching Experiments in Isocontainers

Parameter	Specification
Mass	1500 kg
Granulometry	+12"-(-12"+6")- (-6"+2")- (-2")
Test Duration	25,8 days
Impregnation	0.05 m^3/tonne--1 l/h/m^2
Irrigation	Water-SI-Mixed-Washing

In the final campaigns (2017-2018), seeking a faster turnaround time, isocontainer results were used directly, weighting them according to the shafttrial pits-pile correlation (empirical actor of 0.97 to estimate projection to pile). The operation of the piles was carried out at two irrigation rates (TR), 1.5 and 2 liters per hour square meter (L/h-m^2) and unit water consumption (CU) of 0.53 m^3/tonne.

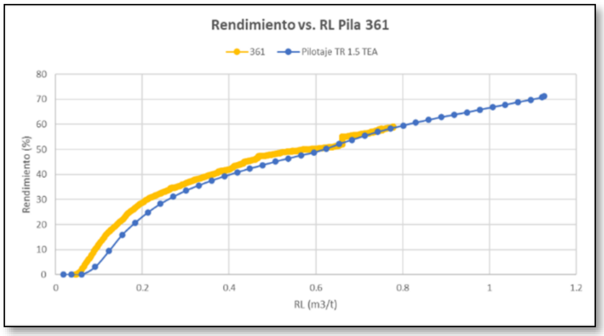
For the last pilot campaign carried out, the working conditions of the test were the following four:

- Pilot Trial pits (calicatas) TEA Norte, CU 0.53 m^3/tonne, TR 2 L/h-m^2, Leaching Ratio (RL) 0,9 m^3/tonne.
- Pilot Trial pits (calicatas) TEA Sur, CU 0.53 m^3/tonne, TR 2 L/h-m^2, RL 0.9 m^3/tonne.
- Trial pits (calicatas) TEA Sur, CU 0.53 m^3/tonne, TR 1,5 L/h-m^2, RL 0.9 m^3/tonne.
- Trial pits (calicatas) NVO, CU 0.53 m^3/tonne, TR 1.5 L/h-m^2, RL 0.9 m3/tonne.

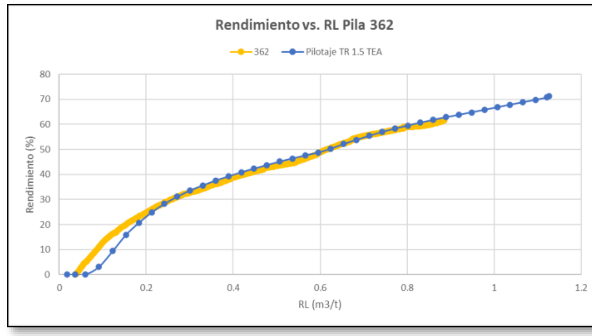
The test results of piques vs. industrial piles correspond, in process conditions close to those tested. TEA-North and TEA-South, under TR 2 L/h-m2 conditions, obtain an average I2 extraction of 69% and 65%, respectively. The TEA-South ponds treated at TR 1.5 l/h-m2 obtained a better iodine recovery of 67%. The results have shown that the decrease in TR will have an effect of concentrating more of the solution going down the bed, and therefore cause a higher yield vs. RL. This has been demonstrated at the isocontainer level, and can also be seen at the stack level, in cases where there is no change of solution, but only of rate.

Having defined the appropriate irrigation rate of 1.5 L/h-m^2, the following projections, Figure 10-13, show the contrast of the actual pile and pilot recovery results. Through the graphs, it can be established that the tests have reflected the industrial performance in a good way, taking into consideration that an average behavior curve has been made for the piles at isocontainer scale.

Figure 10-13. Pile Curve 361 and 362 vs. Average Pilot Curve for TR 1.5 L/h-m3 TEA Pilot Campaign



a) Iodine yield contrast curve of 361 pile.



b) Iodine yield contrast curve of 362 pile.

The relevant results of the campaigns conducted are conclusive in the following aspects:

- Lower values of 0.5 m3/tonne, which will have a negative impact on actual vs projected yield. Likewise, TR increasing from values of 1.5 to 2 L/h-m2, will also have a negative impact on actual vs. projected yield.
- Caliches of the same composition and grain size can have drastically different behaviors based on irrigation rate alone.
- Harder/compact and higher salt content caliches will be more sensitive to irrigation rate.
- Between two caliches of equal composition, the one with larger grain size will also be more sensitive to rate increase, since there are fewer exposed surface areas.
- It is recommended to lower the operational TR for more refractory caliches such as TEA and control the particle size to provide yield benefit.

10.6 Significant Risk Factors

Elements detrimental to recovery or to the quality of the product obtained pose a risk. Insoluble material and elements such as magnesium (magnesium sulfate or Epsom salt) and perchlorate in the raw material also poses a negative impact to the process. In this regard, this report has provided information on tests carried out on the process input and output flows, such as brine and finished products of iodine, potassium nitrate and sodium nitrate, for these elements, thus showing the company's constant concern to improve the operation and obtain the best product.

Plant control systems analyze grades and ensure that they comply with required threshold values and will not affect the concentration of valuable species in the brine or impact plant performance. Therefore, processing factors or deleterious elements that may have a significant impact on the potential economic extraction are controlled. For example, brines are monitored and those that are loaded with 2-2.5 g/L of Epsom salt are purged to waste ponds.

Along with the above, the company is also interested in developing or incorporating a new stage, process and/or technology that can mitigate the impact of known factors. This is achieved with constant focus on continuous improvement of the processes.

10.7 Qualified Person´s Opinion

10.7.1 Physical and chemical characterization

Mineralogical and chemical characterization results, as well as physical and granulometric characterization of the mineral to be treated are obtained from the tests performed. This allows continuous evaluation of different processing routes, both in the initial conceptual stages of the project and during established processes. This ensures that the process is valid and current, while continuing to review optimal alternatives to recover valuable elements based on the nature of the resource. Additionally, analytical methodologies determine deleterious elements to establish control mechanisms in operations to ensure a certain product quality.

10.7.2 Chemical-Metallurgical Tests

Metallurgical test work performed in laboratories and pilot plants are adequate to establish proper processing routes for caliche resources.

Testing program has evidenced adequate scalability of separation and recovery methods established in plant to produce iodine and nitrate salts. It has been possible to generate a model that can assist with an operational plan for the initial irrigation stage to improve iodine and nitrate recovery in leaching.

Samples used to generate metallurgical data are sufficiently representative to support estimates of planning performance and are suitable in terms of estimating recovery from the Mineral Resources.

10.7.3 Innovation and Development

The company has a research and development team that has demonstrated important advances regarding development of new processes and products in order to maximize returns from exploited resources.

Research is developed by three different units covering topics, such as chemical process design, phase chemistry, chemical analysis methodologies, and physical properties of finished products. These address raw material characterization, operations traceability, and finished product.

11 MINERAL RESOURCE ESTIMATE

11.1 Key Assumptions, Parameters and Methods

This sub-section contains forward-looking information related to density and grade for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including actual in-situ characteristics that are different from the samples collected and tested to date, equipment and operational performance that yield different results from current test work results.

The Mineral Resource estimation process was different depending on the drill hole spacing grid available in each sector:

- Measured Mineral Resources: Sectors with a block model, with a drill hole spacing grid of 50-x-50 m or 70-x-70 m (RGM100T) were estimated with a full 3D block model using kriging, which contains variables, such as iodine, nitrate, soluble salts, geology, geotechnics, topography, etc. For Nueva Victoria, only the sectors of Mina Norte, TEA_E, TEA_HS, and TEA W have an available block model.
- Indicated Mineral Resources: Sectors with a drill hole spacing grid of 100-x-100 m, 200-x-200 m and do not have a block model, and the resource evaluation is done at the drill hole database level. A script is run with operational and economic parameters, such as cut-off grade, cover thickness, mantle thickness, waste mineral ratio, etc. The outputs are the intervals with a positive evaluation in each drill hole, which are then transformed to tonnage by multiplying by the nominal drill hole spacing grid of the sector (200-x-200 m, for example), and density. Sectors in which the scripting approach was performed includes Fortuna, Coruña, Hermosa Oeste, Pampa Engañadora, TEA Oest, Franja Oeste, and Cocar
- Inferred Mineral Resources are sectors with 400-x-400-m grid or above.

11.1.1 Sample Database

The 2021, Nueva Victoria Model included the estimate of iodine and nitrate, and in the case of smaller grids (50-x-50 m and 70-x-70 m), soluble salts.

Table 11-1 summarizes the basis statistics of iodine and nitrate for Nueva Victoria.

Table 11-1. Basic Sample Statistics for Iodine and Nitrate in Nueva Victoria

Variable	Number of samples	Minimum	Maximum	Mean	Std. Dev.	Variance	CV	Kurtosis
Iodine	67,153	0.10	21.2	5.28	3.79	14.33	0.72	4.50
Nitrate	67,153	3.00	2,272.0	376.28	320.31	102,599.60	0.85	9.15

11.1.2 Geological Domains and Modeling

For the estimation of each block within a geological unit (GU), only the composite grades found in that domain are used (hard contact between GUs). The main GUs are:

- Overburden, Cover (GU 1).
- Mineralized mantle, Caliche (GU 2).
- Underlying (GU 3).

11.1.3 Assay Compositing

Given that all the samples have the same length (0.5 m) and the block height is also 0.5 m, SQM did not composite the sample database and used individual samples directly in the estimation process.

11.1.4 Evaluation of Outlier Grades, Cut-offs, and Grade Capping

Definition and control of outliers is a common industry practice that is necessary and useful to prevent potential overestimation of volumes and grades. SQM has established detection limits (upper limit) in the determined grades of Iodine and Nitrates in the analyzed samples (2,000 ppm Iodine and 20% Nitrates). The distribution of grades for both Iodine and Nitrate within the deposit were such that not samples were judged to be extreme, so no sample restrictions were used in the estimation process.

11.1.5 Specific Gravity

There are no available SG samples in the database. SQM have been using a historic value of 2.1 (g/cc) for the calculations of tonnage, SQM performed a series of analyses for different drill holes measuring the specific gravity in Nueva Victoria. Table 11-2 shows the analyzed drill holes, the specific gravity and the geological unit (GU), these results justified the historical value used by SQM.

Table 11-2. Specific Gravity Samples in Nueva Victoria

Drill Hole	Specific Gravity (g/cc)	GU
567L	2.15	3
1941L	2.22	3
117L	2.28	3
2316L	1.84	6
1684L	2.14	3
2695L	2.23	3
CL-10	2.25	4
AI-06	2.07	3
1032L	2.23	3
MB-18-4	2.12	3
MB-12_29	1.96	2
2995L	2.05	2
Average	2.13	

11.1.6 Block Model Mineral Resource Evaluation

As mentioned before, sectors with a drill hole spacing grid of 50-x-50 m or 70-x-70 m (RGM100T) were estimated with a full 3D block model using kriging for the interpolation of iodine and nitrate. In Nueva Victoria, only Mina Norte, TEA_E, TEA_HS, and TEA_W, have an available block model.

Block Model Parameters and Domaining

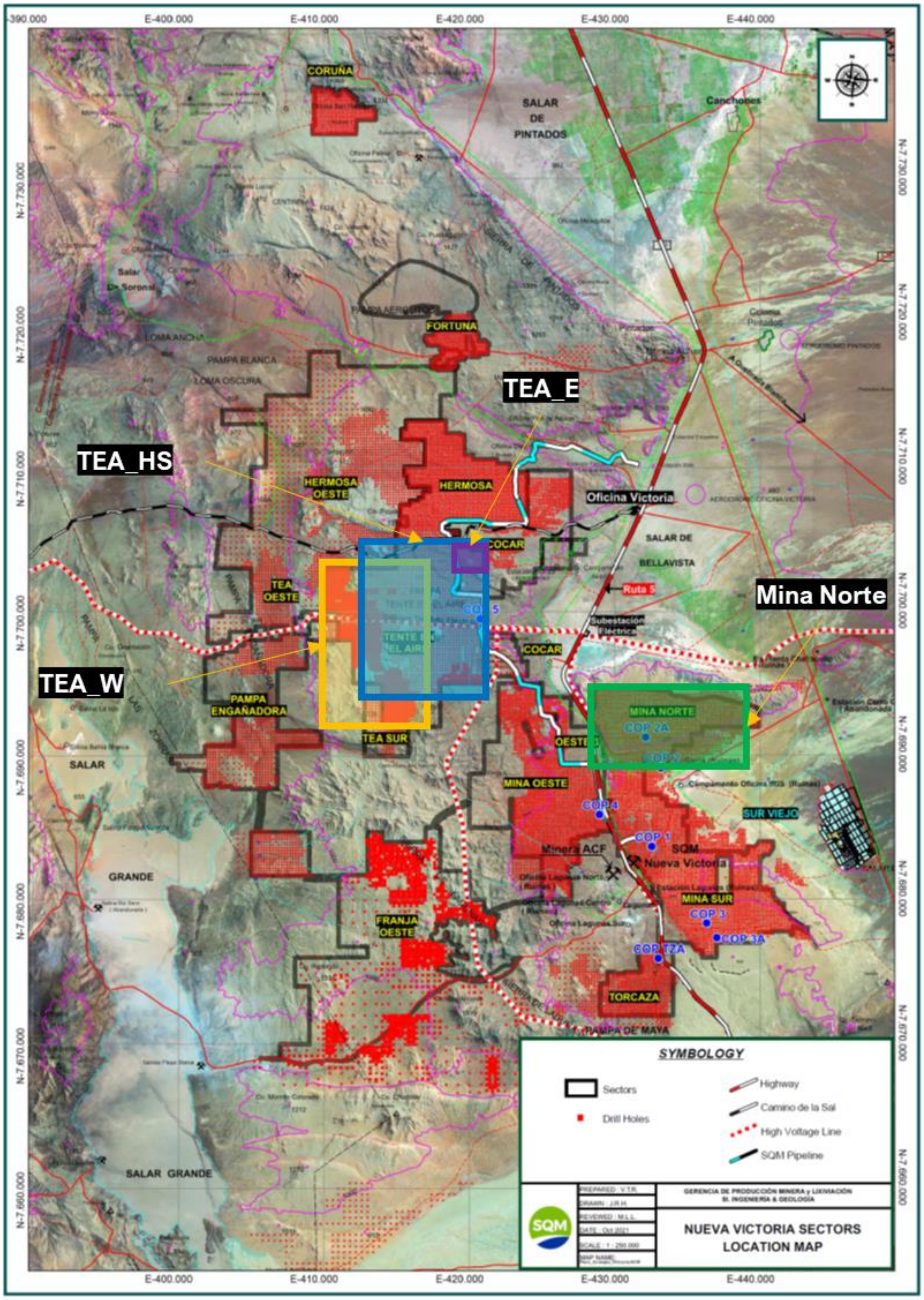
Table 11-3 shows the definition for the block model built in Datamine®. The block size is 25-x-25-x-0.5 m in all sectors.

Table 11-3. Block Model Dimensions

Sector	Parameters	East	North	Elevation
Mina Norte	Origin (m)	428,450	7,689,449	954
	Range (m)	10,650	5,350	149
	Block Size	25.0	25.0	0.5
	Number of blocks	426	214	297
TEA_E	Origin	418,925	7,703,000	1,118
	Range	2,100	1,650	95
	Block Size	25.0	25.0	0.5
	Number of blocks	84	66	189
TEA_HS	Origin	412,500	7,694,200	1,017
	Range	8,525	10,850	173
	Block Size	25.0	25.0	0.5
	Number of blocks	341	434	345
TEA_W	Origin	409,950	7,692,050	990
	Range	7,125	11,450	204
	Block Size	25.0	25.0	0.5
	Number of blocks	285	458	407

Figure 11-1 illustrates a plan view of the sectors with a block model inside Nueva Victoria

Figure 11-1. Block Model Location in Nueva Victoria



Although there are overlaps between the boundaries of the TEA block models, there is no duplication of blocks for the estimation of Mineral Resources, each of these models has the boundary of the other zones given by the different databases of each zone (they did not share samples).

Variography

Experimental variograms were constructed using all the drill hole samples independent of the GU. The variogram is modeled and adjusted, obtaining parameters, such as structure range and sill, nugget effect, and the main direction of mineralization. Experimental variograms were calculated and modeled for iodine and used in the estimation of both iodine and nitrate.

Table 11-4 describes the variogram models for Iodine used in each zone for the estimation of Iodine and Nitrate.

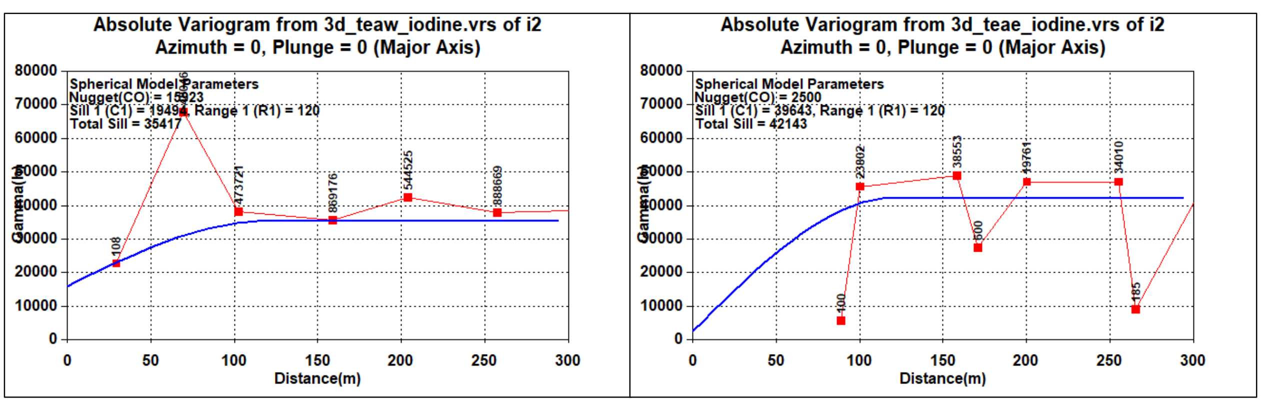
Table 11-4. Variogram models for Iodine in Each Sector

Zone	Variable	Rotation			Nugget Effect	Range 1			Sill 1
		Z	Y	X		x	y	z	
MINA NORTE	Iodine/Nitrate	0	0	0	6,964	80.0	80.0	0.5	39,643
TEA_E	Iodine/Nitrate	0	0	0	2,500	120.0	120.0	0.5	38,372
TEA_HS	Iodine/Nitrate	45	0	0	18,929	150.0	100.0	0.5	79,464
TEA_W	Iodine/Nitrate	0	0	0	15,923	120.0	120.0	0.5	19,494

The nugget effect varies between 5% and 80% of the total sill, this suggests different behavior of Iodine between each zone. The total ranges are around 80 m to a maximum of 150 m. These variogram ranges are in line with the SQM's definition of Measured Mineral Resources, namely estimated blocks using a drill hole grid of 50-x-50 m, or 70-x-70 m (block model evaluation).

The QP performed an independent analysis to confirm the variogram models used by SQM, Figure 11-2 shows the experimental variogram calculated in this analysis (red line) and the variogram model used by SQM (blue line) for TEA_W (left) and TEA_E (right). In general, the independent analysis obtains similar nugget effect, total sill and variogram ranges to those used by SQM.

Figure 11-2. Variogram Models for Iodine and Nitrate in Nueva Victoria



Interpolation and Extrapolation Parameters

The estimation of Iodine and Nitrate grades for Nueva Victoria has been conducted using Ordinary Kriging (OK) in one pass for each GU. SQM used cross validation to determine the estimation parameters such as search radius, minimum and maximum number of samples used, etc. In the cross-validation approach, the validation is performed on the data by removing each observation and using the remaining to predict the value of the removed sample. In the case of stationary processes, it would allow to diagnose whether the variogram model and other search parameters adequately describes the spatial dependence of the data.

The block model is intercepted with the geological model to flag the Gus used in the estimation process.

The OK plan included the following criteria and restrictions:

- No capping used in the estimation process.
- Hard contacts have been implemented between all GU.
- No octant restrictions have been used for any GU.
- No samples per drill hole restrictions have been implemented for any GU.

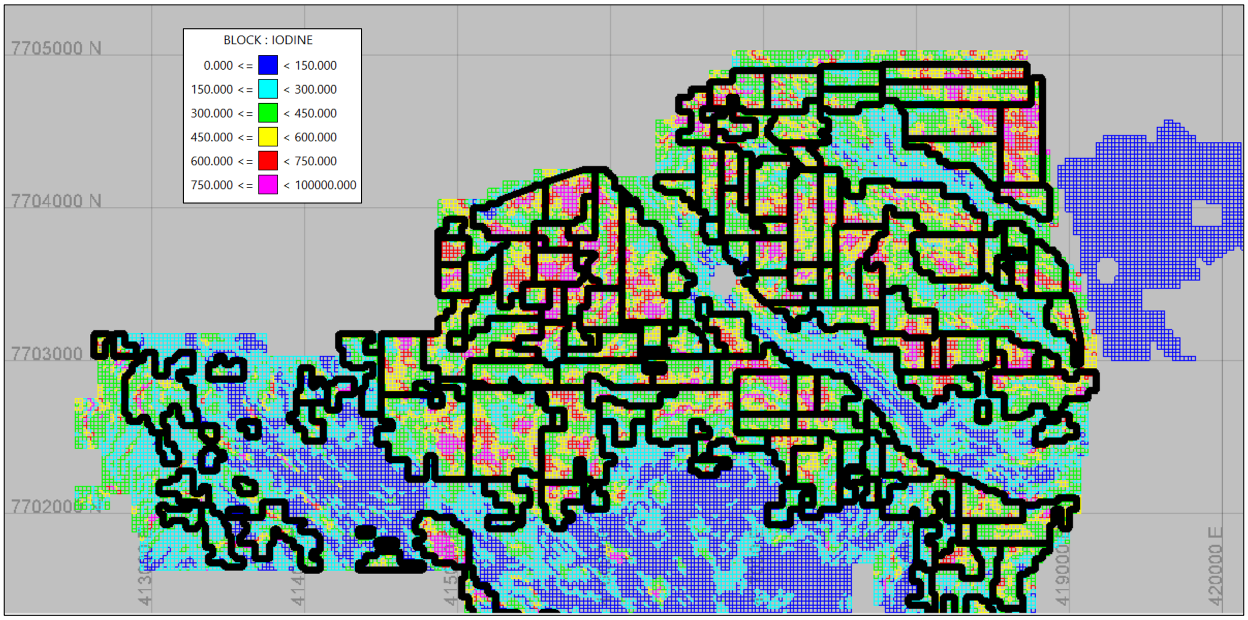
Table 11-5 summarizes the orientation, radii of searches implemented and the scheme of samples selection for each GU and sector. Search ellipsoid radii were chosen based on the variogram ranges.

Table 11-5. Sample Selection for Each Sector

Sector	Variable	Rotation			Range 1			Samples	
		Z	Y	X	x	y	z	Minimum	Maximum
MINA NORTE	Iodine/Nitrate	0	0	0	80	80	0.75	3	20
TEA_E	Iodine/Nitrate	0	0	0	120	120	0.75	1	20
TEA_HS	Iodine/Nitrate	45	0	0	150	100	0.75	3	20
TEA_W	Iodine/Nitrate	0	0	0	120	120	0.75	3	20

After the estimation is done, a vertical reblocking was performed transforming the 3D block model in a 2D grid of points (coordinates X and Y) with the mean grades of all estimated variables. When the 2D grid points are available, operational and mine planning parameters are applied to determine tonnage/grade according to a 300-ppm cut-off grade for iodine. Finally, GIS software (Arcview and Mapinfo) is used to draw the polygons, limiting the estimated Mineral Resources with economic potential. An example of this methodology is shown in Figure 11-3 for TEA_HS. The black line defines polygons above the cut-off grade and that comply with several operational conditions (at least 50-x-50 m, not isolated polygons, no infrastructure nearby, etc.).

Figure 11-3. Plan View of the Polygons Bordering the Resources



Source: TEA_HS

Block Model Validation

A validation of the block model was carried out to assess the performance of the OK and the conformity of input values. The block model validation considers:

- Statistical comparison between estimated blocks and samples grades
- Global and local comparison between estimated blocks and samples through each direction (East, North and elevation)
- Visual validation to check if the lock model matches the sample data

11.1.6.1 Global Statistics

The QP carried out a statistical validation between sample grades and estimated blocks. Global statistics of mean grades for samples can be influenced by several factors, such as sample density, grouping, and, to a greater extent, the presence of high grades that have been restricted in the estimation plan. Consequently, global statistics of sample grades were calculated using the nearest-neighbor (NN) method with search ranges like the one used in the estimation. A summary of this comparison is shown in Table 11-6 and Table 11-7 for iodine and nitrate, respectively, where the negative values indicate a negative difference between block mean grades in relation to composite mean grades, and vice-versa. In general, differences under 5% are satisfactory, and differences above 10% require attention. The result of the estimate shows that relative differences are found within acceptable limits.

Table 11-6. Global Statistics Comparison for Iodine

Sector	# Data		Minimum		Maximum		Mean		Difference	Std. Dev.	
	Blocks	NN	Blocks	NN	Blocks	NN	Blocks	NN		Blocks	NN
Mina Norte	437,603	437,603	50.0	50.0	1770.0	2000.0	362.7	354.3	2.4%	157.6	235.5
TEA_E	32,574	32,574	102.0	90.0	1626.0	2000.0	382.0	377.1	1.3%	152.2	225.3
TEA_HS	801,787	801,787	1.0	50.0	1941.0	2000.0	299.1	310.3	-3.6%	190.4	266.9
TEA_W	450,024	450,023	50.0	50.0	1640.0	2000.0	308.6	312.2	-1.1%	123.3	205.0

Table 11-7. Global Statistics Comparison for Nitrate

Sector	# Data		Minimum		Maximum		Mean		Difference	Std. Dev.	
	Blocks	NN	Blocks	NN.	Blocks	NN	Blocks	NN.		Blocks	NN
Mina Norte	437,603	437,603	1.0	1.0	19.5	20.0	3.7	3.6	1.9%	2.1	3.1
TEA_E	32,574	32,574	1.0	1.0	20.0	20.0	5.5	5.4	2.4%	2.5	3.6
TEA_HS	780,648	780,648	1.0	1.0	20.0	20.0	5.8	5.8	1.2%	3.0	4.4
TEA_W	450,024	450,023	1.0	1.0	20.0	20.0	3.7	3.6	0.9%	1.8	2.9

11.1.6.2 Swath Plots

To evaluate how robust block grades are in relation to data, a semi-local comparison using swath plots was completed. Generating swath plots entail averaging blocks and samples separately in regular 100 m (east) x 100 m (north) x 2 m (elevation) panels and then comparing the mean grade in each sample and block panel through each axis. Figure 11-4 to Figure 11-7 provides a summary of swath plots for each variable for TEA_E and TEA_W. In general, results indicate that estimates reasonably follow trends found in the deposit's grades at a local and global scale without observing an excessive degree of smoothing.

Figure 11-4. Swath Plots for Iodine – TEA_E

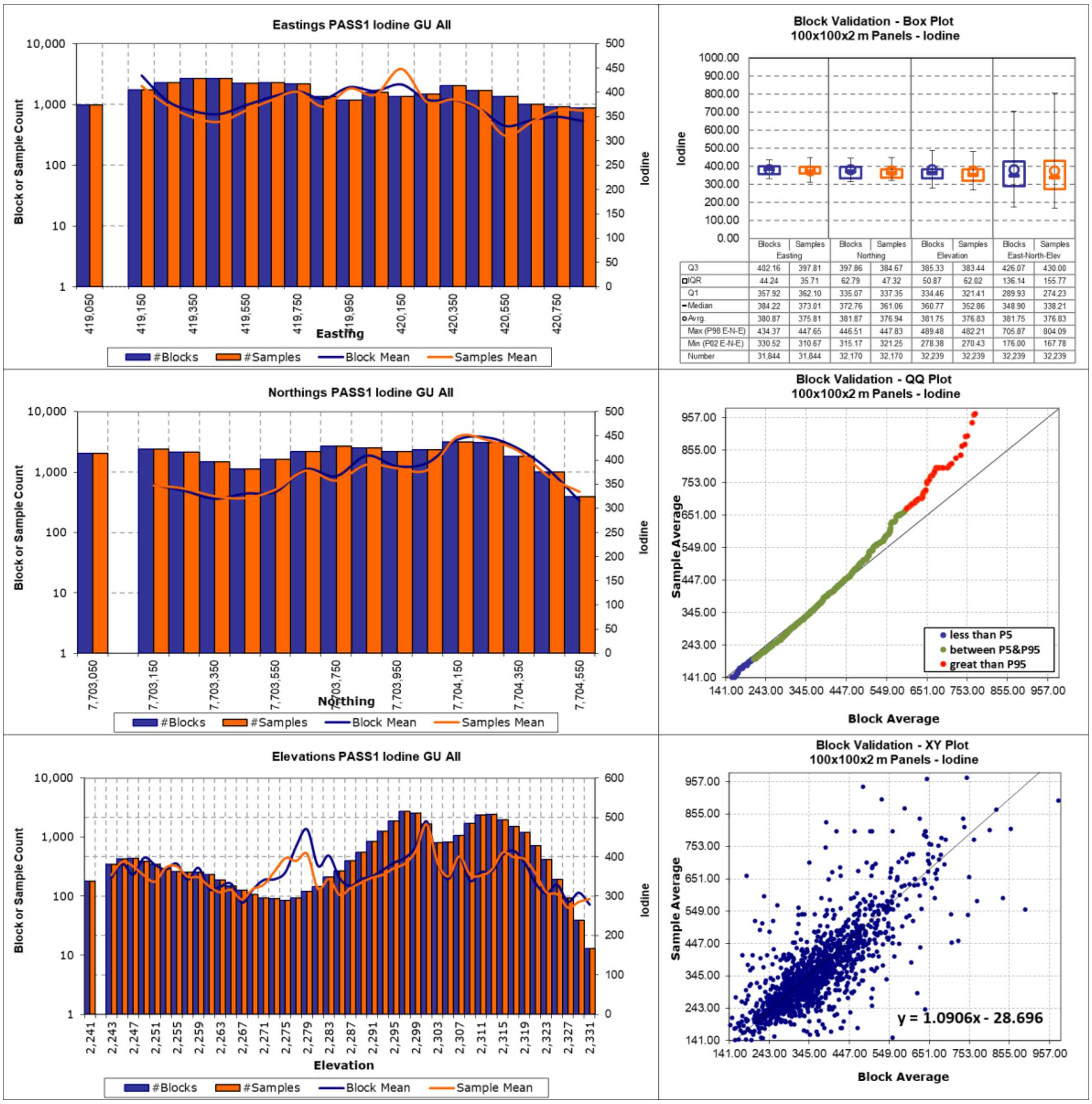


Figure 11-5. Swath Plots for Nitrate – TEA_E

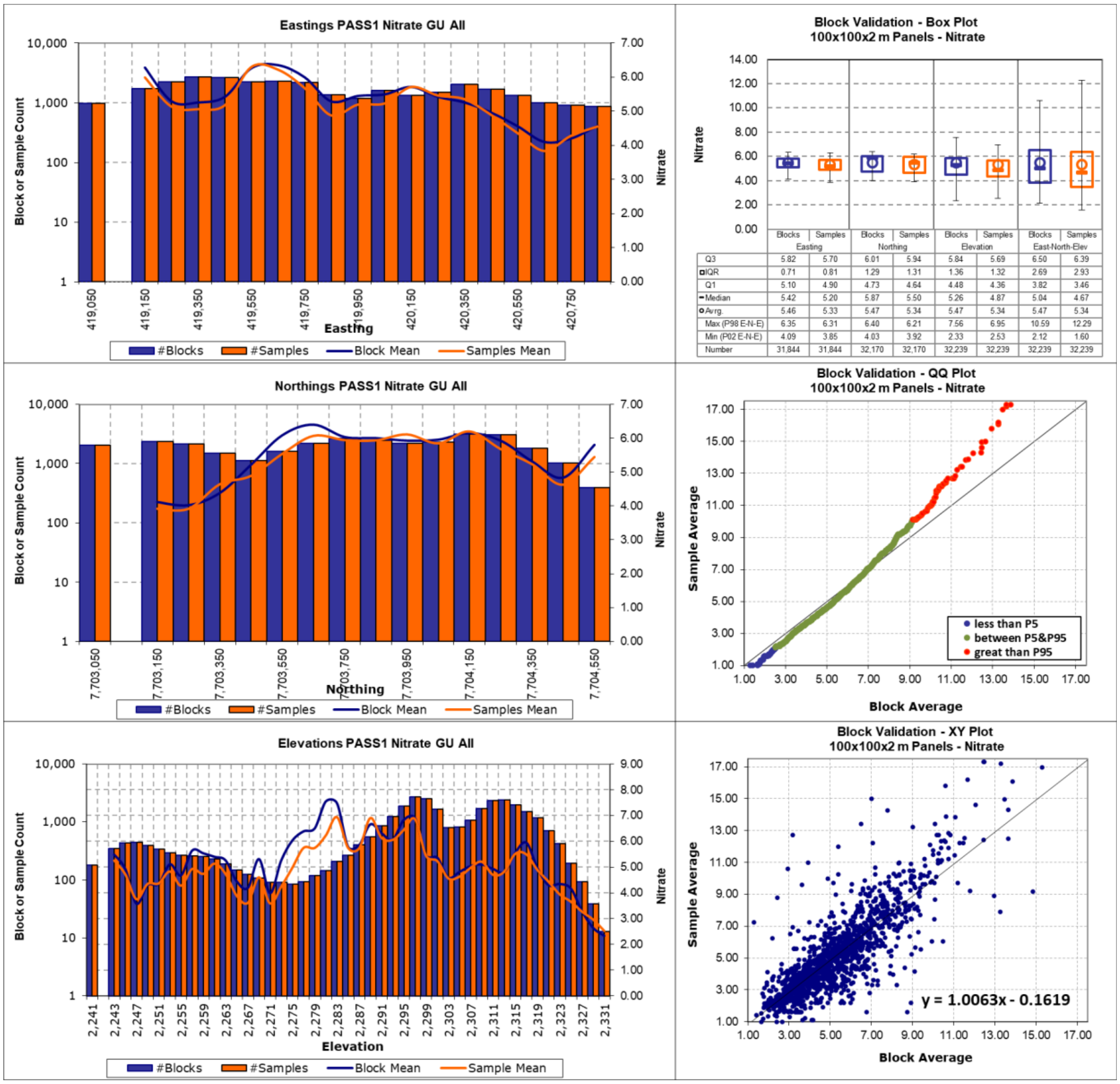
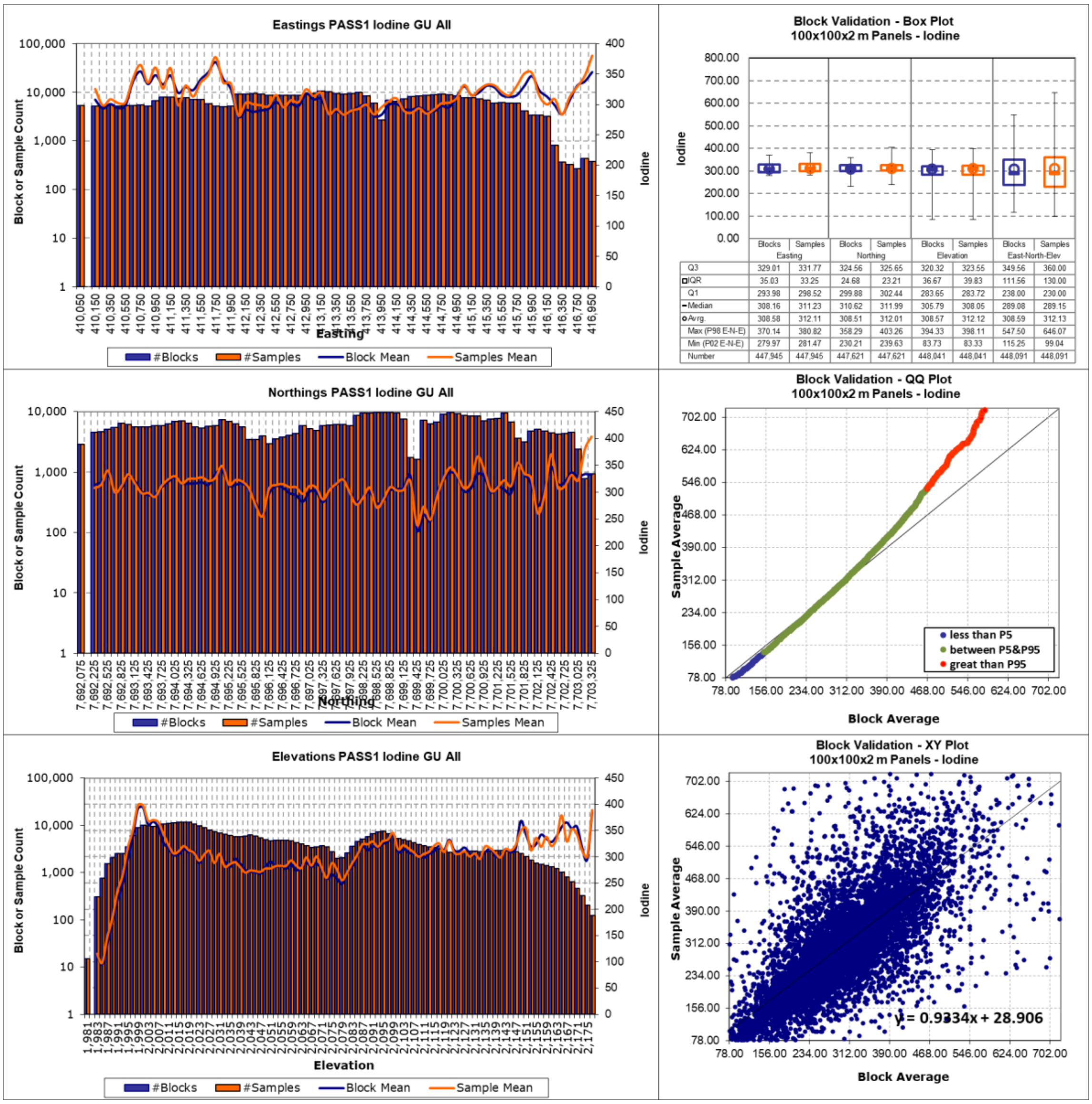
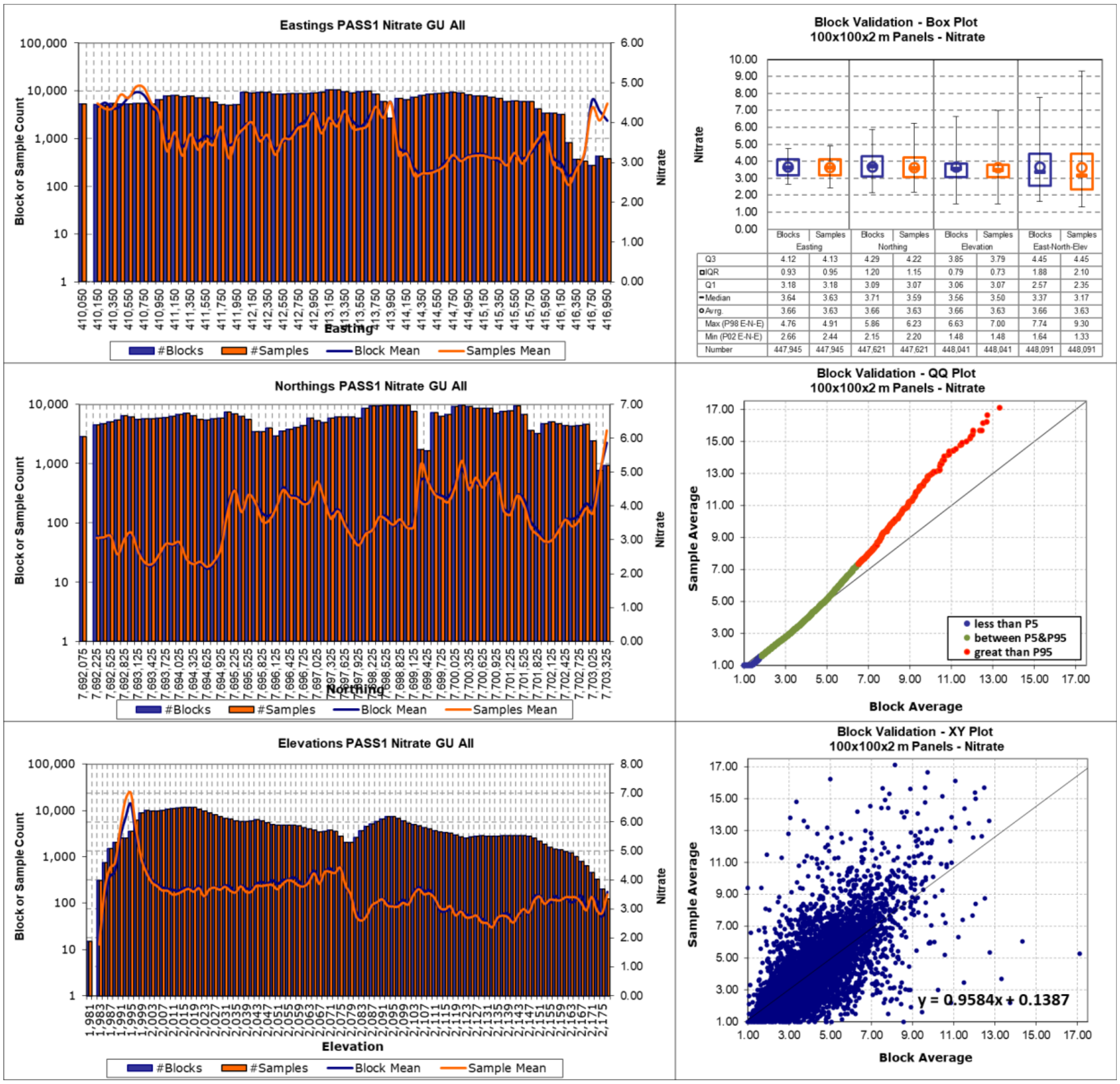


Figure 11-6. Swath Plots for Iodine – TEA_W



	Easting Blocks	Easting Samples	Northing Blocks	Northing Samples	Elevation Blocks	Elevation Samples	East-North-Elev Blocks	East-North-Elev Samples
Q3	329.01	331.77	324.56	325.65	320.32	323.55	349.56	360.00
IQR	35.03	33.25	24.68	23.21	36.67	39.83	111.56	130.00
Q1	293.98	298.52	299.88	302.44	283.65	283.72	238.00	230.00
Median	308.16	311.23	310.62	311.99	305.79	308.05	289.08	289.15
Avrg.	308.58	312.11	308.51	312.01	308.57	312.12	308.59	312.13
Max (P98 E-N-E)	370.14	380.82	358.29	403.26	394.33	398.11	547.50	646.07
Min (P02 E-N-E)	279.97	281.47	230.21	239.63	83.73	83.33	115.25	99.04
Number	447,945	447,945	447,621	447,621	448,041	448,041	448,091	448,091

Figure 11-7. Swath Plots for Nitrate – TEA_W



11.1.6.3 Visual Validation

To visually validate the iodine and Nitrate estimation, the QP completed a review of a set of cross-sectional and plan views. The validation shows a suitable representation of samples in blocks. Locally, the blocks match the estimation samples both in cross-section and plant views. In general, there is an adequate match between composite data and block model data for Iodine and Nitrate grades. High grade areas are suitably represented, and high-grade samples exhibit suitable control.

Figure 11-8 and Figure 11-9 present a series of horizontal plan views with the estimated model and the samples for Iodine and Nitrate in TEA_E and TEA_W.

Figure 11-8. Visual Validation of Iodine (left) and Nitrate (right) Estimation, Plan View – TEA_E

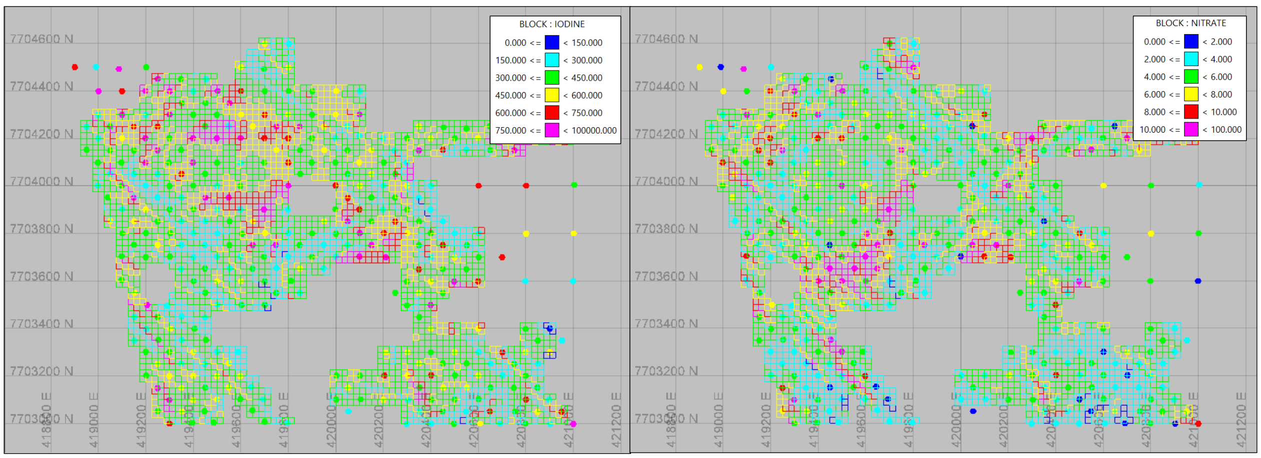
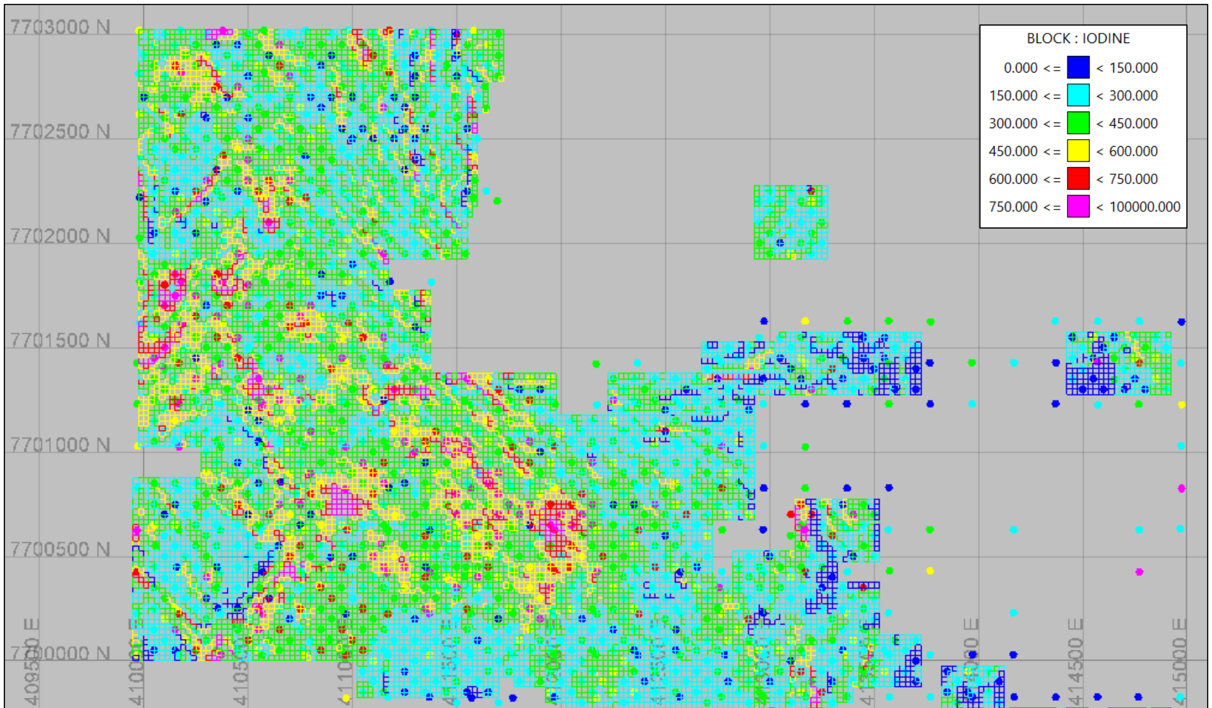
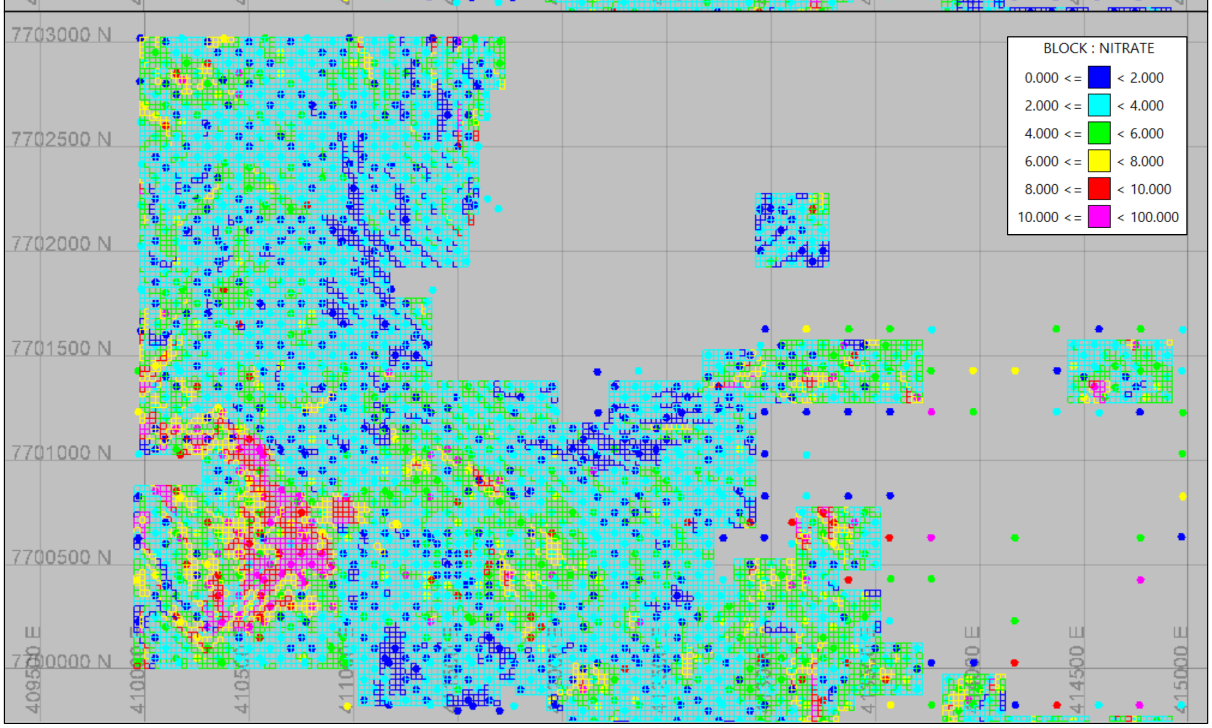


Figure 11-9. Visual Validation of Iodine (left) and Nitrate (right) Estimation, Plan View – TEA_W





Reconciliation

During the period between June 1999 and December 2002, SQM compared the block model estimation with the material in 18 heap leach piles in Pampa Blanca. Comparing the grade determined by SQM in the block model versus Cesmec mass balance head grade of the pile. 16 piles were considered acceptable for Nitrate (error less than 15 %) and 15 piles good for Iodine (error less than 20 %), validating in this way the geological model and the grade estimation through geostatistics techniques. Table 11-8 shows this comparison for the 18 selected piles in Pampa Blanca. A similar approach was used in Maria Elena in 2003, the results of this analysis are shown in Table 11-9.

Table 11-8. Comparison between Block Model Grade and the Grade Measured from Different Piles, Pampa Blanca

Pile	Nitrate (%)			Iodine (ppm)		
	Block Model	Pile	Error	Block Model	Pile	Error
24	8.1	7.3	11.0	464	436	6.4
25	7.9	7.6	3.9	488	443	10.2
26	7.1	6.6	7.6	477	439	8.7
27	7.9	7.4	6.8	538	439	22.6
28	7.6	7.3	4.1	467	403	15.9
29	8.3	7.0	18.6	529	508	4.1
31	7.9	7.7	2.6	368	346	6.4
33	7.3	6.9	5.8	466	417	11.8
41	7.1	5.4	31.5	570	425	34.1
44	7.3	7.3	0.0	487	434	12.2
45	6.7	6.7	0.0	393	371	5.9
46	7.4	7.2	2.8	443	394	12.4
47	7.2	6.8	5.9	418	401	4.2
48	7.3	7.7	-5.2	411	456	-9.9
49	7.1	7.0	1.4	412	414	-0.5
50	7.4	6.6	12.1	415	392	5.9
51	6.9	6.0	15.0	395	357	10.6
52	7.1	6.9	2.9	440	352	25.0
Average	7.4	7.0	6.5	455	413	10.2

Table 11-9. Comparison between Block Model Grade and the Grade Measured from Different Piles, Maria Elena

Pile	Tonnage	Nitrate (%)			Iodine (ppm)		
		Block Model	Pile	Error	Block Model	Pile	Error
8	7,745	8.2	7.6	7.9	602.0	472	27.5
9	9,241	8.0	7.9	1.3	434.0	525	-17.3
10	8,449	9.6	8.8	9.1	574.0	551	4.2
1	11,529	8.4	8.7	-3.4	437.0	487	-10.3
2	9,417	8.2	8.7	-5.7	413.0	429	-3.7
3	10,913	8.9	8.2	8.5	549.0	537	2.2
4	10,737	8.6	9.8	-12.2	521.0	538	-3.2
5	11,705	9.0	8.6	4.7	365.0	506	-27.9
6	10,385	7.5	8.0	-6.3	442.0	481	-8.1
7	10,649	8.1	7.3	11.0	446.0	436	2.3
Average		**8.5**	**8.4**	**0.8**	**472.8**	**496.3**	**-4.7**

11.1.7 Database-Level Mineral Resource Evaluation

This sub-section contains forward-looking information related to establishing the prospects of economic extraction for Mineral Resources for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including cut-off grade assumptions, costing forecasts and product pricing forecasts

For the rest of the sectors with a drill hole spacing grid equal, or greater, than 100-x-100 m, the Mineral Resource evaluation was performed at the database level. Table 11-10 shows the parameters used to define drill hole intervals with economic potential in each in Nueva Victoria.

Table 11-10. Economic and Operational Parameters Used to Define Economic Intervals for each Drill Hole in Nueva Victoria

Parameter	Value
Mantle thickness	More than 2 m
Cover thickness	Less than 3 m
Waste/Mineral Ratio	Less than 1.5
Iodine Cut-off grade	300 ppm

These parameters are the inputs of a script that calculates for each drill hole the intervals with economic potential which then are converted to tonnage using the nominal drill hole spacing grid (200-x-200 m for example) and density (2.1 g/cc).

Table 11-11 shows an example calculation for a drill hole in from the Hermosa Sector. The evaluation starts at the top of the drill hole, considering a 300-ppm iodine cut-off grade. In this case, only the first four intervals were selected (2-m thickness of the interval with economic potential). Details of this are presented in Section 19 (Economic Analysis). This analysis includes all operating costs, recoveries, and downstream costs to Coya Sur.

Table 11-11. Example of the Database Evaluation in Hermosa, Nueva Victoria

Hole-Id	From (m)	To (m)	Nitrate (%)	Iodine (ppm)	Cover (m)	Selected
HAF'-66	0.0	0.5	2.5	250	0.12	Yes
HAF'-66	0.5	1.0	10.0	200	0.12	Yes
HAF'-66	1.0	1.5	3.5	160	0.12	Yes
HAF'-66	1.5	2.0	8.1	690	0.12	Yes
HAF'-66	2.0	2.5	4.0	170	0.12	No
HAF'-66	2.5	3.0	3.6	260	0.12	No
HAF'-66	3.0	3.5	2.8	340	0.12	No
HAF'-66	3.5	4.0	2.4	160	0.12	No
HAF'-66	4.0	4.5	2.7	100	0.12	No
HAF'-66	4.5	5.0	1.8	170	0.12	No
HAF'-66	5.0	5.5	5.0	120	0.12	No
HAF'-66	5.5	6.0	12.6	400	0.12	No

Then this interval is transformed in tonnage using the nominal spacing grid (100-x-100 m) and the density (2.1 g/cc).

$$Tonnage = 2.0\ m\ x\ 100\ m\ x\ 100\ m\ x\ 2.1\ \frac{tonne}{m^3} = 42{,}000\ tonne$$

After the script selected all the economic intervals SQM used the same methodology used in the block model evaluation to define polygons with material above cut-off grade and that comply with operational conditions.

11.2 Mineral Resource Estimate

This sub-section contains forward-looking information related to Mineral Resource estimates for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including geological and grade interpretations and controls and assumptions and forecasts associated with establishing the prospects for economic extraction.

Table 11-12, summarizes the Mineral Resource estimate, exclusive of reserves, for iodine and nitrate in Nueva Victoria. Note that because the caliche deposit is at the surface, all measured and indicated resources has been converted into mineral reserves.

Table 11-12. Mineral Resource Estimate, Exclusive of Mineral Reserves, as December 31, 2021

Nueva Victoria	Inferred		
	Tonnage (Mt)	Iodine (ppm)	Nitrate (%)
Hermosa Sur	31.1	430	5.5
Tente en el Aire	2.4	441	4.7
Total	33.4	431	5.4

Notes:

(a) Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resource will be converted into Mineral Reserves upon the application of modifying factors.

(b) Mineral Resources are reported as in-situ and exclusive of Mineral Reserves, where the estimated Mineral Reserve without processing losses during the reported LOM was subtracted from the Mineral Resource inclusive of Mineral Reserves. All Measured and Indicated Mineral Resources have been converted into Mineral Reserves; as a result, only Inferred Mineral Resources are reported in this TRS.

(c) Comparisons of values may not add due to rounding of numbers and the differences caused by use of averaging methods.

(d) The units “Mt”, “ppm” and % refer to million tonnes, parts per million, and weight percent respectively.

(e) The Mineral Resource estimate considers an iodine cut-off grade of 300 ppm, based on accumulated cut-off iodine grades and operational average grades, as well as caliche thickness ≥ 2.0 m and overburden thickness ≤ 3.0 m. The iodine cut-off grade considers the cost and medium- and long-term price forecasts of generating iodine as discussed in Sections 11, 16 and 19 of this TRS.

(f) Donald Hulse is the QP responsible for the Mineral Resources.

11.3 Mineral Resource Classification

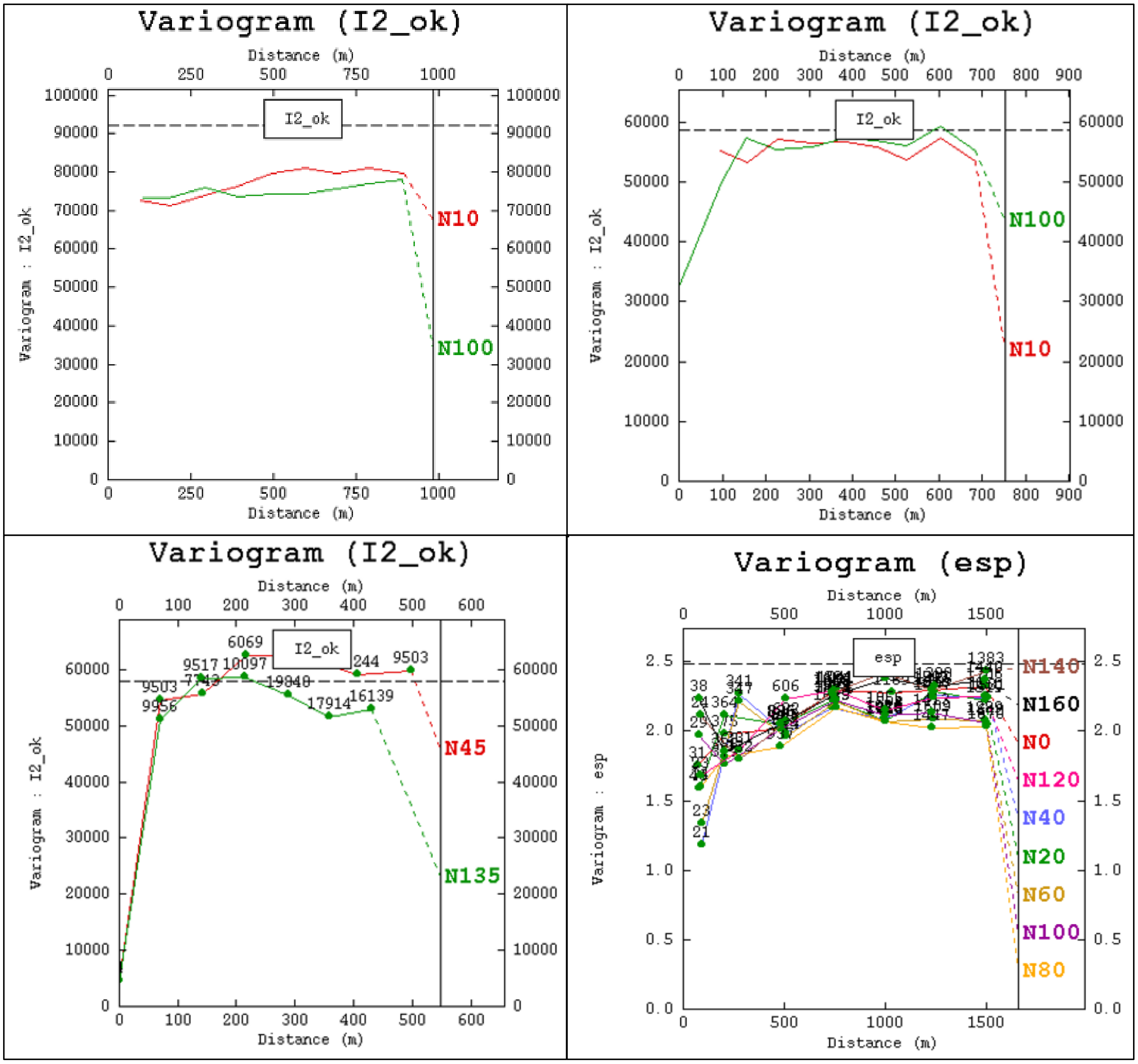
This sub-section contains forward-looking information related to Mineral Resource classification for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including geological and grade continuity analysis and assumptions.

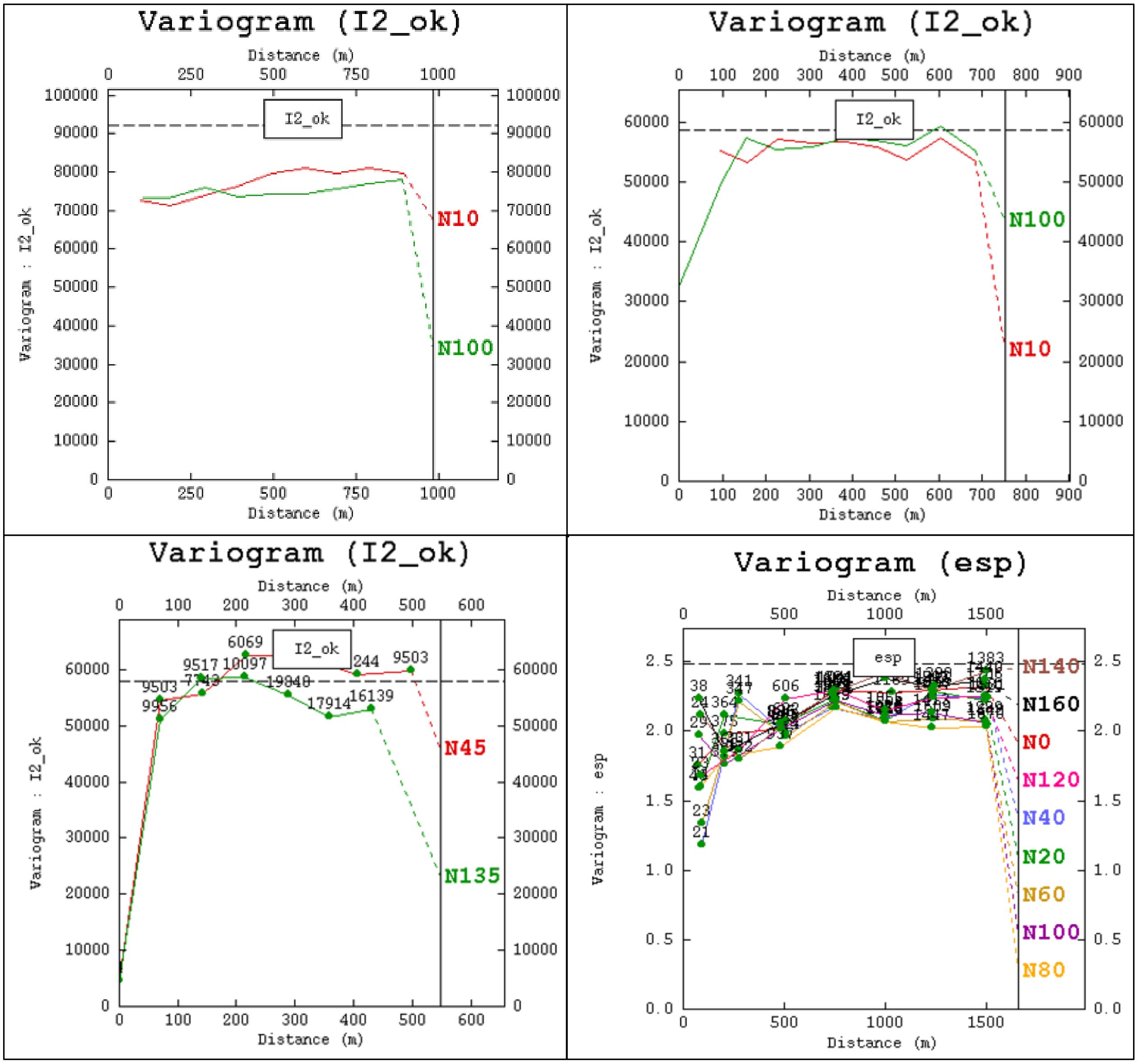
The Mineral Resource classification defined by SQM is based on drill hole spacing grid:

- Measured Resources were defined using the prospecting grids of 50-x-50 m and 70-x-70 m, which allows to delimit with a significant level of confidence the dimensions, mantle thickness and grades of the mineralized bodies as well as the continuity of the mineralization. Variability and uncertainty studies carried out by SQM show a relative estimation error of 4.5 and 5.5 % for both grids, respectively.
- Indicated Resources were defined using the prospecting grids of 100 x 100 m and 200-x-200 m, which allows to delimit with a reasonable level of confidence the dimensions, mantle thickness, tonnage, and grades of the mineralized bodies. Variability and uncertainty studies show a relative estimation error of 7.6 and 8.3 % for both grids, respectively.
- Inferred Mineral Resources were defined using the 400-x-400-m prospecting grids carried out in the earlier steps of the project. When prospecting is carried out in districts or areas of recognized presence of caliche, or when the drill hole grid is accompanied by some prospecting in a smaller grid, confirming the continuity of mineralization, it is possible to anticipate that such resources have a sustainable base to give them a reasonable level of confidence; and therefore, to define dimensions, mantle thickness, tonnages, and grades of the mineralized bodies. The information obtained is complemented by surface geology and the definition of GUs.

The QP carried out an independent variographic analysis on several deposits. The results show a high lateral continuity of the grade for both nitrate and iodine in the mineralized mantle. As an example, Figure 11-10 shows the experimental variogram for TEA_HS (upper-left), TEA_W (upper-right) and TEA_E (bottom-left), where the grade has good continuity for iodine, especially in TEA_HS and TEA_W where the sill was reached beyond 600 m. The mineralized mantle (bottom right) also shows a good level of continuity in all directions.

Figure 11-10. Experimental Variograms of Iodine for TEA_HS (upper-left), TEA_W (upper-right), TEA_E (bottom-left) and Mantle Thickness (bottom-right) for Nueva Victoria





It is the QP's opinion that these analyses show that the estimated errors were low enough (5 %) for drill hole grids of 50-x-50 m and 70-x-70 m. The definition of Measured Mineral Resources from these grids is justified.

Considering that the Down the hole (DTH) variograms also show a low nugget effect the general conclusion of the independent analysis was that both grades and the mineralized mantle have an adequate level of continuity due to the large range of the experimental variogram (up to 600 m). This justifies the definition of Indicated Mineral Resource for drill holes grids up to 200-x-200 m.

11.4 Mineral Resource Uncertainty Discussion

Mineral Resource estimates may be materially affected by the quality of data, natural geological variability of mineralization and/or metallurgical recovery and the accuracy of the economic assumptions supporting reasonable prospects for economic extraction including metal prices, and mining and processing costs.

Inferred Mineral Resources are too speculative geologically to have economic considerations applied to them to enable them to be categorized as Mineral Reserves.

Mineral Resources may also be affected by the estimation methodology and parameters and assumptions used in the grade estimation process including top-cutting (capping) of data or search and estimation strategies although it is the QP's opinion that there is a low likelihood of this having a material impact on the Mineral Resource estimate.

11.5 Assumptions for Multiple Commodity Mineral Resource Estimate

For Nueva Victoria, the cut-off grade was dependent only on iodine grade. Nitrate was considered a by-product of the iodine process.

11.6 Qualified Person's Opinion on Factors that are Likely to Influence the Prospect of Economic Extraction

As Nueva Victoria is an active mine with more than twenty years of operational experience and data. It is the QP's opinion that the relevant technical and economic factors necessary to support economic extraction of the Mineral Resource have been appropriately accounted for at the mine.

The QP is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors, that could materially affect the Mineral Resource Estimate that are not discussed in this TRS.

The 2021 Mineral Resource Estimate may be materially impacted by any future changes in the break-even cut-off grade, changing some sectors to be evaluated by nitrate instead of iodine, potentially resulting from changes in mining costs, processing recoveries, or metal prices, or from changes in geological knowledge, because of new exploration data.

12 MINERAL RESERVE ESTIMATE

12.1 Estimation Methods, Parameters and Methods

This sub-section contains forward-looking information related to the key assumptions, parameters and methods for the Mineral Reserve estimates for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including Mineral Resource model tonnes and grade and mine design parameters.

Mineral Resource estimates are based on sample grades obtained from drill holes executed with reverse air drilling machines in 200-x-200 m (RGM200), 100-x-100 m (RGM100), 70-x-70 m (RGM100T) and 50-x-50 meters (RGM50) grid spacing.

Measured Resources are evaluated from 3D blocks built by numerical interpolation techniques (Kriging Method), where iodine, nitrate and soluble salt content information available from data obtained in drill hole grids with a spacing equal to or less than 70 m (RGM100T and RGM50).

Indicated Resources are defined by drill hole spacing of 100-x-100 m (RGM100) and 200-x-200 m (RGM200).

Mineral Reserves considers SQM's criteria for the mining plan which includes the following:

- Caliche Thickness ≥ 2.0 m
- Overburden thickness ≤ 3.0 m
- Waste / Mineral Ratio ≤ 1.5
- Iodine (300 ppm) cut-off grade.
- The average production cost corresponds to 27.45 US$/kg for Iodine and the sales price for Iodine derivatives is 35 US$/kg. For nitrate concentrate brine[1], the average production unit cost is 145 US$/tonne (mining, leaching, seawater pipeline, neutralization and pond treatment) and the unit internal price is 295 US$/tonne.

The mining sectors considered in the mining plans (see Figure 12-2) are delimited based on the environmental licenses obtained by SQM and a series of additional factors (layout of main accesses, heap and ponds locations, distance to treatment plants, etc.). Mining is executed in blocks of 25-x-25 m and the volumes of caliche to be extracted are established considering an average density value applied to 2.10 t/m^3 for the deposit.

Using these criteria, SQM estimated mineral volumes (caliche) to be considered as Proven Reserves based on the 3D block models built, to define Measured Mineral Resources, and applying the criteria defined above to determine the mining plan.

[1] Correspond to the brine enriched in nitrate salts (AFA -*Agua Feble Ácida*-: Acid Water Feble) neutralized and treated in ponds (Salar Viejo) that SQM transport to Coya Sur plant to produce Potassium Nitrate Fertilizers mixing with KCl from Salar de Atacama.

The Indicated Resources estimated by geometric or conventional method using the Iodine and Nitrate grades and other relevant data obtained from medium density drill hole prospecting grids (RGM100 and RGM200) are stated as Probable Reserves using the same criteria described above, such as caliche and overburden thickness, waste/mineral rates and iodine cut-off grade.

To convert Indicated Resources to Probable Reserves, SQM uses a conversion factor equal to one for tonnage considering the layered, shallow, and sub-horizontal geological features of "caliches" and the mining process to extract the ore. Nevertheless, the intrinsic geological variability of the mineral deposit, perceived when comparing the results obtained from medium density drill hole spacing prospecting surveys (RGM100 or RGM200) with higher density surveys (RGM100T or RGM50), indicates using a coefficient below 1.0 for Iodine and Nitrates grades for the conversion of Indicated Resources to Probable Reserves.

The historical data collected by SQM during decades of mining exploitation of caliches in Chile implies the use of different values for grade conversion depending on the mine. For Nueva Victoria mine, SQM's mining experience indicates the use of a coefficient of 0.90 for Iodine and 0.85 for Nitrate for Probable Reserves evaluated from Indicated Resources.

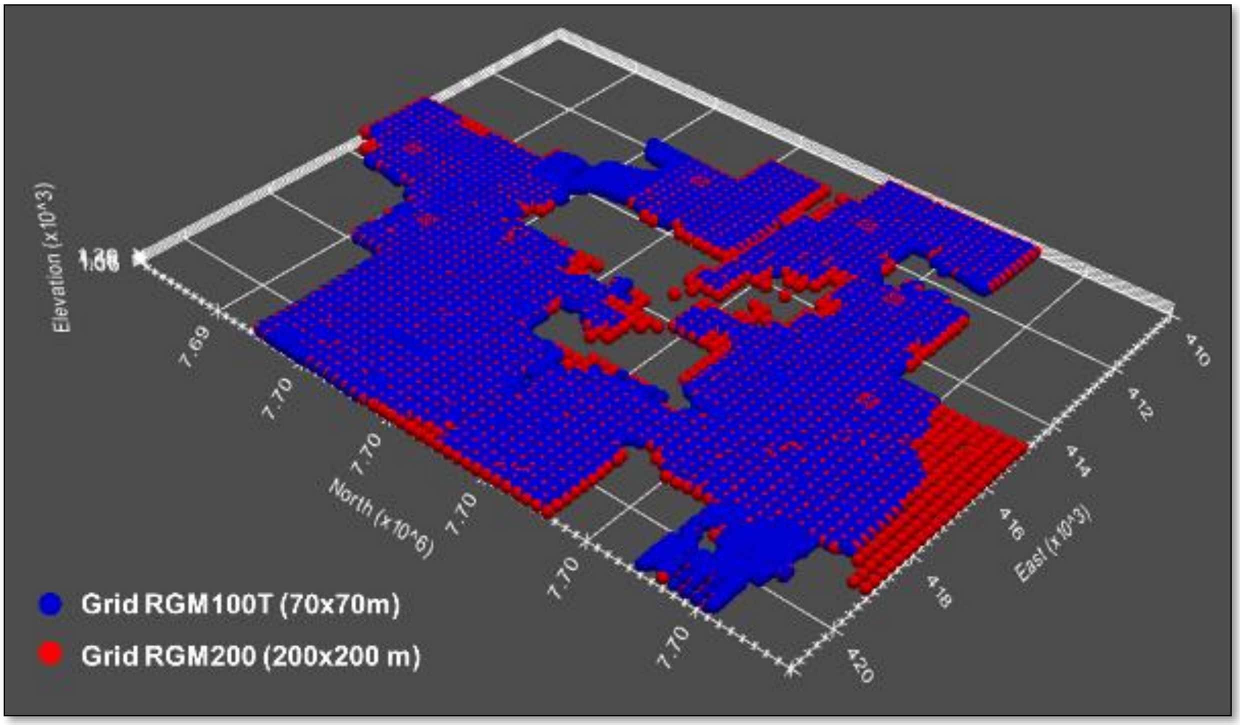
WSP has executed an analysis using 3D model blocks built with the information derived from the database provided by SQM from the prospecting drill hole surveys (RGM100, RGM100T and RGM200) in the TEA sector of Nueva Victoria mine, reviewing the base data, variograms for iodine and nitrate grades and ordinary kriging interpolation, to reconcile these with 3D block models from the data obtained from the 3D Model Block executed by SQM, which combine all the data of the prospecting surveys executed in the TEA sector (RGM200, RGM100T and RGM50).

The purpose was to verify the criteria used to convert Indicated Resources to Probable Reserves. The results of the reconciliation exercise executed by WSP are as follows (Figure 12-1 and Table 12-1):

- The average Iodine and Nitrate grades obtained by the 3D Block Model built using RGM200 database are higher than the average grades obtained by the 3D Block Model built by the RGM100T database.
- The average iodine and nitrate grades and tonnage obtained by the 3D Block Model built using the RGM100T database (70-x-70-m drill hole spacing grid) and the 3D Block Model built by SQM to estimate resources (using collectively base data from RGM50, RGM100T, and RGM200) are similar.
- The average Iodine and Nitrate grades obtained by the 3D Block Model built using only the RGM200 database are higher than the average grades obtained by the 3D Block Model built by SQM using the whole entire database (using collectively base data from RGM50, RGM100T, and RGM200).

Based on the SQM operational experience and the results obtained by WSP to compare data from different grid geological investigations, justify the use of coefficients below a value of one for iodine and nitrate grades to convert Indicated Resources to Probable Reserves, as shown in accounts for the geological variability of the caliches deposit.

Figure 12-1. Results of the 3D Block Model Reconciliation

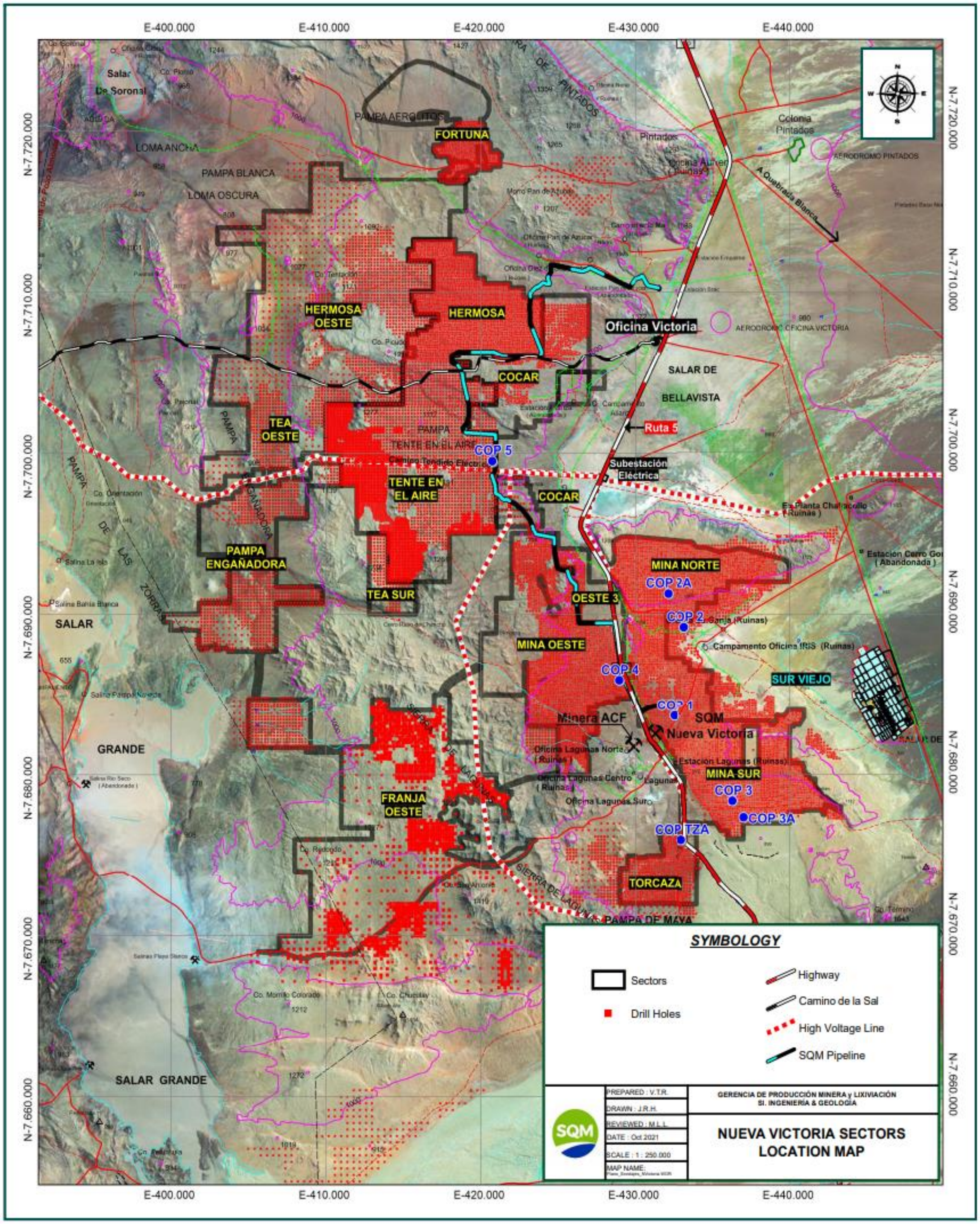


Prospecting drill hole grid - Tente el Aire (TEA) sector (Nueva Victoria mine)

Table 12-1. Results of 3D Block Model Reconciliations

SOURCE	CUTOFF Iodine ppm	NITRATE (%)	IODINE (ppm)	Tonnage (Mt)	NITRATE (Mt)	IODINE (Kt)
3D Model Block SQM (MBSQM)	300	5.87	448.3	324.0	1.9	145.3
3D Model Block RGM100T (MB100T)	300	5.84	428.2	321.5	1.9	137.6
3D Model Block RGM200 (MB200)	300	6.58	460.4	319.4	2.1	147.0
Difference: (MB100T-MQ SQM)/MB100T	300	-1%	-4%	-1%	-1%	-5%
Difference: (MB SQM-MB200)/MB SQM	300	-12%	-3%	1%	-10%	-1%
Difference: (MB100T-MB200)/MB100T	300	-11%	-7%	1%	-11%	-6%

Figure 12-2. Map of Reserve Sectors in Nueva Victoria (caliches)



Source: Provided by SQM

12.2 Cut-off Grade

SQM's has historically used an operational cut-off grade of 300 ppm of iodine. The QP has reviewed the cut-off and agrees that at a cut-off of 300 ppm iodine is conservative and will more than pay all mining costs and iodine production costs. Additional nitrate production profits will enhance the economics, and that the iodine cut-off is appropriate for operations.

12.3 Classification and Criteria

This sub-section contains forward-looking information related to the Mineral Reserve classification for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including Mineral Resource model tonnes, grade, and classification.

The geological features of the mineral deposits (sub-horizontal, superficial and limited thickness) allow consideration of all the estimated Measured and Indicated Mineral Resources and Mineral Reserves, because, regardless, the method of mining extraction used by SQM (drill & blast, continuous miner), the entire volume/mass of Mineral Resources defined as Measured or Indicated can be extracted.

Any mining block (25x25m) that can´t be extracted due to temporary infrastructure limitations (pond, pipes, roads, etc.), are still counted as Mineral Reserves since they may be mined once the temporary limitations are removed.

Proved Reserves have been determined based on Measured Resources, considering the rules set for tonnage and grades conversion (direct conversion of tonnage and grades). Measured Resources are classified as described in Section 11.3 with modifying factors, as described in Section 12.1.

Probable Reserves has been determined from Indicated Resources, which are classified as described in Section 11.3. Additional criteria as described in Section 12.1 are applied in conjunctions with conversion factors for grade conversions as described in Section 12.1 and summarized in Table 12-2. SQM applies a conversion factor of 0.90 for Iodine grade and 0.85 for Nitrate grades. Proved Reserve tonnages are the same as Indicated Mineral Resources.

The cut-off Iodine (I_2) grade use by SQM to estimate reserves in Nueva Victoria mine has been set a 300 ppm I_2. This value could be considered as an operational cut-off grade, because the real cut-off grade evaluated reach a value of 216 ppm I_2, using the unit costs or prilled Iodine production (mining, leaching a processing –27,500 USD/tonne-) versus unit sales price (35,000 USD/tonne).

12.4 Mineral Reserves

This sub-section contains forward-looking information related to Mineral Reserve estimates for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including Mineral Resource model tonnes and grade, modifying factors including mining and recovery factors, production rate and schedule, mining equipment productivity, commodity market and prices and projected operating and capital costs.

Nueva Victoria mine is divided into three sectors: Nueva Victoria, Tente en el Aire (TEA) and Hermosa. Each sector is further subdivided into exploitation sub-sectors (see Figure 12-2).

The Nueva Victoria Sector (located at the SW Sector) contains the following sub-sectors:

- Mina Norte, Mina Sur, Mina Oeste, Oeste 3, Torcaza and Franja Oeste;

The Tente en el Aire (TEA) Sector (Central Sector) contains the following sub-sectors:

- TEA Oeste Sur, TEA Oeste Norte, TEA Sur, TEA Oeste, Fortuna, Pampa Engañadora and Cocar;

Finally, the Hermosa Sector (North and NE Sector):

- Hermosa, Hermosa Oeste, Hermosa Sur and Coruña.

SQM extracts "caliches" from these sectors within areas having environmental license currently approved by the Chilean authorities. In the near future, SQM plans to obtain additional environmental licenses to extend the mining into the TEA sector.

SQM exploits caliche at a rate of up to 37,000 Ktpy for Nueva Victoria plant site (Exempt Resolution N°0515/2012), and a rate of up to 6,480 Ktpy (Exempt Resolution 1447/2018), which implies a caliche production of 43,480 Ktpy. Exploitation is expected to increase to a total of 65,000 Ktpy of caliche extraction in Nueva Victoria, when the additional environmental license for Nueva Victoria mine will be approved ("TEA project").

In 2021 caliche mining production targeted 41.40 Mt of Proved Reserves[2], with an iodine grade averaging 441 ppm I_2 and nitrate salts of 5.3% $NaNO_3$. This implies an average mining rate of 18.3 kt of iodine and 2,182 kt of nitrates in 2021.

SQM's Mining Plan for 2022-2040 (Nueva Victoria-SQM Industrial Plan) sets a total extraction of 917.4 Mt of caliche with production ranging between 44,000 Ktpy and 58,800 ktpy. 75.6% (693.4 Mt) of this material will be extracted by blasting and 27.4% (251.5 Mt) by continuous miner. Iodine average grade is 420 ppm and Nitrate average grade is 4.90% for the life-of-mine (LOM).

2 The Five-Year Mining Plan (5YP) in Nueva Victoria mine is defined by the exploitation of Proved Reserves. Every year SQM executes a plan to re-shape the prospecting grid used to define Indicated Resources (RGM100 or RGM200) to convert these to Measured Resources using a higher density drill hole spacing grid (RGM50 or RGM100T).

The criteria for estimating Mineral Reserves are as described below:

- Measured Mineral Resources defined by 3D Model block and kriging using data from high resolution drill hole spacing campaigns (RGM50 and RGM100T) are used to establish Proven Mineral Reserves using a unit coefficient conversion for tonnage and Iodine and Nitrate grades (see Table 12-2).
- Indicated Mineral Resources defined geometrically in 2D using data from medium resolution drill hole spacing campaigns (RGM100 and RGM200) are converted to Probable Mineral Reserves using a coefficient equal one for tonnage conversion and coefficients lower than one for iodine and nitrate grades as consequence of natural variability of grades in the mineral deposit for coarser drill grids (see Table 12-2).
- All the prospected sectors at Nueva Victoria have an environmental license to operate, considering the mining method used by SQM (drill-and-blast and CM) and the treatment by heap leach structures to obtain enriched brines of iodine and nitrates.

Table 12-2. Resources to Reserves Conversion Factors at the Nueva Victoria Mine

MEASURED RESOURCES	PROVEN RESERVES		
	Tonnage (Mt)	Iodine (ppm)	Nitrate (%)
RGM100T (70x70)	1.00	1.00	1.00
RGM50	1.00	1.00	1.00

INDICATED RESOURCES	PROBABLE RESERVES		
	Tonnage (Mt)	Iodine (ppm)	Nitrate (%)
RGM100	1.00	0.90	0.85
RGM200	1.00	0.90	0.85

Notes:

1. Grade variability depends on the prospecting drill hole spacing.
2. Reconciliation analysis using grades/tonnages obtained from RGM100 or RGM200 against those obtained from RGM100T or RGM50 indicates the need to use conversion coefficients lower than 1 on grades.
3. The factors depend on the mine and SQM's mining experience.

Modifying Factors

The modifying factors are considered herein. All permits are current and although there are no formal agreements, the operations have longstanding relationships with the communities, some of which are company towns. Mining, processing, downstream costs, mining loss, dilution, and recoveries are accounted for in the operational cutoff grade. As the project has been in operation since 2002, the risks associated with operating costs and recoveries are considered minimal.

Based on the described rules for resources to reserves conversion and qualification, the Proven Mineral Reserves and Probable Mineral Reserves of Nueva Victoria has been estimated as shown in Table 12-3 summarizes the estimated Mineral Reserves in the different sectors investigated by SQM in the Nueva Victoria mine.

The volume of estimated reserves was provided by SQM. The WSP team audited the volume and average grades and applied the coefficients for tonnage and grades as appropriate to the model. Using the economic data supplied by SQM (unit costs and sales prices), WSP checked the cut-off grade set by SQM for iodine (I_2) to establish mineral reserves (see Section 12.2).

Table 12-3.Mineral Reserves at the Nueva Victoria Mine (Effective 31 December 2021)

	PROVEN RESERVES	PROBABLE RESERVES	TOTAL RESERVES
Tonnage (Mt)	268.1	649.3	917.4
Iodine Grade (ppm)	436	414	420
Nitrate Grade (%)	5.2	4.8	4.9
Iodine (kt)	116.8	268.9	385.7
Nitrate (kt)	14,021	30,926	44,947

Notes:

a) Mineral Reserves are based on Measured and Indicated Mineral Resources at an operating cutoff of 300 ppm iodine. Operating constraints of caliche thickness ≥ 2.0 m; overburden thickness ≤3.0 m; and waste / caliche ratio ≤ 1.5 are applied.

b) Proven Mineral Reserves are based on Measured Mineral Resources at the criteria described in (a) above.

c) Probable Mineral Reserves are based on Indicated Mineral Resources at the criteria described in (a) above with a grade call factor of 0.9 for iodine and 0.85 for nitrates confirmed by operating experience.

d) Mineral Reserves are declared as in-situ ore (caliche).

e) The units "Mt", "kt", "ppm" and % refer to million tonnes, kilotonnes, parts per million, and weight percent respectively.

f) Mineral Reserves are based on an Iodine price of USD35/kg and a Nitrate price of USD295/t. Mineral Reserves are also based on economic viability as demonstrated in an after-tax discounted cashflow (see Section 19)..

g) Donald Hulse is the QP responsible for the Mineral Reserves.

h) The QP is not aware of any environmental, permitting, legal, title, taxation, socioeconomic, marketing, political or other relevant factors that could materially affect the Mineral Reserve estimate that are not discussed in this TRS.

i) Comparisons of values may not total due to rounding of numbers and the differences caused by use of averaging methods.

The final estimates of Mineral Reserves by sector is summarized in the Table 12-5. The procedure used by WSP to check the estimates provided by SQM is as follows:

- Verified tonnage and average grades (iodine and nitrate) provided by SQM as Mineral Reserves by sectors with the measured and indicated resources previously analyzed (Section 11).
- Checked that the sectors with estimated Mineral Reserves by SQM are in areas with environmental licenses approved by the Chilean authorities while also considering application of modifying factors.

- Checked that the rules and factors previously described to convert Measures Resources to Mineral Reserves (tonnage and grade) have been correctly applied.
- Confirmed that each sector with Mineral Reserves is considered in the life-of-mine plan (2022-2040) and the total volume of mineral ore (caliche) is economically mineable.
- Considered the judgment of the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction.

Table 12-4. Reserves at Nueva Victoria Mine by Sector (Effective date 31 December 2021)

Exploitation Sector	Proved			Probable			RESERVES		
	Tonnage (Mt)	Iodine (ppm)	Nitrate (%)	Tonnage (Mt)	Iodine (ppm)	Nitrate (%)	Tonnage (Mt)	Iodine (ppm)	Nitrate (%)
Nueva Victoria	68,9	438	4,5%	123,3	407	3,5%	192,2	418	3,8%
Tente en el Aire (TEA)	54,0	440	5,2%	277,7	404	5,0%	331,8	410	5,0%
Hermosa	145,2	433	5,6%	248,3	426	5,3%	393,5	429	5,4%
TOTAL	268,1	436	5,2%	649,3	414	4,8%	917,4	420	4,9%

Exploitation sector of Nueva Victoria comprises:

Mina Oeste, Oeste 3, Torcaza and Franja Oeste (see ubication in the Figure 12-2 (Map of Reserve Sectors in Nueva Victoria -caliches-).

Exploitation sector of Tente en el Aire (TEA) includes:

TEA Oeste Sur, TEA Oeste Norte, TEA Sur, TEA Oeste, Fortuna, Pampa Engañadora and Cocar (see ubication in the Figure 12-2 (Map of Reserve Sectors in Nueva Victoria -caliches-).

Exploitation sector of Hermosa considers:

Hermosa, Hermosa Oeste, Hermosa Sur and Coruña (see ubication in the Figure 12-2 (Map of Reserve Sectors in Nueva Victoria -caliches-).

Notes:

a) Mineral Reserves are based on Measured and Indicated Mineral Resources at an operating cutoff of 300 ppm iodine. Operating constraints of caliche thickness ≥ 2.0 m; overburden thickness ≤3.0 m; and waste / caliche ratio ≤ 1.5 are applied.

b) Proven Mineral Reserves are based on Measured Mineral Resources at the criteria described in (a) above.

c) Probable Mineral Reserves are based on Indicated Mineral Resources at the criteria described in (a) above with a grade call factor of 0.9 for iodine and 0.85 for nitrates confirmed by operating experience.

d) Mineral Reserves are declared as in-situ ore (caliche).

e) The units “Mt”, “kt”, “ppm” and % refer to million tonnes, kilotonnes, parts per million, and weight percent respectively.

f) Mineral Reserves are based on an Iodine price of USD35/kg and a Nitrate price of USD295/t. Mineral Reserves are also based on economic viability as demonstrated in an after-tax discounted cashflow (see Section 19)..

g) Donald Hulse is the QP responsible for the Mineral Reserves.

h) The QP is not aware of any environmental, permitting, legal, title, taxation, socioeconomic, marketing, political or other relevant factors that could materially affect the Mineral Reserve estimate that are not discussed in this TRS.

i) Comparisons of values may not total due to rounding of numbers and the differences caused by use of averaging methods.

12.5 Qualified Person's Opinion

Mineral Reserve estimates are based on Measured and Indicated Mineral Resources and have been provided by SQM in reference to its mining operations at Nueva Victoria. The QP has audited the estimation of mineral resources and the modifying factors to convert the measured and indicated resources to proven and probable reserves. The QP has also reconciled the estimated mineral reserves with production and judges that the mineral reserves herein presented are appropriate for use in mine planning and production forecasting.

13 MINING METHODS

SQM provided WSP with production forecasts for the period from 2022 to 2040 (Mining Plan - MP-). WSP checked that the planned exploitation sectors had environmental licenses approved by the Chilean authorities; the total tonnage and average Iodine and Nitrate grades were consistent with estimated Mineral Reserves; the total volume of mineral ore (caliche) is economically mineable and the production of prilled Iodine and Brine Nitrate Concentrate (Brine Nitrate) set by SQM is attainable, considering the dilution and mass losses for mining and recovery factors for leaching and processing.

Mining at the Nueva Victoria mine comprises soil and overburden removal, mineral extraction from the surface, loading and transport of the mineral (caliche) to make heap leach pads to obtain iodine and nitrate-enriched solutions (brine leach solution).

Mineralization can be described as stratified, sub-horizontal, superficial (≤ 7.5m), and limited thickness (3.2m average). The extraction process of the mineral is constrained by the tabular and superficial bedding disposition of the geological formations that contain the mineral resource (caliches). This mining process has been approved by local mining authorities in Chile (Sernageomin)[3]. Generally, extraction consists of a few meters' thick excavation (one continuous bench of up to 7.5 m in height (overburden + caliche) where the mineral is extracted using traditional methods - drilling and blasting and a CM (SEM). Extracted ore is loaded by front loaders and/or shovels and transported by rigid hopper mining trucks to heap leach structures.

The concentration process starts with leaching in situ by means of heap leach pads irrigated by drip/spray to obtain an iodine and nitrate enriched solution that is sent to treatment plants to obtain the final products. The mining and extraction process is summarized in Table 13-1.

[3] SERNAGEOMIN Resolution 1469/2005 of June 30, 2005 (" Ordinance for Regularization of Mine Exploitation Method and mineral treatment and expansion of Nueva Victoria mine and iodide plant"); updated by SERNAGEOMIN Resolution 0515/2012 of November 29, 2012, in accordance with Article 22 of D.S. No. 132/04, Ministry of Mining, Mining Safety Regulations).

Table 13-1. Summary of Nueva Victoria-SQM Caliche Mine Characteristics

Mining system	Opencast with a single and continuous bench with a height of up to 6 m
Drilling	Atlas Copco Model - F9 and D7
Blasting	ANFO, detonating cord, 150 gr APD booster and non-electric detonators. Power factor 0.365 kg/tonne
Continuous mining	Surface excavator (tractor with cutting drum)
Loading and transportation	Front loaders (12 to 14 m^3), 100 to 150 t trucks (60 m^3 to 94 m^3 capacity)
Topsoil stripping (overburden removal)	0.15 m^3 of soils and overburden/tonne of caliche
Caliche production	122,500 tonnes per day (tpd)
Dilution factor	±10 ppm Iodine (<2.5 %)
Recovery factor	56% of iodine and 52% of nitrate (2008-2021 period)
Heap leaching water consumption	0.39 to 0.60 m^3/tonne leached caliche (2008-2021 period)
Sterile[a] /Ore mass ratio	1 t : 2.36 t

(a) This material is used by SQM to build the base of the heap pads. The final volume of waste material is negligible.

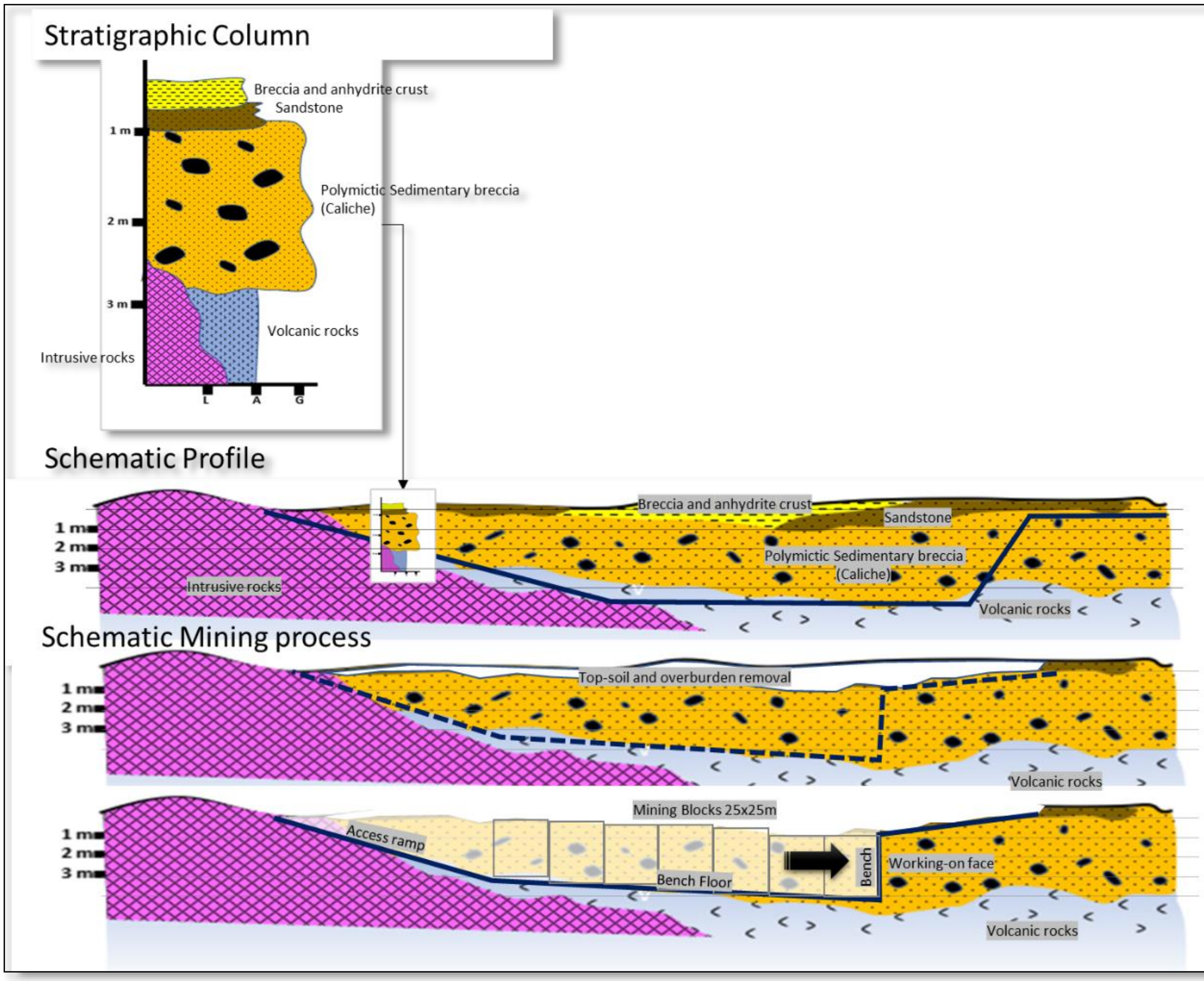
13.1 Geotechnical and Hydrological Models, and Other Parameters Relevant to Mne Designs and Plans

This sub-section contains forward-looking information related to mine design for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section.

Mining at Nueva Victoria is relatively simple, as it is only necessary to remove a surface layer of sterile material (soil + overburden) up to 1.50 m thick (sandstone, breccia and anhydrite crusts), which is removed. Subsequently the ore (caliche) is extracted, which has a thickness of 1.50 to 6.00 m (average of 3.20 m). Caliche's geotechnical characteristics (Polymictic Sedimentary Breccia) allow a vertical mining bench face, allowing increased efficiency in the exploitation of the mining resources.

The mining conditions do not require physical stability analysis of the mining working face; therefore, no specific geotechnical field investigations and designs are required. One single final bench of about 4.70 m average height (1.50 m of soil + overburden and 3.2 m of caliche) is typical of the operations (Figure 13-1).

Figure 13-1. Stratigraphic Column, Schematic Profile, and Schematic Mining Process in Nueva Victoria Caliche Mine



Due to its practically non-existent surface runoff and surface infiltration (area with very low rainfall) and its shallow mining depth, the water table is not reached during excavation. Therefore, no surface water management and/or mine drainage plans are required to control groundwater and avoid problems arising from the existence of pore pressures.

Therefore, this mining operation does not require detailed geotechnical, hydrological and hydrogeological models for its operation and/or mining designs and mining plans

Two methods are used in the mining operation: blasting and continuous surface mining. The selection of the method to be used in each sector depends on a variable defined by the hardness of the caliche to be excavated and its proximity to infrastructure, where there may be a potential risk of blasting damage.

The hardness is established during geological surveys and exploration and relates to the following qualitative technical criteria as judged by the geologist in the field from boreholes:

- Caliche drilled borehole section that exhibits collapse and/or roughness in diameter is rated as Soft (Hardness 1) or Semi-Soft (Hardness 2).
- Borehole section drilled in caliche that exhibits a consistent and smooth borehole diameter is rated as Hard (Hardness 3).
- This parameter is included in the block model and is used in decision-making on mining and heap leach shaping.

Extracted mineral is stockpiled in heaps located in same general area of exploitation. Heap leach pads are constructed in previously mined-out areas. The pads are irrigated to leach the target components (iodine and nitrates) by aqueous dissolution (pregnant brine solution).

SQM has analyzed heap leach stability[4] in order to verify the physical long-term stability of these mining structures under adverse conditions (maximum credible earthquake). Geomechanical conditions analyzed for heap leaching facilities that are already closed have been considered, which have the following characteristics:

- Wet density of 20.4 kilonewtons per cubic meter (kN/m^3).
- Internal friction angle of 32°.
- Cohesion of 2.8 kPa.

A graded compacted material is used to support the liner on which the piles rest. The specification is based on experience and is generally defined by a wet density of 18.5 kN/m^3, an angle of friction (ϕ) of 38° and no cohesion. Between the soil base and heap material there is an HDPE sheet that waterproofs the heap leach pad foundation. The interface between geomembrane HDPE and the drainage layer material is modelled as a 10-cm thick layer of material and a friction angle ϕ = 25° is adopted, which represents generated friction between the soil and the geomembrane.

Maximum acceleration value for the maximum credible earthquake is set at 0.86 g and for the design earthquake it is set at 0.35 g.

The horizontal seismic coefficient (k_h) was set through expressions commonly used in Chile and the vertical seismic coefficient (k_v) was set according to NCh 2369 Of. 2003, as 2/3 of the horizontal coefficient. Therefore, in the stability analysis of heaps, a k_h value of 0.21 and kv of 0.14 was used for the maximum credible earthquake; and a k_h of 0.11 and k_v of 0.07 were used for the design earthquake.

[4] INFORME TÉCNICO ANÁLISIS DE ESTABILIDAD DE TALUDES PILAS 300 Y 350. SQM N° 14220M-6745-800-IN-001. PROCURE Servicios de Ingeniería (21146-800-IN-001), May 2021.

The stability analysis was executed using the static dowel equilibrium methodology (Morgenstern-Price Limit Equilibrium method) and Geostudio's Slope software, with results that comply with the minimum Factor of Safety criteria.

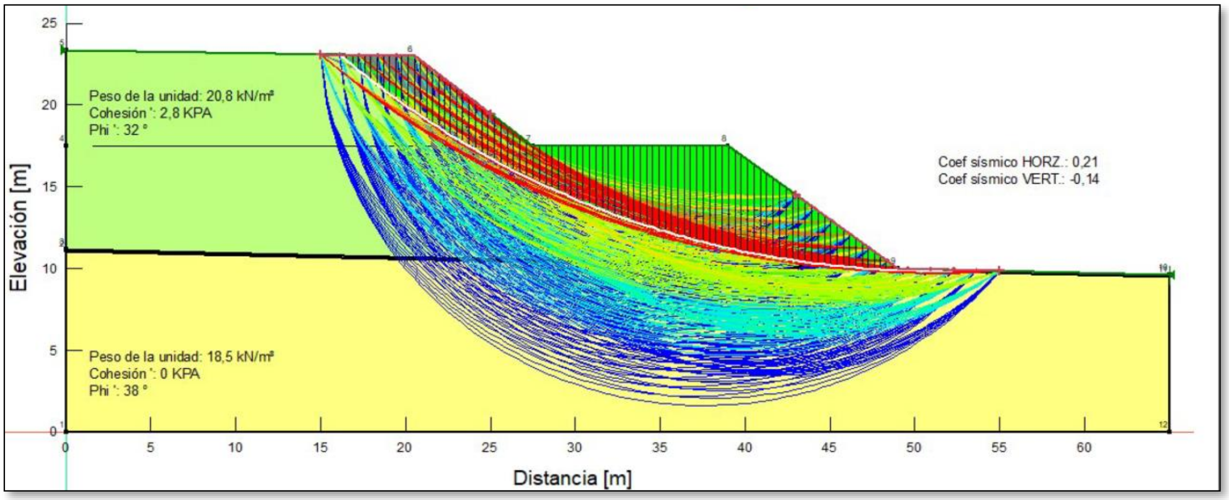
Based on the analysis developed in this document, it is possible to draw the following conclusions (Table 13-2 and Figure 13-2):

- The slopes of the heaps analyzed in their current condition are stable against sliding.
- None of the heaps will require slope profiling treatment after closure.

Table 13-2. Summary Results of Slope Stability Analysis of Closed Heap Leaching (Nueva Victoria)

Heap pad Number	Static case (FS $_{adm}$ = 1.4)	Pseudo-static design earthquake (FS $_{adm}$ = 1.2)	Pseudo-static maximum credible earthquake (FS $_{adm}$ = 1.0)
300	1.93	1.42	1.09
350	1.91	1.42	1.10

Figure 13-2. Geotechnical Analysis Results: Heap #300, Hypothesis Maximum Credible Earthquake



TECHNICAL REPORT "ANÁLISIS DE ESTABILIDAD DE TALUDES PILAS 300 Y 350". SQM N° 14220M-6745-800-IN-001. PROCURE Servicios de Ingeniería (21146-800-IN-001), May 2021.

13.2 Production Rates, Expected Mine Life, Mining Unit Dimensions, and Mining Dilution and Recovery Factors

The MP considers a total caliche extraction of 917.4 Mt, with an increasing production from 44 Mtpy to 58.8 Mtpy as shown in Table 13-4. For the MP total caliche to be extracted is projected to have iodine grades ranging between 410 to 436 ppm and nitrate grades between 4.03% and 6.12%.

With an average Iodine grade of 420 ppm (0.042%), gross iodine production is estimated to be at 56 tpd (20,500 tpy of iodine). Likewise, for a Nitrate average grade of 4.90%, average Nitrate production is estimated to be at 6,587 tpd (2.37 Mtpy of nitrate).

The mining area extends over an area of 40 km x 50 km (see Figure 12-2). The mining sequence is defined based on the productive thickness data established for caliche from geological investigations, approved mining licenses exist, distances to treatment plants and ensuring that mineral is not lost under areas where infrastructure is planned to be installed (heap bases, pipelines, roads, channels, trunk lines, etc.). Areas with future planned infrastructure are targeted for mining prior to establishing these elements or mined after the infrastructure is demobilized.

Mineral Reserves considers SQM's criteria for the mining plan which includes the following:

- Caliche Thickness ≥ 2.0 m.
- Overburden thickness ≤ 3.0 m.
- Waste / Mineral Ratio ≤ 1.5.
- Iodine (300 ppm) cut-off grade.

In addition to the above mentioned operational parameters, the following geological parameters are also considered for determining the mining areas:

- Lithologies.
- Hardness parameters.
- Density.
- Total salts (caliche salt matrix) which impact caliche leaching.
- Total salts elements (majority ions) which impact caliche leaching.

GPS control over the mining area floor is executed during mining to minimize dilution of the target iodine and nitrate grades.

Table 13-3. Mining Plan (2022-2040)

Year	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	TOTAL
Nueva Victoria Sector Ore Tonnage (kt)	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	4,204	4,341	4,478	4,615	4,751	4,888	5,025	5,162	5,299	5,435	192,197
Iodine (I2) in situ (kt)	438	427	407	397	397	396	396	404	423	450	451	449	451	447	452	452	445	452	449	420
Average grade Nitrate Salts (NaNO3) (%)	5.3%	5.3%	4.2%	4.2%	4.1%	4.0%	4.0%	4.4%	5.5%	3,7%	3,7%	3,8%	3,6%	3,9%	3,6%	3,5%	4,1%	3,6%	3,8%	4.3%
Tente en el Aire (TEA) Sector Ore Tonnage (kt)	9,000	7,000	7,000	10,000	10,000	7,000	7,000	7,000	7,000	22,743	23,483	14,223	24,963	25,703	26,443	27,183	27,923	28,663	29,403	331,731
Iodine (I2) in situ (kt)	439	429	434	408	408	407	407	410	404	393	394	392	394	391	395	395	389	394	392	398
Average grade Nitrate Salts (NaNO3) (%)	6.3%	6.2%	5.9%	4.7%	4.6%	4.5%	4.5%	4.6%	4.8%	4,1%	4,0%	4,1%	4,0%	4,3%	3,9%	3,8%	4,4%	3,9%	4,2%	4.3%
Hermosa Sector Ore Tonnage (kt)	19,000	21,000	21,000	18,000	18,000	21,000	21,000	21,000	21,000	18,533	19,136	19,739	20,343	20,946	21,549	22,152	22,755	23,358	23,961	393,472
Iodine (I2) in situ (kt)	433	422	427	423	423	422	422	416	410	453	454	453	455	451	456	456	449	455	452	439
Average grade Nitrate Salts (NaNO3) (%)	6.7%	6.6%	6.4%	6.7%	6.6%	6.5%	6.4%	6.3%	6.5%	5,0%	4,9%	5,1%	4,9%	5,2%	4,8%	4,7%	5,4%	4,8%	5,1%	5.7%
TOTAL ORE MINED (CALICHE) (kt)	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	45,480	46,960	48,440	49,920	51,400	52,880	54,360	55,840	57,320	58,800	917,400
Iodine (I2) in situ (kt)	19.2	18.7	18.5	18.0	18.0	18.0	18.0	18.1	18.2	19	20	20	21	22	22	23	23	24	25	385.3
Yield process to produce prilled Iodine (%)	48.9%	45.8%	48.1%	52.8%	51.7%	55.3%	55.9%	60.0%	61.9%	68,3%	68,5%	67,9%	68,4%	67,5%	68,5%	68,6%	66,8%	68,3%	67,5%	61.7%
Prilled Iodine produced (kt)	9.4	8.6	8.9	9.5	9.3	10.0	10.1	10.9	11.3	13.1	13.6	13.9	14.5	14.6	15.4	15.9	15.6	16.6	16.7	237.8
Nitrate Salts in situ (kt)	2,693	2,671	2,416	2,332	2,310	2,314	2,292	2,350	2,583	2.009	2.033	2.181	2.149	2.373	2.226	2.258	2.681	2.429	2.653	44,953
Yield process to produce Nitrates (%)	42.0%	41.3%	48.3%	61.1%	59.5%	65.3%	66.4%	71.8%	71.9%	77,1%	77,2%	76,9%	77,2%	76,6%	77,3%	77,4%	76,1%	77,2%	76,6%	69.0%
Brine Nitrate production for Fertilizers (kt)	1,131	1,104	1,167	1,424	1,374	1,512	1,522	1,687	1,856	1,549	1,570	1,676	1,659	1,817	1,721	1,747	2,040	1,874	2,032	30,462

Grade dilution from mining is estimated to be less than 2.5% (±10 ppm iodine) and less than 2.25% for nitrate (±0.12% nitrate). During the caliche mining process, as the mineralized thicknesses are low (< 5.0m), there is a double effect on the mineralized mantle floor resulting from the blasting process: with the inclusion of underlying material as well as over-excavation. These tend to compensate, with dilution or loss of grade is minor or negligible (± 10 ppm for Iodine).

The excavation depth is controlled by GPS on the loading equipment. SQM considers a planned mining recovery of 92% (average value por MP 2022-2040).

The processes of extraction, loading and transport of the mineral (caliche) include:

- Surface layer and overburden removal (between 0.50 to 1.5 m thick) that is deposited in nearby mined out or barren sectors. This material is used to build the base of the heap leaching structures.
- Caliche extraction, to a maximum depth of 6 m, using explosives (drill and blast), or surface excavator (CM type Terrain Leveler SEM).

  Blasting is performed to achieve good fragmentation, good floor control, ore sizes suitable for the loading equipment, and to avoid further handling (20% of fragments below 50-60 mm, 80% of fragments below 370 mm, and maximum diameter of 1,000 mm).

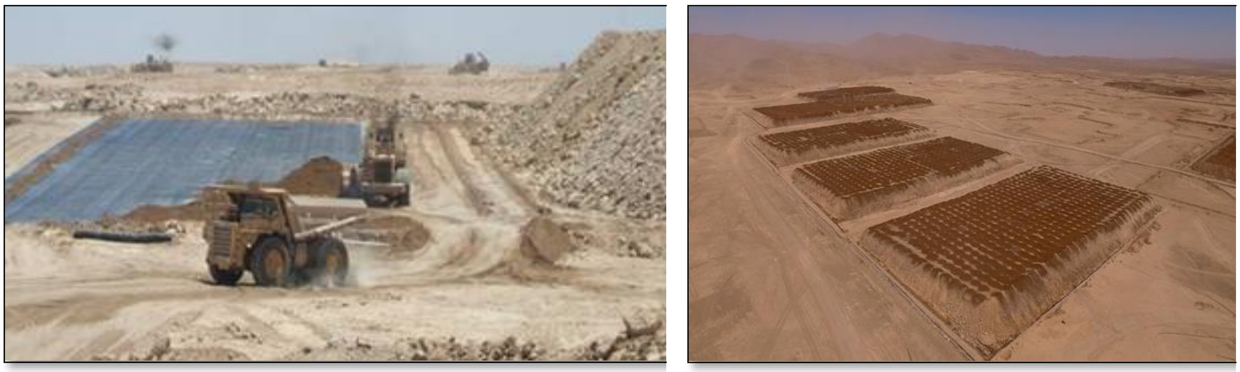
  CMs are used to mine areas that are close to infrastructure that can be damaged by blasting, to extract softer caliche areas and to obtain a more homogenous granulometry of mineral extracted, which generates better recovery rates in the iodine and nitrate leaching processes. In addition, it generates less dust emission than drill and blast. The decision to use a miner versus drill & blast is based on simple compressive strength parameters of the rock (up to 35 megapascals [MPa]), to limit material abrasiveness, as well as the presence of caliche clasts.

  This equipment allows mineral fragmentation through the rotation of the cutting drum with iron tips reinforced with tungsten alloy, which crushes the mineral to obtain an average and homogeneous size of approximately 150 mm (20% below 35 mm, 80% below 150 mm and D_{max} 450 mm, as average values). The drum is located at the back of the machine, which enables the cutting of mineral while the crawler tracks remain on the ground so as not to damage the crushed material.

  The 2022 Mining Plan targets an annual production of 44 Mt of fresh caliche (436 ppm Iodine, 6.12% $NaNO_3$ and 58.4% soluble salts) of which 36 Mt will be extracted by traditional mining and 8 Mt by continuous mining. However, the objective is to progressively increase continuous mining to reach a production 12 Mt in 2023 and the remaining 32 Mt by drill and blast.
- Caliche loading, using front-end loaders and/or shovels.
- Transport of the mineral to heap leach pads, using mining trucks (rigid hopper, 100t to 150 t).

Heap leach pads (Figure 13-3) are built to accumulate a total of 1 Mt, with heights between 7 to 15 m and a crown area of 65,000 m².

Figure 13-3. Caliche Leach Pad Construction and Morphology in Nueva Victoria Mine



Physical stability analysis performed by SQM reports that these heaps are stable in the long term (closed heaps) and no slope modification is required for closure.

Fragmented material from continuous surface mining (18% of annual production and projected to reach 27% by 2023) comes to heaps separate from the ROM ones.

There are a number of stages in the heap construction process:

- Site preparation and construction of the heap base and perimeter parapets to facilitate collection of the enriched solutions.

  The base of the heaps has an area of 84,000 m² and a maximum cross slope of 2.5% to facilitate the drainage of solutions enriched in iodine and nitrate salts.

  Heap base construction material (0.40-m thick) comes from the sterile material and is roller-compacted to 95% of normal proctor (moisture and/or density is not tested on site).

  An HDPE, waterproof geomembrane is laid on top of this base layer.

  To protect the geomembrane, a 0.5-m thick layer of barren material is placed on top (to avoid damage to the membrane by ROM/CM fragments stored in the heap).

- Heap pad loading by high-tonnage trucks (100 to 150 tonnes). The leach pads are built in two lifts each 3.25 m high, on average. The average high of a heap pad is 6.5 m.
- Impregnation, which consists of an initial wetting of the heap with industrial water, in alternating cycles of irrigation and rest, for a period of 60 days. During this stage the pile begins its initial solution drainage (Brine).
- Continuous irrigation until leaching cycle is completed in the following stages:
  - Irrigation Intermediate Brine:: stage where first pass solutions are cycled through the oldest half of heaps to add an additional charge. It lasts up to 280 days.

- o Mixing: Irrigation stage consisting of a mixture of recirculated Brine Feble[5] and water. Drainage from these heaps are considered as SI and are used to irrigate other heaps. This stage lasts about 20 days.
- o Washing: last stage of a heap's life, with a final irrigation of water, for approximately 60 days.

In total, there is a cycle of approximately 400-to-500 days for each heap, during which time the heap drops in height by 15-20%.

The irrigation system used is a mixed system with drippers and sprinklers. In the case of drippers, heaps may be covered with a plastic sheet or blanket to reduce evaporation losses and improve the efficiency of the irrigation system.

- Leaching solutions are collected by gravity via channels, which lead the liquids to a sump where it is recirculated by means of a portable pump and pipes to the brine reception and accumulation ponds.
- Once the heaps are out of operation, tailings can either be used for base construction of other heaps or remain on site as exhausted heaps.

In 2021, for the heap leaching processes, the total water demand was 584 L/s (2,069 m^3/h) (unit consumption of 0.438 m^3/tonne caliche leached), while enriched solution flow from heap leach to Nueva Victoria-Iris concentration plants was 2,224 m^3/h. In the process SQM applies a recirculation system for leaching to achieve a higher brine production than fresh water used. The hydraulic efficiency of the heap leaching process in NV mine reached an average of 80%.

In the LOM for 2022-2040 period, the unit water consumptions range from 0.41 to 0.71 m^3/tonne of caliche leached with an average of 0,64 m^3/tonne. The leaching process projected for 2022-2040 envisions an increase of water used (pumped groundwater and seawater) from 551 l/s in 2022 to 1,351 l/s in 2040. This increased water use in the leaching process results in an improvement in the extraction of Iodine and Nitrates in the heap leach structures, allowing a better performance in the metallurgical recovery process.

Leaching process yields average 71% for iodine and 74% for nitrate in ROM heap leaching (drill and blast material) for the LOM from 2022 to 2040 period.

Homogeneous and smaller fragmentation generated by the CM allows an increase of 6% in Nitrate yield (up to 80% recovery) and 12% in Iodine yield (up to 82% recovery)[6]. There is a lower water consumption that has not yet been quantified by SQM.

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[5] In SQM NV complex, Brine Feble (BF) and AFA (Agua Feble Ácida -Acid Water Feble-) are terms used interchangeably.

[6] The improvement in the performance for Iodine and Nitrates recovery due to the increase in the amount of water applied in the heap leaching structures means going from 52% to 71% for Iodine in ROM heaps and from 65% to 83% in CM heaps; for nitrates an increase from 45% to 78% in ROM heaps and from 51% to 84% in CM heaps is projected.

Heap leaching process performance constraints include the amount of water available, slope shaping[7] (slopes cannot be irrigated), re-impregnation and resource/reserve modelling errors. This last factor most influences annual target production deviations from actuals achieved. Such deviations are typically as high as -5% for iodine and -10% for nitrate.

Other facilities besides heaps are solution ponds (brine, blending, intermediate solution) and water and back-up ponds (brine and intermediate solution). There are about seven rectangular ponds with 8,000 m^3 to 36,000 m^3 capacity and heights between 3.0 to 4.9 m, which have pump systems, whose function is to drive industrial water, Brine Feble (BF), and Intermediate Brine to the heap leaching, through HDPE pipes, to extract the maximum amount of iodine and nitrate from the caliche heaps (continuous irrigation process).

From brine ponds, the enriched solutions are sent to the iodide plants via HPDE pipes.

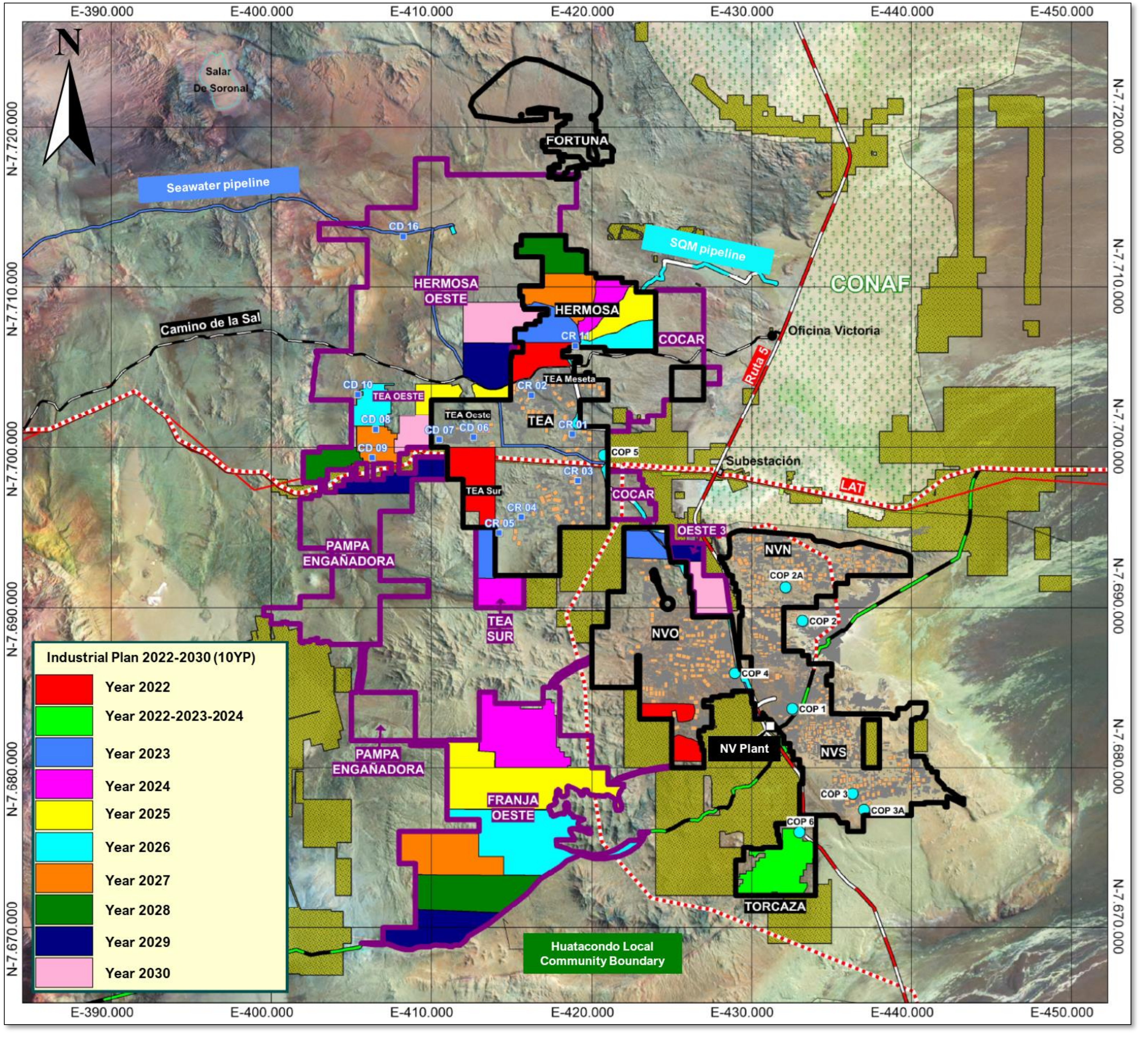
13.3 Production and Final Mine Outline

SQM works with topographic control in the mining operations whereby the soil and overburden are removed (total thickness of 1.50 m on average at Nueva Victoria) and caliche is extracted (average thickness of 3.20 m).

Given that the excavations are small (4.70 m on average) in relation to the surface area involved (655 Ha/year), it is not possible to correctly visualize a topographic map showing the final situation of the mine. Figure 13-4 depicts the final mine outline for the 2022 to 2040 period (Life of Mine Plan).

[7] Heap morphology implies a natural slope of 24° (1H:0.44V).

Figure 13-4. Final Mine Outline - Nueva Victoria Mining Plan 2022-2040 (sectors to caliche extraction 2022-2030 - 10YP)



Caliche production data for the 2022-2040 MP involves a total production of 917.4 Mt, with average grades of 420 ppm of Iodine and 4.9% of Nitrates.

The total of volume of brine leach solution to produce expected is around 655 Mm^3 (Mining Plan 2022-2040).

Based on production factors set in mining and leaching processes, a total production of 257 kt of Iodine and 30,462 kt of Nitrate salts is expected for this period (2022-2040), which means to produce fresh brine solution (95.997 m^3/d) with average contents of 37.7 tpd of Iodine (0.39 g/L) and 4,464 tpd of Nitrate salts (54.6 g/L) that would be sent to the processing plants. Note that dilution factors considered herein are in addition to the indicated resource to probable reserve factors described above.

Table 13-4. Mine and Pad Leaching Production for Nueva Victoria Mine – Period 2022-2040

LoM 2022-2030	Caliches	%/Ratios	Iodine	Nitrates
Production (kt)	917.4			
Average grades (Iodine ppm / Nitrate ppm)			420	4.9%
In-situ estimates (kt)			385.3	44,953
Traditional mining (kt)	693.4	75.58%		
Continuous mining (kt)	251.5	27.42%		
Mining yield		92.31%		
Grade Dilution Factor			2.25%	2.50%
Grade dilution			±9.4	±0.12%
Mining process efficiency			92%	92%
Mineral charged in heap leach (kt)			385.3	44,953
Heap Leach ROM recovery from traditional mining[(a)]			71%	75%
Heap ROM production from traditional mining heaps (kt)			191.0	22,863
Heap Leach recovery from continuous mining			77%	76%
Heap production ROM continuous mining (kt)			3.5	401
TOTAL Heap Leach production (kt)			**257.1**	**30,462**
TOTAL Heap Leach production (tpd)			**38.5**	**4,524**
TOTAL Heap Leach production (ktpa)			**13.8**	**1,625**
Heap Leaching recovery coefficient			72%	75%
Reserve/Fresh Brine conversion factor			67%	69%
Recovery Average Coefficient for Iodine complete process			62%	-
TOTAL industrial plant processing NV-Iris (kt)			237.8[(b)]	30,462[(c)]

(a) Recovery from CM is higher than ROM ore material

(b) Prilled Iodine

(c) Brine with nitrate salts concentrated used to produce Potassium Nitrates Fertilizers.

13.4 Requirements for Stripping, Underground Development, and Backfilling

Initial ground preparation work requires an excavation of a surface layer of soil-type material (50-cm average thickness) and overburden or waste material above the mineral (caliche) that reaches average thicknesses of between 50 cm to 100 cm.

This is done by bulldozer-type tracked tractors and wheeldozer-type wheeled tractors. This waste material is deposited in nearby mined-out or barren sectors.

SQM has 8 bulldozer-type tractors of 50 to 70 t and 4 wheeldozer-type tractors of 25 t to 35 t for these tasks.

Caliche mining is conducted through use of explosives and/or continuous miners to a maximum depth of 6 m (3.2 m average and 1.5 m minimum mineable thickness), with an annual caliche production rate at Nueva Victoria of 44 Mtpy.

Caliche extraction by drilling and blasting is executed by means of rectangular blasting patterns, which are drilled considering an average caliche thickness of 3.2 m.

Table 13-5. Blasting Pattern in Nueva Victoria Mine

Diameter (inches.)	Burden (m)	Spacing (m)	Subgrade (m)
3.5	2.8 to 3.2	2.2 to 2.8	0.5 to 0.8
4.0	2.8 to 3.4	2.8 to 3.4	0.7 to 1.2
4.5	3.4 to 3.8	3.4 to 3.8	1.0 to 1.5

Usually, the drilling grid used in Nueva Victoria is 2.8 x 3.0 m and 3.00 x 3.2-m, with a drill diameter of 4". Atlas Copco rigs (F9 and D7 equipment) are used for drilling (percussion drilling with DTH hammer).

The explosive used is ANFO, which is composed of 94% ammonium nitrate and 6% fuel oil, which has a density of 0.82-0.84 g/cc, with a detonation velocity between 3,800 to 4,100 m/s. The charge is 24.3 kg per drill hole.

A backfill (stemming) of 0.80 m is provided with sterile material. For detonation, 150-g APD boosters and non-electric detonators are used as detonators, which start with a detonating cord. The over-excavation (subgrade) is variable from 0.50 to 1.50 m. Blasting assumes a rock density of 2.1 t/m^3 of intact rock, with an explosives load factor of 365 gm/tonne (load factor of 0.767 kg/m^3 of blasted caliche), for an extraction of 122,500 tpd of caliche (Table 13-5). The Figure 13-5 depicts a typical blast.

Figure 13-5. Typical Blast in Nueva Victoria Mine (caliches)

SQM has two Vermeer T1655 series equipment with a rotating drum and crawler tracks. Each unit can produce 3 Mtpy. It also has SEM-Wirtgen 2500SM Series equipment (Figure 13-6), with a different cutting design to Vermeer equipment, with crawler tracks and able to work with a conveyor belt stacking or loading material directly to a truck.

SQM is analyzing the performance of the SME-Wirtgen's against the Vermeer models to decide which has a better cutting performance.

Figure 13-6.Terrain Leveler and SME equipment (Vermeer)

The unit cost of mine production at Nueva Victoria based on traditional mining is set at 1.80 US/tonne, while for continuous mining it is 2.80 US/tonne.

In addition, SQM's analysis implies an 18% increase in production costs for iodine and nitrate enriched solutions (heap leach) using continuous mining equipment (1.18 US/tonne) compared to using the traditional (drill & blast) system (1.00 US/tonne).

However, the higher recovery rate in heap leaching which allows continuous mining fragmented material, smaller in diameter and better sorted, leads to a 16% reduction in iodine production costs at Nueva de Victoria's plant (13,560 US/tonne iodine produced for traditional mining method versus 11,750 US/tonne iodine produced for continuous mining method).

Use of the continuous Wirtgen-type machinery implies a 2% cost saving compared to Vermeer-type machinery for production of enriched solutions on heap leaching and an iodine production cost saving at the Nueva Victoria plant of 2%.

13.5 Required Mining Equipment Fleet and Personnel

This sub-section contains forward-looking information related to equipment selection for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including labor and equipment availability and productivity.

SQM has sufficient equipment at the Nueva Victoria mine to produce enough caliche as required, to mine and build heap leach pads, and to obtain enriched liquors that are sent to treatment plants to obtain Iodine and Nitrate end-products.

The equipment available to achieve Nueva Victoria's current production Mining Plan (2022-2040) of caliche is summarized in Table 13-6. The current equipment capacity has been evaluated by the QP and will meet the future production requirements. The gradual increase of mine production from 44 million tons to 59 million tons will occur over 9 years and the production growth will be addressed through sustaining capital replacement with the larger sized equipment.

Table 13-6. Equipment. Equipment Fleet at Nueva Victoria Mine

Equipment	Quantity	Type or size
Front loader	10	12.5 and 15 m^3
Shovels	3	13 to 15 m^3
		150 to 200 tonnes
Surface Excavation Machines (SME)	2	100 to 200 tonnes
Trucks	30	100 to 150 tonnes
Bulldozer	8	50 to 70 tonnes
Wheeldozer	4	35 tonnes
Drill	10	Top hammer of 3.5 to 4.5 inches (diameter)
Grader	5	5 – 7 m
Roller	3	10-15 tonnes
Excavator	5	Bucket capacity 1 - 1.5 m^3

The staff at Nueva Victoria's mining operation consists of 575 professionals dedicated to mining and heap leach operation.

Also, a total of 126 professionals are employed for heap leaching and ponds maintenance. No contractor mining and labor is used.

The Nueva Victoria mine operation includes some general service facilities for site personnel: offices, bathrooms, truck maintenance and washing shed, change rooms, canteens (fixed or mobile), warehouses, drinking water plant (reverse osmosis) and/or drinking water storage tank, sewage treatment plant and transformers.

14 PROCESSING AND RECOVERY METHODS

This sub-section contains forward-looking information related to the copper concentrators, leaching and solvent extraction throughputs and designs, equipment characteristics, and specifications for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including actual ore feed characteristics that are different from the historical operations or from samples tested to date, equipment and operational performance that yield different results from the historical operations, historical and current test work results, and metallurgical recovery factors.

The Nueva Victoria Property includes caliche mining areas, heap leaching and processing plants to produce iodine as the primary product and nitrate as a secondary product. The mine facilities are concentrated in the following three SQM property areas: Nueva Victoria, Sur Viejo and Iris.

Nueva Victoria ore contains an average of 4.9% nitrate and 420 ppm iodine as stated in the current TRS (section 12.2 Mineral Reserves). A portion of the iodine and nitrate is water-soluble and is extracted during heap leaching. Following iodide extraction, a portion of the iodide-depleted solution is fed back to the heap leaching process. The remaining iodide-depleted solution is piped to the evaporation ponds where nitrate salts are recovered from it.

Standard open pit mining methods are used to mine the caliche ore. Caliche mining occurs over an area of approximately 408.5 km^2 within the Nueva Victoria Property and 45.5 km^2 within the Iris Property. The nominal rate of caliche mining is currently 44Mtpy. Once the environmental permitting of the TEA project is complete, the caliche mining rate will increase by a further 28 Mtpy. Pregnant Leach Solution (PLS) from the heap leach is piped to the iodide and iodine plants, Nueva Victoria and iris, located about 20 km from the pile site, which have a production capacity of 11 Ktpy and 2 Ktpy of iodine, respectively.

The 2010 environmental permit for the Pampa Hermosa Project considered the installation of a Nitrate Plant to produce sodium nitrate & potassium nitrate at Nueva Victoria. This has not yet been implemented, and currently nitrate production for Nueva Victoria and Iris is carried out at the Coya Sur (Antofagasta Region).

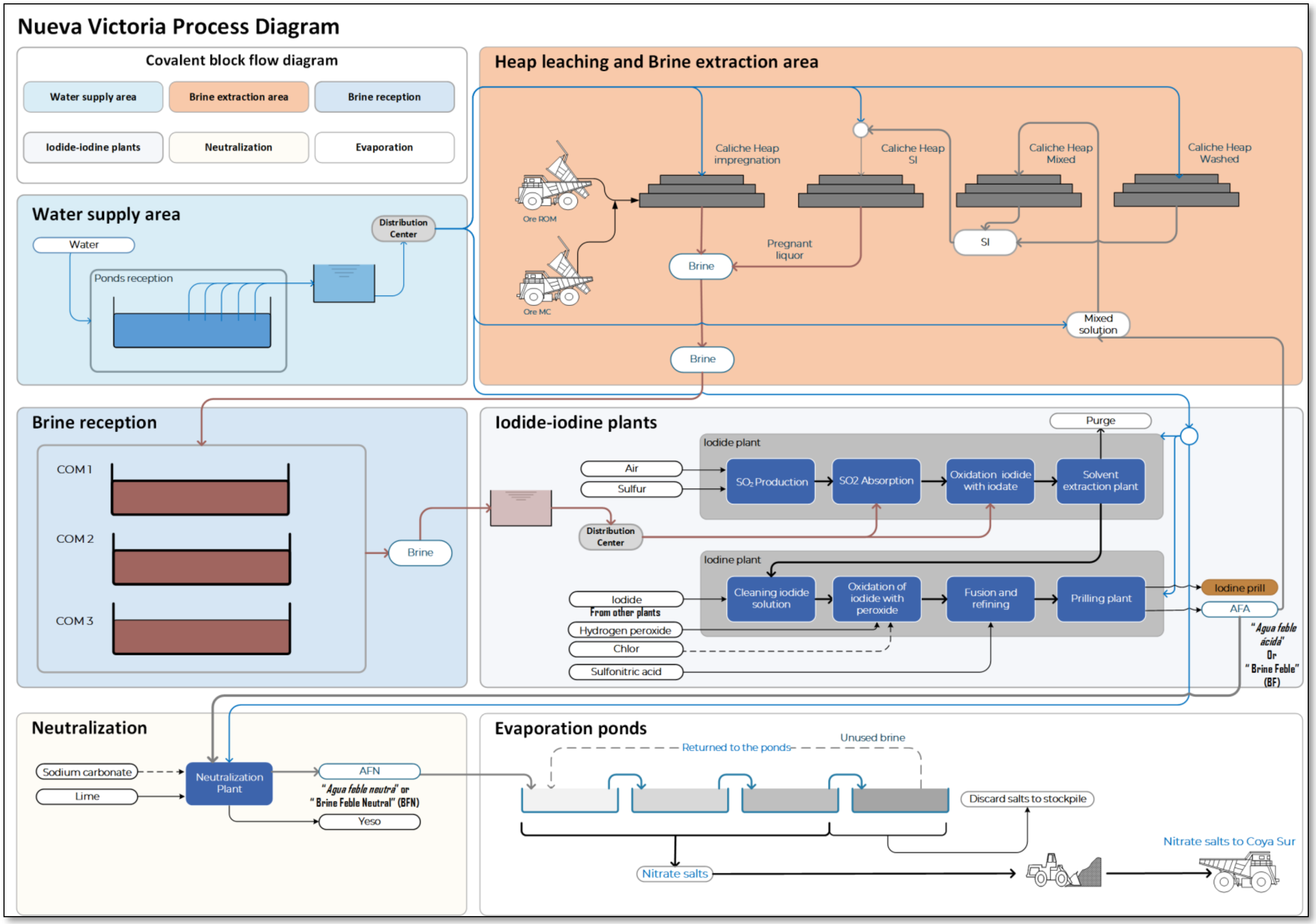
Nueva Victoria operations currently have the following facilities:

- Caliche mine and mine operation centers.
- Nueva Victoria Iodide Plant and Nueva Victoria Iodine Plant.
- Iodide - iodine Iris Plant.
- Neutralization Plant.
- Evaporation ponds.
- Waste salts deposit.
- Industrial water supply.

- Auxiliary installations: Camps and offices, domestic waste disposal site, hazardous waste yard, and non-hazardous industrial waste yard.

Figure 14-1 shows a block diagram of the main stages of caliche mineral processing to produce iodine prill and nitrate salts at Nueva Victoria. The following sections describe the operational stages and mineral processing facilities.

Figure 14-1. Simplified Nueva Victoria Process Flowsheet

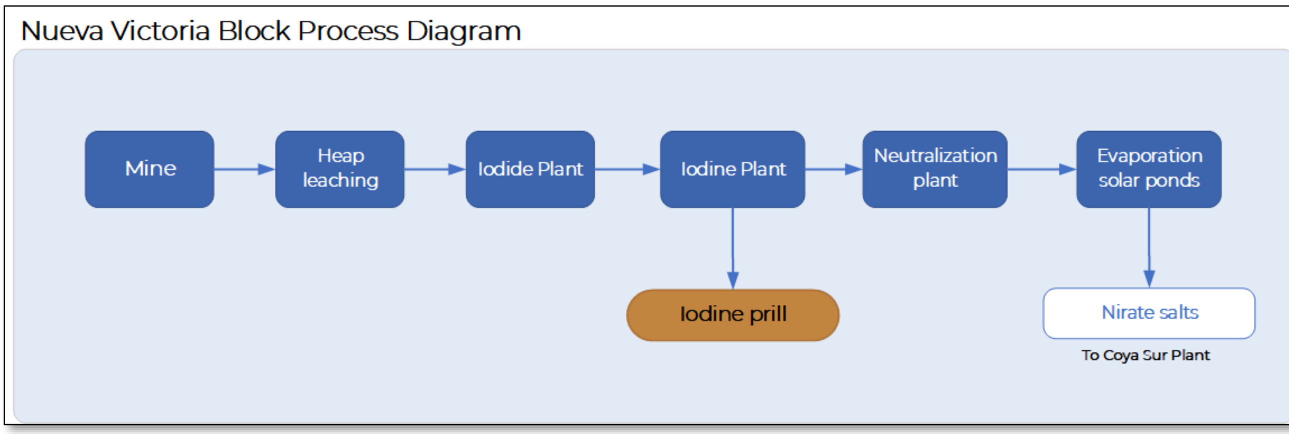


14.1 Process Overview

The Nueva Victoria Property includes caliche mining, heap leaching and processing plants to obtain iodine as the main product and nitrate as a by-product.

Figure 14-2 presents a schematic of the mineral production process of iodine and concentrated nitrate salts from caliche ore at Nueva Victoria. This diagram shows that the process can be summarized in six relevant stages: mining, leaching, extraction in iodide plant, conversion in iodine plant, neutralization and evapo-concentration. Each of these stages are described below.

Figure 14-2. Schematic of the Mineral Production Process at Nueva Victoria



The extraction process begins with the removal of non-mineralized soil and non-mineralized overburden, and ends with the loading and transport of the caliche to the leaching heaps. More details on this operation are described in Section 13.2

Two categories of ore, defined by SQM, are processed at the site. ·These include Ore Category 1 (ROM ore extracted by blasting), and Ore Category 2 (ore extracted by CMs). The batter fragmentation of the CM ore results in a higher percentage recovery of the available mineral salts in the PLS generated. As of 2022, this material represents 18.18% of the mineral stacked on the heap leach pads. The relative proportion of this material added to the heap leach pads will increase sequentially over the LOM.

SQM excavates caliche from the Nueva Victoria at a rate of 37 Mtpy in accordance with RE N°0515/2012 (Resolución Exenta, the government permit that authorizes the mineral extraction). At the neighboring Iris Property, SQM mines caliche and a rate of 6.48 Mtpy in accordance with permit RE 1447/2018. Once the TEA project is approved, the authorized mining rate will increase by an additional 28 Mtpy, reaching an authorized total of 65 Mtpy of mining at the Nueva Victoria Property. The caliche is extracted using explosives and then loaded and transferred to the heap leach pads. The caliche is leached using process water, augmented with depleted solution outflow from the iodine prilling plant. This component of depleted (feeble) solution from the iodine process is referred to by SQM as BF that corresponds to weakly acidic water (also called agua feble ácida [AFA]).

The EIA for the TEA expansion project is currently being assessed within SEIA by the Chilean Regulator, SEA. Table 14-1 summarizes the changes considered by the expansion project.

Table 14-1. Modifications to the Operation with Expansion of the TEA Project

INSTALLATION	CURRENT SITUATION	MODIFICATION	SITUATION WITH TEA PROJECT
Nueva Victoria surface area authorized for mining	408.5 km²	Increase of 436 km²	Total mineable area of 844.5 km² at Nueva Victoria (890 km² including Iris)
Iris surface area authorized for mining	45.5 km²	No change	No modification
Rate of caliche mining at Nueva Victoria	37 Mtpy	Increase of 28 Mtpy	Total mining rate 71.48 Mtpy (65 Mtpy of which is at Nueva Victoria)
Rate of caliche mining at Iris	6.48 Mtpy	No modification	No modification
Iodide production, Nueva Victoria	11 Ktpy	Increase of 12 Ktpy	Total iodide production rate 25 Ktpy
Iodide production, Iris	2 Ktpy	No modification	
Iodine production, Nueva Victoria	11 Ktpy	Increase of 12 Ktpy	Total rate of iodine production 23 Ktpy
Iodine production, Iris	2 Ktpy	No modification	
Salt production	1.025 Mtpy (2.050 Mtpy with Pampa Hermosa)	Increase of 1.95 Mtpy	Total production rate of nitrate-rich salts 4 Mtpy
Evaporation ponds	8,34 km²	Increase of 10.17 km²	Total evaporation ponds area 18.51 km²
Water use	810.8 L/s (groundwater abstraction for industrial use)	Increase of 900 L/s (abstraction of seawater)	Total permitted water uses 1.710.8 L/s for industrial use

The operations carried out to treat the ore and obtain iodine and nitrate salts are described below.

14.1.1 Mine Areas and COM Operation Centers

The SQM Nueva Victoria and Iris Properties cover areas of approximately 408.5 km² (Nueva Victoria West, North, and South) and 44.5 km² (Iris). Administratively, SQM distinguishes:

- The mining areas (mineral deposit areas).
- The office and support buildings, warehouses, truck repair shops, heap leach piles, industrial water, and leaching solution (brine) storage ponds.

SQM refers to the processing plant and office area at Nueva Victoria and Iris as the Nueva Victoria Mine Operations Center (Centro de Operación Mina, or COM) and the Iris COM respectively.

Inside the mine areas there are the COM whose objective is the management of the different solutions. Basically, a COM is formed by the leaching heaps and accumulation ponds for the brine coming from the leaching process and the water required for the same. Thus, both COM de Nueva Victoria and Iris are facilities that have brine accumulation ponds, reception and accumulation ponds for AFA, industrial water ponds, and intermediate solution, which correspond to irrigation solutions.

All brine, industrial water and BF accumulation ponds are lined with impermeable membranes (typically HDPE or PVC) to prevent infiltration of their contents into the underlying ground.

14.1.2 Heap Leaching

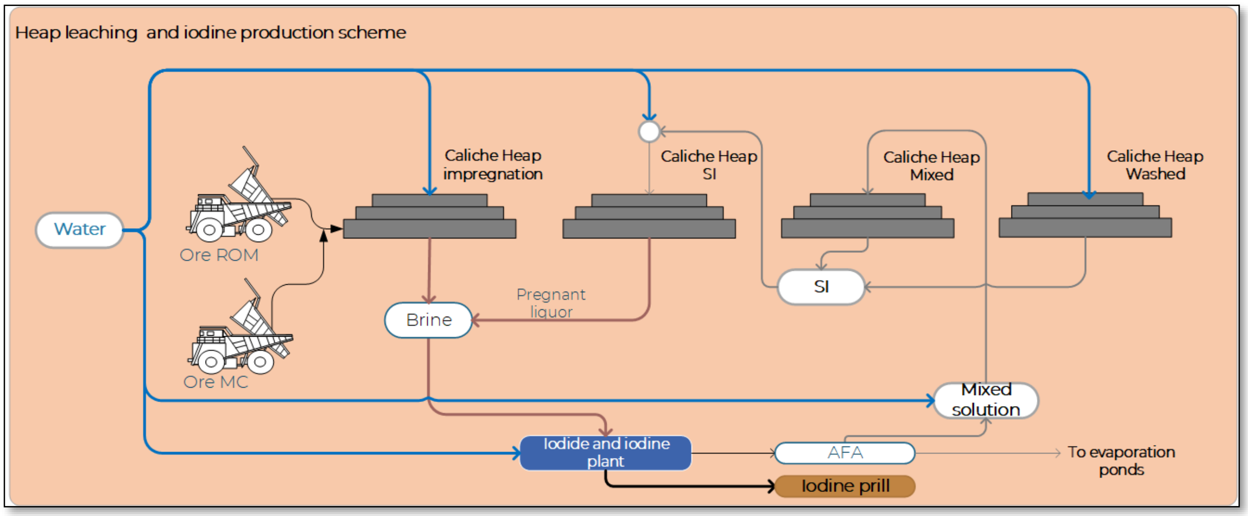
Leach piles are constructed on non-mineralized ground, so as not to cover valuable caliche resource. The land is prepared prior to construction of the heap leach pads. The soil is left with a slope profile of 1 to 4%, to promote gravity flow of the PLS. The base is covered with an impermeable geomembrane (PVC, or HDPE) to prevent seepage of leaching solutions into the ground, allowing the solutions to be collected at the toe of the leach pile. A protective 40-50 cm thick layer of fine material (non-mineralized chusca (weathered material), or spent leached caliche) is spread over geomembrane to protect it against being damaged by the transit of mine vehicles or punctured by sharp stones.

The caliche to be leached is then emplaced over the protective layer. The leach piles are constructed with a rectangular base and heights between 7 to 15 m and a crown area of 65,000 m². Once the stacking of caliche is complete, the pile is irrigated to dissolve the soluble mineral salts present in the caliche.

The heap leaching operation applies alternating cycles of irrigation and resting. The irrigation system used incorporates both sprinklers and drip irrigation. The heap leaching process typically takes around 425 days from start to finish (in general, the operating range is of approximately 400- 500 days for each heap). Over the leaching cycle, the removal of soluble mineral salts results in a 15% to 20% drop in height of each leach pile.

Figure 14-3 presents a schematic of the heap leaching process. The piles are organized in such a way as to reuse the solutions they deliver: production piles (the newest ones), which produce rich solution to be sent to the iodine plant, and older piles whose drainage feeds the production piles. At the end of its irrigation cycle, an (old) pile leaves the system as inert debris, and a new pile enters at the other end, thus forming a continuous process.

Figure 14-3. Schematic of the Heap Leaching Process at Nueva Victoria



The stages in the heap leaching process (Figure 14-3) are as follows:

1. Initial irrigation of the heap with industrial water (impregnation): the "impregnation" stage corresponds to the initial irrigation of the leach pile with industrial water. During this stage the pile begins generating salt-bearing leach solution at its base, termed brine. Stage 1 lasts about 55-60 days.
2. Irrigation of the heap with Intermediate Solution: Maturing heap leach piles are irrigated with drained solutions. This stage lasts about 190-280 days.
3. Mixed: the heap is irrigated with a mixture of recirculated AFA and also referred to by SQM as BF and industrial water. The leaching solutions draining from these heaps are termed Intermediate Solution (SI). The SI is the input to Stage 3 of the heap leaching cycle. This stage lasts about 20 days approximately.
4. Washing of the heap: this is the last stage of a heap's life, comprising a final water irrigation of the heap with industrial water to maximize total extraction of soluble salts. This stage lasts about 60 days.

The PLS obtained during heap leaching process is referred to as brine by the operation. The leaching solutions (brines) which drain from the leaching piles are piped, according to their hydrochemistry to poor solution, intermediate solution and rich solution brine storage ponds (accumulation ponds) at the COM. From here they are piped to the Nueva Victoria and Iris process plants.

The mining waste generated at the site corresponds to spent leached material, overburden, and non-target mineral salts. These discarded mineral salts form an inert, cohesive and highly cemented material that are emplaced as dump piles adjacent to the evaporation ponds.

As part of ongoing efforts to reduce the use of continental groundwaters, SQM is currently evaluating:

- The integration of seawater into the industrial water feed.
- The reduction of evaporative water loss from leach piles by relying increasingly on drip irrigation rather than spray irrigation and covering the surface of leach piles which are undergoing irrigation with impermeable membranes.
- The reduction of evaporative water loss from industrial water, brine and BF accumulation ponds by covering the surface of these ponds with floating HDPE spheres.

14.1.3 Iodide and Iodine Production Process

The facilities are in three sectors corresponding to: Nueva Victoria, Sur Viejo and Iris. The iodide and iodine production plants are located at Sur Viejo.

The iodide plant is connected to the Nueva Victoria COM via a 20 km long pipeline. It converts the iodate, recovered from the caliche by the heap leaching process, into iodide. The segregation of the brines into poor, intermediate and rich in the accumulation ponds at the Nueva Victoria and Iris sites allows SQM to ensure an optimum concentration of iodate (in the range 0.5 - 1.0 g/L iodate) in the brine feedline to the iodide plant.

The iodide-rich solution output by the iodide plant is then fed into the iodine plant which produces spherical pellets (prills) of iodine whose luster gives them a metallic appearance.

The other output from the iodide plant is leaching solution depleted in iodide, which SQM often refers to as BF, or AFA. The BF produced at the iodide plant can be routed via two alternative paths:

- It can be recirculated to the heap leach operation.
- It can be sent to the neutralization plant, where, by adding lime or sodium carbonate, neutral BF (brine feble neutral [BFN, AFN]) is produced. BFN is discharged to the solar evaporation ponds at Viejo Sur where nitrate-rich salts are produced and sent for processing to the nitrate production plant at the SQM Coya Sur facility, located 160 km to the south of Nueva Victoria, and 7 km southeast of the town of María Elena in the Antofagasta Region of northern Chile.

At Iris and Nueva Victoria service plants, this process is intended to reduce sodium iodate from caliche leach solutions to free iodine by addition of sulfur dioxide, and then to separate and purify it. The required sulfur dioxide is produced by burning sulfur. There are two stages in the process of obtaining free iodine: production of iodide from iodate (iodide plant) and production of iodine from iodide (iodine plant). The iodine and iodine derivatives production facilities have qualified in accordance with ISO-9001:2015 program for which TÜV Rheinland provides quality management system certification.

Below is a description of iodate to iodine transformation processes that are performed at Nueva Victoria and Iris service plants.

Nueva Victoria Iodine Production

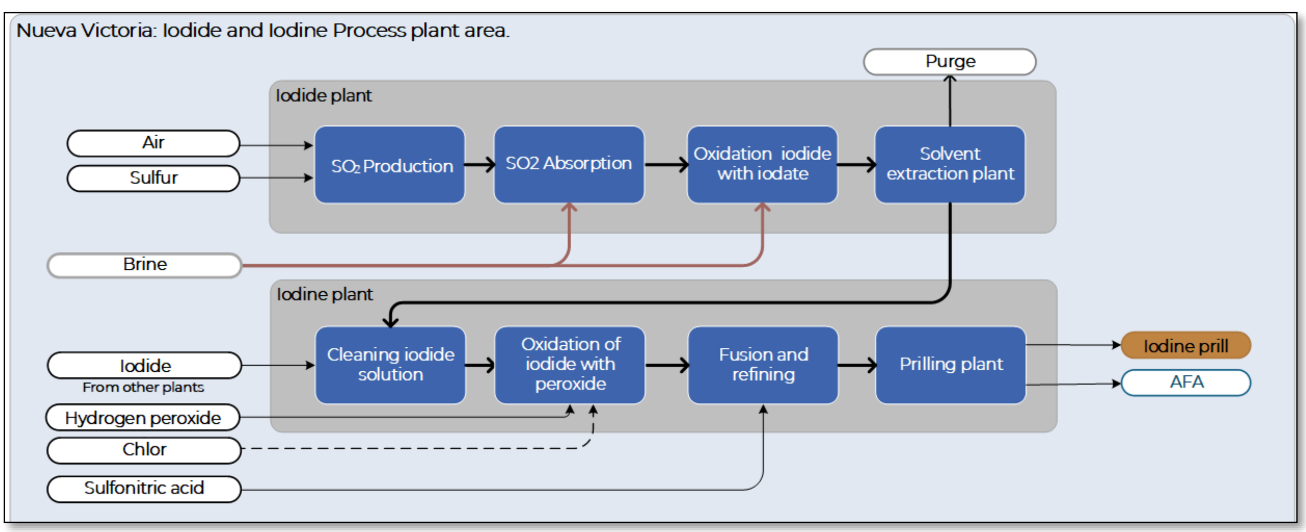
The Nueva Victoria Iodine Processing Plant is situated 1 km southeast of the access control (garita) to the SQM Nueva Victoria complex. It covers an area of approximately 15 ha. It includes:

- 3 iodate to iodide modules.
- 3 iodide to iodine modules.
- A sulfur dioxide (SO_2) generating plant.

Leaching solutions (brines) from the heap leaching of caliche ores are piped to the brine reception pond of each iodate to iodide module. This brine has an iodate content between a minimum of 0.4 g/L and an ideal working concentration of 0.7 g/L iodine equivalent.

Figure 14-4 presents a schematic of the iodine recovery process.

Figure 14-4. Schematic of the Iodine Recovery Process at Nueva Victoria



The first stage of the process occurs at the iodide plant. Here, the iodate in the brine entering the iodide plant from the heap leach is chemically reduced to iodide with sulfur dioxide. Most of the iodide produced by this process is in the form of sodium iodide. Sulfuric acid is added to acidify the iodide solution, then fresh brine is mixed into it. Due to the acidic conditions, iodate (IO_3^-) and iodide (I^-)in the solution react to precipitate solid iodine (I_2) as described by the following equation:

$$5I^-(aq) + IO_3^-(aq) + 6H^+(aq) \rightarrow 3I_2(s) + 3H_2O\ (l)$$

Three moles of iodine are produced for every mole of iodate ions consumed in the reaction. This process of producing iodine by reacting iodate and iodide in acidic solution is referred to as "cutting". The brine now comprises an aqueous solution of iodide and iodate with iodine in suspension. It is routed to a mixer-settler which separates out the solid iodine. The aqueous solution of iodide and iodate is then processed with solvent extraction (SX), using kerosene as the solvent, to recover iodide from it. Nueva Victoria has three such SX plants (SX1, SX2, and SX3).

The outputs from the SX plant are:

- Iodide pulp.
- Iodine-depleted acidic solution, referred to by SQM as AFA.

The kerosene solvent is recirculated to the start of the SX process.

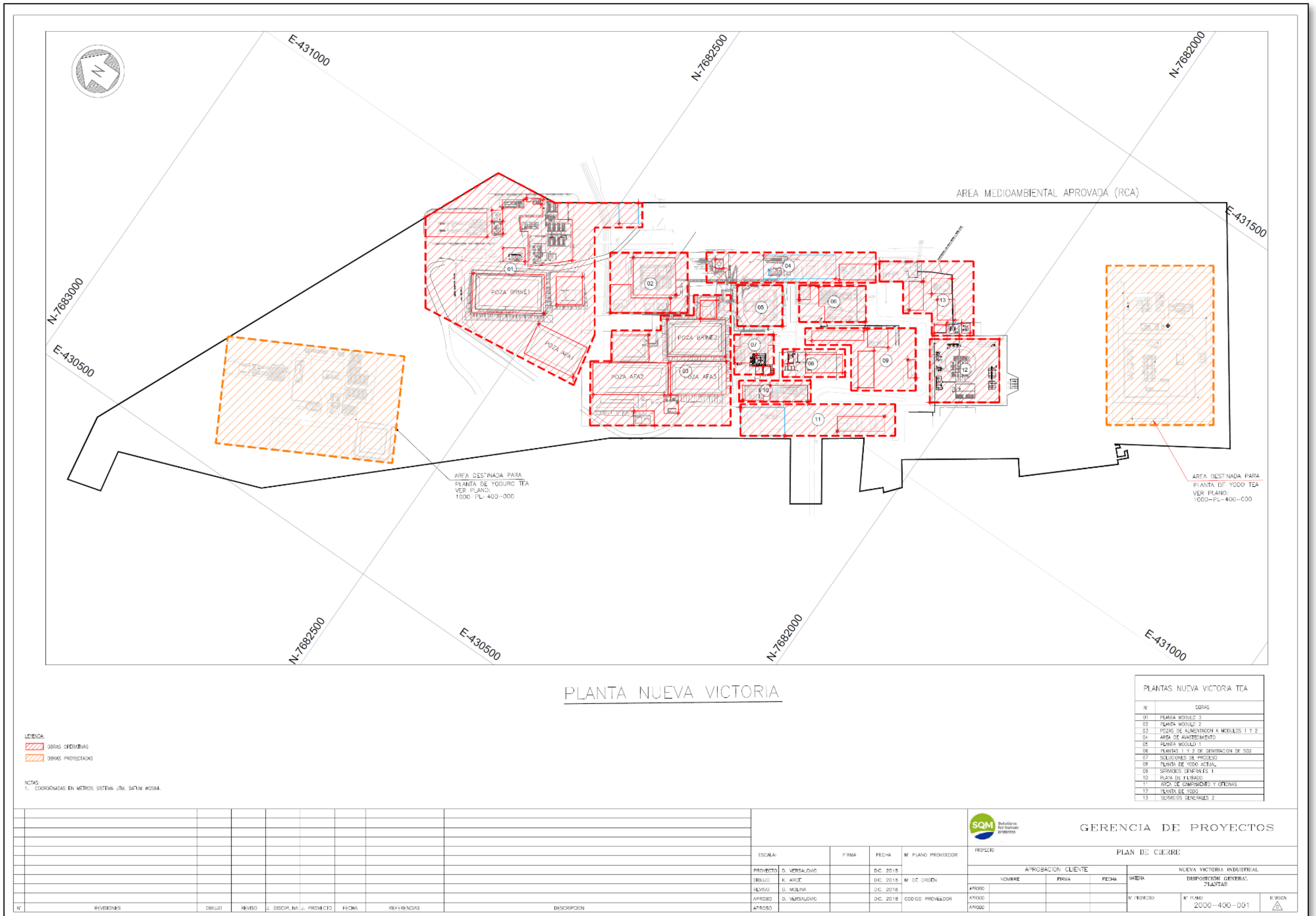
The AFA is neutralized with sodium hydroxide to give BFN, part of which is recycled to the heap leaching process, with the rest routed to the evaporation ponds at Sur Viejo for the recovery of salts rich in potassium and sodium nitrate, which are trucked to the SQM Property at Coya Sur for refining.

The iodide pulp produced by the SX plants is refined in a 2-stage process. First it is filtered, then it is passed through an activated carbon column tower to remove any residual kerosene solvent.

The iodide pulp is then routed through to the next stage of the process at the iodine plant where it is oxidized, using hydrogen peroxide and chlorine as the oxidizing agents. The iodine pulp thus obtained is then smelted and subsequently prilled to produce fine pellets of iodine called "prills" which have a metallic luster.

Figure 14-5 presents the general layout of the iodide and iodine plant complex at Nueva Victoria, including the additional capacity which will be required once the environmental permit for the TEA expansion has been obtained.

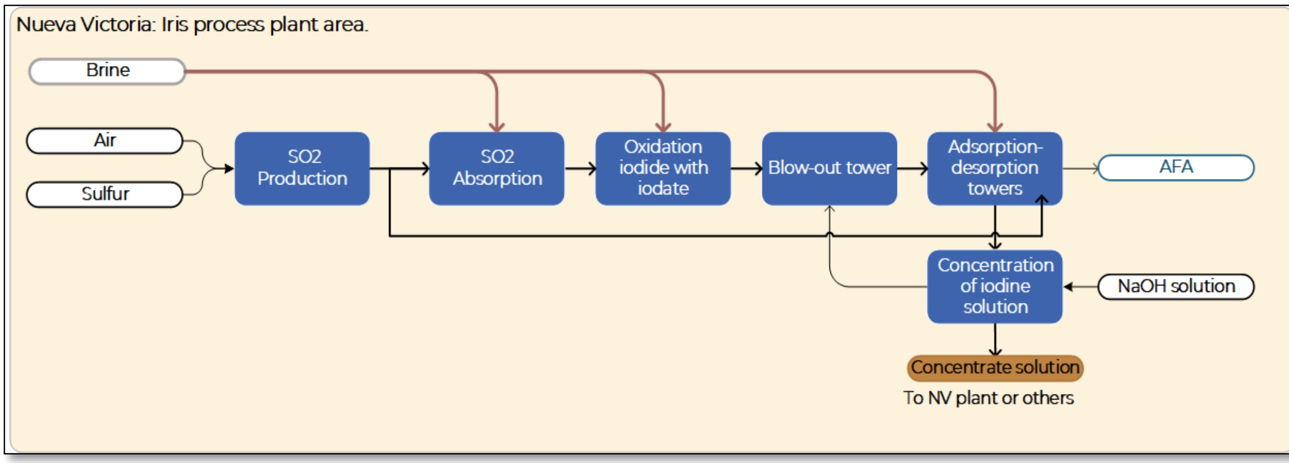
Figure 14-5. General Arrangement of Iodide-Iodine Plants at Nueva Victoria



Iris Iodide-Iodine Production

The Iris plant has an iodide-iodine plant within its COM. The iodine production facilities are currently inoperative and so the iodide brines are used to feed the iodine plants at Nueva Victoria. Figure 14-6 presents a schematic of the production process at Iris Plant.

Figure 14-6. Process Diagram of Iris Plant



The Iris Plant can process brines with iodate concentrations as low as 0.02 g/L iodine equivalent.

The iodide produced in the absorption towers is routed to the cutting pond, where it is mixed with iodate-bearing fresh brine from the fresh brine storage pond at the plant. The iodate and iodide in the solution react to precipitate solid iodine.

The iodine-enriched solution from the cutter is pumped to the blow-out tower (blowing tower), where it is counter-flowed with air. This generates a liquid iodine suspension in air, which is routed to the iodine adsorption-desorption tower. There, applying a counterflow of iodide solution, triiodide ions form, which are unstable. The design of the adsorption-desorption tower maximizes contact time between the reagents.

The triiodide-bearing solution is sent to reducing towers (coolers) where, on contact with SO_2, it dissociates, yielding solid iodine.

This solution is routed to the iodide recirculation pond, creating a concentration cycle. From the recirculation ponds, the iodide-enriched brine is sent for refining at the Nueva Victoria iodine plant.

14.1.4 Neutralization Plant

The neutralization plant at Nueva Victoria covers a surface area of approximately 59.76 ha. It includes AFA storage ponds, solids sedimentation ponds, neutralization ponds, industrial water ponds, reagent storage warehouses, pumping infrastructure and support facilities. The Neutralization Plant receives AFA outflow from the iodide plants. The AFA is mixed with a lime (calcium hydroxide) slurry to neutralize it in the neutralization ponds.

14.1.5 Solar Evaporation Ponds

The evaporation ponds (referred to by SQM as pozas), and associated transfer pumps, are located at Sur Viejo (Figure 14-7). There are 6 stages in the Evapo-concentration process. The ponds are of different types that vary in size given their function. The Sur Viejo evaporation ponds have a depth of 3.2 m and an approximate surface area of 3,200,000 m^2 - 3,400,000 m^2. The pond configurations (pond types) used are detailed in Table 14-2. Averaged over the sequence of pond types, the mean annual rate of evaporation is approximately 5 $l/m^2/d$ (5 mm/d or 1,825 mm/a).

Table 14-2. Solar Evaporation Pond Types at Sur Viejo

Pond Type	Description
Stage 1 pond	AFA Alkalinization Pond
Stage 2 pond	Brine Preconcentration, Phase 1 Pond
Stage 3 pond	Brine Preconcentration, Phase 2 Pond
Stage 4 pond	Cut-off or Boundary Pond
Stage 5 pond	High Grade Nitrate Pond

The 6 stage evaporation sequence is designed to progressively concentrate the evaporating brine. As this process progresses, the highly-soluble nitrates (KNO_3 and $NaNO_3$) become ever more concentrated in the brine as impurities such as halite and astrakanite progressively precipitate out from the ever-concentrating brine.

Each of the 6 stages in the evapo-concentration process are described below.

<u>Stage 1: AFA Alkalinization</u>

Stage 1 corresponds to the AFA alkalinization (AFA neutralization) stage. Stage 1 infrastructure includes a neutralization plan, a quicklime (calcium oxide, CaO) storage silo, a slaking system to produce slaked lime (calcium hydroxide, $CaOH_2$) and a reactor with agitator to mix the slaked lime slurry into the AFA. The slaked lime-AFA mixture (Stage 1 brine) is discharged into the Stage 1 pond. The main objective of this stage is to increase the pH of the brine from the pH 1.6-2.0 of the AFA to the pH 5.4-6.0 of the Stage 1 brine.

The rate of quicklime consumption (kg/m^3 of AFA) varies between 0.30 and 0.60 kg/m^3, depending on the acidity of the influent AFA. The Stage 1 brine can also be referred to as BFN, or Feble Neutral Water (FNW).

Stages 2 & 3: Brine Preconcentration Ponds

The brine passes through the 125,000 m^2 Stage 2 and 250,000 m^2 Stage 3 evaporation ponds in sequence. The objective of this process is to Evapo-concentration the AFN towards saturation with KNO_3 and $NaNO_3$, progressively precipitating out impurities, principally halite (NaCl) and astrakanite ($Na_2Mg(SO_4)_2 \cdot 4H_2O$) crystals.

Stage 4: Cut-off or Boundary Pond

Evapo-concentration continues during Stage 4, progressively concentrating KNO_3 and $NaNO_3$ toward saturation levels.

Stage 5: High Grade Nitrate Pond

KNO_3 and $NaNO_3$ crystallize out in the Stage 5 pond. The high-nitrate salts obtained include residual impurities, including NaCl, astrakanite, $KClO_4$, H_3BO_3, and $MgSO_4$. The relative proportion of KNO_3 and $NaNO_3$ in the high-nitrate salts reflects their ratio in the AFA fed into Stage 1.

Stage 6: System Purge

This is the final stage of the process, the remaining free moisture in the high-nitrate salt from Stage 5 is evaporated off and the high-nitrate salt is stockpiled for trucking to the SQM Coya Sur facility for further refinement prior to sale.

The Nueva Victoria Mine evaporation ponds planned for the TEA Project can be seen in Figure 14-8 and the dimensions are shown in Table -14-3.

Table -14-3. Solar Evaporation Pond Types at TEA Project

Pond type	Description	Length x Width (m x m)	Surface Area (m^2)	Surface Area (ha)
Stage 1 pond	AFA Alkalinization Pond	500 x 320	160,000	16
Stage 2 pond	Brine Preconcentration, Phase 1 Pond	500 x 250	125,000	12.5
Stage 3 pond	Brine Preconcentration, Phase 2 Pond	500 x 500	250,000	25
Stage 4 pond	Cut-off or Boundary Pond	240 x 165	39,600	3.96
Stage 5 pond	High Grade Nitrate Pond	280 x 250	70,000	7

Figure 14-7. General Arrangement of Sur Viejo Evaporation Ponds

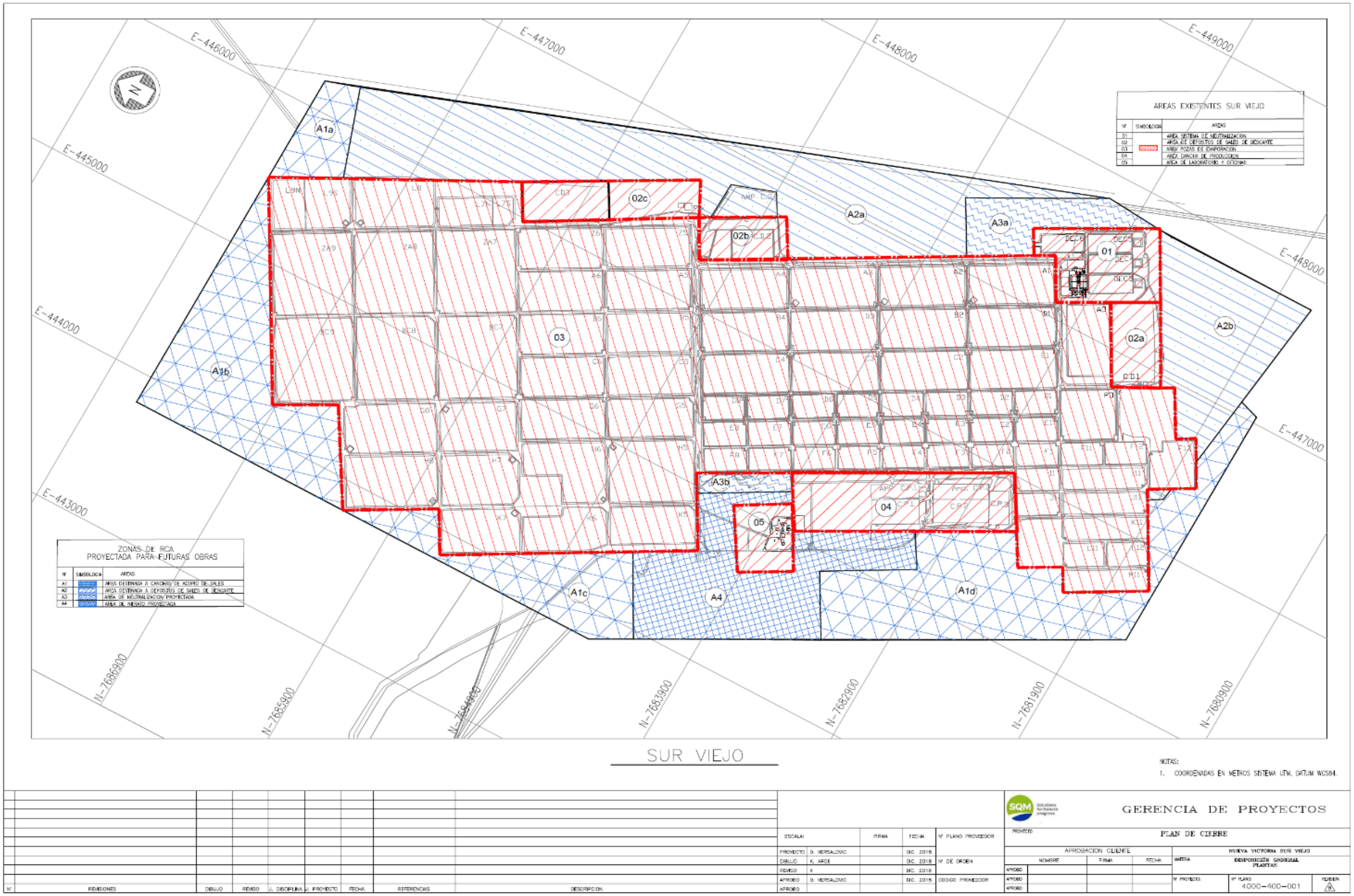
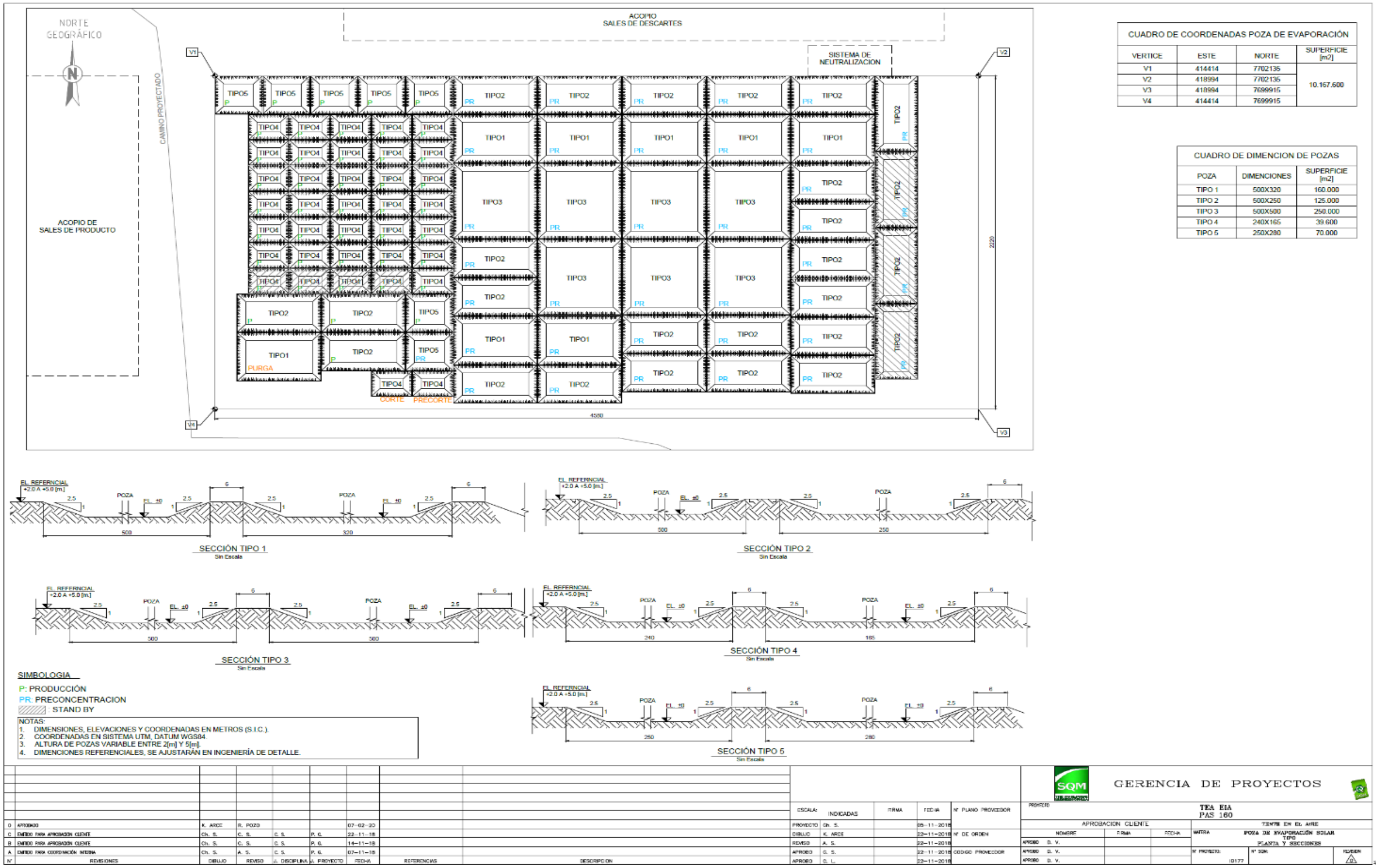


Figure 14-8. General Arrangement of TEA Evaporation Ponds



CUADRO DE COORDENADAS POZA DE EVAPORACIÓN			
VERTICE	ESTE	NORTE	SUPERFICIE [m2]
V1	414414	7702135	10.167.600
V2	418994	7702135	
V3	418994	7699915	
V4	414414	7699915	

CUADRO DE DIMENCION DE POZAS		
POZA	DIMENCIONES	SUPERFICIE [m2]
TIPO 1	500X320	160.000
TIPO 2	500X250	125.000
TIPO 3	500X500	250.000
TIPO 4	240X165	39.600
TIPO 5	250X280	70.000

14.1.6 Sur Viejo Nitrate Plant (Planned)

The 2010 environmental permit (RCA 890/10), which constitutes the environmental approval for the Pampa Hermosa Project, contemplates the construction of a nitrate plant at the Sur Viejo, adjacent to the existing evaporation ponds. The nitrate plant has yet to be constructed and so the high-nitrate salt produced by the evaporation pond sequence at Sur Viejo is trucked to the SQM Coya Sur facility for refinement.

The production capacity of the Sur Viejo nitrate plant would be 1.2 Mtpy of refined $NaNO_3$ & KNO_3. It would cover an area of 8.2 ha. Of modular construction, it would comprise 4 modules, each with a 300 Ktpy $NaNO_3$ / KNO_3 production capacity. The plant would receive high-nitrate brine from Stage 5 of the evaporation pond sequence, which would be routed through crystallizers, solid-liquid separators, thickeners and centrifuges. The resulting commercial products would be sodium nitrate and wet potassium nitrate

14.2 Production specifications and efficiencies

14.2.1 Process Criteria

Table 14-4 contains a summary of the main criteria for the Nueva Victoria processing circuit.

Table 14-4. Summary of Process Criteria - Mine Site Caliche Heap Leaching and Productive Iodine Process

Criteria		
Mining capacity and grades		
Caliche exploitation at Nueva Victoria mine	:	37 Mtpy
Caliche exploitation at Iris mine	:	6.48 Mtpy
Exploitation of future proven areas	:	28 Mtpy
Average grades	:	5.2% nitrate, 436 ppm iodine
Cut-off grade		
Availability/Use of availability		
Mining exploitation factor		80-90%
Plant availability factors		85%
Caliche Iodine NV Factor		4.2 Mt caliche per tonne of prilled iodine at Nueva Victoria
Caliche Nitrate NV Factor		48 tonnes caliche per tonne of finished $NaNO_3$ & KNO_3 at Nueva Victoria
Caliche Iodine Iris Factor		
Heap leaching		
Impregnation stage Intermediate Solution Mixed irrigation stage Washing stage with industrial water		400-to-500 days for each heap

Criteria		
Water + AFA mixed irrigation	:	40% dilution of AFA
Heap drainage	:	10 days
Iodate Brine Turbidity		
Yield and plant capacity		
Iodate/iodide yield		94-95%
Iodide/iodide yield		98%
Production capacity at Nueva Victoria		11 Ktpy iodide at Nueva Victoria
Production capacity at Iris		2 Ktpy iodide at Iris
Iodine prill product purity		99.8%
High-nitrate salts production capacity		2.050 Mtpy

The following subsections summarize the Nueva Victoria productivity and forecast.

14.2.2 Solar pond specifications

The specific criteria for the operation of evaporation ponds are summarized in Table 14-5.

Table 14-5. Description of Inflows and Outflows of the Solar Evaporation System

System inflows	Unit	Value
AFA Feed Flow	m^3/h	1,200
Sodium nitrate ($NaNO_3$)	g/L	127
Potassium (K)	g/L	12.5
Potassium perchlorate ($KClO_4$)	g/L	1.2
Magnesium (Mg)	g/L	15
Boron as boric acid (H_3BO_3)	g/L	4.0
System outflows	**Unit**	**Value**
Discard salts	t	3,900,000
Astrakanite	%	25
Sodium chloride (NaCl)	%	75
High-nitrate salt production	t	2,050,000
Sodium nitrate ($NaNO_3$)	t	1,050,000
Sodium nitrate ($NaNO_3$)	%	41.9
Potassium nitrate (KNO_3)	%	11.4
Potassium perchlorate ($KClO_4$)	%	0.32
Magnesium (Mg)	%	1.30
Boron w/boric acid (H_3BO_3)	%	2.40

14.2.3 Production Balance and Yields

Since 2014, SQM has been working on a plan to develop new caliche mining areas at Nueva Victoria and increase production of both nitrates and iodine at Nueva Victoria. With respect to the Iris Property, no modifications to the operation are contemplated. In recent years, investments have been made to increase the water supply capacity at the Nueva Victoria operations and to expand the capacity of the solar evaporation ponds and implement new mining and solution collection areas through expansion projects submitted to the National Environmental Commission. These projects are the Pampa Hermosa project (approved in 2010) and the TEA project, currently in process. The approval of Pampa Hermosa allowed increasing the nominal production capacity of the Nueva Victoria Operations to 11 Ktpy iodine and to produce up to 1.2 Mtpy of nitrates and use new water rights of up to 665.7 L/s. This increase in capacity was achieved by adding new iodide production modules and new support facilities over an area of 34.9 hectares at the Nueva Victoria COM.

Nueva Victoria (including the Iris Operation) currently has a total production capacity of 13 Ktpy of iodine, which affords SQM the flexibility to adjust production according to market conditions (iodine price). In 2019, 42.196 Mt of caliche, with a mean iodine grade of 465 ppm iodine, were processed, from which 10.70 kt of prilled iodine was produced. For the year 2020, the mean iodine grade of mined caliche was slightly lower at 452 ppm iodine and the 43.42 Mt of caliche processed yielded 10.61 kt of prilled iodine (9.36 kt from Nueva Victoria and 1.25 kt from Iris).

Table 14-6 presents a summary of 2020 iodine & nitrate production at Nueva Victoria, including Iris.

Table 14-6. Summary of 2020 Iodine and Nitrate Production at Nueva Victoria, Including Iris

Nueva Victoria Iodine Production	Unit	Total, year 2020
Caliche processed	Mt	43.420
Caliche nitrate grade	%	5.1%
Caliche iodine grade	ppm	452
Iodine heap yield	%	51.0%
Iodate-rich brine feed to iodide plant	m^3	17,803,215
Iodate concentration	g/L	0.57
Iodide produced	kt	9.639
Iodide plant yield	%	97%
Iodine produced	kt	9.360
Iodine plant yield	%	94%
Iodide global yield	**%**	**52%**

Iris Iodine Production	Unit	Total, year 2020
Iodate-rich brine feed to iodide plant	m^3	1,021
Iodide to Nueva Victoria Iodine Plant	kt	1.2818
Iodide Plant Yield	%	90%
Average yield of prilled iodine from Iris iodide	%	97%
Global iodine yield, Iris	%	87%
Iodine produced	kt	1.250
Nueva Victoria Nitrate Production	**Unit**	**Total, year 2020**
AFA sent to Sur Viejo Evaporation Ponds	Mm^3	9,663,961
Nitrate in AFA sent to Sur Viejo Evaporation Ponds	t $NaNO_3$	1,009,873
Nitrate concentration in AFA sent to Sur Viejo Evaporation Ponds	g/L (ppt)	106
$NaNO_3$ grade	%	53%
Yield of $NaNO_3$ from Sur Viejo Evaporation Ponds	%	71%

Table 14-7 shows the production data for 2021, 2020, and 2019.

Table 14-7. Nueva Victoria Production Data for 2019 to 2021

Nueva Victoria (including Iris)	2021	2020	2019
Mass of caliche ore mined (Mt)	41.428	43.420	42.196
Iodine grade in caliche ore (ppm)	441	452	465
Mass of iodine produced (kt)	8.7	10.6	10.7

14.2.4 Production Estimation

In recent years, investments have also been made to increase water supply capacity at Nueva Victoria operations from two water sources approved by the Pampa Hermosa Environmental Study and to expand solar evaporation pond capacity and implement new mining and solution collection areas.

Due to Pampa Hermosa project, to increase nitrate production, Sur Viejo Industrial Area will have to be incorporated. In this sector, solar evaporation ponds will be expanded and there will be 2 types of ponds:

- Pre-concentration ponds: Four pits (500-x-250 m, depth 3.2 m) and 13 ponds (500-x-250 m, depth 2.2 m), and a total volume of 5,175,000 m^3.
- Production ponds: Area 1,645,000 m^2, 3,290,000 m^3, 47 Ponds (140-x-250 m, depth of 2 m), and a total volume of 3,290,000 m^3.

Furthermore, two additional neutralization plants will be built in addition to those already existing; a nitrate production plant will be built (with a capacity of 1.2 Mtpy of sodium nitrate and/or potassium nitrate) and new salt storage areas will be set up (final product, nitrate-rich salts, discarded salts and neutralization process residue). These facilities will involve a total surface area of 1,328 ha.

During 2020, there has been progress at TEA Project, moving forward in its environmental processing and obtaining authorizations required by the authorities. This project will incorporate 900 L/s of seawater, increase mine area by more than 40,000 ha as well as increase production in the first stage by 3,000 t of iodine and 250,000 t of nitrate salts.

In terms of future plans, Nueva Victoria and Iris' mining (see Section 13.2, see Table 13-3) and industrial plan, an economic analysis of which is discussed later in Chapter 19 (see Table 19-1) considers caliche extraction at a current rate of 44 Mtpy and estimates an increase in iodine and nitrate production to the year 2030. Projected growth is sequential and is expected to reach 10.9-11.3 ktpy of iodine production by 2029-2030.

From 2031 starting at a production of 13 kt and is expected to reach a production of about 17 kt in 2040. The estimated production of iodine and nitrates for the period 2021 to 2040 is presented in Section 19.2 of this TRS.

Table 14-8 shows that to achieve the committed production it is required to increase water consumption to 0.65 for the years 2028-2040 and the heap leach yield for iodine must be increased to 74.2%.

The indicated yield values for each year have been calculated using empirical yield ratios as a function of soluble salt content, nitrate grade and unit consumption.

For the 2031-2040 period, the expected increase in caliche production in the Mining Plan -MP- prepared by SQM (average caliche production of 52.5 Mtpy) requires reaching leaching recoveries near 80% for Iodine in the heap pads and over 80% for Nitrate leaching, which could be achieved through the projected increment the consumption of water for irrigation (0.71 m^3/tonne) (increase of water consumption using seawater pipeline). The QP recommends that the production planning process incorporate ore blending strategies to optimize production and maintain the cost/recovery profile in an optimum balance.

Table 14-8. Nueva Victoria Process Plant Production Summary

PARAMETER	2022	2023	2024	2025	2026	2027	2028	2029	2030	Long Term 2031-2040	AVERAGE	TOTAL
Mass of caliche ore processed (Mt)	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	52.49	48.82	917.4
Water consumption (m^3/tonne caliche)	0.420	0.419	0.459	0.557	0.542	0.592	0.599	0.637	0.647	0.71	0.64	
Ore grade (ppm I_2)	436	425	421	410	410	410	410	411	414	423	420	
Ore grade (nitrate, %)	6.12%	6.07%	5.49%	5.30%	5.25%	5.26%	5.21%	5.34%	5.87%	4.41%	4,90%	
Soluble salts, %	58.5%	60.3%	60.3%	60.5%	60.5%	60.7%	60.7%	59.1%	58.5%	59.74%	59.81%	
Iodine leaching yield, %	59.3%	55.6%	57.9%	63.3%	62.0%	66.3%	67.0%	71.9%	74.2%	79.05%	72.49%	
Nitrate leaching yield %	47.7%	46.9%	54.2%	67.8%	66.1%	72.6%	73.8%	79.8%	79.9%	82.90%[a]	75.18%	
Iodine leaching production (kt)	8.8	8.4	8.6	9.5	9.9	10.2	10.6	10.9	11.3	16.3	13.8	257
Nitrate leaching production (kt)	1,173	1,145	1,195	1,445	1,394	1,535	1,545	1,712	1,884	1,574	1,507	28,405

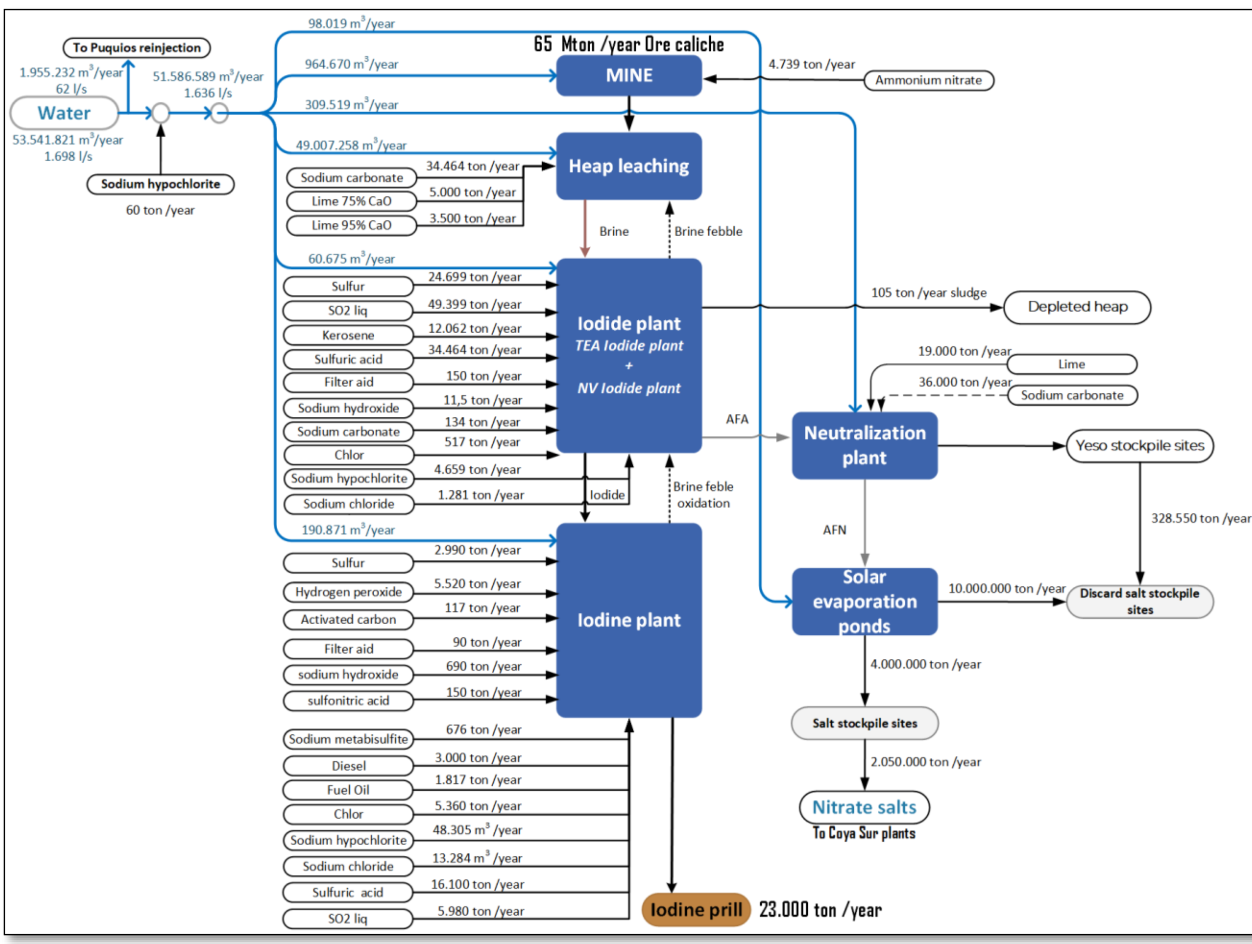
a) The expected increase in caliche production requires reaching leaching yields over 80% for Nitrate leaching based on the projected increment in the water consumption for irrigation (0.71 m^3/tonne). However, it's advisable to keep the nitrate leaching yield in heap pads not above 80%, selecting sectors with a Nitrate grade above 5.0% and maintaining ore control to prevent dilution grade in mining process.

14.3 Process Requirements

This sub-section contains forward-looking information related to the projected requirements for energy, water, process materials and personnel for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors, or assumptions, that were set forth in this sub-section including actual plant requirements that yield different results from the historical operations.

Figure 14-9 shows Nueva Victoria's process diagram with TEA project incorporated, giving an overall production process balance. It is important to note that input quantities will depend on caliche chemical properties, as well as iodide plant operation (whether operating in SX or blow-out mode) but will not exceed those indicated in the diagram.

Figure 14-9. Projected Water and Reagent Consumption at Nueva Victoria with Implementation of the TEA Extension



The balance scenario shown corresponds to the situation of treatment of 65 Mtpy of caliche with 23 ktpy of iodine prill production.

Future energy and water needs will be satisfied by the infrastructure expansion plan considered in the TEA Project. This includes power transmission lines connected to electrical installations with new transformers to be located at mine operation centers, water supply centers, and the Nueva Victoria mining areas, as well as the Sur Viejo industrial area.

The following sections detail energy, water, staff, and process input consumption.

14.3.1 Energy and Fuel Requirements

Power and Energy

The power supply comes from permanent power lines to the site. Its function is to supply electricity to the industrial areas to carry out operations and to supply electricity to the adduction system, specifically through installed substations. There is a control portal and power distribution center at the facility. This center has a start-up power supply for the operations, laboratory and plant.

Nueva Victoria has one substation, with two distribution systems. One system has a capacity of 50 MW and the other has a capacity of 60 MW. Associated with the Nueva Victoria 50 MW line, the consumption declared by SQM for the 2021 is of 21,048,180 kilowatt-hours (kWh), while for the line Nueva Victoria 60 MW, the energy consumption is 123,531,632 kWh.

In terms of power consumed and considering a calendar year of 365 days and 24 hours, the indicated energy values translate into a consumption of 2.40 MW for the available 50 MW power line and 14.10 MW for the available 60 MW power line. Therefore, for the year 2021, the electric power consumption was about 16.50 MW.

There is an auxiliary electricity supply system, via 500-kilovolt-amperes (kVA) generators, considered to be installed in both process plants planned for the expansion.

Fuels

The operation will require 26,601 m^3/year of diesel and 22 m^3/year of petrol. Fuel will be supplied by duly authorized fuel trucks. Storage tanks in the Sur Viejo industrial area will be the source of the fuel.

Gas is a source of energy for operations at Iris.. Gas is stored in liquefied gas storage tanks at the Iris camp.

14.3.2 Water Supply and Consumption

Water Supply System

Water supplies are required for basic consumption, drinking water consumption (treated and available in drums, dispensed by an external supplier) and for industrial quality work. As reported, the entire sector is supplied by an industrial water supply center located in Nueva Victoria.

For industrial water supply, groundwater will be extracted at an average rate of 810.8 L/s[8], from wellfields at the Salar de Sur Viejo, the Salar de Llamara and the Pampa del Tamarugal.

SQM has:

- 9 wells at Sur Viejo with consumptive rights totaling 64.5 L/s.
- 10 wells in the western area of the Salar de Bellavista with consumptive rights totaling 208.5 L/s.
- Well TC-9, situated to southwest of the Salar de Bellavista.
- 3 wells in the Salar de Llamara with consumptive rights totaling 70.7 L/s.
- A further 4 wells in the Salar de Llamara with consumptive rights totaling 174 L/s, of which 120 L/s currently have environmental approval.

SQM projects the addition of the following water resource supply capacity to its water rights:

- 113.1 L/s of groundwater extraction from new wells situated to the east of the Salar de Bellavista.
- Groundwater extraction from the TC-10 well located in Salar de Llamara.
- Surface water extraction through permanent and continuous surface consumptive rights for a maximum of 60 L/s granted in Quebrada Amarga.

Industrial water pipelines connect groundwater ponds to the mining and industrial areas of Nueva Victoria. For water extraction, pumping and transport, there is a network of pipes, pumping stations and power lines that allow extraction of the required industrial water and its transport and redistribution to the different points where it is required.

Water is supplied to an existing process water storage tank. Raw water is used for all purposes requiring clean water with low dissolved solids and salt content, mainly for reagent replenishment.

Raw water is treated in a reverse osmosis system; whose infrastructure includes tanks for water storage (industrial or potable). The potable water storage tank also supplies water for use in:

[8] 797.8 L/s (approved by the *Dirección General de Aguas* (DGA), the Chilean Regulator.

- Safety showers and other similar applications:
- Fire-fighting – the building of the Nueva Victoria, Iris and Sur Viejo COMS are equipped with water storage tanks for firefighting which supply hydrant & sprinkler systems.
- Cooling water.
- Boilers for steam generation.

In addition, the TEA project considers a seawater supply system (900 L/s design flow) to supplement the industrial process water supply. The seawater will be drawn from the coast at Puerto Patillos, 58 km northwest of the Nueva Victoria Property and 55 km SSW of the City of Iquique. The seawater will be stored in reception ponds at Nueva Victoria.

Water Consumption

Table 14-9 summarizes the rate of groundwater pumping for industrial water supply by SQM, by sector, for the years 2020 & 2021.

Table 14-9. Historic Rates of Groundwater Extraction for Industrial Water Supply

YEAR	SUR VIEJO (L/S)	LLAMARA (L/S)	IRIS (L/S)	SORONAL (L/S)	PAMPA TAMARUGAL (L/S)	TOTAL (L/S)
2020	105	225	61	127	117	635
2021	107	221	61	128	120	637

Source: Provided by SQM- Registros extracción agua NV 2020_2021.xls

Potable water will be required to cover all workers' consumption and sanitary needs. Potable water supply considers a use rate of 100 L/person/day, of which 2 L/person/day corresponds to drinking water at the work fronts and cafeterias. Commercial bottled water will be provided to staff. Sanitary water will be supplied from storage tanks located in the camp and office sectors, which will be equipped with a chlorination system. A total of 719 workers per month are required, considering the Nueva Victoria and Iris operations together, so the total amount of potable water will be 72 m^3/day (0.83 L/s).

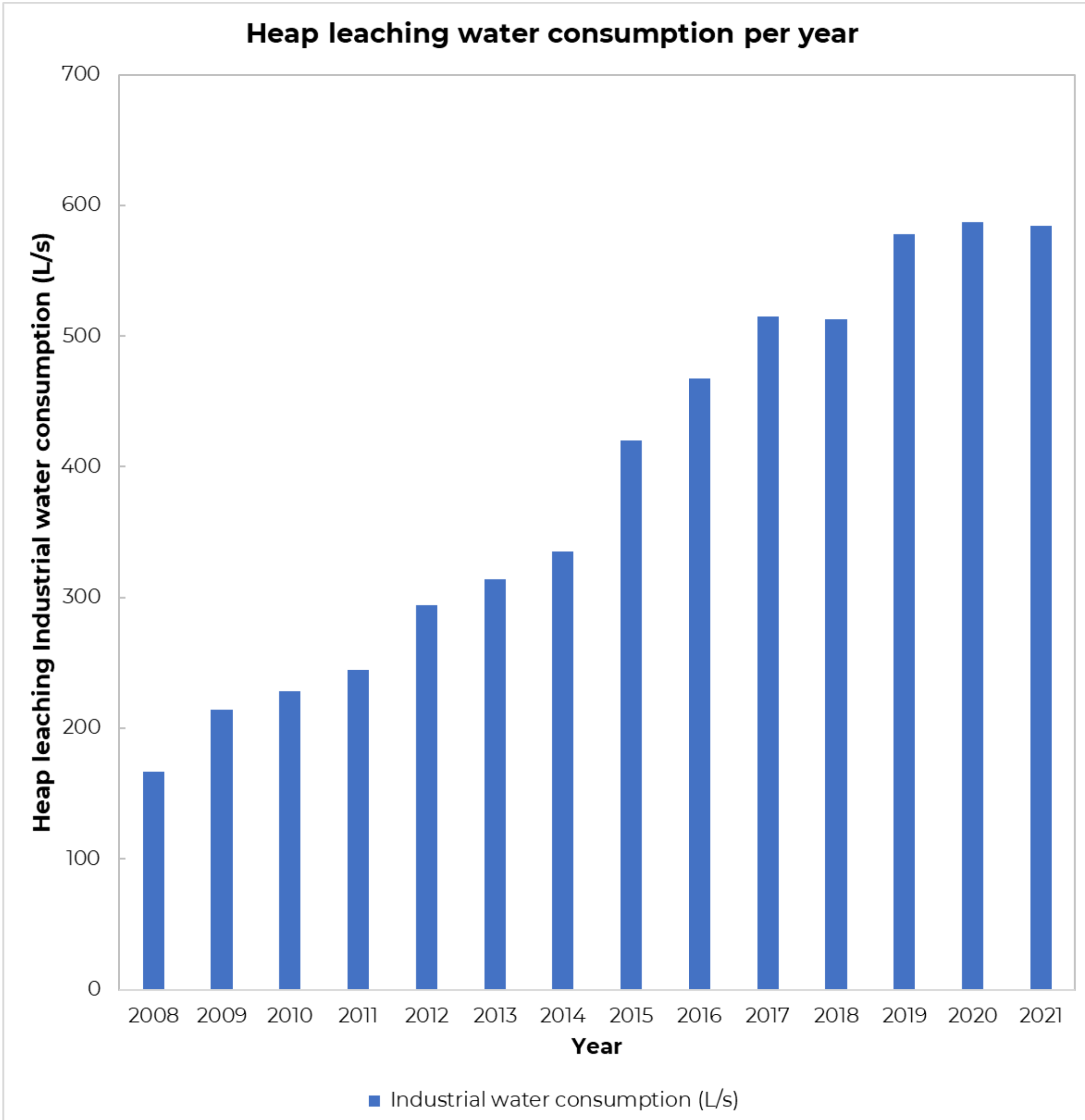
Table 14-10 provides a breakdown of the estimated annual water requirement by potable and industrial water for year 2021. The heap leaching process corresponds to the greatest water demand.

Table 14-10. Nueva Victoria Industrial and Potable Water Consumption

Use	Annual volume (m^3/year)	Equivalent Rate (L/s)
Industrial water		
Heap leach	18,332,548	581.20
Puquios reinjection	877,836	27.80
Mine	152,583	4.80
Iodide- Iodine Plants Neutralization Plant	271,521	8.60
Solar evaporation ponds	435,130	13.90
Camp	63,073	2.00
Total other areas Mine Iodide Plant Iodine Plant Neutralization Plant Solar evaporation ponds Camp Puquios reinjection	1,800,142	57.10
Total industrial water	20,132,690	638.30
Drinking water	26,207	0.83

Figure 14-10 presents the historical rate of water consumption by the heap-leaching operation at Nueva Victoria over the period 2008 – 2021. In 2021 the consumption of industrial water for heap leaching was 581.20 L/s.

Figure 14-10. Historical Rate of Consumption of Industrial Water by the Heap leach Operation at Nueva Victoria (L/s)



Future Process Water Requirements

Future process water requirements, due to TEA Project incorporation, will be covered by adding a 900 L/s seawater supply system. This seawater supply system extends from an intake located in Patillos Bay at a depth of 25 m and 852 m from the beach line, through to the seawater storage ponds located at the Seawater System Terminal Station at Nueva Victoria.

This system will be implemented starting in 2024, with an initial capacity of 206 L/s, which will increase to 400 L/s between 2026-2028 and reach the full design capacity of 900 L/s by 2030.

14.3.3 Staffing Requirements

An estimated 719 workers are required during Nueva Victoria and Iris operations, while an estimated 717 workers will be required for the TEA Expansion of the Nueva Victoria Property when that project is completed. Table 14-11 summarizes current and future workforce requirements.

Table 14-11. Personnel Required by Operational Activity

OPERATIONAL ACTIVITY	CURRENT PERSONNEL, NUEVA VICTORIA & IRIS OPERATIONS	ADDITIONAL PERSONNEL., TEA EXPANSION PROJECT
Caliche mining	475	474
Maintenance (mine-plant)	38	38
Iodide production	17	17
Iodine production	40	40
Neutralization system	2	2
Evaporation system-operations	75	75
Evaporation system, maintenance	72	71
Total	**719**	**717**

Source: Provided by SQM-Informe actualización plan de cierre Faenas Nueva Victoria e Iris.

14.3.4 Process Plant Consumables

Raw materials such as sulfur, chlorine, paraffin, sodium hydroxide, or sulfuric acid, are added to the plants to produce a concentrated iodide solution which is then used in iodine production. These materials are transported by trucks from different parts of the country. A-412, which connects with Route 5, is the main route for vehicular flows required for input supply and raw material shipment.

Reagent Consumption Summary

Table 14-12 summarizes the main annual materials required for Nueva Victoria's operations to the nominal production rate of 11 Kt iodine prill. This table also includes a total requirement for the future expansion of TEA project. It is worth noting that some of the inputs can be replaced by an alternative compound; for example, sulfur can be replaced by liquid sulfur dioxide, kerosene can be replaced by sodium hydroxide and finally, lime can be replaced by sodium carbonate.

It is important to note that there are ranges of consumption factors that have been studied through historical operational data of plant treatment. The ranges are established according to the different qualities of brine obtained from the treated resource. These factors allow projecting the requirements of reagents and process inputs, both for annual, short- and long-term planning.

Table 14-12. Process Reagents and Consumption Rates per Year, NV

Reagent and Consumables	Function or Process Area	Units	Consumption of Nueva Victoria (11-ktonnes iodine prill)	Consumption With TEA (23-ktonnes iodine prill)
Sodium Hypochlorite	Addition of Sodium Hypochlorite Solution in the seawater pipeline suction.	tpy	29	60
	Iodide and Iodine consumption	tpy	2,228	4,659
		tpy	23,102	48,305
Ammonium Nitrate	Necessary for blasting	tpy	13,860	22,000
Sulfuric Acid	Iodide plant	tpy	16,652	34,464
Sulfur	Iodide and Iodine plants	tpy	9,058	24,699
			825	2,990
Liquid Sulfur Dioxide	Used as an alternative to solid sulfur	tpy	23,626	49,399
		tpy	2,860	5,980
Kerosene	At the Iodide plant as a solvent	tpy	6,007	12,062
Sodium Hydroxide	At the Iodine plants and at thee Iodide plant as peplacement of kerosene	tpy	1,935	34,464
			166	690
Chlorine	Supply chlorine to the Iodine plants as an oxidizer	tpy	2,563	5,360

Reagent and Consumables	Function or Process Area	Units	Consumption of Nueva Victoria (11-ktonnes iodine prill)	Consumption With TEA (23-ktonnes iodine prill)
	To the Iodide plants	tpy	247	517
Filter Aid	Alpha Cellulose Powder used tt Iodide and Iodine plants	tpy	72	150
		tpy	43	90
Codium Chloride	Iodide plant	tpy	613	1,281
		tpy	6,353	13,284
Hydrogen Peroxide	Iodine plant as an oxidizer	tpy	2,136	5,520
Activated Carbon	At the Iodine plant	tpy	52	117
Sulfonitric Acid	At the Iodine plant	tpy	72	150
Sodium Metabisulfite	Iodine plant	tpy	132	276
Lime (75 % Cao)	Neutralization plant	tpy	7,979	19,000
	Heap	tpy	2,391	5,000
Lime (95 % Cao)	Heap	tpy	1,674	3,500
Sodium Carbonate	Neutralization plant for lime replacement	tpy	17,217	36,000
	Heap	tpy	16,483	34,464
Others				
Fuel Oil	Iodine plant	tpy	399	1,817
Barrels	Packaging	Pcs/Month	15,105	31,584
Polyethylene Bags	Packaging	Pcs/Month	17,948	37,527
Krealon Bags	Packaging	Pcs/Month	16,452	34,399
Maxi Bags	Packaging	Pcs/Month	414	865

It should be noted that when the Project's Nitrate Plant is built and becomes operational, 2,050,000 tpy of nitrate salts will be processed to produce 1,000,000 Tpy of potassium nitrate and 1,200,000 tpy of potassium nitrate, for which it will require the following processing inputs in addition to those detailed above (Table 14-13).

Table 14-13. Process Reagents and Consumption Rates per year with Nitrate Plant (Planned)

Reagent and Consumables	Units	Consumption
Potassium Chloride	Tpy	924,000
Potassium Salts	Tpy	3,314,000
Fuel oil	Tpy	33,500
Diesel	Tpy	31,500

Reagent handling and storage

In order to operate, inputs used are stored in stockpiles and tanks, facilities available in the area known as the input reception and storage area. To store the inputs used in the Nueva Victoria plants, the following infrastructure are used:

- Sulfur storage facilities.
- Paraffin tanks.
- Sulfuric acid tanks.
- Peroxide tanks.
- Chlorine tanks (mobile).
- Bunker oil tanks.
- Diesel oil tanks.
- Sulfonitric acid tank.

In the case of inputs used at Iris' iodine plant, the storage facilities include:

- Sulfur storage facilities.
- Sulfuric acid tanks.
- Diesel oil tank.
- Caustic soda tank.
- Calcium carbonate silo.

Each reagent storage system assembly is segregated based on compatibility and is located within curbed containment areas to prevent spill spreading and incompatible reagents from mixing. Drainage sumps and pump sumps are provided for spill control.

14.3.5 Air Supply

High pressure air at 600-700 kPa is produced by compressors in place in order to satisfy the requirements of the plant as well as the equipment. High pressure air supply is dried and distributed through air receivers located throughout the plant. Each process plant has a compressor room to supply air to the compressors.

14.4 Qualified Person's Opinion

According to Gino Slanzi Guerra, QP responsible for metallurgy and resource treatment:

- Metallurgical test data on the resources planned to be processed in the projected production plan to 2022 indicate that recovery methods are adequate. The laboratory, bench and pilot plant scale test program conducted over the last few years has determined that feedstock is reasonably suitable for production and has demonstrated that it is technically possible using plant established separation and recovery methods to produce iodine and nitrate salts. Based on this analysis, the most appropriate process route, based on test results and further economic analysis of the material, are the unit operations selected which are otherwise typical for the industry.
- In addition, historical process performance data demonstrates reliability of recovery estimation models based on mineralogical content. Reagent forecasting and dosing will be based on analytical processes that determine mineral grades, valuable element content and impurity content to ensure that system treatment requirements are effective. Although there are known deleterious elements and processing factors that can affect operations and products, the company has incorporated proprietary methodologies for their proper control and elimination. These are supported by the high level of expertise of its professionals, which has been verified at the different sites visited.
- The mineralogical, chemical, physical and granulometric characterization results of the mineral to be treated, obtained from trials obtained, allow continuous evaluation of processing routes, either at the initial conceptual stages of the project or during the process already established, in order to ensure that the process is valid and in force, and/or to review optimal alternatives to recover valuable elements based on resource nature. Additionally, analysis methodologies determine deleterious elements, in order to establish mechanisms in operations so that these can be kept below the limits to ensure a certain product quality.

15 PROJECT INFRASTRUCTURE

This section contains forward-looking information related to locations and designs of facilities comprising infrastructure for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including Project development plan and schedule, available routes and facilities sites with the characteristics described, facilities design criteria, access and approvals timing.

The analysis of the infrastructure in New Victoria has been developed considering current facilities and requirements associated with future projects. This Section describes the existing facilities and planned expansion projects.

SQM's mining sites in Tarapacá Region, Nueva Victoria and Iris, are located in Tarapacá Region, in Iquique and Tamarugal provinces, communes of Iquique and Pozo Almonte, approximately 145 km southeast from Iquique and 85 km south from Pozo Almonte, in the case of Nueva Victoria, and 120 km southeast from Iquique in the case of Iris, located close to Iris office (Figure 15-1). These works as a whole involve a surface area of approximately 92,998 ha, including the TEA Project. The geographical reference location is 7.682.276 N, 431.488E, with an average elevation of 891 masl.

In late 2002, in order to restore mining operations at Nueva Victoria East, SQM re-established mining operations at Nueva Victoria East. Mineral at Nueva Victoria is transported by truck to heap leaching facilities, where iodine is produced. This site is constituted by facilities located in three sectors corresponding to Nueva Victoria, Sur Viejo, and Iris.

Figure 15-2 shows Nueva Victoria's geographic location. It also shows, for reference purposes, other sites belonging to SQM (Coya Sur, Salar de Atacama, and Salar del Carmen), and facilities used to distribute its products (Port of Tocopilla, Port of Antofagasta, and Port of Iquique).

From caliche, this site produces iodine and nitrate-rich salts through heap leaching and evaporation ponds. The main raw material required for the production of nitrate and iodine is caliche mineral, which is obtained from SQM's surface mines. The areas that are currently mined are located approximately 20 km northwest of Nueva Victoria.

Iodine extraction from caliche is a well-established process, but variations in the iodine and other chemical content of treated mineral and other operational parameters require a high level of technical expertise to manage effectively.

Caliche mineral in northern Chile contains a unique deposit of nitrate and iodine known throughout the world and is the world's largest commercially exploited source for natural nitrate. From these caliche mineral deposits, a wide range of nitrate-based products are produced, used as specialty plant nutrients and industrial applications as well as iodine and iodine derivatives.

Figure 15-1. General Location of Nueva Victoria

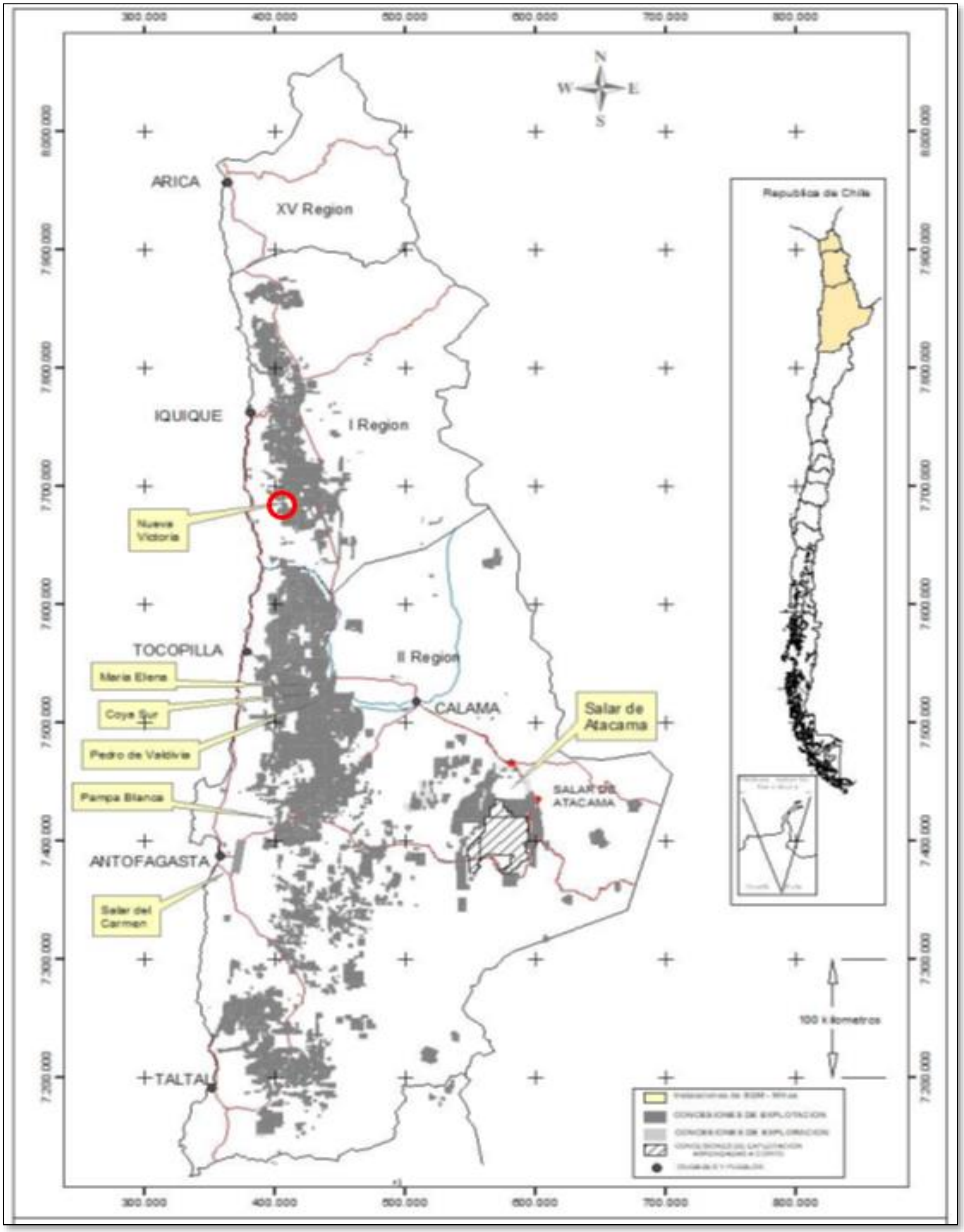
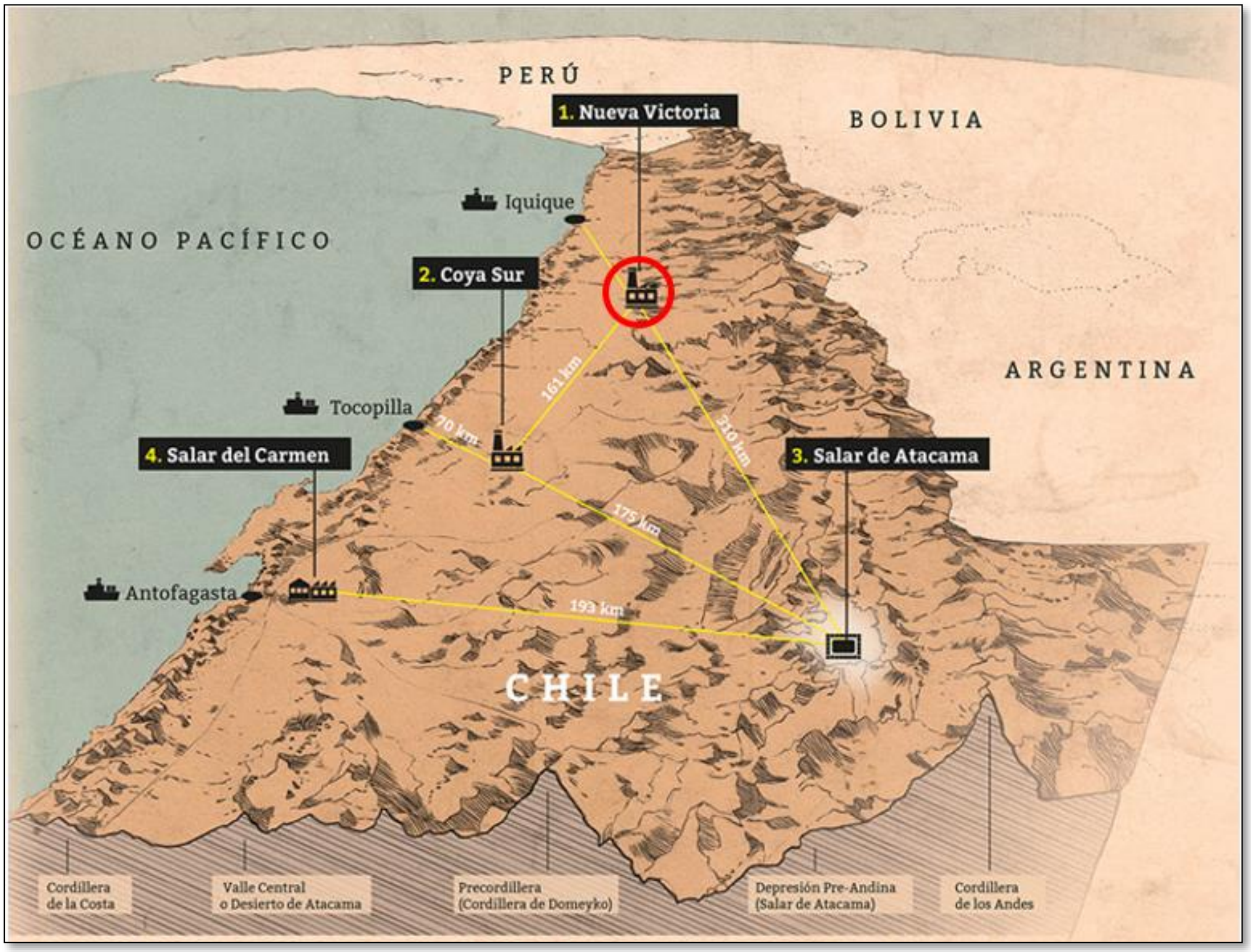


Figure 15-2. Location of Nueva Victoria Production Area



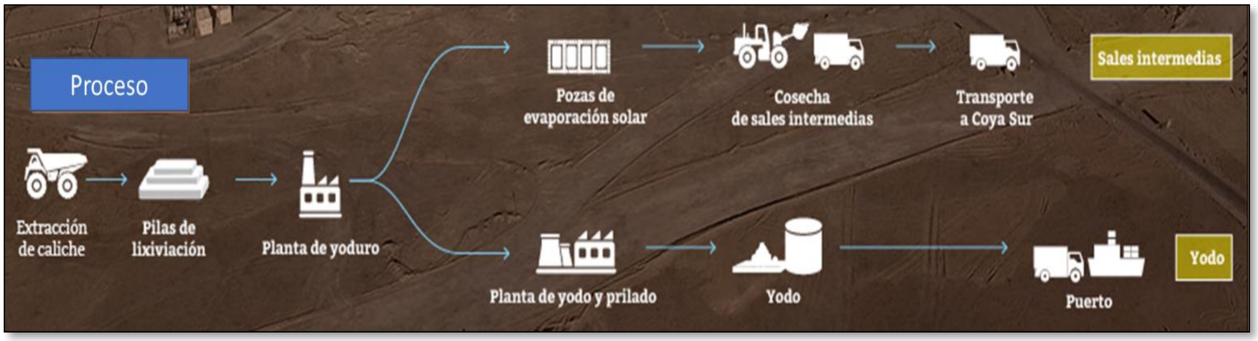
Iodine and its derivatives are used in a wide range of medical, pharmaceutical, agricultural and industrial applications, including x-ray contrast media, polarizing films for liquid crystal display (LCD/LED) screens, antiseptics, biocides and disinfectants, in pharmaceutical synthesis, electronics, pigments and dye components.

The solutions resulting from caliche mineral leaching at Nueva Victoria plant are used to produce iodine from the iodate contained inside them. Iodine is extracted from aqueous and concentrated solutions in iodide form using solvent extraction in plants at Nueva Victoria Pedro de Valdivia and Iris. Details on the the processfacilities and the iodine and nitrates extraction can be found n Section14.

Prilled iodine is tested for quality control purposes, using international standard procedures it has implemented, and then packaged in 20-50 kg drums or 350-700 kg maxi bags and transported by truck to Antofagasta, Mejillones or Iquique for export.

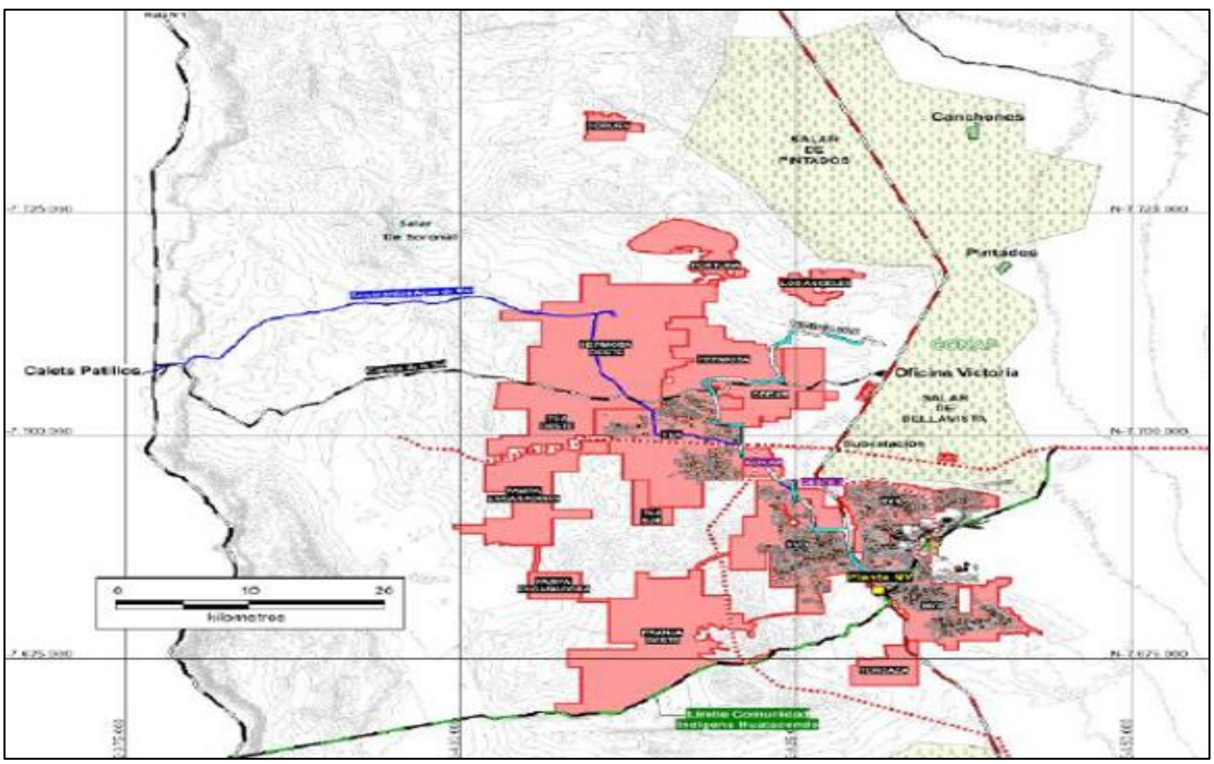
Figure 15-3 shows Nueva Victoria's process diagram.

Figure 15-3. Nueva Victoria Plant Process Diagram



SQM S.A.'s surface area under Mining Concessions for Exploitation associated with caliche Mineral Resources for its mining operations as of 31 December 2020 is approximately 558,562 ha (Figure 15-4). In addition, as of 31 December 2020, Exploration Mining Concessions held in association with caliche Mineral Resources for the mining operations represent approximately 400 ha.

Figure 15-4. Nueva Victoria Site Resource Diagram



In September 2010, the National Environmental Commission (now the Environmental Assessment Service) approved Pampa Hermosa's Environmental Study in Chile's Tarapacá Region (RCA N°890/2010).

This approval allowed SQM to have a production capacity at Nueva Victoria of 11,000 t of iodine per year and also to produce up to 1.2 Mt of nitrates, extract up to 37 Mt of caliche per year, and use new water rights of up to 665.7 L/s.

At Iris, SQM has approved 2,000 t of iodine production per year with annual caliche extraction of up to 6.48 Mt. In recent years SQM has invested to increase water capacity at Nueva Victoria's operations from two water sources approved by Pampa Hermosa's Environmental Study and to expand the capacity of solar evaporation ponds and implement new mining areas and solution collection.

In 2011 and 2013, SQM completed iodine plant capacity expansions at Nueva Victoria.

In 2014, SQM made investments in new mining sector development and production increases for both nitrates and iodine at Nueva Victoria, achieving a production capacity (including Iris facility) of approximately 8,500 tpy of iodine at that site.

In November 2015, mining and nitrate operations at Pedro de Valdivia were suspended and iodine production at the site was reduced to take advantage in the more efficient production facilities at Nueva Victoria. Pampa Blanca's operations were suspended in 2010 and Maria Elena's operations were suspended in October 2013.

During 2017, iodine production capacity at Nueva Victoria was increased to approximately 10,000 tpy.

Currently, Nueva Victoria has a production capacity of approximately 13,000 metric tpy of iodine in an area of about 48,000 ha and 1,000,000 metric t of nitrates per year.

Current total effective production capacity at the iodine production plants (Nueva Victoria, Iris, Pedro de Valdivia) is approximately 14,800 tpy.

Total iodine production in 2020 was 12,118 t, 9,362 t from Nueva Victoria (with loading fronts TEA, and NV Norte), 1,250 t from Iris, and 1,506 t from Pedro de Valdivia. Nueva Victoria is also equipped to produce iodine from iodide delivered from the other plants. There is flexibility to adjust production according to market conditions.

Some of iodine produced is used to manufacture inorganic iodine derivatives, which are intermediate products used to make nutritional and agricultural applications, at facilities located near Santiago, Chile, and also to produce organic and inorganic iodine derivatives in collaboration with Ajay, a company that purchases iodine. Iodine-derived products have been marketed mainly in South America, Africa and Asia, while Ajay and its affiliates have marketed iodine derivatives mainly in North America and Europe.

During 2020, progress was made on the TEA project development and environmental processing. In November 2021, SQM's TEA project was favorably classified by Tarapacá Region's Environmental Assessment Commission.

It involves an investment of USD350 million and aims to incorporate new mine areas for iodide, iodine and nitrate-rich salts production at Nueva Victoria mine, which will increase the total amount of caliche to be extracted and the use of water for these processes.

This project consists in modifying Nueva Victoria mine, which consists of:

a) New mine areas (43,586 ha approx.), with a caliche extraction rate of 28 Mtpy, resulting in a total of 65 Mtpy.

b) Two new iodide production plants (6,000 tpy each), for a total of 23,000 tpy.

c) One new iodine production plant (12,000 tpy) for a total of 23,000 tpy.

d) New evaporation ponds for the production of nitrate-rich salts (1,950,000 tpy) for a total of 4,000,000 tpy.

e) New iodine production plants for a total of 4,000,000 tpy.

f) New iodine production plants for a total of 4,000,000 tpy.

g) A new neutralization system, a seawater conveyance (900 L/s maximum) from Patillos Bay sector to the mining area.

h) A new electricity transmission line from the National Electricity System to the mining area.

15.1 Access to Production, Storage, and Port Loading Areas

The main access for vehicular traffic will be through a private existing road and A-760 Route. This private road will be accessed from Route 5. Access to Route A-760 may be from Route A-750 or from Route 5.

Additionally, the TEA Project considers two service roads - a road that connects the north-west sector (mine areas) with the coastal sector, where seawater suction works are located; and an internal road that will run from south to north, parallel to electric transmission line.

SQM's products and raw materials are transported by trucks, which are operated by third parties under long-term, dedicated contracts,

Iodine raw material, obtained from the same caliche used for nitrate production, is processed, packaged and stored exclusively at Nueva Victoria and Pedro de Valdivia facilities.

Iodine is packaged in FIBC drums and maxi-bags with an inner polyethylene bag and oxygen barrier. When transported, it is consolidated in containers and sent by truck to port terminals suitable for handling, mainly in Antofagasta, Mejillones, and Iquique.

They are then shipped to the different markets by container ship, or by truck to Santiago where iodine derivatives are produced at Ajay-SQM Chile's plants.

In Nueva Victoria, nitrate raw material is produced for potassium nitrate production at Coya Sur, whose plant, also owned by SQM, is located 161 km southwest of Nueva Victoria by road.

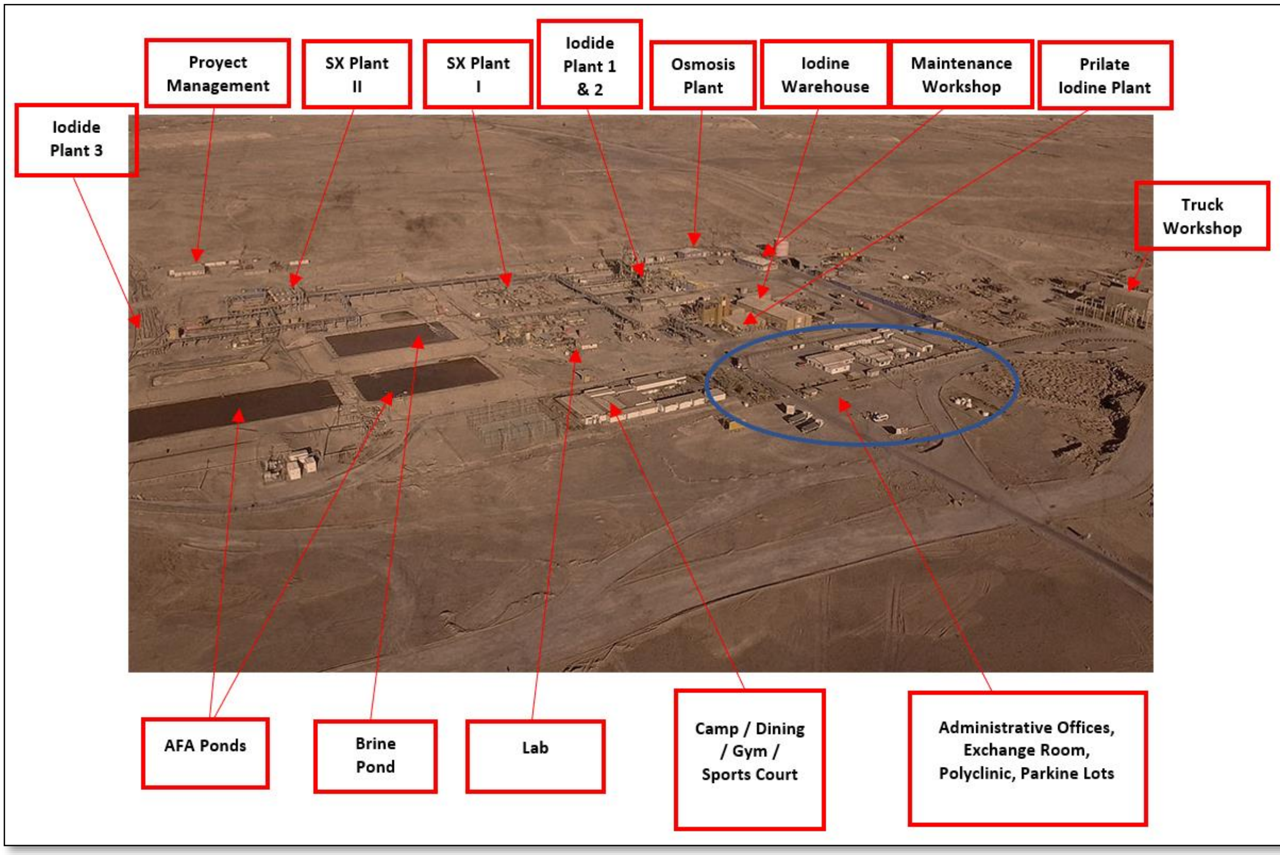
15.2 Production Areas and Infrastructure

The main facilities at Nueva Victoria are as follows:

- Caliche mining areas.
- Industrial water supply.
- Heap leaching operation.
- Iodide plants (Nueva Victoria and Iris properties).
- Industrial water supply.
- Evaporation ponds (Sur Viejo).
- Iodine production & prilling Plant NV (Nueva Victoria).
- Administrative and technical offices and training rooms.
- Medical facilities.
- Camp and associated facilities (gym, restaurant, etc.).
- Domestic waste disposal site.
- Hazardous waste yard.
- Non-hazardous industrial waste yard.

Figure 15-5 depicts the Nueva Victoria site layout.

Figure 15-5. Nueva Victoria Site Layout



The Nueva Victoria mining areas and process facilities are described in more detail below.

15.2.1 Caliche Mining Areas

Caliche ore is blasted and dug at Nueva Victoria and Iris. The minimum thickness of caliche ore that SQM will mine is 1.5 m. The ore deposits are mined on a 25-x-25-m grid pattern.

The surface area authorized for mining at Nueva Victoria is 408.5 km^2, this will increase to a total of 890 km^2 when the TEA expansion is approved. The surface area authorized for mining at Iris is 45.5 km^2. No expansion is planned at Iris.

Caliche extraction at Nueva Victoria is 37 Mtpy, with an additional 6.48 Mtpy at Iris. The overall mining rate at Nueva Victoria and Iris will increase to a total of 71.48 Mtpy with the incorporation of the TEA expansion.

15.2.2 Heap Leaching

- Heap leaching: platforms (normally 90- x-500 m) with parapets around the perimeter and with bottom waterproofed with HDPE membranes), are loaded with required caliche (between 400 to 1000 Mt) and are irrigated with different solutions (industrial water, industrial water + BF mix or Intermediate Solution).
- Mine Operation Centres (COM) represent a set of heap leaching facilities, with brine accumulation ponds (poor solution, intermediate solution and rich solution ponds), recirculated brine ponds, industrial water ponds and their respective pumping and impulsion systems.
- Auxiliary infrastructure includes general service facilities destined for workers.

15.2.3 Iodide Plants

Iodide production at the Nueva Victoria Iodide Plant totals 11 Ktpy. The Iris Iodide Plant produces an additional 2 Ktpy. When the TEA expansion is approved the combined Nueva Victoria plus Iris iodide production will reach 25 Ktpy.

The infrastructure at the iodide plants includes the following:

- Storage ponds to hold the brine received from the heap leaching operation.
- SO_2 generation units.
- Absorption towers with their respective pick-up tanks.
- SX units.
- Stripping system.
- Gas scrubbing system.
- BF storage ponds with their respective pumps.

15.2.4 Iodine Plant

The Iodine Plant at Nueva Victoria receives iodide from the iodide plants at Nueva Victoria and Iris. The current production capacity of the Nueva Victoria Iodine Plant is 11 ktpy. This will increase to 23 ktpy when the TEA expansion is approved.

The infrastructure at the iodine plant includes the following:

- Iodide storage ponds (concentrated, filtered or conditioned).
- Filters (perrin, or duplex plates).
- Activated carbon towers for iodide conditioning.
- Oxidizers.

- Reactors (for smelting, refining and prilling stages).
- Prilling towers.
- Prill grading sieving systems.
- Gas scrubbing system.
- Boiler room.
- Warehouse for packaging and temporary storage (product awaiting approval).
- Dispatch warehouse with a rack system for product storage.

15.2.5 Ancillary infrastructure at the Nueva Victoria COM

The following facilities are available for the storage of consumables used in the iodide and iodine plants:

- Sulfur stockpiles for the generation of sulfur dioxide.
- Kerosene tanks.
- Sulfuric acid tanks.
- Hydrogen peroxide storage tanks.
- Mobile storage tanks for chlorine.
- Oil storage tanks.
- Diesel storage tanks.
- Sulfonitric acid storage tanks.

The Nueva Victoria COM is also equipped with the following systems and infrastructure:

- Firefighting water system.
- Water storage tank with its respective pump and piping system distributed throughout the entire plant installation.
- Reverse osmosis system, including water storage tanks (industrial or drinking water).
- Generator room.
- Compressor room.
- Control room.
- Office building.
- Ponds used with intermediate process solutions.
- Equipment maintenance workshop.

- Vehicle maintenance workshop.
- Material and replacement parts yard.
- Electrical control rooms.

15.2.6 Evaporation Ponds

This facility, located in the industrial area of Sur Viejo, receives AFA piped 20 km from the iodide plant at Nueva Victoria.

Current production of high-nitrate salts at Nueva Victoria is 2.05 Mtpy. This is projected to increase to a total of 4 Mtpy when SQM receives the environmental permits for the TEA expansion.

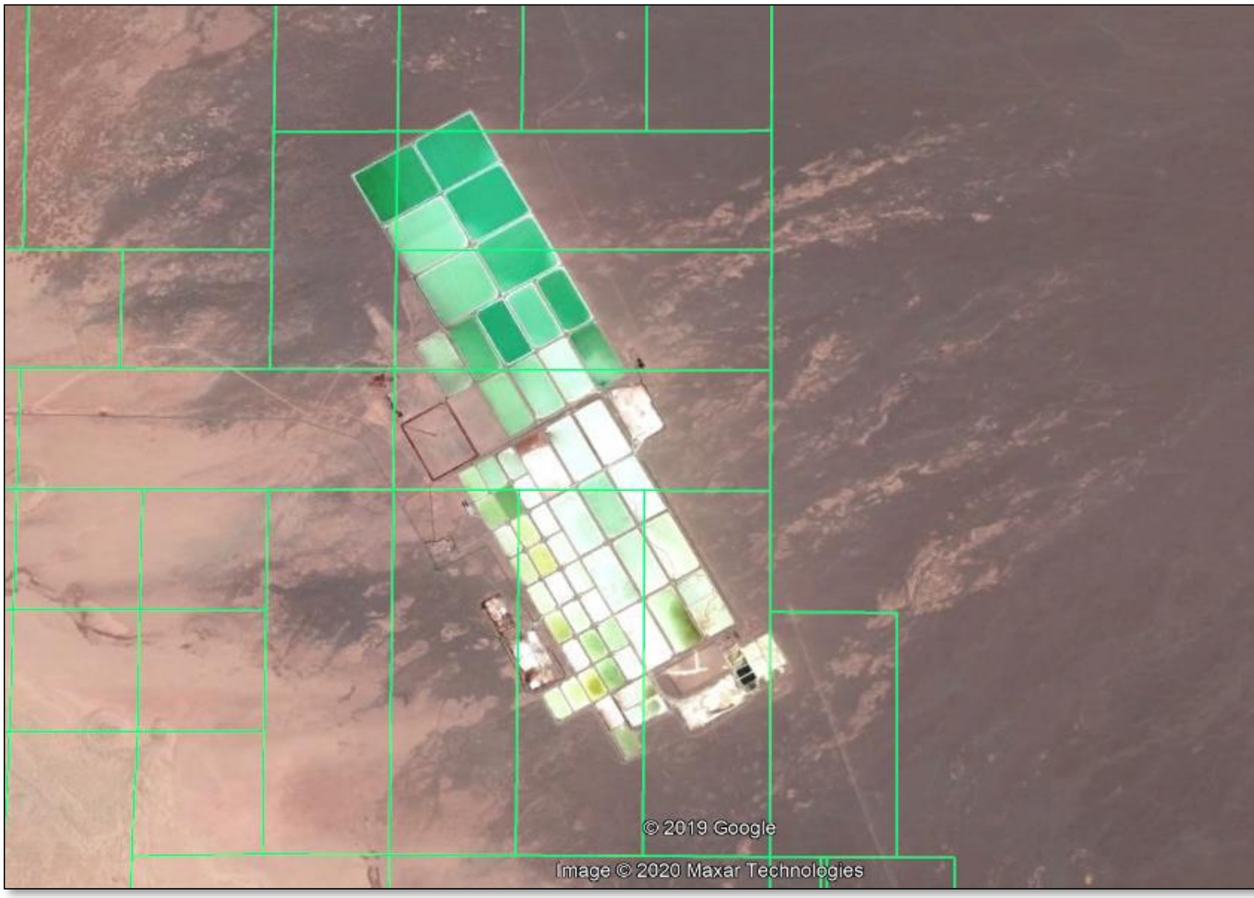
The current facility covers an area of 8.34 km^2, this will increase to a total of 18.51 km^2 once the TEA expansion is approved.

The evaporation ponds facility includes the following infrastructure:

- Neutralization Plant to raise the pH of the influent AFA.
- Solar evaporation ponds.
- Auxiliary facilities.

Figure 15-6 presents an aerial view of the evaporation ponds facility at Sur Viejo.

Figure 15-6. General View of the Evaporation Ponds at the Sur Viejo Industrial Area



Source: Provided by SQM

15.2.7 Neutralization Plant

AFA is neutralized by mixing it with a slurry of calcium hydroxide. Neutralization takes place in mixing ponds that discharge into ponds that allow sedimentation of solids in suspension, such as gypsum.

15.2.8 Solar Evaporation Ponds

Solar evaporation ponds are divided into pre-concentration ponds, production ponds and purge ponds. Figure 15-7 shows a panoramic view of a part of the solar evaporation ponds.

Figure 15-7. General View of Solar Evaporation Ponds in Sur Viejo

Source: Provided by SQM

In the pre-concentration ponds, discard salts precipitate, which are harvested and placed in discard salt stockpiles that have a waterproofed base to recover the solution from the squeezing or impregnation. Nitrate-rich salts precipitate in the production ponds are harvested and stockpiled in product ponds.

These nitrate-rich salts are shipped by truck to SQM's facilities in the Antofagasta Region.

15.2.9 Auxiliary Facilities

These include offices, bathrooms, dressing rooms and a cafeteria for personnel working there, a reverse osmosis plant and a sewage treatment plant (TAS).

15.2.10 Iris Iodine Plant

Located at the Iris COM, it includes the following infrastructure:

- Iodide plant
- Auxiliary installations
- Iodine plant

Figure 15-8 presents an aerial view of the Iris Iodine Plant.

Figure 15-8. General View of the Iris Iodine Plant Area

Source: Provided by SQM

For the production of iodin at Iris the plant that cover reception of raw materials to producing iodine prill as a final product.

The main equipment and infrastructure at the iodine plant are:

- SO_2 generation furnaces.
- Iodization absorption towers, each with its respective tank pick up, cooler and tank seal.
- Iodine reception tank from the iodization towers.
- Gas scrubber with its respective tank seal.
- Tank for primary cutting.
- Blow-out modules, consisting of absorption tower, desorption tower and NaOH tank.
- Concentrated iodide tank.
- BF pond for blow-out modules discard solution, with their respective pumps.
- Crystallizers (secondary cutting).
- Reactors (for smelting, refining and prilling stages).
- Prilling tower.
- Dryers and sifters.
- Boiler room.

Packaging and shipment facilities include:

- Packaging and transitory storage warehouse (product awaiting approval),
- Auxiliary facilities.

Storage facilities at the at Iris iodine plant include:

- Sulfur storage yard,
- Sulfuric acid tanks,
- Diesel oil tank,
- Caustic soda tank

Other infrastructure in the area of the plant include:

- Osmosis plant and water storage ponds,
- TAS plants (sewage treatment),
- Generator room,
- Compressors,
- Control room,

- Administrative offices,
- Ponds used with intermediate process solutions,
- Maintenance workshop,
- Camp and Offices.

In the industrial sectors of Nueva Victoria and Iris, the following annexed facilities are available:

- General office facility,
- Offices,
- Training room,
- Cafeteria,
- Camp,
- Warehouse,
- Domestic waste disposal site,
- Hazardous waste yard and
- Non-hazardous industrial waste yard.

15.3 Communications

The facilities have telephone, internet and television services via satellite link or by fibre optics supplied by an external provider.

Communication for operations staff is via communication radios with the same frequency.

Communication to the control system, CCTV, internal telephony, energy and data monitoring is via its own fibre optics, which connects process plants and control rooms.

15.3.1 Information Systems and IT

In addition to the facilities mentioned above, SQM operates several computer and information systems that connect its main subsidiaries to operational and administrative facilities in Chile and other parts of the world. IT and information systems are mainly used for finance, accounting, human resources, supply and inventory tracking, invoicing, quality control, research activities, as well as production and maintenance process control. The mainframe computer system is located at Santiago offices and Chilean and international subsidiaries are interconnected with each other through data links.

15.4 Water Supply

Water for Nueva Victoria's facilities is obtained from ground water ponds near the production facilities. Currently, a new EIA TEA has been submitted to increase production, which considers seawater from an aqueduct to be constructed by SQM.

For industrial water supply, there are groundwater extraction ponds in Salar de Sur Viejo, Pampa del Tamarugal and Salar de Llamara, whose water rights have been approved as shown in Table 15-1:

Table 15-1. Approved Water Rights by Sector

Ponds Location Sector	Approved Water Right (L/s)
Salar de Sur Viejo	171,5
Pampa del Tamarugal	321,6
Salar de Llamara	244,7
Total	737,8

The current authorized groundwater extraction for industrial use is 810.8 L/s, increasing by an additional 900 L/s due to seawater conveyance (TEA project), reaching a total of 1,710.8 L/s for industrial use.

The average water abstraction records (L/s) during 2020 and part of 2021 are included in Table 15-2.

Table 15-2. Average Water Extraction by Sector

Water Resource Sector	Groundwater pumping rate, 2020 (L/s)	Groundwater pumping rate, Jan to Oct 2021 (L/s)
Salar de Sur Viejo	104.68	106.50
Pampa del Tamarugal	304.89	309.30
Salar de Llamara	225.48	220.62
Total	635.05	636.42

A network of pipelines, pumping stations, and power lines are used for water extraction, pumping, and transport to storage ponds, and from there to the different points where it is required. Average water consumption is 551 l/s.

The difference between extraction of 635 L/s compared to consumption of 551 L/s, in other words, 84 L/s (approximately 2,649,024 m^3/year) is accumulated in pools and/or ponds.

15.5 Water Treatment

The volume of treated water at the wastewater treatment plant in 2019 was 11,738 cubic meters.

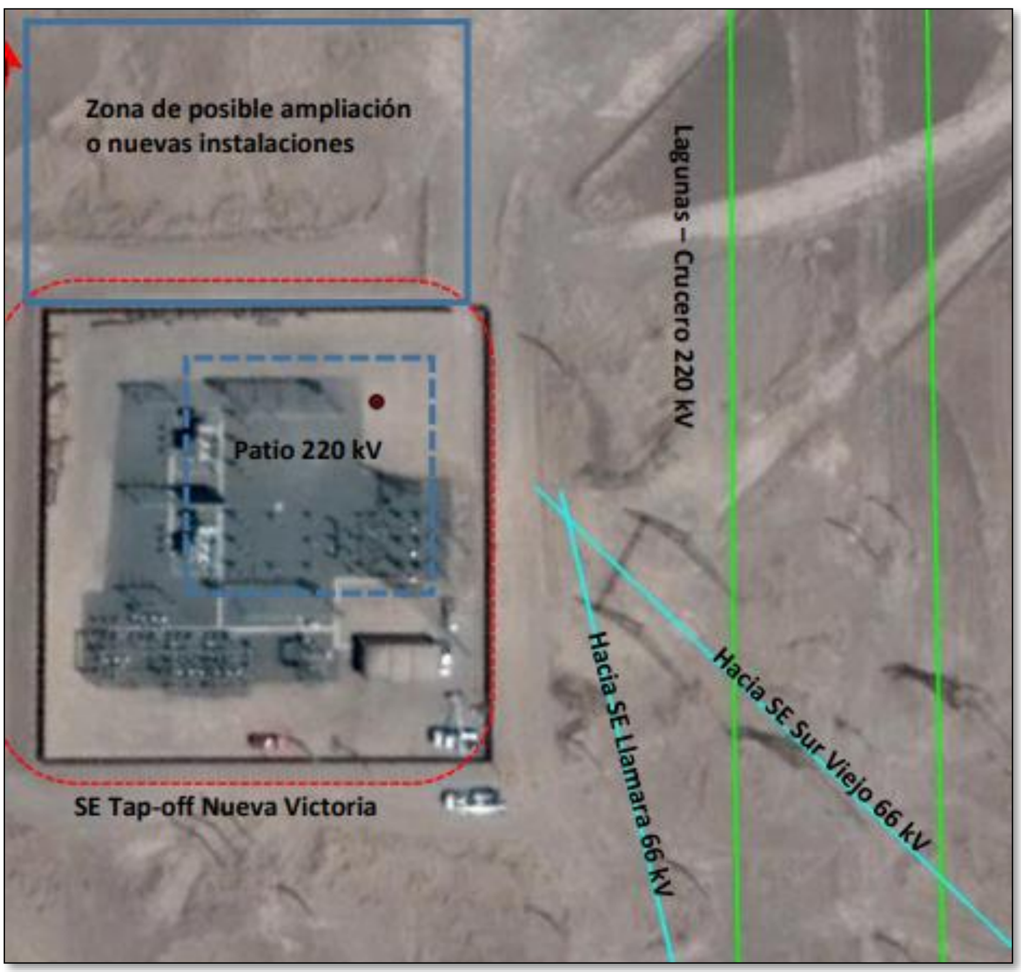
Mining waste generated at the site correspond to depleted heap leaching, overburden, and waste salts.

15.6 Power Supply

These facilities, shown in Figure 15-9, are connected to the National Electric System, Arica-Diego de Almagro area. The electrical system in the north of the country is called "Sistema Interconectado Norte Grande" or SING.

Nueva Victoria Tap-Off Substation has 220-, 66-, and 23-kV high-voltage yards in single bus configuration. It is currently connected to Circuit No. 1 of the Lagunas - Crucero 220-kV National Transmission Line, and also to the line, called Lagunas - Nueva Victoria, with 220-kV voltage and 211-MVA capacity.

Figure 15-9. Geographical location of S/E Tap Off Nueva Victoria



Source: Provided by SQM

16 MARKET STUDIES

This section contains forward-looking information related to commodity demand and prices for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this section including prevailing economic conditions, commodity demand and prices are as forecasted over the LOM period.

16.1 The Company

SQM is the world's largest producer of potassium nitrate and iodine and one of the world´s largest lithium producers. It also produces specialty plant nutrients, iodine derivatives, lithium derivatives, potassium chloride, potassium sulfate and certain industrial chemicals (including industrial nitrates and solar salts). The products are sold in approximately 110 countries through SQM worldwide distribution network, with more than 90% of the sales derived from countries outside Chile.

The business strategy is to maintain the world leadership position in the market for iodine, potassium nitrate, lithium and salts.

The products are mainly derived from mineral deposits found in northern Chile. Mine and process caliche ore and brine deposits.

From the caliche ore deposits, SQM produces a wide range of nitrate-based products used for specialty plant nutrients and industrial applications, as well as iodine and its derivatives.

The SQM´s products are divided into six categories:

- specialty plant nutrients,
- iodine and its derivatives,
- industrial chemicals,
- lithium and its derivatives,
- potassium chloride and potassium sulfate,
- other commodity fertilizers.

The following table presents the percentage breakdown of SQM's revenues for 2020, 2019 and 2018 according to the product lines:

Table 16-1. Percentage breakdown of SQM's revenues for 2020, 2019, and 2018

Revenue Breakdown	2020	2019	2018
Specialty Plant Nutrition	39.2%	37.9%	35.3%
Lithium and derivatives	21.4%	26.5%	33.1%
Iodine and derivatives	18.7%	19.4%	14.7%
Potassium	11.7%	11.1%	12.1%
Industrial Chemicals	9.0%	5.0%	4.9%

16.2 Iodine and its Derivatives, Markets, Competition, Products, Customers

SQM is one of the world's leading producers of iodine and its derivatives, which are used in a wide range of medical, pharmaceutical, agricultural and industrial applications, including x-ray contrast media, polarizing films for liquid crystal displays (LCD/LED), antiseptics, biocides and disinfectants, in the synthesis of pharmaceuticals, electronics, pigments and dye components.

In 2020, the SQM´s revenues from iodine and iodine derivatives amounted to US$334.7 million, representing 18.4% of the total revenues in that year. It is estimated that SQM´s sales accounted for approximately 28% of global iodine sales by volume in 2020.

SQM's strategy for the iodine business is:

i. To achieve and maintain sufficient market share to optimize the use of the available production capacity.

ii. Encourage demand growth and develop new uses for iodine.

iii. Participate in the iodine recycling projects through the Ajay-SQM Group ("ASG"), a joint venture with the US company Ajay Chemicals Inc. ("Ajay").

iv. Reduce the production costs through improved processes and increased productivity to compete more effectively.

v. Provide a product of consistent quality according to the requirements of the customers.

16.2.1 Iodine Market

Iodine and iodine derivatives are used in a wide range of medical, agricultural and industrial applications as well as in human and animal nutrition products. Iodine and iodine derivatives are used as raw materials or catalysts in the formulation of products such as X-ray contrast media, biocides, antiseptics and disinfectants, pharmaceutical intermediates, polarizing films for LCD and LED screens, chemicals, organic compounds and pigments. Iodine is also added in the form of potassium iodate or potassium iodide to edible salt to prevent iodine deficiency disorders.

X-ray contrast media is the leading application of iodine, accounting for approximately 23% of demand. Iodine's high atomic number and density make it ideally suited for this application, as its presence in the body can help to increase contrast between tissues, organs, and blood vessels with similar X-ray densities. Other applications include pharmaceuticals, which account for 13% of demand; LCD and LED screens, 12%; iodophors and povidone-iodine, 9%; animal nutrition, 8%; fluoride derivatives, 7%; biocides, 6%; nylon, 4%; human nutrition, 4% and other applications, 14%.

Japan has the world's largest reserves of iodine, contained in brines rich in sodium iodide (NaI) in natural gas wells east of Tokyo, and estimated at 5 million tonne of contained iodine. For reasons of geotechnical stability of the wells, the extraction of brine has a controlled flow, so its production is limited in its level current.

Iodine resources in Chile are found in the nitrate deposits of the regions of Tarapacá and Antofagasta, in the form of calcium iodate, $Ca(IO_3)_2$ in typical concentrations of 400 ppm (0.04% iodine by weight). It is obtained in co-production with sodium nitrate. The reserves in these deposits are estimated at 1.8 million tonne of iodine, the second largest reserves in the world.

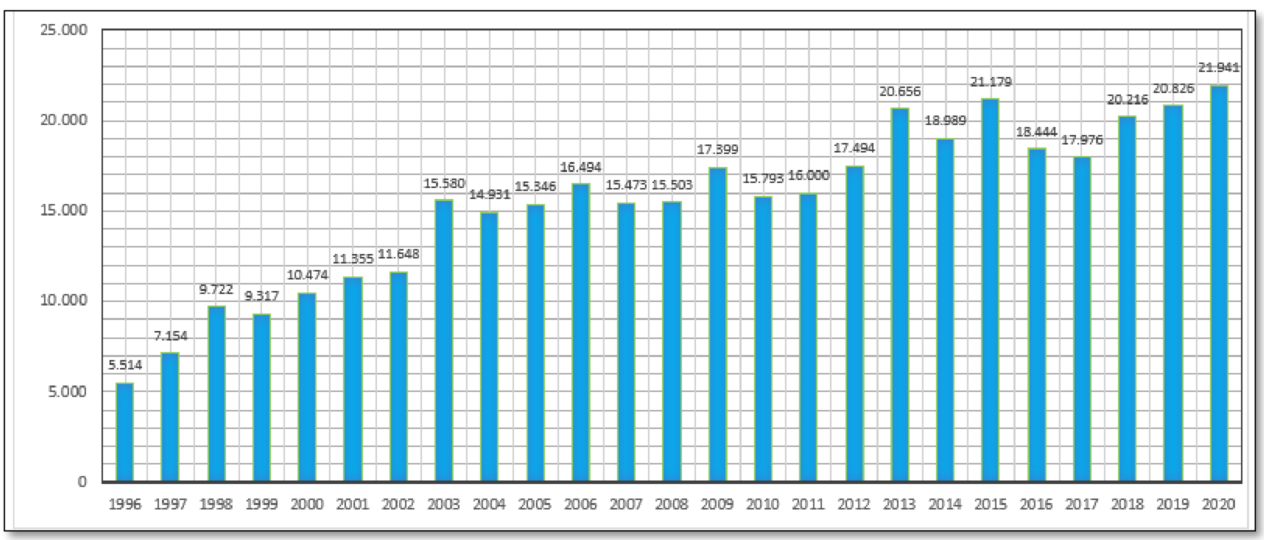
The USA has similar resources in its type to Japan, but to a lesser extent (250,000 tonne).

During 2020, iodine demand was impacted significantly due to the economic crisis caused by COVID-19, with total global demand decreasing by approximately 9% to 33,200 metric tonne, of which 9,700 were sold by SQM.

Although the decrease in demand occurred across product lines, two uses of iodine had growth compared to 2019: the use of povidone-iodine grew by 6%, and the use of iodine for human nutrition grew by 1%. It is expected that most iodine applications will begin to recover demand during the course of 2021.

Figure 16-1 shows the production of iodine and its derivatives in Chile, from 1996 to 2020.

Figure 16-1. Annual Iodine Production in Chile and Derivates 1996-2020 (tonnes)



Source: Chilean Copper Commission Non-Metallic Mining Statistics.

16.2.2 Iodine: Products

SQM produces iodine in the Nueva Victoria plant, near Iquique, and in Pedro de Valdivia plant, close to María Elena. The production capacity is 14,800 metric tonne of iodine per year, including the Iris plant, which is located near the Nueva Victoria plant.

Through ASG, SQM produces organic and inorganic iodine derivatives. ASG was established in the mid-1990s and has production plants in the United States, Chile and France. ASG is one of the world's leading inorganic and organic iodine derivatives producer.

Consistent with the business strategy, SQM works on the development of new applications for iodine-based products, pursuing a continuing expansion of the businesses and maintaining the market leadership.

SQM manufactures its iodine and iodine derivatives in accordance with international quality standards and have qualified its iodine facilities and production processes under the ISO 9001:2015 program, providing third party certification of the quality management system and international quality control standards that SQM has implemented.

SQM´s revenues decreased to US$334.7 million in 2020 from US$371.0 million in 2019. This decrease was primarily attributable to lower sales volumes during 2020. SQM's sales volumes decreased 24.1% in 2020. Average iodine prices were about 18.9% higher in 2020 than in 2019.

Table 16-2 shows the total sales volumes and revenues from iodine and iodine derivatives for 2020, 2019 and 2018:

Table 16-2. Iodine and derivates volumes and revenues, 2018-2020

	2020	2019	2018
Sales volumes (thousands of metric tonne)			
Iodine and derivatives	9.7	12.7	13.3
Total revenues (in US$ millions)	334.7	371.0	325.0

16.2.3 Iodine Marketing and Customers

In 2020, SQM sold iodine products in 47 countries to 250 customers, and most of the sales were in exports. Two customers each accounted for more than 10% of the iodine revenues in 2020 accounting for approximately 42% of revenues. The ten largest customers accounted for approximately 77% of total revenues.

Table 16-3 shows the geographical breakdown of the revenues:

Table 16-3. Geographical breakdown of the revenues

Revenues breakdown	2020	2019	2018
North America	27%	24%	26%
Europe	42%	33%	34%
Chile	0%	0%	0%
Central and South America (excluding Chile)	3%	2%	2%
Asia and Others	27%	40%	37%

Note: Totals may not add to 100% due to rounding

SQM sells iodine through its own worldwide network of representative offices and through its sales, support and distribution affiliates. SQM maintains inventories of iodine at its facilities throughout the world to facilitate prompt delivery to customers. Iodine sales are made pursuant to spot purchase orders or within the framework of supply agreements. Supply agreements generally specify annual minimum and maximum purchase commitments, and prices are adjusted periodically, according to prevailing market prices.

16.2.4 Iodine Competition

The world's main iodine producers are based in Chile, Japan and the United States. Iodine is also produced in Russia, Turkmenistan, Azerbaijan, Indonesia and China.

Iodine is produced in Chile using a unique mineral known as caliche ore, whereas in Japan, the United States, Russia, Turkmenistan, Azerbaijan, and Indonesia, producers extract iodine from underground brines that are mainly obtained together with the extraction of natural gas and petroleum. In China, iodine is extracted from seaweed.

Five Chilean companies accounted for approximately 55% of total global sales of iodine in 2020, including SQM, with approximately 28%, and four other producers accounting for the remaining 27%.

The other Chilean producers are Atacama Chemical S.A. (Cosayach), controlled by the Chilean holding company Inverraz S.A.; ACF Minera S.A., owned by the Chilean Urruticoechea family; Algorta Norte S.A., a joint venture between ACF Minera S.A. and Toyota Tsusho; and Atacama Minerals, which is owned by Chinese company Tewoo.

Eight Japanese iodine producers accounted for approximately 28% of global iodine sales in 2020, including recycled iodine. Iodine producers in the United States (one of which is owned by Toyota Tsusho and another by Ise Chemicals Ltd., both of which are Japanese companies) accounted for nearly 5% of world iodine sales in 2020.

Iodine recycling is a growing trend worldwide. Several producers have recycling facilities where they recover iodine and iodine derivatives from iodine waste streams.

It is estimated that 19% of the iodine supply comes from iodine recycling. SQM, through ASG or alone, is also actively involved in the iodine recycling business using iodinated side streams from a variety of chemical processes in Europe and the United States.

The prices of iodine and iodine derivative products are determined by market conditions. World iodine prices vary depending upon, among other things, the relationship between supply and demand at any given time. Iodine supply varies primarily as a result of the production levels of the iodine producers and their respective business strategies.

The price of iodine recovered from the lows of US$ 12/kg registered in 2003, stabilizing between US$ 22/kg and US$ 26/Kg in 2006-2010, and then enjoying significant growth in 2011 and 2012, exceeding US$ 52/Kg. The reason for this increase is mainly attributed to the explosive demand registered as a result of the earthquake in Japan that affected nuclear power plants, forcing the supply of iodine (potassium iodide tablets) to the population to avoid thyroid complications due to effects of possible nuclear radiation. In 2013 there was a fall in price attributed to a more stabilized demand and to the greater Chilean supply available, which led to the price of iodine moderating between levels registered between 2010 and 2012, in line with market fundamentals.

The annual average iodine sales prices increased to approximately US$35/kg in 2020, from the average sales prices of approximately US$29/kg observed in 2019 and US$24/kg in 2018.

During 2021, the demand for iodine recovered to pre-pandemic levels, and sales volumes per SQM were close to 12,000 tonnes, with a price close to US$35/kg. The QP has determined that using $35/kg for iodine at the port of Tocopilla is the best price for this study.

Demand for iodine varies depending upon overall levels of economic activity and the level of demand in the medical, pharmaceutical, industrial and other sectors that are the main users of iodine and iodine-derivative products. Certain substitutes for iodine are available for certain applications, such as antiseptics and disinfectants, which could represent a cost-effective alternative to iodine depending on prevailing prices.

The main factors of competition in the sale of iodine and iodine derivative products are reliability, price, quality, customer service and the price and availability of substitutes. SQM has competitive advantages over other producers due to the size and quality of its mineral reserves and the production capacity available. Iodine is competitive with that produced by other manufacturers in certain advanced industrial processes. SQM also benefits from the long-term relationships it has established with its main clients.

16.3 Nitrates

Nitrates are obtained in Chile from the exploitation of the fields of nitrates that are in a strip of approximately 700 km long by 30-50 km wide, which is in the north of Chile, to the east of the Cordillera de la Costa, in the regions of Tarapacá and Antofagasta. This is the only area in the world where nitrate deposits have reserves and resources with economic content, where it is feasible to obtain different products, such as sodium nitrate, potassium nitrate, iodine, and sodium sulfate. The ore, called caliche, usually occurs naturally as a dense, hard surface layer of salt-cemented sands and gravels, with variable thicknesses between 0.5 m to 5 m.

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Nitrates, in general, are considered specialty fertilizers because they are applied in a relatively narrow range of crops where it is possible to obtain higher yields and better products in their crops compared to massive fertilizers (urea and others).

Potassium nitrate is the main nitric fertilizer due to the combination of two primary nutrients, Nitrogen (N) and Potassium (K). Other nitric fertilizers are nitrate of sodium, ammonium nitrate and calcium nitrate. Nitrates account for less than 1% of the world market for nitrogenous fertilizers.

The most relevant crops for the potassium nitrate market are fruits, vines, citrus, tobacco, cotton and vegetables, where higher yields and specific benefits are achieved such as improvements in color, flavor, skin strength, disease resistance, etc.

Potassium nitrate competes favorably against ammonia fertilizers in certain markets due to its advantage in the solubility and speed of assimilation by the plants. These properties have been key to gaining a solid position in the applications of drip irrigation and foliar fertilization that are applied in specialty crops with higher market value.

In addition, sodium nitrate, historically recognized in the international market as "Salitre de Chile", fulfills functions like potassium nitrate, although the functionality of the sodium is more limited. For this reason, it has been losing market share to potassium nitrate.

Nitrates can be modified by adding other functional nutrients, such as phosphorus, sulfur, boron, magnesium, silicon, etc., to enhance certain fertilizer properties for more specific crops.

Sodium and potassium nitrates also have industrial applications based on their chemical properties.

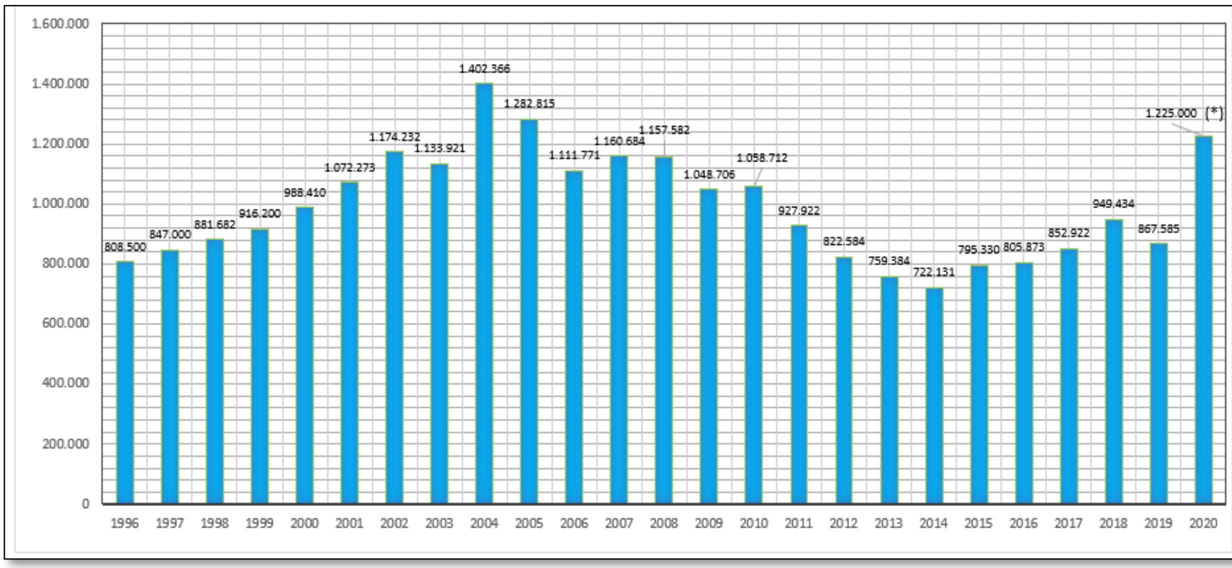
The alkaline oxides of sodium and potassium (Na_2O and K_2O) lend themselves to the special requirements of the glass industry. The nitrate, rich in oxygen, strengthens the oxidizing properties. Its main industrial applications are found in high-resolution glasses for TV screens and computers, ceramics, explosives, charcoal briquettes, metal treatment and various chemical processes as a powerful industrial oxidant.

It is relevant to mention the great growth potential of the application of nitrates in solar thermal installations, where it plays the role of a heat accumulator that allows capturing the solar energy in the day and release heat at night to allow almost continuous operation of power generation plants. The most efficient solar salt for this purpose is a mixture of 60% by weight of sodium nitrate and 40% of potassium nitrate.

In Chile, the main companies producing nitrate are SQM, Cosayach and ACF. However, it is estimated that SQM produces close to 95% of the nitrates produced in Chile.

Figure 16-2 shows the production of nitrates in Chile, from 1996 to 2020.

Figure 16-2. Annual nitrate Production in Chile from 1996-2020 (tonnes)



Source: Chilean Copper Commission Non-Metallic Mining Statistics.

(*): value considers the production of nitrates in fertilizer and in the chemical industry.

In 2020, SQM supplied more than 1,000,000 tonnesnes of nitrates to the Specialty Plant Nutrition market and nearly 225,000 tonne of nitrates to the Industrial chemicals market.

It is estimated that the Chilean participation in the potassium nitrate market is between 47% and 53% of world sales. It should be noted that Chilean natural nitrates, although unique in nature, must compete on the international market with similar products of synthetic origin, produced mainly in Israel, Jordan and China.

The price of nitrates has varied from US$241/tonne registered in 2003, reaching US$400/tonne in 2006 and 2007, and stabilizing between US$650/tonne and US$900/tonne in 2009-2019. In 2020 the price for Specialty Plant Nutrition was on average US$677/tonne and for Industrial Chemicals was US$713/tonne.

16.3.1 Specialty Plant Nutrition, Market, Competition, Products, Customers

Specialty Plant Nutrients are premium fertilizers that allow farmers to improve their yields and the quality of certain crops. In 2020, SQM's revenues from the sale of specialty plant nutrients was US$701.7 million, representing 39% of the total revenues for that year.

SQM produces four main types of specialty plant nutrients that offer nutritional solutions for fertigation, soil and foliar applications: potassium nitrate, sodium nitrate, sodium potassium nitrate and specialty blends. In addition, SQM markets other specialty fertilizers including third-party products.

All these products are commercialized in solid or liquid form, for use mainly in high-value crops such as fruits, flowers and certain vegetables.

These fertilizers are widely used in crops using modern farming techniques such as hydroponics, greenhouses, foliar-applied crops and fertigation (fertilizer dissolved in water before irrigation).

Specialty plant nutrients have certain advantages over commodity fertilizers. These include rapid and effective absorption (no need for nitrification), higher water solubility, alkaline pH (which reduces soil acidity), and low chloride content.

One of the most important products in the field of specialty plant nutrients is potassium nitrate, which is available in crystallized and granulated (prilled) form, which allows different application methods. Crystalline potassium nitrate products are ideal for application by fertigation and foliar applications. Potassium Nitrate Granules are suitable for direct use in soil.

SQM has developed brands for marketing according to the different applications and uses of the products. The main brands are: UltrasolR (fertigation), QropR (soil application), SpeedfolR (foliar application) and AllganicR (organic agriculture).

The new needs of more sophisticated customers demand that the industry provide integrated solutions rather than individual products. The products, including customized specialty blends that meet specific needs along with the agronomic service provided, to create plant nutrition solutions that add value to crops through higher yields and better-quality production.

Because SQM products come from natural nitrate deposits or natural potassium brines, they have certain advantages over synthetically produced fertilizers. One of these advantages is the presence in the products of certain beneficial micronutrients, valued by those customers who prefer products of natural origin.

As a result, specialty plant nutrients are sold at a premium price compared to commodity fertilizers.

SQM's strategy in the specialty plant nutrition business is:

i. Leveraging the advantages of the specialty products over commodity-type fertilizers.

ii. Selectively expanding the business by increasing sales of higher-margin specialty plant nutrients based on potassium and natural nitrates, particularly soluble potassium nitrate and specialty blends.

iii. Pursuing investment opportunities in complementary businesses to enhance the product portfolio, increase production, reduce costs, and add value to the marketing of the products.

iv. Developing new specialty nutrient blends produced at the mixing plants that are strategically located in or near the principal markets to meet specific customer needs.

v. Focusing primarily on the markets where SQM can sell plant nutrients in soluble and foliar applications to establish a leadership position.

vi. Further developing the global distribution and marketing system directly and through strategic alliances with other producers and global or local distributors.

vii. Reducing production costs through improved processes and higher labor productivity to compete more effectively.

viii. Supplying a product with consistent quality according to the specific requirements of customers.

Specialty plant Nutrition: Market

The target market for the specialty plant nutrients includes producers of high-value crops such as vegetables, fruits, industrial crops, flowers, cottonnes and others. Furthermore, SQM sells specialty plant nutrients to producers of chloride-sensitive crops.

Since 1990, the international market for specialty plant nutrients has grown at a faster rate than the international market for commodity-type fertilizers. This is mainly due to:

i. The application of new agricultural technologies such as fertigation, hydroponics and greenhouses.

ii. The increase in the cost of land and the scarcity of water, which has forced farmers to improve their yields and reduce water use.

iii. The increase in the demand for higher quality crops.

Over the last ten years the compound annual growth rate for per capita vegetable production was 3% while the same rate for the world population was close to 1%.

The global scarcity of water and arable land is driving the development of new agricultural techniques to maximize the use of these resources. An example of this is the more efficient use of water. While total irrigation has grown at an annual average of 1% over the last 20 years (like population growth), micro-irrigation (more efficient in water use) has grown by 10% per year in the same period. Micro-irrigation systems, which include drip irrigation and micro-sprinklers, are the most efficient forms of technical irrigation. These applications require fully water-soluble plant nutrients. The specialty nitrate-based plant nutrients are fully water soluble and provide nitric nitrogen, which allows faster nutrient uptake by the crop than when using urea or ammonium-based fertilizers. This facilitates the efficiency in the consumption of nutrients in the plant and, therefore, increases the yield of the harvest and improves its quality.

The lowest global share of hectares under micro-irrigation over total irrigated hectares is recorded in Asia with a figure of around 3%. This means that there is a high potential for the introduction of this technology in the region in the next years.

China is an important market for potassium nitrate though agricultural demand for this product is largely met by local producers. The demand for potassium nitrate in the China is expected to be approximately 400,000 to 420,000 metric tonnesnes, of which approximately 130,000 metric tonnesnes are linked to the tobacco industry and approximately another 120,000 metric tonnesnes are related to horticulture. Of this total, between 15,000 and 35,000 metric tonnesnes of potassium nitrate correspond to imports.

Specialty plant Nutrition: Products

Potassium nitrate, sodium potassium nitrate, and specialty blends are higher margin products that use sodium nitrate as a feedstock. These products can be manufactured in crystallized or prilled form. Specialty blends are produced using the company's own specialty plant nutrients and other components at blending plants operated by the Company or its affiliates and related companies in Brazil, Chile, China, Spain, the United States, the Netherlands, Italy, Mexico, Peru and South Africa.

The following table shows sales volumes and revenue for specialty plant nutrients for 2020, 2019 and 2018:

Table 16-4. Sales volumes and revenue for specialty plant nutrients, 2020, 2019, 2018

	2020	2019	2018
Sales volumes (thousands of metric tonnes)			
Sodium nitrate	25.6	30.2	25.0
Potassium nitrate and Sodium potassium nitrate	575.2	617.4	673.4
Specialty blends	271.3	238.9	242.5
Blended nutrients and other specialty plant nutrients	164.4	155.3	141.6
Total revenues (in US$ millions)	**701.7**	**723.9**	**781.8**

In 2020, SQM's revenues from the sale of specialty plant nutrients decreased to US$701.7 million, representing 39% of the total revenues for that year and 3.1% less than US$723.9 million for sales of the previous year. Average prices during 2020 were down approximately 2.6%.

It is estimated that SQM's sales volume of potassium nitrate marketed during 2020 represented close to 50% of the total potassium nitrate marketed in the world for all its applications (including agricultural use). During 2020, the agricultural potassium nitrate market increased approximately 5% when compared to 2019. These estimates do not include potassium nitrate produced and sold locally in China, only Chinese net imports and exports.

Depending on the application systems used to deliver specialty nutrients, fertilizers can be classified as granular (also known as specialty field fertilizer [SFF]) or soluble (also known as water soluble fertilizer [WSF]).

Granulated specialty nutrients are those for direct application to the soil, either manually or mechanically. These are highly soluble, are free of chloride and do not present acid reactions, which makes them especially recommended for tobacco, potatoes, coffee, cotton, and for various fruit trees and vegetables.

In the soluble line, the specialty nutrients are typically incorporated into irrigation systems. Due to the high-tech characteristics of these irrigation systems, the products used must be highly soluble, highly nutritional, free of impurities and insoluble particles, and with a low salt index. Potassium nitrate stands out in this segment, which, due to its optimal balance of nitric nitrogen and chloride-free potassium (the two macronutrients most required by plants), becomes an irreplaceable source for crop nutrition under technical irrigation systems.

Potassium nitrate is widely known to be a vital component in foliar applications, where it is recommended to prevent nutritional deficiencies before the appearance of the first symptoms, to correct deficiencies and increase resistance to pests and diseases, to prevent stress situations and promote a good balance of fruits and/or plant growth along with its development, especially in crops affected by physiological disorders.

Specialty Plant Nutrition: Marketing and Customers

In 2020, SQM sold specialty plant nutrients in approximately 102 countries and to more than 1,100 customers. No customer represented more than 10% of specialty plant nutrition revenues during 2020, and the ten largest customers accounted in the aggregate for approximately 33% of revenues during that period. No supplier accounted for more than 10% of the costs of sales for this business line.

Sales breakdown	2020	2019	2018
North America	35%	34%	31%
Europe	21%	21%	26%
Chile	14%	15%	14%
Central and South America (excluding Chile)	10%	11%	10%
Asia and Others	20%	20%	19%

Note: Totals may not add 100% due to rounding

The following table shows the geographical breakdown of the sales:

Table 16-5. Geographical breakdown of the sales

Sales breakdown	2020	2019	2018
North America	35%	34%	31%
Europe	21%	21%	26%
Chile	14%	15%	14%
Central and South America (excluding Chile)	10%	11%	10%
Asia and Others	20%	20%	19%

SQM sells specialty plant nutrition products worldwide mainly through its own global network of sales offices and distributors.

Specialty Plant Nutrition: Competition

SQM is the largest producer of sodium nitrate and potassium nitrate for agricultural use in the world. The main competitive factors in potassium nitrate sales are product quality, customer service, location, logistics, agronomic expertise, and price.

Sodium nitrate products compete indirectly with specialty substitutes and other commodities, which may be used by some customers instead of sodium nitrate depending on the type of soil and crop to which the product will be applied. Such substitute products include calcium nitrate, ammonium nitrate and calcium ammonium nitrate.

In the potassium nitrate market, SQM´s largest competitor is Haifa Chemicals Ltd. ("Haifa"), in Israel, which is a subsidiary of Trans Resources International Inc. It is estimate that sales of potassium nitrate by Haifa accounted for approximately 18% of total world sales during 2020 (excluding sales by Chinese producers to the domestic Chinese market). SQM's sales represented approximately 48% of global potassium nitrate sales by volume for the period.

ACF, another Chilean producer, mainly oriented to iodine production, has been producing potassium nitrate from caliche and potassium chloride since 2005.

Kemapco, a Jordanian producer owned by Arab Potash, produces potassium nitrate in a plant located close to the Port of Aqaba, Jordan.

In addition, there are several potassium nitrate producers in China, the largest of which are Yuantonnesg and Migao. Most of the Chinese production is consumed by the Chinese domestic market.

In Chile, the products mainly compete with imported fertilizer blends that use calcium ammonium nitrate or potassium magnesium sulfate. Specialty plant nutrients also compete indirectly with lower-priced synthetic commodity-type fertilizers such as ammonia and urea, which are produced by many producers in a highly price-competitive market. Products compete on the basis of advantages that make them more suitable for certain applications as described earlier.

16.3.2 Industrial Chemicals, Market, Competition, Products, Customers

In 2020, the SQM´s revenues from Industrial Chemicals sales amounted to US$160,6 million, representing 8,8% of the total revenues for that year.

SQM produces and markets three industrial chemicals: sodium nitrate, potassium nitrate and potassium chloride.

Sodium nitrate is mainly used in the production of glass and explosives, in metal treatments, metal recycling and the production of insulating materials, among others.

Potassium nitrate is used as a raw material to produce frits for ceramic and metal surfaces, in the production of special glasses, in the enamel industry, metal treatment and pyrotechnics.

Solar salts, a combination of potassium nitrate and sodium nitrate, are used as a thermal storage medium in concentrated solar power plants.

Potassium chloride is a basic chemical used to produce potassium hydroxide, and it is also used as an additive in oil drilling as well as in food processing, among other uses.

In addition to producing sodium and potassium nitrate for agricultural applications, SQM produces different grades of these products, including prilled grades, for industrial applications. The grades differ mainly in their chemical purity.

At SQM there is some operational flexibility in the production of industrial nitrates because they are produced from the same process as their equivalent agricultural grades, needing only an additional step of purification.

SQM, with certain constraints, shift production from one grade to the other depending on market conditions. This flexibility allows to maximize yields and to reduce commercial risk.

In addition to producing industrial nitrates, SQM produces, markets and sells industrial potassium chloride.

The strategy in industrial chemical business is to:

- (i) Maintain the leadership position in the industrial nitrates market.
- (ii) Encourage demand growth in different applications as well as exploring new potential applications.
- (iii) Be a reliable supplier for the thermal storage industry, maintaining close relationships with R&D programs and industrial initiatives.
- (iv) Reduce production costs through improved processes and higher productivity to compete more effectively
- (v) Supply a product with consistent quality according to the requirements of the customers.

Industrial Chemicals: Market

Industrial sodium and potassium nitrates are used in a wide range of industrial applications, including the production of glass, ceramics and explosives, metal recycling, insulation materials, metal treatments, thermal solar and various chemical processes.

In addition, this product line has also experienced growth from the use of industrial nitrates as thermal storage in concentrated solar power plants (commonly known as "concentrated solar power" or "CSP"). Solar salts for this specific application contain a blend of 60% sodium nitrate and 40% potassium nitrate by weight ratio and are used as a storage and heat transfer medium. Unlike traditional photovoltaic plants, these new plants use a "thermal battery" that contains molten sodium nitrate and potassium nitrate, which store the heat collected during the day. The salts are heated up during the day, while the plants are operating under direct sunlight, and at night they release the solar energy that they have captured, allowing the plants to operate even during hours of darkness. Depending on the power plant technology, solar salts are also used as a heat transfer fluid in the plant system and thereby make CSP plants even more efficient, increasing their output and reducing the Levelized Cost of Electricity (LCOE).

A growing trend for the CSP application is seen because of its economical long duration electricity storage. The thermal storage of CSP plants helps to improve the stabilization of the electricity grid. Like all large power generation plants, such large CSP power plants are capital intensive and require a relatively long development period.

SQM supplies solar salts to CSP projects around the world. In 2020, it sold approximately 160,000 metric tonne of solar salts to supply a CSP project in the Middle East and targeted to supply over 400,000 metric tonne to this project between 2020-2022. In addition, there are ten major projects currently under development worldwide that SQM could supply through 2025. As a result, SQM´s sales volumes of this product are expected to surpass 1 million metric tonne through 2025. As a result, SQM´s sales volumes of this product is expected to surpass 1 million metric tonne for the 2020-2025 period.

There is also a growing interest in using solar salts in thermal storage solutions not related to CSP technology. Due to their proven performance, solar salts are being tested in industrial heat processes and heat waste solutions. These new applications may open new opportunities for solar salts uses in the near future, such as retrofitting coal plants.

Industrial Chemicals: Products

Revenues for industrial chemicals increased to US$160.6 million in 2020 from US$94.9 million in 2019, as a result of higher sales volumes in this business line. Sales volumes in 2020 increased 82.3% compared to sales volumes reported last year.

The following table shows the sales volumes of industrial chemicals and total revenues for 2020, 2019 and 2018:

Table 16-6. Sales volumes of industrial chemicals and total revenues for 2020, 2019 and 2018

	2020	2019	2018
Sales volumes (thousands of metric tonne)			
Industrial chemicals	225.1	123.5	135.9
Total revenues (in US$ millions)	160.6	94.9	108.3

Industrial Chemicals: Marketing and Customers

In 2020 SQM sold industrial nitrate products in 54 countries to 268 customers

No supplier accounted for more than 10% of the cost of sales of this business line.

Sales breakdown	2020	2019	2018
North America	15%	29%	25%
Europe	7%	16%	16%
Chile	3%	42%	4%
Central and South America (excluding Chile)	3%	7%	11%
Asia and Others	72%	6%	43%

Note: Totals may not add to 100% due to rounding

The following table shows the geographical breakdown of the revenues for 2020, 2019 and 2018:

Table 16-7. Geographical breakdown of the revenues

Sales breakdown	2020	2019	2018
North America	15%	29%	25%
Europe	7%	16%	16%
Chile	3%	42%	4%
Central and South America (excluding Chile)	3%	7%	11%
Asia and Others	72%	6%	43%

SQM´s industrial chemical products are marketed mainly through its own network of offices, representatives and distributors. SQM maintains updated inventories of the stocks of sodium nitrate and potassium nitrate, classified according to graduation, to facilitate prompt dispatch from its warehouses. SQM provides support to its customers and continuously work with them to develop new products and applications for its products.

Industrial Chemicals: Competition

SQM is one of the world's largest producers of industrial sodium nitrate and potassium nitrate. In 2020, SQM's estimated market share by volume for industrial potassium nitrate was 73% and for industrial sodium nitrate was 44% (excluding domestic demand in China and India).

The competitors are mainly based in Europe and Asia, producing sodium nitrate as a by-product of other production processes. In refined grade sodium nitrate, BASF AG, a German corporation, and several producers in China and Eastern Europe are highly competitive.

SQM´s industrial sodium nitrate products also compete indirectly with substitute chemicals, including sodium carbonate, sodium sulfate, calcium nitrate and ammonium nitrate, which may be used in certain applications instead of sodium nitrate and are available from many producers worldwide.

The main competitor in the industrial potassium nitrate business is Haifa, which had a market share of 16% for 2020. SQM's market share was approximately 73% for 2020. Other competitors are mainly based in China.

Producers of industrial sodium nitrate and industrial potassium nitrate compete in the marketplace based on attributes such as product quality, delivery reliability, price, and customer service. SQM´s operation offers both products at high quality and with low cost. In addition, SQM´s operation is flexible, allowing to produce industrial or agricultural nitrates, maximizing the yields, and reducing commercial risk. In addition, with certain restrictions, SQM can adapt production from one grade to another depending on market needs.

In the potassium chloride market, SQM is a relatively small producer, mainly focused on supplying regional needs.

Pricing Estimates

The QP has determined that using $35/kg for iodine at the port of Tocopilla is the appropriate price for this study. Nitrates are more complicated since varios products are produced based on market conditions, however the QP has determined that an appropriate average price for nitrates at Tocopilla is $US680. The derivation of a price for delivery of nitrates for refining in Coya Sur is detailed in Section 19.

17 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

The following section details the regulatory environment of the Project. It presents the applicable laws and regulations and lists the permits that will be needed to begin the mining operations. The environmental Impact Study (EIA) process requires that data be gathered on many components and consultations be held to inform the Project relevant stakeholders. The main results of this inventory and consultation process are also documented in this section. The design criteria for the water and mining waste infrastructure are also outlined. Finally, the general outline of the mine's rehabilitation plan is presented to the extent of the information available at this point in time.

17.1 Environmental Studies

The Law 19.300/1994 General Bases of the Environment (Law 19.300 or Environmental Law), its modification by Law 20.417/2010 and Supreme Decree N°40/2012 Environmental Impact Assessment Service regulations (DS N°40/2012 or RSEIA)) determines how projects that generate some type of environmental impact must be developed, operated and closed. Regarding mining projects, the art. 3.i of the Environmental Law defines that mining project must be submitted to the Environmental Impact Assessment System (SEIA) before being developed.

The Nueva Victoria project, which includes the Pampa Hermosa and TEA projects, has been submitted to the SEIA a total of 13 times, on account of the following projects:

- Groundwater Extraction from Salar Sur Viejo Project submitted through a DIA and approved by RCA 36/ 1997
- Lagoons project submitted through an EIA and approved by RCA N° 58/1997
- Nueva Victoria Expansion submitted through a DIA and approved by RCA N° 163/2005)
- Llamara Pipeline Project submitted through a DIA and approved by RCA N° 32/ 2005)
- Nueva Victoria Sur Mine submitted through a DIA and approved by RCA N° 173/ 2006
- Modification of Nueva Victoria Iodide Plant submitted through a DIA and approved by RCA N° 94/2007
- Chlorine Incorporation at Nueva Victoria Iodine Plant submitted through a DIA and approved by RCA N°70/2008)
- Nueva Victoria Operation Update submitted through a DIA and approved by RCA N°124/2008
- Nueva Victoria Mine Area submitted through an EIA and approved by RCA N°42/2008)
- Iris Evaporation Pipeline and Ponds submitted through a DIA and approved by RCA N° 61/ 2009
- Pampa Hermosa project submitted through an EIA and approved by RCA N° 890/2010

- Nueva Victoria South Mine Zone Expansion submitted through a DIA and approved by RCA N°76/ 2012
- TEA submitted through an EIA and approved by RCA N° 20210100112/2021

In addition, an Environmental Impact Study (EIA), "Partial modification of the reinjection system in the Llamara reservoirs", was submitted to the SEIA on July 17, 2020 and is in process of being qualified.

17.1.1 Baseline Studies

Each time the project has been submitted to the SEIA, baseline environmental studies were carried out. The last Environmental Impact Study (EIA) approved by RCA N° 20210100112/2021 included the following environmental baseline studies:

The following is a more detailed analysis of certain components of the baseline:

Hydrology

Regarding the hydrology of the site, the average annual precipitation has a value of less than 2 mm in recent years, with many years with zero precipitation. The maximum 24-hour rainfall recorded in the area is less than 10 mm, with historical maximums fluctuating between 3 and 7 mm. There are no permanent surface runoff channels, with sporadic runoff associated with extreme precipitation events. It is estimated that the streams in the sector's ravines are capable of containing the runoff generated by these extreme precipitation events.

Hydrogeology

In the area of influence of the project, groundwater rights have been granted for 41 wells. All are consumptive, permanent, and continuous. The annual flow of the wells varies between 0.2 and 40 L/s, totaling 68.86 + 168.8 + 12.4 = 250.06 L/s.

In the area of influence, there are four distinct hydrogeological units: A1, A3, C5 and D1 (IMAGE). Units A have a high hydrogeological potential to store and transmit water, C has a low potential and D has no potential.

Unit D1 corresponds to compact to slightly fractured/altered andesites, and locally fractured/altered diorites without water content. Its potential is nonexistent because it does not receive any recharge due to its position.

Unit C5 corresponds to sandy-clayey gravels intercalated with sands, clays and silts, without water content. It has a low to null recharge due to precipitation at the site.

Unit A3 corresponds to evaporite deposits hosted in the western sector of the Pampa del Tamarugal. It has a medium to high water transmissivity.

Unit A1 corresponds to sands and gravels with low consolidation, which form active deposits mainly in the central basin. It has a medium to high water transmissivity, with a maximum value of 4.280 m2/day.

According to the study, there is no evidence of the existence of water under the area of the planned works in the coastal mountain range. To the northwest and southwest of the planned works there are local basins with groundwater. To the east, groundwater belonging to the Pampa del Tamarugal aquifer can be observed. To the north of the works, in the Soronal salt flat, there is groundwater with a depth of between 0,8 and 19,6 m.

According to hydrochemical information, the water in the area corresponds to the chloride-sodium type.

Figure 17-1. Location of Wells with Granted Water Rights

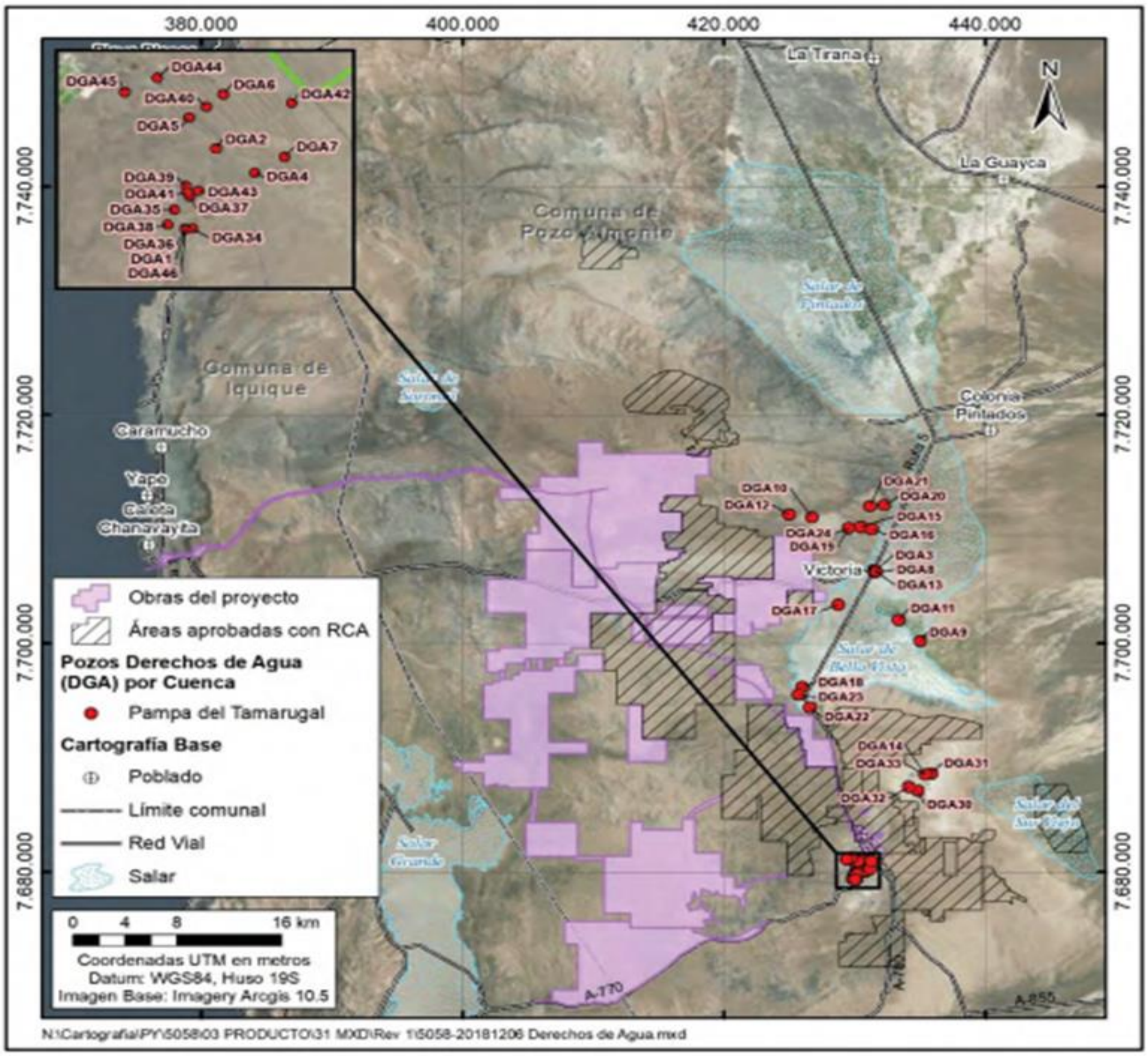
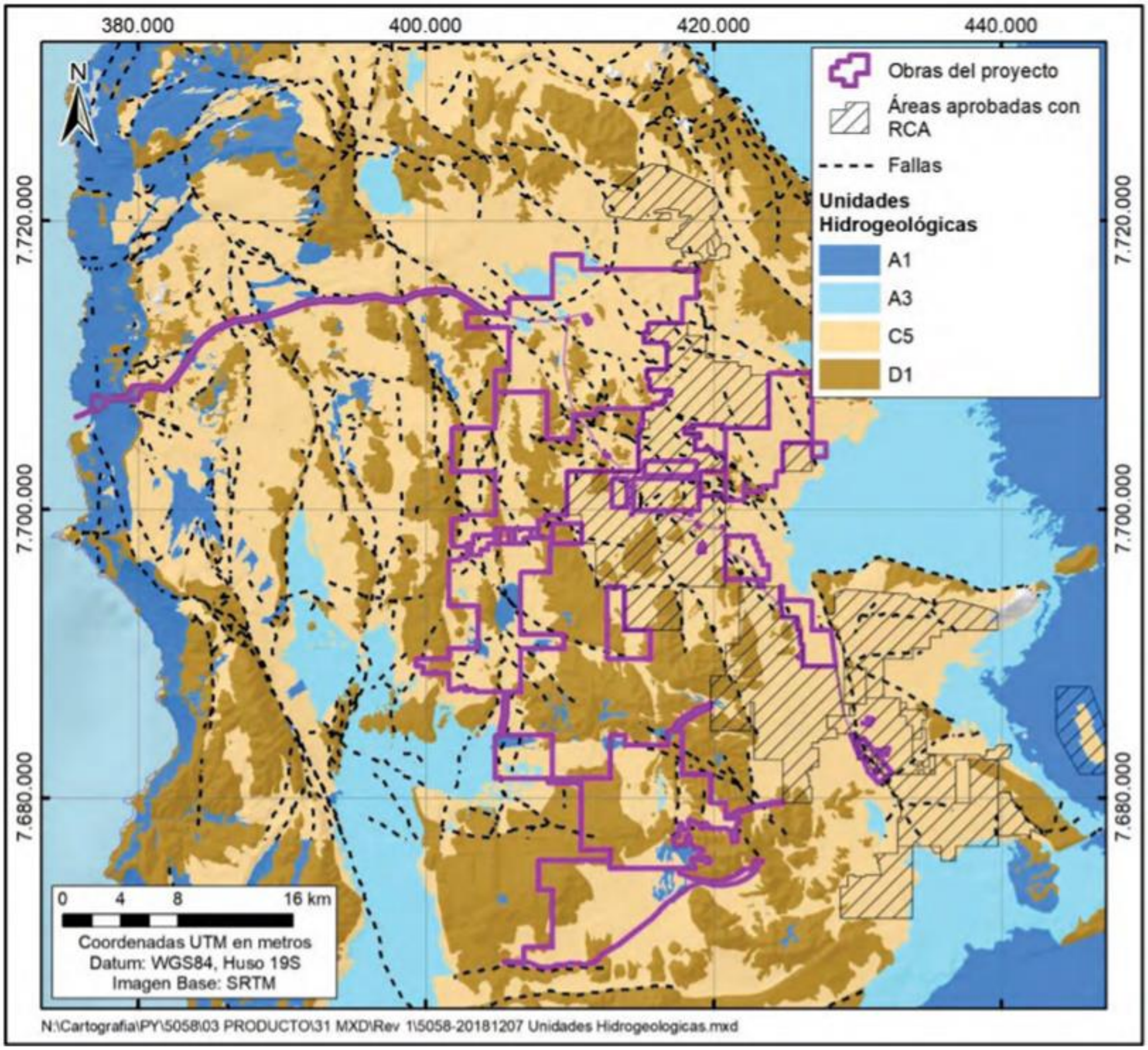


Figure 17-2. Hydrogeologic Map of the Area of Background Collection



Soil

The soils present in the project show very little edaphic development, mainly due to the extremely arid conditions of the site, which have limited the intensity of soil formation processes. Four different homogeneous soil units were defined, being "Depositional plains soils" the predominant one in the sector (76.6%).

In general terms, the sector's soil has a neutral to strongly alkaline pH; it is extremely saline, and strongly to extremely sodic. Soils with loam- sandy (Fa) and sandy- loam (aF) textures predominate. All of these characteristics place all of the sector's soils within use capacity VIII ("soils with no agricultural, livestock or forestry value, where their use is limited to wildlife, recreation or watershed protection").

As a result of all the findings, it is indicated that the soil resource present in the area of influence of the project would not be considered a scarce or unique resource within the region. In addition, it has a very low capacity to support biodiversity, which makes it an inhospitable habitat (absolute desert condition).

Plants

Regarding the vegetation in the area of influence of the project, the predominant vegetation type is "*Prosopis tamarugo* plantation", covering 96.6% of the study area. It is followed by "*Distichlis spicata meadow*", with 1.9%; and the least represented is "*Tillandsia landbeckii meadow*", with 0.1%.

There is a preservation native forest formation in the area of influence (vegetation type "*Prosopis tamarugo* forest"); however, it is far from the area of direct intervention of the project. Only the intervention of floristic elements in the vegetation type "*Tillandsia landbeckii* meadow" is considered, which has no endemic species or species in conservation category.

With respect to the flora, 4 species were identified within the area of influence of the project, 2 belonging to the Magnoliopsida class and 2 to the Liliopsida class. There are 2 species classified in a conservation category: *Prosopis tamarugo* (tamarugo), classified as endangered; and *Prosopis alba* (algarrobo blanco), classified as out of danger. Both species are considered native. The area of influence is dominated by native and endemic species.

With respect to environmental singularities (1, according to the document "Guide for the Description of the area of influence, description of the Soil, Flora and Fauna Components of Terrestrial Ecosystems in the SEIA" (SEA, 2015)), Native Forest formations of *Prosopis tamarugo* preservation were detected, because it is a scarce area and because of the presence of a species classified as Endangered; however, the project estimates that there will be no impact on the habitat of *Prosopis tamarugo*.

Wild Animals

38 native species were identified: 27 birds, 7 mammals and 4 reptiles.

18 species were identified in some state of conservation:

Endangered: black tern, little tern.

Vulnerable: Garuma Seagull, Nun Seagull, Humboldt penguin, Guanay, Stolzmann's dragon, Chungungo (detected exclusively in the Patillos Islet sector).

Near threatened: Northern mouse-eared bat.

Rare: Teresa's Runner

Insufficiently known: Tamarugal sebo-eater, Lile;

Least Concern: Four-banded racer, Booby, Common sea lion, Great northern gecko, Chilla fox, Culpeo fox.

Six exotic species were detected: dog, donkey, mule, goat, hare and guarén.

The coastal sector had the greatest richness of species, with 20 detected. This was followed by the Pampa del Tamarugal National Reserve sector, with 14 species, and then the pampas sector, with 9 species. In particular, the lesser tern was detected in the coastal sector (Chanavayita sector), with 7 adults and 5 active nests in the incubation stage. The black tern and other species of the Procellaridae family were detected only through carcasses, and no nesting sites were found. The Garuma gull was sighted in the coastal sector and in the pampas sector, with 9 sightings of adults and detection of isolated nesting events.

Fungi and Lichens

No fungal species were detected in the study area. Thirty-six species of lichens were detected, four of which are in a conservation category: Acarospora altoandina and Acarospora rhabarbarina, both in the Data Deficient category; and Acarospora bullata and Polycauliona ascendens in the Least Concern category.

Biological Oceanography

A marine baseline was conducted, taking as the study area (larger than the area of influence of the project) a sector of Patillos Bay and a sector north of Caleta Caramucho.

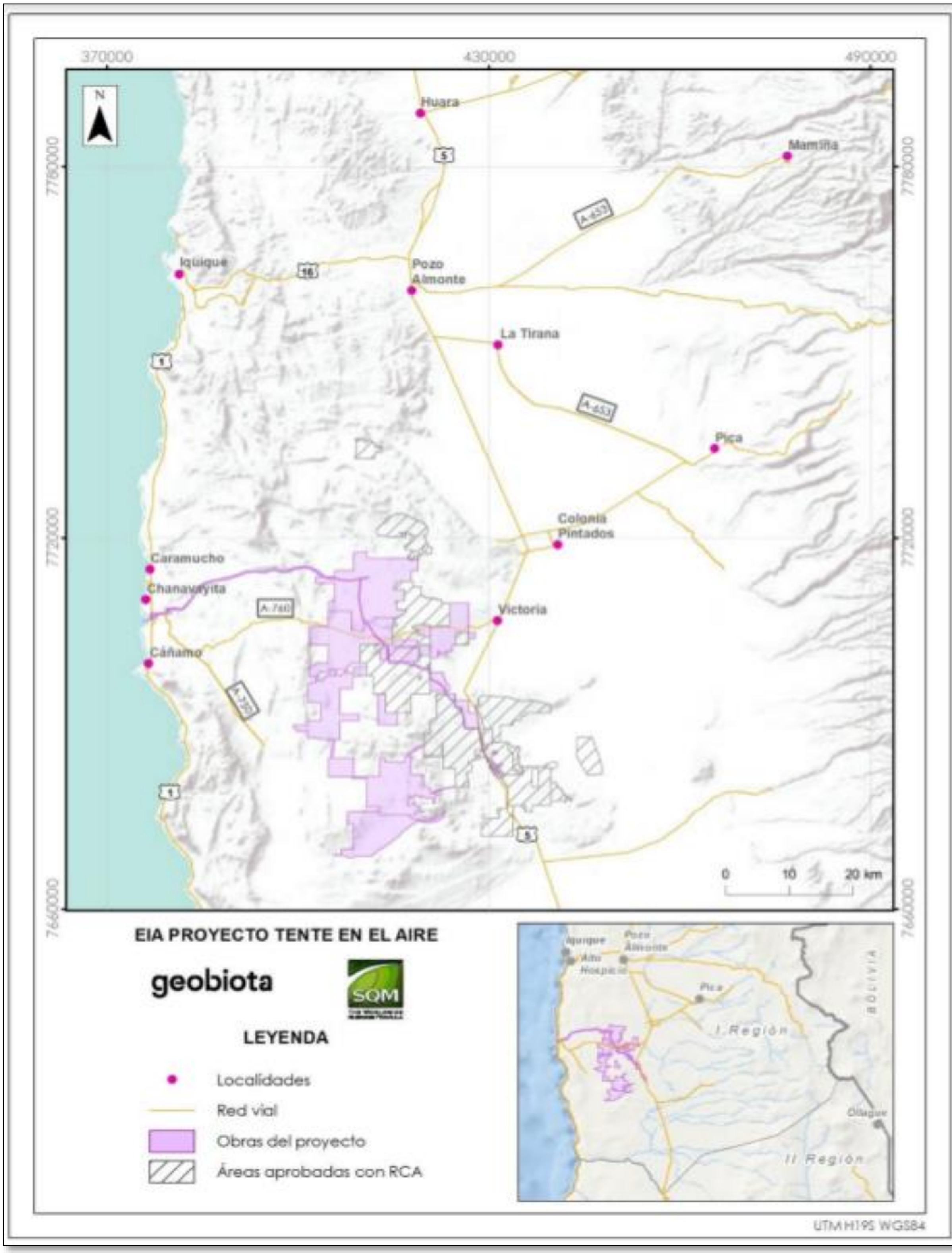
In the sampling period (winter 2017 to winter 2018) the number of identified phytoplanktonnes taxa varied between 41 and 47; of zooplanktonnes varied between 24 and 68.

With respect to fish, 16 taxa were found, the most abundant being burrito (C. crusma), bilagay (C. variegatus) and borachilla (Scartichthys spp). The highest abundance of fish was observed in transects with rocky substrate.

Human Environment

For the definition of the area of influence of the project's human environment, the sectors that had some type of housing, productive and/or cultural use were considered. Accordingly, the settlements of Chanavayita, Caleta Cáñamo and Caramucho, corresponding to the Coast sector, and the settlements of Colonia Pintados and Victoria, corresponding to the Pampa sector, were considered.

Figure 17-3. Sectors of the Area of Influence



In paleontological terms, the sector where the project is located has a low to medium potential. Most of the geological units in the sector did not show paleontological findings of interest during prospecting; however, the Coastal Deposits unit (PIHI) shows a medium to high potential, having shown a finding of fossil pieces in the field, in addition to its characteristics.

With respect to archaeology, a survey found 3.017 heritage elements in the area of influence of the project. They were classified into five categories: 761 point type finds, 194 aeral type finds, 239 linear type finds, 71 lithic sites and 1.752 caliche pits. The linear elements were mostly classified as roadways, totaling almost 410 km in length. The specific finds are divided into isolated finds, signaling structures, animal skeletonne and stonnese inscriptions. With respect to the time period of the finds, 76% were dated as chronologically historical, with 5.5% dating to pre-Hispanic times.

17.1.2 Environmental Impact Study

Regarding the Pampa Hermosa Project, based on the results of the EIA (Section 5), the project activities and their potential environmental impacts were analyzed. This made it possible to identify the environmental components that could be directly or indirectly affected during the different phases of the project and where they are located.

For those significant environmental impacts, management measures were designed to mitigate, repair and compensate the relevant affected elements.

Table 17-1 summarizes that information.

Table 17-1. Environmental Impacts of the Pampa Hermosa Project and Committed Measures

Impact	Phase in which it Occurs	Type of Measure	Measures
Decrease in surface water level in the Salar de Llamara ponds (puquios)	Operation	Mitigation	Implementation of a hydraulic barrier: consist of injecting water between the pumping sector and the ponds, in order to induce an increase in the aquifer level so as to generate a water divide that isolates the hydraulic behavior of both sectors and prevent the cone of depression from spreading and affecting the water level of the ponds.
			An Early Warning Plan "PAT" has been designed, which should be understood as an environmental management tool complementary to the implementation of the hydraulic barrier, i.e., the PAT would be activated if the hydraulic barrier runs the risk of not being efficient enough to meet the environmental objectives defined for the Puquios and hydromorphic vegetation.

Impact	Phase in which it Occurs	Type of Measure	Measures
The alteration of the vital state of natural Tamarugo formations and of the habitat for flora species in the Salar de Llamara	Operation	Mitigation	Staggered groundwater withdrawal and the exclusion of groundwater withdrawal from the 45 L/s well TC-10.
			An Early Warning Plan has been designed that contemplates the application of warning and recovery measures aimed at maintaining population vitality values, the main measures to be implemented being: a) Irrigation of tamarugos during the Warning Phase and b) Reduction of pumping flow during the Recovery Phase.
			Tamarugo recovery irrigation program: the purpose of this program would be to recover the vitality of the Tamarugo of the Salar de Llamara that could be affected by water stress due to the pumping of the Project. For this purpose, it is considered to irrigate specimens that are in regular or bad condition, according to the amount of Tamarugo that exceeds the threshold defined for the activation of the Tamarugo alert for a certain period of time. This measure will be linked to the Early Warning Plan of the Llamara Tamarugo System, consequently it will be implemented together with the actions of the Tamarugo alert and recovery phase, as appropriate.
The alteration of the livelihood systems of tenant ranchers who use the Pampa del Tamarugal National Reserve due to water extraction.	Construction, operation and closure	Mitigation	Change of well catchment point
			Staggered water withdrawal
			Tamarugo plant production program
			Tamarugo planting program
			Program to support phytosanitary control of Tamarugo trees
			Program for sustainable management of tamarugo trees
			Productive development program for cattle ranchers
			SQM commits not to affect the livelihood systems of the Quillagua Community in the Quebrada Amarga sector; to maintain monthly contact with the leadership of the Community in order to monitor the generation of any situation related to the project in the sector and, in the event that the information provided by the leadership indicates any situation attributable to the project, the respective measures will be taken in order to maintain the commitment of not affecting; and submit an annual report to the competent authority on these contacts with the Quillagua leadership, the situations detected that are attributable to the project and the actions taken for such purposes.

Impact	Phase in which it Occurs	Type of Measure	Measures
The alteration of cultural heritage	Construction, operation and closure	Mitigation	An archaeological exclusion area will be created for the geoglyphs, lithic workshops, burial sites and recorded animites, where the application of mitigation measures focused on signage and fencing is proposed, to ensure their protection and safeguarding.
		Compensation	Materials recovered in the different compensation activities will have a definitive destination such as the Saltpeter Museum Corporation of Humberstonnese
			Plan for the study, preservation and enhancement of the Pintados Station

Source: Own elaboration, based on information obtained from RCA N°890/2010

The Pampa Hermosa Project is currently undergoing a sanctioning process (Sanctioning File D-027-2016) due to violations detected by the authority during 2016 in relation to non-compliance with certain commitments established in the Environmental Assessment Resolution (RCA 890/2010) of the project, mainly associated with the water resource and its impact on environmental systems (púquios, tamarugos). In this line, in 2019 SQM presented a suitable plan to address this issue: a revised and corrected Environmental Compliance Program, that incorporates the observations made by the authority, complying with the established contents and criteria and legal requirements to ensure compliance with the infringed requirements.

This program establishes concrete actions to improve knowledge and follow-up of the environmental systems that make up the project, recognizes the role of the communities, and provides greater transparency in the monitoring of environmental variables. To date, 20 reports have been submitted on the status of compliance with the Environmental Compliance Program and no new charges or economic sanctions have been filed. However, constant monitoring of the established actions must be maintained.

It should be noted that the EIA "Partial modification of the reinjection system in the Llamara reservoirs", mentioned above, was presented as part of the commitment of this Compliance Program that the company presented. The project corresponds to a modification of the Pampa Hermosa project (RCA N°890/2010), geographically limited to the "Puquios Sector in Salar de Llamara", and its objective is to modify the mitigation measure of recital 7.1.1 of RCA N° 890/2010, which is oriented to minimize the secondary impacts that water extraction will have on biotic systems present in the area of influence of the project, allowing to maintain the surface levels of the ponds in such a way as not to affect the aquatic and terrestrial biota surrounding them. The project also pretends to modify the Phase I Alert Llamara Aquifer of the Early Warning Plan, as well as to strengthen the monitoring plan associated with the Puquios of Llamara.

So, if this project is approved, it will modify the measure of water injection in the reservoirs.

Regarding the TEA project, it aims to incorporate to the "Nueva Victoria" mine new mine areas for the production of iodide, iodine and nitrate-rich salts, which entails an increase in the total amount of caliche to be extracted, in the production of iodide, iodine and nitrate-rich salts and in the use of seawater for these processes.

The environmental impacts of this project and the measures proposed by the company to mitigate, repair, or compensate those impacts are included in Table 17-2.

Table 17-2. Environmental Impacts of the TEA Project and Committed Measures

Impact	Phase in which it occurs	Type of measure	Measures
Intervention of relevant nesting habitat for the nesting of the little tern Chanavayita	Construction, operation, and closure	Mitigation	Construction outside the breeding season of the Little Tern and installation of an automatic noise monitoring station outside the nesting area.
			Permanent environmental inspector during the construction phase
			Relocation of works near the "Chanavayita" site: installation of work sites 1 and linear works.
			Apply soundproofing measures during construction and operation: acoustic screens during construction and encapsulation of auxiliary pumping station during operation.
		Compensation	Management measures plan for the nesting site at the Chanavayita access: strengthen dog control at the municipal kennel; install allusive signage at the nesting site at the Chanavayita access; environmental education plan; and research program to characterize the habitat and reproductive dynamics of the little tern at the Chanavayita site.
Intervention of relevant nesting habitat for the nesting of sea swallows in the northern sector of the project.	Construction, operation and closure	Mitigation	Prohibition of construction during the swallow's breeding season.
			Prohibition of mining exploitation during the operation phase.
			Prohibition of removal of facilities during the reproductive season.
			Extension of the protection buffer of the swallow nesting site "Pampa Hermosa".
			Extension of the exclusion area and prohibition of mining activities in the "Pampa Hermosa" nesting site, because of the previous measure.
			20m protection buffer around potential nesting sites with nesting records, close to the route of the project's linear works.
		Compensation	Compensation measure MC-4 "Protection of the Exclusion Area": the owner agrees not to explore or exploit this mining property or those in his name that are not included in the project; he agrees to require the constitution of encumbrances on the surface properties.

Impact	Phase in which it occurs	Type of measure	Measures
Alteration of archaeological cultural heritage	Construction and operation	Mitigation	MM1- Induction lectures in Paleontology
			MM2- Rescue of elements of paleontological interest and release of area (surface)
			MM3- Ongoing paleontological monitoring during construction in coastal sector
			MM4- Creation of archaeological cultural heritage protection areas
			MM5- Permanent archaeological monitoring during construction
			MM6- Induction lectures in archeology
		Compensation	MC1- Improvement or fitting out of the warehouse of the Saltpeter Museum Corporation for the conservation of cultural heritage pieces.
			MC2- Scientific-educational publication on local and regional paleontology.
			MC3- Intensive archaeological survey and documentation
Alteration of paleontological cultural heritage			MC4- Protection of the exclusion area

Source: Own elaboration, based on information obtained from RCA N° 890/210

Industrial Chemicals: Marketing and Customers

In 2020 SQM sold industrial nitrate products in 54 countries to 268 customers. One customer accounted for more than 10% of SQM´s revenues of industrial chemicals in 2020, accounting for approximately 69%, and the ten largest customers accounted in the aggregate for approximately 79% of such revenues/2021

17.2 Operating and Post Closure Requirements and Plans

17.2.1 Waste Disposal Requirements and Plans

Two types of waste are generated during mining operations. Mineral and non-mineral wastes.

Mineral Wastes

Mineral waste or mining residues refer in this case to inert salts are called waste salts. These salts are transported to certain areas for deposit, piling up on the ground in the form of cakes.

To this purpose, the Nueva Victoria site has the Sectorial Permit for Stockpiling of Discard Salts presented and approved by the authority in accordance with current regulations (article 339 of Supreme Decree No. 132/2002, Mining Safety Regulations of the Ministry of Mining, for the establishment of a waste dump.), additionally, it has the corresponding environmental authorization.

Currently, the discarded salts are deposited in stockpiles in the industrial area of Sur Viejo (in an area of approximately 1,328 ha that also includes storage areas for the final product). However, in the TEA project (environmentally approved in November 2021), which expands the current operation of Nueva Victoria, a new deposit is considered to dispose of the discarded salts from the evaporation ponds and the waste from the neutralization process. This new deposit will have a surface area of 360 ha in which material accumulation cakes up to 50 m high will be placed, resulting in a total estimated capacity of 102,500,000 t (4,997,000 tpy of discarded salts and 110,150 tonnes/year of gypsum). These salts are neutral and do not present health risks as declared to the authority.

Regarding the management of these deposits, it should be noted that the hygroscopic properties of the salts that make up the deposits favor compaction and subsequent cementation.

Given these characteristics (salts that form a crust and the level of final impregnation in brine of the residue from the neutralization process is approximately 20%), no emissions of particles, or gases are generated.

Regarding the management of possible effluents, the new deposit will have a perimeter drainage system, which will allow, on one hand, the collection of solutions resulting from the squeeze or runoff generated by impregnation solutions, which will be channeled to 4 collection pools for later be pumped to the evaporation ponds and on the other hand, the function of this drainage system will be the channeling of rainwater.

The discard salt deposits have the commitment of being monitored annually to verify that they are in accordance with the design variables and at the closure of the mine, the discard salts and the residue from the BFN process will remain in place.

<u>Non-mineral Waste</u>

All kinds of waste can be classified as non-mineral waste, which in turn can be classified as Hazardous Waste and Non-hazardous Waste, according to current environmental and sector regulations in Chile.

Among the non-hazardous waste associated with this type of project, it is possible to mention solid waste assimilable to domiciliary waste, sludge from the sewage treatment system, containers of non-hazardous inputs, non-hazardous discards, waste associated with maintenance and generated products of the actions taken in contingencies, among others.

Hazardous waste (RESPEL) comes from process discards, used lubricant oil maintenance generated by changing equipment and machinery, batteries, paint residue, ink cartridges, fluorescent tubes, contaminated cleaning materials, among others.

The disposal of this type of waste has the current environmental and sectoral legal authorizations declared in section 17.3

Additionally, the company in its 2020 Sustainable Development Plan contains a set of commitments, including reducing the generation of industrial waste by 50% by 2025.

17.2.2 Monitoring and Management Plan Established in the Environmental Authorization

The contents of the Environmental Monitoring Plan agreed upon the implementation of the Pampa Hermosa project include: Project Phase, Environmental components to be measured and controlled, Associated environmental impacts, Monitoring Plan, Measurement methods or procedures, Location of monitoring points, Parameters that would be used to characterize the status and evolution of said component, Permitted or committed levels or limits, Duration and frequency of the monitoring plan according to the project stage, Delivery of Report with monitoring results, Indication of the competent body that would receive said documentation, and Location in the Evaluation History.

The Hydrogeological Environmental Monitoring Plan for the "Pampa Hermosa" Project is the same environmental monitoring plan [Plan de Seguimiento Ambiental (PSA)] of the Llamara Aduction Project (committed through RCA N°32/05 and modified according to Resolution N°097/07). Thus, the commitments of the Aducción Llamara PSA will be incorporated to the Pampa Hermosa PSA.

For the implementation of the TEA project, a monitoring plan for the different components was committed. This plan establishes the following:

- Regarding the cultural heritage component the follow-up plan includes induction talks on paleontology; rescue of elements of paleontological interest and release of the area (surface); permanent paleontological monitoring during construction in the coastal sector; scientific-educational publication on local and regional paleontology; creation of archeological cultural heritage protection areas; permanent archeological monitoring during construction; induction talks on archeology; and intensive archeological survey and documentation. Also, improvement or fitting out of the warehouse of the Corporación Museo del Salitre for the conservation of cultural heritage pieces.
- Regarding the wild animals component, the follow-up plan includes exclusion of mining area in tern nesting sites; modification of layout and establishment of precautionary areas in linear works in tern nesting sites; Chanavayita little tern nesting site; protection of exclusion area; study of the ecology, phenology and ethology of the tern (Procellariformes: Hydrobatidae) in the Pampa Hermosa; research program on increasing habitat use at the "Pampa Hermosa" nesting site.

17.2.3 Requirements and Plans for Water Management during Operations and After Closure

The extraction of water for the Nueva Victoria industrial operation is environmentally approved and totals 810 L/s, considering the use of 570.8 L/s of water approved in RCA 890/2010, a flow that is additional to the 120 L/s contemplated by the EIA “Lagunas” (RCA 58/1997) and the 120 L/s considered in the DIA “Extraction of Groundwater from Salar de Sur Viejo” (RCA 36/1997) and DIA “Expansion Nueva Victoria” (RCA 04/2005).

It should be noted that the last environmentally approved project (EIA "Tente en el Aire" - RCA 20210100112/2021), did not increase the projected continental water requirement despite an increased rate of exploitation and processing of caliche, by relying on the use of 900 L/s of seawater.

The extraction is carried out from the 5 locations detailed in Table 17-3, located in the Salar de Sur Viejo, Salar de Llamara, and the Pampa del Tamarugal (environmental protection area), comprising principally groundwater sources with a minor component of surface waters. The monthly average extraction flow reported during the years 2020 and 2021 was approximately 630 L/s.

Table 17-3. Monthly Average Flow Period 2020-2021-Nueva Victoria

Sur Viejo (L/s)	Llamara (L/s)	Iris (L/s)	Soronal (L/s)	CPC (L/s)	Total flow (L/s)
105	225,5	61	126	119	636
17%	35%	10%	20%	19%	100%

Table 17-4 shows how the water resources are distributed among the different sectors of the Nueva Victoria operation.

Table 17-4. Distribution of Freshwater Consumption between the Various Components of the Nueva Victoria Operation

Pozas (L/s)	Puquíos injection (L/s)	Mine (L/s)	Processing Plant (L/s)	Camp (L/s)	Other Areas	Leaching (L/s)
2%	4%	1%	1%	0%	8%	84%

The information on water extraction n from natural sources is public, being reported to the Chilean Regulatory Authority via the reporting component of the PSA.

The PSA fulfills the objective of monitoring the ecosystems which might be affected by a project, thereby guaranteeing their conservation and the continuance of the ecosystem services that they supply. Hydrogeological reporting, includes groundwater levels, the hydrochemical quality of groundwaters and surface waters, and the rates and cumulative volumes of pumping from supply wells and surface water abstraction points.

The PSA also documents the mitigation measure of injecting water to generate a hydraulic barrier to protect the Puquíos wetlands against drawdown in the water table associated with the extraction of groundwater from the Llamara aquifer. The chemical quality of the injected water is controlled to ensure that the hydrochemistry of the groundwaters of the Puquíos wetlands is not adversely affected. Currently, SQM is seeking approval from the regulatory authority for modifications to this mitigation measure in relation to the period of injection of water into the aquifer and the operational rule to ensure the protection of the wetland ecosystem.

As stated in the current Closure Plan (Res 1858/2015) for the Nueva Victoria site, the works or actions contemplated for closure in relation to water resources are the disabling of pumping wells and the removal of all infrastructure associated with the operation.

The EIA Modification of the Injection System (in evaluation by the regulatory authority) would contemplate prolonging the injection of water by 15 years in the closure phase compared to what was initially considered in the EIA of Pampa Hermosa (8 years).

17.3 Environmental and Sectorial Permit Status

This sub-section contains forward-looking information related to permitting requirements for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including regulatory framework is unchanged for Study period and no unforeseen environmental, social or community events disrupt timely approvals.

The project has been submitted 13 times to the SEIA. In 9 cases the projects were submitted through Environmental Impact Statements (DIA) and in 4 cases through EIAs and in all cases the projects were authorized by the environmental authority. Section 17.1 contains the environmental authorization for each project.

Additionally, the Project required different sectorial permitting for operating. Table 17-5. shows the sectorial permits defined in each RCA as applicable to each project:

Table 17-5. Sectorial Permits Defined in the Environmental Resolutions

Name of the Sectorial Permit (PAS)	PAS Number	Sectorial Approval Resolution
Permit for stockpiling mining waste	136	Res. Ex. N° 1602/10; Res. Ex. N° 2552/15; Res. Ex. N° 2959/16; Res. Ex. N° 1570/2020; Res. Ex. N° 2129/20; Res. Ex. N° 1032/09 A new application was submitted for approving by the National Mining Service in July 2020. The application is currently in process.
Approval of the mining closing plan	137	Res. Ex. N°376/09; Res. Ex. N° 515/12; Res. Ex. N° 49/14. An update of the closure plan was submitted to the National Mining Service for it approval in June 2020.
Permit for the construction, modification and expansion of any public or private work for the evacuation, treatment or final disposal of sewage water	138	Res. Ex. N° 2543/06; Res. Ex. N° 1970/13; Res. Ex. N° 3428/14; Res. Ex. N° 3079/11; Res. Ex. N° 3427/14; Res. Ex. 3429/14; Res. Ex N° 339/18.
Permit for the construction, modification and expansion of any garbage and waste treatment plant of any kind; or for the installation of any place for the accumulation, selection, industrialization, trade or final disposal of garbage and waste of any kind.	140	Res. Ex. N° 1813/06; 2167/14, Res. Ex. N° 2547/10; Res. Ex. N° 758/18; Res. Ex. N° 2482/19; Res. Ex 17581/21.
Permit for the construction of a site for the storage of hazardous wastes	142	Res. Ex. N° 81/18; Res. Ex. N° 753/18
Permit for the hunting or capture of specimens of animals	146	
Permit for the construction of some hydraulic works	155	The application was submitted for approving by the Water General Directorate in November 2020 for the seawater pools and in June 2020 for the evaporation pools. Both applications are currently in process.
Permit for the modification of a watercourse	156	The application was submitted for approving by the Water General Directorate in June 2020 for the evaporation pools. The application is currently in process.
Permit to subdivide and urbanize rural land to complement an industrial activity with housing, to equip a rural sector, or to set up a spa or tourist camp; or for industrial, equipment, tourism and population constructions outside the urban limits.	160	Res. Ex. N° 577/11. A new field is being elaborated for an updating of the permit.
Permit for the qualification of industrial or warehousing establishments.	161	Res. Ex. N° 686/14

Source: Own elaboration based on letter sent by SQM

Additionally, an authorization of the Method of exploitation is required. These authorizations are:

- Res. Ex 1447/2018. Exploitation method update – Office Iris
- Res. Ex. 1646/2011. Approves the Project "Updating Nueva Victoria Operation".
- Res. 1602/2010. Approves Project "Stockpiles of discarded salts Sur Viejo"
- Res. 621/2006. Increase in the exploitation of caliche in Nueva Victoria.
- Res. 1469/2005. Regularization of the mine Exploitation Method and treatment of minerals and expansion of the Nueva Victoria mine and iodine plant.
- Res.1351/2004. Regularization of the Exploitation Method and Processing Plants of the Iris office.

17.4 Social and Community

This sub-section contains forward-looking information related to plans, negotiations or agreements with local individuals or groups for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including that regulatory framework is unchanged for Study period; no unforeseen environmental, social or community events disrupt timely approvals.

17.4.1 Plans, Negotiations, or Agreements with Individuals, or Local Groups

The company has established agreements with indigenous and non-indigenous communities on different aspects that derive both from previous commitments and from programs associated with corporate policies on community relations, for example:

- Registration of the community hotline, as a permanent communication mechanism.
- Hydrogeological environmental monitoring plan for Pampa Hermosa (Pampa Tamarugal and Salar Llamara).

Working groups with different communities and territories:

- Bellavista Sector: there is a Memorandum of Understanding and Agreement that incorporates Voluntary Environmental Commitments (VEC), in the framework of the TEA EIA (Digital Document 20210100112/19.10.2021). Regardless of the above, there were minutes in sight from September 2020 to June 2021, reporting on the progress of the working group in the context of the Work Plan (Memorandum and Agreement).
- Quechua Huatacondo Indigenous Community: there is also a Memorandum of Understanding and VEC. In this context, there were minutes in sight - between December 2020 and June 2021 - regarding the implementation of an Environmental

Education Center in the Llamara sector. This project will be developed in coordination with the National Forestry Development Corporation (CONAF). There was also a report on a field visit to the Copaquire sector (Mrs. Sabina Segovia).

- Aymara Indigenous Community of Quillagua: as in the previous cases, they are part of the Memorandum of Understanding and VEC. Accordingly, records of meetings held between June 2020 and August 2021 were presented, which addressed issues such as: Enviro Program Report; Chug Chug Park; Quillagua Development Plan; Algarrobo Park Project; land lease; Foundation, and "Quebrada Amarga" sector, among others.

It should be noted that, in general terms, and in accordance with the confidentiality clause, the final amount of the commitments signed by SQM with local organizations or communities is not available.

Notwithstanding the above, a standard format document or agreement was available, with contents such as the following: general background of the agreement; background on community relations; long-term relationship; validation of agreements; contributions; accountability of funds; external audit; working table and operation; obligations of the parties; environmental commitments for the sustainability of the territory; communications between the parties; dispute resolution; mechanisms for reviewing the agreement; assignment of rights; anti-corruption clause; other commitments; term of the agreement; domicile.

Nevertheless, within the framework of the company's relationship policies, the following working groups are maintained:

<u>IQUIQUE:</u>

1. Chanavayita Fishermen's Union N° 5 Working Group.
2. Working table of Fishermen's Union N°6 Chanavayita.
3. Working table Fishermen's Union N°1 Caramucho (Coastal Union Grouping).
4. Working table Fishermen's Union N°2 Caramucho (Grouping of Coastal Unions).
5. Working table Sindicato de Pescadores Cáñamo (Grouping of Coastal Unions).

<u>POZO ALMONTE:</u>

1. Working group of the Multiethnic Association Tierras de Jehovah.
2. Aymara Indigenous Aymara Youth of the Desert Association Working Group.
3. Working group Junta de Vecinos de Oficina Victoria.
4. Working Group with Efrain Choque Family, Bellavista Sector.
5. Working Group with Sandra Vicentelo Family, Tamentíca.
6. Alfalfa Production Center Working Group (with CONAF and Pampa del Tamarugal Indigenous Aymara Campesino Association).
7. Tarapacá Dairy Farmers' and Dairy Cooperative Working Group.

17.4.2 Commitments to Local Procurement or Hiring

Notwithstanding the above, as part of its community relations policy, SQM has programs aimed at hiring local labor, such as:

- Employability Workshops aimed at improving curriculum vitae for job interviews.
- More Tarapacá Suppliers Program.
- Program for the Development of Agricultural Suppliers in the Province of Tamarugal.

17.4.3 Social Risk Matrix

There is no specific risk matrix to evaluate these aspects at the corporate level. In the framework of the work meetings for the preparation of this report, it was indicated that there are initiatives to evaluate these aspects but that they lack a specific program or derive from a specific commitment or goal.

17.5 Mine Closure

This sub-section contains forward-looking information related to mine closure for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including prevailing economic conditions continue such that unit costs are as estimated in constant (or real) dollar terms, projected labor and equipment productivity levels are appropriate at time of closure and estimated infrastructure and mining facilities are appropriate at the time of closure.

17.5.1 Closure, Remediation, and Reclamation Plans

During the abandonment stage of the Project, the measures established in the Closure Plan "Faena Nueva Victoria" approved by the National Geology and Mining Service (SNGM), through Resolution No. 1858 of 2015, modified by Resolution No 2817 of 2015, will be implemented.

Among the measures to be implemented are the removal of metal structures, equipment, materials, panels and electrical systems, de-energization of facilities, closure of accesses and installation of signage. The activities related to the cessation of operation of the Project will be carried out in full compliance with the legal provisions in force at the date of closure of the Project, especially those related to the protection of workers and the environment.

However, currently the Closure Plan Update (includes the TEA Project) is in processing and pending approval by the authority, in compliance with the provisions of Law 20.551 that "Regulates the Closure of Mining Sites and Facilities" since 2012. This update includes all closure measures and actions included in the documents of the Environmental Qualification Resolution

(RCA) and sectorial Resolutions, including the closure plans: Res Exe. N° 376/2009 "Plan de Cierre Faena Iris", Res Exe. N°515/212 "Pampa Hermosa: Actualización Método de Explotación, Tratamiento de Minerales y Plan de Cierre", Res Exe. N° 049/2014 "Paralización temporal parcial de la Planta de Yodo de Iris", Res Exe. N°1858/2015 "Plan de Cierre para la Faena Minera Nueva Victoria" modified by Resolution N°2817/2015.

Closing measures

The following are the closure and post-closure measures for the main or remaining facilities, i.e., those that remain on the site after the end of the mine's useful life. The remaining facilities are the leach heaps, tailings ponds and solar evaporation ponds.

In the case of the waste stockpile, slope stabilization measures will be carried out in the post-closure phase, as indicated in Addendum 1 of the Closure Plan in process. For the closure of the leach heaps, the removal of structures, equipment, electrical equipment, concrete structures, support structures and piping will be considered, along with the closure of access and installation of closure signage. For the closure of the solar evaporation ponds, measures were defined for the removal of nitrate-rich salts, removal of parapets, concrete structures and support structures.

For the rest of the complementary and auxiliary facilities, the measures are also aimed at protecting the safety of people and animals, and are basically the removal of structures, closure of roads, installation of signage, de-energization of the facilities and perimeter closures, and leveling of the terrain.

All measures are of the "Personal Safety" type and the means of verification corresponds to photographic reports.

Risk analysis

SERNAGEOMIN, in consideration of Law 20.551 and Supreme Decree N°41/2012, requests the owners to carry out a risk assessment that considers the impacts on the health of people and the environment in the context of the closure of the mining site at the end of its useful life. This risk assessment was carried out considering the Risk Assessment Methodology for Mine Closure currently in force. The results of the assessment indicate that the risks associated with the remaining facilities of the Nueva Victoria Mine and TEA project are Low and Not Significant (see Table 17-6).

Table 17-6. Risk Assessment of the Main Facilities at the Nueva Victoria and TEA Project Mine

Register	Risk	Description of Risk	Level Nueva Victoria	Level Project Tea	Significance
Solar evaporation ponds					
PE1	PE1.P	To people due to failure in the slope of the pool, which exceeds the exclusion zone due to an earthquake.	LOW	LOW	Non- significant
	PE1.MA	To the Environment due to failure in the slope of the pool, which exceeds the exclusion zone as a result of an earthquake.	LOW	LOW	Non- significant
PE2	PE2.P	To persons for DAR infiltration	LOW	LOW	Non- significant
	PE2.MA	To the environment by DAR infiltration	LOW	LOW	Non- significant
Discard salt deposits					
DE1	DE1.P	To people due to groundwater contamination from rainfall (infiltration of solutions).	LOW	LOW	Non- significant
	DE1.MA	To the environment due to groundwater contamination caused by rainfall (infiltration of solutions).	LOW	LOW	Non- significant
DE2	DE2.P	To people due to groundwater contamination from floods/floods	LOW	LOW	Non- significant
	DE2.MA	To the environment due to groundwater contamination caused by floods/floods	LOW	LOW	Non- significant
DE3	DE3.P	To people due to particulate emissions into the atmosphere caused by wind.	LOW	LOW	Non- significant
	DE3.MA	To the environment due to particulate emissions to the atmosphere caused by wind	LOW	LOW	Non- significant
DE4	DE4.P	To people due to surface water pollution caused by heavy rainfall	LOW	LOW	Non- significant
	DE4.MA	To the Environment due to surface water contamination caused by heavy rainfall	LOW	LOW	Non- significant
DE5	DE5.P	To people due to surface water contamination caused by floods	LOW	LOW	Non- significant
	DE5.MA	To the Environment due to surface water contamination caused by floods	LOW	LOW	Non- significant
DE6	DE6.P	To people as a result of slope failure due to water erosion	LOW	LOW	Non- significant
	DE6.MA	To the Environment for slope failure due to water erosion	LOW	LOW	Non- significant

Register	Risk	Description of Risk	Level Nueva Victoria	Level Project Tea	Significance
DE7	DE7.P	To people due to slope failure as a result of an earthquake	LOW	LOW	Non- significant
	DE7.MA	To the Environment due to slope failure caused by an earthquake	LOW	LOW	Non- significant
MINE					
MR1	MR1.P	To people due to failure of the pit slope, which exceeds the exclusion zone due to an earthquake.	LOW	LOW	Non- significant
	MR1.MA	To the environment due to failure of the pit slope that exceeds the exclusion zone as a result of an earthquake.	LOW	LOW	Non- significant
MR2	MR2.P	To people due to DAR infiltration from the mine	LOW	LOW	Non- significant
	MR2.MA	To the environment due to DAR infiltration from the mine	LOW	LOW	Non- significant

Source: Annex 10 of the Nueva Victoria and TEA project Mine Closure Plan Update (in process).

17.5.2 Closure costs

The total amount of the closure of the Nueva Victoria and TEA Project mine site, considering closure and post-closure activities, adds up to 271.135 UF (Unidad de Fomento), 258.899 UF for closure and 12.236 UF for post-closure. Below is a summary of the costs reported to the authority in the Nueva Victoria Mine Closure Plan Update (in process) (see Table 17-7 and Table 17-8).

Table 17-7. Nueva Victoria Mine Site Closure Costs

Item	Total (UF)
Total direct closing cost	164.820
Indirect cost and engineering	16.482
Contingencies (20% CD + CI)	36.260
Subtotal	217.562
IVA (19%)	41.337
Closing Plan Amount (UF)	258.899

Source: Annex 5, Addendum 2 to the Closure Plan Update Nueva Victoria and TEA project mine (in process)

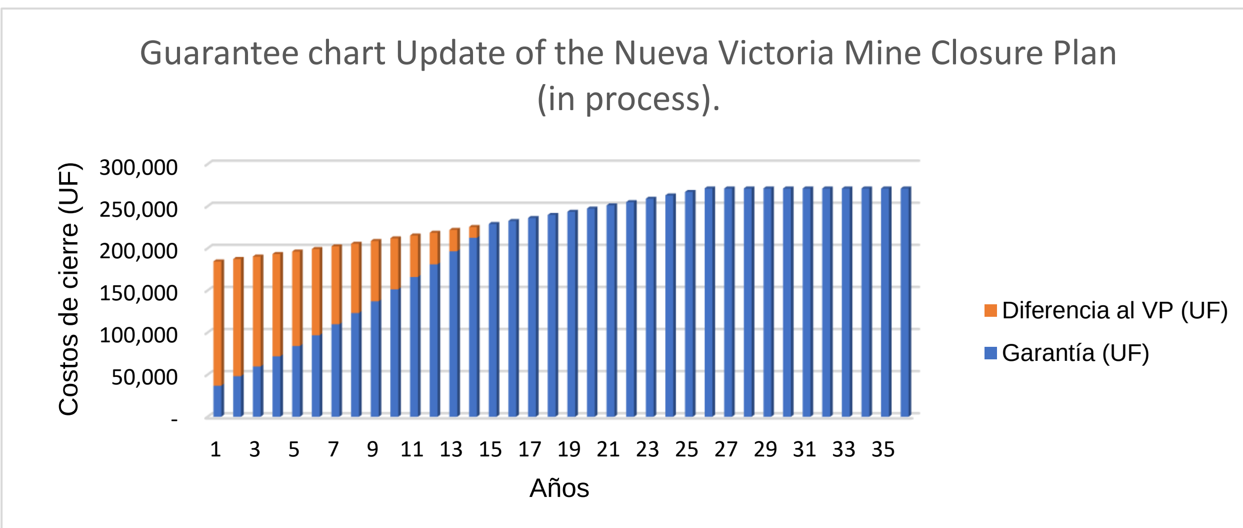
Table 17-8. Nueva Victoria Mining Site Post-closure Costs

Item	Total (UF)
Total direct closing cost	710
Indirect cost and engineering	71
Contingencies (20% CD+CI)	156
Subtotal	937
IVA (19%)	178
Closing Plan Amount (UF)	12.236

Source: Annex 5, Addendum 2 to the Closure Plan Update Nueva Victoria and TEA project mine (in process)

The result of the calculation of the useful life for the Nueva Victoria mine according to the "Nueva Victoria - Statement of Useful Life of the Mining Operation" performed by SQM (2020) by qualified person is 21 years. However, the constitution of the guarantees was carried out considering the total cost of the Closure Plan, and a useful life of 26 years, as stated in the Closure Plan in Process. The development of the constitution of guarantees is shown in Figure 17-4.

Figure 17-4. Guarantee Chart Update of the Nueva Victoria Mine Closure Plan (in process)



Source: Annex 5, Addendum 2 to the Closure Plan Update Nueva Victoria and TEA project mine (in process)

18 CAPITAL AND OPERATING COSTS

This section contains forward-looking information related to capital and operating cost estimates for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this section including prevailing economic conditions continue such that unit costs are as estimated in constant (or real) dollar terms, projected labor and equipment productivity levels and that contingency is sufficient to account for changes in material factors or assumptions.

The main facilities for producing iodine and nitrate salts at the Nueva Victoria Site are as follows:

- Caliche Mining
- Heap Leaching
- Iodide & Iodine Plants
- Solar Evaporation Ponds
- Water Resource Provision
- Electrical Distribution System
- General Facilities

18.1 Capital Costs

The facilities for lithium and potassium production operations manly include caliche extraction, leaching, water resources, Iodide an Iodine production plants, solar evaporation ponds, as well as other minor facilities. Offices and services include, among others, the following: common areas, supply areas, powerhouse, laboratory and warehouse.

Much of the primary capital expenditure in the Nueva Victoria Project has been completed. At the end of 2020, the capital cost invested in these facilities was reportedly about USD 814 million with the relative expenditure by major category as shown in Table 18-1

Table 18-1. Summary of Capital Expenses for the Nueva Victoria and Iris Operations

	Capital Cost	Capital Cost
	%	Millions of USD
Category	100%	813,727
Caliche Mining	27%	222,081
Heap Leaching	16%	134,007
Iodide & Iodine Plants	20%	162,276
Solar Evaporation Ponds	20%	166,096
Water Resource Provision	10%	79,817
Electrical Distribution System	3%	23,856
General Facilities	3%	25,593

The net book value as of January 1, 2022 was reportedly about USD 240.6 and according to SQM will be depreciated over the next 6 years.

18.1.1 Caliche Mining

SQM produces salts rich in iodide, iodine and nitrate in Nueva Victoria and Iris, near Iquique, Chile, mineral caliche extracted from mines near Nueva Victoria.

Capital investment in the mine is primarily for the equipment including trucks, front loaders, bulldozers, drills, surface miners (Vermeer, Wirtgen), wheeldozers, motor graders. Other investment is in buildings and support facilities and associated equipment.

18.1.2 Heap Leaching

The leach piles are made up of platforms (normally 90 mx 500 m) with perimeter parapets and with a bottom waterproofed with HDPE membranes), which are loaded with the necessary caliche and are irrigated with different solutions (water, mixture or intermediate solution of piles).

The Mine Operation Centers (COM) are a set of leaching heaps that have brine accumulation ponds, recirculated "feeble brine" ponds, industrial water ponds and their respective pumping systems.

Primary capital expenditure is in the form of piping, electrical facilities and equipment, pumps, ponds, and support equipment.

18.1.3 Iodide and Iodine Plants

The main investment in the Iodide and Iodine Plants is found in tank and decanter equipment, pumps and piping, equipment and electrical facilities, buildings and well. primary investment in the Prilate Iodine Plant is found in piping and pumps, mechanical equipment (Reactor, Tank, Tower) and buildings.

18.1.4 Solar Evaporation Ponds

These ponds in the industrial area of Sur Viejo and receive the "feeble brine" fraction (BF) generated in the process of obtaining iodide, which is transported through 3 pipelines of approximately 20 kilometers each. The current area of evaporation ponds is 8.34 km^2, eventually increasing to a total of 18.51 km^2 with TEA project.

18.1.5 Water Resources

Primary investment is in piping, pumps, buildings and wells.

18.1.6 Electrical Distribution System

Primary investment is in transformers, substations, distribution systems and associated support facilities.

18.1.7 General Facilities

Investment in General Facilities include laboratories, fire detection systems, lighting and warehouses.

18.2 Future Investment

During 2020, progress was made in the development and environmental approvals of the TEA Project. In November 2021, the Environmental Assessment Commission of the Tarapacá Region agreed to favorably classify the TEA project presented by SQM.

With an investment of US$350 million, the initiative aims to incorporate new mining areas to produce iodide, iodine and salts rich in nitrates at the Nueva Victoria Site. This entails an increase in caliche extraction and in the use of water to support the processes.

The proposed moidfications consist of:

a) New mining areas (approx. 43,586 ha), with a caliche extraction rate of 28 Mtpy, resulting in a total extraction rate of 65 Mtpy.

b) Two new iodide production plants (6,000 tpy each) resulting in a total capacity of 23,000 tpy.

c) A new iodine production plant (12,000 tpy), resulting in a total capacity of of 23,000 tpy.

d) New evaporation ponds to produce nitrate-rich salts (1,950,000 tpy), resulting in a total capacity of 4,000,000 tpy.

e) A new neutralization system and seawater intake (900 L/s maximum) from the Bahía Patillos sector to the mining area.

f) A new electric transmission line from the National Electric System.

g) The construction of a seawater pipeline.

Additional capital for the LOM is estimated to be USD593 million including capital associated with the TEA expansion project and sustaining capital for mining and leaching operations. for equipment, improving aspects of quality, performance, sustainability and increasing production capacity.

18.3 Operating Cost

The main costs to produce Iodine and Nitrates at Nueva Victoria can be separated into three primary areas:

1. Common
    a. Mining
    b. Leaching
    c. Seawater
2. Iodine Production
    a. Solution costs
    b. Iodide Plant
    c. Iodine Plant
3. Nitrate Production
    a. Solution Cost
    b. Ponds and Preparation
    c. Harvesting and production
    d. Personnel and Administrative
    e. Transport to Coya Sur

Estimated aggregate unit operating costs are presented in Table 18-3. These are based on hisotircal unit operating costs provided by SQM for each of the sub-cateopries listed above.

Over the LOM, total operating costs are expected to be almost equally apportioned amongst the three primary categories (Common; Iodine Production and Transport; Nitrate Production and Transport).

Table 18-2. Estimated Investments

Investments (M US$)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Sea Water Pipeline	140	30					20	73	77										
Nueva Victoria	10	16	48	3	20	21	44	20	21	22	45	27	49	51	36	40	59	34	27

Table 18-3. Nueva Victoria Operating Cost

Cost Category	Estimated Unit Cost
Common (Mining / Leaching/ Seawater)	3.76 US$/tonne caliche
Iodine Production (including transport to ports)	16,000 US$/tonne iodine
Nitrates Production	83.6 US$/tonne nitrate
Nitrates Transport to Coya Sur	23.1 US$/tonne nitrate

19 ECONOMIC ANALYSIS

This section contains forward-looking information related to economic analysis for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-section including estimated capital and operating costs, project schedule and approvals timing, availability of funding, projected commodities markets and prices.

WSP utilized operating costs and capital expense estimates provided by SQM. SQM is a well-established operation with a long history and the staff well experienced in the planning and cost estimation for all aspects of the operation. Therefore, since estimates are based on actual operating experience, it is WSP opinion that the costs provided and considered for this study meets the requirements of accuracy and contingency required of a pre-feasibility level study for the economics required to support Mineral Reserve estimates.

19.1 Principal Assumptions

Capital and operating costs used in the economic analysis are as described in Section 18. Sales prices used for Iodine and Nitrates are as described in Section 16. A 10% discount rate was used for the cashflow and is deemed reasonable to account for cost of capital and project risk. A 28% income tax rate was assumed based on information provided by SQM.

All costs, prices, and values shown in this section are in Q4 2021 US$.

19.2 Production and Sales

The estimated production of iodine and nitrates for the period 2022 to 2040 is presented in Table 19-1. The production shown does not consider the impact of the Pampa Orcoma Project which is currently under review by SQM and is presented in a separate TRS. Once developed, the Pampa Orcoma Project will result in a decrease in caliche production at Nueva Victoria. However, Donald Hulse is the QP's opinion that this decreased production will not impact the economic viability of the of the Nueva Victoria mineral reserves.

19.3 Prices and Revenue

An average sales price of USD 35/kg (USD 35,000/t) was used for sales of Iodine based on the market study presented in in Section 16. This price is assessed as FOB port.

As a vertically integrated company, nitrate production from the mining operations are directed to the plant at Coya Sur for the production of specialty fertilizer products. An imputed sales price of USD 295/t was assumed for nitrates based on an average sales price of USD 680/t for finished fertilizer products sold at Coya Sur, less USD 275/t for production costs at Coya Sur and the remaining margin distributed amongst the various operations which supply nitrates and potassium to the Coya Sur facilities.

These prices and the revenue streams derived from the sale of iodine and nitrates is shown in Table 19-2.

Table 19-1. Nueva Victoria Life-of-Mine Production

DESCRIPTION	UNITS																				
MATERIAL MOVEMENT																					
Nueva Victoria Sector Ore Tonnage	Mt	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	4.2	4.3	4.5	4.6	4.8	4.9	5.0	5.2	5.3	5.4	**192.2**
Iodine (I_2) in situ	ppm	438	427	407	397	397	396	396	404	423	450	451	449	451	447	452	452	445	452	449	**420**
Average grade Nitrate Salts ($NaNO_3$)	%	5.3%	5.3%	4.2%	4.2%	4.1%	4.0%	4.0%	4.4%	5.5%	3,7%	3,7%	3,8%	3,6%	3,9%	3,6%	3,5%	4,1%	3,6%	3,8%	**4.3%**
Tente en el Aire (TEA) Sector Ore Tonnage	Mt	9.0	7.0	7.0	10.0	10.0	7.0	7.0	7.0	7.0	22.7	23.5	24.2	25.0	25.7	26.4	27.2	27.9	28.7	29.4	**331.7**
Iodine (I_2) in situ	ppm	439	429	434	408	408	407	407	410	404	393	394	392	394	391	395	395	389	394	392	**398**
Average grade Nitrate Salts ($NaNO_3$)	%	6.3%	6.2%	5.9%	4.7%	4.6%	4.5%	4.5%	4.6%	4.8%	4.1%	4.0%	4.1%	4.0%	4.3%	3.9%	3.8%	4.4%	3.9%	4.2%	**4.3%**
Hermosa Sector Ore Tonnage	Mt	19.0	21.0	21.0	18.0	18.0	21.0	21.0	21.0	21.0	18.5	19.1	19.7	20.3	20.9	21.5	22.2	22.8	23.4	24.0	**393.5**
Iodine (I_2) in situ	ppm	433	422	427	423	423	422	422	416	410	453	454	453	455	451	456	456	449	455	452	**439**
Average grade Nitrate Salts ($NaNO_3$)	%	6.7%	6.6%	6.4%	6.7%	6.6%	6.5%	6.4%	6.3%	6.5%	5.0%	4.9%	5.1%	4.9%	5.2%	4.8%	4.7%	5.4%	4.8%	5.1%	**5.7%**
TOTAL ORE MINED (CALICHE)	Mt	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	45.5	47.0	48.4	49.9	51.4	52.9	54.4	55.8	57.3	58.8	**917.4**
Iodine (I_2) in situ	kt	19	19	19	18	18	18	18	18	18	19	20	20	21	22	22	23	23	24	25	**385**
Yield process to produce prilled Iodine	%	48.9%	45.8%	48.1%	52.8%	51.7%	55.3%	55.9%	60.0%	61.9%	68.3%	68.5%	67.9%	68.4%	67.5%	68.5%	68.6%	66.8%	68.3%	67.5%	**61.7%**
Prilled Iodine produced	kt	9.4	8.6	8.9	9.5	9.3	10.0	10.1	10.9	11.3	13.1	13.6	13.9	14.5	14.6	15.4	15.9	15.6	16.6	16.7	**237.8**
Nitrate Salts in situ	kt	2,693	2,671	2,416	2,332	2,310	2,314	2,292	2,350	2,583	2,009	2,033	2,181	2,149	2,373	2,226	2,258	2,681	2,429	2,653	**44,953**
Yield process to produce Nitrates	%	42.0%	41.3%	48,3%	61,1%	59,5%	65,3%	66,4%	71,8%	71,9%	77,1%	77,2%	76,9%	77,2%	76,6%	77,3%	77,4%	76,1%	77,2%	76,6%	**69.0%**
Brine Nitrate production for Fertilizers	kt	1,131	1,104	1,167	1,424	1,374	1,512	1,522	1,687	1,856	1,549	1,570	1,676	1,659	1,817	1,721	1,747	2,040	1,874	2,032	**30,462**

Table 19-2. Nueva Victoria Iodine and Nitrate Prices and Revenues

PRICES		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	TOTAL
Iodine	US$/tonne	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	**35,000**
Nitrates delivered to Coya Sur	US$/tonne	295	295	295	295	295	295	295	295	295	295	295	295	295	295	295	295	295	295	295	**295**
REVENUE																					
Iodine	US$M	328	300	312	333	327	349	353	380	395	460	477	486	506	510	539	555	546	582	585	**8,324**
Nitrates delivered to Coya Sur	US$M	334	326	344	420	405	446	449	498	548	457	463	494	489	536	508	515	602	553	599	**8,986**
Total Revenues	US$M	662	625	656	753	732	796	802	878	942	917	940	980	996	1,046	1,046	1,071	1,148	1,134	1,185	17,310

19.4 Operating Costs

Operating costs associated with the production of iodine and nitrates at Nueva Victoria are as described earlier in Section 18 and are incurred in the following primary areas:

1. Common
2. Iodine Production
3. Nitrate Production

Additional details on operating costs may be found in Section 18.3. Unit costs for each of these unit operations is shown in Table 19-3.

Table 19-3. Nueva Victoria Operating Costs

COST		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	TOTAL
COMMON																					
Mining	US$M	94	94	94	94	94	94	94	94	94	97	100	103	106	109	113	116	119	122	125	**1,954**
Leaching	US$M	47	47	47	47	47	47	47	47	47	49	50	52	53	55	57	58	60	61	63	**982**
Seawater	US$M			7	6	13	12	12	25	25	25	26	27	28	29	30	30	31	32	33	**392**
Total Mining Cost	**US$M**	**141**	**141**	**148**	**147**	**154**	**153**	**153**	**165**	**165**	**171**	**177**	**182**	**188**	**193**	**199**	**204**	**210**	**216**	**221**	**3,328**
IODINE PRODUCTION																					
Solution Cost	US$M	118	108	112	120	118	126	127	137	142	165	172	175	182	184	194	200	197	209	211	**2,997**
Iodine Plant	US$M	15	14	14	15	15	16	16	T7	18	21	22	22	23	23	25	25	25	27	27	**381**
Iodine Plant	US$M	17	15	16	17	17	18	18	20	20	24	25	25	26	26	28	29	28	30	30	**428**
Total Iodine Production Cost	**US$M**	**150**	**137**	**143**	**152**	**149**	**160**	**161**	**174**	**180**	**210**	**218**	**222**	**232**	**233**	**246**	**254**	**250**	**266**	**268**	**3,805**
Total Iodine Production Cost	**US$/ kg Iodine**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**
NITRATE PRODUCTION																					
Solution Cost	US$M	39	38	40	49	48	52	53	58	64	54	54	58	57	63	60	60	71	65	70	**1,054**
Ponds and preparetion	US$M	30	29	31	37	36	40	40	44	49	41	41	44	44	48	45	46	54	49	53	**801**
Harvest production	US$M	6	5	6	7	7	7	7	8	9	8	8	8	8	9	8	9	10	9	10	**149**
Others (C&A)	US$M	20	20	21	25	24	27	27	30	33	28	28	30	30	32	31	31	36	33	36	**542**
Transport to Coya Sur	US$M	26	25	27	33	32	35	35	39	43	36	36	39	38	42	40	40	47	43	47	**704**
Total Nitrate Production Cost	**US$M**	**121**	**118**	**124**	**152**	**147**	**161**	**162**	**180**	**198**	**165**	**168**	**179**	**177**	**194**	**184**	**186**	**218**	**200**	**217**	**3,250**
Total Nitrate Production Cost	**US$/tonne Nitrate**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**	**107**
Closure Accretion	**US$M**																			**11**	**11**
TOTAL OPERATING COST	US$M	412	396	415	452	450	474	477	519	544	546	562	583	596	620	629	645	677	681	717	**10,394**
TOTAL OPERATING COST	US$/tonne Caliche	9.4	9.0	9.4	10.3	10.2	10.8	10.8	11.8	12.4	12.0	12.0	12.0	11.9	12.1	11.9	11.9	12.1	11.9	12.0	**11.3**

19.5 Capital Expenditure

Much of the primary capital expenditure in the Nueva Victoria Project has been completed.

The most significant proposed future capital expenditure is for the seawater pipeline to support the proposed TEA Expansion Project. This investment is expected to need USD170 million in years 2022-2023 and the same amount between 2028-2030.

Additional capital for the MP (2022 to 2040) is estimated to be USD593 million including capital associated with the TEA expansion project and sustaining capital for mining and leaching operations. for equipment, improving aspects of quality, performance, sustainability and increasing production capacity.

A closure costs of USD11 million has been estimated in 2040 in the cashflow.

Additional details on capital expenditures for the Nueva Victoria Project can be found in Section 18.1 and Section 18.2. The estimated capital expenditure for the MP (2022 to 2040) is presented in Table 18-2.

19.6 Cashflow Forecast

The cashflow for the Nueva Victoria Project is presented in Table 19-4.The following is a summary of key results from the cashflow:

- Total Revenue: estimated to be USD 17.3 bilion including sales of iodine and nitrates
- Total Operating Cost: estimated to be USD 10.4 billion.
- EBITDA: estimated at USD6.9 billion
- Tax Rate of 28% on pre-tax gross income
- Closure Cost: estimated at USD 11 million
- Capital Expenditure estimated at USD 933 million
- Net Change in Working Capital is based on two months of EBITDA.
- A discount rate of 10% was utilized to determine NPV. The QP deems this to be a reasonable discount rate to apply for this TRS which reasonable accounts for cost of capital and project risk.]
- After-tax Cashflow: The cashflow is calculated by subtracting all operating costs, taxes, capital costs, interest payments, and closure costs from the total revenue.
- Net Present Value: The after tax NPV is estimated to be USD 1.6 billion at a discount rate of 10%

The QP considers the accuracy and contingency of cost estimates to be well within a Prefeasibility Study (PFS) standard and sufficient for the economic analysis supporting the Mineral Reserve estimate for Nueva Victoria.

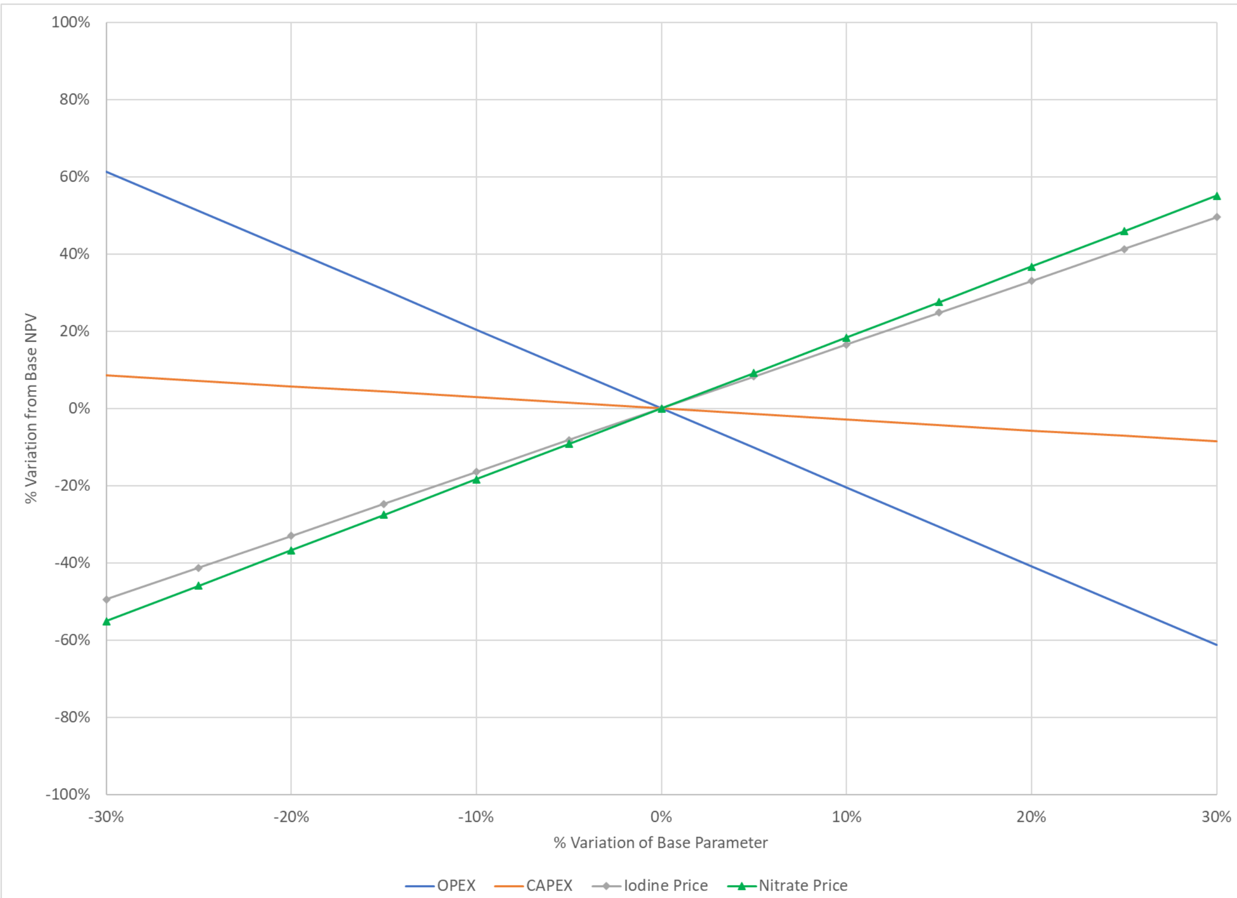
Table 19-4. Estimated Net Present Value (NPV) for the Period

NPV		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	TOTAL
REVENUE																					
Total Revenues	US$M	662	625	656	753	732	796	802	878	942	917	940	980	996	1,046	1,046	1,071	1,148	1,134	1,185	17,310
COSTS																					
Total Mining Costs	US$M	141	141	148	147	154	153	153	165	165	171	177	182	188	193	199	204	210	216	221	3,328
Total Iodine Production Cost	US$M	150	137	143	152	149	160	161	174	180	210	218	222	232	233	246	254	250	266	268	3,805
Total Nitrate Production Cost	US$M	121	118	124	152	147	161	162	180	198	165	168	179	177	194	184	186	218	200	217	3,250
Closure Accretion	US$M																			11	
TOTAL OPERATING COST	US$M	412	396	415	452	450	474	477	519	544	546	562	583	596	620	629	645	677	681	717	10,383
EBITDA	US$M	250	230	241	302	282	322	325	359	398	370	378	397	400	426	418	426	471	453	468	6,927
Depreciation	US$M	48	50	52	52	53	54	18	22	27	28	31	32	34	37	39	41	44	45	47	754
Interest Payments	US$M	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	570
Pre-Tax Gross Income	US$M	173	150	158	219	199	237	278	306	341	312	317	335	335	359	349	355	397	378	392	5,592
Taxes	28%	48	42	44	61	56	66	78	86	96	87	89	94	94	101	98	100	111	106	110	1,566
Operating Income	US$M	124	108	114	158	143	171	200	221	246	225	229	241	241	259	251	256	286	272	282	4,026
Add back depreciation	US$M	48	50	52	52	53	54	18	22	27	28	31	32	34	37	39	41	44	45	47	754
Add back closure accretion	US$M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
NET INCOME AFTER TAXES	US$M	172	158	166	210	196	225	218	243	273	253	259	273	276	295	290	297	330	317	340	4,791
Total CAPEX	US$M	150	46	48	3	20	21	64	93	98	22	45	27	49	51	36	40	59	34	27	933
Closure Costs	US$M																			11	11
Working Capital	US$M	1	-3	2	10	-3	7	1	6	7	-5	1	3	0	4	-1	1	7	-3	3	38
Pre-Tax Cashflow	US$M	99	187	191	289	265	294	261	260	294	353	332	367	350	371	383	385	404	422	428	5,934
After-Tax Cashflow	US$M	21	115	117	197	180	198	153	144	168	236	213	243	226	240	255	255	263	286	300	3,810
Pre-Tax NPV	US$M	2,492																			
After-Tax NPV	US$M	1,559																			
Discount Rate	US$M	10%																			

19.7 Sensitivity Analysis

The sensitivity analysis was carried out by independently varying the commodity prices (Iodine, Nitrate), operating cost, and capital cost. The results of the sensitivity analysis are shown in Figure 19-1 shows the relative sensitivity of each key metric.

Figure 19-1. Sensitivity Analysis



As seen in the above figure, the project NPV is equally sensitive to operating cost and commodity price while being least sensitive to capital costs. This is to be expected for a mature, well-established project with much of its infrastructure already in place and no significantly large projects currently planned during the LOM discussed in this Study. Both iodine and nitrate prices have a similar impact on the NPV with nitrate prices having a slightly larger impact.

20 ADJACENT PROPERTIES

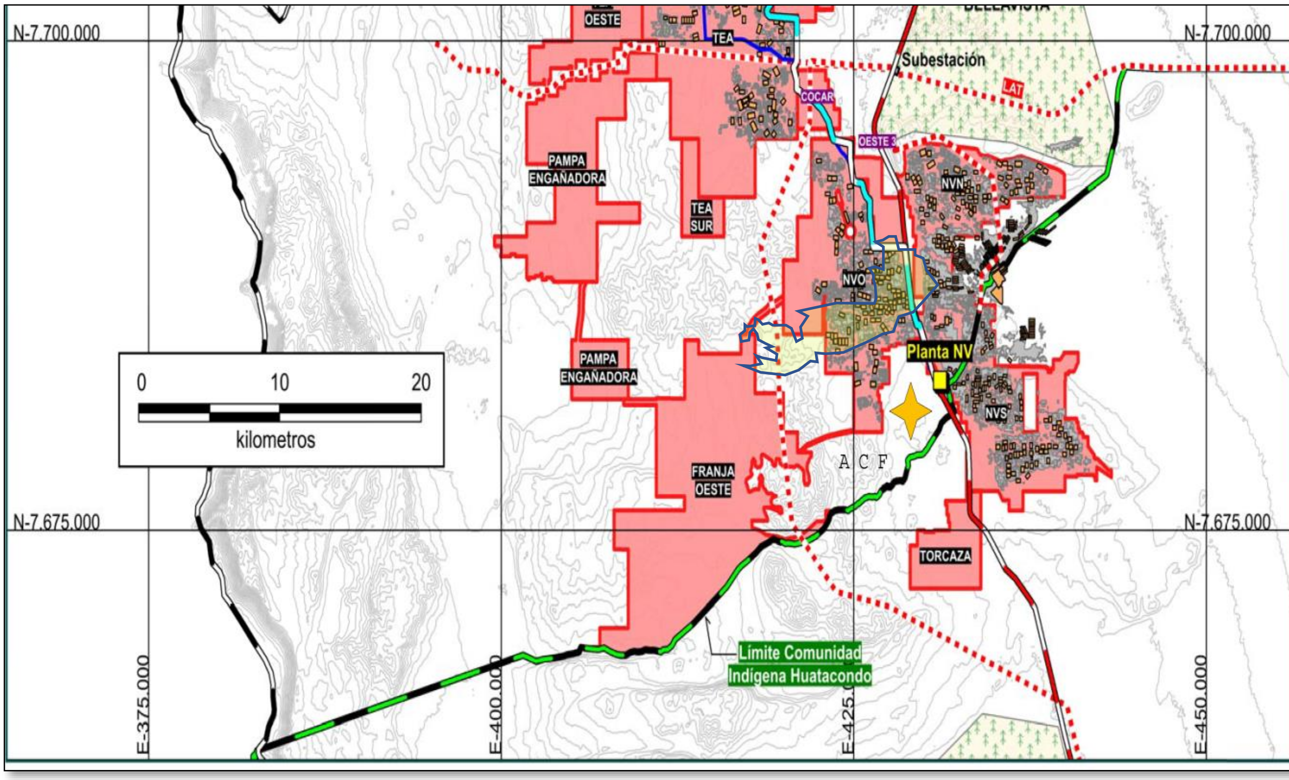
SQM has the right to explore and/or exploit caliche mineral resources in an effective area covering more than 1,565,781 hectares in Northern Chile's Regions I and II. Prospect deposits are located on flat land or "pampas".

- Hermosa Oeste
- TEA Oeste.
- Pampa Hermosa
- Pampa Engañadora
- Hermosa
- Sur fortuna
- Cocar
- Coruña
- Hermosa Sur
- Los Ángeles
- TEA
- Franja Oeste

All prospected areas have been explored and exploration program results have indicated that these prospects reflect a mineralized trend hosting nitrate and iodine. For the year 2021, a detailed exploration program of 4,100 ha in the Hermosa Oeste and Tente en el Aire Oeste sector is underway. On the other hand, exploration efforts are focused on possible metallic mineralization found underneath caliche. There is significant potential for metallic mineralization in the area, especially copper and gold. Exploration has generated discoveries that in some cases may lead to exploitation, discovery sales and future royalty generation.

Along SQM-Nueva Victoria's boundary, as shown in Figure 20-1, there are some small-scale mining rights. In total there are two mining lots (shown in green: North-east and south-east), which are close to the property boundary.

Figure 20-1. Nueva Victoria Adjacent Properties



Source: Plano_Recursos_Faena NV (SQM).

21 OTHER RELEVANT DATA AND INFORMATION

The QP is not aware of any other relevant data or information to disclose in this TRS.

22 INTERPRETATION AND CONCLUSIONS

This section contains forward-looking information related to Mineral Resources and the LOM plan for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were forth in this sub-section including: geological and grade interpretations and controls and assumptions and forecasts associated with establishing the prospects for economic extraction; grade continuity analysis and assumptions; Mineral Resource model tonnes and grade and mine design parameters; actual plant feed characteristics that are different from the historical operations or from samples tested to date; equipment and operational performance that yield different results from the historical operations and historical and current test work results; mining strategy and production rates; expected mine life and mining unit dimensions; prevailing economic conditions, commodity markets and prices over the LOM period; regulatory framework is unchanged during the Study period and no unforeseen environmental, social or community events disrupt timely approvals; estimated capital and operating costs; and project schedule and approvals timing with availability of funding.

The Nueva Victoria Mine is a proven producer of both iodine and nitrate fertilizer products. Current exploration drilling has identified Mineral Resources and Mineral Reserves sufficient to continue production until 2040. To accomplish this, certain planned strategic investments must be implemented, including a sea water intake and supply system for the operation.

To reach this conclusion, WSP has reviewed the available data on geology, drilling, mining and mineral processing, and has concluded that Mineral Resources, costs and recoveries are reasonable. The largest risks for the operation will lie in changes to market conditions or to the cost of operating inputs.

The work done in this report has demonstrated that the mine, heap leach facility and the iodine and nitrate operations correspond to those of a technically feasible and economically viable project. The most appropriate process route is determined to be the selected unit operations of the existing plants, which are otherwise typical of the industry.

The current needs of the nitrate and iodine process, such as power, water, labor, and supplies, are met as this is a mature operation with many years of production supported by the current project infrastructure. As such, performance information on the valuable nitrate and iodine species consists of a significant amount of historical production data, which is useful for predicting metallurgical recoveries from the process plant. Along with this, metallurgical tests are intended to estimate the response of different caliche ores to leaching.

Mr. Donald Hulse QP of Reserves, concludes that the work done in the preparation of this technical report includes adequate details and information to declare the Mineral Reserves. In relation to the resource treatment processes, the conclusion of the responsible QP, Gino Slanzi, is that appropriate work practices and equipment, design methods and processing equipment selection criteria have been used. In addition, the company has developed new processes that have continuously and systematically optimized its operations.

The QP believes that mining and continued development of the N. Victoria project should continue and be integrated into SQM's corporate plans.

22.1 Results

22.1.1 Geology and Mineral Resources

- Nueva Victoria is a nitrate-iodine deposit located the intermediate depression, limited to the east by the Coastal Range (representing the Jurassic magmatic arc) and the Precordillera (associated to the magmatic activity originating from the mega Cu-Au deposits in northern Chile), generating a natural barrier for their deposition and concentration.
- The Nueva Victoria geology team has a clear understanding of mineralization controls and the geological and deposit related knowledge has been appropriately used to develop and guide the exploration, modeling and estimation processes.
- Sampling methods, sample preparation, analysis and security were acceptable for mineral resource estimation. The collected sample data adequately reflect deposit dimensions, true widths of mineralization, and the style of the deposits. Sampling is representative of the Iodine and Nitrate Grades.
- Quality control programs for pre-2017 drill campaigns are not recorded. WSP reviewed the available data and found no material issues.
- As of December 31, 2021, the Inferred Resources (exclusive of Mineral Reserves) for iodine and nitrate in Nueva Victoria are 33.4 Mt with a 431 ppm mean grade of Iodine and 5.4% of nitrate. Note that because the caliche deposit is at the surface, all measured and indicated resources has been converted into mineral reserves.
- The average mineral resource concentrations are above the cutoff grades of 300 ppm of Iodine, reflecting that the potential extraction is economically viable.
- SQM holds a large property position with similar geology and geomorphology as the current operations. It is probable that SQM will continue to find additional mineral resources in the Nueva Victoria area.

22.1.2 Mining and Mineral Reserves

- Nueva Victoria has been in operation since 2002 and is a stable enterprise that should continue producing into the future.

22.1.3 Metallurgy and Mineral Processing

According to Gino Slanzi Guerra, the QP in charge of metallurgy and resource treatment:

- There is a duly documented verification plan for the cover system to limit infiltration during leaching. The document establishes installation and leak detection procedures in accordance with environmental compliance criteria.
- Metallurgical test work performed to date has been adequate to establish appropriate processing routes for the caliche resource. The metallurgical test results show that the recoveries are dependent on the saline matrix content and, on the other hand, the maximization of this is linked to the impregnation cycle which has been studied, establishing irrigation scales according to the classified physical nature. The derived data are suitable for the purpose of estimating recovery from mineral resources.
- Based on the annual, short- and long-term production program, the yield is estimated for the different types of material to be exploited according to the mining plan, according to their classification of physical and chemical properties, obtaining a projection of recoveries that is considered quite adequate for the resources.
- In addition to the ROM mining methodology, there is a mining method called "continuous mining", which, according to the tests carried out with the reaming equipment, allows obtaining a smaller size mineral and more homogeneous granulometry, which implies obtaining higher recoveries for iodine and nitrate during leaching.
- Reagent forecasting and dosing are based on analytical processes that determine ore grades, valuable element content and impurity content to ensure that the system's treatment requirements are effective. These are translated into consumption rate factors that are maturely studied.
- Since access to water can be affected by different natural and anthropogenic factors, the use of seawater is a viable alternative for future or current operations. However, this may increase operating costs, resulting in additional maintenance days.
- During operations, the content of impurities fed to the system and also the concentration in the mother liquor is monitored in order to eventually detect any situation that may impact the treatment methodologies and the characteristics of its products.

22.2 Risks

22.2.1 Geology and Mineral Resources

- The management of the Nueva Victoria database should be clear and reproducible, keeping only one database containing all sectors and exploration drilling grids. The management and knowledge of the database should not be the responsibility of a single person, but of an entire work team to avoid losses of valuable information.
- All the procedures, methodologies and results should be reported and updated annually, trying to avoid using recycled reports with only some updated tables, leaving outdated or unimportant information.

22.2.2 Mining and Mineral Reserves

- As mining proceeds into new areas, such as TEA, the production, dilution, and recovery factors may change based on operating factors. These factors and mining costs should be evaluated on a sector-by-sector basis.

22.2.3 Metallurgy and Mineral Processing

- The risk that the process, as currently defined, will not produce the expected quantity and/or quality required. However, exhaustive characterization tests have been carried out on the treated material and, moreover, at all stages of the process, controls are in place to manage within certain ranges a successful operation.
- The risk that the degree of impurities in the natural resources may increase over time more than predicted by the model, which may result in non-compliance with certain product standards. Consequently, it may be necessary to incorporate other process stages, with the development of previous engineering studies, to comply with the standards.

22.2.4 Other Risks

- The prices of iodine and fertilizers have been stable and increasing and though product price is a risk it is expected to be small.
- There is a social and political risk that derives from the current process of constitutional discussion in Chile, which may change the actual regulation of the mining industry This could impact to mining property, taxes, and future royalties.

22.3 Significant Opportunities

22.3.1 Geology and Mineral Resources

- There is a big opportunity to improve the resource estimation simplicity and reproducibility using the block model approach not only in the case of smaller drill hole grids (50 m and 100T m) but also for larger drill hole grids to avoid separating the resource model and databases by drill hole spacing, bringing the estimation and management of the resource model to industry standards.

22.3.2 Mining and Mineral Reserves

- Improve efficiency of mining by implementing selective mining criteria to improve produced grades. As the deposit is a single mining bench there is an opportunity to establish a smaller selective mining unit and mine irregular polygons to improve head grade delivered to the leach pads.
- The advantages of continuous mining machines will offer better leaching recoveries and may be optimized with evaluation of cutter head designs and operating parameters. Care should be taken to evaluate the costs on a basis of final product production price.

22.3.3 Metallurgy and Mineral Processing

- Determine the optimal mining levels by continuous mining that maximizes recovery and minimizes costs.
- Improve heap slope irrigation conditions to increase iodine and nitrate recovery.
- Use of clayey materials (low permeability) available in discards as soil cover for infiltration management.

23 RECOMMENDATIONS

23.1 Geology and Mineral Resources,

- Construct updated procedures that describe in sufficient detail the activities of capture, administration, and backup of the data.
- Confirm the accuracy and precision of SQM internal laboratory implementing an external QA/QC check with a representative number of samples as a routine procedure.
- Improvements are required for the QA/QC program to align with industry best practice and facilitate more meaningful QC
- Maintain original and/or digitized records of collar surveys, geological, and geochemical data in a secure database
- Keep only one database containing all sectors and exploration drilling grids. Quality procedures for data maintenance should be implemented as well as a formal methodology for reviewing laboratory QA/QC information and flagging potential issues.
- Update all the procedures, methodologies, and results in the annual reports.
- Expand the block model approach for resource estimation to larger drill hole grids to avoid separating the resource model and databases by drill hole spacing.

23.2 Mining and Mineral Reserves

- The conversion factors from indicated mineral resources to probable mineral reserves should be continuously reviewed and updated as preproduction drilling converts the indicated resources to measured. Expansion of the use of geostatistical block models (see above) will have an impact on these factors.
- In cooperation with the processing group, an ore blending plan could optimize the cost and recovery balance in the future and should be studied soon to better forecast production and equipment needs for the life of mine.

23.3 Metallurgy and Mineral Processing

- From the point of view of the material fed to the heaps, a recovery study is necessary to establish optimal annual operating levels that maximize recovery and minimize costs. The study will allow defining the percentage of ore to be reamed during the life of the mine to increase recovery sequentially.
- Regarding irrigation, alternatives that allow an efficient use of water should be reviewed, considering the irrigation of the lateral areas of the piles to increase the recovery of iodine and nitrates.

- A relevant aspect is the incorporation of seawater in the process, a decision that is valued given the current water shortage and that ultimately is a contribution to the project, however, a study should be made of the impact of processing factors such as impurities from this source.
- It is advisable to carry out tests to identify the hydrogeological parameters that govern the behavior of the water inside the pile. Review the properties of the mineral bed, which acts as a protector of the binders at the base of the piles, which is currently a fine material called "chusca", which could be replaced by classified particulate material, favoring the infiltration of the solutions.
- It is considered important to evaluate the leachable material through heap leaching simulation, which allows the construction of a conceptual model of caliche leaching with a view to secondary processing of the riprap to increase the overall recovery.
- It is contributive and relevant to work on the generation of models that represent heap leaching, the decrease in particle size (ROM versus Scarious granulometry) and, therefore, of the whole heap and the simultaneous dissolution of different species at different rates of nitrate iodine extraction.
- With respect to generating material use options, detailed geotechnical characterization of the available clays within the mine property boundaries is suggested to assess whether there are sufficient clay materials on site to use as a low permeable soil liner bed under the leach pad.
- Environmental issues include leachate or acid water management, air emissions management, tailings dump management, and leachate riprap.

All the above recommendations are considered within the declared CAPEX/OPEX and do not imply additional costs for their execution.

24 REFERENCES

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25 RELIANCE ON INFORMATION PROVIDED BY REGISTRANT

The qualified person has relied on information provided by the registrant in preparing its findings and conclusions regarding the following aspects of modifying factors:

1. Macroeconomic trends, data, and assumptions, and interest rates.
2. Mine and process operating costs.
3. Projected sales quantities and prices.
4. Marketing information and plans within the control of the registrant.
5. Environmental and social licenses.