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NI 43-101 Technical Report on the Feasibility Study for the Fenix Gold Project

Atacama, III Region, Chile

RIO2

Report Prepared for:

Rio2 Limited

Report Prepared by:

Mining Plus Peru S.A.C

Qualified Persons:

Erick Ponce (QP) FAusIMM(Min)
Anthony Maycock (QP) P.Eng
Denys Parra (QP) SME, Registered Member
Carlos Arevalo (QP) Chilean Mining Commission, Registered Member
Andres Beluzan (QP) Chilean Mining Commission, Registered Member
Francisco Javier Rovira (QP) Competent Person in Mineral Resources and Reserves

Effective Date: October 16th, 2023

Report Date: October 16th, 2023

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Fenix Gold Project, Atacama, III Region, Chile
NI 43-101 Technical Report on the Feasibility Study for the Fenix Gold Project.

Prepared for Rio2 Limited.

Effective Date: October 16th, 2023
Report Date: October 16th, 2023

(Original Signed)

Erick Ponce (QP) FAusIMM(Min). Signed in Lima Peru at October 16th, 2023.

(Original Signed)

Carlos Arevalo (QP) Chilean Mining Commission, Registered Member. Signed in Santiago, Chile at October 16th, 2023.

(Original Signed)

Anthony Maycock (QP) P.Eng. Signed in Santiago Chile at October 16th, 2023.

(Original Signed)

Andres Beluzan (QP) Chilean Mining Commission, Registered Member. Signed in Santiago Chile at October 16th, 2023.

(Original Signed)

Denys Parra (QP) SME, Registered Member. Signed in Lima Peru at October 16th, 2023.

(Original Signed)

Francisco Javier Rovira Frez (QP), Competent Person in Mineral Resources and Reserves. Signed in Santiago, Chile at October 16th, 2023.

Certificate of Qualified Person

I, Erick Ponce, FAusIMM (QP), do hereby certify that:

1. I am a Mining Engineer employed as Surface Area manager by Mining Plus Peru S.A.C. (Mining Plus), with an office address at Avenida Jose Pardo 513, Office 1001, Miraflores, Lima, Peru.

2. This certificate applies to the Technical Report Summary titled "NI 43-101 Technical Report on the Feasibility Study for the Fenix Gold Project", (The "Technical Report Summary") with an effective date on October 16th, 2023.

3. I am a graduate from Pontificia Universidad Católica del Perú in the province of Lima, Peru in 2003 with a Bachelor of Mining Engineering. I have worked as a Mining Engineer for a total of 18 years since my graduation. I am a Chartered Professional with the Australasian Institute of Mining and Metallurgy FAusIMM(QP) #3056910.

4. I have read the definition of "Qualified Person" set out in National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101 in connection with those sections of the Technical Report that I am responsible for preparing.

5. I have visited the Property of Fenix Gold Project, that is the subject of this Technical Report Summary, on April 23rd to 25th, 2023.

6. I am responsible for authoring Sections 2, 3, 4, 5, 6, 15, 19, 20, 22, 23, 24 and 27. As well as, I am authoring for Sub-sections 1.1, 1.2, 1.3, 1.4, 1.5, 1.12, 1.13, 1.15.1, 1.15.2, 1.15.4, 1.15.6, 1.16, 1.17, 1.18, 1.19, 1.20, 1.21.5, 1.21.8, 1.21.9, 1.21.10, 16.1, 16.4, 16.5, 16.6, 16.7, 16.11, 18.1, 18.2, 18.4, 18.6, 18.7.1, 18.7.2, 18.7.3, 18.7.5, 21.1.1, 21.1.2, 21.1.3, 21.1.4, 21.1.5, 21.1.8, 21.1.9, 21.1.10, 21.1.11, 21.2.1, 21.2.2, 21.2.4, 25.1, 25.6, 25.7, 25.10, 25.11, 25.12, 25.13, 25.14.1, 25.14.4, 25.14.5, 25.14.6, 26.5, 26.8, 26.9 and 26.10 of this Technical Report Summary.

7. I am independent of the Company, as independence is defined in Section 1.5 of the NI 43-101 and in Section 1.5 of the Companion Policy to NI 43-101.

8. I have not had prior involvement with the Project that is the subject of this Technical Report Summary.

9. I have read NI 43-101, Form 43-101F1 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101, Form43-101F1.

10. As of the Effective Date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be.

Effective Date: October 16th, 2023
Signing Date: October 16th, 2023

____
Erick Ponce, FAusIMM (QP)

Certificate of Qualified Person

I, Dr. Carlos Arévalo (QP), Professional Geologist, Registered Member of the Chilean Mining Commission, do hereby certify that:

1. I am a Principal Geologist employed by CAC SpA, (Santiago Chile).
2. This certificate applies to the Technical Report Summary titled "NI 43-101 Technical Report on the Feasibility Study for the Fenix Gold Project", (The "Technical Report Summary") with an effective date on October 16th, 2023.
3. I am a graduate of Universidad de Chile, Santiago, Chile, in 1992 with a Geologist Professional title; PhD Kingston University, Surrey, UK 2000. I am registered as a Professional Geologist (Reg. No. 167). I have worked as a Geologist for a total of 31 years since my graduation.
4. I have read the definition of "Qualified Person" set out in National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101 in connection with those sections of the Technical Report that I am responsible for preparing.
5. I visited the Fenix Gold Project property that is the subject of this Technical Report Summary on February 7th to 9th, 2023.
6. I am responsible for authoring Sections 7, 8, 9, 10, 11, and 12 and co-authoring Sections 1.6, 1.7, 1.8, 1.9, 1.21.1, 1.21.2, 1.21.3, 1.21.4, 7, 8, 9, 10, 11, 12, 25.2, 25.3, 26.1, 26.2, 26.3, 26.4 of this Technical Report Summary.
7. I am independent of the Company, as independence is defined in Section 1.5 of the NI 43-101 and in Section 1.5 of the Companion Policy to NI 43-101.
8. I have not had prior involvement with the Project that is the subject of this Technical Report Summary.
9. I have read NI 43-101, Form 43-101F1 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101, Form 43-101F1.
10. As of the Effective Date of the Technical Report, to the best of my knowledge, information, and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be.

Effective Date: October 16th, 2023
Signing Date: October 16th, 2023

____
Dr. Carlos Arevalo, Registered Member of the Chilean Mining Commission, Reg #215

Certificate of Qualified Person

I, Anthony Ralph Maycock (QP), Metallurgical Consultant, do hereby certify that:

1. I am a Senior Metallurgical Consultant employed by MM CONSULTORES SpA (Santiago, Chile), a company which provided consultancy services to HLC SpA Chile.

2. This certificate applies to the Technical Report Summary titled "NI 43-101 Technical Report on the Feasibility Study for the Fenix Gold Project", (The "Technical Report Summary") with an effective date on October 16th, 2023.

3. I am a graduate of IMPERIAL COLLEGE, LONDON UNIVERSITY, London, United Kingdom, in 1969 with a Bachelor of Science. I am registered as a Professional Engineer in the Province/State of British Columbia, Canada (Reg. No. 13275). I have worked as a Metallurgical Engineer for a total of 54 years since my graduation.

4. I have read the definition of "Qualified Person" set out in National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101 in connection with those sections of the Technical Report that I am responsible for preparing.

5. I visited the Fenix Gold Property which is the subject of this Technical Report Summary on 22nd April 2019.

6. I am responsible for authoring Sections 1.10, 1.14, 1.15.3, 1.15.5, 1.15.7, 1.21.7, 13, 17, 18.3, 18.5, 18.7.4, 21.1.6, 21.2.3, 25.4, 25.8, 25.14.3 and 26.7 of this Technical Report Summary.

7. I am independent of the Company, as independence is defined in Section 1.5 of the NI 43-101 and in Section 1.5 of the Companion Policy to NI 43-101.

8. I have had prior involvement with the Project that is the subject of this Technical Report Summary as one of the authors of the report entitled "Amended and Restated Pre-feasibility Study for the Fenix Gold Project" with an effective date on August 15th, 2019.

9. I have read NI 43-101, Form 43-101F1 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101, Form 43-101F1.

10. As of the Effective Date of the Technical Report, to the best of my knowledge, information, and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be.

Effective Date: October 16th, 2023
Signing Date: October 16th, 2023

____

Anthony Ralph Maycock, P.Eng

Certificate of Qualified Person

I, Mr. Andres Beluzan (QP), Senior Civil Mining Engineer, Registered Member of the Chilean Mining Commission, do hereby certify that:

1. I am a Senior Civil Mining Engineer employed by ABelco Consulting SpA.
2. This certificate applies to the Technical Report Summary titled "NI 43-101 Technical Report on the Feasibility Study for the Fenix Gold Project", (The "Technical Report Summary") with an effective date on October 16th, 2023.
3. I am a graduate of Universidad de Chile, Santiago, Chile, in 2005 with a Bachelor of Civil Mining Engineer title. I am registered as a Professional Civil Mining Engineer in the Province/State of Santiago (Reg. No. 215). I have worked as a Civil Mining Engineer for a total of 20 years since my graduation.
4. I have read the definition of "Qualified Person" set out in National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101 in connection with those sections of the Technical Report that I am responsible for preparing.
5. I visited the Fenix Gold Project property which is the subject of this Technical Report Summary on the 25th and 26th of March 2019.
6. I am responsible for authoring Sections 14 and co-authoring Sections 1 (1.11), and 25 (25.5) of this Technical Report Summary.
7. I am independent of the Company, as independence is defined in Section 1.5 of the NI 43-101 and in Section 1.5 of the Companion Policy to NI 43-101.
8. I have had prior involvement with the Project that is the subject of this Technical Report Summary as one of the authors of the report entitled "Amended and Restated Pre-feasibility Study for the Fenix Gold Project" with an effective date on August 15th, 2019.
9. I have read NI 43-101, Form 43-101F1 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101, Form 43-101F1.
10. As of the Effective Date of the Technical Report, to the best of my knowledge, information, and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be.

Effective Date: October 16th, 2023
Signing Date: October 16th, 2023

____

Andres Beluzan, Member of the Chilean Mining Commission, Reg #215

Certificate of Qualified Person

I, Denys Parra, SME Registered Member, do hereby certify that:

1. I am a civil/geotechnical engineer employed by Anddes Asociados SAC.

2. This certificate applies to the Technical Report Summary titled "NI 43-101 Technical Report on the Feasibility Study for the Fenix Gold Project", (The "Technical Report Summary") with an effective date on October 16th, 2023.

3. I am a graduate of National University of Engineering, Lima, Peru, in 1990 with a Bachelor of Civil Engineering. I am SME Registered Member in the USA (Reg. No. 4222036). I have worked as a geotechnical engineer for a total of 33 years since my graduation.

4. I have read the definition of "Qualified Person" set out in National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101 in connection with those sections of the Technical Report that I am responsible for preparing .

5. I have visited the Property Fenix Gold Project that is the subject of this Technical Report Summary on December 4th, 2018.

6. I am responsible for authoring sub-sections 1.21.6, 16.3, 16.8, 16.9, 16.10 and 26.6 and co-authoring sub-sections 21.1.7 and 21.1.10 of this Technical Report Summary.

7. I am independent of the Company, as independence is defined in Section 1.5 of the NI 43-101 and in Section 1.5 of the Companion Policy to NI 43-101.

8. I have not had prior involvement with the Project that is the subject of this Technical Report Summary

9. I have read NI 43-101, Form 43-101F1 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101, Form43-101F1.

10. As of the Effective Date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be.

Effective Date: October 16th, 2023
Signing Date: October 16th, 2023

Denys Parra

Denys Parra, SME Registered Member

Certificate of Qualified Person

I, Francisco Javier Rovira Frez (QP), Mining Engineer/Geotechnical Engineer, Do Hereby certify that:

1. I am a mining engineer/geotechnical engineer employed by DERK S.A.
2. This certificate applies to the Technical Report Summary titled "NI 43-101 Technical Report on the Feasibility Study for the Fenix Gold Project", (The "Technical Report Summary") with an effective date on October 16th, 2023.
3. I am a graduate of University of Santiago De Chile, Santiago, Chile, in 2003 with a Bachelor of Mining Engineering. I am registered as a COMPETENT PERSON IN MINERAL RESOURCES AND RESERVES in the Province/State of Santiago/Chile (Reg. No. 0363). I have worked as a COMPETENT PERSON IN MINERAL RESOURCES AND RESERVES for a total of 6 years since my graduation.
4. I have read the definition of "Qualified Person" set out in National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101 in connection with those sections of the Technical Report that I am responsible for preparing.
5. I visited the Property Fenix Gold Project property which is the subject of this Technical Report Summary on April 05th, 2023.
6. I am responsible for authoring Sections 16.2 and 25.14.2 of this Technical Report Summary.
7. I have read NI 43-101, Form 43-101F1 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101, Form 43-101F1.
8. I have not had prior involvement with the Project that is the subject of this Technical Report Summary.
9. I have read the sections of the Technical Report for which I am responsible.
10. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.
11. As of the Effective Date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be.

Effective Date: October 16th, 2023

Signing Date: October 16th, 2023

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Francisco Javier Rovira Frez, Competent Person in Mineral Resources and Reserves Reg. No. 0363

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1 EXECUTIVE SUMMARY

1.1 Overview

This technical report, detailing the results of the Fenix Gold Project (“Fenix” or “the Project”) Feasibility Study (the Feasibility Study), has been prepared by Mining Plus S.A.C (“Mining Plus”) and various other consultants, at the request of Rio2 Limited (“Rio2”). A full list of contributing firms is provided in Chapter 2. Rio2 is a publicly listed company trading on the TSX Venture Exchange under the trading symbol RIO. This Feasibility Study was prepared in accordance with the guidelines set out under the Canadian Securities Administrators Form 43-101F1 Technical Report of National Instrument Standards of Disclosure for Mineral Projects (“NI 43-101”).

The Project was formerly known as the Cerro Maricunga Project. Rio2 formally changed the name of the Project to “Fenix Gold “on September 17, 2018.

The Feasibility Study has maintained the mining strategy established in the Updated Pre-feasibility Study for the Fenix Gold Project, prepared by Mining Plus and with an Effective Date of August 15th, 2019. The Feasibility Study envisions the development of the Fenix Gold Project as a 20,000 tpd throughput mining operation. Initial production is constrained by the requirement to truck water from Copiapó. However, this operational constraint simplifies the project and allows it to be fast-tracked to construction and production operation, while a permanent feed water solution can be implemented that permits project to be expanded to 80 – 100 Ktpd.

The NI 43-101 responsibilities of the geological and engineering consultants who contributed to the Feasibility Study are as follows:

Erick Ponce (Mining Plus) was responsible for reviewing pit designs, completing the mineral reserve estimation, and completing the mine production schedule. Capital and operating costs were estimated in collaboration with the consultants involved in the preparation of the Feasibility Study. The financial model was completed jointly by Mining Plus, Endeavour, and Rio2. Finally, Mining Plus compiled this report with inputs from all parties.

Carlos Arevalo (CAC SpA) was responsible for the review of the geological data and the verification of drilling and sample preparation, and analysis utilized in the preparation of the mineral resource estimate.

Andres Beluzan (Abelco Consulting SpA) was responsible for completing the mineral resource estimate.

Denys Parra (Anddes Asociados SAC) was responsible for the review, design, and completion of stability analyses for principal mine components and the road access for the project.

Francisco Javier Rovira (DERK Ingeniería y Geología Ltda) was responsible for developing a stability analysis for the reserve pit.

Anthony Maycock (HLC Ingeniería y Construcción SpA) was responsible for completing the metallurgical testwork program, as well as processing plant design and minor project infrastructure design.

1.2 Reliance on Other Experts

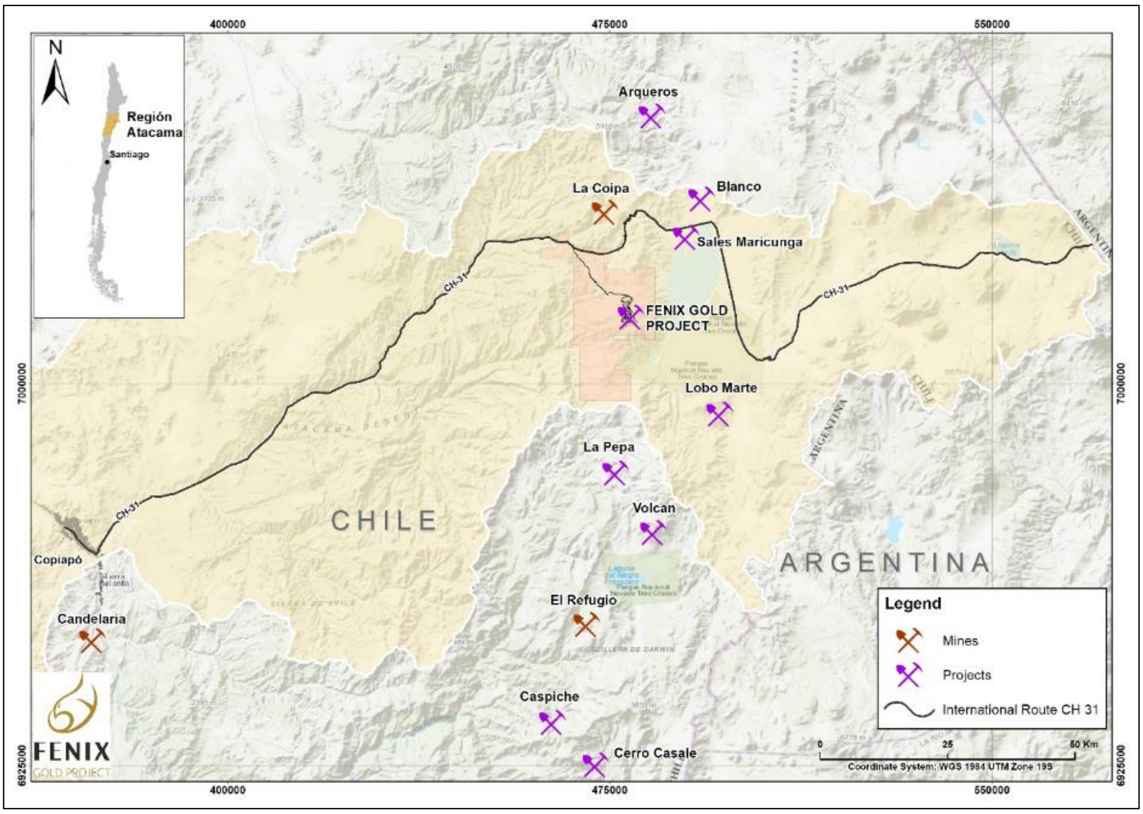
The Qualified Persons (QPs) responsible for this report have relied upon information provided by Rio2 and other experts concerning land tenure, legal, political, environmental, permitting, social licence, closure royalties, and taxation matters relevant to this technical report.

Depreciation and taxation were handled by Chilean law firm Guerrero Olivos, at the request of Rio2. Selling costs related to gold sales were provided by Rio2.

1.3 Property Description and Location

The Fenix Gold Project is located in Chile's III Region (Atacama) in the Maricunga Mineral Belt (MMB), a mining district with a history of mining and a gold endowment of over 70 million ounces. MMB hosts the La Coipa and Maricunga mines, and the Lobo Marte, Volcan, Caspiche, and Cerro Casale gold deposits. Some Lithium projects are also located nearby.

The Project is approximately 117 Km northeast of Copiapó City and approximately 50 Km west of Chile´s border with Argentina. It is located along the western flanks of the Chilean Andes at a mean elevation of approximately 4,500m (see Figure 1-1). The Pan-American Highway and the provincial road network connect the Project to the Pacific Ocean ports at Antofagasta and Coquimbo.



Source: Rio2, 2023

Figure 1-1 – Fenix Gold Project location.

The Fenix Gold Project includes 21,746 hectares of exploration and 15,545 hectares of exploitation concessions, comprising an area of approximately 37,291 hectares. Fenix has obtained and registered a provisional easement over the land (843.27ha) where it will develop the Project by a Resolution dated August 13, 2020, from the 4th Civil Court of Copiapó. This Resolution has been registered in the registry of the “Conservador de Bienes Raíces de Copiapó” on October 21, 2020.

Obtaining this provisional easement was an important milestone for Fenix Gold as it now holds the title to access the surface land where it will develop the project, allowing it to move forward with the application for certain permits while awaiting the approval of its Environmental Impact Study.

The Environmental Impact Assessment (EIA) for the Fenix Gold Project was submitted to the Environmental Assessment Service (SEA) for evaluation in April 2020. The Project was substantially improved following three addendas completed in response to consultations with the SEA and the OAECAS (State Administration Agencies with Environmental Competencies). Prior to the Technical Committee decision, 16 OAECAS members had declared in writing their agreement with the contents of the EIA.

On June 22, 2022, the Technical Committee met and issued the Consolidated Evaluation Report (ICE) recommending a rejection of the project's EIA. The Technical Committee was led by the SEA, two OAECAS members, the National Corporation for Indigenous Development (CONADI), the National

Forest Corporation (CONAF) and the Regional Representative of the Ministry of the Environment (SEREMI).

On July 5, 2022, the Atacama Regional Evaluation Commission voted to not approve the Environmental Impact Assessment of the Fenix Gold Project indicating that while the Project complied with all of the guidelines and environmental regulations, there was insufficient information supplied to rule out the potential for negative impacts to three wildlife species: Guanacos, Vicuñas, and Chinchillas.

On August 31, 2022, Fenix Gold exercised its right to file an administrative appeal before the Committee of Ministries, as the EIA study was completed in accordance with Chilean Environmental Assessment Service guidelines. The Committee of Ministries is comprised of representatives from the Ministry of Environment, the Ministry of Health, the Ministry of the Economy, the Ministry of Agriculture, and the Ministry of Energy and Mining. The national director of the Environmental Evaluation Service acts as the secretary of the Committee. The Committee of Ministers is currently evaluating the Project with a decision expected by the end of 2023. As of the finalization date of this study, Rio2 has not received confirmation from the Chilean regulators to set an appeal hearing date.

1.4 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The Project is located approximately 160 Km from Copiapó and is accessed via 140 Km of paved highway and 20 Km of maintained single-track dirt road. The approximate travel time from Copiapó is 2.5 hours.

The Project is situated on the western slopes of the Andes Cordillera in the high desert of the Atacama Region of Chile at an elevation of approximately 3,400-to-5,000m above sea level. The climate in the area surrounding the Project is classified as a “low marginal desert climate.”

The climate is considered extremely dry. Annual precipitation totals approximately 150mm on average, falling largely as snow during the winter months (June to September). Temperatures in the Project area range from -30°C at night in the winter months, to 20°C during the daytime in the summer months. There is no surface water source flowing through the Project area and no underground water sources have been identified. Phreatic water levels were also not found during drilling in the pit area.

There are no major population centers or civil infrastructures in the immediate vicinity of the Project. Small-scale farming is present in the valleys that drain the highlands. Farming in this area is typically done by indigenous peoples and consists of crop farming and raising livestock. Farming activity has not been recorded near the Fenix Gold Project.

Copiapó, an established regional mining support and logistics hub, has a population of approximately 171,000 (2022 AZ Nations, n.d.) and can supply a skilled and experienced mining and mineral processing workforce.

The Project is approximately 25 Km from Chile´s national power grid, Central Interconnected System (SIC). However, electrical generators were considered in the proposed start-up plan. The connection to the national power grid will be a future improvement for the Project, most likely in conjunction with establishing a water pipeline.

1.5 History

Independent prospectors identified mineralization in the general area of the Project in the early 1980's. In December 2007, a private Chilean exploration company, SBX, discovered gold mineralization in the Cerro Maricunga geological formation, with gold grades ranging from 0.2 g/t to 3 g/t. SBX named the discovery "Cerro Maricunga".

Minera Newcrest Chile Ltda (MNCL) entered into an agreement with SBX to evaluate the Project in 2007. Following their evaluation, MNCL chose to exit the option agreement with SBX. In 2008, Gold Fields (GFC) entered into an agreement with SBX to evaluate the Project, and following their work, GFC concluded that Cerro Maricunga had the potential to host a significant gold deposit. However, GFC elected to discontinue their interest in the Project.

Between 2008 and early 2010, SBX privately funded an extensive exploration program including metallurgical testing and a diamond drill hole program. Phase I drill results were positive and in October 2010, SBX took the Cerro Maricunga Project public after listing on the Toronto Stock Exchange as Atacama Pacific Gold Corporation (APG). Also, in October 2010, APG commenced Phase II drilling at the Project site and generated further positive results supporting the potential for a significant oxide-gold deposit.

Metallurgical test work conducted during 2011 indicated the deposit could be amenable to heap-leach processing. A third phase of drilling designed to define the extent of mineralization began in 2011. APG funded a program of infill drilling and additional metallurgical testing that concluded in May 2013. Following the results of Phase IV drilling, APG published a Pre-feasibility Study (PFS) for the Cerro Maricunga Project (PFS, 2014). In 2017, APG commenced Phase V drilling for metallurgical testing.

In July of 2018, Rio2 and APG announced a merger which saw Rio2 gain control of the Cerro Maricunga Property. Rio2 renamed the Project to "Fenix Gold Project," and Atacama Pacific Gold Chile was renamed to Fenix Gold Limitada (FGL). Since assuming control of the Project, Rio2 has completed Phase VI, Phase VII, and Phase VIII drilling and has published the "Updated Pre-feasibility Study for the Fenix Gold Project" in 2019. This report provided an update to the PFS, 2014 study published by APG. The 2019 Updated PFS study was amended and restated in August 2021.

In February 2022, Rio2 developed a structural model of the Fenix Gold Project and constructed a new geological model in 2023. This geological model was completed using a new version of the detailed geological mapping, which included descriptions of drill holes and a new structural map. Geotechnical and hydrogeological studies for the pit and mine components were also completed. Additionally, Rio2 completed pilot metallurgical testwork on a 426-dry-tonne ore sample.

The Environmental Impact Assessment for the Fenix Gold Project was completed and submitted in April 2020 to the Environmental Assessment Service. In June 2022, the SEA published the Consolidated Evaluation Report recommending that the project be rejected. This recommendation was supported by the Atacama Regional Evaluation Commission in early July 2022. Fenix Gold submitted an administrative appeal in August 2022 which is still in progress at the time of writing this report.

1.6 Geology and Mineralization

The Fenix Gold Project is located near the summit of the Cerro Maricunga Volcanic Complex, where it hosts a NW-SE-trending oxidized gold system approximately 2.5 Km long, 0.75 Km wide and 600m deep.

The stratigraphy of the Project is characterized by the following geologic units: 1) a pre-mineral unit (Early Phreatomagmatism Unit) formed by a set of domes and lava-domes which are rhyodacitic to andesitic and which intrude a sequence of block and ash pyroclastic breccias; 2) a syn-mineral series (Phreatomagmatic Unit) of massive-to-stratified ash tuffs, fine-to-medium lapilli tuffs, breccia tuffs and pyroclastic breccias of phreatomagmatic origin and with subvolcanic intrusions which are genetically related; and 3) a post-mineral group of small-volume dacitic domes that crosscut all previous units (Late Phreatomagmatism Unit).

The Phreatomagmatic Unit is associated with at least 10 maar-diatreme-type volcanic structures (maar-diatreme field) of different preservation degrees, which have been crosscut by NW-SE and late NE-SW faults and fractures.

The gold mineralization is hosted mainly by tuffs, breccias, and dacitic subvolcanic intrusions from the Phreatomagmatic Unit and, to a lessor extent, by andesites and dacitic domes of the same unit. The high-grade gold is commonly associated with low-temperature black banded quartz veins (BBV), which occur in sheeted veins, stockworks, subangular fragments in phreatomagmatic breccias and in hydrothermal injections of silica-magnetite. Low-grade gold is also present in veinless rocks as microscopic auriferous magnetite/ilmenite disseminated in a breccia matrix. Copper sulfides such as chalcocite-digenite, chalcopyrite and bornite have also been detected as small inclusions in quartz.

The deposit is interpreted as an intrusion-related, low-sulfidation, quartz-sulphide, Au±Cu deep epithermal mineralization, which has been lately remobilized by supergene processes facilitated by the permeable fine-grained matrix of the phreatomagmatic breccias.

The alteration associated with the mineralization is a weak homogeneous argillization represented by nontronite, silica, magnetite (chlorite), and, to a lesser extent, restricted silicification. Removed from this alteration, a ring-shaped kaolinite-hematite halo affects the country rocks, likely due to supergene alteration derived from disseminated pyrite.

1.7 Exploration

The Project has been explored by trenching, mapping, geophysics, and drilling. The Phase I drilling program completed a total of 2,142m during the years 2007 to 2010, and was undertaken by SBX.

Atacama Pacific Gold Corporation (APG) completed 106,339 m of drilling corresponding to Phases II through V over the years 2010-2017. APG also generated geological maps and conducted metallurgical and geotechnical testing.

Rio2 has carried out exploration activities since 2018. Several research studies were conducted from 2018 to 2022, including reports focusing on geophysics, petrology, and mineralogy. Included in these reports, was a structural study conducted by Dr. Pamela Pérez and a volcanological study completed by Dr. Jorge Clavero and Valentina Ramirez. During 2020 and 2021, 8 diamond drill holes were drilled for the purposes of geotechnical studies, one of which was completed by DERK in 2022 and which examined the stability of the designed reserve pits.

During 2020 and 2021, 426 tonnes of ore from Fenix North, Fenix Central, and Fenix South were stockpiled for the purposes of metallurgical testing in a pilot plant by HLC Ingenieria y Construccion.

1.8 Drilling

In total, 408 drill holes totaling 120,055m were drilled at the Project site. The 2020-2021 and 2022 drilling campaigns complied with mineral exploration best practices for diamond and Reverse Circulation (RC) drilling.

1.9 Sample Preparation and Data Verification

During the 2020-2021 and 2022 drilling campaigns, Rio2 conducted sampling, sample preparation, and sample analysis procedures according to industry best standards. Rio2 maintained high sample security standards throughout the entire sampling process.

No significant differences between the collar coordinates measured with a hand-held GPS and the coordinates recorded in the project database by Rio2 were observed.

Survey, logging, sampling, and assay data were properly transferred into the project database. No transcription errors were observed when comparing the original survey, logging and assay data with the data recorded in the project database.

Lithologies, structures, alterations and mineralization were properly documented, and data recorded in the logs generally respect the observed core and cuttings.

Interpretations involved in the geological model respect the data recorded in the logs and the sections. The interpretations from adjoining sections are consistent with the characteristics of the deposit represented by the model.

No twinned holes were drilled during the 2020-2021 and 2022 drilling campaigns.

The sampling, sample preparation and analytical precision for gold assays processed at the ALS lab and Andes Analytical Assay Ltda (AAA) laboratories were within industry standard limits for assay samples obtained from the 2020-2021 and 2022 drilling campaigns.

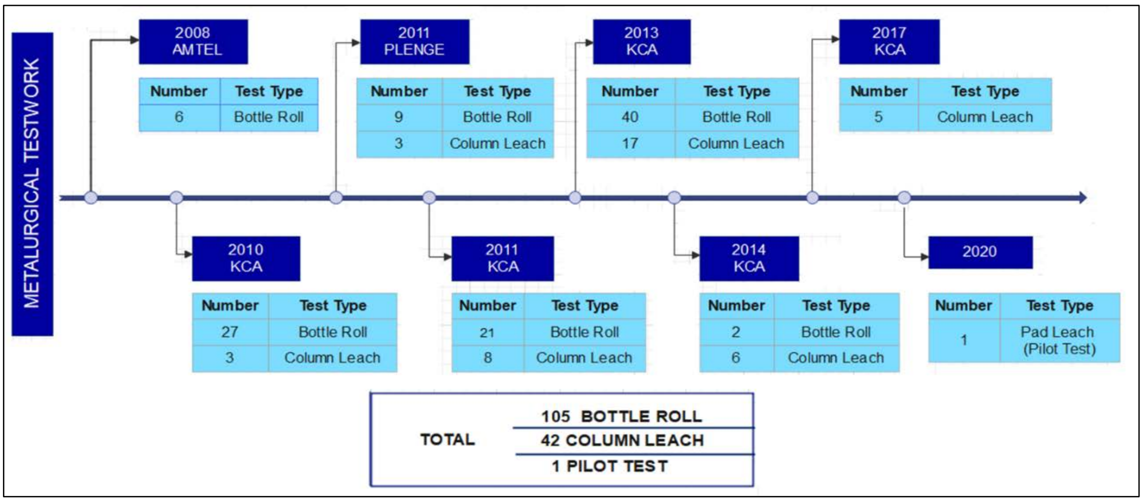
Rio2 used commercial standards, produced, and properly certified by Geostats Pty (Australia) to carry out the Assessment of Accuracy during the 2020-2021 and 2022 campaigns. Shewhart diagrams were prepared for each standard and accuracy biases were calculated. As a result, the Au accuracy at ALS and AAA are considered acceptable.

No significant Au contamination occurred during sample preparation at the ALS and AAA labs through the 2020-2021 and 2022 drilling campaigns.

The QP organized a re-sampling program to independently validate the ALS and AAA data during the 2020-2021 and 2022 campaigns. The check samples were submitted for re-assaying to Certimin, a laboratory with formal accreditations and the check assay data were processed utilizing the RMA method. As a result, the accuracy of ALS & AAA relative to Certimin for Au assay, was acceptable as validated by the high value of the coefficient of determination (R2 =0.993).

1.10 Mineral Processing and Metallurgical Testing

From 2008 to 2021, several metallurgical study campaigns have been conducted on mineralised material from various zones of the Fenix Gold deposit, formerly known as Cerro Maricunga. The sequence of campaigns is displayed in Figure 1-2. The total metallurgical test work involves 105 bottle rolls tests, 42 column leach tests and 1 pilot scale leaching test. The laboratories that performed the tests were: Advanced Mineral Technology Laboratory Ltd (AMTEL) of London, Ontario, Canada; Kappes, Cassiday & Associates (KCA), based in Reno, Nevada, USA; Plenge, based in Lima, Peru; and HLC, Lima, Peru, which performed the pilot scale testwork.



Source: HLC, 2023

Figure 1-2 – Testwork campaigns from 2008 to 2021.

The purpose of the 2008 to 2014 campaigns was to study gold and silver extractions under different leaching conditions and ore sizing distributions to provide basic design parameters for an industrial heap leach circuit.

The tests determined the optimum pH conditions, reagent consumption (cyanide, lime, and cement), metal recovery (gold, silver, and copper), leaching kinetics and particle size. Crushing tests were also conducted to determine the crushing work index and the abrasion index; high-pressure grinding roll (HPGR) crushing technology was also tested. For these campaigns, drill core and trench material were tested from different zones of the deposit to provide results considered representative of the deposit.

In 2017, leach tests were conducted by KCA for Atacama Pacific Gold. The purpose of this testwork was to study gold extraction in coarse-size particle fractions crushed to P80 -100mm and P80 -75mm, in an attempt to potentially reduce the crushing requirement. KCA received core samples identified from Fenix South, Fenix Central and Fenix North zones. The irrigation time was 123 days and the calculated gold head grades ranged from 0.383g/t to 0.898g/t. Gold recovery for the columns ranged from 53% to 77%.

In 2020, HLC Ingeniería y Construcción SpA (HLC) conducted pilot scale leaching tests at the project facilities in Copiapó, Chile. The purpose of the pilot scale testing was to demonstrate that 75% gold extraction could be obtained from blasted ROM material with a P80 -100mm, using water sources from the Nueva Atacama treatment facility.

The leach test was carried out on a concrete pad protected by a High-Density Polyethylene (HDPE) liner; pad dimensions were 8m x 8m x 3m high. A total of 426 dry tonnes of mineralized material from the three pits was treated with approximately 18% originating from the Fenix North Pit, 48% from the Fenix Central Pit and 34% from the Fenix South. Material from each pit was obtained by blasting, with a target P80 of -100mm. The blasted samples exhibited fragment sizes less than 150mm.

The pad was irrigated with cyanide solution with 150 ppm of free cyanide and the leach time was 81 days, plus 5 days of drain down. The gold, silver, and copper recoveries were determined together with the irrigation rate and reagent consumption. Gold and silver extractions were 75.1% and 12.4% respectively, while cyanide consumption was 0.175 kg/t. Lime was added to maintain the pH level above 10, with a consumption rate of 2.99 kg/t.

Gold extraction for all column tests carried out from 2010 to 2021 was in the range of 70% to 89%, except for the tests carried out in 2017, where two composites from CX top and bottom zones showed gold extractions between 53% and 57% respectively. These results were atypical with respect to previous tests utilizing material obtained from the same zone. It should be noted that when the CX top and CX bottom samples were included in a blend (20/20/20/20/20 CX-Top CX-Bottom LXPX-Top LXPX-Bottom PXLX-Bottom), the overall recovery was 75%.

The results from the pilot pad support the gold extraction obtained by KCA in 2017 for the composites from the three zones of the deposit CX, LX and PX giving an average gold extraction of 77% (without considering Samples CX-Top and CX-Bottom). The tests were carried out on a range of P100 particle size between -150mm and -75mm.

Based on the results of the column leach and pilot tests from 2010 to 2020, crush size has little effect on gold extraction. There is a weak correlation between metal recovery and feed size, with a decrease in gold recovery of 7% over a sample range of 20mm to 140mm.

1.11 Mineral Resource Estimate

The 2019 Mineral Resource Estimate (MRE) was updated to include 13 holes totaling 3,570m of RC and diamond drilling completed in 2021 and 2022. The additional data, new geological model and revised modeling parameters have had no material effect on the combined Measured and Indicated resources when compared to the 2019 PFS. This suggests that the resource estimate is robust for bulk mining.

Inferred resources have decreased compared to the 2019 PFS. This is due to the increase in G&A and process mining costs, combined with lower recoveries than in the 2019 study. The revised costs are considered better aligned with current market conditions.

The Mineral Resource was determined inside a Whittle Open Pit Optimization. The optimization utilizes input parameters that consider an expanded project with access to water via a pipeline, which reflects the longer-term potential of the project on the Measured, Indicated, and Inferred resources. Resources presented in Table 1-1 are constrained within an optimized open pit with a $1,800/oz gold price and corresponds to a cut-off grade of 0.15g/t Au, inclusive of Reserves.

Table 1-1 – Mineral Resource statement for the Fenix Gold Project, 0.15 g/t Au cut-off grade.

Resource Classification	Million Metric Tonnes	Au Grade (g/t)	Au Ounces (x1000)
Measured	123.3	0.42	1,671
Indicated	266.0	0.36	3,086
Total Measured + Indicated	**389.2**	**0.38**	**4,757**
Inferred	90.8	0.33	959

Notes:

1. *Mineral Resources reported is inclusive of Mineral Reserves.*
2. *Metal price of $1800 per ounce gold was used to estimate Mineral Resources.*
3. *Table 1-1 includes all Measured, Indicated, and Inferred Resources contained within the "Resource Pit", which represents the test for eventual extraction applied.*
4. *Mineral Resources were prepared by Independent Consultant Andres Beluzan Chartered Professional, Mining Engineering and a registered member in good standing of the Chilean Mining Commission, REG# 215*
5. *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 Resources estimated will be converted into Mineral Reserves.*
6. *Mineral Resources are reported in accordance with Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101) and have been estimated in conformity with Canadian Institute of Mining, Metallurgy and Petroleum (CIM) "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines.*
7. *Mineral resource tonnage and contained metal have been rounded to reflect the accuracy of the estimate, and numbers may not add due to rounding.*
8. *The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred resources as an Indicated or Measured mineral resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured mineral resource category.*

1.12 Mineral Reserve Estimate

The Mineral Reserves statement has been prepared according to the Canadian Institute of Mining, Metallurgy and Petroleum's (CIM) standards.

The Proven Mineral Reserve is based on Measured Mineral Resources and the Probable Mineral Reserve is based on Indicated Mineral Resources after considering and applying modifying factors to all economic, mining, metallurgical, social, environmental, statutory, and financial aspects of the Project.

Mining Plus developed the mine dilution methodology based on contact dilution of lateral contact edges on each block of the three-dimensional block model (3DBM). The dilution algorithm used to determine the dilution of one block is based on the surrounding grades of others and is further detailed in section 15.5.

The Mineral Reserve estimate is shown in Table 1-2 reported with a cut-off grade of 0.235g/t gold. The Mineral Reserves are reported as in-situ dry tonnes within the operational pit, totaling 114.7Mt of proven and probable ore reserves, 97.1Mt of waste material, a stripping ratio (SR) of 0.85 and 211.8Mt total ROM material.

Table 1-2 – Mineral Reserves statement.

Mineral Reserve Classification	Million Metric Tonnes	Au Grade (g/t)	Au Ounces (x1000)
Proven	63.2	0.50	1,022
Probable	51.5	0.45	750
Total Ore (Proven + Probable)	**114.7**	**0.48**	**1,772**

Notes:

1. *Totals may not add up correctly due to rounding.*
2. *Metal price of $1650 per ounce gold was used to estimate mineral reserves.*
3. *Mineral reserves are estimated using a minimum cut-off of 0.235 g/t and assuming metallurgical recovery of 75% on average for the life of mine.*
4. *Mineral Reserves were prepared by Erick Ponce FAusIMM, Area Manager, Mining Plus.*
5. *Mineral Reserves are reported in accordance with Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101) and have been estimated in conformity with Canadian Institute of Mining, Metallurgy and Petroleum (CIM) "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines.*

1.13 Mining Methods

The Fenix Gold Project consists of an open pit mine which will be developed using conventional drill and blast techniques, with a truck and excavator configuration. The mineral processing rate is 20,000 tpd Run of Mine (ROM) ore to Heap Leach Pad (PAD). The mining rate was determined based on the processing rate, which is primarily a function of the available process feedwater.

The final pit design of the Fenix Gold Project is based on an optimal pit shell Revenue Factor (RF) 0.96 selected during the optimization process. The design includes a ramp width of 14 m, which follows Chilean mining regulations. The final pit is divided into sectors, namely: Fenix North, Fenix Central A, Fenix Central B and Fenix South. Mining Plus reviewed and validated the final pit design, while geotechnical parameters were provided by DERK.

A detailed mining schedule was developed by Mining Plus. The first two years were scheduled on a monthly basis, followed by two years with a quarterly outlook and from year five onwards, on an annual basis. The primary objective of the mining sequence was to maximize the value of the project. The cut-off grade was set at 0.235g/t Au as provided by Rio2 and validated by Mining Plus. To further improve the economics and increase cash flow, medium grade and low grade stockpiles were utilized in the mining strategy.

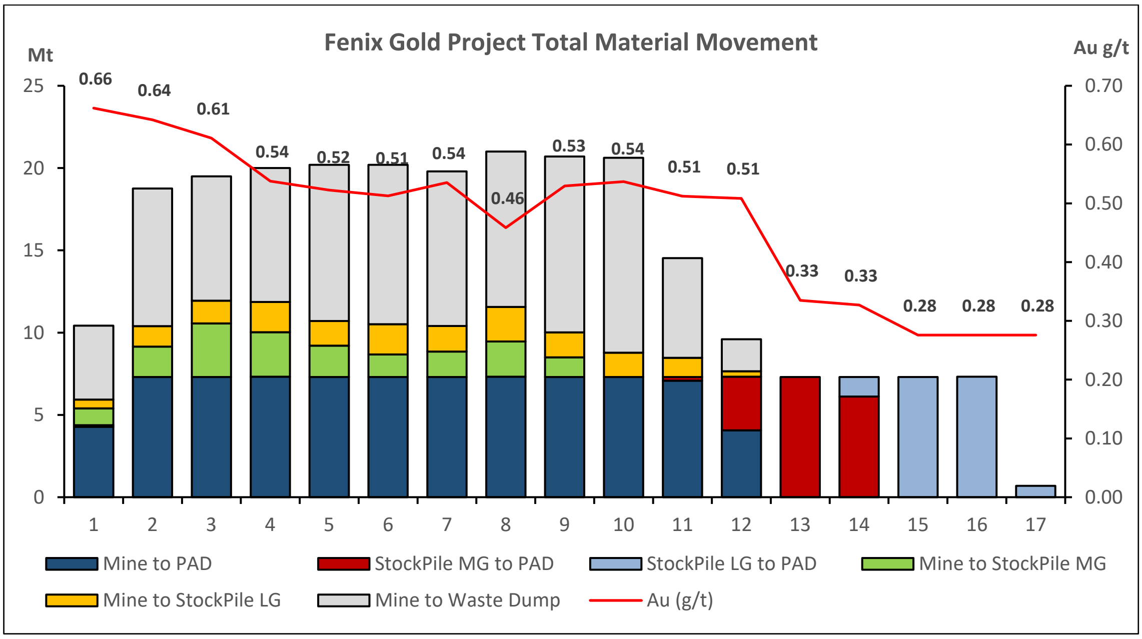
Year one of production has a planned placement rate of 12,000tpd on the PAD, which will operate at a placement rate of 20,000tpd once ramped up to full production. During the initial 12 years, the average grade will be 0.54g/t Au, with an average production of 91Koz of recovered gold. During these years, the mine schedule will reach the maximum annual mining rate of 21Mtpa.

From years 13 to 17, 100% of gold production will originate from 100% stockpile rehandle to PAD with an average grade of 0.30 g/t Au producing 54 Koz of recovered gold as average. The final year completes the rehandle from stockpiles in two months.

Mining operations are based on 365 calendar days per year, with two 12-hour shifts per day. Over a year, 10 days are scheduled to be lost due to weather conditions. STRACON will be responsible for mining operations as part of the alliance contract with Rio2. The mining fleet was estimated by STRACON and consists of 2 DM45 drilling units, a total of 4 units of 6 m^3 bucket excavators, 42 units of 43 t capacity haul trucks, and an associated ancillary and support fleet. The mining contractor will be responsible for purchasing, transporting, and mobilizing the fleet under the aforementioned alliance.

The stability analysis of the mine design was performed by DERK and complies with the acceptability criteria defined in the static, operational earthquake, and maximum credible earthquake scenarios. Anddes completed the stability analysis for mine components, which resulted in acceptable safety factor values for all evaluated scenarios.

The planned production schedule for the Fenix Gold Project is presented in Source: Mining Plus, 2023 Figure 1-3.



Source: Mining Plus, 2023

Figure 1-3 – Fenix Gold Project, Mine schedule.

1.14 Recovery Methods

Metallurgical tests were conducted between 2010 and 2017. A pilot plant test was completed in 2021 by HLC Ingeniería y Construcción SpA (HLC). The testwork showed that the feed for the Fenix Gold process plant is suitable for gold recovery by heap leaching.

The PAD design is based on leaching approximately 114.65 Mt of ROM feed over the Life of Mine (LOM) with an average head grade of 0.48 g/t Au. At a throughput rate of 20 Ktpd of ROM feed (7.3 Mtpa), the mine life is estimated to last 17 years. HLC estimates that in the leach stage the gold recovery is approximately 75.12%, and the Adsorption, Desorption, Recovery (ADR) plant is estimated to have a recovery efficiency of 99.3%. Losses at the ADR plant are due to the loss of gold in the fine carbon and the smelting slag. The overall gold recovery is estimated to be 74.6%.

The ROM material from the open pit will have an F80 particle size of 100 mm and, will be transported by 43 t capacity trucks to the heap leach pad, where it will be placed in 10 m vertical height lifts. Lime will be added to the trucks at the lime plant and the mixture will be dumped on the heap for leaching.

The irrigation system will uniformly apply a cyanide solution directly onto the leveled surface of the material to be leached via a drip irrigation system. The irrigation rate will be 10 l/h.m^2 with a 90-day irrigation cycle.

Leaching will use a diluted sodium cyanide solution to dissolve the gold which will be recovered from the pregnant leach solution (PLS) in the ADR plant. The gold is recovered from PLS in an adsorption circuit with activated carbon in a series of cascading columns (CIC circuit). Desorption then separates gold from the loaded carbon with acid washing to remove inorganic contaminants, leading to elution of the carbon to produce a gold-rich solution. Within the process, regenerated carbon is recycled into the CIC circuit. The final stage of the recovery process is electrowinning, where the gold-bearing sludge obtained from electrowinning will be filtered and then dried in a retort furnace where any mercury will also be removed. The dried material will be refined in a tilting furnace to obtain doré bars.

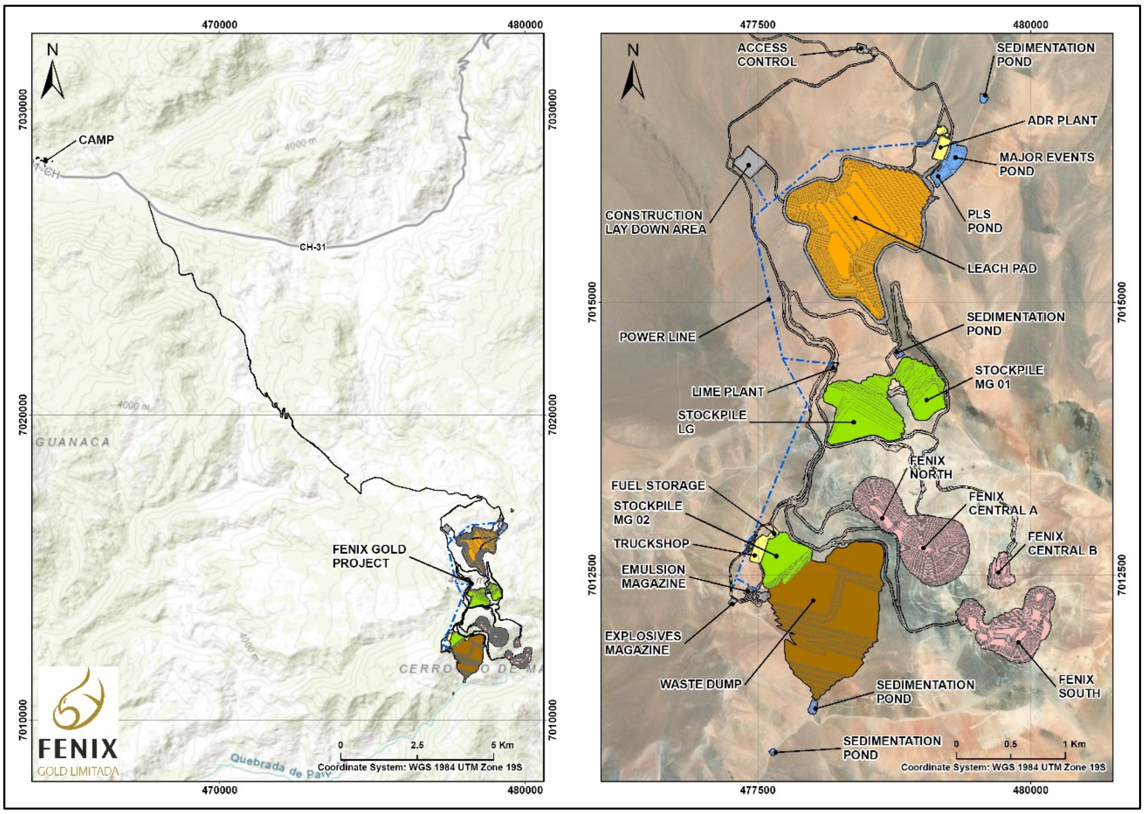
The heap leach was designed by Anddes Asociados SAC (Anddes). The leach pad was designed to be constructed in four phases and has capacity to store the total ore from the mine schedule plus 13% additional capacity. The base of the leach pad is inclined at 2% towards the PLS and major event pond and the PLS flows by gravity to the adsorption circuit. The leach pad has a single Linear Low-Density Polyethylene (LLDPE) geomembrane liner and an underdrain system installed below the liner for capturing any potential solution leakage. The rich solution is collected by HDPE perforated dual wall collection pipes and pumped directly to the plant or the PLS pond.

The PLS pond has a double HDPE geomembrane liner system and will have an installed capacity of 28,000 m^3 from the first year of the life of mine. The PLS pond doubles in size as the major events pond, during the first 6 years of operation. A designated major events pond will be built in year 6 of the mine operation. It will utilize a double HDPE geomembrane liner system and will have a capacity of 50,000 m^3.

Gold recovery was simulated using a gold production model provided by HLC. The model is based on inputs from the mine plan and considers losses due to extraction kinetics, gold losses in fine carbon, and losses in the smelter slag. The feed to the leach pad will have a moisture content of 2%. It is expected that there will generally be a water deficit for the process and make-up freshwater will be required. It is estimated that the make-up freshwater requirement will be 1,800 m^3/d.

1.15 Project Infrastructure

The overall site plan is shown in Figure 1-4 and includes the major project facilities such as the mine open pits, waste dump, stockpiles, leach pad, PLS and major event ponds, ADR plant, power supply, water supply, lime dosing area, workshops, warehouses, offices, laboratory, camp, fuel storage and delivery and other facilities, including the access road to the project area. The main infrastructure locations were selected to take advantage of the local topography, and environmental considerations, and to minimize capital and operating costs.



Source: Rio2, 2023

Figure 1-4 – Key infrastructure facilities.

1.15.1 Access

Access to the camp is via Route CH-31, which connects the city of Copiapó and the Lazaro camp of Lince S.A. via 127 Km of paved highway. The Lazaro Camp will be used by Fenix Gold for the construction and operation of the project. An existing 20.2 Km access road to the project exists off Route CH-31 at approximately the 131.5 Km mark. The current access road needs upgrading to comply with safety standards requiring a maximum gradient of 10% and maintaining a total effective width of 9.10m.

1.15.2 Water Supply

The Project will require a water supply of up to 23.7 l/s (85.3 m^3/hr) during the operations stage. The water will primarily be used for ROM ore processing. The water requirement calculation also includes a provision for dust suppression, as well as feedwater requirements for workshops, offices, etc.

The Project will have access to water via a contract signed with the major water supplier in Copiapó called Nueva Atacama, formerly known as Aguas Chañar. The contract will supply up to 20 l/s of treated wastewater from its Piedra Colgada treatment facility located to the north of Copiapó. The water loading infrastructure was built by Fenix Gold at the Nueva Atacama facilities and has been fully commissioned. The water will be transported by 30 m^3 water tankers to the Fenix Gold Project site. An additional water up to 5 l/s supply of water will be sourced from Lince S.A as required.

There will be three main freshwater/fire water tanks for the Project, two with a capacity of 360 m^3, and one with a capacity of 2,300 m^3. Potable water systems will be installed at both the ADR plant and at the mine maintenance shop. The water that will feed the two potable water treatment plants will be drawn from the Lince S.A. well and trucked to the site.

1.15.3 Plant Infrastructure

Most of the process buildings for the Project were designed as steel frame buildings with modular thermo-acoustic panels. The plant office building, dining room, change room, ADR plant, maintenance workshop, and powerhouse buildings will all be housed in a pre-engineered steel building.

The reagent storage will be inside the ADR building and will consist of two separate storage areas, one for cyanide and one for carbon. The gold room will be adjacent to the ADR building and will be a reinforced concrete block, steel frame building with modular thermo-acoustic panels and high-security control.

Chemical analysis of drill hole samples and process plant samples will be completed on-site by a contractor. The process plant structure was designed with earmarked space for the installation of a chemical laboratory in the future.

The Project will use the existing metallurgical laboratory located at the Lince S.A. infrastructure site, located near the Lazaro camp These facilities will be used utilized for column tests, where there are 10 steel columns of 0.7m diameter and 6.0 m height, designed to simulate to heap leaching conditions.

The powerhouse in its final configuration will contain four 1,100 kW generators, three in operation and one on standby. The powerhouse area will include one fuel storage tank with a capacity of 520,000 litres, sufficient fuel for 24 days of operation.

1.15.4 Mine Facilities

The explosive storage facility will be contained in a warehouse structure and is planned to be located close to the waste dump. Detonators, detonating fuses, and cables will be stored in protected 20 ft long containers. Each container will be isolated by containment walls constructed from compacted material following standard safety construction procedures. These facilities will be utilized for column tests consisting of 10 steel columns of 0.7m diameter and 6.0 m height, designed to simulate heap leaching conditions.

The truck shop facility includes lubricant storage, mine maintenance, welding, tire workshop, truck wash, dining room, and administrative office.

The mine fuel station will be located in proximity to the truck shop and will be supplied by fuel tankers from the Compañía de Petróleos de Chile (COPEC). Fuel storage will consist of five tanks, each with a capacity of 60,000 l, which will supply the site operations for 30 days assuming normal operations.

1.15.5 Power Supply

The power supply for the Project will be supplied via four 1,100 kW diesel generators, three in operation and one on standby. One fuel storage tank with a capacity of 520,000 litres provides sufficient fuel for 24 days of operation. Initially, there will be only three generator sets will be installed.

The power distribution system will consist of a 13.2 kV medium voltage distribution line using single concrete pole structures to carry the line and double portal-type structures for anchoring and/or topping structures. This line will supply power to the lime plant, mine workshop, and explosives storage area. The distribution line will have a total length of approximately 7 Km.

1.15.6 Camp

The Lazaro camp is located at kilometer 127 of Route CH-31 on the property of Lince S.A. The camp is designed to accommodate up to 565 people and covers an area of approximately 10 ha. Additionally, the old camp infrastructure can be reconditioned to provide additional capacity to accommodate 155 people. The facilities include management and worker dormitories, offices, a medical center, a training room, and kitchen, a recreation area a fuel depot, an electrical substation, a water treatment plant, a sewage treatment plant, and a parking lot. These facilities will be used initially by the construction contractors and later by the operations staff.

1.15.7 Site Services

Emergency medical services will be available in a clinic located next to the main office. The medical services will include an ambulance and will be contracted out by Fenix Gold.

Cell phone service coverage will be established to provide coverage to the construction offices and camp area and eventually the mine site construction areas. Internet access is distributed via a satellite system located at the camp. As the infrastructure is constructed and the project advances the internet access will be extended to include the mine, plant, and workshop areas onsite.

All solid waste, industrial waste and toxic waste generated on the site will be temporarily stored in a designated transfer center where it will be classified and stored awaiting transport to an approved final disposal facility.

1.16 Market Studies and Contracts

Rio2 has not conducted a market study related to gold and silver doré. Gold and silver are freely traded commodities for which there is a steady demand from numerous buyers. A sale price of US $1750/oz of gold was used utilized for the economic analysis, which, when vetted by the Qualified Person was considered it reasonable, given that gold has been trading above this price since 2018.

On November 16th, 2021, Rio2 signed a stream agreement with Wheaton Precious Metals over the gold production of the Project. Under the gold stream agreement, Wheaton will purchase 6.0% of gold production from the Fenix Gold Project until 90,000 oz of gold is delivered, followed by 4.0% of the gold production until 140,000 oz of gold is delivered, after which the stream will reduce to 3.5% of the gold production for the remaining of the life of mine.

The Treated Water Supply Agreement (TWSA) signed on December 27th, 2019, is in effect to date and ensures water supply for the Fenix Gold project. The first amendment signed on December 2nd, 2021, included the construction of the water loading system located at the Nueva Atacama plant in Copiapó, this infrastructure was completed in 2022. The second amendment was signed on December 15th, 2022, as a result of the rejection of the EIA which made not possible to comply with deadlines established in the initial contract. The revised contract has the EIA approval date to act as a trigger to begin water supply for the construction phase of up to 10 l/s then increasing to 20 l/s during the operation phase.

In October 2021, Rio2 and STRACON finalized a contract that covered services related to earthmoving and construction, mining, and water transport for the Fenix Gold Project. The contract was placed into suspension on August 19th, 2022, after the EIA was rejected and the outcome of the appeal process is pending.

1.17 Environmental Studies, Permitting, Social and Community Impact

1.17.1 Environmental

The Environmental Impact Assessment (EIA) for the Fenix Gold Project was submitted to the Environmental Assessment Service SEA - (Servicio de Evaluación Ambiental) for evaluation in April 2020. The assessment examined air quality, hydrology, hydrogeology, water quality, climate and meteorology, flora and fauna, archaeology, human interest studies, impact assessments, mitigation and management plans, and closure plans.

Due to the pandemic, the evaluation was suspended and recommenced in November 2020. The Project, as originally submitted and defined in the EIA and its annexes, underwent substantial improvements through each of its three addendums in response to the consultations of the SEA and the OAECAS (Órganos de la Administración del Estado con Competencias Ambientales) the amendments are summarized in Table 1-3.

Table 1-3 – ICSARAS and Addenda during the EIA assessment process.

Document	Issued by	Date of Issue/Presentation
ICSARA 1 (Observations)	SEA	January 2021
Addenda 1 (Replies)	Fenix Gold	March 2021
ICSARA 2	SEA	July 2021
Addenda Complementaria	Fenix Gold	December 2021
ICSARA 3	SEA	January 2022
Addenda Excepcional	Fenix Gold	April 2022

The Citizen Participation Process (PAC - Participación Ciudadana) began in December 2020 and was concluded in February 2021. The indigenous consultation process began in March 2021 with the participation of six indigenous communities (PaiOte, Sinchi Wayra, Runa Urca, Pastos Grandes, Sol Naciente, and Comuna de Copiapó) and was approved in April 2022 with the signing of the Final Agreement Protocols (FAP) with the six indigenous communities.

In June 2022 the Technical Committee led by the SEA, with two OECAS representatives (CONADI and CONAF), and the SEREMI for Environment, published the Consolidated Evaluation Report recommending the rejection of the Project, a decision that was confirmed by the Atacama Regional Evaluation Commission in early July 2022. Following, Fenix Gold entered an administrative appeal to the Committee of Ministers in August 2022, the Committee of Ministers is currently evaluating the Project and a decision before the end of 2023.

1.17.2 Human Environment

Since 2019 Rio2 Fenix Gold, has carried out a process of dialogue and early engagement with the various stakeholders. This dialogue was focussed on the project, allowing Fenix Gold to understand the perceptions and points of view of the stakeholders and the challenges and opportunities that should be considered during the construction and operation of the mine.

The indigenous communities closest to the project and included in its area of influence are located in Quebrada San Andrés and Quebrada Paipote, where they maintain their main productive activities, such as raising livestock, grazing, and agriculture for their own consumption, handcraft, and collecting medicinal herbs as part of their cultural manifestations and ancestral customs.

The EIA process included two mechanisms to inform the stakeholders about the Project, and any significant effects. The first one is the Citizen Participation Process (PAC - Participación Ciudadana) which included online and in-person activities. The event involved various civil society participants This Citizens Participation Process was concluded satisfactorily in February 2021.

The second mechanism is the Indigenous Consultation Process, which was developed in conjunction with the six aforementioned communities. The impacts identified, and the control and mitigation measures proposed in the EIA were presented to the communities. The participants had the opportunity to review, comment, and accept or improve on each of the proposals proposed in the EIA. This dialogue process proved highly successful and resulted in the signing of six Protocols of Final Agreement (PAF) between the SEA, Fenix Gold, and each of the six communities in April 2022.

1.17.3 Potential Emissions, Waste, and Effluents Generated by the Project

The development of the Project will generate emissions, effluents, and mining waste in all its stages. As a result, environmental control actions were proposed to mitigate potential impacts.

Mining waste from the project consists of both waste material extracted from the pits and the leached ore that will remain on the heap leach pad after leaching is complete. Due to the static nature of the heap leaching process, the leached ore waste will be washed in situ at the end of operations to remove cyanide ready for closure.

The leach pad will have coronation channels and a sedimentation pond for non-contact water management during operations.

Mining waste material generated by the project during the construction and mining stages will be disposed of in the waste dump. The waste dump will have a contact water management system consisting of a network of drains at the base of the dump, which will channel any eventual flow of contact water to a sedimentation pool to control and manage this water. For non-contact water, contour channels are planned with their respective sedimentation pools. The limited precipitation in the project area makes this aspect relatively simple to manage.

The waste dump complies with all regulatory and technical requirements to ensure physical and chemical stability. The permit to establish a waste dump or ore stockpile was submitted in April 2021 and received technical approval in May 2022 and its resolution is conditional on the approval of the Environmental Qualification Resolution (RQA).

According to the studies and geochemical models completed for the project, it has been confirmed that the Project will not be a potential Acid Drainage Generator (ADG). This is due to the composition of the sterile material, the scarcity of precipitation in the area, and the high evaporation rate.

Industrial waste (hazardous and non-hazardous) will be managed by an officially authorized company. Recycling and reuse segregation will be conducted before final disposal to minimize the volume. Final waste disposal will be carried out at authorized sites.

1.17.4 Closure and Post-Closure Stage

Once the operation phase of the project is completed, the activities established for the closure of the mine site will be carried out. Closure activities were planned according to current regulations and accepted industry practices.

Specific closure measures will be implemented, the general criteria established for closure are; the de-energization, dismantling, demolition, removal, and disposal of surface installations corresponding to structures and constructions.

As for the remaining mining facilities such as pits, waste dumps, and leaching heaps, the general criterion will be to achieve the physical and chemical stability of these facilities in order to protect the health and safety of people and the environment, as provided in Chilean Law No. 20,551, which regulates the closure of mining sites and facilities. The Project closure plan will have a duration of 1 year.

After the closure, all environmental and physical variables will be monitored to verify the physical and chemical stability of the mining components and to identify the necessary corrective measures when needed.

Maintenance or restitution of the accesses, contour channels, sedimentation pools, PLS pool, and emergency pool, will be implemented as ongoing maintenance measures every 10 years.

Based on the results of the various risk assessments conducted, the remaining facilities will not require monitoring.

1.18 Capital and Operating Cost

Capital and operating cost estimates were prepared by HLC, Anddes, STRACON, and Rio2 and are quoted in United States dollars (US$).

1.18.1 Capital Cost

In 2022, during the pre-construction phase of the Fenix Gold project and before the Environmental Impact Assessment (EIA) was rejected, a total of $28.73 million was expended for the project's pre-construction (See Table 21-1) the expenditure included the construction of a 565-person camp, water loading infrastructure in Copiapó, the purchase of long-lead items such as electrical switchgear, electrical transformers, pumps, prefabricated components of the adsorption/desorption process plant, and preliminary earthworks. This expenditure is included in the financial model for the Fenix Gold Project under investment to date expenditure.

The forward-looking capital cost estimate (Capex) for the Fenix Gold Project is based on an operation processing 20,000 tonnes per day (dry basis). The initial capital was estimated in accordance with the Association for the Advancement of Cost Engineering (AACE) International Class 2 standards, indicating an expected accuracy range of ±10%. The sustaining capital was prepared considering Class 2 and Class 3 standards with an accuracy range of ±10% and ±20%.

The capital estimate was prepared based on an exchange rate of $803.84 Chilean Pesos per 1.00 US$.

The total life of mine capital investment including initial and sustaining capital for the Fenix Gold Project are displayed in Table 1-4. The total Capex is estimated to be $204.59M excluding Goods and Services Tax (GST).

Table 1-4 – Total life of mine Capex summary.

Description	Capex $M	Sustaining $M	Total $M
Owner cost	15.02	-	15.02
Mine Capex	3.77	15.53	19.31
Process Capex	43.62	22.85	66.47
Construction and facilities	21.30	8.36	29.66
Indirect Cost	25.63	21.61	47.24
Mine closure	-	11.10	11.10
Contingency	7.23	8.56	15.79
Total	**116.57**	**88.02**	**204.59**

The following parameters and assumptions were considered for the Capex estimation:

- Construction of the first stage is projected to take 14 months. Month 13 is designated as the pre-production stage and from month 14 onwards it is considered as the production stage.
- The mine capital cost includes waste dump and stockpile development, explosive magazine construction, and mining equipment mobilization and demobilization. It excludes mining equipment acquisition costs, as the operation will be carried out by the mining contractor STRACON under an alliance agreement.

- The processing capital cost, estimated by HLC and Anddes, includes infrastructure for gold production such as the ADR plant, leach pad preparation, PSL and mayor events pond, lime dosing station and chemical analysis lab. The construction of the heap leach will be in 4 stages and will be built as mining progresses. Only the first stage is considered in the construction phase of the project as initial Capex.
- The mining closure cost considers six sectors (mine, plant, workshop, linear works, camp, monitoring) and the activity of closure monitoring. It is expected that the Chilean government will be responsible for the post-closure monitoring, while the project owner contributes to a post-closure fund.
- The capital estimate excludes foreign currency fluctuations, interest, financing costs, general sales, and withholding taxes (included in the financial analysis), working capital, and risks from political upheaval, government policy changes, labor disputes, permitting delays, or other force majeure events.

1.18.2 Operating Cost

The operating cost was estimated by Rio2, HLC, and STRACON and was compiled and reviewed by Mining Plus. The average operating costs over the life of mine are presented in Table 1-5.

Table 1-5 – Summary of operating costs.

Description	LOM Cost $M	Total $/t ore
Mining cost	650.64	5.67
Processing cost	633.98	5.53
G&A	247.95	2.16
Selling cost	13.22	0.12
Royalty	1.35	0.01
Total	**1,547.14**	**13.49**

The operating cost estimates are based on the following assumptions:

- The fuel price used was $3.98/gal, or $1.05/l.
- Mining costs were estimated by contractor STRACON based on material destinations in the mine plan, including fuel.
- Process operating costs were estimated by HLC using test work, supplier quotes, HLC's cost database, and first principles.
- Processing costs include water trucking by 30 m^3 capacity fleet from Copiapó, estimated by STRACON.
- Administrative costs were estimated by Rio2 based on the head count and organizational chart and site personnel required in the mine plan.

1.19 Economic Analysis

Rio2 and Mining Plus developed the economic model for the Fenix Gold Project using capital and operating costs provided by Anddes, HLC, STRACON, and Rio2. The model was based on a gold price of $1750/oz and calculated both pre-tax and after-tax Net Present Value (NPV), payback period, and internal rate of return (IRR). Table 1-6 summarizes the results of the economic evaluation.

Table 1-6 – Summary of financial result.

Description	Units	Value
General		
Gold Price	US$/oz	1,750
Mine Life	Years	17
Total ore to heap Leach	Kt	114,653
Total Waste	Kt	97,102
Strip ratio		0.85
Production		
Gold grade to heap leach	g/t	0.48
Gold recovery	%	74.6%
Total Ounces recovered	Koz	1,321.72
Total Average Annual Production	Koz	81.93
Operating cost		
Royalty	US$/ oz au	1.02
Selling cost	US$/ oz au	10.00
Mining Costs	US$/mined	3.07
Processing Costs	US$/ore	5.53
G&A Costs	US$/ore	2.16
Cash cost	US$/ oz au	1,170.55
AISC	US$/ oz au	1,237.14
Capital cost		
Initial Capital	US$ M	116.57
Sustaining Capital	US$ M	76.92
Closure Cost	US$ M	11.10
Financial results		
NPV @ 5% Pre-Tax	US$ M	292.64
IRR Pre-Tax	%	37.25%
NPV @ 5% After-Tax	US$ M	210.31
IRR After-Tax	%	28.54%
Payback After-Tax	Years	2.75

The following parameters and assumptions were considered:

- Gold production was estimated at 1.32 Moz over a 17-year mine life.

- Gold sales are assumed to occur in the same period as pre-production and production and cash flows include royalties and streaming.
- Closure costs are included based on when they are incurred.
- Royalties are paid according to Chilean law, which is based on production and mining margins.
- Initial capital is $116.57M including infrastructure and contingencies and sustaining capital is $88M for infrastructure maintenance and leach pad.
- Initial capital excludes sunk costs like exploration and permitting.
- 27% income tax rate (according to Chilean law) and 16.7% tax depreciation rate were used.
- Financials assume 100% equity financing, 17 years of production after 1 year of construction.
- After-tax NPV at a 5% discount rate is $210.31M, after-tax IRR is 28.54% and the payback period is 2.75 years.
- Rio2 compiled after-tax results.

1.19.1 Sensitivity Analysis

Mining Plus conducted a sensitivity analysis of the after-tax NPV and IRR based on various parameters of the economic evaluation. The key results are shown below, indicating that the Fenix Gold Project's NPV and IRR are most sensitive to changes in gold price and operating costs. Table 1-7 shows the results of the after-tax sensitivity analysis.

Table 1-7 – NPV and IRR sensitivity analysis.

Sensitivity Analysis			
Gold Price			
Gold Price ($/oz)	1,600	1,750	1,900
NPV@5% after tax (US$ M)	117	210	304
IRR after tax	19.2%	28.5%	37.2%
Capital Costs			
Capital Costs	-10%	205	10%
NPV@5% after tax (US$ M)	223	210	197
IRR (after tax)	32.5%	28.5%	25.3%
Operating Costs			
Operating Costs	-10%	1547	10%
NPV@5% after tax (US$ M)	288	210	133
IRR (after tax)	35.8%	28.5%	20.8%
Discount rate			
Discount Rate	5%	8%	10%
NPV@5% before tax (US$ M)	293	222	185
NPV@5% after tax (US$ M)	210	155	126

1.20 Interpretations and Conclusions

The Fenix Gold Project is defined by an estimated Mineral Resource that has been converted to a Mineral Reserve in accordance with the 2014 CIM Definition Standards through the application of feasibility level of engineering design and project costing.

The Fenix Gold Project will be mined at an annual rate of 7.3 Mt of ore per year with an overall stripping ratio of 0.8. Ore will be processed by a low-cost ROM heap leach that will produce 1.32 million oz of gold over 17 years. Based on the assumptions and parameters presented in this report, the Project generates positive financial results that support the declaration of Mineral Reserves.

1.21 Recommendations

The following subsections summarize the key recommendations resulting from the review of each area of investigation carried out in this study to improve the base case design.

1.21.1 Exploration

The recommendation is based on the common presence of magnetite in the deposit and its close correlation between ground magnetic anomalies and mineralization. The QP suggests Rio2 incorporate magnetic susceptibility as one of the parameters to characterize lithologies, alteration, and mineral zones.

1.21.2 Drilling

This QP recommends that Rio2 complete a full record of recoveries through all phases, particularly in the case of RC. This includes drilling diameter, depth, and lithology to investigate and mitigate the variables involved in decreasing recoveries.

1.21.3 Sample Preparation, Analyses, and Security

The QP recommends Rio2 maintain protocols of all sampling, sample preparation, and sample analysis for future drilling campaign to be executed in the project. This helps to identify and remediate eventual data acquisition misfits affecting accuracy, precision, or contamination of data supporting the Resource estimation.

1.21.4 Data Verification

The QP author of the chapter suggests the following recommendations:

- Boundaries between intrusive and country rocks are often unclear since the contacts are given by transitions where mutual ingressions and inclusions of one unit into the other are normally observed. The QP recommends Rio2 define an additional lithological term expressing the mixed nature between the two end members.
- In future drilling campaigns, Rio2 should twin approximately 10% RC holes with diamond drilling holes to support the quality of the RC drilling.
- Rio2 should try to investigate the causes of the bias obtained from Au high-grade standard results during the 2022 drilling campaign at AAA lab.
- The Rio2 Quality Control (QC) program needs to be completed for the 2022 drillholes by incorporating 2% fine blanks and 4% external controls. These samples should be routinely considered in a comprehensive QC program as they allow evaluation of the primary laboratory performance.

1.21.5 Mineral Reserve and Mining Methods

The following recommendations are made as the project advances through construction:

- The main opportunity to increase the project value is access to water via a pipeline that could allow a throughput expansion of around 80 – 100 Ktpd, lowering processing costs, as well as administration costs. Given that water restricts the operation size, this opportunity could advance some of the Mineral Resources to Mineral Reserves
- The mine plan design allows for a reconfiguration and upscaling of the mine operation to host a bigger mining fleet after the first three years of production. The schedule to increase production will depend on access to water via a pipeline.
- Future studies should include detailed production blasting parameters and fragmentation results.

1.21.6 Geotechnical Work and Hydrogeology

The following geotechnical and hydrogeological recommendations apply to the Fenix Gold Project.

- Shear strength and hydraulic conductivity testing on ore samples and shear strength testing on soil/geomembrane interface must be completed during the operation stage to confirm or update the geotechnical model and to anticipate stability issues.
- A robust geotechnical instrumentation and monitoring program must be implemented in the leach pad, ponds, and waste dump facilities to prevent any anomaly in the performance of those facilities.

- Monitor and reassess the behavior of surface and groundwater in the basin or sub-basin of the project area to ensure that the water resources found in the project environment are not affected by mining activities.

1.21.7 Recovery Methods

The QP author of the Mineral processing and metallurgical test work section suggests the following recommendations:

- It is important to include the total copper, copper oxide, and secondary copper grades in the block model in order to predict high lime and cyanide consumptions, as well as high copper dissolution in the pregnant solution, which would cause problems in the ADR plant circuit and report to the doré bars.
- Further studies are recommended to confirm or rule out the impact of magnesium salts and sulphates on lime consumption. Inductively Coupled Plasma (ICP)tests on the feed reported magnesium values up to 2.34% and sulphates up to 0.34%.
- The samples do not contain significant quantities of fines (>10% 200#mesh), therefore, it is recommended that the irrigation rate could be increased to more than 12 $l/h.m^2$, to shorten leaching times.

1.21.8 Site Infrastructure

Site infrastructure recommendations include:

The implementation of communication infrastructure such as cell phone, radio towers, and repeaters need to be completed as early as possible to warrant good site coverage and communications as required to ensure safe and efficient operations during the various stages of the Project.

The Project will initially use inflatable structures imported from Canada to be used as temporary workshops. The main workshop construction is scheduled for the second year of operation. It is important to complete this infrastructure and connect it to the power line.

1.21.9 Water Management

The project is dependent on water trucked from Copiapó or the Lince camp infrastructure site. Water is an expensive and scarce commodity that requires exceptional control and recycling and reutilization programs to be executed throughout the life of the Project. Other recommendations for water management include:

All main roads should be surfaced and maintained with dust suppressants to minimize the use of water application for dust control.

Control water losses by reducing evaporation on the leach pad and associated ponds. The FS considers the use of special Thermofilm covers for the leach pad. Ponds will be covered with floating covers or floating ball technology to reduce evaporation.

1.21.10 Environment, Permitting, Social and Community Relations

In the 2022 EIA, both mitigation measures and voluntary commitments were proposed by Fenix Gold that controlled and managed the environmental impact identified in the study. The effectiveness of these measures and commitments should be monitored and execute adjustments if opportunities are identified to improve results.

The benefits of these voluntary commitments extend outside of the immediate area to the Project. Accordingly, these voluntary commitments were socialized with local and national authorities, as well as all other stakeholders. It is recommended that the results of these commitments are continuously communicated to keep the stakeholders informed and involved.

All programs and plans proposed in the EIA, as well as, subsequent voluntary commitments, or conditions approved by the Committee of Ministers will be executed in the early stages of the project. This is to allow early identification of any variations in the functioning of the natural systems in and around the project, allowing for control and mitigation of any potential environmental risk.

1.21.10.1 Social

It is recommended that Fenix Gold maintain good control over the execution of the Voluntary Cooperation Agreements (VCA) signed with the Colla Communities. These agreements encompass employment, health, technology, productive development, and others. This is to maintain a positive long-term relationship between the parties.

Fenix Gold should have a designated point of contact with the communities so that their questions or problems are properly received, attended, and mitigated in a timely manner.

2 INTRODUCTION

2.1 Purpose of the Technical Report

This Technical Report has been prepared for Rio2 Limited (“Rio2”), a publicly listed mine development company listed on the TSX Venture Exchange under the trading symbol “RIO”.

The Technical Report is a Feasibility Study (FS) for the Fenix Gold Project (previously Cerro Maricunga Project) and was prepared according to the guidelines set out under Canadian Securities Administrators “Form 43-101F1 Technical Report” of National Instrument Standards of Disclosure for Mineral Projects (“NI 43-101”).

The updated MRE for the project consists of 123 Mt of Measured Resource with a grade of 0.42 g/t with 1.7 Moz of gold contained, 266 Mt of Indicated Resource with a grade of 0.36 g/t with 3.1 Moz of gold contained, and 91 Mt of Inferred Resource with a grade of 0.33 g/t with 1.0 Moz of gold constrained. This Resource is estimated within a pit shell using a gold price of $1,800 per gold ounce. The Mineral Resource remains open at depth and along strike.

This FS is strategically focused on an optimally configured mine plan which will facilitate the shortest possible timeline to construction/production, a lower initial Capex, and higher grades being targeted early in the life of mine. The FS focuses on a low-cost heap leach gold mine that will produce 1.32 million oz of gold.

The FS is built with a throughput rate of 20,000 tonnes per day, with water for the project being trucked from Copiapó, a strategy that was established in the PFS from 2019. Furthermore, Rio2 has an agreement for an alliance mining contract with Stracon to cover earthmoving, construction, mining, and water transport works for the Fenix Gold Project. To maximize cash flow, high-grade ore will be placed on the leach pad during the initial 12 years of production and low-grade ore will be stockpiled and rehandled for leaching in the subsequent 5 years of production giving a total mine life of 17 years. Average annual gold production during the first 12 years will be 91 Koz, while production from the ore stockpile rehandled to the leach pad has an average of 54 Koz from years 13-17. The final year completes the rehandle from stockpiles in two months.

With a large, mineralized resource and potential for resources to grow through further drilling, there remains considerable opportunity to increase annual production and extend the mine life of the Fenix Gold Project. The possibility to increase production will depend on the ability to transport a greater volume of water via a pipeline, and/or using alternative water solutions closer to the project.

2.2 Qualified Persons

The Qualified Persons (QP) responsible for each section of the Technical Report is given in Table 2-1.

Table 2-1 – Qualified Persons.

Qualified Person	Professional Designation	Position	Employer	Report Responsibilities	Report Section
Erick Ponce	Professional Engineer	Surface Area Manager	Mining Plus	Mineral Reserve estimate, mine design, mine plan, consolidation and review of capital cost, operating cost, and financial model.	1.1, 1.2, 1.3, 1.4, 1.5, 1.12, 1.13, 1.15.1, 1.15.2, 1.15.4, 1.15.6, 1.16, 1.17, 1.18, 1.19, 1.20, 1.21.5, 1.21.8, 1.21.9, 1.21.10, 2, 3, 4, 5, 6, 15, 16.1, 16.4, 16.5, 16.6, 16.7, 16.11, 18.1, 18.2, 18.4, 18.6, 18.7.1, 18.7.2, 18.7.3, 18.7.5, 19, 20, 21.1.1, 21.1.2, 21.1.3, 21.1.4, 21.1.5, 21.1.8, 21.1.9, 21.1.10, 21.1.11, 21.2.1, 21.2.2, 21.2.4, 22, 23, 24, 25.1, 25.6, 25.7, 25.10, 25.11, 25.12, 25.13, 25.14.1, 25.14.4, 25.14.5, 25.14.6, 26.5, 26.8, 26.9, 26.10, 27
Carlos Arevalo	Professional Geologist	Principal Geologist	CAC SpA	Geological description, exploration, drilling, sample preparation and data verification.	1.6, 1.7, 1.8, 1.9, 1.21.1, 1.21.2, 1.21.3, 1.21.4, 7, 8, 9, 10, 11, 12, 25.2, 25.3, 26.1, 26.2, 26.3, 26.4
Anthony Maycock	Professional Engineer	Senior Metallurgist	HLC Ingeniería y Construcción SpA	Metallurgical testing, recovery methods and project infrastructure	1.10, 1.14, 1.15.3, 1.15.5, 1.15.7, 1.21.7, 13, 17, 18.3, 18.5, 18.7.4, 21.1.6, 21.2.3, 25.4, 25.8, 25.9, 25.14.3, 26.7
Andres Beluzan	Professional Engineer	Senior Civil Mining Engineer	Abelco Consulting SpA	Mineral Resource estimate	1.11, 14, 25.5
Denys Parra	Professional Engineer	Civil Engineer / Geotechnical Engineer	Anddes Asociados SAC	Hydrogeology, leach pad, waste dump and stockpile design	1.21.6, 16.3, 16.8, 16.9, 16.10, 21.1.7, 21.1.10, 26.6
Francisco Javier Rovira Frez	Professional Engineer	Mining Engineer / Geotechnical Engineer	DERK Ingeniería y Geología Ltda.	Pit slope design	16.2, 25.14.2

2.3 Site Visits

Andres Beluzan (Abelco Consulting SpA) visited the Fenix Gold Project on the 25th and 26th of March 2019. He reviewed drilling and sampling protocols on site and the logging and sampling integrity at the core yard.

Erick Ponce (Mining Plus) visited the Fenix Gold Project on April 23rd to 25th, 2023. He reviewed the proposed surface areas for open pits, leach pad, waste dump, stockpiles, camp, and proposed layout of facilities, including a visit to water supplier contractor.

Denys Parra (Anddes) visited the Fenix Gold Project on December 4th, 2018, and reviewed proposed locations for waste dumps, leach pad, and surface infrastructure to ensure suitability for proposed works as outlined in this report.

Carlos Arevalo (CAC SpA) visited the Fenix Gold Project on February 7th to 9th, 2023. During this visit he checked the location of various drill holes, reviewed the consistency of geological maps in the field and compared the logging data with cores and cuttings from selected drill holes at the core yard.

Anthony Maycock (HLC) visited the Fenix Gold Project on April 22nd, 2019, and reviewed the mineralization and core at the core yard, corresponding to three main zones in the deposit, to ensure representativity of the material used for all metallurgical works.

Francisco Javier Rovira (DERK) visited the Fenix Gold Project on April 5th, 2023. He reviewed the area and location of the three pits, and the general layout of the project.

2.4 Sources of Information and Data

Qualified Persons (QP) signing the report have assumed and relied on the fact that all the information and technical documents listed in Chapter 27 about References are accurate and complete in all material aspects.

Mining Plus received and relied upon the updated Mineral Resources and inputs of other consultants to complete the Reserve estimation and mine schedule in this report. Mining Plus reviewed and compiled the capital and operating costs estimated by STRACON, HLC, Anddes and Rio2. The financial model was completed by Mining Plus, Endeavour, and Rio2.

STRACON, as mining and construction contractor, was responsible for preparing the cost for construction, mining, and water transport.

Information related to legal, socio-economic, land tenure, or political issues has been provided directly by Rio2 for the preparation of this report. These topics were not independently verified by the QPs but appear to be reasonable representations that are suitable for inclusion in Chapter 4 of this report.

2.5 Effective Dates

The report has the following effective dates:

Mineral Resources Estimation: April 1st, 2023.

Mineral Reserve Estimation: May 11th, 2023.

Financial analysis that supports Mineral Reserves: September 5th, 2023.

The effective date of this report matches with financial analysis on October 16th, 2023.

2.6 Frequently Used Acronyms, Abbreviations, Definitions, and Units of Measure

Frequently Used Acronyms are listed in Table 2-2.

All currency is reported in United States Dollars ($).

All coordinates are reported in UTM WGS 84, Zone 19S.

Table 2-2 – Technical terms and abbreviations.

Abbreviation	Description
$ - USD	United States Dollar
$M	Millions of United States Dollars
%	Percentage
AAS	Atomic Absorption Spectrometry
ADR	Adsorption, Desorption, Recovery
Ag	Silver
AISC	All in Sustaining Costs
As	Arsenic
Au	Gold
BM	Block Model
Capex	Capital Expenditure
Cu	Copper
d	Day
DDH	Diamond Drill Hole
DIA	Environmental Impact Statement
ENAMI	"Empresa Nacional de Minería"
EIA	Environmental Impact Assessment
EW	Electro winning
FeOx	Iron Oxides (Collectively)
ft	Foot
g	Gram
gal	United States gallons
ha	Hectare

Abbreviation	Description
Hg	Mercury
hr	Hour
HR	Host Rock
IRR	Internal Rate of Return
ICP	Inductively Coupled Plasma
K/Ar	Potassium / Argon Geochronology
Kg	Kilogram
Kg/bcm	Kilogram per bank cubic meter
Km	Kilometer
Koz	Thousands of ounces
Ktpd	Kilotonnes per day
kV	Kilovolts
l	Litres
lb	Pound
m	Meter
m^2	Square meter
m^3	Cubic meter
masl	Meters Above Sea Level
Max	Maximum Value
Mg	Magnesium
Min	Minimum Value
mm	Millimetre
MMB	Maricunga Mineral Belt
Moz	Million ounces
Mt	Million tonnes
Mtpa	Million tonnes per annum
MW	Megawatts
Wh/t	Watt Hour per tonne of mineral
NPV	Net Present Value
NPV5	Net Present Value discounted at 5%
OK	Ordinary Kriging
Opex	Operational Expenditure
oz	Ounce
PEA	Preliminary Economic Assessment
PFS	Pre-feasibility Study
PLS	Pregnant Leach Solution
ppb	Parts per billion
ppm	Parts per million
QA	Quality Assurance
QC	Quality Control
RC	Reverse-Circulation Drilling Method
ROM	Run of Mine
RQD	Rock-Quality Designation
SEIA	"Sistema de Evaluación de Impacto Ambiental"
SIC	Chilean Power Grid for the Central Zone
SMU	Selective Mining Unit
t	Tonnes
t ppt	Tonnes of precipitates

Abbreviation	Description
tpd	Tonnes per day
wt%	Weight percentage
x1,000	Multiple of 1,000
yr	Year
Zn	Zinc

3 RELIANCE ON OTHER EXPERTS

The Qualified Persons (QP) responsible for this report have relied upon the following information provided to them by the issuer (Rio2) concerning, legal, political, environmental, and tax matters relevant to this technical report.

3.1 Land Tenure

The QPs have not reviewed the land tenure, nor independently verified the legal status, ownership of the Project area, or underlying property agreements.

Rio2 has provided information with respect to Land Tenure used in Chapter 4 of this technical report. The QPs have fully relied upon and disclaim responsibility for information provided with respect to Land Tenure.

3.2 Environmental Liabilities and Permits Acquired

Rio2 has contracted Mineria y Medio Ambiente Limitada (MYMA) to support the environmental permitting needs of Fenix Gold Project. MYMA has extensive experience elaborating on environmental studies for the mining sector in Chile.

The QPs have fully relied upon, and disclaim responsibility for, information derived from the below mentioned document. Information from documents listed below has been used in Chapter 4 of this technical report.

- Minería y Medio Ambiente Ltda. (MYMA), 2020, Environmental Impact Assessment (EIA).
- Sectorial Permits submitted to the National Geology and Mining Service (SERNAGEOMIN) in April 2021 and August 2021.

3.3 Environmental Studies, Permitting, Closure, and Social or Community Impact

Information from the below mentioned documents have been used in Chapter 20 of this technical report. The QPs have fully relied upon, and disclaim responsibility for, information derived from the below mentioned documents.

- Atacama Pacific Gold, 2011, Impact Declaration (DIA) titled “Mining Exploration Cerro Maricunga”, 2011.

- ICASS Consultoría en Recursos Hídricos, 2020, Geochemistry and Hydrogeology Baseline Studies for Fenix Gold Project (Estudios para la Línea Base de Geoquímica e Hidrogeología del Proyecto Fenix Gold).
- Minería y Medio Ambiente Ltda. (MYMA), 2020, Environmental Impact Assessment (EIA).
- "Sectorial Environmental Permit 137: Permit for the approval of the mine site closure plan" submitted to the National Geology and Mining Service (SERNAGEOMIN- Servicio Nacional de Geología y Minería) on April 23rd, 2021.

3.4 Depreciation and Taxes

Rio2 has engaged Guerrero Olivos (Av. Vitacura 2939, Piso 12, Las Condes, Santiago) for specific depreciation and taxation advice.

The QPs have fully relied upon, and disclaim responsibility for, information provided by Guerrero Olivos. Information with respect to depreciation and taxes has been used in Chapter 22 of this technical report.

4 PROPERTY, DESCRIPTION AND LOCATION

4.1 Location

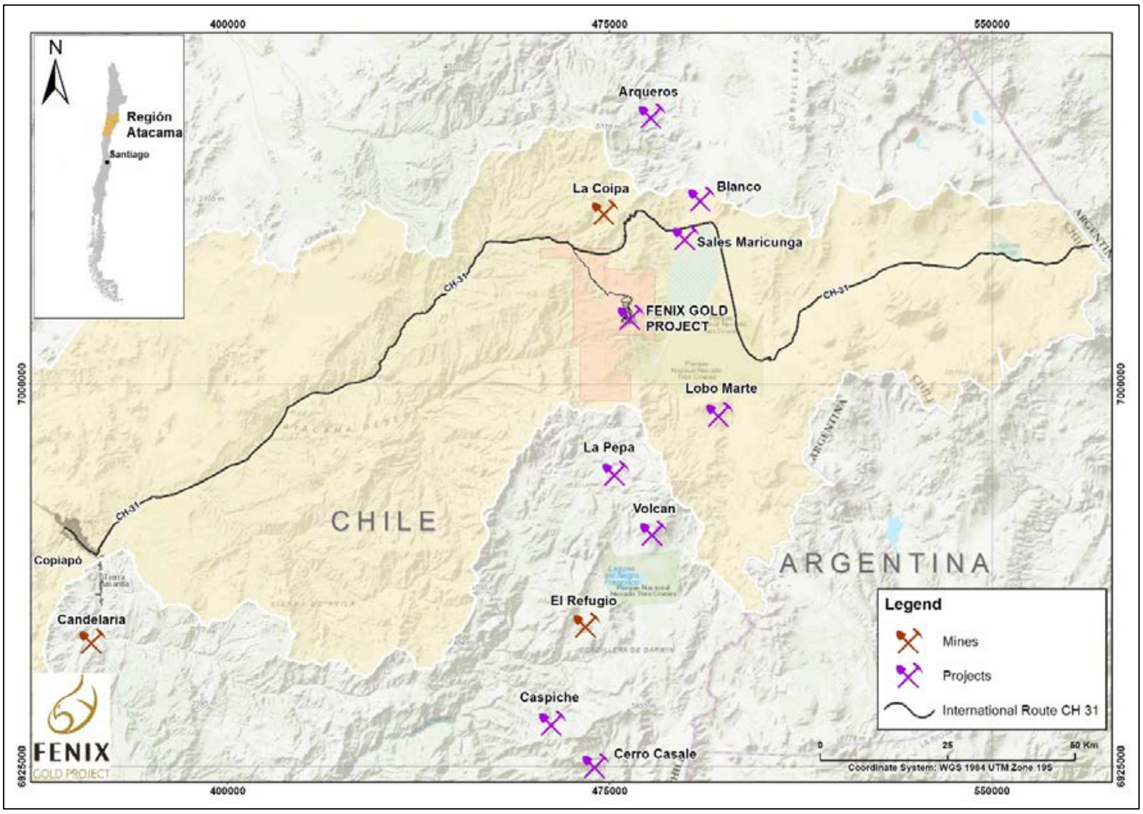
The Fenix Gold Project is located in Chile's III Region (Atacama) in the Maricunga Mineral Belt (MMB), a well-known mining district with a history of mining and a gold endowment of over 70 million ounces. MMB hosts the La Coipa and Maricunga mines, and the Lobo Marte, Volcan, Caspiche, and Cerro Casale deposits. The Atacama Region benefits from an experienced mining workforce presence, support from mining equipment suppliers, and professional and technical consultants.

The Pan-American Highway and the provincial road network connect the Project to the Pacific Ocean ports at Antofagasta and Coquimbo. Chile's central power grid passes within 25 Km of the property.

The Project is approximately 117 Km (straight-line) northeast of Copiapó City (III Region Capital) and is approximately 50 Km west of Chile´s border with Argentina. The Project is located along the western flanks of the Chilean Andes at a mean elevation of approximately 4,500 m (Figure 4-1).

Copiapó is in the Atacama Desert and receives little annual rainfall (12 mm per year). The population of Copiapó was approximately 171,000 inhabitants in 2022 (AZ Nations, n.d.). Copiapó has a diversified economy, but mining is the largest economic activity.

The UTM coordinates, Datum WGS84 of the central point of the Project are located at: E 479,261 m and N 7,012,760 m, approximately 20 Km south of Kinross Gold's La Coipa Au-Ag mine (resumed operations in 2022), 60 Km north of Kinross's Maricunga Gold Mine (currently on residual leaching), and 40 Km north of Hochschild's Volcan Gold Project.



Source: Rio2, 2023

Figure 4-1 – Fenix Gold Project location.

4.2 Land Tenure

4.2.1 Mining Property

Mining concessions in Chile are classified as Exploration or Exploitation concessions.

The Fenix Gold Project includes exploration and exploitation concessions, comprising an area of approximately 37,291 hectares, including areas where Fenix Gold´s mining concessions overlap. The Exploration and Exploitation concessions that form the Fenix Gold Project are summarized in Table 4-1, Table 4-2, and Figure 4-2 .

Chile´s mining laws state that:

- Exploitation Mining concessions can be held in perpetuity provided that the appropriate annual payments have been made.

- Exploration Mining concessions last two years[1] but, before expiring, the mining concession holder can: (i) request a two-year extension, renouncing to half of its surface, or (ii) request its transformation into an Exploitation Mining Concession.
- There is no requirement for a property to commence mining within a specified period.
- There is no requirement to reduce the size of a concession over time unless the mining concession holder applies the extension of the term of an Exploration Mining Concessions in which case it will have to reduce half of its area.

Annual payments to maintain the Project in good standing are up to date. The annual cost to maintain the Project concessions for 2024 is estimated to be $740,000.

Table 4-1 – Fenix Gold Project – Exploration concessions.

Concession	Type	Hectares
Catalina 9	Exploration	300
Catalina II 1	Exploration	300
Catalina II 10	Exploration	300
Catalina II 11	Exploration	300
Catalina II 12	Exploration	100
Catalina II 13	Exploration	300
Catalina II 14	Exploration	300
Catalina II 15	Exploration	300
Catalina II 16	Exploration	200
Catalina II 17	Exploration	200
Catalina II 18	Exploration	200
Catalina II 19	Exploration	200
Catalina II 2	Exploration	300
Catalina II 20	Exploration	300
Catalina II 21	Exploration	300
Catalina II 22	Exploration	300
Catalina II 23	Exploration	300
Catalina II 24	Exploration	300
Catalina II 25	Exploration	200
Catalina II 26	Exploration	300
Catalina II 27	Exploration	300
Catalina II 28	Exploration	300
Catalina II 29	Exploration	300
Catalina II 3	Exploration	300
Catalina II 30	Exploration	300
Catalina II 31	Exploration	300

1 From 2024, Exploration Mining Concessions will last 4 years with no right to request any extension.

Concession	Type	Hectares
Catalina II 32	Exploration	300
Catalina II 33	Exploration	300
Catalina II 34	Exploration	300
Catalina II 35	Exploration	300
Catalina II 4	Exploration	300
Catalina II 5	Exploration	300
Catalina II 6	Exploration	300
Catalina II 7	Exploration	300
Catalina II 8	Exploration	300
Catalina II 9	Exploration	300
Maricunga III 40A	Exploration	300
Maricunga III 41A	Exploration	300
Maricunga III 42A	Exploration	300
Maricunga III 43A	Exploration	300
Maricunga III 44A	Exploration	300
Maricunga III 45A	Exploration	300
Maricunga III 46A	Exploration	300
Maricunga III 47A	Exploration	300
Maricunga III 48A	Exploration	300
Maricunga III 49A	Exploration	300
Maricunga IV 1	Exploration	300
Maricunga IV 10	Exploration	300
Maricunga IV 11	Exploration	300
Maricunga IV 12	Exploration	300
Maricunga IV 13	Exploration	300
Maricunga IV 14	Exploration	300
Maricunga IV 15	Exploration	300
Maricunga IV 16	Exploration	300
Maricunga IV 17	Exploration	300
Maricunga IV 18	Exploration	300
Maricunga IV 19	Exploration	300
Maricunga IV 2	Exploration	300
Maricunga IV 20	Exploration	200
Maricunga IV 21	Exploration	300
Maricunga IV 22	Exploration	300
Maricunga IV 23	Exploration	300
Maricunga IV 24	Exploration	300
Maricunga IV 25	Exploration	300
Maricunga IV 26	Exploration	300
Maricunga IV 27	Exploration	300
Maricunga IV 28	Exploration	300
Maricunga IV 29	Exploration	300
Maricunga IV 3	Exploration	300

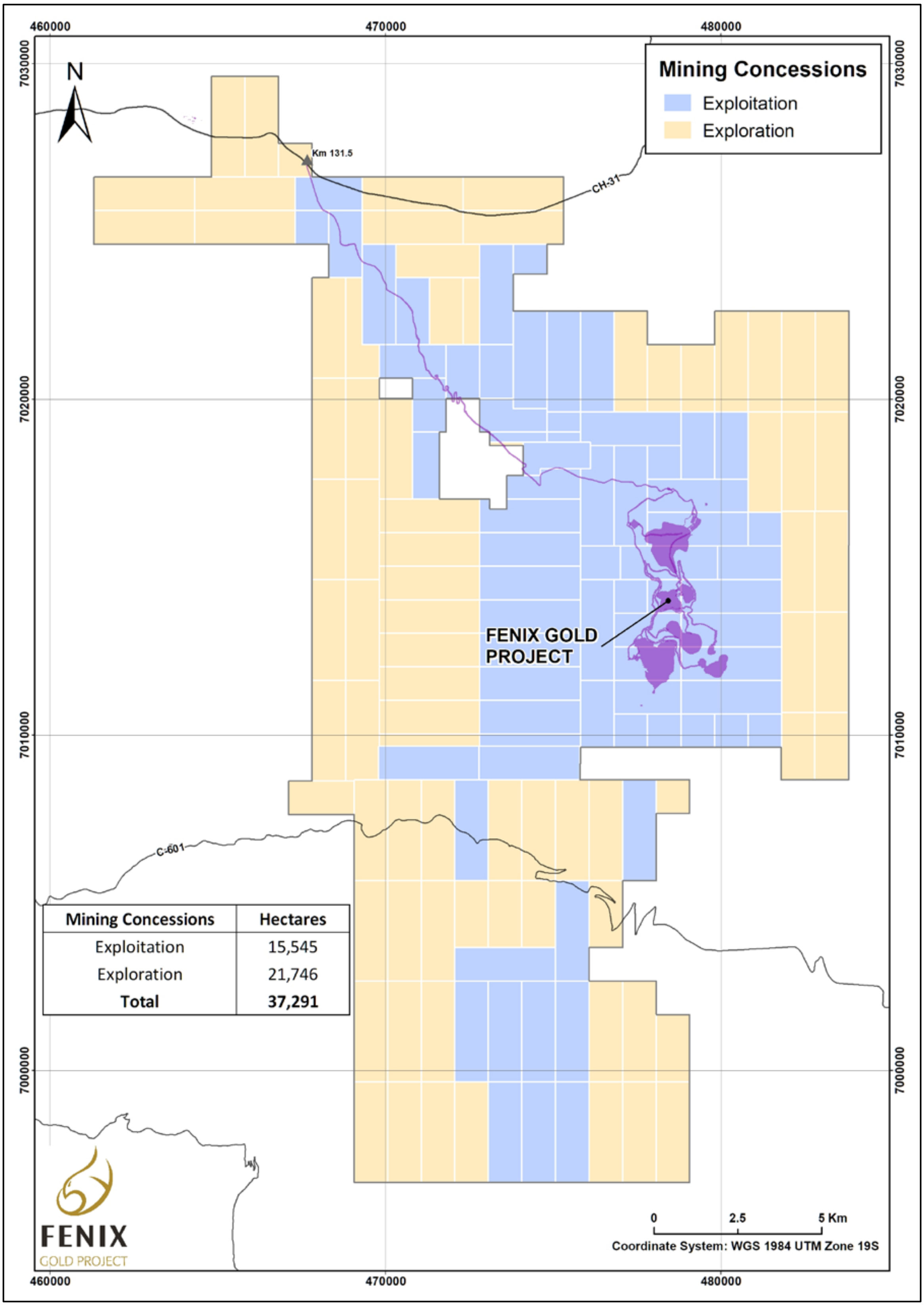
Concession	Type	Hectares
Maricunga IV 30	Exploration	300
Maricunga IV 31	Exploration	200
Maricunga IV 4	Exploration	300
Maricunga IV 5	Exploration	200
Maricunga IV 51	Exploration	300
Maricunga IV 52	Exploration	300
Maricunga IV 53	Exploration	300
Maricunga IV 54	Exploration	300
Maricunga IV 55	Exploration	300
Maricunga IV 56	Exploration	300
Maricunga IV 57	Exploration	100
Maricunga IV 58	Exploration	300
Maricunga IV 59	Exploration	300
Maricunga IV 6	Exploration	200
Maricunga IV 60	Exploration	300
Maricunga IV 61	Exploration	200
Maricunga IV 62	Exploration	300
Maricunga IV 63	Exploration	300
Maricunga IV 64	Exploration	200
Maricunga IV 65	Exploration	300
Maricunga IV 66	Exploration	300
Maricunga IV 67	Exploration	300
Maricunga IV 68	Exploration	300
Maricunga IV 69	Exploration	200
Maricunga IV 7	Exploration	300
Maricunga IV 70	Exploration	300
Maricunga IV 71	Exploration	300
Maricunga IV 72	Exploration	300
Maricunga IV 73	Exploration	300
Maricunga IV 74	Exploration	200
Maricunga IV 75	Exploration	300
Maricunga IV 76	Exploration	300
Maricunga IV 77	Exploration	300
Maricunga IV 78	Exploration	300
Maricunga IV 79	Exploration	300
Maricunga IV 8	Exploration	300
Maricunga IV 80	Exploration	300
Maricunga IV 81	Exploration	300
Maricunga IV 82	Exploration	300
Maricunga IV 83	Exploration	300
Maricunga IV 84	Exploration	300
Maricunga IV 85	Exploration	200
Maricunga IV 86	Exploration	100

Concession	Type	Hectares
Maricunga IV 9	Exploration	300
Total		**21,746**

Table 4-2 – Fenix Gold Project – Exploitation concessions.

Concession	Type	Hectares
Catalina 1 1 AL 60	Exploitation	300
Catalina 11 1 AL 60	Exploitation	300
Catalina 2 1 AL 60	Exploitation	300
Catalina 30 1 AL 60	Exploitation	300
Catalina 31 1 AL 60	Exploitation	300
Catalina 32 1 AL 60	Exploitation	300
Catalina 6 1 AL 60	Exploitation	300
Catalina III 1 1/60	Exploitation	300
Catalina III 2 1/60	Exploitation	300
Catalina III 3 1/60	Exploitation	300
Catalina III 4 1/60	Exploitation	300
Catalina III 5 1/60	Exploitation	300
Catalina III 6 1/60	Exploitation	300
Cerro Maricunga 1 1/17	Exploitation	170
Maricunga 14 1/10	Exploitation	100
Maricunga 15 1/10	Exploitation	100
Maricunga 16 1/10	Exploitation	100
Maricunga 17 1/10	Exploitation	100
Maricunga 18 1/10	Exploitation	100
Maricunga 27 1/40	Exploitation	200
Maricunga 28 1/68	Exploitation	68
Maricunga A 1/60	Exploitation	300
Maricunga B 1/60	Exploitation	300
Maricunga C 1/60	Exploitation	300
Maricunga II 49 1/60	Exploitation	300
Maricunga III 11, 1 AL 60	Exploitation	300
Maricunga III 12, 1 AL 60	Exploitation	300
Maricunga III 13, 1 AL 60	Exploitation	300
Maricunga III 16, 1 AL 60	Exploitation	300
Maricunga III 17, 1 AL 60	Exploitation	300
Maricunga III 18, 1 AL 60	Exploitation	300
Maricunga III 19, 1 AL 60	Exploitation	300
Maricunga III 20, 1 AL 40	Exploitation	200
Maricunga III 24, 1 AL 60	Exploitation	300
Maricunga III 25, 1 AL 60	Exploitation	300
Maricunga III 26, 1 AL 60	Exploitation	300

Concession	Type	Hectares
Maricunga III 27, 1 AL 60	Exploitation	300
Maricunga III 28, 1 AL 60	Exploitation	300
Maricunga III 29, 1 AL 60	Exploitation	300
Maricunga III 30, 1 AL 60	Exploitation	300
Maricunga III 31, 1 AL 40	Exploitation	200
Maricunga Primera 1, 1/60	Exploitation	279
Maricunga Primera 19, 1/60	Exploitation	290
Maricunga Primera 2, 1/60	Exploitation	300
Maricunga Primera 20, 1/60	Exploitation	300
Maricunga Primera 21, 1/60	Exploitation	300
Maricunga Primera 27, 1/60	Exploitation	60
Maricunga Primera 28, 1/60	Exploitation	30
Maricunga Primera 29, 1/60	Exploitation	178
Maricunga Primera 38, 1/60	Exploitation	297
Mary 10 1/30	Exploitation	300
Mary 4 1/30	Exploitation	300
Mary 5 1/20	Exploitation	200
Mary 6 1/30	Exploitation	300
Mary 7 1/20	Exploitation	200
Mary 8 1/30	Exploitation	300
Mary 9 1/40	Exploitation	200
Mary Segunda 2 1/10	Exploitation	100
Mary Segunda 3 1/10	Exploitation	100
Monica 1 1/40	Exploitation	200
Mónica B 1 AL 20	Exploitation	300
Mónica III 10 1/20	Exploitation	100
Mónica III 2 1/40	Exploitation	200
Mónica III 3 1/60	Exploitation	300
Mónica III 4 1/40	Exploitation	200
Mónica III 5 1/40	Exploitation	200
Mónica III 6 1/40	Exploitation	200
Mónica III 7 1/60	Exploitation	300
Mónica III 8 1/40	Exploitation	200
Mónica III 9 1/60	Exploitation	300
Total		**15,545**



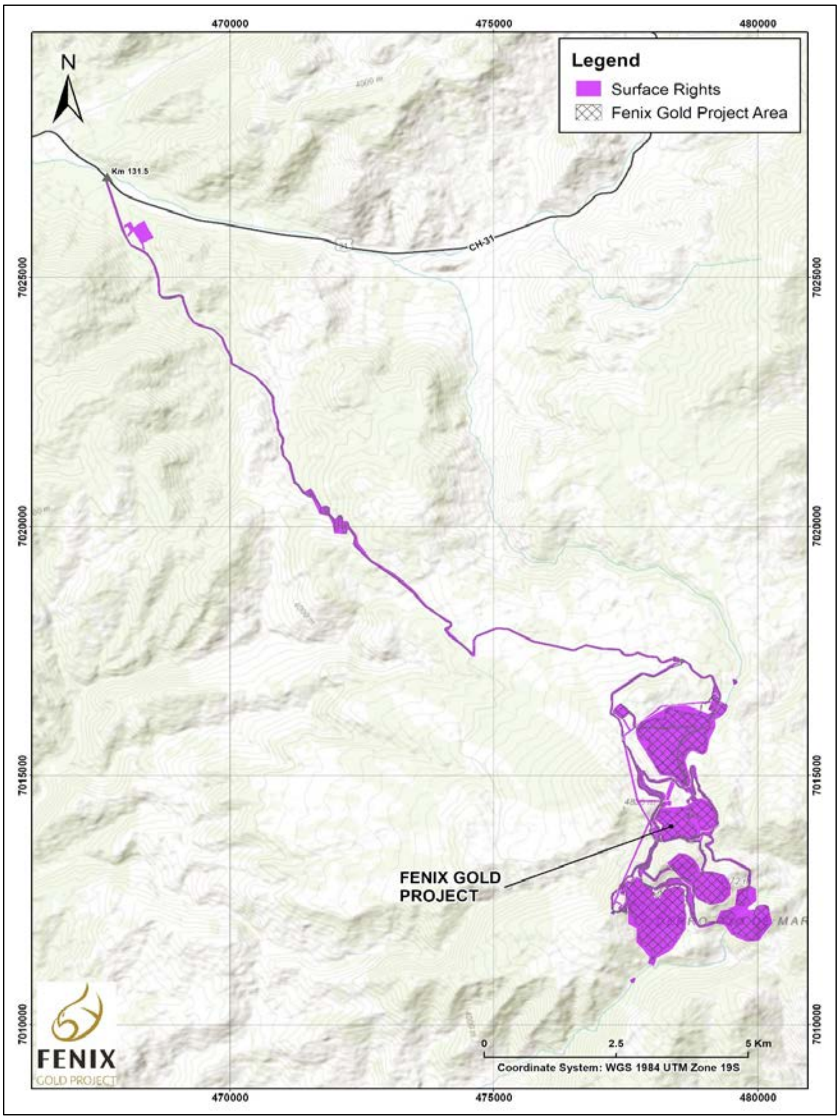
Source: Rio2, 2023

Figure 4-2 – Fenix Gold Project concession map.

4.2.2 Surface Rights

Fenix Gold Limitada has obtained and registered a provisional easement over the land where it will develop the Fenix Gold Project (see Figure 4-3). Note that the easement area includes a 25-meter buffer for the mine components.

By Resolution dated August 13th, 2020, the 4th Civil Court of Copiapó, in the framework of the judicial process for the constitution of a judicial easement, granted Fenix Gold Limitada a provisional easement over the land where the Fenix Gold Project will be developed (843.27 hectares), while the judicial process for the definitive constitution of the easement is being processed. This Resolution was registered in the registry of the Conservador de Bienes Raíces de Copiapó on October 21st, 2020.



Source: Rio2, 2023

Figure 4-3 – Fenix Gold surface rights map.

Obtaining this provisional easement was an essential milestone for Fenix Gold as it now has the title to access the surface land where it will develop the Project, allowing it to move forward with the application for specific permits while waiting for the approval of its EIA.

The provisional easement also allows Fenix Gold to construct and operate the Project while the judicial process is completed. Based on the typical duration of these legal proceedings, Fenix estimates that resolution will be obtained in 2024.

4.3 Environmental Liabilities

During the preparation of the baseline Environmental Impact Study for the Fenix Gold Project, no environmental liabilities have been recorded or evidenced, confirming what was detailed in the previous background of the Environmental Impact Statements for the exploration stage.

4.4 Permits Acquired

4.4.1 Environmental Certification

In 2011, the previous owner of the Project, Minera Atacama Pacific Gold Chile, submitted to the Environmental Impact Assessment System (SEIA) the project "Prospecciones Mineras Cerro Maricunga", (Exploration Cerro Maricunga) which was approved by the Environmental Assessment Commission of the Atacama Region, through Exempt Resolution No. 232 of November 3rd, 2011. The Project was executed between November 2011 and May 2014.

Additionally, on April 23rd, 2019, Fenix Gold Limitada submitted for environmental assessment of the project "Sondajes Fenix Gold" (Fenix Gold Drill holes), which was approved by Exempt Resolution No. 152/2019 of the Environmental Assessment Commission of the Atacama Region. Which was partially executed and considered the execution of 249 RC and 27 DDH drill holes, the latter included geometallurgical and geotechnical drilling.

The EIA for the Fenix Gold Project was submitted to the SEA for evaluation in April 2020. Due to the pandemic, its evaluation was delayed and began in November 2020. The Project originally submitted and detailed in the EIA and its annexes, underwent substantial improvements through each of its Addenda (3) in response to the consultations of the SEA and the OAECAS (Órganos de la Administración del Estado con Competencias Ambientales) (or State Administration Bodies with Environmental Competencies).

The citizen participation process, PAC (Participación Ambiental Ciudadana), began in December 2020 and concluded satisfactorily in February 2021. The indigenous consultation process began in March 2021 with the participation of six indigenous communities (PaiOte, Sinchi Wayra, Runa Urca, Pastos Grandes, Sol Naciente and Comuna de Copiapó) and was approved in April 2022 with the signing of the Final Agreement Protocols (FAP) with the six indigenous communities.

On June 22nd, 2022, the Technical Committee met and issued the Consolidated Evaluation Report (ICE- Informe Consolidado de Evaluación) recommending a rejection of the Project's EIA. The technical committee was led by the Environmental Evaluation Service SEA, Two OAECAS (CONADI[2] and CONAF[3]), and the SEREMI[4] of the Environment presided over the meeting. It should be noted that prior to the Technical Committee decision, 16 OAECAS had declared in writing their agreement with the contents of the EIA.

On July 5th, 2022, the Atacama Regional Evaluation Commission voted to not approve the Environmental Impact Assessment of the Fenix Gold Project indicating that there was insufficient information supplied to rule out negative impacts to three species, Guanacos, Vicuñas, and Chinchillas.

On August 31st, 2022, Fenix Gold Limitada decided to exercise its right to file an administrative appeal before the Committee of Ministries, as the EIA study was completed in accordance with the Chilean Environmental Assessment Service SEA Guidelines. The Committee of Ministries is comprised of the Ministries of Environment (The Chairman), Health, Economy, Agriculture, Energy and Mining. The Committee of Ministers is currently evaluating the Project with a decision expected by the end of 2023. At the finalization date of this study, the company has not received confirmation from the Chilean authorities as to when the appeal will be heard.

4.4.2 Sectorial Permits

The sectorial permits were being advanced by accordance with Chilean law, which allows the processing of sectorial permits at the same time as the EIA evaluation process. These permits are required for the construction and operation of the specific components of the Project and are subject to evaluation by regional sectoral authorities.

In April 2021, the following operating permits (sectorial permits) were submitted to the National Geology and Mining Service (SERNAGEOMIN):

- Permit to establish tailings dump or ore stockpile.
- Permit for the approval of the closure plan of a mining site.
- Permit for Ore Processing Plant and Leaching Pile.
- Authorization for Open Pit Mining Method Authorization.

The first three permits were technically approved by SERNAGEOMIN however are conditional based on the approval resolution of the EIA.

2 National Corporation for Indigenous Development
3 National Forestry Corporation
4 Regional Ministerial Secretary

In August 2021 two sectorial permits were submitted to the Dirección General de Aguas (DGA - General Direction of Waters); the following permits are still under evaluation:

- Permit for the construction of certain hydraulic works.
- Permit to carry out modifications to watercourses.

In addition, other specific permits were submitted for processing. Due to the rejection of the RCA[5] and the current claims process, the process of evaluating the sectorial permits has been frozen; therefore, the files will be resubmitted once the decision of the committee of ministers has been issued and a favorable RCA has been obtained. However, it should be noted that this new sectorial permit evaluation process will take less time as the same files have already been reviewed and approved.

4.5 Ownership, Royalties and Other Payments

The Fenix Gold Project is 100% owned by Fenix Gold Limitada, a subsidiary of Rio2, and is subject to a streaming agreement with Wheaton Precious Metals.

Under the Gold Stream, Wheaton International will purchase 6% of the gold production from the Fenix Gold Project until 90,000 ounces of gold have been delivered and 4% of the gold production until 140,000 ounces of gold have been delivered, after which the stream will reduce to 3.5% of the gold production for the life of mine. Wheaton International will make an upfront deposit in cash of US$50 million with US$25 million available following closing of the gold stream agreement, and the remaining US$25 million payable after the receipt of the EIA approval for the Mine with both payments subject to completion of customary conditions.

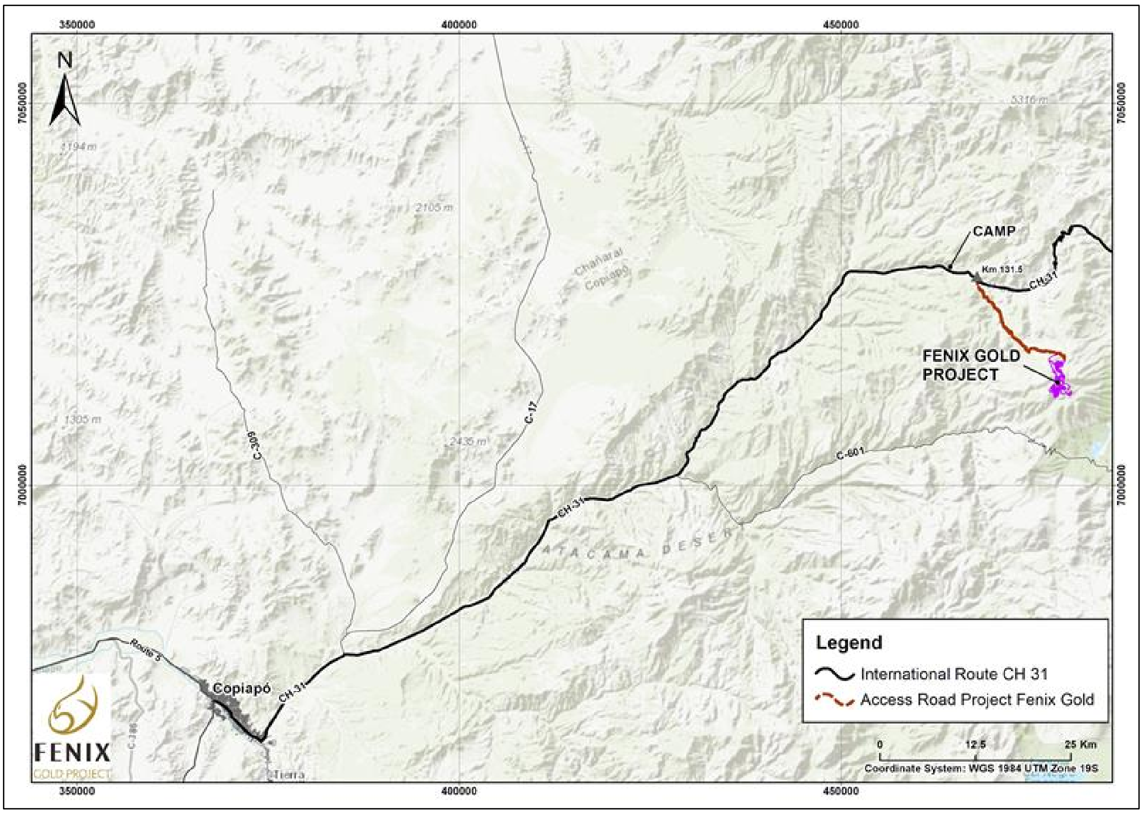
5 Environmental Qualification Resolution

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Access

The Project is approximately 680 Km north of Santiago, Chile´s capital city. Santiago and Copiapó, the city closest to the Fenix Gold Project, are connected via the national road network and daily flights.

The distance between Copiapó and the Project is approximately 160 Km and takes approximately 2.5 hours to drive. From Copiapó, the Project is accessed via 140 Km of paved highway, followed by a 20 Km section of maintained single-track dirt road (Figure 5-1).



Source: Rio2, 2023

Figure 5-1 – Project access from Copiapó.

5.2 Climate

The Project is located on the western slopes of the Andes Cordillera in the high desert of the Atacama Region of Chile between 3,400 and 5,000 masl.

The climate in the project area is classified as marginal low desert (Departamento de Climatología y Meteorología, 2021) with large temperature fluctuations that drop sharply at night. The Project area is located in the cold zone according to the isotherm map from the department of climatology and meteorology of Chile 2001[6]. The average annual temperature is 1.7° C, temperatures can range in the project from between -30°C at night in winter to 20°C during the day in summer.

The wind speeds recorded in the greater project area workshops during campaigns from 2011 – 2014 and 2018 – 2019 recorded average wind speeds of 30 Km/hr, with the highest gust recorded of 151 Km/hr.

Measurements in the ADR plant location were obtained during February to December 2021 indicating an average wind speed of 14 Km/hr with the highest gust recorded at 46 Km/hr. This reflects the lower altitude and protected nature of the ADR plant and Pad location. The Table 5-1 describes the wind speed registration.

Table 5-1 – Wind speed registration.

Wind speed (Km/hr)	Project Area	ADR Plant Area
Registration Date	2011 to 2014 and 2018 to 2019	02/2021 to 12/2021
Average	30	14
Max	151	46
Min	< 1	< 1

The climate is extremely dry and annual precipitation averages approximately 150 mm falling largely as snow during the winter months (June to September). Short sporadic rainstorms can occur between January and May. In the main components of the project, the evaporation from surface varies between 477 - 523 mm/ year.

5.3 Local Resources and Infrastructure

There are no significant population centres or infrastructure near the immediate vicinity of the Project. Small-scale arable and livestock farmers with indigenous heritage are present in the valleys that drain the highlands. Farming activity is not recorded close to the Fenix Gold Project.

Chile has an established mining industry, and high-quality mining technology, infrastructure, supplies, and professionals are available in country. Copiapó, an established regional mining support and

6 Isothem map from "Climatología Regional" by Departamento de Climatología y Meteorología, Chile 2001.

logistics hub, had a population of approximately 171,000 in 2022 (AZ Nations, n.d.) and can supply a skilled and experienced mining and mineral processing workforce.

The Project is approximately 25 Km from Chile´s national power grid, Central Interconnected System (SIC). On-site electrical generators are considered in the proposed mine plan, and connection to SIC could provide a sufficient and reliable supply of electrical power for the proposed mining operations. This improvement to the Project was not considered in the EIA; however, it will be something that is considered in the future as it brings an important cost reduction to the Project and is a cleaner source of energy.

Surface water does not flow through the Project area, and no underground water sources have been identified. Phreatic water levels have not been found during drilling in the pit area.

Fenix Gold Limitada has executed an agreement with Nueva Atacama (Ex Aguas Chañar) to supply treated industrial water at a rate of 20 l/s. Under the contract terms, Nueva Atacama will supply water from their water treatment facility at Piedra Colgada, Copiapó, and Fenix Gold will truck water to the site.

5.4 Physiography

The Project ranges between 3,400 and 5,000 masl with topography characterized by broad open areas with moderate relief, pronounced slopes, and prominent ridges (Figure 5-2). These features reflect horst and graben tectonics and recent volcanism.

The Project is located in the main mountain range of the Atacama Region, composed of sedimentary and volcanic successions from the Triassic to the Paleocene, which rest on a Paleozoic metamorphic basement and are partly covered by Tertiary volcanic rocks. Most of the Project works are located on the Ojo del Maricunga Volcanic Apparatus (Mmv); the access road, which covers a larger area, and the camp would be developed on colluvial deposits. This area is defined as the Domeyko foothills and is characterized by a large pre-altiplanic trench, with high fluviosedimentary activity. The works are located on a slightly steep plane and the area of influence has a heterogeneous slope, with values ranging from 20° to 41° of inclination.

Source: Rio2, 2023

Figure 5-2 – Looking south from planned leach dump location towards Fenix North outcrop.

6 HISTORY

6.1 Exploration History of the Project

6.1.1 Project Area Recognition

Private prospectors identified mineralization in the general area of the Project in the early 1980's.

6.1.2 SBX

In December 2007, SBX, a private Chilean exploration company, constructed access roads and conducted trench sampling and mapping at 1:25k scale in the Project area. Classic "Maricunga Style" Black Banded Veinlets (BBV) were detected in the Cerro Maricunga intrusive breccia complex with gold grades ranging from 0.2 g/t to 3.0 g/t, and SBX named the Project "Cerro Maricunga".

Minera Newcrest Chile Ltda (MNCL) entered into an option agreement with SBX to evaluate the Project in 2007 and took 325 surface samples that confirmed anomalous gold values over a 2.5 Km strike. However, following their evaluation, MNCL choose to exit the agreement with SBX.

In 2008, Gold Fields (GFC) entered into an agreement with SBX to evaluate the Project and conducted independent mapping, trenching, channel sampling, induced potential/resistivity, and magnetic surveys. Following their work, GFC concluded that Cerro Maricunga had the potential to host a significant gold deposit, and that exploration drilling was warranted. Despite that conclusion, GFC elected to discontinue their interest in the Project.

Between 2008 and early 2010, SBX privately funded an extensive program of surface sampling, trenching, geophysical surveys, metallurgical testing, and an eight-hole maiden diamond drill hole program (Phase I - 2,142 m).

Phase 1 drill results were positive and in October 2010, SBX took the Cerro Maricunga Project public after listing on the Toronto Stock Exchange (TSX) as Atacama Pacific Gold Corporation (APG).

6.1.3 Atacama Pacific Gold Corporation

In October 2010, APG commenced Phase II drilling of the Project and generated further positive results supporting the potential for a significant oxide-gold deposit. By the end of April 2011, APG had drilled 33,438 m over a combined 90 DDH and RC holes.

Metallurgical test work conducted in 2011 indicated that oxide-gold mineralization at Cerro Maricunga was amenable to heap-leach processing. Eleven column tests and 36 bottle roll tests indicated gold recoveries in the range of 80% at a 19 to 25 mm crush. Column testing on material crushed to 50 mm indicated gold recovery of 78%.

A third phase of drilling (Phase III - 45,983 m) designed to define the extents of mineralization began in 2011. Trenching and metallurgical sampling continued in parallel with the drilling.

APG funded a program of infill drilling and additional metallurgical testing (Phase IV - 26,335 m) that concluded in May 2013. Following the results of Phase 4 drilling, APG published a Pre-feasibility Study (PFS) for the Cerro Maricunga Project (PFS, 2014), outlining a large-scale open-pit oxide-gold heap-leach mine operation.

In 2017, APG commenced Phase V drilling that included three PQ diameter diamond drill holes for metallurgical testing to better define the primary crushing circuit.

6.1.4 Rio2 Limited

In July 2018, Rio2 and APG announced a business combination, and Rio2 took control of Cerro Maricunga Property (Press Release 1).

To differentiate the Property and to stop confusion surrounding the multiple uses of the name “Maricunga” such as Maricunga Belt, Cerro Maricunga Project, and Maricunga (Refugio) Mine, Rio2 renamed the Project “Fenix Gold Project”.

Rio2 renamed Atacama Pacific Gold Chile to Fenix Gold Limitada (FGL), a Chilean company that Rio2 will use to develop, construct, and operate the Fenix Gold project.

Since taking control of the Project, Rio2 has completed the following:

- Completed phase VI drilling consisting of 7,066 m over 39 RC drill holes within the Resource area.
- Completed twelve trenches and took 729 channel samples (2 m length) over the Resource area.
- Relogging 28,176 m of historical diamond drill core from 79 holes, and 21,184 m of RC chips from 59 holes.
- Rio2 engaged recognized Economic and Structural Geologist Dr. Greg Corbett to spend one week at the Project to investigate geological controls on mineralization.
- Completed phase VII and VIII drilling consisting of 3,570 m over 13 RC and DDH drill holes within the Resource area.
- Completed a study of the Analysis of Volcanic Facies of the Fenix Gold Project by J. Clavero (February 2021).
- Developed a structural model of the Fenix Gold Project by Pamela Pérez Flores (February 2022).
- Constructed a new geological model in 2023, using a new version of a detailed geological mapping, description of drill holes, and a new structural map (Pérez-Flores, 2022).
- Published the PFS “Updated Pre-feasibility Study for the Fenix Gold Project” in September 2019. This updated the 2014 PFS study published by Atacama Pacific Gold Corporation. The

2019 PFS study was amended and restated in August 2021 available in Sedar under "Amended and Restated Pre-Feasibility Study for the Fenix Gold Project".

- Completed the geotechnical study of pit walls and foundation studies for mine components, installation of piezometers, and hydrological studies.
- Completed metallurgical work including pilot test pad (426 tonnes dry).
- Completed and submitted an EIA in April 2020 with the SEA for Fenix Gold Project 20 Ktpd.
  - The Project was admitted to evaluation however due to Covid, the public consultation process which is required could not be held and the Project sat until November 2020.
  - The Project passed through 3 stages of questions and answers before ending the evaluation process.
  - In June 2022 the SEA published the Consolidated Evaluation Report recommending that the Project be rejected, this was confirmed by the Atacama Regional Evaluation Commission in early July 2022.
  - Fenix Gold entered an administrative appeal to the Committee of ministers in August 2022, the Committee of Ministers is currently evaluating the Project with a decision expected by the end of 2023. At the date of this study, Rio2 has not received confirmation from the Chilean authorities as to when the appeal will be heard.

6.2 Resource Development History of the Project

6.2.1 Initial Resource Estimate 2011

Based on 25 DDH and 65 RC holes, APG reported the maiden Mineral Resource Estimate ("MRE") (Press Release 2) for the Project, summarized in Table 6-1.

The MRE was an Ordinary Kriged model based on a 0.15 g/t Au grade shell to define the modelling boundary. The MRE considered a 0.30 g/t Au cut-off grade and was not constrained by a conceptual open pit optimization.

Table 6-1 – Initial Resource Estimate, 2011.

Cut-off	Indicated Category			Inferred Category		
Au g/t	Million Tonnes	Grade Au g/t	Gold Ounces x1,000	Million Tonnes	Grade Au g/t	Gold Ounces x1,000
0.10	163.1	0.40	2,094	354.6	0.29	3,321
0.20	134.1	0.45	1,949	202.5	0.40	2,626
0.30	**92.8**	**0.54**	**1,616**	**116.7**	**0.52**	**1,949**
0.40	59.8	0.65	1,247	69.2	0.64	1,429
0.50	40.8	0.74	973	47.7	0.73	1,121
0.60	28.7	0.83	761	34.4	0.80	887
0.70	19.4	0.91	569	21.4	0.90	617
0.80	13.0	0.99	413	13.8	0.98	435

6.2.2 Resource Update 2012

An updated MRE (Press Release 3), summarized in Table 6-2, considering 63 DDH and 157 RC holes, was prepared for the Project in 2012. The updated MRE was prepared by NCL Consultores Limitada, Magri Consultores Limitada, and NTK Consultores Limitada.

The updated MRE was based on Ordinary Kriging and was bound to a 0.15 g/t Au grade shell. The resource was quoted at 0.30 g/t Au cut-off grade and was not constrained by a conceptual open pit optimization.

The 2012 MRE includes Measured Resources for the first time.

Table 6-2 – Resource Update, 2012.

Cut-off	Measured		Indicated		Measured and Indicated			Inferred		
Au g/t	Million Tonnes	Au g/t	Million Tonnes	Au g/t	Million Tonnes	Au g/t	Moz Au	Million Tonnes	Au g/t	Moz Au
0.00	66.6	0.41	202.6	0.40	269.2	0.40	3.46	271.6	0.33	2.90
0.10	66.5	0.41	202.5	0.40	269.1	0.40	3.46	271.2	0.33	2.90
0.20	60.4	0.44	187.5	0.41	247.9	0.42	3.34	226.3	0.36	2.65
0.30	**40.7**	**0.53**	**123.1**	**0.50**	**163.8**	**0.51**	**2.66**	**120.7**	**0.47**	**1.81**
0.40	24.5	0.64	71.2	0.61	95.7	0.62	1.91	57.8	0.60	1.11
0.50	15.1	0.77	42.7	0.72	57.9	0.74	1.37	32.2	0.73	0.75
0.60	9.9	0.88	26.3	0.84	36.2	0.85	0.99	19.7	0.84	0.53
0.70	6.7	1.00	16.4	0.95	23.2	0.96	0.71	12.8	0.95	0.39
0.80	4.5	1.12	10.5	1.07	15.0	1.08	0.52	8.1	1.06	0.27

6.2.3 PEA 2013

In 2013, NCL Consultores Limitada developed a Preliminary Economic Assessment (PEA) for the Project. The PEA developed a conceptual plan for an open-pit heap-leach operation based on the 2012 MRE considering 261 Mt @ 0.40 g/t Au for 3.4 Moz (Table 6-3) of mineralized material.

The PEA evaluated an owner operator model based on large-scale material movement and three stage crushing of mineralization prior to leaching. The PEA reported a positive outcome and indicated initial capital requirements of $515M and sustaining capital of $249M. Based on a gold price of $1,450/oz, the after tax NPV (5%) for the Project economics were reported as $513M with an IRR of 26.6%, and a 3-year payback.

Table 6-3 – Mining inventory for PEA, 2013.

Year	Mineralized Material			Waste	Total	Plant Feed				
	Million Tonnes	Au g/t	Contained Ounces Au x1,000	Million Tonnes	Tonnes x1,000	Million Tonnes	Au g/t	Contained Ounces Au x1,000	Average Recovery %	Recovered Ounces Gold x1,000
Pre-strip	6.6	0.38	81	4.7	11,400	-	-	-	-	-
Y1	22.5	0.44	319	27.8	50,450	29.2	0.43	400	79.6	318
Y2	29.2	0.41	389	55.3	84,550	29.2	0.41	389	79.5	309
Y3	29.2	0.41	384	55.3	84,550	29.2	0.41	384	79.5	305
Y4	29.2	0.40	374	55.3	84,550	29.2	0.40	374	79.4	297
Y5	29.2	0.35	330	55.3	84,550	29.2	0.35	330	79.0	261
Y6	29.2	0.36	340	55.2	84,473	29.2	0.36	340	79.1	269
Y7	29.2	0.38	357	49.9	79,129	29.2	0.38	357	79.2	283
Y8	26.7	0.40	340	41.0	67,799	26.7	0.40	340	79.4	270
Y9	20.6	0.47	309	18.6	39,300	20.6	0.47	309	80.0	247
Y10	8.5	0.58	159	3.1	11,670	8.5	0.58	159	81.0	129
Y11	0.7	0.66	16	0.1	860	0.7	0.66	16	81.7	13
Total	**261.1**	**0.4**	**3,397**	**422.2**	**683,281**	**261,1**	**0.4**	**3,397**	**79.5%**	**2,700**

6.2.4 PFS 2014

In 2014, NCL Consultores Limitada and Magri Consultores Limitada produced the first Pre-feasibility Study (PFS) for the Project. The PFS considered an updated MRE based on 86 DDH and 234 RC holes (Table 6-4). Ordinary Kriging was used for modelling bound to a 0.15 g/t Au grade shell. The MRE was quoted at 0.15 g/t Au cut-off grade and was not constrained by a conceptual open pit optimization.

Table 6-4 – Resource update for PFS, 2014.

Zone	Measured		Indicated		Measured and Indicated			Inferred		
	Tonnes Millions	Grade g/t Au	Tonnes Millions	Grade g/t Au	Tonnes Millions	Grade g/t Au	Gold Ounces x1000	Tonnes (Millions)	Grade (g/t Au)	Gold Ounces x1000
Lynx	20.1	0.46	82.8	0.40	102.9	0.41	1,344	7.0	0.37	84
Crux	92.0	0.35	119.1	0.32	211.1	0.33	2,227	28.1	0.30	266
Phoenix	40.7	0.46	79.1	0.42	119.8	0.44	1,678	22.8	0.34	253
Total	**152.8**	**0.39**	**281**	**0.37**	**433.8**	**0.38**	**5,249**	**57.9**	**0.32**	**603**

The 2014 PFS reported a Mineral Reserve of 294 Mt @ 0.40 g/t Au for 3.7 Moz (Table 6-5).

Table 6-5 – Mineral Reserve for PFS, 2014 at 0.15 g/t Au cut off.

Category	Tonnes Millions	Au g/t	Gold Ounces x1,000
Proven	126.9	0.39	1,603
Probable	167.6	0.40	2,140
Total Proven and Probable	**294.4**	**0.40**	**3,743**

The 2014 PFS presented a Project that would require $399M Capex investment and $188M of sustaining Capex. The mine scenario considered an equipment-leasing owner operated mining model for a large-scale material movement and three stage ore crushing.

The base case Au price used for optimization was $1,300/oz. The after tax NPV (5%) for the Project was $409M and the after-tax IRR was 25% with a 3-year payback.

6.2.5 PFS 2019

In 2019, Rio2 published a second Pre-feasibility Study (PFS) for the Project with Mining Plus. The PFS demonstrated a smaller project, based on trucking water which limited the production to 20,000 tpd of ore processed. This removed the pipeline and was orientated to fast-tracking the Project into production.

This PFS considered an updated MRE based on 91 DDH and 291 RC holes (Table 6-6). Ordinary Kriging was used for modelling bound to a 0.15 g/t Au grade shell. The MRE was quoted at 0.15 g/t Au cut-off grade and was constrained by a conceptual open pit optimization ($1,500/oz).

Table 6-6 – Resource update for PFS, 2019.

Resource Classification	Million Metric Tonnes	Au Grade (g/t)	Au Ounces (x1,000)
Measured	122.4	0.41	1,630
Indicated	288.3	0.36	3,355
Total Measured + Indicated	**410.7**	**0.38**	**4,985**
Inferred	136.6	0.32	1,388

The 2019 PFS reported a Mineral Reserve of 116 Mt @ 0.49 g/t Au for 1.37 Moz (Table 6-7).

Table 6-7 – Mineral Reserve for PFS, 2019 at 0.24 g/t Au Cut Off.

Reserve Category	Million Tonnes	Grade Au g/t	Contained Ounces Au x1,000	Recoverable Ounces Au x1,000
Proven	53	0.52	866	650
Probable	63	0.47	962	722
Proven and Probable	**116**	**0.49**	**1,828**	**1,372**

The 2019 PFS presented a project that would require $111.2M Capex investment and $95M of sustaining Capex. Mining is to be conducted under an alliance arrangement with the fleet placed on site by the alliance partner.

The base case Au price used for optimization was $1,300/oz. The Project's after-tax NPV (5%) was $120.6M and the after-tax IRR was 27.4% with a 4.3-year payback.

7 GEOLOGICAL SETTING AND MINERALISATION

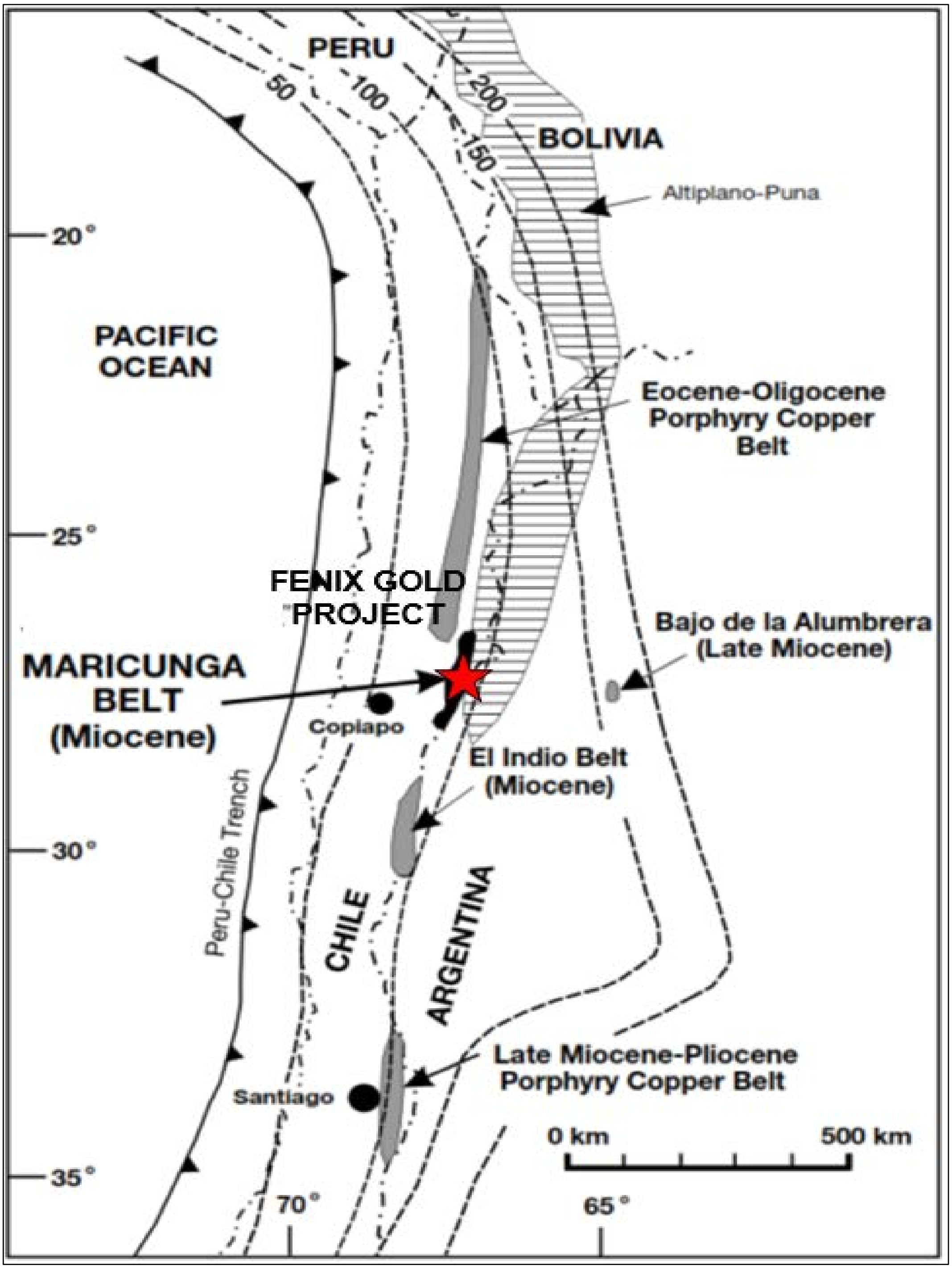
7.1 Regional Geological Setting

The Fenix Gold Project is located in the centre of the Cerro Maricunga Volcanic Complex (CMVC) of the Early to Middle Miocene age. This volcanic complex is one of the eruptive centres which spread between 26°S and 28°S along the Maricunga Belt (Figure 7-1); (Vila and Sillitoe, 1991; Mpodozis et al., 1995), a metallogenic province which hosts numerous epithermal and porphyry deposits in the High Andes of northern Chile (Vila and Sillitoe, 1991; Cornejo et al., 1998; Mpodozis et al., 2012; Mpodozis et al., 2018).

The CMVC is a voluminous volcanic edifice with a height of approximately 1,300 m from the base and a diameter of roughly 15 Km emplaced at the intersection of Incaic NNE-SSW reverse faults and the NW-SE, Potrerillos-Taltal fault system, a pre-Andean sinistral regional fault with normal reactivation and surface seismic activity (Piquer et al., 2019). It lies north-south on a basement composed of Triassic, Jurassic and Cretaceous sedimentary and volcanic rocks displaced by fold and thrust systems attributed to Late Eocene-Early Miocene activity during the Incaic Phase (Cornejo et al., 1998). To the north, these structures are intersected by the Ojos del Salado fault system, a NW-SE trending sinistral structural belt (Yáñez and Rivera, 2019). To the west, the CMVC is bounded by the Incaic Vega La Junta thrust and to the east by the Maricunga and Pedernales endorheics basins. See Figure 7-2.

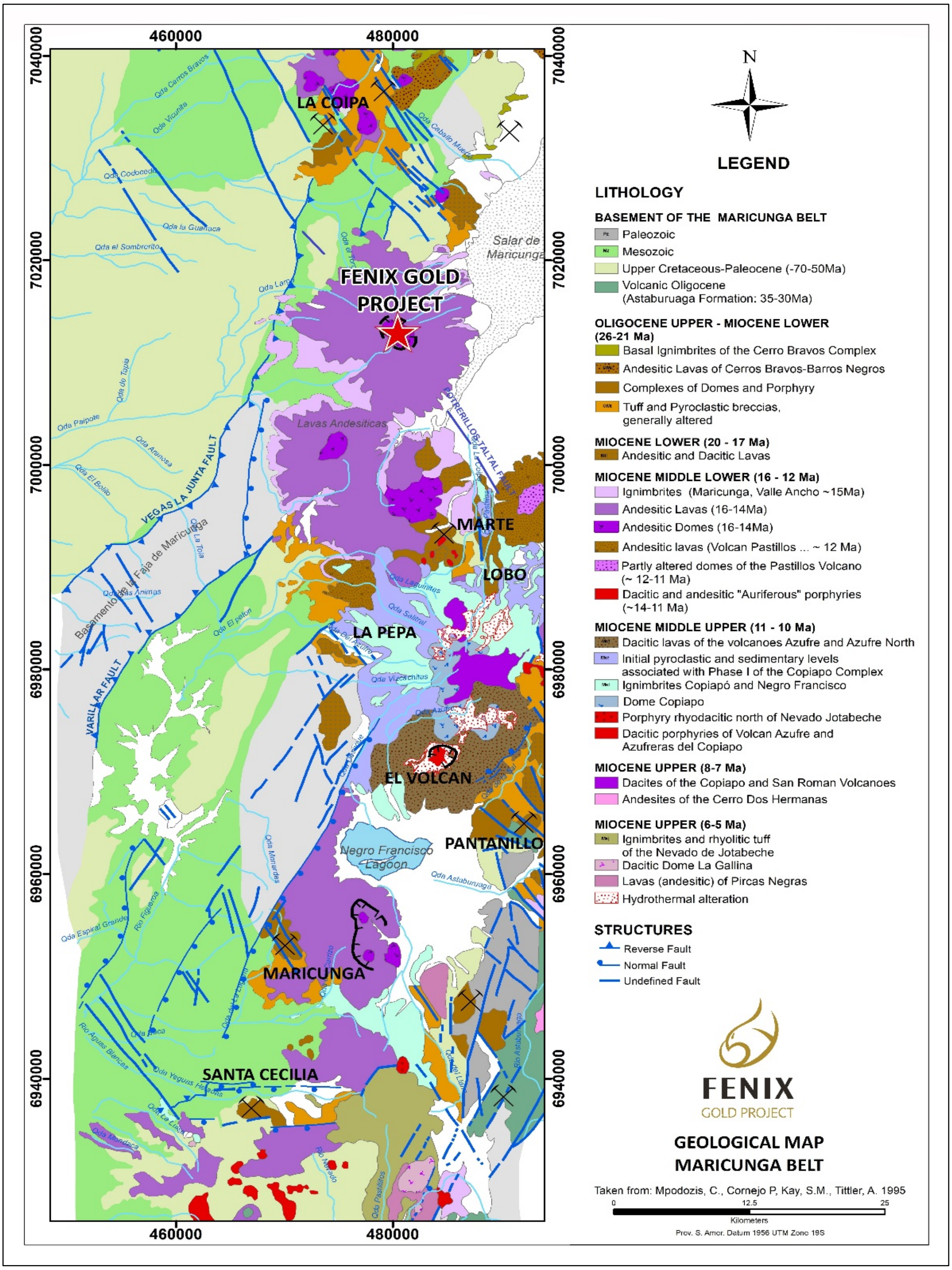
Ignimbrites up to 100 m thick at the base of the CMVC surround the eastern, western, and southern flanks and are interpreted as a result of initial volcanic activity (Mpodozis et al., 1995).

Published K-Ar ages from the CMVC range from 15.8±0.9 Ma to 15.1±0.7 Ma (Cornejo et al., 1998; Mpodozis et al., 2012). Recent U-Pb ages obtained in the complex by Fenix (Rojas, 2022) vary from 16.2±0.2 Ma to 15.8±0.2 Ma and confirm the original age range.



Source: Muntean and Einaudi, 2000

Figure 7-1 – Location of the Maricunga Belt in the geodynamic context of Northern Chile. Contour lines represent depth in km of the Benioff zone.



Source: Mpodozis et al., 1995

Figure 7-2 – Regional geology of the Fenix Gold Project.

7.1.1 The Maricunga Belt

The Maricunga belt is a N-S trending metallogenic province of 200 Km x 50 Km dominated by Cenozoic volcanic rocks associated with eruptive apparatus like stratovolcanoes, composite volcanoes, and calderas of ages from Late Oligocene to Early Pliocene (Mpodozis et al., 1995). The belt is host to numerous gold, silver, and copper deposits of porphyry and epithermal character.

The Maricunga belt extends from 26°S to 28°S southeast of the Eocene-Oligocene Porphyry Copper belt in the southern extreme of the Chilean Central Volcanic Zone where the subduction angle gradually decreases to the south (Cahill & Isacks, 1992) (Figure 7-2).

The magmatic activity in the Maricunga Belt encompasses a time span of 21 Ma, between 26 Ma and 5 Ma, a period when the volcanic front shifted to the east (Kay et al., 1988) due to the decrease of the subduction angle. Through rare earths, Kay et al. proposed that sub horizontalization of the plate was accompanied by lithospheric cooling and thickening of the continental crust.

The first stage of magmatism (26-21 Ma) produced the eruption of volcanic complexes and the first period of mineralization between 24 and 20 Ma in a neutral to weakly extensional tectonic environment. This stage ended with a pulse of compression along high-angle reverse faults that coincided with the thickening of the crust (Mpodozis et al., 1995), and the beginning of a volcanic pause between 20 and 17 Ma.

Between 16 and 12 Ma, magmatic activity resumed. Bulky stratovolcano complexes erupted under more extensional conditions, marked the second period of mineralization, with the emplacement of Au-Cu porphyries between 14 and 11 Ma (Vila & Sillitoe, 1991; Mpodozis et al., 1995). The oldest volcanic complexes of this period like the CMVC show more pronounced rare earth patterns consistent with garnet as the residual phase (Kay et al., 1994; Mpodozis et al., 1995). Younger volcanoes (around 14 Ma) and porphyry gold porphyries, such as Lobo and Marte, have less pronounced REE patterns showing rocks evolved under the presence of amphibole (Kay et al., 1994). After 14 Ma, normal faults were generated between 26° and 27°S, which are probably associated with the uplift of the Altiplano-Puna (Kay et al., 1994).

Between 11 and 7 Ma, volcanic activity was concentrated in the Copiapó volcano and ended at 7-5 Ma with the eruption of rhyodacitic ignimbrites from the Jotabeche caldera (5,800 masl). It is considered that the crust under the Maricunga belt reached a thickness of more than 50 Km after 10 Ma.

7.2 Project Geology

The Project is located in the central summit of the CMVC, where it hosts a NW-SE trending oxidized gold system of 2.5 Km long by 0.75 Km width average. Mineralized zones named Fenix North, Fenix Central and Fenix South have been defined based on gold distribution, trenches, outcrops, and drill holes (Figure 7-3).

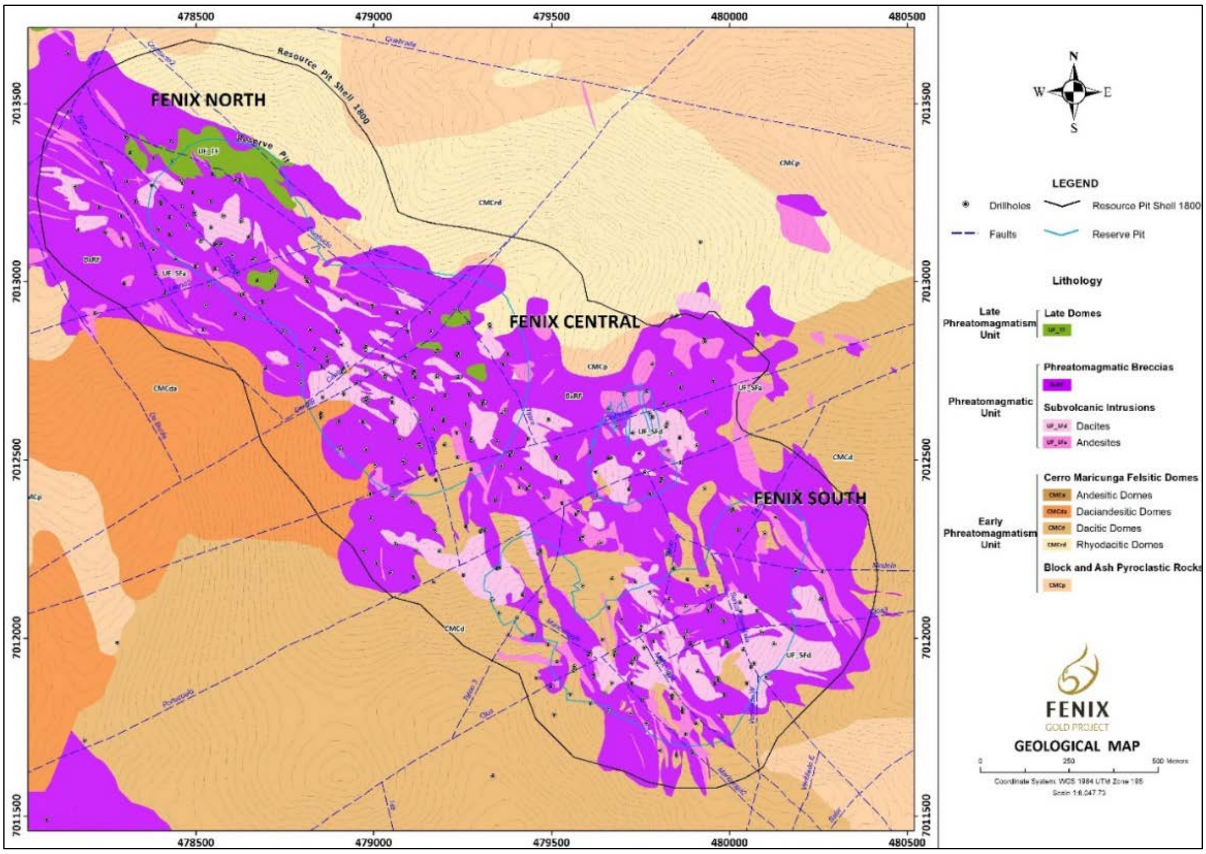
7.2.1 Lithology

The stratigraphy of the Project can be subdivided into an Early Phreatomagmatism Unit (EPU), a Phreatomagmatic Unit (PU) and a Late Phreatomagmatism Unit (LPU).

7.2.1.1 Early Phreatomagmatism Unit (EPU)

This is a 200 m thick sequence of lava flows, lava domes, andesitic to rhyolitic domes, and block and ash pyroclastic breccias associated with partial or total collapse of the domes/lava domes. Fracturing observed in lava flows is interpreted as a result of explosions that occurred during the emplacement of the later PU. The EPU is the largest unit and forms the country rock of the PU.

Clavero and Ramírez (2021) differentiated four volcanic facies within the EPU, namely: (1) Andesitic and Andesitic-Siliceous Lava Flows, (2) Dacitic to Rhyodacitic Lava Flows, (3) Rhyolitic to Rhyodacitic domes and Lava domes and (4) Pyroclastic Breccias. During the update of the geologic model, Alarcón et al. (2022) regrouped these facies in two mappable subunits, (1) Cerro Maricunga Felsitic Domes and (2) Block and Ash Pyroclastic Rocks (Figure 7-3).



Source: Rio2, 2023

Figure 7-3 – Geologic map of the Fenix Gold Project.

Cerro Maricunga Felsitic Domes:

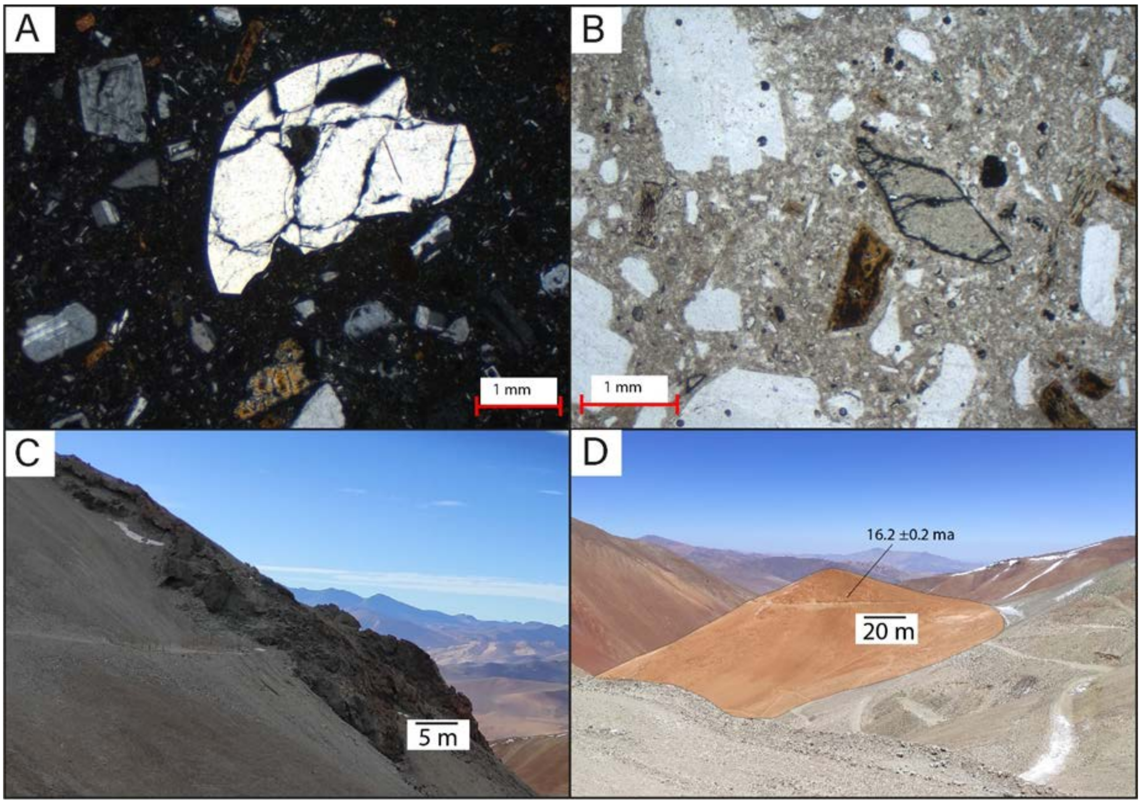
This unit groups a set of domes and lava-domes with a wide range of compositions. Individual rhyodacitic, dacitic, daciandesitic and andesitic domes, and lava domes have distinguished in the surface geological map (Figure 7-3), where the dacitic bodies predominate.

The domes and lava domes are variable in extension and thickness and can reach up to about 200 m of surface exposition. Dense autoclastic facies, and flow banding given by different vesicularity bands and subvertical jointing are common.

Petrographically they are medium to coarse-grained (>2 mm) porphyritic and contain plagioclase, amphibole, pyroxene, quartz, and sanidine phenocrysts in aphanitic to vitreous fundamental mass. Occasionally, quartz crystals appear overgrown (> 2.5 mm) as a distinctive feature (Figure 7-4).

Spatially they are located along the contours of phreatomagmatic breccia bodies and on the slopes of the CMVC. However, they can also appear as remnant blocks of up to 100 m thick within the late Phreatomagmatic Breccias unit.

The domes and lava domes can host Black Banded Veins (BBV, Section 7.2.4) close to contact with phreatomagmatic rocks or within large fragments of breccias. They can also be intruded by tuff injection dikes and, to a lesser extent, by andesitic subvolcanic dikes.

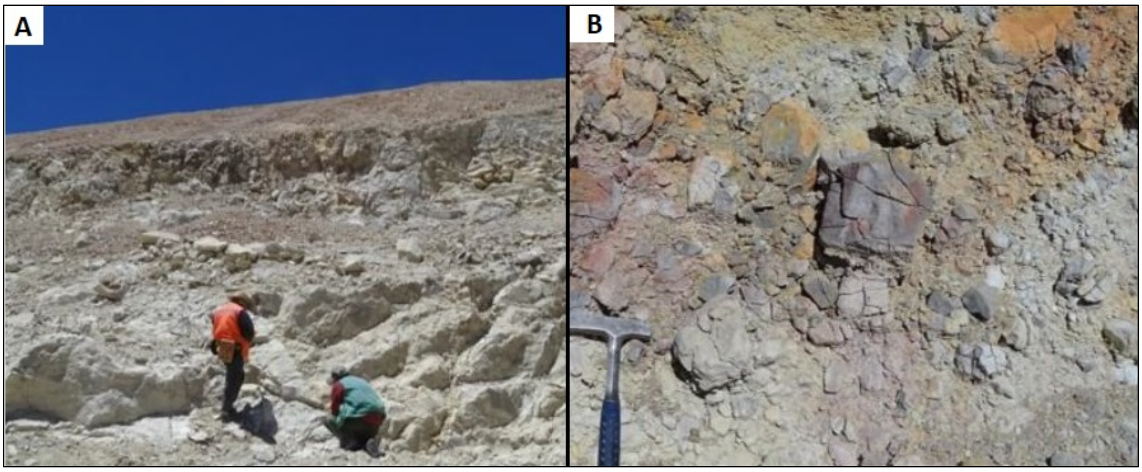


Source: Alarcón et al., 2022

Figure 7-4 – Corroded quartz eye, hornblende, biotite a), and sphene phenocrysts in a vitreous fundamental mass altered to smectites (b). View of a felsic dome on the NE slope of Fenix North and (c) view of dacitic dome SW of Fenix South (d).

Block and Ash Pyroclastic Rocks:

This is a sequence of breccias recognized at the margins of the former felsitic dome unit, mainly in Fenix North (Figure 7-5). The sequence's maximum thickness is about 80 m. The breccia fragments are dacitic to rhyodacitic, subangular to subrounded, and exhibit up to 80 cm in diameter. They often display lobate margins including prismatic fractures (prismatic jointed blocks). Matrix is medium to coarse grained ash rich in plagioclase and quartz crystals. Locally, the breccias are cut by tuff injection dykes. Petrographically, juvenile fragments have porphyritic texture with plagioclase, amphibole, and quartz phenocrysts in a slightly vesicular argillized fundamental mass. This sequence is not associated with recognized mineralization.



Source: Alarcón et al., 2022

Figure 7-5 – Monomictic pyroclastic breccia crosscut by tuff injection dikes (a); Prismatic jointed block (PJB) into coarse grained monomictic ash matrix.

7.2.1.2 Phreatomagmatic Unit (PU)

This unit groups a series of pyroclastic effusive rocks of phreatomagmatic origin and subvolcanic intrusions genetically related to this volcanogenic process. The Phreatomagmatic Unit encompasses most outcrops in the Fenix North, Fenix Central and Fenix South sectors (Figure 7-7), which are associated with at least ten maar-diatreme type volcanic structures (maar-diatreme fields) of different preservation degrees. These structures concentrate along a 2.5 Km x 1 Km belt, NW-SE trending, which forms a maar domain within the central part of the CMVC. Although the maar field is NW-SE oriented, some individual maars are elongated in different second-order directions, such as N20-30E, N70-80W and N60E.

Subvolcanic Intrusions:

They correspond to subvolcanic intrusive bodies of shallow emplacement that intrude the phreatomagmatic pyroclastic rocks located along the edges of maar-diatreme structures and pre-existing felsitic domes.

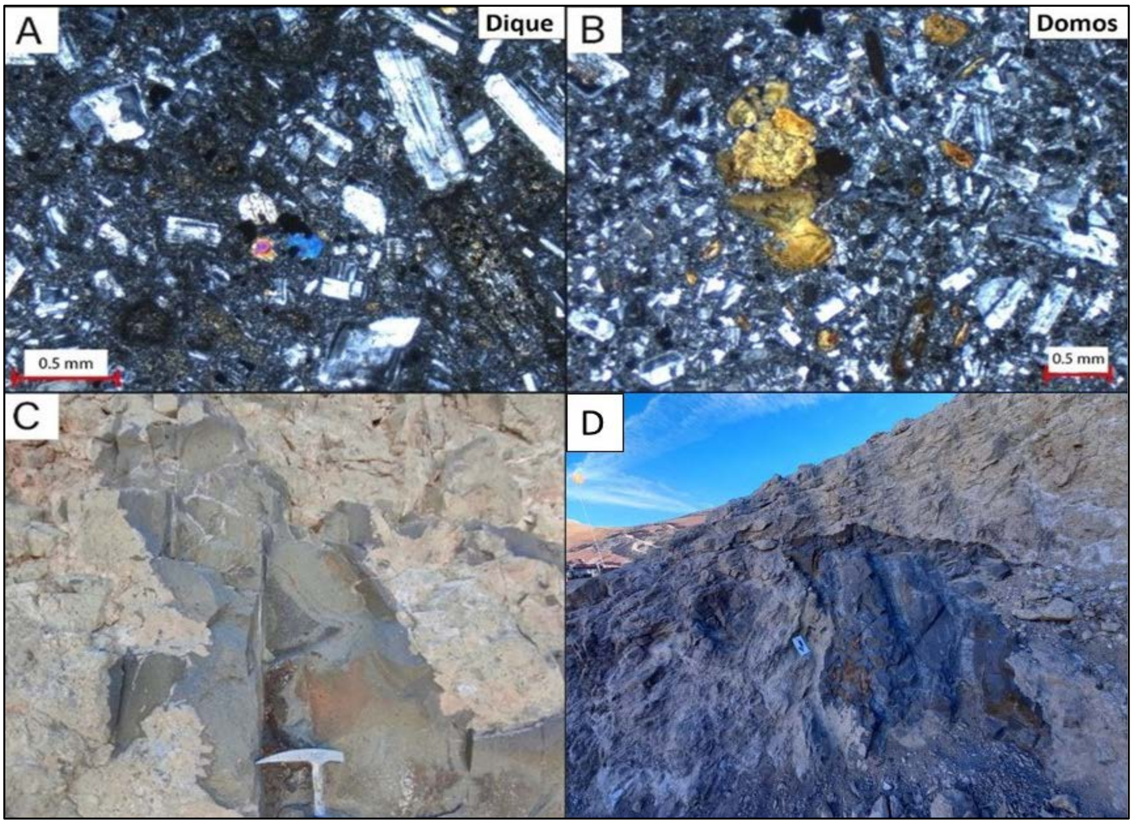
Two mapping subunits were distinguished based on color and composition: light grey dacites and dark grey andesites. As a rule, the dacites have a higher correlation with mineralization. The subvolcanic bodies host gold-bearing BBV structures (Section 7.2.4) which are truncated and follows contact with pyroclastic rocks.

Exposures can occur as dikes, plug-like bodies, and subvolcanic domes. The thicknesses may vary from a few centimetres (dikes) to several tens of metres. Andesitic dikes have a preferential NW-SE orientation. The plug-type dikes and subvolcanic bodies are andesitic in composition, and the subvolcanic to exogenous domes are daciandesitic to dacitic in composition (Figure 7-6).

Petrographically the intrusions are porphyritic in texture and include plagioclase, amphibole, and quartz in the dacitic terms. They display sinuous margins and mutual inclusion along the contacts with phreatomagmatic tuffs. They present slightly vesicular areas and flow banding subparallel to lithological contact. Domes may show sub-vertical penetrative and/or folded fracturing.

Relationships with enclosing phreatomagmatic breccias indicate the subvolcanic intrusions are:

- Prior to phreatomagmatism as breccias include porphyritic fragments containing BBV.
- Simultaneous to phreatomagmatism due to presence of porphyritic juvenile fragments and deformed plug-like bodies, which are occasionally mineralized and mixed with the breccias.
- Later to phreatomagmatism due to the presence of porphyritic dikes, with or without mineralization, that crosscut the breccias.



Source: Alarcón et al., 2022

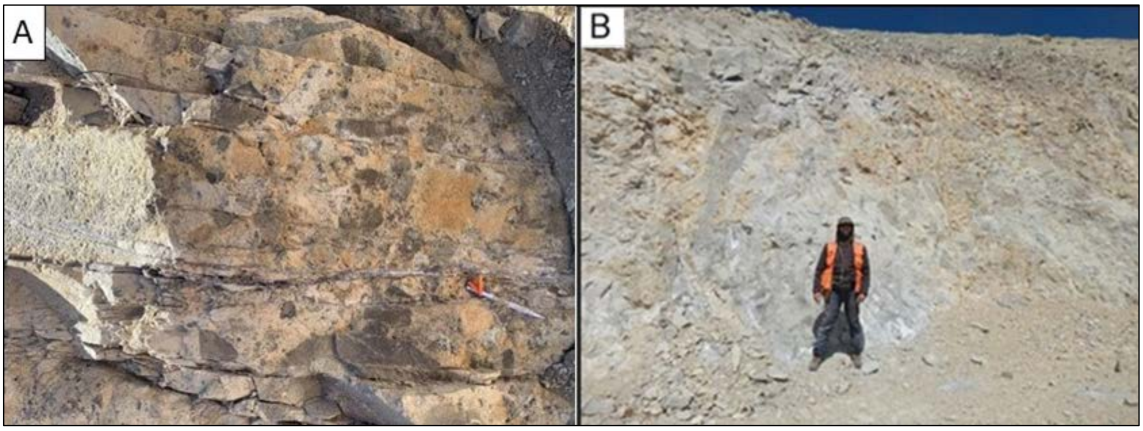
Figure 7-6 – Plagioclase, pseudomorph biotite and diopside phenocrysts in fundamental mass rich in small phyllosilicate microliths from andesitic dike (a). Biotite-opaque cumulus dispersed within felsitic fundamental mass from a dacitic dome (b). Andesitic dike with sinuous edges and mutual inclusion/intrusion contacts with phreatomagmatic breccias (c). Subvolcanic Intrusion cross cutting breccias through sinuous contact (d).

Phreatomagmatic Breccias:

These rocks include massive to stratified ash tuffs, fine to medium lapilli tuffs, breccia tuffs, and pyroclastic breccias. Locally, they display various internal structures such as parallel, cross, trough lamination, and contain occasional metric blocks and decimetric ash tuff intraclasts, sometimes laminated. Close to the country rock, they include lavas and dome fragments which normally exhibit contacts with mutual inclusion and are also intruded by numerous tuff injection dikes.

The following facies of a maar-diatreme system have been recognised: margin infill, crater infill and duct (diatreme). Tuffs and breccia tuff from margin infill facies are layered and exhibit inclinations of 20° to 80°, although higher up in the system, they tend to be more sub horizontal. Crater facies include stratified sub horizontal sequences up to 4 m thick and Duct facies (diatreme) consider massive pyroclastic breccias and lapilli tuffs with no preferred orientation filling in volcanic ducts.

Samples from phreatomagmatic breccias contain high gold grades where the breccias have isolated or sheeted BBV, including fragments with truncated BBV or in the proximities to contacts with Subvolcanic Intrusions.



Source: Alarcón et al., 2022

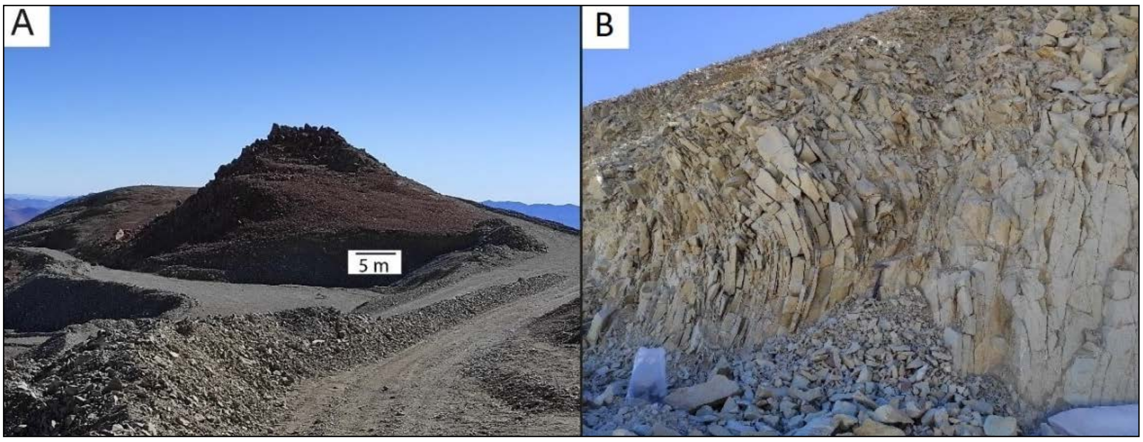
Figure 7-7 – Phreatomagmatic breccia crosscut by BBV (Fenix South) (a). Duct with in-filling facies (b).

7.2.1.3 Late Phreatomagmatism Unit (LPU)

This unit includes a group of small volume dacitic gray domes that crosscut all previous units. They contain no mineralization and therefore are considered barren. The outcrops on the surface usually extend between 60 m to 100 m in diameter, except the dome at the Fenix North summit, which reaches up to 300 m (Figure 7-8).

These late domes have sinuous bases, contacts with phreatomagmatic tuffs defined by mutual inclusions, variable vesicle contents parallel to lithological contacts and flow banding. They also display sub-vertical and folded penetrative fracturing and well-preserved autoclastic fabrics.

Petrographically the dacites are porphyritic and include plagioclase, amphibole, biotite, quartz, and rare pyroxene as phenocrysts. The fundamental mass is aphanitic to vitreous. Vesicles and amygdales filled in with quartz are common. The representative lithological characteristic of these rocks is the presence of amphibole crystals.



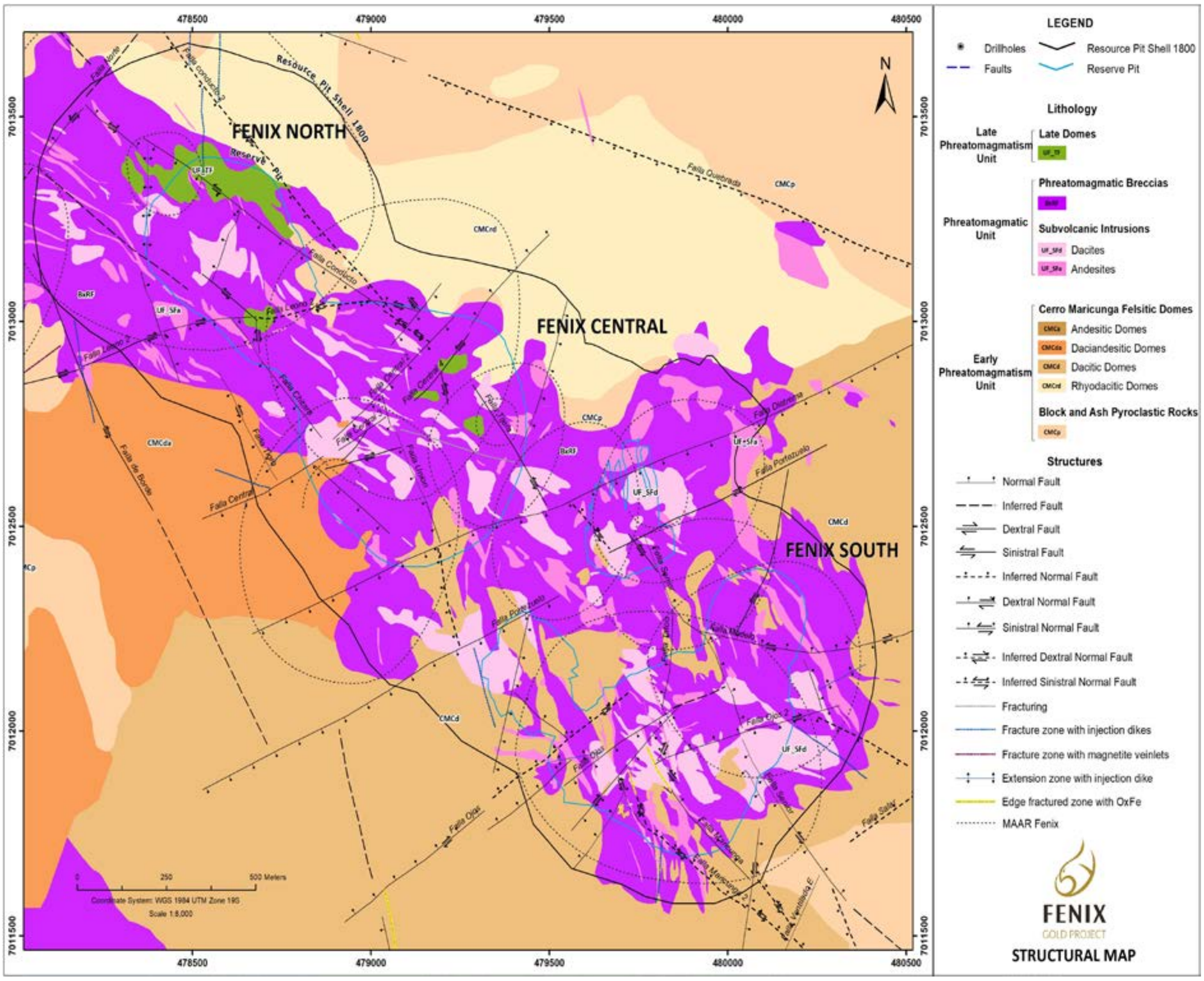
Source: Alarcón et al., 2022

Figure 7-8 – Dacitic Late Dome at the summit of Fenix North (a). Curved penetrative folded fracturing in a Late Dome (b).

7.2.2 Structural Geology

The structures in the Project are concentrated in the volcanic maar-diatreme field in the eroded central area of the CMVC. The pre-existent sequences are less affected by these structures.

The main structural systems are NW-SE and NE-SW trending faults and fractures. They have complex interactions and mutual cut-off relationships (Figure 7-9). Both fault systems contain BBV as sheeted and stockworks, injection dikes, and occasionally at the margin of subvolcanic intrusive bodies. Both structural systems register late activations that crosscut the banded veins.



Source: Rio2, 2023

Figure 7-9 – Geologic structural map of the Fenix Gold Project.

7.2.2.1 NW-SE Faults

The NW-SE fault system is parallel to Phreatomagmatic Breccias's external outline and individual bodies of the associated Subvolcanic Intrusions. Both breccias and intrusions spread along a similarly oriented belt of at least 2.5 Km long by 1 Km at the top of the CMVC (Figure 7-9).

The main NW-SE structures from west to east are the De Borde, Unión, Conducto, Conducto 2 and Senior faults (Figure 7-9).

Several structural sites exhibit left-lateral sense of shear with a normal component.

Towards the SE of the maar-diatreme fields the fault system displays damage zones ranging from about 1 m to 6 m, which are much wider than those from the NW end.

7.2.2.2 NE-SW Faults

The NE-SW system records the last and most significant late movements. Which can be seen in the notorious discontinuity of the NW-SE faults throughout the Project (Figure 7-9) and stratigraphic observations made in the maar-diatreme facies (Clavero and Ramírez, 2021). They have not been mapped at the regional scale, although many previous authors have mapped and projected these structures beyond the outer limits of the Project (e.g.: Clavero and Ramírez, 2021).

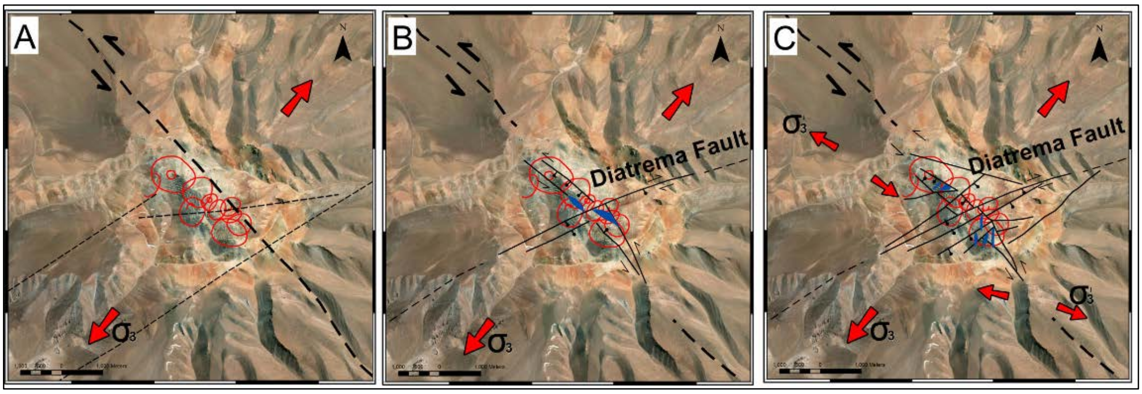
The main NE-SW structures from northwest to southeast are the Norte, Central, Diatrema, Portezuelo, Ojos and Salar faults (Figure 7-9). The Norte and Salar faults are the northern and southern margins of the maar-diatreme field respectively. The Diatreme Fault, at Fenix Central, is aligned with minor subvolcanic bodies and marks a relevant boundary between a southeast domain of NE-SW faults and a northwest domain where NW-SE structures dominate.

The NE-SW faults crosscut and displace the NW-SW fault with a preferent normal sense of shear and dextral strike-slip component.

7.2.2.3 Evolution of the Structural Systems

Pérez-Flores (2022) suggests the structural evolution of the maar-diatreme field occurred in three stages:

(1) During the first stage the maar-diatreme system was emplaced along a NW-SE direction facilitated by second-order ENE-WSW structures. The minimum stress axis is inferred to be sub horizontal and NE-SW (Figure 7-10A).
(2) Through a second stage, vein systems and subvolcanic intrusions were injected along NW-SE directions. NE-SW dextral-normal faults propagated, and NW-SE sinistral faults were reactivated during this stage. The minimum stress axis is inferred to be sub horizontal and NE-SW as in the former stage (Figure 7-10B).
(3) During a third stage, veins and subvolcanic intrusions were emplaced along NE-SW directions to the northwest of the maar-diatreme field and along NNE-SSW directions to the SE of the volcanic system. This is explained by a differential rotation of σ3 minimum stress north and south of the Diatrema Fault (Figure 7-10C).



Source: Pérez-Flores, 2022

Figure 7-10 – Evolution of the structural systems in the Project through first (a), second (b) and third stage (c).

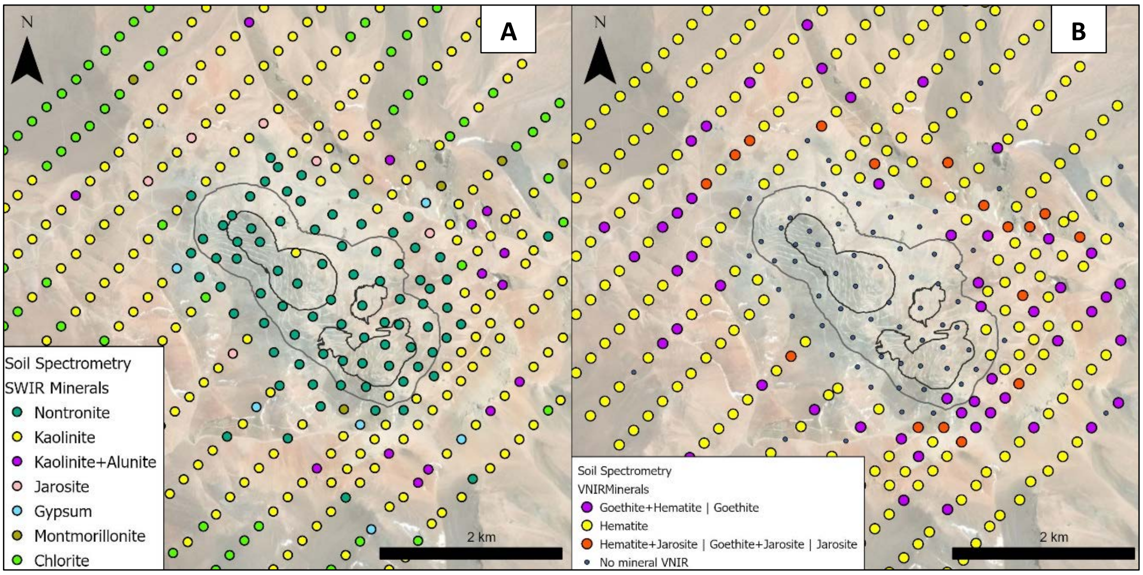
7.2.3 Alteration

The Project presents a weak argillic alteration and, to a lesser extent, restricted silicification. No potassic, advanced argillic alterations nor steam-heated zones are observed.

To understand the occurrences and distribution of the alteration minerals present in the deposit, reflectance spectrometry studies were carried out using Terraspec and interpretation by Aisiris to 380 soil samples and 1,186 drill hole samples (Alarcón et al, 2022).

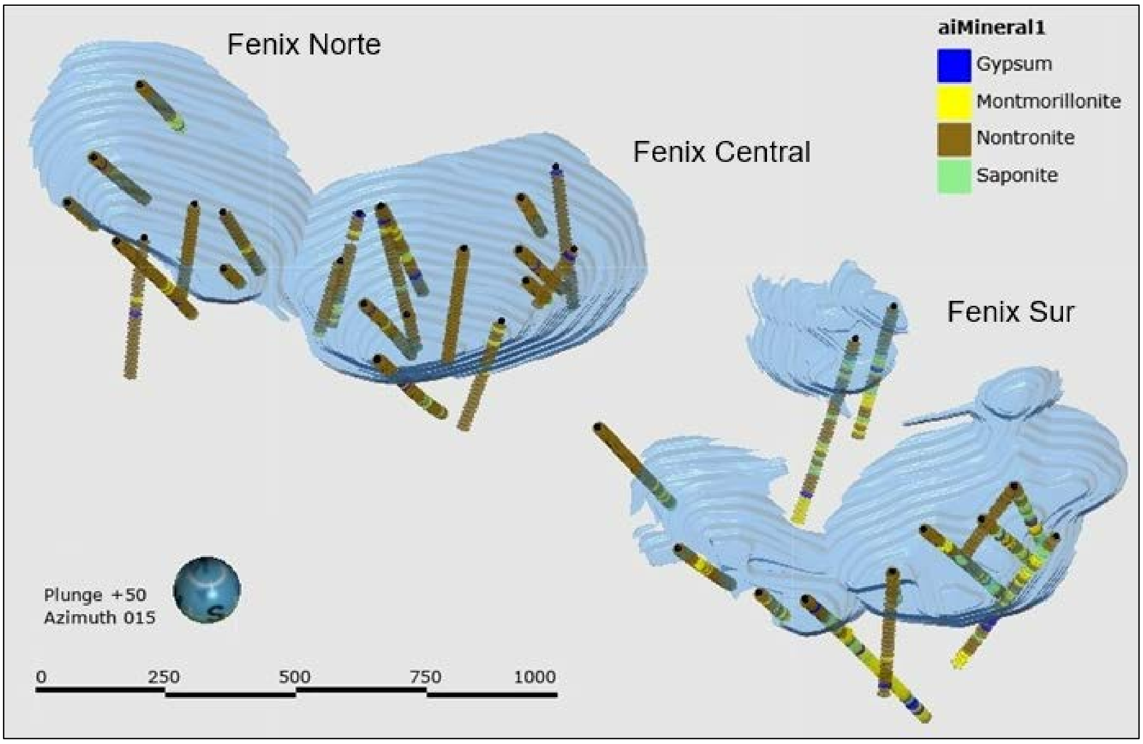
Regarding the soil samples, the Short Wave Infra Red (SWIR) band demonstrated that the maar-diatreme field that hosts the mineralization presents a weak homogeneous argillic alteration composed of nontronite + silica + magnetite (-chlorite), as it is shown in Figure 7-11A. The subvolcanic bodies did not show evident hydrothermal alteration as all their original minerals remained unchanged. The Visible to Near Infrared (VNIR) band showed the pyroclastic rocks and felsic domes display a ring-shaped kaolinite-hematite alteration surrounding the maar-diatreme system, probably due to supergene alteration derived from pyrite identified in some dacitic domes and field observations. Within the maar-diatreme field there is no response of minerals in the VNIR spectrum because the oxides correspond mainly to magnetite (Figure 7-11B).

The SWIR band from the drill hole samples confirms the hydrothermal mineral association is low temperature and pH neutral, characterized by homogeneous smectites-chlorite as a nontronite-montmorillonite ± chlorite assemblage (Figure 7-12). From the VNIR spectrum hematite-goethite is only recognized in Fenix South, mainly due to the dominant magnetite content in this sector.



Source: Alarcón et al., 2022

Figure 7-11 – Zonation of alteration from soil samples. SWIR band shows a nontronite core surrounded by kaolinite ± gypsum and alunite traces of probable supergene origin (a). VNIR band shows a halo of hematite – goethite around the deposit (b).



Source: Alarcón et al., 2022

Figure 7-12 – Spatial distribution of nontronite-montmorillonite ± chlorite from drill hole samples detected by SWIR band.

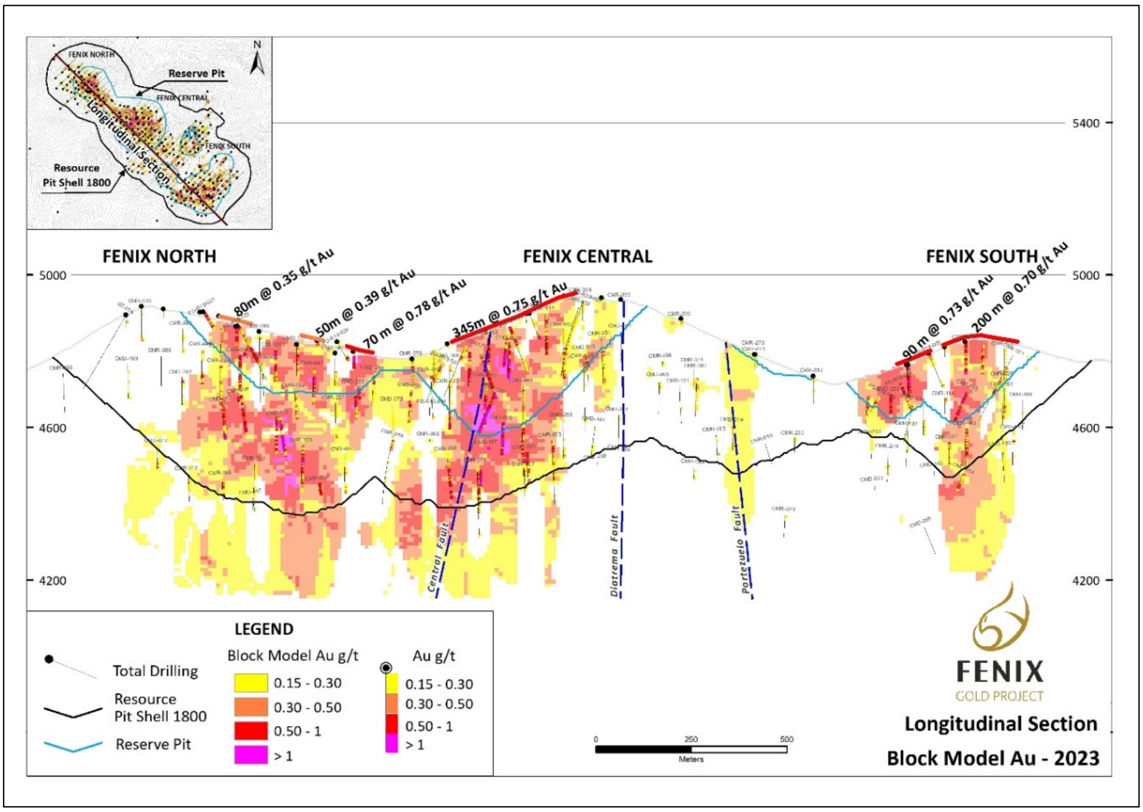
Nontronite is the most abundant alteration mineral independent of the depth, recognized as the main mineral in both barren and high-grade zones. Therefore, there is no direct relationship between alteration and mineralization.

From the drill hole samples, significant elements of mineralized intervals do not show dispersion, suggesting no over imposition of alteration or zoning.

From the detailed mapping of drill holes (more than 300) and thin sections review, the alteration does not exhibit zoning and is constant from the surface to more than 600 m deep. The breccias generally have a dark color due to the presence of tiny crystals of disseminated magnetite.

7.2.4 Mineralization

The Project hosts an oxidized gold system of 2.5 Km long by 0.75 Km average width that trends NW-SE. Drilling has confirmed gold mineralization's existence at depths of at least 600 m (Figure 7-13). The economic mineralization from the surface presents continuous values greater than 0.5 g/t Au for more than 100 m, as it has been recognized through trenches.



Source: Rio2, 2023

Figure 7-13 – Longitudinal section through block model (2023) depicting continuous gold mineralization to more than 600 m depth.

The Phreatomagmatic Breccias and dacites from the Subvolcanic Intrusion unit mainly host gold mineralization. It is also found, in less extents, in andesites and dacitic domes from the Subvolcanic Intrusions unit close to the contact with the Phreatomagmatic Breccias. No mineralization is identified in the Late Domes and Blocks and Ash Pyroclastic Rocks units.

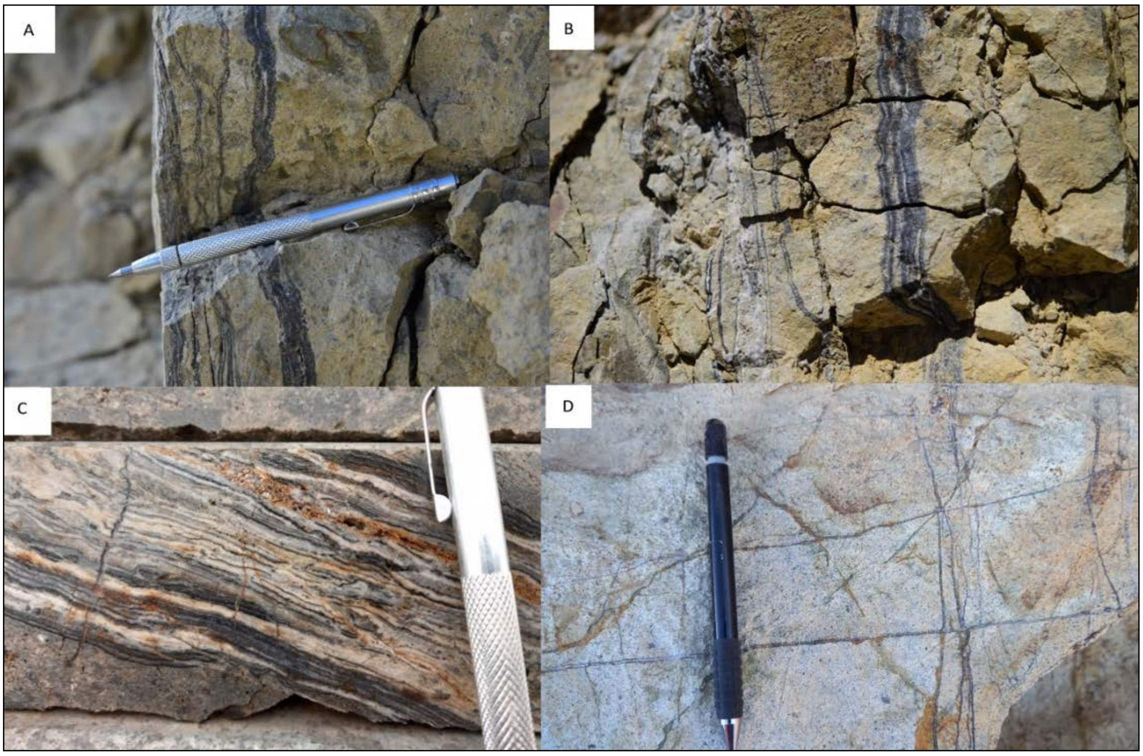
The first-order geometry of the mineralized bodies is defined by the cone morphology of the maar-diatreme structures. Second-order geometries are determined by enrichment associated with faults within the maar-diatreme system and at least two subsequent episodes of veins, linked to the emplacement of subvolcanic intrusions.

The occurrence of high-grade gold is commonly associated with low-temperature dark bands bearing quartz veins known as Black Banded Veins (BBV). These structures occur as sheeted veins and stockwork in breccias, subvolcanic intrusions and domes, and are contained in subangular fragments in phreatomagmatic breccias (Figure 7-14). High-grade mineralization is also recognized in hydrothermal injections of silica-magnetite. Low grade gold or anomalous values are also present in rocks without veins. This may be explained by the microscopic presence of auriferous magnetite/ilmenite disseminated in the breccia matrix.

Mineral and mineral release studies on blasting material by Quantitative Evaluation of Minerals by Scanning Electron Microscopy (QEMSCAN) and Trace Mineral Search TMS) in ALS Vancouver (Canada) indicate Au occurs in an average size of 3 µm mainly free (48% to 77%) and adhered to/included in gangue minerals (quartz>pyrite). Chalcopyrite, pyrite, and sphalerite are less than 0.1%, and ultratraces of galena, pyrrhotite and bornite are also identified (ALS, 2021).

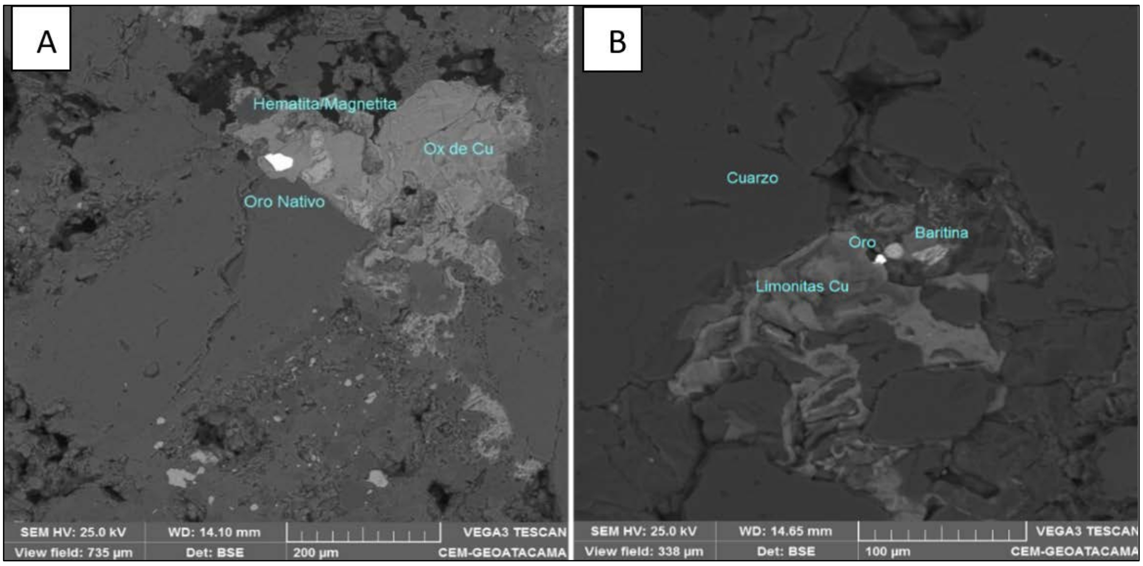
Occurrence and paragenesis studies on high grade (>1.50 g/t Au) diamond core samples by TESCAN microscope in Cem Geoatacama, Coquimbo (Chile) indicate gold is not only associated with quartz but also with Fe oxides such as hematite-magnetite and copper oxides (Figure 7-15). Copper sulfides like chalcocite-digenite, chalcopyrite and bornite as small inclusions (5 µm to 25 µm) in quartz are also detected.

These findings are consistent with the interpretation by Corbett (2019) that the mineralization in the Project is an intrusion related, low sulfidation, quartz-sulphide Au±Cu deposit of deep epithermal type. This same author considers the deposit was lately remobilized by supergene processes facilitated by the permeable fine-grained matrix of the phreatomagmatic breccias.



Source: Alarcón et al., 2022

Figure 7-14 – Sheeted vein arrangement of BBV in phreatomagmatic breccias (a, b). Well developed banding of BBV in HQ core fragment (c). Stockwork arrangement of millimetric BBV in dacitic subvolcanic intrusion (d).



Source: Alarcón et al., 2022

Figure 7-15 – TESCAN microscope images of 40 μm gold particle intergrown with hematite/magnetite (drill hole CMD-126) (a) and 10 μm free gold particle intergrown with Cu limonites and barite (drill hole CMD-196).

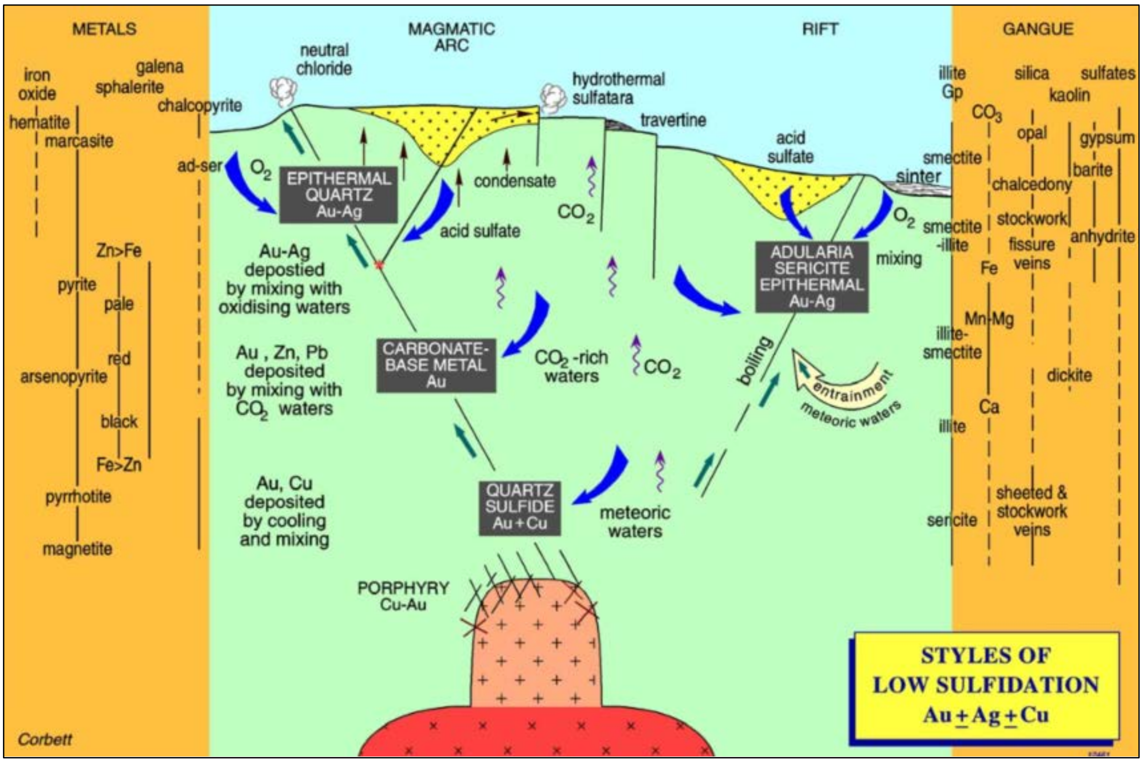
8 DEPOSIT TYPE

The conceptual model of the gold mineralization in the Project has changed with the accumulation of new information and the improvement of the deposit understanding.

Magri (2012) defined the deposit as a porphyry associated with Miocene dome intrusions of similar characteristics to other known porphyry-type deposits in the Maricunga Belt.

Lohmeier (2017) proposed a transitional model of porphyry gold to epithermal and alternating environments in nearby areas.

Corbett (2019) interpreted the gold mineralization in the Project as an Intrusion Related, Low Sulfidation, Quartz-Sulphide, Au±Cu Deep Epithermal (ILFQS) deposit (Figure 8-1). The same author infers the mineral was lately redeposited by supergene processes facilitated by deep oxidation within the permeable fine-grained matrix of phreatomagmatic breccias.



Source: Corbett, 2004

Figure 8-1 – Styles of low sulfidation occurrences where the ILFQS type deposit is outlined in red.

According to Corbett (2018, 2002), the ILFQS mineralisation style displays the following characteristics:

- Typically develops within andesitic magmatic arcs, as the earliest in the paragenetic sequence.

- Gold is hosted within pyrite in various forms and over a considerable vertical range.
- Gold grades are modest, derived from cooling fluids, and rise in settings of fluid mixing.
- Gold is typical of a high fineness.
- At deep crustal levels, Au is accompanied by Cu within chalcopyrite and anomalous bismuth values, while local pyrrhotite, specular haematite or rare magnetite may be present.
- Strongly saline conditions in fluid inclusion data may reflect a common strong intrusion component, although circulating meteoric waters may also provide some dilute fluids.
- Wall rock alteration is dominated by retrograde sericite-illite-pyrite and local chlorite-carbonate assemblages, typically as vein halos, with gradations to illite-smectite clays veins at higher crustal levels and more peripheral to vein systems.

The following characteristics in the Project account for the ILFQS type of deposit:

- Dominance of massive chalcedony, more typical of epithermal environments.
- Existence of open comb quartz veins is evidence of development in slow cooling conditions in epithermal environments.
- Existence of bornite replaced by chalcopyrite along with sphalerite and tetrahedrite sulphide minerals is a typical association of an intrusion-related fluid in a deep epithermal setting.
- Presence of quartz-pyrite gangue minerals associated with gold as shown by QEMSCAN/TMS studies.
- High fineness of Au and associations with Cu bearing sulphides.
- Existence of low temperature neutral pH argillic alteration characterized by smectites-chlorite (nontronite-montmorillonite ± chlorite) of homogeneous horizontal and vertical distribution.

9 EXPLORATION

The Project has been explored by SBX, Atacama Pacific Gold Corporation (APG) and Rio2 from 2018 to the effective date of this Report. Exploration activities and results from 2018, organized by the operator, are presented in Table 9-1 and Table 9-2 below.

9.1 Exploration Activities Previous to 2018

A summary of the exploration work completed by SBX is provided in Table 9-1.

Table 9-1 – Summary of SBX exploration programs on the Project.

Year	Work Performed
2007	Collection of the first samples in the area with gold values between 0.20 g/t and 3.0 g/t.
	Generation of a map at a 1:25,000 scale.
2008	Construction of trenches
	Conduction of terrestrial magnetometry and resistivity/chargeability sections
	Surface mapping
2008-2010	Completion of 2,142 m drilling (Phase I)

A summary of the exploration work completed by APG is provided in Table 9-2.

Table 9-2 – Summary of APG exploration programs on the Project.

Year	Work Performed
2010-2012	Generation of geological maps at scales of 1:25,000 and 1:10,000
2010-2017	Completion of 106,339 m drilling (Phases II to V)
	Conduction of metallurgical and geotechnical tests
2017	Completion of a PhD thesis on the petrological and geochemical characterization of lithologies, alterations, veins, and ore mineralogy

9.2 Exploration Activities by Rio2 from 2018

9.2.1 Geological Mapping

During 2020-2021 the Rio2 staff executed two geological maps of the Project at scales 1:5,000 and 1:1,000 based on 3,658 control points and drill hole collar geology. They define two major units (Initial Volcanism and Phreatomagmatic units) and five subunits (Cerro Maricunga Felsitic Domes, Block and Ash Pyroclastic Rocks, Subvolcanic, Phreatomagmatic Breccia, and Late Domes subunits).

9.2.2 Geophysics

During 2021 Fenix Gold contracted Quantec Geoscience to reprocess historical DCIP-Dipole Dipole and terrestrial magnetic data acquired from 1998 to 2013 by other companies, and to carry out Controlled Source Audio – Magnetotelluric (CSAMT) sections.

Nineteen DCIP-DPDP lines were reprocessed and 2D DC resistivity and chargeability models were generated for each line. Around 840 Km of terrestrial magnetic data was reprocessed on N-S lines spaced 100 m apart and the following were generated:

- Total Magnetic Field (TMF)
- Reduction to Pole (RP)
- Analytic Sign (AS)
- Analytic Signal of Vertical Integration (ASVI)
- Tilt Derivative
- Theta
- First Vertical Derivative (1VD)
- Vector Residual Magnetic Intensity (VRMI)
- Magnetic Vector Inversion model

Quantec delivered 1D and 2D inversion sections at a 1:5,000 scale where resistive mineralization and magnetic anomalies were remarked as highs.

9.2.3 Petrology, Mineralogy, and Research Studies

In 2018, Dr. William Kerby performed a hyperspectral study of cores using 6 diamond drill holes from the mineralized zones of the Project and described the main alteration minerals as illite-smectite.

In 2019, Dr. Greg Corbett was retained to review the Project. He interpreted the gold mineralization as an intrusion related, low sulfidation, quartz-sulphide Au±Cu deposit of deep epithermal type.

In 2021 a volcanological study by Dr. Jorge Clavero and Valentina Ramirez was completed. Based on a description of volcanic facies, they proposed the existence of at least ten maar-diatreme volcanic structures with intermediate to high degree of preservation.

During 2021 six core samples containing high grade banded veins were analysed by a TESCAN microscope at the CEM Geoatacama laboratory. It was concluded that gold is associated with quartz and Fe oxides such as hematite-magnetite and copper oxides.

Also, in 2021 six samples were sent to the Zirchron ILLC Lab in Arizona for U-Pb geochronology on subvolcanic and dome rocks. LA-ICP-MS laser ablation was applied and ages from 16.2 Ma to 15.8 Ma consistent with field observation were obtained.

In 2021-2022 a structural study of the Project was commissioned by Dr. Pamela Pérez. The study defined an earlier NW-SE structural system and a later NE-SW structural system, which were described and mapped. The earlier faults were associated with the magma and hydrothermal ascent and the later faults were attributed to geometric aperture and evolution of the system.

During 2022, reflectance spectrometry studies were carried out using Terraspec and interpretation by AiSiris on 380 soil samples and 1,186 drill hole samples from 40 drill holes. Smectites-chlorite (nontronite-montmorillonite +/- chlorite) associations and traces of kaolinite were found.

In 2022 Sergio Rojas conducted a study to characterize the domes and subvolcanic intrusions of the Project and to establish a model of magmatic evolution as a thesis to obtain a professional geologist degree.

9.2.4 Geotechnical Studies

During 2020-2021 eight diamond drill holes were drilled for geotechnical studies and Derk (2022 and 2023) was commissioned to conduct a geotechnical study on the stability of the designed reserve pits. After geological, geotechnical, and structural characterization the design was regarded as safe, stable, and trustable.

9.2.5 Metallurgical Studies

During 2020-2021 blasted ore (426 dry tonnes) was collected from Fenix North, Fenix Central and Fenix South for metallurgical tests in a pilot plant by HLC (2021). After 86 days cyanide leaching cycle a gold recovery of 75.12% was demonstrated, which is considered a satisfactory value. The test was conducted using water from Nueva Atacama plant in Copiapó at the existing industrial facilities of Lince S.A located 127 Km from Copiapó and 25 Km from the Fenix Gold Project.

During 2021 a mineralogical and mineral release study on blasted material by QEMSCAN and TMS was assigned to ALS Vancouver, Canada. The study determined fine gold was mainly free and adhered to/included in gangue (quartz>pyrite; ALS, 2021). The study supported that the gold was amenable to heap leaching.

10 DRILLING

10.1 Legacy SBX and APG Drilling

SBX drilled eight combined diamond drill holes (DDH) and reverse circulation (RC) drill holes (Phase I) in 2010, totalling 2,142 m, ahead of listing as Atacama Pacific Gold Corporation (APG) on the Toronto Stock Exchange (Table 10-1).

APG completed five drilling campaigns at the Property (Phases I to V), totalling 108,481.76 m over 337 holes of combined RC and DDH (Table 10-1).

10.2 Rio2 Drilling

Since taking control of the Project in 2018 (Phases VI, VII and VIII), Rio2 has drilled an additional 11,544 m over 63 RC and DDH holes (Table 10-1).

In total, four hundred and eight (408) drill holes totalling 120,055 m have been drilled at the Project.

From the total drilled, 110 holes are DDH totalling 33,069 m, and 298 holes are RC drill holes totalling 86,987 m. Drilling for condemnation totals 1,290 m, drilling for metallurgical testing and grade control totals 7,766 m, and drilling for geotechnical and hydrological purposes totals 4,122 m.

From the total drilled, 118,203 m have been assayed, typically at 2 m intervals.

A total of 116,280 m drilled (376 holes) has been considered into the modelled mineralized zones, accounting for 97% of the total meters drilled into the deposit. The percentage of total meters within Fenix South, Fenix Central, and Fenix North are 20%, 52% and 25% respectively (Table 10-2).

Drilling has been aligned along 50-meter spaced northeast oriented sections, orientated approximately perpendicular to northwest trending mineralization. Drill hole locations and mineralized zones are shown in Figure 10-1.

Drill collars were surveyed using differential GPS and conventional survey method. Downhole survey measurements were routinely taken out at either 3 m or 10 m downhole or uphole intervals by Comprobe Ltda (Santiago), Wellfield Services Ltda (Antofagasta) or Explomin using gyroscopes.

Eight (2%) of 376 holes used in the Resource Estimation do not have a downhole survey due to extreme ground collapses totalling 1,324m (1%).

Details of non-surveyed drill holes are shown in Table 10-3.

Core recoveries were measured for each drill run by a drill controller or a geologist on site. RC recovery was estimated by dividing the theoretical weight of the sample to the actual recovered weight. A 2.44 t/m^3 bulk density was considered. Table 10-4 shows the average recoveries of both 2020-2021 and 2022 drilling campaigns and historical results.

Based on the documents reviewed and on the site visit, the QP is of the opinion that the drilling operators met best practices of the exploration and mining industry for diamond drilling and RC drilling during the 2020-2021 and 2022 drilling campaigns. Regarding the recoveries, the QP recommends Rio2 complete a full record of recoveries through phases, particularly in the case of RC holes. The record should include drilling diameter, depth, and lithology to investigate and mitigate the variables involved in the decrease of this parameter.

Table 10-1 – Number of holes and metres drilled per phase.

Phase Year	I	II	II	III	III	IV	IV	V	VI	VII	VIII
	2010		2011		2012		2013	2017	2018-2019	2020-2021	2022
N° Drill Holes	8	15	67	28	102	38	71	16	39	19	5
Reverse Circulation (m)	1,422	3,134	21,446	6,350	25,272	6,181	12,970	1,890	7,066	0	1,256
Diamond Drilling (m)	720	2,153	4,728	3,446	10,915	2,839	4,346	700	0	3,222	0
Total (m)	**7,429**		**35,970**		**45,207**		**17,316**	**2,590**	**7,066**	**3,222**	**1,256**

Table 10-2 – Fenix Gold Project drilling phases – Meters drilled and meters assayed.

Zone	Drilling Phase	DDH HOLES			RC HOLES			DDH + RC HOLES		
		Drilled (m)	Assayed (m)	Not Assayed (m)	Drilled (m)	Assayed (m)	Not Assayed (m)	Drilled (m)	Assayed (m)	Not Assayed (m)
Fenix North	I	182	182	-	-	-	-	182	182	-
	II	2,013	2,013	-	6,734	6,734	-	8,747	8,747	-
	III	3,046	3,046	-	4,912	4,912	-	7,958	7,958	-
	IV	1,570	1,570	-	2,050	2,050	-	3,620	3,620	-
	V	150	-	150	300	-	300	450	-	450
	VI	-	-	-	2,060	2,052	8	2,060	2,052	8
	VII	874	869	5	-	-	-	874	869	5
	VIII	-	-	-	250	244	6	250	244	6
	Sub-Total	**7,836**	**7,680**	**155**	**16,306**	**15,992**	**314**	**24,142**	**23,672**	**469**
Fenix Central	I	321	321	-	570	570	-	891	891	-
	II	2,568	2,568	-	16,500	16,484	16	19,068	19,052	16
	III	7,812	7,812	-	13,976	13,944	32	21,788	21,756	32
	IV	4,674	4,674	-	10,642	10,632	10	15,316	15,306	10
	V	300	-	300	300	-	300	600	-	600
	VI	-	-	-	3,338	3,336	2	3,338	3,336	2
	VII	600	591	9	-	-	-	600	591	9
	VIII	-	-	-	1,006	982	24	1,006	982	24
	Sub-Total	**16,275**	**15,967**	**309**	**46,332**	**45,948**	**384**	**62,607**	**61,915**	**693**
Fenix South	I	217	217	-	852	852	-	1,069	1,069	-
	II	2,229	2,229	-	1,346	1,346	-	3,645	3,645	-

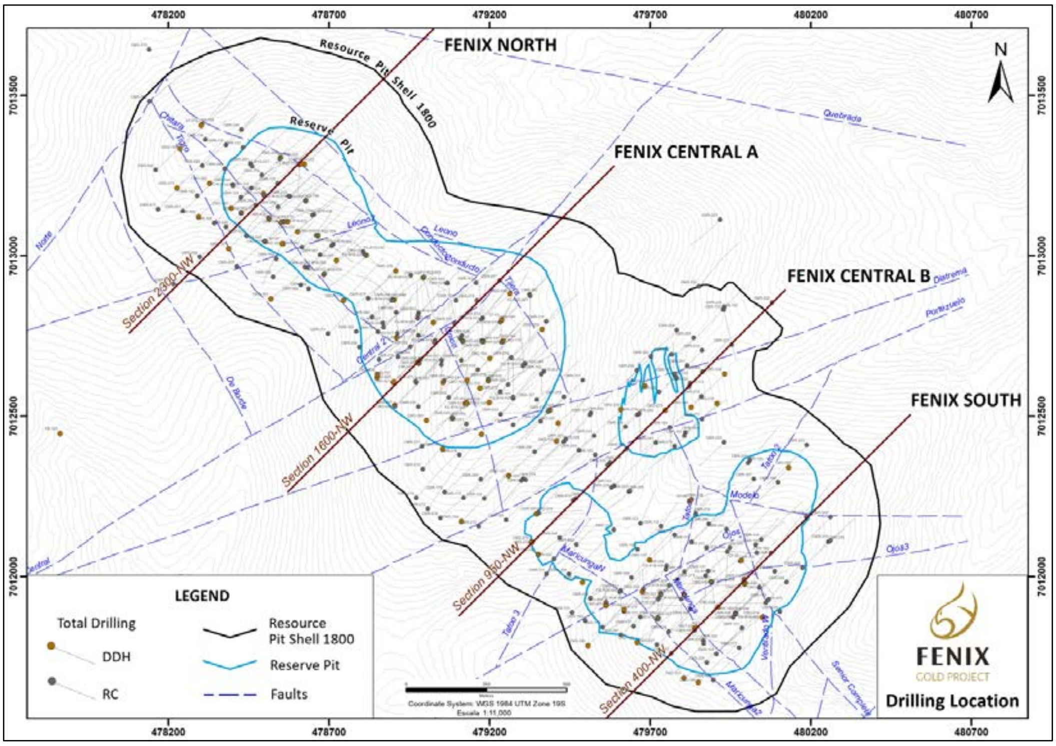
Zone	Drilling Phase	DDH HOLES			RC HOLES			DDH + RC HOLES		
		Drilled (m)	Assayed (m)	Not Assayed (m)	Drilled (m)	Assayed (m)	Not Assayed (m)	Drilled (m)	Assayed (m)	Not Assayed (m)
	III	3,503	3,503	-	12,734	12,728	6	16,237	16,231	6
	IV	941	941	-	5,580	5,562	18	6,521	6,503	18
	V	250	-	250	300	-	300	550	-	550
	VI	-	-	-	1,668	1,668	-	1,668	1,668	-
	VII	840	823	17	-	-	-	840	823	17
	VIII	-	-	-	-	-	-	-	-	-
	Sub-Total	**8,050**	**7,783**	**267**	**22,480**	**22,156**	**324**	**30,530**	**29,939**	**591**
Around Fenix	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	III	-	-	-	-	-	-	-	-	-
	IV	-	-	-	879	869	11	879	868	11
	V	-	-	-	990	948	42	990	948	42
	VI	-	-	-	-	-	-	-	-	-
	VII	907	860	47	-	-	-	907	860	47
	VIII	-	-	-	-	-	-	-	-	-
	Sub-Total	**907**	**860**	**47**	**1,869**	**1,816**	**53**	**2,776**	**2,676**	**100**
All Zones	I	720	720	-	1422	1422	0	2,142	2,142	0
	II	6,881	6,881	-	24,580	24,564	16	31,461	31,445	16
	III	14,361	14,361	-	31,622	31,584	38	45,983	45,945	38
	IV	7,185	7,185	-	19,151	19,112	39	26,335	26,297	39
	V	700	-	700	1,890	948	942	2,590	948	1,642
	VI	-	-	-	7,066	7,056	10	7,066	7,056	10
	VII	3,222	3,156	66	-	-	-	3,222	3,144	78
	VIII	-	-	-	1,256	1,226	30	1,256	1,226	30
	Sub-Total	**33,069**	**32,303**	**766**	**86,987**	**85,912**	**1,075**	**120,055**	**118,203**	**1,852**

Table 10-3 – non-surveyed drill holes included in Resource Estimate.

Zone	Non-surveyed drill holes	Non-Surveyed (m)	Section	Drill hole Type
Fenix South	CMR-148	214	350 NW	RC
Fenix Central	CMR-018	444	1400 NW	RC
Total RC		**658**		**RC**
Fenix Central	CDM-010	165	1400 NW	DDH
Fenix Central	CMD-152	135	1400 NW	DDH
Fenix Central	CMD-091	26	1600 NW	DDH
Fenix Central	CMD-021	143	1600 NW	DDH
Fenix North	CMD-122	173	2150 NW	DDH
Fenix North	CMD-036	23	2300 NW	DDH
Total DDH		**666**		**DDH**

Table 10-4 – Recoveries of 2020-2021 campaigns and historical results.

Phase Year	I-IV	I-VI	VII	VIII
	2010-2013 (%)	2010-2019 (%)	2020-2021 (%)	2022 (%)
Reverse Circulation	-	87.7	-	83.0
Diamond Drilling	97.5	-	97.7	-



Source: Rio2, 2023

Figure 10-1 – Drill hole location, mineralized zones, and pit outlines.

11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 2020-2021 Drilling Campaign

All drill holes from the 2020-2021 campaign were diamond drill holes. Rio2 applied the following sampling methodology (Figure 11-1):

- Diamond drill cores were boxed in aluminium trays at the drilling site where they were properly extracted from the core barrel. Measures to maintain the core integrity included the use of a rubber hammer to avoid accidental breaking, the use of a rubber gloves and water to clean the sample surfaces and the marking of core surfaces to indicate no natural fractures.
- A geotechnical geologist measured the recovery, RQD, fracture frequency and fracture between the drill runs.
- A senior geologist at the drill site logged cores, and the geologist selected 2 m samples that were duplicated in the sample preparation facility. The identification of samples selected for duplicates was recorded.
- The core boxes were labelled including drill runs and regularization meters and were properly secured with wire and packing foam, and they were then transported to the core warehouse located in Paipote.
- Core photographs and saw splitting were carried out in the Paipote site.
- One half of the core was returned to the core box for final logging and storage; the other half was properly bagged and labelled, blanks were inserted, and then these samples were delivered to ALS lab facility in Copiapó for sample preparation.
- As a chain-of-custody filling out sample submittal forms accompanied the sample shipments to Paipote and to the laboratory. Measures to maintain the core integrity included were adequate packing of core trays with wire and packing foam to avoid displacement or separation of the core during transport movement.

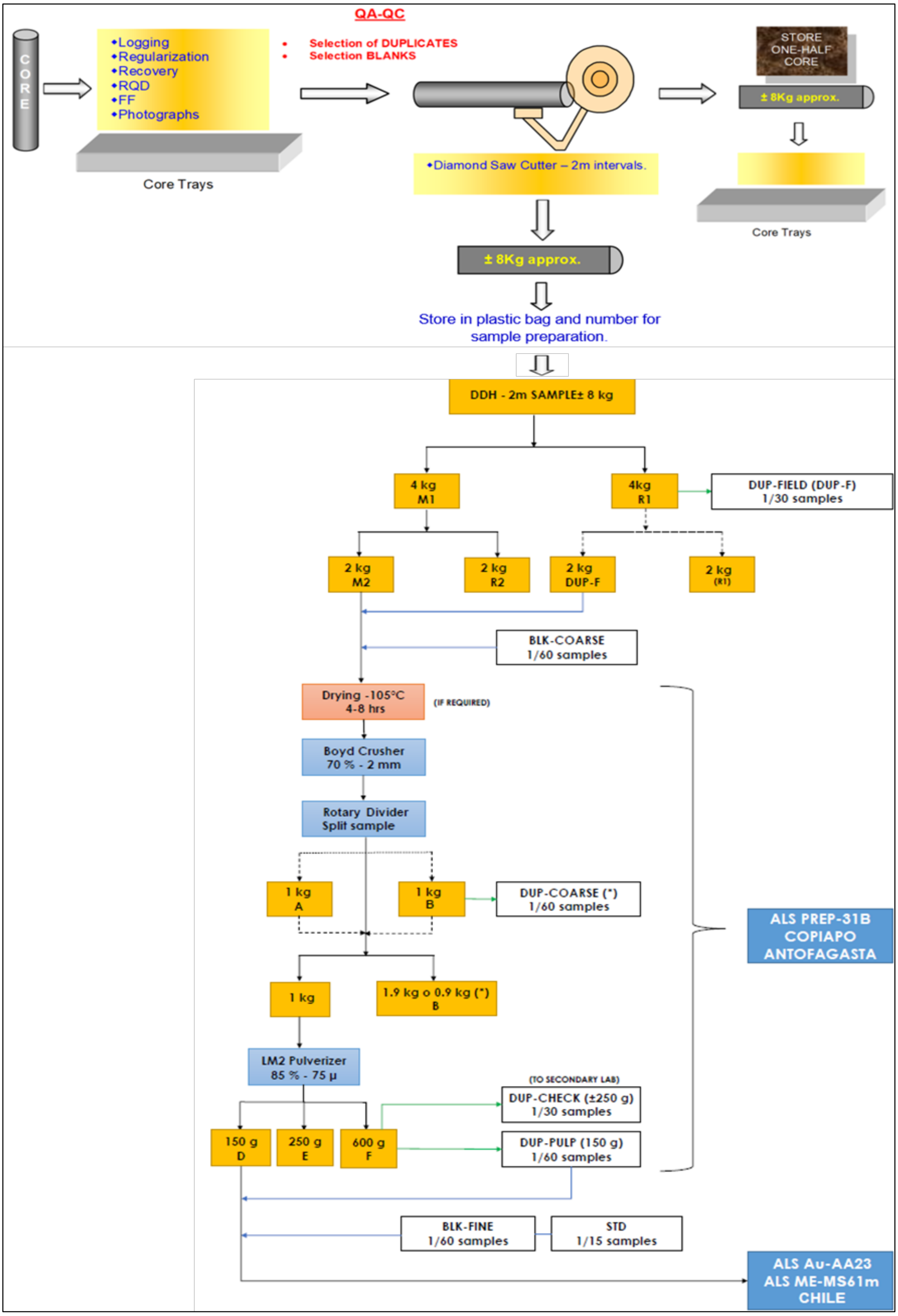
The following summarizes the sample preparation procedures used at the ALS preparation facility in Copiapó:

- The samples (~8 Kg) are coarse crushed and split in two halves. One fraction (~4 Kg) is returned to Rio2 for storage or coarse duplicate. The other fraction is dried, if necessary, crushed to 70% passing 2mm and rotary split down to 50%.
- 50% (~1 Kg) is retained as coarse duplicate. The other 50% is pulverized to 85% passing 75 µ to three – 600 g, 250 g, and 150 g samples. The 600 g sample (sample F) is returned to Rio2 or retained as a pulp duplicate (150 g) and the 150 g sample (sample D) are kept to be assayed.
- The remaining 250 g split is stored.

Rio2 collected the prepared pulps and inserted the duplicates, standards, and blanks into the entire batch, utilizing a different sequential numbering system. The re-numbered pulps were then re-delivered to the ALS laboratory in Lima, which was used as a primary laboratory. At each stage of the process Rio2 utilized shipping slips, which were signed as appropriate by ALS and Rio2.

Analytical methods used by ALS were:

- Gold (Au-AA24): 50 g of material is subjected to a standard 50 g fire assay. Typically, an AAS finish is used, however, if the resulting values are greater than 5 g/t Au, then the reported result is obtained using a gravimetric finish. The lower detection limit for Au is 5 ppb.
- Multi elements (ME-ICP61 m): a 35 multi-element suite is analysed using ICP-AES methods with variable lower detection limits.



Source: Rio2, 2023

Figure 11-1 – Sample preparation, analyses, and security.

11.2 2022 Drilling Campaign

During the 2022 drilling campaign, drill holes were all Reverse Circulation. Rio2 applied the following sampling methodology in this campaign (Figure 11-2):

- RC 2 m run cuttings weighing approximately 80 Kg were split in two fractions of about 40 Kg each at the drill site using a standard riffle splitter. Cuttings from each fraction were split again down to 50% to complete subfractions of approximately 20 Kg each.
- 20 Kg subfractions from the first split were homogenized, weighed, and deposited into plastic bags and labelled M2 and R2 under the supervision and control of Rio2 personnel. Sample M2 was sent to the lab for assay. All rejects were homogenized, bagged, weighed, and properly labelled to be available for field duplicates.
- For each 2 m interval, representative samples (dust and cuttings) were collected from the debris flow coming out from the riffle of the 20 Kg assay sample or the counterpart by using an appropriate sieve. The resulting fractions were deposited into properly marked and identified plastic chip trays, which were used for logging purposes.
- Field duplicate samples were inserted at a rate of approximately one per 33 samples. Sample bags for coarse duplicates were inserted in the batch at the drilling platform at a rate of 1 each 50 samples. Each 5 samples, 200 g of debris were collected from the 40 Kg rejects for hyperspectral analysis at the ALS laboratory. Once the holes were sampled, the samples were transported to the core shed located in Paipote.
- In Paipote, blanks and reference materials were inserted into the sample stream after each field duplicate, and then each batch was sent to the preparation facility of Andes Analytical Assay Ltda laboratory (AAA) in Copiapó.
- Chain-of-custody procedures consisted of palletisation and photography of samples at the drilling platform according to their labelling, direct transport from platform to laboratory using boom trucks and filling out of sample submittal forms sent to the laboratory with sample shipments.

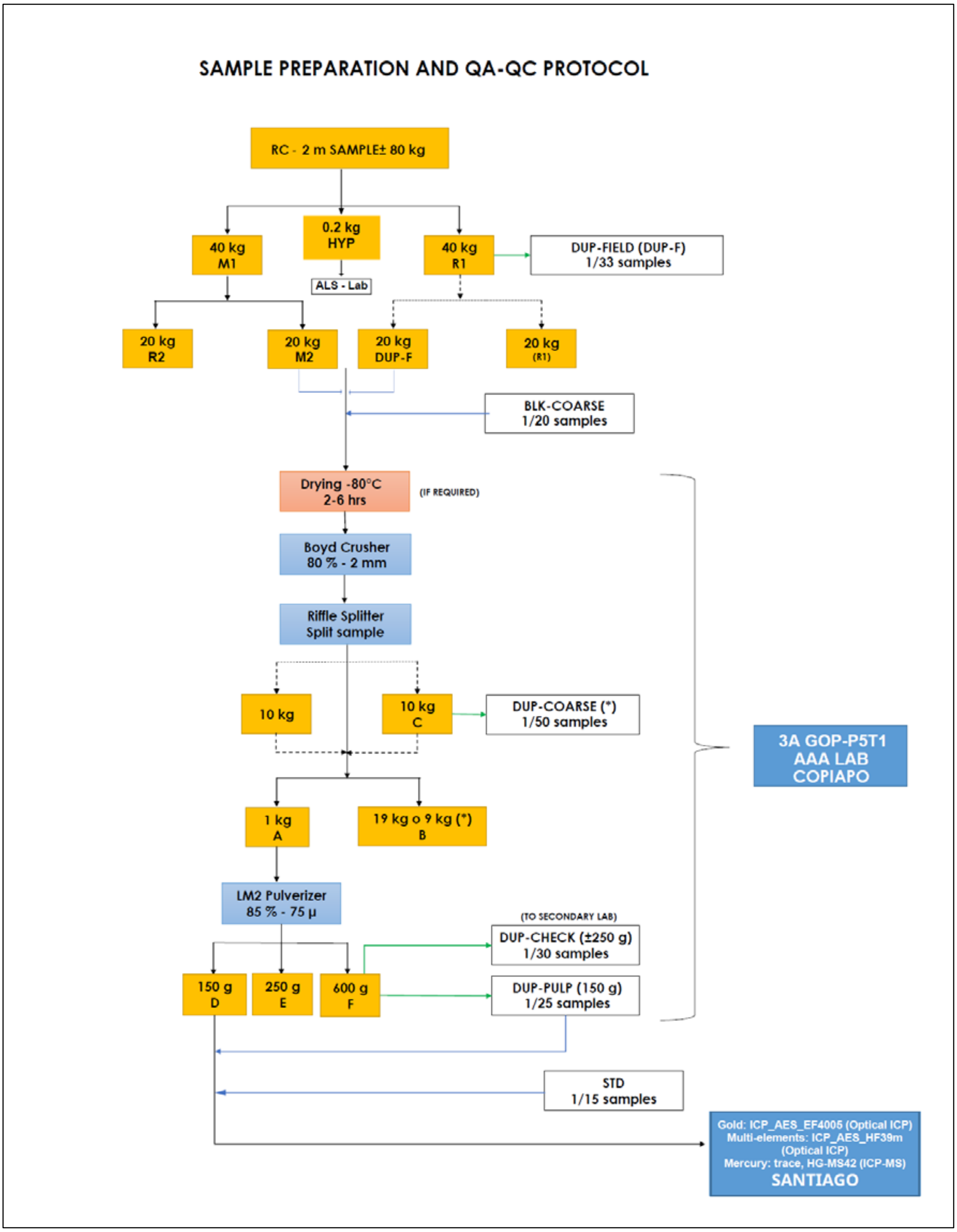
The following summarizes the sample preparation procedures used at the AAA:

- The laboratory received and inspected the samples and contrasted with the list delivered by Rio2.
- The samples were weighed, dried at a temperature above 80° C and weighed again to obtain information of wet and dry mass.
- The samples were crushed at least 80% 2 mm and split down to 50%. From the 10 Kg subsample a 1 Kg fraction was obtained through a rotary splitter. This fraction was pulverized at 85% 75 µ and split again into 150 g, 250 g, and 600 g fractions. The 150 g fraction was the assay pulp and the other two were returned to the customer as rejects.

Rio2 collected the pulps and inserted the duplicates, standards, and blanks utilizing a different sequential numbering system. The pulps were then re-delivered to the AAA laboratory in Santiago which was used as a primary laboratory.

The analytical methods used by AAA were:

- Gold (ICP_AES_EF4005): 40 g of pulp are melted with litharge, processed by fire assay, and dissolved, graduated, and homogenized to finally be measured by optical ICP.
- Multi-elements (ICP_AES_HF39m): 0.5 g of sample are processed by digestion of 4 acids (or multi-acid): HNO3 + HCl + HClO4 + HF. The sample is graduated, homogenized, and measured by optical ICP.
- Mercury (trace, HG-MS42): samples for Hg were collected every 10 m. Aqua Regia digested them at temperatures low enough to prevent evaporation of this volatile and processed by ICP-MS analysis.



Source: Rio2, 2023

Figure 11-2 – Sample preparation protocol – RC.

12 DATA VERIFICATION

Various verification routines on the data collected by Rio2 were completed during the site visit to the Project. The consultant checked the location of various drill holes in the field, audited the Mineral Resource database, and compared the logging data with cores and cuttings from selected drill holes.

12.1 Data Entry

The Project database was assembled by using digital platforms. Collar survey data were produced in Excel files by the surveyor and delivered to Rio2; logging, recovery, and sampling data were recorded digitally; and data assays were submitted by ALS and AAA laboratories to Rio2 by e-mail, and then the data was inserted into Excel files.

12.2 Drill-Hole Collar Review

During the site visit the consultant determined the collar coordinates for five drill holes corresponding to 38.5% of the holes from the 2020-2021 and 2022 campaigns (1.2% of the holes included in the Mineral Resource database) and were compared with the coordinates determined by Rio2. The instrument utilized was a hand-held Garmin® GPS. Although conventional hand-held GPS measurements are less precise than measurements conducted with more sophisticated equipment, this procedure identifies gross surveying errors.

The absolute differences between the consultant's measurements of the collar coordinates and the corresponding Rio2's determinations recorded in the Project database ranged between 0.7 m and 2.1 m for the eastern coordinates (averaging 1.5 m), and between 0.1 m and 2.1 m for the northern coordinates (averaging 1.1 m). These absolute differences are within the acceptable error of a conventional hand-held GPS unit (Table 12-1).

Table 12-1 – Collar coordinate check.

Hole ID	THIS REVIEW		RIO2		Absolute Difference	
	Easting (m)	Northing (m)	Easting (m)	Northing (m)	Easting (m)	Northing (m)
FG-R22-003	7012933.0	478996.0	7012934.2	478995.9	1.2	0.1
FG-R22-004	7013061.0	478663.0	7013063.0	478660.9	2.0	2.1
FG-R22-005	7012655.0	479303.0	7012655.7	479304.0	0.7	1.0
GT-05	7012048.0	479983.0	7012049.5	479984.1	1.5	1.1
GT-07	7013035.0	478556.0	7013037.1	478554.4	2.1	1.6
Averages					**1.5**	**1.2**

12.3 Database Checks

12.3.1 Collar Coordinates

The QP compared the collar coordinates (easting, northing, and elevation) of all 2020-2021 and 2022 drill holes included in the Mineral Resource database with the original measurements reported by the surveyor in an Excel file and did not find any differences.

12.3.2 Geological Logs

Rio2 staff directly digitalizes the logs from drill cores and drill cuttings using manual computers and the GV Mapper© platform. Therefore, the cores and cutting records were transferred automatically to the database avoiding errors in the data transcription.

12.3.3 Original Assay Data

The consultant requested Rio2's primary laboratory certificates including the original PDF and Excel assay data. Then the original Au assay values were compared with the Au assay data recorded in the Project database. The assay data corresponding to 1,824 samples was reviewed, and no errors were identified.

12.4 Geological Interpretation

12.4.1 Geological Logs against Drill Cores and Cuttings

During the site visit, the consultant compared the geological logs with the drillhole cores and cuttings from the following twelve drill-holes corresponding to 92% of the drill holes from the 2020-2021 and 2022 drilling campaigns:

- GT-01A, GT-03, GT-04, GT-05, GT-06, GT-07, GT-08 (2020-2021)
- FG-R22-001, FG-R22-002, FG-R22-003, FG-R22-004, FG-R22-005 (2022)

The QP confirmed that in general terms the recorded data matches the material collected. Lithologies, structures, alterations and mineralization were properly documented.

12.4.2 Geological Modelling

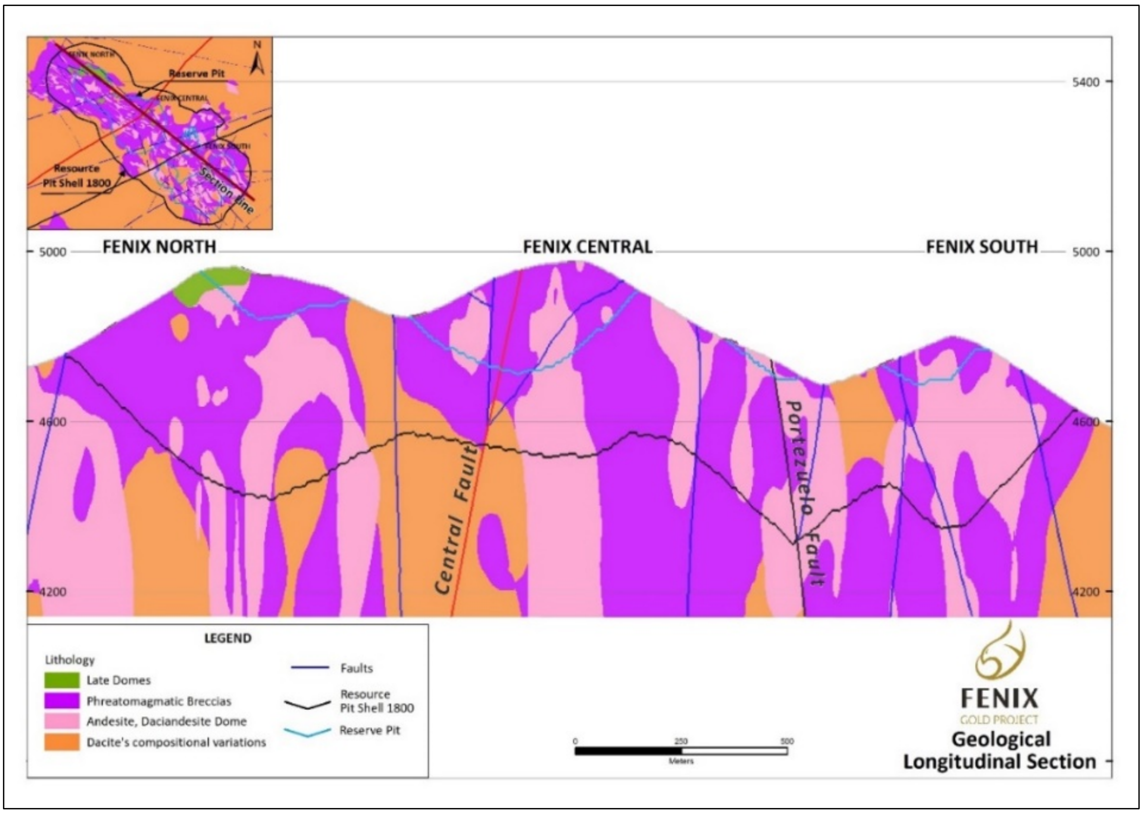
Rio2 updated the previous geological model (Rio2, 2019) using a new version of the surface geological map, a structural map (Pérez-Flores, 2022), and descriptions of trenches and drill holes.

The new geological model was built using the Leapfrog© platform based on 57 NE-SE oriented master sections separated every 50 m where the drill holes were included or projected. The model considered four geological units:

- Late Domes (UF_TFd)
- Subvolcanic Intrusions (UM_AP)
- Phreatomagmatic Breccias (BxRF),
- Cerro Maricunga Felsitic Domes (UM_DP)

The lithological units were displaced by 5 NE-SW (Leono2, Central, Diatrema, Portezuelo and Ojos) and 10 NW-SE (Maricunga 2, Maricunga N, Senior Completa, Unión, Tijera, Conducto, Conducto 2, Chitara, Tigro, Modelo) subvertical relevant faults resulting in a complex model made up of 16 subblocks (Figure 12-1).

The QP checked the consistency of the projected drill hole traces and the lithologies and reviewed the geometry of the interpreted geological shapes. The QP is satisfied that the interpretations honour the data recorded in the logs and the sections, as well as the interpretations from adjoining sections, are consistent with the characteristics of the deposit the model wanted to represent. The lithologic model has been diligently constructed in conformance to industry standard practices.



Source: Rio2, 2023

Figure 12-1 – Longitudinal section looking to the NE that shows main NE-SW fault. Central and Portezuelo faults marked in red and black traces show normal displacement of stratigraphic markers.

12.5 Twin Holes

In 2014 Atacama Pacific completed a twin drill hole study coupling eleven RC drill holes with nearby DDH holes and comparing the DDH results with the corresponding RC nearest results (closer than 10 m). No substantial differences between the RC and the DDH drilling grades were found, therefore the RC data was considered as valid to be used in the Resource Estimation.

During the 2020-2021 and 2020 campaigns Rio2 did not drill twin holes to support the quality of the RC drilling. The QP recommends Rio2 to complete a drill hole analysis similar to that applied in 2014 taking advantage of the far more abundant DDH drill hole population at the current status of the Project.

12.6 Quality Control

12.6.1 2020-2021 Drilling Campaign

During the 2020-2021 drilling program, Rio2 implemented a Quality Control (QC) program following written protocols properly implemented and diffused (Correa, 2019; Diaz, 2019). The procedure included the insertion of 1,551 control samples of the following types, number, and proportions:

- Field duplicates: 53 samples (4.00%)
- Coarse duplicates: 25 samples (1.90%)
- Pulp duplicates: 15 samples (1.10%)
- Coarse blanks: 63 samples (4.80%)
- Standards: 63 samples (4.80%)

The control samples were prepared and assayed in ALS lab. Field duplicates were inserted in the batches on site prior to their submission to the crushing laboratory; coarse duplicates and coarse blanks were inserted in the preparation batches between primary and secondary crushing; and standards (high, medium, and low) were introduced in the pulp batches to assay. The results of the QC data processing were informed in the report Rio2 (n.d.-a). The results are summarized below.

12.6.1.1 Assessment of Precision

Results of field, coarse, and pulp duplicates were evaluated according to the hyperbolic method (Simón, 2004). Field, coarse, and pulp duplicates yielded 2, 1 and 2 failures, respectively, relative to the failure boundaries of each type of duplicates (Table 12-2). The failure rates for field (3.8%) and coarse (4.0%) duplicates do not exceed the accepted 10% threshold. The rate for pulp duplicates (13.3%) is above this boundary, although these results are considered valid as the two failed pairs are low grade and close to the failure line. Therefore, the QP is satisfied that sampling, preparation, and analytical precision of Rio2 and at ALS lab for Au during the 2020-2021 drilling campaign are adequate.

Table 12-2 – Duplicate summary.

Duplicate Types	Pairs	Failures	Failure Rate (%)
Field Duplicate	53	2	3.8
Coarse Duplicate	25	1	4.0
Pulp Duplicate	15	2	13.3

12.6.1.2 Assessment of Accuracy

Rio2 used G303-8, G909-7, G907-2, and G907-7 commercial standards, produced, and properly certified by Geostats Pty (Australia), to monitor accuracy of low, low-medium, medium, and high Au grades. In total, 63 standards samples were inserted in the submission batches. Shewhart diagrams were prepared for each standard and accuracy biases were calculated. Biases for the low, low-medium, medium, and high Au grade standards were -4.0%, -3.0%, -3.0%, and -2.7%, respectively which are considered as acceptable (Table 12-3). The QP concludes that the Au analytical accuracy at the ALS lab during the 2020-2021 drilling campaign was within acceptable limits.

Table 12-3 – Summary of standards performance.

Standard ID	No. of Samples	Best Values Au (ppm)	ALS Averages Au (ppm)	Outliers	Bias (%)
G303-8	23	0.3	0.3	0	-4.0
G909-7	25	0.5	0.5	2	-3.0
G907-2	12	0.9	0.9	1	-3.0
G907-7	3	1.5	1.5	0	-2.7

12.6.1.3 Assessment of Contamination

Rio2 used IN-BGM-176, OREAS-C26c and OREAS-C27c commercial blanks, produced and certified by INTEM (Antofagasta, Chile) and Oreas Research and Exploration (Australia), to monitor contamination. In total, 63 coarse blanks were inserted in the submission batches. All Au values were below the 0.005 ppm detection limit. Therefore, the QP concludes that no significant Au contamination occurred during sample preparation at the ALS lab through the 2020-2021 drilling campaign.

12.6.2 2022 Drilling Campaign

During the 2022 drilling campaign, Rio2 applied a QC program that included the insertion of 717 control samples of the following types, number, and percentages:

- Field duplicates: 18 samples (2.9%)
- Coarse duplicates: 13 samples (2.1%)

- Pulp duplicates: 11 samples (1.8%)
- Coarse blanks: 50 samples (8.2%)
- Standards: 37 samples (6.0%)
- External check: 50 samples (8.2%)

Control samples were prepared and assayed in the Andes Analytical Assay lab (AAA), which was chosen as the primary laboratory. Field duplicates were inserted in the batches on site, prior to submission to the crushing laboratory; coarse duplicates and coarse blanks were inserted between primary and secondary crushing; and standards (high, medium, and low) were inserted in the pulp batches to assay as external check samples. Preparation rejects, and pulp samples were subsequently sent to the ALS lab, which served as a secondary lab. The results of the QC data processing were informed in the report Rio2 (n.d.-b). The results are summarized as follows.

12.6.2.1 Assessment of Precision

The results of duplicates were evaluated according to the hyperbolic method (Simón, 2004). Field, coarse, and pulp duplicates produced 2, 0, and 0 failures, respectively, corresponding to specific failure boundaries of each duplicate type (Table 12-4).

The failure rate of the field duplicates (11.1%) is above the accepted 10% threshold. However, this result is considered valid as one pair is very close to the detection limit where values tend to increase dispersion. The second pair displays an out of the ordinary difference between the standard and the duplicate Au values due to a probable sample mix-up during the insertion process.

Coarse and pulp duplicates did not show failure pairs.

Therefore, the QP concludes the sampling, preparation, and analytical precision of Rio2 at AAA for Au during the 2022 drilling campaign was within acceptable limits.

Table 12-4 – Duplicate summary.

Duplicate Type	Pairs	Failures	Failure Rate (%)
Field Duplicate	18	2	11.1
Coarse Duplicate	13	0	0.0
Pulp Duplicate	8	0	0.0

12.6.2.2 Assessment of Accuracy

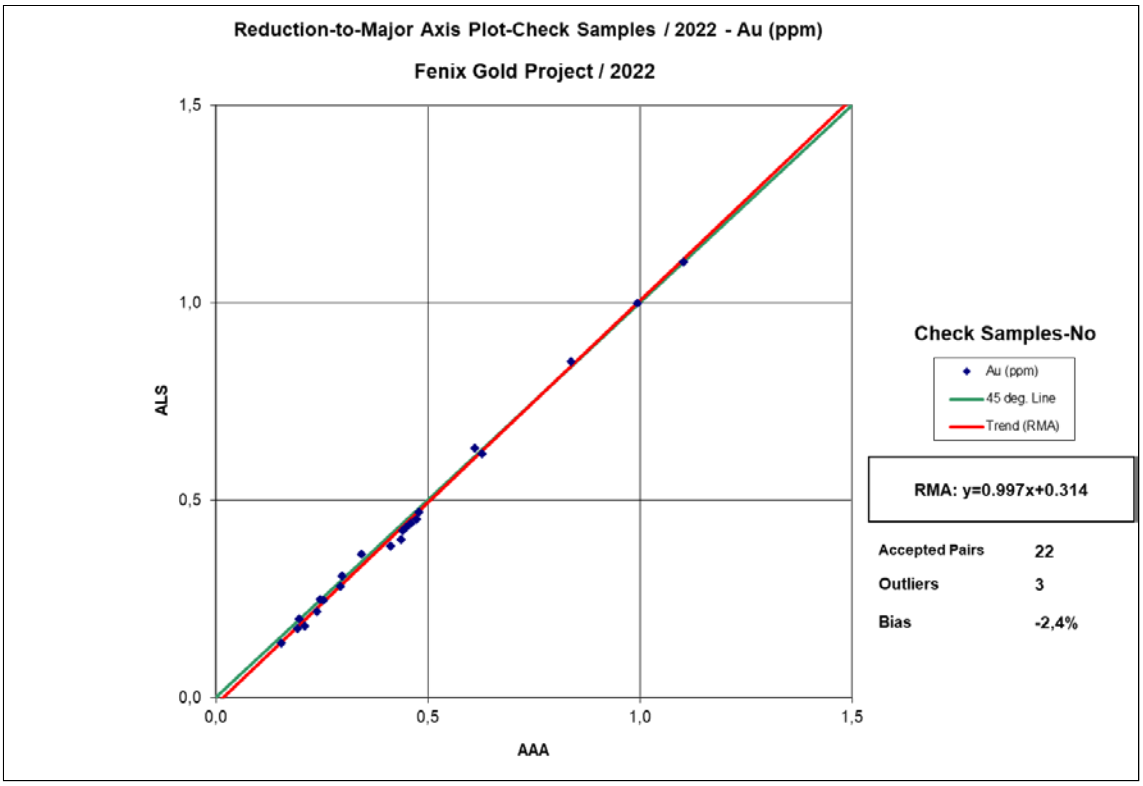
Rio2 used G303-8, G909-7, and IN-M291-138 commercial standards, produced and properly certified by Geostats Pty (Australia) to monitor accuracy of low, medium, and high Au grades respectively. In total, 37 control samples were included in the submission batches. Shewhart diagrams were prepared, and accuracy biases resulted -4.3%, -3.4%, and 7.8% for the respective low, medium, and high Au grade standards.

According to the mining industry's best practices, biases lower than 5% (in absolute value), like those of the low and medium Au grade standards are considered acceptable (Table 12-5). However, biases greater than 5% (in absolute value), like those obtained for the high Au grade standard, are questionable.

The QP reprocessed the values obtained for the IN-M291-138 standard and confirmed the bias obtained by Rio2. The QP also processed results from 50 samples (8.2%) sent as external controls to ALS, in Copiapó, which acted as secondary laboratory to estimate relative accuracy. An RMA (Reduction to Major Axis) plot indicates good fit (0.997 R2) after exclusion of 3 outliers, and acceptable values of the relative bias (-2.4%; Figure 12-2).

Table 12-5 – Summary of standards performance.

Standard ID	No. of Samples	Best Values Au (ppm)	ALS Averages Au (ppm)	Outliers	Bias (%)
G303-8	13	0.3	0.2	0	-4.3
G909-7	14	0.5	0.5	0	-3.4
IN-M291-138	10	0.8	0.9	0	7.8



Source: Rio2, 2023

Figure 12-2 – RMA plot indicating good fit of AAA External Control Samples relative to ALS lab after exclusion of 3 outliers.

12.6.2.3 Assessment of Contamination

Rio2 used IN-M561-256 and IN-M566-258 commercial blanks, produced and certified by INTEM (Antofagasta, Chile) to monitor contamination. In total, 25 coarse blanks were inserted in the submission batches and all Au values resulted below the 0.005 Au ppm detection limit. Therefore, the QP confirms that no significant Au contamination occurred at AAA during the preparation process of the 2022 campaign samples.

12.7 Independent Sampling

The QP organized a re-sampling program to independently validate the ALS & AAA data. In total, 13 pulp samples were chosen one from each drill hole from the 2020-2021 and 2022 campaigns. Also, the check samples were selected to represent different grades (high, medium, low), locations (north, centre, south), drilling methods (RC, DDH) and hosting rocks (UM_DP, BxRF, UM_AP) (Table 12-6).

The check samples were submitted for re-assaying to Certimin, a laboratory based in Lima with formal ISO 9001 (2015) and NTP-ISO/IEC 17025 (2017) accreditations. The check-sample batch also included 6 samples from three standards (two samples from each low, middle, and high grades) and two fine blanks.

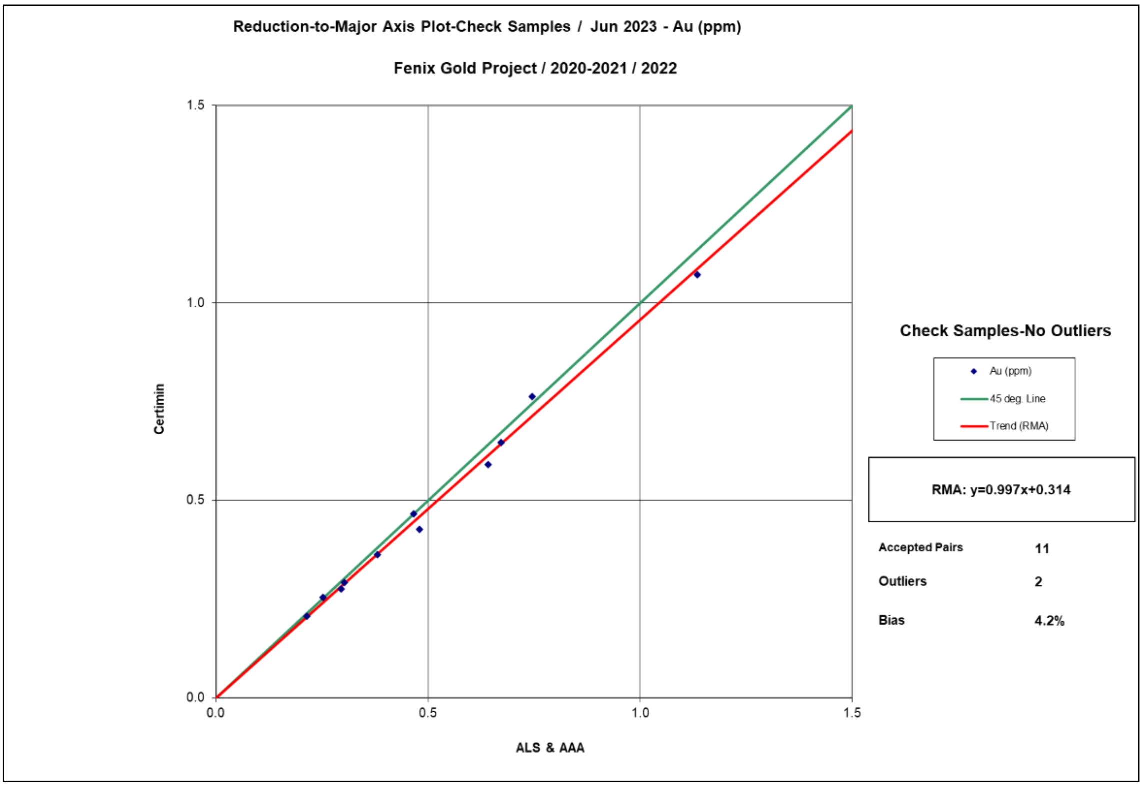
The QP processed the check assay data using the RMA method (after excluding two outliers due to probable sample mix-ups) and calculated the bias of ALS & AAA relative to Certimin for Au (Figure 12-3). It was concluded that there was a good correspondence between ALS & AAA and Certimin laboratories, as indicated by the high value of the coefficient of determination R2 (0.993). Also, it was concluded that the accuracy of ALS & AAA relative to Certimin for Au was acceptable during the assessed period, with a bias of 4.2%.

Table 12-6 – Check samples submitted to Certimin for re-assaying.

Drill Hole	Sample Interval (m)	Unit	Grade (Au)
GT-01A	2-4	BxRF	Low
GT-02	88-90	BxRF	Low
GT-03	120-121	BxRF	High
GT-04	78-80	UM_AP	High
GT-05	78-80	UM_AP	Middle
GT-06	148-150	BxRF	Low
GT-07	128-130	UM_AP	Middle
GT-08	32-34	UM_AP	High
FG-R22-001	104-106	UM_AP	Middle
FG-R22-002	24-26	BxRF	Low
FG-R22-003	194-196	UM_AP	Middle
FG-R22-004	46-48	BxRF	High

Drill Hole	Sample Interval (m)	Unit	Grade (Au)
FG-R22-005	82-84	BxRF	High

Notes: Low: < 0.3ppm Au, Middle:0.3-1ppm Au, High: > 1ppm Au



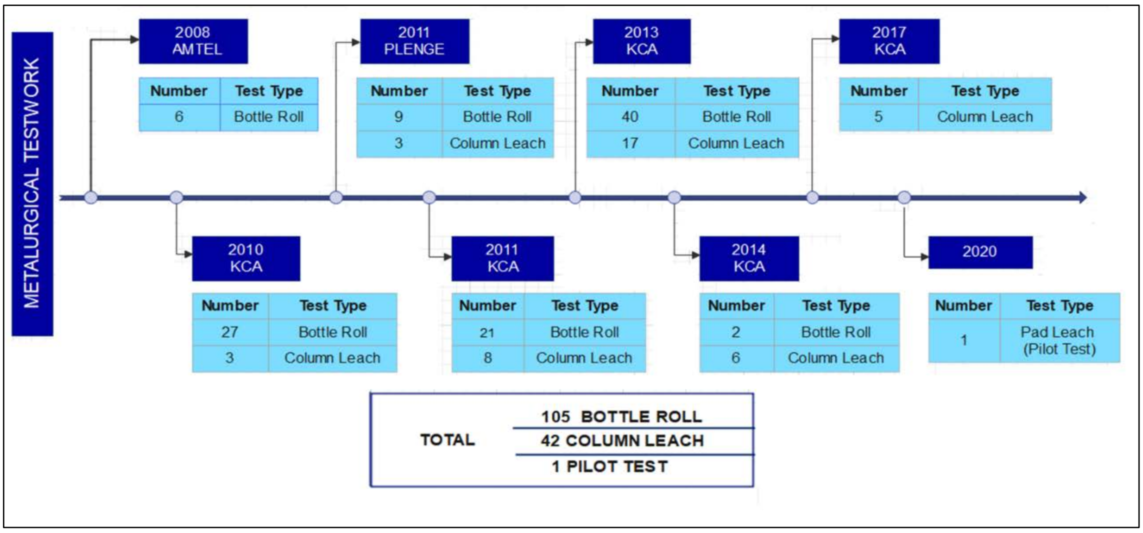
Source: Rio2, 2023

Figure 12-3 – RMA plot Indicating good fit of ALS & AAA check samples relative to Certimin lab after exclusion of 2 outliers.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

Over the period 2008 to 2021, several metallurgical study campaigns were conducted on mineralised material from various zones of the Fenix Gold deposit formerly known as Cerro Maricunga. The sequence of campaigns is shown in Figure 13-1; the laboratories involved were: AMTEL (Advanced Mineral Technology Laboratory Ltd), London, Ontario, Canada; Kappes, Cassiday & Associates (KCA), Reno, Nevada, USA; Plenge, Lima, Peru; and HLC, Lima, Peru, for pilot scale testing.



Source: HLC Ingenieria y Construcción SpA, 2023

Figure 13-1 – Testwork campaigns from 2008 to 2021.

The focus of the 2008 to 2014 campaigns aimed to study gold and silver extractions under different leaching conditions and size distributions to provide basic design parameters for an industrial heap leach circuit.

Leaching studies using bottle roll tests were conducted on crushed material with a wide range of particle sizes. Column tests were conducted with coarser sizes up to a P80 of 150 mm.

The tests determined the optimum pH conditions, reagent consumption (cyanide, lime, and cement), metal extractions (gold, silver, and copper), leaching kinetics, and particle size. Crushing tests were also conducted to determine the crushing work index, abrasion index, and high-pressure grinding roll (HPGR) crushing technology was also tested.

In these campaigns, drill core and trench material were tested from different zones of the deposit to provide results that would be as representative as possible of the whole deposit.

In 2017, leach tests were conducted by KCA for Atacama Pacific Gold. This work aimed to study gold extraction in coarse size fractions crushed to P80s of 100 mm and 75 mm. This work is summarised in Section 13.7.

In 2020, HLC Ingeniería y Construcción (Peru) conducted pilot scale leaching tests at the project facilities in the existing facilities of Lince S.A, located 127 Km away from Copiapó and 25 Km from the Fenix Gold Project. The purpose of the tests was to determine the gold recovery from blasted ROM material. The tests were carried out on a pad covered by a High-Density Polyethylene (HDPE) liner. The gold, silver, and copper extractions were determined with the irrigation rate and reagent consumption. A total of 426 dry tonnes of blasted material was treated from the three pits in the proportions: Fenix Norte 18%, Fenix Centro 48%, and Fenix Sur 34% reflecting LOM contributions from each pit. A summary of the tests is provided in Section 13.8.

13.2 Metallurgical tests, AMTEL 2008

Bottle roll tests were carried out on three samples with gold grades of 1.40 g/t, 0.80 g/t, and 0.59 g/t. The total copper content was between 0.033% and 0.013%. The oxide copper content was between 0.014% and 0.005%.

XRD mineralogical studies determined that the presence of quartz in the three samples was 29.1%, 15.8%, and 17.9%. The pyrite and chalcopyrite contents were relatively low (<0.1%); hence, the copper extractions were low.

The bottle roll tests were conducted at P80s between 1,000 µm and 80 µm, 33% solids, 1,000 ppm NaCN, and 48 hours of agitation. The results are shown in Table 13-1.

Table 13-1 – Bottle Roll test results.

AMTEL Sample No.	SiO_2 (%)	AMTEL Avg. Assay Au g/t	P80	Extracted % Au	Consumption NaCN Kg/t	Addition Lime Kg/t
201506	29.10	1.40	1mm	77.00	1.76	2.00
		1.40	80µm	82.00	1.24	2.00
201517	15.80	0.80	1mm	86.00	2.02	2.30
		0.80	108µm	90.00	1.92	2.40
201582	17.90	0.59	1mm	90.00	2.14	3.10
		0.59	94µm	91.00	1.38	3.00

Source: AMTEL Ltd, 2008, Evaluation of gold recovery by cyanide leaching of Maricunga hill Au ore, Modified by HLC Ingenieria y Construcción SpA, 2023.

Table 13-2 shows that the gold extraction had an inverse relationship to the head grade. It is possible that some gold may have been occluded in the quartz in the higher-grade samples.

Gold recoveries ranged between 77% and 91%, cyanide consumption was between 1.24 Kg/t and 2.14 Kg/t and lime consumption to maintain pH >10 ranged between 2.0 Kg/t and 3.1 Kg/t.

13.3 Metallurgical tests, Kappes Cassiday Associates (KCA), 2010

Three composites were sent to KCA in January 2010 for bottle roll and column leaching tests. Twelve bottle roll tests were conducted in duplicate for Composites 1 and 2, plus three single bottle roll tests on Composite 3 (high grade material). The purpose was to evaluate the impact of particle size on gold recovery at different head grades.

In the bottle roll tests, the P80 sizes tested were 19 mm down to 0.1 mm. Leaching was conducted at 50% solids with the cyanide strength at 1.0 g NaCN/L, and the pH was of 10 to 11. Gold extraction and reagent consumption in the bottle roll tests (BRT) are shown in Table 13-2.

Table 13-2 – Gold extraction and reagent consumption, BRTs.

KCA Sample No.	Crush P80 Size mm	KCA Avg. Assay Au g/t	Days of Leach	Extracted, % Au	Consumption NaCN Kg/t	Addition Lime Kg/t
Composite 1	19.0	1.10	10	81.00	0.25	2.50
Composite 2	19.0	0.80	10	76.00	0.16	2.50
Composite 3	1.7/0.1	1.40/1.45	4	82.00/89.00	0.13/0.19	4.00/3.50

Source: Kappes, Cassiday & Associate, 2010, Maricunga Project - Report of Metallurgical Test Work, Modified by HLC Ingenieria y Construcción SpA, 2023.

Column leaching tests were performed on Composites 1 and 2 at a P80 of 19 mm. A third column was tested on Composite 2 at a P80 of 9.5 mm; all three columns were irrigated for 57 days. A summary of the results is shown in Table 13-3.

Table 13-3 – Gold extraction and reagent consumption, column leach tests.

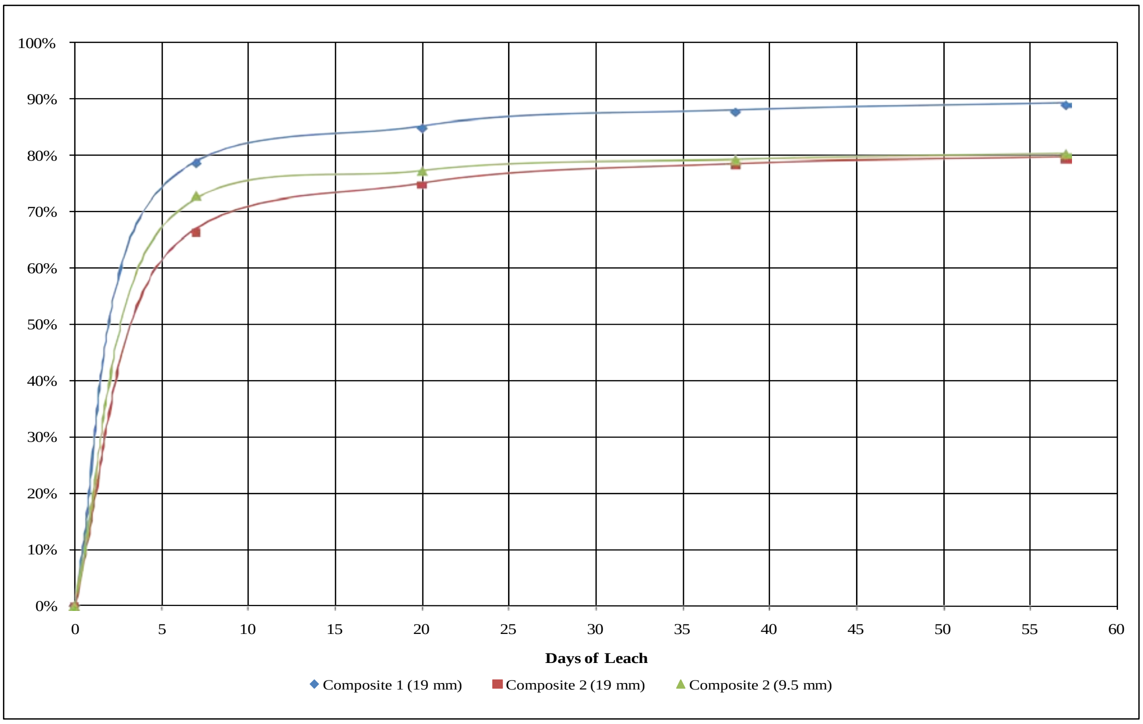
KCA Sample No.	Crush P80 Size mm	KCA Avg. Assay Au g/t	Calculated Head Au g/t	Days of Leach	Extracted % Au	Consumption NaCN Kg/t	Addition Lime Kg/t	Addition Cement Kg/t
Composite 1	19.0	1.08	1.13	57	89.00	1.03	3.08	1.01
Composite 2	19.0	0.78	0.76	57	79.00	1.06	3.07	1.01
Composite 2	9.5	0.78	0.79	57	80.00	1.19	3.06	1.01

Source: Kappes, Cassiday & Associate, 2010, Maricunga Project - Report of Metallurgical Test Work, Modified by HLC Ingenieria y Construcción SpA, 2023.

All three composites gave high gold recoveries, 79% and 89% at a P80 of 19 mm. Composite 2 with P80 of 9.5 mm gave 80% gold extraction.

Lime addition was relatively high (3 Kg/t) and NaCN consumption was 1.0 Kg/t; however, at the industrial level cyanide consumption should decrease by between 0.25 Kg/t to 0.35 Kg/t.

Figure 13-2 shows fast kinetics, reaching extractions between 70% and 80% after 10 days of leaching.



Source: Kappes, Cassiday & Associate, 2010, Maricunga Project - Report of Metallurgical Test Work

Figure 13-2 – Gold extraction vs. Leaching time (days), column leach tests.

Copper extraction during the 57 days of leaching was low, with values between 1.0% and 2.6%. Mercury concentration in the activated carbon ranged from 0.03 g/t to 0.07 g/t.

The slump percentage in the columns was minimal, which indicates that the material had good permeability.

Ball mill Work index (BWi) tests were conducted at 150 µm with values ranging from 10.63 kWh/t to 11.26 kWh/t, indicating medium hardness.

The abrasion index (Ai) values ranged from 0.0669 to 0.1239, indicating relatively low abrasiveness.

13.4 Metallurgical tests, Plenge 2011

In March 2011, four composite samples were sent to Plenge Laboratories for cyanide leach bottle roll and column tests.

Composites 4, 5, and 7 were obtained from drill holes and Composite 6 was obtained from a surface trench. The gold contents in Composites 4, 5, and 7 were: 0.271 g/t, 0.505 g/t, and 0.223 g/t. Composite 6 contained 0.58 g/t Au. The copper content in the four composites ranged between 120 ppm and 150 ppm, the silver content was very low, with an average value of less than 0.5 ppm.

Six bottle roll tests were performed out in duplicate on Composites 4, 5, and 6 with P80s of 50 mm, 25 mm, 12.5 mm, 6.3 mm, 1.0 mm, and 0.1 mm. With Composite 7, three bottle roll tests were performed at P80s of 50 mm, 25 mm, and 12.5 mm. The test conditions were sample weight 5 Kg, 50% solids, 1,000 ppm NaCN, pH 10 to 11 and 6 days of agitation.

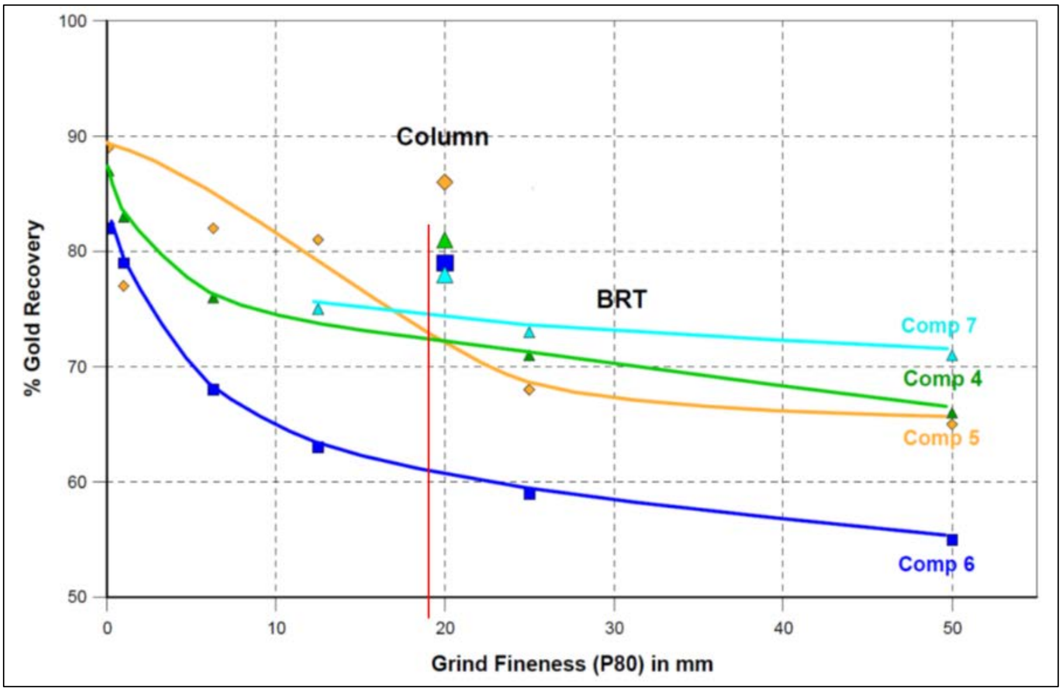
The results shown in Table 13-4 and Figure 13-3 indicate that the gold extraction at P80 19 mm ranged between 62% and 74%.

Table 13-4 – Gold extraction in Bottle Roll tests.

N° Composite	P80 (mm)					
	50	25	12.5	6.3	1.0	0.1
	Extracted % Au					
4	66.0	71.0	75.0	76.0	83.0	87.0
5	65.0	68.0	81.0	82.0	88.0	90.0
6	**55.0**	**59.0**	**63.0**	**68.0**	**79.0**	**82.0**
7	71.0	73.0	75.0	-	-	-

**Composite 6 samples were from surface trenches.*

Source: AMTEL Ltd, 2011, Evaluation of 2011 leach tests of Cerro Maricunga Gold Ores.



Source: AMTEL, 2011 Ltd, Evaluation of 2011 leach tests of Cerro Maricunga Gold Ores.

Figure 13-3 – Gold extraction vs. P80 size.

In parallel with the bottle roll tests, eight column leach tests were carried out. For Composites 4 and 5 the tests were duplicated; with Composite 6 (trench) three tests were performed at P80s of 100 mm, 50 mm, and 19 mm and for Composite 7 (marginal material) one test was performed.

The eight columns were irrigated for 87 days (including 7 days resting periods), the initial cyanide concentration was 1.0 g/L and then maintained at 0.5 g/L. The results of gold extractions and reagent consumption are shown in Table 13-5.

Table 13-5 – Gold extraction and reagent consumption, plenge column leach tests.

N° Composite	P80 mm	Avg. Head Assay Au g/t	Calculated Head Au g/t	Extracted % Au	Days of Leach	Consumption NaCN (Kg/t)	Addition Hydrated Lime (Kg/t)	Addition Cement (Kg/t)
Composite 6	100.0	0.58	0.57	77.0	87	0.09	6.61	1.02
	50.0	0.58	0.54	78.0	87	0.10	6.66	1.02
	19.0	0.58	0.57	80.0	87	0.44	6.53	1.00
Composite 4	19.0	0.27	0.31	80.0	87	0.82	2.51	1.00
	19.0	0.27	0.31	82.0	87	0.52	2.51	1.01
Composite 5	19.0	0.50	0.52	86.0	87	0.74	2.01	1.00
	19.0	0.50	0.50	84.0	87	0.97	2.03	1.01
Composite 7	19.0	0.22	0.22	78.0	82	0.57	4.01	1.00

**Composite 6 samples were from surface trenches and Composite 7 represents marginal feed.*
Source: AMTEL Ltd, 2011, Evaluation of 2011 leach tests of Cerro Maricunga Gold Ores.

In columns with material at P80 19 mm, gold extractions between 78% and 86% were obtained. Columns with P80s of 50 mm and 100 mm gave gold extractions of 78% and 77% respectively.

The kinetics of gold extraction in Composites 4, 5, and 7 were fast (P80 19 mm), with 70% of the gold extracted in the first 20 days; 82% of the extraction was recovered into the first tonne of solution applied per tonne of feed.

The four composites tested in 2011 confirmed the results of the three composites tested in 2010, giving gold extractions between 78% and 85% for samples with P80s of 19 mm.

Copper extraction resulted low (<2%), with concentration levels between 0.9 mg/L and 7.0 mg/L in the leach solution.

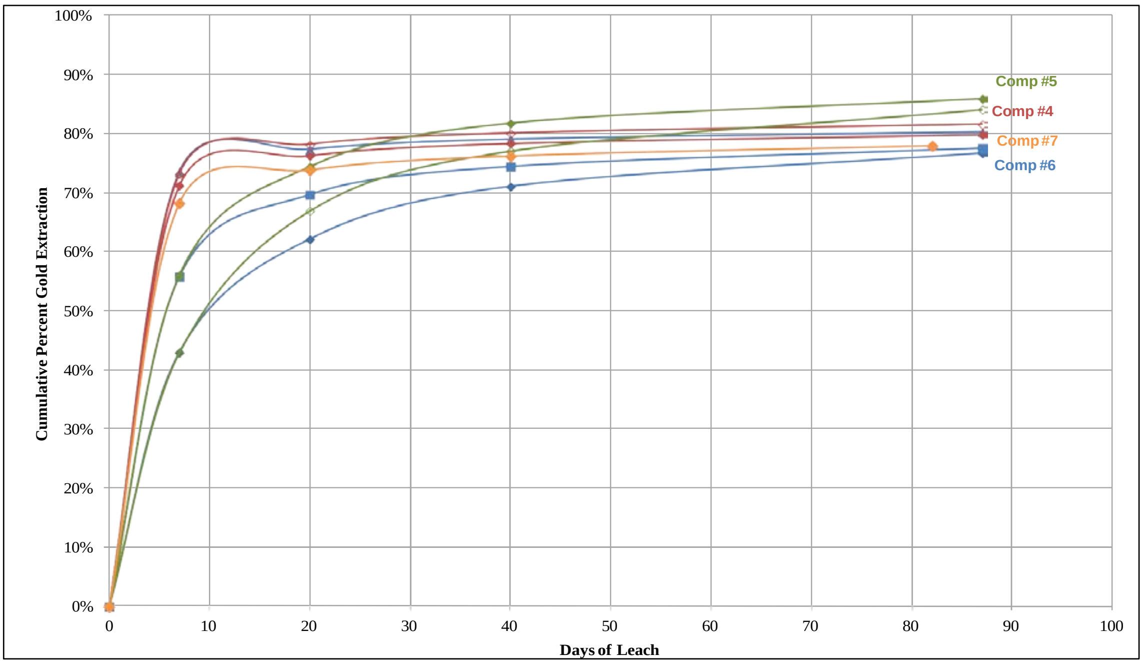
Estimated mercury levels in the samples were less than 0.01 g/t. The mercury loading on the activated carbon was 0.4% to 3.0% of the gold loading.

The average maximum percolation rate at a P80 of 19 mm was 11.0 l/hm^2, and the retained moisture (P80 19 mm) averaged 40 l of solution per tonne of dry material (4%).

There was no measurable material settling in the leach columns (height 3.0 m).

The composites exhibited an average BWi of 10.0 kWh/t.

Figure 13-4 shows the leaching kinetics for the eight leach columns.



Source: AMTEL, 2011 Ltd, Evaluation of 2011 leach tests of Cerro Maricunga Gold Ores.

Figure 13-4 – Column leaching kinetics.

13.4.1 Mineralogical Characterization

Three composite samples (4, 5, and 6) from the Fenix central zone were sent for mineralogical analysis at the AMTEL laboratory. The analyses were carried out on crushed samples (P80 11 mm to 13 mm) and ground samples (P80 80 µm to 100 µm).

The mineralogy was similar for all three composites with 65% to 70% feldspars, 12% to 25% quartz, and 3% to 11% smectite. Carbonates, in the form of dolomite, represented 3% of the mass of the samples and iron oxides/hydroxides (FeOx) 4%. Sulphide minerals occurred in trace amounts (<0.1 wt%), mainly pyrite, some chalcopyrite grains, and in smaller amounts, bornite, chalcocite, and covellite.

The two study results are summarised in Table 13-6 and Table 13-7.

Table 13-6 – Mineralogical analysis of crushed composites and gold recoveries.

Composite ID	Head Grade (Au g/t)	Crush Size P80 (mm)	Gold grains (%)			Recovery (%)	
			Exposed Attached	Enclosed CN-Able	Refractory	BRT	CLT
Composite 4	0.28	11.5	81.0	14.0	5.0	75.0	80.0
Composite 5	0.46	11.5	79.0	17.0	4.0	81.0	86.0
Composite 6	0.50	13.0	74.0	13.0	13.0	63.0	80.0

Note: BRT = Bottle Roll Tests, CLT = Column Leach Tests.

Source: AMTEL, 2012 Ltd, Deportment of gold in Maricunga low& medium grade ore composites, Modified by HLC Ingenieria y Construcción SpA, 2023.

Table 13-7 – Mineralogical analysis of ground composites and gold recoveries.

Composite ID	Head Grade (Au g/t)	Grind Size P80 (mm)	Free Gold (%)		Attached (%)			Enclosed CN-Able (%)	Refractory (%)	Recovery % $P_{80}75$
			>10 µm	<10 µm	To FeOx	To Comp.	To Rock			BRT
Composite 4	0.28	87.0	3.0	47.0	12.0	6.0	16.0	7.0	8.0	86.00
Composite 5	0.46	110.0	14.0	43.0	9.0	3.0	21.0	5.0	5.0	89.00
Composite 6	0.50	83.0	12.0	51.0	6.0	1.0	8.0	9.0	13.0	79.00

Source: AMTEL, 2012, Deportment of gold in Maricunga low& medium grade ore composites, modified by HLC Ingenieria y Construcción SpA, 2023.

- Free or attached gold grains vary from 74% to 81% in crushed feed and 78% to 90% in ground feed.
- Refractory gold occurs as fine-grained gold contained within micro-crystalline quartz, ranging from 5% to 9% for crushed feed and 5% to 13% for ground feed.

- In all three composites, the gold grains were small with 75% to 95% smaller than 10 µm and 45% to 75% smaller than 5 µm. The Fenix material can be easily leached with cyanide with fast leach kinetics depending on the gold grain size.
- Mineralogical studies were also carried out on column leach test residues conducted in 2011 (Composites 6 and 7). The results indicated that gold in the residues was present in small quantities. Gold in solution was less than 1%, indicating that the residues had been well washed. The exposed un-leached gold grains represented between 5% and 9% of the residue grade, revealing an opportunity to improve extraction by 1.1% to 1.5% using longer leaching times. Refractory gold for the three samples represented 35%, 52% and 54% of the un-leached gold in the three composite leach residues.

13.5 Metallurgical tests, KCA 2013

In July, August, and September 2012, KCA received six HQ core samples from the Cruz, Lynx, and Phoenix zones for bottle roll testing and column leaching tests. All three samples had medium and low gold grades, in the range 0.45 g/t down to 0.25 g/t. For the evaluation of coarser material, the remaining trench sample from the 2011 program and a fresh trench sample were used.

The objectives were:

- To determine the variability in gold extraction from medium and low grade material at a P80 of 19 mm.
- To determine the effect of coarser crushing sizes (P80s of 19 mm, 50 mm, and 150 mm) on the gold extraction and leaching kinetics, using the composites from the two surface trenches.
- To determine the effect of agglomeration on leaching kinetics and gold extraction at coarser sizes (P80s of 25 mm, 50 mm, and 150 mm) using the two surface trench materials.
- To determine the consumption of reagents (lime, cement, NaCN) and the BWi and Ai.

A total of 40 bottle roll tests and 17 column leach tests were performed.

In the medium gold grade samples, the copper content ranged from 141 g/t to 254 g/t. In the low gold grade samples, the copper content ranged from 112 g/t to 174 g/t. In surface trench samples, the copper content was between 147 g/t and 161 g/t. In samples crushed using HPGR, the copper content was between 186 g/t and 191 g/t.

The results of the 17 column leach tests are shown in Table 13-8.

Table 13-8 – Column leach gold extraction and reagent consumption, KCA 2013.

KCA Sample No.	Description	P100 Crush Size mm	P80 Crush Size mm	Calculated Head, gms Au g/t	Extract. Au, %	Days Leach.	Consumption NaCN Kg/t	Addition CaO Kg/t	Addition Cement Kg/t
60061	Crux, (0.45 Au g/t)	25.0	--	0.47	80.0	113	0.75	3.48	0.00
60062	Crux, (0.25 Au g/t)	25.0	--	0.24	80.0	113	0.62	3.49	0.00
60063	Lynx, (0.45 Au g/t)	25.0	--	0.48	82.0	113	0.75	3.48	0.00
60064	Lynx, (0.25 Au g/t)	25.0	--	0.24	80.0	113	0.83	3.49	0.00
60065	Phoenix, (0.45 Au g/t)	25.0	--	0.46	80.0	113	0.96	3.50	0.00
60066	Phoenix, (0.25 Au g/t)	25.0	--	0.23	82.0	113	0.85	3.48	0.00
60093	C,L,P,(0.45 Au g/t), 1:1:1, No.1	25.0	--	0.49	85.0	102	0.78	3.48	0.00
60093	C,L,P,(0.45 Au g/t), 1:1:1, No.1	25.0	--	0.45	80.0	102	0.37	0.00	12.55
65853	C,L,P,(0.45 Au g/t), 1:1:1, No.2	25.0	--	0.50	81.0	128	1.00	0.69	4.05
60067A	Surface Trench, (0.45-0.55 Au g/t)	--	50.0	0.50	80.0	127	0.91	3.48	0.00
60067A	Surface Trench, (0.45-0.55 Au g/t)	--	50.0	0.49	78.0	127	0.40	0.00	12.55
60067B	Surface Trench, (0.45-0.55 Au g/t)	25.0	--	0.53	84.0	127	1.05	3.41	0.00
60067B	Surface Trench, (0.45-0.55 Au g/t)	25.0	--	0.53	82.0	127	0.48	0.00	12.62
65837	HPGR Centre Product	25.0	--	0.34	80.0	98	0.49	0.00	12.49
65837	HPGR Centre Product	25.0	--	0.34	85.0	98	0.72	3.50	0.00
65857	Bulk Composite	--	150.0	0.37	76.0	132	0.18	4.04	0.99
65857	Bulk Composite	--	150.0	0.40	70.0	132	0.60	4.04	0.99

Source: Kappes, Cassiday & Associate, 2013, Maricunga Project - Report of Metallurgical Test Work, modified by HLC Ingenieria y Construcción SpA, 2023.

Gold extraction after 113 days of leaching of medium and low grade material ranged from 80% to 82 %.

Gold extraction from surface trench samples with 127 days of leaching (P80 50 mm), ranged from 78% to 80%, and at P100 25 mm ranged from 82% to 84%.

Gold extraction from bulk samples with 132 days of leaching (P80 150 mm) was between 70% and 76%.

Agglomeration with 12.5 Kg/t of cement did not improve gold extraction.

Copper extraction was negligible; hence, this had no impact on NaCN consumption.

The NaCN consumption was estimated to be 0.72 Kg/t and the average lime consumption was 3.35 Kg/t based on the CaO content.

HQ core samples of medium and low-grade material had BWi between 9.78 kWh/t and 9.84 kWh/t; abrasion indices (Ai) ranged from 0.0888 to 0.1223.

Retained moisture in the columns was 5% and 11 %, with bulk composite samples having the lowest value and HPGR crushed samples the highest.

13.6 Metallurgical tests, KCA 2014

Two sample shipments were received by KCA in July and November 2013. The first was bulk material referred to as MS-1.5 Tonne-04 with lump sizes less than 150 mm. The second was crushed material referred to as KHD, all at a size of less than 25 mm.

The samples were prepared to form six composites for column leach, the head characterisation results are shown in Table 13-9.

The average gold content was 0.50 g/t, the silver content was negligible, and the copper content ranged from 161 g/t to 239 g/t. The maximum total sulphide content was 0.33% in the fine dust sample.

Six column leach tests were performed with calculated head grades ranging from 0.304 g/t to 0.603 g/t Au. The material size distribution for the tests remained as received, except for one column test on bulk composite MS-1.5 Tonne-04 which was reduced to a P80 of 25 mm. The columns were irrigated for 84 days; 1.0 Kg of cement was added before leaching to reduce lime consumption. Table 13-10 shows the results of the column tests.

Gold extraction was between 71% and 85%, with the columns loaded with MS-1.5 Tonne-04 composite having the lowest gold extraction. Notably, there was only a 1% difference in gold extraction from this material between the as received sample and the sample crushed to -25 mm.

The maximum copper extraction was 5.6% from a head grade of 200 g/t indicating that the copper concentration in the leach solution would be less than 15 ppm.

Cyanide consumption ranged from 0.96 Kg/t to 2.47 Kg/t and hydrated lime consumption averaged 0.85 Kg/t for the last four columns in Table 13-9.

Table 13-9 – Summary of head sample characterization.

KCA Sample No.	Description	KCA Avg. Assay Au g/t	KCA Avg. Assay Ag g/t	Total Copper mg/Kg	Total Mercury mg/Kg	Total Carbon %	Total Sulfur %
68801 B	MS-1.5 Tonne-04	0.37	0.75	161	<0.05	0.09	0.14
68808	Fine Dust from HPGR Centre#2	0.55	0.41	237	<0.05	0.17	0.33
68811	Conventionally Crushed Test #6	0.54	0.41	201	<0.05	0.06	0.23
68813	Test#1	0.57	0.41	231	<0.05	0.10	0.21
68814	Test#2	0.54	0.41	239	<0.05	0.09	0.17
68815	Test#5	0.43	0.41	204	<0.05	0.09	0.26

Source: Kappes, Cassiday & Associate, 2014, Maricunga Project - Report of Metallurgical Test Work, Modified by HLC Ingenieria y Construccion SpA, 2023.

Table 13-10 – Gold extraction and reagent consumption for column leach tests, KCA 2014.

KCA Sample No.	Description	Material Type	Crush P100 Size mm	Calculated Head Au g/t	Calculated Head Ag g/t	Calculated Head Cu g/t	Extracted % Au	Extracted % Ag	Extracted % Cu	Days Leaching	NaCN Consumption, Kg/t	Hydrated Lime Addition, Kg/t	Cement Addition, Kg/t
68801 A	MS-1.5 Tonne-04	As Rec'd	--	0.32	0.41	128.00	72.00	2.00	0.10	84	0.96	0.01	1.00
68811	MS-1.5 Tonne-04	Crushed	25.0	0.30	0.51	137.00	71.00	11.00	0.40	84	1.96	0.81	1.02
68813	Conventionally Crushed Test#6	As Rec'd	--	0.44	0.31	177.00	84.00	32.00	5.60	84	2.42	0.92	1.04
68814	Test#1	Composite	--	0.57	0.28	201.00	85.00	29.00	4.40	84	2.47	0.82	1.02
68815	Test#2	Composite	--	0.60	0.30	191.00	85.00	29.00	4.40	84	2.24	0.81	1.02
68832	Test#5	Composite	--	0.45	0.33	172.00	84.00	37.00	5.00	84	2.10	0.83	1.03

Source: Kappes, Cassiday & Associate, 2014, Maricunga Project - Report of Metallurgical Test Work, Modified by HLC Ingenieria y Construccion SpA, 2023.

13.7 Metallurgical testing, KCA 2017

In March 2017, KCA received six core samples: CX-Top, CX-Bottom, LXPX-Top, LXPX-Bottom, PXLX-Top, and PXLX-Bottom. The designations CX, LX, and PX refer to Fenix South, Fenix North, and Fenix Central, respectively. Samples were prepared for composites generation, chemical head analyses, and column leaching tests.

The purpose of this work was to study the extraction of gold in coarse size fractions and potentially reduce the crushing requirement in an industrial plant.

The whole rock analysis showed that the main constituent was SiO_2 at 61% to 66% followed by Al_2O_3 at 15% to 16%, CaO at 4% to 4.8%, Fe_2O_3 at 3.5% to 4.4%, and MgO at 1.7% to 3.9%.

Table 13-11 shows the results of the chemical head analysis for the five composites on which the column tests were performed.

Table 13-11 – Chemical head analysis.

KCA Sample No.	Description	Average Assay Au g/t	Average Assay Ag g/t	Total Copper mg/Kg	Total Mercury mg/Kg	Total Carbon %	Total Sulphur %
78601 A	CX-Top	0.34	0.45	272	0.02	0.18	0.30
78602 A	CX-Bottom	0.42	0.41	208	0.02	0.18	0.35
78607 A	50/50 LXPX-Top PXLX-Top	0.42	0.25	207	0.03	0.14	0.19
78608 A	50/50 LXPX-Bottom PXLX-Bottom	0.80	0.41	328	0.02	0.15	0.16
78609 A	20/20/20/20/20 CX-Top CX-Bottom LXPX-Top LXPX-Bottom PXLX-Bottom	0.56	0.41	268	0.02	0.15	0.23

Source: Kappes, Cassiday & Associate, 2017, Maricunga Project - Report of Metallurgical Test Work, Modified by HLC Ingenieria y Construcción SpA, 2023.

The results of cyanidation shake tests carried out on pulverised material are reported in Table 13-12. These results showed that the upper and lower CX samples had the highest copper extractions, between 22% and 29%. Gold extractions ranged between 80% and 90% and silver extractions ranged between 28% and 37%.

Table 13-12 – Cyanidation shake tests on pulverised samples.

KCA Sample No.	Description	Head Assay Au g/t	Head Assay Ag g/t	Total Copper mg/Kg	Extraction Cu mg/Kg	Extraction Au %	Extraction Ag %	Extraction Cu %
78601 A	CX-Top	0.34	0.45	272	60.32	80.0	37.0	22.0
78602 A	CX-Bottom	0.42	0.41	208	60.76	88.0	34.0	29.0
78607 A	50/50 LXPX-Top PXLX-Top	0.42	0.25	207	15.24	83.0	34.0	7.0

KCA Sample No.	Description	Head Assay Au g/t	Head Assay Ag g/t	Total Copper mg/Kg	Extraction Cu mg/Kg	Extraction Au %	Extraction Ag %	Extraction Cu %
78608 A	50/50 LXPX-Bottom PXLX-Bottom	0.80	0.41	328	29.64	90.0	30.0	9.0
78609 A	20/20/20/20/20 CX-Top CX-Bottom LXPX-Top LXPX-Bottom PXLX-Bottom	0.56	0.41	268	44.54	88.0	28.0	17.0

Source: Kappes, Cassiday & Associate, 2017, Maricunga Project - Report of Metallurgical Test Work, Modified by HLC Ingenieria y Construccion SpA, 2023.

Five column tests were performed, the first two with the CX-Top and CX-Bottom samples (Composites 78601 A and 78602 A) and the remaining three columns with Composites 78607 A, 78608 B, and 70609 A, formed from the remaining four samples (LXPX-Top, LXPX-Bottom, PXLX-Top, and PXLX-Bottom).

The column tests were carried out on material crushed to P100s of 150 mm and 75 mm, the irrigation time was 123 days and the calculated gold head grades ranged from 0.383 g/t to 0.898 g/t. Table 13-13 shows the results of these tests.

Table 13-13 – Column leach gold extraction and reagent consumption.

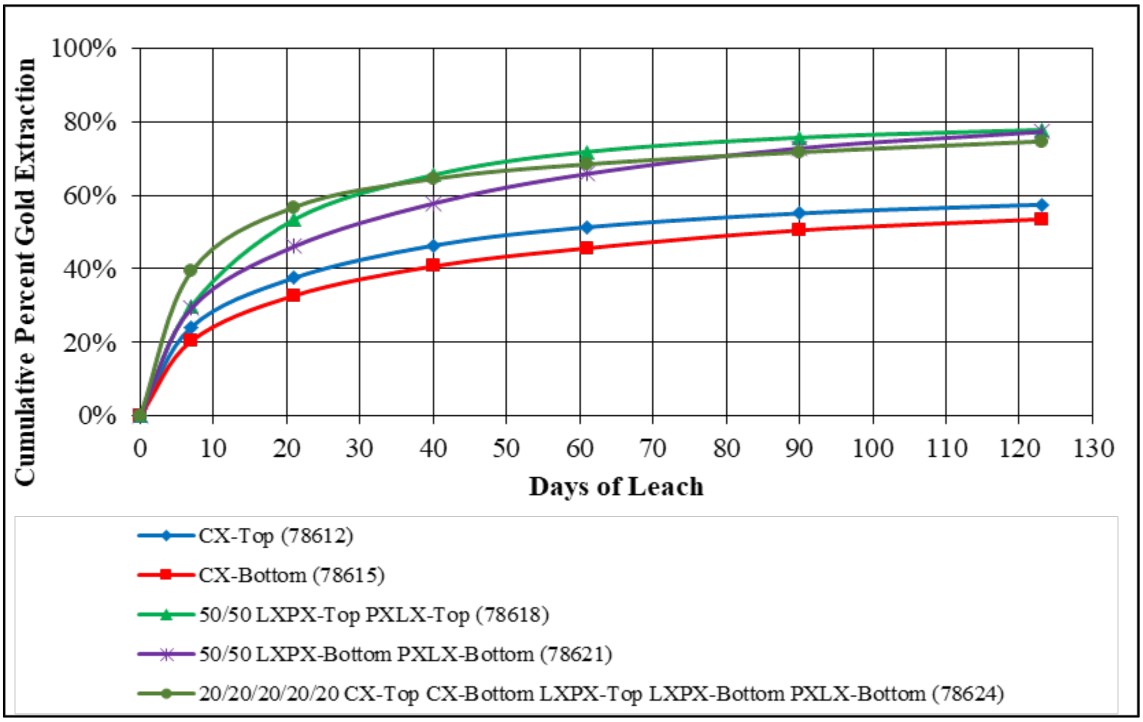
KCA Sample No.	Description	Crush Size mm	Calculated Head Au g/t	Extracted % Au	Days Leaching	NaCN Consumption Kg/t	Lime Addition Kg/t
78601 A	CX-Top	150.0	0.38	57.0	123	0.48	5.50
78602 A	CX-Bottom	150.0	0.45	53.0	123	0.97	3.80
78607 A	50/50 LXPX- Top PXLX – Top	150.0	0.38	78.0	123	1.39	4.50
78608 A	50/50 LXPX – Bottom PXLX – Bottom	150.0	0.89	77.0	123	1.01	4.10
78609 A	20/20/20/20/20 CX – Top CX-Bottom LXPX – Top LXPX – Bottom PXLX – Bottom	75.0	0.60	75.0	123	0.85	4.10

Source: Kappes, Cassiday & Associate, 2017, Maricunga Project – Report of Metallurgical Test Work, Modified by HLC Ingenieria y Construccion SpA, 2023.

Gold extraction for the five columns ranged from 53% to 77%; the columns with material from the CX top and bottom zones showed the lowest gold extractions between 53% and 57%, respectively. The other composites gave recoveries between 75% and 78%. The 78609 A composite contained 40% CX material but still gave a total recovery of 75%.

Cyanide consumption for the five columns ranged from 0.48 Kg/t to 1.39 Kg/t and lime (as CaO) consumption ranged from 3.8 Kg/t to 5.46 Kg/t.

Figure 13-5 shows the leaching kinetics for the five column tests.



Source: Kappes, Cassiday & Associate, 2017, Maricunga Project - Report of Metallurgical Test Work.

Figure 13-5 – Gold extraction vs. Leach days.

The results of the cyanidation shake tests in Table 13-12 show that the copper extraction from the upper and lower CX samples is higher than that for the other samples. The copper concentration in the leach solutions showed values between 0.49 g/m^3 and 16.5 g/m^3 with the CX bottom composite having the highest value. The copper solubility results are shown in Table 13-14.

There is the possibility of the presence of cyanide soluble secondary copper minerals in the CX top and CX bottom samples; however, no mineralogical analyses were reported.

Table 13-14 – Copper concentration in leach solutions.

KCA Sample No.	KCA Test No.	Description	Low Copper mg/l	High Copper mg/l
78601 A	78612	CX-Top	0.58	4.41
78602 A	78615	CX-Bottom	2.28	16.5
78607 A	78618	50/50 LXPX- Top PXLX - Top	0.49	2.58
78608 A	78621	50/50 LXPX - Bottom PXLX - Bottom	0.56	6.58
78609 A	78624	20/20/20/20/20 CX - Top CX-Bottom LXPX - Top LXPX - Bottom PXLX - Bottom	2.46	14.8

Source: Kappes, Cassiday & Associate, 2017, Maricunga Project - Report of Metallurgical Test Work.

13.8 Metallurgical pilot scale testing, 2020

The tests were conducted between November 2020 and April 2021 at the Lince infrastructure site. The purpose of the pilot scale testing was to demonstrate that adequate gold extraction can be obtained from blasted run of mine (ROM) material with water from the Nueva Atacama plant in Copiapó.

The material for the tests was obtained by blasting and the proportions that made up the composite for testing on the pilot pad were: 18% Fenix North, 48% Fenix Central, and 34% Fenix South, reflecting the LOM plan proportions of each pit. Table 13-15 shows the material weight from each pit zone in the composite and the respective head grades. The grades shown are the averages of the analyses by SGS-Chile, ALS-Chile, and Geolaquim.

Table 13-15 – Weights and assays of material composited for pad leach tests.

Sample I.D.	Crush P100 Size mm	Wet Tonnes Deposited on Pad	Feed Moisture %	Dry Tonnes Deposited on Pad	Mineral Proportion on Pad (%)	Assay Head Au g/t	Assay Head Ag g/t	Assay Head Cu g/t
Fenix Norte	<150	78	0.96	77	18.0	0.71	<0.50	237
Fenix Centro	<150	208	0.96	206	48.0	0.52	<0.50	314
Fenix Sur	<150	144	0.96	143	34.0	0.21	<0.50	104
TOTAL	**<150**	**430**	**0.96**	**426**	**100%**	-	-	-

Source: HLC Ingenieria y Construccion SpA, 2021, Metallurgical tests at pilot level through Cyanide Leaching, Modified by HLC Ingenieria y Construccion SpA, 2023.

The head grade of the material fed to the pilot pad was the average of the grades reported from five test pits (excavated from the pilot pad at a depth of 2.5 m) and grades obtained by assaying the material fed to the pilot pad. Table 13-16 shows the head assays of the material placed on the pilot pad.

Table 13-16 – Grade of material placed on the pad.

Sample No.	Crush P100 Size, mm	Assay Head g Au/t	Assay Head g Ag/t	Assay Head g Cu/t
Test pits from the Pad	<150	0.48	0.42	197
Screen Sizes	<150	0.43	<4.0	250
Arithmetic mean, Pad	<150	0.46	0.42	224

Source: HLC Ingenieria y Construccion SpA, 2021, Metallurgical tests at pilot level through Cyanide Leaching, Modified by HLC Ingenieria y Construccion SpA, 2023.

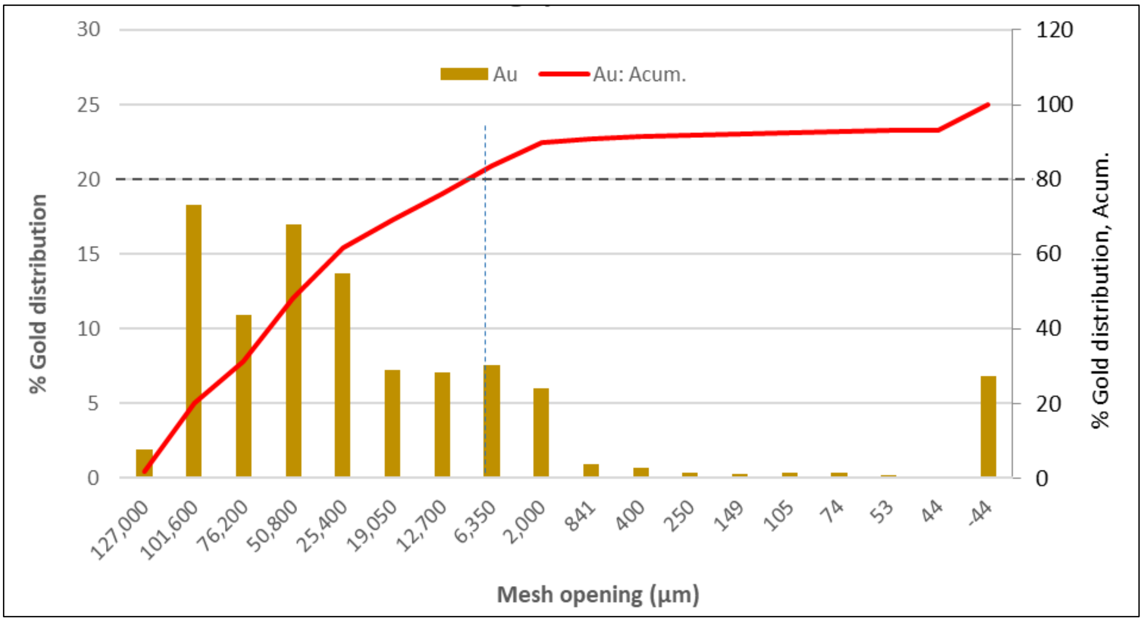
The leach test was carried out on a concrete pad protected by an HDPE liner. Pad dimensions were 8 m x 8 m x 3 m high. A total of 426 t of material, with a P80 of 80.5 mm and a P100 of <150 mm, were placed on the pad. The pad was irrigated with cyanide solution with 150 ppm of free cyanide, and the leach time was 81 days plus 5 days of drain down.

Gold and silver extractions were 75.1% and 12.4%; copper concentration in the pregnant solution reached 12 g/m^3; cyanide consumption was 0.175 Kg/t and lime were added to maintain the pH above 10 with a consumption of 2.99 Kg/t.

The percolation rate was calculated to be 2.4 m/day and the solution/mineral ratio was 1.73 m^3/t for the 81 days of irrigation. The leach residue grade was calculated using the average of the grades of material from two excavations and that taken on a grid pattern on the pad, obtaining values of 0.118 g/t for gold and 204 g/t for copper.

An analysis of the gold distribution by screen fraction determined that 80% of the gold occurred in +6,350 µm sizes and only 7% in the -44 µm fraction which shows that gold recovery could be increased by crushing the coarser material if that proved to be economic.

Figure 13-6 shows the gold distribution in the leach residue by size fraction.



Source: HLC Ingenieria y Construccion SpA, 2021, Metallurgical tests at pilot level through Cyanide Leaching.

Figure 13-6 – Gold distribution by leach residue size range analysis.

13.9 Gold extraction tests with different water sources

Water from two different sources, the Nueva Atacama (Chañar) treatment plant in Copiapó and a Lince borehole, were tested in bottle roll tests to determine if there was a difference in gold extraction. The tests were carried out with 96 hours leaching with material at 33% solids and a P80 <150 µm. The head grade of the material was 0.47 g/t Au and 191 g/t Cu.

The results of the bottle roll tests are presented in Table 13-17. The use of water from either the Nueva Atacama or Lince borehole sources did not have a significant influence on gold extraction, nor was there any significant variability in the consumption of sodium cyanide and lime.

Table 13-17 – Summary of bottle roll test results.

<table>
<tr><th>BTR Test</th><th>Sample I.D.</th><th>Crush P80 Size mm</th><th>Assay Head Au g/t</th><th>Assay Head Cu g/t</th><th>Type of Water</th><th>Free Cyanide</th><th>Extracted % Au</th><th>Extracted % Cu</th><th>NaCN Consumption Kg/t</th><th>Lime Addition Kg/t</th></tr>
<tr><td>P13</td><td>Composite</td><td>-#100</td><td>0.47</td><td>191</td><td>Chañar</td><td>200</td><td>88.19</td><td>4.18</td><td rowspan="2">1.01</td><td rowspan="2">3.64</td></tr>
<tr><td>P14</td><td>Composite</td><td>-#100</td><td>0.47</td><td>191</td><td>Chañar</td><td>200</td><td>89.70</td><td>4.10</td></tr>
<tr><td>P15</td><td>Composite</td><td>-#100</td><td>0.47</td><td>191</td><td>Lince</td><td>200</td><td>89.65</td><td>3.68</td><td rowspan="2">1.24</td><td rowspan="2">3.70</td></tr>
<tr><td>P16</td><td>Composite</td><td>-#100</td><td>0.47</td><td>191</td><td>Lince</td><td>200</td><td>89.58</td><td>4.27</td></tr>
<tr><td>P29</td><td>Composite</td><td>-#100</td><td>0.47</td><td>191</td><td>Chañar</td><td>100</td><td>81.49</td><td>4.57</td><td rowspan="2">0.52</td><td rowspan="2">4.27</td></tr>
<tr><td>P30</td><td>Composite</td><td>-#100</td><td>0.47</td><td>191</td><td>Chañar</td><td>100</td><td>82.03</td><td>4.70</td></tr>
<tr><td>P31</td><td>Composite</td><td>-#100</td><td>0.47</td><td>191</td><td>Lince</td><td>100</td><td>81.84</td><td>4.60</td><td rowspan="2">0.53</td><td rowspan="2">4.11</td></tr>
<tr><td>P32</td><td>Composite</td><td>-#100</td><td>0.47</td><td>191</td><td>Lince</td><td>100</td><td>85.15</td><td>4.66</td></tr>
</table>

Source: HLC Ingenieria y Construccion SpA, 2021, Metallurgical tests at pilot level through Cyanide leaching, Modified by HLC Ingenieria y Construccion SpA, 2023.

13.10 Summary of results of column tests (2010 to 2021)

Gold extraction for all column tests carried out from 2010 to 2021 was in the range of 70% to 89%, with the exception of the tests carried out in 2017 on the composites from the CX upper and lower zones as discussed in Section 13.7, Table 13-13.

Leaching kinetics generally depended on the material size distribution with the coarser sizes requiring longer leach times to reach the maximum recovery. Material coarser than 50 mm required leaching times longer than 90 days to reach maximum gold extraction.

Table 13-18 summarises the results for the column tests and pilot tests carried out from 2010 to 2021.

Table 13-18 – Column leach test results from 2010 to 2021 and pilot test results column leach tests from 2010 to 2017 + pilot pad.

Year	Sample No.	Crush P80 Size mm	Calculated Head g Au/t	Days of Leach	Extracted % Au	Consumption NaCN Kg/t	Addition Lime Kg/t	Addition Cement Kg/t
2010	Composite 1	19.0	1.13	57	89.0	1.03	3.08	1.01
	Composite 2	19.0	0.76	57	79.0	1.06	3.07	1.01
	Composite 2	9.5	0.78	57	80.0	1.19	3.06	1.01

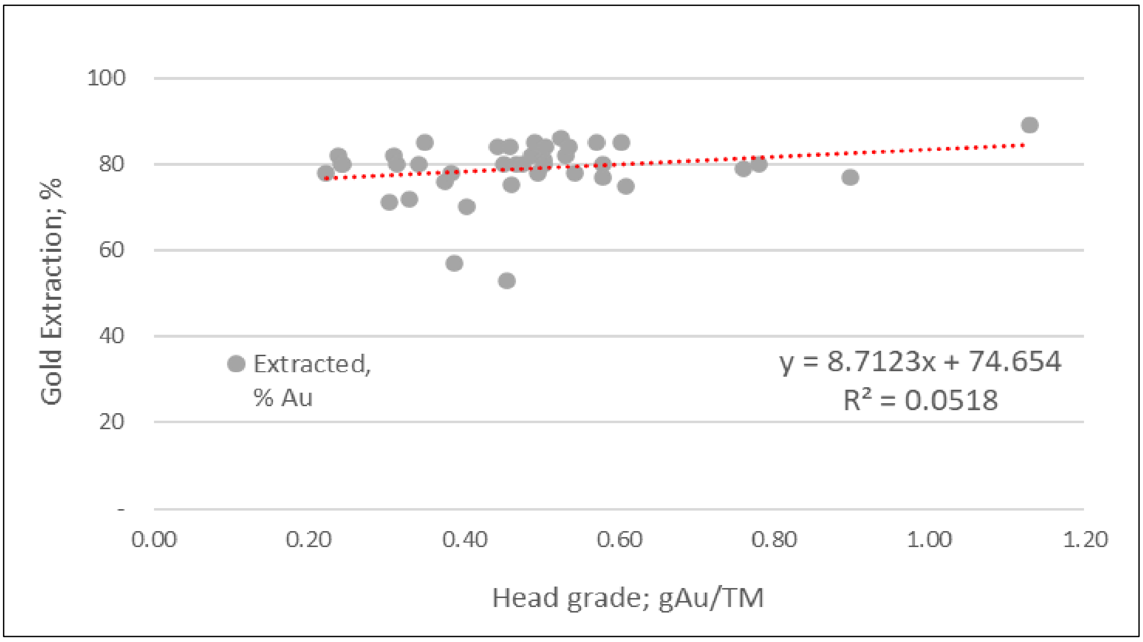
Year	Sample No.	Crush P80 Size mm	Calculated Head g Au/t	Days of Leach	Extracted % Au	Consumption NaCN Kg/t	Addition Lime Kg/t	Addition Cement Kg/t
2011	Composite 6	100.0	0.57	87	77.0	0.09	4.52	1.02
		50.0	0.54	87	78.0	0.10	4.56	1.02
		19.0	0.57	87	80.0	0.44	4.47	1.00
	Composite 4	19.0	0.31	87	80.0	0.82	1.72	1.00
		19.0	0.31	87	82.0	0.52	1.72	1.01
	Composite 5	19.0	0.52	87	86.0	0.74	1.38	J.00
		19.0	0.50	87	84.0	0.97	1.39	J.01
	Composite 7	19.0	0.22	82	78.0	0.57	2.74	1.00
2012 / 2013	Crux, (0.45 g Au/t)	25.0*	0.47	113	80.0	0.75	3.48	0.00
	Crux, (0.25 g Au/t)	25.0*	0.24	113	80.0	0.62	3.49	0.00
	Lynx, (0.45 g Au/t)	25.0*	0.48	113	82.0	0.75	3.48	0.00
	Lynx, (0.25 g Au/t)	25.0*	0.24	113	80.0	0.83	3.49	0.00
	Phoenix, (0.45 g Au/t)	25.0*	0.46	113	80.0	0.96	3.50	0.00
	Phoenix, (0.25 g Au/t)	25.0*	0.23	113	82.0	0.85	3.48	0.00
	C, L, P, (0.45 g Au/t), 1:1:1, No. 1	25.0*	0.49	102	85.0	0.78	3.48	0.00
	C, L, P, (0.45 g Au/t), 1:1:1, No. 1	25.0*	0.45	102	80.0	0.37	0.00	12.55
	C, L, P, (0.45 g Au/t), 1:1:1, No. 2	25.0*	0.50	128	81.0	1.00	0.69	4.05
	Surface Trench, (0.45-0.55 g Au/t)	50.0	0.50	127	80.0	0.91	3.48	0.00
	Surface Trench, (0.45-0.55 g Au/t)	50.0	0.49	127	78.0	0.40	0.00	12.55
	Surface Trench, (0.45-0.55 g Au/t)	25.0*	0.53	127	84.0	1.05	3.41	0.00
	Surface Trench, (0.45-0.55 g Au/t)	25.0*	0.53	127	82.0	0.48	0.00	12.62
	HPGR Central product	25.0*	0.34	98	80.0	0.49	0.00	12.49
	HPGR Central product	25.0*	0.34	98	85.0	0.72	3.50	0.00
	Bulk Composite	150.0	0.37	132	76.0	0.18	4.04	0.99
	Bulk Composite	150.0	0.40	132	70.0	0.60	4.04	0.99
2014	MS-1.5 Tonne-04	As Rec'd	0.32	84	72.0	0.96	0.01	1.00
	MS-1.5 Tonne-04	25.0*	0.30	84	71.0	1.96	0.81	1.02
	Conventionally Crushed Test #6	As Rec'd	0.44	84	84.0	2.42	0.92	1.04
	Test #1	Composite	0.57	84	85.0	2.47	0.82	1.02
	Test #2	Composite	0.60	84	85.0	2.24	0.81	1.02
	Test #5	Composite	0.45	84	84.0	2.10	0.83	1.03
2017	CX-Top	150.0*	0.38	123	57.0	0.48	5.50	-----
	CX-Bottom	150.0*	0.45	123	53.0	0.97	3.80	-----
	50/50 LXPX-Top PXLX-Top	150.0*	0.38	123	78.0	1.39	4.50	-----
	50/50 LXPX-Bottom PXLX-Bottom	150.0*	0.89	123	77.0	1.01	4.10	-----
	20/20/20/20/20 CX-Top CX-Bottom LXPX-Top LXPX-Bottom PXLX-Bottom	75.0*	0.60	123	75.0	0.85	4.10	-----
2020	Pilot Testing	80.5	0.46	81	75.0	0.17	2.99	-----

*Note: * = Size P100*

Source: HLC Ingenieria y Construccion SpA, 2023, NI 43-101 Technical Report Fenix Gold Project; own elaboration.

13.10.1 Relationship Between Gold Head Grade and Gold Extraction

Figure 13-7 shows the relationship between the gold head grade and gold extraction for column tests performed on material crushed to P100 19 mm and 150 mm. This includes tests where cement was used for agglomeration. Figure 13-7 shows a poor correlation between head grade and gold extraction. Over the head grade range 0.22 g/t to 1.13 g/t, extraction ranged from 78% to 89%.



Source: HLC Ingenieria y Construccion SpA, 2023, NI 43-101 Technical Report Fenix Gold Project.

Figure 13-7 – Gold extraction vs. Gold head grade (P100: 19 mm/150 mm).

13.10.2 Effect of Particle Size on Gold Extraction

Based on the results of the column leach and pilot tests from 2010 to 2020 (see Table 13-19), crush size has little effect on gold extraction; the gold extraction for Composite 2 at P80 9.5 mm was similar to that for P80 19 mm and the gold extraction for different crush sizes for Composite 6 had a range of only 3%.

Table 13-19 – Gold extraction Vs. Feed size, 2010 to 2020.

Year	Sample No.	Crush P80 Size mm	Calculated Head g Au/t	Extracted % Au
2010	Composite 2	19.0	0.76	79.0
		9.5	0.79	80.0
2011	Composite 6	100.0	0.58	77.0
		50.0	0.54	78.0

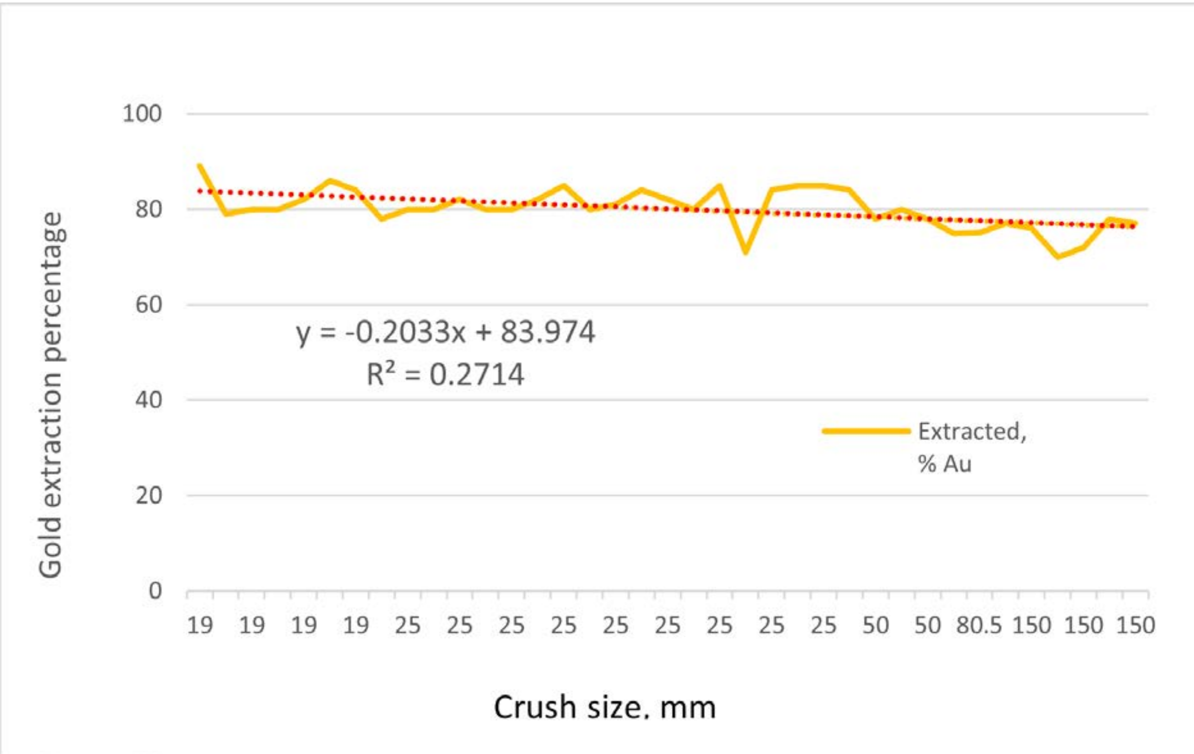
Year	Sample No.	Crush P80 Size mm	Calculated Head g Au/t	Extracted % Au
		19.0	0.58	80.0
2013	Surface Trench, (0.45-0.55 g Au/t)	50.0	0.50	80.0
	Surface Trench, (0.45-0.55 g Au/t)	50.0	0.50	78.0
2017	50/50 LXPX-Top PXLX-Top	150.0*	0.38	78.0
	50/50 LXPX-Bottom PXLX-Bottom	150.0*	0.90	77.0
	20/20/20/20/20 CX-Top CX-Bottom LXPX-Top LXPX-Bottom PXLX-Bottom	75.0*	0.61	73.0
2020	Pilot Testing	80.5	0.46	75.0

*Note: * = Size P100*

Source: HLC Ingenieria y Construccion SpA, 2023, NI 43-101 Technical Report Fenix Gold Project; own elaboration.

To confirm the effect of particle size on gold extraction Figure 13-8 was generated using data from Table 13-18 for column tests with feed size greater than 19 mm. The results of the CX top and CX bottom composites (gold extraction 57% and 53%) were excluded because they were not considered to be representative.

Figure 13-8 shows a weak correlation between metal recovery and feed size. Over the range between 20 mm and 140 mm, gold recovery drops by approximately 7%.



Source: HLC Ingenieria y Construccion SpA, 2023, NI 43-101 Technical Report Fenix Gold Project.

Figure 13-8 – Gold extraction vs. Crush size P100 (mm).

13.10.3 Cyanide and Lime Consumption

The average NaCN consumption for tests conducted with material larger than 50 mm was 0.57 Kg/t, and the average lime consumption was 3.77 Kg/t.

In the pilot scale tests (P80 80.5 mm) the cyanide and lime consumptions were 0.275 Kg/t and 2.99 Kg/t, respectively.

13.10.4 Impact of Copper on Gold Extraction

- Copper extraction was generally low in the column leach tests.
- Copper extraction for the Fenix South, Fenix Central, and Fenix North composites was also low with an average of 3.7% from material with an average copper grade of 257 g/t, which gave pregnant solutions with less than 10 mg/l.
- The pregnant solution in the pilot tests reported copper concentrations of approximately 12 mg/l.

The low copper extractions were consistent with the mineralogical finding that chalcopyrite was the main copper mineral. Chalcopyrite does not leach significantly in sodium cyanide solution.

14 MINERAL RESOURCE ESTIMATES

14.1 Modelling Procedure

14.1.1 Data Used

The resource model was created using the following data:

- Surface maps containing lithological units, structures, and trenches with assays.
- Geological descriptions (logging) of 92 diamond drill holes (DDH) totaling 30,947.31 m of core.
- Lithological descriptions (quick logging) of 282 reverse circulation (RC) holes totaling 84,418 m of RC cuttings.
- Geological description (quick and logging) of 2 combined RC/DDH drilling totaling 914.2 m of perforation.
- Assay data from 58,131 samples of mostly two meters of drill core and RC chips.
- Lithological descriptions of 5 trenches from the 2013 campaign (266 m) and 12 trenches from the 2018-2019 campaign (1,458 m). Totals are 17 trenches with 1,724 m of logging.
- Assay data from 131 two-meter trench samples (2013 campaign), and 729 two-metertrench samples (2018-2019 campaign). Totals are 860 two-meter trench samples.

Andres Beluzan (QP) notes that the data used in the 2023 Mineral Resource Estimate (MRE) includes 5 RC and 8 diamond drill holes drilled since the 2019 MRE.

Carlos Arévalo (QP) has reviewed the QA/QC procedures and performance for these samples and considers them acceptable.

As discussed in Chapter 12, another difference from the prior model is the change in the main laboratory used for Au assays, which for the 2020-2022 campaign is AAA and ALS; in addition, the samples were also analysed using ICP, and mercury was analysed using cold vapour method.

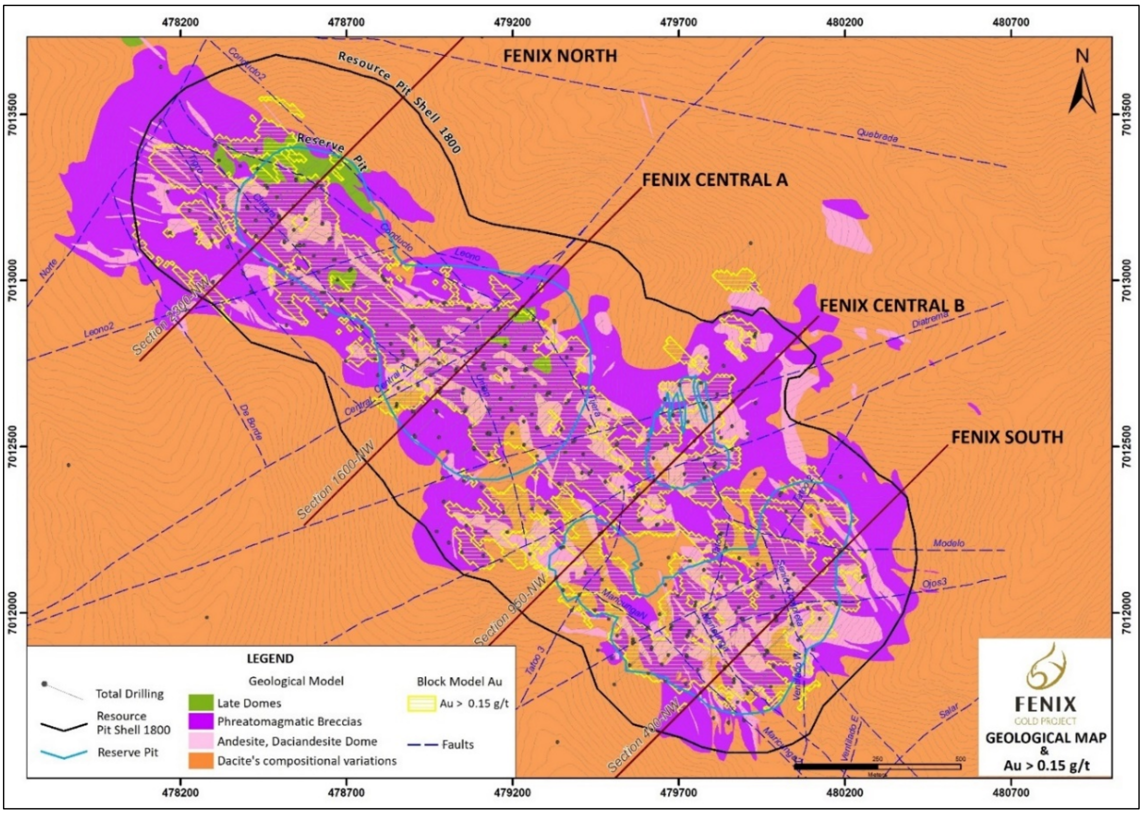
14.1.2 Geological Interpretation

The Fenix 2023 Resource Model is based on the new structural geological model. Fenix Gold updated the previous geological model (Fenix, 2019) using a new version of the surface geological map (Clavero and Ramírez, 2021) and a structural map (Pérez-Flores, 2022) and descriptions of trenches and drill holes. So, a combination of lithological modelling with consideration of prevalent main structures and main orientations, in addition to grade shells was used to define estimation domains.

The estimation domains are thus based on lithological, structural, and grade controls. Gold mineralization appears mainly within black banded veins that are hosted within the phreatomagmatic breccias and in contact with andesitic and dacite domes.

The main structures mapped in the zone are trending NW and are controlling most of the mineralization in the three zones. East-west tensional faults are locally controlling the emplacement of the black banded veins and Au mineralization. The NE trending faults arelate and three of these main ones (Central, Diatrema, and Portezuelo faults) are segmenting the deposit into four zones, the Fenix North, Fenix Central (A and B), and Fenix South.

The gold estimation domains were finalized using a 0.15 g/t Au cut-off and within the lithological/mineralized domains described above using the Leapfrog Geo© software package. Figure 14-1 shows the geological map and estimation domains.



Source: Rio2, 2023

Figure 14-1 – Geological map and estimation domains with resource pit outline.

14.1.3 Definition of estimation domains

The thirteen estimation domains defined for the Project are based on major fault systems in combination with lithological domains, which have displaced the mineralized NE-SW structures.

All domains are grade shells using a 0.15g/t Au cut-off and are:

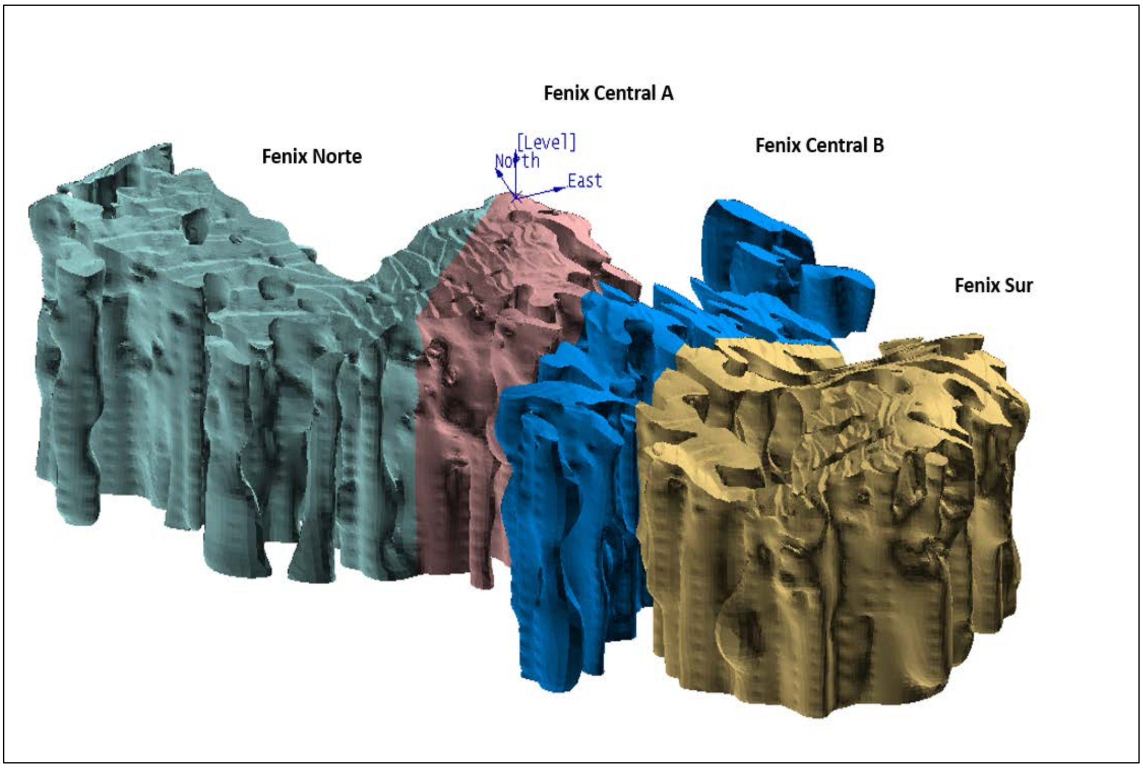
- Fenix North (FN).
- Fenix Central A (FCA)
- Fenix Central B (FCB)
- Fenix South (FS)

- Host Rock (HR)

The lithological domains are:

- Andesitic Domes: Subvolcanic Intrusions (UM_AP)
- Phreatomagmatic Breccias: (BxRF)
- Dacitic Domes: Felsitic Domes (UM_DP)
- Late Domes: (UF_TFd). Barren rocks, considered within the HR.

Figure 14-2 is a three-dimensional representation of the Fenix model and domains.



Source: Rio2, 2023

Figure 14-2 – 3-D view of Fenix mineralized zones (HR encompasses the domains shown).

14.2 Database

The drill hole database used for the Fenix Gold Project Mineral Resource estimate contains 92 diamond drill holes (30,947 m), 282 RC holes (84,418 m) and two combined RC/DDH drilling (914.2 m).

The drill hole database includes the data tables summarized in Table 14-1.

Table 14-1 – Data tables - Drill hole database.

Table	Variable			
Collar	X - Easting	Y - Northing	Z - Elevation	
Survey	From (m)	To (m)	Azimuth (°)	Dip (°)
Assay	From (m)	To (m)	Au (g/t)	
In Situ Density	From (m)	To (m)	SG (g/cc)	

Table 14-17 lists the drill hole collars contained in the drill hole database.

14.2.1 Other Elements

Other potentially deleterious elements of interest are Arsenic (As), Mercury (Hg), and Magnesium (Mg).

Early drill phases did not routinely include ICP analysis of various elements. From 2018-2019 campaign to campaign 2022, there have 36 elements analyzed, including As, Hg, and Mg.

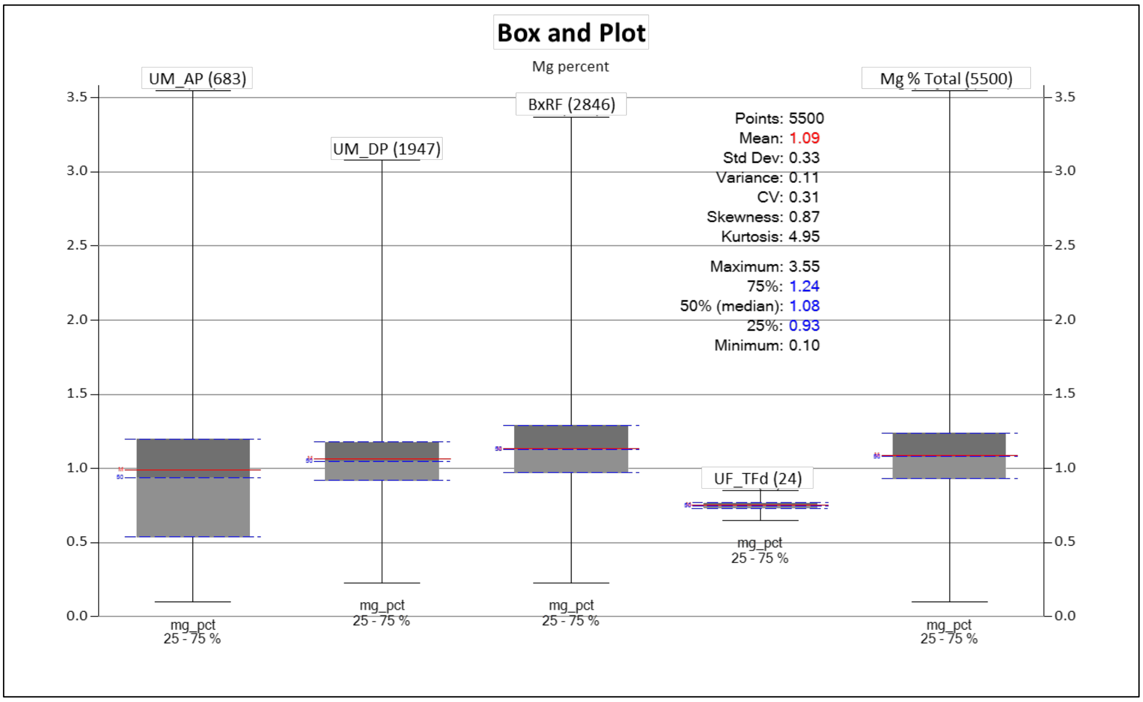
Basic statistics on As and Hg values show that these elements are not likely to be consequential for the Fenix Gold Project. Specifically:

There are 2,274 samples available for Hg. The average Hg grade is 0.010 ppm; the largest Hg value found is 0.359 ppm.

There are 5,500 samples with As values. The average As grade is 7.59 ppm, while the maximum As value sampled to date is 233 ppm.

In the opinion of Andres Beluzan (QP), As or Hg do not reach values reach levels that could be potentially considered deleterious and of interest and thus no model for these elements is deemed necessary at this point.

With respect to Mg, 5,500 samples show that overall average grades are around 1%, which are constant when the same samples are analyzed by lithology. The element is prevalent across the deposit, and is part of the rock-forming minerals, at a more-or-less relatively uniform concentration, Figure 14-3.



Source: Rio2, 2023

Figure 14-3 – Plot of Mg by lithology.

14.3 Compositing, Statistics and Outliers

Statistical analysis was performed for Au samples and included reviews of the number of samples, total length, minimum, maximum, mean value, standard deviation, and CV.

Most of the samples were performed at 2m (except for the DDH, which is more variable), all these samples were composited at 2m, obtaining 58,116 composites, where only 66 composites have lengths other than 2m.

Three trench campaigns were completed and classified by drilled year. The first one, called historical campaign, was completed from 2010 to 2011. No QA/QC performed for this data, so it will not be considered in resource estimation. The second one was completed by Atacama in 2013 and the third one by Rio2 in 2018-2019. For these last two, QA/QC procedures were in place. After checking the data quality and comparing it to the drill hole data, it was decided that these last two data sets would be used for resource estimation.

Table 14-2 shows basic sample statistics for each mineralized envelope and for the samples lying outside the mineralized envelopes (Host Rock). A set of histograms, cumulative probability plots, mean vs coefficient of variation at different cut of grades, and contact plots were obtained to validate the domains and define outliers handling and other grade estimation strategies.

Table 14-2 – Basic sample statistics by domain.

Domains	Data Type	Count	Mean	SD	CV	Var	Min	Max
10AP	DH	2,854	0.44	0.44	0.99	0.19	0.002	6.67
	TR	82	0.72	0.55	0.76	0.31	0.122	2.90
Total		**2,936**	**0.45**	**0.44**	**0.98**	**0.2**	**0.002**	**6.67**
10BX	DH	4,939	0.41	0.37	0.90	0.13	0.006	3.57
	TR	183	0.51	0.46	0.89	0.21	0.009	4.18
Total		**5,122**	**0.41**	**0.37**	**0.90**	**0.141**	**0.006**	**4.18**
10DP	DH	525	0.60	0.75	1.24	0.567	0.021	6.94
Total		**525**	**0.60**	**0.75**	**1.24**	**0.567**	**0.021**	**6.94**
20AP	DH	1,645	0.41	0.39	0.94	0.153	0.002	3.68
	TR	96	0.43	0.32	0.75	0.105	0.041	1.73
Total		**1,741**	**0.41**	**0.38**	**0.93**	**0.151**	**0.002**	**3.68**
20BX	DH	3,945	0.46	0.34	0.75	0.122	0.010	2.79
	TR	170	0.52	0.52	0.98	0.270	0.059	4.90
Total		**4,115**	**0.46**	**0.35**	**0.77**	**0.128**	**0.010**	**4.90**
20DP	DH	645	0.34	0.26	0.76	0.072	0.051	2.24
Total		**645**	**0.34**	**0.26**	**0.76**	**0.072**	**0.051**	**2.24**
21AP	DH	1,385	0.30	0.22	0.73	0.051	0.020	2.22
Total		**1,385**	**0.30**	**0.22**	**0.73**	**0.051**	**0.020**	**2.22**
21BX	DH	1,201	0.27	0.18	0.66	0.033	0.005	2.42
Total		**1,201**	**0.27**	**0.18**	**0.66**	**0.033**	**0.005**	**2.42**
21DP	DH	495	0.28	0.19	0.67	0.038	0.008	1.58
Total		**495**	**0.28**	**0.19**	**0.67**	**0.038**	**0.008**	**1.58**
30AP	DH	3,494	0.42	0.45	1.07	0.208	0.002	5.18
	TR	100	0.49	0.47	0.96	0.229	0.050	2.56
Total		**3,594**	**0.42**	**0.45**	**1.07**	**0.209**	**0.013**	**5.18**
30BX	DH	2,898	0.41	0.37	0.89	0.139	0.081	4.63
	TR	86	0.41	0.43	1.04	0.190	0.013	2.31
Total		**2,984**	**0.41**	**0.37**	**0.89**	**0.141**	**0.002**	**4.63**
30DP	DH	2,023	0.30	0.19	0.64	0.039	0.077	1.62
	TR	23	0.35	0.17	0.48	0.030	0.002	0.79
Total		**2,046**	**0.30**	**0.19**	**0.63**	**0.038**	**0.002**	**1.62**
HR	DH	32,067	0.07	0.07	0.97	0.005	0.002	2.93
	TR	120	0.12	0.07	0.60	0.005	0.002	0.37
Total		**32,187**	**0.07**	**0.07**	**0.97**	**0.005**	**0.002**	**2.93**
Total all domains		**58,976**	**0.22**	**0.31**	**1.38**	**0.097**	**0.002**	**6.94**

14.3.1 Fenix North – Andesitic Domes (FNAP = 10AP)

The 2 m composite data population for diamond drillholes gold samples of FNAP is 2,854. The data presents a mean of 0.447 g/t Au, a standard deviation of 0.443 and a coefficient of variation of 0.991. The minimum and maximum values are 0.003 g/t Au and 6.67 g/t Au, respectively.

Figure 14-4 shows the histogram of gold grades. The composites present a classical gold grade distribution shape, similar to a log normal distribution.

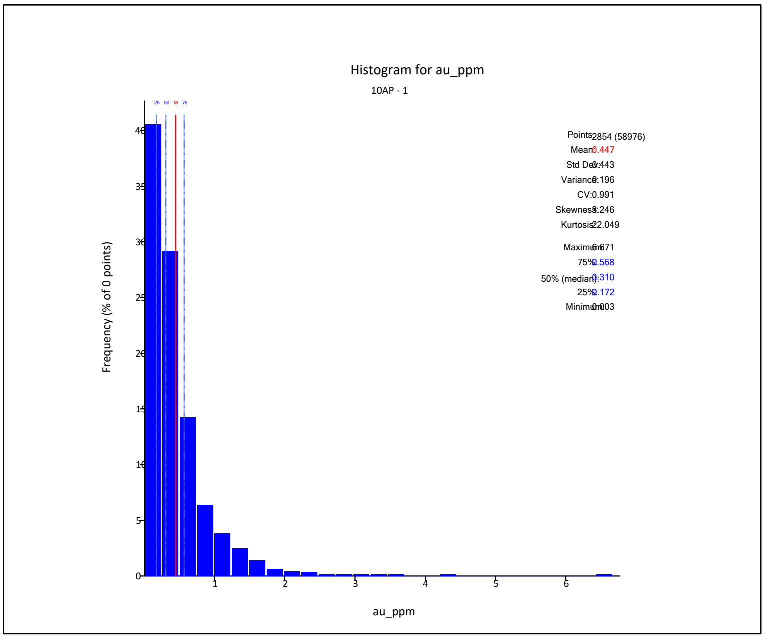


Figure 14-4 – Histogram of gold composite grades of Fenix North AP.

Figure 14-5 shows the gold probability plot of the composites. The curve shows that there are no population breaks nor aberrant high-grade values that must be eliminated. There is a discontinuity in the distribution of grades in the percentile greater than 99.5%, which can serve as a reference for a special treatment of these values in the resource estimation stage.

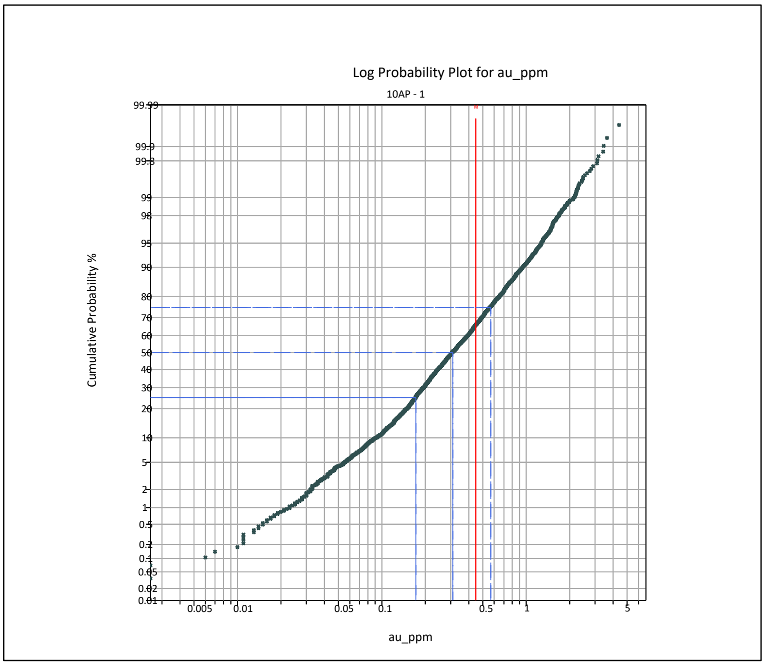


Figure 14-5 – Probability plot of gold composites, Fenix North AP.

The mean and coefficient of variation plot shows the variation of the average gold value and the coefficient of variation at different cut-off grades. This gives us a guide to define outliers and how high grades influence a greater domain heterogeneity.

Figure 14-6 shows the mean and coefficient of variation plot for Fenix North - Andesitic Domes Unit.

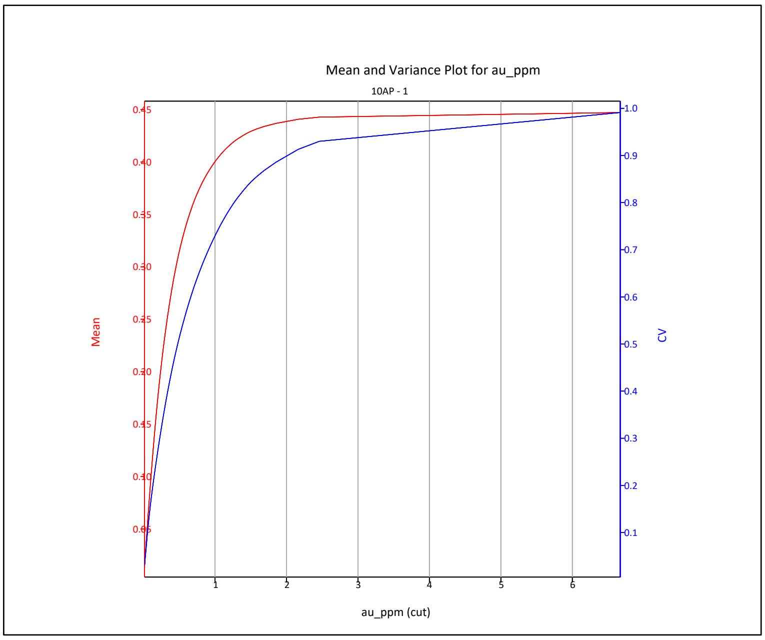


Figure 14-6 – Mean and coefficient of variation plot for Fenix North AP.

14.3.2 Fenix North – Phreatomagmatic Breccias (FNBX = 10BX)

The 2 m composite data population for diamond drillholes gold samples of FNBX is 4,939. The data presents a mean of 0.41 g/t Au, a standard deviation of 0.372 and a coefficient of variation of 0.906. The minimum andmaximum values are 0.006 g/t Au and 3.57 g/t Au, respectively.

Figure 14-7 shows the histogram of gold grades. The composites present a classical gold grade distribution shape, similar to a log normal distribution.

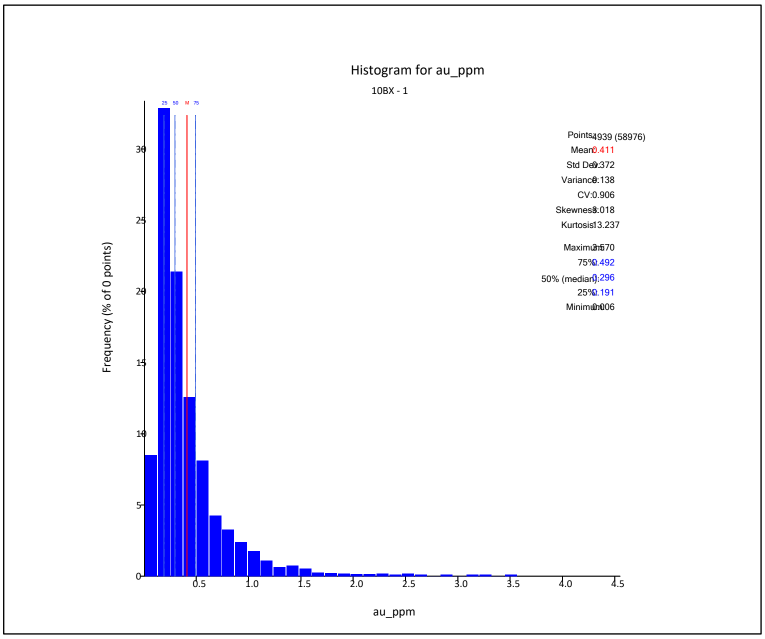


Figure 14-7 – Histogram of gold composite grades of Fenix North BX.

Figure 14-8 shows the gold probability plot of the composites. The curve shows that there are no population breaks, nor aberrant high-grade values that must be eliminated. There is a discontinuity in the distribution of grades in the percentile greater than 99.8%, which can serve as a reference for a special treatment of these values in the resource estimation stage.

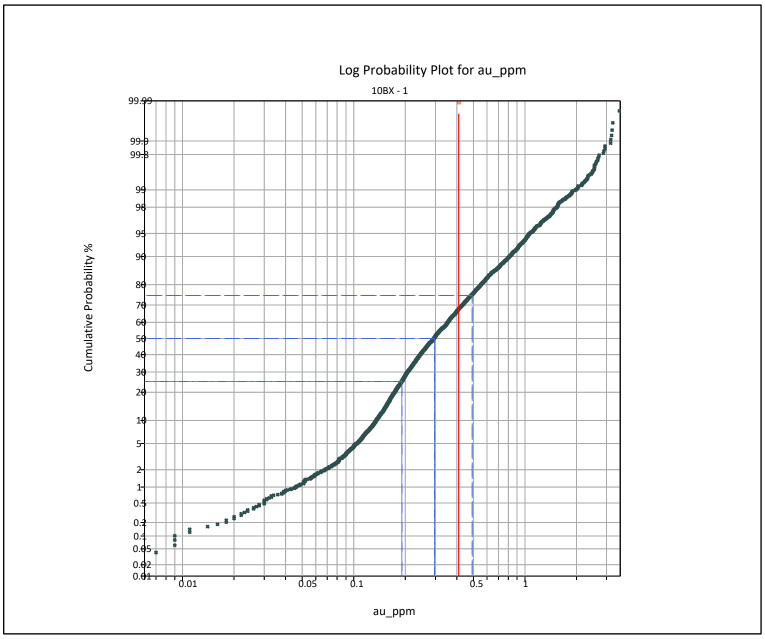


Figure 14-8 – Probability plot of gold composites, Fenix North BX.

Figure 14-9 shows the mean and coefficient of variation plot for Fenix North - Phreatomagmatic Breccias Unit.

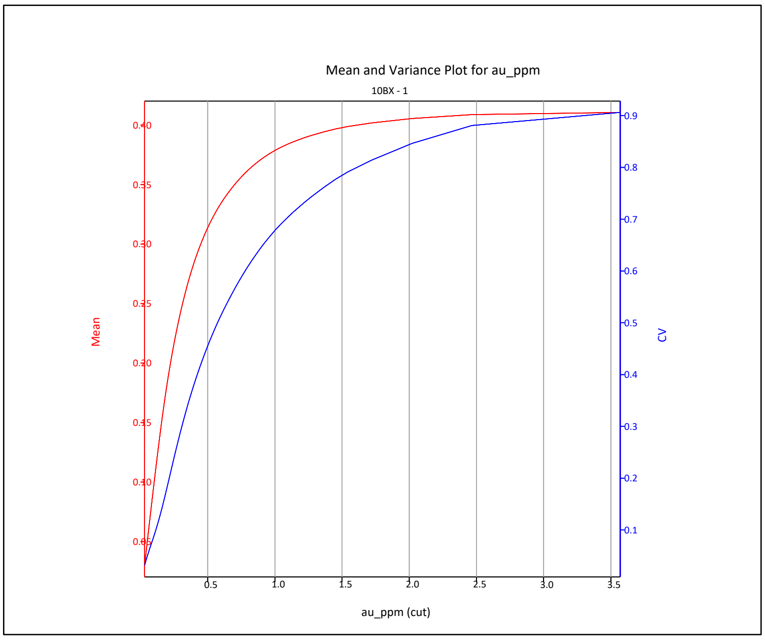


Figure 14-9 – Mean and coefficient of variation plot for Fenix North BX.

14.3.3 Fenix North – Dacitic Domes (FNDP = 10DP)

The 2 m composite data population for diamond drillholes gold samples of FNDP is 525. The data presents a mean of 0.604 g/t Au, a standard deviation of 0.753 and a coefficient of variation of 1.248. The minimum and maximum values are 0.021 g/t Au and 6.94 g/t Au, respectively.

Figure 14-10 shows the histogram of gold grades. The composites present a classical gold grade distribution shape, similar to a log normal distribution.

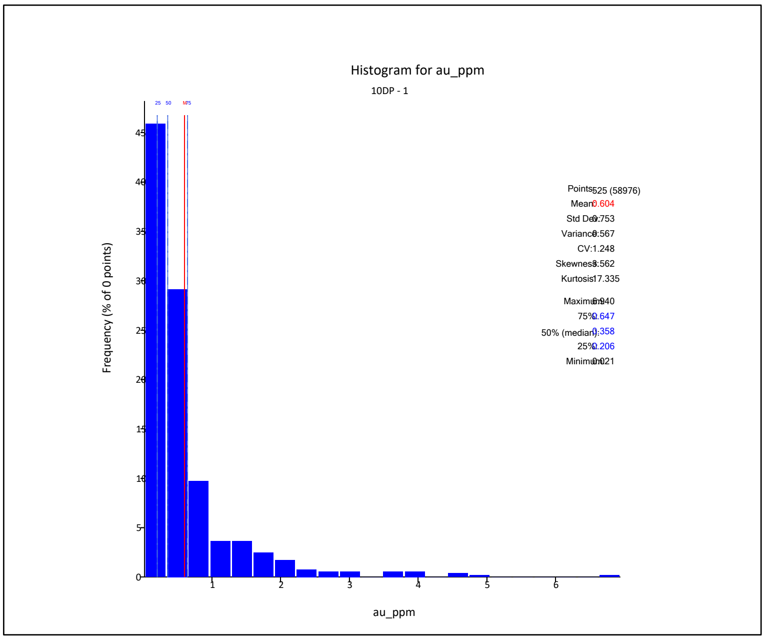


Figure 14-10 – Histogram of gold composite grades of Fenix North DP.

Figure 14-11 shows the gold probability plot of the composites. The curve shows that there are no population breaks, nor aberrant high-grade values that must be eliminated. There is a discontinuity in the distribution of grades in the percentile greater than 98%, which can serve as a reference for a special treatment of these values in the resource estimation stage.

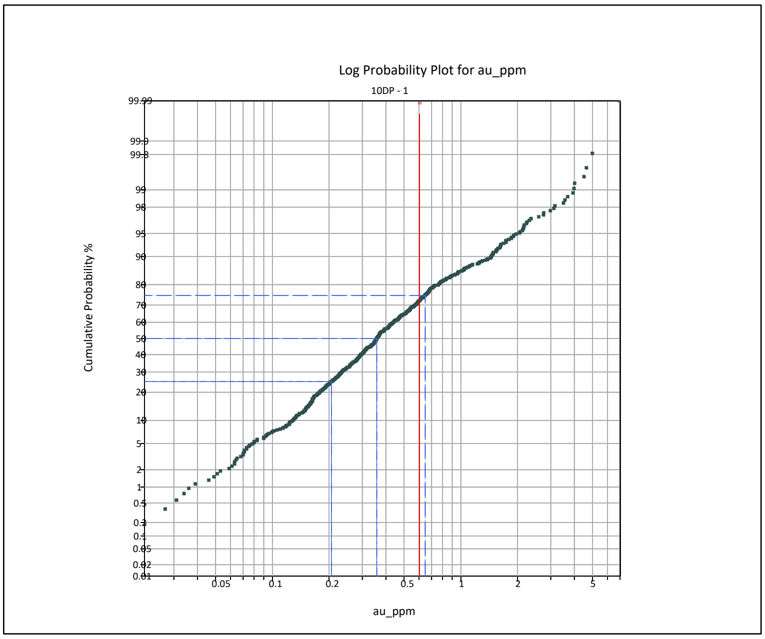


Figure 14-11 – Probability plot of gold composites, Fenix North DP.

The Figure 14-12 shows the mean and coefficient of variation plot for Fenix North – Dacitic Domes Unit.

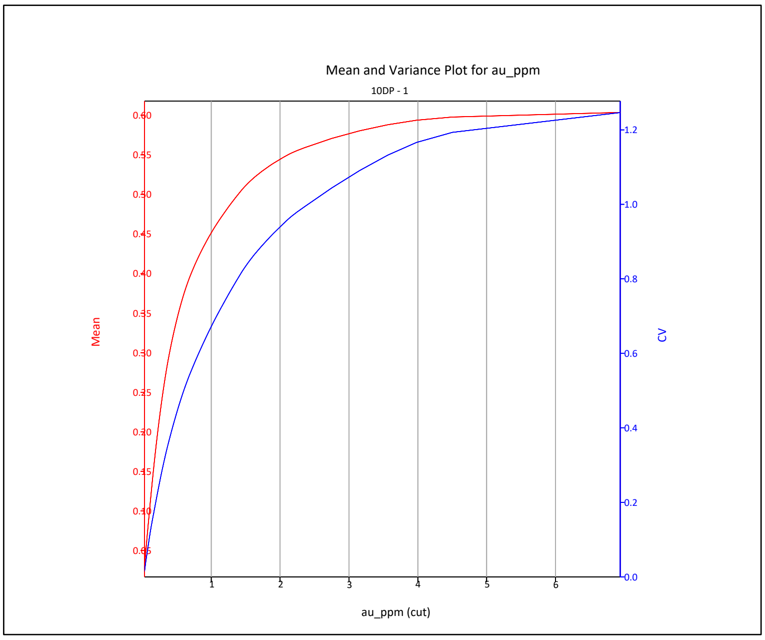


Figure 14-12 – Mean and coefficient of variation plot for Fenix North DP.

14.3.4 Fenix Central A - Andesitic Domes (FCAAP = 20AP)

The 2 m composite data population for diamond drillholes gold samples of FCAAP is 1,645. The data presents a mean of 0.414 g/t Au, a standard deviation of 0.392 and a coefficient of variation of 0.945. The minimum and maximum values are 0.003 g/t Au and 3.68 g/t Au, respectively.

Figure 14-13 shows the histogram of gold grades. The composites present a classical gold grade distribution shape, similar to a log normal distribution.

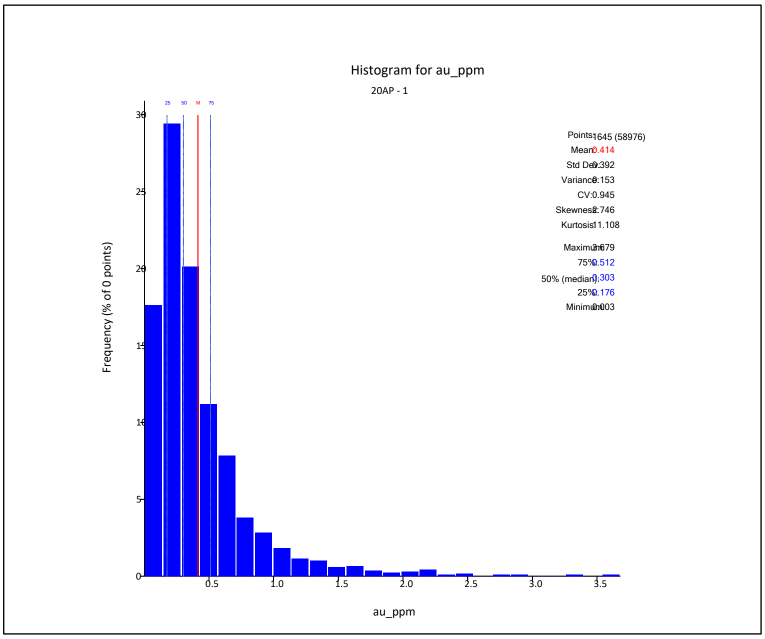


Figure 14-13 – Histogram of gold composite grades of Fenix Central A – AP

Figure 14-14 shows the gold probability plot of the composites. The curve shows that there are no population breaks, nor aberrant high-grade values that must be eliminated. There is a discontinuity in the distribution of grades in the percentile greater than 99%, which can serve as a reference for a special treatment of these values in the resource estimation stage.

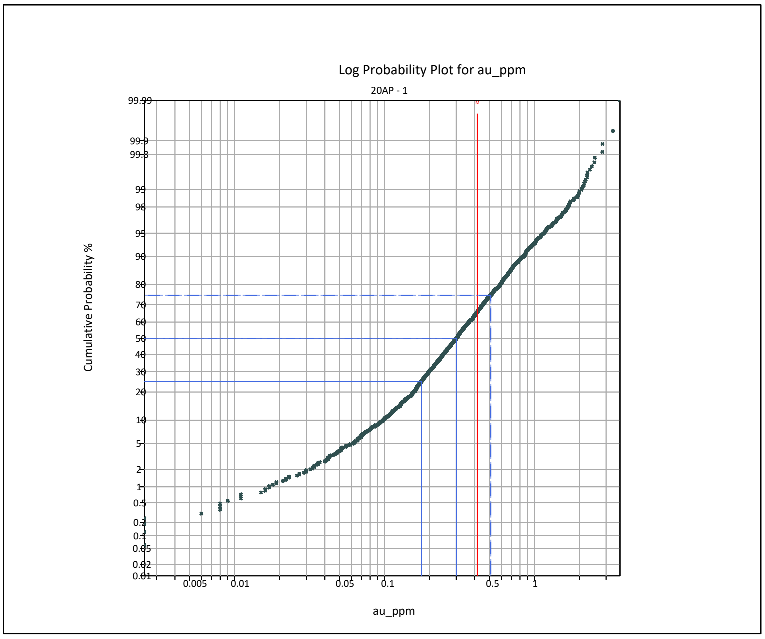


Figure 14-14 – Probability plot of gold composites, Fenix Central A – AP.

The Figure 14-15 shows the mean and coefficient of variation plot for Fenix Central A - Andesitic Domes Unit.

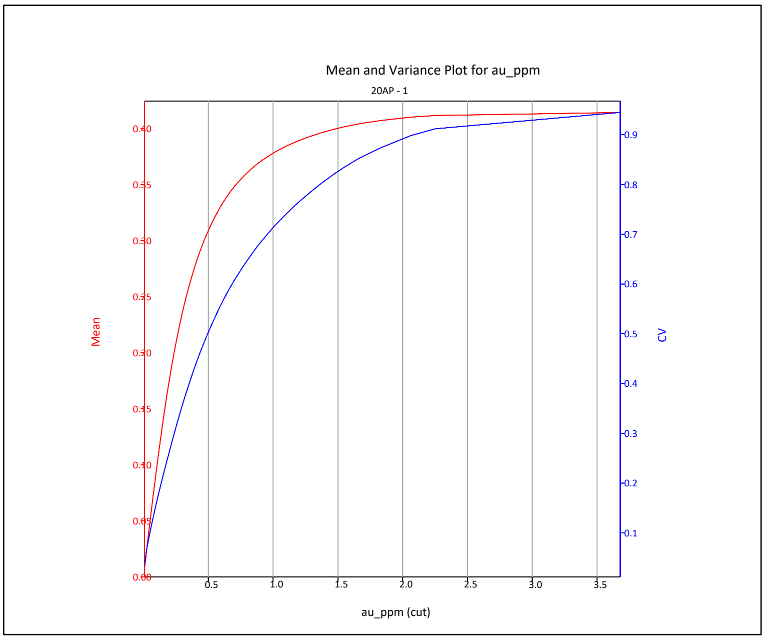


Figure 14-15 – Mean and coefficient of variation plot, Fenix Central A – AP.

14.3.5 Fenix Central A - Phreatomagmatic Breccias (FCABX = 20BX)

The 2 m composite data population for diamond drillholes gold samples of FCABX is 3,945. The data presents a mean of 0.46 g/t Au, a standard deviation of 0.349 and a coefficient of variation of 0.757. The minimum and maximum values are 0.01 g/t Au and 2.79 g/t Au, respectively.

The Figure 14-16 shows the histogram of gold grades. The composites present a classical gold grade distribution shape, similar to a log normal distribution.

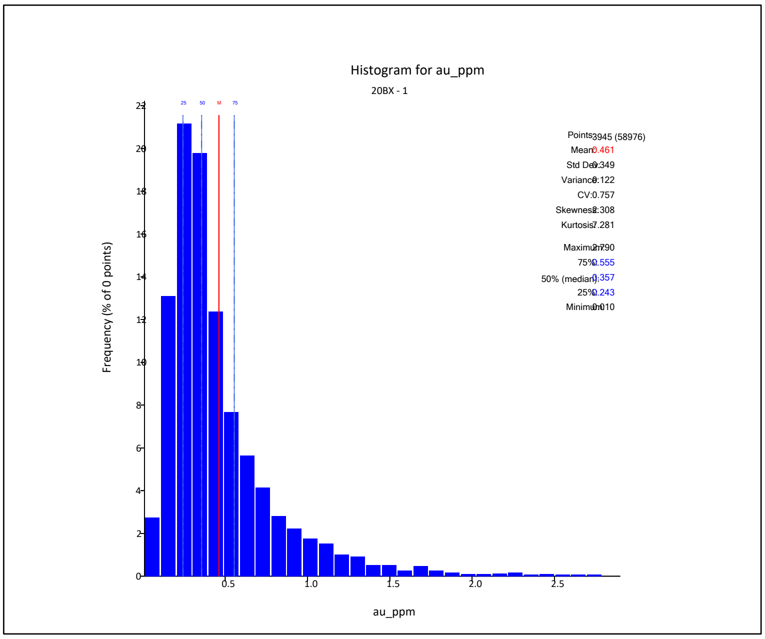


Figure 14-16 – Histogram of gold composite grades of Fenix Central A – BX.

The Figure 14-17 shows the gold probability plot of the composites. The curve shows that there are no population breaks, nor aberrant high-grade values that must be eliminated. There is a discontinuity in the distribution of grades in the percentile greater than 99.8%, which can serve as a reference for a special treatment of these values in the resource estimation stage.

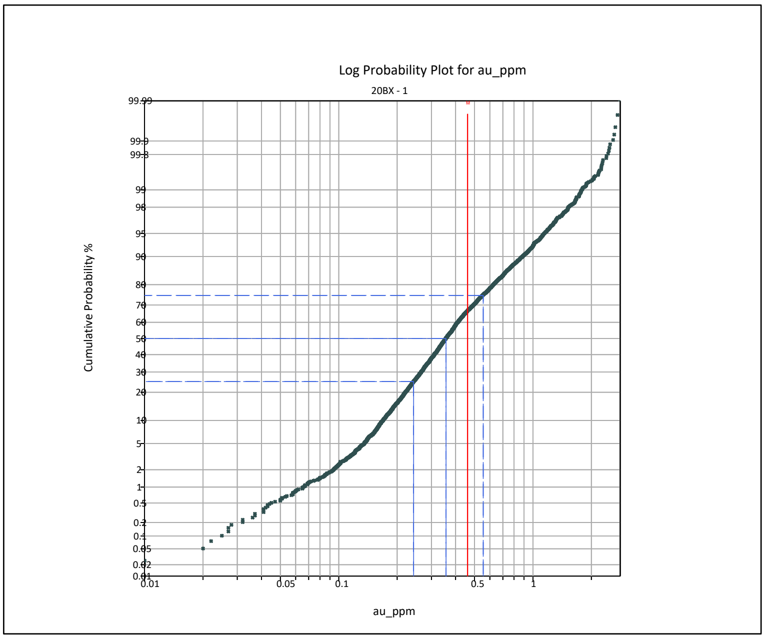


Figure 14-17 – Probability plot of gold composites, Fenix Central A – BX.

The Figure 14-18 shows the mean and coefficient of variation plot for Fenix Central A - Phreatomagmatic Breccias.

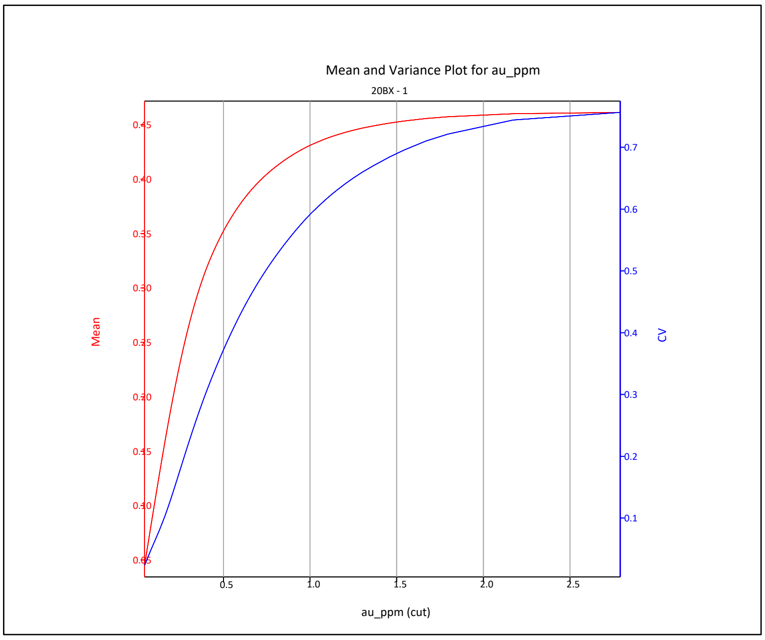


Figure 14-18 – Mean and coefficient of variation plot, Fenix Central A – BX.

14.3.6 Fenix Central A – Dacitic Domes (FCADP = 20DP)

The 2 m composite data population for diamond drillholes gold samples of FCADP is 645. The data presents a mean of 0.35 g/t Au, astandard deviation of 0.268 and a coefficient of variation of 0.768. The minimum and maximum values are 0.051 g/t Au and 2.24 g/t Au, respectively.

The Figure 14-19 shows the histogram of gold grades. The composites present a classical gold grade distribution shape, similar to a log normal distribution.

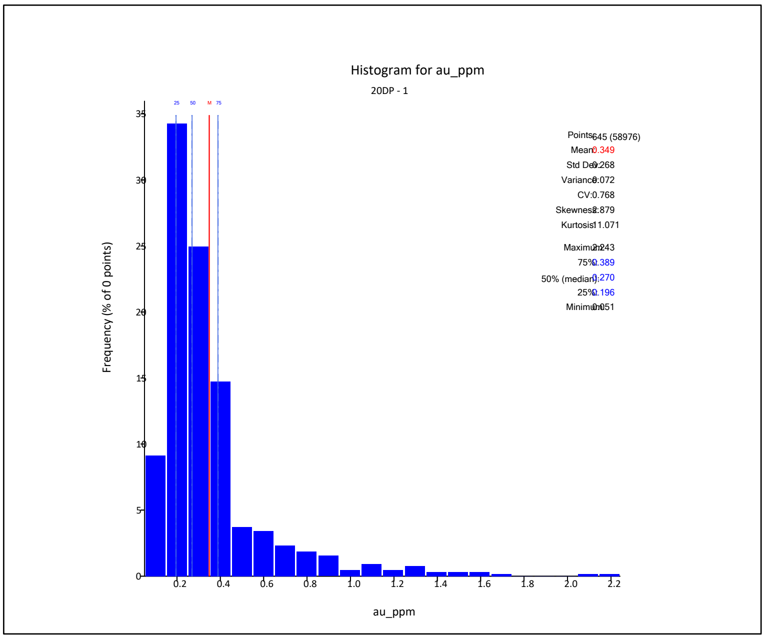


Figure 14-19 – Histogram of gold composite grades of Fenix Central A – DP.

Figure 14-20 shows the gold probability plot of the composites. The curve shows that there are no population breaks, nor aberrant high-grade values that must be eliminated. There is a discontinuity in the distribution of grades in the percentile greater than 96%, which can serve as a reference for a special treatment of these values in the resource estimation stage.

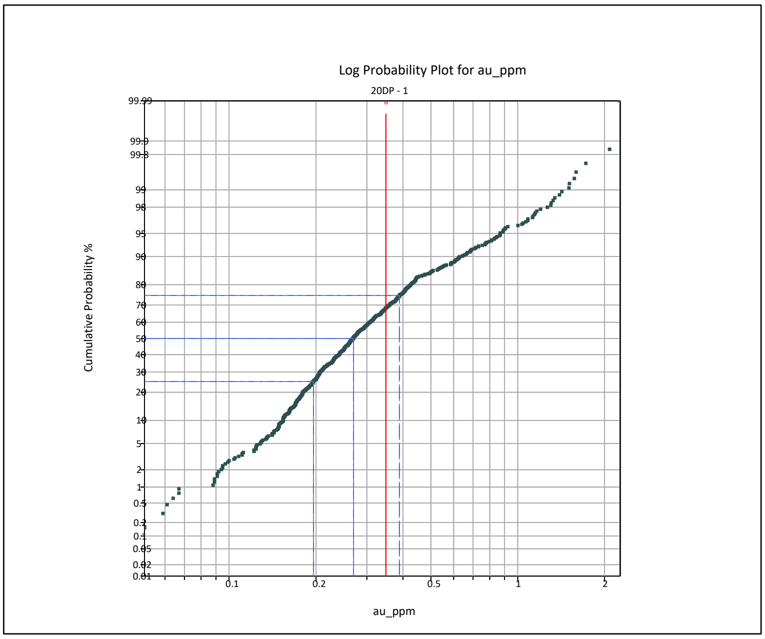


Figure 14-20 – Probability plot of gold composites, Fenix Central A -DP.

Figure 14-21 The shows the mean and coefficient of variation plot for Fenix Central A – Dacitic Domes.

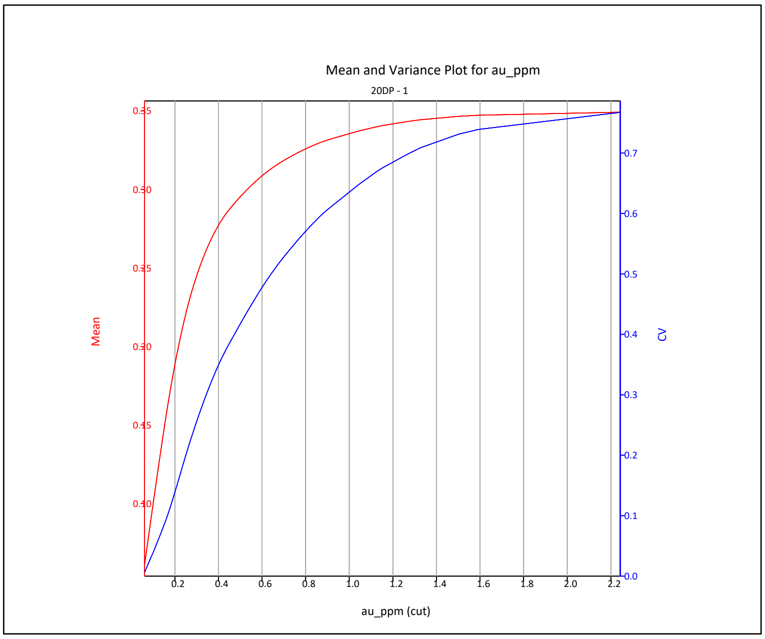


Figure 14-21 – Mean and coefficient of variation plot, Fenix Central A – DP.

14.3.7 Fenix Central B - Andesitic Domes (FCBAP = 21AP)

The 2 m composite data population for diamond drillholes gold samples of FCBAP is 1,385. The data presents a mean of 0.305 g/t Au, astandard deviation of 0.225 and a coefficient of variation of 0.737. The minimum and maximum values are 0.02 g/t Au and 2.221 g/t Au, respectively.

The Figure 14-22 shows the histogram of gold grades. The composites present a classical gold grade distribution shape, similar to a log normal distribution.

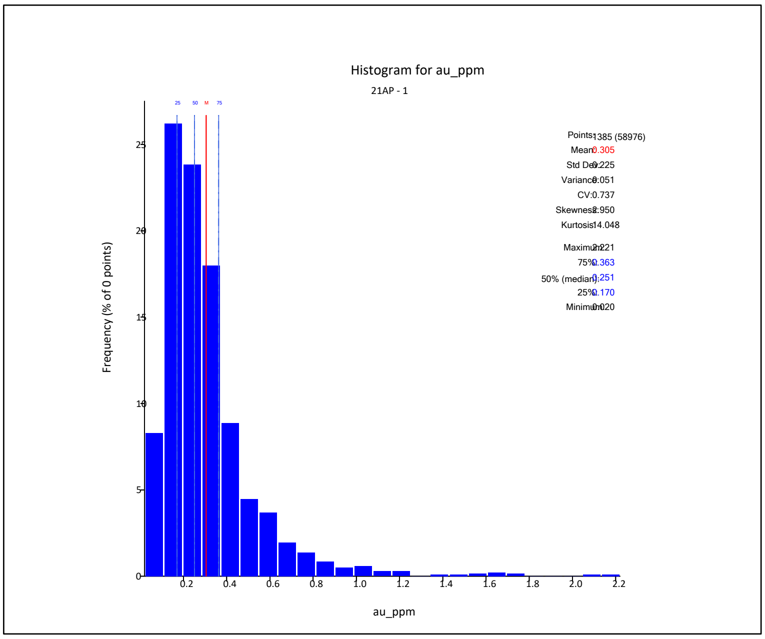


Figure 14-22 – Histogram of gold composite grades of Fenix Central B-AP.

Figure 14-23 shows the gold probability plot of the composites. The curve shows that there are no population breaks, nor aberrant high-grade values that must be eliminated. There is a discontinuity in the distribution of grades in the percentile greater than 99%, which can serve as a reference for a special treatment of these values in the resource estimation stage.

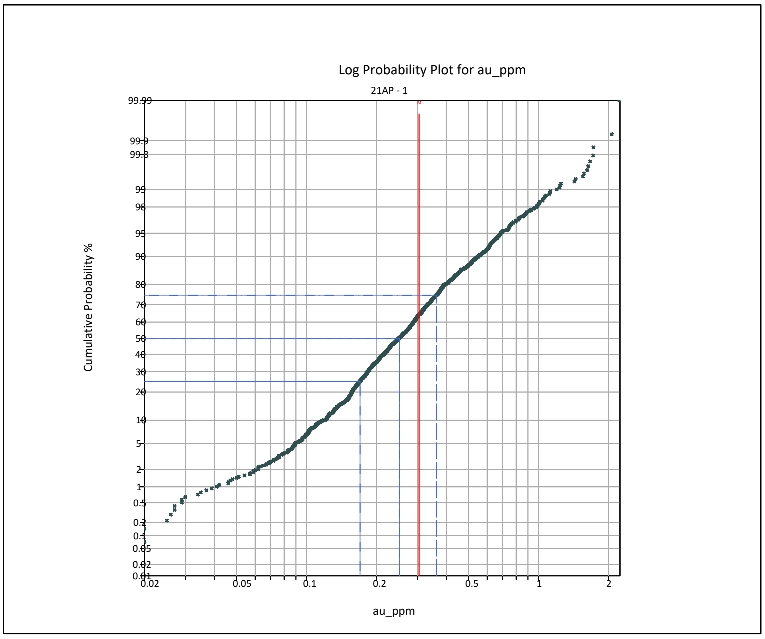


Figure 14-23 – Probability plot of gold composites, Fenix Central B- AP.

The Figure 14-24 shows the mean and coefficient of variation plot for Fenix Central B - Andesitic Domes Unit.

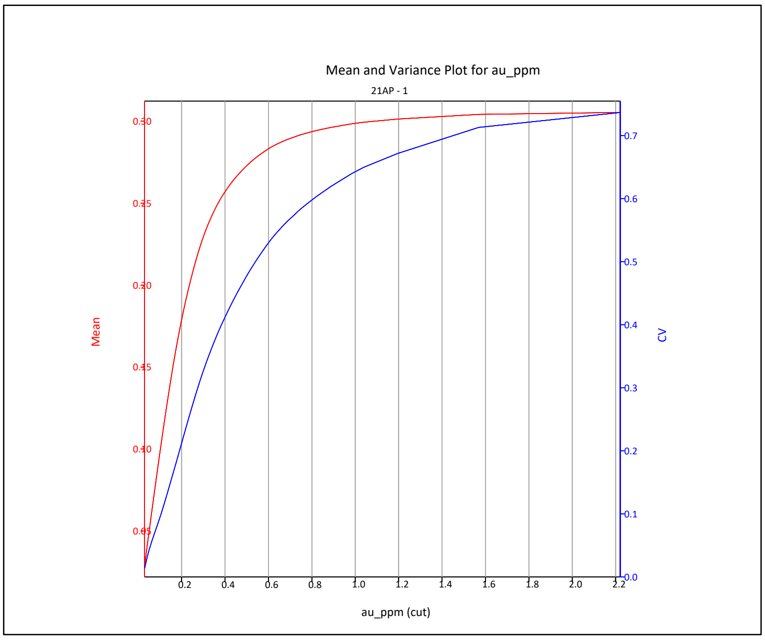


Figure 14-24 – Mean and coefficient of variation plot, Fenix Central B AP.

14.3.8 Fenix Central B - Phreatomagmatic Breccias (FCBBX = 21BX)

The 2 m composite data population for diamond drillholes gold samples of FCBBX is 1,201. The data presents a mean of 0.273 g/t Au, a standard deviation of 0.182 and a coefficient of variation of 0.667. The minimum and maximum values are 0.005 g/t Au and 2.423 g/t Au, respectively.

Figure 14-25 shows the histogram of gold grades. The composites present a classical gold grade distribution shape, similar to a log normal distribution.

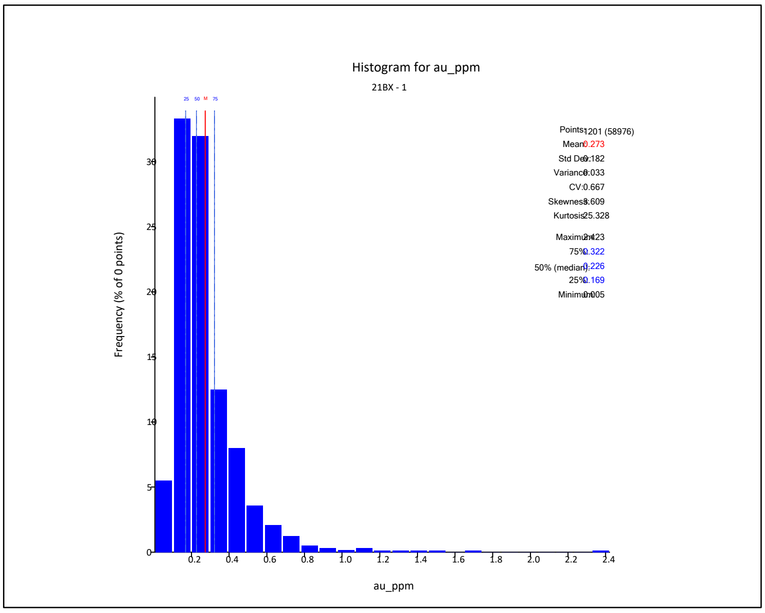


Figure 14-25 – Histogram of gold composite grades of Fenix Central B – BX.

The Figure 14-26 shows the gold probability plot of the composites. The curve shows that there are no population breaks, nor aberrant high-grade values that must be eliminated. There is a discontinuity in the distribution of grades in the percentile greater than 99%, which can serve as a reference for a special treatment of these values in the resource estimation stage.

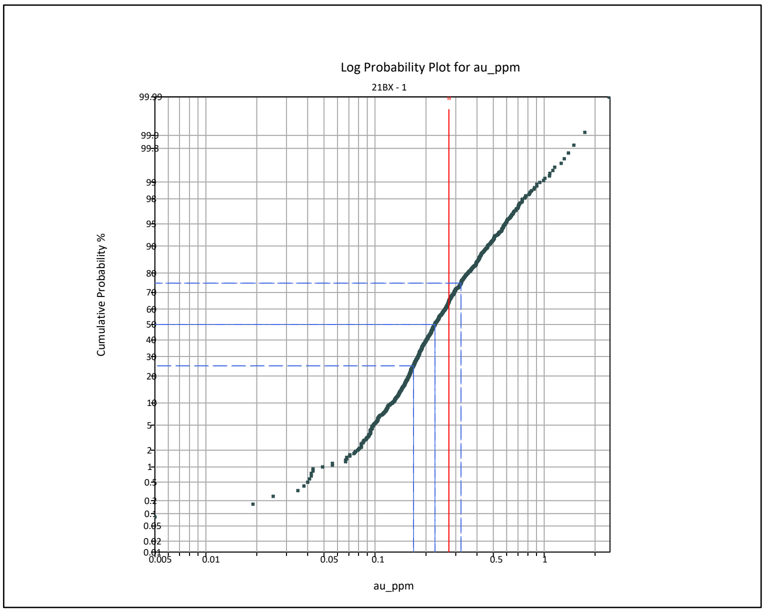


Figure 14-26 – Probability plot of gold composites, Fenix Central B – BX.

The Figure 14-27 shows the mean and coefficient of variation plot for Fenix Central B - Phreatomagmatic Breccias.

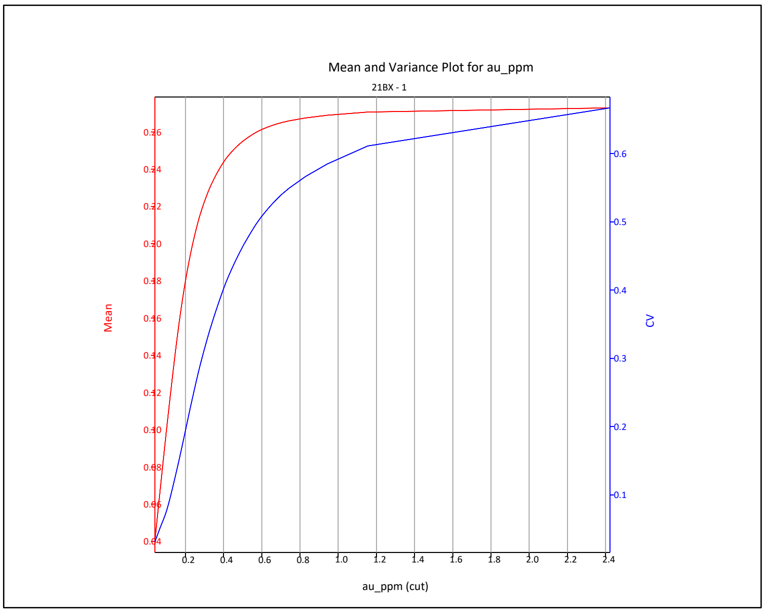


Figure 14-27 – Mean and coefficient of variation plot, Fenix Central B – BX.

14.3.9 Fenix Central B – Dacitic Domes (FCBDP= 21DP)

The 2 m composite data population for diamond drillholes gold samples of FCBDP is 495. The data presents a mean of 0.289 g/t Au, a standard deviation of 0.195 and a coefficient of variation of 0.675. The minimum and maximum values are 0.008 g/t Au and 1.583 g/t Au, respectively.

Figure 14-28 shows the histogram of gold grades. The composites present a classical gold grade distribution shape, similar to a log normal distribution.

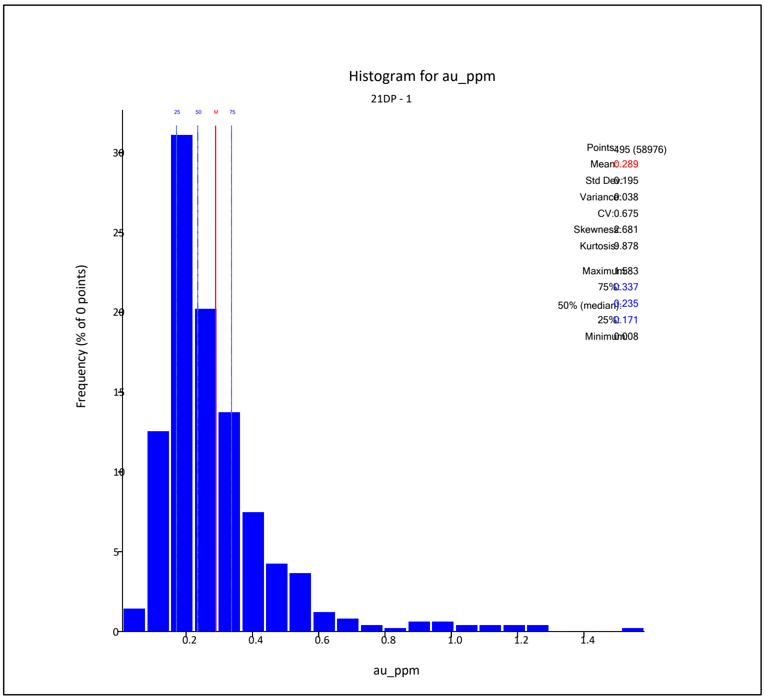


Figure 14-28 – Histogram of gold composite grades of Fenix Central B – DP.

Figure 14-29 shows the gold probability plot of the composites. The curve shows that there are no population breaks, nor aberrant high-grade values that must be eliminated. There is a discontinuity in the distribution of grades in the percentile greater than 96%, which can serve as a reference for a special treatment of these values in the resource estimation stage.

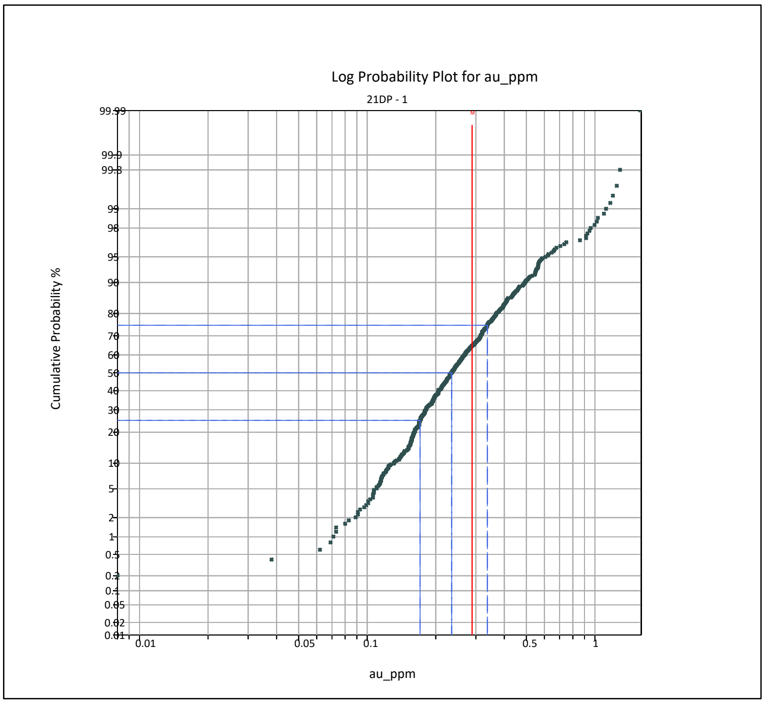


Figure 14-29 – Probability plot of gold composites, Fenix Central B – DP.

The Figure 14-30 shows the mean and coefficient of variation plot for Fenix Central B – Dacitic domes.

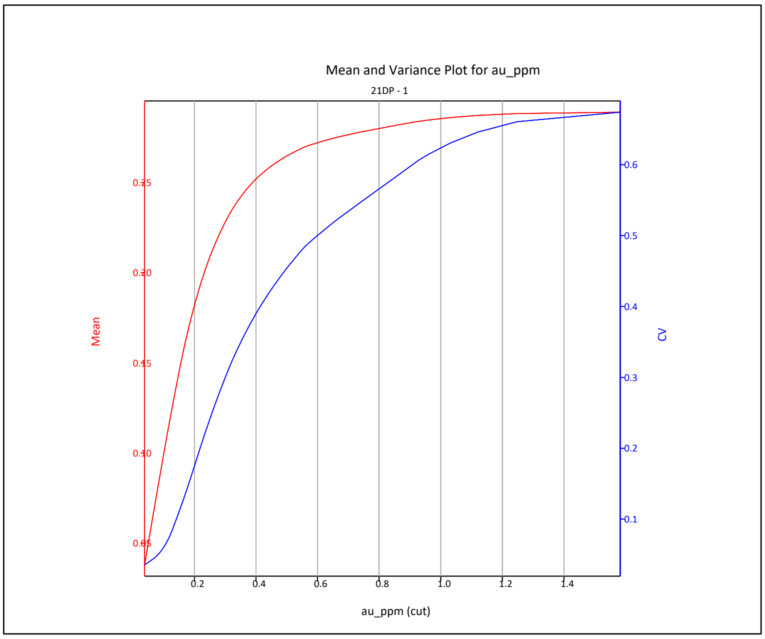


Figure 14-30 – Mean and coefficient of variation plot, Fenix Central B – DP.

14.3.10 Fenix South – Andesitic Domes (FSAP = 30AP)

The 2 m composite data population for diamond drillholes gold samples of FSAP is 3,494. The data presents a mean of 0.424 g/t Au, a standard deviation of 0.456 and a coefficient of variation of 1.076. The minimum and maximum values are 0.003 g/t Au and 5.179 g/t Au, respectively.

Figure 14-31 shows the histogram of gold grades. The composites present a classical gold grade distribution shape, similar to a log normal distribution.

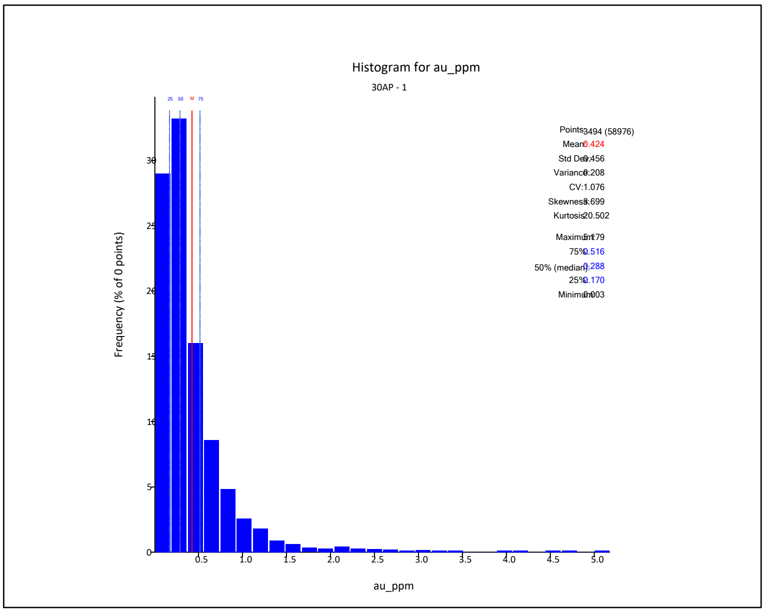


Figure 14-31 – Histogram of gold composite grades of Fenix South AP.

Figure 14-32 shows the gold probability plot of the composites. The curve shows that there are no population breaks, nor aberrant high-grade values that must be eliminated. There is a discontinuity in the distribution of grades in the percentile greater than 99.8%, which can serve as a reference for a special treatment of these values in the resource estimation stage.

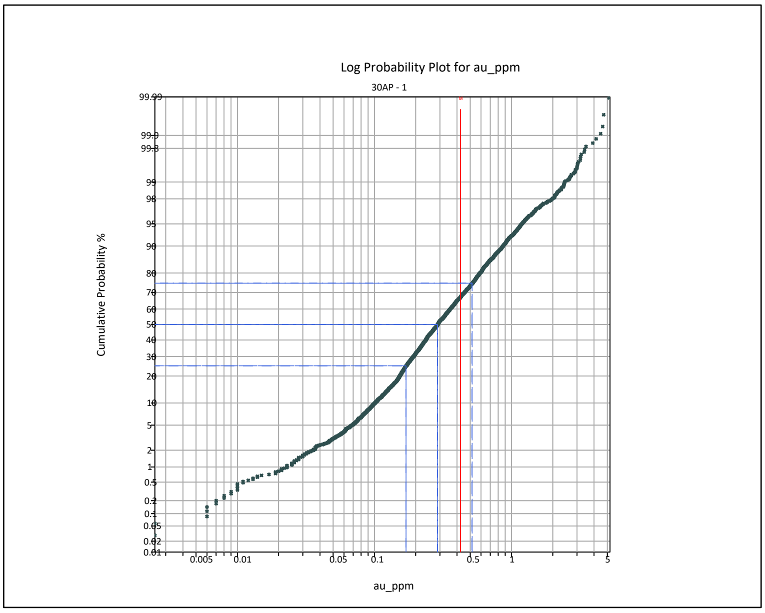


Figure 14-32 – Probability plot of gold composites, Fenix South AP.

The Figure 14-33 shows the mean and coefficient of variation plot for Fenix South - Andesitic Domes Unit.

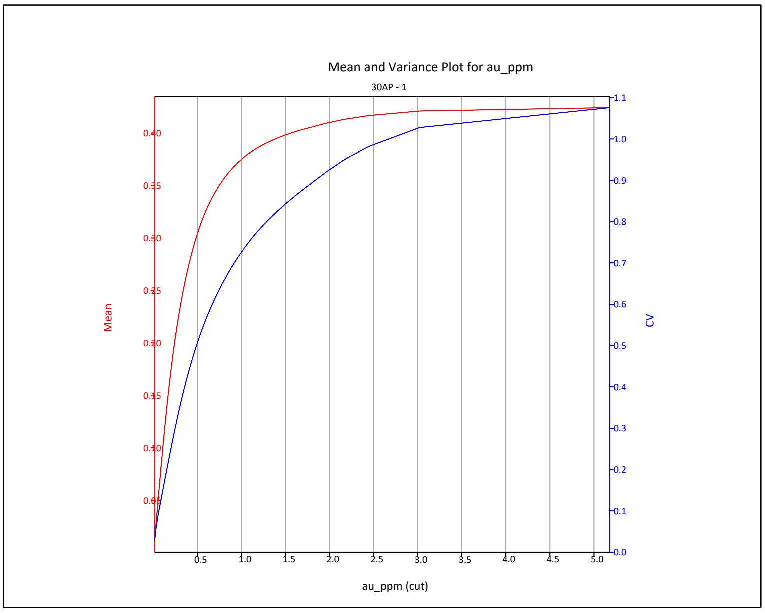


Figure 14-33 – Mean and coefficient of variation plot, Fenix South AP.

14.3.11 Fenix South - Phreatomagmatic Breccias (FSBX = 30BX)

The 2 m composite data population for diamond drillholes gold samples of FSBX is 2,898. The data presents a mean of 0.418 g/t Au, a standard deviation of 0.373 and a coefficient of variation of 0.892. The minimum and maximum values are 0.013 g/t Au and 4.627 g/t Au, respectively.

The Figure 14-34 shows the histogram of gold grades. The composites present a classical gold grade distribution shape, similar to a log normal distribution.

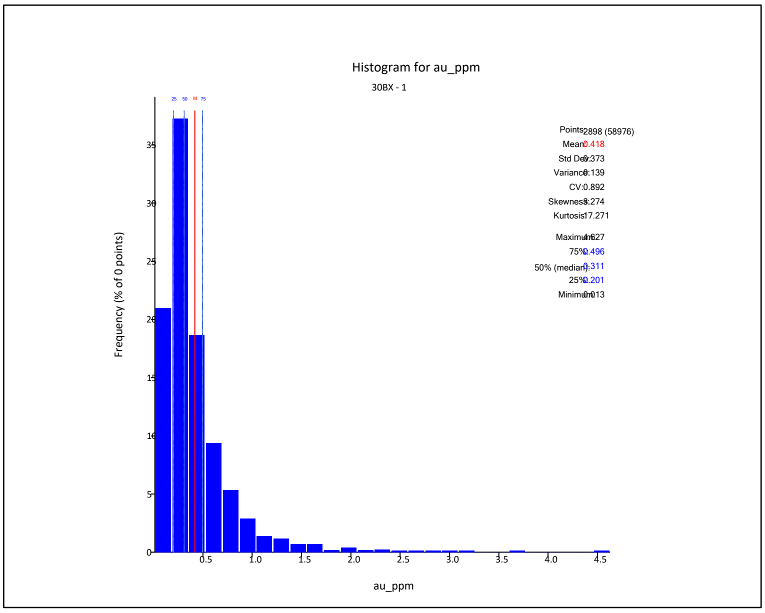


Figure 14-34 – Histogram of gold composite grades of Fenix South BX.

Figure 14-35 shows the gold probability plot of the composites. The curve shows that there are no population breaks, nor aberrant high-grade values that must be eliminated. There is a discontinuity in the distribution of grades in the percentile greater than 99.5%, which can serve as a reference for a special treatment of these values in the resource estimation stage.

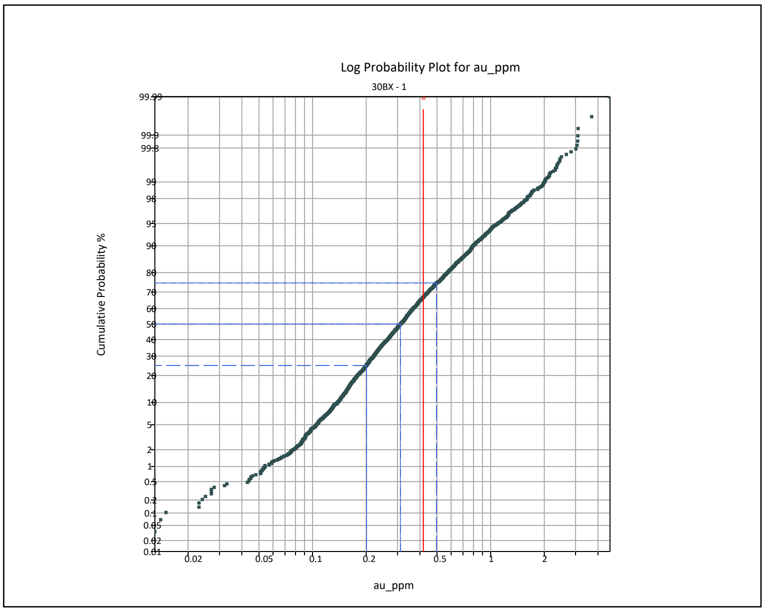


Figure 14-35 – Probability plot of gold composites, Fenix South BX.

The Figure 14-36 shows the mean and coefficient of variation plot for Fenix South - Phreatomagmatic Breccias.

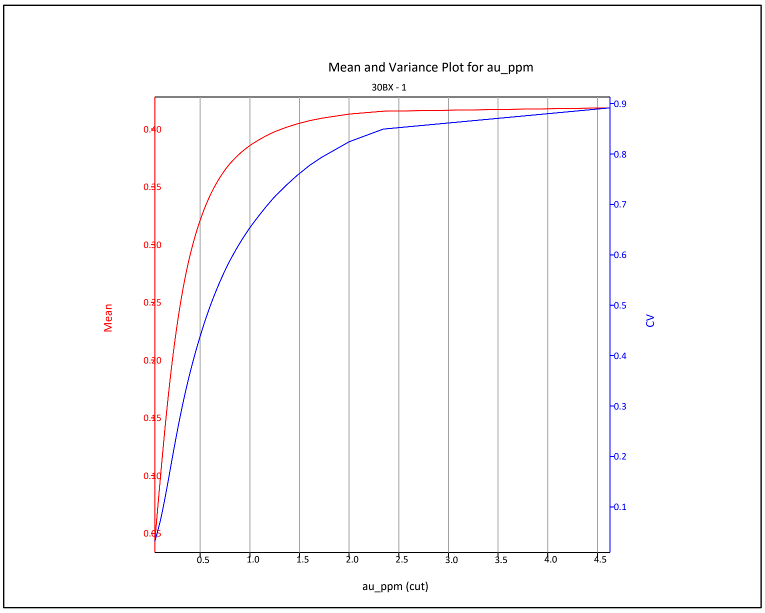


Figure 14-36 – Mean and coefficient of variation plot, Fenix South BX.

14.3.12 Fenix South – Dacitic Domes (FSDP = 30DP)

The 2 m composite data population for diamond drillholes gold samples of FSDP is 2,023. The data presents a mean of 0.307 g/t Au, a standard deviation of 0.196 and a coefficient of variation of 0.64. The minimum and maximum values are 0.003 g/t Au and 1.616 g/t Au, respectively.

Figure 14-37 shows the histogram of gold grades. The composites present a classical gold grade distribution shape, similar to a log normal distribution.

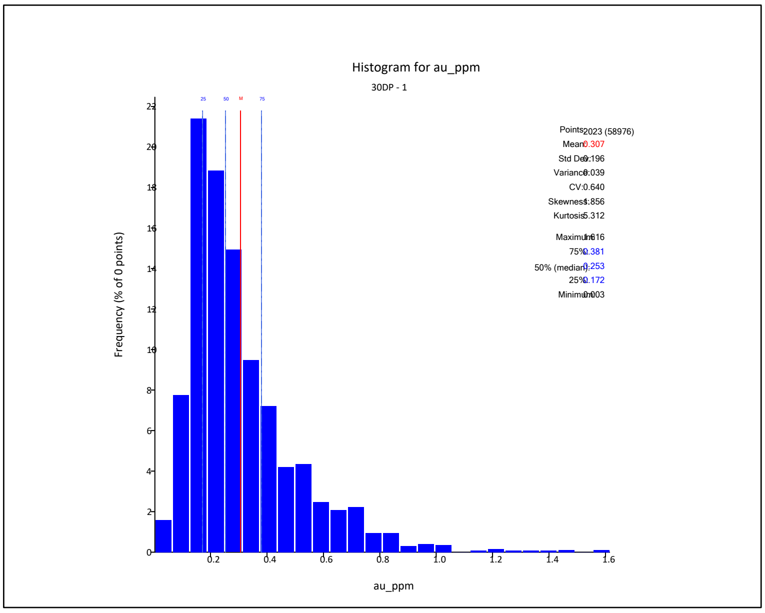


Figure 14-37 – Histogram of gold composite grades of Fenix South DP.

Figure 14-38 shows the gold probability plot of the composites. The curve shows that there are no population breaks, nor aberrant high-grade values that must be eliminated. There is a discontinuity in the distribution of grades in the percentile greater than 99.5%, which can serve as a reference for a special treatment of these values in the resource estimation stage.

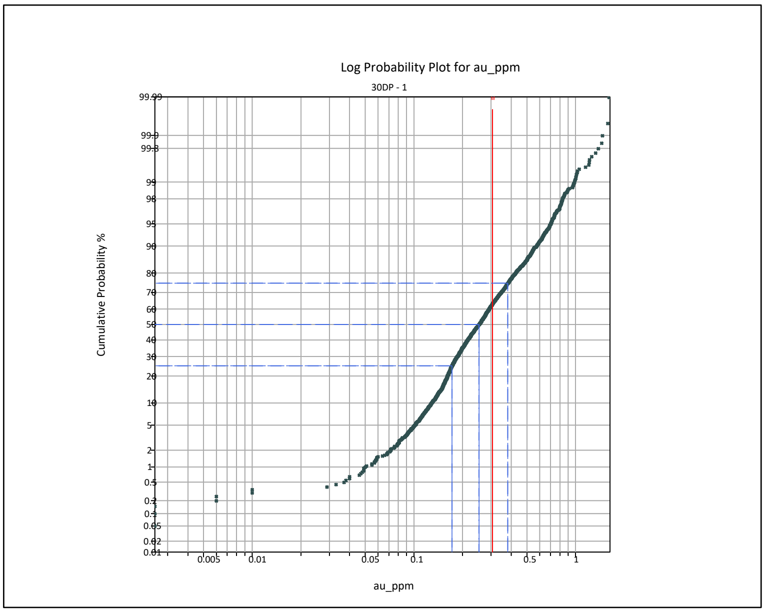


Figure 14-38 – Probability plot of gold composites, Fenix South DP.

The Figure 14-39 shows the mean and coefficient of variation plot for Fenix South – Dacitic Domes Unit.

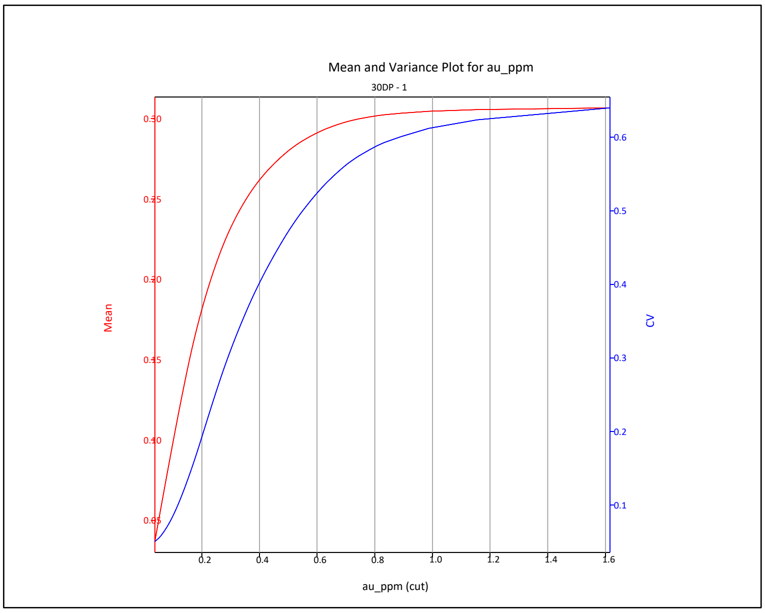


Figure 14-39 – Mean and coefficient of variation plot, Fenix South DP.

14.4 Contact Analysis

Contact plots were generated to analyze the grade behavior at the grade-shell contacts. The analysis shows that all contacts should be treated as hard between the mineralized ore body and host rock. Figure 14-40 shows contact profiles between each mineralized envelope and the samples lying outside. Contact plots between Fenix North, Central A, Central B, and South shows that all contacts should be treated as soft between them. Figure 14-41 shows contact profiles between each domain.

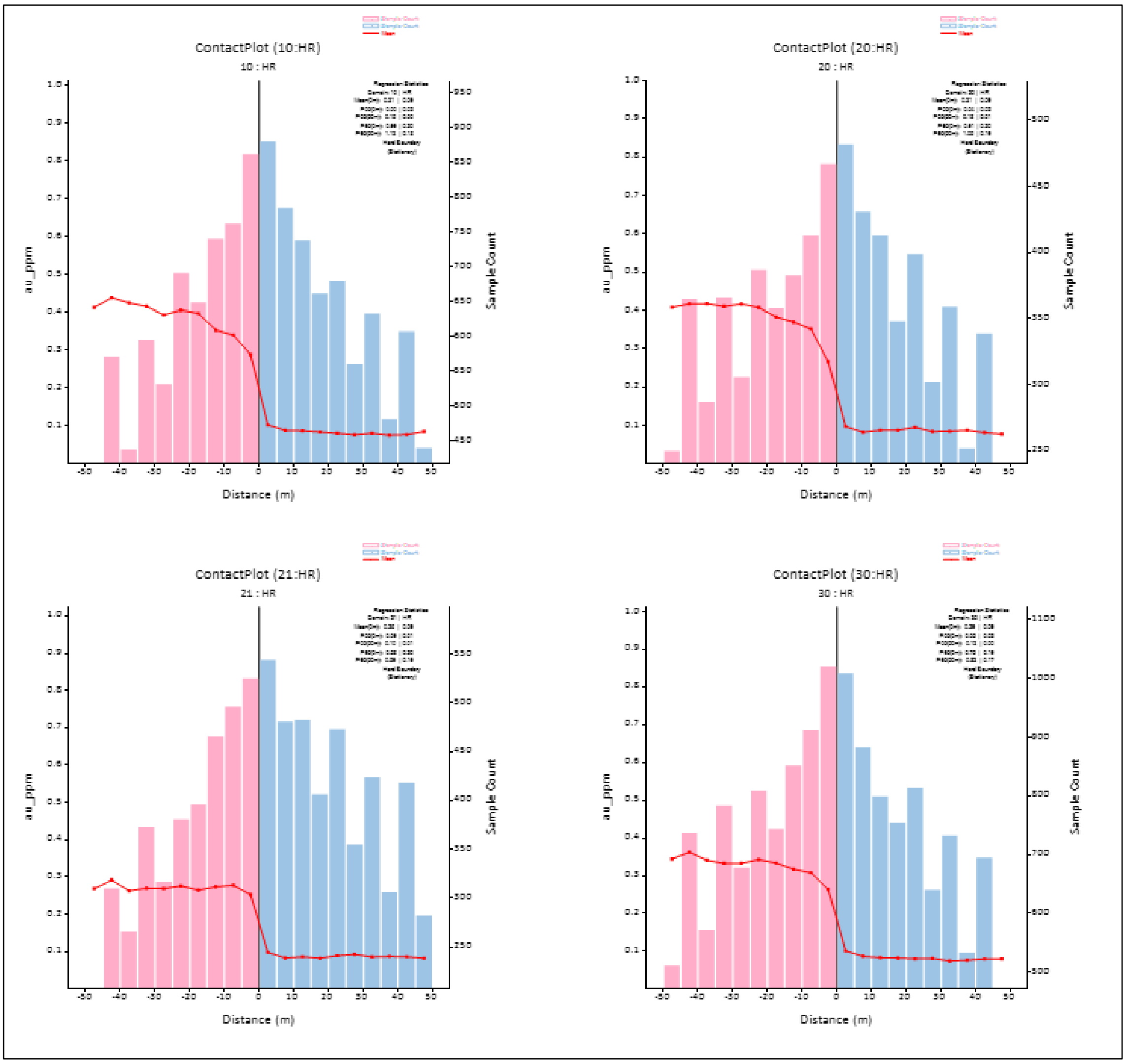


Figure 14-40 – Contact plots, Host Rock and Fenix North, Fenix Central A, Fenix Central Band, Fenix South.

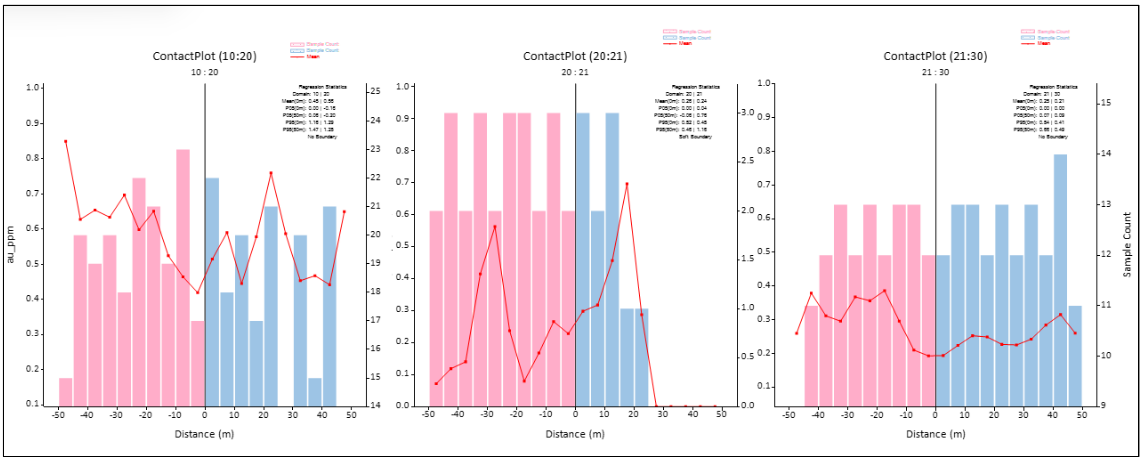


Figure 14-41 – Contact plots, Fenix North-Fenix Central A, Fenix Central A - Fenix Central B, Fenix Central B and South.

14.5 Variography

Experimental variograms were obtained for each domain. Anisotropic analysis shows ageometric anisotropy, meaning the correlation is stronger in a specific direction. In geometrical anisotropy, the range changes but not the sill.

Snowden Supervisor© software was used to develop variographic analysis for gold grades. The rotation of the variogram model resulting from this analysis is consistent with the Vulcan3D software format.

The variograms have been normalized by the variance of the data. For the calculation of the experimental variograms, a horizontal and vertical bandwidth of 30 m was used, with 15° angular tolerance and lags of 35 to 40 m. Downhole variograms were also obtained to help model the nugget effect for each domain.

Variogram maps (with color-coded variance) for each domain, were calculated in the three main planes and are shown in Figure 14-42 to Figure 14-53.

Table 14-3 shows the final variogram models used for estimation. Figure 14-54 to Figure 14-65 shows for each domain the directional as well as fitted models for the downhole variogram and for the three principal directions. Weak geometrical anisotropies are apparent for Fenix North, Central A, Central B and Fenix South.

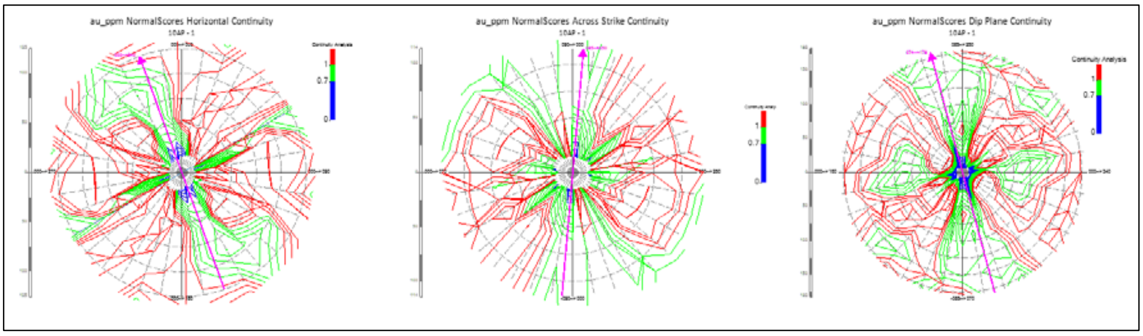


Figure 14-42 – Variogram map, Fenix North AP.

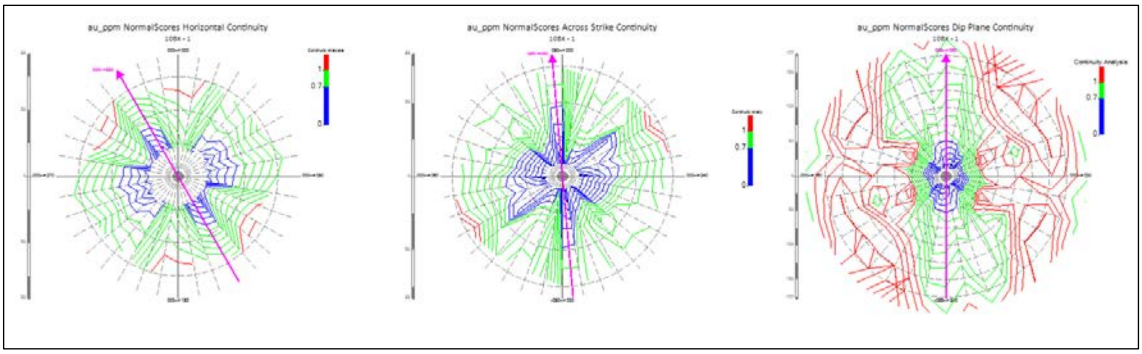


Figure 14-43 – Variogram map, Fenix North BX.

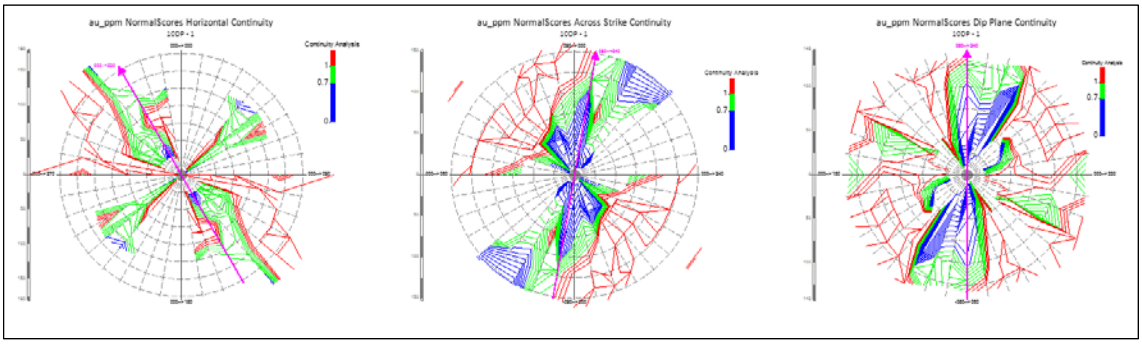


Figure 14-44 – Variogram map, Fenix North DP.

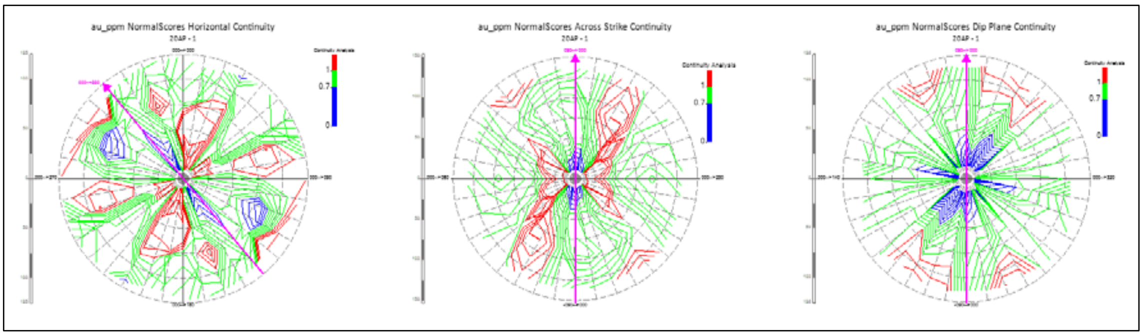


Figure 14-45 – Variogram map, Fenix Central A – AP.

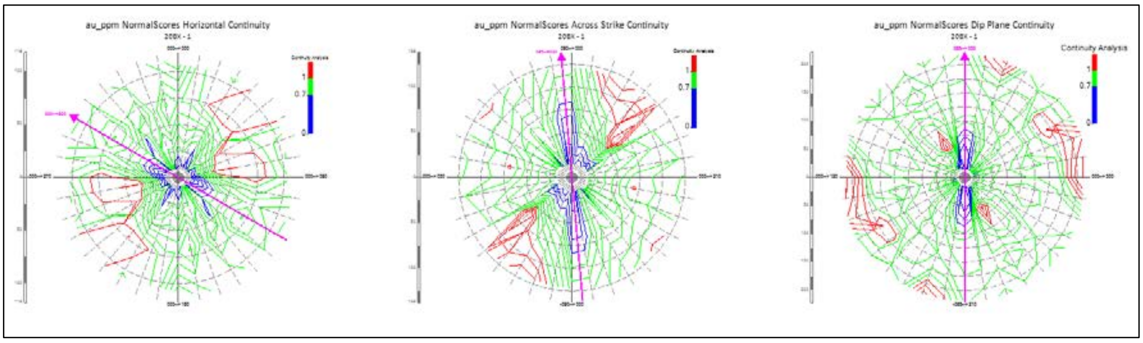


Figure 14-46 – Variogram map, Fenix Central A – BX.

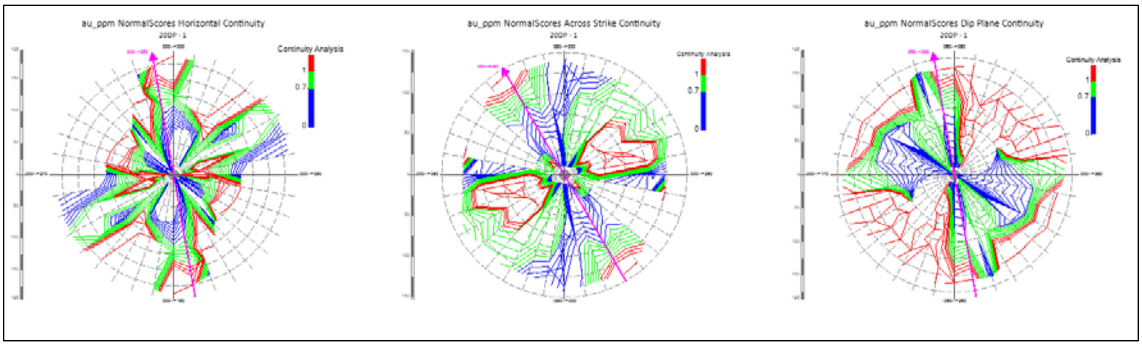


Figure 14-47 – Variogram map, Fenix Central A – DP.

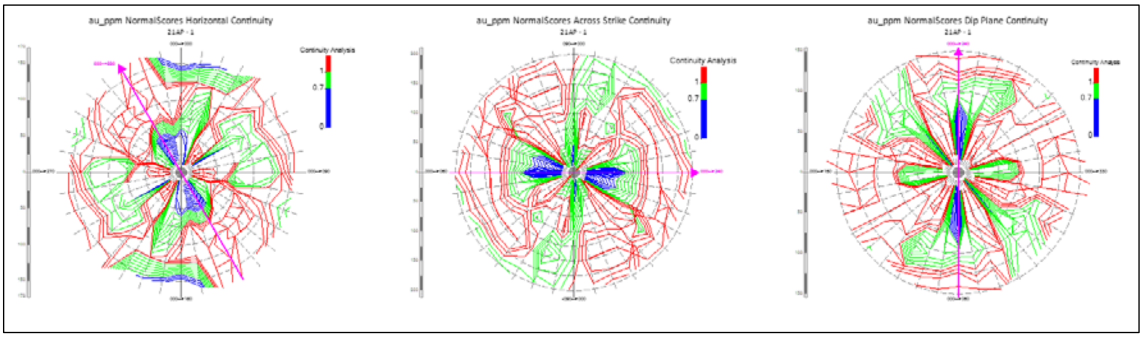


Figure 14-48 – Variogram map, Fenix Central B – AP.

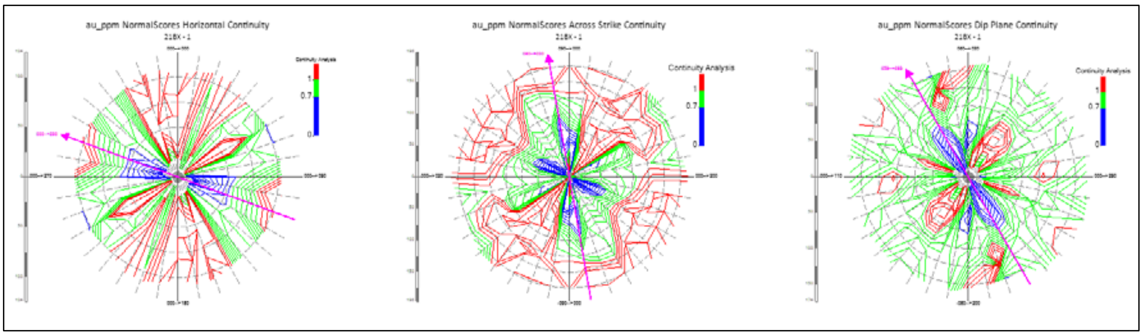


Figure 14-49 – Variogram map, Fenix Central B – BX.

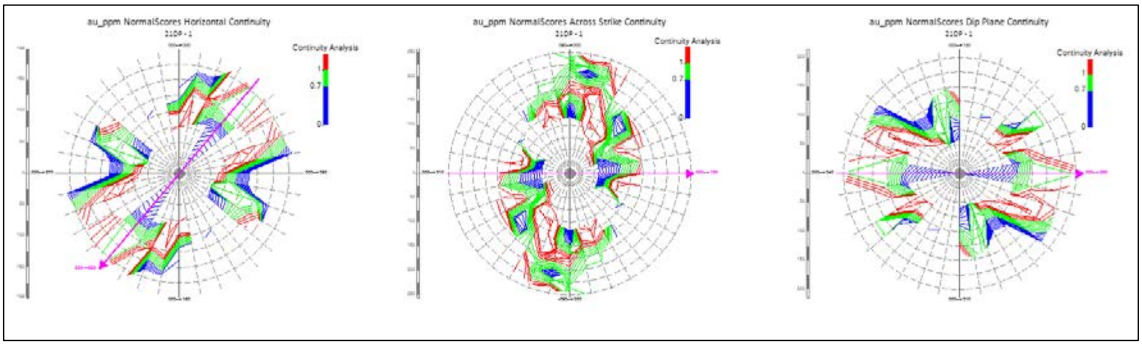


Figure 14-50 – Variogram map, Fenix Central B – DP.

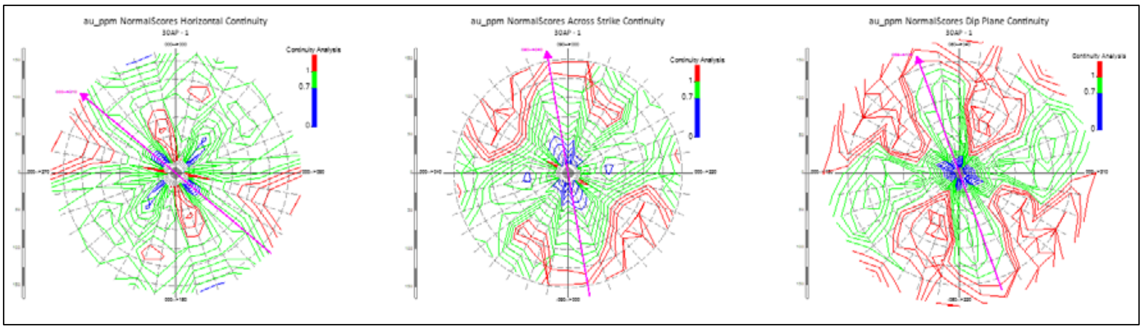


Figure 14-51 – Variogram map, Fenix South AP.

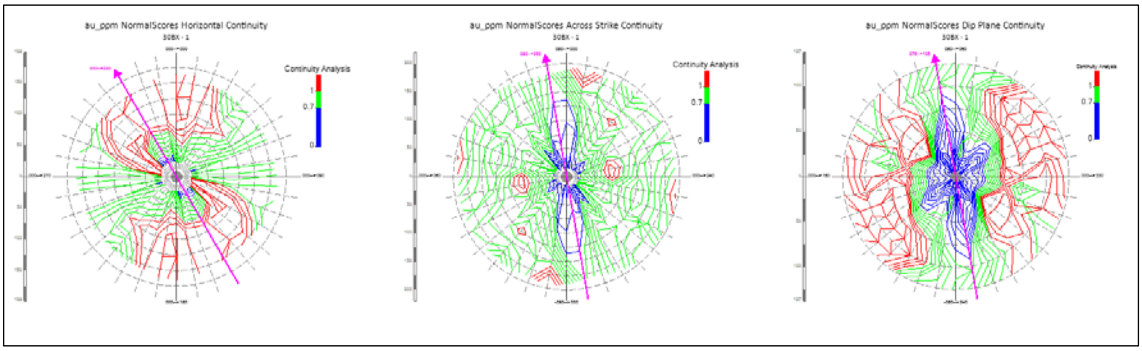


Figure 14-52 – Variogram map, Fenix South BX.

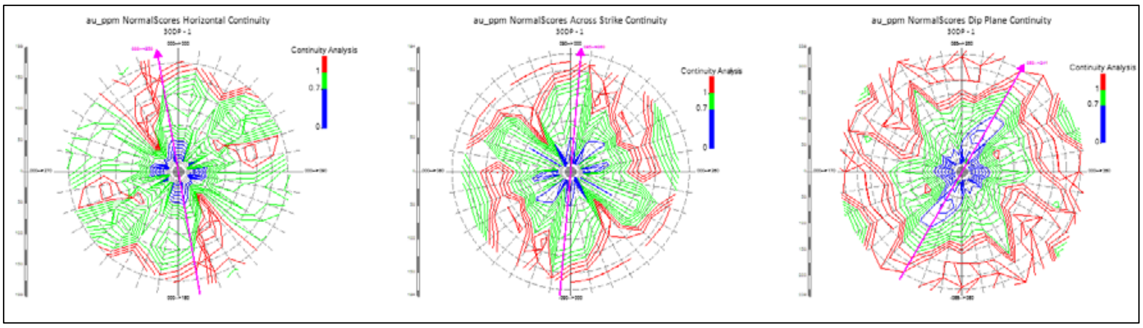


Figure 14-53 – Variogram map, Fenix South DP.

Table 14-3 – Modelling and plotting parameters, separately by domain.

Au Domain	Nugget	Str	Type	Sill	Search Angles			Range		
					Bearing	Plunge	Dip	Major	Semi	Minor
10AP	0.12	1	Sph	0.5	178	74.2	71.3	51	36	57
		2	Sph	0.39	178	74.2	71.3	185	114	131
10BX	0.14	1	Sph	0.41	60	85	180	39	36	48
		2	Sph	0.45	60	85	180	225	96	116
10DP	0.18	1	Sph	0.36	240	80	0	60	36	48
		2	Sph	0.46	240	80	0	212	92	116
20AP	0.13	1	Sph	0.45	0	90	-130	34	30	25
		2	Sph	0.42	0	90	-130	180	177	96
20BX	0.15	1	Sph	0.4	30	85	180	51	36	25
		2	Sph	0.46	30	85	180	302	130	96
20DP	0.18	1	Sph	0.34	99.4	58.5	163.3	168	77	25
		2	Sph	0.48	99.4	58.5	163.3	183	173	107
21AP	0.13	1	Sph	0.45	240	0	0	111	64	69
		2	Sph	0.42	240	0	0	205	126	128
21BX	0.22	1	Sph	0.29	93.3	58.5	109.4	93	52	46
		2	Sph	0.49	93.3	58.5	109.4	162	102	113
21DP	0.12	1	Sph	0.4	220	0	0	73	39	28
		2	Sph	0.49	220	0	0	188	106	98
30AP	0.15	1	Sph	0.57	104.5	67.7	117.3	48	55	53
		2	Sph	0.28	104.5	67.7	117.3	170	102	148
30BX	0.13	1	Sph	0.57	105.4	75.9	135.4	175	47	48
		2	Sph	0.3	105.4	75.9	135.4	205	102	137
30DP	0.19	1	Sph	0.16	341.4	59.6	80.1	136	79	78
		2	Sph	0.65	341.4	59.6	80.1	227	97	115
HR	0.19	1	Sph	0.31	24.6	75.9	135.4	21	23	25
		2	Sph	0.51	24.6	75.9	135.4	200	106	114

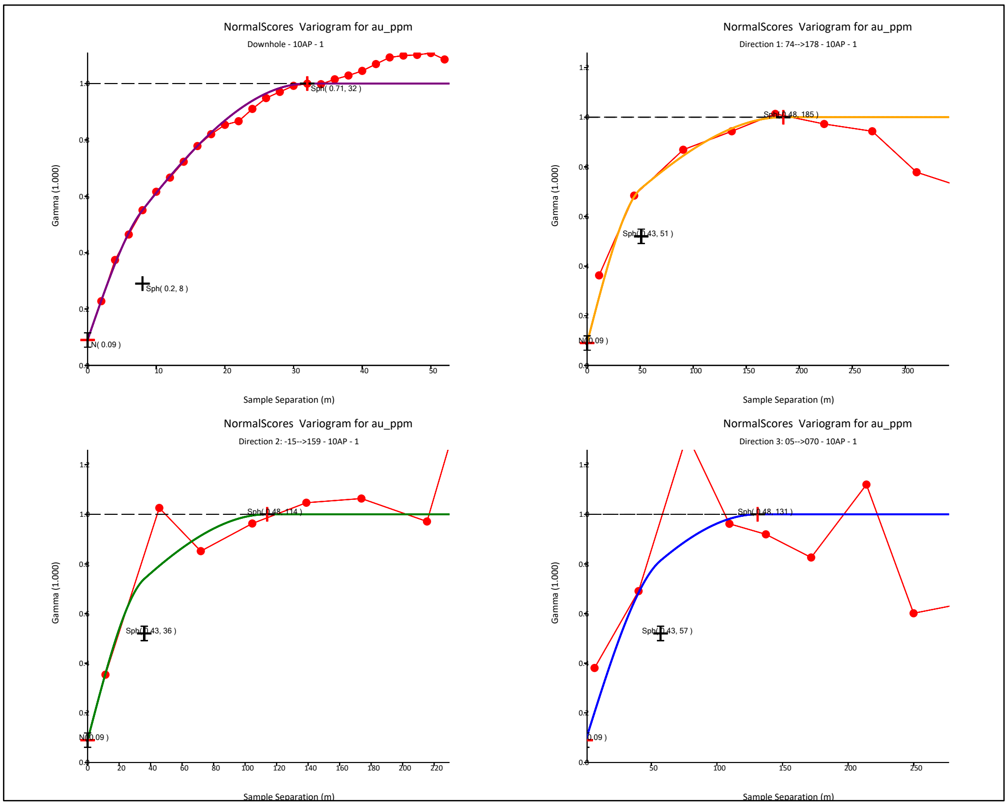


Figure 14-54 – Directional variogram model, Fenix North AP.

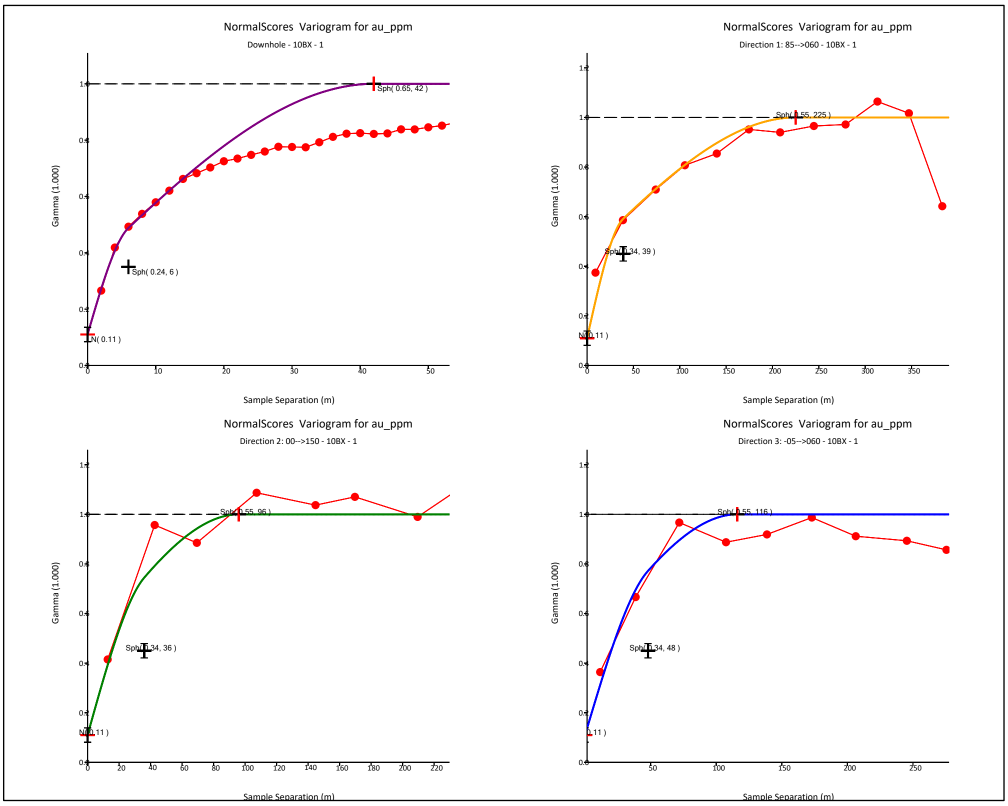


Figure 14-55 – Directional variogram model, Fenix North BX.

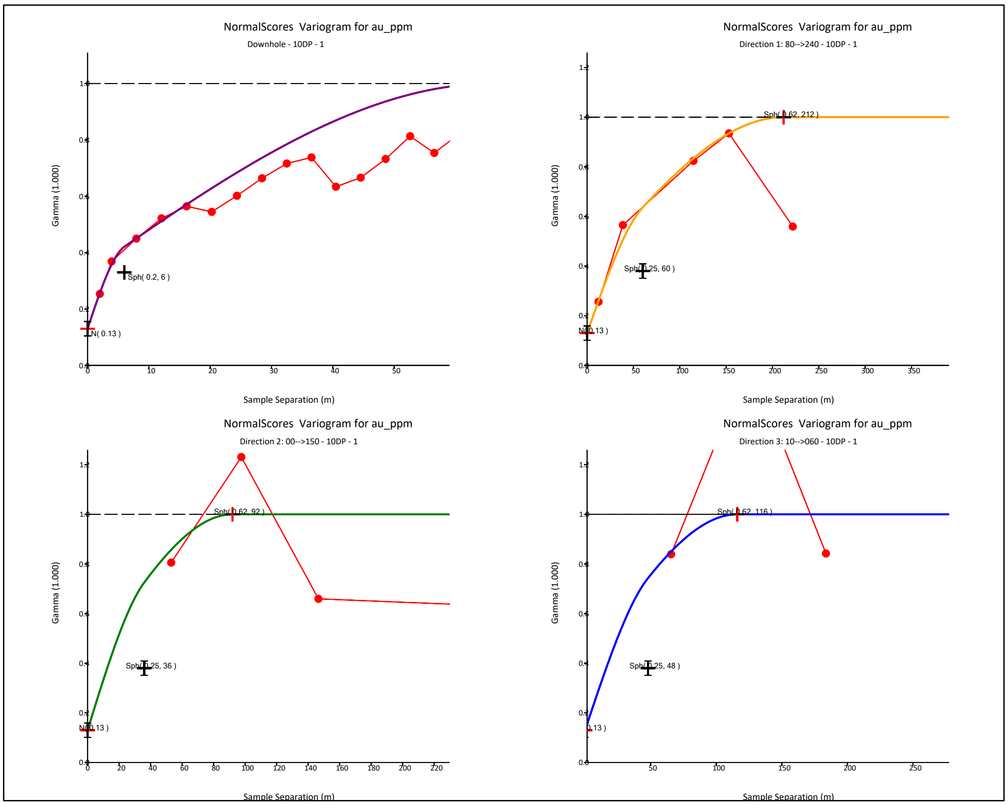


Figure 14-56 – Directional variogram model, Fenix North DP.

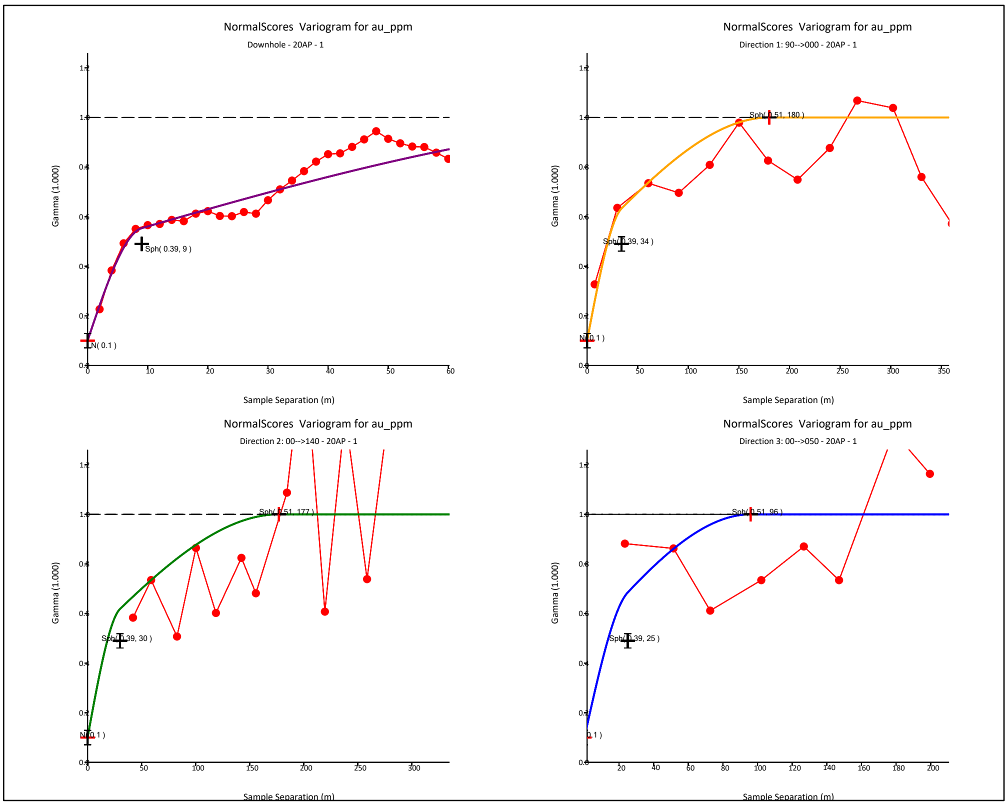


Figure 14-57 – Directional variogram model, Fenix Central A – AP.

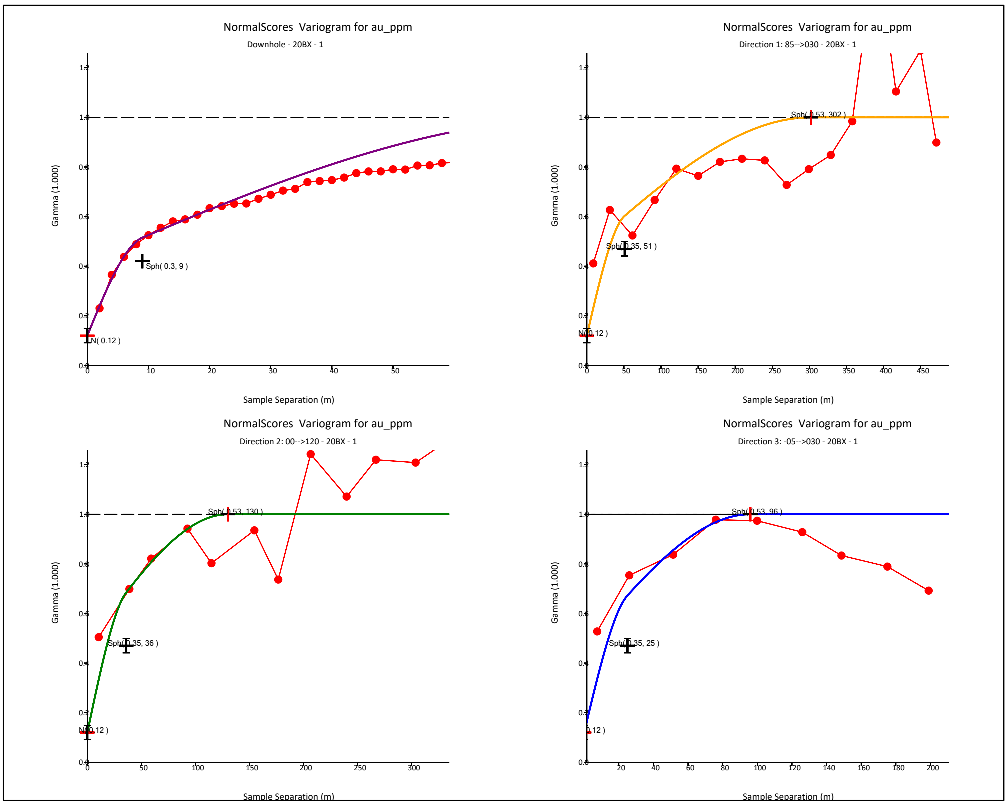


Figure 14-58 – Directional variogram model, Fenix Central A – BX.

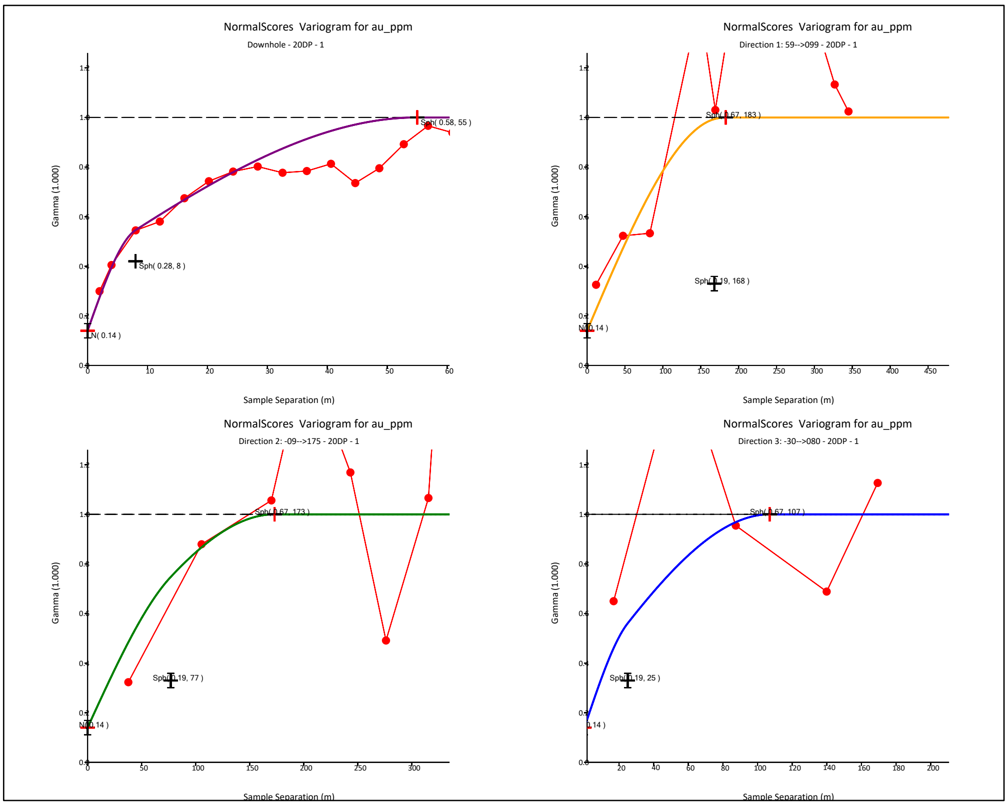


Figure 14-59 – Directional variogram model, Fenix Central A – DP.

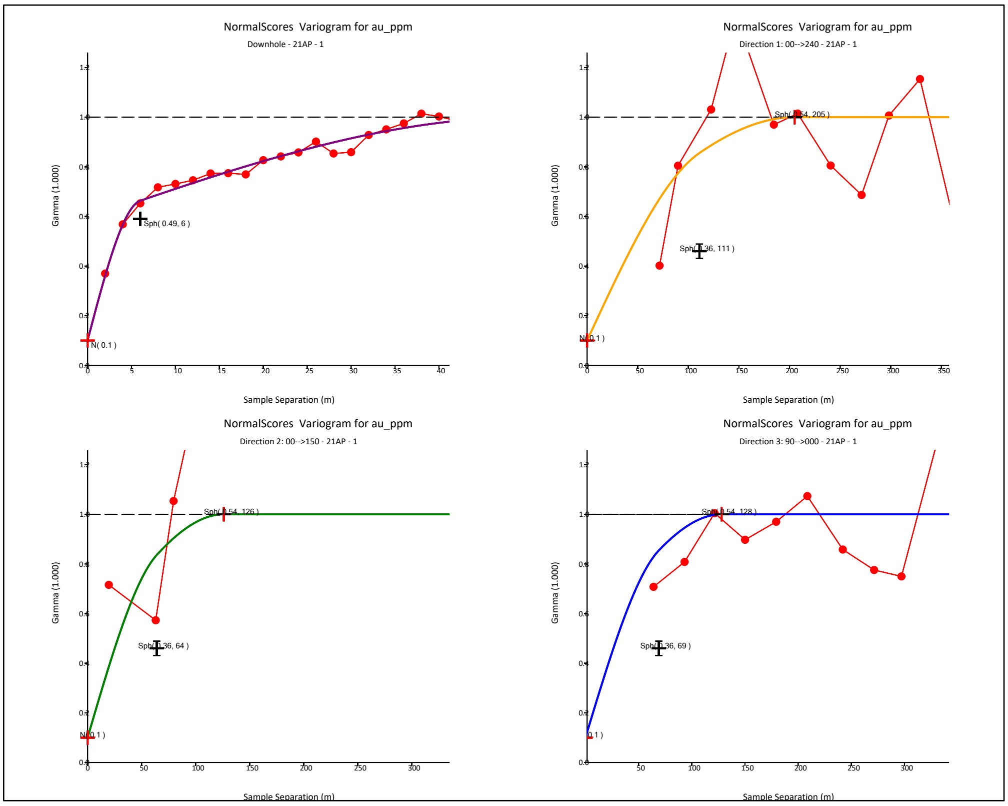


Figure 14-60 – Directional variogram model, Fenix Central B – AP.

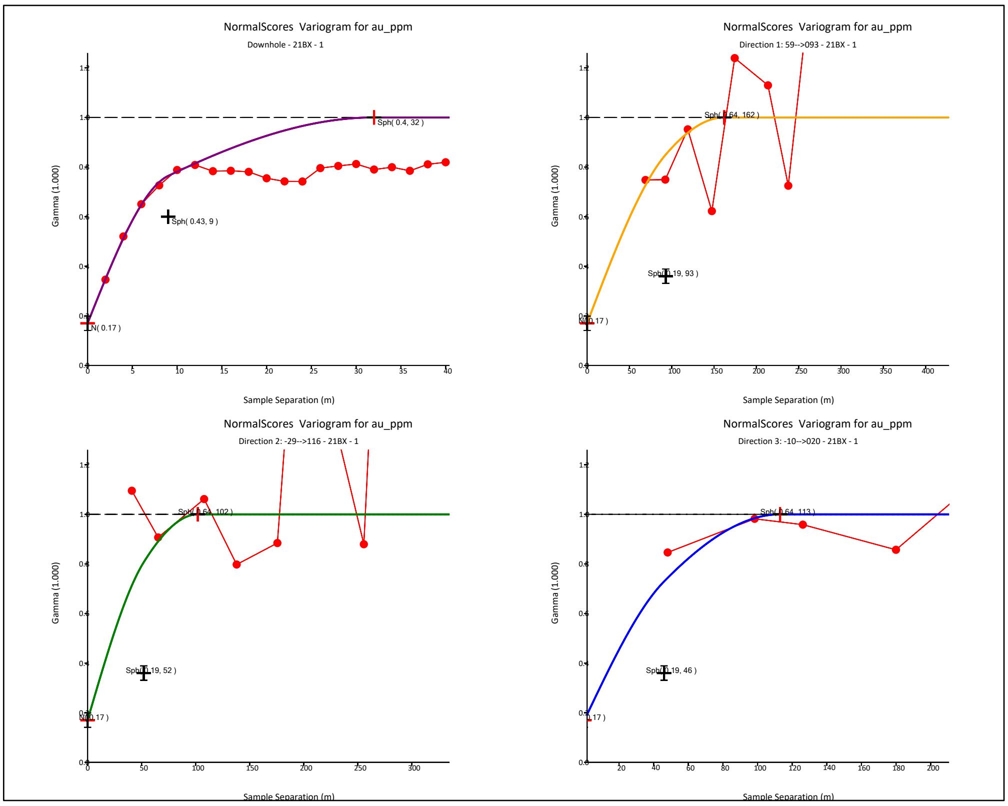


Figure 14-61 – Directional variogram model, Fenix Central B – BX.

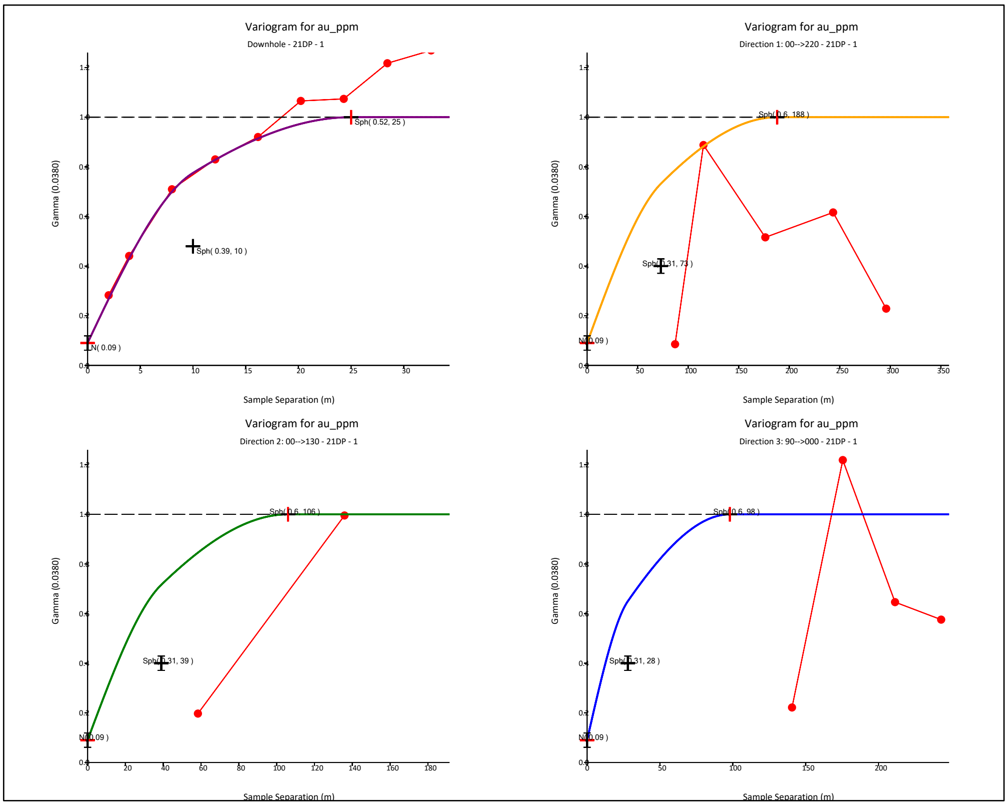


Figure 14-62 – Directional variogram model, Fenix Central B – DP.

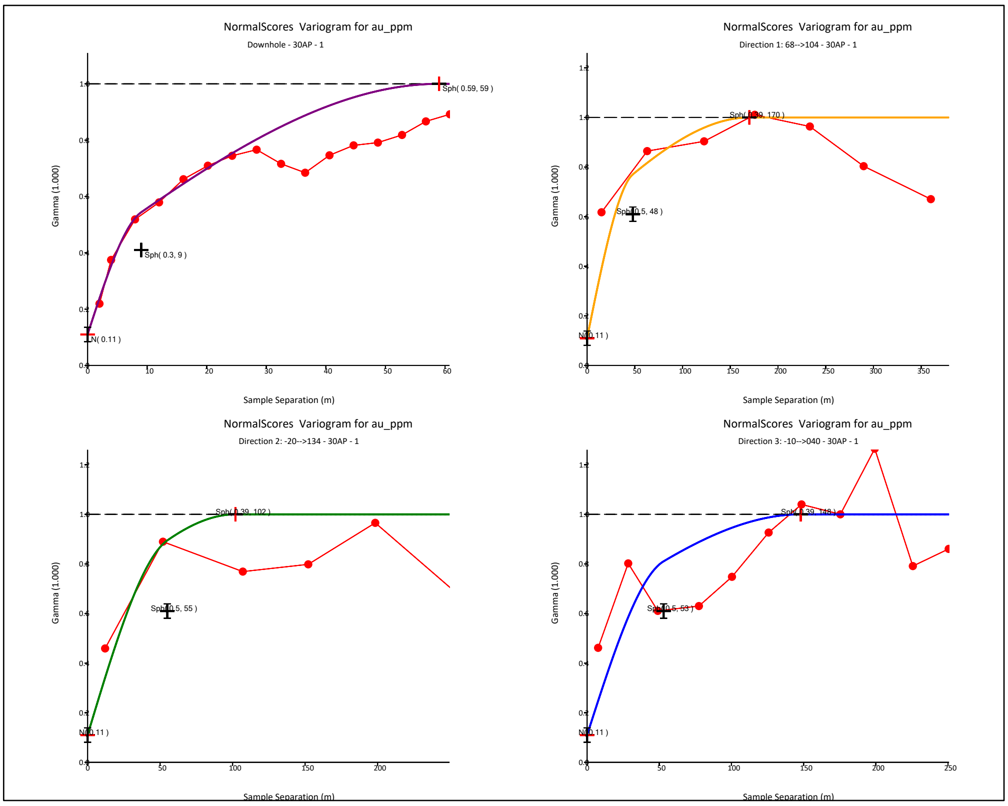


Figure 14-63 – Directional variogram model, Fenix South AP.

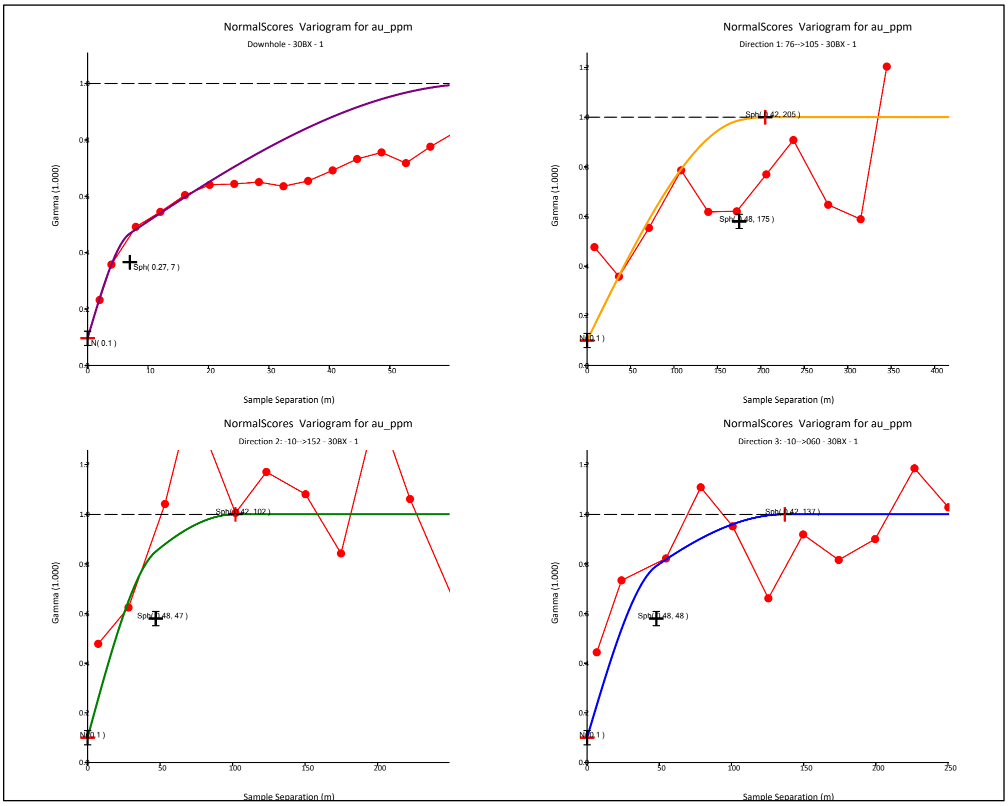


Figure 14-64 – Directional variogram model, Fenix South BX.

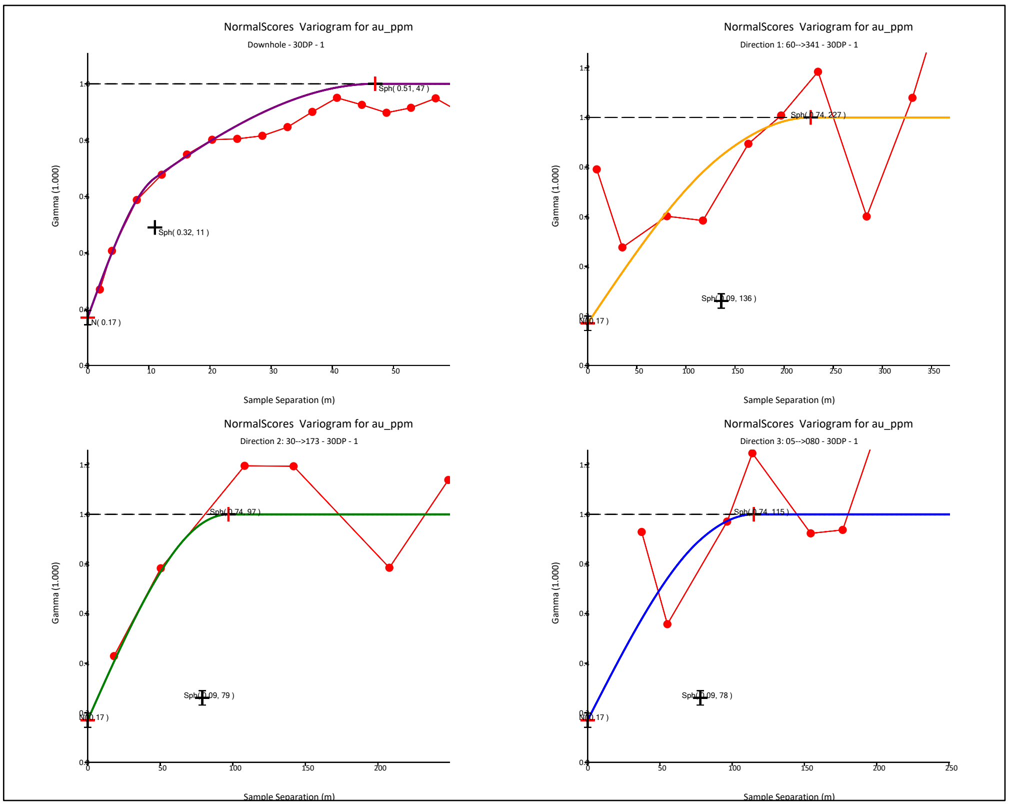


Figure 14-65 – Directional variogram model, Fenix South DP.

14.6 Block Model and Resource Estimation Plan

A 10m x 10m x 10m block model was created applying the dimension and orientation parameters presented in Table 14-4 and Table 14-5. A list of all model variables is given in Table 14-6.

Table 14-4 – Block model dimensions.

Dimension	X	Y	Z
Origin	479815.764	7010936.586	4150.000
Model Size	2200	3200	1000
Block Size	10	10	10

Table 14-5 – Block model orientation.

Bearing	45°
Plunge	0°
Dip	0°

Table 14-6 – Model variables.

Variable	Description
density	Block Density
flag_au	Au Estimation Pass
domain	9999 = Host Rock
	1010 = Fenix North DP
	1020 = Fenix North AP
	1030 = Fenix North BX
	2010 = Fenix Central A DP
	2020 = Fenix Central A AP
	2030 = Fenix Central A BX
	2110 = Fenix Central B DP
	2120 = Fenix Central B AP
	2130 = Fenix Central B BX
	3010 = Fenix South DP
	3020 = Fenix South AP
	3030 = Fenix South BX
au	Estimated Au grade using Ordinary Kriging
cu	Estimated Cu grade using Ordinary Kriging
au_nn	Estimated Au grade using Nearest Neighbour
ns_au	Number of Samples used in Au estimation
dist_csc	Cartesian distance to the nearest sample used in estimation
dist_csa	Anisotropic distance to the nearest sample used in Ordinary Kriging estimation

Variable	Description
dist_auc	Samples Average Distance, used in Ordinary Kriging estimation
dist_aus	Samples anisotropic average distance used in Ordinary Kriging estimation
varkri_au	Au Kriging Variance
slope_au	Au Conditional Bias Slope
clas	Resource classification category
rock	Rock Type

The grade estimation plan for the Fenix Gold Project was carried out in three passes. General settings are detailed as follows:

- Ordinary Kriging interpolation for both Au and Cu grades.
- Only samples within the mineralized domains were used to estimate blocks, and only samples outside the mineralized domains were used to estimate host rock blocks.
- For the first and second passes the minimum number of samples used for estimation are higher than the maximum allowed per hole. This is used to avoid blocks that are estimated with one drill hole.
- For the first pass, samples are shared between contiguous mineralized domains.
- The search radii for the third kriging pass were set large enough to avoid leaving too many blocks un-estimated within the mineralized envelope.
- Anisotropy rotation angles were used for search ellipsoids.
- A block discretization of 2 x 2 x 5 nodes was adopted for block kriging, this is considered reasonable for the block size and sample length used for resource estimation.
- The maximum composite value in the database is 6.94 g/t Au. High-grade restriction was used in all domains using different grades and restricted in a 10 m search radius as shown in Table 14-7.
- High grade restrictions were also used for copper, the estimation parameters are shown in Table 14-8.

The estimation parameters for Au and Cu are shown in Table 14-7 and Table 14-8, respectively.

Table 14-7 – Au estimation parameters.

AU Domain	Run	Type	Search Angles			Search Distance			Samples x Est.		Capping Au ppm	Restricted Ratios for Threshold High				Max Samples for Drill hole
			Bearing	Plunge	Dip	Major	Semi	Minor	Min	Max		Au(ppm)	Major	Semi	Minor	
10AP	1	OK	325.0	89.0	87.0	70	50	40	10	20	-	3.70	10	10	10	6
	2	OK	325.0	89.0	87.0	130	80	60	8	24	-	3.70	10	10	10	6
	3	OK	325.0	89.0	87.0	160	160	120	4	30	-	3.70	10	10	10	-
10BX	1	OK	325.0	89.0	87.0	75	50	40	10	20	-	3.25	10	10	10	6

AU Domain	Run	Type	Search Angles			Search Distance			Samples x Est.		Capping Au ppm	Restricted Ratios for Threshold High				Max Samples for Drill hole
			Bearing	Plunge	Dip	Major	Semi	Minor	Min	Max		Au(ppm)	Major	Semi	Minor	
	2	OK	325.0	89.0	87.0	150	80	60	8	24	-	3.25	10	10	10	6
	3	OK	325.0	89.0	87.0	300	160	120	4	30	-	3.25	10	10	10	-
10DP	1	OK	325.0	89.0	87.0	70	50	40	10	20	-	4.10	10	10	10	6
	2	OK	325.0	89.0	87.0	140	80	60	8	24	-	4.10	10	10	10	6
	3	OK	325.0	89.0	87.0	280	160	120	4	30	-	4.10	10	10	10	-
20AP	1	OK	320.0	90.0	88.0	60	60	40	10	20	-	2.52	10	10	10	6
	2	OK	320.0	90.0	88.0	120	120	60	8	24	-	2.52	10	10	10	6
	3	OK	320.0	90.0	88.0	240	240	120	4	30	-	2.52	10	10	10	-
20BX	1	OK	320.0	90.0	88.0	90	60	40	10	20	-	2.80	10	10	10	6
	2	OK	320.0	90.0	88.0	180	120	60	8	24	-	2.80	10	10	10	6
	3	OK	320.0	90.0	88.0	270	240	120	4	30	-	2.80	10	10	10	-
20DP	1	OK	320.0	90.0	88.0	70	60	40	10	20	-	1.80	10	10	10	6
	2	OK	320.0	90.0	88.0	140	120	70	8	24	-	1.80	10	10	10	6
	3	OK	320.0	90.0	88.0	280	240	140	4	30	-	1.80	10	10	10	-
21AP	1	OK	295.0	89.0	90.0	70	60	40	10	20	-	1.80	10	10	10	6
	2	OK	295.0	89.0	90.0	140	90	80	8	24	-	1.80	10	10	10	6
	3	OK	295.0	89.0	90.0	280	180	160	4	30	-	1.80	10	10	10	-
21BX	1	OK	300.0	88.0	92.0	70	60	40	10	20	-	1.75	10	10	10	6
	2	OK	300.0	88.0	92.0	120	80	80	8	24	-	1.75	10	10	10	6
	3	OK	300.0	88.0	92.0	240	160	160	4	30	-	1.75	10	10	10	-
21DP	1	OK	305.0	90.0	89.0	70	60	40	10	20	-	1.30	10	10	10	6
	2	OK	305.0	90.0	89.0	140	80	75	8	24	-	1.30	10	10	10	6
	3	OK	305.0	90.0	89.0	280	160	150	4	30	-	1.30	10	10	10	-
30AP	1	OK	300.0	91.0	89.0	70	50	40	10	20	-	3.52	10	10	10	6
	2	OK	300.0	91.0	89.0	140	90	80	8	24	-	3.52	10	10	10	6
	3	OK	300.0	91.0	89.0	280	150	120	4	30	-	3.52	10	10	10	-
30BX	1	OK	305.0	90.0	87.0	75	60	40	10	20	-	3.10	10	10	10	6
	2	OK	305.0	90.0	87.0	150	100	80	8	24	-	3.10	10	10	10	6
	3	OK	305.0	90.0	87.0	300	200	120	4	30	-	3.10	10	10	10	-
30DP	1	OK	310.0	89.0	86.0	80	60	40	10	20	-	-	10	10	10	6
	2	OK	310.0	89.0	86.0	160	100	80	8	24	-	-	10	10	10	6
	3	OK	310.0	89.0	86.0	300	200	120	4	30	-	-	10	10	10	-
HR	1	OK	305.0	90.0	90.0	70	60	40	10	20	-	0.97	10	10	10	6
	2	OK	305.0	90.0	90.0	140	80	70	8	24	-	0.97	10	10	10	6
	3	OK	305.0	90.0	90.0	210	120	105	4	30	-	0.97	10	10	10	-

Table 14-8 – Cu estimation parameters.

CU Domain	Run	Type	Search Angles			Search Distance			Samples x Est.		Capping Cu ppm	Restricted Ratios for Threshold High				Max Samples for Drill hole
			Bearing	Plunge	Dip	Major	Semi	Minor	Min	Max		Cu(ppm)	Major	Semi	Minor	
10	1	OK	315.0	92.0	87.0	100	80	50	10	20	-	1110.00	10	10	10	6
	2	OK	315.0	92.0	87.0	200	150	80	8	24	-	1110.00	10	10	10	6
	3	OK	315.0	92.0	87.0	350	240	120	4	30	-	1110.00	10	10	10	-
20	1	OK	300.0	90.0	88.0	90	60	50	10	20	-	1250.00	10	10	10	6
	2	OK	300.0	90.0	88.0	180	120	90	8	24	-	1250.00	10	10	10	6
	3	OK	300.0	90.0	88.0	270	180	130	4	30	-	1250.00	10	10	10	-
21	1	OK	295.0	89.0	90.0	90	80	50	10	20	-	1540.00	10	10	10	6
	2	OK	295.0	89.0	90.0	170	130	90	8	24	-	1540.00	10	10	10	6
	3	OK	295.0	89.0	90.0	250	180	130	4	30	-	1540.00	10	10	10	-
30	1	OK	300.0	91.0	89.0	100	80	60	10	20	-	880.00	10	10	10	6
	2	OK	300.0	91.0	89.0	180	130	100	8	24	-	880.00	10	10	10	6
	3	OK	300.0	91.0	89.0	260	180	140	4	30	-	880.00	10	10	10	-
HR	1	OK	310.0	90.0	88.0	100	80	50	10	20	-	510.00	10	10	10	6
	2	OK	310.0	90.0	88.0	200	150	80	8	24	-	510.00	10	10	10	6
	3	OK	310.0	90.0	88.0	360	240	120	4	30	-	510.00	10	10	10	-

14.6.1 In Situ Dry Bulk Density Estimation

The 2023 Resource Model uses the same dry bulk density estimated values from the prior 2019 Model. There are no additional samples with bulk density measurements taken since 2014 (the new drill holes are all RC), so for this model the same bulk density values (block by block) were assigned from the 2014 estimation. In situ density in the Resource Model varies between 2.291 and 2.617 t/m^3.

The estimated bulk density values were assigned using Ordinary Kriging interpolation, and the details are explained in Section 14.10 of the 2014, PFS (PFS, 2014).

14.7 Validations

A series of validations on the estimated grades were carried out, including visual and statistical validations.

14.7.1 Global Bias

The Resource Estimation was validated using various methods of independent checks, including a comparison of summary statistics between Ordinary Kriging (OK) and Nearest Neighbour (NN) estimate, visual inspection of estimated grade against samples, and drift analysis to detect spatial bias. The Nearest Neighbour method assigns the Au grade value of the nearest sample to each block. The estimated Au grade values are compared thus to the sample grade values assigned to blocks. It is a proxy for data de-clustering.

Table 14-9 shows the comparison between Ordinary Kriging and Nearest Neighbour estimates for gold. It shows that the relative error between estimates and database, and between estimates and nearest neighbour model is less than 5%, which Andres Beluzan (QP) considers to be reasonable. It should be noted that this validation procedure was carried out for the Measured and Indicated Resources only.

Table 14-9 – Global bias validation.

	Au OK	Au NN	OK/NN
Fenix Norte	0.43	0.41	3.00
Fenix Central A	0.42	0.41	1.00
Fenix Central B	0.28	0.27	3.00
Fenix Sur	0.37	0.36	2.00

14.7.2 Drift Analysis

Drift analysis was obtained by plotting the average grades from Ordinary Kriging, Nearest Neighbour, and composites within 20m slices (two blocks) in the North-South, East-West, and vertical direction. The analysis was focused on the Measured and Indicated Resources and was performed for all 12 estimation units, however only one per domain is shown in this report (UE=1,4,7,10). The 3×3 matrix of plots includes the swath plots for all directions in the first row of plots, grade difference plots in the second row, and projection plots of the data and blocks that relate to each swath direction in the third row.

The trend analysis shows an agreement between Ordinary Kriging (blue), de-clustered or NN estimates (green), and composites (red), the curves follow similar trends, and therefore, results were considered satisfactory. Drift graphs for each zone in different directions are shown in Figure 14-66 to Figure 14-73.

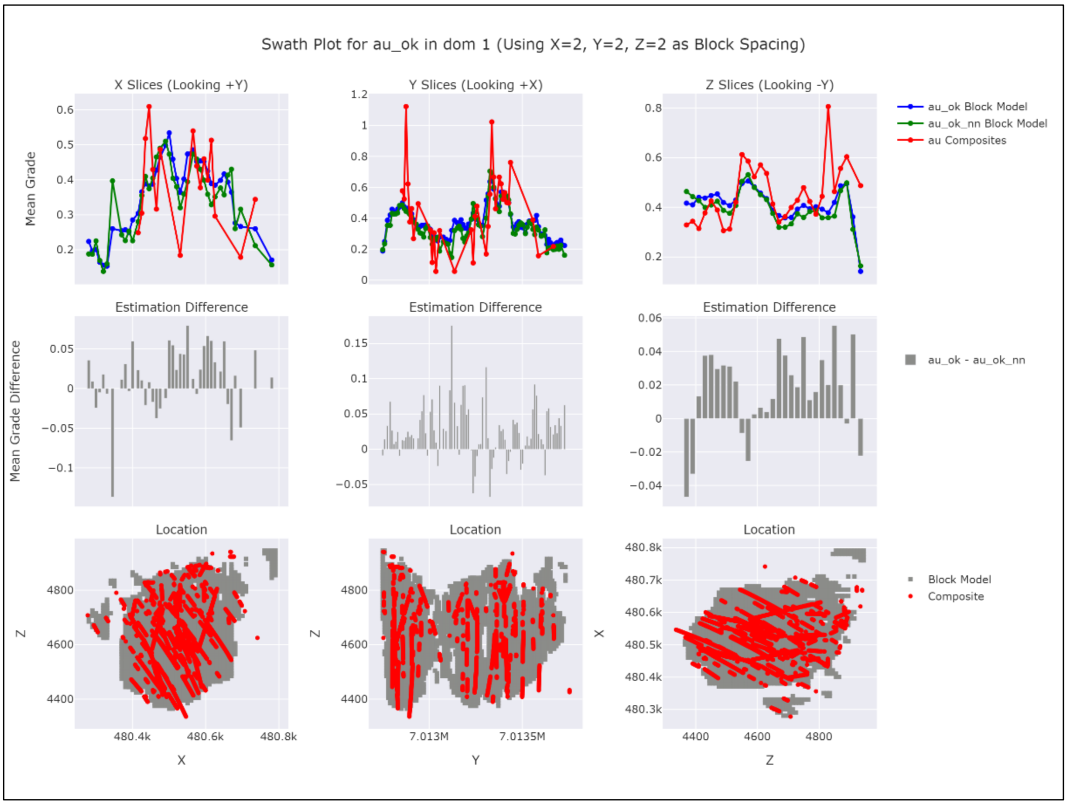


Figure 14-66 – Gold swath plot, UE =1.

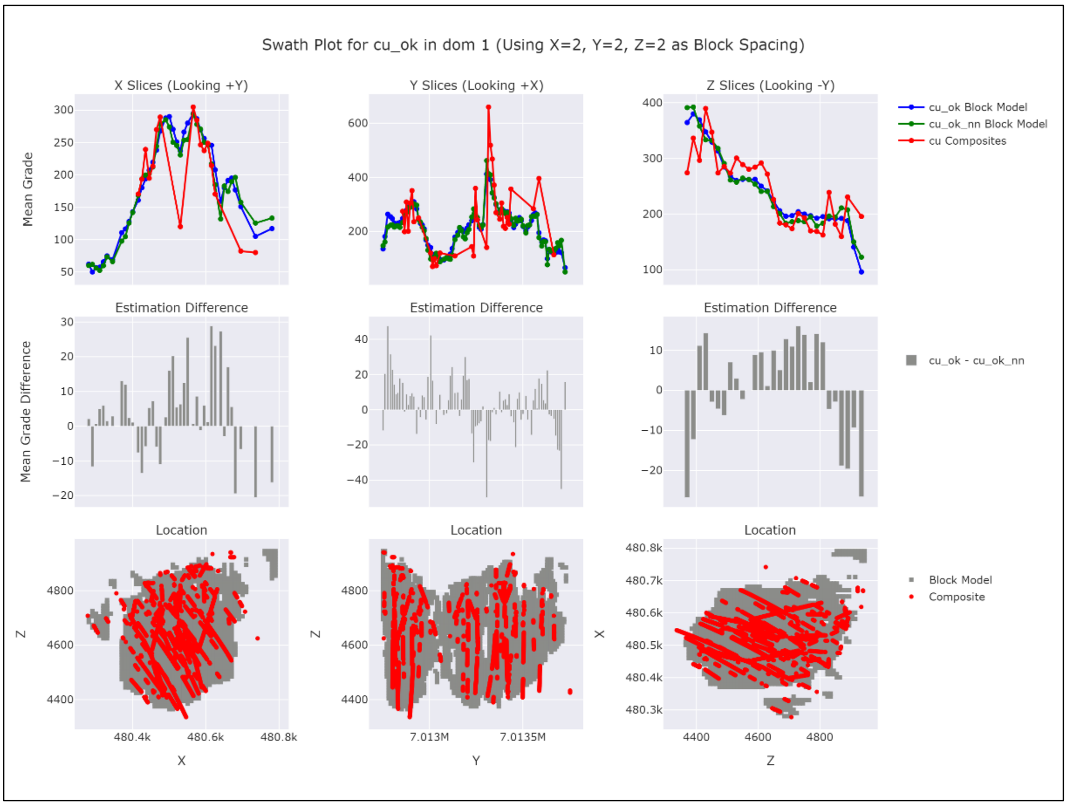


Figure 14-67 – Copper swath plot, UE =1.

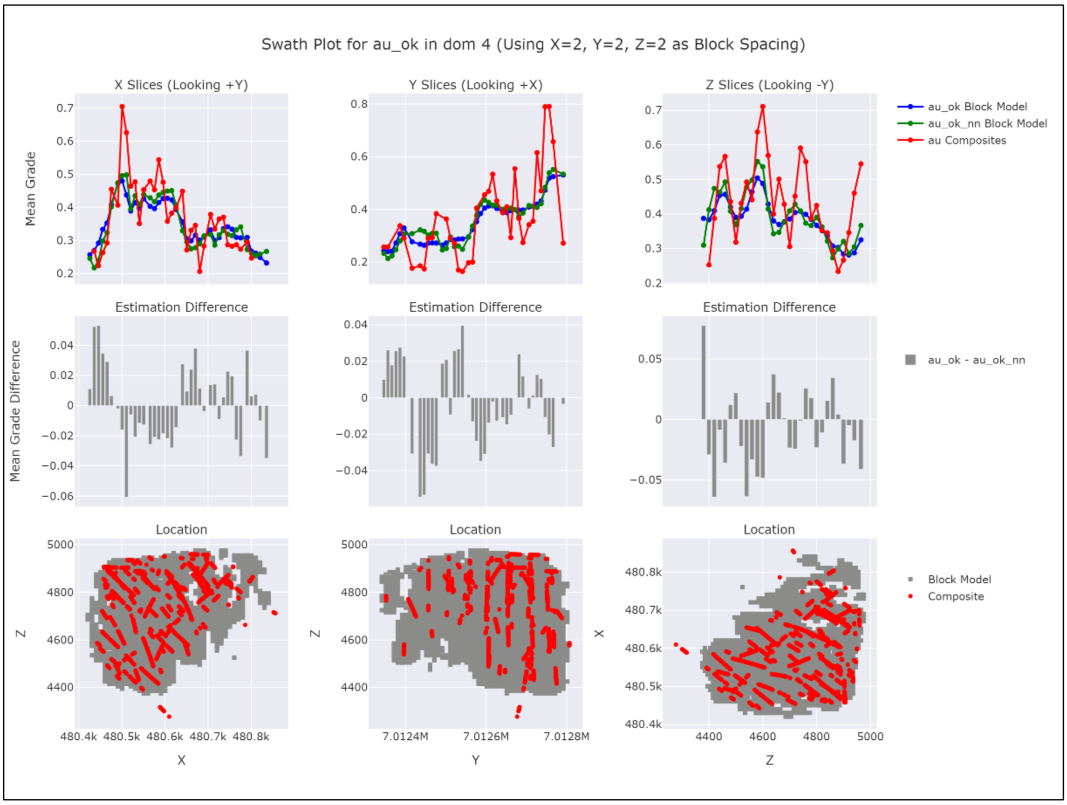


Figure 14-68 – Gold swath plot, UE =4.

Figure 14-69 – Copper swath plot, UE =4.

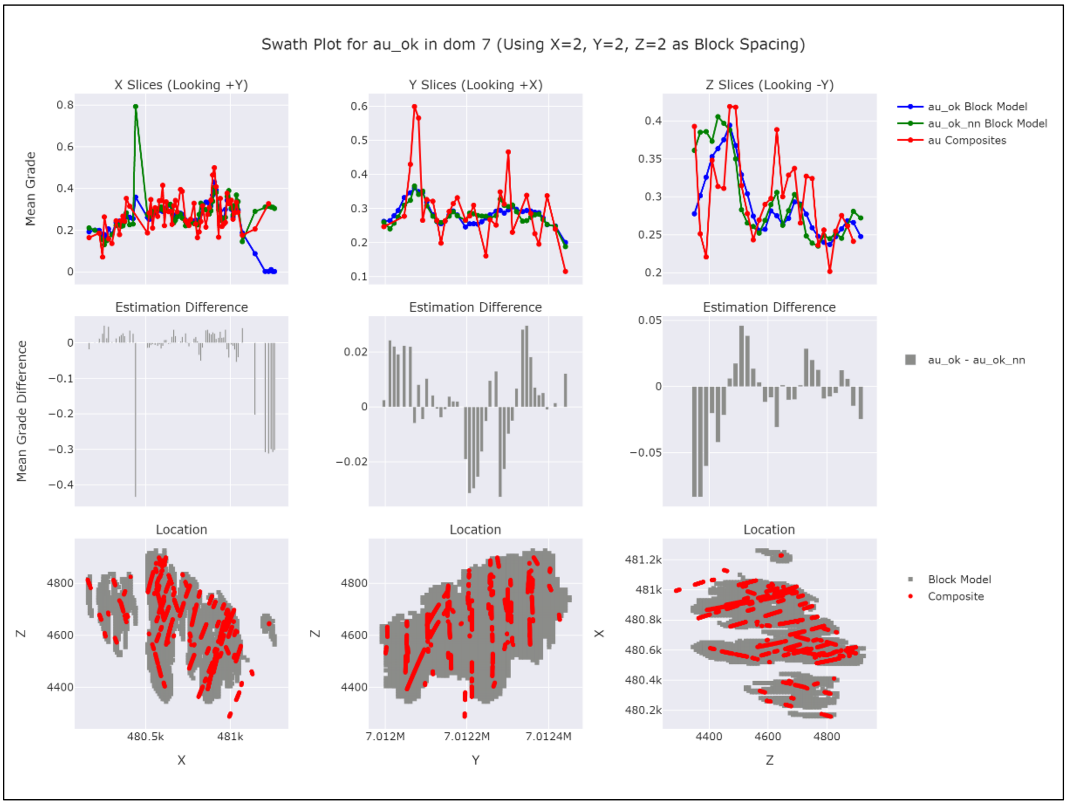


Figure 14-70 – Gold swath plot, UE =7.

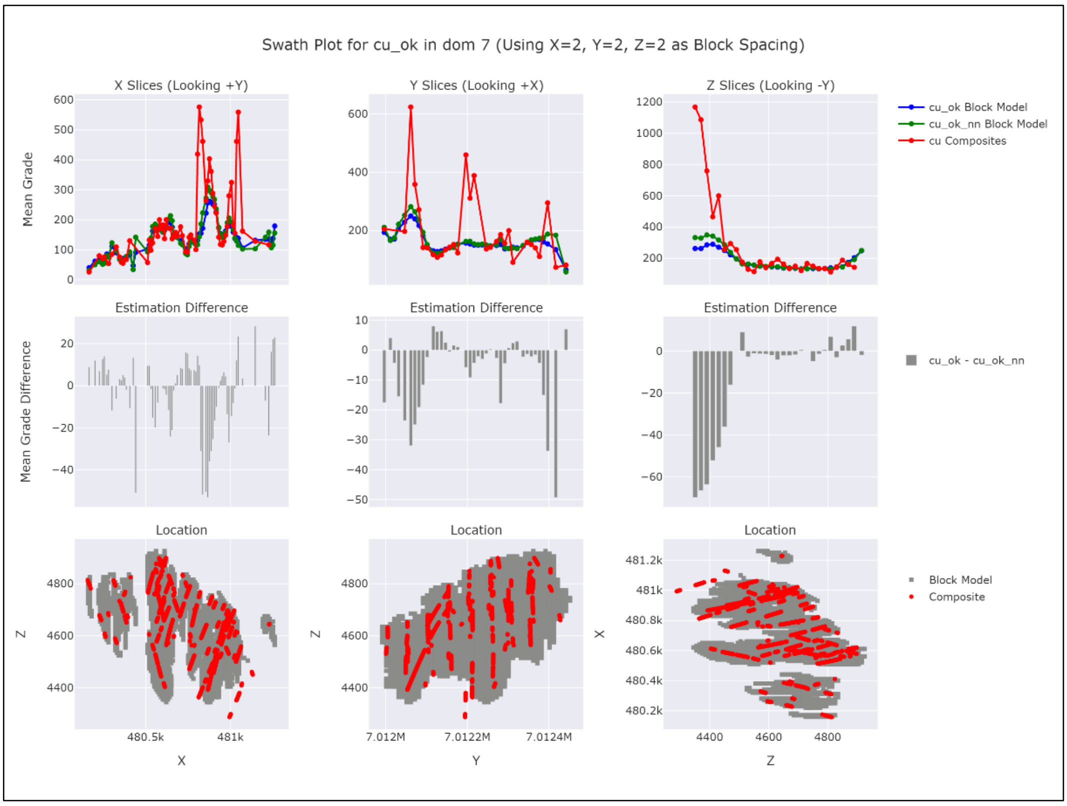


Figure 14-71 – Copper swath plot, UE =7.

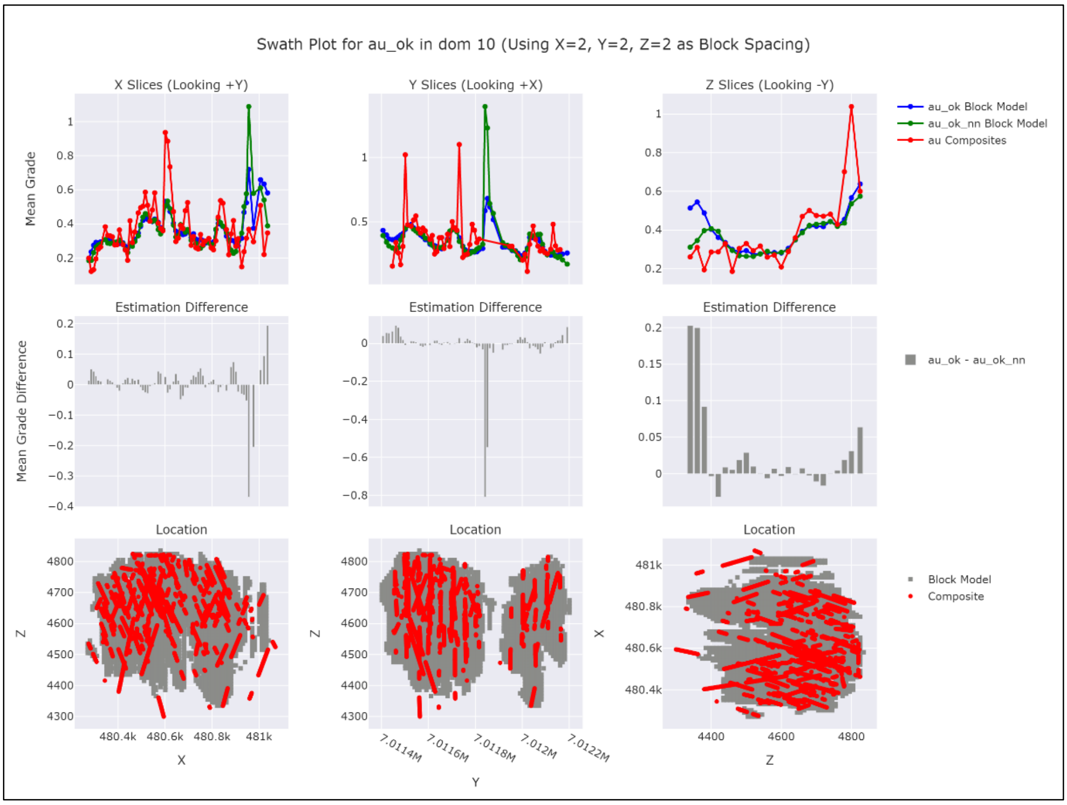


Figure 14-72 – Gold swath plot, UE =10.

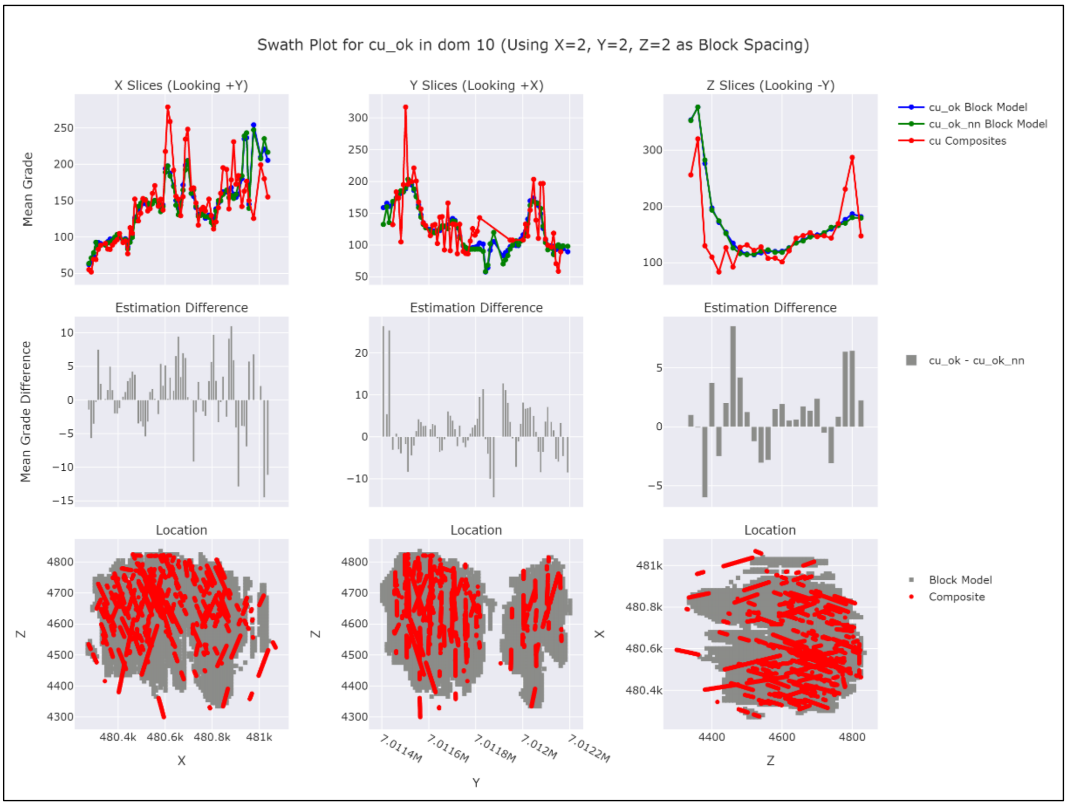
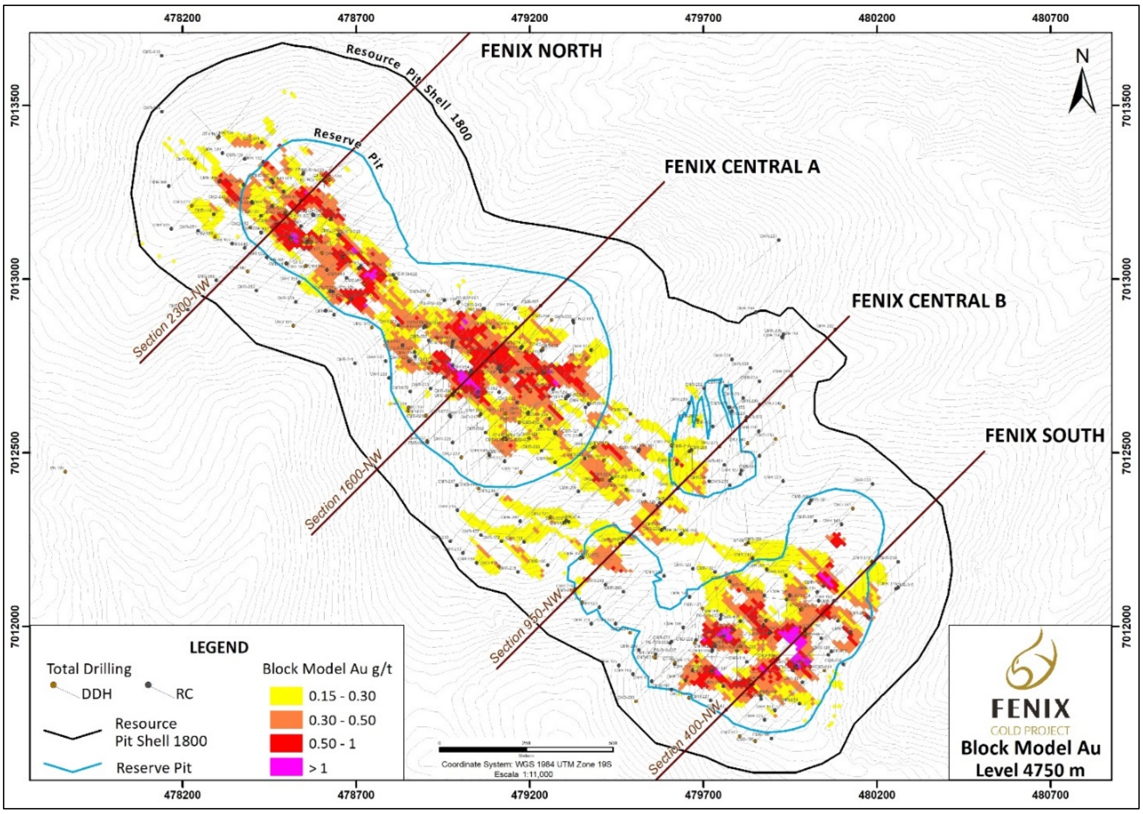


Figure 14-73 – Copper swath plot, UE =10.

14.7.3 Visual Validation

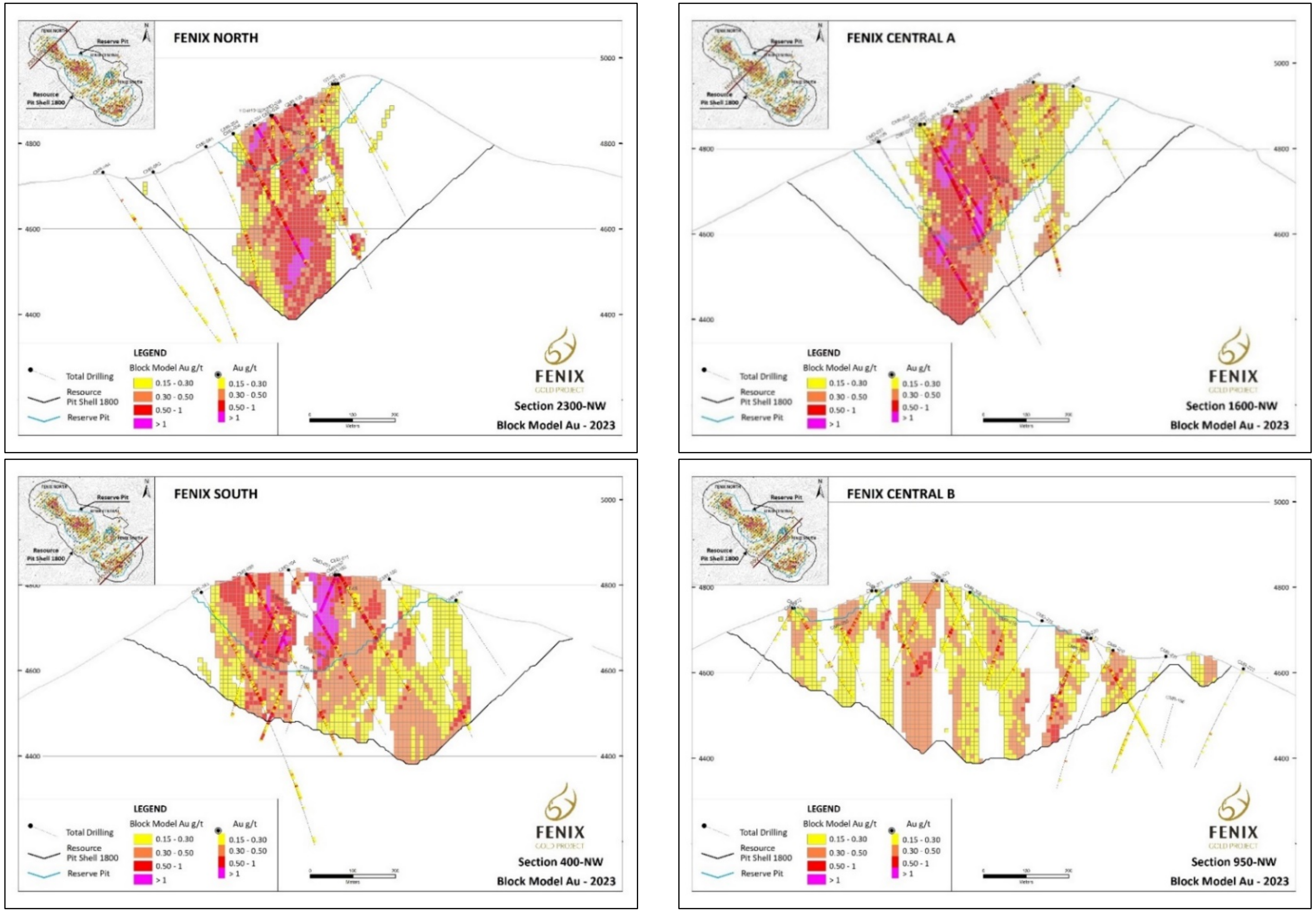
Four cross sections of the Fenix Gold Project deposit (Figure 14-74) were reviewed by Andres Beluzan (QP) to compare Au block model estimates against drill hole sample grades using the same colour scheme. Cross-sections are shown in Figure 14-75.

Similarly, visual validations were completed for the Cu estimates. The QP notes that there is little Cu in the deposit, generally less than 0.04% Cu, and only a few small areas in the 0.04% Cu to 0.1% Cu range.



Source: Rio2, 2023

Figure 14-74 – Location of the sections reviewed by Andres Beluzan to compare modelled Au grade and drilled grade.



Source: Rio2, 2023

Figure 14-75 – Sectional view of the Au estimate (looking NW).

14.8 Resource Classification

Mineral Resources for the Fenix Gold Project were estimated according to the Canadian NI 43-101 (Standards for Disclosure for Mineral Projects, 2011) and the CIM Definition Standards for Mineral Resources and Mineral Reserves (2014).

The Resource Classification methodology used in the 2023 model is similar to that used in the 2019 Model.

The Resource Classification has been based on a more traditional (geometric) approach, taking advantage of several parameters available from the block estimation process. Among others, the number of drill holes used in the estimation of the block; the minimum number of samples; the anisotropic closest distance to the nearest sample, and the anisotropic average distance samples.

After obtaining the classification codes in each block, a manual smoothing process was performed on the Measured and Indicated Resource to improve continuity.

Mineral Resources for the Fenix Gold Project were classified using the following criteria:

Measured Mineral Resources:

(1) A portion of each block must be contained within the interpreted mineralized domains.
(2) Anisotropic Closest Distance of samples used to estimate the block must be less than or equal to 40 m.
(3) Anisotropic Average Distance of samples used to estimate the block must be less than or equal to 75 m.
(4) The block must be estimated with a minimum of three drill holes.
(5) The minimum number of samples used to estimate the block is 10.

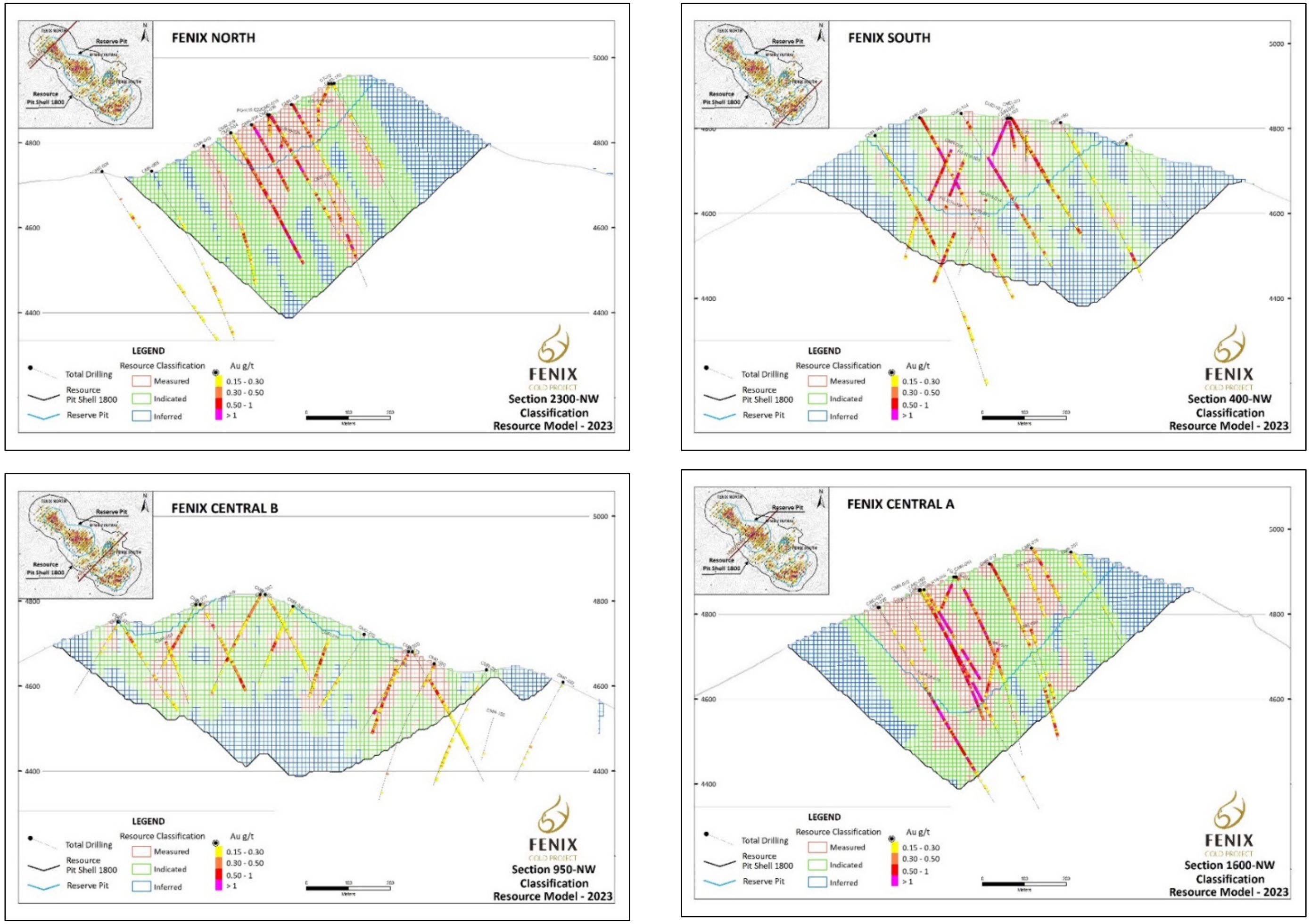
Indicated Mineral Resources:

(1) A portion of each block must be contained within the interpreted mineralized domains.
(2) Anisotropic Closest Distance of samples used to estimate the block must be less than or equal to 70 m.
(3) Anisotropic Average Distance of samples used to estimate the block must be less than or equal to 85 m.
(4) The block must be estimated with a minimum of two drill holes.
(5) The minimum number of samples used to estimate the block is 10.

Inferred Mineral Resource:

(1) A portion of each block must be contained within the interpreted mineralized domains.

Results of the resource categorization procedure are shown in Figure 14-76 utilizing the same sections presented in Figure 14-75.

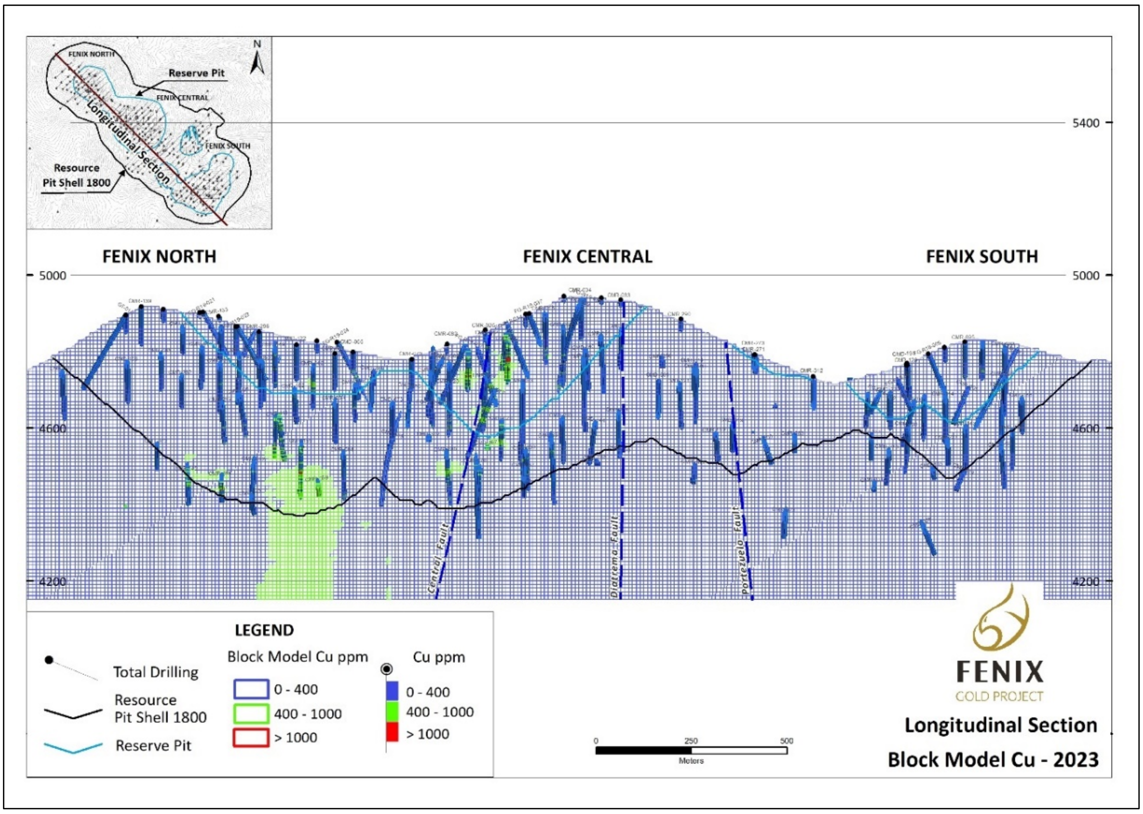


Source: Rio2, 2023

Figure 14-76 – Section views of the Resource Classification (looking NW).

14.9 Copper Content in the Deposit

When displayed visually (Figure 14-77), it is apparent that estimated block model Cu values in the Fenix Gold Project are low. This is also shown tabularly (Table 14-10) in relation to Au content, based on the Resource Classification of the Block Model. Globally, about 3% of mineralized tonnage contains minor Cu. It is also noted that the Project Measured Resources contain less copper than the Indicated and Inferred categories, and that most estimated Cu values are below 0.1% Cu.



Source: Rio2, 2023

Figure 14-77 – Longitudinal sectional (looking NE), estimated Cu grades and composites.

Table 14-10 – Copper content by Resource category.

Category	Cu < 400				400 =< Cu < 1,000				Cu >= 1,000			
	Kt	Au g/t	Cu ppm	Au oz x1,000	Kt	Au g/t	Cu ppm	Au oz x1,000	Kt	Au g/t	Cu ppm	Au oz x1,000
Measured	119,221	0.407	178	1,559	4,042	0.864	480	112	-	-	-	0
Indicated	257,740	0.347	157	2,872	8,220	0.809	512	214	10	1.467	1,084	0.46
Inferred	86,898	0.320	144	895	3,951	0.501	517	64	-	-	-	0
Total	**463,859**	**0.357**	**160**	**5,326**	**16,213**	**0.747**	**505**	**390**	**10**	**1.467**	**1,084**	**0.46**

14.10 Resource Tabulation

The Mineral Resource has been determined inside a Whittle Open Pit Optimization and the parameters used to develop the Resource Pit are shown in Table 14-11. Costs have been increased compared to the 2019 PFS, to represent the long-term potential of the project more accurately. No dilution or mining recovery factor was applied (100% mining recovery, 0% dilution).

Table 14-11 – Resource pit parameters.

Item	Units	Value
Au Price	USD/oz	1,800
Mining Cost	USD/t-mined	1.81
Processing & Rehandling Cost	USD/t-processed	3.14
G&A Cost	USD/t-processed	1.45
Sustaining Capex	USD/t-processed	0.44
Closure Cost	USD/t-processed	0.13
Metallurgical Recovery	%	75.00

Table 14-12 below shows the Resource statement for the Fenix Gold Project corresponding to a cut-off grade of 0.15 g/t Au, inclusive of Mineral Reserves.

Table 14-12 – Resource statement for the Fenix Gold Project, 0.15 g/t Au cut-off grade.

Resource Classification	Million Metric Tonnes	Au Grade (g/t)	Au Ounces (x1,000)
Measured	123.3	0.42	1,671
Indicated	266.0	0.36	3,086
Total Measured + Indicated	**389.2**	**0.38**	**4,757**
Inferred	90.8	0.33	959

Notes:

1. *Mineral Resources reported is inclusive of Mineral Reserves.*
2. *Metal price of $1,800 per ounce gold was used to estimate Mineral Resources.*
3. *Table 14-12 includes all Measured, Indicated, and Inferred Resources contained within the "Resource Pit", which represents the test for eventual extraction applied.*
4. *Mineral Resources were prepared by Independent Consultant Andres Beluzan Chartered Professional, Mining Engineering and a registered member in good standing of the Chilean Mining Commission, REG# 215*
5. *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 Resources estimated will be converted into Mineral Reserves.*
6. *Mineral Resources are reported in accordance with Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101) and have been estimated in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines.*
7. *Mineral Resource tonnage and contained metal have been rounded to reflect the accuracy of the estimate, and numbers may not add due to rounding.*
8. *The quantity and grade of reported Inferred Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Resources as an Indicated or Measured Mineral Resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured Mineral Resource category.*

Figure 14-78 shows the overall Au tonnage-grade curve for the Measured and Indicated Mineral Resources, considering all mineralized domains within the Fenix Gold Project, while Table 14-13 displays these relationships in tabular form.

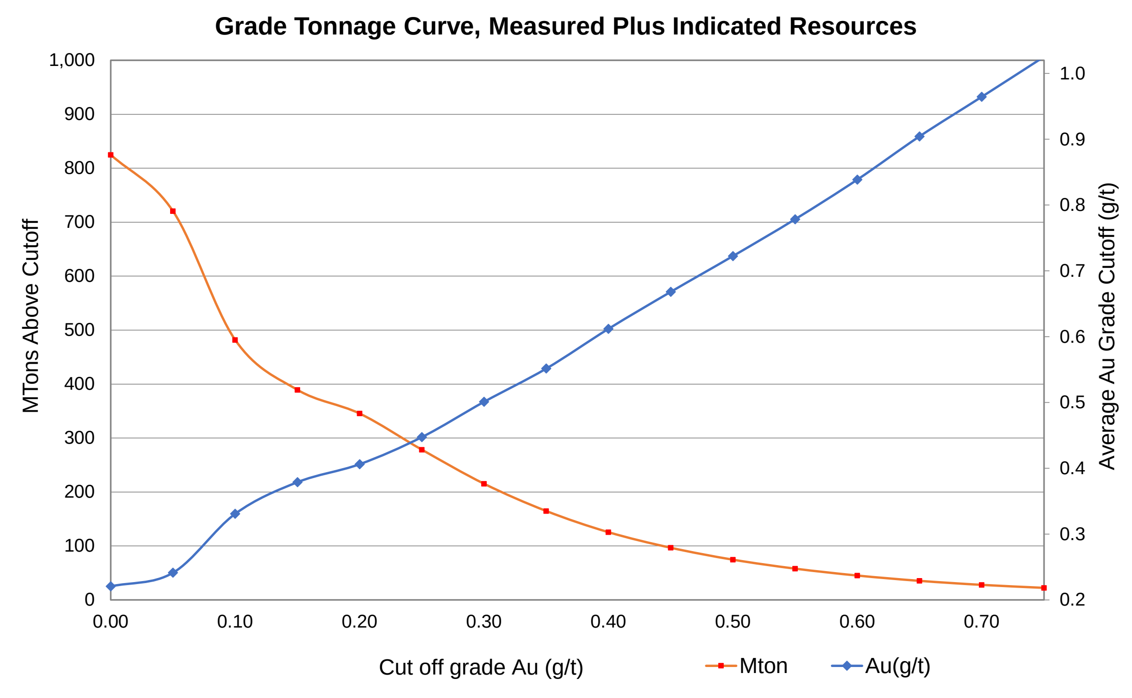


Figure 14-78 – Grade-Tonnage Curve, Measured + Indicated Resources, Fenix Gold Project.

Table 14-13 – Resources at different cut-offs for the Fenix Gold Project.

Au (ppm) Cut Off	Measured			Indicated			Measured + Indicated			Inferred		
	Million Tonnes	Grade Au(g/t)	M oz Au	Million Tonnes	Grade Au(g/t)	M oz Au	Million Tonnes	Grade Au(g/t)	M oz Au	Million Tonnes	Au(g/t)	M oz Au
0.00	213.3	0.28	1.89	611.4	0.20	3.91	824.7	0.22	5.80	450.3	0.11	1.61
0.05	192.6	0.30	1.87	527.7	0.22	3.81	720.3	0.25	5.68	292.1	0.16	1.51
0.10	144.2	0.38	1.75	337.4	0.31	3.36	481.6	0.33	5.11	143.1	0.25	1.15
0.15	**123.3**	**0.42**	**1.67**	**266.0**	**0.36**	**3.09**	**389.2**	**0.38**	**4.76**	**90.8**	**0.33**	**0.96**
0.20	112.7	0.44	1.61	232.6	0.39	2.89	345.3	0.41	4.51	79.7	0.35	0.90
0.25	97.3	0.48	1.50	181.1	0.43	2.52	278.3	0.45	4.02	59.8	0.39	0.75
0.30	79.8	0.52	1.34	135.4	0.49	2.12	215.2	0.50	3.46	41.9	0.44	0.59
0.35	63.9	0.57	1.18	100.8	0.54	1.76	164.7	0.55	2.94	27.3	0.50	0.44
0.40	50.3	0.63	1.01	75.2	0.60	1.45	125.4	0.61	2.47	18.8	0.56	0.34
0.45	39.5	0.68	0.87	57.1	0.66	1.21	96.6	0.67	2.07	14.0	0.61	0.27
0.50	31.2	0.74	0.74	43.3	0.71	1.00	74.5	0.72	1.74	10.5	0.66	0.22
0.55	24.8	0.79	0.63	33.1	0.77	0.82	57.9	0.78	1.46	7.8	0.70	0.18
0.60	19.7	0.85	0.54	25.4	0.83	0.68	45.1	0.84	1.22	5.5	0.75	0.13
0.65	15.8	0.91	0.46	19.4	0.90	0.56	35.3	0.90	1.02	3.8	0.81	0.10

Au (ppm) Cut Off	Measured			Indicated			Measured + Indicated			Inferred		
	Million Tonnes	Grade Au(g/t)	M oz Au	Million Tonnes	Grade Au(g/t)	M oz Au	Million Tonnes	Grade Au(g/t)	M oz Au	Million Tonnes	Au(g/t)	M oz Au
0.70	12.7	0.97	0.39	15.1	0.96	0.47	27.8	0.96	0.86	2.6	0.87	0.07
0.75	10.3	1.02	0.34	11.9	1.03	0.39	22.3	1.03	0.73	1.9	0.93	0.06

Notes:

1. *Mineral Resources reported is inclusive of Mineral Reserves.*
2. *Metal price of $1,800 per ounce gold was used to estimate Mineral Resources.*
3. *Table 14-13 includes all Measured, Indicated, and Inferred Resources contained within the "Resource Pit", which represents the test for eventual extraction applied.*
4. *Mineral Resources were prepared by Independent Consultant Andres Beluzan Chartered Professional, Mining Engineering and a registered member in good standing of the Chilean Mining Commission, REG# 215*
5. *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 Resources estimated will be converted into Mineral Reserves.*
6. *Mineral Resources are reported in accordance with Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101) and have been estimated in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines.*
7. *Mineral Resource tonnage and contained metal have been rounded to reflect the accuracy of the estimate, and numbers may not add due to rounding.*
8. *The quantity and grade of reported Inferred Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Resources as an Indicated or Measured Mineral Resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured Mineral Resource category.*

14.11 Comparison with the 2019 Resource Model

Andres Beluzan (QP) has compared the 2019 and 2023 Mineral Resource Estimates visually and numerically. The numerical comparisons are based on the grade-tonnage curves, particularly at the 0.15 g/t Au cut-off used as reference. Table 14-14 to Table 14-16 show that the differences between the two models (positive means that the 2019 value is larger), particularly after considering the combined Measured and Indicated resources, is minimal. Based on the estimation parameters shown in Table 14-11, the current classification criteria are somewhat more conservative hthe definition of Measured Resources at a 0.15 g/t Au cut-off. This is compensated by a slightly higher grade and more tonnage in the Indicated category, thus resulting in a similar amount of Measured and Indicated Resources.

The differences are more significant for the Inferred Resources due to the increase in G&A costs, process mining costs, and a lower recovery used than in 2019. Today, the costs are more up-to-date and supported by the further development of the project.

Table 14-14 – Comparison of Measured Resources, 2019 and 2023 block models, using US$1,500/oz Au constraining pit in 2019 and US$1,800/oz Au constraining pit in 2023.

Study	Cut-off Au g/t	Measured		
		Tonnes	Au g/t	Ounces (x1,000)
BM2019	0.15	122	0.41	1,613
BM2023	0.15	124	0.42	1,673
Difference % (2019/2023)	0.00	0.73	2.38	3.47

Table 14-15 – Comparison of combined Measured and Indicated Resources, using US$1,500/oz Au constraining pit in 2019 and US$1,800/oz Au constraining pit in 2023.

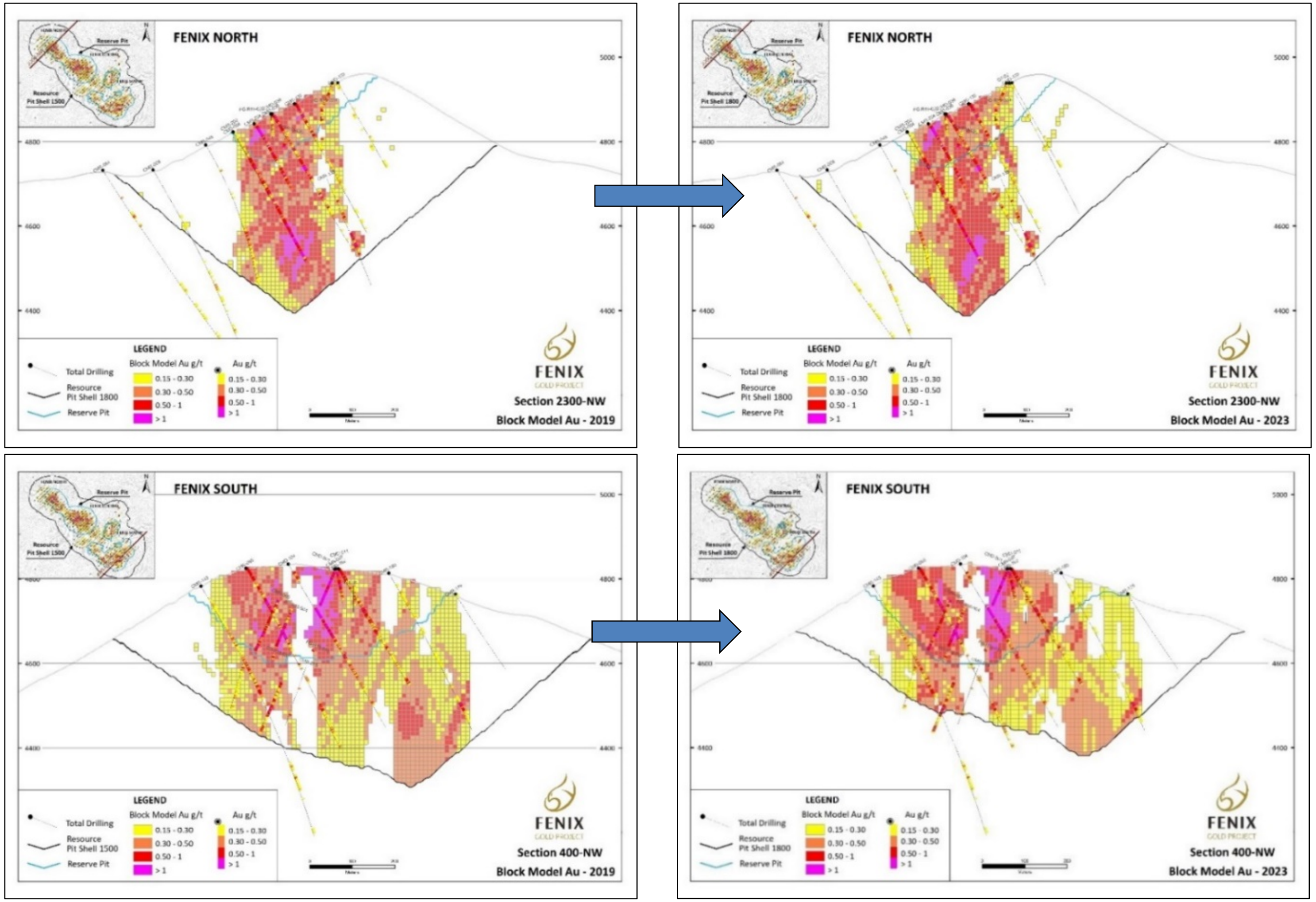
Study	Cut-off Au g/t	Measured + Indicated		
		Tonnes	Au g/t	Ounces (x1,000)
BM2019	0.15	410	0.38	5,018
BM2023	0.15	389	0.38	4,757
Difference % (2019/2023)	0.00	-5.52	0.00	-5.49

Table 14-16 – Comparison of Inferred Resources, 2019 and 2014 block models, using US$1,500/oz Au constraining pit, 0.15 g/t Au.

Study	Cut-off Au g/t	Inferred		
		Tonnes	Au g/t	Ounces (x1,000)
BM2019	0.15	136	0.32	1,405
BM2023	0.15	103	0.32	1,062
Difference % (2019/2023)	0.00	-50.4	0.00	-46.5

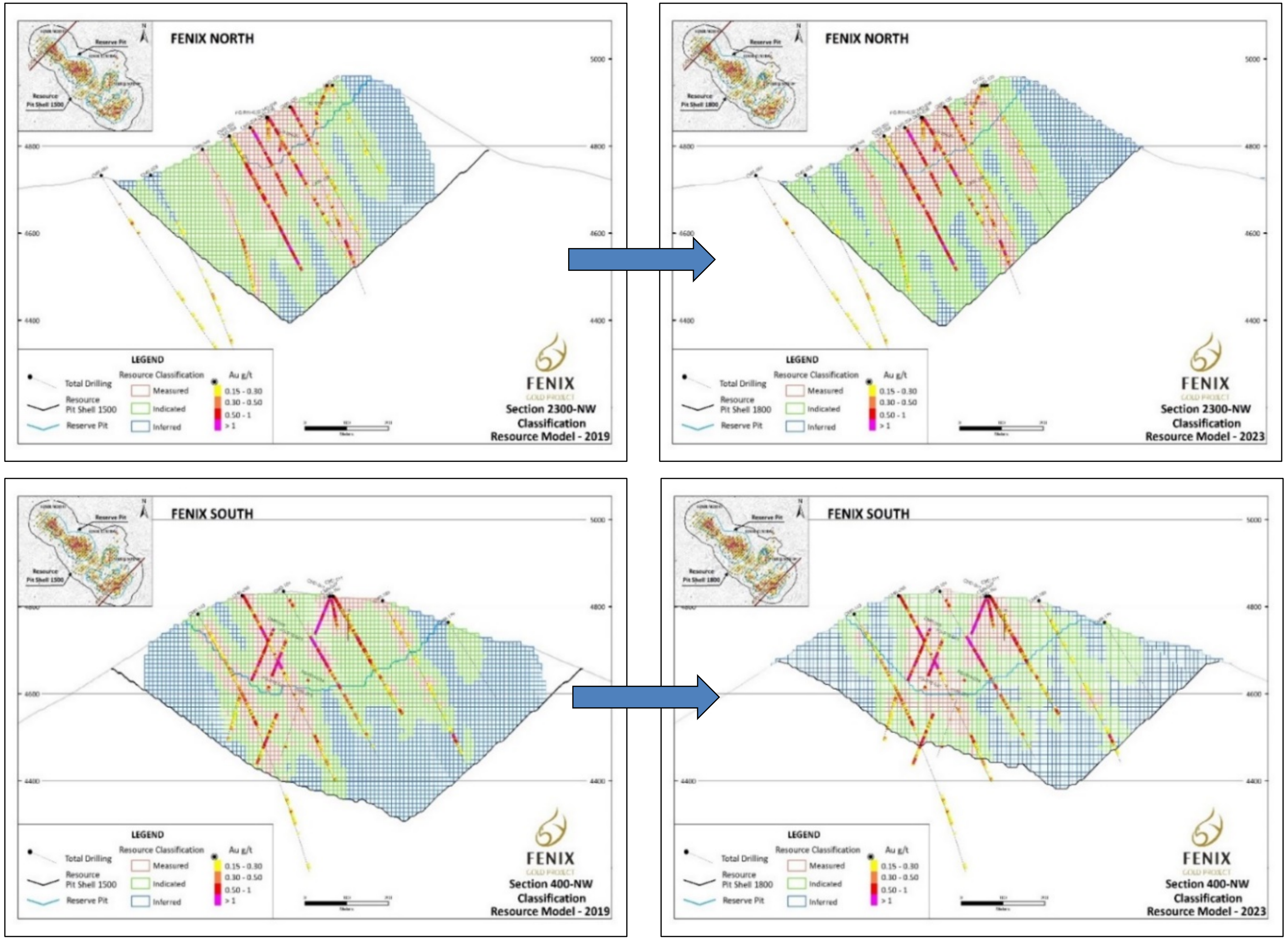
The main difference between the two models is the Inferred category, which shows a decrease with respect to the 2019 model. This is the result of a smaller pit because of higher costs. Measured and Indicated Resource tonnage remains about the same but Inferred Resources are down.

Visual comparisons are shown in Figure 14-79 (Au grade) and Figure 14-80 (Resource Category), which show four side-by-side sections through each of the deposit areas.



Source: Rio2, 2023

Figure 14-79 – Example cross sections through the Fenix Gold Project showing Au grades from the drill holes and Block Model, 2019 Model on the left, 2023 Model on the right.



Source: Rio2, 2023

Figure 14-80 – Example cross sections through the Fenix Gold Project showing Resource Classification Categories, 2019 Model on the left, 2023 Model on the right.

Table 14-17 – Drill holes used in the Mineral Resource Estimate.

Hole_ID	Easting	Northing	Elevation	Final_Depth	Hole_Type	Year
CMD-001	479994.3	7011976.4	4823.6	217.35	DDH	2010
CMD-004	478427.4	7013132.9	4822.8	181.85	DDH	2010
CMD-008	478993.7	7012931.6	4865.9	321.05	DDH	2010
CMD-009	479388.0	7012518.3	4911.5	350.20	DDH	2010
CMD-010	479196.3	7012610.0	4954.8	165.35	DDH	2010
CMD-011	479994.3	7011979.2	4823.6	224.20	DDH	2010
CMD-012	479889.7	7011983.5	4818.9	295.60	DDH	2010
CMD-014	480049.3	7011872.7	4778.4	398.05	DDH	2010
CMD-016	479723.4	7011869.2	4776.9	310.05	DDH	2010
CMD-019	479345.8	7012195.9	4770.8	266.20	DDH	2010
CMD-021	478899.8	7012605.4	4815.5	143.15	DDH	2010
CMD-026	478901.6	7012607.2	4815.7	536.40	DDH	2011
CMD-027	479724.9	7011868.7	4777.0	278.20	DDH	2011
CMD-031	479561.9	7011908.8	4697.0	302.35	DDH	2011
CMD-036	478495.9	7013193.2	4865.5	22.95	DDH	2011
CMD-037	478910.6	7012744.6	4819.4	424.95	DDH	2011
CMD-038	478496.5	7013193.9	4865.5	371.20	DDH	2011
CMD-046	478902.7	7012861.9	4816.2	310.95	DDH	2011
CMD-049	478551.8	7013104.6	4827.0	350.30	DDH	2011
CMD-056	479562.4	7011913.0	4697.3	490.80	DDH	2011
CMD-058	478665.6	7013062.6	4827.6	275.20	DDH	2011
CMD-065	478722.9	7012985.6	4798.9	272.35	DDH	2011
CMD-066	478294.3	7013121.5	4804.1	305.10	DDH	2011
CMD-072	478227.5	7013210.3	4855.9	416.30	DDH	2011
CMD-073	478746.0	7012860.6	4743.9	370.90	DDH	2011
CMD-091	478975.8	7012667.7	4855.0	25.95	DDH	2011
CMD-092	478979.7	7012664.0	4856.9	589.60	DDH	2011
CMD-093	479084.3	7012492.4	4915.3	531.00	DDH	2011
CMD-096	479180.1	7012732.8	4957.4	351.85	DDH	2011
CMD-099	478904.9	7012533.3	4818.8	700.00	DDH	2011
CMD-104	479911.1	7011905.2	4835.4	450.00	DDH	2011
CMD-108	479201.0	7012679.5	4965.7	347.65	DDH	2011
CMD-111	478501.5	7013043.9	4786.7	450.00	DDH	2011
CMD-119	479805.7	7011942.9	4794.0	563.00	DDH	2012
CMD-121	479259.2	7012313.7	4840.4	491.45	DDH	2012
CMD-122	478602.4	7013074.4	4817.7	173.50	DDH	2012
CMD-126	478513.7	7013114.0	4826.3	400.00	DDH	2012
CMD-128	479198.9	7012542.1	4940.0	600.45	DDH	2012
CMD-137	479698.4	7012051.8	4743.4	450.00	DDH	2012
CMD-140	479024.8	7012791.6	4883.0	400.00	DDH	2012
CMD-141	479174.4	7012443.6	4920.4	522.05	DDH	2012
CMD-144	479053.9	7012396.5	4895.1	630.00	DDH	2012

Hole_ID	Easting	Northing	Elevation	Final_Depth	Hole_Type	Year
CMD-145	479658.7	7011794.2	4758.6	338.15	DDH	2012
CMD-147	478388.4	7013021.6	4756.6	437.10	DDH	2012
CMD-152	479170.4	7012586.8	4949.8	134.80	DDH	2012
CMD-153	479805.1	7011683.4	4774.1	600.00	DDH	2012
CMD-154	479112.1	7012171.7	4808.2	449.55	DDH	2012
CMD-160	479850.2	7011669.8	4773.5	351.65	DDH	2012
CMD-165	479408.8	7012421.7	4899.1	422.95	DDH	2012
CMD-167	478850.3	7012620.6	4784.8	281.89	DDH	2012
CMD-169	478236.2	7013333.5	4897.6	440.85	DDH	2012
CMD-170	478624.1	7013284.9	4939.7	314.40	DDH	2012
CMD-178	479240.5	7012732.7	4976.1	107.85	DDH	2012
CMD-182	478557.0	7013037.4	4789.9	400.00	DDH	2012
CMD-184	479241.5	7012734.5	4975.9	153.85	DDH	2012
CMD-187	479130.3	7012611.7	4944.3	471.20	DDH	2012
CMD-191	478519.6	7012865.5	4691.7	350.15	DDH	2012
CMD-192	479992.2	7011991.7	4823.3	320.00	DDH	2012
CMD-193	479732.4	7011946.0	4764.7	180.00	DDH	2012
CMD-196	479965.6	7011884.2	4823.5	250.02	DDH	2012
CMD-198	478628.7	7013171.1	4877.9	80.35	DDH	2012
CMD-200	479352.1	7012069.0	4731.0	300.00	DDH	2012
CMD-201	479413.1	7012477.8	4900.3	300.05	DDH	2012
CMD-224	479489.5	7011981.5	4656.8	230.35	DDH	2012
CMD-228	479675.8	7011952.5	4739.4	270.25	DDH	2012
CMD-232	479608.8	7012520.6	4795.2	317.55	DDH	2012
CMD-236	479908.0	7012539.6	4640.2	300.00	DDH	2012
CMD-240	479827.6	7012527.3	4680.7	400.05	DDH	2012
CMD-242	479931.6	7012631.5	4623.8	290.30	DDH	2012
CMD-247	479055.5	7012605.5	4903.8	380.30	DDH	2012
CMD-249	479263.3	7012882.0	4964.5	650.15	DDH	2012
CMD-256	478908.2	7012952.8	4833.5	401.00	DDH	2013
CMD-258	479363.6	7012769.9	4951.4	530.25	DDH	2013
CMD-262	478395.5	7013148.2	4827.1	390.00	DDH	2013
CMD-266	479506.6	7011784.4	4669.0	300.00	DDH	2013
CMD-268	479683.0	7012594.3	4754.4	230.10	DDH	2013
CMD-272	479332.5	7012107.9	4751.3	250.15	DDH	2013
CMD-275	479747.5	7012517.6	4721.6	210.00	DDH	2013
CMD-278	479330.7	7012105.0	4751.3	200.15	DDH	2013
CMD-281	480130.7	7012339.0	4711.3	140.10	DDH	2013
CMD-282	478328.8	7013225.1	4865.1	270.00	DDH	2013
CMD-284	478816.5	7013000.8	4829.1	350.00	DDH	2013
CMD-287	478684.0	7012941.8	4763.2	310.00	DDH	2013
CMD-293	479003.3	7012486.0	4870.9	450.00	RC/DDH	2013
CMD-295	478548.8	7013305.5	4934.4	250.00	DDH	2013

Hole_ID	Easting	Northing	Elevation	Final_Depth	Hole_Type	Year
CMD-298	478851.2	7012629.5	4784.5	464.20	RC/DDH	2013
CME-001	478965.4	7014253.9	4565.8	300.00	RC	2013
CMQ-003	479334.8	7011611.8	4571.0	100.00	RC	2017
CMQ-009	479107.8	7013734.7	4733.0	100.00	RC	2017
CMQ-010	478140.8	7013642.7	4734.0	100.00	RC	2017
CMR-002	478979.7	7012666.6	4856.9	342.00	RC	2010
CMR-003	478978.9	7012820.8	4856.8	228.00	RC	2010
CMR-005	479958.9	7011872.9	4823.7	252.00	RC	2010
CMR-006	480032.3	7012074.0	4825.8	300.00	RC	2010
CMR-007	479892.8	7011981.7	4819.1	300.00	RC	2010
CMR-013	479233.5	7012576.5	4948.1	460.00	RC	2010
CMR-015	479059.2	7012611.4	4902.6	460.00	RC	2010
CMR-017	479090.8	7012789.2	4918.2	450.00	RC	2010
CMR-018	479196.2	7012615.4	4955.0	444.00	RC	2010
CMR-020	478978.0	7012751.3	4856.4	456.00	RC	2010
CMR-022	478443.2	7013062.6	4788.0	432.00	RC	2010
CMR-023	479401.2	7012054.8	4707.4	432.00	RC	2010
CMR-024	479257.6	7012598.0	4950.8	194.00	RC	2011
CMR-025	479069.2	7012914.5	4905.1	444.00	RC	2011
CMR-028	479114.4	7012750.6	4928.4	396.00	RC	2011
CMR-029	479175.9	7012734.8	4956.9	416.00	RC	2011
CMR-030	479176.0	7012732.0	4957.0	374.00	RC	2011
CMR-032	479164.1	7012644.0	4952.5	362.00	RC	2011
CMR-033	479234.6	7012506.1	4934.9	348.00	RC	2011
CMR-034	479127.3	7012541.8	4939.2	450.00	RC	2011
CMR-035	478978.2	7012528.7	4857.3	486.00	RC	2011
CMR-039	479123.3	7012539.3	4937.8	360.00	RC	2011
CMR-040	478498.5	7013044.4	4786.8	354.00	RC	2011
CMR-041	479083.6	7012496.0	4915.4	348.00	RC	2011
CMR-042	478615.9	7013025.8	4795.2	354.00	RC	2011
CMR-043	479066.6	7012914.4	4905.0	294.00	RC	2011
CMR-044	478400.1	7013222.2	4867.7	428.00	RC	2011
CMR-045	479238.0	7012730.1	4976.0	312.00	RC	2011
CMR-047	479273.8	7012472.3	4926.2	414.00	RC	2011
CMR-048	478379.9	7013089.5	4792.5	350.00	RC	2011
CMR-050	479382.1	7012513.8	4911.7	420.00	RC	2011
CMR-051	479128.3	7012475.3	4924.7	354.00	RC	2011
CMR-052	479112.2	7012674.3	4931.8	376.00	RC	2011
CMR-053	478412.9	7012966.5	4732.5	400.00	RC	2011
CMR-054	479031.6	7012735.9	4886.9	450.00	RC	2011
CMR-055	479353.8	7012198.3	4770.4	300.00	RC	2011
CMR-057	479051.4	7012674.0	4898.4	350.00	RC	2011
CMR-059	478526.7	7012934.3	4730.1	350.00	RC	2011

Hole_ID	Easting	Northing	Elevation	Final_Depth	Hole_Type	Year
CMR-060	478915.3	7012684.9	4823.0	500.00	RC	2011
CMR-061	478672.8	7013002.7	4795.2	500.00	RC	2011
CMR-062	479073.5	7012558.3	4914.1	450.00	RC	2011
CMR-063	478972.0	7012604.6	4855.8	450.00	RC	2011
CMR-064	478215.5	7012911.6	4732.1	500.00	RC	2011
CMR-067	478905.4	7012529.7	4819.0	450.00	RC	2011
CMR-068	478298.1	7012996.2	4733.0	464.00	RC	2011
CMR-069	478899.0	7012864.7	4817.2	450.00	RC	2011
CMR-070	478821.8	7012866.7	4779.9	450.00	RC	2011
CMR-071	479977.4	7011778.1	4815.0	500.00	RC	2011
CMR-074	479178.6	7012805.2	4958.1	320.00	RC	2011
CMR-075	480060.0	7011918.3	4778.2	396.00	RC	2011
CMR-076	479160.9	7012860.2	4954.9	192.00	RC	2011
CMR-077	478969.7	7012607.9	4855.6	450.00	RC	2011
CMR-078	478856.0	7012676.0	4788.6	500.00	RC	2011
CMR-079	479268.3	7012682.4	4976.2	450.00	RC	2011
CMR-080	478834.0	7012809.6	4778.0	462.00	RC	2011
CMR-081	479312.4	7012301.3	4829.9	422.00	RC	2011
CMR-082	478909.7	7012823.6	4819.2	354.00	RC	2011
CMR-083	479515.6	7012509.6	4846.8	450.00	RC	2011
CMR-084	478612.1	7012908.9	4725.3	452.00	RC	2011
CMR-085	478306.3	7013279.9	4891.8	450.00	RC	2011
CMR-086	478161.1	7013266.9	4855.9	500	RC	2011
CMR-087	478456.1	7013286.3	4902.4	350	RC	2011
CMR-088	478140.9	7013481.1	4803.4	500	RC	2011
CMR-089	478626.2	7013170.4	4877.7	350	RC	2011
CMR-090	479751.2	7012032.9	4764.4	450	RC	2011
CMR-094	479724.6	7011872.7	4776.7	300	RC	2011
CMR-095	479839.4	7011836.7	4825.3	482	RC	2011
CMR-097	479993.4	7011988.8	4823.8	200	RC	2011
CMR-098	479966.0	7011886.2	4823.6	250	RC	2011
CMR-100	479906.8	7011758.2	4816.3	350	RC	2011
CMR-101	479512.6	7012503.9	4846.8	300	RC	2011
CMR-102	479866.1	7011800.2	4825.7	350	RC	2011
CMR-103	479529.5	7012378.9	4836.8	168	RC	2011
CMR-105	479980.4	7012047.5	4827.8	320	RC	2011
CMR-106	480028.8	7012098.4	4823.7	210	RC	2011
CMR-107	479880.9	7012016.5	4811.8	400	RC	2011
CMR-109	479948.5	7012089.4	4828.5	350	RC	2011
CMR-110	479183.9	7012242.8	4844.5	400	RC	2011
CMR-112	479734.0	7012156.4	4764.1	200	RC	2011
CMR-113	479875.7	7012089.0	4810.8	230	RC	2011
CMR-114	479757.4	7011828.1	4794.8	400	RC	2011

Hole_ID	Easting	Northing	Elevation	Final_Depth	Hole_Type	Year
CMR-115	479806.8	7012014.9	4788.7	250	RC	2011
CMR-116	479825.5	7011897.9	4811.0	496	RC	2011
CMR-117	479829.4	7012108.5	4792.5	400	RC	2011
CMR-118	479776.2	7012129.3	4775.0	294	RC	2011
CMR-120	478852.9	7012762.4	4783.2	400	RC	2012
CMR-123	479670.1	7012166.1	4741.4	234	RC	2012
CMR-124	478426.4	7013181.3	4848.3	372	RC	2012
CMR-125	479311.2	7012662.8	4963.1	200	RC	2012
CMR-127	479347.2	7012551.6	4930.5	350	RC	2012
CMR-129	479733.2	7011942.4	4764.6	400	RC	2012
CMR-130	478380.1	7013345.1	4910.5	250	RC	2012
CMR-131	479669.0	7011873.4	4754.1	490	RC	2012
CMR-132	478433.1	7013337.5	4915.4	210	RC	2012
CMR-133	478491.4	7013251.4	4892.1	480	RC	2012
CMR-134	480046.2	7012115.8	4817.1	350	RC	2012
CMR-135	478540.7	7013224.6	4889.6	350	RC	2012
CMR-136	479095.6	7012860.7	4921.9	360	RC	2012
CMR-138	478305.5	7013409.5	4895.3	350	RC	2012
CMR-139	478315.6	7013361.9	4917.5	200	RC	2012
CMR-142	478290.0	7013186.6	4842.1	474	RC	2012
CMR-143	479766.1	7011760.3	4782.9	650	RC	2012
CMR-146	479660.5	7012084.9	4732.0	300	RC	2012
CMR-148	480039.3	7011965.9	4805.8	214	RC	2012
CMR-149	480098.7	7012293.1	4736.1	300	RC	2012
CMR-150	479927.4	7012832.4	4666.1	450	RC	2012
CMR-151	479985.3	7011839.0	4811.8	350	RC	2012
CMR-155	479782.5	7012619.5	4698.1	428	RC	2012
CMR-156	479928.8	7012831.6	4666.1	332	RC	2012
CMR-157	479552.3	7011842.4	4695.8	300	RC	2012
CMR-158	479829.1	7012240.0	4751.8	250	RC	2012
CMR-159	478536.3	7012990.1	4761.0	396	RC	2012
CMR-161	479273.3	7012555.3	4943.4	300	RC	2012
CMR-162	479369.1	7012638.9	4939.7	394	RC	2012
CMR-163	479157.7	7012915.1	4939.2	266	RC	2012
CMR-164	479761.2	7012464.8	4720.0	250	RC	2012
CMR-166	478343.4	7013101.7	4793.4	430	RC	2012
CMR-168	479498.1	7011862.3	4667.0	306	RC	2012
CMR-171	479775.0	7012630.9	4697.9	200	RC	2012
CMR-172	479119.2	7012244.9	4848.0	400	RC	2012
CMR-173	479821.6	7012592.3	4681.1	228	RC	2012
CMR-174	478652.9	7013127.6	4857.9	300	RC	2012
CMR-175	479456.8	7011887.5	4640.1	270	RC	2012
CMR-176	479377.2	7012795.3	4943.4	200	RC	2012

Hole_ID	Easting	Northing	Elevation	Final_Depth	Hole_Type	Year
CMR-177	479060.5	7012262.9	4853.8	400	RC	2012
CMR-179	480185.7	7012186.7	4764.4	250	RC	2012
CMR-180	480077.0	7012074.2	4813.5	420	RC	2012
CMR-181	480004.8	7012354.0	4691.5	270	RC	2012
CMR-183	478714.1	7013035.4	4824.5	250	RC	2012
CMR-185	479252.0	7012176.6	4806.5	500	RC	2012
CMR-186	479896.4	7011676.9	4784.5	300	RC	2012
CMR-188	479964.9	7011886.9	4823.8	250	RC	2012
CMR-189	479642.4	7011996.4	4721.2	434	RC	2012
CMR-190	479851.6	7012903.8	4704.5	400	RC	2012
CMR-194	479810.2	7012449.1	4695.2	300	RC	2012
CMR-195	480069.0	7011927.7	4778.1	264	RC	2012
CMR-197	479807.1	7012438.3	4695.2	300	RC	2012
CMR-199	479237.4	7012796.2	4969.1	400	RC	2012
CMR-202	479325.1	7012879.9	4950.5	200	RC	2012
CMR-203	480188.0	7012409.9	4671.7	400	RC	2012
CMR-204	479766.6	7012692.1	4698.1	400	RC	2012
CMR-205	480009.9	7012362.1	4690.8	250	RC	2012
CMR-206	479659.7	7012504.0	4769.1	300	RC	2012
CMR-207	479231.2	7012922.5	4945.5	250	RC	2012
CMR-208	478795.0	7012714.8	4747.3	482	RC	2012
CMR-209	478426.6	7013133.9	4823.1	450	RC	2012
CMR-210	478972.0	7012245.0	4826.6	550	RC	2012
CMR-211	478697.2	7012756.8	4686.3	408	RC	2012
CMR-212	478577.7	7013184.3	4875.0	400	RC	2012
CMR-213	479007.8	7012211.1	4821.5	600	RC	2012
CMR-214	479105.7	7012378.7	4901.6	400	RC	2012
CMR-215	479166.3	7012156.5	4805.8	400	RC	2012
CMR-216	478991.9	7012334.7	4862.3	500	RC	2012
CMR-217	478990.3	7012405.9	4862.8	400	RC	2012
CMR-218	479047.0	7012182.7	4821.0	510	RC	2012
CMR-219	479666.9	7012507.3	4768.5	300	RC	2012
CMR-220	479824.9	7012602.0	4680.5	350	RC	2012
CMR-221	479917.3	7013112.3	4692.2	300	RC	2012
CMR-222	480080.3	7012854.3	4608.8	260	RC	2012
CMR-223	479929.8	7012418.3	4652.3	216	RC	2012
CMR-225	479866.8	7011790.7	4824.7	258	RC	2012
CMR-226	479876.9	7011731.2	4806.1	250	RC	2012
CMR-227	479721.7	7011786.7	4777.9	310	RC	2012
CMR-229	479759.9	7011972.3	4769.4	310	RC	2012
CMR-230	480104.4	7011890.3	4751.4	276	RC	2012
CMR-231	479954.5	7012722.2	4638.0	300	RC	2012
CMR-233	479609.1	7011956.5	4710.2	220	RC	2012

Hole_ID	Easting	Northing	Elevation	Final_Depth	Hole_Type	Year
CMR-234	479861.6	7012705.2	4659.6	400	RC	2012
CMR-235	479930.4	7012840.1	4665.2	180	RC	2012
CMR-237	479649.1	7011844.9	4750.7	120	RC	2012
CMR-238	479515.1	7011931.8	4667.5	130	RC	2012
CMR-239	479579.8	7012277.9	4790.9	160	RC	2012
CMR-241	479587.7	7012283.6	4790.7	260	RC	2012
CMR-243	479525.9	7012439.0	4843.6	262	RC	2012
CMR-244	478428.1	7013393.3	4918.3	150	RC	2012
CMR-245	478376.0	7013271.1	4891.9	110	RC	2012
CMR-246	480088.2	7012015.7	4797.7	200	RC	2012
CMR-248	479418.8	7012120.6	4722.4	150	RC	2012
CMR-250	478458.8	7013210.1	4866.1	280	RC	2012
CMR-251	478245.6	7013139.3	4819.0	200	RC	2012
CMR-252	478953.0	7012715.9	4842.7	420	RC	2012
CMR-253	478633.8	7012964.1	4762.9	330	RC	2012
CMR-254	478473.3	7013157.0	4842.3	180	RC	2013
CMR-255	479432.0	7012560.0	4892.0	380	RC	2013
CMR-257	479490.3	7012612.0	4865.6	390	RC	2013
CMR-259	479783.2	7012768.4	4715.1	300	RC	2013
CMR-260	479658.5	7012642.9	4764.0	160	RC	2013
CMR-261	479815.5	7012657.9	4675.0	250	RC	2013
CMR-263	479728.1	7012575.2	4729.7	330	RC	2013
CMR-264	480175.0	7012027.2	4757.6	370	RC	2013
CMR-265	479633.8	7012264.7	4772.0	210	RC	2013
CMR-267	479637.5	7012266.9	4771.9	160	RC	2013
CMR-269	480261.7	7012185.3	4725.9	270	RC	2013
CMR-270	479618.3	7011892.0	4725.1	320	RC	2013
CMR-271	479469.4	7012243.4	4791.6	230	RC	2013
CMR-273	479461.1	7012237.7	4791.8	190	RC	2013
CMR-274	479785.7	7011990.7	4778.6	260	RC	2013
CMR-276	479776.6	7012405.8	4707.4	130	RC	2013
CMR-277	479861.9	7012491.3	4665.1	180	RC	2013
CMR-279	479860.3	7012561.7	4662.6	230	RC	2013
CMR-280	479863.0	7012637.7	4652.4	350	RC	2013
CMR-283	479469.7	7012100.3	4712.5	200	RC	2013
CMR-285	479882.1	7012164.2	4798.5	180	RC	2013
CMR-286	479359.6	7012483.7	4921.5	180	RC	2013
CMR-288	480124.8	7011982.3	4769.3	100	RC	2013
CMR-289	479172.6	7012302.6	4871.2	160	RC	2013
CMR-290	479340.2	7012388.5	4885.1	340	RC	2013
CMR-291	479717.8	7012417.3	4740.5	130	RC	2013
CMR-292	479702.8	7012685.4	4734.7	210	RC	2013
CMR-294	479478.6	7012394.0	4863.4	180	RC	2013

Hole_ID	Easting	Northing	Elevation	Final_Depth	Hole_Type	Year
CMR-296	478541.7	7013151.9	4851.4	300	RC	2013
CMR-297	479608.9	7011817.5	4729.8	220	RC	2013
CMR-299	479430.5	7012419.7	4888.8	150	RC	2013
CMR-300	479623.6	7012466.4	4791.4	200	RC	2013
CMR-301	479437.5	7012426.4	4888.4	180	RC	2013
CMR-302	478785.8	7012763.8	4742.3	200	RC	2013
CMR-303	479937.9	7012146.3	4809.2	150	RC	2013
CMR-304	478637.1	7012897.2	4725.0	200	RC	2013
CMR-305	479835.4	7012743.9	4683.4	290	RC	2013
CMR-306	478870.8	7012776.2	4795.0	300	RC	2013
CMR-307	480023.5	7012304.0	4719.9	100	RC	2013
CMR-308	479627.4	7012397.6	4787.4	200	RC	2013
CMR-309	479448.0	7012007.3	4670.0	300	RC	2013
CMR-310	479842.6	7012195.8	4779.9	150	RC	2013
CMR-311	479378.2	7012007.2	4691.2	300	RC	2013
CMR-312	479587.0	7012145.9	4734.8	150	RC	2013
CMR-313	478168.7	7013144.8	4828.0	300	RC	2013
CMR-314	479305.1	7012305.0	4830.3	150	RC	2013
CMR-315	480254.7	7012107.8	4729.2	90	RC	2013
CMR-316	480261.8	7012111.6	4729.1	230	RC	2013
CMR-322	479727.2	7011932.5	4764.4	400	RC	2013
CMR-323	479575.6	7012355.9	4815.3	250	RC	2013
CMR-325	479567.5	7012347.5	4815.6	260	RC	2013
CMR-326	479300.0	7012299.1	4830.3	180	RC	2013
FG-R18-001	478512.3	7013118.0	4826.3	300	RC	2018
FG-R18-002	478982.8	7012676.4	4857.2	348	RC	2018
FG-R18-003	479968.1	7011882.5	4823.5	250	RC	2018
FG-R18-004	479891.8	7011983.0	4819.1	210	RC	2018
FG-R18-005	479796.5	7011929.5	4793.7	170	RC	2018
FG-R18-006	479749.6	7012021.8	4765.6	148	RC	2018
FG-R18-007	479563.0	7011919.9	4697.7	100	RC	2018
FG-R18-008	479604.6	7011952.2	4710.7	100	RC	2018
FG-R18-009	479679.5	7011960.7	4740.6	120	RC	2018
FG-R18-010	479233.3	7012793.5	4969.4	250	RC	2018
FG-R18-011	479174.8	7012801.7	4957.8	240	RC	2018
FG-R18-012	479307.5	7012662.6	4963.6	250	RC	2018
FG-R18-013	479361.1	7012630.7	4940.3	120	RC	2018
FG-R18-014	479029.1	7012730.2	4887.1	230	RC	2018
FG-R18-015	478976.5	7012804.7	4856.8	250	RC	2018
FG-R18-016	478977.1	7012814.6	4856.8	200	RC	2018
FG-R18-017	478913.2	7012758.2	4819.7	200	RC	2018
FG-R18-018	478895.5	7012860.8	4817.1	160	RC	2018
FG-R18-019	478608.1	7013282.0	4938.7	180	RC	2018

Hole_ID	Easting	Northing	Elevation	Final_Depth	Hole_Type	Year
FG-R19-020	478547.1	7013301.8	4934.0	200	RC	2019
FG-R19-021	478461.5	7013279.0	4902.8	130	RC	2019
FG-R19-022	478497.5	7013188.1	4865.5	160	RC	2019
FG-R19-023	478402.0	7013217.6	4867.6	100	RC	2019
FG-R19-024	478708.7	7013030.7	4824.5	180	RC	2019
FG-R19-025	478625.6	7012965.0	4762.6	100	RC	2019
FG-R19-026	478686.7	7012943.0	4763.6	100	RC	2019
FG-R19-027	478868.3	7012789.8	4795.2	140	RC	2019
FG-R19-028	478812.5	7013003.3	4829.1	120	RC	2019
FG-R19-029	478575.3	7013185.2	4875.4	100	RC	2019
FG-R19-030	478648.3	7013125.6	4857.6	100	RC	2019
FG-R19-031	478954.9	7012938.6	4851.8	250	RC	2019
FG-R19-032	478807.0	7013012.0	4829.4	180	RC	2019
FG-R19-033	478559.8	7013106.7	4827.3	110	RC	2019
FG-R19-034	479939.7	7012077.9	4828.6	230	RC	2019
FG-R19-035	479273.6	7012558.9	4942.8	250	RC	2019
FG-R19-036	479132.1	7012538.5	4938.2	250	RC	2019
FG-R19-037	479050.5	7012660.4	4899.0	200	RC	2019
FG-R19-038	479873.4	7012002.7	4811.7	230	RC	2019
FG-R19-039	479725.5	7011928.7	4764.4	110	RC	2019
GT-01A	478302.2	7013405.6	4894.8	224.05	DDH	2021
GT-02	478612.7	7013287.2	4938.6	350.05	DDH	2021
GT-03	479237.8	7012801.2	4969.1	350	DDH	2021
GT-04	479618.8	7011896.0	4725.2	240.2	DDH	2021
GT-05	479984.1	7012049.5	4827.9	300	DDH	2021
GT-06	479128.4	7012539.2	4937.8	250	DDH	2021
GT-07	478554.4	7013037.1	4789.4	300	DDH	2021
GT-08	479823.1	7012235.9	4751.8	300	DDH	2021
FG-R22-001	479326.7	7012874.2	4949.9	300	RC	2022
FG-R22-002	479109.0	7012742.1	4927.2	300	RC	2022
FG-R22-003	478995.9	7012934.2	4866.1	250	RC	2022
FG-R22-004	478660.9	7013063.0	4827.5	250	RC	2022
FG-R22-005	479304.0	7012655.7	4963.7	156	RC	2022

15 MINERAL RESERVE ESTIMATES

15.1 Introduction

The Proven Mineral Reserve is based on Measured Mineral Resources and the Probable Mineral Reserve is based on Indicated Mineral Resources after considering all economic, mining, metallurgical, social, environmental, statutory, and financial aspects of the Project.

The Mineral Resources have been converted to Mineral Reserves based upon the following modifying factors:

- Only Measured and Indicated Resources may be included.
- The Mineral Resources within optimized pit limits are considered.
- Dilution is applied.
- The mineralized rock is economically and technically feasible to extract.

Each of these requirements was addressed in establishing the Mineral Reserves. The Mineral Reserves statement has been prepared according to the Canadian Institute of Mining, Metallurgy and Petroleum's (CIM) standards.

15.2 Base Case Considerations

Annual ore production will commence at 12,000 tpd, ramping up to 20,000 tpd from year 2 onwards achieving nameplate capacity. The life of mine schedule considers a rate of 20,000 tpd of ore production based on water availability constraints.

Mining operations will run continuously, 24 hours a day, 365 days a year, minus 10 days for non-operational delays and to account for weather conditions. Each day consist of two 12-hour shifts with four mining crews required to cover the operation.

15.3 Block Model

The Resource Block Model "bmfx2303_w84_aucutr_r01_tr_clcurv230403.bmf" with block size 10x10x10 m referenced in Chapter 14 was provided to Mining Plus for all mine planning work. Sufficient variables were included in the block model enabling grade calculation and metal reporting.

The grid coordinate system used for this block model is the WGS84 coordinate system. The bounds of the block model are shown in Table 15-1.

Table 15-1 – Resource Block model framework.

Parameter	Unit	East	North	Elevation
Model Origin	m	479815.75	7,010,936.50	4,150.00
Cell Size Meters	m	10	10	10
Block Number	#	220	320	100
Rotation Angle	degrees		315°	

Note: Block model information Hexagon's MinePlan software.

The following are the variables contained in the block model received:

- Bulk density (t/m^3).
- Gold grade in grams per tonne (g/t Au).
- Copper grade (ppm).
- A class code to distinguish Measured, Indicated, and Inferred Resource blocks.

The Resource block model included Mineral Resources classified as Measured, Indicated, or Inferred. All the activities of pit optimization, mine design, mine planning, and Mineral Reserves estimation were completed using this block model excluding Inferred Resources as part of the mineral inventory (only Measured and Indicated Resources can be converted into Mineral Reserves as defined by CIM). Inferred Resources were treated as waste.

15.4 Material Types (Mineralization)

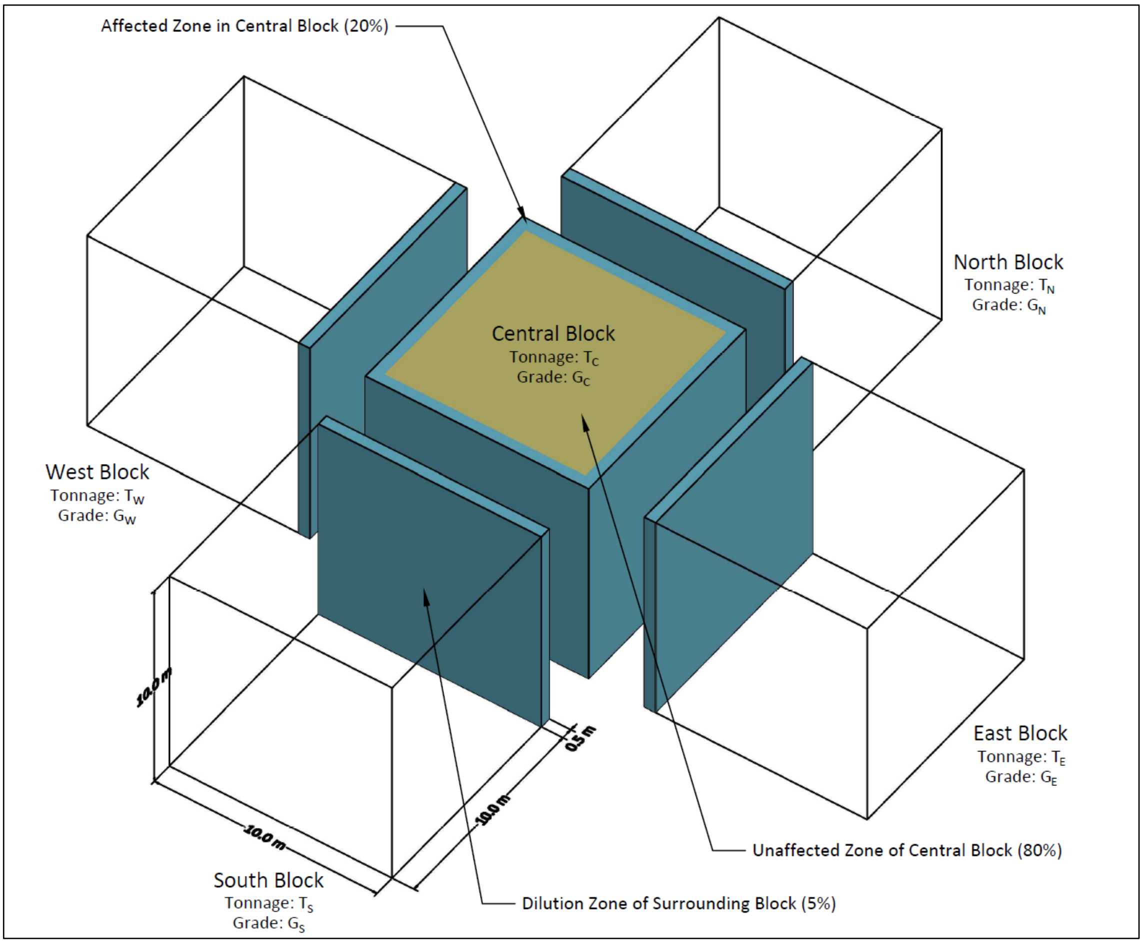
All mineralization is defined as oxide material, there is no transition or sulphide material present in the deposit considered for the purposes of Mineral Reserves estimation.

Ore is typically supergene enriched and gold often occurs with iron oxides. Minor localized areas of relatively enriched copper and magnesium are recognized in the deposit; copper and magnesium grades in these areas are not significant to affect the mineral processing.

15.5 Mining Dilution

Mining Plus developed a dilution methodology based on contact dilution of lateral contact edges on each block of the aforementioned block model.

The dilution methodology determines the dilution of one block due to the surrounding block grades. A contamination of 5% of block tonnage from each surrounding block on the North, South, East, and West sides are considered (See Figure 15-1).



Source: Mining Plus, 2023

Figure 15-1 – Contact dilution procedure.

Diluted grades were calculated as follows:

(1) Determine surrounding blocks on North, South, East, and West sides.
(2) Determine the blended tonnage according to influence meters between blocks. The distance of 0.5 meters near to block contact edge represents 5% of block tonnage.
(3) Surrounding blocks in the four contact edges have an influence on the central block, the diluted grade is estimated using the dilution algorithm:

$$Diluted\ Grade = \frac{Tonnage_{Central\ block}\ x\ Grade_{Central\ block} + (Tonnage_{Surrounding\ block}\ x\ Grade_{Surrounding\ block})}{Total\ Tonnage}$$

Notes:

1. Tonnage in central block is discounted with surrounding blocks in the face contacts: Tc – (TN + TE + TS + TW)

2. Tonnages multiplied by Grades of surrounding blocks refers to: $(T_N \times G_N) + (T_E \times G_E) + (T_S \times G_S) + (T_W \times G_W)$.
3. Total tonnage counts the block size 10x10x10 m.

Total metal contained is determined with the grades of the surrounding blocks in a tonnage of 0.5m x 10m x 10m for each contact face representing 20% of the total tonnage. Metal contained in central block is determined with the unaffected tonnage behind the influence distance between blocks, central block tonnage is reduced by the tonnage of influence zones of surrounding blocks. In case of four face contact, the central block has 80% of the total tonnage.

(4) The diluted grade in central block is estimated with the final metal contained back in a block sized 10 x 10 x 10m.

Mining Plus has estimated that the mining dilution decreases mineral content within the pit design described in Section 15.8 by 1%.

15.6 Cut-off Grade

The cut-off grade was established to maximize revenue. The minimum cut-off grade calculated for the Fenix Gold Project was derived from first principles using reference equation listed below:

$$COG\ (Au\ g/t) = \frac{(Treatment\ Cost + G\&A)}{(Recovery) \times (Price - Sell\ Cost)}$$

*Treatment Cost = processing and rehandling

A Cut-off grade of 0.235 g/t was used to estimate the Mineral Reserves. The by-products recovered in the concentrate or the Doré bars were considered to have negligible value contribution to be included in the cut-off grade calculation. Table 15-2 shows the economic assumptions for pit optimization.

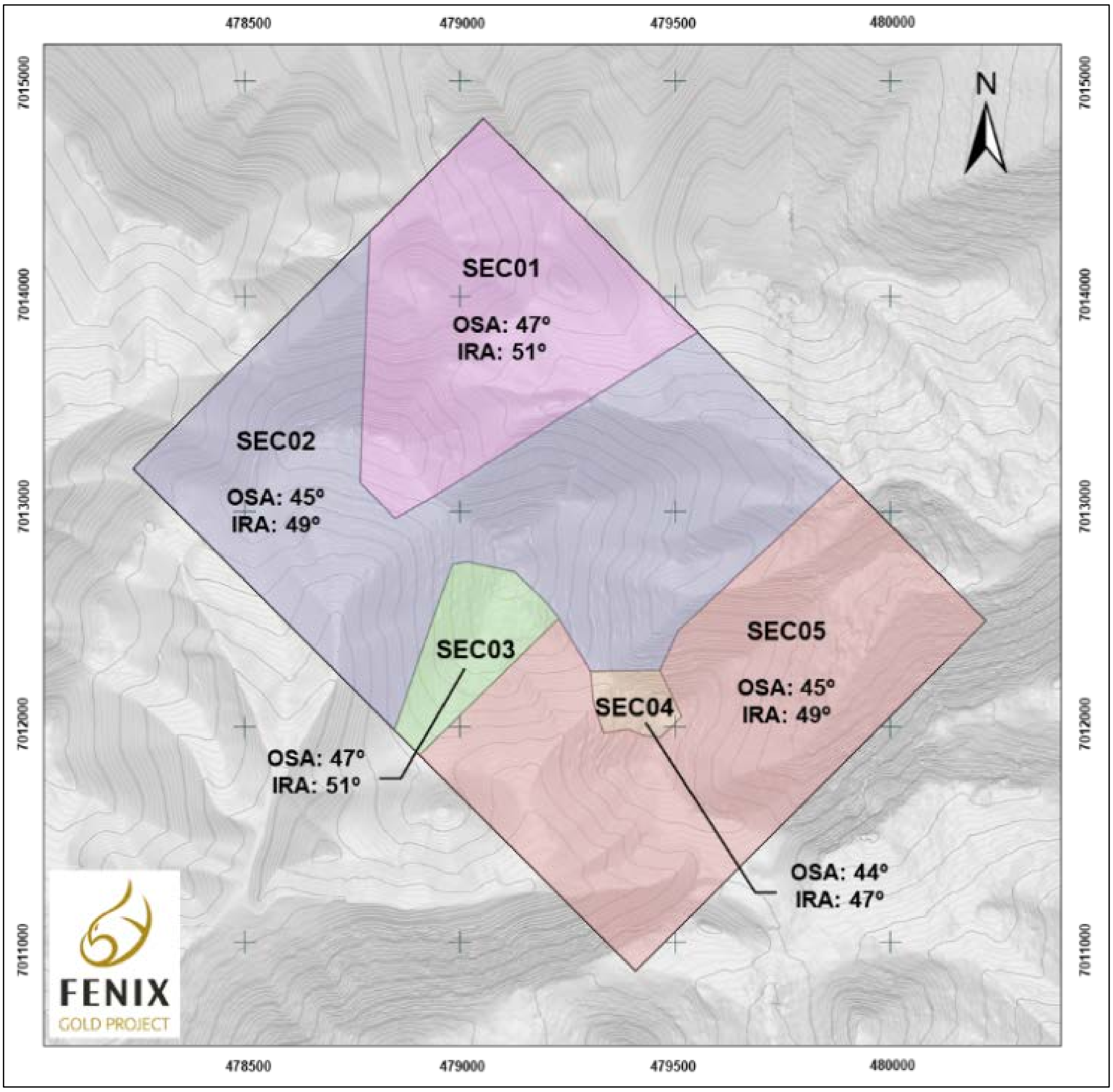
Table 15-2 – Pit optimization parameters for Mineral Reserves.

Parameter	Value	Unit	Source
Block Model Characteristics			
Model	Resources Model		Coordinate System WGS84
Dimensions	10x10x10	m	Rio2
Density	Variable	t/m^3	Rio2
Au	Model	g/t	Gold grade
Metal Prices			
Au	1,650	US$/oz	Three-year trailing average
Operating Cost			
Ore Mining cost	3.31	US$/t mined	STRACON

Parameter	Value	Unit	Source
Waste Mining cost	2.65	US$/t mined	STRACON
Incremental Mining Cost. Ref.Level 4750	0.012	US$/t mined below	Rio2 calculated
	0.000	US$/t mined above	Rio2 calculated
Processing Cost			
Throughput	20,000	tpd	Internal Rio2
ADR Processing cost	3.17	US$/$t_{proc}$	HLC
Water Cost	2.30	US$/$t_{proc}$	Rio2 contract, STRACON Transport
G&A	2.49	US$/$t_{proc}$	Rio2
Sustaining Capex	0.45	US$/$t_{proc}$	Anddes, HLC
Closure Cost	0.13	US$/$t_{proc}$	Rio2
Incremental Cost (Ore/Waste)	0.66	US$/$t_{proc}$	Rio2 Calculated
Total ADR Processing cost	**9.20**	**US$/$t_{proc}$**	
Metallurgical Recovery			
Au recovery	75%	%	HLC - Leaching pilot, supporting testwork
Geotechnics			
Overall angle slope	Variable by Sectors	degrees	Derk
Economic Parameters			
Discount Factor	10%	%	Rio2
Refining Charge Au, Insurance, Legal Cost	10	US$/oz	Rio2
Royalty	1	%	G&O
Mining Recovery	100%	%	Mining Plus, included in BM
Dilution	0%	%	Mining Plus included in BM with diluted grade
Cut-off Grade			
Cut-off Grade	0.235	Au g/t	Mining Plus

Notes:
1. *Resources model refers to block model "bmfx2303_w84_aucutr_r01_tr_clcurv230403.bmf".*
2. *The overall slope angle was determined by Derk according to geotechnical analysis in Section 16.2.*
3. *Mining recovery is considered as 100% and was included in block model.*
4. *Dilution was estimated in Section 15.5 and used into the block model prior pit optimization.*

DERK, geotechnical consultant, determined the overall slope angle, and the design parameters were divided into sectors and used for pit optimization. A detailed Geotechnical analysis is shown in Section 16.2, while the overall slope angle is detailed below in Figure 15-2 and Table 15-3 for the purposes of the mine design.



Source: DERK, 2023

Figure 15-2 – Overall slope angle for pit optimization.

Table 15-3 – Overall slope angle for pit optimization by sectors.

Design	Sector	Inter Ramp Slope (°)	Overall Slope Angle (°)
Original	SEC02	49	45
	SEC05		
Best	SEC01	51	47
	SEC03		
Regular	SEC04	47	44

15.7 Pit Optimization

The pit optimization was conducted by Mining Plus using the Whittle® software package. Whittle is a well-known commercial product that applies geological, mining, and economic inputs to determine the pit shell with the maximum value.

The pit optimization used techno-economic parameters summarized in Table 15-2. The economic parameters were provided by multi-disciplinary sources involved with the Fenix Gold Project.

The Mineral Reserves are constrained by a pit geometry determined by technical, cost, and recovery economic inputs. The main consideration to determine the optimal pit at the Fenix Gold Project was water availability limited to 20,000 tpd, minimizing capital investment, and minimizing stripping ratio.

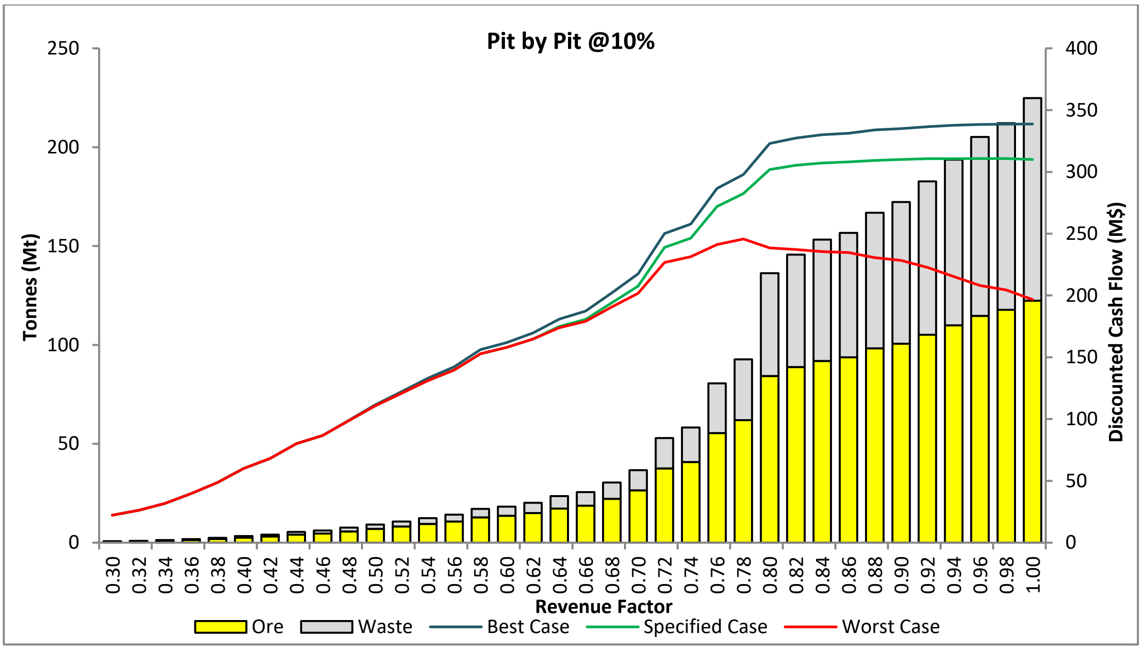
Lerchs-Grossmann algorithm was used to determine the optimal pit using the diluted grade described in Section 15.5. The Whittle software determines three scenarios, "Best Case", "Worst Case", and "Specific Case".

The final pit selection focused on minimizing the movement of large amounts of waste, maximizing Mineral Reserves, and selecting the pit with maximum NPV. Pit 34, with a Revenue Factor (RF) of 0.96 was selected as the final pit. Table 15-4 and Figure 15-3 show the pit-by-pit results.

Table 15-4 – Summary of Whittle pit optimization.

Pit	Revenue Factor	Best Case Discounted US$ MM	Specified Case Discounted US$ MM	Worst Case Discounted US$ MM	Ore Mt	Au g/t	Waste Mt	Total Mt	SR	LOM Year
1	0.30	22.2	22.2	22.2	0.5	1.39	0.2	0.7	0.36	0.1
2	0.32	26.1	26.1	26.1	0.7	1.31	0.2	0.9	0.33	0.2
3	0.34	31.7	31.7	31.7	0.9	1.22	0.4	1.3	0.38	0.2
4	0.36	39.7	39.7	39.7	1.3	1.11	0.4	1.8	0.33	0.3
5	0.38	48.7	48.7	48.7	1.8	1.03	0.6	2.4	0.31	0.4
6	0.40	60.0	60.0	60.0	2.6	0.96	0.8	3.3	0.30	0.6
7	0.42	68.1	68.1	68.1	3.1	0.92	1.0	4.1	0.31	0.7
8	0.44	80.1	80.1	80.1	4.1	0.88	1.4	5.5	0.35	0.9
9	0.46	86.8	86.7	86.7	4.6	0.85	1.6	6.2	0.34	1.0
10	0.48	99.0	98.7	98.7	5.7	0.81	1.9	7.6	0.33	1.2
11	0.50	111.6	110.8	110.8	7.0	0.77	2.1	9.1	0.30	1.4
12	0.52	122.1	120.9	120.9	8.2	0.75	2.5	10.7	0.31	1.5
13	0.54	133.0	131.1	131.1	9.5	0.73	3.0	12.4	0.31	1.7
14	0.56	142.2	139.6	139.6	10.7	0.71	3.4	14.1	0.32	1.9
15	0.58	156.2	152.8	152.8	12.8	0.69	4.3	17.1	0.34	2.2
16	0.60	161.8	158.0	158.0	13.6	0.68	4.6	18.2	0.34	2.3
17	0.62	169.6	164.7	164.7	15.0	0.66	5.2	20.2	0.35	2.5
18	0.64	180.9	175.0	173.9	17.2	0.64	6.3	23.5	0.37	2.8
19	0.66	187.4	180.6	179.1	18.7	0.63	6.9	25.6	0.37	3.0

Pit	Revenue Factor	Best Case Discounted US$ MM	Specified Case Discounted US$ MM	Worst Case Discounted US$ MM	Ore Mt	Au g/t	Waste Mt	Total Mt	SR	LOM Year
20	0.68	202.1	194.1	190.7	22.2	0.61	8.3	30.4	0.37	3.4
21	0.70	217.5	207.5	201.7	26.5	0.59	10.2	36.7	0.38	4.0
22	0.72	250.1	238.9	226.7	37.6	0.55	15.3	52.9	0.41	5.6
23	0.74	257.8	246.4	231.4	40.7	0.54	17.5	58.3	0.43	6.0
24	0.76	286.6	272.0	241.2	55.4	0.52	25.2	80.6	0.45	8.0
25	0.78	297.9	282.5	245.7	62.0	0.51	30.7	92.7	0.50	8.9
26	0.80	323.0	301.8	238.5	84.3	0.50	52.0	136.3	0.62	12.0
27	0.82	327.4	305.4	237.2	88.8	0.50	56.8	145.6	0.64	12.6
28	0.84	330.1	307.2	235.5	91.9	0.50	61.3	153.2	0.67	13.0
29	0.86	331.3	308.1	234.8	93.8	0.49	62.9	156.7	0.67	13.3
30	0.88	334.0	309.2	230.5	98.3	0.49	68.6	166.9	0.70	13.9
31	0.90	335.0	310.0	228.4	100.6	0.49	71.7	172.3	0.71	14.2
32	0.92	336.6	310.6	222.7	105.1	0.49	77.5	182.7	0.74	14.8
33	0.94	337.7	310.7	215.4	109.9	0.49	83.8	193.7	0.76	15.5
34	**0.96**	**338.4**	**310.8**	**208.1**	**114.7**	**0.48**	**90.4**	**205.2**	**0.79**	**16.1**
35	0.98	338.7	310.8	204.5	117.7	0.48	94.4	212.1	0.80	16.5
36	1.00	338.7	310.0	196.7	122.4	0.48	102.4	224.8	0.84	17.2



Source: Mining Plus, 2023

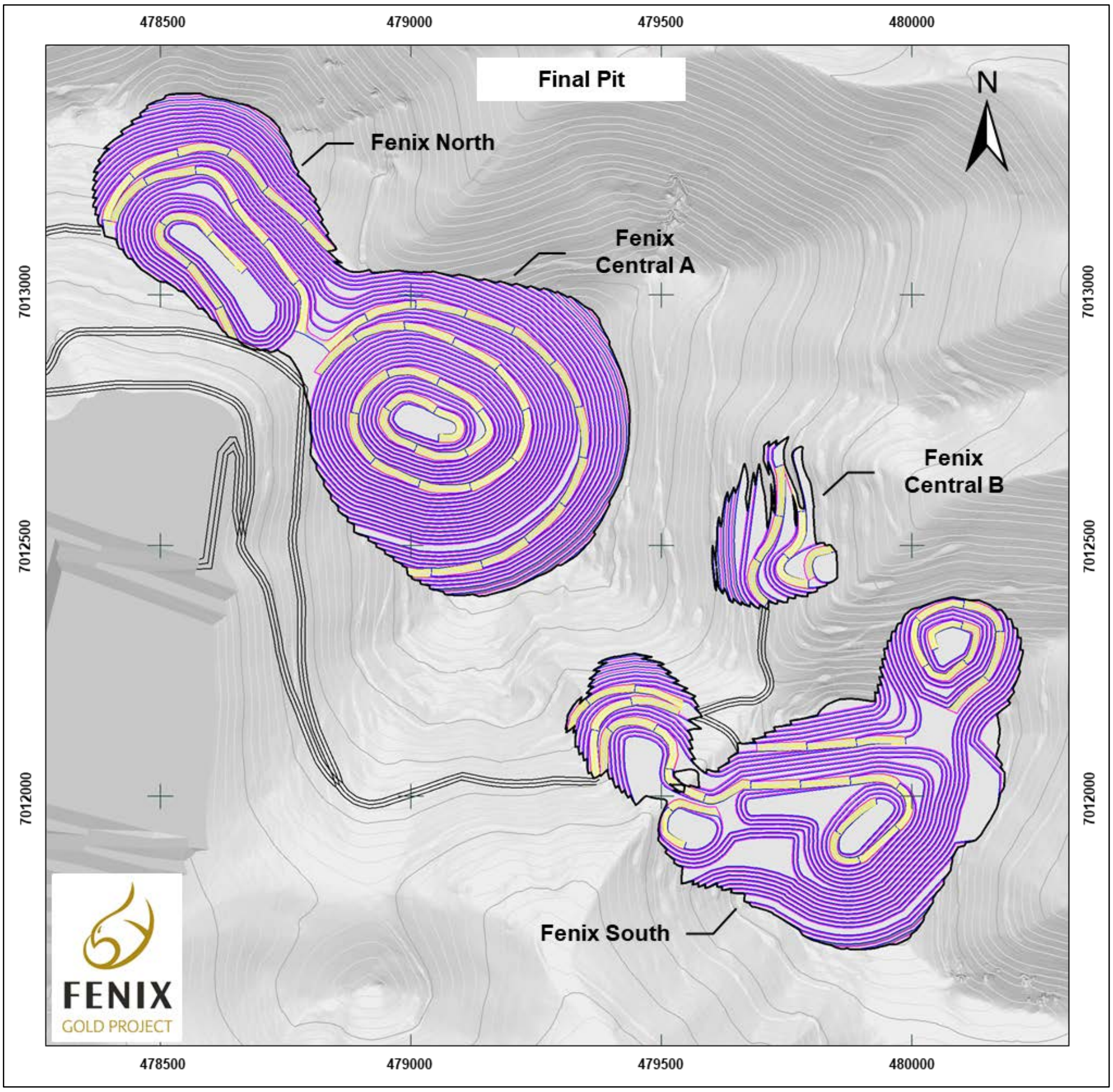
Figure 15-3 – Pit Optimization -Pit by Pit graph.

15.8 Mine Design

The final pit was designed based on pit shell 34 (RF 0.96) in the optimization process, considering geotechnical parameters with a ramp width of 14 m in accordance with Chilean mining regulations. Pit ramps were designed with a gradient of 10% for two-way traffic haul roads to hold mining trucks of 43 metric tonnes of payload. In order to provide stability to the wall slope, 14 m geotechnical catch-benches were considered every 160 m. The mine design parameters are summarised in Table 15-5, and the final pit design is presented in Figure 15-4.

Table 15-5 – Mine design parameters.

Design Parameters	Unit	Value
Haul road width	m	14
Haul road gradient	%	10
Bench Height	m	10
Batter Angle	degrees	75
Berm Width	m	Variable
Inter-ramp Angle	degrees	Variable
Safety berm width every 160 m vertical	m	14



Source: Rio2, 2023

Figure 15-4 – Final pit design.

15.9 Mineral Reserve Statement

The Resource estimation discussed in Chapter 14 was prepared using industry-standard methods. The Qualified Person (QP) and author of Chapter 15 has reviewed the reported Mineral Resources, production schedules, and economic parameters to determine if the Resources met the CIM Definition Standards for Mineral Resources and Mineral Reserves, to be classified as Proven and Probable Reserves. The QP has concluded that the Measured and Indicated Mineral Resource contained within the final pit is suitable to be converted to Mineral Reserves.

The Mineral Reserve estimate is shown in Table 15-6 with an effective as of May 11, 2023, reported with a cut-off grade of 0.235 g/t of gold with a diluted grade described in Section 15.5. The Mineral Reserves are reported as in-situ dry million tonnes with the operational pit containing 114.7 Mt of

Proven and Probable ore and 97.1 Mt of waste material with a stripping ratio (SR) of 0.85, for a total of 211.8 Mt of total material.

Table 15-6 – Mineral Reserves statement.

Mineral Reserve Classification	Million Metric Tonnes	Au Grade (g/t)	Au Ounces (x1,000)
Proven	63.2	0.50	1,022
Probable	51.5	0.45	750
Total Ore (Proven and Probable)	**114.7**	**0.48**	**1,772**

Notes:
1. *Totals may not add up correctly due to rounding.*
2. *Metal price of $1,650 per ounce of gold was used to estimate Mineral Reserves.*
3. *Mineral Reserves are estimated using a minimum cut-off of 0.235 g/t and assuming metallurgical recovery of 75% on average for the life of mine.*
4. *Mineral Reserves were prepared by Erick Ponce FAusIMM, Area Manager, Mining Plus.*
5. *Mineral Reserves are reported in accordance with Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101) and have been estimated in conformity with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines.*

The Mineral Reserve statement contains the total mineable Reserve for the deposits described in Section 15. The Mineral Reserve passed an economic test conducted on the production schedule. The results of the economic analysis are shown in Chapter 22.

16 MINING METHODS

16.1 Introduction

The Fenix Gold Project will be completed through conventional open pit operation using truck and excavator mining.

In 2014, Rio2 completed a Pre-Feasibility Study detailing a conceptual mine design that considered an 80,000 tpd processing throughput operation to produce approximately 3 Moz of Au over 13 years LOM. The 2014 mine plan relied on the installation of a 149 Km, capital intensive, water pipeline and associated environmental baseline studies. The timeline for the project would be dependent on receiving an Environmental approval and obtaining the relevant easements for surface rights and mining concessions. The absence of a defined permitting process and timeline for the pipeline construction encouraged Rio2 to seek an alternative project development option that will not require water pipeline construction.

As such, Rio2 commissioned Mining Plus to complete a mine plan for a 20,000 tpd processing throughput operation that delays the need to install the pipeline. The benefits of this option include:

- Commencement of production in the shortest possible timeframe, as the permitting footprint and associated requirements are greatly reduced.
- Minimizing the upfront capital requirements.
- Maximizing free cash flow by year five of the mine plan.
- Maintaining the potential to reconfigure and expand operations within the optimized pit shell.

With the objective of maximizing NPV, ROM material is sent directly from the pits to different destinations including leach pad (PAD), medium-grade stockpile, and low-grade stockpile. Stockpiling strategy allows giving priority to high gold grades early in the life of mine while ensuring an achievable rate of vertical advance (benches by phase by pit by year). Waste material is to be disposed of in a waste dump located in the southwest corner of the pit.

16.2 Geotechnical Analysis

The development of the stability analysis for the Pits defining Mineral Reserves (4 pits) in its Feasibility Stage for the Fenix Gold Project, was completed by Derk Ingeniería Y Geología Ltda as detailed in the report "Pit of Reserves Stability Analysis Feasibility Stage Fenix Gold" (Derk 2023).

The analysis and evaluation developed for the mine designs at the feasibility stage concludes the following:

1. The Fenix Gold Project is contained in a NW-SE oriented Maar-Diatrema system, which is located in a complex of andesitic to dacitic domes, inside the partially eroded volcano "Ojo de Maricunga".

2. Lithologies are grouped into three geotechnical units: Dacitic Dome (UM_DP), Bechas Complex (BxRF) and Andesitic Domes (UM_AP).
3. North, Central and South structural domains are considered for the deposit.
4. It is considered that the pits belonging to the Pit of Reserves are in dry condition, i.e., there is no groundwater or pore pressure.
5. A geotechnical characterization was done using the Geological Strength Index (GSI) of the 3 main geotechnical units.
6. The strength and deformability properties of the main lithological units was performed based on the analysis of laboratory tests at intact rock level and rock mass scale, considering lower than average values due to a conservative criterion due to the variability of the results.
7. Based on laboratory tests, Strength properties were estimated for the geological structures.

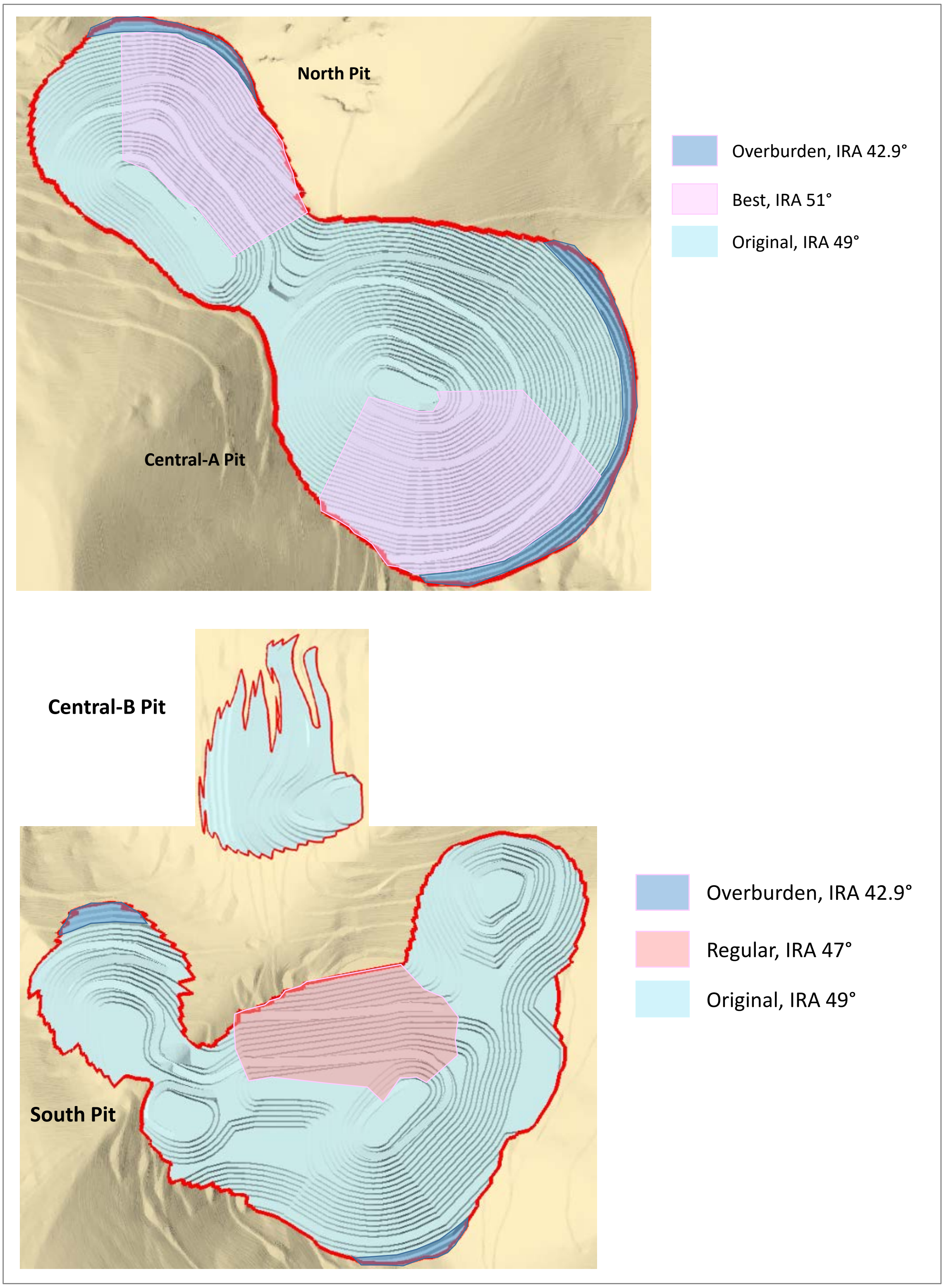
16.2.1 Stability Analysis

A stability analysis of the North, Central A, Central B and South pits was completed by Derk in 2023. The design analysed for the feasibility stage is shown in Figure 16-1 and the design parameters are shown in Table 16-1.

Table 16-1 – Parameters of design to pit Reserves of Fenix Gold Project, Derk (2023).

Design	Bench – Shoulder Slope				Inter Ramp Slope		Overall Slope	
	Bench Height	Bench Face Angle	Rupture	Berm	Inter Angle	Maximum Inter Ramp Height	Ramp Width	Maximum Overall Height
	m	degrees	m	m	degrees	m	m	m
Original	10	75	2.7	6.0	49	160	14	300
Best	10	75	2.7	5.4	51	160	14	300
Regular	10	75	2.7	6.6	47	160	14	300
Overburden	10	60	5.8	5.0	42.9	20 to 30	14	300

Notes:
1. *Original, Best, Regular and Overburden were used as zones to apply different geotechnical parameters for pit design.*
2. *Safety berm of at least 10 m is considered at maximum inter ramp height.*
3. *Pit design has a ramp width of 14 m with 10% of gradient.*



Source: DERK, 2023

Figure 16-1 – Designs of the North, Central A, Central B and South pits of the Fenix Gold Project – Feasibility Stage.

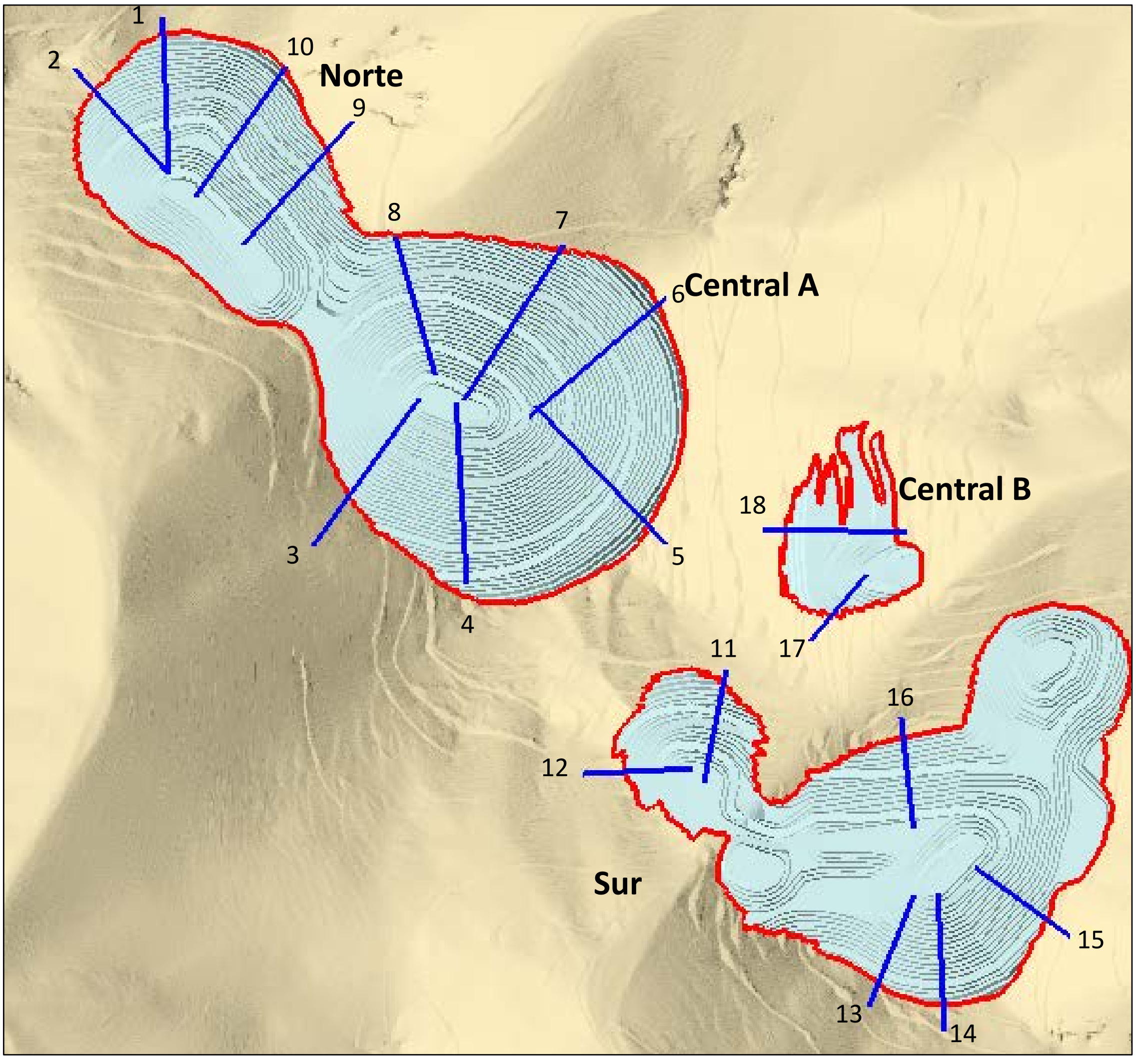
Based on Derk's geotechnical investigations, a safety berm of at least 10 m is required when the slopes inter-ramp level exceed 160 m in height, and in all cases, the analysed designs have no inter-ramp height higher than 160 m.

A berm bench analysis was performed, concluding that the mine design is feasible in all pits. Therefore, these evaluated designs are deemed safe, stable, and reliable. If an eventual flat slide, wedge instability, overturning or structural instability is generated, these scenarios will be contained within the design's berms.

For the stability analysis in two dimensions for the Fenix Gold Project pits in its feasibility stage, 18 geotechnical sections were defined. Each section was assigned a GSI based on the most conservative characterization. The location of the analysis sections for each pit is presented in Figure 16-2.

The horizontal seismic coefficients for an operational earthquake of 0.13 and the maximum credible earthquake of 0.20 were considered according to the updated earthquake hazard report developed by Anddes (2022).

Acceptability criteria were defined to evaluate the results of the stability analysis, which are presented in Table 16-2.



Source: DERK, 2023

Figure 16-2 – Geotechnical stability analysis sections of the North, Central A, Central B and South pits of the Fenix Gold Project - Feasibility Stage.

Table 16-2 – Acceptability criteria for slopes of The Fenix Gold Project - Feasibility stage Derk (2023).

Slope	Static		Earthquake Design		Maximum Credible Earthquake		Comments
	FS	PF (%)	FS	PF (%)	FS	PF (%)	
Bench	> 1.30	< 30	-		-		The berm is designed with a nominal width to contain flat landslides or wedge landslides whose size stops 85% of the landslide, estimated deterministically and probabilistically. The design considers simple benches of 10 m in height. Compliance with the program line will be monitored.

Slope	Static		Earthquake Design		Maximum Credible Earthquake		Comments
	FS	PF (%)	FS	PF (%)	FS	PF (%)	
Inter-ramp Global	> 1.30	< 10	≥ 1.10	< 25	≥ 1.00	< 50	The stability analysis must explicitly include the effect of the structures present in the rock mass. There is no infrastructure inside the pit. The surface infrastructure is away from the final perimeter of the pit and will not suffer subsidence problems.

Notes:
1. *FS: Factor of Safety*
2. *PF: Probability of Failure*

The stability evaluation, done through limit equilibrium analysis, takes in to account the directionality of the rock mass, the slope designs at the inter-ramp and global level, the presence of major and minor faults in the North, Central A, Central B and South pits of the Fenix Gold Reserves Pit and compliant with the acceptability criteria defined by the static, operational earthquake, and maximum credible earthquake scenarios in all the defined analysis sections. Therefore, the designs are stable, acceptable, and safe in all scenarios considered.

The slope designs of the pits defining the Mineral Reserves in feasibility stage were evaluated. The geotechnical analysis of the designs confirms their stability, acceptability, and safety, accounting for geological, geotechnical, seismic, hydrogeological, and structural conditions.

16.3 Hydrogeology and Hydrology

Hydrology and hydrogeology considerations for this study have been taken from the Fenix Gold Project Geochemistry and Hydrogeology Baseline Study (ICASS, 2020).

The hydrological evaluation indicates that the local average annual precipitation is ~150 mm of total water (liquid precipitation plus solid); however, the zero effective precipitation indicates that all the water that falls in the basin is retained in the subsoil (subject to evapotranspiration) and no runoff is generated. Total annual evapotranspiration for the heap leach and stockpiles, pit and waste store basins correspond to 477, 483 and 523 mm/year, respectively. It should be noted that the heap leach basin does not have evapotranspiration in June and July because the average monthly temperatures are less than zero, the same thing occurs in the Pit basin between May and August. Additionally, with respect to the snow cover, it is estimated that snow melting occurs between August to November, therefore the potential sublimation is estimated to be 20% of the potential evapotranspiration.

Regarding the hydrogeological evaluation, the results of geophysical prospecting, hydrogeological drilling and monitoring carried out at control points report that no groundwater has been found within the limits of each mining component, which is supported by the hydrogeological characteristics of the project (low storage capacity). The behavior of surface and groundwater in the basins and sub-basins in the project area will be monitored and reassessed to ensure that the water resources found in the project environment are not affected by mining activities. The water resources found in the project environment are not affected by mining activities.

16.4 Pit Design and Optimal Pit Shell

The final pit was designed by Rio2 based on optimal pit shell 34 (RF 0.96) resulting from the optimization process, which considered the geotechnical parameters by sectors. The pit designs use a safety berm of at least 10 m, a maximum inter-ramp height of 160 m, and ramp width of 14 m with 10% of gradient.

The final pit design was divided in three pits: Fenix North and Fenix Central A, Fenix Central B and Fenix South. Mining Plus reviewed and validated the final pit design.

The ramps were designed in accordance with requirements of the Chilean mining regulations. A total width of 14 m considers double lane traffic for the largest truck width in the fleet, including drains on either side of the haulage road and safety berms.

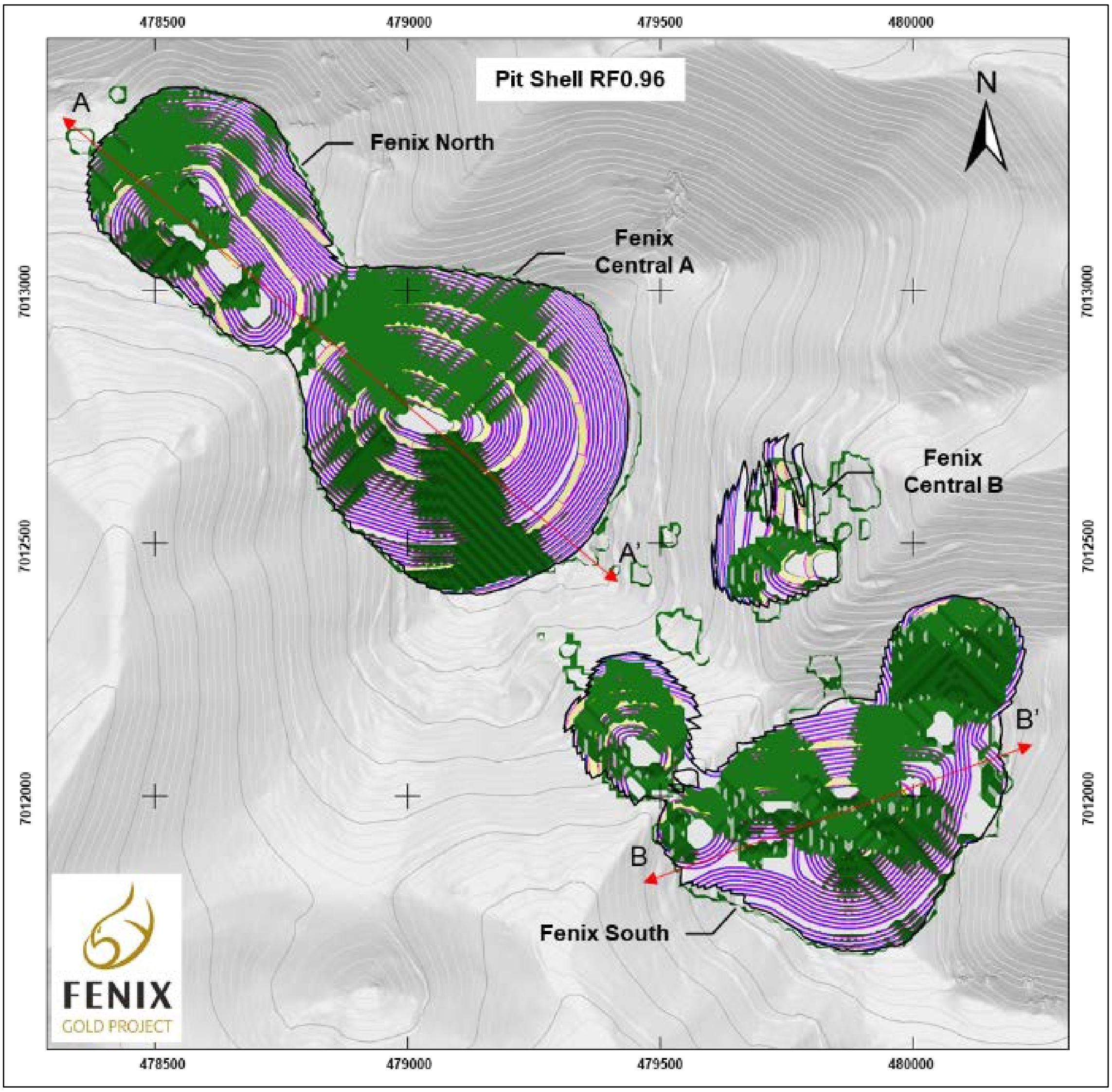
Pit exit ramps are planned to be on the west side of the pit and gives short access to the waste dumps, stockpiles and PAD access roads.

Table 16-3 shows the difference of ore and waste tonnages of the pit design against the Whittle pit shell. The differences between the pit design and the pit shell are less than 1% in ore and less than 4% in total material.

Table 16-3 – Tonnage and grade comparison - Optimized pit and pit design.

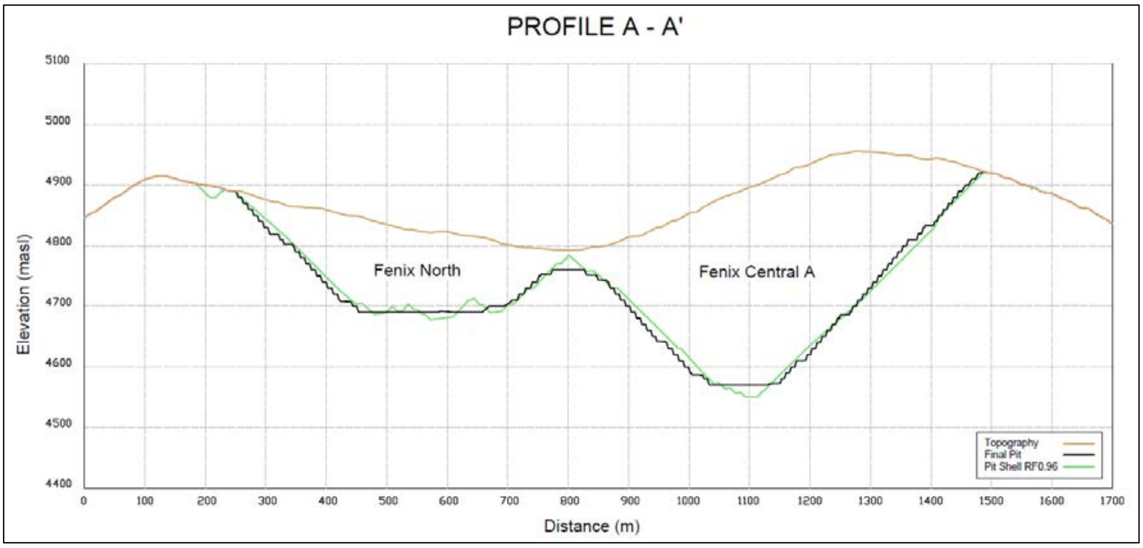
Item	Unit	Pit Design	Pit Shell RF 0.96	Variation%
Ore	Mt	114.7	114.4	0.26%
Au Grade	g/t	0.48	0.48	-0.38%
Waste	Mt	97.1	90.6	7.21%
Total Material	Mt	211.8	204.9	3.33%
Contained Ounces	Au oz x1000	1,772	1,774	-0.12%
SR	w/o	0.85	0.79	-

Mining Plus considers the variation between pit design and Whittle pit shell reasonable. Figure 16-3 to Figure 16-5 show a graphic comparison between the mine design and pit shell RF 0.96 in plan view and cross sections.



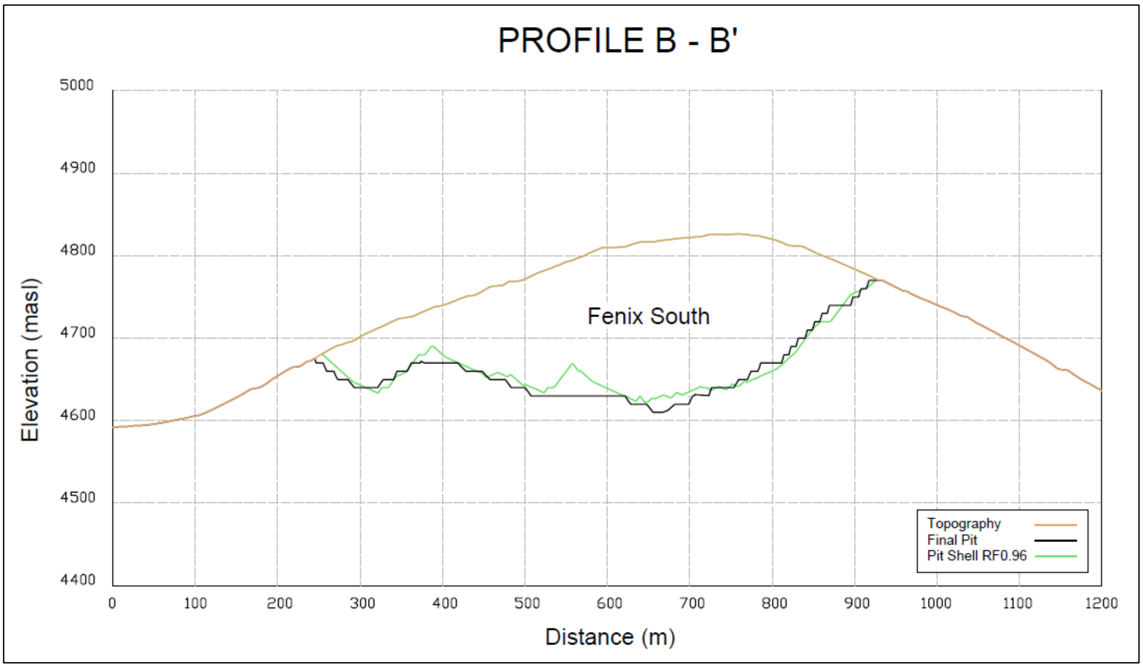
Source: Mining Plus, 2023

Figure 16-3 – Pit design and pit shell RF 0.96.



Source: Mining Plus, 2023

Figure 16-4 – Profile A-A' - Pit design and pit shell.



Source: Mining Plus, 2023

Figure 16-5 – Profile B-B' - Pit design and pit shell.

16.5 Mine Phase Design

The Fenix Gold Project is mined in nine phases. Rio2 designed the mining phases based on concentric pit shells resulting from the optimization process. The designs consider a minimum mining width of 40 m for each phase, which allows an excavator and truck to work safely. Mining Plus reviewed and validated the mining phases.

The initial phases contain the highest-grade ore and least amount of waste material possible. The phases were designed with the following criteria:

- Open high-grade ore in the first phases.
- Minimum mining width of 40 m between mining phases.
- Connectivity of ramps between phases.

The following Table 16-4 shows the phases corresponding to each pit sectors.

Table 16-4 – Phases by pit sectors.

Pit Sectors	Phase
Fenix North	Phase 02A
	Phase 02B
Fenix Central A	Phase 01
	Phase 04
	Phase 06
Fenix Central B	Phase 07
Fenix South	Phase 03
	Phase 05A
	Phase 05B

Table 16-5 and Figure 16-6 shows the material content of each phase.

Table 16-5 – Mine phases and gold content.

Phase	Ore (Mt)	Au (g/t)	Waste (Mt)	Total Material (Mt)	SR	VPT (US$/t)
Phase 01	16.1	0.46	4.1	20.2	0.26	4.28
Phase 02A	6.2	0.55	4.0	10.2	0.64	4.97
Phase 02B	8.6	0.49	10.0	18.5	1.16	2.01
Phase 03	17.2	0.55	8.6	25.8	0.50	5.63
Phase 04	30.4	0.45	20.9	51.3	0.69	2.33
Phase 05A	16.3	0.46	20.8	37.0	1.28	1.23
Phase 05B	1.6	0.44	1.3	2.9	0.76	1.86
Phase 06	17.7	0.47	26.5	44.2	1.50	1.03
Phase 07	0.6	0.44	1.0	1.6	1.79	0.20
Total	**114.7**	**0.48**	**97.1**	**211.8**	**0.85**	**2.53**

Notes:

1. *Value per Tonnage (VPT) represents the value per tonnage for all material considering revenues and operating cost per block.*

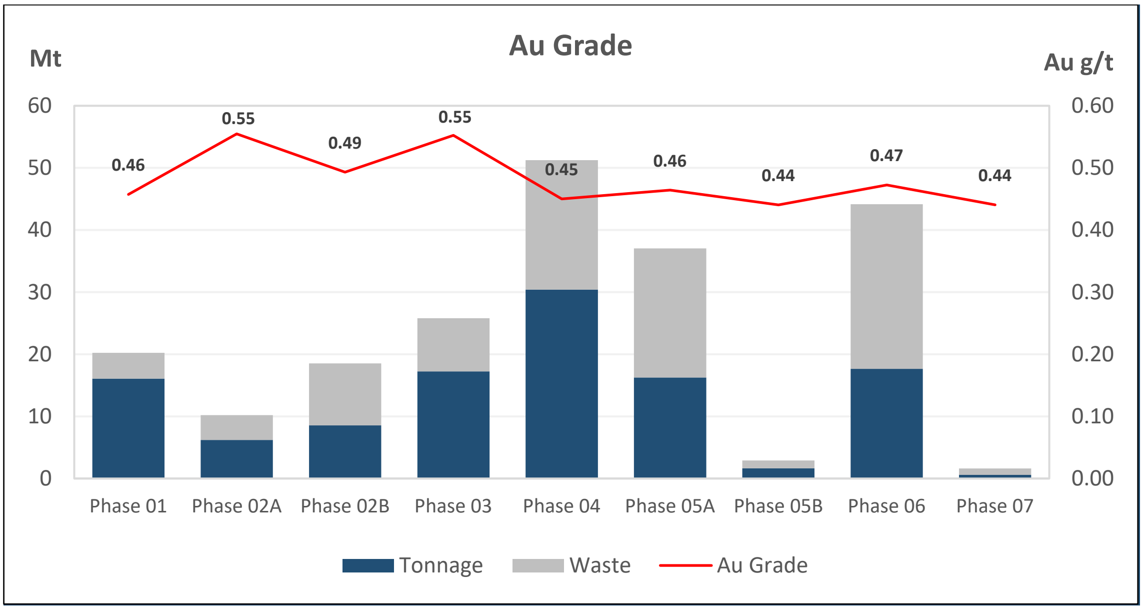
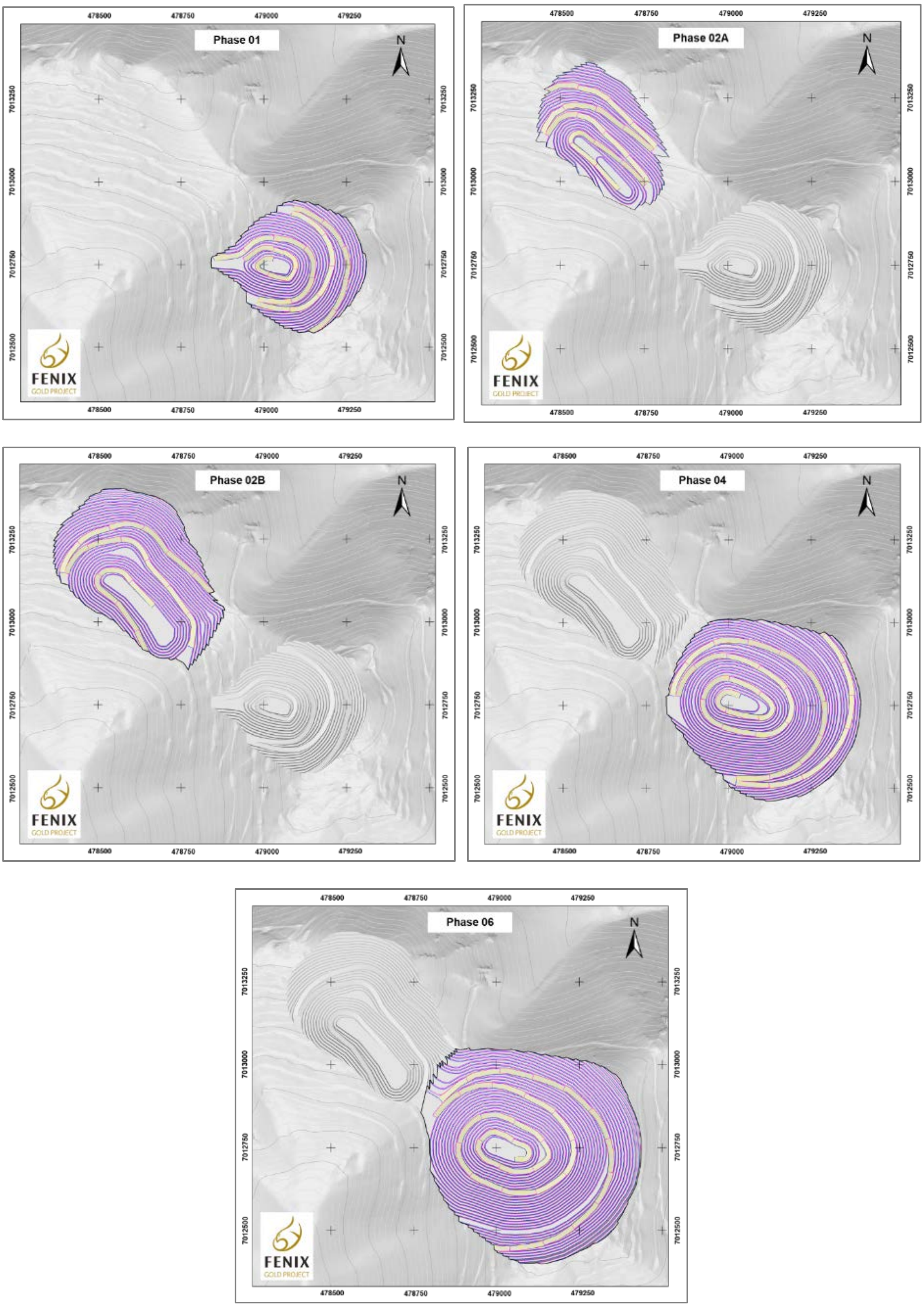


Figure 16-6 – Mine phases and gold grade.

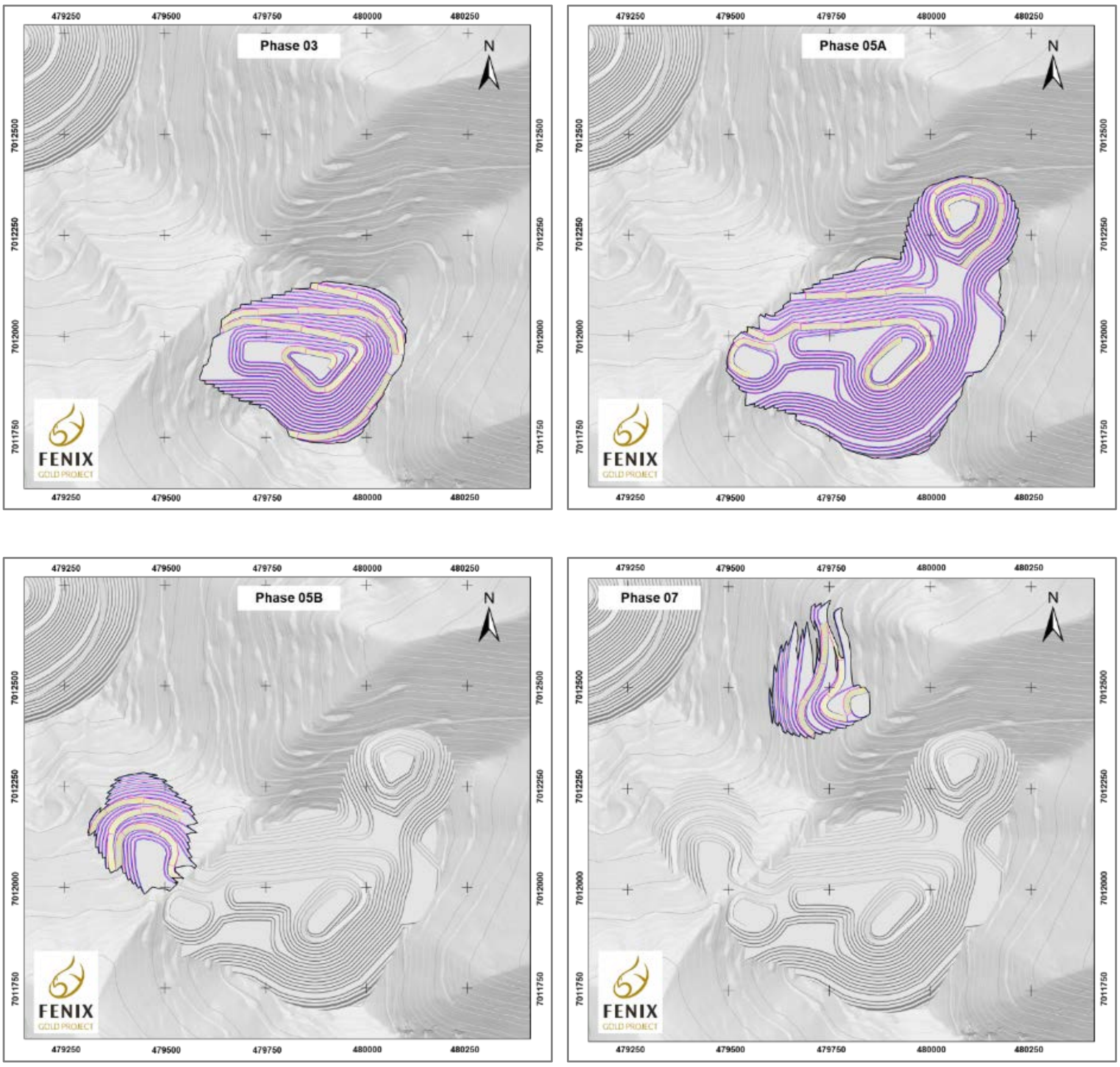
Phase sequence starts with Phase 02A and Phase 03, which have the highest gold grades with low stripping ratios and contribute the highest value to the project. Phase 04 produces a large amount of ore tonnage which will maintain throughput to PAD during stripping of Phase 06.

Phases were designed to allow mining of top benches with ramps and haul roads from previous phases. The Figure 16-7 and Figure 16-8 show the mining phases design in plan view.



Source: Mining Plus, 2023

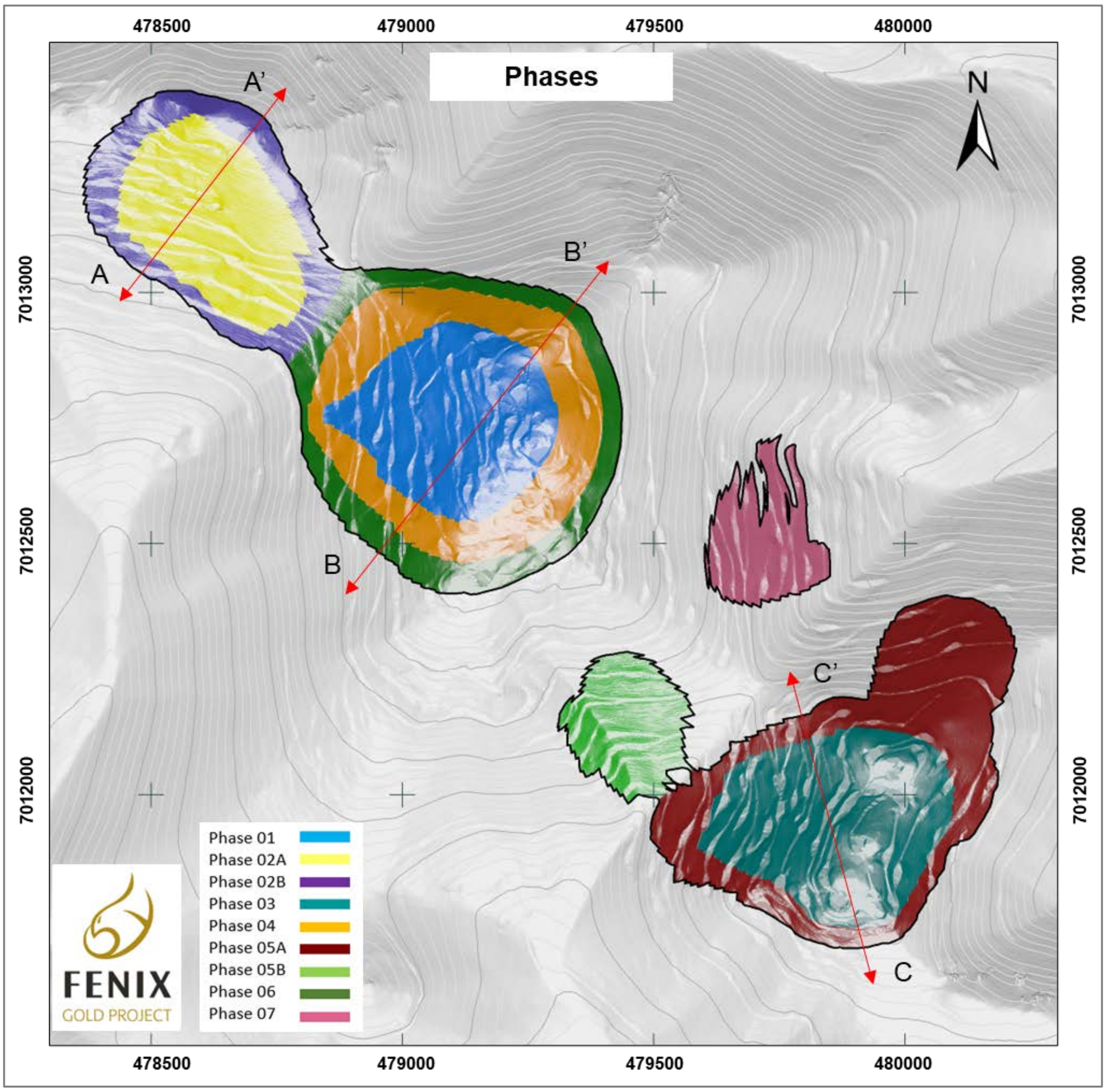
Figure 16-7 – Phases design - Fenix North and Fenix Central A.



Source: Mining Plus, 2023

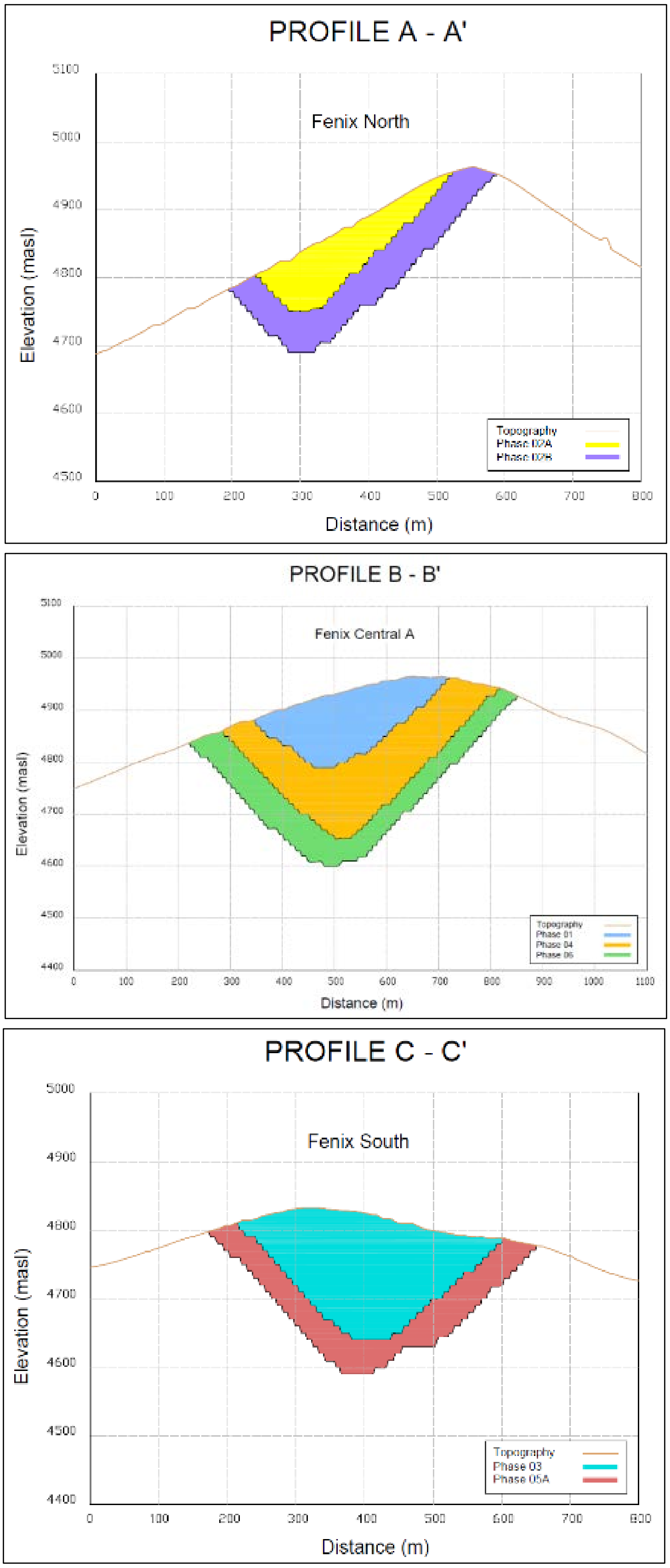
Figure 16-8 – Phases design - Fenix South and Fenix Central B.

The Figure 16-9 and Figure 16-10 show a plan view of mining phases and cross sections A-A’, B-B’ and C-C’.



Source: Mining Plus, 2023

Figure 16-9 – Mine phases.



Source: Mining Plus, 2023

Figure 16-10 – Section view of mining phases.

16.6 Mine Production Schedule

16.6.1 Production Scheduling Criteria

The mine plan was completed by Mining Plus using Hexagon's MPSO (MinePlan Schedule Optimizer). The mine was scheduled monthly for the first two years, the following two years were scheduled quarterly and from year five onwards on yearly basis.

The mining sequence objective was to maximize the value of the project, favoring high gold grades to be processed earlier in the life of mine.

The Fenix Gold Project consists of an open pit mine developed using conventional drill and blast techniques, with an excavator and truck configuration. The throughput rate is 20,000 tpd of ore mined as ROM to PAD and stockpiles for medium grade and low grade were considered to prioritize high grades during the LOM. A waste dump located at southwest corner of the pits will store material below the cut-off grade.

Rio2 provided the mine schedule parameters described in the following Table 16-6.

Table 16-6 – Mine schedule parameters.

Parameters		Value	Unit
Annual Ore Production	Year 1	4,380	Ktpa
	Year 2 - 17	7,300	Ktpa
Daily Ore Production	Year 1	12	Ktpd
	Year 2 - 17	20	Ktpd
Mine Capacity		21,000	Ktpa
Mineral Reserve		Proven and Probable	-
Maximum Sinking Rate		10	bench/year

The mining rate has been determined based on the processing rate, primarily a function of the available water. The water supply will be delivered to site by a fleet of trucks from Copiapó. The water supply rate was determined primarily by assessing the practical and sustainable limit to the number of trucks that can make the continual cycle from Copiapó to the mine.

The cut-off grade of 0.235 g/t Au determined in Section 15.6 was used for the mine schedule. Rio2 provided the cut-off grade for the mine schedule by destination as shown in Table 16-7. Mineralized ore with Cut-off grades classified as medium grade and low grade will be properly stockpiled to further improve the economics and increase cash flow.

Table 16-7 – Cut-off grade by destination.

Category	Lithology	Alteration	Ore Zone	Au grade g/t	Destination
Measured - Indicated	BxRf, UM_AP, UM_DP y Lam	ALL	OXI	Au ≥ 0.235	PAD
Measured - Indicated	BxRf, UM_AP, UM_DP y Lam	ALL	OXI	Au ≥ 0.30	Stock MG/PAD
Measured - Indicated	BxRf, UM_AP, UM_DP y Lam	ALL	OXI	Au ≥ 0.25 < 0.30	Stock LG/PAD

Notes:

1. *Destination Stock MG is Stockpile Medium Grade.*
2. *Destination Stock LG is Stockpile Low Grade.*
3. *Cut-off of 0.25 g/t was applied to stockpiles and considers economic costs related to rehandle.*

Ore with medium grade for stockpile material is considered above 0.30 g/t Au which allows to prioritise high grades in early years. Low grade material is between 0.25 – 0.30 g/t Au, this cut-off considers rehandle cost from stockpile location to PAD. The ore material above 0.235 g/t is treated directly as ROM.

Medium grade and low grade stockpiles will be located adjacent to the PAD; however the medium grade stockpile requires more storage capacity, therefore a second area was defined above the waste dump south of the pit. Low grade ore is sent to Stockpile LG and medium grade ore is sent to two locations “Stockpile MG 01” and “Stockpile MG 02” as described in Section 16.10.

The first year of production has an average production rate of 12,000 tpd of material placed on the leach pad, which reflects the ramp to nameplate capacity of 20,000 tpd. The starter pits of the initial phases are located on topographic high points with limited workspace. The mined gold grade is 0.66 g/t Au producing 62 Koz of recovered gold. The yearly gold production and metallurgical recovery model was developed by HLC as described in Section 17.5.

The PAD operates at the full 20,000 tpd throughput capacity between years 2 and 12, the total mining rate has a maximum of 21 Mtpa. The gold grade mined during this period has an average of 0.54 g/t Au with an average yearly production of 94 Koz of recovered gold.

Ore material from years 13 to 17 is delivered directly from stockpiled material to the PAD as the mine ceased operation to continue the production target of 20,000 tpd processing rate with an average grade of 0.30 g/t Au to produce an average of 54 Koz of recovered gold. The final year completes the rehandle from stockpiles in two months recovering 11 Koz gold from the leach pad.

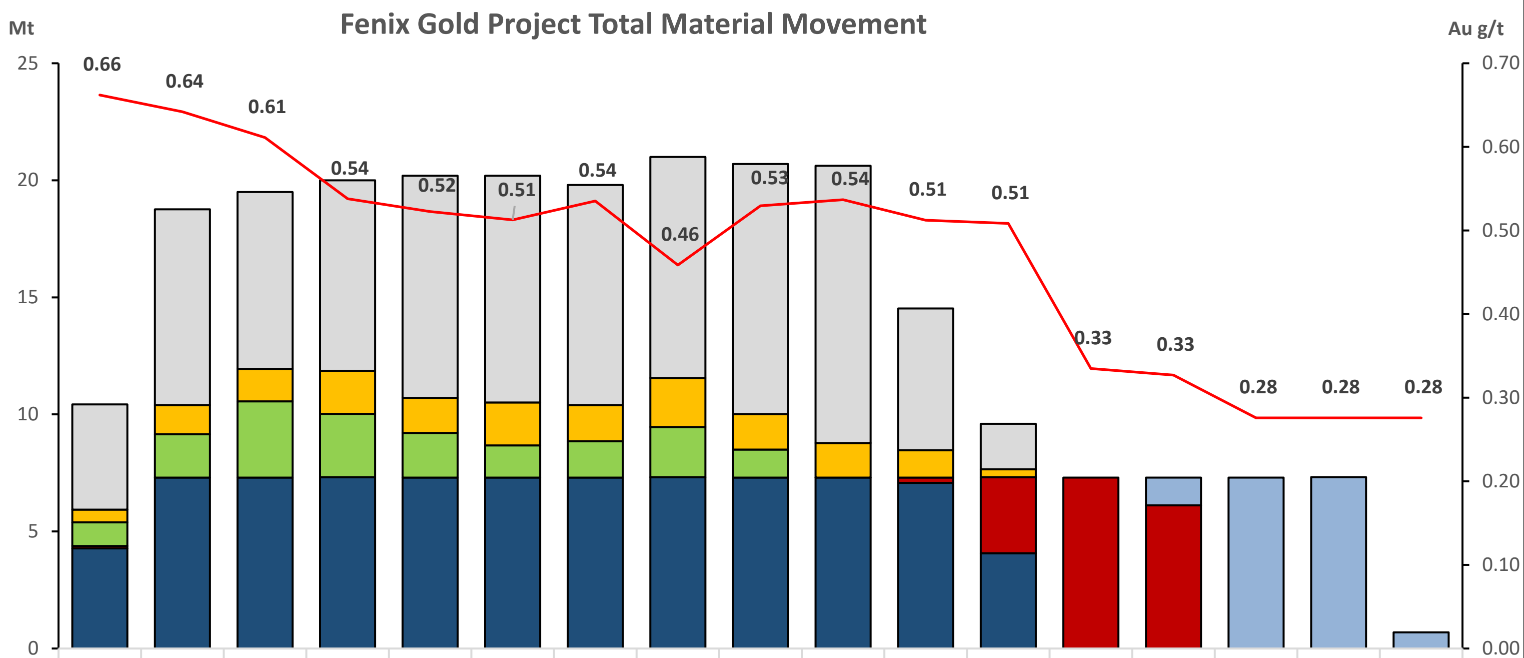
The projected production schedule for the Fenix Gold Project is presented in Table 16-8 and Figure 16-11.

Table 16-8 – Production schedule for Fenix Gold Project.

Year	Mine to PAD		Mine to Stockpile MG		Stockpile MG to PAD		Mine to Stockpile LG		Stockpile LG to PAD		Total Ore to PAD		Mine to WD	Total Mined	Total Movement	Contained Gold
	Mt	Au (g/t)	Mt	Au (g/t)	Mt	Au (g/t)	Mt	Au (g/t)	Mt	Au (g/t)	Mt	Au (g/t)	Mt	Mt	Mt	Koz
1	4.28	0.67	1.01	0.37	0.10	0.38	0.54	0.28	-	-	4.38	0.66	4.50	10.32	10.43	93
2	7.30	0.64	1.85	0.34	-	-	1.25	0.28	-	-	7.30	0.64	8.36	18.76	18.76	151
3	7.30	0.61	3.26	0.36	-	-	1.39	0.28	-	-	7.30	0.61	7.56	19.50	19.50	143
4	7.32	0.54	2.70	0.33	-	-	1.84	0.28	-	-	7.32	0.54	8.14	20.00	20.00	127
5	7.30	0.52	1.91	0.33	-	-	1.50	0.28	-	-	7.30	0.52	9.49	20.20	20.20	123
6	7.30	0.51	1.38	0.32	-	-	1.84	0.28	-	-	7.30	0.51	9.69	20.20	20.20	120
7	7.30	0.54	1.55	0.32	-	-	1.55	0.28	-	-	7.30	0.54	9.40	19.80	19.80	126
8	7.32	0.46	2.14	0.33	-	-	2.10	0.28	-	-	7.32	0.46	9.44	21.00	21.00	108
9	7.30	0.53	1.20	0.32	-	-	1.52	0.28	-	-	7.30	0.53	10.68	20.70	20.70	124
10	7.30	0.54	-	-	-	-	1.48	0.28	-	-	7.30	0.54	11.84	20.62	20.62	126
11	7.08	0.52	-	-	0.22	0.34	1.17	0.28	-	-	7.30	0.51	6.06	14.30	14.53	120
12	4.07	0.64	-	-	3.25	0.34	0.33	0.28	-	-	7.32	0.51	1.94	6.34	9.60	120
13					7.30	0.33	-	-	-	-	7.30	0.33	-	-	7.30	79
14					6.12	0.34	-	-	1.18	0.28	7.30	0.33	-	-	7.30	77
15					-	-	-	-	7.30	0.28	7.30	0.28	-	-	7.30	65
16					-	-	-	-	7.32	0.28	7.32	0.28	-	-	7.32	65
17					-	-	-	-	0.69	0.28	0.69	0.28	-	-	0.69	6
Total	**81.16**	**0.55**	**17.00**	**0.34**	**17.00**	**0.34**	**16.49**	**0.28**	**16.49**	**0.28**	**114.65**	**0.48**	**97.10**	**211.76**	**245.25**	**1,772**

Notes:

1. *Totals may not add up due to rounding.*
2. *Mine schedule uses a minimum cut-off of 0.235 g/t Au.*
3. *Contained gold does not consider a metallurgical recovery. The gold production schedule is detailed in Chapter 17 completed by HLC.*
4. *Mine to WD refers to waste dump destination.*
5. *Stockpile MG includes Stockpile MG 01 and Stockpile MG 02.*

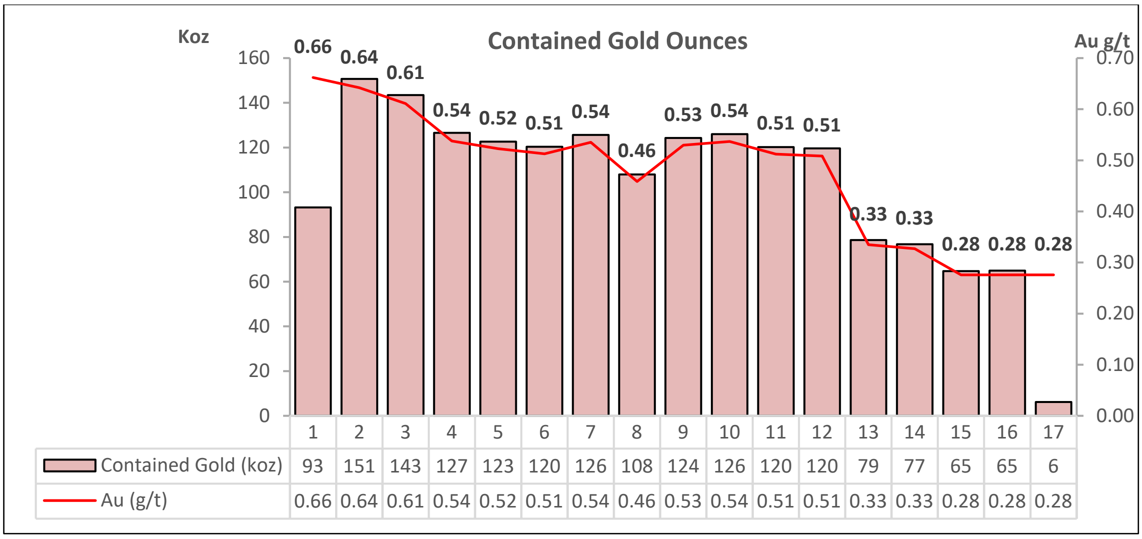


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Mine to Waste Dump	4.50	8.36	7.56	8.14	9.49	9.69	9.40	9.44	10.68	11.84	6.06	1.94	-	-	-	-	-
Mine to StockPile LG	0.54	1.25	1.39	1.84	1.50	1.84	1.55	2.10	1.52	1.48	1.17	0.33	-	-	-	-	-
Mine to StockPile MG	1.01	1.85	3.26	2.70	1.91	1.38	1.55	2.14	1.20	-	-	-	-	-	-	-	-
StockPile LG to PAD	-	-	-	-	-	-	-	-	-	-	-	-	-	1.18	7.30	7.32	0.69
StockPile MG to PAD	0.10	-	-	-	-	-	-	-	-	-	0.22	3.25	7.30	6.12	-	-	-
Mine to PAD	4.28	7.30	7.30	7.32	7.30	7.30	7.30	7.32	7.30	7.30	7.08	4.07	-	-	-	-	-
Au (g/t)	0.66	0.64	0.61	0.54	0.52	0.51	0.54	0.46	0.53	0.54	0.51	0.51	0.33	0.33	0.28	0.28	0.28

Source: Mining Plus, 2023

Figure 16-11 – Fenix Gold project, Mine schedule.

The yearly gold output from the pit is shown in Figure 16-12.

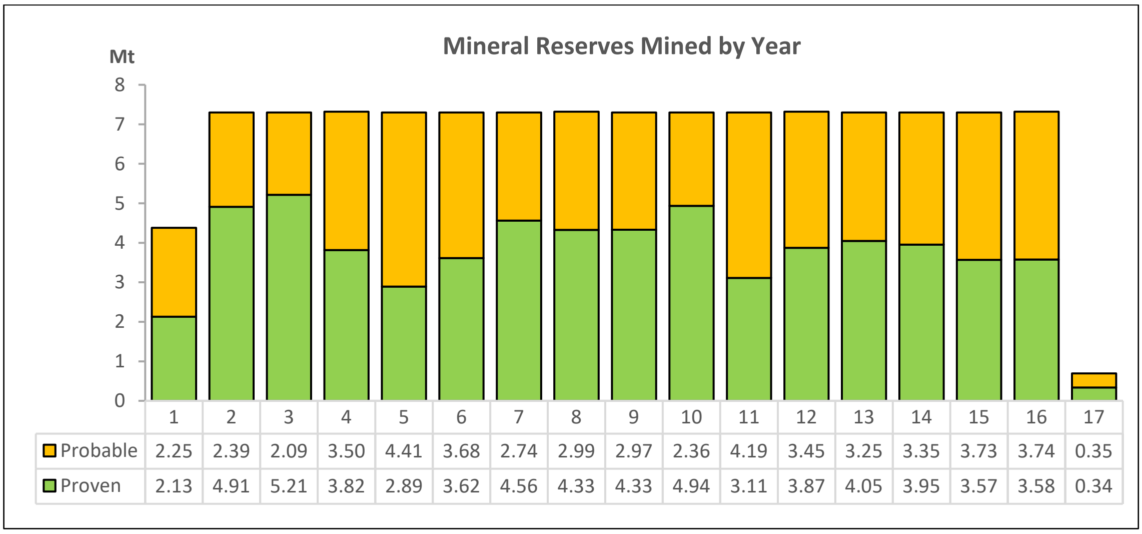


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Contained Gold (koz)	93	151	143	127	123	120	126	108	124	126	120	120	79	77	65	65	6
Au (g/t)	0.66	0.64	0.61	0.54	0.52	0.51	0.54	0.46	0.53	0.54	0.51	0.51	0.33	0.33	0.28	0.28	0.28

Source: Mining Plus, 2023

Figure 16-12 – Contained ounces gold – Fenix Gold Project.

Mineral Reserve classification corresponds to 55% of Proven and 45% of Probable Reserves. The Figure 16-13 describes the yearly distribution in the mine schedule.

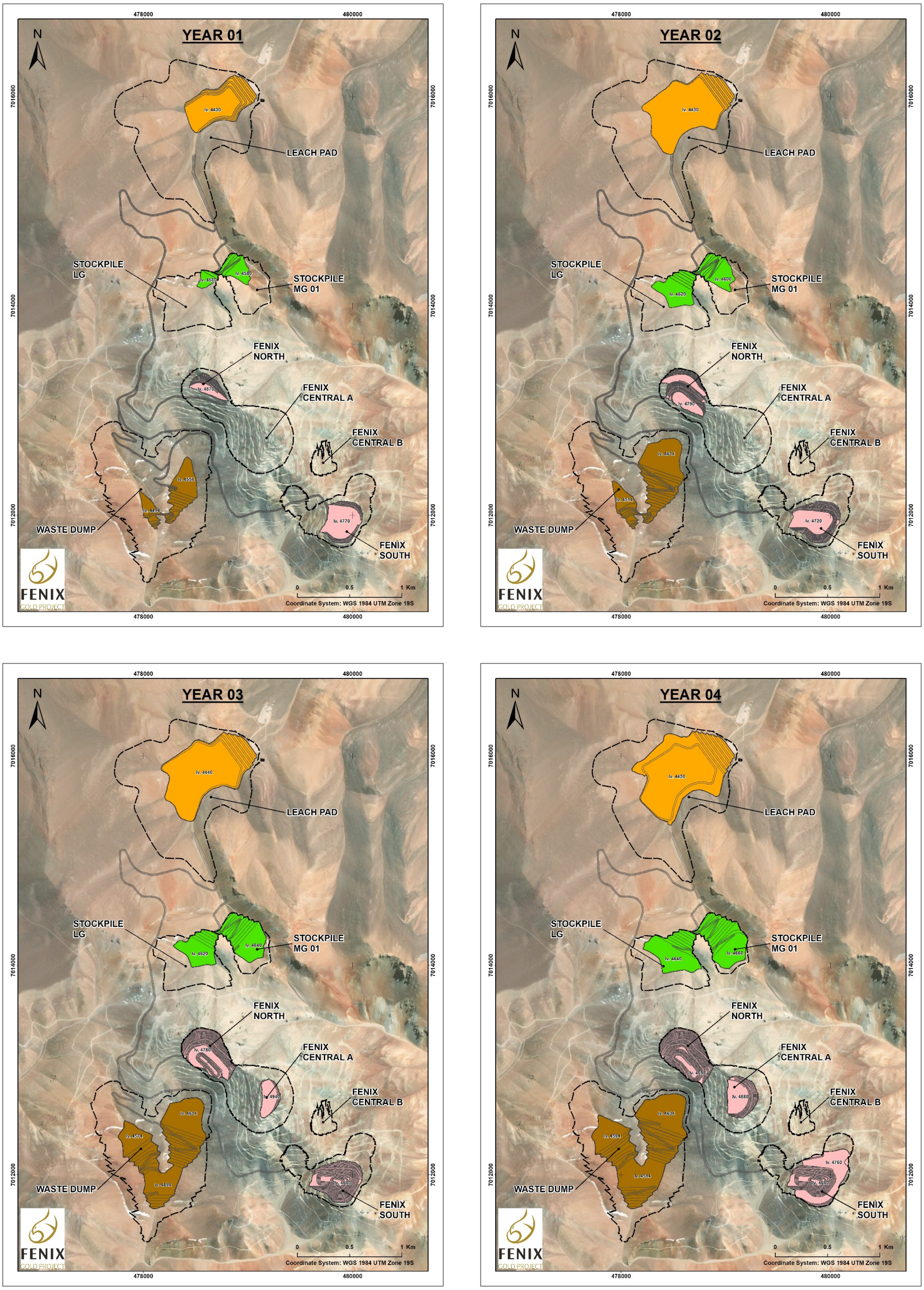


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Probable	2.25	2.39	2.09	3.50	4.41	3.68	2.74	2.99	2.97	2.36	4.19	3.45	3.25	3.35	3.73	3.74	0.35
Proven	2.13	4.91	5.21	3.82	2.89	3.62	4.56	4.33	4.33	4.94	3.11	3.87	4.05	3.95	3.57	3.58	0.34

Source: Mining Plus, 2023

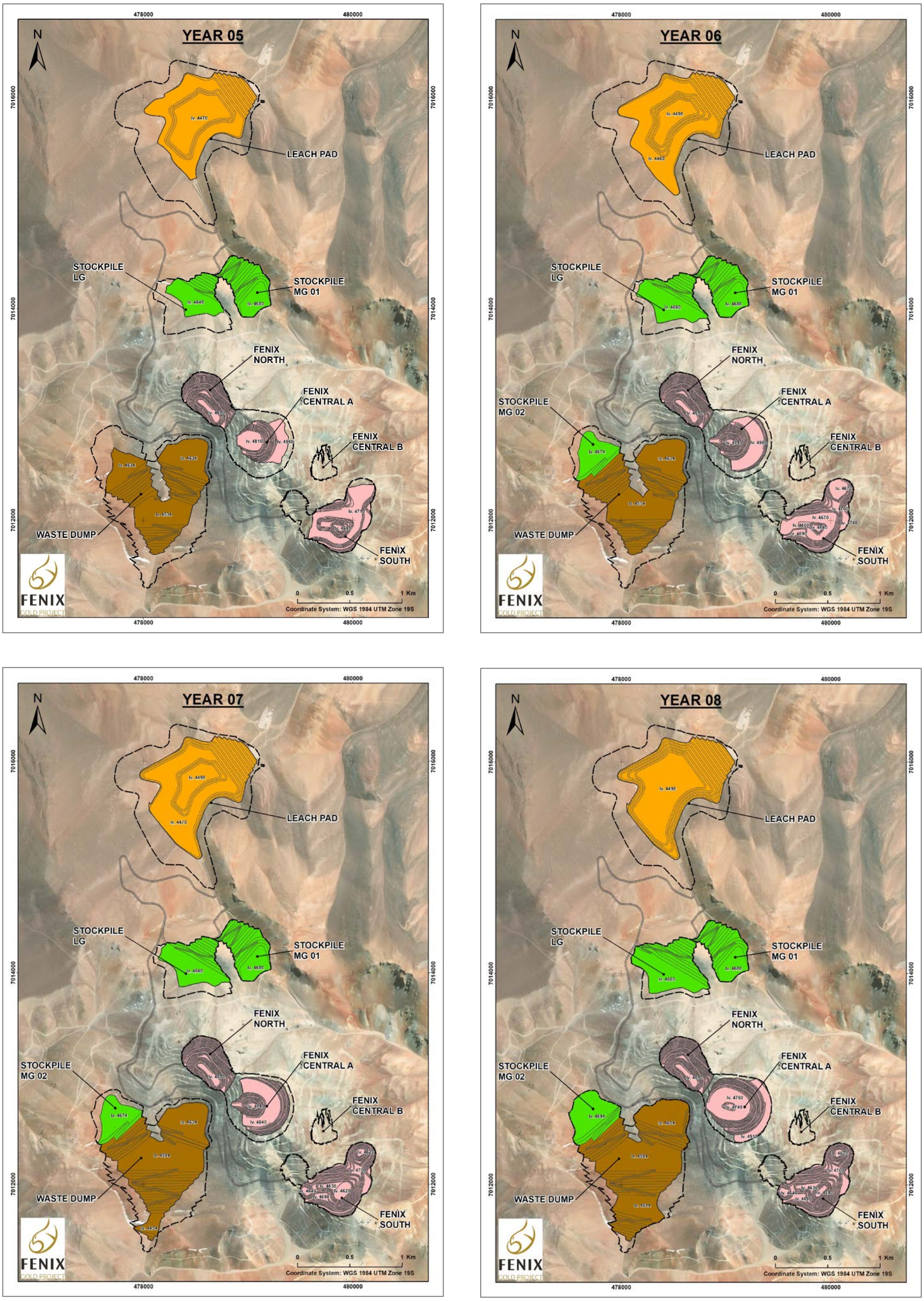
Figure 16-13 –Mineral Reserves Mined by Year– Fenix Gold Project.

The anticipated mine sequence is presented in Figure 16-14 to Figure 16-18. Sequence and rehandling of Stockpile LG, Stockpile MG 01 and Stockpile MG 02 are also included in the figures.



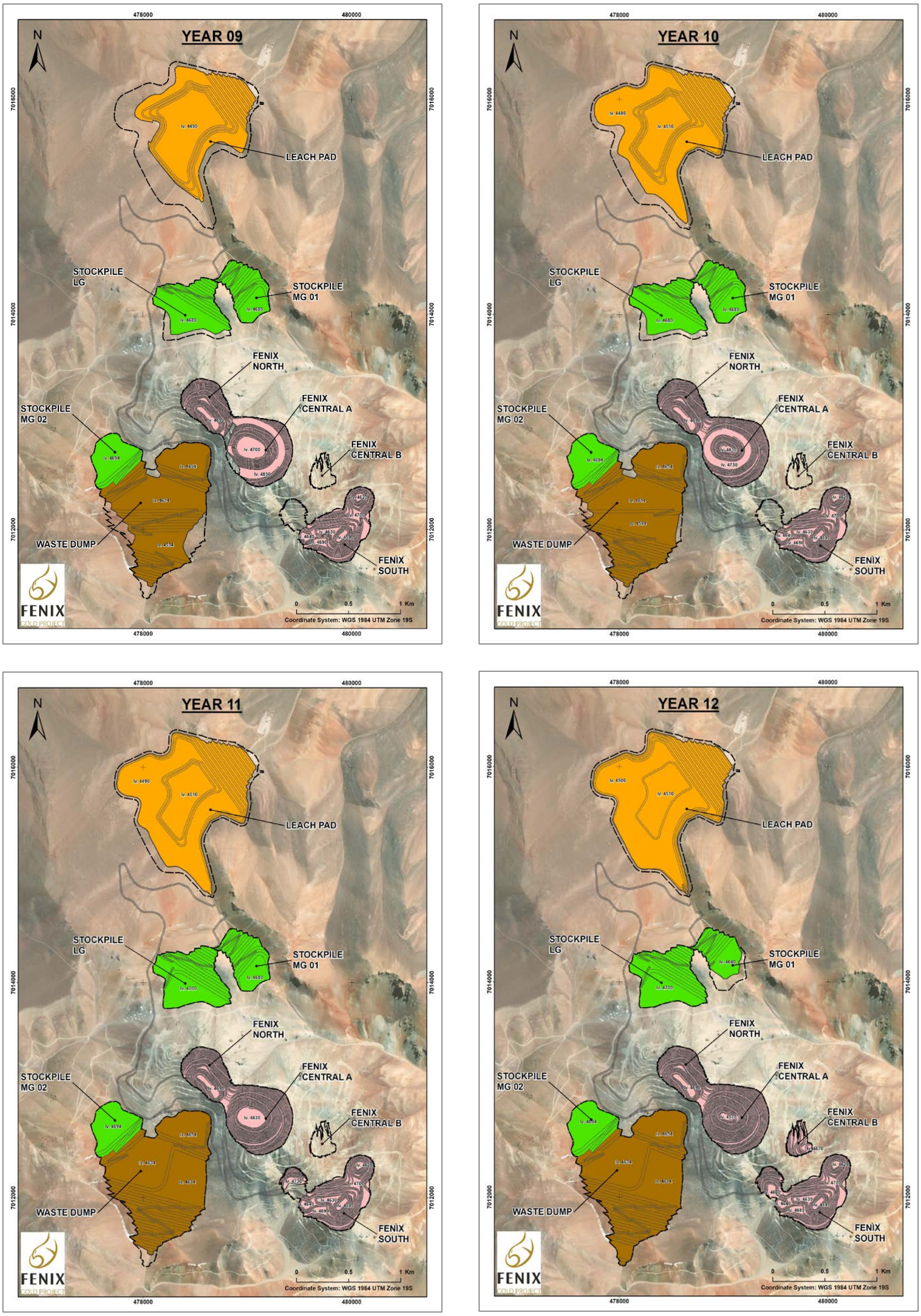
Source: Rio2, 2023

Figure 16-14 – End of Period map – Year 1 - 4.



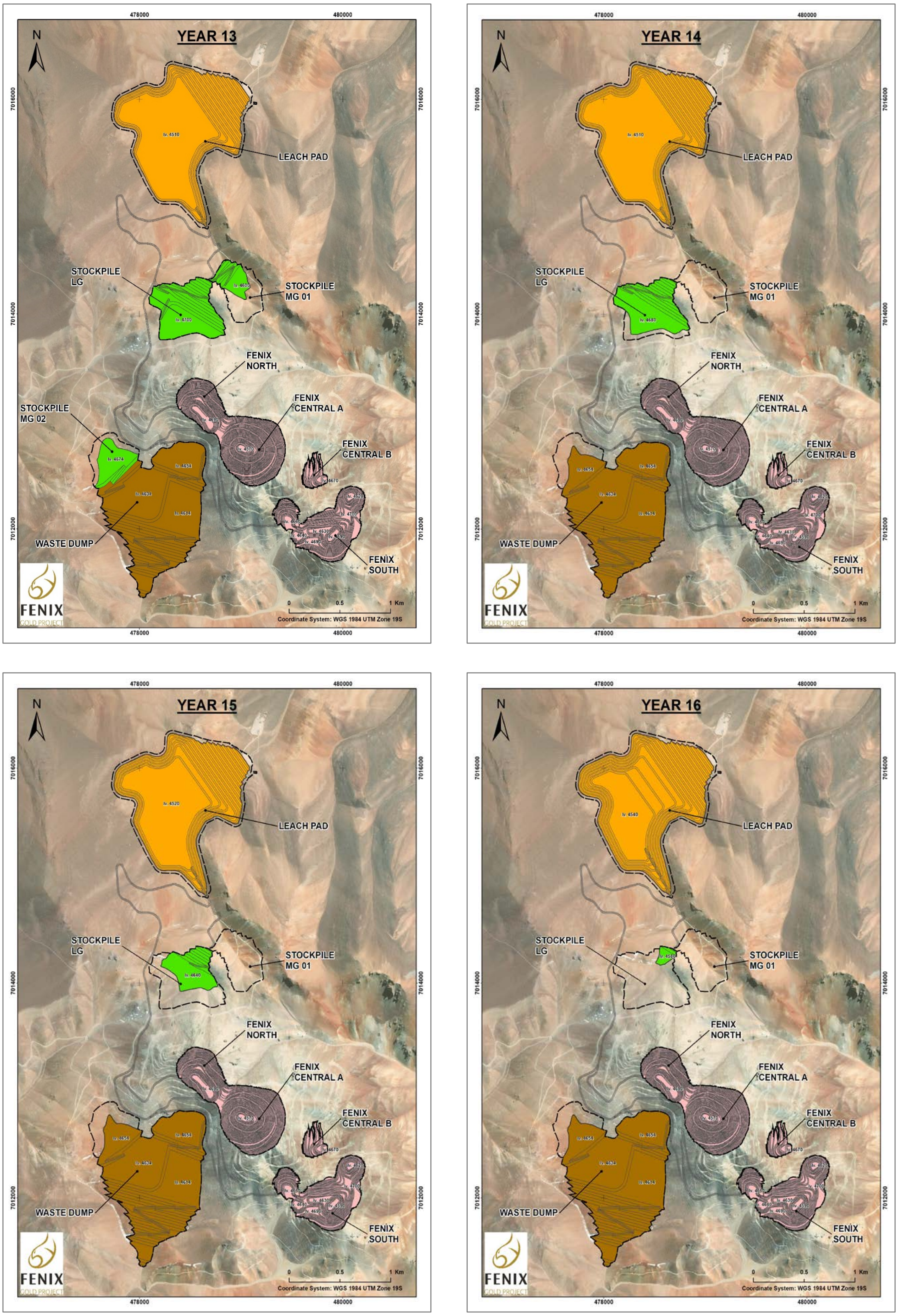
Source: Rio2, 2023

Figure 16-15 – End of Period map – Year 5 - 8.



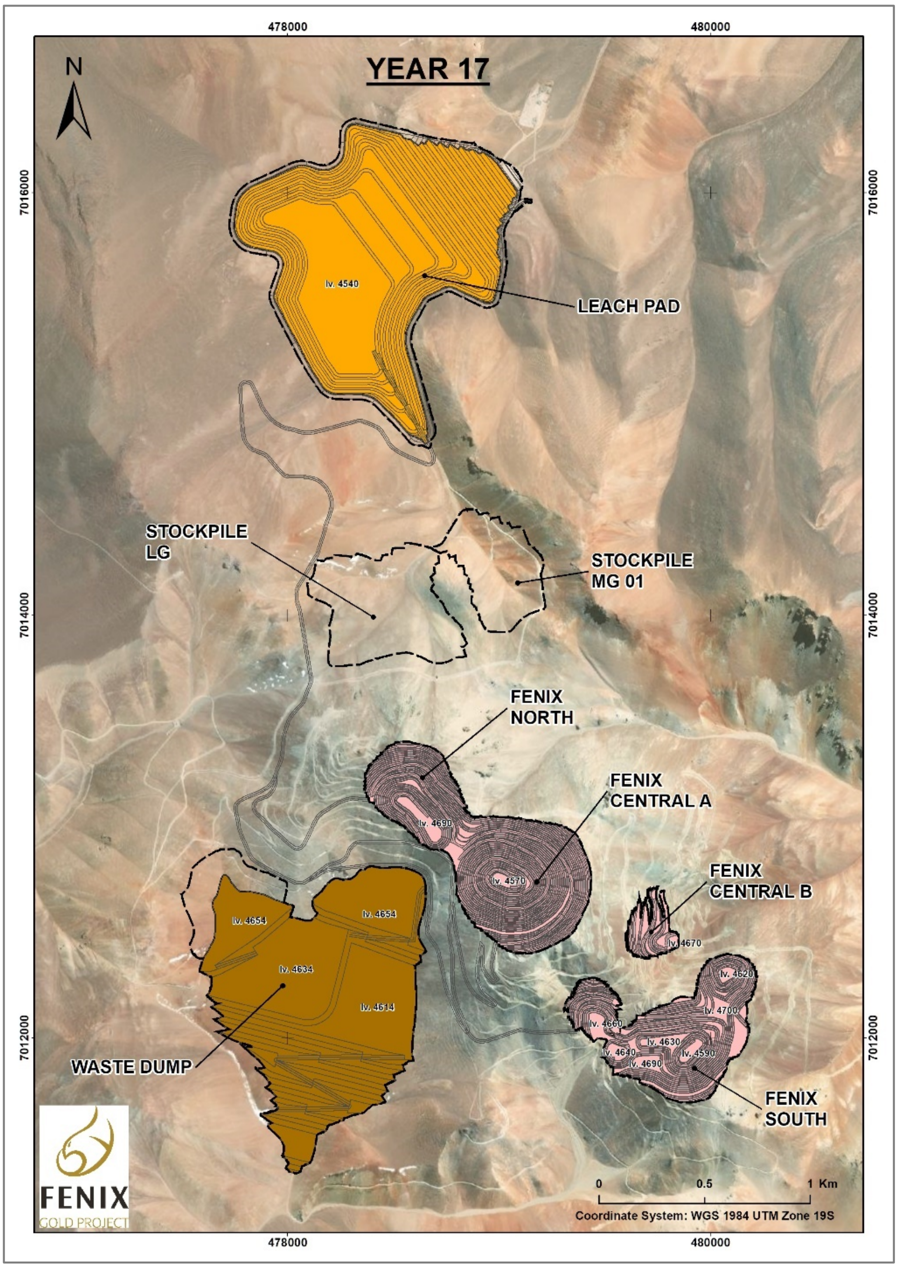
Source: Rio2, 2023

Figure 16-16 – End of Period map – Year 9 - 12.



Source: Rio2, 2023

Figure 16-17 – End of Period map – Year 13 - 16.



Source: Rio2, 2023

Figure 16-18 – End of Period map – Year 17.

16.6.2 Alliance Mining Contract

In October 2021, Rio2 and STRACON finalized an alliance contract that covered services related to earthmoving and construction, mining, and water transport for the Fenix Gold Project. The alliance contract is based on an open book, cost model, where every year STRACON and Rio2 jointly produce a budget for the agreed scope of work. Monthly claims are approved by the alliance manager and a 10% fee is charged based on approved claim. There are Key Performance Indicators (KPI) targets for safety performance, labour relations, costs and time associated with the fee. Rio2 has previously worked with STRACON using the alliance model on two other projects in Peru. The benefits of the model include flexibility, quick decision making that is best for the project, reduction in overhead duplication, shared responsibility, and goals.

16.7 Mining Equipment

16.7.1 Operating Schedule

The Fenix Gold Project is scheduled to operate 24 hours a day, seven days a week working 12-hour shifts. There are two 12-hour shifts scheduled, consisting of a day shift and a night shift.

Programmed and non-programmed delays are considered in time usage model accounting for 2.05-2.25 lost hours by day. Additionally, over a year, approximately 10 days are considered for lost time due to weather conditions, mainly in the wintertime. The KPI's and time assumptions that were used for the fleet of excavators, trucks, and drills are presented in Table 16-9.

Table 16-9 – Time Usage Model.

Parameter	Unit	Excavator	Truck
Scheduled Delays per Shift			
Lunch Time.	hour	1	1
Shift Change and Safety Control	hour	0.5	0.5
Total Scheduled Delays by Shift	hour	1.5	1.5
Available Operating Hours per Shift	**hour**	**10.5**	**10.5**
Non-Scheduled Delays per Shift			
Short Movement	hour	0.15	0
Excavator Move – Long Movement (Deadheading)	hour	0.25	0.1
Blasting	hour	0.15	0.15
Cleanup / Refueling	hour	0.2	0.3
Subtotal	**hour**	**0.75**	**0.55**
Total Effective Hours per Shift	**hour**	**9.75**	**9.95**
Calendar Time			
Calendar Days	day	365	365
Calendar Hours per Day	hour	24	24

Parameter	Unit	Excavator	Truck
Calendar Hours per Year	hour	8760	8760
Unscheduled Days per Year	day	**10**	**10**
Scheduled Hours per Year	hour	8,520	8,520
Mechanical Availability	%	90	88
Down Time	hour/year	876	1,051
Use of Availability	%	95	95
Standby	hour	394	385
Gross Operating Hours per Year	hour	7,250	7,083
Annual Operating Delay	hour	1,366	1,217
Net Operating Hours per Year	hour	**5,884**	**5,867**
Equipment SMU per year	hour	6,248	6,104

Source: STRACON, 2023

16.7.2 Mining Fleet

STRACON estimated the Mining fleet required for the Fenix Gold Project. A fleet of two DM45 drills or equivalent, 4 units of 6 m^3 bucket excavators, 42 units of 43 t payload haul trucks and associated ancillary and support fleet are required to carry out the mine plan. STRACON will purchase and mobilize the fleet to site.

The total required machine hours were calculated based on the mine schedule, machine availabilities, productivities, operational factors, and haul profiles generated from the mine design and layout. Drills are required for the mine operation from year 1 to year 12, principal hauling and loading equipment are used for rehandling years.

The Table 16-10 shows the main equipment estimated according to mine plan by period.

Table 16-10 – Primary mining equipment.

Year	Drills DM45 Unit	Excavators C395 Unit	Tip Truck 43t Unit
1	1	2	24
2	2	4	37
3	2	4	41
4	2	4	42
5	2	4	41
6	2	4	41
7	2	4	41
8	2	4	41
9	2	4	39
10	2	4	38
11	2	3	28
12	1	2	18
13	-	2	11
14	-	2	11
15	-	2	10
16	-	2	10
17	-	1	6

16.7.3 Drilling

The mine will be drilled and blasted on 10 m high benches using 171 mm diameter blast holes. It is considered that drilling of the entire bench height and suitable sub-drilling will be completed in a single pass. Technical drilling parameters to obtain the optimal size of fragmentation after blasting for loading and processing considered for the Fenix Gold Project were estimated by STRACON as shown in Table 16-11.

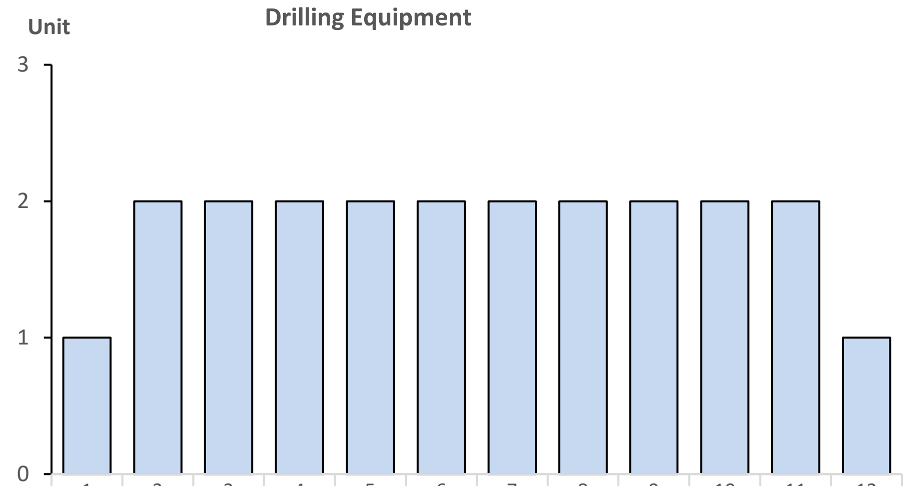
Table 16-11 – Drilling parameters.

Parameters	Unit	Ore	Waste
Burden	m	4.60	5.00
Spacing	m	5.30	5.80
Depth	m	10.00	10.00
Subdrill	m	1.20	1.20
Total Drilled per Hole	m	11.20	11.20
Volume per Hole	bcm	243.30	287.50
Hole Diameter	m	0.171	0.171
Density	t/m^3	2.45	2.43

Drill rig equipment was calculated considering a 1% moisture for ore and waste and a penetration rate of 37 m/h SMU. The Table 16-12 and Figure 16-19 shows the drilling equipment requirement.

Table 16-12 – Drilling equipment estimation.

Year	Drills DM45 Unit	Material Mined Mt	SMU Hours	
			Ore	Waste
1	1	10	3,042	2,008
2	2	19	5,429	3,736
3	2	19	6,236	3,375
4	2	20	6,193	3,635
5	2	20	5,590	4,240
6	2	20	5,488	4,328
7	2	20	5,430	4,198
8	2	21	6,034	4,217
9	2	21	5,230	4,771
10	2	21	4,585	5,289
11	2	14	4,307	2,704
12	1	6	2,298	867



	1	2	3	4	5	6	7	8	9	10	11	12
Drills DM45	1	2	2	2	2	2	2	2	2	2	2	1
Material Mined (Mt)	10.3	18.8	19.5	20.0	20.2	20.2	19.8	21.0	20.7	20.6	14.3	6.3

Source: STRACON, 2023

Figure 16-19 – Drilling equipment estimation.

16.7.4 Blasting

Blasting activities are going to be carried out by STRACON. The supplier of explosives material (ANFO and Emulsion) and accessories for blasting was determined by STRACON and included for this estimation.

Heavy ANFO is the primary explosive proposed for the mining operations, consisting of 40% Ammonium Nitrate and 60% Emulsion. The estimated powder factor is between 0.63 - 0.75 Kg/bcm. Table 16-13 shows the assumed blasting parameters and characteristics of the explosives.

Table 16-13 – Blasting parameters.

Parameters	Unit	Ore	Waste
Stemming	m	3.60	3.60
Charged Length	m	7.60	7.60
% ANFO	%	0.25	0.25
% HANFO	%	0.75	0.75
Density ANFO	Kg/L	0.85	0.85
Density HANFO	Kg/L	1.10	1.10
Density Average	Kg/L	1.04	1.04
Explosives per Hole	L	175.40	175.40
Explosives per Hole ANFO	Kg	45.50	45.50
Explosives per Hole HANFO (40%NA/60%Emulsion)	Kg	136.50	136.50
Explosives per Hole Average	Kg	182.00	182.00
Powder Factor	Kg/bcm	0.75	0.63
Powder Factor	Kg/t(dry)	0.30	0.26

16.7.5 Loading

The Fenix Gold Project will operate under an over-trucking model, which means the loading fleet will limit production, not truck availability.

STRACON estimated primary loading equipment based on hydraulic excavators with a 6 m^3 bucket, which can load 43 t truck with 5 passes in 2.40 min. Productivity was estimated using the parameters in shown Table 16-14.

Table 16-14 – Loading equipment productivity.

Loading Equipment	Unit	CAT 395
Bucket Capacity	m^3	6
Bucket Fill Factor	%	95%

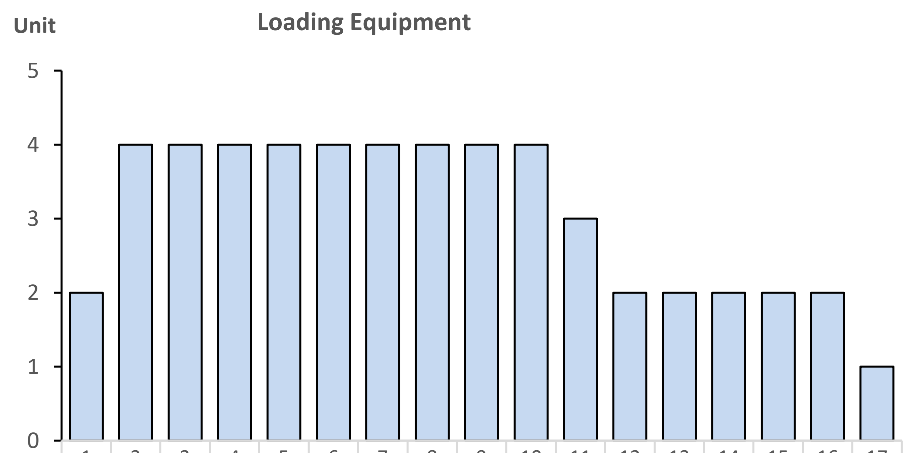
Loading Equipment	Unit	CAT 395
Swell Factor	%	35%
Moisture Content	%	1%
In-situ Density	t/m³	2.76
Loose Density	t/m³	1.80
Tonnage in Bucket, In-situ	t	10.3
Tonnage in Bucket, Wet	t	10.4
Truck Rated Payload	t	43.0
Truck Fill Factor	%	100%
Tonnage in Truck Payload, Wet	T	43.00
Heaped Truck Volume Capacity	m³	26
# Passes for Truck Payload	#	4.1
# Passes for Truck Volume Capacity	#	4.6
# Integer Passes	#	5.0
Cycle Time per Pass	min	0.43
Cycle Time per Loading	min	1.8
Cycle Time per Truck Exchange	min	0.58
Truck Payload Loaded, In-situ	t	42.6
Loading Time including Truck Exchange	min	2.40
Loader Nominal Productivity, In-situ	t/hr	1,064
Operational Efficiency	%	95%
Operational Efficiency (% Digging Time)	%	91%
Effective Loading Time including Truck Exchange	min	2.53
Effective Productivity of Loader, In situ	**t/hr**	**920**
Effective Productivity of Loader, In situ	BCM/hour	333
Annual Productivity of Loader	**kt/yr**	**5,414**

Loading equipment are used to mine ore and waste from pits to waste dump, stockpiles, and PAD as well as rehandling. Table 16-15 and Figure 16-20 demonstrates the total loading equipment.

Table 16-15 – Loading equipment estimation.

Year	Excavators C395 Unit	Total Movement Mt	SMU Hours	
			Mine	Rehandle
1	2	10	11,318	114
2	4	19	20,574	
3	4	19	21,383	
4	4	20	21,932	
5	4	20	22,151	

Year	Excavators C395 Unit	Total Movement Mt	SMU Hours	
			Mine	Rehandle
6	4	20	22,151	
7	4	20	21,712	
8	4	21	23,028	
9	4	21	22,699	
10	4	21	22,615	
11	3	15	15,686	244
12	2	10	6,957	3,567
13	2	7		8,005
14	2	7		8,005
15	2	7		8,005
16	2	7		8,027
17	1	1		760



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Excavators C395	2	4	4	4	4	4	4	4	4	4	3	2	2	2	2	2	1
Total Movement (Mt)	10	19	19	20	20	20	20	21	21	21	15	10	7	7	7	7	1

Source: STRACON, 2023

Figure 16-20 – Loading equipment estimation.

16.7.6 Hauling

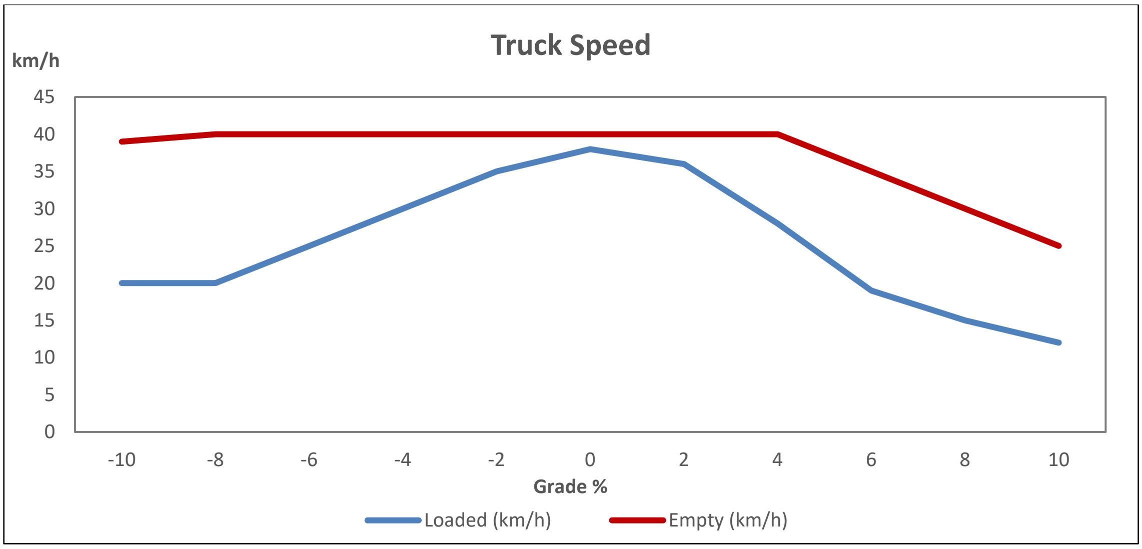
Primary hauling equipment selected for ore and waste mining is a truck with 43 t wet payload capacity. The dry capacity is estimated at 42.6 t assuming 1% moisture.

Mining Plus estimated the truck operating hours based on the mine schedule and travel distances from a road network developed using Hexagon's MinePlan software. Haul distances were reported for ROM material starting from its location on a mining bench to its final destination and for stockpile material rehandled to PAD destination. Truck speed was estimated by STRACON and applied to each haul road to estimate travel time. STRACON estimated the number trucks using the required truck operating hours.

The truck speed is described in Table 16-16 and Figure 16-21.

Table 16-16 – Truck speed.

Grade %	Loaded (Km/hr)	Empty (Km/hr)
-10%	20	39
-8%	20	40
-6%	25	40
-4%	30	40
-2%	35	40
0%	38	40
2%	36	40
4%	28	40
6%	19	35
8%	15	30
10%	12	25



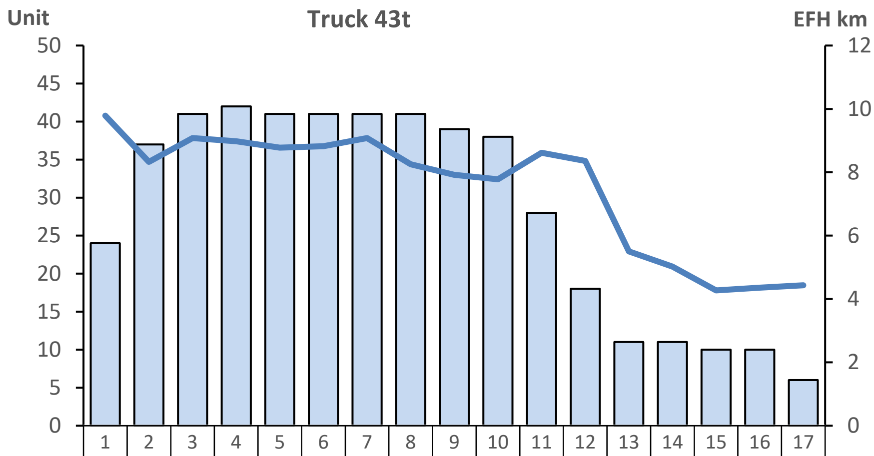
Source: STRACON, 2023

Figure 16-21 – Truck Speed.

Truck estimation was calculated by month and quarters for the first 4 years and annually from year 5 onwards. Table 16-17 and Figure 16-22 shows truck estimation, operating hours, equivalent flat haul (EFH) and total movement by year.

Table 16-17 – Hauling equipment estimation.

Year	Truck 43t Unit	Operating Hours hour	EFH Km	Total Movement Mt
1	24	144,668	9.79	10.43
2	37	226,516	8.33	18.76
3	41	248,366	9.08	19.50
4	42	251,520	8.98	20.00
5	41	248,092	8.78	20.20
6	41	246,816	8.82	20.20
7	41	248,539	9.08	19.80
8	41	245,540	8.25	21.00
9	39	233,652	7.92	20.70
10	38	227,628	7.78	20.62
11	28	169,086	8.62	14.53
12	18	110,072	8.36	9.60
13	11	64,444	5.50	7.30
14	11	61,371	5.02	7.30
15	10	56,488	4.27	7.30
16	10	58,082	4.36	7.32
17	6	5,607	4.43	0.69



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Truck 43t	24	37	41	42	41	41	41	41	39	38	28	18	11	11	10	10	6
Total Movement (Mt)	10	19	19	20	20	20	20	21	21	21	15	10	7	7	7	7	1
EFH Km	9.8	8.3	9.1	9.0	8.8	8.8	9.1	8.3	7.9	7.8	8.6	8.4	5.5	5.0	4.3	4.4	4.4

Source: STRACON, 2023

Figure 16-22 – Hauling equipment estimation.

16.7.7 Ancillary and Support Equipment

Ancillary and maintenance equipment are responsible for activities not directly related to mine production. These equipment fleets are used to facilitate safe and efficient operation and maintain the mining area in optimal condition with high physical availability.

The purpose of support equipment is to help sustain mine operations, attend to road hazards that could cause damage to mining equipment, manage stockpile areas, help with water management within the mine and facilitate the transportation of personnel.

To produce overliner material for the leach pad, STRACON included a Chieftain 2100 3 Deck Power Screen and a CAT 966 loader. The screen will be located within the Leach Pad construction area. Low grade mineral will be sent directly from mining to the screen to be processed into overliner. Reject material from the screening process will be deposited in the leach pad.

The requirement of ancillary and support equipment was estimated by STRACON detailed in Table 16-18 and Table 16-19.

Table 16-18 – Ancillary equipment.

Year	Excavator C336	FEL C966	Bulldozer CD8T	Bulldozer CD6T	Wheeldozer C834	Grader C14M /140K	Backhoe C420	Water Truck 6000G
	Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit
1	1	1	2	1	-	1	1	1
2	1	1	2	1	1	2	1	2
3	1	1	2	1	1	2	1	2
4	1	1	2	1	1	2	1	2
5	1	1	2	1	1	2	1	2
6	1	1	2	1	1	2	1	2
7	1	1	2	1	1	2	1	2
8	1	1	2	1	1	2	1	2
9	1	1	2	1	1	2	1	2
10	1	1	2	1	1	2	1	2
11	1	1	2	1	-	1	1	1
12	-	1	1	1	-	1	1	1
13	-	-	-	1	-	1	-	1
14	-	-	-	1	-	1	-	1
15	-	-	-	1	-	1	-	1
16	-	-	-	1	-	1	-	1
17	-	-	-	1	-	1	-	1

Table 16-19 – Support equipment.

Year	Lube Truck	Fuel Truck	Roller 10t	Chieftain 2100 3 Deck Power Screen	Light Plants
1	1	1	1	1	9
2	2	2	1	1	12
3	2	2	1	1	12
4	2	2	1	1	12
5	2	2	1	1	12
6	2	2	1	1	12
7	2	2	1	1	12
8	2	2	1	1	12
9	2	2	1	1	12
10	2	2	1	-	12
11	1	1	1	-	12
12	1	1	1	-	8
13	1	-	-	-	5
14	1	-	-	-	5
15	1	-	-	-	5
16	1	-	-	-	5
17	1	-	-	-	3

16.8 Leach Pad, PLS Pond, and Major Event Pond

The leach pad (PAD), pregnant leach solution (PLS) pond and major event pond were designed by Anddes. The PAD was designed in four phases (Figure 16-23) and has a storage capacity of 132.6 Mt with a remaining capacity of 14% as shown in Table 16-20. Ore is mined as ROM and heaped by dumping the material into successive lifts, and then irrigated with a cyanide leaching solution for gold recovery.

The pad dumping sequence has been aligned with the mine plan and there is a six month overlap with Pad construction phases to ensure the continuity of gold production. In year 17, the PAD reaches an elevation of 4,540 masl at its crest with a total heap capacity of 114.7 Mt.

When Phase 4 is constructed, the combined PAD, PLS pond and major event pond will extend over 131 hectares.

Stability analysis carried out by Anddes produced acceptable factor of safety results for static analysis between 1.92 – 2.06 (FS>1.5 for global and 1.3 local). Pseudostatic analysis in short- term considers the most unfavourable seismic scenario (OBE) with a factor of safety of 1.16 – 1.17 (FS>1.1) and long-term analysis considers the probabilistic MCE (maximum considered earthquake) with a result between 1.01 – 1.03 (FS>1.0). The PAD demonstrates favourable stability conditions.

The base of the PAD is inclined at 2% towards the PLS and major event pond. The PAD will have a single low-density polyethylene (LLDPE) geomembrane liner system and underdrain system installed below the liner for capturing any potential solution leakage. Solution will be collected by HDPE perforated dual wall collection pipes to the ADR Plant or the PLS pond.

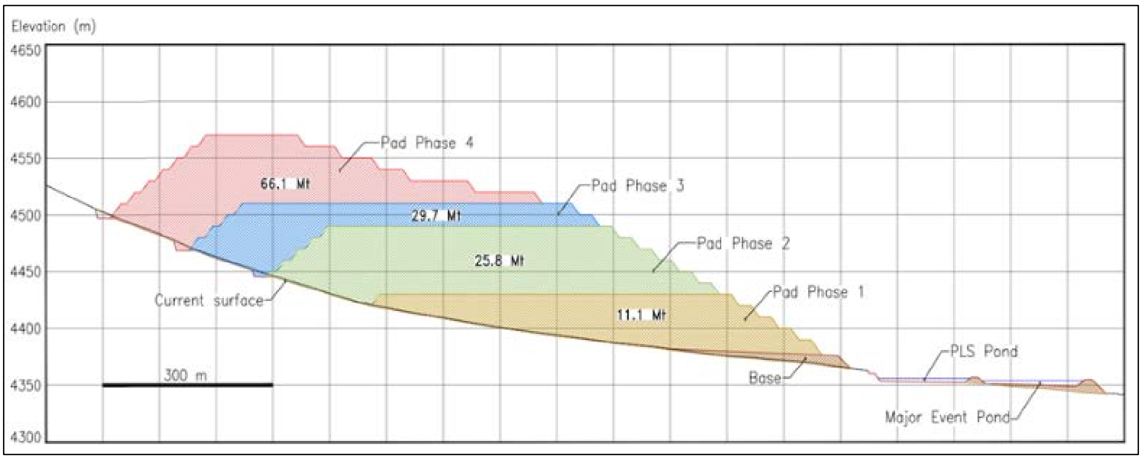
The PLS pond will have a double HDPE geomembrane liner system and an installed capacity of 28,000 m^3 from the first year of the mine plan. The PLS pond capacity covers the major events pond requirement for the first 6 years of operation.

The major event pond will be constructed in year 6 of operation. It will have a double HDPE geomembrane liner system and will have a capacity of 50,000 m^3.

The location of the PAD, PLS pond and major event pond relative to the ADR Plant, is presented in Figure 16-24.

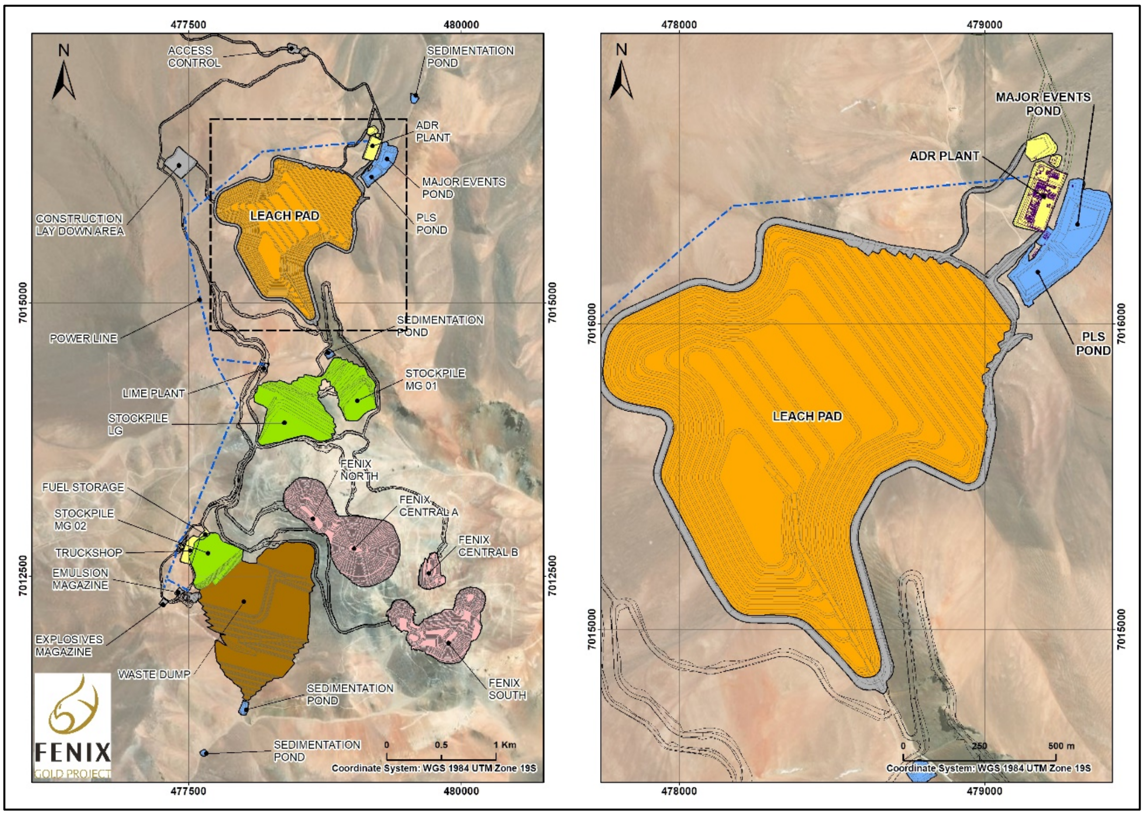
Table 16-20 – Parameters of the leach pad, PLS pond and major event pond (Anddes 2023).

Parameter	Unit	Value
Storage Capacity	Mt	132.6
Typical Bench Height	m	10
Lift Slope	-	1.45H:V
Berm Width	m	20.5
Overall Slope	-	3.5H:V
PLS Pond Capacity	m^3	28,000
Major Event Pond	m^3	50,000



Source: 211.009.112-0206-111-12-PL-010_R0, Anddes, 2023

Figure 16-23 – Leach Pad (PAD), PLS Pond, Major Event Pond – Section.



Source: Rio2, 2023

Figure 16-24 – Leach Pad (PAD), PLS Pond, Major Event Pond.

16.9 Waste Storage Area

Anddes designed and evaluated the stability of the proposed waste dump. The waste dump is located west of the central pit and was developed in five stages with a storage capacity of 123.7 Mt considering a loose density of 1.8 t/m^3. The remaining capacity of 26.6 Mt is 22% more than the planned waste tonnage shown in the LOM plan.

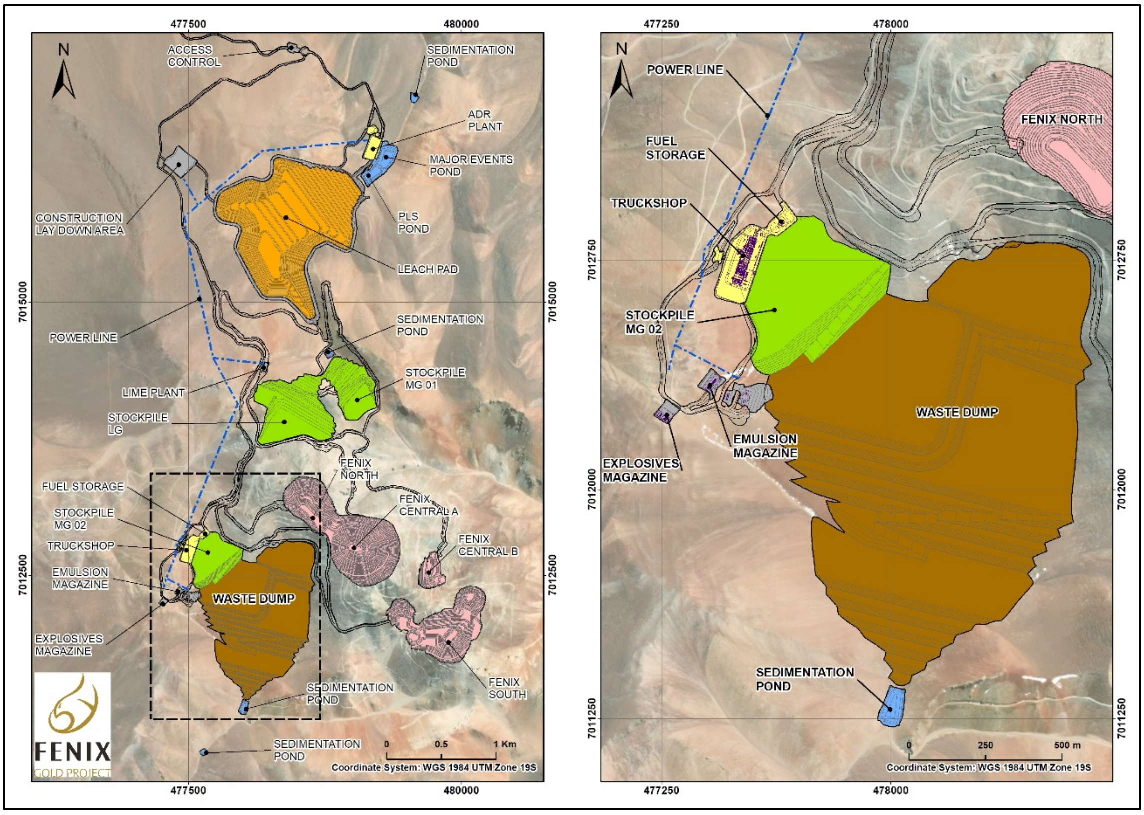
The dumping sequence is carried out in stages aligned to the mine schedule. The dump reaches an elevation of 4,654 masl at its crest containing 97.1 Mt of waste. The design incorporates 12 lifts, each with a height of 20 m with a ramp designed at 20 m width and 10% of gradient. The final overall slope was established at a ratio of 2.65H:1V.

Stability analysis carried out by Anddes produced acceptable factor of safety results for static analysis between 1.85 – 2.69 (FS>1.5 for global and 1.3 local), Pseudostatic analysis in short- term considers the most unfavourable seismic scenario (OBE) with a factor of Safety of 1.36 – 1.68 (FS>1.1) and long-term analysis considers the probabilistic MCE (maximum considered earthquake) with a result between 1.23 – 1.49 (FS>1.0). Therefore, the waste storage area has favourable stability conditions. Geotechnical recommendations for the waste storage area design are summarized in Table 16-21.

Table 16-21 – Waste dump design parameters (Anddes, 2023).

Parameter	Unit	Value
Storage Capacity	Mt	123.7
Typical Bench Height	m	20
Lift Slope	ratio	1.4H:1V
Berm Width	m	25
Overall Angle	ratio	2.5H:1V

The proposed waste storage area, relative to the pits, is presented in Figure 16-25.



Source: Rio2, 2023

Figure 16-25 – Waste dump.

16.10 Stockpiles areas

There are two stockpiles designed by Anddes (Stockpile MG 01 and Stockpile LG). Stockpile MG 01 has a storage capacity of 11.1 Mt without any room for remaining capacity when considering a loose density of 1.8 t/m^3. Stockpile LG has a storage capacity of 22.1 Mt and has a 16% remaining capacity when considering a loose density of 1.8 t/m^3. However, the mine schedule requires additional capacity to stock medium grade material, therefore, a second area called Stockpile MG 02 was defined and corresponds to the last two lifts of in the north-west side of the waste dump with a storage capacity of 6.6 Mt as shown in Figure 16-26.

There are two stockpiles according to the cut-off grade used in the mine schedule: Stockpile for medium-grade ore with gold grades above 0.30 g/t Au to be placed in two stockpile locations due to storage capacity named “Stockpile MG 01” and “Stockpile MG 02” and stockpile for low grade ore with gold grades between 0.25 g/t and 0.30 g/t Au to be placed in an stockpile location named “Stockpile LG”.

From Year 12 ore will be retrieved from the stockpiles to be processed until the end of the stockpile material in Year 17.

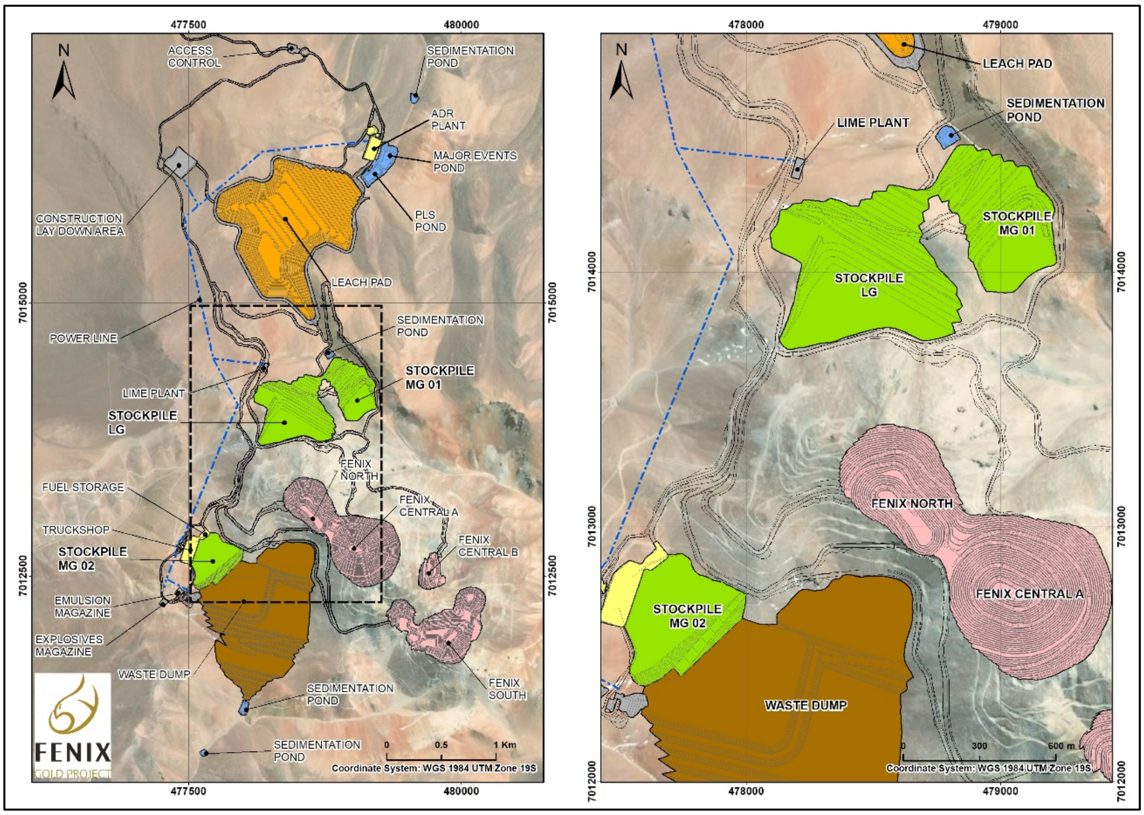
A stability analysis of the global slope was performed by Anddes for the stockpiles and acceptable stability conditions were confirmed for both. The results produced acceptable factor of safety for static analysis between 1.72 – 2.69 (FS>1.5 for global and 1.3 local), pseudostatic analysis in short- term considers the most unfavourable seismic scenario (OBE) with a factor of safety of 1.25 – 1.41 (FS>1.1) and long-term analysis considers the probabilistic Maximum Considered Earthquake (MCE) with a result between 1.12 – 1.26 (FS>1.0). Therefore, the stockpiles have favourable stability conditions.

Stockpile MG 02 located above waste dump was designed without berms and its stability analysis was considered as part of the waste dump stability analysis.

Figure 16-26 below shows the locations of the stockpiles. Stockpile LG and Stockpile MG 01 are close to the leach pad and Stockpile MG 02 is located in the north-west side of waste dump. The dimensions of these stockpiles are summarized in Table 16-22.

Table 16-22 – Stockpile design parameters (Anddes, 2019).

Parameter	Unit	Stockpile LG	Stockpile MG 01
Storage Capacity	Mt	22.1	11.1
Typical Bench Height	m	20	20
Lift Slope	ratio	1.4H:1V	1.4H:1V
Berm Width	m	25	25
Overall Angle	ratio	2.5H:1V	2.5H:1V

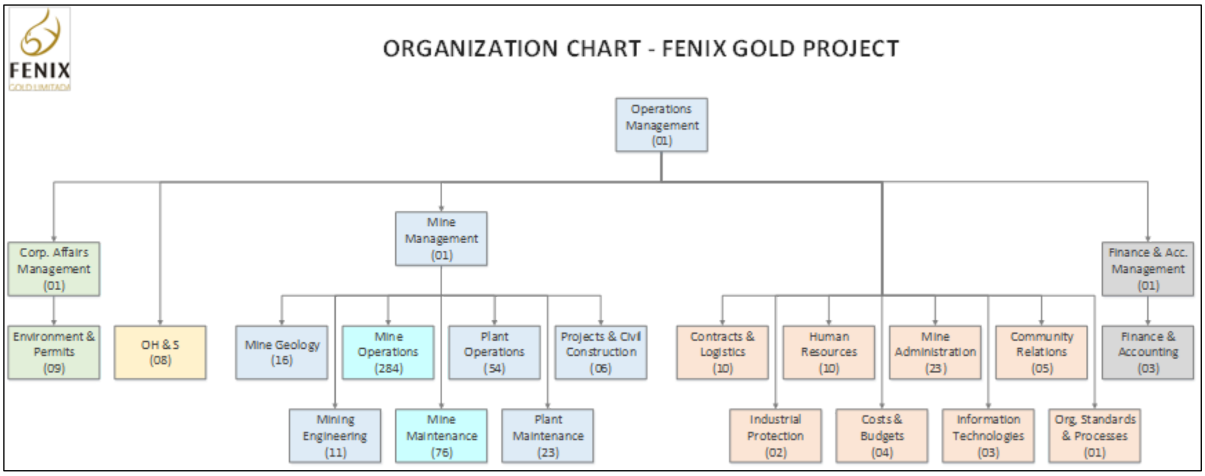


Source: Rio2, 2023

Figure 16-26 – Stockpile areas.

16.11 Project Workforce

Mine personnel include all project supervisory staff working in mine operations, maintenance, engineering and geology departments, and hourly paid employees required to operate and maintain drilling, blasting, loading, hauling and mine operation activities. Fenix Gold project when in normal operation is expected to employ an average of 552 people. Out of these, 57 positions are management and leadership roles, while the remaining 495 position are considered workforce. Figure 16-27 shows the expected organigram on average year of operation.



Source: Rio2, 2023

Figure 16-27 – Organization Chart, Fenix Gold Project.

Employee cost distribution has been allocated as follows:

All management and workers not directly involved in mining, maintenance, or processing are considered part of the G&A unit rate costs. This includes Senior Management, Geology, Environmental, Occupational Health & Safety, Projects & Civil Construction, Engineering (planning), Human Resources, Community Relations, Contracts & Logistics, Industrial Protection (security), Costs & Budgets, Administration, Finance & Accounting, Information Technologies, Org. Standards & Processes. The G&A unit rate costs consist of 28 management staff and 87 workers.

All mining and maintenance-related management and workforce costs are included in the Mining unit rate cost. This includes 16 management staff and 344 workers.

All mineral process and maintenance -related management and workforce costs are included in the Processing unit rate cost. This includes 13 management staff and 64 workers.

The workforce calculation model assumes that leaders or management staff will work on a 4:3 or 7:7 schedule, while the workforce will work on a 7:7 schedule.

Annual costs for personnel, including fringe benefits, are shown in Table 16-23. The personnel costs used for the project were provided by Fenix Gold and were developed from costs obtained from benchmarking of other Chilean mining operations. The Figure 16-28 shows the annual workforce labour requirements.

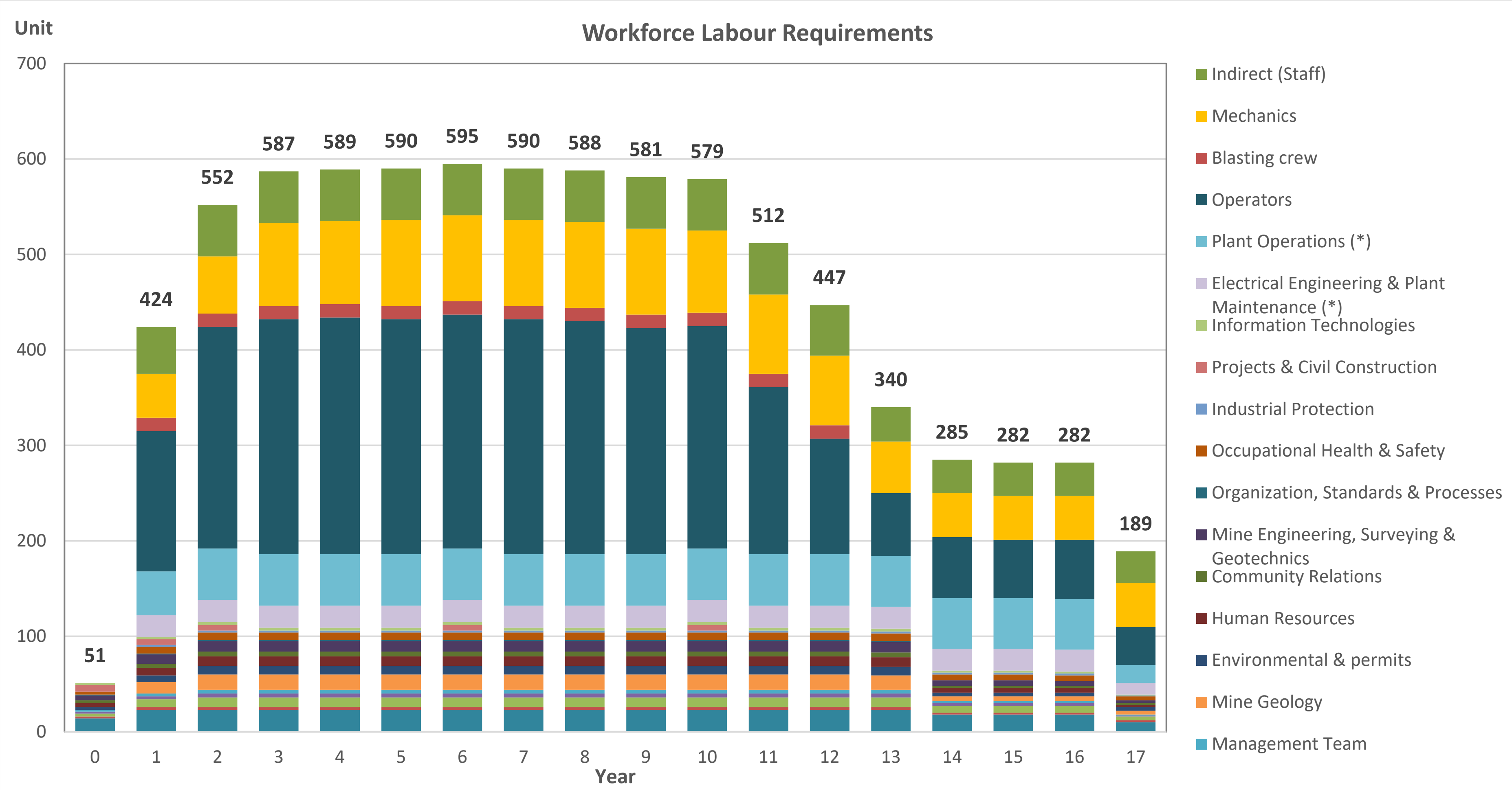
Table 16-23 – Workforce labour salary.

	AREA	USD
Mine Administration		
1	Mine administration superintendent	72,216
2	Head of administration	64,335
3	Copiapó office administration assistant	26,288
4	Light vehicle operator (vans & buses)	24,329
Finance & Accounting		
5	Accounting and tax analyst	40,676
6	Treasury analyst	40,676
7	Accounting assistant	26,288
Contracts & Logistics		
8	Head of logistics	64,335
9	Contracts administrator	55,437
10	Buyer	43,840
11	Warehouse supervisor	43,840
12	Warehouse assistant	24,329
13	Dispatcher	22,369
Costs & Budgets		
14	Head of costs and budgets	64,335
15	Cost & budget analyst	45,514
16	Equipment control & productivity assistant	22,369
Management Team		
17	Operations manager	180,542
18	Mine manager	132,783
19	Corporate affairs manager	132,783
20	Finance and accounting manager	102,246
Mine Geology		
21	Mine geology superintendent	72,216
22	Mine geologist	55,437
23	Modeling geologist	55,437
24	Ore control technician	30,277
25	Sampler	17,471
26	Geology assistant	17,471
Environmental & permits		
27	Superintendent of environmental & permits	72,216
28	Head of environmental & permits	48,878
29	Environmental supervisor	40,676
30	Environmental technician	32,327
31	Environmental Assistant	17,471
Human Resources		
32	Head of human resources & labor relations	64,335
33	Talent & culture analyst	42,626
34	Recruitment and selection specialist	42,626
Electrical Engineering & Plant Maintenance (*)		
69	Head of mechanical-electrical maintenance	75,625
70	Mechanical supervisor	57,548
71	Electrical supervisor	57,548
72	Plant mechanical technician	35,510
73	Plant electrical technician	35,510
74	Plant instrument technician	35,510
Plant Operations (*)		
75	Superintendent of plant	120,816
76	Head of plant	93,701
77	Head of metallurgy	75,625
78	Shift boss - leach	66,586
79	Shift Boss - ADR Plant	66,586
80	Shift Boss - leach - cast	66,586
81	Lime tank operator	33,958
82	Leach operator	33,958
83	ADR plant operator	33,958
84	Smelter Operator	33,958
Mine Operations & Maintenance		
	Operators	
85	Operator C395	47,669
86	Operator tip truck 43T	39,340
87	Drill operators	49,050
88	Drill Assistant	25,187
89	Excavator C336	36,100
90	Front-end loader C966	37,420
91	Bulldozer CD8T	55,731
92	Bulldozer CD6T	47,000
93	Wheeldozer C834	51,910
94	Grader C14M / 140K	43,904
95	Backhoe C420	36,087
96	Water truck 6000G	39,340
97	Fuel truck	42,345
	Blasting crew	
98	Operator	28,859
99	Hose operator	26,400
100	QA/QC	26,400
101	Blast assistant	26,400
	Mechanics	
102	Mechanical technician 1	44,503
103	Mechanical technician 2	41,200
104	Electrical technician 1	44,503

	AREA	USD
35	Personnel administration specialist	42,626
36	Personnel administration supervisor	40,676
37	Training supervisor	40,676
38	Wellness supervisor	40,676
Community Relations		
39	Community relations superintendent	72,216
40	Community relations specialist	42,626
41	Community relations analyst	40,676
42	Communication & citizen participation assistant	22,369
Mine Engineering, Surveying & Geotechnics		
46	Mine engineering superintendent	72,216
47	Head of mine planning	64,335
48	Head of surveying	59,740
49	Mine planning engineer	55,437
50	Surveyor	30,277
51	Survey assistant	17,471
52	Head of geotechnics	59,740
53	Geotechnical Assistant	17,471
Organization, Standards & Processes		
54	Head of organization, standards, and processes	59,740
Occupational Health & Safety		
55	Superintendent of risk prevention	72,216
56	Risk prevention adviser	64,335
57	Risk prevention engineer	55,437
58	Risk prevention and document control assistant	24,329
59	Emergency response supervisor	43,840
Industrial Protection		
60	Head of industrial protection	59,740
61	Industrial protection supervisor - gold room	43,840
Projects & Civil Construction		
62	Head of civil works and project control	72,216
63	Project control engineer	55,437
64	Supervisor of civil works	48,878
65	Document control specialist	51,948
66	Electrical engineer	48,878
Information Technologies		
67	Head of systems and communications	64,335
68	Systems and communications supervisor	40,676

	AREA	USD
105	Electrical technician 2	41,200
106	Welding technician 2	41,204
107	Welding assistant	25,187
108	Tire technician 2	41,200
109	Lubrication technician 2	40,099
110	Lubricator assistant	21,555
	Indirect (Staff)	
111	Project manager	169,707
112	Resident	138,011
113	Head of operations	138,011
114	Head of drill & blast	110,265
115	Drill & blast supervisor	110,265
116	Shift Boss mine operations	110,265
117	Head of planning and costs	86,283
118	Cost engineer	71,504
119	Planning engineer	71,504
120	Head of safety occupational health & environment	78,894
121	Environment supervisor	64,114
122	Engineer of safety occupational health & environment	64,114
123	Document control assistant	29,698
124	Heavy equipment instructor	60,419
125	Civil works administrator	83,529
126	Administrative assistant	54,634
127	HR coordinator	65,072
128	HR assistant	54,634
129	Wellness supervisor	37,162
130	Logistic buyer	54,634
131	Head of warehouse	67,809
132	Warehouse assistant	43,013
133	Crane truck driver	48,662
134	Rigger	36,356
135	5tn truck driver	34,998
136	Equipment superintendent	138,011
137	Leader of maintenance	84,436
138	Planner of maintenance	65,962
139	SAP data entry assistant	41,233
140	Equipment supervisor	71,504
141	Equipment assistant (AMT)	41,233

Note:(*) All Personnel of plant operations & electrical engineering & plant maintenance is included in the process plant unit cost, and all personnel of mining and maintenance are included in STRACON unit rate cost for mining. They are illustrated in the table for reference to salaries and headcount.



Source: Rio2, 2023

Figure 16-28 – Workforce Labour Requirements

17 RECOVERY METHODS

17.1 Introduction

The development of the flowsheet, operating parameters and design criteria were based on the metallurgical test results presented in Chapter 13. The gold recovery process was designed based on the leaching of approximately 114.65 million tonnes of feed over the life of mine (LOM) with an average head grade of 0.48 g/t Au, 75.12% extraction in leaching and an overall recovery of 74.6%.

The run of mine (ROM) feed from the open pit with an F80 size of 100 mm will be transported by trucks to the heap leach with a lift height of 10 m. Leaching will use a dilute sodium cyanide solution to dissolve the gold, which will be recovered from the pregnant leach solution (PLS) in an adsorption circuit with activated carbon. The gold will be recovered from the loaded carbon using pressure desorption and electrowinning. The gold bearing sludge obtained from electrowinning will be filtered and then dried in a retort furnace where mercury will also be removed. The dried material will be refined in a tilting furnace to obtain Doré bars.

The following are the unit operations that will be used in processing:

- Heap leaching
    - ROM feed is loaded in lifts on the heap leach pad with an underlying geomembrane liner system.
    - The material is leached using dilute sodium cyanide solution.
    - Collection and pumping systems for the PLS and the barren solution.
- Adsorption, Desorption, Recovery (ADR) plant
    - Carbon in Column (CIC) Adsorption: adsorption of gold from the PLS onto carbon in a series of cascading columns containing carbon.
    - Desorption: Acid washing of the loaded carbon to remove inorganic contaminants, elution of the carbon to produce a gold rich solution, thermal regeneration of the carbon to remove organic contaminants and recycling of the regenerated carbon to the CIC circuit.
    - Gold recovery: gold electrowinning, filtration, drying and smelting to produce Doré bars.

17.2 Process Flow Diagram Development

The previous process flowsheet (2019) has been re-evaluated and updated based on the 2021 pilot test results conducted by HLC Ingeniería y Construcción SpA, as described in Chapter 13. The crushing plant has been removed and the mine will deliver ROM feed with a P80 of 100 mm.

The current process plant flow diagram consists of the following unit processes:

- Lime plant

- Heap leaching
  - Leach pad
  - Solution collection and circulation system
  - Solution collection ponds
- ADR plant
  - Adsorption
  - Desorption and electrowinning
  - Acid washing
  - Thermal regeneration
  - Retorting and refining.

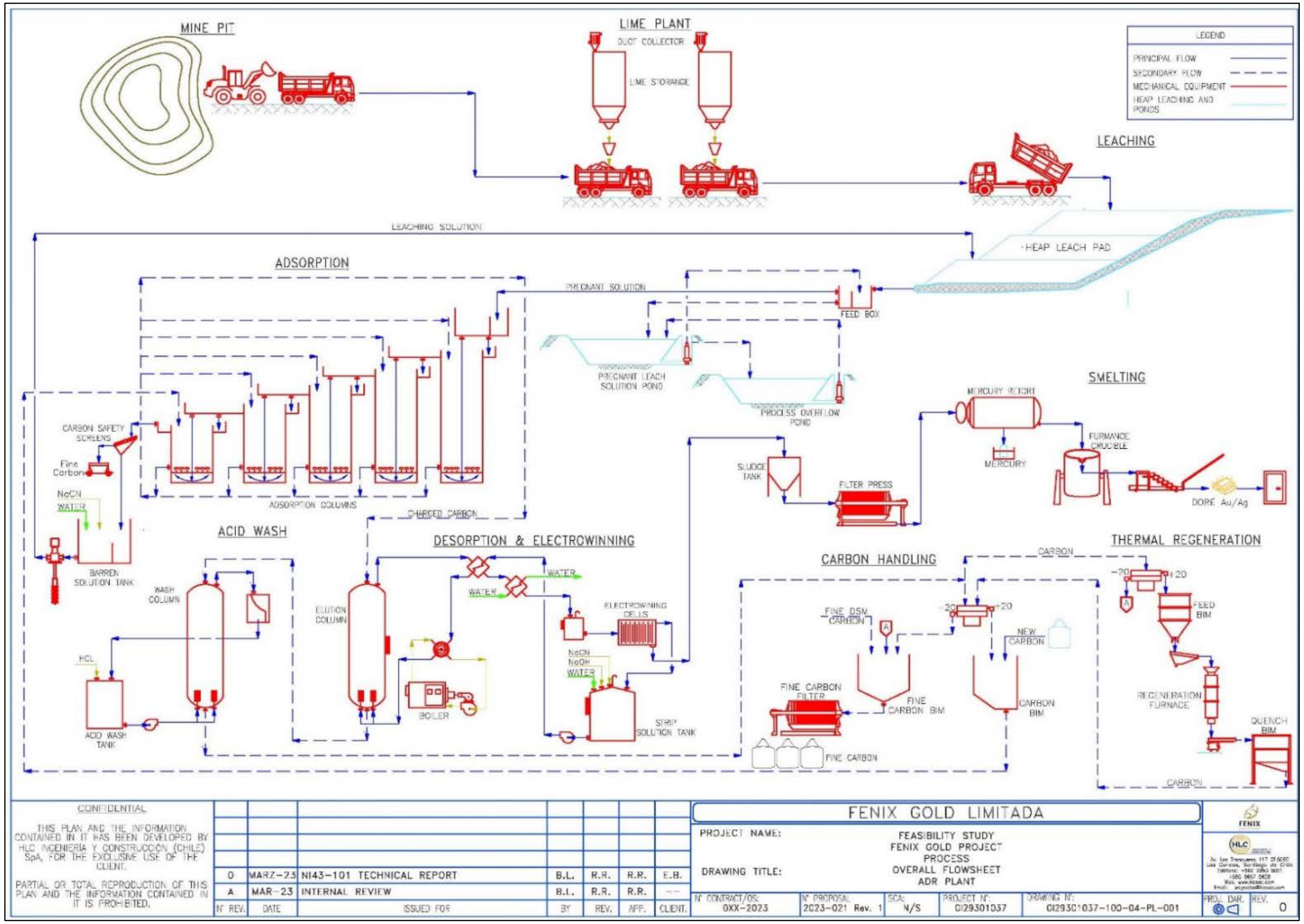
These process steps are described in Section 17.3. Figure 17-1 shows the process flow diagram for the Project.

17.3 Process Design Base

Metallurgical tests were conducted between 2010 and 2017 as described in Chapter 13 by Kappes, Cassiday & Associates (KCA) and others, and a pilot plant test was conducted in 2021 by HLC Ingeniería y Construcción SpA (HLC). The testwork showed that the feed for the Fenix Gold process plant is suitable for gold recovery by heap leaching. The heap leach was designed by Anddes Asociados SAC (Anddes).

The design is based on leaching approximately 114.65 million tonnes of ROM feed over the LOM, at 20,000 t of ROM feed per day (7.3 Mtpa), giving a mine life of approximately 17 years. In the first year the feed will average only 12,000 t as the mine and plant ramp up to full capacity.

The criteria used for the plant design are summarized in Table 17-1 and a simplified flowsheet is shown in Figure 17-1.



Source: HLC, 2023

Figure 17-1 – Process flow diagram.

Table 17-1 – Main process plant design criteria.

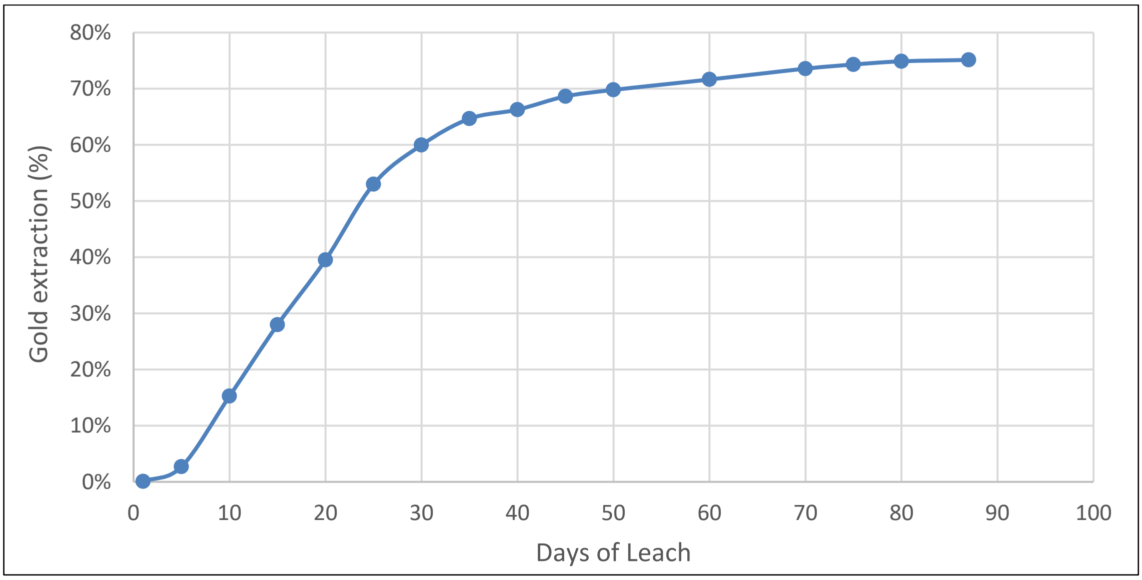
Description	Unit	Value	Source
General			
Total Feed	t	114,653,000	Rio2
Daily	t/d	20,000	Rio2
Average gold grade LOM	g/t Au	0.48	Rio2
Moisture	%	2	Rio2
Heap Leaching			
Maximum pile height	m	160	Anddes
Lift height	m	10	Anddes
Heap slope	H:V	2.5:1	Anddes
Solution application rate	L/h/m^2	10	HLC
Leach time	days	90	Pilot plant testwork
Solution application method	-	Drip	Rio2 & HLC
Solution flow rate	m^3/hr	1,058	HLC
Gold extraction	%	75.12	Pilot plant testwork
Solution Collection Ponds			
Pregnant solution pond	m^3	28,000	Anddes
Overflow pond	m^3	50,000	Anddes
Adsorption			
Number of trains	N°	1	HLC
Carbon columns per train	N°	5	HLC
Column carbon capacity	t	10	HLC
Solution flow rate	m^3/hr	1,058	HLC
Gold concentration in carbon	g/t	2,000	HLC
Desorption			
Column carbon capacity	t	10	HLC
Elution solution flow rate	BV/hr	2	HLC
Acid Washing			
Column carbon capacity	t	10	HLC
Dilute HCl solution flow rate	BV/hr	2	HLC
Thermal Regeneration			
Kiln capacity	Kg/hr	125	HLC
Electrowinning			
Number of electrolytic cells	N°	6	HLC
Number of cathodes per cell	N°	17	HLC
Smelting			
Retort capacity	Kg	300	HLC
Refining furnace capacity	Kg doré	653	HLC
Leaching Reagents			
Sodium cyanide	Kg/t	0.175	Pilot plant testwork
Lime	Kg/t	2.95	Pilot plant testwork
Recovery			
Overall gold recovery	%	74.6	HLC

Note BV = Bed volume

17.4 Process Description

The Fenix Gold Project will commence operations in two phases. The first phase will correspond to the first year with 12,000 t of ROM feed per day with a head grade of 0.66 g/t Au. The second phase will commence in the second year and will process 20,000 t of ROM feed per day with a head grade of 0.48 g/t Au. The ROM material will be placed on the leach pad, where cyanide solution will be added for gold extraction.

The gold leach recovery for the Fenix Gold project is 75.12% according to the pilot test work (see Figure 17-2). The process is described below.



Source: HLC, Technical Report N° 211.009.112-0104-100-18-IT-001, 2021

Figure 17-2 – Gold extraction kinetics.

For the pilot test heap, Fenix Gold carried out the blast design and provided HLC with 426 t of ROM feed of -150 mm. This was a composite for testing consisting of 18% Fenix North, 48% Fenix Central and 34% Fenix South material.

The pilot leach test was carried out on a concrete pad protected by an HDPE liner. Pad dimensions were 8 m x 8 m x 3 m high; leaching was carried out for 87 days, and 75.12% gold extraction was obtained.

Based on the results from the pilot test, no crushing is required. In the PFS 2019 the Fenix Gold project process design considered a single stage crush to produce a P80 of 100 mm and a recovery of 75%, this was based on historical metallurgical work. A stockpile dome, feeder and conveyor to the pad were also considered for the crushed material.

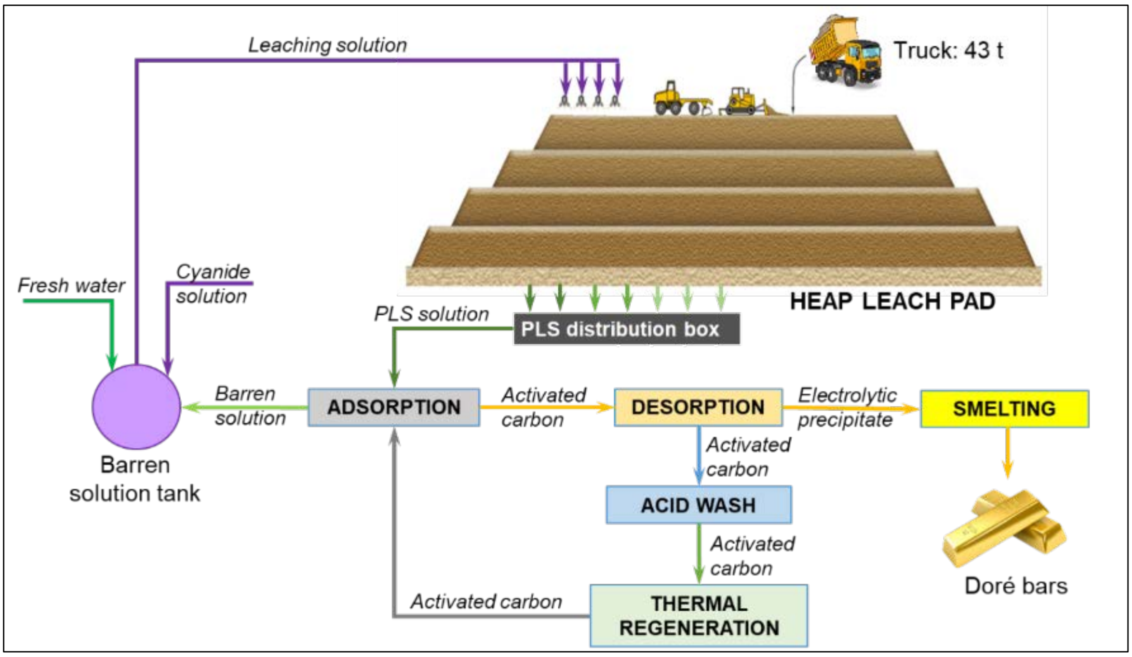
Review of the metallurgical studies indicated that a recovery of 75% could possibly be obtained from run of mine (ROM) material. In 2020 Fenix Gold initiated a metallurgical test to obtain blasted material from the three pits and leach this ROM material in a pilot leach pad to verify if 75% was obtainable from ROM material. This test is detailed in Chapter 13.

The test demonstrated that a P80 of 80.5 mm could be obtained from blasting, the blasted blended material returned a recovery of 75.12% over 87 days, using water trucked from the Nueva Atacama process plant in Copiapó.

While the crusher, stockpile dome, feeder and conveyor are still included in the EIA study and permissions, Fenix Gold has chosen to remove these items from the Capex and initial construction for the following reasons.

- Reduction of Initial Capital.
- Simplification of construction phase.
- Reduced learning curve and start-up complications.
- Reluctance to commit to infrastructure limited to 20 Ktpd, when the project needs to be expanded to 80 – 100 Ktpd to realize its full potential, leaving this infrastructure obsolete.
- Flexibility to include later if required.

The pregnant leach solution (PLS) from the leach pad will drain by gravity to a distribution box, the solution will then drain by gravity to the ADR plant for gold recovery. The ADR plant will include adsorption, desorption, acid washing, thermal regeneration, and smelting. The barren solution from the ADR plant will flow by gravity to the barren solution tank where cyanide will be added, and the solution will be pumped back to the leach pad (see Figure 17-3).



Source: HLC, 2023

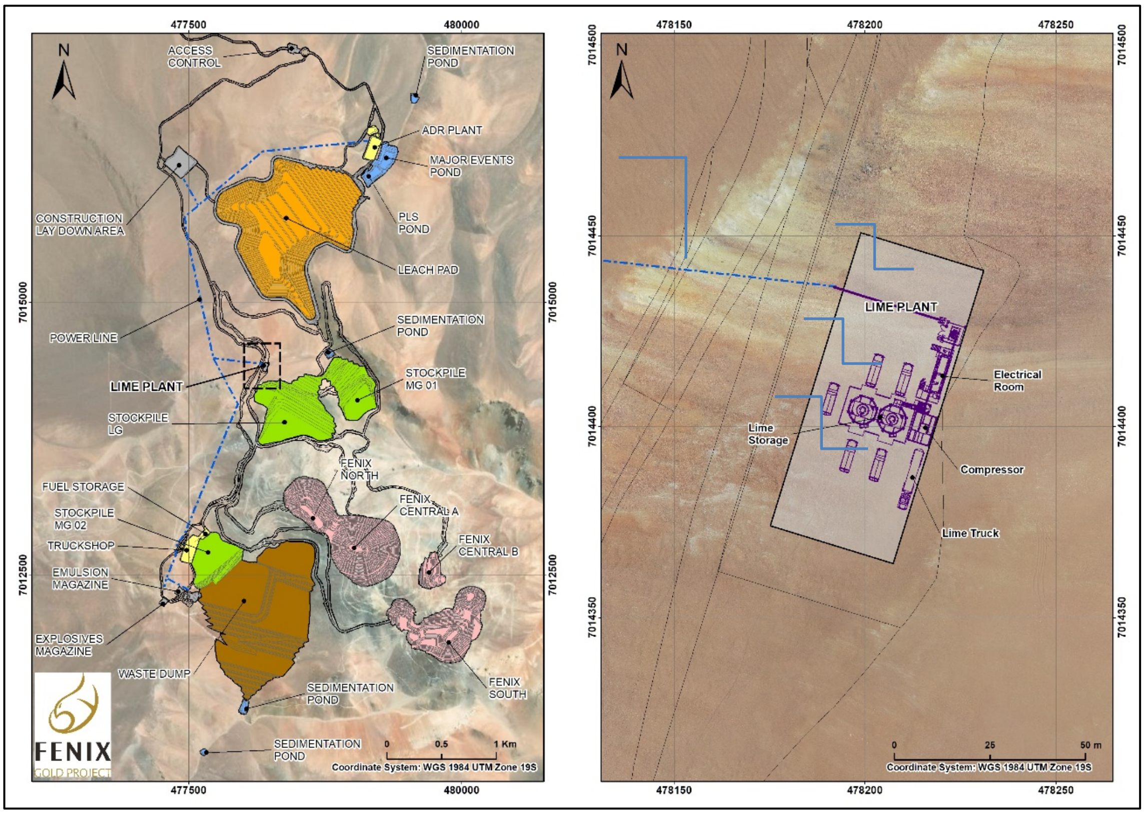
Figure 17-3 – General layout of the heap leach processing.

17.4.1 Lime Plant

The ROM feed will be transported by 43 t capacity trucks (Actros or Volvo type), lime will be added to the trucks at the lime plant, and the mixture will be loaded on the heap for leaching (see Figure 17-4).

Lime will be supplied to the mine in dry bulk trucks. When the lime trucks arrive at the lime plant, the lime will be transported via a pneumatic conveying system to two storage silos of 400 t capacity each. Only one truck can be unloaded at a time. Each silo will be equipped with a dust collection filter, a pressure relief valve, a vibrating activator to provide a continuous flow and a guillotine valve at the silo discharge for downstream maintenance purposes.

A rotary dosing valve will carry out lime dosing from the silos to provide flow control at the silo discharge to deliver the required lime flow rate. The lime will pass by gravity to a hopper which will dose the lime onto the mine trucks at a rate of 2.95 Kg/t.



Source: Fenix Gold, 2023

Figure 17-4 – General layout of the mine and plant.

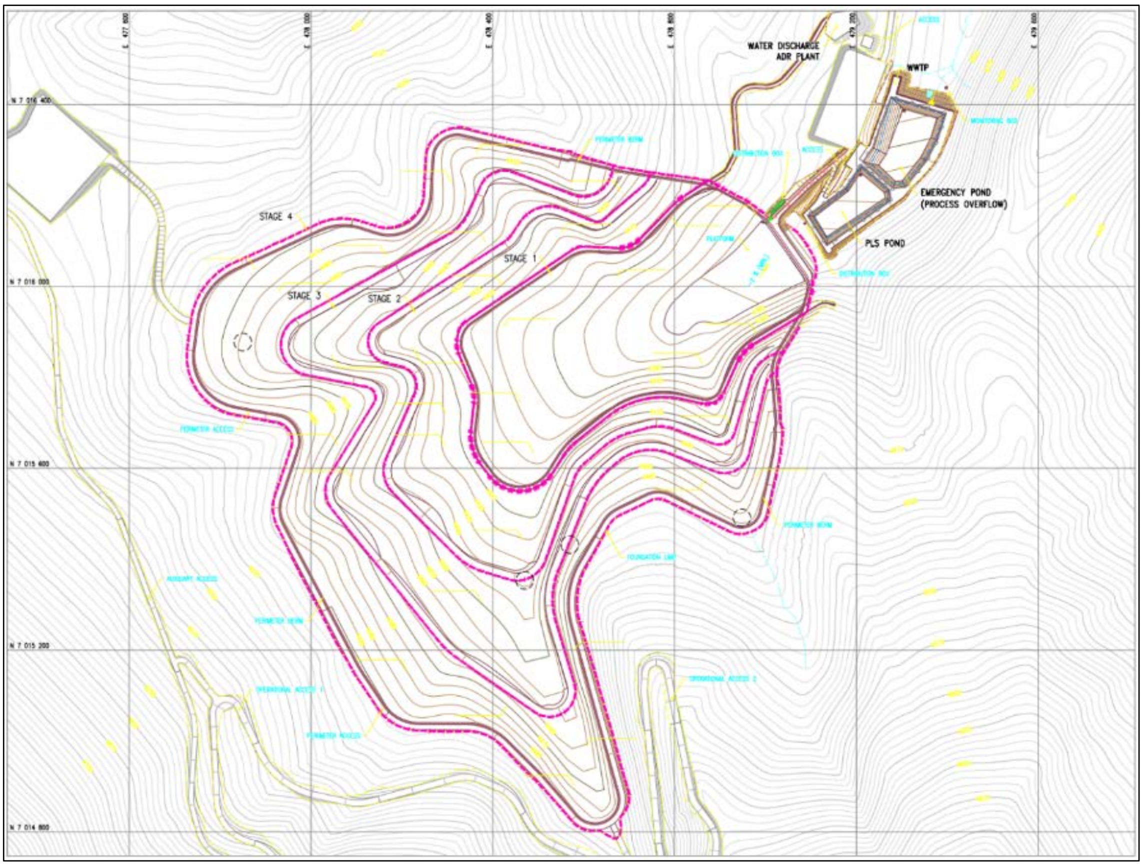
17.4.2 Heap Leaching

17.4.2.1 Leach Pad

For construction of the leach pad base, first the unsuitable material below the leach pad will be removed and the earthworks required for cut and fill to level the pad and to allow good drainage of solution will be completed.

The pad is designed to have a minimum gradient of 2% to provide effective solution drainage and to allow the mechanical equipment to compact the backfill as designed.

The liner system will be placed (after levelling the pad) to contain the solutions within the facility. A 1.5 mm and 2 mm thick LLDPE SST geomembrane liner has been considered. This type of geomembrane was selected because it is flexible and is recommended based on experience in similar projects. It has been demonstrated that under the application of loads from the leaching material the geomembrane behaves with sufficient flexibility without compromising the integrity. The leach pad layout and growth by stages is shown in Figure 17-5. Anchor trenches are provided to secure the geomembrane in place without tearing.



Source: Anddes Drawing No. 211.009.112-0206-111-12-PL-006_R0, 2023

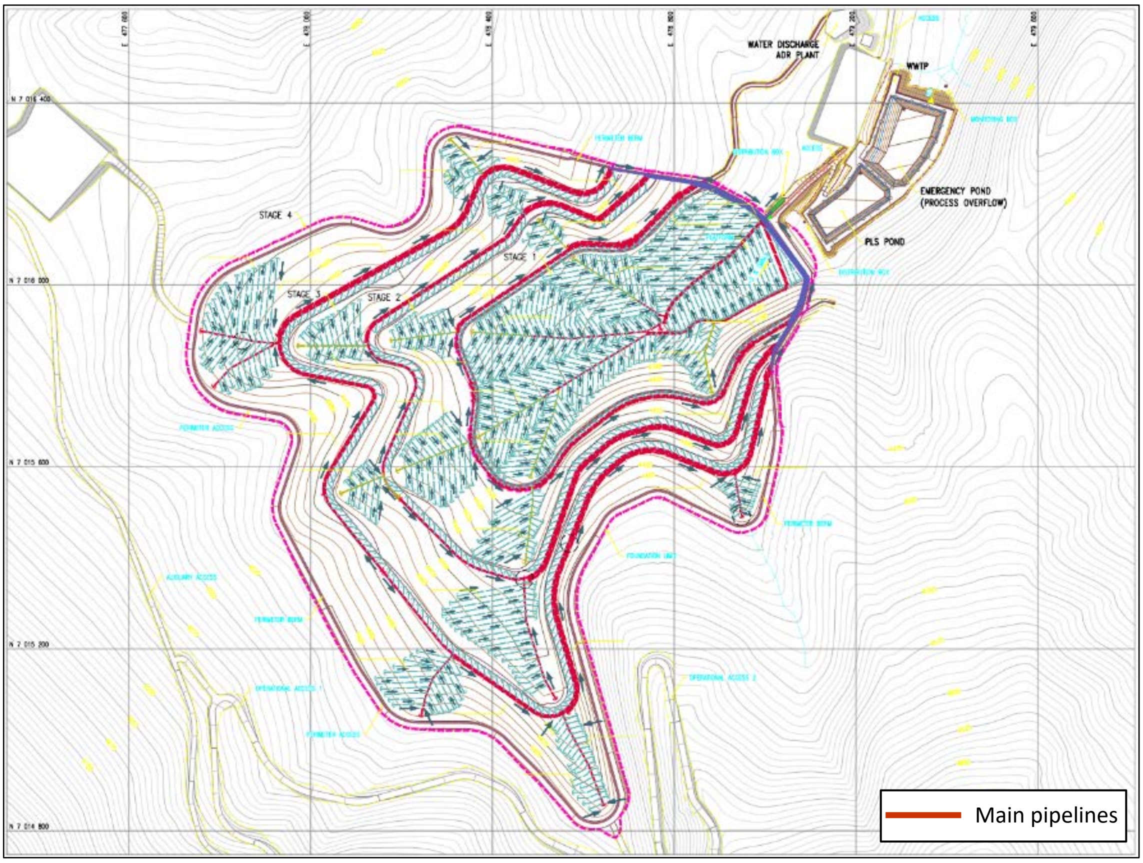
Figure 17-5 – Heap leach pad layout.

17.4.2.2 Solution Collection System

The solution collection system will provide relatively rapid drainage of PLS and melting snow from within the heap. The piping network was designed to reduce the hydraulic loading of the solution in the liner system, and to facilitate and accelerate solution collection.

The solution collection system consists of the main pipes (of variable diameter depending on the flow for the different areas of the heap) and a network of lateral pipes, 100 mm in diameter, arranged in a herringbone pattern.

The main pipes converge at the bottom of the heap and cross the perimeter berm using 450 mm diameter HDPE SDR 21 pipes which then discharge the flows into the distribution box, see Figure 17-6.



Source: Anddes Drawing No. 211.009.112-0206-111-12-PL-006_R0, 2023

Figure 17-6 – Leach solution collection system.

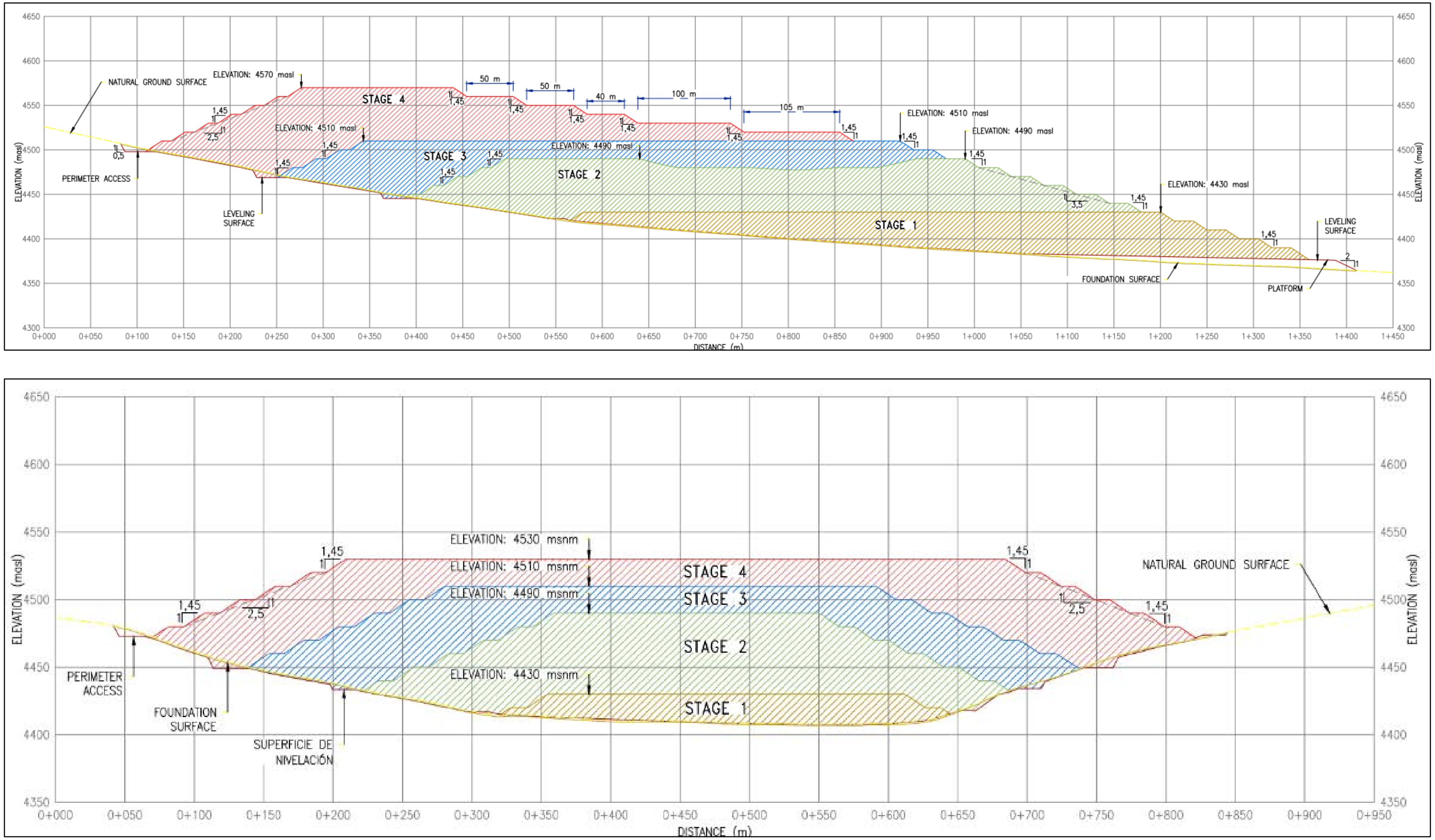
17.4.2.3 Overliner

After installing the geomembrane, a protective cover (overliner) will be placed on top of the liner. The cover material will be acid resistant and permeable to allow rapid collection of the solution and flow to the perforated pipe system. The overliner will be placed over the entire area of the liner with a minimum thickness of 600 mm. It is estimated that this overline material will come from the excavation of the ponds and will require crushing and screening.

The overliner material will be installed during construction in areas with slopes equal to or less than 3H:1V. In areas of the heap with slopes steeper than 3H:1V the overline will be placed as feed is loaded on the heap.

17.4.2.4 Feed Transportation and Stockpiling

The feed will be transported by truck from the mine to the heap leach pad via the lime plant and the feed will be piled in an orderly fashion until the typical lift height of 10 m is reached. Access ramps will be built into the loading area of the leach pad. Figure 17-7 shows sections through the heap.



Source: Anddes Drawing No. 211.009.112-0206-111-12-PL-010_R0, 2023

Figure 17-7 – Heap leach pad sections.

The mine trucks will dump the material in piles which will be pushed to the edge of the lift under construction using a front-end loader or bulldozer. The feed will be levelled to the design elevation and topographically controlled. Once the lift has been completed, the entire upper area of the lift will be ripped using the ripper of a bulldozer to loosen compacted material resulting from the transit of mine trucks and other heavy equipment.

17.4.2.5 Heap Leach Irrigation System

The irrigation system will apply cyanide solution uniformly directly onto the levelled surface of the material to be leached via a drip irrigation system, at an irrigation rate of 10 l/hm^2 with an irrigation cycle of 90-days. The leach solution will contain sodium cyanide at a concentration of 200 ppm, pumped from the barren solution tank using vertical pumps.

Two types of cell configuration will be used for the irrigation system: Cell Type 1 with an area of 4,000 m^2 and an irrigation flow rate of 40 m^3/hr and Cell Type 2 with an area of 6,000 m^2 and an irrigation flow rate of 60 m^3/hr.

To avoid freezing of the solution in the heap, hydraulic variables have been evaluated to minimize the exposure time of the solution to low temperatures. The piping system has been designed to provide rapid flow through the heap. In addition, alternatives for thermal insulation of the irrigation cells using thermofilm coverings or crushed low grade material have been analyzed. An allowance has been included in the budget for thermal protection but the decision on the type of cover will be made during the detail design.

When the cell is saturated with solution, the gold rich solution will drain to the lowest part of the heap and into the PLS distribution box.

17.4.2.6 Pregnant Solution Drainage and Pumping System

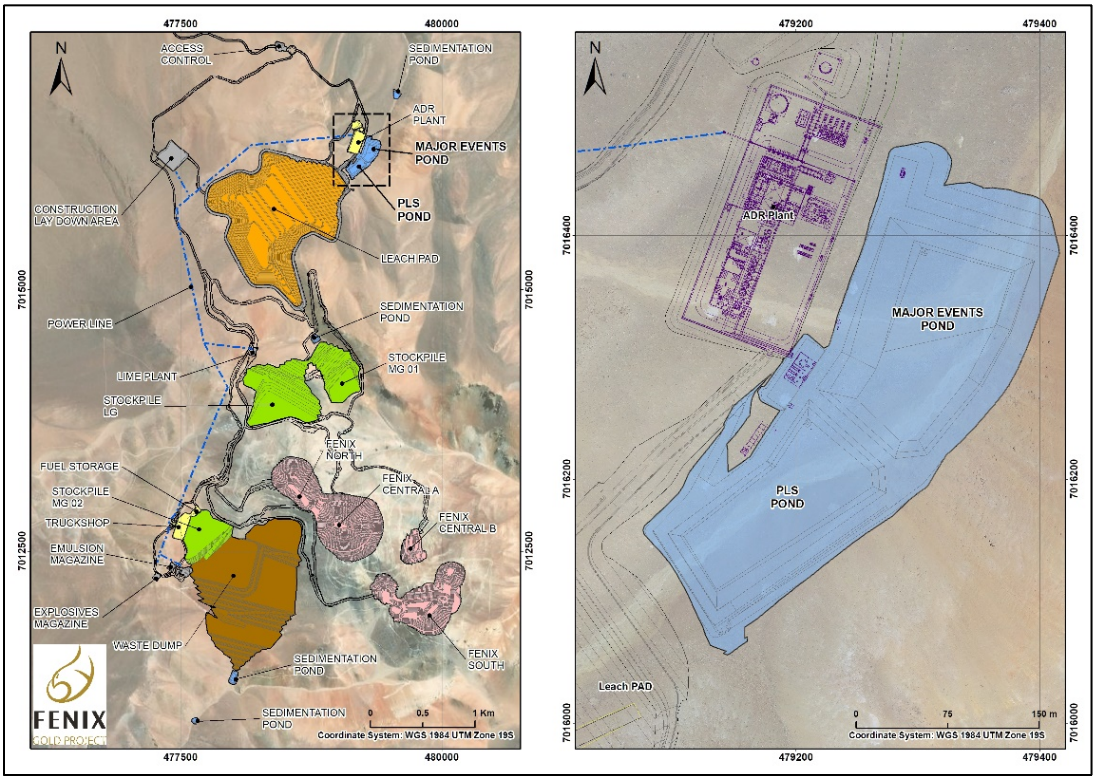
The slope of the pad will allow the PLS to flow by gravity through the drainage piping to the PLS distribution box. From this box the PLS will flow by gravity to the adsorption circuit. There will also be the facility to allow the PLS to flow directly to the PLS pond which has an overflow system to direct the solution to the overflow pond in the event of an unexpected process or weather event. Figure 17-8 shows the ponds and the ADR plant layout.

The ponds are designed with impermeable geomembrane liners to prevent seepage and loss of solution. However, leak detection pumps will also be installed to return the leakage to the ponds in the event of solution seepage.

Pumps will be installed in the PLS pond to transfer the solution to the barren solution tank or to the distribution box (for medium or high-grade solutions) and then to the adsorption columns.

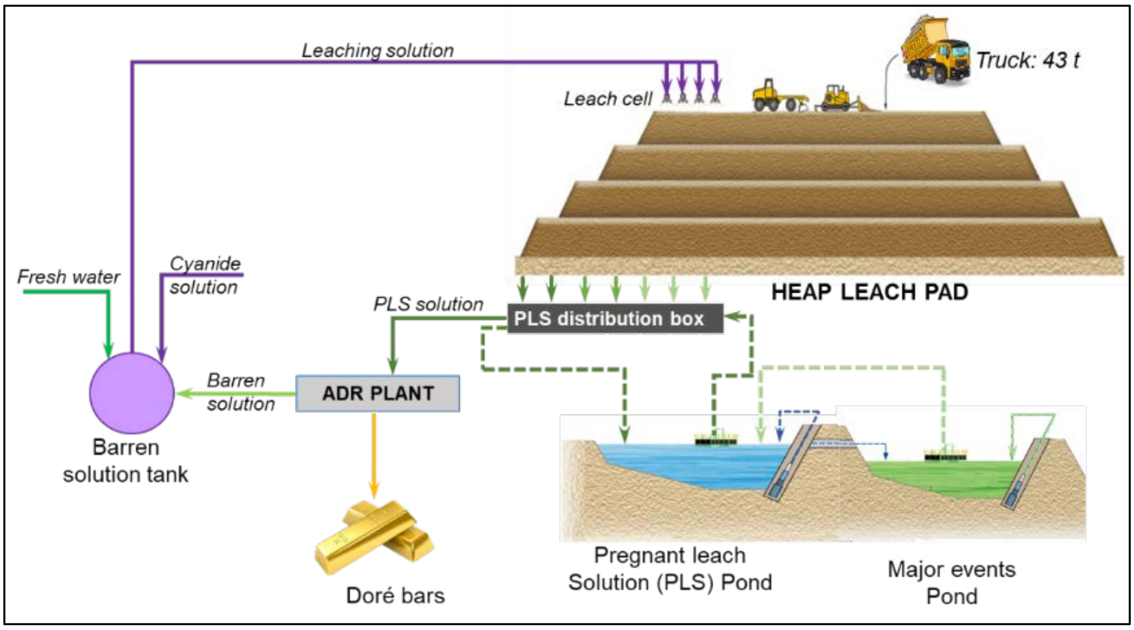
Submersible pumps will also be installed in the overflow pond to transfer the solution back to the PLS pond, see Figure 17-9.

The capacity of the PLS pond will be 28,000 m^3 and the overflow pond will have a capacity of 50,000 m^3.



Source: Fenix Gold, 2023

Figure 17-8 – Solution ponds and ADR plant layout.



Source: HLC, 2023

Figure 17-9 – Solution ponds and ADR plant layout – Summary flowsheet.

17.4.3 ADR Plant

17.4.3.1 Adsorption

The PLS leaving the heap leach will drain by gravity from the PLS distribution box to the adsorption columns, where the gold dissolved in the PLS will be adsorbed on the activated carbon.

The adsorption circuit will consist of a train of five adsorption columns with a capacity of 10 t of activated carbon each. In these columns, the rich solution will flow counter-currently to the movement of the activated carbon. The solution will flow from column 1 to column 5 and the carbon will flow from column 5 to column 1.

The PLS entering the adsorption circuit will pass through a flow meter for flow monitoring and control and will then enter a gravity flow box, to direct the solution to the first column. The PLS will flow down the central tube to the bottom of the column and the solution will be distributed throughout the column section, by a distribution plate to prevent carbon return and to keep the carbon bed in suspension. The solution will overflow into a channel leading to the next adsorption column, continuing the process in all the columns in the series.

The barren solution with low residual gold, leaving the last adsorption column, will pass through a vibrating screen to recover any fine carbon particles, which will be stored in Maxi-sacs. The barren solution will then flow by gravity to the barren tank, where the sodium cyanide will be added to adjust the strength in the leach solution. The solution will then be pumped back to the heap leach, creating a closed circuit.

The loaded carbon will be collected from the first column and sent to the desorption stage by an eductor.

The adsorption circuit will be in an enclosed building; the gases generated in the adsorption columns will be captured by the extraction hoods and the duct systems. This is then directed to the gas scrubbing tower using a centrifugal extractor. In the gas scrubbing tower, fresh water and sodium hydroxide solution will be recirculated to treat the gases.

17.4.3.2 Desorption

Activated carbon containing the gold and silver will be loaded via an eductor into the 10 tonnes capacity desorption reactor. The system will use the pressurized Zadra process, which requires a solution containing approximately 2% sodium hydroxide, 0.2% sodium cyanide and 10 ppm antiscalant, at a temperature of 140°C and 60 psi circulating through the reactor.

The strip solution with high gold values exiting the top of the reactor will be cooled by the heat exchanger (the heat will be transferred to the strip solution entering the reactor).

A thermal oil boiler will be used as the primary heater for the strip solution to maintain 140°C. The cooled high-grade solution will flow by gravity into the electrowinning cells. The stripped activated carbon from the desorption column will be sent to the acid wash stage by an eductor.

17.4.3.3 Acid Washing

The acid wash reactor will have a capacity of 10 tonnes of carbon. Acid washing will remove carbonates and sulphates adsorbed by the activated carbon in the adsorption stage. This process is carried out in a closed circuit with a 4% solution of hydrochloric acid (HCl). This solution is passed through the carbon until the pH stabilizes below 2.

Once the acid wash is complete, the carbon is rinsed with water and then with a dilute caustic solution to remove any residual acid. The total time required for acid washing of a 10 tonnes batch of carbon is approximately 4 to 6 hours. Once the acid wash is complete, the carbon will be transferred by an eductor, to the lean carbon hopper or to the thermal regeneration furnace.

The system will have DSM type stationary screens to recover any carbon that exits with the solution during the acid wash process.

17.4.3.4 Thermal Regeneration

The thermal regeneration system will treat a portion of the activated carbon after the acid wash, it will have a capacity of 125 Kg/hr. The washed activated carbon will be fed to a circular vibrating screen to separate the fine carbon, discharging the fines into the fine carbon tank and the coarse carbon into the carbon feed hopper through a pre-drying vibrating screen.

The coarse carbon will fall by gravity into the thermal regeneration kiln, where the carbon will be regenerated at a temperature of ~700°C; the operating time will be approximately 28 to 34 hours. The regenerated carbon will be discharged from the furnace by an electromagnetic feeder into a cooling hopper and then transported by an eductor to the carbon storage hopper.

17.4.3.5 Electrowinning

The electrowinning process will be carried out in a circuit of six electrowinning cells (3 trains of 2 cells each), where direct current is applied to deposit gold onto the stainless-steel mesh cathodes. The barren solution from the electrowinning cells will flow by gravity to the strip solution storage tank, creating a closed circuit with the desorption stage. The stainless-steel mesh cathodes will be washed inside the cells and the precipitate containing the gold and silver will be recovered. The precipitate will be fed to a filter press to remove excess solution and the cake generated in the filter press will be loaded into the retort furnace trays (see Figure 17-10).

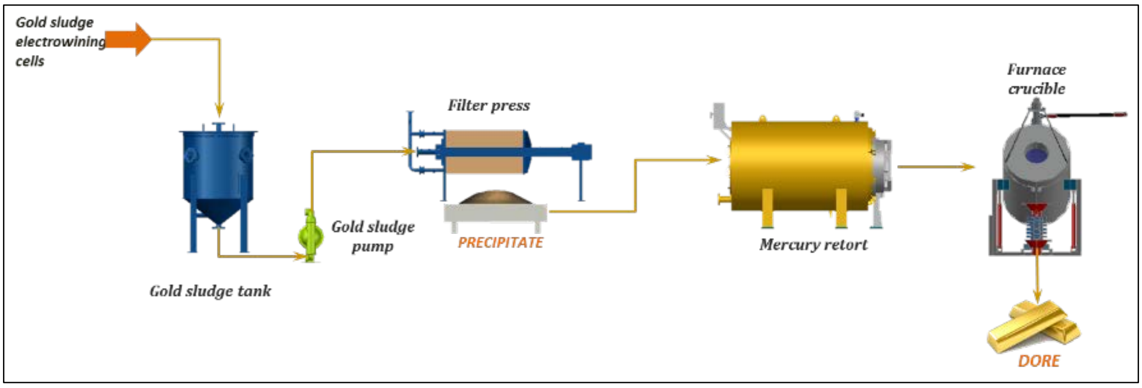
17.4.3.6 Mercury Removal

The filtered precipitate from the electrowinning area will be treated in a retort to remove any mercury, that may be present in the precipitate. The precipitate will be placed on trays and heated in the retort for approximately 12 hours at a temperature of approximately 500°C to volatilize the mercury.

The steam generated in the retort will be passed through a water-cooled condenser. The cooled mercury-depleted steam will pass through a purifier containing sulphur-impregnated carbon to remove residual mercury to ensure that the emissions meet environmental standards.

17.4.3.7 Refining

After the mercury removal, the precipitate will be mixed with fluxes including borax, potassium nitrate, silica, and sodium carbonate. This mixture will be charged into a crucible to be melted. The main product of the refining furnace will be molten metal, a mixture of gold and silver called Doré. This will be poured into moulds, cooled, and then stored in the vault until transport (see Figure 17-10). Doré bars are the product of the recovery process.



Source: HLC, 2023

Figure 17-10 – Gold room summary flowsheet.

17.5 Gold production

The gold production model was developed from a combination of metallurgical testwork, the mine production plan, and the stacking volumes on the leach pad.

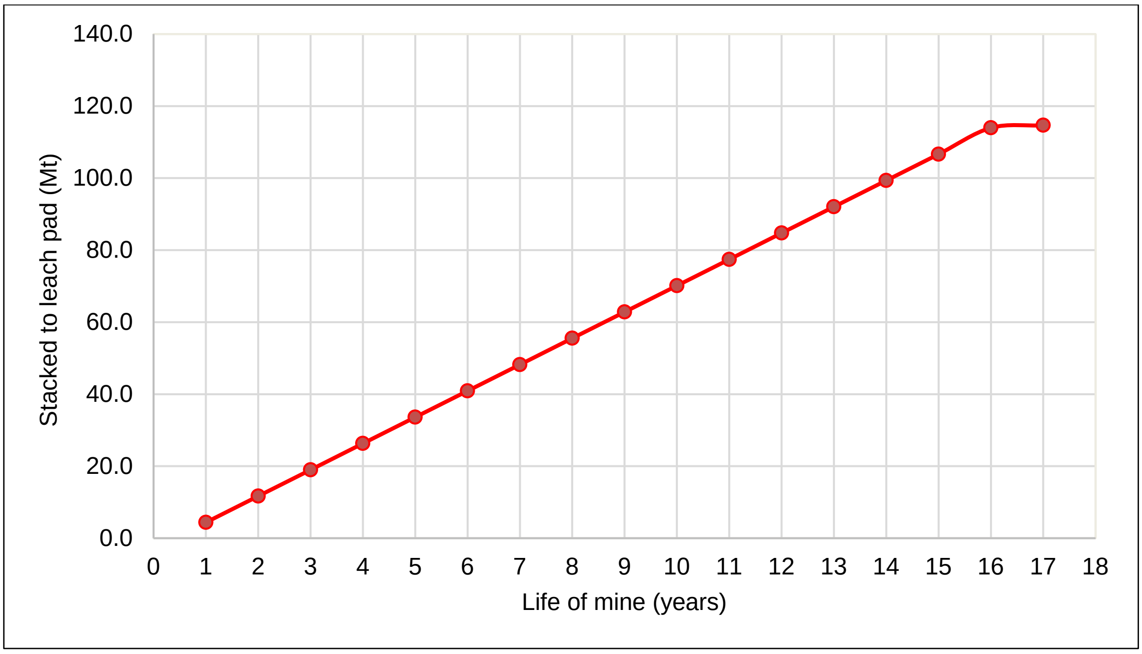
17.5.1 Gold Recovery

As indicated in Chapter 13, a gold extraction of 75.12% is expected in the leach stage. Considering the loss of gold in the fine carbon and in the smelting slag, the ADR plant is estimated to have a recovery efficiency of 99.3%. Therefore, the overall gold recovery is estimated to be 74.6%.

The recovery will change as the blending, mineralogy, lithology, and mineral alteration of the feed vary.

17.5.2 Gold Production Schedule

The annual mine production plan provides the annual tonnage and grade for each rock type that will be delivered to the leach pad. This information was used with the heap leach model to calculate the gold recovery over time. Figure 17-11 and Figure 17-12 show the cumulative tonnes and ounces placed over the life of mine respectively. Figure 17-13 shows the estimated gold recovery based on the production plan and the gold recovery model.



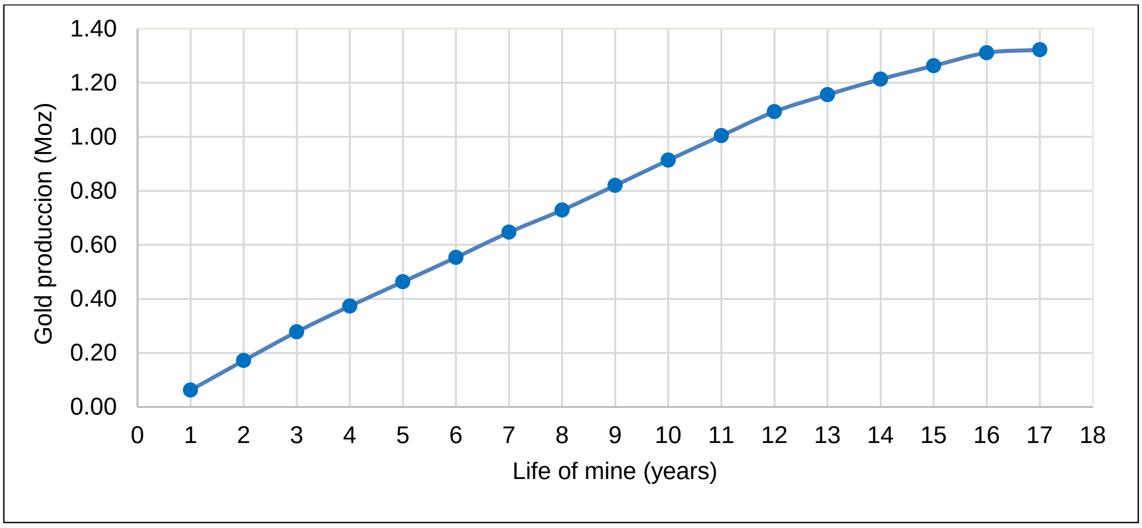
Source: Rio2, 2023

Figure 17-11 – Cumulative tonnes placed.

Source: HLC, 2023

Figure 17-12 – Cumulative ounces of gold placed.

The gold production model is based on the 20 Ktpd ROM production to the pad, as calculated in the mine plan, see Figure 17-13. This model uses the mine plan and the planned process to simulate gold recovery over time. The model also tracks loading time, leach cell set-up time, percolation rate, extraction kinetics, gold loss in fine carbon, and losses in the smelter slag. The time for this gold to be recovered in the gold plant is controlled by several factors both operational and leaching process.



Source: HLC, 2023

Figure 17-13 – Cumulative ounces of gold production from the ADR plant.

The model estimates that the time to build a 72,000-t leach cell (4000 m^2 area), 3.6 days are required to deposit the mineral. Once the cell is complete, a further 3 days is estimated to place the driplines and begin leaching. Percolation or the time required for the solution to soak down through the rock and arrive to the plastic liner is a further 5.5 days.

These operational delays are reflected in the model so that once a cell is built an additional 8.5 days of delay is incurred before gold rich solution arrives at the ADR plant.

The gold leach cycle considered in the FS is 90 days based on the results of the pilot pad work. These process times are built into the model as per the following recoveries in time. Table 17-2 and Source: HLC, 2023

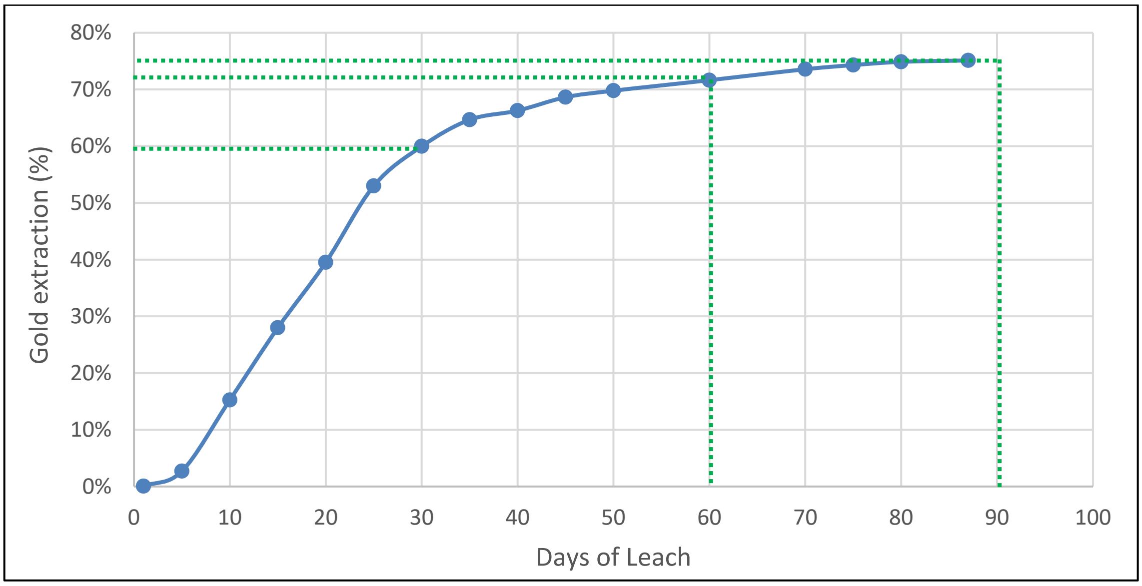
Figure 17-14 below show the recoveries in time that are applied in the economic model.

Table 17-2 – Economic Model criteria used for the gold production model.

Criteria	Unit	Value
Cell Area	m^2	4000
Lift Height	m	10
Ore density	t/m^3	1.8
leach cell volume	t	72,000
Cell stacking time	days	3.6
Drip-line installation	days	3
Leach cycle	days	90
Irrigation rate	l/hm2	10
Percolation rate	m/day	1.8

Criteria	Unit	Value
Mineral moisture content	%	2
M3 solution applied per t ore	m^3/t	1.2

A gold recovery of 60% is achieved after at 30 days, 71.50% at 60 days and 75.12% after 87 days leaching. A further 3 days is included in the leaching plan to reach 90% recovery.



Source: HLC, 2023

Figure 17-14 – Leach recovery curve from Pilot Pad used in the gold recovery model.

17.6 Water Management

Fenix Gold's heap leach system is designed as a zero-discharge facility. The Fenix Gold project area is in the driest region of Chile, which simplifies solution management. Due to limited precipitation at site, water control will be based on the volume required to be stored due a sudden storm event by using an overflow pond.

17.6.1 Process Water Consumption

The feed to the leach pad will have a moisture of 2%. It is expected that there will generally be a water deficit for the process and make-up freshwater will be required. It is estimated that the make-up freshwater requirement will be 1,800 m^3/d. More detail on water consumption can be found in section 18.2.1

17.7 Main Process Plant Equipment

The main equipment selected for the process is listed in Table 17-3 showing the size/capacity of the equipment.

Table 17-3 – Main process plant equipment.

Equipment	Unit	Characteristics
Lime Plant		
Lime silo	2	Capacity = 400 t lime each
Air compressor	1	482 SCFM **
Heap leaching		
Barren tank	1	126.7 m^3
Barren solution pump	3	625 m^3/hr
Pregnant/barren solution pump	2	360 m^3/hr
Barren solution pump	2	360 m^3/hr
ADR Plant		
Adsorption		
Adsorption column	5	Capacity =10 t carbon/1.058 m^3/hr
Safety screen	2	1.058 m^3/hr
Steam extractor	1	Capacity = 33,000 CFM *
Desorption		
Desorption reactor	1	Capacity =10 t carbon
Strip tank	1	30.3 m^3
Electric boiler	1	2,000,0000 kcal/hr
Heat exchanger	3	Capacity = 40.0 m^3/hr
Acid Washing		
Washing reactor	1	Capacity =10 t carbon
Wash tank	1	1.7 m^3
Acid recirculation pump	1	Capacity = 40.0 m^3/hr
Electrowinning		
Electrolytic cell	6	Capacity = 40.0 m^3/h total
Current rectifier	6	Capacity = 0 - 2000 A
Gas extractor	1	Capacity = 18,500 CFM *
Thermal Regeneration		
Feed hopper	1	Capacity = 5 t of carbon
Thermal regeneration reactor	1	Capacity = 125 Kg/hr
Cooling hopper	1	Capacity = 5 t of carbon
Gas extractor	1	Capacity = 15,500 CFM *
Carbon Handling		
Carbon storage hopper	2	25.9 m^3
Fine carbon storage hopper	1	17 m^3
Smelting		

Equipment	Unit	Characteristics
Electric retort furnace	1	300 Kg/batch
Refining furnace	1	600 Kg/batch
Gas extractor	1	Capacity = 20,000 CFM *
Plant Facilities		
Plant air		
Air compressor	1	Capacity = 250 CFM *
Air dryer	1	Capacity = 140 CFM *
Fresh Water		
Water receiving tank	1	92 m^3
Water storage tank	1	2,300 m^3
Reagent Preparation		
NaCN preparation tank	1	63 m^3
NaCN dosing tank	1	72 m^3

(**) SCFM: Standard Cubic Feet per Minute
(*) CFM: Cubic Feet per Minute

17.8 Process Reagents and Consumables

The reagents and consumables required for the process plant and estimated consumptions are shown in Table 17-4.

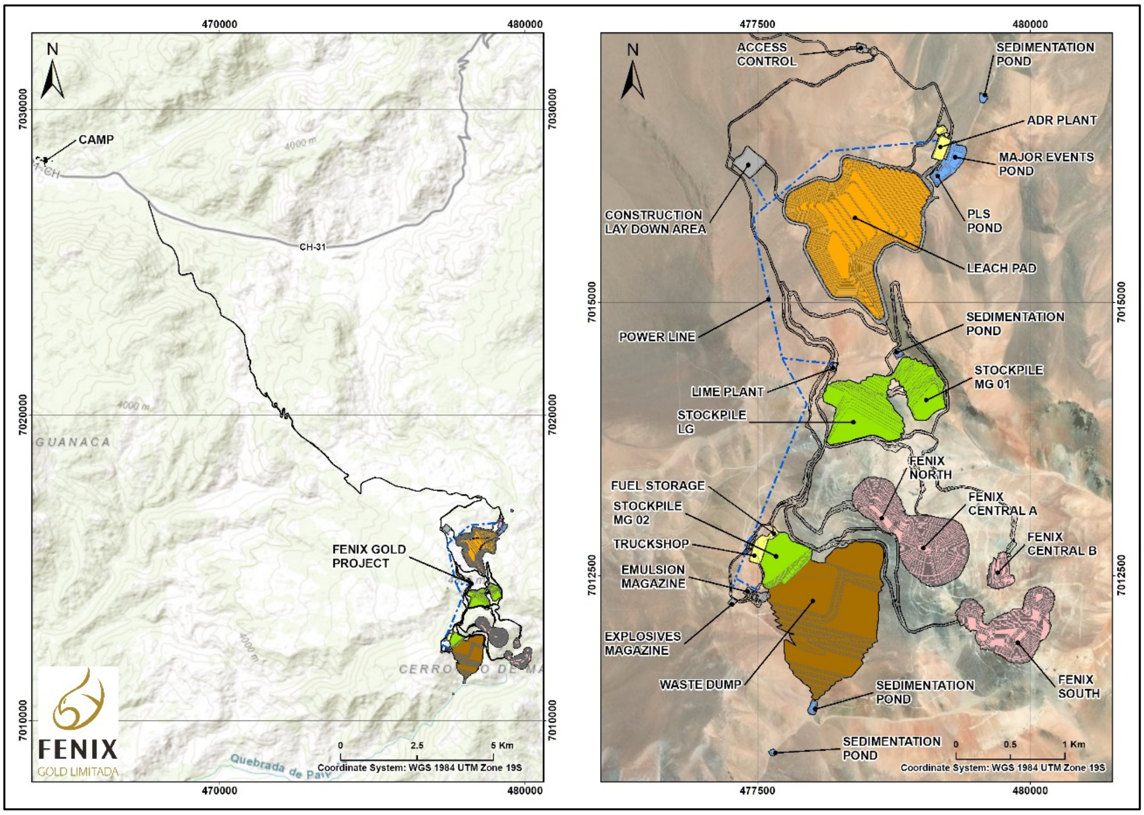
Table 17-4 – Reagents and consumables .

Description	Unit	Quantity at 20k tpd
Sodium cyanide	g/t	175
Lime	g/t	2,950
Activated carbon	t/month	2
Antiscalant	t/month	11.5
Sodium hydroxide	Kg/month	6,827
Hydrochloric acid (33%)	Kg/month	18,900
Borax	Kg/t ppt *	300
Sodium nitrate	Kg/t ppt *	100
Silica	Kg/t ppt *	70
Make-up water	m^3/d	1,800
Energy demand (total)	kWh/t	3.09
Lime plant	kWh/t	0.11
Leaching	kWh/t	1.25
ADR plant	kWh/t	1.24
Infrastructure	kWh/t	0.49

(*) t ppt: tonnes of precipitate

18 PROJECT INFRASTRUCTURE

The Fenix Gold Project requires several ancillary facilities and related infrastructure for mining and processing, the locations of which were selected to take advantage of the local topography, accommodate environmental considerations, and minimize capital and operating costs. The infrastructure includes roads, power supply, water supply, lime dosing, workshops, warehouses, offices, laboratory, camp fuel storage and delivery, and other facilities, as shown in Figure 18-1. All locations considered future plant, pad, and dump expansions and were designed to accommodate and not interfere with the footprint of a 20,000 tpd project as considered in the resource estimation.



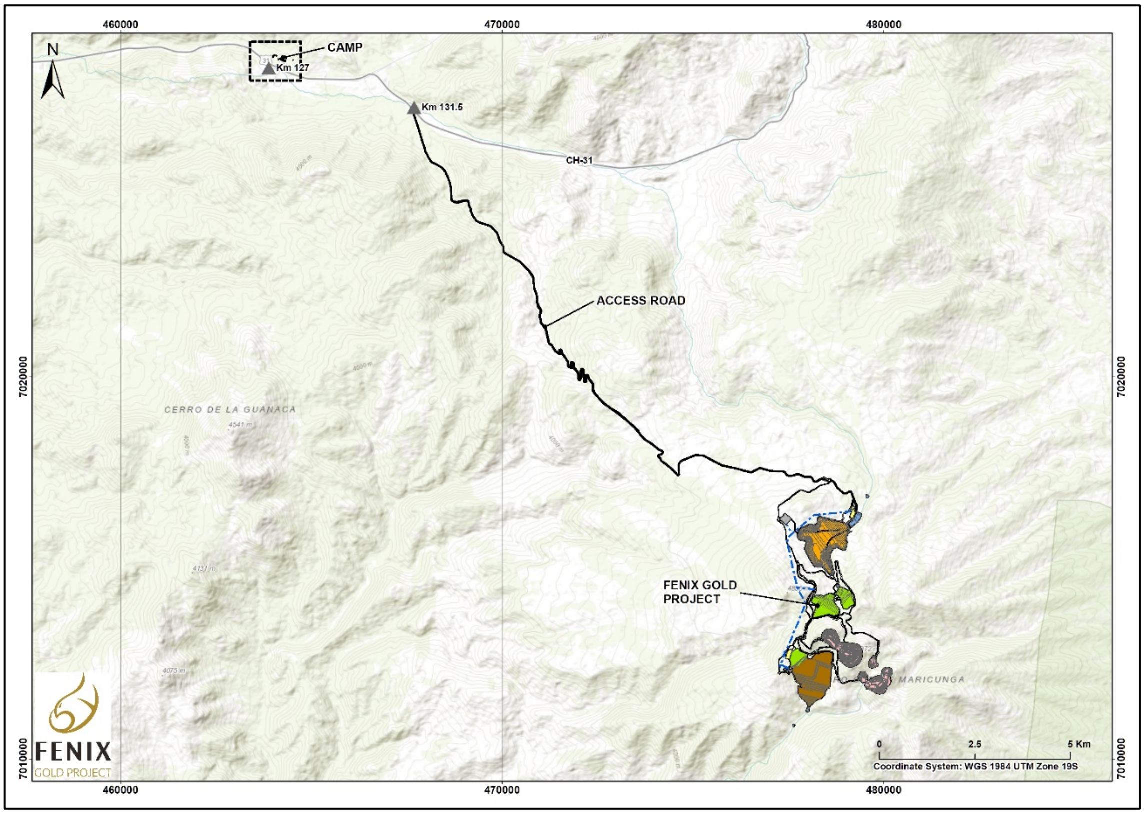
Source: Rio2, 2023

Figure 18-1 – Key infrastructure facilities.

18.1 Roads

18.1.1 Access Roads

From the city of Copiapó, access to the project area is via Route CH-31. The Lince S.A. company's Lazaro camp, which Fenix Gold will use for the construction and operation of the project, is located approximately 127km along the route. Continuing along Route CH-31 the access road to the Project begins at approximately the 131.5 Km mark. The 20.2 Km access route to the Project is detailed in Figure 18-2.



Source: Rio2, 2023

Figure 18-2 – Site access road.

This proximity to the national road CH-31 makes the location of the Fenix Gold Project convenient for construction. CH-31 to site has approximately 80 Km surfaced with Asphalt and the remaining section is in the process of being paved. This remaining section is currently finished with "Bichufita", which is a salt-based surface. While the suite access road has good access from CH-31 to the Project, the access road will require widening, regrading, and dust control surfacing as standard for a working mine operation. Anddes has completed the improved road design.

Table 18-1 – Physical characteristics of the access roads to the Project.

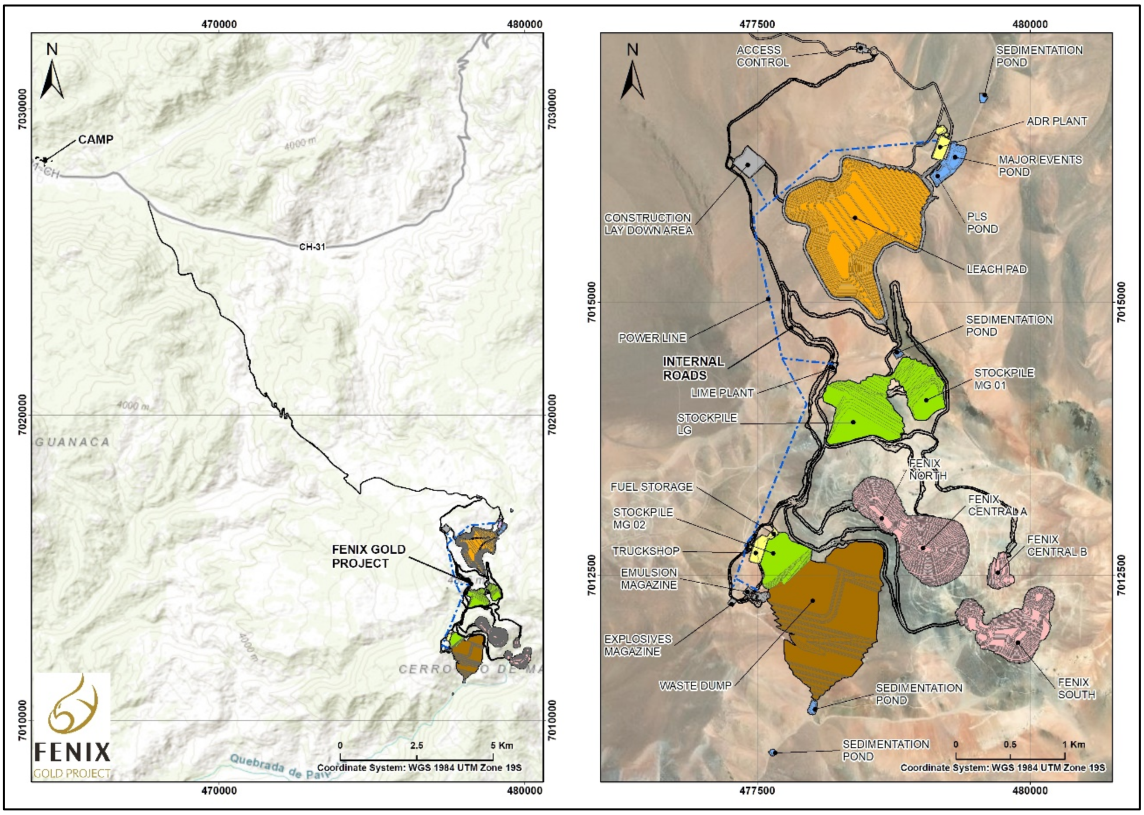
Road	Roadway Type	Material	Feature	Total Length (Km)
Route CH-31	International road	Asphalt Surface (80 Km) / Treated Gravel (51.5 Km)	Suitable for high tonnage traffic	131.5

Road	Roadway Type	Material	Feature	Total Length (Km)
Access road leading to the project area.	Access road to the site	Natural compacted, stabilized with dust suppressant	Suitable for high tonnage traffic	20.2

Source: MYMA, EIA, 2020

18.1.2 On-Site Roads

The Project design includes the improvement of the main site access road and the construction of a network of roads throughout the site to connect the main and auxiliary facilities, as shown in Figure 18-3. the roads are divided into three categories according to their use: haul roads, main roads, and auxiliary roads (See Table 18-2).



Source: Rio2, 2023

Figure 18-3 – Access and internal roads.

Table 18-2 – Access on-site roads.

Road Type	Total Length (Km)	Effective Road Width (m)	Berm Height (m)	Type Road Bed	Use	Period
Main Access Road (External)	20.2	9.1	0.7	Compacted natural soil	Supply trucks, light vehicles	Permanent
Haul Roads (Internal)	16.6	9.6	1.0	Compacted natural soil	Mining trucks (43 ton)	Permanent
Auxiliary Roads (Internal)	73.2	7.0	0.5	Compacted natural soil	Supply trucks, light vehicles	Permanent

Source: MYMA, EIA, 2020

The main access road will provide vehicle access to the mine, starting at the intersection with international highway CH-31 at kilometer 131.5 and ending at the entrance to the ADR plant, with an approximate length of 20.2 km. The existing access road will be improved with a maximum gradient of 10%. The main access road design considers a total effective width of 9.1 m, minimum turning radius of 25 m, a maximum gradient of 10%, and a 0.7 m high safety berm where required.

Haul roads are designed to allow connection between the pits with the leach pad, lime plant, stockpiles and waste rock dump, and different components of the project in order to provide continuity to the operation. The haulage accesses are designed with an effective width of 9.6 m, minimum radius of curvature of 25 m, a maximum slope of 11% and a berm with a height of 1.2 m in areas where required. In sections with negative slopes greater than 10%, emergency ramps with a minimum length of 30 m, a minimum slope of 5%, and an effective width of 9.6 m will be put in place.

The auxiliary roads will connect the main access road to all the project components. The auxiliary roads will be approximately 7.3 km long from the main access road traffic circle, allowing access to all the project components, and ending at the maintenance shop.

The auxiliary road has been designed with an effective width of 7.0 m, minimum radius of curvature of 25 m, maximum slope of 10%, and perimeter berm 0.5 m high where required.

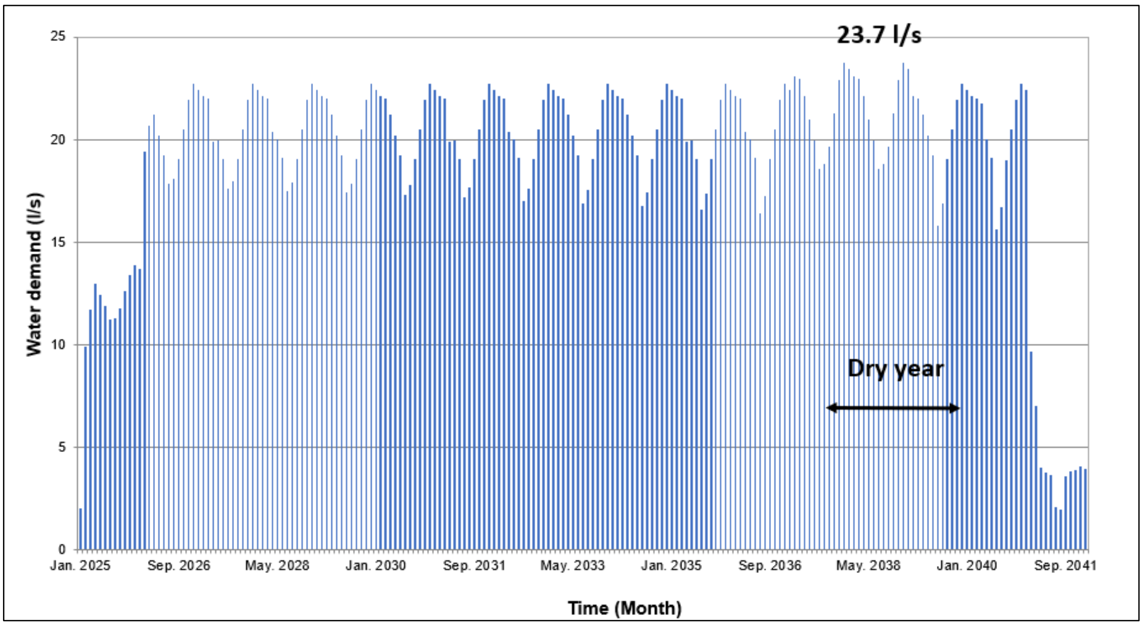
18.2 Water Supply

The Project will require water for the following purposes:

- Dust control for mining operations.
- Make-up water for heap leaching pad.
- Processing plant and laboratory.
- Mine maintenance shop washdown bay.
- Fire water.
- Construction activities.
- Domestic Usage.

The anticipated maximum water demand for the project was estimated by Anddes to be 23.7 l/s (85.3 m^3/hr). For year 1 of production at 12 Ktpd is estimated at 14.2 l/s, the average annual demand for years 2 – 17at 20 Ktpd production rate is estimated to be 20.5 l/s.

Fresh water requirement is shown in Figure 18-4.



Source: Technical report – Water balance, Anddes 2023

Figure 18-4 – Project water consumption.

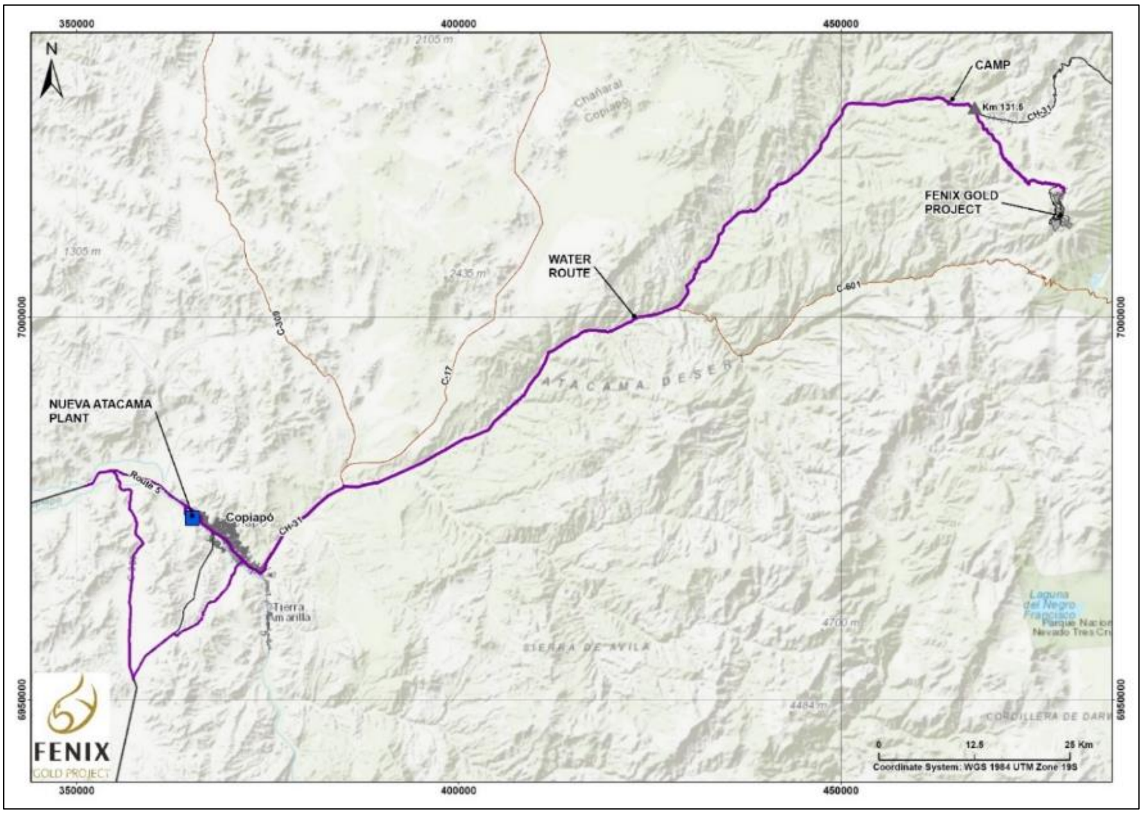
The Project has access to water via a contract signed with Nueva Atacama, formerly Aguas Chañar, the major water supplier in Copiapó. It will supply up to 20 l/s of treated town wastewater from its Piedra Colgada treatment facility located to the north of Copiapó.

Additional water up to 5 l/s can be sourced from Lince S.A Lazaro camp, both via the well and from treated camp wastewater, as required. At the Nueva Atacama plant, the water supply infrastructure was built by Fenix Gold, and commissioned ready for use as shown in Figure 18-5. The water will be transported approximately 158 km by 30 m^3 water tankers loading from the Nueva Atacama facility and discharging to the Process Plant located at the Project. The water transport route is via international highway CH-31 as illustrated below in Figure 18-6.

For the purposes of the water supply cost a flat requirement of 23 l/s was considered, the cost assumes all water is transported from the Nueva Atacama treatment plant as the worst-case scenario, water from the Lince S.A infrastructure site would cost less as the transport distance is approx. 22 km and there is no supply charge per m^3.

Source: Rio2, 2023

Figure 18-5 – Water loading infrastructure.



Source: Rio2, 2023

Figure 18-6 – Water transport route from Nueva Atacama, Copiapó Treatment Plant.

18.2.1 Site Water Usage

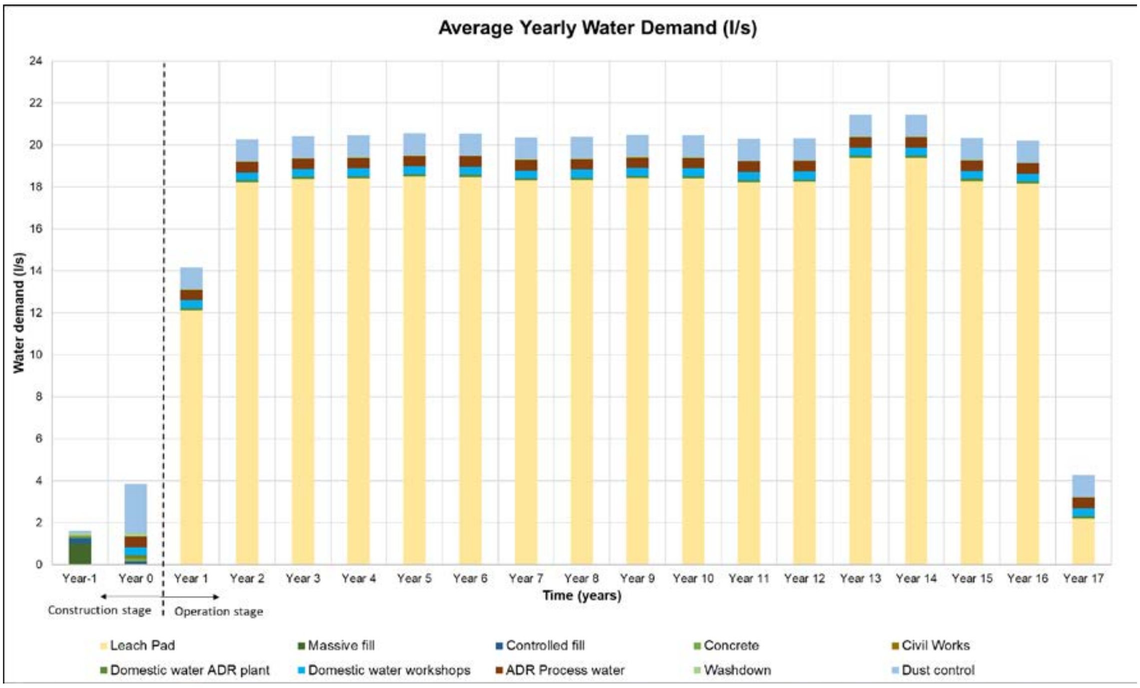
Water demand estimate after (precipitation and evaporation) for the site (Anddes, 2023) is principally water for wetting and leaching ore. Additional water for Construction, domestic uses and road surfacing with dust control was also considered. The balance assumes that the ore would require an additional 7.65 % water for saturation and percolation. This is supported by the pilot pad trial conducted by Fenix Gold, which demonstrated that after the application of 6.35 % solution to ore weight, solution percolation and solution flow to plastic was achieved.

The anticipated maximum water demand for the project was estimated by Anddes to be 23.7 l/s (85.3 m3/hr). For year 1 of production at 12 Ktpd is estimated to be 14.2 l/s, the average annual demand for years 2 – 17 at 20 Ktpd production rate is estimated to be 20.5 l/s. The project water requirement per year is displayed in Table 18-3 and Figure 18-7.

Residual moisture in the leach pad post leaching is estimates range between 4% (Plenge 2011) and 7% (Anddes, 2023)

Table 18-3 – Project water requirement per year

Year	Leach Pad	Massive fill	Controlled fill	Concrete	Civil Works	Domestic water ADR plant	Domestic water workshops	ADR Process water	Washdown	Dust control
Yr-1	0.00	0.99	0.29	0.06	0.03	0.00	0.00	0.00	0.12	0.12
Yr 0	0.00	0.02	0.14	0.13	0.06	0.11	0.37	0.50	0.18	2.34
Yr 1	12.11	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 2	18.21	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 3	18.37	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 4	18.40	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 5	18.49	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 6	18.47	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 7	18.31	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 8	18.34	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 9	18.42	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 10	18.40	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 11	18.23	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 12	18.25	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 13	19.39	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 14	19.39	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.06	1.02
Yr 15	18.28	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.05	1.02
Yr 16	18.15	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.05	1.02
Yr 17	2.21	0.00	0.00	0.00	0.00	0.11	0.37	0.50	0.05	1.02



Source: Rio2, 2023

Figure 18-7 – Average yearly water demand

18.2.2 Raw Water and Fire Water Distribution

There will be three main fresh water/fire water tanks for the Project. The first tank, with a capacity of 360 m^3, will be located near stockpile 1, and will supply water for road dust suppression and fire water for the plant. The second tank will be located near the ADR plant, it will have a storage capacity of 2,300 m^3, and will supply process water for leach pad make up, reagent preparation, as well as primary fire water for the plant. The third tank will be located near the mine maintenance shop area, have a storage capacity of 360 m^3, and will supply fresh water to the truck wash area and maintenance bays, and fire water for the truck shop. All three main supply tanks will be designed to maintain a fire water reserve of at least 2 hours.

18.2.3 Drinking Water System

Two drinkable water systems will be installed as part of this Project to supply drinking water. The first system will be located at the ADR plant, and the second system will be located at the mine maintenance shop.

The raw water that will feed the two potable water treatment plants will be provided from the Lince S.A. well and trucked to site. This well is authorized for 5 l/s.

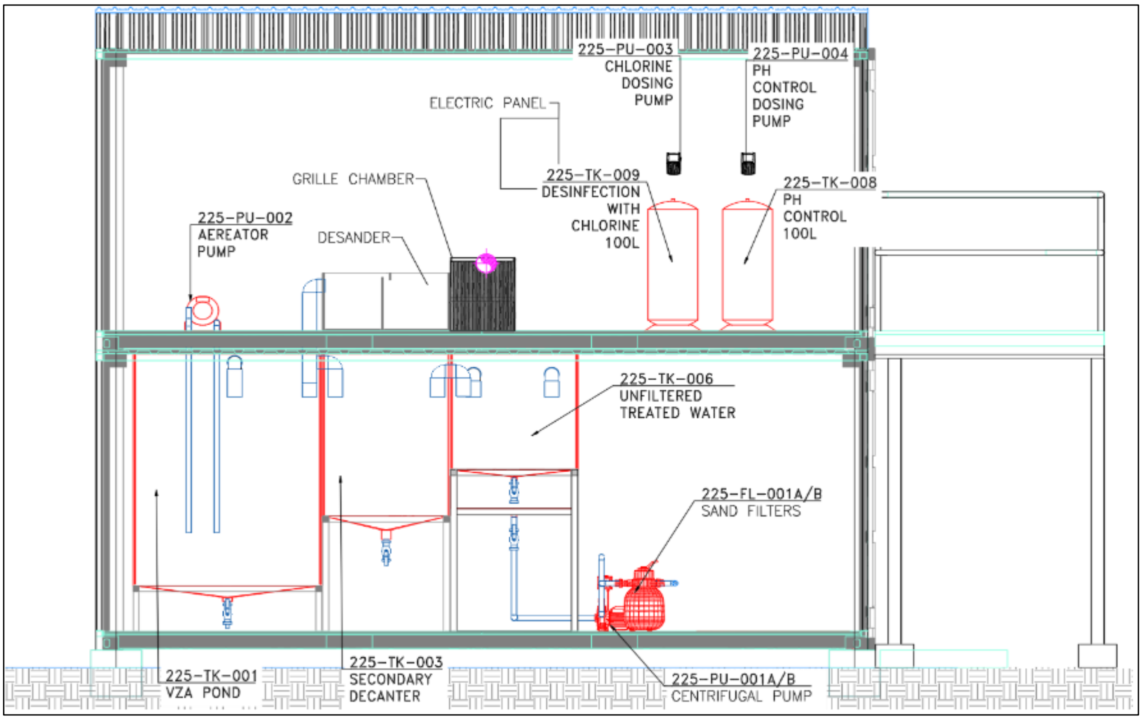
The drinking water systems will consist of a pre-filtration unit coupled to a reverse osmosis unit with associated piping, tanks, and controls, and will include chemical addition points prior to the potable water storage tank. This technology has been chosen because it effectively removes most of the dissolved material, inorganic and organic solids, and metal ions present in the water.

18.2.4 Sewage Treatment

There will be two treatment plants, one at the ADR plant and the other at the mine workshop. These plants will consist of a grille chamber and a desander as primary treatment, to retain oil residues and coarse solids that may interfere with the biological treatment process. The treatment will then consist of three stages: the anoxic zone, the oxic zone, and clarification. This activated sludge process is called an MBBR (Moving Bed Biofilm Reactor).

The clarified water from the secondary clarification tank goes to the disinfection tank where sodium hypochlorite is dosed at a concentration of 5 ppm, the water then goes to the pH regulation tank where sodium sulphite is added, and the water is stored in the unfiltered treated water tank. This disinfected water goes through tertiary treatment consisting of a centrifugal pump that feeds the filters that retain particles larger than 80 microns; The treated water is stored in a 2 m^3 tank for use (see Figure 18-8).

The effluent from the treatment plants onsite and from the Lince camp can be reused for dust suppression on roads in operational areas.



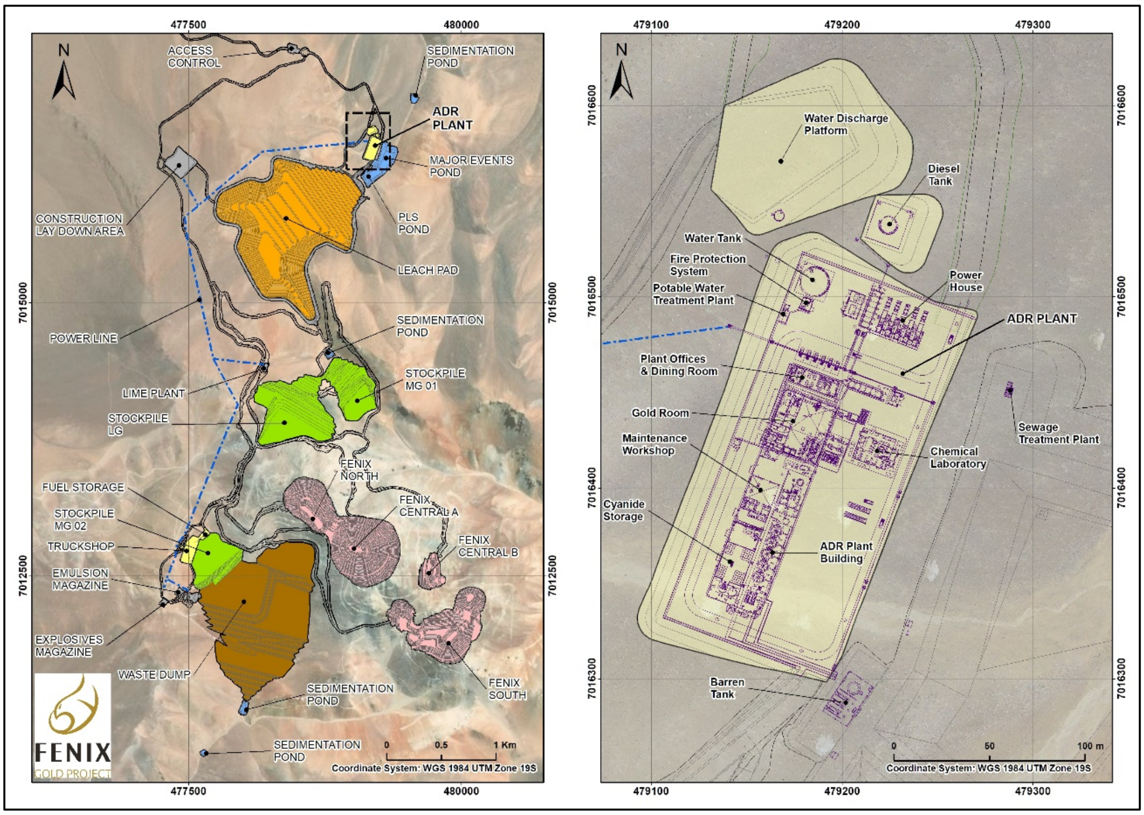
Source: HLC, 2023

Figure 18-8 – Sewage treatment plant.

18.3 Plant Infrastructure

Most process buildings for the Project have been designed as steel frame buildings with modular thermo-acoustic panels. These buildings are pre-engineered and prefabricated, which include all structural members, exterior doors and windows, roofs, insulation, interior and exterior wall panels, and all connections required to erect and assemble the buildings on-site.

For the gold refinery, a reinforced concrete block/steel framework building with modular thermo-acoustic panels has been designed to meet the security requirements for this area (see Figure 18-9).



Source: Rio2, 2023

Figure 18-9 – Plant infrastructure.

18.3.1 Plant Office Building

The plant office will be located near the ADR plant; it will consist of a 28.8 m long x 8.9 m wide and 9.1 m high structure. The building will have two floors, each providing an area of 256.3 m^2. The building will provide the following rooms:

First floor

- Women's toilets and locker rooms
- Men's toilets and locker rooms
- Showers
- Dining room (capacity for 32 people)
- Kitchen and serving area.
- Self-service food area
- Laundry room
- Temporary garbage storage

Second floor

- Shared offices (8 workstations)

- Private offices (2)
- Kitchenette
- Two temporary shelter bedrooms (2 bunk beds in each)
- Women's WC (also part of the temporary shelter area)
- Men's WC (also part of the temporary shelter area)
- Data centre
- Control room
- Meeting room (with capacity for 11 people)
- Document storage area

18.3.2 Dining Room

The dining area in the administration building will have tables, chairs, and fixed fittings for food service. The food service area will include a cold bar, microwave, electric water heater, hot water food warmers, and a table for sauces and condiments for self-service. The dining room will have an area of 175 m^2 with a capacity for 32 people.

18.3.3 Change Rooms

Entry to the showers and change room areas in the plant office building will be through a swing door leading to an access airlock for the men's area and another for the women's area. Both the women's and men's areas will have sinks, toilets, lockers, and showers.

18.3.4 ADR Plant Building

The ADR (adsorption, desorption, and recovery) plant will be housed in a pre-engineered steel building. The building will house the carbon columns, pressure stripping circuit, acid wash, carbon regeneration, and caustic soda mixing areas. The building will be approximately 15 m high at the roof apex to accommodate the carbon columns and the elution and acid wash columns.

The ADR building is in the same general area as the laboratory, where chemical analyses of samples from the ADR plant will be carried out.

18.3.5 Gold Room

The gold room will be adjacent to the ADR building. The refinery will be a reinforced concrete block, steel frame building with modular thermo-acoustic panels. A separate secure staging area is included at the entrance of the building. The interior and exterior of the building will be monitored continuously by cameras and closed-circuit television.

18.3.6 Plant Maintenance Workshop

The plant maintenance workshop area will be located within the gold plant building and is designed for routine maintenance activities. Office space for maintenance planning staff will also be included.

The maintenance shop will have access to forklifts and a pedestrian entrance. The workshop will include metal shelving, welding machines, drill stand, plane, lathe, filing cabinets, and worktables.

18.3.7 Chemical Laboratory

A contractor will conduct chemical analyses of drill hole samples and process plant samples on-site. The assaying costs have been included in the mining and process operating cost estimates. The process plant platform has been designed with space allowed for the installation of a laboratory in the future. The design of the future laboratory includes:

- Isolated foundations with perimeter berms
- Support slabs for equipment
- Concrete walkways
- Fire assay area
- Office area constructed with modular wall panels.
- Bathrooms
- Wet laboratory areas with ceramic floors
- Sample preparation area
- Data input, AA, and weighing areas.
- Metallurgical laboratory area.

18.3.8 Metallurgical Laboratory

The operation will utilize the existing metallurgical laboratory at the Lince S.A facilities, which are located near the Lazaro camp. The facility will be used for column tests, where ten 6-meter-high steel columns are installed, each with a diameter of 0.7 meters, for the purpose of simulating heap leaching.

18.3.9 Powerhouse

The powerhouse will contain four 1,100 kW generators, three in operation and one on stand-by.

The low voltage synchronization panel will receive power from the generators and perform the synchronization using controllers operating in master slave mode. These controllers will perform the following functions:

- Synchronization of the sets
- Load sharing
- Switching off.

The synchronization panel will evaluate the number of generators needed in operation, depending on the power demand and the amount of power to be delivered by each generator.

The powerhouse area includes one fuel storage tank with a capacity of 520,000 litres sufficient for 24 days of operation. This tank will be made of steel and located on a concrete slab, enclosed by a retaining wall to contain any fuel spillage. The tank will receive fuel from pumps connected directly to the storage tank via a piping system. Fuel will be supplied to generators through a piping system.

18.3.10 Reagent Storage

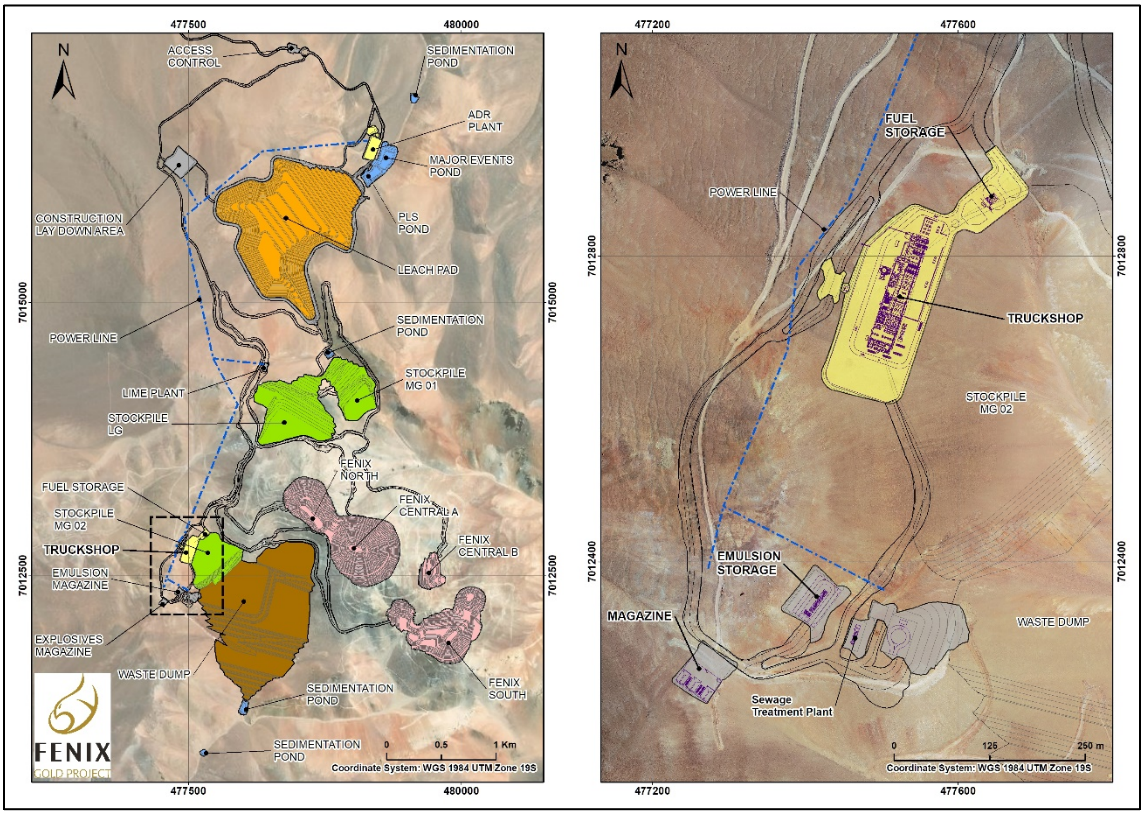
Reagent storage will be inside the ADR building and consist of two areas: one for cyanide, and another for carbon storage.

External access to the cyanide storage area is through a sliding metal gate. There will be a central passage for the forklift. Access to the carbon storage will likewise be through a sliding metal gate to the exterior of the building for incoming carbon. Both these areas will have internal accesses to the plant to allow the reagents to be used in the process.

The carbon storage will be in an area contained by concrete curbs in which hydrochloric acid containers will also be stored.

18.4 Mine Facilities

The mine facilities are shown in Figure 18-10, and described below.



Source: Rio2, 2023

Figure 18-10 – Fenix Gold Project Mine infrastructure.

18.4.1 Explosives Storage

Explosives will be stored in a warehouse close to the waste dump. Detonators, detonating fuses, and cable will be stored in protected 20 ft containers. Each container will be isolated by containment walls of compacted material and there will be no electrical installations, to avoid the generation of sparks. The containing walls will be surrounded by a metal fence, barbed wire, and a locked gate.

Ammonium nitrate will be stored in an isolated and protected warehouse. The warehouse will have a concrete floor with steel walls and peaked roof. The emulsion storage silos will also be in this area. The silos will be supported on a metal structure with access for direct loading into the Mobile Mixing Unit MMU trucks.

18.4.2 Truckshop Area

18.4.2.1 Lubricant Storage

The lubricant storage area will be adjacent to the mine maintenance workshop. This area will have space to store 15W40, 70W90, and DTE25 lubricants, which will be supplied in 1.0 m^3 isopods. The

85W140 lubricants and synthetic AFT will be supplied in cylinders. Greases will also be stored in this area.

Lubricants will be transferred to the workshop by a battery of five pneumatic positive displacement pumps.

There will be a 19.0 m^3 tank to store used lubricants from the mine maintenance workshop. A double diaphragm pump will transfer used lubricants from the storage tank to the tanker for disposal off site.

18.4.2.2 Mine Maintenance Workshop

The mine maintenance workshop area will have three bays: one preventive maintenance bay, and two corrective maintenance bays.

Lubricants will be pumped from the lubricant storage area to three lubrication stations within the workshop. The mine haul trucks will be supplied with lubricants and grease by means of gun-type dispensers with Wiggins or similar couplings, which will be connected to hose reels at the lubrication stations. Three grease cylinders will be installed within the mine maintenance workshop.

A mobile extraction trolley will be used to remove used oil from the trucks. The trolley will be equipped with a double diaphragm pneumatic pump that will discharge by Wiggins inlets to a 3-inch diameter carbon steel pipe, through which the waste oil will be transported to the 19.0 m^3 waste oil storage tank in the lubricant storage area.

18.4.2.3 Welding Workshop

The welding shop area will have one bay parallel to the maintenance shop. Opposite the welding bays will be the gas cylinder storage and tool storage area.

18.4.2.4 Tyre Workshop

The tyre workshop area will be a shed on the side of the main workshop. The shed will run parallel to the maintenance bays. Storage for new and used tyres is provided on the opposite side of the tyre workshop.

The tyre shop will be used for changing, mounting, and repairing tyres. There will be two air reels and a freshwater reel in the bay, as well as a tyre press.

18.4.2.5 Truck Wash

The truck wash area will have an insulated bay equipped with reels and hoses for pressurised water and a settling pond. The bay will be fully enclosed, while the external settling pond will only have a roof.

The truck wash water tank will have a capacity of 24 m^3 from which water will be pumped to the reels located on the sides of the wash bay. The water used during the truck washing process will be collected in a weir and drain by gravity to the settling pond.

In the settling pond the heavy solids will be deposited by gravity and will be retained and accumulate in the pond. The solids will be removed periodically using a Bobcat or backhoe and transported in dump trucks to the deposition area to be determined by Fenix Gold. Water from the settling pond is recovered by decantation and oil and grease collected in the settling pond will be collected in a tank for subsequent disposal.

The oil-free water is collected in the third decanter and the water is recirculated to the wash water tank by a 12 m^3/hr submersible pump for reuse.

18.4.2.6 Dining Room

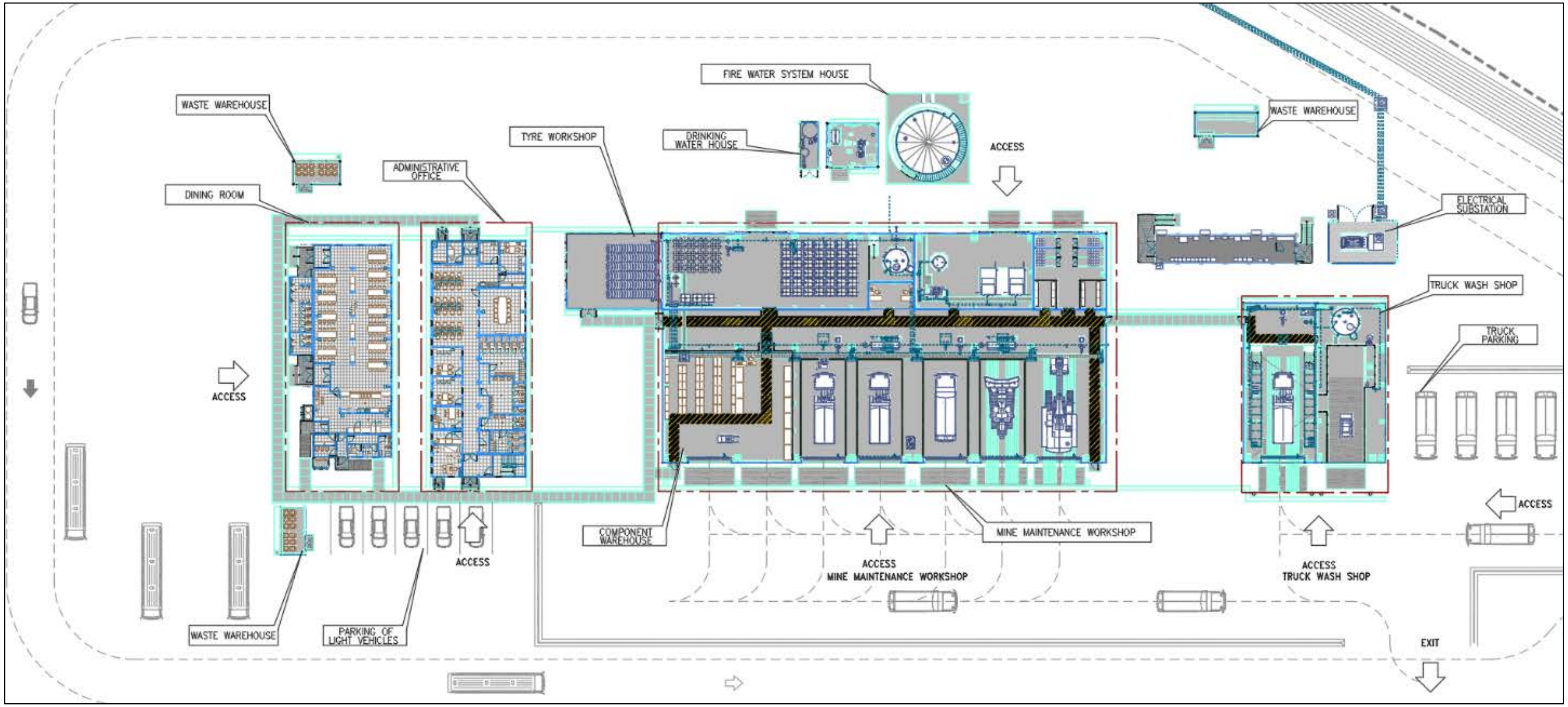
The dining area will be parallel to the mine area administration offices and equipped with tables, chairs, and fixed food service furniture. The food service area will include a cold bar, microwave, electric kettle, hot water heaters for food, and a table for self-service sauces and condiments. Men's and women's toilets will be provided in this area.

The dining area will be 307 m^2 with seating for up to 100 people. Both maintenance and mine operations staff will use the dining room during meal breaks on site.

18.4.2.7 Administrative Office

The administration office will be a two-story industrial building with a 25% pitched roof. The building structure will consist of metal beams and columns on reinforced concrete bases. The upper floor will be a concrete slab with a steel deck. The administrative office will be 360 m^2 on two levels and include the following areas: an induction room for a max of 30 people, two co-working areas with a capacity of 24 people each, offices, meeting rooms, data centre, temporary accommodation, kitchenette, men’s and women's toilets.

The layout of the truck shop can be seen in Figure 18-11.



Source: HLC, 2023

Figure 18-11 – Truck shop layout.

18.4.3 Fuel Storage and Delivery

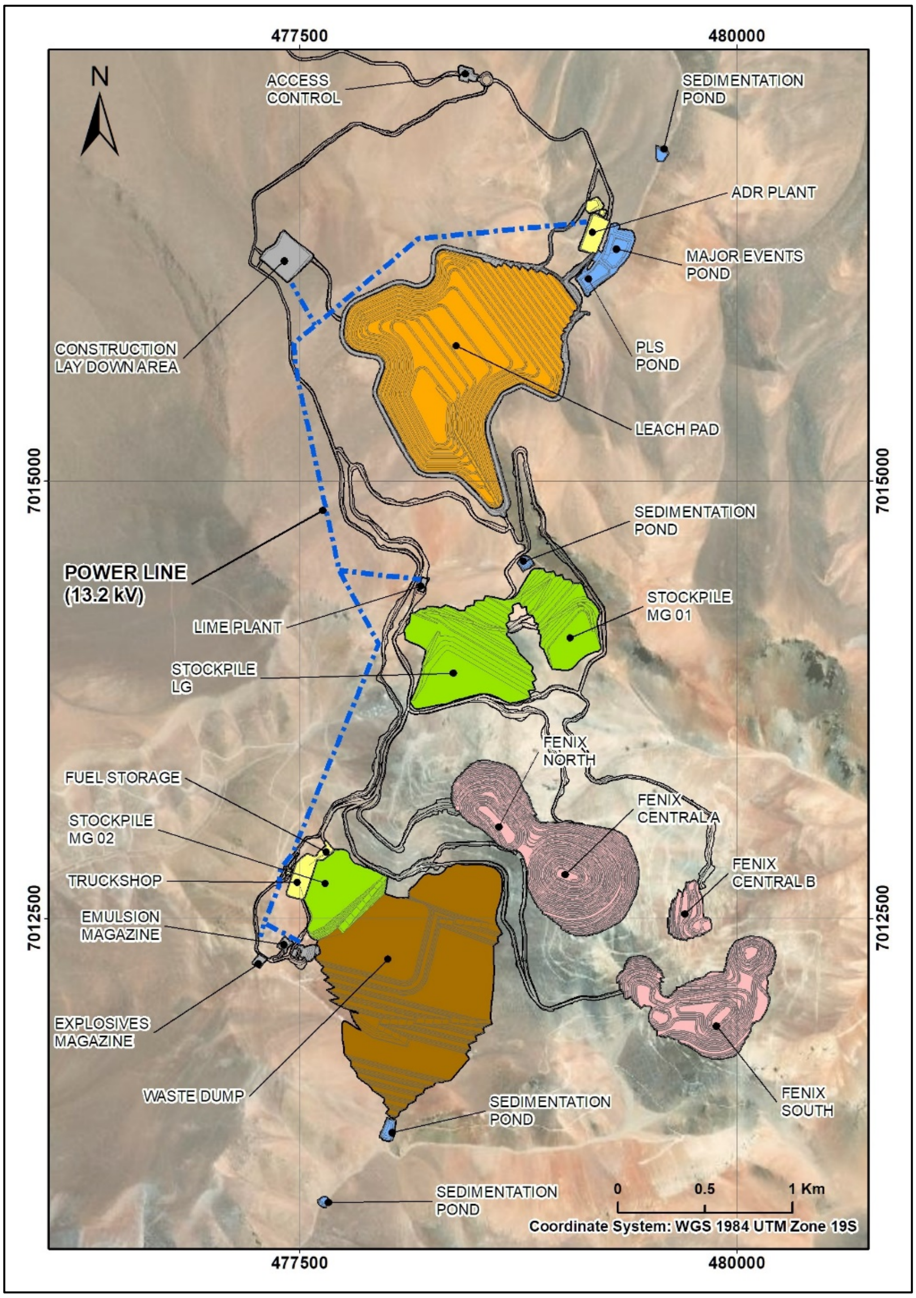
The Mine fuel station will be located close to the truck shop, see Figure 18-11, supplied by Fuel tankers from COPEC.

Fuel storage will consist of five tanks with a capacity of 60,000 litres each. When full, these tanks cover site for around one month of normal operations. The storage tanks will be located on a slab and enclosed by a contention wall to contain any fuel spillage. The fuel station will receive fuel from pumps connected directly to the storage tanks via a buried piping system. Fuel will be supplied to heavy and light vehicles at the fuel station.

18.5 Power Supply

The distribution system will consist of a 13.2 kV medium voltage distribution line using single concrete pole structures to carry the line, and double portal-type structures for anchoring and/or topping structures. This line will supply power to the lime plant, mine workshop, and explosives storage area.

The distribution line will have a total length of approximately 7.0 km, supported by 107 support structures (see Figure 18-12).



Source: Rio2, 2023

Figure 18-12 – Fenix Gold Project, Electrical distribution system.

18.6 Camp Area

The camp area is show in Figure 18-13, and includes the camp, site administration office, medical centre, and other services.

18.6.1 Camp

The Lazaro camp facilities have been constructed at Lince S.A. Lazaro site, they include offices, medical center, training room, fuel depot, electrical substation, water treatment plant, sewage treatment plant, canteen, management and worker dormitories, recreation area and parking, and a diesel generator for contingency. These facilities will be used initially by the construction contractors and later by the operations staff.

The Lazaro camp is located at Km 127 of the Route CH-31, as shown in Figure 18-13. The camp is designed to accommodate up to 565 people and covers an area of approximately 100,000 m^2. It includes a security screening area and car park. The camp has been constructed using prefabricated modular units and will be managed by Lince S.A., which is a subsidiary of Rio2. Fenix Gold will lease the facilities from Lince S.A.

Additionally, there are up to 80 rooms in the old camp infrastructure that can be reconditioned to provide an extra 155 beds if required.

Fenix Gold will lease the facilities to Lince S.A. to house the project workforce.

Source: Rio2, 2023

Figure 18-13 – Camp location and layout.

18.6.2 Main Offices

The main administration office will be a single-story structure with offices for mine managers and technical and administrative staff.

Located within the main building will be an entrance area for receptionists, individual offices for managers, an open plan workspace for administrative workers, 2 meeting rooms, a document and plan filing room, an IT and communications area, and a kitchenette. There also be restrooms for both male and female staff members.

There is a central air conditioning system throughout the building. Utilities include electricity, water, and a sewage system. The main switchboard, servers, and network management will be in this building.

Most of the staff will be in the main office as support for the operation, visiting the site as needed. Only operational staff will be on site at the Project.

An operational office will be located on site in the maintenance shop for mining, geology, and mine maintenance staff. There will also be a plant operations office at the ADR plant for plant management, plant maintenance, and laboratory supervisors.

The infrastructure of the Lazaro camp can be seen in Figure 18-14.

Source: Rio2, 2023

Figure 18-14 – Lazaro Camp.

18.7 Site Services

18.7.1 First Aid

Emergency medical service will be available in a clinic next to the main office. Medical personnel staff will be contracted by Lince S.A. The medical staff will include on-site nurses, one on-call doctor, and a rescue vehicle. An ambulance will also be located at the Clinic.

18.7.2 Communications

18.7.2.1 Off-site Communications

Basic telephone service will initially be provided by satellite phone communications. Cellphone coverage will be established within six-months from construction to cover the construction offices and camp area, and eventually the mine site construction areas.

Currently cellphone coverage for ENTEL can be located 500 m from the camp on the main road approaching Kinross´s La Coipa operation.

Internet is connected and distributed via a satellite system located at the camp. As the infrastructure is constructed, internet will be extended to include the mine, plant, and workshop areas onsite. Currently most communication is via internet.

18.7.2.2 On-site Communications

Cell phone and internet repeaters will be installed to give coverage to the principal infrastructure on site, while radio towers will be implemented to cover operational areas, including the pits, waste dump, leaching pad, plant, workshops, and camp. Entel cellphone signal is available at limited locations.

18.7.3 Transportation

Fenix Gold personnel will be transported to the Project site from Copiapó and will remain at the Lazaro camp during work periods. Transportation of workers from the camp to the mine site will be provided using buses and large vans at scheduled shift changes.

18.7.4 Waste Management

All solid waste, industrial, and toxic waste generated on the site will be temporarily stored in a designated transfer centre where it will be classified and stored awaiting transport to an approved final disposal.

18.7.5 Site Fencing

The Fenix Gold site is remote and as such it is not considered necessary to fence the entire project site. Specific portions of the facilities will be fenced, including securing links around the main substation, PLS and Mayor events ponds, and all water collection ponds associated with infrastructure like waste dump, stockpiles, roads etc.

19 MARKET STUDIES AND CONTRACTS

19.1 Market studies

Rio2 has not conducted a market study related to the gold and silver doré that will be produced by the Fenix Gold Project. Gold and silver are freely traded commodities on the world market for which there is a steady demand from numerous buyers.

A sale price of US $1,750/oz of gold was used. The QP considers that this price is reasonable and notes that gold has been trading above this price since before the beginning of 2019.

19.2 Contracts

There are no refining agreements in place for the Fenix Gold Project.

There is a Stream signed with Wheaton precious metals over the Project. Other relevant contracts in place are with water suppliers, and an alliance contract with STRACON (mining operator).

19.2.1 Wheaton Precious Metals Stream

On November 16th, 2021, Rio2 entered into a definitive precious metals purchase agreement (Gold Stream) with Wheaton Precious Metals International Ltd., in relation to Fenix Gold Project.

Under the Gold Stream, Wheaton International will purchase 6% of gold production from the Fenix Gold Project until 90,000 oz of gold is delivered and 4% of gold production until 140,000 oz of gold is delivered, after which the stream will reduce to 3.5% of the gold production for the life of mine. Wheaton International will make an upfront deposit in cash of US$50 million with US$25 million available following the closing of the Gold Stream agreement, and the remaining US$25 million payable after the receipt of the EIA approval for the Mine, with both payments subject to completion of customary conditions.

In addition, Wheaton International will make ongoing payments for gold ounces delivered equal to 18% of the spot gold price until the value of gold delivered, less the production payment, is equal to the upfront consideration of US$50 million, at which point the production payment will increase to 22% of the spot gold price.

19.2.2 Nueva Atacama - Water Supply and Water Loading System

The Treated Water Supply Agreement signed on December 27th, 2019, is currently in effect and ensures water supply for the Fenix Gold project. To date, two amendments have been made to the agreement.

The first amendment signed on December 2nd, 2021, was to include the construction of the water loading system located at the Nueva Atacama plant in Copiapó. The cost of this infrastructure - necessary to load the tanker trucks was USD $494,214 + GST.

This loading infrastructure was completed in 2022.

The second amendment, signed on December 15th, 2022, was made because of the rejection of the EIA, which made it impossible for Fenix Gold to comply with the agreed deadlines for the different phases established in the contract. The phases of the contract were redefined as follows:

- Reserve Phase: Current period, from the signing of the second amendment until the environmental qualification resolution of the Fenix Gold project is obtained.
- Construction Phase: Will begin immediately after the conclusion of the Reserve Phase and will extend until the start of production of the mine, however, it cannot extend beyond 18 months from the start of the construction phase. The guaranteed water supply for this phase will range from 5 l/s to 10 l/s.
- Supply Phase: It will begin immediately after the conclusion of the Construction Phase and will extend until the end of the contract term. The guaranteed water supply for this phase is 20 l/s.

19.2.3 STRACON (Earthworks – Construction and Mining and Water Transport)

In October 2021 Rio2 and STRACON finalized an alliance contract that covered services related to earthmoving and construction, mining, and water transport for the Fenix Gold Project. The alliance contract is based on an open book, cost plus model, where STRACON and Fenix jointly produce a budget for the agreed scope of work every year. The alliance manager approves monthly claims, and a 10% fee is charged based on approved claim. There are KPI targets for Safety performance, labour relations, cost, and time, associated with the fee. Rio2 has previously worked with STRACON using the alliance model on two projects in Peru. The benefits of the model include flexibility, best for project fast decision making, reduced overhead duplication, and shared responsibility and goals.

The contract was actioned on October 25th, 2021, as Rio2 started mobilising towards construction. The contract was suspended on August 19th, 2022, after the EIA was rejected.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 Environmental Studies

In 2011, the previous owner of the project, Minera Atacama Pacific Gold Chile, submitted to the Environmental Impact Assessment System (SEIA - Sistema de Evaluación de Impacto Ambiental) the project "Prospecciones Mineras Cerro Maricunga" (Mining Exploration Cerro Maricunga). This was approved by the Environmental Assessment Commission of the Atacama Region, via Exempt Resolution No. 232 of November 3rd, 2011. This project was executed between November 2011 and May 2014.

Additionally, on April 23rd, 2019, Fenix Gold Ltda. submitted the project "Sondajes Fenix Gold" (Fenix Gold Drillholes) for environmental assessment, which was approved by Exempt Resolution No. 152/2019 of the Environmental Assessment Commission of the Atacama Region. This approved the execution of 249 RC Drillholes and 27 DDH Drillholes, with the latter including geometallurgical and geotechnical drilling.

For the Environmental Impact study of the Fenix Gold Project, the baseline survey was carried out from November 2018 to the first quarter of 2020. For certain environmental components this was extended to April 2022 as part of information gathering in response to the ICSARA´s[7] observations arising from the evaluation process.

Fenix Gold's EIA was submitted to the Environmental Assessment Service (SEA- Servicio de Evaluación Ambiental) for evaluation in April 2020. Due to the COVID pandemic, and the inability to hold a public consultation event, the evaluation was suspended and restarted in November 2020.

The project submitted underwent substantial improvements through each of the three Addenda's (replies to observations) in response to the observations from the SEA and the OAECAS (Órganos de la Administración del Estado con Competencias Ambientales - State Administration Bodies with Environmental Competencies) as shown in Table 20-1.

Table 20-1 – ICSARAS and Addenda during the EIA assessment process.

Document	Issued by	Date of Issue/Presentation
ICSARA 1 (Observations)	SEA	January 2021
Addenda 1 (Replies)	Fenix Gold	March 2021
ICSARA 2	SEA	July 2021

7 Informe Consolidado de Aclaraciones, Rectificaciones o Ampliaciones (ICSARA) - Consolidated Report of Clarifications, Rectifications or Extensions.

Document	Issued by	Date of Issue/Presentation
Addenda Complementaria	Fenix Gold	December 2021
ICSARA 3	SEA	January 2022
Addenda Excepcional	Fenix Gold	April 2022

The public consultation process or the environmental citizen participation (PAC - Participación Ambiental Ciudadana) began in December 2020 and was concluded satisfactorily in February 2021.

The indigenous consultation process began in March 2021 with the participation of six indigenous communities (PaiOte, Sinchi Wayra, Runa Urca, Pastos Grandes, Sol Naciente and Comuna de Copiapó). This was finalized in April 2022 with the signing of the Final Agreement Protocols (PAF- Protocolos de Acuerdo Final) by the six indigenous communities.

In June 2022 the Technical Committee led by SEA, two OECAS (CONADI and CONAF), and the SEREMI of the Environment, published the Consolidated Evaluation Report recommending that the Project be rejected. This was confirmed by the Atacama Regional Evaluation Commission in early July 2022.

Fenix Gold entered an administrative appeal to the Committee of ministers in August 2022, the Committee of Ministers is currently evaluating the Project with a decision expected by the end of 2023.

20.2 Environmental Work Completed

The EIA for the Fenix Gold Project was completed and included studies around climate and meteorology, air quality, hydrology and hydrogeology, flora and fauna studies, archaeology, human-interest studies, impact assessment, mitigation and management plans, closure plans, etc.

20.2.1 Air Quality

The data collected by Atacama Pacific between 2011 and 2014 showed low levels of particulate matter, within accepted levels, in the project area. The same levels were confirmed from the baseline air quality monitored at the Cerro Maricunga Station and Laguna Santa Rosa (from 2018 to 2019). Therefore, it can be concluded that the values recorded are below the limits established in the national regulations (MP2, MP5, MP10, NO_2, CO and SO_2) and under the reference regulation for solid particulate matter during the period evaluated.

For the evaluation of environmental impacts, an emissions inventory has been developed according to the LOM (life of mine plan) for the operations and an emissions dispersion model developed for each of the stages of the project (construction, operation, and closure), considering the most conservative scenarios, demonstrating that the project does not generate significant impacts on air quality.

20.2.2 Noise Levels

For the EIA baseline study, noise was monitored at 9 points located around the project components, including the access, the camp, and the Santa Rosa lagoon.

For the evaluation of noise impacts, noise emission models were developed, the results of which indicate that the project does not generate significant impacts on the human or natural components.

During the baseline studies, species of fauna were identified that could be affected by project activities and specifically by noise emissions; however, these impacts are not considered to be significant as per the SEA guidelines on recorded noise emissions.

20.2.3 Hydrology and Hydrogeology

Hydrology and hydrogeology considerations for this study have been taken from the Fenix Gold Project Geochemistry and Hydrogeology Baseline Study (ICASS, 2020).

The hydrological evaluation indicates that the local average annual precipitation is ~150 mm of total water (liquid precipitation plus solid); however, the zero effective precipitation indicates that all the water that falls in the catchment is retained in the subsoil (subject to evapotranspiration) and no runoff is generated. Total annual evapotranspiration for the heap leach and stockpiles, pits, and waste dump sub catchments correspond to 477, 483, and 523 mm/year, respectively. It should be noted that the heap leach sub catchment does not have evapotranspiration in June and July because the average monthly temperatures are less than zero, the same thing occurs in the pit sub catchment between May and August. Additionally, with respect to the snow cover, it is estimated that snow melting occurs between August to November, therefore the potential sublimation is estimated to be 20% of the potential evapotranspiration.

In the hydrogeological evaluation, the results of geophysical prospecting, hydrogeological drilling, and monitoring carried out at control points, report that no groundwater has been found within the limits of the mining components, which is supported by the hydrogeological characteristics of the project (low storage capacity). The behavior of surface and groundwater in the catchment and sub-catchments in the project area will be monitored and reassessed to ensure that the water resources found in the project environment are not affected by mining activities.

According to the hydrogeological model and the water balance prepared for each of the sub-catchments, the project does not generate significant impacts.

20.2.4 Flora and Vegetation

The influence area of flora and vegetation determined for the project covers 1,325 ha. It has little vegetation cover due to climatic and extreme altitudinal conditions, which generate adverse conditions for developing classified vegetable formations. The project area devoid of vegetation (including the areas disturbed by exploration activities, roads and platforms, etc.) is approximately 78.5%.

The remainder of the area has high Andean Steppe formations dominated by *Pappostipa frigida* as well as very open, open, and semi-dense scrub formations dominated by *Adesmia echinus, Adesmia histryx, Fabiana bryoides* and *Pappostipa frigida* species. There are also 38 ha of xerophytic formations within the project area for which a permit will be obtained from the authorities before disturbing the areas where these formations are located.

Regarding the flora species present in the area of influence of the Fenix Gold Project, a floristic richness of 40 species distributed in 19 families was determined (see Table 20-2). After reviewing current regulations and scientific-technical proposals with legal weighting, none of the species recorded are protected by law under any official conservation category. However, according to the scientific proposal of the Red Book of the III Region of Atacama, the species *Festuca deserticola, Hordeum pubiflorum, Phacelia pinnatifida and Phylloscirpus acaulis* are in the "Insufficiently known" category.

Table 20-2 – Vascular flora of the study area according to biological type and origin.

Biological type	Autochthonous		Allochthonous	Total	%
	Native	Endemic			
High woody	0	0	0	0	0.0%
Short woody	8	2	0	10	25.0%
Herbaceous	28	1	0	29	72.5%
Succulent	0	1	0	1	2.5%
Total	**36**	**4**	**0**	**40**	**100.0%**

Source: Baseline EIA - MYMA, 2020.

In the project area, vegetation is scarce, and the impact assessment finds that the impacts that could be generated by the Fenix Gold project are not significant. However, Fenix Gold has proposed some voluntary commitments in the EIA regarding the flora component:

- Flora and Vegetation information in the workforce Induction process
- Monitoring of the vegetation of the North and South SVAHTs.
- Prohibition of collection or extraction of unauthorized plant species.
- Management of removal permits for Xerophytic species.

20.3 Fauna

The area delineating the influence of fauna determined for the project covers 1,325 ha, where 7 environments were defined for fauna: high Andean steppe, areas with scarce vegetation, scrubland, grassland, areas devoid of vegetation, industrial areas (exploration activities), and plains.

The analysis of the spatial distribution of the species recorded was determined according to the time in which they were identified in the area of influence. For the baseline, 6 campaigns were carried out in different seasons (summer, spring, autumn, and winter). For the elaboration of the addenda's, 3 additional campaigns were conducted for camelids (guanacos and vicuñas), 3 additional campaigns for chinchillas, 2 additional campaigns for avifauna in the national park (one of them specifically for the species tagua cornuda).

A total richness of 26 species were established, of which 3 correspond to reptiles, 17 to birds, and 6 to mammals; three of them are of endemic origin, one of introduced origin, and 22 are of native origin.

The dominant class among the terrestrial vertebrates corresponded to birds, reaching the highest richness values over reptiles and mammals.

Within the area of influence, six species were recorded in the conservation category: three species of reptiles (*Liolaemus rosenmanni, Liolaemus isabelae and Liolaemus patriciaiturrae*), which are considered low mobility, and three species of mammals *(Lama guanicoe, Lycalopex culpaeus* and *Vicugna vicugna*), which are highly mobile. Outside of the area of influence, species of *Chinchilla chinchilla*, which are in a state of conservation, were identified.

According to the impact assessment, the project will only generate significant environmental impacts for the three reptile species because they were identified along part of the access road and in the plant sector. Two management measures will be implemented to mitigate this impact:

- Controlled disturbance plan in the case of findings in linear works (access to the project).
- Rescue and relocation plan in the area works (plant sector).
- Follow-up and monitoring of relocated species.

These measures will be implemented prior to the intervention of these areas.

In the case of highly mobile mammals, there are no significant impacts determined due to the nature of the project, the mobility condition of the species and the proposed mitigation activities. Control programs that will be implemented are as follows:

- Training for all Fenix Gold employees on the importance of caring for and protecting wildlife.
- Signage on the importance of wildlife protection.
- Signage and restrictions for camelid protection in access routes
- Delimitation of the Chinchilla chinchilla protection zone.
- Program of diffusion and education of the species Chinchilla chinchilla, in six educational establishments of Copiapó.
- Prohibition of hunting and collection of any species of flora and/or fauna.

As part of the EIA appeal process, Additional Voluntary Commitments (CAVA - Compromisos Voluntarios Adicionales) have been added. Over the appeal process, improvements to the CAVs were proposed or new commitments were generated:

- Creation of a fund for Chinchilla research.
- Creation of a fund for Camelid research.
- Research project on the population dynamics or study of the Chinchilla species in Quebrada Vizcachita.
- The acoustic barrier project, during the construction stage, which has the objective of reinforcing preventive actions to attenuate the noise associated with the Project that could be perceived in the sector where the presence of chinchillas was registered.

20.3.1 Fauna Monitoring Program

Within the Fenix Gold Project Environmental Impact Study, monitoring programs were proposed for the biological component. These programs are part of the Voluntary Environmental Commitments proposed by Fenix Gold:

- Monitor the effectiveness of the reptile rescue and relocation measure.
- Quarterly monitoring of camelids.
- Satellite monitoring of camelids.
- Visual recording of wild canids (foxes).
- Monitoring of short-tailed chinchillas, pumas, and Andean cats using camera traps in rocky areas of the Project area.
- Monitoring in the Chinchilla protection zone.

During the appeal process, new monitoring commitments and proposals that improve on previous commitments were proposed for the following CAVAs:

- Increase the Chinchilla monitoring period from 1 month to 6 months during the spring-summer season.
- Increase the quarterly monitoring area for camelids to 6,425 ha, which proposes to incorporate an additional monitoring area of 5,100 ha to the 1,325 ha already covered by the project area’s influence of fauna.

20.4 Archaeological Heritage

From the literature review and ground survey conducted in 2019, a total of ten (10) findings with archaeological value were identified around the area of influence of the Project. Of these, seven (7) sites were previously recorded in the environmental characterization of the "Cerro Maricunga" project (RCA No. 232/2011) and three (3) were identified in the "Sondajes Fenix Gold" project (RCA No.

152/2019), ruling out the presence of new findings throughout the area of influence of this EIA for the Fenix Gold Project. In addition, two complementary campaigns were conducted in 2020 and 2021 to visually inspect the sectors that could not be accessed in the 2019 campaigns. The complementary surveys carried out during 2020 and 2021 confirmed the presence of 6 new findings of archaeological interest according to the definitions established in the current legislation on the matter, five (5) of which correspond to linear features of undetermined date (trails) (see Figure 20-1 and Figure 20-2) and one (1) to an isolated finding of historical data (glass bottle) (see Figure 20-3).

The findings of the previous campaigns and those of 2019 described were catalogued with an estimated archaeological valuation of low and medium according to criteria such as their scientific potential, state of conservation, representativeness and context; and most of them correspond to areas enclosed with stone walls with evidence of historical occupation (See Figure 20-4 and Figure 20-5). In the case of the findings in the 2020 and 2021 campaigns, they were catalogued with an estimated archaeological valuation of low.

Regarding the relationship of the Project with these sites, only 5 of them would be within the area of influence, with no overlap between them and the components and facilities of the Project, thus ruling out that the Project could have an intervention on these findings.

According to the paleontological evaluation of the Project area, they have been classified as having low to no paleontological potential, in line with the volcanic origin of the project.

The Fenix Gold Project does not have significant impacts on the archaeological component; however, control and monitoring activities are planned:

- Archaeological and paleontological monitoring during the construction stage (during earthworks) by a specialist.
- Induction talks to all employees on the protection of archaeological and paleontological heritage.
- Protection of archaeological sites through perimeter fencing and maintenance.

In case there is a detected presence of anthropological/archaeological or subsurface historic cultural remains not registered in the present survey, procedures should comply with provisions in articles 26° and 27° of Law 17.288 of National Monuments and articles 20° and 23° of its Regulations, with the purpose of designing and carrying out the appropriate archaeological salvage activities. Likewise, the Council of National Monuments must be notified in writing immediately, so that it may authorize the specific procedures to be followed.

Source: Rio2, 2021

Figure 20-1 – Linear finding (trail) - Campaign 2020-2021.

Source: Rio2, 2021

Figure 20-2 – Linear finding (trail) Campaign - 2020-2021.

Source: Rio2, 2021

Figure 20-3 – Cultural Material - 2020-2021 Campaign.

Source: Rio2, 2021

Figure 20-4 – Pyrcada structure (2019 campaign)

Source: Rio2, 2021

Figure 20-5 – Pyrcada structure - old campaigns.

20.5 Landscape and Tourism

The Project is located in the Norte Grande Macrozone, where desert areas with stable climatic conditions predominate. This area is characterized by mountainous relief, with no water, very low or no vegetation cover, and low snow cover in winter. There are three landscape units, UP2 with medium visual quality, UP3 with low visual quality, and UP1 with high visual quality, which is partly due to the presence of permanent water resources (Salar de Maricunga). With respect to the visual intrusion of the Project, the only site visible is the Lince camp, located 280 meters from Route CH-31.

The scenic and tourist areas near the Project area are the Nevado Tres Cruces National Park, the Portezuelo de Maricunga, the viewpoint of the Laguna Santa Rosa, the Virgen de La Candelaria, and the viewpoint of the Salar de Maricunga.

The EIA determines that the project's impacts on the landscape are not significant. Notwithstanding, the project development is planned to minimize the visual impact on the landscape.

Despite not presenting significant impacts, Fenix Gold proposes (in the EIA) to execute the following voluntary commitments:

- Valorization of the Tourist Resources of Nevado Tres Cruces National Park.
- Construction of Welcome Portals to Nevado Tres Cruces National Park.
- Digitalization of Tourist Routes inside the Nevado Tres Cruces National Park.
- Construction of Tourist Viewpoints inside the Nevado Tres Cruces National Park.

20.6 Human Environment

Since 2019 Rio2, through Fenix Gold, has carried out a process of dialogue and early engagement with the various stakeholders related to the project.

Fenix Gold's Social and Environmental Responsibility approach contemplates:

- Climate Change
- Participatory Monitoring
- Human Rights
- Communities
- Occupational Health and Safety
- Hiring of Local Personnel
- Hiring Local Suppliers
- Payment of Taxes

Company responsibility has been based on monitoring and evaluation, each of them having specific objectives and levels of measurement.

Participation of stakeholders has been prioritised, allowing Rio2 to better understand the perceptions, points of view, and challenges and opportunities to be considered during the construction and operation of the mine.

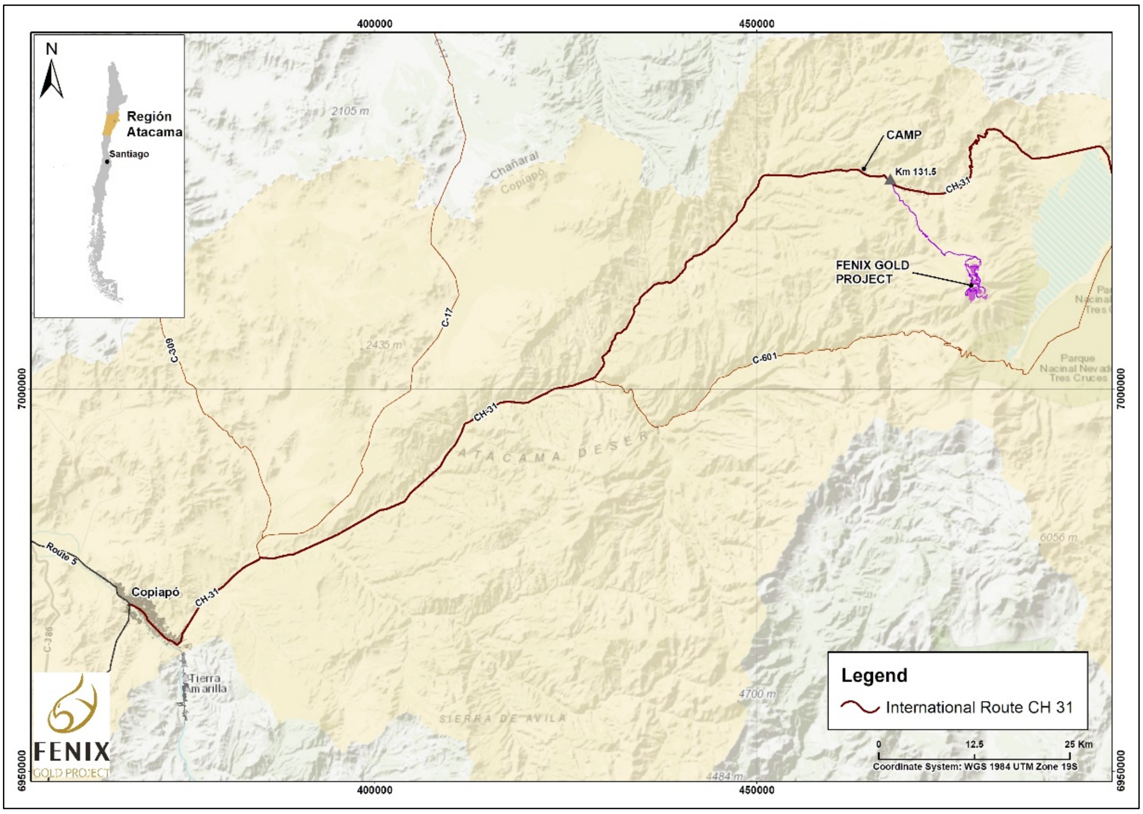
A transversal management has been put in place, resulting in constant articulated communication with all interest groups:

- National Government
- Regional/Local Government
- Authorities
- The Academy
- Business Associations
- Civil Society
- Communities
- Other Institutions

20.6.1 Background

It is important to note that mining activities at the Fenix Gold Project will be located between 4,300 and 4,900 meters above sea level, where the altitudinal and climatic conditions of the area are part of the natural factors that restrict the establishment of human settlements in this sector. These natural factors also reduce the presence of wild plants and animals due to the predominantly arid and rocky soils.

The indigenous Colla communities closest to the project are located in Quebrada San Andrés and Quebrada Paipote, where they carry out their main productive activities, such as raising livestock, grazing and agriculture for their own consumption, creating handicrafts, and collecting medicinal herbs as part of their cultural manifestations and ancestral customs.



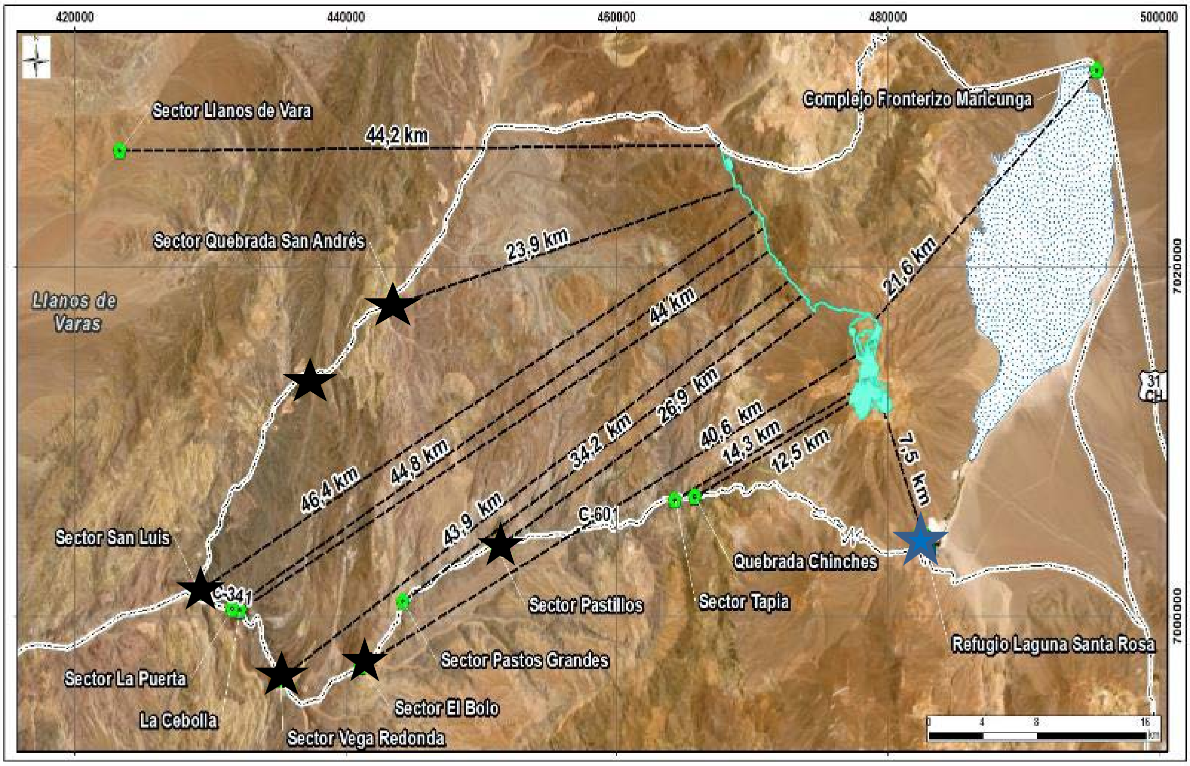
Source: Rio2, 2023

Figure 20-6 – Location of the Project.

The Indigenous Colla Communities whose anthropological studies are considered in the Environmental Impact Study of the Fenix Gold Project are:

- Sinchi Wayra Colla Indigenous Community (1)
- Runa Urka Colla Indigenous Community (2)
- Pastos Grandes Colla Indigenous Community (3)
- PaiOte Colla Indigenous Community (4)
- Comuna de Copiapó Colla Indigenous Community (5)
- Sol Naciente Colla Indigenous Community (6)

The location of the communities and their straight-line distance to the project are shown below in Figure 20-6.



Source: Baseline EIA - MYMA, 2020.

Figure 20-7 – Location of community sites – Fenix Gold Project.

With respect to the territorial distribution of the sites of cultural importance to the communities, most of these are located near road infrastructure, including routes C-341, C-601, and C-607, and to a lesser extent international route, highway CH-31. The territory occupied by the Indigenous Colla Communities is discontinuous and dispersed. The presence of the community members varies during the year according to the perspective of each community as a reflection of their ancestral uses and seasonality, mainly linked to ceremonial practices and migratory habits.

20.6.1.1 Early Community Engagement

Before the Environmental Impact Study was submitted to the Environmental Impact Assessment System (SEIA), two previous activities were carried out with respect to the indigenous Colla communities.

1. Early Community Engagement
2. Human Environment Information Gathering (Anthropological Studies).

The methodology implemented for the Early Community Engagement (ECE) process was developed exclusively for the Fenix Gold project following the reference guidelines of the "Guide for Early Community Involvement in projects submitted to the Environmental Impact Assessment System" (SEA, 2013), the "Guide of Methodological Guidelines for Indigenous Consultation Processes", the "ILO

Convention 169 - Supreme Decree No. 66" of the Ministry of Social Development, the "United Nations Declaration on the Rights of Indigenous Peoples" and the provisions of the SEA Regulations.

The objective for the implementation of early stakeholder engagement process was to:

1. Inform the various local stakeholders and Indigenous Communities about the Project, its objectives, scope, and timeline.
2. Disseminate among the various local partners the development and progress of the EIA for the Project.
3. To hear the concerns and receive contributions and observations from the various stakeholders and Indigenous Communities regarding the Project.
4. Collect and incorporate relevant information from Indigenous Colla Communities into the Project.
5. Contribute to the success of the Public Consultation process once the EIA was submitted for evaluation.

More information on this early engagement stage can be found at the following link *https://seia.sea.gob.cl/archivos/2020/04/17/13_Acciones_Previas_Rev_0.pdf* (only available in Spanish).

20.6.1.2 Environmental Assessment Process

Once the Environmental Baseline information had been collected, in accordance with SEA (Environmental Evaluation Service) guidelines, it was determined that the project would be evaluated under an Environmental Impact Assessment (EIA), given that it identified the following effects, characteristics, or circumstances described below:

- Significant adverse effects on the quantity and quality of renewable natural resources, in accordance with the provisions of article 11(b) of Law No. 19. 300 and in particular in letter b) of article 6 of the SEIA Regulations, due to the intervention of surfaces in which environments with the presence of reptile species Liolaemus rosenmanni (Rosenmanni's Lizard), Liolaemus patriciaiturrae (Patricia Iturra's Lizard) and Liolaemus isabelae (Isabel's Lizard), in conservation category, are identified.
- Significant alteration of the life systems and customs of human groups, in accordance with the provisions of article 11(c) of Law No. 19,300 and in particular letters a) and d) of article 7 of the SEIA Regulations, since it will generate difficulties for the exercise or manifestation of traditions, culture, or community interests linked to the activity of transhumance, collection of plants and herbs for medicinal use.

The EIA process contemplates two instances to inform the stakeholders of the details of the project, as well as any significant effects:

1. Citizen Participation Process (PAC).
2. Indigenous Consultation Process (PCI)

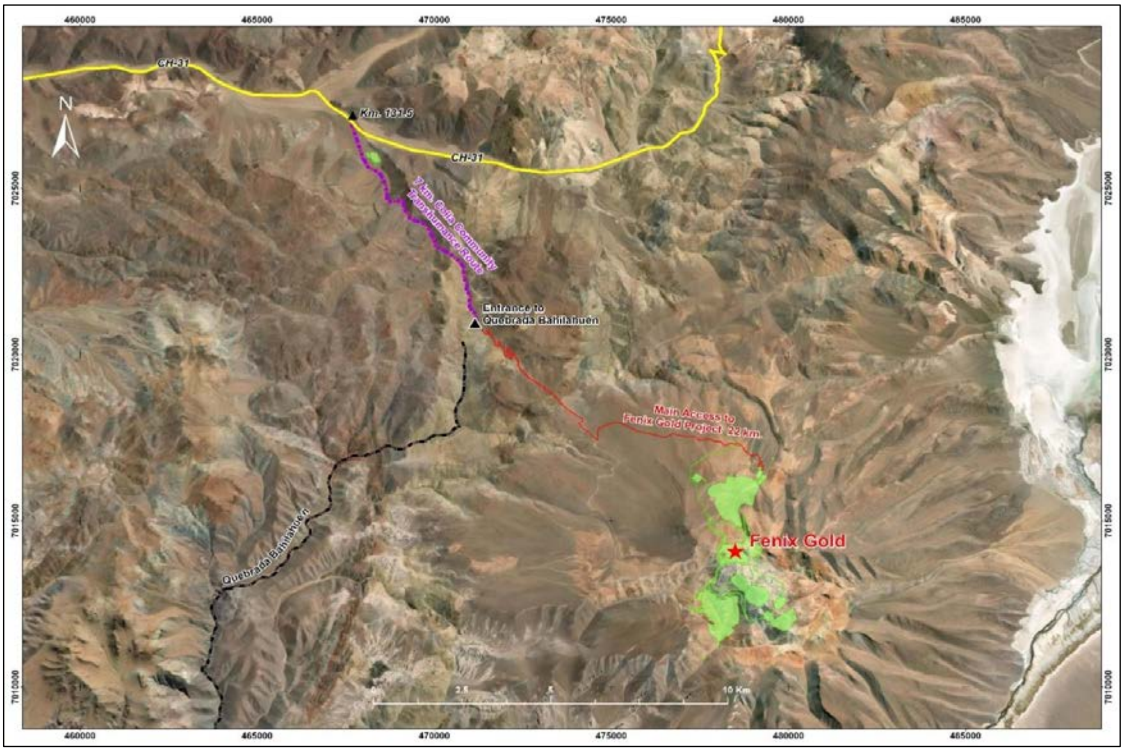
For the Citizen Participation Process (PAC), online and face-to-face open house events were carried out, involving various civil society actors, on the following dates in the Table 20-3:

Table 20-3 – Citizen participation events.

N°	Activity	Place	Date
1	Citizen participation webinar	Copiapó, Atacama Region	11.30.2020
2	Face-to-face dialogue open house	Copiapó, Atacama Region	12.11.2020
3	Face-to-face dialogue open house	Copiapó, Atacama Region	01.06.2021

For more information on the PAC refer to the following link: *https://seia.sea.gob.cl/expediente/expedientesEvaluacion.php?modo=ficha&id_expediente=2146327395#-1* (only available in Spanish).

Within the framework of the Indigenous Consultation Process developed with the six communities, both the scope of the impacts identified, and the measures proposed in the EIA were presented, so that all communities had the space to review, discuss, and accept or improve each of the proposals made by the project. Figure 20-8 shows the location of the area where the significant impact on the human environment was identified and its relationship with the project.9



Source: Rio2, 2023

Figure 20-8 – Transhumance route of the Colla indigenous communities – Fenix Gold.

This dialogue process was successful and resulted in the signing of six Protocols of Final Agreement (PAF) between the SEA, Fenix Gold, and the six communities.

For more information regarding the PCI, refer the following link: *https://seia.sea.gob.cl/expediente/expedientesEvaluacion.php?modo=ficha&id_expediente=2146327395#-1* (only available in Spanish).

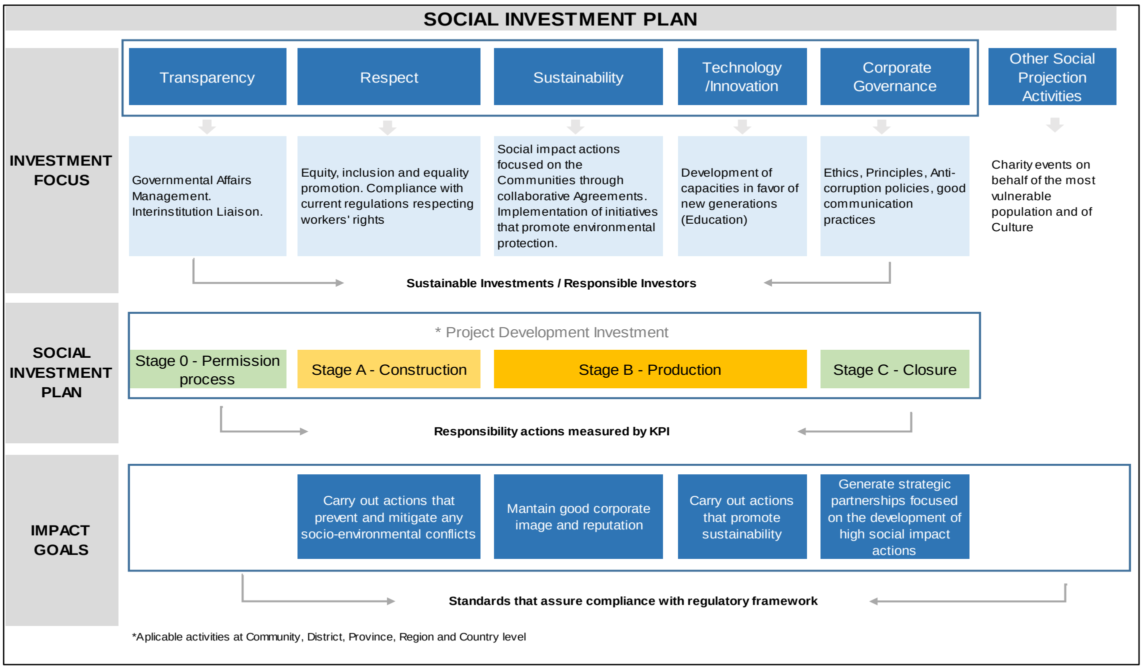
The following Table 20-4 is a summary of the social measures agreed upon with the communities in the Indigenous Consultation Process:

Table 20-4 – Indigenous consultation process.

Social Measures		
Communities	**Reason**	**Purpose of the Agreement**
Pastos Grandes, Sol Naciente, Comuna de Copiapó	Agreements of the Indigenous Consultation Process_EIA	Program for the Promotion of Traditional Practices related to the transhumance activity of the C.I.C Pastos Grandes, Sol Naciente and Comuna de Copiapó
	Agreements of the Indigenous Consultation Process_EIA	Program for the Promotion of Traditional Practices, related to the collection of herbs and medicinal plants of the C.I.C Pastos Grandes, Sol Naciente and Comuna de Copiapó
	Agreements of the Indigenous Consultation Process_EIA	Comprehensive Road Safety Plan
Runa Urka	Agreements of the Indigenous Consultation Process_EIA	Program for the Promotion of Traditional Practices related to transhumance activity.
	Agreements of the Indigenous Consultation Process_EIA	Program for the Promotion of Traditional Practices, related to the collection of herbs and medicinal plants
	Agreements of the Indigenous Consultation Process_EIA	Comprehensive Road Safety Plan
PaiOte	Agreements of the Indigenous Consultation Process_EIA	Program for the Promotion of Traditional Practices related to transhumance activity.
	Agreements of the Indigenous Consultation Process_EIA	Program for the Promotion of Traditional Practices, related to the collection of herbs and medicinal plants
	Agreements of the Indigenous Consultation Process_EIA	Comprehensive Road Safety Plan
Sinchi Wayra	Agreements of the Indigenous Consultation Process_EIA	Program for the Promotion of Traditional Practices, related to the collection of herbs and medicinal plants
	Agreements of the Indigenous Consultation Process_EIA	Comprehensive Road Safety Plan

The Fenix Gold Project contemplates the implementation of high environmental and social standards, not only those indicated at the national level, but also those regulated at the international level, in such a way that they drive us towards continuous improvement both within and outside of the Fenix Gold Project.

The social investment plan strategy is shown below in Figure 20-9.



Source: Rio2, 2023

Figure 20-9 – Conceptual social investment plan.

20.7 Protected Areas and Priority Sites

There is no territorial or spatial overlap between the project area and the protected areas, priority sites, protected wetlands, glaciers, or sites with environmental value.

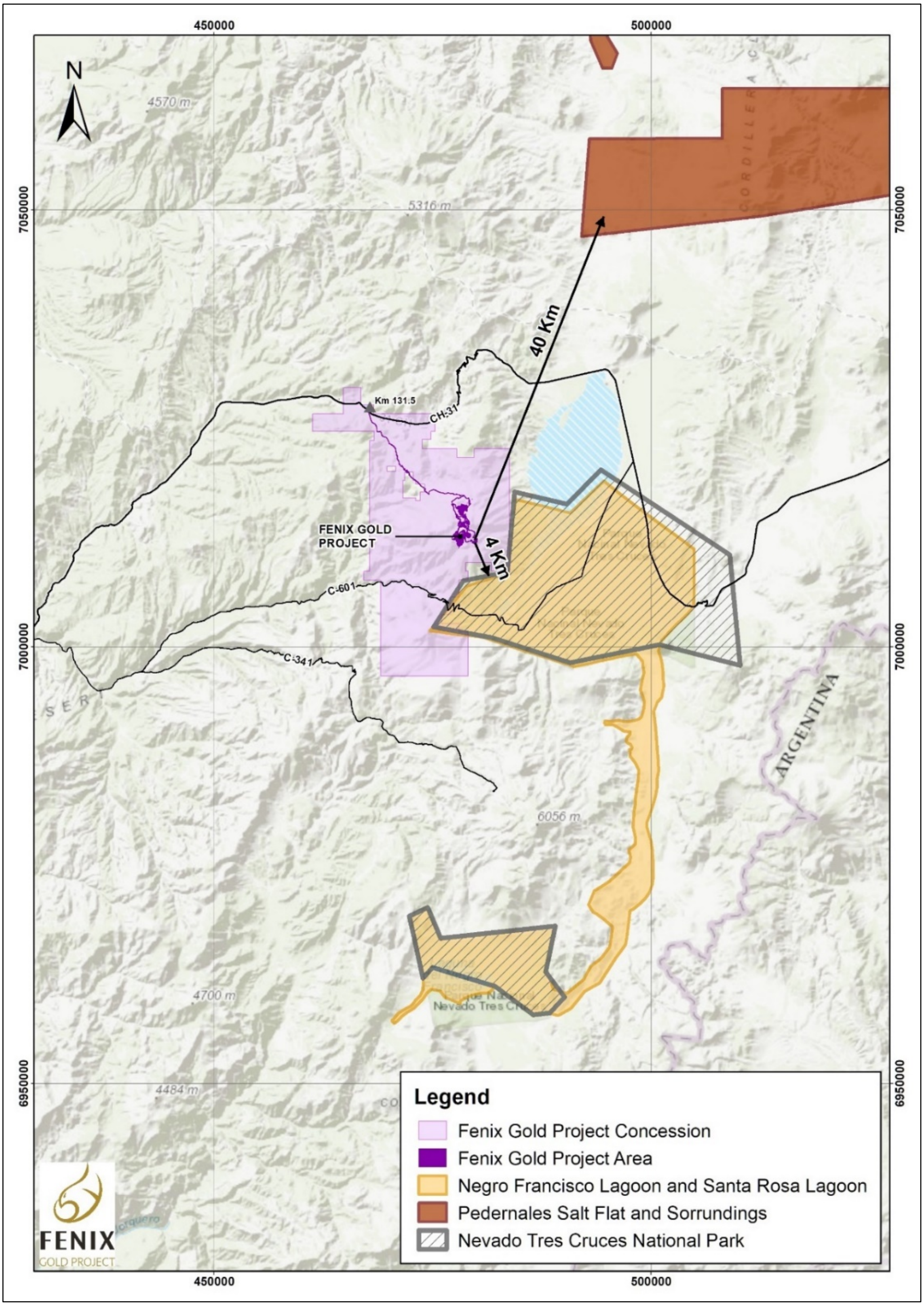
In the Atacama Region, there are a total of ten Protected Areas corresponding to the following categories: three (3) National Parks, three (3) National Protected Goods, one (1) National Reserve, one (1) Nature Sanctuary, one (1) Marine Reserve, and one (1) Marine Coastal Protected Area. The closest site is the Nevado Tres Cruces National Park, approximately 3.5 km away in a straight line from the Project (Figure 20-10).

According to the Instructions on Priority Sites for Conservation in the Environmental Impact Assessment System (Ordinary Official Letter N° 100143 de 2010, of the Executive Directorate of the Environmental Assessment Service), the Priority Site for the Conservation of Biodiversity closest to the Project corresponds to the site known as "Pedernales Salt Flat and its surroundings", located more than 36 km away in a straight line from the Project's central point. In this regard, the analysis made from the defined influence areas for noise, vibrations, and dust, show that the emissions of the Project will not generate any effects on this site.

According to the List of Wetlands of International Importance (Ramsar Convention), in the Atacama Region there is a Ramsar site corresponding to Laguna del Negro Francisco and Laguna Santa Rosa, which are part of Nevado de Tres Cruces National Park.

According to the "Inventory of Chilean Glaciers of the General Directorate of Water Management" (GDWM, 2014), 884 glaciers are identified in the Atacama Region, of which 191 are in the Copiapó district. In this regard, the Project is not positioned close to any glacier. The closest one is located approximately 29.0 km south of the Project and corresponds to a Rocky Glacier located in the Tierra Amarilla district.

During the preparation of the EIA, mathematical models were developed for air quality, noise, water, hydrogeology, etc., concluding that the project will not generate significant impacts on any of the areas of interest.



Source: Rio2, 2023

Figure 20-10 – Protected areas and priority sites.

20.8 Potential Emissions, Waste and Effluents Generated by the Project

The development of the Project's works will generate emissions, effluents, and waste in all its stages, for which environmental control actions are proposed to mitigate potential impacts.

20.8.1 Atmospheric Emissions

In relation to the observed air quality, a baseline was prepared from the data recorded at the Air Quality Monitoring Station at Cerro Maricunga and Laguna Santa Rosa. It can be concluded that the values recorded are below the limits established in national regulations (MP2.5, MP10, NO_2, CO, and SO_2) and below the reference standard for Settleable Particulate Matter in the periods evaluated.

With this information, an emissions model was created using the "WRF-CALPUFF" modelling system. and applied to each phase of the project (construction, operation, and closure). The assessment encompassed the evaluation of both primary and secondary air quality standards. Additionally, points of interest were categorized based on the specific type of standard they correlated with, i.e., Primary Quality and Secondary Quality.

Regarding the results for the conducted scenarios at the mining facilities during construction, operation, and closure phases, it is evident that the daily PM10 levels remain consistently below 25.55 µg/m³ for all phases of the project. Similarly, the annual PM10 levels remain below 3.99 µg/m³ during all phases. With respect to the same scenarios mentioned above, the highest contributions for the daily and annual PM2.5 standard will not exceed 4.39 µg/m³ and 0.66 µg/m³.

For the case of gaseous NO_2, CO, and primary SO_2, its emissions are anticipated to remain under 14.70 µg/m³ for all evaluated the sites of interest. However, there is an exception for the Refugio Laguna Santa Rosa site, where during its operation phase, there will be an increase of 59.31 µg/m³ for the hourly NO_2 standard and 2.07 µg/m³ for its annual equivalent. On the other hand, for the case of sulfur dioxide (secondary standard), the contributions at all sites of interest will not exceed 0.05 µg/m³ during all phases of the Project.

Taking in to account all factors discussed earlier, the combined concentration at the sites of interest do not exceed primary and secondary quality standards. All scenarios evaluated represent the most unfavourable conditions, corresponding to years with the highest emissions and flow rates. Consequently, based on this comprehensive assessment, the project does not generate emissions that will cause significant impact at the sites of interest.

Within the Environmental Management Plan of the Project, controls to mitigate emissions include:

- Unpaved roads frequently traversed within site and considered as final will be stabilized using bischofite (or a similar suppressant). Short-term accesses will be humidified.
- Oversight of technical inspections for trucks and vehicles.
- Engine shutdown while vehicles and machinery are stopped and not operating.
- Regulation of traffic speeds within site.

- Requirement for contractors to perform regular inspection and maintenance of vehicles and machinery.
- Implementation of gas scrubbing system in the process plant.

As a follow-up and control measure, an MPS (material particulado sedimentable - settled particulate matter) monitoring program will be implemented as voluntary measures at 3 stations: Laguna Santa Rosa, SVATH North, and SVATH South. As part of the EIA Appeal process, this commitment was increased to include three additional monitoring points: two in the Maricunga Salt Flat and one in the Vizcachitas ravine.

During the EIA appeal process, air quality monitoring for pollution was proposed for the commune of Copiapó. Coordinating with the SEREMI from Ministry of Health, four monitoring points will be set up and observed over a period of one year. This effort will aid local authorities in tracking pollution in Copiapó and forming a basis for community-driven environmental improvements.

20.8.2 Noise and Vibrations

To understand the existing environment around the designated area in terms of noise and vibrations, a comprehensive assessment of the estimated influence area was conducted. This involved identifying potential points of interest, encompassing locations where individuals reside, work, or where wildlife congregates.

Noise and vibration modeling was conducted using the construction, operation, and closure stages as scenarios. These scenarios were modelled under the most unfavorable conditions, which involved the simultaneous operation of machinery used for the project. Noise and vibration produced by blasting activities was assessed and its reach towards the identified points of interest was evaluated. Additionally, the models considered the potential elevation in levels caused by project vehicle traffic along external routes, primarily between Copiapó and the project site.

Based on the results of the models, noise levels generated by the project would remain below 25 dB(A) at all identified points of interest, complying with the standards set by D.S. No. 38/11 of the Ministry of the Environment (MMA). Furthermore, the estimated noise levels during blasting activities fall below international standards for human settlements and wildlife. Similarly, increased vehicle traffic on external roads due to the project does not further increase existing noise level.

While the models suggest that significant environmental impacts caused by noise are not anticipated, the installation of acoustic barriers were proposed. This measure is aimed at protecting the chinchilla identified in the Vizcachitas ravine. The implementation of these barriers will be established in collaboration with a specialized company during the construction stage of the project. For the case of vibrations, the calculations were conducted using the model specified by the Federal Transit Administration (FTA) of the United States. The calculations found that vibrations produced by heavy machinery and blasting activities were at levels below the thresholds for structural damage and disturbances.

20.8.3 Mine Waste

Mine waste from the Project will consist of non-mineralized rock and mineralized ore below cut-off grade (defined in Chapter 16) extracted from the pits, and the leached ore that will remain in the heap leach pad.

Due to the static nature of the heap leaching process, the leached ore waste will be managed on site. The leach pad will have coronation channels and a sedimentation pond for contact water management.

Mining waste (waste rock) generated by the project during the construction and operation stages will be disposed of in the waste dump. The project includes a waste dump with a total capacity of 124 Mt, which will use an area of 110 ha.

The waste dump will have a contact water management system consisting of a network of drains at the base of the dump, which will channel any eventual flow of contact water to a sedimentation pool for the control and management of this water. For non-contact water, contour channels are planned with their respective sedimentation pools. The presence of little precipitation in the area makes this component easy to manage.

The waste dump complies with regulatory and technical requirements to ensure physical and chemical stability. To ensure this, a geotechnical monitoring program will be in place to monitor its stability. The permit to establish a waste dump or ore stockpile was submitted in April 2021. It received a technical approval in May 2022, and its resolution is contingent upon RCA (Environmental Qualification Resolution) approval. Chapter 4 provides more detail on the management process for these permits.

According to the studies and geochemical models conducted for the Project, the generation of acid drainage is eliminated. This conclusion takes into account the sterile material composition, minimal precipitation in the area, and significant evaporation rate. According to these studies, the contact waters that reach the base of the landfill, as per mixing models, are neutral-alkaline and exhibit low long-term salinity.

20.8.4 Industrial Waste

Industrial wastes will be generated during all stages of the Project and will be of two types: non-hazardous industrial wastes and hazardous industrial wastes.

Non-Hazardous industrial waste will come mainly from the construction of the Project and from general maintenance activities during the operation of the Project. This waste will consist of surplus metal, wood, scrap metal, concrete debris, glass, rubber, plastics, equipment parts, pipes, among others. These will be disposed in 10 to 20 m^3 towable metal hopper containers, or similar, located at the ADR Plant, in the Mine Shop, and in the Construction Yard.

In the case of hazardous industrial waste, there will be 4 temporary storage warehouses and an accumulation tank for used oils. These facilities will be located at the generation sites, i.e., at the Camp, ADR Plant, Crushing Area, and Mine Workshop.

Industrial waste (hazardous and non-hazardous) will be managed by an authorized company. Recycling and reuse segregation will be implemented prior to final disposal to minimize waste volume. Final disposal will be carried out at authorized sites.

Standards and procedures will be implemented for integrated waste management.

20.8.5 Residential Waste

Solid domestic and similar waste will be generated at all stages of the project and will come mainly from the camp, dining rooms, offices, and restrooms, and will mostly consist of food, wrappers, and plastic bags. This waste will be disposed of in 240 l plastic containers, or similar, located in trash rooms.

Household and similar waste will be segregated and recycled as much as possible from the beginning, and the rest will be disposed of in places designated for that purpose.

Recyclable waste (paper, electrical and electronic equipment, plastics, and metals) will have a clean point located in the waste yard of the Construction Yard. It will be stored and segregated in closed metal containers of 10 to 20 m^3 or similar capacity as appropriate, for subsequent recycling by an external company.

Waste from the polyclinic will be classified as "special waste" in accordance with the provisions of D.S. No. 6 of the Ministry of Health (Regulation of Waste from Health Care Establishments – REAS- Reglamento de Residuos de Establecimientos de Atención de Salud). This waste will be handled in special containers, avoiding contact with other waste, and will be disposed off at an authorized site.

It should be noted that the specific permits for the temporary waste storage areas received technical approval and their resolution is contingent upon RCA approval.

20.9 Closure and Abandonment Stage

20.9.1 Closure Plan

During the preparation of the Environmental Impact Study, the “Sectorial Environmental Permit 137: Permit for the approval of the mine site closure plan” submitted to the National Geology and Mining Service (SERNAGEOMIN- Servicio Nacional de Geología y Minería) on April 23, 2021, will also be requested. This permit was approved by SERNAGEOMIN in June 2022, contingent upon obtaining the RCA. However, after the rejection of the RCA, it was decided to desist from this procedure and once the RCA approval is obtained, the file will be resubmitted.

Once the operation phase of the project is completed, the activities established for the closure of the mine site will be carried out. Closure activities have been planned in accordance with current regulations and accepted industry practices.

Regardless of specific closure measures, the general approach involves the de-energization, dismantling, demolition, removal, and disposal of surface installations corresponding to structures and constructions.

For mining areas such as pits, waste dumps and heap leach pads, the general criteria is to ensure their physical and chemical stability. This approach aligns with Chilean Law No. 20,551, which regulates the closure of mining sites and facilities, in order to protect the health and safety of people and the environment.

The Project closure plan will have a duration of 1 year.

Table 20-5 presents a summary of the proposed closure components and measures.

Table 20-5 – Closure components and measures.

Sector	Components	Closure Measures
Mine	Pits	Signage installation
		Access closure
	Tailings Dump	Signage installation
		Access closure
	Sedimentation pools	Filling cavities
		Terrain profiling
	Crushing Area Lime Silos Powder Magazine Emulsion Warehouse Communication Towers	De-energization of facilities
		Disassembly of equipment
		Dismantling of structures
		Demolition
		Waste Management
		Earthworks
		Removal of remaining explosives by authorized personnel
	Monitoring Wells	Well sealing
Plant	ADR Plant	De-energization of facilities
		Disassembly of equipment
		Dismantling of structures
		Demolition
		Waste Management
		Earthworks
	Leaching Heap	Signage installation
		Access closure
		Gravel washing

Sector	Components	Closure Measures
	PLS, emergency and sedimentation pools	Filling cavities
		Terrain profiling
	Sentry Box N°2 Communication Towers PTAS ADR Plant Water-fuel unloading platform	De-energization of facilities
		Dismantling of structures
		Demolition
		Waste Management
		Earthworks
	Construction Yard	De-energization of facilities
		Dismantling of structures
		Demolition
		Waste Management
		Earthworks
Mine Workshop	Mine Workshop PTAS-PTAR Fuel Supply Waste Storage Other Facilities	De-energization of facilities
		Disassembly of equipment
		Dismantling of structures
		Demolition
		Waste Management
		Earthworks
Linear works	Electrical Transmission Line Conveyor Belts	De-energizing facilities and removing cables
		Dismantling of structures
		Demolition
		Waste Management
		Earthworks
	Main Road	Danger Warning Signage
		Access closure
Camp	Camp	De-energization of facilities
		Disassembly of equipment
		Dismantling of structures
		Demolition
		Removal and disposal of waste
		Earthworks
Monitoring	Monitoring	Groundwater monitoring control and follow-up monitoring
		Sealing of monitoring wells used in post-closure
		Visual inspection of the condition of the facilities (pits, landfill, and pile).

Chapter 22 details the closure costs and the contribution amounts to the post-closure fund. These amounts are part of the Closure Plan that received technical approval from SERNAGEOMIN. The direct and indirect costs of the Closure Plan (PDC-Plan de Cierre) amount to 229,897 UF[8]. According to SERNAGEOMIN, the costs of the closure plan must consider an additional 20% in contingencies and 19% VAT (Value Added Tax Rate). This increases the total cost of the PDC amount is 328,293 UF.

The guarantees will be provided through payment policies as required by Chilean law. The cost of these policies was estimated based on a proportional ratio using Lince S.A.'s policy cost as a reference.

20.9.2 Post-closing Stage or Abandonment

Post closure, it is necessary to follow and monitor all environmental and physical variables, with the purpose of verifying the correct performance of the plan and to action the necessary corrective measures in case any contingent event was to happen.

The objective of post-closure activities is to verify that the physical and chemical stability of the closure procedures applied to the mining components was achieved.

The site facilities that will remain once operations have ceased and closure measures have been implemented are the open pit mines, the tailings dump, and the heap leach pad.

Maintenance or restitution of access closures, contour channels, sedimentation pools, PLS pool, emergency pool, and danger signs will be implemented as recurring maintenance measures every 10 years.

Based on the results of the risk assessments of the various remaining facilities, it is not necessary to monitor surface water, or groundwater, or air quality.

Post-closure costs amount to 19,994 UF (direct costs plus indirect costs); for these costs, contingencies (20%) and VAT (19%) are added. According to Chilean legislation, the Chilean state is responsible for the execution of post-closure activities. Within the guarantees for closure and post-closure, an allocation for Post Closure Fund equivalent to 28,551 UF is included. This contribution will be paid during the first 14 years of operation.

20.10 Summary of Main Environmental topics for the Project

The location of the Project makes it a favourable area to develop due to the minimal impact it will make. The use of water from a source that does not generate any significant environmental impact, the scarcity of fauna and flora due to the altitude of the project, the absence of human activities, and the low rainfall of the area make the project attractive from an environmental perspective.

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8 The Unidad de Fomento (UF) is a readjustment index, calculated and authorized by the Central Bank of Chile.

This situation is favourable because there will be no potential impacts to the aquifers of the sector due to water supply. This considers the ecosystem dynamics near the Project such as Nevado Tres Cruces National Park, RAMSAR site Santa Rosa and Negro Francisco Lagoons, and Maricunga Salt Flat.

Particularly for the Fenix Golf Project, no significant environmental issues were identified that could impede or halt the development of a mining and heap leach processing operation. While operating, Fenix will obtain the International Code Certification for Cyanide Management, which will give greater control for the environmentally responsible use of the product.

To comply with the current SEIA regulation, it is necessary to conduct an ecosystem study of sensitive areas around the Project. This ecosystem study will assess the environmental conditions of the area and its interaction with project activities. This contributes to the design of future environmental management measures to protect these ecosystems.

Since no population exist in the proximity of the project area that could be affected by mining activities, there is no risk of having the zone declared as saturated or latent due to particulate material and gas emissions. This is also true for noise emissions, effluent release, and waste generation, whether it is residential, industrial, or hazardous waste. However, the authorities still request data usage models to validate the effects or absence of emissions. Consequently, it is in the best interest of Fenix Gold Limited to conduct studies that will assess their impacts.

During the next stage of the project, it is recommended that the Environmental Authorities and the neighbouring communities are engaged to reinforce their relationship with Fenix Gold. This will help facilitate good communication during the environmental evaluation and permitting process. It should be noted that Rio2has an active community relations program and has established good relations with the local communities.

The mining operation will not cause alterations to the lifestyle, dwellings, or customs of inhabitants in the surrounding area. No cultural or anthropological changes are foreseen for any of the human groups previously mentioned. Furthermore, the project will generate jobs for the local work force that can benefit the local communities.

During the Project closure, it will be verified that all actions contribute to restore the environment after the operation. The objective is to restore the environment in the same or better conditions than what it was prior to the operation.

During closure and post closure, continuous monitoring will be carried out to detect any deviations to the closure plan. Necessary measures will be proposed to ensure optimal closure conditions that align with the environmental and social responsibility of the company.

21 CAPITAL AND OPERATING COSTS

Capital and operating costs for the Fenix Gold Project were developed based on the mine plan, production schedule, process plant design, and required infrastructure. The capital costs were estimated based on infrastructure designs, equipment, materials, labour, and services required for the fabrication and assembly of the various components. Operating costs were estimated for equipment, labour, materials, power, supplies, fuel, explosives, and support costs for consultants and potential suppliers to operate the mine and plant as designed. The capital and operating cost estimates were prepared by HLC Ingeniería y Construcción SpA (HLC), Anddes Asociados (Anddes), STRACON and Rio2. Capital and operating costs are quoted as United Stated Dollars ($).

21.1 Capital Cost

The capital cost estimate (Capex) for the Fenix Gold Project is for a gold mine capable of producing and processing an average of 20,000 tpd of ore (dry basis).

The initial capital was estimated in accordance with the guidelines from the Association for the Advancement of Cost Engineering (AACE) international Class 2 standards, indicating an expected accuracy range of ±10%. Sustaining capital was prepared considering Class 2 and Class 3 standards with an accuracy range of ±10% and ±20%.

The direct costs are composed of the direct costs of acquisition, construction, and installation.

To calculate the acquisition costs; the main mechanical, electrical, and instrumentation equipment, as well as various materials such as pipes, valves, and general accessories, were quoted on the local and foreign markets.

In the case of metal-mechanical equipment (plate work), the estimate was determined based on the weights (kilogram) multiplied by the unit costs used by the contractors. The same was applied for heavy metal structures, light structures, metal racks, metal steps, and railings.

For the estimation of construction costs, quotations and unit costs of the different supplies were used. For the estimation of assembly costs, the cost of consumable materials, labour costs, and rental equipment costs were used.

Indirect costs consist of procurement assistance, third-party assistance, pre-commissioning and start-up, spare parts for start-up, temporary facilities, general expenses, and contractor's profits.

This study is a joint effort between Rio2, HLC, Anddes, and STRACON, and was compiled and reviewed by Mining Plus. This summary describes the approach, methodology, format, and scope used for estimating capital cost, including guidance notes and key assumptions used by the engineering team.

21.1.1 Investment to Date

In 2022, during the pre-construction phase of the Fenix Gold project and before the Environmental Impact Assessment (EIA) was rejected, a total of $28.73 million was expended for the project's pre-construction (See Table 21-1). This expenditure is included in the financial model for the Fenix Gold Project under investment to date expenditure.

The expenditure is detail in Section 24.1 and included the construction of a 565-person camp, water loading infrastructure in Copiapó, the purchase of long-lead items such as electrical switchgear, electrical transformers, pumps, screens, and prefabricated components of the adsorption/desorption process plant, and preliminary earthworks. Additionally, it covered associated facilities like concrete foundation blocks, structural steel, cladding, columns, tanks, and more.

Furthermore, two large inflatable tents were acquired for use as initial offices and a workshop. Early earthworks involved enhancements to the access road and access to the ADR plant site.

Table 21-1 – Investment to date.

Description	Investment to date $M
Owner cost	6.89
Process Capex	10.25
Construction and facilities	11.58
Total	**28.73**

21.1.2 Estimate Summary

The forward-looking estimate is derived based on developed process flow diagrams, scope definitions, developed equipment lists, and all associated construction works outlined for the Project. The total life of mine capital investment (Initial and Sustaining Capital) for the Fenix Gold Project is estimated at $204.59 M (Table 21-2). The first construction stage of the project spans 14 months. The Pre-production stage commences in month 13, and the production stage is from month 14 onwards.

Table 21-2 – Capex summary.

Description	Initial Capex $M	Capital Sustaining $M	Total $M
Owner cost	15.02	-	15.02
Mine Capex	3.77	15.53	19.31
Process Capex	43.62	22.85	66.47
Construction and facilities	21.30	8.36	29.66
Indirect Cost	25.63	21.61	47.24

Description	Initial Capex $M	Capital Sustaining $M	Total $M
Mine closure	-	11.10	11.10
Contingency	7.23	8.56	15.79
Total	**116.57**	**88.02**	**204.59**

21.1.3 Exchanges rates

The capital estimate is denominated using the US dollar. The April 2023 exchange rate was used as shown in Table 21-3. The capital estimate does not account for additional funds for further exchange rate escalations or fluctuations beyond April 2023.

Table 21-3 – Estimate exchange rate.

Code	Currency	Exchange rate
USD	United States dollar	1.00 USD = 1.00 USD
CLP	Chilean pesos	1.00 USD = 803.84 CLP

21.1.4 Basis of Owner Capital Cost estimate

Owner's costs include owner staffing during construction, site communications, owner camp, owner commissioning, operator training, environmental compliance, community development, land acquisitions, consultants, legal expenses, and further metallurgical testing. Table 21-4 summarizes owner capital cost estimate.

Table 21-4 – Summary owner cost Capex.

Description	Capex $M
Business System/ IT for Operations	0.10
Minor Equipment Maintenance	0.02
Studies	0.46
Sustainability	1.19
Lince S.A (Holding Cost)	0.43
G&A Capex	12.82
Total	**15.02**

21.1.5 Basis of Mining Capital Cost Estimate

Mining will be executed by contract mining through an alliance agreement. This agreement resembles those used successfully in similar Peruvian projects, of which Rio2's management have experience working with. Therefore, the acquisition of mining equipment is not considered as part of the capital cost of mining.

Table 21-5 summarizes the initial and sustaining capital cost associated with the mining cost.

Table 21-5 – Mining capital costs.

Description	Initial Capex $M	Sustaining Capital $M	Total $M
Truck shop	-	14.38	14.38
Waste dump preparation	0.25	0.40	0.64
Stockpiles preparation	0.27	0.10	0.37
Open pit water control	-	0.28	0.28
Explosive Magazine	0.95	-	0.95
Mobilization and Demobilization Mine Contractor	0.36	0.38	0.74
Mining cost Pre-Operation	1.94	-	1.94
Total Mine Capex	**3.77**	**15.53**	**19.31**

The truck shop construction Capex was estimated by HLC. 58% ($8.38M) of the direct costs correspond to supplies and 42% ($5.99M) correspond to installation costs. The details are shown in Table 21-6.

Table 21-6 – Truck shop capital.

Components	Supply cost $M	Installation Cost $M	Total
General	0.63	0.95	1.58
Air distribution	0.55	0.09	0.63
Water distribution	0.62	0.48	1.09
Firefighting system	0.57	0.43	1.00
Sewage treatment plant	0.08	0.01	0.09
Industrial waste	0.07	0.08	0.15
Energy distribution	1.24	0.22	1.46
Maintenance offices	0.80	0.39	1.19
Eating area	0.29	0.20	0.49
Lubricant storage	0.16	0.12	0.27
Mine maintenance shop	2.47	2.13	4.60
Tire shop	0.04	0.02	0.06
Truck washing workshop	0.88	0.89	1.77
Total Cost	**8.38**	**5.99**	**14.38**

The activities included in the Capex estimate for the waste dump, stockpiles, and open pit water control preparation are the effluent collection system, sediment pond, surface water management, and geotechnical instrumentation. These costs were estimated by Anddes and will be developed in 4 stages. Table 21-7 shows the detailed costs of each component.

Table 21-7 – Waste dump and stockpiles preparation.

Components	Stage 1 $M	Stage 2 $M	Stage 3 $M	Stage 4 $M	Total $M
Waste dump preparation	**0.25**	**0.35**	**-**	**0.04**	**0.64**
Effluent collection system	0.08	0.22	-	-	0.31
Sediment pond 3	-	0.10	-	-	0.10
Surface drainage management	0.12	0.03	-	0.02	0.17
Geotechnical instrumentation	0.04	-	-	0.03	0.07
Stockpiles preparation	**0.27**	**-**	**0.10**	**-**	**0.37**
Effluent collection	0.18	-	0.10	-	0.28
Sediment pond 2	0.09	-	0.00	-	0.09
Pit	**-**	**0.06**	**0.11**	**0.11**	**0.28**
Surface drainage management	-	0.06	0.11	0.11	0.28

The cost to construct the explosives magazine was estimated at $0.95M by Rio2.

The mobilization and demobilization of mining equipment was developed by STRACON, the contractor responsible for mining operations, it was estimated at $0.74M.

21.1.6 Basis of Processing Capital Cost Estimate

Table 21-8 summarizes the estimated capital costs for the processing plant. The total indirect costs associated with the capital are detailed in Section 21.1.9 of this report.

Table 21-8 – Processing initial capital costs.

Components	Initial Capex $M	Capital Sustaining $M	Total $M
Lime plant	3.00	1.79	4.79
ADR Plant	26.98	0.00	26.98
Spare parts	0.40	0.20	0.60
Leaching heap	5.85	18.81	24.66
Emergency pond	-	2.05	2.05
PLS pond (includes access to ponds)	1.81	-	1.81
Reagents	2.46	-	2.46

Components	Initial Capex $M	Capital Sustaining $M	Total $M
Chemical Analysis-Lab	1.71	-	1.71
Processing cost Pre-Production	1.42	-	1.42
Total Process Capex	**43.62**	**22.85**	**66.47**

The most significant cost components are the lime plant, the ADR plant, and the heap leach, which account for 85% of the total processing capital costs.

Table 21-9 details the capital cost of the lime plant, broken down by supply and installation cost. 71% of the costs are from construction supplies and the remainder are installation costs.

Table 21-9 – Lime plant capital costs.

Components	Supply cost $M	Installation Cost $M	Total
Air distribution	0.14	0.09	0.22
Water distribution	0.48	0.28	0.76
Firefighting system	0.04	0.01	0.05
Lime plant	1.93	0.80	2.73
Power distribution	0.84	0.19	1.03
Total	**3.42**	**1.37**	**4.79**

Table 21-10 details the cost of each component required for the construction of the ADR plant, including the preliminary earthwork ($0.21M) required for the platform where it will be built.

Table 21-10 – ADR plant capital costs.

Components	Supply cost $M	Installation Cost $M	Total
Earthworks	-	0.21	0.21
General	0.79	2.50	3.29
Air distribution	0.31	0.21	0.52
Water distribution	0.84	1.02	1.86
Firefighting system	0.70	0.52	1.23
Reagent handling	0.44	0.29	0.73
Leaching	3.15	2.24	5.39
Adsorption	1.29	1.02	2.31
Desorption	1.65	0.78	2.43
Acid washing	0.41	0.15	0.56
Thermal regeneration	0.80	0.39	1.19
Carbon handling	0.22	0.13	0.35

Components	Supply cost $M	Installation Cost $M	Total
Smelting	1.48	1.26	2.74
Wastewater treatment plant	0.11	0.05	0.16
Industrial waste	0.06	0.06	0.11
Power distribution	0.30	0.28	0.57
Reagents warehouse	0.59	0.52	1.11
Plant offices	0.70	0.48	1.17
Maintenance shop	0.58	0.46	1.04
Total	**14.43**	**12.55**	**26.98**

The heap leach will be constructed in 4 stages and will be built as mining progresses. The first stage will be built during the construction year of the project, the second stage will be built in year 2 of production, the third stage in year 6, and the last stage in year 10. Table 21-11 details the cost of the components of this infrastructure.

Table 21-11 – Heap leaching capital costs.

Components	Stage 1 $M	Stage 2 $M	Stage 3 $M	Stage 4 $M	Total $M
Construction of the foundation	1.04	0.81	1.20	1.31	4.35
Leveling and perimeter access	1.77	1.26	1.61	2.39	7.03
Monitoring system	0.08	0.11	0.15	0.24	0.59
Lining	2.23	2.02	2.46	3.52	10.23
Collection system	0.41	0.35	0.51	0.68	1.95
Surface drainage management	0.24	0.05	0.06	0.05	0.41
Geotechnical instrumentation	0.07	-	-	0.03	0.10
Total	**5.85**	**4.61**	**5.99**	**8.21**	**24.66**

21.1.7 Facilities Capital Cost

Table 21-12 lists the cost areas that are considered as capital civil construction and facilities costs.

Table 21-12 – Facilities and civil construction capital cost.

Description	Initial Capex $M	Capital Sustaining $M	Total $M
Power generation house	3.85	0.86	4.72
Power line	2.00	-	2.00
Provisional and preliminary works	2.31	1.75	4.06
Platforms	1.42	0.00	1.42
Roads	8.10	3.54	11.64

Description	Initial Capex $M	Capital Sustaining $M	Total $M
QA/QC	0.96	1.01	1.97
Infrastructure camp	0.51	1.20	1.71
Fuel station	0.76	-	0.76
Engineering	0.14	-	0.14
Communications	0.90	-	0.90
Safety	0.35	-	0.35
Total	**21.30**	**8.36**	**29.66**

21.1.8 Mine closure

The Mine closure costs mentioned in this report are from the Closure Plan (CP) submitted to SERNAGEOMIN (National Geology and Mining Service) in April 2021 and received technical approval in June 2022 (subject to obtaining a favorable RCA). These costs were quoted in UF (Unidad de Fomento) and were converted to CLP (Chilean Pesos) using the April 2023 average exchange rate of 1 UF = 35,666 CLP. Subsequently, the CLP amounts were converted to USD (US Dollar) at an exchange rate of 803.84 CLP = 1 USD to be used for this report.

The mining closure cost considers 6 sectors, as shown in Table 21-13: mine, plant, workshop, linear works, camp, and closure monitoring.

Table 21-13 – Mine closure.

Description	Value $M
Mining Sector	
Pits	0.01
Waste Dumps	0.00
Sedimentation Ponds	0.16
Other components in the mining sector	1.58
Plant Sector	
ADR Plant	2.99
Leach Pad	0.11
PLS Pond	0.18
Major Events Pond	0.27
Other components in the plant sector	0.56
Mine Workshop	
Mine workshop and facilities	3.11
Linear Works	
Power Line	0.25
Conveyor Belt	0.10
Main Access Road	0.00
Camp	**0.87**

Description	Value $M
Monitoring	**0.02**
Insurance Policy - Closing Guarantee	0.90
Total Mine Closure	**11.11**

The government is responsible for post-closure monitoring, while the project owner contributes to a post-closure fund that is included in the approved closure cost amounts by SERNAGEOMIN.

To estimate the cost of the insurance policies to constitute the guarantee to the government for the Project's closure bond, the reference costs of the policies held by Lince S.A for 2021, 2022, and 2023 were used on a ratio basis to calculate the Fenix Bond financing cost.

21.1.9 Indirect cost

Indirect costs include all costs necessary to complete the Fenix Gold Project that are not related to direct construction costs.

These costs include procurement assistance, vendor engineering review, freight of equipment and materials, third party services for testing or certification, mobilization and demobilization of construction equipment, temporary facilities required during the construction phase, and contractors' profit. Over the life of the mine, indirect capital costs total $47.24M.

21.1.10 Contingency

A contingency estimate of 7.5% to 10.6% was used according to the infrastructure. The purpose of the contingency is to allow for uncertain cost elements that are predicted to occur, but not included in the cost estimate. These cost elements include uncertainties concerning completeness and accuracy of material take-offs, accuracy of labour and material rates, accuracy of labour productivity expectations, and accuracy of equipment pricing.

The contingency costs are summarized in Table 21-14 and the contingency related to the closure cost of the Fenix Gold Project's mining applies a value of 20% required by SERNAGEOMIN.

Table 21-14 – Summary of contingency costs.

Description	Initial Capex $M	Sustaining Capital $M	Total $M
Process Plant and Infrastructure (7.5%)	3.74	1.77	5.51
Leach Pad, Waste dump and PLS Ponds Construction (10.6%)	3.49	4.56	8.06
Mine closure (20%)	-	2.22	2.22
Total Contingency	**7.23**	**8.56**	**15.79**

Table 21-15 shows the classification of the cost estimates according to AACE International Recommended Practices, 100% of the initial capital cost estimates are Classification 2.

Table 21-15 – Contingency considered by component and AACE classification.

Component	Cost Estimate Classification - AACE		
	Initial Capital	Sustaining Capital	Consultant
Mining Capex			
Waste dump	CLASS 2	CLASS 3	ANDDES
Stockpiles	CLASS 2	CLASS 3	ANDDES
Contractor Mob and Demobilization	CLASS 2	CLASS 2	STRACON
Explosive Magazine	CLASS 2	-	HLC
Mining cost Pre-Operation	CLASS 2	-	STRACON
Truck Shop		CLASS 2	HLC
Waste dump		CLASS 3	ANDDES
Stockpiles		CLASS 3	ANDDES
Mine drainage system		CLASS 3	ANDDES
Processing Capex			
Lime plant	CLASS 2	CLASS 2	HLC
ADR plant	CLASS 2	CLASS 2	HLC
Spare parts	CLASS 2	CLASS 2	HLC
Leaching heap	CLASS 2	CLASS 3	ANDDES
PLS pond (including access to ponds)	CLASS 2	-	ANDDES
Reagents	CLASS 2	-	HLC
Chemical Analysis-Lab	CLASS 2	-	HLC
Processing cost Pre-Operation	CLASS 2	-	HLC
Emergency pond		CLASS 3	ANDDES
Construction and facilities Capex			
Power Generation House	CLASS 2	CLASS 2	HLC
Power line	CLASS 2	-	HLC
Temporary and preliminary works	CLASS 2	CLASS 3	ANDDES
Platforms	CLASS 2	-	ANDDES
Access	CLASS 2	CLASS 3	ANDDES
QA/QC	CLASS 2	CLASS 3	ANDDES
Infrastructure camp	CLASS 2	CLASS 2	HLC
Fuel station	CLASS 2	-	HLC
Engineering	CLASS 2	CLASS 3	HLC
Communications	CLASS 2	-	HLC
Safety	CLASS 2	-	HLC
Indirect cost infrastructure	CLASS 2	CLASS 2	HLC
Indirect earth works	CLASS 2	CLASS 3	ANDDES
Indirect mobilization and demobilization mining equipment	CLASS 2	CLASS 2	STRACON

21.1.11 Estimate Exclusions

Items not included in the capital estimate:

- Foreign currency exchange rate fluctuations.
- Interest and financing cost.
- General sales and withholding taxes (included in the financial analysis).
- Working capital.

Risks due to political upheaval, government policy changes, labour disputes, permitting delays, or any other force majeure occurrences are also excluded.

21.2 Operating Cost

The operating cost estimate for the Fenix Gold Project was a joint effort between Rio2, HLC, and STRACON and was compiled and reviewed by Mining Plus. This summary presents the approach, methodology, format, and scope of the basis used for estimating the operating cost.

Operational costs are considered beginning month 14 (inclusive), while costs estimated in previous periods are considered capital costs.

Operating costs averaged over the life of mine are presented in Table 21-16.

Table 21-16 – Summary of operating costs.

Description	LOM Cost $M	Total $/t ore
Mining cost	650.64	5.67
Processing cost	633.98	5.53
G&A	247.95	2.16
Selling cost	13.22	0.12
Royalty	1.35	0.01
Total	**1,547.14**	**13.49**

21.2.1 Fuel Price

The fuel price used for the operating cost estimate was 3.98 $/gal (1.05 $/l), based on an economic proposal from July 2023.

21.2.2 Mine Operating Cost

Mining costs were estimated by STRACON, a specialist earth-moving contractor with significant mining experience in South America. The estimate is based on the open pit design criteria, the mining plan, the operating hours of the equipment (including non-productive hours), 7x7 roster (7 days in / 7 days off) with 2 shifts per day, and 12 hours per shift.

The mining cost includes ownership cost (depreciation, insurances, and interests) and operational cost (major repairs for rig drills, large excavators and wheel-dozers, minor repairs, and diesel consumption). Blasting activities will be carried out by STRACON and the supply of explosives material (ANFO and Emulsion) and blasting accessories will be provided by FAMESA. Information from the quotation file "Propuesta Comercial Rio2 Fenix Gold (Etapa de operación mina) V.4 (actualización al 06-07-23).pdf" was used for this estimate. Electronic detonators will be used for blasting ore and non-electric detonators will be used for waste.

A summary of mine operating costs incurred over the life of the mine are presented in Table 21-17. Estimates of mine costs were made according to the destinations of the material within the mine plan: direct ore to PAD, ore to stockpile (medium grade and low grade material), waste to waste dump, and ore reclaimed from the stockpile. The total cost of mining is $650.64M of which 15.7 % is due to fuel ($101.82M).

Table 21-17 – Mine operating costs summary.

Description	Units	Value
Ore to Pad	$/t ore mined	2.45
Ore to stock	$/t ore stock	2.02
Reclaimed ore from stockpile	$/t ore reclaimed	1.15
Waste	$/t mined	1.68
Diesel Consumption	$/t moved	0.42
Mine administration	$/t moved	0.26
blast hole assay	$/t mined	0.08
Total	**$/t ore**	**5.67**

Table 21-18 summarizes the calculated costs for different mining activities including drilling, blasting, loading, hauling, auxiliary services, mine administration, and blast hole assaying. Figure 21-1 shows the distribution of the costs.

Table 21-18 – Mining cost by activity.

Description	LOM Cost $M	Total $/t ore
Drilling	43.50	0.38
Blasting	86.11	0.75

Description	LOM Cost $M	Total $/t ore
Loader	69.63	0.61
Haulage	278.27	2.43
Auxiliary services	92.83	0.81
Mine administration	63.93	0.56
Blast hole assay	16.37	0.14
Total	**650.64**	**5.67**

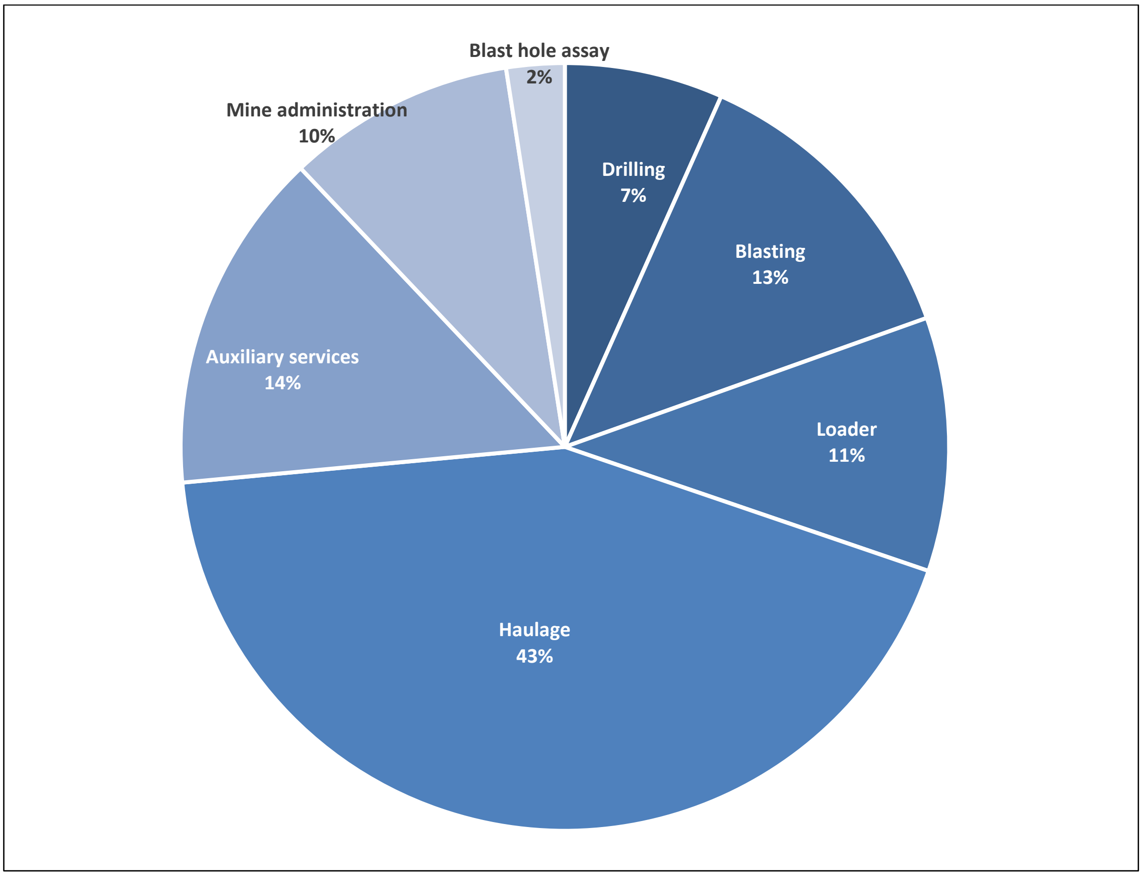


Figure 21-1 – Distribution of mine operating costs by activity.

21.2.3 Processing Operating Cost

The process operating costs were developed by HLC based on interpretation of metallurgical test work, supplier quotes for reagents and consumables, HLC's cost database, and calculations from first principles.

Table 21-19 summarises the total process plant operating cost by area, the average cost per tonne processed, and the cost per ounce of gold produced.

Operating costs for the ADR plant have been estimated from first principles. Labour costs were estimated using Project-specific staffing, salary, wage, and benefit requirements. Unit consumptions of materials, supplies, power, and water delivered-supply costs were also estimated.

In the first year of operation only 12,000 t/d of material will be processed; from the second year onwards 20,000 t/d of material will be processed.

Table 21-19 – Summary of operating cost without water cost by processing rate.

Capacity	Unit Cost		
	US$/month	US$/t	US$/oz
Processing 12,000 t/d, Year 1	1,205,205	3.35	286.53
Processing 20,000 t/d, Year 2 onwards	1,948,758	3.25	277.98

Project process costs were estimated considering key events during the LOM of 17 years with a throughput of 20,000 t/d (12,000 t/d for Year 1), an average head grade of 0.48 g/t Au and an overall recovery of 74.6%.

The process costs presented are based on ownership by Fenix Gold of production equipment and site facilities and Fenix Gold provided staff and management for processing, maintenance, and support.

It is considered that the operating costs have an accuracy of -15% to +15% with a 90% probability of occurrence. Unit operating costs are expressed in US$ per tonne of material processed and US$ per metal ounce recovered.

The operating cost estimate is expressed in Q2 2023 US$. and no value added tax has been included in the process operating cost estimate.

The process plant operating costs are summarized in Table 21-20, and Figure 21-2 shows the distribution of the costs.

Table 21-20 – Processing operating costs summary.

Description	LOM Cost $M	$/t ore	$/oz
Workforce	51.59	0.45	39.03
Materials and Supplies	197.84	1.73	149.69
Fuel, Energy	13.17	0.11	9.96
Maintenance	5.86	0.05	4.44
Water Cost	263.07	2.29	199.03
Diesel Consumption	102.44	0.89	77.51
Total	**633.98**	**5.53**	**479.66**

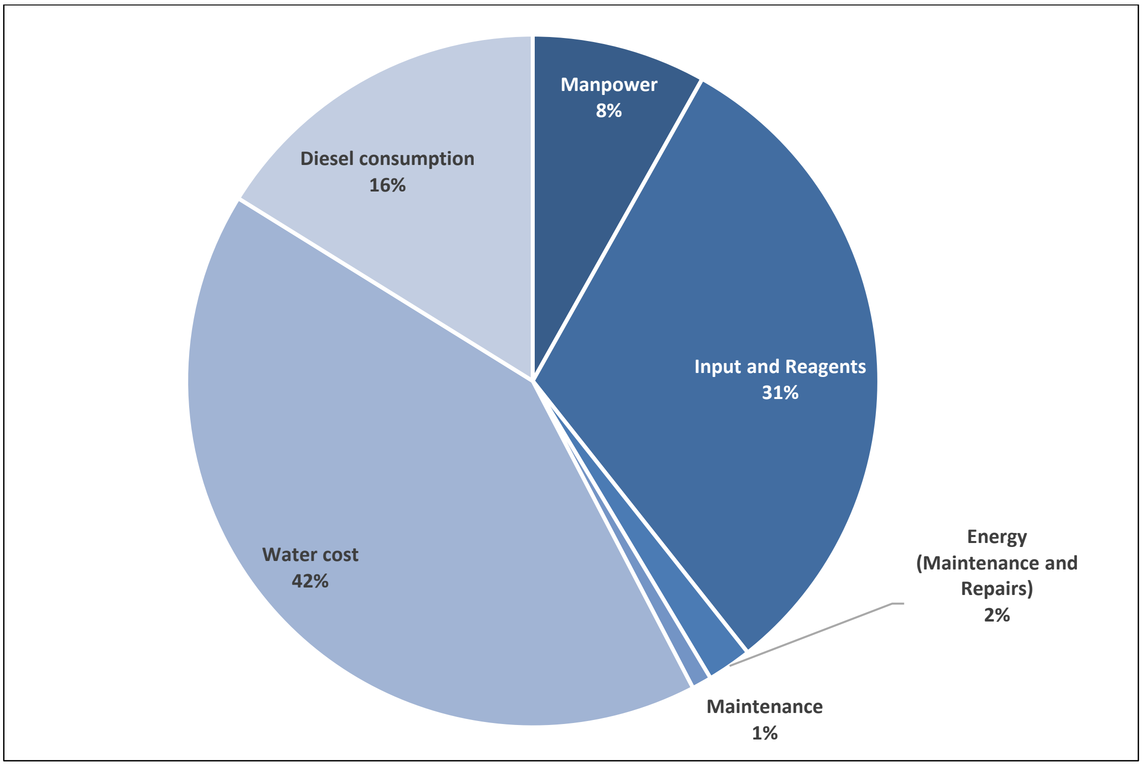


Figure 21-2 – Distribution of processing operating costs.

The details of the workforce costs are shown in the Table 21-21.

Table 21-21 – Workforce of processing operation.

Description	LOM Cost $M
Employees	
Plant Manager	1.92
Plant Manager	1.51
Metallurgy Manager	0.90
Shift Managers - Leaching	4.26
Shift Managers - ADR Plant	4.26
Shift Managers - Smelter	1.07
Labourers	
Lime Silo Operator	2.18
Leaching Operator	14.92
ADR Plant Operator	4.37
Smelter Operator	1.09
Plant Maintenance	
Employees	
Mechanical - Electrical Maintenance Manager	1.22
Mechanical Supervisor	1.85

Description	LOM Cost $M
Electrical Supervisor	1.85
Workers	
Mechanics	5.66
Electricians	3.40
Instrumentalist	1.14
Total Cost	51.59
Unit Cost $/t	0.45

HLC provided estimates for the monthly costs of consumables, maintenance, and power. Table 21-22 shows the costs in the first year where the processing throughput has yet to achieve 20,000 tpd. As a result, the unit cost for the first year is higher than the unit cost shown in Table 21-23, when the optimal throughput of 20,000 tpd is achieved.

Table 21-22 – Detail per month of processing cost without water cost – Year 1.

Description	Unit cost – first year		
	US$/month	US$/t	US$/oz
Manpower	254,632	0.71	**60.54**
Input and Reagents	660,919	1.84	**157.13**
Leaching	503,366	1.40	119.67
ADR Plant	43,679	0.12	10.38
Adm. & Services	113,874	0.32	27.07
Fuel	23,386	0.06	**5.56**
Fuel N° 2 (Desorption)	22,670	0.06	5.39
Fuel N° 2 (Smelter)	716	0.00	0.17
Power	241,817	0.67	**57.49**
Maintenance	30,000	0.08	**7.13**
Total per month year 1	**1,210,754**	**3.36**	**287.85**

Table 21-23 – Detail per month of processing cost without water cost – Year 2 to 17.

Description	Unit cost –year 2 to 17		
	US$/month	US$/t	US$/oz
Manpower	277,271	0.46	39.55
Input and Reagents	1,034,735	1.72	147.60
Leaching	841,009	1.40	119.97
ADR Plant	61,488	0.10	8.77
Adm. & Services	132,238	0.22	18.86
Fuel	40,925	0.07	5.84
Fuel N° 2 (Desorption)	39,672	0.07	5.66

Description	Unit cost –year 2 to 17		
	US$/month	US$/t	US$/oz
Fuel N° 2 (Smelter)	1,253	0.00	0.18
Power	571,376	0.95	81.51
Maintenance	30,000	0.05	4.28
Total per month year 2 to 17	**1,954,307**	**3.26**	**278.78**

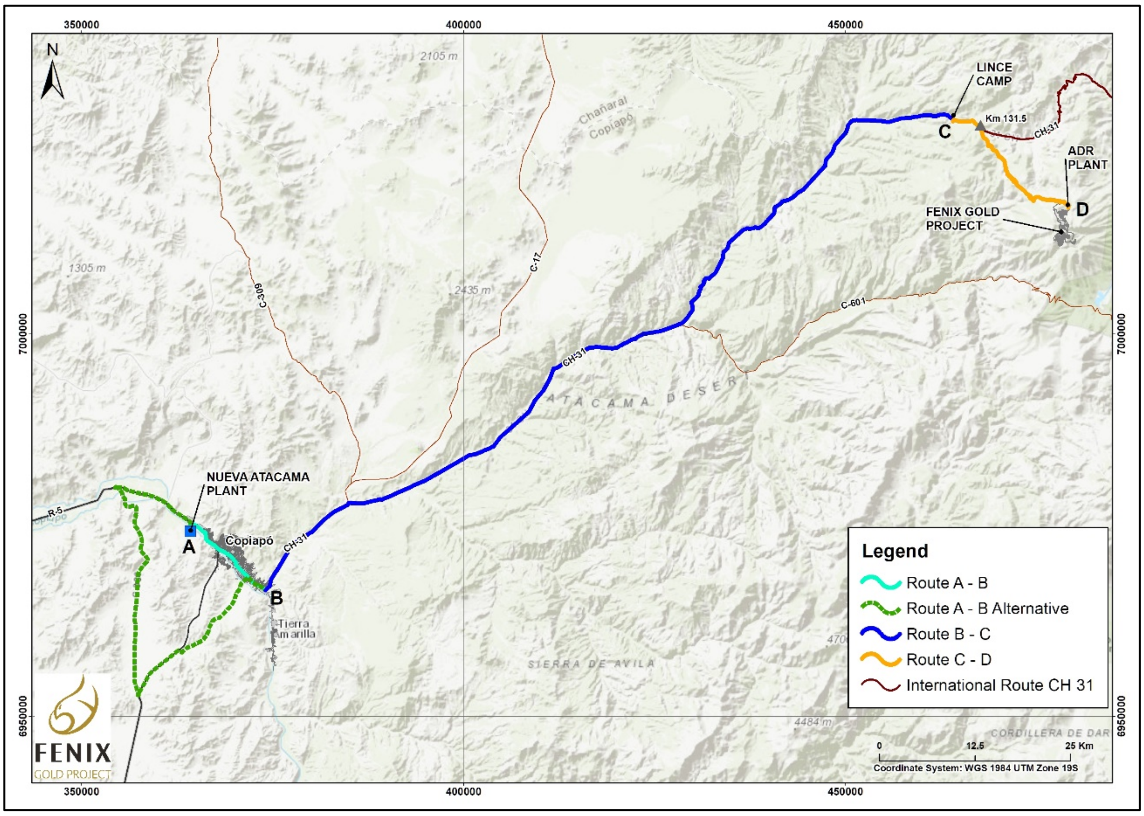
21.2.3.1 Water cost

The supply of raw water is critical for the Fenix Gold Project. An exclusive fleet of 8,000-gallon (30 m^3) water trucks, estimated by STRACON, was selected to haul water from Copiapó to the mine site.

The water requirement is based on:

- Water required for PAD: 1,800 m^3 per day.
- Water required for other purposes (dust control, project facilities, etc.): 200 m^3 per day.

Rio2 plans to use the 158 km public route from Copiapó to the Fenix Gold Project. The first segment "ROUTE A-B" is located in an urban zone within Copiapó. This is from Nueva Atacamas's treatment plant to Paipote and is 15 km long. Due to high traffic congestion during typical morning, noon, and evening hours, an alternative route called "ROUTE A-B High traffic alternative" will be used. For estimation purposes, only 3% of all trips would use this route. "ROUTE B – C covers the segment from Paipote to the Lince Camp. For the final 25 km segment, "ROUTE C - D", going from Lince Camp site to the project (See Figure 21-3), a dedicated group of onsite truck drivers will cycle the loaded trucks to the ADR plant for discharge and return to the camp. Operators that arrive at Lince Camp from Copiapó will return to Copiapó with empty water trucks. The reduces the exposure of the drivers to changes in altitude and fatigue.



Source: Rio2, 2023

Figure 21-3 –Water transport route segments from Nueva Atacama Treatment Plant to Fenix Gold Project

The total cycle from Copiapó to the Fenix Gold Project is seven hours and a total distance of 320 Km. 27 trucks will be required to transport water on the indicated routes. Table 21-24 shows the detailed water cost estimates.

The trucking estimate considers 3 trucks available to be filled and parked at strategic sites during peak traffic hours to be able to fill gaps in the cycle if required.

The calculation also considers 10 days a year when trucks cannot get to the project due to weather conditions. In this case the water will be discharged at Lince infrastructure site (using tanks from the existing plant infrastructure). Truck hours have been considered to rehandle this water to site when access is resumed.

Table 21-24 – Water cost estimates.

Description	Units	Value
Total direct cost	$M	168.33
Fuel Direct cost	$M	42.83
Total Indirect cost	$M	21.56
Fue Indirect cost	$M	0.57

Description	Units	Value
Total cost	$M	233.28
Direct Unit cost	US$/m^3	18.36
Indirect Unit cost	US$/m^3	1.92
Total Unit cost	US$/m^3	20.29
Fee*	%	10%
Sell price	US$/m^3	21.94
Water purchase	US$/m^3	1.00
Total	US$/m^3	22.94
Total Per ore Tonne processed	**$/t ore**	**2.30**

Notes:
(*) STRACON's fee is included but it does not apply to fuel costs.
Table 21-24 extracted from "Opex Open Pit and Water Haulage Cost Estimation for Feasibility Study".

21.2.4 General and Administrative Expenses

Rio2 developed estimates for administrative cost based on the number of operational personnel at site according to the mine plan. The number of personnel at site impacts the supply requirements for the camp, personal protective equipment, fuel, power, medical exams, auditing, vehicle administration and maintenance, personnel, and transport. Workers' salaries account for approximately 27% of administrative costs. Table 21-25 details estimated general and administrative costs by category over the life of mine. General and Administrative costs totalling less than 1% are included as other items. The unit cost of administrative expenses is 2.16 $/t ore.

Table 21-25 – Administrative costs.

Description	LOM Cost $M
Salaries	65.95
Food	35.28
Service Consulting, Audits and Outsourcing Collaboration	17.61
Contractor Service	15.81
Owner	15.66
Concessions	12.59
EPP´S	10.83
Social Cost	10.17
Municipal tax - licenses & Fees	7.26
Lince S.A (Holding Cost)	6.89
Buses	6.26
Accommodation and Laundry	5.41
IT (Software)	4.93
Materials	3.81
Truck Rental	3.62

Description	LOM Cost $M
Air Transport	3.59
Energy	2.95
Fuel	2.84
Lease and maintenance	2.53
Others	13.95
Total general	**247.95**

22 ECONOMIC ANALYSIS

Rio2 and Mining Plus developed the economic model using capital and operating cost inputs from Anddes, HLC, STRACON, and Rio2. The model was prepared following accepted engineering and financial principles and is accurate.

The economic analysis assumes the project will be 100% equity financed. All dollar amounts in this analysis are expressed in Q1 2023 US dollars, unless otherwise specified. Corporate sunk costs up to the start of construction, including expenses for exploration, pre-construction activities, technical studies, and permitting, are excluded from initial capital.

The economic analysis includes the first construction stage (ending month 14), one month of pre-production (month 13), and the subsequent production periods (approximately 17 years). The net present value (NPV) at a 5% discount rate is calculated from the start of project construction.

The financial evaluation presents the determination of the NPV, payback period (time in years to recapture the initial capital investment), and the internal rate of return (IRR) for the project. Annual cash flow projections were estimated over the life of the mine based on estimates of capital expenditures, production costs, and sales revenue. Revenues are based on gold production. The capital expenditure and site production cost estimates were developed specifically for this project and have been presented in earlier sections of this report.

22.1 After-Tax Financial Result

Based on the Cash Flow Model results, the Fenix Gold Project has an unlevered after-tax NPV@5% of $210.3 M, an after-tax IRR of 28.5%, a payback period of 2.8 years, and an annual average EBITDA of $44.1 M, at a long-term gold price of $1,750/oz. The key financial metrics of the Project are summarized in Table 22-1.

The cash cost calculation includes royalties, selling cost, mining cost, processing cost, and administrative costs. The AISC includes the cost of sustaining capital in addition to the above.

Table 22-1 – Summary of after-tax financial results.

Description	Units	Value
General		
Gold Price	US$/oz	1,750
Mine Life	Years	17
Total ore to heap Leach	Kt	114,653
Total Waste	Kt	97,102
Strip ratio		0.85
Production		

Description	Units	Value
Gold grade to heap leach	g/t	0.48
Gold recovery	%	74.6%
Total Ounces recovered	Koz	1,321.72
Total average Annual Production	Koz	81.94
Operating cost		
Royalty	US$/ oz au	1.02
Selling cost	US$/ oz au	10.00
Mining Costs	US$/mined	3.07
Processing Costs	US$/ore	5.53
G&A Costs	US$/ore	2.16
Cash cost	US$/ oz au	1,170.55
AISC	US$/ oz au	1,237.14
Capital cost		
Initial Capital	US$ M	116.57
Sustaining Capital	US$ M	76.92
Closure Cost	US$ M	11.10
Financials after taxes		
NPV @ 5%	US$ M	210.31
IRR @ 5%	%	28.54%
Payback	Years	2.75

22.2 Methods, Assumptions and Basis

The economic analysis was performed on the following assumptions and basis:

- The financial analysis was performed on Proven and Probable Mineral Reserves.
- The LOM NPV was determined on a pre-tax and after-tax basis.
- Annual cash flows used for NPV calculations are assumed to be realized at year-end.
- An exchange rate of 803.84 CLP (Chilean Pesos) = 1 USD (US Dollar) was assumed
- All costs and sales do not consider inflation or escalation factors.
- All gold sales are assumed to occur in the same period as produced.
- Details of capital and operating costs are provided in Chapter 21 of this report.
- Cash flows shown include payment of royalties and metal streaming agreements.
- Progressive and final closure costs are included in the period incurred.
- The financial analysis includes working capital.
- After-tax results and royalty payments were provided by Rio2. Mining Plus has not verified taxes.
- After-tax figures assume a tax rate of 27% applied to taxable mining profits.

22.3 Gold Price

The gold price used for the economic evaluation is 1,750 US$/oz. Due to updated metal price forecasts, this differs from the price used during the optimization process, developing the mine schedule, and declaring ore reserves. The metal prices used can be found in the sensitivity tables shown in Section 22.14.

22.4 Mine Production

Mine production was developed by Mining Plus and it is reported as ore high grade, ore low-grade, and waste from the mining operation. The annual production figures were obtained from the mine plan as reported in Section 16.6. A total of 114.7 Mt of ore is mined at an average grade of 0.48 g/t Au. A total of 97.1 Mt of waste is mined for a waste-ore stripping ratio of 0.85:1.

22.5 Plant Production

The gold production plan was estimated and provided by HLC. The process plant is designed based on the following criteria:

- 20,000 tpd ore production.
- 74.6 % gold recovery.
- Estimated life of mine gold production is 1.32 million ounces.

22.6 Revenue

Annual revenue is determined by applying the estimated gold prices to the annual payable metal estimated for each operating year (Table 22-2). Sale prices used for the entire life of mine production are not escalated or hedged. Revenue is the gross value of payable gold and the NSR (Net Smelter Return) revenue accounts for royalty and selling costs.

Table 22-2 – Revenue summary.

Description	LOM $M
Revenue	2,313.01
Royalty	1.35
Selling cost	13.22
NSR revenue	**2,298.44**

22.7 Total Operating Cost

The average total operating cost over the life of the mine is estimated at $13.49 per tonne of ore processed. A breakout of the operating cost is shown in Chapter 21.

22.7.1 Total Cash Cost

The average total cash cost over the life of the mine is estimated at $1,170.55 per ounce of payable gold. Total cash cost for the project is summarized in Table 22-3.

Table 22-3 – Total cash cost.

Description	$M	$/oz Au*
Mining	650.64	492.27
Processing	633.98	479.66
G&A	247.95	187.59
Selling Cost	13.22	10.00
Royalty	1.35	1.02
Total Operating Costs	**1,547.14**	**1,170.55**

(*) $/oz Gold payable

22.8 Selling Cost

The cost of gold sales used in the economic evaluation is $10/oz Au. This value was estimated and provided by Rio2.

22.9 Royalties

The royalty charged on mining activity in Chile depends on the level of production and is applied to taxable operating income. Taxable operating income is calculated by deducting the costs and expenses associated with annual sales from the sales revenue. Table 22-4 shows the ranges and marginal rates used in estimating the royalty based on a preliminary Chilean law which is in the final stages of approval at the finalization date of this study. The total royalty over the life of the mine is estimated at $1.35 million.

Table 22-4 – Royalty estimation.

Cu Eq – 000’t			Cu Eq – US$			Marginal	Royalty	Mining Tax Rate		Tax
From	To	Delta	From	To	Delta	Tax		From	To	
0	12	12	$0	$97,621	$97,621	0.00%				
12	15	3	$97,629	$122,026	$24,397	0.40%	0.08%	0%	35%	5.00%
15	20	5	$122,034	$162,701	$40,667	0.90%	0.28%	35%	40%	5.38%
20	25	5	$162,709	$203,376	$40,667	1.40%	0.51%	40%	45%	5.94%
25	30	5	$203,385	$244,052	$40,667	1.90%	0.74%	45%	50%	6.65%
30	35	5	$244,060	$284,727	$40,667	2.40%	0.98%	50%	55%	7.45%
35	40	5	$284,735	$325,402	$40,667	2.90%	1.22%	55%	60%	8.33%
40	50	10	$325,410	$406,753	$81,342	4.40%	1.85%	60%	65%	9.31%

22.10 Capital Expenditure

22.10.1 Initial Capital

The base case financial indicators were determined under the assumption of 100% equity financing for the initial capital. The total initial capital estimate for the project, which includes construction of infrastructure, owners’ costs, and contingencies, is $116.57 million. A breakout of the capital cost is shown in Chapter 21.

22.10.2 Sustaining Capital

Sustaining capital is estimated at $88.02 million and includes infrastructure maintenance, permanent truck shop, equipment demobilization, construction of phases 2, 3, and 4 of the Leach Pad, mine closure, and respective contingencies.

22.10.3 All In Sustaining Cost

The average all in sustaining cost over the life of the mine is estimated at $1,237.14 per ounce of payable gold.

22.11 Depreciation

Tax depreciation was calculated at an annual rate of 16.7%. The depreciation considers an initial balance of $28.7 million considering the investment in the pre-construction infrastructure built as described in the section 21.1.1.

22.12 Working Capital

Working capital for accounts receivable and accounts payable will vary over the mine life based on revenue, operating costs, and capital costs. The turnover rate is 60 days for accounts receivable and 60 days for accounts payable. Finished goods inventory turnover is 30 days. All the working capital is assumed to be recaptured by the end of the mine life and the closing value of the accounts is zero. First fills of consumables and other operating supplies are included in project capital. This cost was estimated by Rio2.

22.13 Taxes

According to Chilean regulations, the tax levied on income generated from the capital of mining companies corresponds to the "First Category Income Tax". As of 2019, a rate of 27% will be applicable.

22.14 Sensitivity Analysis

The most important model input is the gold price. To assess the sensitivity, six price scenarios were examined as illustrated in Figure 22-1.

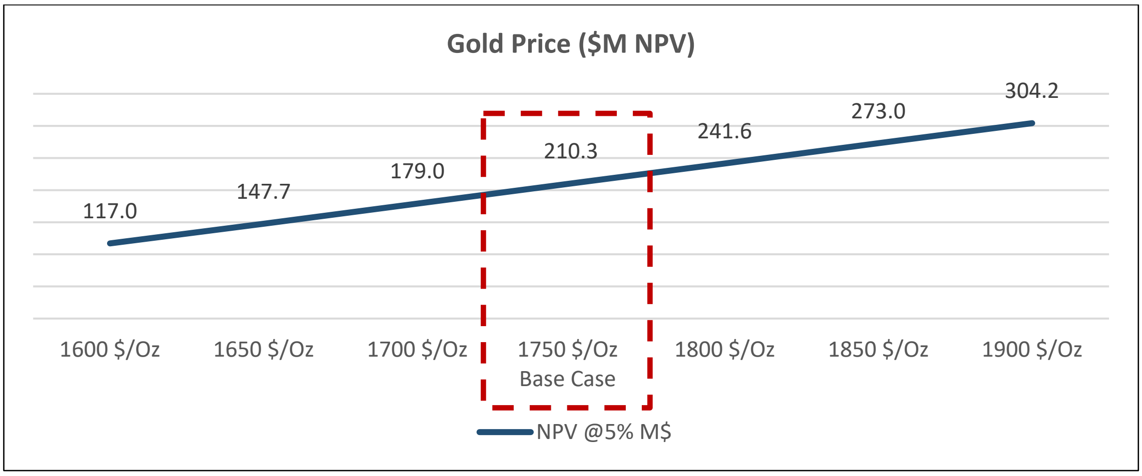


Figure 22-1 – Gold price sensitivity.

Four other parameters were considered for the sensitivity analysis: Capex, Opex, fuel cost, and discount rate (Figure 22-2 - Figure 22-5).

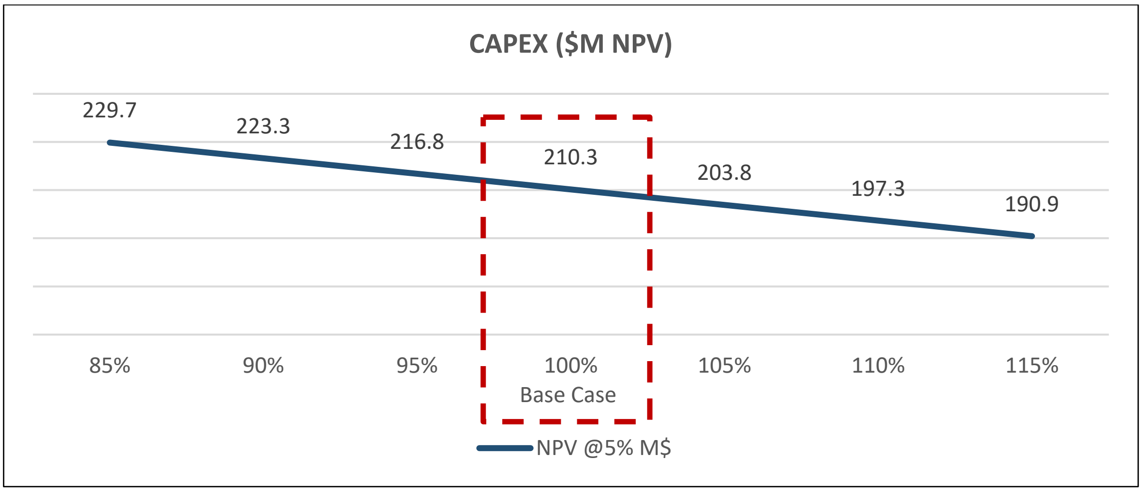


Figure 22-2 – Capex sensitivity.

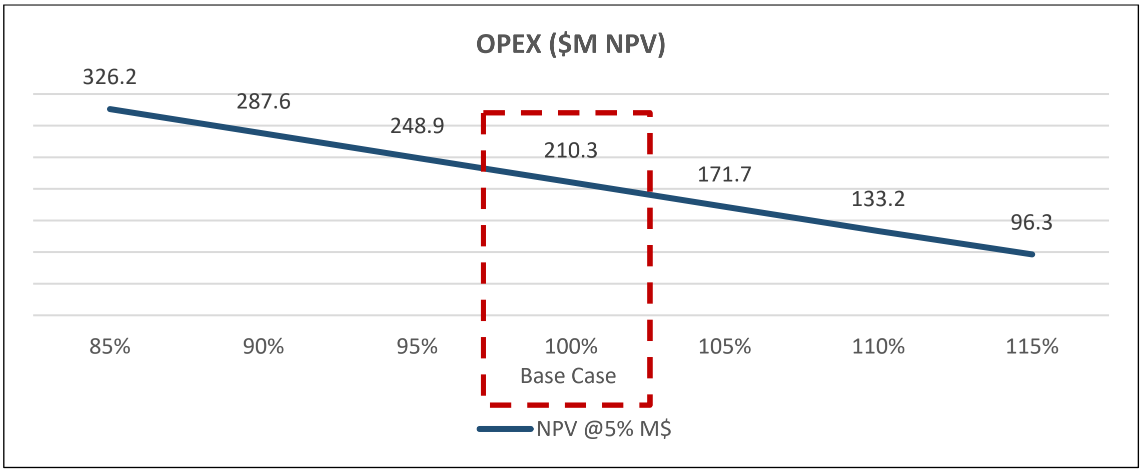


Figure 22-3 – Opex sensitivity.

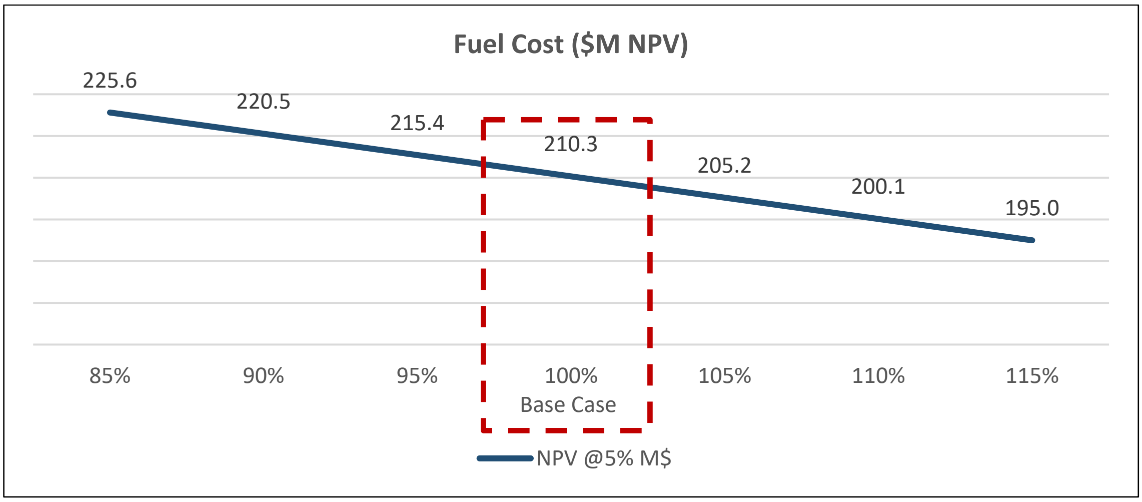


Figure 22-4 – Fuel cost sensitivity.

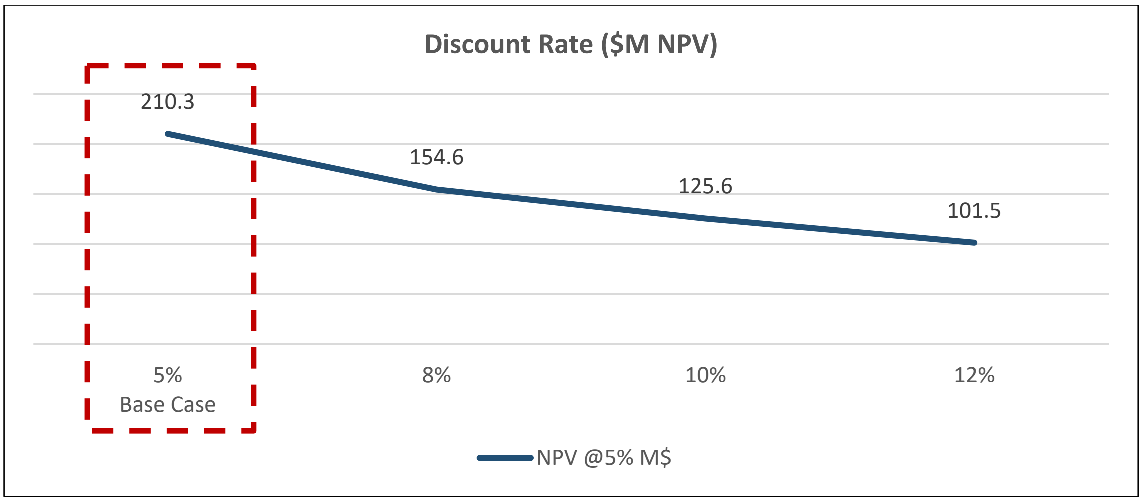


Figure 22-5 – Discount rate sensitivity.

The sensitivity analysis shows that the Fenix Gold Project is more sensitive to operating costs than to capital costs. If the capital cost is increased by 15%, the NPV would be reduced to $190.9M, while if the operating expenditure (Opex) is increased by the same percentage, the NPV would be reduced to $96.3M.

A summary of the annual and cumulative cash flow balance is presented in Figure 22-6. The cumulative payback over the 17-year life of the mine amounts to $353M.

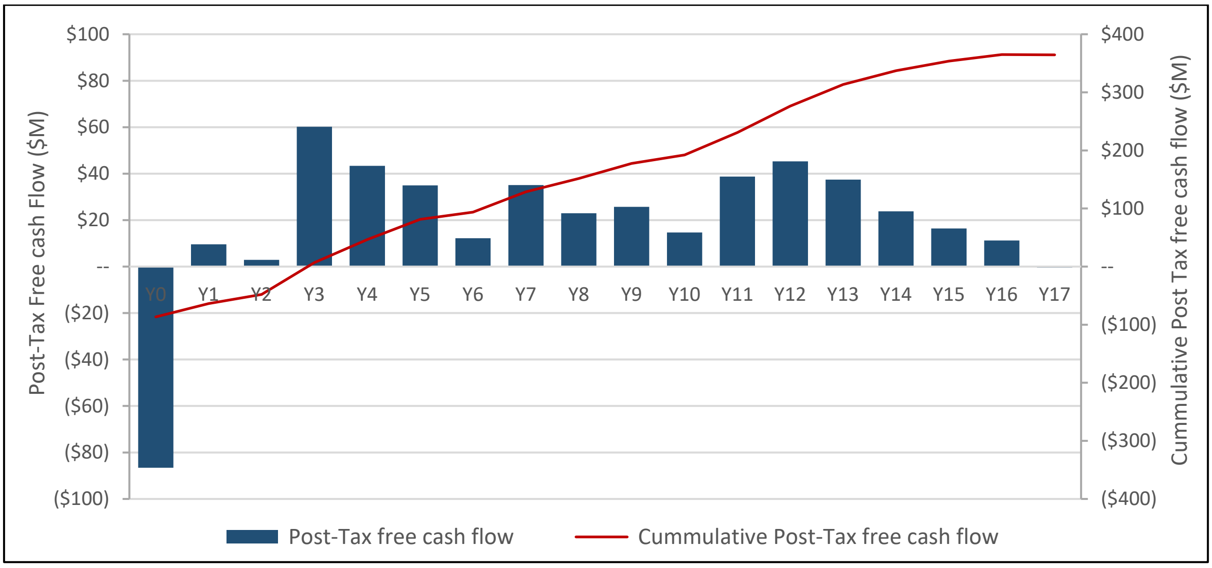


Figure 22-6 – Cash Flow profile.

The annual production schedule and estimated cash flow forecast for the Fenix Gold Project is shown in Table 22-5. The presentation is on a 100% Fenix Gold Project ownership basis.

Table 22-5 – Fenix cash flow by year.

Year End December 31		Total /Average	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17
MINING SCHEDULE																				
Ore mined (Ore direct to pad)	(000's Tonnes)	81,160		4,276	7,300	7,300	7,320	7,300	7,300	7,300	7,320	7,300	7,300	7,077	4,067	-	-	-	-	-
Head grade Au - mined	(g/t)	0.55		0.67	0.64	0.61	0.54	0.52	0.51	0.54	0.46	0.53	0.54	0.52	0.64	-	-	-	-	-
Ore to Stockpile	(000's Tonnes)	33,493		1,549	3,097	4,644	4,541	3,407	3,211	3,101	4,238	2,717	1,481	1,172	335	-	-	-	-	-
Head grade Au - Ore to stockpile	(g/t)	0.31		0.34	0.31	0.34	0.31	0.31	0.30	0.30	0.30	0.30	0.28	0.28	0.28	-	-	-	-	-
Reclaimed Ore from Medium stockpile	(000's Tonnes)	33,493		104	-	-	-	-	-	-	-	-	-	223	3,253	7,300	7,300	7,300	7,320	693
Head grade Au - From stockpile	(g/t)	0.31		0.38	-	-	-	-	-	-	-	-	-	0.34	0.34	0.33	0.33	0.28	0.28	0.28
Waste Mined	(000's Tonnes)	97,102		4,496	8,365	7,556	8,139	9,493	9,689	9,399	9,442	10,683	11,842	6,055	1,942					
Strip Ratio	(Waste: Ore)	0.85		0.77	0.80	0.63	0.69	0.89	0.92	0.90	0.82	1.07	1.35	0.73	0.44					
Total Mined	(000's Tonnes)	211,755		10,321	18,762	19,500	20,000	20,200	20,200	19,800	21,000	20,700	20,623	14,305	6,344	-	-	-	-	-
Total Moved	(000's Tonnes)	245,248		10,425	18,762	19,500	20,000	20,200	20,200	19,800	21,000	20,700	20,623	14,527	9,597	7,300	7,300	7,300	7,320	693
PROCESS SCHEDULE																				
Tonnes ore to the leach pad	(000's Tonnes)	114,653		4,380	7,300	7,300	7,320	7,300	7,300	7,300	7,320	7,300	7,300	7,300	7,320	7,300	7,300	7,300	7,320	693
Head grade Au	(g/t)	0.48		0.66	0.64	0.61	0.54	0.52	0.51	0.54	0.46	0.53	0.54	0.51	0.51	0.33	0.33	0.28	0.28	0.28
PROCESS SCHEDULE FOR DEPRECIATION																				
Tonnes ore to the leach pad	(000's Tonnes)	114,142		3,869	7,300	7,300	7,320	7,300	7,300	7,300	7,320	7,300	7,300	7,300	7,320	7,300	7,300	7,300	7,320	693
Tonnes ore to the leach pad	(000's Tonnes)	114,142		3,869	7,300	7,300	7,320	7,300	7,300	7,300	7,320	7,300	7,300	7,300	7,320	7,300	7,300	7,300	7,320	693
Gold Extraction in Heap Leach	(000's oz)	1,331		62.67	110.16	107.16	95.79	90.67	90.88	93.74	82.51	92.02	94.29	91.06	89.74	63.20	57.76	49.93	48.63	10.84
Recovery in ADR plant	%	0.99																		
Gold production in ADR plant	(000's oz)	1,322		62.23	109.39	106.41	95.12	90.04	90.24	93.08	81.93	91.38	93.63	90.42	89.11	62.75	57.35	49.58	48.29	10.77
REVENUE																				
Gold price		1,750		$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750
Gold Payable Rate		100.0%																		
Glod payable	(000's oz)	1,322		62.2	109.4	106.4	95.1	90.0	90.2	93.1	81.9	91.4	93.6	90.4	89.1	62.8	57.4	49.6	48.3	10.8
Total Revenue	**(US$MM)**	**$2,313.0**		**$108.9**	**$191.4**	**$186.2**	**$166.5**	**$157.6**	**$157.9**	**$162.9**	**$143.4**	**$159.9**	**$163.8**	**$158.2**	**$155.9**	**$109.8**	**$100.4**	**$86.8**	**$84.5**	**$18.8**
ROYALTY																				
Cu price		$1.4		$3.7	$3.7	$3.7	$3.7	$3.7	$3.7	$3.7	$3.7	$3.7	$3.7	$3.7	$3.7	$3.7	$3.7	$3.7	$3.7	$3.7
Government Royalty	(US$MM)	$1.4		$0.0	$0.3	$0.2	$0.1	$0.1	$0.1	$0.1	$0.0	$0.1	$0.1	$0.1	$0.2	$0.0	$0.0	--	--	--
Total Royalty	**(US$MM)**	**$1.4**		**$0.0**	**$0.3**	**$0.2**	**$0.1**	**$0.1**	**$0.1**	**$0.1**	**$0.0**	**$0.1**	**$0.1**	**$0.1**	**$0.2**	**$0.0**	**$0.0**	**--**	**--**	**--**
SELLING COST																				
Refining, Transportation	(US$MM)	$13.2		$0.6	$1.1	$1.1	$1.0	$0.9	$0.9	$0.9	$0.8	$0.9	$0.9	$0.9	$0.9	$0.6	$0.6	$0.5	$0.5	$0.1
Gold Sales	**(US$MM)**	**$13.2**		**$0.6**	**$1.1**	**$1.1**	**$1.0**	**$0.9**	**$0.9**	**$0.9**	**$0.8**	**$0.9**	**$0.9**	**$0.9**	**$0.9**	**$0.6**	**$0.6**	**$0.5**	**$0.5**	**$0.1**
NSR REVENUE																				
Gross Revenue	(US$MM)	$2,313		$108.9	$191.4	$186.2	$166.5	$157.6	$157.9	$162.9	$143.4	$159.9	$163.8	$158.2	$155.9	$109.8	$100.4	$86.8	$84.5	$18.8
Refining, Transportation & Royalty	(US$MM)	$15		$0.6	$1.4	$1.3	$1.1	$1.0	$1.0	$1.0	$0.8	$1.0	$1.1	$1.0	$1.1	$0.6	$0.6	$0.5	$0.5	$0.1
NSR Revenue	**(US$MM)**	**$2,298**		**$108.3**	**$190.1**	**$184.9**	**$165.4**	**$156.6**	**$157.0**	**$161.9**	**$142.5**	**$158.9**	**$162.8**	**$157.2**	**$154.9**	**$109.2**	**$99.8**	**$86.3**	**$84.0**	**$18.7**

Year End December 31		Total /Average	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17
STREAM COST																				
Stream	(US$MM)	$111		$5.4	$9.4	$9.2	$8.2	$7.8	$7.8	$8.0	$6.7	$7.5	$7.7	$7.4	$7.3	$5.1	$4.7	$4.1	$4.0	$0.9
Total Stream Costs		**$111**		**$5.4**	**$9.4**	**$9.2**	**$8.2**	**$7.8**	**$7.8**	**$8.0**	**$6.7**	**$7.5**	**$7.7**	**$7.4**	**$7.3**	**$5.1**	**$4.7**	**$4.1**	**$4.0**	**$0.9**
Net Revenue	**(US$MM)**	**$2,187**		**$102.9**	**$180.6**	**$175.8**	**$157.2**	**$148.9**	**$149.2**	**$153.9**	**$135.8**	**$151.4**	**$155.1**	**$149.8**	**$147.6**	**$104.0**	**$95.1**	**$82.2**	**$80.1**	**$17.9**
OPERATING COST																				
Mining Costs																				
Excluding Diesel																				
Ore mined (Ore direct to pad)	(US$MM)	$199.2		$10.7	$17.3	$17.8	$17.8	$18.8	$18.4	$18.3	$17.2	$16.8	$17.1	$16.8	$12.1	--	--	--	--	--
Ore to Stockpile	(US$MM)	$67.8		$3.4	$6.3	$9.7	$9.8	$7.6	$6.6	$6.1	$7.6	$4.9	$2.7	$2.3	$0.9	--	--	--	--	--
Reclaimed Ore from stockpile	(US$MM)	$38.4		$0.1	--	--	--	--	--	--	--	--	--	$0.1	$2.5	$9.2	$8.6	$8.3	$8.4	$1.0
Waste	(US$MM)	$163.2		$7.5	$13.1	$13.2	$13.4	$14.7	$15.9	$16.4	$16.6	$18.6	$19.6	$10.3	$3.9	--	--	--	--	--
Diesel Fuel Consumption	(US$MM)	$101.8		$4.8	$8.2	$8.8	$8.9	$8.8	$8.8	$8.8	$8.9	$8.6	$8.5	$6.3	$4.0	$2.2	$2.1	$2.0	$2.1	$0.2
Administration	(US$MM)	$63.9		$3.6	$4.4	$4.4	$4.5	$4.4	$4.4	$4.5	$4.4	$4.4	$4.5	$4.4	$4.2	$2.8	$2.8	$2.8	$2.8	$0.4
Blast Holes (works assays)	(US$MM)	$16.4		$0.8	$1.5	$1.6	$1.6	$1.5	$1.5	$1.5	$1.6	$1.5	$1.4	$1.2	$0.5	--	--	--	--	--
Total Mining Costs	**(US$MM)**	**$650.6**		**$31.0**	**$50.82**	**$55.4**	**$56.1**	**$55.8**	**$55.7**	**$55.6**	**$56.3**	**$54.9**	**$53.8**	**$41.4**	**$28.1**	**$14.2**	**$13.5**	**$13.1**	**$13.2**	**$1.7**
Processing Costs																				
Manpower	(US$MM)	$51.6		$2.7	$3.3	$3.3	$3.3	$3.3	$3.3	$3.3	$3.3	$3.3	$3.3	$3.3	$3.3	$3.2	$3.2	$3.2	$3.2	$0.3
Input and Reagents																				
Leaching	(US$MM)	$160.4		$5.8	$10.2	$10.2	$10.3	$10.2	$10.2	$10.2	$10.3	$10.2	$10.2	$10.2	$10.3	$10.2	$10.2	$10.2	$10.3	$1.0
ADR Plant	(US$MM)	$11.8		$0.5	$0.7	$0.7	$0.8	$0.7	$0.7	$0.7	$0.8	$0.7	$0.7	$0.7	$0.8	$0.7	$0.7	$0.7	$0.8	$0.1
Adm. & Services	(US$MM)	$25.6		$1.3	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$0.2
Energy (Maintenance and Repairs)	(US$MM)	$13.2		$0.4	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	$0.1
Maintenance	(US$MM)	$5.9		$0.3	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.0
Water Cost	(US$MM)	$263.1		$10.7	$16.8	$16.8	$16.8	$16.7	$16.7	$16.7	$16.7	$16.7	$16.7	$16.7	$16.7	$16.7	$16.7	$16.7	$16.7	$2.0
Diesel Fuel Consumption	(US$MM)	$102.4		$2.7	$6.6	$6.6	$6.6	$6.6	$6.6	$6.6	$6.6	$6.6	$6.6	$6.6	$6.6	$6.6	$6.6	$6.6	$6.6	$0.6
Total Processing Costs	**(US$MM)**	**$634.0**		**$24.5**	**$40.43**	**$40.4**	**$40.5**	**$40.3**	**$40.3**	**$40.3**	**$40.4**	**$40.3**	**$40.3**	**$40.3**	**$40.4**	**$40.3**	**$40.3**	**$40.3**	**$40.3**	**$4.2**
G&A, Social cost and other																				
G&A	(US$MM)	$215.2		$12.4	$14.9	$14.2	$14.4	$14.3	$14.6	$14.2	$14.3	$14.2	$14.5	$13.8	$13.6	$12.9	$10.2	$10.1	$10.1	$2.5
Social Cost	(US$MM)	$10.2		$0.7	$1.3	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.7
Lince S.A (Holding Cost)	(US$MM)	$6.9		$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.3	$0.3	$0.3
Owner cost	(US$MM)	$15.7		$1.0	$1.4	$1.0	$1.0	$0.9	$0.9	$0.9	$0.9	$0.9	$0.9	$0.9	$0.9	$0.9	$0.9	$0.9	$0.9	$0.2
Total G&A Costs	**(US$MM)**	**$247.95**		**$14.6**	**$17.95**	**$16.2**	**$16.3**	**$16.2**	**$16.5**	**$16.1**	**$16.2**	**$16.1**	**$16.4**	**$15.7**	**$15.5**	**$14.8**	**$12.0**	**$11.9**	**$11.9**	**$3.7**
Total Operating Costs																				
Mining	(US$MM)	$650.6		$31.0	$50.8	$55.4	$56.1	$55.8	$55.7	$55.6	$56.3	$54.9	$53.8	$41.4	$28.1	$14.2	$13.5	$13.1	$13.2	$1.7
Processing	(US$MM)	$634.0		$24.5	$40.4	$40.4	$40.5	$40.3	$40.3	$40.3	$40.4	$40.3	$40.3	$40.3	$40.4	$40.3	$40.3	$40.3	$40.3	$4.2
G&A	(US$MM)	$247.9		$14.6	$17.9	$16.2	$16.3	$16.2	$16.5	$16.1	$16.2	$16.1	$16.4	$15.7	$15.5	$14.8	$12.0	$11.9	$11.9	$3.7
Selling Cost	(US$MM)	$13.2		$0.6	$1.1	$1.1	$1.0	$0.9	$0.9	$0.9	$0.8	$0.9	$0.9	$0.9	$0.9	$0.6	$0.6	$0.5	$0.5	$0.1
Royalty	(US$MM)	$1.4		$0.0	$0.3	$0.2	$0.1	$0.1	$0.1	$0.1	$0.0	$0.1	$0.1	$0.1	$0.2	$0.0	$0.0	--	--	--
Total Operating Costs	**(US$MM)**	**$1,547.1**		**$70.7**	**$110.6**	**$113.3**	**$114.0**	**$113.3**	**$113.5**	**$113.1**	**$113.8**	**$112.2**	**$111.6**	**$98.5**	**$85.1**	**$69.9**	**$66.3**	**$65.7**	**$66.0**	**$9.6**
Cash Costs Per Ounce	**(US$/oz)**	**1,170.5**		**1,135.7**	**1,010.8**	**1,064.7**	**1,198.1**	**1,258.2**	**1,257.4**	**1,214.7**	**1,389.3**	**1,228.3**	**1,192.2**	**1,089.3**	**954.9**	**1,114.0**	**1,156.3**	**1,325.3**	**1,366.1**	**894.9**

Year End December 31		Total /Average	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17
INITIAL CAPITAL																				
Owners Costs	(US$MM)	$15.0	$13.1	$1.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mine Capex	(US$MM)	$3.8	$0.6	$3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Process Capex	(US$MM)	$43.6	$38.9	$4.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Construction and facilities	(US$MM)	$46.9	$44.2	$2.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Contingency	(US$MM)	$7.2	--	$7.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Initial Capital Expenditures	**(US$MM)**	**$116.6**	**$96.8**	**$19.7**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
SUSTAINING CAPITAL																				
Mine closure	(US$MM)	$11.1		$0.0	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	--	--	$10.2
Mine Capex	(US$MM)	$15.5		--	$14.8	$0.0	$0.0	--	$0.2	--	$0.0	$0.0	$0.2	$0.1	$0.1	--	$0.0	--	$0.0	$0.1
Process Capex	(US$MM)	$22.9		--	$6.6	--	--	--	$8.0	--	--	--	$8.2	--	--	--	--	--	--	--
Construction and facilities	(US$MM)	$30.0		--	$15.4	$0.0	$0.0	--	$8.6	--	$0.0	$0.0	$5.9	$0.0	$0.0	--	$0.0	--	$0.0	$0.0
Contingency	(US$MM)	$8.6		--	$3.0	$0.0	$0.0	$0.0	$1.8	$0.0	$0.0	$0.0	$1.5	$0.0	$0.0	$0.0	$0.0	--	--	$2.0
Total sustaining capital	**(US$MM)**	**$88.0**		**$0.0**	**$39.9**	**$0.0**	**$0.1**	**$0.1**	**$18.7**	**$0.1**	**$0.1**	**$0.1**	**$15.9**	**$0.2**	**$0.2**	**$0.1**	**$0.1**	**--**	**$0.0**	**$12.3**
AISC Cash Costs Per Ounce	**(US$/oz)**	**1,237**		**1,136**	**1,376**	**1,065**	**1,199**	**1,259**	**1,465**	**1,215**	**1,390**	**1,230**	**1,362**	**1,092**	**957**	**1,116**	**1,158**	**1,325**	**1,367**	**2,038**
DEPRECIATION SCHEDULE																				
Opening balance	(US$MM)	$28.7	$28.7	$125.6	$140.4	$168.4	$156.5	$144.5	$132.6	$137.7	$124.2	$110.6	$97.0	$97.1	$81.3	$65.5	$49.6	$33.7	$17.6	$1.5
Additions	(US$MM)	$204.6	$96.8	$19.7	$39.9	$0.0	$0.1	$0.1	$18.7	$0.1	$0.1	$0.1	$15.9	$0.2	$0.2	$0.1	$0.1	--	$0.0	$12.3
Depreciation	(US$MM)	($233.3)	--	($4.9)	($11.9)	($11.9)	($12.0)	($11.9)	($13.6)	($13.6)	($13.7)	($13.7)	($15.9)	($15.9)	($16.0)	($16.0)	($16.1)	($16.1)	($16.1)	($13.8)
Closing balance	(US$MM)	--	$125.6	$140.4	$168.4	$156.5	$144.5	$132.6	$137.7	$124.2	$110.6	$97.0	$97.1	$81.3	$65.5	$49.6	$33.7	$17.6	$1.5	--
TAXES																				
Corporate Taxes																				
Revenue	(US$MM)	$2,313.0		$108.9	$191.4	$186.2	$166.5	$157.6	$157.9	$162.9	$143.4	$159.9	$163.8	$158.2	$155.9	$109.8	$100.4	$86.8	$84.5	$18.8
Operating Costs	(US$MM)	($1,547.1)		($70.7)	($110.6)	($113.3)	($114.0)	($113.3)	($113.5)	($113.1)	($113.8)	($112.2)	($111.6)	($98.5)	($85.1)	($69.9)	($66.3)	($65.7)	($66.0)	($9.6)
Stream	(US$MM)	($111.0)		($5.4)	($9.4)	($9.2)	($8.2)	($7.8)	($7.8)	($8.0)	($6.7)	($7.5)	($7.7)	($7.4)	($7.3)	($5.1)	($4.7)	($4.1)	($4.0)	($0.9)
Stream - Deferred Revenue	(US$MM)	$50.0		$5.4	$9.4	$9.2	$8.2	$7.8	$7.8	$2.4	--	--	--	--	--	--	--	--	--	--
EBITDA	(US$MM)	$704.9		$38.2	$80.9	$72.9	$52.5	$44.3	$44.5	$44.2	$22.8	$40.2	$44.6	$52.3	$63.5	$34.8	$29.4	$17.0	$14.6	$8.3
Depreciation	(US$MM)	($233.3)		($4.9)	($11.9)	($11.9)	($12.0)	($11.9)	($13.6)	($13.6)	($13.7)	($13.7)	($15.9)	($15.9)	($16.0)	($16.0)	($16.1)	($16.1)	($16.1)	($13.8)
EBIT	(US$MM)	$471.6		$33.3	$68.9	$61.0	$40.5	$32.3	$30.8	$30.5	$9.2	$26.5	$28.6	$36.4	$47.5	$18.8	$13.3	$0.9	($1.5)	($5.5)
EBIT	(US$MM)	$471.6		$33.3	$68.9	$61.0	$40.5	$32.3	$30.8	$30.5	$9.2	$26.5	$28.6	$36.4	$47.5	$18.8	$13.3	$0.9	($1.5)	($5.5)
Add: Book Depreciation	(US$MM)	$233.3		$4.9	$11.9	$11.9	$12.0	$11.9	$13.6	$13.6	$13.7	$13.7	$15.9	$15.9	$16.0	$16.0	$16.1	$16.1	$16.1	$13.8
Less: Tax Depreciation	(US$MM)	($233.3)		($20.2)	($28.6)	($30.9)	($30.9)	($30.9)	($34.0)	($13.8)	($5.4)	($3.2)	($5.8)	($5.9)	($2.8)	($2.8)	($2.8)	($2.8)	($0.1)	($2.5)
Less: NOL Used	(US$MM)	($26.5)		($18.0)	($8.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Less: Senior debt interest	(US$MM)	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Taxable Income	(US$MM)	$445.1		--	$43.8	$42.1	$21.6	$13.4	$10.4	$30.3	$17.4	$37.0	$38.7	$46.5	$60.8	$32.0	$26.6	$14.2	$14.5	$5.8
Tax Rate	(%)			27.0%	27.0%	27.0%	27.0%	27.0%	27.0%	27.0%	27.0%	27.0%	27.0%	27.0%	27.0%	27.0%	27.0%	27.0%	27.0%	27.0%
Estimated Taxes Payable	(US$MM)	$120.2		--	$11.8	$11.4	$5.8	$3.6	$2.8	$8.2	$4.7	$10.0	$10.5	$12.5	$16.4	$8.6	$7.2	$3.8	$3.9	$1.6
Total taxes	**(US$MM)**	**$120.2**		**--**	**$11.8**	**$11.4**	**$5.8**	**$3.6**	**$2.8**	**$8.2**	**$4.7**	**$10.0**	**$10.5**	**$12.5**	**$16.4**	**$8.6**	**$7.2**	**$3.8**	**$3.9**	**$1.6**

Year End December 31		Total /Average	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17
NOL SCHEDULE																				
Beginning Balance	(US$MM)	$26.5	$26.5	$26.5	$8.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Add: NOL Created	(US$MM)	$9.9		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Less: NOL Used	(US$MM)	($26.5)		($18.0)	($8.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ending Balance	(US$MM)	$9.9	$26.5	$8.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WORKING CAPITAL ADJUSTMENT																				
Accounts Receivable - 60 days	(US$MM)	$380.2	--	$17.9	$31.5	$30.6	$27.4	$25.9	$26.0	$26.8	$23.6	$26.3	$26.9	$26.0	$25.6	$18.1	$16.5	$14.3	$13.9	$3.1
Inventory 30 days	(US$MM)	$190.1	--	$9.0	$15.7	$15.3	$13.7	$13.0	$13.0	$13.4	$11.8	$13.1	$13.5	$13.0	$12.8	$9.0	$8.2	$7.1	$6.9	$1.5
Accounts Payable 60 days	(US$MM)	$254.3	--	$11.6	$18.2	$18.6	$18.7	$18.6	$18.7	$18.6	$18.7	$18.5	$18.3	$16.2	$14.0	$11.5	$10.9	$10.8	$10.8	$1.6
Total Net Working Capital	**(US$MM)**	**$316.0**	**--**	**$15.2**	**$29.0**	**$27.3**	**$22.3**	**$20.2**	**$20.3**	**$21.6**	**$16.6**	**$21.0**	**$22.1**	**$22.8**	**$24.5**	**$15.6**	**$13.8**	**$10.6**	**$10.0**	**$3.1**
Change in Net Working Capital			**--**	**$15.2**	**$13.8**	**($1.7)**	**($5.0)**	**($2.1)**	**$0.1**	**$1.3**	**($4.9)**	**$4.3**	**$1.1**	**$0.8**	**$1.6**	**($8.9)**	**($1.7)**	**($3.3)**	**($0.6)**	**($6.9)**
UNLEVERED FREE CASH FLOW																				
EBIT	(US$MM)	$471.6	--	$33.3	$68.9	$61.0	$40.5	$32.3	$30.8	$30.5	$9.2	$26.5	$28.6	$36.4	$47.5	$18.8	$13.3	$0.9	($1.5)	($5.5)
Change in Net Working Capital	(US$MM)	--	--	($15.2)	($13.8)	$1.7	$5.0	$2.1	($0.1)	($1.3)	$4.9	($4.3)	($1.1)	($0.8)	($1.6)	$8.9	$1.7	$3.3	$0.6	$6.9
Book depreciation	(US$MM)	$233.3	--	$4.9	$11.9	$11.9	$12.0	$11.9	$13.6	$13.6	$13.7	$13.7	$15.9	$15.9	$16.0	$16.0	$16.1	$16.1	$16.1	$13.8
Stream - Deferred Revenue	(US$MM)	($50.0)	--	($5.4)	($9.4)	($9.2)	($8.2)	($7.8)	($7.8)	($2.4)	--	--	--	--	--	--	--	--	--	--
Taxes	(US$MM)	($120.2)	--	--	($11.8)	($11.4)	($5.8)	($3.6)	($2.8)	($8.2)	($4.7)	($10.0)	($10.5)	($12.5)	($16.4)	($8.6)	($7.2)	($3.8)	($3.9)	($1.6)
Capital expenditures	(US$MM)	($204.6)	($96.8)	($19.7)	($39.9)	($0.0)	($0.1)	($0.1)	($18.7)	($0.1)	($0.1)	($0.1)	($15.9)	($0.2)	($0.2)	($0.1)	($0.1)	--	($0.0)	($12.3)
Stream Proceeds	(US$MM)	$25.0	$25.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chilean VAT	(US$MM)	($1.9)	($14.7)	$11.7	($3.1)	$6.1	($0.0)	($0.0)	($2.8)	$2.9	($0.0)	($0.0)	($2.4)	($0.0)	($0.0)	$2.5	($0.0)	--	($0.0)	($1.9)
Unlevered free cash flow	**(US$MM)**	**$353.2**	**($86.6)**	**$9.6**	**$2.9**	**$60.2**	**$43.4**	**$34.9**	**$12.2**	**$35.1**	**$23.0**	**$25.7**	**$14.7**	**$38.8**	**$45.3**	**$37.4**	**$23.8**	**$16.4**	**$11.2**	**($0.5)**

After-tax NPV @ 0%	**(US$MM)**	**$353.2**
After-tax NPV @ 5%	**(US$MM)**	**$210.3**
After-tax IRR	**(%)**	**28.5%**
Payback	**(Years)**	**2.8**

Before -tax NPV @ 0%	**(US$MM)**	**$475.3**
Before -tax NPV @ 5%	**(US$MM)**	**$292.6**
Pre-tax IRR	**(%)**	**37.2%**

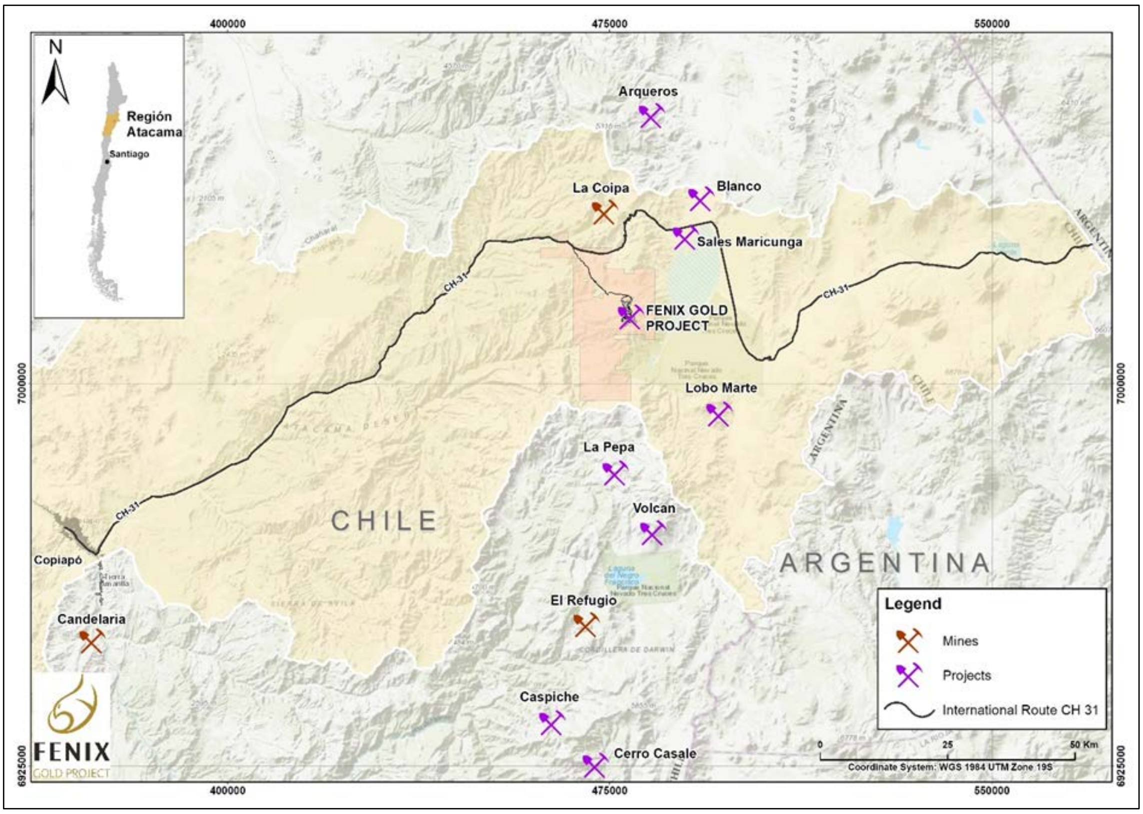
23 ADJACENT PROPERTIES

Figure 23-1 shows the locations of other projects that are adjacent to the Fenix Gold Project.

The Fenix Gold Project is centred at latitude 27°0'7.00"S and longitude 69°12'58.00"W. It is in the Maricunga Belt, which is a metallogenic belt located east of Copiapó, Chile, with a length of 200 km and oriented in the NNE-SSW direction. This belt hosts significant gold deposits classified as porphyry gold, epithermal gold typically of a high sulphidation type.

The Fenix Gold project is located approximately 20 km south of Kinross Gold's La Coipa Au-Ag mine (resumed operations 2022), and 60 km north of Kinross's Maricunga (Refugio) Gold Mine (currently on residual leaching). Other important projects in the area are Lobo Marte (Kinross Gold - Mantos de Oro, currently in elaboration of an EIA), La Pepa (Mineros Chile, Yamana y Minera Cavancha), Volcan (Minera Hochschild), and Caspiche and Cerro Casale (Norte Abierto).

With the recent Lithium boom, the Salar de Maricunga has become an important deposit where three projects are being currently being developed: "Proyecto Blanco", owned by Minera Salar Blanco; "Producción Sales de Maricunga", owned by SIMCO SpA, and an exploration project "Salar de Maricunga"owned by Codelco.



Source: Rio2, 2023

Figure 23-1 – Adjacent properties.

24 OTHER RELEVANT DATA AND INFORMATION

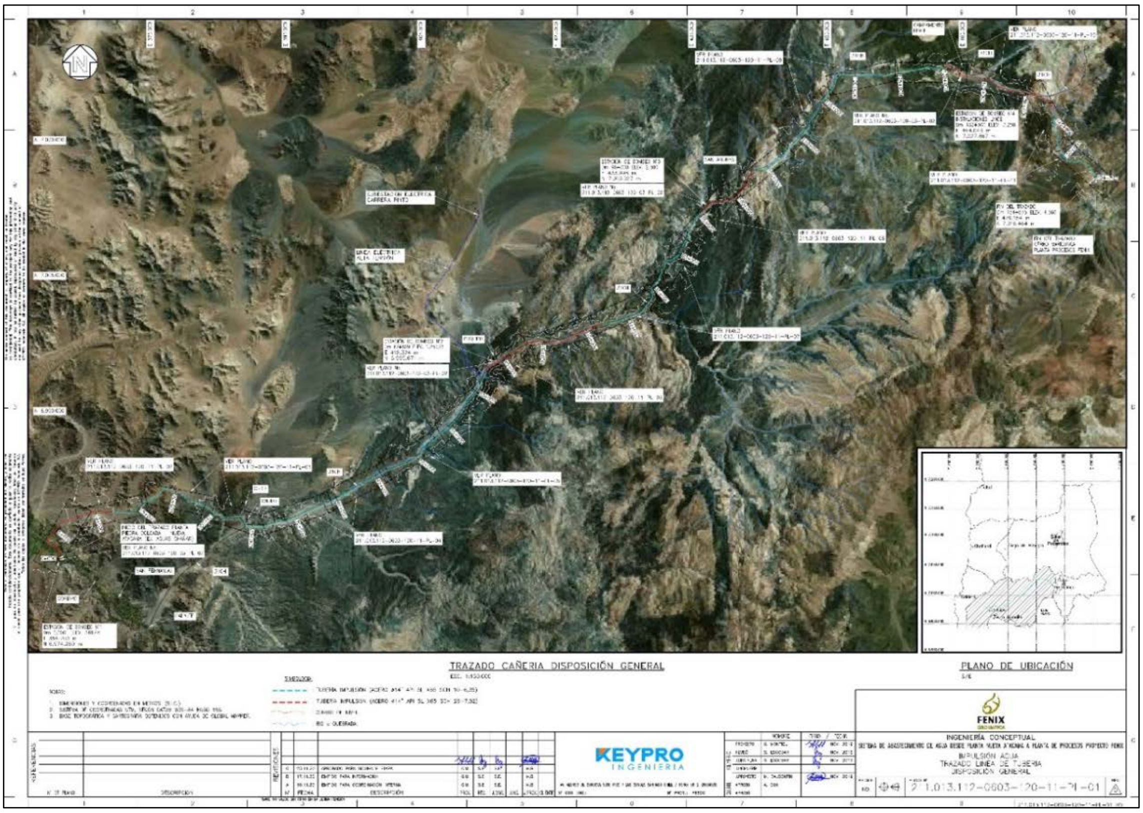
The Fenix Gold Project as described in the feasibility study is water constrained. Rio2 recognise that trucking water to the project is not an optimal water solution. Currently, it is the only viable solution to a short term start up for the project, which will generate cash-flow and enough time to identify and implement the best solution for water supply to the Project.

With respect to a future expansion of the Fenix Gold Project from 20,000 tpd to 80,000-100,000 tpd mineral throughput, the project will require a water pipeline to bring water to the project. Some options include continental water from boreholes and desalinated water from the Chilean coast. The use of continental water in Chile is increasingly difficult and unlikely to be a realistic solution.

In 2021, Rio2 completed a cost study with KEYPRO Engineering to construct a pipeline from the Nueva Atacama water treatment plant to the project. The study is called the "Conceptual Engineering for a water supply system from the Nueva Atacama Plant to the process plant - Fenix Gold - Final report ". This study evaluated delivering 100 l/s to the project, via a pipeline and impulsion system from Copiapó. Main power for the expanded project was also evaluated in parallel with the pipeline to site. The power grid connection considered Substation Carrera Pinto as the point of connection. This study considered the use of retreated wastewater from the Nueva Atacama plant, however with the arrival of desalinized water to Copiapó via the ECONSSA Pipeline in late 2021, or potentially from the upcoming ENAPAC desalinization plant and distribution system project, desalinated water will be a viable option. Re-treated wastewater as contracted currently costs \$1.0/m^3. The price of desalinated water from potential suppliers mentioned is believed to be around is \$3.0/m^3 in Copiapó.

The study estimated a Capex cost of \$213M (plus and additional \$43M contingency) and a 59-month or 1,775-day project timeline. An Opex of \$2.39/m^3 was estimated by KEYPRO to deliver water to the project. The Pipeline route considered in the study is demonstrated in Figure 24-1.

The case presented in this feasibility study for the resource calculation considers the expanded project using this pipeline scenario. In the resource model, the Opex was adjusted for inflation.



Source: KEYPRO, 2021

Figure 24-1 – Pipeline from the Nueva Atacama water treatment plant to the Fenix Gold project.

A second alternative is the ENAPAC (Pacific Energies and Waters) Project now being driven by AGUASOL and belonging to the Israeli company SOLAER. The project has two approved EIA studies to build:

1. A desalinization plant with incorporated solar farm that pumps to a reservoir near Lundin's Candelaria mine site near Copiapó.
2. A Northen distribution line that extends to Inca del Oro.

A third EIA is currently in the evaluation process for an eastern line that passes through the Fenix Gold Project and the Maricunga belt to the South through the Lobo Marte and Maricunga projects.

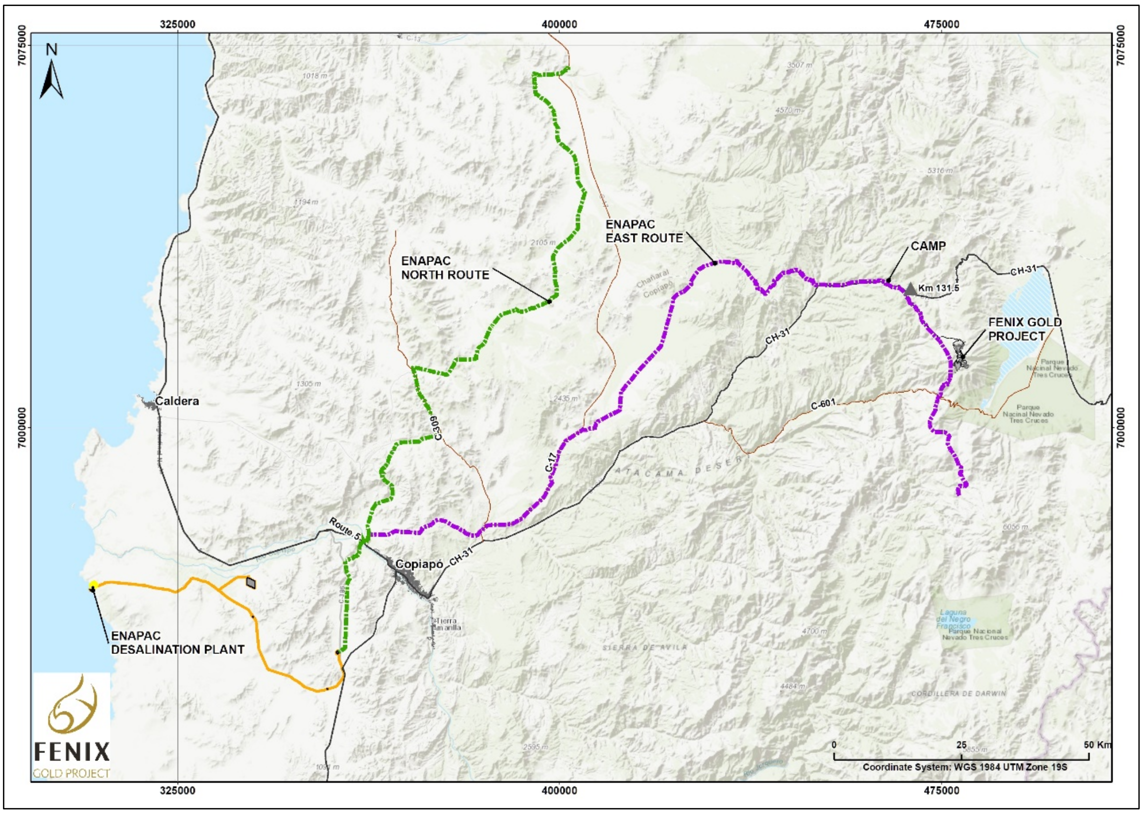
SOLAER in in the process of financing this project and expects to start construction in the second half of 2024. Commissioning is planned for Q4 2026.

Rio2 believes in this is the most viable option for the Fenix Gold Project as it would deliver pipeline desalinated water to the project in line with timeline estimates for a) permitting an expanded project (2 years) and b) gives the smaller mining fleet adequate time to generate working areas to be able to introduce larger machinery.

Source information:

- ENAPAC desalination plant proposes a solution to the challenges of the mining and agricultural industries of Atacama – Revista Digital Minera REDIMIN (eseuro.com).
- Planta desaladora ENAPAC propone solución a desafíos de las industrias minera y agrícola de Atacama – Diario Chañarcillo (chanarcillo.cl).

The Project is illustrated in Figure 24-2.



Source: Rio2, 2023

Figure 24-2 – Plan of the ENAPAC project.

Fenix Gold has also identified opportunities to incorporate mains power into the project.

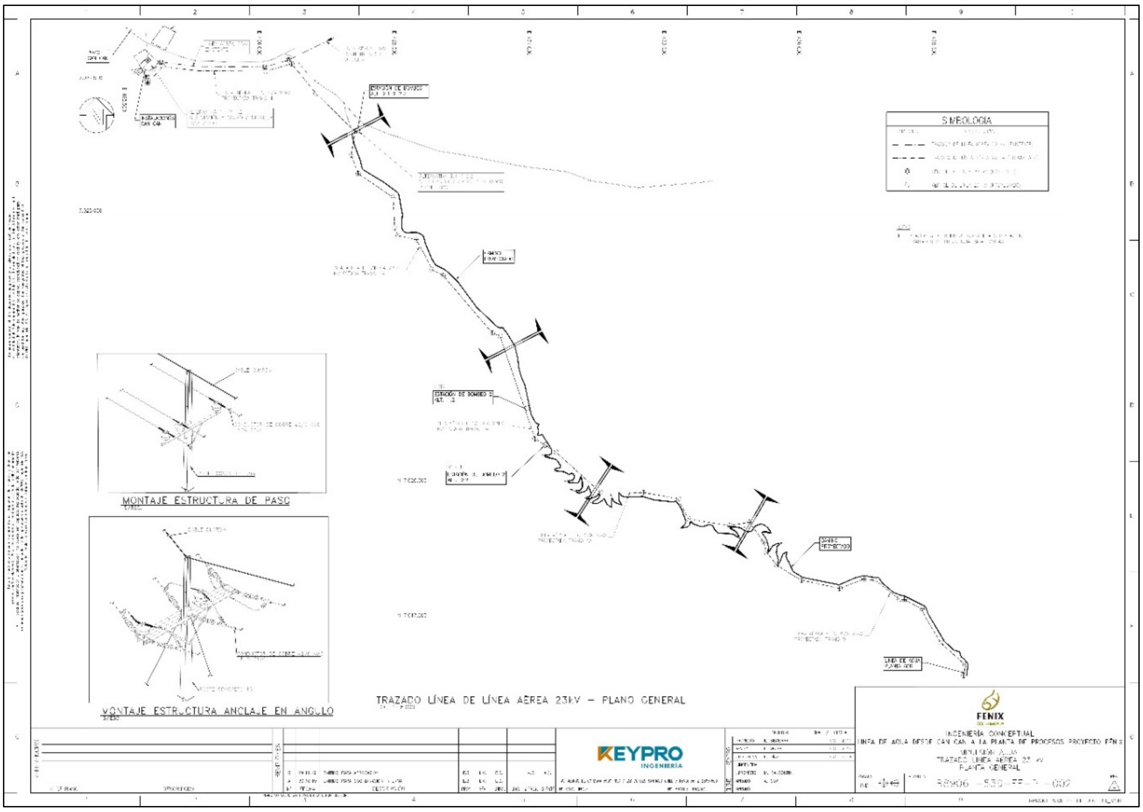
The purchase of infrastructure from Minera Paso San Francisco, also known as Can (now renamed as Lince SA), gives the Fenix Gold Project access to 2.0 MW of installed energy. When the EIA was submitted for evaluation, this infrastructure did not belong to Rio2, and therefore could not be included in the EIA study. There is an important economic benefit of building this transmission line and connecting the project to the national grid, it is considered as a priority once construction begins, to start work towards permitting this line as an improvement.

Energy costs for generation on site evaluated in this feasibility is estimated at $0.302/kWh.

The estimated average power consumption for the project (excluding the camp) is 1,852,681 kwh/month, or $558k/month. Currently, Lince SA, where the camp is located, is paying $0.122/kwh with Guacolda Energy (as of the last April 2023 bill). The monthly saving for the project by connecting to grid power is estimated at approximately $333k.

In 2020, the Fenix Gold Project participated in a study with KEYPRO Engineering called the "Fenix Gold – Conceptual engineering analysis of Opex alternatives for electricity generation (R890061-33-GG-INF-010 R0)", which included pricing for the construction of a 23 kV transmission line with transformers from Lince camp to the project, this capital cost was estimated at $4.35M, with an annual maintenance cost of $241K.

The powerline connection route used in the study is shown in Figure 24-3.



Source: KEYPRO, 2020

Figure 24-3 – 23 KV transmission line with transformers from Lince camp to the project.

24.1 Project Execution Plan

This section summarizes the "Fenix Gold Project execution plan for the construction stage". The master plan considers that mobilization and the incorporation of key people and contractors begins as soon as the EIA is approved. At the time of publication, the Committee of Ministers hearing date has not been fixed but is expected to be Q3 2023.

The project execution plan details the activities to be completed once the EIA is approved, it was updated to include long lead time items already purchased, contracts that are in suspension, and the infrastructure and early works already completed.

In the initial phase prior the EIA rejection, Rio2 completed the detailed engineering, the purchase of critical path items, and some early works to ensure the project will be able to meet the milestones outlined in the project execution plan during the construction phase. These were:

- The construction of a new camp with 565 beds at the Lince site for both construction workers then operators, improvements to the existing access, construction of a new access to the plant site, and some preliminary platforms.
- The purchase and acquisition of long lead time items, like electrical switch rooms (3), Pumps for the ADR plant (3), heat exchangers (5), and a vibrating screen (1) for the separation of fine carbon.
- All the structures and cladding for the ADR plant building, including the foundry and the offices, were prefabricated or purchased. This included the support structures for the preparation of reactive agents, adsorption and desorption columns and tanks, and electrowinning. 52 prefabricated concrete foundation blocks were also fabricated. These components and materials are stored at the Lince infrastructure site.
- The Fenix Gold Project has maintained key personnel for the construction phase but the alliance contract with STRACON for the earthworks, operation of the mine, and water trucking has been halted but remains active. This ensures a quick restart with the site earthworks once the EIA is approved. The contract with HLC for the assembly and commissioning of the plant and associated infrastructure is complete and will be signed upon recommencement of construction. Both STRACON & HLC were mobilized for the work completed to date and a restart will utilize the experience gained in this earlier process. The water contract with Nueva Atacama was renegotiated to a minimum holding cost, with construction and mining supply periods triggered by the EIA approval (RCA), rather than specific dates.
- The total value of Capital Works and assets already executed towards Fenix Gold Is $28.7 million. See Table 24-1.

Table 24-1 – Capital works and assets executed.

Description	$M
ADR Plant	10.2
Camp Infrastructure	9.1
Leach pad	2.5
Temporal Services: offices y temporal workshop	1.1
Earthworks	3.0
Roading	2.3
Water infrastructure supply	0.5
Total	**28.7**

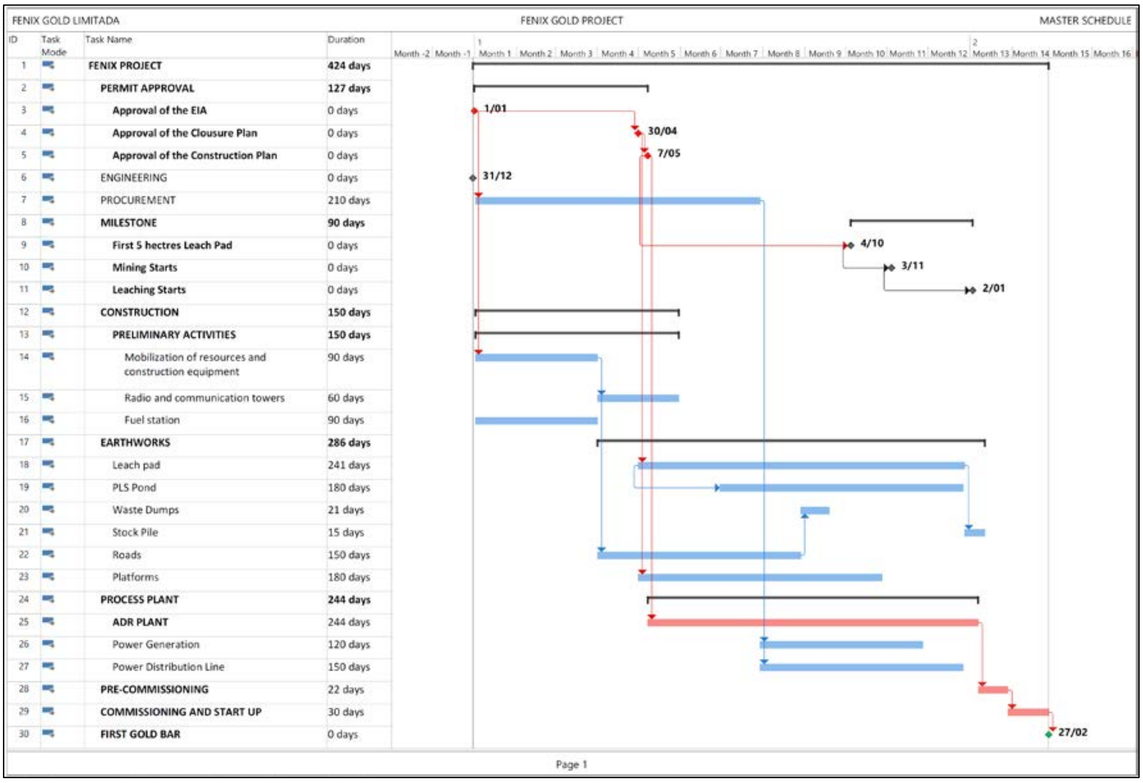
This 2023 feasibility study was updated to include the removal of the crusher from the construction phase (not from the EIA), inclusion of the updated metallurgical test work including pilot ROM pad, the final detailed engineering, as well as work and purchases executed to date. The following milestones for the project will be:

- Approval of the EIA in the Ministers Committee, which is expected in Q3 2023.
- Completion of the regional permits required by Sernageomin (Mining), SAG (Agricultural service), CONAF (National Parks and Forests), MINSAL (Health), and the DGA (water authority).
- Securing the financing required for construction.
- Restart tender process for the acquisition of the project power generators.
- Reactivate or sign the contract with the principal alliance contractors, STRACON, HLC, and Anddes to ensure their early mobilization.

Details of the milestones are shown in Table 24-2 and Figure 24-4.

Table 24-2 – Milestone Fenix Gold Project – Stage construction.

Description	Day	Months
Permit Approval		
Approval of the EIA	1	M1
Approval of the Closure Plan	120	M4
Approval of the Construction Plan	127	M4
Construction		
ADR Plant – Start Construction	128	M4
First 5 hectares Leach Pad	270	M9
Operations		
Mining Starts	300	M10
Leaching Starts	390	M13
First Gold Bar	424	M14



Source: Rio2, 2023

Figure 24-4 – Milestone events schedule.

24.2 Exploration Potential

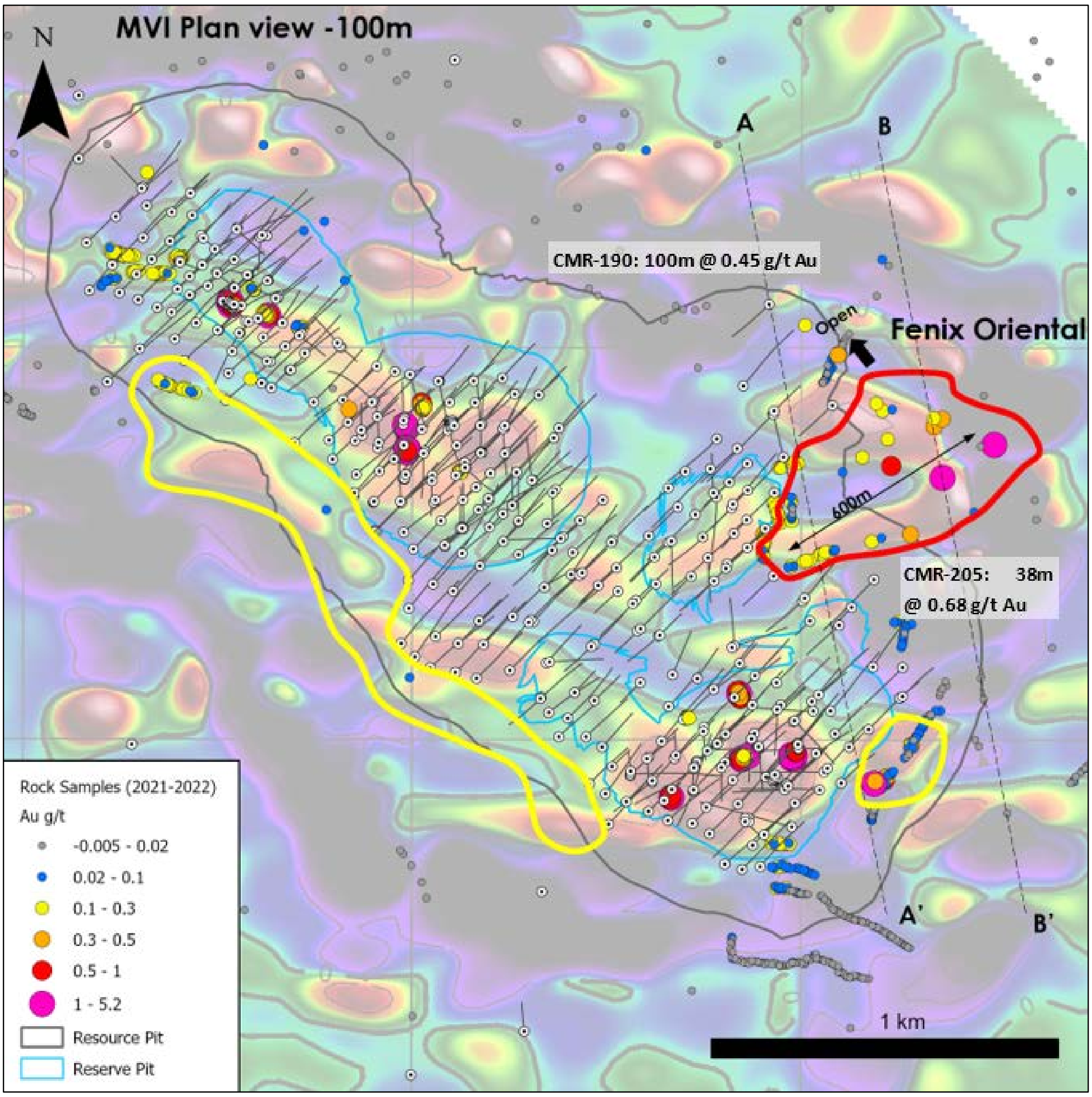
During the 2021-2022 period, geological mapping, sampling, and surface geochemical work was carried, out covering the entire Fenix area and the border of the pit that could result in future exploration potential for the project.

In 2021, Quantec Geoscience were asked to reprocess the historical DCIP-Pole Dipole and Terrestrial magnetic (GMAG) data acquired from previous geophysical campaigns carried out between 1998 and 2013 by Atacama Pacific Gold and other companies.

Around 840 km of terrestrial magnetic data was reprocessed on N-S lines spaced 100 m apart. A set of maps was generated showing the Magnetic Vector Inversion (MVI) magnetic anomalies that correlate to the subvolcanic rocks and breccias with magnetite, which are associated with the gold mineralization of the deposit.

24.2.1 Fenix Oriental

Fenix Oriental corresponds to a gold anomaly in an area of 600 x 300 meters to the East of the resource pit. Undrilled, and covered by colluvium in 95% of the area, this location has potential near surface mineralization (as shown in Figure 24-5), and rock sampling from float and sub-outcrops returned gold anomalies over 0.1 g/t up to 5.16 g/t Au in veins and breccia lithologies (Figure 24-6). The surface samples coincide with the magnetic anomaly shown in Figure 24-5 below.



Source: Rio2, 2023

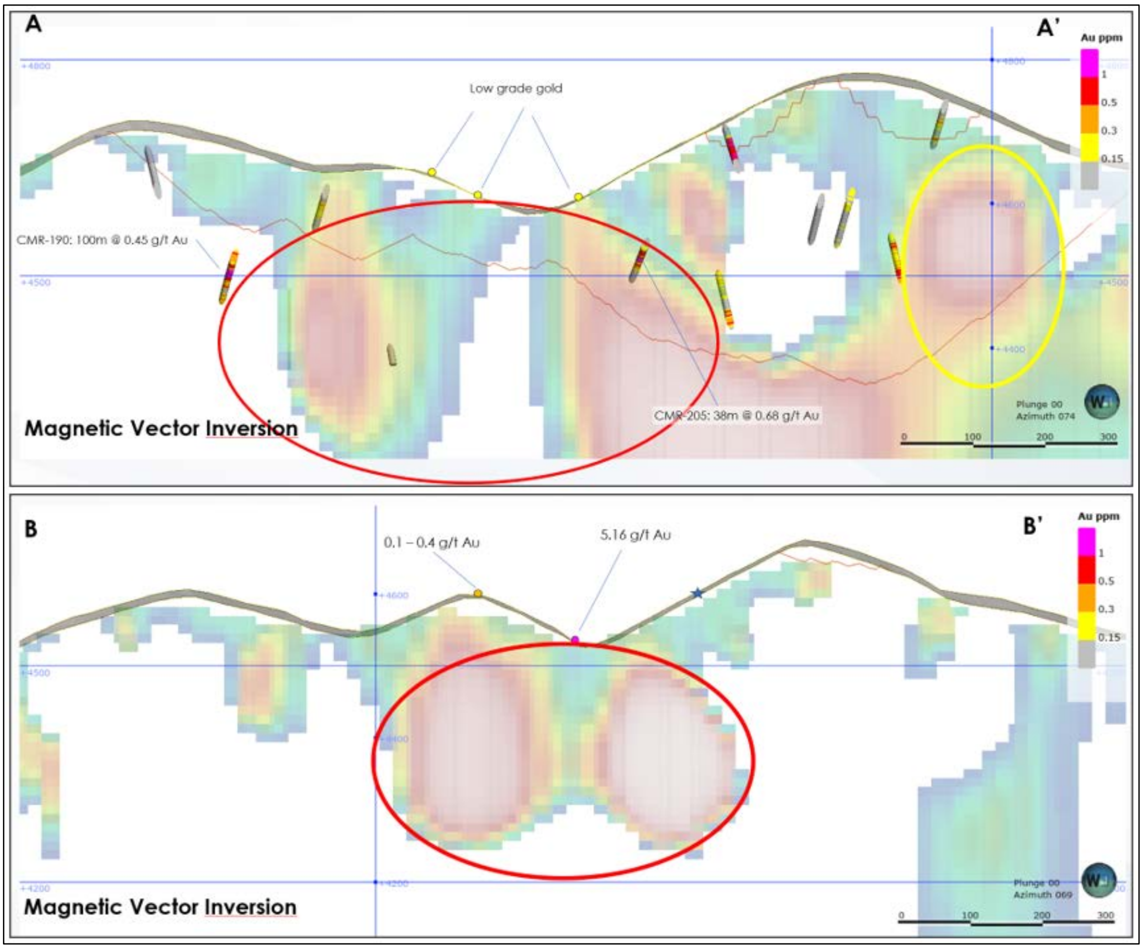
Figure 24-5 – Geochemical and Geophysical anomaly map showing the anomalies at the Fenix Oriente (red) and Fenix Resource pit border 2019 (yellow).

Source: Rio2, 2023

Figure 24-6 – Fenix Oriente: Quartz banded sheeted veins. Float sample 1.6 g/t Au (left) and 5.16 g/t Au (right).

Nearby drill holes (CMR-190 and CMR-205), with gold intercepts, extend the mineralization potential to the north and possibly open to the south (Figure 24-5).

Cross sections show sampled low-grade gold mineralization in surface sampling channels near magnetic anomalies (section A-A’, Figure 24-7). Section B-B’ (Figure 24-7) shows undrilled targets with potential for shallow, high-grade gold mineralization close to magnetic anomalies.



Source: Rio2, 2023

Figure 24-7 – Geophysical and Geochemical cross section of Fenix Oriente (red) and Fenix resources pit border2019 anomalies (yellow).

24.2.2 Resource Pit Border

Geophysical magnetic anomalies (Magnetic Vector Inversion) can be seen on the western and southern border of the resource pit. The anomalies correlate with low-grade gold mineralization at the surface (in yellow Figure 24-5) in sub-volcanics and breccias. The pit border in the southern sector is open and mineralization could extend to the southeast of this pit. This prospective target is not drilled.

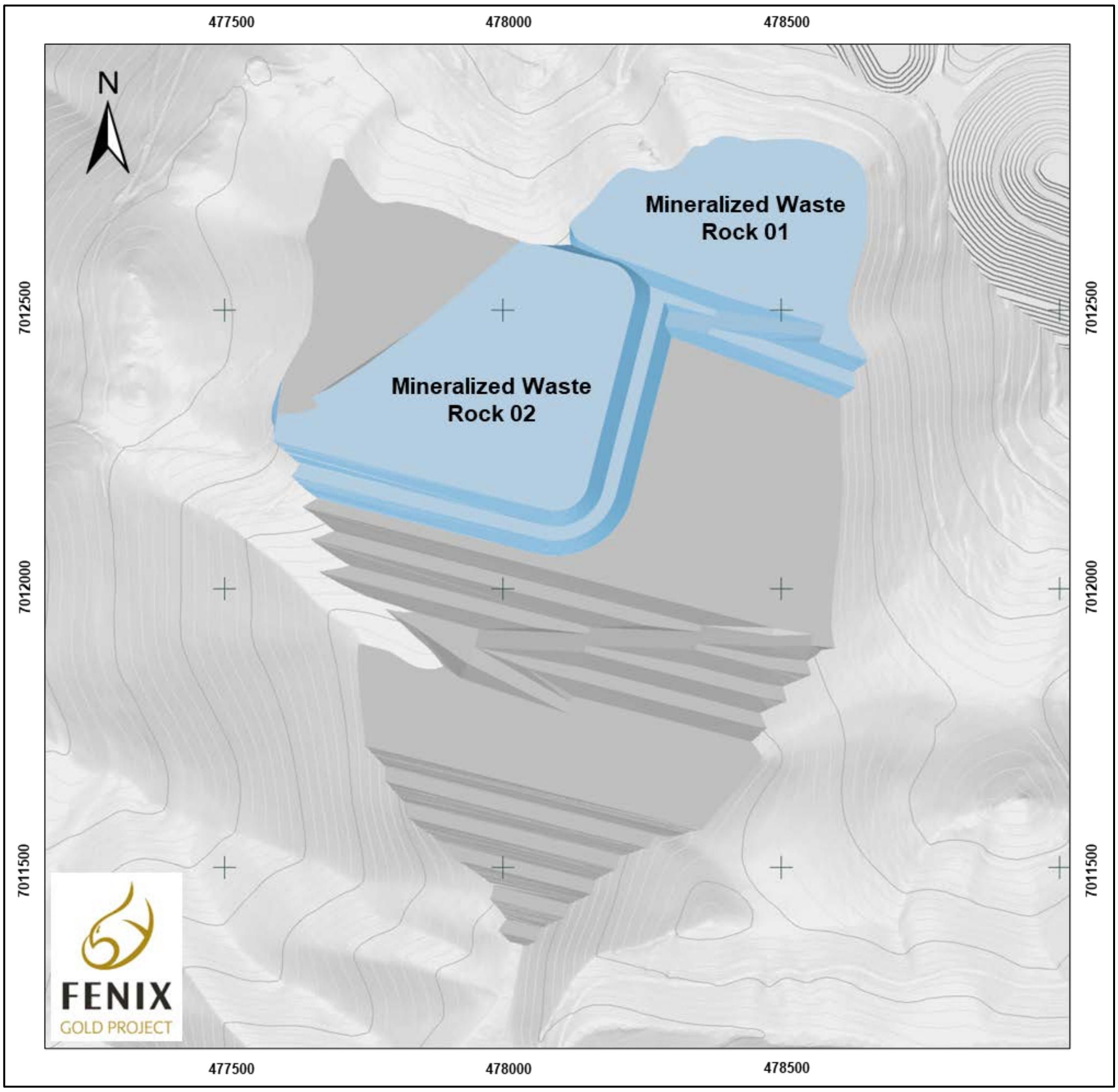
24.3 Mineralized Waste Rock

Mineralized waste rock was defined in the mine schedule as a future opportunity if metal prices allow for lower grades than defined in Chapter 16 to be processed.

Measured and Indicated material with cut-off above 0.18 g/t Au and less than 0.235 g/t within the Reserves Pit was used to define mineralized waste rock material for a total of 9.5 Mt at an average grade of 0.21 g/t Au.

This mineralized waste material in considered as waste material in the mine schedule and subsequent cost model; however, the waste dump sequencing strategy includes two areas to receive the this defined mineralized waste rock during the LOM where it will be accessible in the future if deemed economic. This material provides no material value to this FS study and its economical value and viability has not been included in this study.

The two areas to store the mineralized waste rock were designed as part of the waste dump and included in the corresponding stability analysis shown in Section 16.9. Figure 24-8 shows the assigned areas to storage the 9.5 Mt of mineralized waste material.



Source: Rio2, 2023

Figure 24-8 – Storage Area for Mineralized Waste Rock

24.4 Risk Analysis 2022 – Construction Stage

Rio2 commissioned Anddes to conduct the study "Engineering for EIA and Detailed Engineering of the PAD and Landfill Stage 1" of the Fenix Gold Project. A risk workshop was held as part of the scope of this study.

The risk workshop was held on December 9th, 2021, with the objective of evaluating the engineering, procurement and construction risks of the project, the workshop was conducted by a multidisciplinary team composed of professionals from the Fenix Gold Project, STRACON, HLC, and Anddes.

The detailed engineering evaluated the following areas:

- Heap Leaching - Stage 1.
- Tailings impoundment - Stage 1.
- PLS Pool.
- Ore Stockpile - Stage 1.
- Camp
- ADR Plant.
- Main, auxiliary, and operation access.
- Construction yard.
- Mine workshop.

The risk analysis identified the main risks that could occur during the construction of the different areas mentioned above. The study report was conducted using the Project Management Institute PMI project risk management methodology.

The purpose of the risk analysis and review was to identify risky situations, assess the severity of possible risk impacts, and provide the necessary subsidies to enable the implementation of mitigating measures to reduce and control risks.

24.4.1 Management of Identified Risks

24.4.1.1 Risk management planning

For risk management planning, the approaches, tools, and data sources used to carry out the risk management were first defined. Table 24-3 details the methodology to be followed for each risk planning process.

Table 24-3 – Methodology for risk management planning.

Process	Activities	Tools	Information sources
Risk Management Planning	Determine how to plan risk management.	Risk Management Plan forms and meetings.	Assets of the organization's processes. Fenix standards.
Identify Risks	Perform risk identification.	Brainstorming, checklist, risk register format.	Assets of the organization's processes. Fenix standards.
Perform qualitative analysis	Perform qualitative risk analysis.	Expert judgment, risk categorization, probability and impact matrix, qualitative analysis format.	Organizational process assets, risk management template.
Perform quantitative analysis	Perform quantitative risk analysis.	Quantitative analysis format. Monte Carlo simulation.	Organizational process assets, risk management template.
Plan Risk Response	Perform risk response planning.	Expert judgment, risk response plan format.	Project documents, organizational process assets, risk management template.
Risk Monitoring and Control	Take action to control the project. Measure performance against baseline. Determine variances and determine if a change request is appropriate. Influence drivers of change. Perform risk audits. Manage reserves.	Expert judgment, risk response plan format. Risk control meetings, risk control report format.	Project documents, organizational process assets, risk management templates.

Source: Anddes, Risk Analysis Report 1901.30.09-90-000-2230-00-ITE-001, 2022.

24.4.1.2 Definition of probability and impact of risks

Based on the basic risk formula (Risk = Impact x Probability), the definitions of probability and impact used to quantify the risks are shown in Table 24-4 and Table 24-5, respectively.

Table 24-4 – Probability / Frequency.

Ranking	Annual Frequency		Probability	
	Description	Definition	Description	Definition
5	Frequent	Occurs more than once a month in project execution	Almost always	More than 90% probability, it will probably occur in most circumstances or that in the last 5 years it has manifested itself and the causes of the event could not be established, nor actions taken.
4	Very likely	Occurs more than once a year in project implementation	Very likely	Probability of occurrence between <65% and 90%> or that in the last 5 years it has manifested itself and neither the causes of the event could be established, nor actions taken.

Ranking	Annual Frequency		Probability	
	Description	Definition	Description	Definition
3	Likely	Occurs once or less than once a year in project execution project implementation	Likely	Probability of occurrence between <35% and 65%>.
2	Unlikely	Occurs more than once every 5 years in the project execution.	Unlikely	Probability of occurrence between <10% and 35%>.
1	Rare	The event occurs rarely in the execution of the project. Example: An event that occurs every 100 years	Rare	Less than 10% probability of occurrence

Source: Anddes, Risk Analysis Report 1901.30.09-90-000-2230-00-ITE-001, 2022.

Table 24-5 – Impact / Severity.

Description	Types of Impact			
	Scope	Schedule	Cost	Quality
Insignificant	Barely perceptible range increase	Negligible time increase	Cost increase of less than US$3 million to Capex	Hardly noticeable quality degradation
Minor	Secondary range areas affected	Time increases less than 3 weeks	Cost increase between US$3 million and US$7 million to Capex	Only very demanding applications are affected
Moderate	Primary range areas affected	Increase in time between 3 weeks and 1.5 months	Cost increase between US$7 million and US$15 million to Capex	Quality reduction requires sponsor approval
Major	Scope creep unacceptable to sponsor	Increase of time between 1 month and a half and 3 months	Cost increase between US$15 million and US$30 million to Capex	Quality reduction unacceptable to sponsor
Catastrophic	Scope creep detracts from the purpose of the project	Time increases greater than 3 months	Cost increase of more than US$30 million to Capex	Finished project item is effectively unusable

Source: Anddes, Risk Analysis Report 1901.30.09-90-000-2230-00-ITE-001, 2022.

24.4.1.3 Probability and Impact Matrix

According to the PMBOK (Project Management Body of Knowledge), risks can be prioritized according to their probability using impact matrices. This applies for both threats and opportunities, after previously defining the probability and impact of the risk. From the result of the multiplication of probability by impact, the magnitude of the risk is rated. This is shown in the probability by impact matrix for threats in Table 24-6.

Table 24-6 – Threat impact probability matrix.

			Severity / Impact				
			1	2	3	4	5
			1	3	10	30	100
Probability / Frequency	5	10	10	30	100	300	1000
	4	3	3	9	30	90	300
	3	1	1	3	10	30	100
	2	0,3	0,3	0,9	3	9	30
	1	0,1	0,1	0,3	1	3	10

Source: Anddes, Risk Analysis Report 1901.30.09-90-000-2230-00-ITE-001, 2022.

Table 24-7 shows the levels, descriptions, and colors of the magnitude of the risk.

Table 24-7 – Threat magnitude levels and color.

Level	Description
Extreme	Hazards that significantly exceed the acceptable risk limit and need urgent and immediate attention. The response plan must reduce the acceptable level for approval.
High	Hazards that exceed the acceptable risk limit and require proactive management. Detailed response plan is required.
Medium	Hazards that approach the acceptable risk limit and require active monitoring.
Low	Hazards that are below the acceptable risk limit and require active management.

Source: Anddes, Risk Analysis Report 1901.30.09-90-000-2230-00-ITE-001, 2022.

24.4.2 Risk Register

The risk register was used as the basic format to identify risks. It is the document where the results of risk analysis and response planning are recorded. The only area where negative risks or threats were identified was at the workshop,

According to the analysis carried out in the workshop, the magnitude for each risk can be defined. and the risks were prioritized according to level of magnitude. The workshop identified two high-level risks, eleven medium level risks, and twenty low level risks. The purpose of the action plan is described in the Section 24.4.3

The Table 24-8 shows the identified risks for the high and medium levels.

Table 24-8 – List of risks requiring additional analysis.

N° ID	Risk Name	Physical area	Description of causes.	Description of consequences or impacts	Existing Controls	Risk Level	Action Plan	Risk Level
001	Failed to recruit on time and retain a sufficient number of competent staff in the time frame required to support the project	All the project	1. Low level supply of qualified personnel in the construction sector. 2. Work environment (culture shock). 3. Working conditions above 4,000 masl. 4. Unattractive compensation package. 5. Constant change in the needs dimensioning and histogram. 6. Human talent recruitment sources were not found (non-existent database). 7. Country situation: current bonds paid by the Chilean government to the population do not help the labor supply (it could go up to 03.30.22). 8. Lack of recognition of the company and the project in the region	a) Impact on the work schedule and on the start of the project. b) Low utilization and availability affected by not having adequate personnel. c) Higher recruitment costs. d) Increased risk of incidents and accidents occurring. e) Stoppage of work due to bad work environment. f) Generation of different unions. g) Higher costs due to inflation	- Promptly alert the changes and update the histogram involving the entire project. - Hire a company specialized in the recruitment and attraction of personnel in the sector. - Expand the search for personnel in continuous regions. - Use the most recurrent means of communication such as the social networks Facebook and radio frequencies such as Radio Nostalgia and others. - Register or join CORPROA, the Chilean Chamber of Construction and other associations. - Quality of life plan, survey and monitoring of the work environment. - Ensure and manage habitability and food conditions. - Compliance with the RIT. - Periodic review of workers' compensation according to the current market. - Planning of work according to the standard.	Medium	1. Monitor the salary band. 2. Recruitment of international personnel. 3. Greater mass communication	Low
002	Delay in the supply chain for project supply (includes due supply for start-up)	All the project	1. Lack of planning by the user areas. 2. Lead time not defined. 3. Incorrect specifications and details of the materials or services to be requested. 4. Inefficient logistics (unqualified personnel). 5. Not having credit facilities for not having a credit history in Chile. 6. Lack of knowledge of the purchasing and service process. 7. Communication and exchange of culture with suppliers. 8. High dependence on a single provider. 9. Incorrect dimensioning of head count and equipment needs (histograms). 10. Permits not obtained in a timely manner.	a) Impacts on the work schedule and budget. b) Inoperability of equipment. c) Cost overruns for emergency purchases. d) Fixed inventory increases. e) Increase in the cost of the project. f) Contractual penalties. g) Basic services not covered	- Key suppliers, identified and that have all the permits and authorizations required by local regulations. - Final histograms reviewed and approved by the project team. - Lookahead and weekly purchase status report (based on the project's annual operational and maintenance plan); involving the project team, project logistics and corporate logistics. The review is weekly but there must be a defined annual purchasing plan. - Manage alternative rental options and identify local providers. - Monitoring of the schedule (milestones, progress, etc.) and updating of the schedule in coordination with the client. - Permanent search for alternative contractors and early closing of rates and commercial agreements (both for goods and services). - Checklist of key contractors and monitoring of progress in contracting, according to the STRACON standard. - Complete expediting reports from the start of the project	Medium	1. Generate the Procurement Management Plan, with a purchasing responsibility matrix, made and approved by Fenix and disseminated to each partner or contractor in a workshop for their knowledge and designation of those responsible. 2. The presentation and dissemination of the plan will be in the month following the obtaining of the RCA. 3. Review of the plan on a weekly basis by all those responsible.	Low

N° ID	Risk Name	Physical area	Description of causes.	Description of consequences or impacts	Existing Controls	Risk Level	Action Plan	Risk Level
			11. Rates not timely closed with service providers. 12. Little offer of services in Copiapó. 13. Shortage of various materials and services due to COVID."		and strategy of maximums and minimums, clearly set consignments. - Definition and approved agreement of lead times. - Contact and establishment of rates with main logistics operators. - Have a transit warehouse in Copiapó. - Recruitment of key and competent personnel. - Inventory control in operations: weekly cyclical inventory, correct location and signage. - Inventory consumption control. - Timely payment to suppliers through payment schedule.			
003	Not having a communications system implemented on time (cell phones, internet, radios, etc.) that guarantees good communication and continuity of the project	All the project	1. Absence of knowledge about the main providers of communication services in Chile. 2. Zone without coverage in the project. 3. Delay in the installation of the Internet and limited/no access to the mobile network (there is no mobile network coverage from any operator; in terms of data transmission, there is currently a satellite network that allows a fluid connection to be maintained internet, but considering the small amount of personnel that is in the field). 4. Radial system not provided by the client according to contractual agreement or without adequate operation. 5. Fall in the technological platforms used in the project."	a) Delays in start-up and impact on the work schedule. b) On costs associated with the project. c) Inability to use the system (SAP) d) Lack of knowing the progress and control of the project, delay in decision making. e) Increases the probability of having accidents and makes it impossible to report emergencies	- Ensure the number of base radios necessary for the project. - Contractual meetings to communicate the restrictions of internet and telephony communications on time. - Cell phones, radios and internet ready to be used before the start of the project. - Timely identification of communication service providers. - Define from the start the expansion of the capacity of the current network system and share these facilities with Fenix Gold or implement an independent network only for STRACON. - Identification of technological backup strategies that provide continuity to the project in the event of unanticipated system crashes. - Manage immediate attention from the corporate Help Desk or implement a local Help Desk. - Mobile phone coverage complementary to the radio communication system. - Slack of 15 to 20 days in the installation of the communications system - Claro and Entel coverage in certain areas of the project.	Medium	1. Use of satellite phones.	Low
004	Failure to meet schedule milestones	All the project	1. Utilization and availability below what was planned. 2. Arrival of resources on time (MO, EQ, services and tools) on the scheduled date. 3. Climatic factors, low performance due to extreme temperatures and wind. 4. Changes in the characteristics of the soil, type of materials (rippable material	a) Delays in start-up and impact on the work schedule and budget. b) Cost overruns and/or contractual penalties. c) Cost overruns for emergency purchases.	- Effective and coordinated planning of maintenance of third-party equipment. - Permanent search for equipment suppliers (existence of comparative charts with tangible options). - Ensure that all equipment has a pre-heater and its proper maintenance. - Ensure connectivity of the system to be used (SAP) and that the staff is properly trained. Connectivity problems must be promptly reported.	Medium	1. Review and dissemination of the Scope Management Plan, Cost Management Plan and Schedule Management Plan of the Fenix project. 2. Weekly monitoring of the equipment maintenance plan by Stracon and HLC. 2. Weekly meeting with	Low

N° ID	Risk Name	Physical area	Description of causes.	Description of consequences or impacts	Existing Controls	Risk Level	Action Plan	Risk Level
			or rock is found). 5. Inadequate planning of assigned tasks. 6. Non-competent personnel, operators, mechanics, supervision, etc. 7. Poor control of physical inventories vs. system. 8. Lack of permits for timely releases. 9. Have the necessary infrastructure and facilities in the project. 10. Pending engineering or definition changes. 11. Absenteeism or desertion of personnel due to a new variant of COVID."		- Incorporate in contracts with equipment suppliers the contractual condition of clause 10.2.3 (minimum tire wear of 50%); likewise, the RITRANS requirements (in relation to the age of the equipment: hour meter). - Recruitment of key personnel (superintendent, supervision, maintainers and planners) with verification of competencies. - Lookahead and weekly purchase status report (from the monthly maintenance program of the project); involving the project team, project logistics and corporate logistics. - Inventory control in operations: weekly cyclical inventory. - From the start, have a technical training plan for equipment operators. - Operators require certifications to be able to work. - Have detailed engineering on time, properly manage changes with the principal. - Compliance with the controls established in the COVID Plan.		engineering and quality assurance Anddes/HLC, to follow up on the RFI's, pending responses, according to their criticality for responses found to hidden defects or soil quality changes. 3. Submit to the Risk Assessment Committee, made up of the Sponsor, Project Manager, Legal Manager, and Financial Manager, the possible changes in out-of-market rate payments or purchase of materials from critical producers, with prices out of budget. Changes in the project will be presented and approved by the committee, in a single document called PCN for its acronym in English: Potential Change Notice.	
005	Occurrence of a serious accident or fatality (SUSESO)	All the project	1. Lack of protocols, procedures, risk identification, legal requirements, etc. 2. Inadequate management of identification, risk assessment and critical controls. 3. Negligence of collaborators/reckless attitude, psychological and psychosocial aspects.	a) Penalties and sanctions. b) Termination of the contract. c) Impacts on the work schedule due to stoppage of work. d) Reputational damage.	- Implement the Security Management System in the project and in accordance with the principal. - Project inductions and training, including presentations related to all critical risks and controls, project standards (especially SSOMA and operational). - Periodic training in the Annual Occupational Health Safety and Environment Plan (PASSOMA). - Have clear knowledge of penalizable breaches. - Ensure the aptitude of the workers in the contracted positions. - Dissemination of the Internal Work Regulations. - Safety Program based on behavior, assistance and psychological monitoring of workers.	Medium	Manage the legal and safety monitoring plan in a preventive manner, as well as the dissemination of new legal, safety, occupational health and environmental regulations, in the event of a contingency, activate the Crisis Committee, made up of the CEO, Manager Legal and external legal advisor.	Low
006	Deficiency in transportation of water supply	All the project	1. Difficulty of transporting the water supply due to the long trajectory of the water supply. 2. Media questioning by some authority for non-compliance with protocols.	a) Delay in the project. b) High costs.	- Additional source of water. - Adequate management control of water management.	Medium	1. Transportation service with whales. 2. Have reservoirs and flexible tanks in the project.	Low

N° ID	Risk Name	Physical area	Description of causes.	Description of consequences or impacts	Existing Controls	Risk Level	Action Plan	Risk Level
			3. Non-compliance of the supplier of the water supply.				3. Control of the water supply route.	
008	Exposure to the pandemic during the execution of the project and infections of the personnel.	All the project	1. Infected personnel in contact with personnel in quarantine or in the project. 2. Not adequately controlling the protocols (management and monitoring). 3. Negligence of collaborators / reckless attitude or exposure to personnel from outside the site	a) Stoppage of the project. b) Impact on the work schedule. c) Inoperability of equipment due to availability of operators. d) Higher costs of recruitment and inductions, training and certifications, PPE, EMO, etc.	- Comply with existing COVID Protocols. - Costing and fine control of the impacts of these events (if infections and stoppages are caused by the client) and log of claims. - Promote the hiring of fully vaccinated personnel. - Have clearly identified medical centers in the cities of Copiapó and Santiago for emergency care. - Ensure compliance with COVID protocols also by subcontractors inside and outside the project (transportation, lodging, etc.). - Sensitization from the first day and training of project personnel. - Supervision of subcontractors in compliance with COVID protocols.	High	1. Update and monitoring of the current COVID protocol by the Ministry of Health. 2. Isolation in our facility for COVID.	Medium
012	Delay in obtaining the Environmental Qualification Resolution (RCA)	All the project	1. Change of government. 2. Changes of regional political authorities before obtaining the RCA. 3. Interruption of the normal functioning of the activities of Fenix Gold due to a health emergency - COVID. 4. Baseline development accompanied by the competent authority. 5. Requirement of specific environmental studies (study of water bodies, fragile ecosystems, glaciers, water use license, etc.). 6. Changes in engineering development.	a) Project delays. b) Economic losses due to equipment standby.	- Dialogue/agreements with the authorities. - Norms of a 180-day term that are not modified.	High	Follow-up by the permits, contract and administrative areas of Fenix and Rio2 and report in weekly or monthly meetings or activate the communication channel in the event of a critical event.	Low
013	Extension of the time to obtain sectoral permits	All the project	1. Gap between the engineering of the environmental evaluation and the construction of the site. 2. Delays in the review of the files by the sectoral authority	a) Non-compliance with the project schedule. b) Request for engineering alignment.	- Fenix Gold standards for engineering development.	Medium	1. Approach with the authorities. 2. Communications between units (environment, construction, etc.).	Low
017	Failure to obtain aggregate materials for concrete at work	All the project	1. Verification of work materials does not comply with the technical specifications of concrete	a) Increased cost per purchase.	- Master program. - Issuance of the geotechnical report. - Purchase of arid materials in case of not having quarries.	Medium	Submit to the Risk Assessment Committee, made up of the Sponsor, Project Manager, Legal Manager, and Financial Manager, the possible changes	Low

N° ID	Risk Name	Physical area	Description of causes.	Description of consequences or impacts	Existing Controls	Risk Level	Action Plan	Risk Level
							in the purchase of materials from critical producers, with prices outside of the budget. Changes in the project will be presented and approved by the committee, in a single document called PCN for its acronym in English: Potential Change Notice.	
025	Media questions from Non-Governmental Organizations	All the project	1. Proximity of the works and components of the project to the Laguna Santa Rosa and Salar de Maricunga. 2. Excessive generation of MPS. 3. Affectation of local fauna. 4. Claims from tour operators. 5. Non-compliance with environmental regulations and what is committed in the EIA	a) Media questioning of the Social Responsibility policies of the Fenix Gold project. b) Sanctions by the Superintendence of the Environment for non-compliance with the standard.	- Fenix Gold safety standards. - Social Communication Plan.	Medium	Follow-up by the area of permits, legal and contracts of Fenix and its allies and report in weekly or monthly meetings or activate the communication channel in case of a critical event.	Low
027	Work in wintertime	All the project	1. Scheduling of earthmoving works in wintertime.	a) Frozen tracks. b) Accidents. c) Possible fatalities. d) Delay in construction. e) Loss of yields.	- Schedule management - Generation of microclimates with the ships.	Medium	Acquisition of anti-winter tents by Fenix Gold as well as the application of Sodium Chloride to the tracks for freezing, included within the acquisition plan and budget.	Low
030	Winds greater than 50 km/h in the hoisting work area	All the project	1. Winds greater than 50 km/h.	a) Suspension of hoisting works.	- Hoisting plan. - Planning of the works according to the standard in these conditions.	Medium	1. Implementation of HLC strategic plans.	Low

Source: Anddes, Risk Analysis Report 1901.30.09-90-000-2230-00-ITE-001, 2022.

Table 24-9 shows the supervision list generated during the workshop. It contains low level risks which are use by Rio2 to observe and manage the behavior of these risks globally, and to allocate resources for the management of these risks.

Table 24-9 – Supervision list.

N° ID	Risk Name	Physical area	Description of causes.	Description of consequences or impacts	Existing Controls	Risk Level	Action Plan	Risk Level
007	Availability of water for the project	All the project	1. Insufficient amount of water.	a) Delay in the project. b) High costs.	- Additional source of water. - Adequate management control of water management.	Low	1. Transportation service with whales. 2. Have reservoirs and flexible tanks in the project.	Low
009	Unethical conduct of employees and other related parties	All the project	1. Fraud and/or personnel behaving unethically. 2. Ineffective due diligence. (employees/supplier/subcontractor) -> hiring without a good background/history check. 3. The staff does not internalize and does not clearly understand the Code of Ethics and Anti-Corruption Policy.	a) Damage to internal and external reputation. b) Financial impact (result of theft or fraud). c) Decrease in the culture and climate of the project. d) Contractual penalties (Compliance clauses).	"- Recruitment and selection of personnel, implementing due diligence. - Hiring suppliers and subcontractors, implementing due diligence. - Solid induction and constant training. The induction must also include the contractual requirements on the use of social networks (we cannot publish anything about Fenix Gold or our services without your consent). - Code of Ethics and whistleblowing channel ""STRACON listens to you"". - Policy and Compliance Manual. You must be very precise with relations with public officials and authorities to prevent bribery, especially for sectoral permits and during the use of public roads. - Full compliance with the ethical, compliance and conflict of interest clauses of the contract."	Low	Follow-up by the contract and administrative areas of Fenix and its allies and report in weekly or monthly meetings or activate the communication channel in the event of a critical event.	Low
010	Failure to comply with legal and labor obligations	All the project	1. Ignorance of Chilean regulations or lack of implementation of updates in the legislation. 2. Not using the right outside consultants. 3. Not knowing the legal obligations that our clients and suppliers transfer to us.	a) Economic impacts as a result of fines. b) Loss of reputation related to the breach of Corporate Governance. c) Impacts on the work schedule. d) Higher costs associated with the project.	"- Matrix of legal requirements and permits. - Full compliance with Supreme Decree No. 72 of 1985 of the Chilean Ministry of Mining where the Mining Safety Regulations are approved. - Matrix of labor requirements (as stipulated by the labor department in Chile). - Recruitment of legal, labor and tax specialists. - Recruitment of specialized positions that are from Chile (for example, the head of GH, prevention, accountant, etc. of the branch)."	Low	Follow-up by the contract and administrative areas of Fenix and its allies and report in weekly or monthly meetings or activate the communication channel in the event of a critical event.	Low
011	Delay in the implementation /rehabilitation/ construction of the main project facilities: maintenance workshop,	All the project	1. Platforms not authorized for the construction of the facilities that apply. 2. Poor planning of construction facilities. 3. Permits/authorizations for preliminary work not obtained in a	a) Affectation in progress of work due to limited space to carry out timely maintenance of equipment. b) Staff dissatisfaction due to deficient / poorly implemented facilities. c) Contractual penalties. d) Environmental impacts or	"- Monitoring the timely release of permits for preliminary works. - Timely and duly prepared and approved plans (even by the client). - Final histogram of people and equipment reviewed and approved by the project team. - Personnel and equipment mobilization plan approved by the project team and with clearly	Low	Follow-up by the area of permits, legal and contracts of Fenix and its allies and report in weekly or monthly meetings or activate the communication channel in case of a critical event.	Low

N° ID	Risk Name	Physical area	Description of causes.	Description of consequences or impacts	Existing Controls	Risk Level	Action Plan	Risk Level
	warehouse, offices, camp and satellite canteens (if applicable), basic services		timely manner. 4. Late execution of facilities.	observations. e) Devaluation of inventory or total loss due to poor storage conditions (also considering the climatic factor). f) On costs due to bad engineering. g) Work stoppage due to inappropriate working conditions / employee complaints / fines by the Chilean work department.	defined responsibilities. - Correct sizing of inventory. - Establish areas for temporary installations or satellite installations (workshop, canteens, etc.) and, if possible, that are mobile. - Monitoring compliance with the construction of platforms on time."			
014	Delay in the physical delivery of the area to the contractor to build the ADR plant	ADR Plant	1. Delays in moving to the area.	a) Delay in execution. b) Increase in the budget due to delays. c) Changes in the schedule.	- Mobilization Plan.	Low	1. Implementation of the mobilization plan.	Low
015	Delay in the construction of ADR plant coverage	ADR Plant	1. Obtaining the RCA permit. 2. Delay in the procurement of coverage materials.	a) Delay in execution. b) Increase in the budget due to delays. c) Changes in the schedule.	- Permission tracking structure. - Follow-up of the placement of the Purchase Order (PO). - Action plan for the procurement of materials.	Low	1. Implementation of the action plan for the procurement of materials. 2. Monitoring and control of providers of structures and coverage.	Low
016	Geomembrane lifting during its installation	Heap Leach Pools	1. Strong winds in the project area.	a) Damage to personnel. b) Material damage (geomembrane). c) Paralysis of the work front. d) Delays.	"- Geomembrane installation procedures. - Bags with granular material on the installed geomembrane. - Provision of jobs with yields penalized.	Low	1. Creation and dissemination of the safe work procedure for the activities: Geomembrane installation, for all personnel involved in this activity and generate a record of evidence of their training, subject to unopinionated audit by Fenix.	Low
018	Failure to respect the footprints of the authorized areas for the rescue of fauna or vegetation	All the project	1. Limit of traces of components close to areas authorized for the rescue of fauna or vegetation.	a) Financial and administrative sanctions filed by the sectoral authorities. b) Delays. c) Deterioration of image. d) Social conflicts.	- Topographic control. - Archaeological monitoring. - Trainings.	Low	1. Area release protocols.	Low
019	Approval of the bill that prohibits mining around glaciers	All the project	1. Bill banning mining around glaciers.	a) Revaluation of certain areas. b) Economic losses.		Low	Follow-up by the area of permits, legal and contracts of Fenix and its allies and report in weekly or monthly meetings or activate the communication channel in case of a critical event.	Low

N° ID	Risk Name	Physical area	Description of causes.	Description of consequences or impacts	Existing Controls	Risk Level	Action Plan	Risk Level
020	Encounter of chance archaeological or paleontological finds during earthmoving activities	All the project	1. Existence of archaeological and paleontological remains in the area.	a) Stoppage of the associated work where the finding was found. b) Economic losses.	- Adequate training of personnel for communication of findings. - Presence of archaeologists and paleontologists during earthworks.	Low	Follow-up by the area of permits, legal and contracts of Fenix and its allies and report in weekly or monthly meetings or activate the communication channel in case of a critical event.	Low
021	Delay in the processes of procurement of materials and equipment (critical plant equipment) and decision making	All the project	1. Delay of administrative procedures. 2. Delay in signing the contract. 3. Delay in the information of the suppliers. 4. Delay in the delivery of equipment. 5. Restrictions for contagion of new variants of COVID.	a) Delay in execution. b) Increase in the budget due to delays. c) Changes in the schedule.	- Monitoring by the project control area. - Weekly reports on supplier contracting status and coordination meetings. - Procedures for the award of tenders and contracting. - Early identification of critical equipment. - OC of some critical equipment carried out.	Low	1. Critical equipment contracting plan (acceleration of contracts).	Low
022	Conflict with the Colla Indigenous Communities related to the project	All the project	1. Breach of Fenix Gold procedures. 2. Complaint for the non-hiring of local service companies. 3. Non-compliance with the Plan of Measures, CAV and Agreements. 4. Change of Community Directives 5. Negative events related to fauna within the project area"	a) Sanctions of the Superintendence of the Environment (SMA). b) New negotiations.	- Recruitment procedures. - Control measures associated with the contour channels and various components of the project - Commitment follow-up matrix.	Low	Follow-up by the area of permits, legal and contracts of Fenix and its allies and report in weekly or monthly meetings or activate the communication channel in case of a critical event.	Low
023	Questioning of authorities and unions due to the non-hiring of suppliers and personnel from the Atacama region	All the project	1. High expectation from local companies looking for hiring opportunities. 2. Not hiring personnel from the Atacama region. 3. Failure to comply with the voluntary environmental commitments associated with these issues.	a) Political and social questioning in the media. b) Sanctions for non-compliance with voluntary environmental commitments.	- Recruitment procedures. - CAV compliance matrix. - Monthly reports of % hiring of suppliers and local labor.	Low	Follow-up by the area of permits, legal and contracts of Fenix and its allies and report in weekly or monthly meetings or activate the communication channel in case of a critical event.	Low
024	Obstruction of access to the Fenix Gold project - Quebrada Pelada sector	Main Access	1. Inadequate moistening at the time of improving or rehabilitating the access. 2. Associated negative impact on the waterhole, identified by the Colla Communities. 3. Negative environmental event, associated with the traffic of SUSPEL in the section.	a) Blockages in the main access. b) Delays in the construction of the main access. c) Delay in legal proceedings. d) Economic losses.	- Operational control. - The development of the access line is not found in the waterhole.	Low	Follow-up by the area of permits, legal and contracts of Fenix and its allies and report in weekly or monthly meetings or activate the communication channel in case of a critical event.	Low

N° ID	Risk Name	Physical area	Description of causes.	Description of consequences or impacts	Existing Controls	Risk Level	Action Plan	Risk Level
026	Traffic accidents on the roads used by the project	All the project	1. Excessive speed on route CH31 and Copiapó. 2. Running over animals from the communities on the CH31 route. 3. Environmental accidents due to SUSPEL on the CH31 route. 4. Not respecting SUSPEL's transportation time restriction. 5. Damage to native animals and those with conservation status	a) social conflicts. b) Economic compensation c) Environmental sanctions d) Accidents or possible fatalities.	- Operational Control. - Security Procedure. - Training for workers and contractors.	low	Follow-up by the area of permits, legal and contracts of Fenix and its allies and report in weekly or monthly meetings or activate the communication channel in case of a critical event.	Low
028	Affected productivity in possible night work	All the project	1. Failure to meet the goal of the day during the workday.	a) Delay in execution. b) Increase in the budget due to delays.	- Planning of works according to the standard in these conditions.	Low	Submit to the Risk Assessment Committee, made up of the Sponsor, Project Manager, Legal Manager, and Financial Manager, the possible changes in the purchase of materials from critical producers, with prices outside of the budget. Changes in the project will be presented and approved by the committee, in a single document called PCN for its acronym in English: Potential Change Notice.	Low
029	Spill of hazardous substances and waste	All the project	1. Work with construction equipment.	a) Delay in execution. b) Sanction. c) Damage to reputation.	- Internal guidelines. - Fenix Gold hazardous substances and waste management standards.	Low	Follow-up by the area of permits, legal and contracts of Fenix and its allies and report in weekly or monthly meetings or activate the communication channel in case of a critical event.	Low
031	Regularization of work permits for personnel in Peru	All the project	1. Demand for international staff.	a) Fines.	- Internal guidelines.	Low	1. Implementation of HLC strategic plans.	Low
032	Number of expatriates from the project (less than 15% of the payroll)	All the project	1. Demand for international staff.	a) Social impact. b) Questions. c) Fines.	- Internal guidelines.	Low	1. Implementation of HLC strategic plans.	Low
033	Mismanagement of critical controls	All the project	1. Use of nuclear densimeter. 2. Blasting. 3. Work at height.	a) Possible fatalities. b) Effects on health.	- Regulations and standards. - Protocols and procedures.	Low	1. Implementation of HLC strategic plans.	Low

Source: Anddes, Risk Analysis Report 1901.30.09-90-000-2230-00-ITE-001, 2022.

24.4.3 Risk Response Strategy

The risk response strategy develops options and action plans to improve opportunities, as well as reduce threats to the project and closure objectives. Since only threats were obtained during the workshop, the risk response will focus exclusively on reducing the likelihood and impact of negative risks as shown in Table 24-8 and Table 24-9.

For each risk, the risk register lists the risk owner who manages the completion of the action plan or response to the risk. In addition, the risk register lists the action owner for each risk who is responsible for executing the risk response. These responsibilities are framed by the deadline for the implementation of the risk response and should be a measurable commitment.

Most of the strategies used in the risk action plans are mitigation measures, taking early actions to reduce the impact and probability of risks. However, the risk acceptance is only used for low level risks because it has negligible consequences. In addition, Rio2 sets aside contingency cost for the risks.

24.4.4 Conclusions

From the results of the workshop, a risk register was developed outlining the 33 negative risks identified by the Anddes, STRACON, HLC SAC, and the Fenix Gold Project teams.

- The negative risks were identified during the workshop: two high-level risks, eleven medium-risks and twenty low- risks.
- There are no risks identified categorized as extreme level of risk.
- The two high -level risk identified will be optimized as a priority and proper risk response will be implemented.
- Low-level risks are controlled and continuing monitored.

25 INTERPRETATION AND CONCLUSIONS

The following sections summarize the interpretations and conclusions provided by Qualified Persons (QP) within their respective areas of expertise, based on the available information from this report.

25.1 Mineral Tenure, Surface Rights Water rights and Agreements

Fenix Gold has the necessary mining concessions and surface rights to develop the project.

In addition to the signed agreement with Nueva Atacama S.A to supply the water necessary for the construction and operation of the Project at 20 l/s, Fenix Gold Project has access to the water rights held by Lince S.A at the camp infrastructure site for 5 l/s.

25.2 Geology and Mineralization and Deposit Types

The QP author responsible for the Geological Setting and Mineralization and Deposit Types sections (Chapters 7 and 8 respectively), after reviewing the data provided by Rio2 and conducting a visit to the Project, concludes that the regional setting and the local geology of the Project are adequately understood and support the declaration of the Mineral Resources. The QP is also confident that the deposit type has been correctly understood, and its main features have been used to guide the exploration campaign.

25.3 Exploration, Drilling and Analytical Data Collection in Support of Mineral

The QP author responsible for the Exploration section (Chapter 9) concludes that the exploration conducted by Rio2 for the Project is appropriate for the known deposit type.

The QP acknowledges that the drilling operation adhered to industry best practices for exploration and mining, specifically for diamond and RC drilling, during the 2020, 2021, and 2022 drilling campaigns.

The QP acknowledges that sample preparation and assaying were conducted according to industry-standard procedures. In addition, Rio2 was able to maintain high sample security standards during the 2020-2021 and 2022 drilling campaigns.

The QP author responsible for the Data Verification section (Chapter 12) concludes that:

- No significant differences were found between the collar coordinates measured with a hand-held GPS and the coordinates recorded in Rio2's database records.
- Survey, logging, sampling, and assay data were properly recorded into the project database. The QP did not identify any transcription errors during the database checks they performed.

This involved comparing the original surveys, logs, and assays with the data recorded in the project database.
- Lithologies, structures, alterations, and mineralization were properly documented.
- Data recorded in the logs generally respect the observed core and cuttings.
- Interpretations implied in the geological model construction honour the data recorded in the logs.
- Interpretations from sections are consistent with the deposit characteristics represented in the model.
- The lithologic model was diligently constructed by following industry-standard practices.
- During the 2020, 2021, and 2022 drilling campaigns, Rio2 did not drill twin holes to support the quality of the RC drilling.
- The QC program implemented by Rio2 assessed the precision, accuracy, and possible contamination of data collected during the exploration programs.
- Rio2's sampling, sample preparation, and analytical precisions at ALS and AAA labs for gold (Au) during 2020, 2021, and 2022 drilling campaigns, were within acceptable limits.
- The Au analytical accuracy at ALS and AAA during the 2020, 2021, and 2022 drilling campaigns can be deemed acceptable.
- No significant Au contamination occurred during sample preparation at the ALS and AAA labs through the 2020, 2021, and 2022 drilling campaigns.
- Check samples show a strong correlation between ALS & AAA results and those from Certimin, which serves as a secondary laboratory. The analytical accuracy of ALS & AAA compared to Certimin for Au was acceptable during the 2020-2021 and 2022 drilling campaigns.

25.4 Metallurgical Testwork

The QP author responsible for the mineral processing and metallurgical testwork section (Chapter 13) concludes that:

- Mineralogical analysis of composites 4, 5, and 6 from the central zone of the deposit show that the gold grains are very small. 75% to 95% of the grains are smaller than 10 µm: of which 45% to 75% are smaller than 5 µm. Given these grain sizes, the gold from the Fenix Gold deposit should leach rapidly using a cyanide solution.
- During the pilot tests, it was observed that the mineral responds well to leaching by a cyanide solution. After 81 days of irrigation and 5 days of drain down, the extraction results were 75.12% for Au and 12.37% for Ag. These results at the pilot scale support the gold extraction obtained by KCA in 2017. The KCA tests were conducted with composites from the three zones of the deposit: CX, LX, and PX giving an average gold extraction at P100 between 150 mm and 75 mm of 77% (without considering Samples CX-Top and CX-Bottom).
- Sodium cyanide consumption at a crush size of P80 100 mm ranged from 0.5 Kg/t to 1.4 Kg/t. From experience, the industrial scale consumption is approximately 25% of laboratory consumption. This was supported by the pilot tests, which produced a consumption of 0.175 Kg/t.

- The lime (CaO) consumption for the column tests, with a grind size of P80 100 mm, was in the range of 4.1 Kg/t to 5.5 Kg/t. However, the pilot tests reported a lower consumption of 2.99 Kg/t.
- Bottle roll tests conducted in 2020 determined that there is no significant difference in gold extraction or cyanide consumption using either Nueva Atacama or Lince water.
- Sulphide minerals are present in trace amounts (< 0.1% by weight). These are mainly pyrite and chalcopyrite, and smaller quantities of bornite, chalcocite, and covellite. Although the average copper content was 250 ppm in the feed, there was no significant copper dissolution in the cyanide solution. This implies that the copper is associated with pyrite or primary copper minerals.
- Composites for column tests were soft and not very abrasive to crushing. Core samples (HQ) from the three zones of the deposit reported a hardness index (BWi) between 9.78 and 9.84 kWh/t. The abrasion index (Ai) ranged from 0.0888 to 0.1223.
- The column and pilot tests did not report significant slumping, indicating low presence of fine material in the samples studied.
- The moisture retained by the leach residue after drain down reported an average value of 4%. However, samples crushed using HPGR (High Pressure Grinding Rolls) contained moisture values of 11%.

25.5 Mineral Resource Estimates

The geological model modelled for the Fenix Gold Project adequately represents the mineralized body. The validations confirm that the estimation is within the acceptable error parameters. In general, the error is less than 5%.

About 83% of the reported resources are classified as Measured and Indicated. Inferred Resources show a decrease when compared to the 2019 model. This is a result of using a smaller pit result of using higher input costs.

25.6 Mineral Reserve Estimates

Mineral Reserves were prepared according to the 2014 CIM Definition Standards. The mine schedule was based on Proven and Probable Mineral Reserves. The Reserves were established as a result of applying modifying factors to Measured and Indicated Mineral Resource estimates.

The economic and optimization parameters were provided by multi-disciplinary sources involved with the Fenix Gold Project. Prior to being used, all parameters were reviewed and approved by Qualified Persons.

The cut-off grade of 0.235 g/t Au was used to estimate Mineral Reserves within the operational pit which complies stability criteria. The Mineral Reserve statement is suitable to use in this feasibility study.

25.7 Mining Methods

The mine plan for this 2023 feasibility study maintains the strategy established in the 2019 pre-feasibility study. Ore mining was planned a rate of 20,000 tpd, which is limited by the amount of water that can be trucked to the project from Copiapó. Higher grade material was targeted during start-up using a higher cut off grade. During this period, low grade and medium ore is stockpiled to be processed at the end of the mine life. The feasibility study presents a gold mine with low-cost ROM heap leach process that will produce 1.32 million oz of gold over 17 years.

Mining Plus concludes that:

- The stockpiles create flexibility in the mine plan to send the higher-grade material to leach pad first. This decision will be based on gold price opportunities, rehandle costs, or revised cut offs.
- Rio2 established an alliance mining contract with STRACON to cover services related to earthmoving and construction, mining, and water transport for the Fenix Gold Project. The equipment fleet provided by STRACON will be appropriate for a conventional truck–excavator operation with medium sized equipment. LOM operating costs were calculated by STRACON according to the mine schedule in this 2023 feasibility study and operating hours for trucks were estimated by Mining Plus.
- The main advantage to using an alliance partner is the flexibility to adjust the mine plan, the amount of equipment and resources to promptly react to emerging opportunities or operational risks. In addition, there is a capital cost savings as STRACON mobilizes the mining fleet to the site. This allows Rio2 to take advantage of STRACON's purchasing power for the machinery, tyres, parts, and maintenance practices. The alliance follows a best for project principal, where the on-site team have a combined responsibility to achieve best for project goals like safety, production targets, and cost control.
- Identifying an alternative water supply either closer to mine operations or via a water pipeline can potentially reduce operating costs and considerably improve project economics.
- The mine design complies with the acceptability criteria defined for the static, operational earthquake, and maximum credible earthquake scenarios. The designs are compliant in all the defined analysis sections developed during Derk's stability analysis. Therefore, the designs are stable, acceptable, and safe for all scenarios considered.
- According to the stability analysis carried out by Anddes for the leach pad, waste dump and stockpiles, the stability conditions are well controlled. The results produce acceptable Safety Factor values for static, short-term, and long-term with maximum credible earthquake scenarios.

- The results of the hydrological and hydrogeological studies conclude that the area receives a low precipitation rate (<150 mm per year) that appears as snow above 4400 masl and as rain below this level.
- The results of the hydrogeological investigations do not show the presence of groundwater within the mining components area. To date, groundwater has not been reported in any exploration drill holes, so the actual phreatic level is unknown.
- The underground flows found outside the study area are due to the contributions of subsurface flows and runoff produced mainly by snow melt.

25.8 Recovery Methods

The design was based on leaching approximately 114.7 million tonnes of ROM feed over the LOM, at a rate of 20,000 tpd, with an average head grade of 0.48 g/t Au (7.3 million t per year), which produced a mine life of approximately 17 years.

The stockpiled ore will be leached with sodium cyanide at a concentration of 200 ppm at an irrigation rate of 10 l/hm^2 with a 90-day irrigation cycle. The consumption of reagents during leaching will be 2.95 Kg/t lime and 0.175 Kg/t cyanide. Gold will be recovered from the pregnant leach solution onto activated carbon within the metallurgical process.

The ADR plant was designed to treat 1,058 m^3/hr of pregnant solution in a train of five adsorption columns, each containing 10 tonnes of activated carbon. The ADR plant will comprise adsorption, desorption, acid washing, thermal regeneration, and smelting. The gold global recovery is 74.6%.

25.9 Project Infrastructure

The main road that allows vehicle access to the mine starts at the intersection of international highway CH-31 at the 131.5 km mark, and ends at the entrance to the ADR plant, with an approximate length of 20.2 km.

The Project requires a fresh water supply of up to 23.7 l/s. There will be three main fresh water/fire water reservoirs for the Fenix Gold Project. The raw water that will feed the three potable water treatment plants will be taken from the LINCE S.A. well. The authorized rate at which water can be drawn is 5 l/s.

The ADR plant's office building will be a 28.8 m long x 8.9 m wide and 9.1 m high structure. The building will have 2 floors, covering an area of 256.3 m^2. The dining room of the ADR plant will have a surface area of 175 m^2 with capacity to accommodate 32 diners. The ADR plant's maintenance workshop area will be located within the administration building. The area will provide space for maintenance activities and maintenance planning staff.

The powerhouse will contain four 1,100 kW generators: three in operation and one on standby. To supply power to the different sectors of the mine and plant area, a 13.2 kV medium voltage distribution line will be built.

Reagent storage will consist of two areas: an area to store cyanide and an area for carbon storage.

The mine maintenance workshop area will have three bays: one preventive maintenance bay and two corrective maintenance bays.

The fuel storage will consist of five tanks that each have a capacity of 60,000 litres.

The camp facilities include an office, medical center, training room, fuel depot, electrical substation, water treatment plant, sewage treatment plant, canteen, management and worker dormitories, recreation area, sports field, and car park.

The camp was constructed using prefabricated modular units and will be managed by Lince S.A.

25.10 Environmental, Permitting and Social Considerations

The Project area has very little vegetation due to extreme climatic and altitudinal conditions that generate adverse conditions for classified vegetable formations to develop.

The Environmental Impact Study determined significant environmental impact to three species of lizards that have low mobility and were given conservation status. Various environmental management measures were included in the study, such as controlled perturbation and the rescue and relocation of species located within the footprint of the work area.

The Fenix Gold project does not have activity in zones of interest like national parks, protected areas, etc., In addition, the Project will not generate significant impacts that will affect them. This was supported in the results of the EIA study that was completed while the environmental models and impact evaluation process was developed.

Fenix Gold proposed voluntary commitments in the EIA study to manage and preserve the environment around the project area.

25.10.1 Social

As detailed in Section 20.6, various groups, stakeholders, regulatory authorities and, in particular, members of the Colla communities, were engaged.

Within the framework of the environmental assessment process (EIA), opportunities for citizen participation and indigenous consultation were developed. These were integral steps undertaken to help guarantee legal and regulatory consent for the Project. This also ensured that the communities were well-informed of the project's potential technical and socioeconomic effects, and what environmental measures and voluntary commitments are in place to address these impacts.

25.11 Market Studies and Contracts

Fenix Gold has not completed any formal marketing studies for gold production that will result in doré bars. Gold production is expected to be sold on the spot market. The terms and conditions of the sales contracts are expected to be similar to typical contracts for doré sales throughout the world. Gold is bought and sold on many world markets, and it is not difficult to obtain a market price at any time. The gold market is very liquid, with numerous active buyers and sellers.

25.12 Capital and Operating Cost Estimates

The capital and operating cost estimate was prepared using a US dollar exchange rate 803.84 CLP/USD. The estimates do not account for further exchange rate escalations or fluctuations beyond April 2023.

Risks due to political upheaval, government policy changes, labour disputes, permitting delays, or any other force majeure occurrences are excluded.

The Capex for the Fenix Gold Project is capable of producing and processing an average of 20,000 tpd of ore. The Capex was prepared according to industry standard best practices for this level of study. The Capex estimation was a joint effort between Rio2, HLC, Anddes, and STRACON, which are companies with experience in relevant operations and maintain a good reputation in the mining industry.

The total life of mine capital investment for the Fenix Gold Project is estimated at $204.59M. $116.57M (57%) is allocated to the initial Capex and the remaining $88.02M to sustaining capital. According to the nature of the activity, the capital cost was divided into owner cost ($15.02M), mine Capex ($19.31M), process Capex ($66.47M), construction and facilities ($29.66M), indirect cost ($47.24M), mine closure ($11.10M), and contingencies ($15.79M). Since mining will be undertaken by contract mining, the acquisition of mining equipment was not included. To estimate construction costs, quotations and unit costs of the different supplies were used. Assembly costs consist of consumable materials or inputs costs, labour, and costs for rental equipment used to construct and assemble all components of the project.

Indirect costs include all costs necessary to complete the Project that are not related to direct construction costs over the life of the mine. The total indirect costs for the Project are estimated at $47.24M.

Operating costs were considered applicable beginning the production stage (month 14 of the project). Estimates were based on the unit fuel cost of 3.98$/gal, water cost of 22.94 $/m^3 and unit costs of 0.27 $/Kg for lime and 2.9 $/Kg of NaCN.

Operating costs, averaged over the life of mine, was estimated at $1,547.14M (13.49 $/ore). Mining cost represents 42.1% of the total cost (5.67$/t ore), processing cost represents 41.0% (5.53 $/t ore), administrative expense represents 16.0% (2.16 $/t ore) and selling cost and royalties represents 0.9% (0.13$/t ore).

25.13 Economic Analysis

Rio2 and Mining Plus completed the economic analysis for this feasibility study using industry standard criteria appropriate for studies of this level. The results of this study indicate that developing the Fenix Gold Project offers positive economic potential based on the information available at this time.

The economics were based on a gold price of US$1,750 per ounce and a production of 1.32 million ounces of gold over the life of the mine. The average annual production will be 82,000 ounces of gold, where the first 12 years of production will be approximately 91,000 ounces per year.

The economic analysis assumes the project will be 100% equity financed, which covers the first construction stage (ending month 14), one month of pre-production (month 13), and from month 14 onwards the production period (approximately 17 years). The net present value (NPV) at a 5% discount rate is calculated from the start of project construction.

The base case economic analysis results in an after-tax NPV of $210.31M at a discount rate of 5%, a projected internal rate of return (IRR) of 28.54%, a payback period of 2.75 years, and an average annual EBITDA of $44.06M.

The project cash cost is $1,170.55/oz Au and the AISC is $1,237.14/oz Au.

Initial capital costs are estimated at $116.57M and cover first stage construction and pre-production stage costs. Sustaining capital costs are estimated at $88.02M and cover the next stages of construction as mining progresses.

The sensitivity analysis finds that the most influential parameter is gold price followed by the cost of operations.

25.14 Risk and Opportunities

25.14.1 Mineral Reserve and Mining Methods

The following risk and opportunities to be evaluated:

- Grade control and mining near ore contacts present the risk of potentially mining diluted material or losing high-grade material. The execution of grade control methods and mining techniques should be continuously evaluated to manage this risk.

- Final pit design, ramp configuration in phases, and principal ex-pit routes are adapted to the topography of the project. However, it may involve constant cleanup of spilled material from top benches after blasting, which could lead to productivity losses. This is considered an important, but manageable operating risk to meet production targets.
- Ore mined as ROM require a P80 of 100 mm for adequate leaching process. Poor blasting that does not achieve this material size could reduce productivity by requiring additional material size reduction or affecting metal recovery in the leach pad. However, it is a manageable risk at the operational stage.
- The processing rate is primarily based on the availability of water. Increasing production will depend on transporting a greater volume of water via a pipeline, or alternative water solutions closer to the project. This makes water supply a key opportunity to develop. Additionally, water via pipeline will decrease operating cost which would lead to an increase in reserves.
- Given the Mineral Resources available, a review of operating cost and gold price for Mineral Reserves will lead to a larger pit shell and increase in Mineral Reserves. There is an opportunity to increase pit inventory with a re-optimization of the deposits.
- Mineralized waste rock was included in the mine schedule as an opportunity for the future under better economic conditions. It was included with the waste dump sequence in order to prepare an area for storage in the shortest time on the waste dump. The total mineralized waste rock stored has 9.5 Mt with an average grade of 0.21 g/t Au.
- Increasing capacity of medium-grade stockpiles close to leach pad is an opportunity to avoid using the designated area above the waste dump. Having a stockpile near the leach pad might decrease operating costs related to rehandle.

25.14.2 Geotechnical Work

A robust geotechnical instrumentation and monitoring program will be implemented to proactively detect any anomalies in the performance of facilities.

Certain sectors within the open pit exhibit high safety factors. During the operational stage, and when more field information is available, there is the possibility to optimize the wall angles.

25.14.3 Recovery Methods

It is important to carry out more geometallurgical tests to determine the variability of gold recovery by location, rock type, and fragmentation, to assist with blast design and leach cycle planning.

25.14.4 Infrastructure and Mine Facilities

In the construction plan, include whenever possible the use of modular and prefabricated structures to reduce construction times.

The start-up schedule, start-up equipment, and personnel deployment are part of the main areas of risks and opportunities which will be improved conducting further studies and defining schedules in detail.

25.14.5 Water Management (water balance, hydrology, and hydrogeology)

The Fenix Gold Project is dependent on water trucked from Copiapó or the Lince camp infrastructure site. This makes water an expensive commodity and needs to be carefully controlled, recycled, and reutilized throughout the project.

Water trucking is a critical part of the operation that will require a controlled implementation, close supervision, and monitoring, to be able to maximize the opportunities and efficiencies, and ensure safe operations and good relations with other road users.

25.14.6 Environmental, Permitting and Social Risks

The principal environmental risks for the project are associated with:

- Changes to the Laws and regulations in Chile
- Winter conditions
- Climate change

The principal opportunities identified for the project are:

- The environmental management proposal documented in the EIA proposes higher standards than required by the authorities. They are also aligned with environmental best practice.
- The allegations presented by Fenix Gold for the reclamation process are solid and have a legal basis that supports a positive decision.
- Fenix Gold project does not use continental or superficial water from the project areas.
- The mineral recovery process is 100% closed recirculation of process water, without industrial discharge.

26 RECOMMENDATIONS

The following subsections summarize the key recommendations resulting from the review of each area of investigation completed as part of this study to improve the base case design.

26.1 Exploration

The QP author responsible for the Exploration section (Chapter 9) suggests the following recommendations based on the common presence of magnetite in the deposit and close correlation between ground magnetic anomalies and mineralisation. The QP suggests Rio2 to incorporate magnetic susceptibility as one of the parameters to characterize lithologies, alteration, and mineral zones. Measurements of this parameter should be implemented as routine during data acquisition from drilling or field reconnaissance. A susceptibility database can become a new exploration tool and an additional input for future magnetic inversions to help constrain and improve the models with local data.

26.2 Drilling

This QP recommends Rio2 to complete a full record of recoveries through all phases, particularly in the case of RC. This includes drilling diameter, depth, and lithology to investigate and mitigate the variables involved in decreasing recoveries.

26.3 Sample Preparation, Analyses and Security

This QP recommends Rio2 to maintain protocols of all sampling, sample preparation, and sample analysis for every drilling campaign executed during the Project. This helps identify and remediate eventual data acquisition misfits, which can affect the accuracy, precision, or contamination of data that supports the Resource Estimation.

26.4 Data Verification

The QP author responsible for the Data Verification section (Chapter 12) suggests the following recommendations:

- The boundaries between intrusive (Subvolcanic Intrusions unit) and country rocks (Phreatomagmatic Breccias unit) are often unclear since the contacts are given by transitions where mutual ingressions and inclusions of one unit into the other are normally observed at these contacts. To help represent the transitions observed, it is recommended that Rio2 defines an additional lithological term expressing the mixed nature between the two end members (for instance Phreato-Intrusive rocks, Mixed rocks). This lithological term, as well as the unmixed breccias or intrusions, should also be geostatistically analysed with the aim to test their appropriateness to serve as estimation units.

- To complete a drill hole analysis by pairing RC drill holes with near DDH holes and comparing the DDH results with corresponding RC nearest results. In every future drilling campaign Rio2 should twin approximately 10% of RC holes with diamond drilling holes to support the quality of the RC drilling.
- To make opportune corrections to the sample mix up during the process of control sample insertion, Rio2 should try to process the QC close to the arrival of assay results.
- Rio2 should try to investigate the causes of the questionable bias obtained from Au high-grade standard results during the 2022 drilling campaign at AAA's lab. Possible causes to consider are:
    - The grade range covered by the selected standards is too reduced compared with the total range of grades observed in the campaign samples. This over emphasizes variability of grades.
    - The IN-M291-138 standard was created from materials too different from the samples evaluated in the project.
    - The IN-M291-138 standard best value was not well evaluated.
- The Rio2 QC program needs to be completed by incorporating 2% fine blanks and 4% external controls. The aim of inserting fine blanks is to indicate if the analytical laboratory is a potential source of contamination. The lack of these blanks can affect the ability to track where potential sample contamination occurred. External control samples were not considered during the 2020-2021 campaign. These samples should be routinely considered into a comprehensive QC program as they allow evaluation of the primary laboratory performance. Only pulp duplicates should be considered for this purpose.

26.5 Mineral Reserve and Mining Methods

The following recommendations were made as the project advances through construction:

- Potential for Resources and Reserves to grow through further drilling where there is considerable opportunity to extend the mine life of the Fenix Gold Project. The principal opportunity to increase project value will be having access to water via a pipeline, which allows the project to expand to 80,000 – 100,000 tpd, which lowers processing costs and administrations costs, and converts Resources into Reserves.
- The mine plan design allows for reconfiguration and upscaling of mine operations to a bigger mining fleet after 3 years of production. Timing to increase production will depend on access to water via a pipeline, like the ENAPAC project. Long term mine planning needs to maintain this potential "expansion date" present in future LOM runs.

- Future studies should include production blasting parameters and fragmentation results. This will control and optimize the required powder factors and fragmentation required for ore mined as ROM for leaching.
- Establish an infill drilling program to increase the percentage of Measured Resources and consequently the probable Reserves in the operation.

26.6 Geotechnical Work and Hydrogeology

The following geotechnical and hydrogeological recommendations apply to Fenix Gold Project:

- Shear strength and hydraulic conductivity testing on ore samples and shear strength testing on soil/geomembrane interface must be completed during the operation stage to confirm or update the geotechnical model and to anticipate stability issues.
- A robust geotechnical instrumentation and monitoring program must be implemented in the leach pad, ponds, and waste dump facilities to prevent any anomaly in the performance of those facilities.
- Monitor and reassess the behavior of surface and groundwater in the basin or sub-basin of the project area to ensure that the water resources found in the project environment are not affected by mining activities.

26.7 Recovery Methods

The QP author for the Mineral processing and metallurgical test work section (Chapter 13) suggests the following recommendations:

- Considering the mineralization, lithology, and alteration models, it is recommended that the deposit's main geological units be identified to provide predictive information prior to mining. It is important to include the total copper, copper oxide, and secondary copper grades in the block model to predict high lime and cyanide consumptions, as well as high copper dissolution in the pregnant solution, which would cause problems in the ADR plant circuit and report to the doré bars.
- Further studies are recommended to confirm or rule out the impact of magnesium salts and sulphates on lime consumption. ICP tests on the feed reported magnesium values up to 2.34% and sulphates up to 0.34%.
- The samples do not contain significant quantities of fines (< 10% -74 microns), therefore, it is recommended that the irrigation rate be increased to more than 12 $l/h.m^2$, to shorten leaching times.
- Strontium and radioactivity levels in the mineralized material should be monitored as the multi-element assays reported average values of 800 ppm of strontium in the feed. Naturally occurring strontium is generally not radioactive.

26.8 Site Infrastructure

Site infrastructure recommendations include:

- The implementation of communication infrastructure such as cell phone and radio towers and repeaters need to be completed as early as possible. This will provide good site coverage for communications to ensure safe and efficient operations during the construction stage of the Project.
- The project will initially use inflatable tents structures imported from Canada as temporary workshops. The main workshop construction is scheduled for the second year in parallel with operations. It is important to complete this infrastructure and connect it to the power line to provide a good working environment for all the necessary facilities, such as the wash-bay, welding bay, and offices, before equipment starts to require major repairs.

26.9 Water Management

The Fenix Gold project is dependent on water trucked from the water source in Copiapó or from the Lince camp infrastructure site. As such water is an expensive commodity and needs to be carefully controlled and recycled and reutilized throughout the project, recommendations include:

- All main roads should be surfaced and maintained with dust suppressants as soon as constructed to minimize the use of water application for dust control.
- The main opportunity to reduce water losses in the project is by reducing evaporation on the leach pad and associated ponds. The feasibility study considers the use of special Thermofilm covers for the leach pad that incorporates the drip lines within its composite layers. This will reduce evaporation significantly; and maintain heat within the pad to assist with winter conditions. Ponds will be covered with floating covers or floating ball technology to reduce evaporation.
- Education of the workforce as to the value of water and the need to minimize loses and reuse wherever possible is an important recommendation for the Project.
- Technology should be utilized by the project to allow measurement and control of the water resource on site as soon as possible, the implementation of onsite communications and Wi-Fi will be a key part of this.

26.10 Environment, Permitting, Social and Community Relations

In the EIA study for the Fenix Gold Project presented in 2022, both mitigation measures and voluntary commitments proposed by Fenix Gold to control and manage the identified environmental risks identified in several studies. The effectiveness of these measures and commitments should be monitored to measure effectiveness, and execute adjustments if opportunities are identified to improve results.

The benefits of some of these voluntary commitments extend outside of the immediate areas to the Project. Accordingly, these voluntary commitments were socialized with local and national authorities, as well as all other relevant stakeholders. The results of these voluntary commitments should be regularly communicated to interested stakeholders to keep them informed and involved.

Since the EIA was rejected in June 2023 by the regional evaluation committee, Fenix Gold has entered an administrative appeal process before a committee of ministers. Additional voluntary commitments principally related to Fauna were presented to the committee as part of the appeal process to provide additional information related to ruling out significant impact over fauna.

If the EIA is approved in the Committee of Ministers appeal, a process optimizing the use of resources and reduction of waste generation will need to be implemented as part of a culture of continuous improvement. This will need to be done as soon as possible after construction and operation of the Project begins.

All programs and plans proposed in the EIA, as well as subsequent voluntary commitments or conditions approved by the Committee of Ministers, will need to be executed in the early stages of the project. This is to allow early identification of any variations in the normal functioning of the natural systems in and around the project, allowing for control and mitigation of any potential environmental risks identified.

26.10.1 Social

Fenix Gold has formed commitments with the Colla Communities during the Indigenous Consultation Process (PCI). This relationship is regulated by the state of Chile, so that compliance with voluntary measures and commitments become mandatory. This is to foster trust between state institutions, communities, and the company.

It is recommended for Fenix Gold to comply with the voluntary cooperation agreements signed between them and the Colla Communities. These agreements encompass employment, health, technology, productive development, and others. This is to maintain a positive long-term relationship between the parties.

Fenix Gold should have a designated point of contact with the communities so that their questions or problems are properly received, addressed, and mitigated in a timely manner.

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