San Agustin Operations, Durango State, Mexico, NI 43-101 Technical Report

Prepared for:
Heliostar Metals Ltd.

Prepared by:

Mr. Todd Wakefield, RM SME, Mine Technical Services
Mr. David Thomas, P.Geo., Mine Technical Services
Mr. Jeffrey Choquette, P.E., Hard Rock Consulting
Mr. Carl Defilippi, RM SME, Kappes Cassiday and Associates
Ms. Dawn Garcia, CPG, Stantec

Effective Date:
30 November, 2024

Amended and Refiled:
14 January 2025

CERTIFICATE OF QUALIFIED PERSON

I, Todd Wakefield, RM SME, am employed as the Manager and Principal Geologist, with Mine Technical Services Ltd., with a street address at 4110 Twin Falls Drive, Reno, NV, 89511.

This certificate applies to the technical report titled “San Agustin Operations, Durango State, Mexico, NI 43-101 Technical Report” that has an effective date of 30 November, 2024 (the “technical report”).

I am a Registered Member (RM) of the Society of Mining, Metallurgy, and Exploration (SME), registration number 4028798. I graduated from the University of Redlands with a Bachelor of Science degree in Geology in 1986, the Colorado School of Mines with a Master of Science degree in Geology in 1989, and the University of Alberta with a Citation in Applied Geostatistics in 2019.

I have practiced my profession continuously since 1987. I have been directly involved in gold and base metal exploration and mining projects in the United States, Venezuela, Indonesia, Perú, and Mexico, and I have been involved in the evaluation of data quality, geologic modeling, resource modeling, and estimation for gold, base metal, and industrial mineral projects in North and South America, and the Asia Pacific.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 *Standards of Disclosure for Mineral Projects* (NI 43–101) for those sections of the technical report that I am responsible for preparing.

I most recently visited the San Agustin Operations on 18 November, 2024, a duration of one day.

I am responsible for Sections 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8.1, 1.8.2, 1.24 (exploration only); Sections 2.1, 2.2, 2.3, 2.4.1, 2.6, 2.7; Sections 3.1, 3.2; Section 4; Section 5; Section 6; Section 7; Section 8; Section 9; Section 10; Section 11; Sections 12.1, 12.2, 12.3, 12.4.1; Section 23; Sections 25.1, 25.2, 25.3, 25.4; 26.1 (exploration only), 26.2, and Section 27 of the technical report.

I am independent of Heliostar Metals Ltd. as independence is described by Section 1.5 of NI 43–101.

I have been involved with the San Agustin Operations since 2021 when I helped compile a technical report on the project.

As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the technical report not misleading.

Dated: 14 January 2025.

“Signed”

Todd Wakefield, RM SME.

CERTIFICATE OF QUALIFIED PERSON

I, David Thomas, P.Geo. am employed as an Associate Mineral Resource Estimator with Mine Technical Services Ltd., with a street address at 4110 Twin Falls Drive, Reno, NV, 89511.

This certificate applies to the technical report titled "San Agustin Operations, Durango State, Mexico, NI 43-101 Technical Report" that has an effective date of 30 November, 2024 (the "technical report").

I am a member of the Engineers and Geoscientists of British Columbia (EGBC Licence # 149114). I am also a member of the Australasian Institute of Mining and Metallurgy (MAusIMM # 225250).

I graduated from Durham University, in the United Kingdom, with a Bachelor of Science degree in Geology in 1993, and I was awarded a Master of Science degree in Mineral Exploration from Imperial College, University of London, in the United Kingdom in 1995

I have practiced my profession for over 31 years since graduation. I have been directly involved in the review of exploration programs, geological models, exploration data, sampling, sample preparation, quality assurance/quality control, databases, and Mineral Resource estimates for a variety of mineral deposits, including epithermal vein deposits. I have worked in Argentina, Australia, Brazil, Bulgaria, Canada, Chile, Colombia, Ecuador, Greece, México, Peru, Romania, Serbia, and the USA.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 *Standards of Disclosure for Mineral Projects* (NI 43–101) for those sections of the technical report that I am responsible for preparing.

I most recently visited the San Agustin Operations on 18 November 2024, a duration of one day.

I am responsible for Sections 1.1, 1.2, 1.8.2, 1.10, 1.11, 1.21.1.1, 1.22.2; Sections 2.1, 2.2, 2.3, 2.4.2, 2.5, 2.6; Sections 3.1, 3.2; Section 12.4.2; Section 14; Sections 25.1, 25.6, 25.16.1, 25.17; and Section 27 of the technical report.

I am independent of Heliostar Metals Ltd. as independence is described by Section 1.5 of NI 43–101.

I have had no previous involvement with the San Agustin Operations.

As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the technical report not misleading.

Dated: 14 January 2025

“Signed and sealed”

David Thomas, P.Geo.

CERTIFICATE OF QUALIFIED PERSON

I, Jeffrey Choquette, P.E., am employed as a Principal Engineer with Hard Rock Consulting LLC, with an office address at 13918 E Mississippi Ave, Suite 474, Aurora, CO, 80012.

This certificate applies to the technical report titled "San Agustin Operations, Durango State, Mexico, NI 43-101 Technical Report" that has an effective date of 30 November, 2024 (the "technical report").

I am a Registered Professional Engineer in the State of Montana (No. 12265) and a QP Member in Mining and Ore Reserves in good standing of the Mining and Metallurgical Society of America (No. 01425QP).

I am a graduate of Montana College of Mineral Science and Technology and received a Bachelor of Science degree in Mining Engineering in 1995.

I have 29-plus years of domestic and international experience in project development, resource and reserve modeling, mine operations, mine engineering, project evaluation, and financial analysis. I have worked for mining and exploration companies for 15 years and as a consulting engineer for 14 years. I have been involved in industrial minerals, base metals and precious metal mining projects in the United States, Canada, Mexico and South America.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 *Standards of Disclosure for Mineral Projects* (NI 43–101) for those sections of the technical report that I am responsible for preparing.

I visited the San Agustin Operations on 18 November, 2024, a duration of one day.

I am responsible for Sections 1.1, 1.2, 1.8.2, 1.12, 1.13, 1.14, 1.16 (excepting power), 1.18, 1.19 (excepting process costs), 1.20 (excepting process costs), 1.21, 1.23, 1.24 (mining only); Sections 2.1, 2.2, 2.3, 2.4.3, 2.5, 2.6; Section 3; Section 12.4.3; Section 15; Section 16; Section 18 (excepting 18.9); Section 19; Section 21 (excepting process capital and operating costs); Section 22; Section 24; Sections 25.1, 25.7, 25.8, 25.10 (excepting power), 25.12, 25.13 (excepting process costs), 25.14 (excepting process costs), 25.15, 25.18; Sections 26.1 (mining only), 26.3; and Section 27 of the technical report.

I am independent of Heliostar Metals Ltd. as independence is described by Section 1.5 of NI 43–101.

I have had no previous involvement with the San Agustin Operations.

As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the technical report not misleading.

Dated: 14 January 2025

“Signed and sealed”

Jeffrey Choquette, P.E.

CERTIFICATE OF QUALIFIED PERSON

I, Carl Defilippi, RM SME am employed as a Project Manager at Kappes, Cassiday & Associates, with an office at 7950 Security Circle, Reno, NV, 89506.

This certificate applies to the technical report titled “San Agustin Operations, Durango State, Mexico, NI 43-101 Technical Report” that has an effective date of 30 November, 2024 (the “technical report”).

I am a Registered Member of the Society for Mining, Metallurgy & Exploration (RM SME) with a membership number of 775870. I graduated from the University of Nevada with a Bachelor of Science degree in Chemical Engineering in 1978 and a Master of Science degree in Metallurgical Engineering in 1981.

I have practiced my profession continuously for 43 years. I have been directly involved in the development of gold-silver leaching projects and have successfully managed studies at all levels on numerous cyanidation projects.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 *Standards of Disclosure for Mineral Projects* (NI 43–101) for those sections of the technical report that I am responsible for preparing.

I most recently visited the San Agustin Operations from 14–15 March 2023, a duration of two days.

I am responsible for Sections 1.1, 1.2, 1.8.2, 1.9, 1.15, 1.16 (power only), 1.19 (process costs only), 1.20 (process costs only), 1.22.1.2, 1.24 (process only); Sections 2.1, 2.2, 2.3, 2.4.4, 2.6; Sections 3.1, 3.2; Section 12.4.4; Section 13; Section 17; Section 18.9; Section 21 (process capital and operating costs only), Sections 25.1, 25.5, 25.9, 25.10 (power only), 25.13 (process costs only), 25.14 (process costs only), 25.16.2; Sections 26.1 (process only), 26.4; and Section 27 of the technical report.

I am independent of Heliostar Metals Ltd. as independence is described by Section 1.5 of NI 43–101.

I have been involved with the San Agustin Operations since 2013. I have previously co-authored the following technical reports on the San Agustin Operations:

- Lane, T., Samari, H., Defilippi, C., and Breckenridge, L., 2024: San Agustin Gold/Silver Mine, Durango, Mexico, NI 43-101 Technical Report: report prepared for Florida Canyon Gold Inc., effective date 20 June, 2024;
- Leduc, M., Nicholls, O., and Defilippi, C., 2024: San Agustin Gold/Silver Mine, Durango, Mexico, NI 43-101 Technical Report: report prepared for Argonaut Gold Inc., effective date 15 May, 2024;
- Arkell, B., Carron, J., and Defilippi, C., 2021: San Agustin Gold/Silver Mine, Durango, Mexico, NI 43-101 Technical Report: report prepared for Argonaut Gold Inc., effective date 1 August, 2021;
- Defilippi, C.E., Lechner, M.J., and Rhoades, R., 2016, Technical Report and Updated Preliminary Economic Assessment, San Agustin Heap Leach Project, Durango, Mexico: report prepared for Argonaut Gold Inc., effective date 29 April, 2016;
- Defilippi, C.E., and Lechner, M.J., 2015, Technical Report and Preliminary Economic Assessment, San Agustin Heap Leach Project, Durango, Mexico: report prepared for Argonaut Gold Inc., effective date 3 October, 2014;
- Lechner, M.J., Defilippi, C.E., 2014, Oxide Resource Estimate, San Agustin Project, Durango, Mexico: report prepared for Argonaut Gold Inc., effective date 8 July, 2014.

I have read NI 43–101 and the sections of the technical report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the technical report not misleading.

Dated: 14 January, 2025

“Signed”

Carl Defilippi, RM SME

CERTIFICATE OF QUALIFIED PERSON

DAWN H. GARCIA

I, Dawn H. Garcia, state that:

(a) I am a Senior Associate at:

Stantec Consulting Services Inc.
One South Church Avenue, Suite 2100
Tucson, Arizona, USA

(b) This certificate applies to the technical report titled "San Agustin Operations, Durango State, Mexico, NI 43-101 Technical Report" with an effective date of 30 November 2024 (the "Technical Report").

(c) I am a "qualified person" for the purposes of National Instrument 43-101 ("NI 43-101"). My qualifications as a qualified person are as follows: I am a graduate of Bradley University with a bachelor's degree in Geological Sciences in 1982 and a graduate of California State University, Long Beach, with a master's degree in Geology in 1995. I am a licensed Professional Geologist in Arizona (License No. 26034) and am certified as a Professional Geologist (CPG) with the American Institute of Professional Geologists (Membership Number 08313). I am also a registered member of the Society for Mining, Metallurgy & Exploration (Membership No. 4135993). I have practiced my profession as an environmental geologist and hydrogeologist for over 35 years. I have over 20 years of experience in the mining industry. My relevant experience for the purpose of this Technical Report is:
- Acted as the Qualified Person for the Environmental, Permitting and Social section for 18 public disclosure technical reports and more than 20 detailed environmental and permitting reviews.
- Conducted environmental, socio-economic, or water-related tasks for over 50 mineral development, mineral processing, and mining operations.

(d) My most recent personal inspection of the San Agustin Operations occurred on 11 September 2024 and was for a duration of one day.

(e) I am responsible for Sections 1.1, 1.2, 1.17, 1.22.1.3, 1.24 (environmental only), 2.1, 2.2, 2.3, 2.4.5, 3.1, 3.2, 12.4.5, 20, 25.1, 25.11, 25.16.3, 26.1 (environmental only), 26.5, and 27 of the Technical Report.

(f) I am independent of the issuer as described in Section 1.5 of NI 43-101.

(g) I have no previous involvement with the San Agustin Operations.

(h) I have read NI 43-101 and the part of the Technical Report for which I am responsible has been prepared in compliance with NI 43-101; and

(i) At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the parts of the Technical Report for which I am responsible, contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated at Tucson, Arizona, USA this 14th day of January 2025.

Dawn H. Garcia, PG, CPG

IMPORTANT NOTICE

This report was prepared as National Instrument 43-101 Technical Report for Heliostar Metals Limited (Heliostar) by Mine Technical Services Ltd., Hard Rock Consulting LLC, Kappes, Cassiday & Associates, and Stantec Consulting Services Inc. (collectively the Report Authors). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in the Report Author's services, based on i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by Heliostar, subject to terms and conditions of its contracts with each of the Report Authors. Except for the purposes legislated under Canadian provincial and territorial securities law, any other uses of this report by any third party is at that party's sole risk.

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1.0 SUMMARY

1.1 Introduction

Mr. Todd Wakefield, RM SME, Mr. David Thomas, P.Geo., Mr. Jeffrey Choquette, P.E., Mr. Carl Defilippi, RM SME, and Ms. Dawn Garcia, CPG, prepared this technical report (the Report) for Heliostar Metals Ltd. on the San Agustin Operations (also referred to as the San Agustin Mine or the Project), located in the State of Durango, Mexico.

The Report was refiled on 14 January 2025 to correct a Certificate of Qualified Person that had not been dated. There are no other changes to the Report.

The San Agustin Mine is owned and operated by Minera Real del Oro, S.A. de C.V. (Minera Real del Oro), which is a wholly-owned Heliostar subsidiary.

Heliostar announced notice of the acquisition of the Project on July 17, 2024, from Florida Canyon Gold Inc., an interim successor to the former operator Argonaut Gold Inc. (Argonaut), and completed the acquisition on November 8, 2024.

Mineral Resources are reported for oxide, transitional and sulphide material, whereas Mineral Reserves are only reported for oxide and transition material.

1.2 Terms of Reference

The Report was prepared to support Heliostar's news release dated 13 January 2025 entitled "Heliostar Files Technical Reports on Mines and Development Project Recently Acquired in Mexico".

Mineral Resources are classified using the 2014 edition of the Canadian Institute of Mining and Metallurgy (CIM) Definition Standards for Mineral Resources and Mineral Reserves (the 2014 CIM Definition Standards).

All measurement units used in this Report are metric unless stated otherwise, and currency is expressed in United States (US) dollars unless stated otherwise. The Mexican currency is the Mexican peso. The Report uses Canadian English.

1.3 Project Setting

The San Agustin Operations are located in the northern San Lucas de Ocampo District in the State of Durango, 4 km north of the village of San Agustin de Ocampo and approximately 100 km north of the city of Durango. Initial access to the Project can be gained via paved Highway 45 for 90 km north from the city of Durango to San Lucas de Ocampo. The Project can be reached from San Lucas de Ocampo by a 10 km all-weather gravel road. Well maintained dirt roads provide access to most of the concession area. A north access road primarily serves to connect the San Agustin mine to Heliostar's closed El Castillo mine. The distance between the two mines is approximately 11 km.

A port facility in Mazatlan is located approximately 360 km south of the Project and railway access is available in Torreón and Durango. Torreón is located approximately 260 km to the northeast of the Project on two-lane paved Mexican Highway 40D. There are daily flights to the city of Durango from Mexico City and Dallas, Texas.

The Project is situated in a zone classified as semi-dry. Mining operations have been conducted year-round and are expected to be year-round in the future.

Durango is a major regional population centre, and the state capital, with approximately 600,000 inhabitants. Most supplies and some contractors for construction and mining are available in Durango. The local resources and infrastructure were adequate to support the mining operation.

Absolute relief varies from 1,875 masl in stream gullies to near 2,000 masl in areas of highest relief. The elevation of the area containing the bulk of the known mineralization ranges from 1,550–1,950 masl. Vegetation in the area consists of various species of cactus, mesquite, and other thorny bushes. Fertile areas of the flat-lying fans near prominent streams are under cultivation (corn, beans) while the remainder is used as pasture for cattle.

1.4 Mineral Tenure, Surface Rights, Water Rights, Royalties and Agreements

The San Agustin Mine is owned and operated by Minera Real del Oro, S.A. de C.V., a wholly-owned Heliostar subsidiary.

The San Agustin Operations consist of 15 mineral concessions totalling 5,884 ha. Current mining operations and the Mineral Resources and Mineral Reserves presented in this Report are located within the Project mineral concessions. As per Mexican requirements for grant of tenure, the concessions were surveyed on the ground by a licensed surveyor. All applicable payments and reports were submitted to the relevant authorities, and the licenses were in good standing as at the Report effective date.

Heliostar owns 207 ha of surface rights at San Agustin. An additional 218 ha are held under agreements with two local ejidos and an individual landowner. A land access agreement was entered into for part of the southwest portion of the deposit on August 4, 2023 with a private group. As a condition of this agreement, Heliostar must obtain the change of use of soils permit, and at that time the final payment for access will be made and the agreement will be in effect. Heliostar expects to receive the permit during Q2 2025. Heliostar will need to purchase or lease surface rights in the southwest portion of the mine for the final layback in Phase 4 of the proposed open pit.

Heliostar maintains a single underground water right totaling 1,000,000 m^3/yr, and a water discharge permit in the amount of 1,100 m^3/yr.

The San Agustin concessions are not subject to any royalties on the oxide Mineral Resources, but EMX Royalty Corp. holds a 2% net smelter return (NSR) royalty on any sulphide mineralization that may be developed in the future. Under the Federal Ley de Derechos there is a mining duty that functions in a comparable manner to an income tax, where the government collects 8.5% of taxable earnings before interest and depreciation. In addition, precious metal mining companies must pay a 1% duty on revenues from gold, silver, and platinum.

1.5 Geology and Mineralization

The San Agustin deposit is an example of a porphyry deposit that was subsequently overprinted by a late-stage epithermal event.

The area of known mineralization at the Project is dominated by an igneous, quartz monzonite dome complex intruding a clastic sedimentary sequence composed of shale, mudstone, and less abundant sandstone. Occasionally some calcareous layers are observed in the sedimentary sequence. Both the intrusive complex and the sedimentary sequence occur on a dominant northwest trend with sub-vertical dips. These two main units are unconformably covered by post-mineralization rhyolites and younger conglomerates.

The San Agustin deposit is roughly 1,500 m long by 800 m wide. The average depth of oxide material is 65–100 m below surface. Sulphide mineralization extends, where drilled, down to an average depth of about 200 m with the deepest tested areas extending to 400 m below surface. The oxide portion of the deposit remains open to the northwest and to the southwest. The sulphide portion of the deposit is open in all directions and at depth.

Mineralization was emplaced through a strong and widespread system of sulphide-rich veins, veinlets, and fissure fillings that make the system similar to a disseminated deposit. Fracture systems follow two main trends that run northeast and northwest. Locally, mineralization can be observed following lithological controls in the sedimentary rocks, especially where they run parallel to sediment-intrusive rock contacts. Mineralization is also observed in the flow facies of the intrusion and is usually characterized by disseminated pyrite and in parallel veinlets. A component of the pyrite is thought to be pre-mineralization and associated with early phyllic alteration.

The mineral system has very little silica and is more related to sulphide fracture filling. Epithermal boiling textures were observed locally such as bladed textures, coliform silica, or drusy quartz. These epithermal textures are not common. Some structures with cryptocrystalline jasperoid have also been found in deeper drill intercepts within sulphide zones.

Two late phases of mineralization were identified with one carrying sphalerite and pyrite, and the other, galena and sphalerite. This mineralization is related to an epithermal low sulphidation system superimposed over the intrusion-related gold system. The sulphide boundary is located within a range of 30–170 m below the surface with an average depth of about 65 m. The boundary is reached when the rock colour turns grey and disseminated pyrite becomes visible. The transition zone is commonly <1 m wide. The boundary surface is undulating and erratic across the deposit, primarily due to the many faults and fractures controlling ground water in the area.

There are several areas around the San Agustin pit where mineralized corridors defined in mining extend beyond the pit into areas that have little or no drill testing. These corridors are commonly controlled by northeast striking faults that focus gold mineralization and can be effectively targeted by shallow drilling. These zones represent the potential to identify shallow oxide material.

Mineralization defined in drilling in Phase 4 is open to the southwest and several lines of evidence including trenching, rocks, and soils indicate that mineralization extends beyond the current planned pit limits. A major northeast-striking structure that localized high-grade gold mineralization in the San Agustin pit and Phase 4 is open, and is poorly tested by drilling to the southeast.

The San Agustin Mine has significant exploration potential in sulphide material below the ultimate pit design, which has not been a historical focus of exploration. Past exploration and mining have focused almost exclusively on oxide gold mineralization that was amenable to heap leach processing.

A land package acquisition completed in 2016 has seen little exploration. The Consejo Zone is an underground gold and base metals prospect. It was drilled in the 1980s but has not been explored since. Additional prospects include a number of color anomalies and pathfinder elements in soils anomalies surrounding San Agustin. Several major northeast-striking structures, which localize gold mineralization in the pit, are regional through-going structures and have received minimal drill testing beyond the pit limits.

1.6 History

Prior to Heliostar's acquisition of the Project, the following companies had completed exploration or mining activities: Consejo de Recursos Minerales, Monarch Mining Corporation (Monarch), Silver Standard Resources Inc. (Silver Standard), Geologix Explorations Inc. (Geologix), and Argonaut. Work completed included geological mapping, geochemical sampling (rock, soil, trench, underground channel), minor underground development, induced polarization geophysical survey, reverse circulation (RC) and core drilling, mining studies, mineral resource and mineral reserve estimates, environmental and social studies. Mining started in 2017. Mining and crushing activities ceased in August 2024; however, metals production continued from re-leaching of the heap leach piles.

Since Project acquisition, Heliostar has continued re-leaching of the heap leach piles.

1.7 Drilling and Sampling

Argonaut, Fresnillo, Monarch, Silver Standard, and Geologix conducted drill programs from 1997–2023. Heliostar has completed no drilling at the Report effective date.

Drilling totals 1,013 holes for 131,720 m, consisting of 808 RC drill holes (85,426 m) and 205 core holes (46,294 m). Drilling used in estimation consisted of 948 holes for 123,335 m, comprising 783 RC drill holes (82,416 m) and 165 core holes (38,919 m). Drilling excluded from estimation support included drill holes outside the model limits, drill holes with no quality assurance or quality control (QA/QC) information, drilling completed for metallurgical or water purposes.

No information is available regarding the logging procedures for the Monarch, Silver Standard, and Geologix drill campaigns. Logging of core was accomplished on a series of paper formats customized by Argonaut, which included descriptions of lithology, structures, redox boundaries, alteration, mineralization, and geotechnical data. Data from the paper drill logs were entered into an Argonaut customized Microsoft Excel data form which was then imported into the master Microsoft Access database. Paper log forms were used to record lithology, structure, alteration, mineralization, and redox boundaries (the contact between oxide and sulphide material) for RC samples. The information was later entered into a Microsoft Excel data form and then imported into the master Microsoft Access database.

No information is available regarding sample recovery for the Monarch, Silver Standard, and Geologix drill campaigns. During the Argonaut programs, sample recoveries were strictly monitored in both core and RC drill programs and controls were established in the logging formats. Core recoveries normally exceeded 95% and RC recoveries exceeded 90%.

Drill collars were located using hand-held or high-precision global positioning system (GPS) instruments.

No downhole surveys were collected during the Monarch and Silver Standard drilling programs. Geologix collected downhole survey information at approximately every 50 m using a digital Reflex downhole survey instrument. Argonaut also used a Reflex camera during early programs; downhole readings were made every 50 m. Later programs had readings taken by a north-seeking gyro instrument.

In the QP's opinion the quantity and quality of the lithological, collar, and down- hole survey data collected in the Argonaut exploration and infill drill programs are sufficient to support Mineral Resource estimation.

No information regarding the drill sampling methods is available from the Monarch, Silver Standard, and Geologix RC drill campaigns. RC cuttings were systematically collected every 1.52 m (5 ft), during Argonaut programs, regardless of their geological characteristics.

Core from the Monarch and Geologix programs were sent for analysis. The entire drill core volume from select sections of the Argonaut metallurgical drill programs was consumed for metallurgical testwork. These metallurgical drill holes were not assayed and were not used to estimate Mineral Resources.

Argonaut performed density testwork in 2014 and 2018. Based on a review of the available density data, Heliostar assigned bulk density values of 2.27 g/cm^3 to oxide and transition blocks and 2.76 g/cm^3 to sulphide blocks.

A number of sample preparation and analytical laboratories have been used over the Project history, including: Bondar Clegg Laboratories (Bondar Clegg); Rocky Mountain Geochemical, Reno, BSI Inspectorate de Mexico, S.A. de C.V., Durango; ALS Guadalajara; ALS Vancouver; Analytical Laboratories (Acme), Vancouver; Oestec, Hermosillo; SGS; Inspectorate, Hermosillo;

and ALS Chemex. All of the laboratories were independent at the time they were used. Laboratories used from 2014 onward had ISO17025 accreditations.

Monarch's RC samples were dried, crushed to 70% passing -10 mesh (2 mm) and pulverized to 75% passing 200 mesh (75 µm). Samples from Silver Standard, Geologix, and Argonaut RC drill programs were dried, crushed to 70% passing -10 mesh (2 mm) and pulverized to 85% passing 200 mesh (75 µm).

Gold was determined by fire assay on a 30 g charge with an atomic absorption (AA) finish on the Monarch RC samples. Silver and seven other elements were analyzed by aqua regia digestion and inductively coupled plasma (ICP) determination. Mercury was determined by aqua regia digestion and cold vapor AA. Silver Standard and Geologix pulps were shipped to ALS Vancouver for analysis of gold by fire assay on a 50 g charge with AA finish and an additional 35 elements by aqua regia digestion and ICP determination. Samples with initial fire assay results >10 g/t Au were re-assayed on a separate pulp by fire assay with a gravimetric finish. Overlimit assays for Ag (> 100 g/t), Zn (>10,000 ppm), and Pb (>10,000 ppm) were completed by ore grade aqua regia digestion with either ICP or AA finish. Argonaut samples were assayed for gold using a 30 g fire assay with atomic absorption finish. The detection limit was 0.005 ppm with an upper detection limit of 10 ppm. Over limit assays were automatically re-analyzed using fire assay/gravimetric methods. Trace element geochemistry was analyzed for the 2014 RC samples using conventional ICP methods to generate values for 35 elements.

Assay QA/QC results from the initial Monarch and Silver Standard drilling programs were limited. Geologix located coarse rejects from the Monarch and Silver Standard drilling programs and sent approximately 5% (182 samples) of those samples to ALS Vancouver for check assaying along with certified reference materials (standards) at a rate of one standard for every 20 samples. Geologix programs included insertion of standards, blanks, and duplicate samples, and use of an umpire laboratory. Argonaut programs included submission of blanks, standards, field duplicates, and completion of check assay programs.

There is no information as to security measures taken with regards to pre-Argonaut drill hole samples. The Argonaut samples were always in the custody of employees, drill contractors, and commercial trucking firms. The sample bags were secured with plastic zip ties and placed into larger zip tie secured rice bags for transport to the sample preparation facility.

The QP is of the opinion that the sample preparation, sample security, and analytical procedures undertaken by Argonaut for the San Agustin Project are adequate. The QA/QC procedures and subsequent results demonstrate that the drill hole data are reasonable and suitable for estimating Mineral Resources.

1.8 Data Verification

1.8.1 Internal Verification

Argonaut data validation included automatic validation of sample numbers and analytical methods of received analytical certificates in GeoSequel. Before the analytical results were imported, a validation report was generated indicating any discrepancies between sample numbers and requested analysis compared to the sample dispatch. Any inconsistencies were corrected by the database manager. When there were no discrepancies, the data were imported and results were available in the database. Heliostar data verification uses similar methods to those described for Argonaut.

1.8.2 Verification by Qualified Persons

The QPs performed site visits in support of Report compilation and data verification. The QPs individually reviewed the information in their areas of expertise, and concluded that the information supported Mineral Resource and Mineral Reserve estimation, and could be used in mine planning and in economic analyses.

1.9 Metallurgical Testwork

San Agustin has been an operating mine since 2017 with crushing and stacking of new ore stopping at the end of September 2024. Leaching is ongoing.

Metallurgical test work has been conducted from 2009 to the present. All the test results support the realized gold recovery of 59.5% as of the end of November 2024. In 2023, processing of transition ore increased significantly, and overall recoveries have been decreasing slightly but are in line with test work results. Actual silver recovery is less than that predicted by the test work which is largely due to poor silver recovery in the carbon adsorption plant and lower levels of sodium cyanide in the leach solutions (both intentional to favour gold recovery). The addition of a Merrill-Crowe plant in November 2020 and continued leaching is expected lead to increased silver recovery but the realized recovery will ultimately not be in line with test work expectations. The operation of the Merrill-Crowe plant was recently stopped due to low silver values in the pregnant leach solutions but can be re-started as needed if silver values begin to increase.

The processed ore has generally followed the results from the monthly composite column test data and prior tests. Test work on oxides, transition and sulphide material indicates gold recovery of 66% for oxides, 38% for transition, 26% for argillic transition, 17% for silicic transition, 28% for transition from stockpiles, and 22% for the sulphides. Based on past results and on ore stacked as of the end of September, overall gold recovery is projected to be 61.3%.

Silver recoveries have been adjusted down from the test work results due to the low field recovery in relation to test work results. Recoveries for silver are estimated to be 10% for oxides, transition, and argillic transition; 9% for silicic transition; 6% for transition from stockpiles; and 6% for the sulphides.

Cyanide consumption is reasonable and lime consumption is high for the sulphide materials.

Blending of the argillic sulphide material with other transition/sulphide material may be a viable treatment strategy, although a detailed economic evaluation of this concept and the practicality of selectively mining only this material type is required. Preliminary environmental testing of the transition and sulphide samples was conducted to evaluate the long-term effects of heap leaching this material. These results indicate a potential for transition and sulphide materials to generate acid over time and it is recommended that they be stacked on the heap leach pad in such a manner to allow them to be surrounded by oxide ore to minimize long term exposure to precipitation events which could lead to acid drainage from the heap.

There are no significant deleterious elements in the San Agustin ores.

1.10 Mineral Resource Estimation

Argonaut technical staff performed annual updates to the Mineral Resource model. Information from infill drilling, blast hole data, and pit mapping were incorporated into the annual updates. In each update, the interpolation parameters were adjusted to improve reconciliation to the short-range block model used for grade control. In November 2024, Heliostar updated the resource block model using the drilling database that includes 1,000 drill holes totaling 127,612.15 m and 75,023 samples to support interpolation of gold and silver grades.

Argonaut's geological staff and geological consultants constructed a number of wireframe solids using Leapfrog software. These three-dimensional solids included shapes for the gold grade shell using a 0.13 g/t Au cut-off, key lithological units, oxidation units, and critical fault planes.

Heliostar elected to cap raw gold assays at 7.0 g/t and silver assays were capped at 300 g/t. Drill hole assays were composited to 3 m fixed lengths.

A number of gold variograms (correlograms) were generated in 2014, and used for oxide estimation. For the sulphides, the QP used blasthole indicator variograms above incrementally higher cut-offs to select an outlier grade threshold of 4.5 g/t and a distance of 12 m.

Based on a review of the available density data, Argonaut assigned bulk density values of 2.27 g/cm^3 to oxide and transition blocks and 2.76 g/cm^3 to sulphide blocks. Oxide blocks coded as alluvium and conglomerate were assigned the oxide bulk density of 2.27 g/cm^3. This value may be appropriate for those surficial deposits, but some additional work should be undertaken to support more accurate estimates to support mine planning.

Gold grades are transitional across the primary lithological and oxidation state contacts. These contacts were used as soft boundaries for the grade estimation plan which allowed composites from the various rock types and oxidation states to contribute to the estimation of blocks across their boundaries. A gold grade shell of 0.13 g/t Au was used as a hard boundary for grade estimation purposes. In the sulphides, the 0.35 g/t probability-based grade shell was used as a hard boundary for grade estimation. Grade estimation was carried out in three passes for each of the seven structural domains. For the oxide and transition material types, the low grade passes (passes 1–2) were estimated first using capped composites inside the 0.13 g/t Au gold grade shell. The low-grade passes used an outlier restriction method to restrict the influence of grades >0.35 g/t Au to 10 m. The high-grade pass (pass 3) overwrote blocks with grades ≥0.35 g/t Au and did not employ outlier restriction. The high grade pass used more anisotropic search ellipse dimensions, to mimic the distribution of higher gold grade zones along narrow sub-vertical structures and breccia zones. The grade estimation of the sulphide material type used a similar approach except the outlier restriction in the low-grade pass was changed to 0.5 g/t and the high-grade pass used an additional outlier restriction with a threshold of 4.5 g/t and a maximum distance of 12 m.

Silver grades were estimated by ID2 using four passes with outlier restriction varying by structural domain. Similar estimation parameters were used for silver as were used for gold. The domains, number of composites, ellipse dimensions, and ellipse orientation were the same, but the outlier restriction parameters were different and there was no separation of low-grade and high-grade domains.

Estimated block grades were verified visually, using statistical methods, and by reconciliation with the mine short-term model. No material biases were observed.

Mineral Resource confidence categories were assigned using drill spacing:

- Indicated:
  - Oxide and transition: drill spacing of 50 m or less, and falling within the 0.13 g/t grade shell;
  - Sulphide: 50 m drill spacing and blocks falling within the 0.35 g/t gold grade shell (demonstrating grade continuity above a 0.35 g/t Au cut-off grade);
- Inferred:
  - Oxide and transition: All blocks not classified as Indicated, and falling within the 0.13 g/t grade shell;
  - Sulphide: All blocks not classified as Indicated and falling within the 0.13 g/t grade shell.

Argonaut generated a conceptual Lerchs–Grossmann (LG) pit to constrain the Mineral Resource estimate in support of reasonable prospects of eventual economic extraction.

Internal gold equivalent (AuEq) cut-off grades were used to summarize Mineral Resources and varied by material type as follows: 0.14 g/t AuEq for oxides, 0.27 g/t AuEq for transition; 0.41 g/t AuEq for sulphide argillic; and 0.6 g/t AuEq for sulphide silicified. The AuEq grades were calculated using ratios of metal prices and metal recoveries in the following equation:

- AuEq = (Au + Ag/equivalency factor)

Where equivalency factor = ((Au price in US$/g * Au recovery) / (Ag price in US$/g * Ag recovery)).

1.11 Mineral Resource Statement

Mineral Resources are reported insitu, using the 2014 CIM Definition Standards, and are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The Qualified Person for the estimate is Mr. David Thomas, P.Geo., Associate Mineral Resource Estimator with MTS.

Mineral Resources for San Agustin were tabulated inside a conceptual pit using variable cut-off grades that depended on the oxidation state of the mineralization.

Mineral Resources are summarized in Table 1-1. The estimates have an effective date of August 1, 2024.

Areas of uncertainty that may materially impact the Mineral Resource estimate include: changes to the long-term gold and silver prices and exchange rates; changes in interpretation of mineralization geometry and continuity of mineralization zones; changes to design parameter assumptions that pertain to the conceptual pit design that constrains the Mineral Resources; modifications to geotechnical parameters and mining recovery assumptions; changes to metallurgical recovery assumptions; changes to environmental, permitting, and social license assumptions; and the ability to obtain or maintain land access agreements.

1.12 Mineral Reserves Estimation

Mineral Reserves were based on the economic balance between the value per tonne of rock and the cost to mine and process each tonne of rock. The value was based on estimated metal concentration, estimated metal value and leach recovery. The costs included development, mining, processing, and operating overhead.

Blocks were converted from Indicated Mineral Resources to Probable Mineral Reserves based on positive cash flow pit optimization results, pit designs and geological classification of Indicated Mineral Resources. Inferred Mineral Resources were set to waste. The final pit was limited to a US$1,900/oz AuEq pit shell. The pit was designed as two phases for the Mineral Reserve evaluation, with the first phase providing a shorter haulage route to the crusher.

The San Agustin deposit was mined from 2017 and was put on care and maintenance in November 2024 as Heliostar works to finalize the land use change authorization for phase 4B of the pit which where the Mineral Reserves estimate is located. Heliostar expects to receive final resolution of the land use change authorization in Q2 2025.

The Mineral Reserves were limited to only oxide and transition material; all sulphide material was classified as waste. The Mineral Reserves for the oxide and transitional material were reported using a 0.156 g/t and 0.310 AuEq cutoff respectively inside the pit designs. Gold equivalency (AuEq) grades were calculated using ratios of metal prices and metal recoveries in the following equation:

- AuEq = (Au + Ag/equivalency factor)

Where equivalency factor = ((Au price in US$/g * Au recovery) / (Ag price in US$/g * Ag recovery)).

1.13 Mineral Reserves Statement

The Mineral Reserve estimates are reported at the point of delivery to the process plant, using the 2014 CIM Definition Standards. The QP for the estimate is Mr. Jeffrey Choquette P.E., of Hard Rock Consulting.

The Mineral Reserves are reported using AuEq cutoffs inside of the final pit as shown in Table 1-2. The estimates have an effective date of 30 November, 2024.

Table 1-1: Mineral Resource Statement

Material Type	AuEq Cutoff (g/t AuEq)	Confidence Classification	Tonnes (kt)	Gold Grade (g/t Au)	Silver Grade (g/t Ag)	Contained Gold (koz)	Contained Silver (koz)
Oxide	0.14	Indicated	17,154	0.30	11.5	165	6,333
Transitional	0.27		700	0.44	17.4	10	391
Sulphide argillic	0.41		5,348	0.80	14.0	138	2,403
Sulphide silicified	0.60		427	0.90	7.4	12	102
Total			***23,629***	***0.43***	***12.2***	***325***	***9,229***
Oxide	0.14	Inferred	1,273	0.29	9.2	12	378
Transitional	0.27		5	0.32	25.6	0	4
Sulphide argillic	0.41		121	0.64	9.6	2	38
Sulphide silicified	0.60		2	0.68	6.0	0	0
Total			***1,401***	***0.32***	***9.4***	***14***	***421***

Notes to accompany San Agustin Mineral Resource table:

1. Mineral Resources are reported insitu, using the 2014 CIM Definition Standards, and have an effective date of 30 November, 2024. The Qualified Person for the estimate is Mr. David Thomas, PGeo., Associate Mineral Resource Estimator with MTS.
2. Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
3. Mineral Resource estimates are defined by end of month July 2024 topography.
4. Mineral Resources are constrained by a conceptual pit shell using the following assumptions: a gold price of US$2,150/oz Au; a silver price of US$26.0/oz Ag; mining cost of US$2.0/t mined; oxide process and leaching cost of US$4.23/t processed; transition process and leaching cost of US$5.14/t processed; sulphide argillic process and leaching cost of US$5.36/t processed; sulphide silicic process and leaching cost of US$4.94/t processed; general and administrative cost of US$1.4/t processed; selling cost of US$0.66/t processed; gold metallurgical recoveries from 17–66%; silver metallurgical recoveries from 9–10%; and pit slope angles of 45º.
5. Totals may not sum due to rounding.

Table 1-2: Mineral Reserves Statement

Classification	Material Type	AuEq Cut-off (g/t AuEq)	Tonnes (kt)	Gold Grade (Au g/t)	Silver Grade (Ag g/t)	Contained Gold (koz)	Contained Silver (koz)
Probable	Oxide	0.156	7,281	0.29	16.24	67	3,803
	Transition	0.310	77	0.39	31.39	1	77
	Total		***7,358***	***0.29***	***16.40***	***68***	***3,880***

Notes to accompany Mineral Reserves table:

1. Mineral Reserves are reported at the point of delivery to the process plant, using the 2014 CIM Definition Standards.
2. Mineral Reserves have an effective date of 30 November 2024. The Qualified Person for the estimate is Mr. Jeffrey Choquette, PE, of Hard Rock Consulting, LLC.
3. A 0.156 g/t AuEq cut-off is used for reporting the Mineral Reserves in oxide, and a 0.310 g/t AuEq cut-off is used for reporting Mineral Reserves in transitional material. Cut-offs were calculated based on a gold price of US$1,900/oz Au, silver price of US$23/oz Ag, processing costs of US$4.23/t for oxide, processing costs of US$5.14/t for transitional, general and administrative costs of US$1.40/t, refining and selling costs of US$0.66/t, gold recovery of 66% for oxide and 38% for transitional and a silver recovery of 10% for oxide and transitional. The AuEq calculation uses the formula AuEq = (Au + Ag/equivalency factor) where equivalency factor = ((Au price in US$/g * Au recovery) / (Ag price in US$/g * Ag recovery)).
4. Mineral Reserves are reported within the ultimate reserve pit design. An external dilution factor of 5% and a metal loss of 3% have been factored into the Mineral Reserve estimate.
5. Tonnage and grade estimates are in metric units.
6. Mineral Reserve tonnage and contained metal have been rounded to reflect the accuracy of the estimate, and numbers may not add due to rounding

1.14 Mining Methods

The mine is currently on care and maintenance but mine plans have been developed for restarting the operation. The mine has been mined with eight separate phases in the past with a portion of the fourth phase remining in the LOM plan which is Phase 4B. The final pit dimensions will be approximately 0.9 km long (east–west) by 0.7 km wide (north–south) and up to 115 m deep.

Geotechnical data are sourced from SRK Consulting (U.S.) Inc. (SRK), who estimated the factor of safety (FOS) of the proposed slope walls in 2017. SRK assumed low confinement (shallow pit) and estimated the cohesion and internal friction angle using the lower boundaries of the geological strength index (50) and uniaxial compressive strength (40 MPa). The equivalent Mohr-Coulomb properties were estimated to have a cohesive strength of approximately 400 kPa and an internal friction angle of 38°. SRK applied the circular failure chart method to estimating the FOS of the highest walls for each phase.

Based on their empirical assessment, SRK endorsed the mine designs at a conceptual-level and stated their opinion that because the pit is shallow, future adjustments to this angle will result in minor changes in stripping requirements.

During 2021, GCM Engineering S.A. (GCM) conducted a series of geotechnical studies in conjunction with Argonaut staff. The studies included mapping and structural measurements of pit workings, rock mechanics, and structural analyses. The work concluded the San Agustin pit has generally good competent rock and confirmed the 45º inter-ramp angle.

The QP noted during the November 2024 site visit that the current highwalls all appear stable with no significant failures but recommends Heliostar perform further geotechnical work to continually confirm the geotechnical parameters including pit mapping, geotechnical analysis of core samples, groundwater monitoring, and pit wall stability monitoring.

The current mine plan involves mining in Phase 4B to levels only 6 m below the current pit bottom elevation. It is anticipated that similar groundwater conditions and flows to those experienced during previous operations will exist and, through a similar application of pit sumps, pumps, and short interceptor wells, the groundwater inflows can be managed.

The final San Agustin pit design was limited to a US$1,900/oz AuEq pit shell. The pit was designed into two phases for the Mineral Reserve evaluation with the first phase allowing for a shorter haulage route to the crusher.

For the pit designs, haul roads are designed at a width of 25 m, which provides a safe truck width (6.7 m wide for Caterpillar 777 size truck) to running surface width ratio of 1:3 with an additional 5 m for a berm and a drainage ditch. Maximum grade of the haul roads is 10%, except for the lower benches where the grade is increased to 12%, and the ramp width is narrowed to 15 m to minimize excessive waste stripping. Mining levels are planned on 6 m benches with a safety catch bench every 12 m that are 7 m wide. Bench face angles are planned to be 66° with the overall inter-ramp angles at 45°.

The Mineral Resource estimate is considered to be internally diluted by compositing and the subsequent block grade interpolation to 6 m x 6 m x 6 m blocks. However, based on past reconciliation reports, the QP has also applied a 5% external dilution factor and a 3% metal loss factor in the Mineral Reserve estimates to better align with reported crusher tonnages and grades.

Pre-production activities are minimal with ore outcropping at surface and being delivered during month 1 of Year 1. Given that only one pit area is available for production, the maximum tonnes per day mined was limited to 45,000 t/d which resulted in a maximum ore delivery rate of 18,000 t/d, which is well within the maximum capacity of the crushers at 30,000 t/d. Production was limited mainly to keep the maximum benches mined per month at approximately three, and the maximum number of required haul trucks at seven. The average LOM stripping ratio is estimated to be 0.9:1 with 6.47 Mt of waste and 7.36 Mt of ore with 99% of the ore being oxide and only 1% being transitional. Waste will be delivered to two WRSF which are designs that backfill mined out portions of the pit on the north end. The WRSFs have a combined capacity of 6.5 Mt, which is sufficient to provide storage for all waste defined in the production schedule.

Mining equipment is planned to be supplied by a mining contractor. All loading, hauling, drilling, blasting, and support services are planned to be included within the mining contract.

1.15 Recovery Methods

San Agustin was designed to process 30,000 t/d of crushed (P_{80} 22 mm) and belt agglomerated ore stacked onto a conventional single-use leach pad; however, the actual processing rate has averaged approximately 20,000 t/d since 2023 with crushing and stacking ending in late September 2024. Solutions are treated with two gravity-cascade carbon column trains of five columns each: one with 14 t of carbon in each column, and the second with 1.5 t of carbon in each column. A Merrill-Crowe plant was in operation until April 2024 and was shutdown due to low silver values in solution. Loaded carbon is shipped to Argonaut's La Colorada mine for carbon stripping and carbon regeneration and the stripped carbon is returned to site for re-use. The precipitate from the Merrill-Crowe plant was also sent to La Colorada for treatment.

Ore was agglomerated with cement (with the exception of 2019) as required until April of 2021 when the cement was replaced with a synthetic polymer agglomeration aid. By all reports there were no percolation problems since using the polymer and none were noticed during the QP's latest site visit in 2023.

Realized gold recovery as of the end of November 2024 is 59.5% compared to the assumed endpoint recovery of 61.3% (from test work on oxide, transition, and sulphide samples) of the gold stacked as of the end of September. Realized silver recovery (8.9%) is lower than what would be otherwise possible (15.5% endpoint recovery) from the stacked silver to-date due to poor silver recovery in the carbon adsorption plant and lower levels of sodium cyanide in the leach solutions (both intentional to favour gold recovery), and insufficient leach times. The addition of the Merrill-Crowe plant in November 2020 and continued leaching was expected lead to increased silver recovery but the realized recovery will ultimately not be in line with test work expectations.

Reagents usage is in line with expectations based upon metallurgical test work and is well within industry norms and benchmarks for similar types of operations.

1.16 Project Infrastructure

The San Agustin Project has well established infrastructure in place including:

- An open pit mine;
- Explosive storage;
- Crushing plant;
- Cyanide heap leach pad;
- Carbon gold recovery plant;
- Merrill-Crowe gold recovery plant;
- Reagent storage;
- Waste rock storage facilities;

- A truck shop and warehouse;
- A sample preparation laboratory and atomic absorption gold analysis laboratory;
- Offices for administration, operations, and technical services;
- Change and dining facilities;
- Water tanks;
- Various Project access roads.

The only planned stockpile for the LOM plan is the crusher stockpile, which will be used to balance consistent ore feed to the crusher.

For the LOM plan, there are two WRSFs planned. The Backfill Phs5 WRSF has a capacity of 3.7 Mt and the Backfill NE WRSF has a capacity of 2.9 Mt. Together, the WRSFs have a combined capacity that is adequate to receive all of the waste within the LOM plan.

No tailings storage facilities are required for the LOM plan.

Water for the Project is pumped directly from water wells to an event pond or alternatively to a water tank with a volume of approximately 42,000 m^3. Stormwater is managed through facility-specific diversion ditches, as necessary.

There is no camp site at the San Agustin Mine; all employees and contractors live off-site in nearby towns.

All power requirements for process, crushing, laboratory, security, and office facilities are provided by a 34.5 kV Comision Federal de Electricidad (CFE) power line.

1.17 Environmental, Permitting and Social Considerations

1.17.1 Environmental Considerations

Baseline studies were initiated in 2014 as part of the environmental impact assessment process required to permit mining activities. Baseline studies included aspects such as water, climate, hydrology, soil and geomorphology, geology, biodiversity, mining waste geochemistry (waste rock and leached ore), and socio-economic aspects.

The operations generate the following mining wastes:

- Waste rock from the open pit mining operations;
- Spent ore associated with the mineral processing using the heap leach system;
- Spent activated carbon from the hydrometallurgical processing.

The San Agustin mine is a zero-discharge operation, using lined process water ponds and ditches to convey cyanide solutions to and from the heap leach pads. Stormwater is managed through facility-specific diversion ditches. Sampling is carried out to monitor surface water and groundwater quality.

Because San Agustin is a heap leaching operation, no tailings are generated that require management and disposal. The operations produce wastes classified as hazardous, non-hazardous, and regulated wastes.

Routine environmental monitoring and waste management practices are carried out to comply with environmental permit for the mine.

1.17.2 Closure and Reclamation Planning

Mexico requires the preparation of a reclamation and closure plan, as well as a commitment on the part of the operator to implement the plan; the requirement for financial guarantees is still pending implementation. An Asset Retirement Obligation was prepared by Argonaut in 2023 to define the closure liabilities associated with the San Agustin mine. An Asset Retirement Obligation calculation is for a present closure liability based on current conditions and does not include the LOM designs.

The total costs for closure and reclamation of the site (including a 10% contingency) were estimated at MXN$99,859,735 or US$5,528,108 based on a currency exchange rate of MXN$18.06 to US$1 for October 31, 2023. The forecast closure cost for 2024 conditions, including increases in prices and increased volumes compared to 2023 conditions, was MXN$167,839,408 or US$9,291,376.

1.17.3 Permitting Considerations

Heliostar has three environmental impact authorizations and two land use change authorizations for San Agustin.

The LOM plan proposes to expand the pit to the southwest. The boundaries of the environmental impact and land use change permits are not the same; the land use change permit does not include an area to the southwest. Minera Real del Oro has obtained an agreement with the landowners to purchase the property when the land use change permit is granted.

The application for the land use change permit was submitted in September 2024 to the environmental authority. The legal timeframes for review and approval of a permit can vary depending on the project complexity, and the Mexican environmental authority is known to extend timeframes well beyond the legal timeframes. Minera Real del Oro has a high level of confidence that approval of the permit will be granted.

Minera Real del Oro holds a water concession from Mexican water authority for an annual extraction up to 1,000,000 m^3 of groundwater. A wastewater discharge permit allows a discharge of 1,100 m^3 annually.

1.17.4 Social Considerations

Five towns are located within the San Agustin Project area: San Agustin, Las Cruces, San Lucas de Ocampo, El Resbalon, and San Juan del Rio. San Agustin and Las Cruces are the nearest towns to the mine.

1.18 Markets and Contracts

Gold markets are mature, and global markets with reputable smelters and refiners are located throughout the world. Markets for doré are readily available.

A gold price of US$1,900/oz and a silver price of US$23/oz were used for estimation of Mineral Reserves to reflect a long-term conservative price forecast. The forecasts were based on the current market, historical prices, values used in other recent projects, and forecasts in the public domain.

Higher metal prices of US$2,150/oz Au and US$26/oz Ag were used for the Mineral Resource estimates to ensure the Mineral Reserves are a sub-set of, and not constrained by, the Mineral Resources, in accordance with industry-accepted practice.

San Agustin was a contract mining operation with an Owner-operated process facility that is currently on care and maintenance. With the planned restart of operations, the mining, explosives and blasting and leach pad construction contracts will have to be negotiated. Contracts are entered into with third parties, where required. The principal contracts in place at the Report effective date included diesel and fuel, lime, cyanide, and security services. Contracts are negotiated and renewed as needed. Contract terms are typical of similar contracts in Mexico that Heliostar is familiar with.

1.19 Capital Cost Estimates

Capital cost estimates were derived from Heliostar's 2024 operating budget, mining contract quotes, Hard Rock Consulting's and KCA's in-house database of projects and studies including experience from similar operations.

The Project started operations in 2017, so all of the mining infrastructure, heap leach pad and primary plant equipment are in place. The total initial capital for the Project is estimated at US$4.15 M. The majority of these costs are US$3.4 M of Owner's costs, which are primarily required for equipment maintenance at the process facilities and land acquisition. A total of US$0.6 M is also included for definition drilling and US$0.15 M for mining contractor mobilization.

A phase 4 leach pad expansion was initiated in the summer of 2024 with 75% of the expansion completed. The completion of this expansion is required to allow for an extra 6.6 Mt of capacity to the heap leach pad for the ore contained within the LOM plan. The remaining 0.8 Mt of ore will be placed on the top of the existing heap. The extra lift on top of the existing heap has been approved by Golder for geotechnical purposes. The remaining costs for the leach pad expansion are estimated by Heliostar at US$0.61 M and were verified by KCA based on their in-house database of leach pad construction costs in Mexico. A 15% contingency was added to the estimated leach pad costs.

The mining contractor de-mobilization costs were included as part of the sustaining capital at US$0.05 M. In addition, the estimated closure costs of US$13.57 M were included as part of the sustaining capital for a total estimated sustaining cost of US$14.3 M.

The total capital cost estimate is provided in Table 1-3.

1.20 Operating Cost Estimates

The operating costs include the ongoing cost of operations related to mining, processing, and general administration activities. Operating cost estimates were derived from actual historical costs, mining contract quotes, the Heliostar's 2024 operating budget, and Hard Rock Consulting's and KCA's in-house database of projects and studies including experience from similar operations.

Operating cost estimates use terms that are non-International Financial Reporting Standards measures:

- All-in sustaining costs (AISC): as set out in the 2018 World Gold Council guidance note. AISC are the sum of operating costs (as defined and calculated above), royalty expenses, sustaining capital, corporate expenses and reclamation cost accretion related to current operations. Corporate expenses include general and administrative expenses, net of transaction related costs, severance expenses for management changes and interest income. AISC excludes growth capital expenditures, growth exploration expenditures, reclamation cost accretion not related to current operations, interest expense, debt repayment and taxes;
- Cash operating costs: include mine site operating costs such as mining, processing, and administration, but exclude royalty expenses, depreciation and depletion and share based payment expenses and reclamation costs.

Mine operating costs are calculated using recent mining contracts and quotes from Heliostar's operations in Mexico. Support services are estimated from historic actuals and from base principles for equipment, consumables, supplies, services, and manpower requirements based on the mine schedule. Equipment fuel requirements are calculated based on required operating hours for each unit and haulage route profiles for the trucks. Diesel costs were estimated at US$1.10/L.

Process operating costs for the San Agustin Mine were estimated by KCA from first principles with input from Heliostar on power costs, reagent supply costs and historic mine operating costs. Labour costs were estimated using Project-specific staffing, salary and wage and benefit requirements. Unit consumptions of reagents, materials, supplies, and power were also estimated. The first principles operating costs were then compared against the historic process operating costs and budget operating estimates for reasonableness.

Table 1-3: Capital Cost Summary

Capital Costs	**Initial (US$ M)**	**Sustaining (US$ M)**	**Total LOM (US$ M)**
Definition drilling Phase 4 Pit	0.60	0.00	0.60
Mine contractor mobilization and demobilization	0.15	0.05	0.20
Leach pad expansion	0.00	0.61	0.61
Total direct costs	*0.75*	*0.66*	*1.41*
Owner Costs and reclamation	3.40	13.57	16.97
Indirects and contingency	0.00	0.09	0.09
Total indirect costs	*3.40*	*13.67*	*17.07*
Total	***4.15***	***14.33***	***18.48***

The operating costs estimates considered fixed costs (labor, support equipment, etc.) which are expected to be the same regardless of the material type or tonnes being processed and variable costs (reagents, power, wear, etc.) which are expected to change based on material type or total tonnes being processed and have been estimated for the oxide, transition, sulphide, silicic transition, and argillic transition material types.

Based on the design production rate of 10.95 Mt/a to be processed, the average processing cost fore each material type was estimated as follows:

- Oxide: US$4.18/t;
- Transition: US$4.92/t;
- Sulphide: US$4.86/t;
- Silicic transition: US$4.74/t;
- Argillic transition: US$5.12/t.

The major general and administrative cost component is staff and labor, but general and administrative also covers such items as security, office equipment, heat and lighting, communications, overtime, property insurance, office supplies, computer system license fees, administration building maintenance, janitorial services, outside services, and allowances for travel and meetings.

The LOM average cash operating cost is projected to be US$1,543/oz AuEq sold. The LOM average base case total operating cost (including royalties and production taxes) is expected to be US$1,605/oz AuEq. The total AISC summary per tonne of mill feed and per ounce of gold equivalent is expected to US$12.96/t and US$1,990/oz Au respectively (Table 1-4).

Table 1-4: Total Operating Cost Summary

Operating Costs	Operating Cost (US$/oz AuEq)	Operating Cost (US$/t ore)	Operating Cost (US$/t mined)
Total mining	681.41	4.44	2.36
Total processing	699.96	4.56	
Total site general and administrative	123.57	0.80	
Refinery and transport	38.47	0.25	
Cash operating costs	***1,543.41***	***10.05***	
Production taxes	40.10	0.26	
Royalties	21.00	0.14	
Total cash costs	***1,604.51***	***10.45***	
Capital costs	385.59	2.51	
Total AISC	***1,990.09***	***12.96***	

1.21 Economic Analysis

1.21.1 Forward-Looking Information Note

Information that is forward-looking includes:

- Mineral Resource and Mineral Reserve estimates;
- Assumed commodity prices and exchange rates;
- Mine production plans;
- Projected recovery rates;
- Sustaining and operating cost estimates;
- Inputs to the economic analysis that supports the Mineral Reserve estimate
- Assumptions as to closure costs and closure requirements;
- Assumptions as to environmental, permitting, and social risks.

Additional risks to the forward-looking information include:

- Changes to costs of production from what is assumed;
- Unrecognized environmental risks;
- Unanticipated reclamation expenses;
- Unexpected variations in quantity of mineralized material, grade, or recovery rates;

- Geotechnical and hydrogeological considerations during mining being different from what was assumed;
- Failure of plant, equipment, or processes to operate as anticipated;
- Accidents, labour disputes and other risks of the mining industry.

1.21.2 Economic Analysis

The Project was evaluated using a constant US dollar, after-tax discounted cashflow methodology based on a 5% discount rate. For personnel costs and material sourced in Mexico, an exchange rate of 19 pesos per US dollar was assumed. This valuation method requires projecting material balances estimated from operations and calculating economic analysis.

Cashflows are calculated from sales of metal, less cash outflows such as operating costs, capital costs, working capital changes, royalties, any applicable taxes, and reclamation costs. Resulting annual cash flows are used to calculate the net present value (NPV) and internal rate of return (IRR) of the Project.

Tax calculations involve complex variables that can only be accurately determined during operations, and as such, the actual post-tax results may differ from those estimated.

The economic analysis also used the following assumptions:

- The current care and maintenance costs of the Project are not included in the analysis and are assumed to be offset by the ongoing residual leaching of gold and silver.
- The mine production life is 1.2 years, with residual leaching of gold and silver continuing until the end of Year 2;
- Cost estimates are in constant Q4 2024 US dollars for capital and operating costs, with no inflation or escalation factors considered;
- Results are based on 100% ownership with a 1% government NSR on revenue from gold and silver production;
- Capital costs are funded with 100% equity (no financing assumed);
- All cash flows are discounted to the start of the construction period using a mid-period discounting convention;
- Closure costs are estimated based on the full closure requirements for the Project. Thus, the summary cashflow and NPV are calculated based on the estimated production life of the mine. Closure costs occurring after the production life of the mine are excluded from summary calculations to reflect the value of the remaining Mineral Reserves. A full LOM cashflow with closure costs was included in the Report; note that the full closure costs are included in Year 3, but will most likely be spread over several years;
- All metal products will be sold in the same year they are produced;

- Project revenue will be derived from the sale of gold and silver doré.

The Project was assumed to be subject to the following tax regimes:

- The Mexican corporate income tax system (Federal Income Tax) consists of 30% income tax. Federal income tax is applied on Project income after deductions of eligible expenses including depreciation of assets, earthworks and indirect construction costs, exploration costs, special mining tax, extraordinary mining duty and any losses carried forward;
- Mining tax in Mexico (Special Mining Tax) consists of 8.5% on earnings before interest, taxes, depreciation, and amortization. The special mining duty is applied on Project income after deduction of eligible exploration, earthworks, and indirect costs expenses. Income subject to the special mining tax does not allow deductions for depreciation or allow losses carried forward.

At the assumed metal prices, total payments are estimated to be US$7.8 M over the LOM.

For the economic model, value-added tax is not considered in the capital or operating cost estimate as it is assumed that value-added tax paid will be credited in the year that it occurs (net zero impact).

Mexican tax law allows for the carry-forward of operating losses for the development of a property. The historic loss carry-forward is almost used up and is currently estimated at US$1,170,000 for the Mexican subsidiary company, Minera Real del Oro.

Royalties payable for the La Colorada include a 1.0% royalty due to the Mexican government as an “Extraordinary Mining Duty”. The 1.0% extraordinary mining duty represents US$1.0 M over the LOM and is included in the Project economics.

The financial analysis for the Project shows an after-tax net present value at a discount rate of 5% of US$12.67 M, an after-tax internal rate of return of 156%, and a payback period of 0.79 years.

The projected total lifespan of the Project is 1.2 years with 0.8 years of residual leaching. Approximately 67,800 oz of gold is projected to be mined, with 44,500 oz recovered and produced for sale.

Table 1-5 summarizes the projected cashflow; net present value at varying rates; internal rate of return; years of positive cash flows to repay the negative cash flow (payback period); multiple of positive cash flows compared to the maximum negative cash flow (payback multiple) for the project on both an after-tax and before-tax basis.

Table 1-5: Summary Economic Results

Project Valuation Overview	Units	After Tax	Before Tax
Total cashflow	US$ M	14.83	19.69
NPV @ 5.0% (base case)	***US$ M***	***12.67***	***19.46***
NPV @ 7.5%	US$ M	11.74	18.10
NPV @ 10.0%	US$ M	10.88	16.86
Internal rate of return	***%***	***156.1***	***218.9***
Payback period	Years	0.79	0.59
Payback multiple		1.09	1.66
Total initial capital	US$ M	4.15	4.15

1.21.3 Sensitivity Analysis

A sensitivity analysis was performed on the base case to determine Project sensitivity to gold and silver price and grade, operating costs, and capital costs.

The Project is most sensitive to changes in the gold price and grade. It is less sensitive to operating cost changes, and least sensitive to changes in capital costs. It is not sensitive to changes in the silver price and grade. This is illustrated in Figure 1-1 and Figure 1-2.

1.22 Risks and Opportunities

1.22.1 Risks

1.22.1.1 Mineral Resources

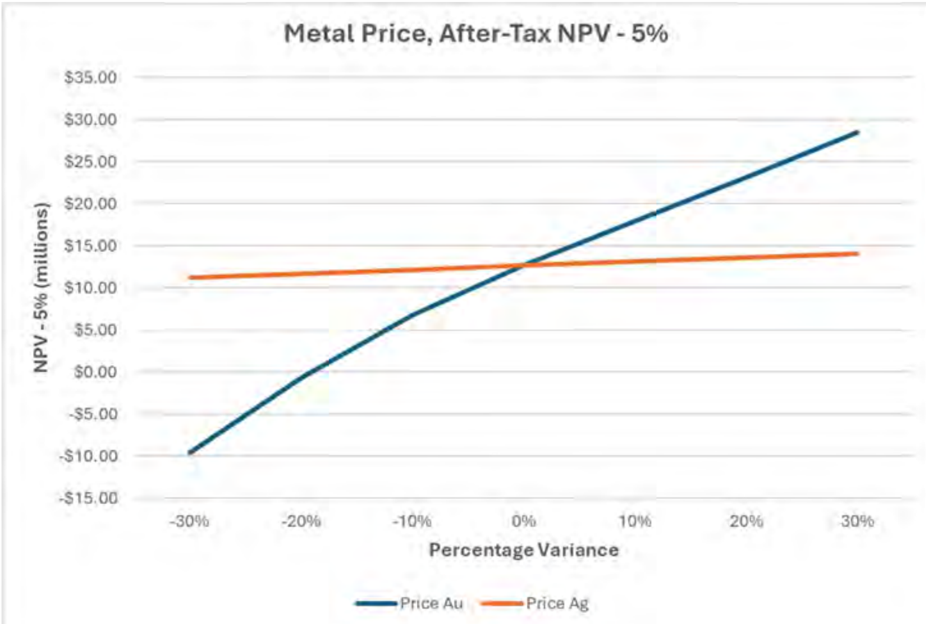
Grade trends in the mineralization display multiple orientations (predominantly northeast- and northwest-striking). Mineral Resources have been defined using drill holes that are not always ideally oriented to provide intercepts perpendicular to the trend of mineralization.

There is a risk that the estimated tonnage of the Mineral Resource is locally inaccurate.

1.22.1.2 Process

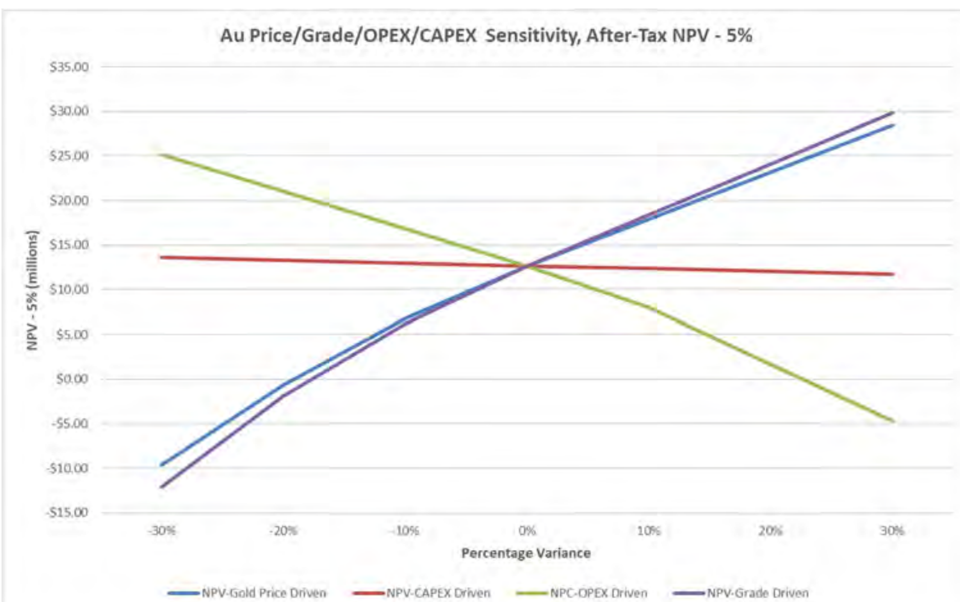
Production data and site column leach test results as of November 2024 indicate that processing of transition materials is a viable option. Finer crushing improves silver recovery but not gold recovery. Long term effects include potential acid generation which will cause increased lime consumptions and, as a worst case scenario, may cause the heap to go acidic and release deleterious elements (such as copper), which can have the potential to significantly adversely affect metal production and increase operating costs.

Figure 1-1: Metal Price Sensitivity Analysis



Note: Figure prepared by Hard Rock Consulting, 2024.

Figure 1-2: Project Gold Price, Grade, Operating Cost and Capital Cost Sensitivity Analysis



Note: Figure prepared by Hard Rock Consulting, 2024. CAPEX = capital cost estimate; OPEX = operating cost estimate

Ongoing studies are underway to better-define the acid rock drainage and metals leaching mitigation costs upon site closure. These studies will upgrade the current estimated closure costs to a value with a more robust engineering underpinning.

1.22.1.3 Environmental

Minera Real del Oro has experienced disputes with the local ejidos that have resulted in roadblocks and negotiations. Future conflicts remain a risk that will require monitoring and mitigation.

Should the mine plan be advanced to execution, a land use change permit will be required. A permit submittal was previously submitted, denied, and resubmitted. Minera Real del Oro has indicated a high level of confidence that the Mexican environmental authority will approve the revised permit. There is no certainty on when, or if, the permitting will be successful under the current government administration. Inability to obtain the required permit would be a material risk to the mine plan.

1.22.2 Opportunities

There is upside potential for the Mineral Resource estimates if mineralization that is currently classified as Inferred can be upgraded to higher-confidence Mineral Resource categories.

The Mineral Resource estimate is currently evaluated using reasonable prospects of eventual economic extraction parameters for a heap-leach operation. There is potential to evaluate the polymetallic sulphide mineralization using parameters for a milling operation with floatation recovery of sulphide concentrates.

1.23 Interpretation and Conclusions

An economic analysis was performed in support of estimation of the Mineral Reserves; this indicated a positive cash flow using the assumptions detailed in this Report.

1.24 Recommendations

A single phase work program is proposed for all disciplines other than exploration, where a two-phase program is recommended, and provided by discipline area. The total budget required to complete the suggestions is approximately US$6.1–US$6.6 M, depending on whether the work is completed internally or a consultant is used. The majority of the work can be conducted concurrently. The second work phase proposed for exploration would depend on the results of the proposed sulphide studies, and the regional, grassroots exploration program in the first exploration work phase.

Recommended exploration activities are divided into two work phases. The first work phase consists of drilling known prospects (Phase 4 SW Trend area and other potential oxide-hosting prospects; sulphide material below the ultimate pit design) and regional, grassroots exploration activities (geological mapping and rockchip/soil sampling), and totals approximately US$2.2 M. The second work phase would consist of drill testing any areas of significant anomalism identified from the sulphide potential and regional grassroots exploration programs. The recommended budget is about US$2.8 M.

Mining-related recommendations include an evaluation of treatment of the sulphide mineralization using a milling scenario and flotation plant; a full geotechnical study including detailed pit mapping combined with core drilling and rock strength analyses is recommended for the pit to advance into mining the deeper sulphides; a study to investigate the mining and re-processing potential of some or all of the heap through any future mill to recover some of the gold that is locked up in sulphides; and trade-off studies to evaluate Owner versus contract mining and owned versus leased equipment. These activities are estimated to cost approximately in the range of US$250,000 to US$300,000.

The process recommendations comprise analyzing the site monthly column leach test solutions for copper; completing a trade-off study to determine if finer crushing is an economically feasible option to consider; placing transition/sulphide material on the heap so that it can be enveloped by oxide material to minimize the potential for future acid generation; and additional density testing is recommended for the sulphide mineralized material. An approximate budget of US$20,000 should be allocated for this work.

Recommendations in the environmental discipline area are divided into studies (evaluation of dust suppression equipment and activities; evaluation of whether problematic waste rock lithologies are properly managed to prevent long-term environmental impacts; evaluation of post-closure slope stability in the WRSFs; completion of a pit lake study; improvements to the groundwater monitoring program; development of a written environmental monitoring plan, including fauna and flora monitoring; evaluating the site weather station to improve operation and data quality; completion of socio-economic diagnosis on a routine basis and development of specific mitigation measures for the highest risk stakeholders; updating of the grievance mechanism; and updates to the closure and post-closure plans) and investigation and data collection programs (fauna and flora monitoring studies; completion of an environmental geochemistry study that includes representative sampling from all areas and lithologies in the mine plan; geotechnical characterization of the waste rock and erosion modeling; and updating hydrological studies with recent climate data and completion of a climate change analysis to support water conveyance and pond designs). An estimated budget range of approximately US$0.74–US$1.28 M is required.

2.0 INTRODUCTION

2.1 Introduction

Mr. Todd Wakefield, RM SME, Mr. David Thomas, P.Geo., Mr. Jeffrey Choquette, P.E., Mr. Carl Defilippi, RM SME, and Ms. Dawn Garcia, CPG, prepared this technical report (the Report) for Heliostar Metals Ltd. on the San Agustin Operations (also referred to as the San Agustin Mine or the Project), located in the State of Durango, Mexico (Figure 2-1).

The Report was refiled on 14 January 2025 to correct a Certificate of Qualified Person that had not been dated. There are no other changes to the Report.

The San Agustin Mine is owned and operated by Minera Real del Oro, S.A. de C.V. (Minera Real del Oro), which is a wholly-owned Heliostar subsidiary.

Heliostar announced notice of the acquisition of the Project on July 17, 2024, from Florida Canyon Gold Inc., an interim successor to the former operator Argonaut Gold Inc. (Argonaut), and completed the acquisition on November 8, 2024.

Mineral Resources are reported for oxide, transitional and sulphide material, whereas Mineral Reserves are only reported for oxide and transition material.

2.2 Terms of Reference

The Report was prepared to support Heliostar's news release dated 13 January 2025 entitled "Heliostar Files Technical Reports on Mines and Development Project Recently Acquired in Mexico".

Mineral Resources are classified using the 2014 edition of the Canadian Institute of Mining and Metallurgy (CIM) Definition Standards for Mineral Resources and Mineral Reserves (the 2014 CIM Definition Standards).

All measurement units used in this Report are metric unless stated otherwise, and currency is expressed in United States (US) dollars unless stated otherwise. The Mexican currency is the Mexican peso. The Report uses Canadian English.

Figure 2-1: Project Location Map

Note: Figure prepared by Argonaut, 2021.

2.3 Qualified Persons

The following serve as the qualified persons (QPs) for this Report as defined in National Instrument 43-101, Standards of Disclosure for Mineral Projects, and in compliance with Form 43-101F1:

- Mr. Todd Wakefield, RM SME, Manager and Principal Geologist, Mine Technical Services Ltd. (Mine Technical Services or MTS);
- Mr. David Thomas, P.Geo., Associate Mineral Resource Estimator, MTS;
- Mr. Jeff Choquette, P.E., Principal Mining Engineer, Hard Rock Consulting LLC (Hard Rock Consulting);
- Mr. Carl Defilippi, RM SME, Senior Engineer, and Project Manager, Kappes, Cassiday & Associates (KCA);
- Ms. Dawn Garcia, CPG, Senior Associate, Hydrogeologist, Stantec Consulting Services Inc., (Stantec).

2.4 Site Visits and Scope of Personal Inspection

2.4.1 Mr. Todd Wakefield

Mr. Wakefield visited the San Agustin Project site on November 18, 2024. During his site visit Mr. Wakefield reviewed highwall and blast hole mapping procedures in the San Agustin open pit and reviewed drill core, reverse circulation (RC) drill cuttings and quality assurance and quality control (QA/QC) procedures at the San Agustin core logging facility.

2.4.2 Mr. David Thomas

Mr. Thomas completed a site visit on November 18, 2024. During the site visit, he confirmed the rock types, alteration and mineralization exposed in the San Agustin open pit. Mr. Thomas inspected drill core from drilling and confirmed the presence of alteration and mineralization. Geological models were discussed with Heliostar staff.

2.4.3 Mr. Jeff Choquette

Mr. Choquette visited the site on November 18, 2024. He inspected the open pit, reviewed the blast hole sampling and grade control procedures, and reviewed mine plans with the onsite technical staff. Mr. Choquette also toured the waste rock storage facility (WRSF), the mine laboratory, and reviewed assaying procedures, the process facilities, and the heap leach pad.

2.4.4 Mr. Carl Defilippi

Mr. Carl Defilippi visited the Project several times, with the most recent visit being from March 14–15, 2023. During his latest site visit to San Agustin his time was spent inspecting transition and sulphide core and site column leach tests. Discussions on placing sulphide containing materials on the heap to minimize generation of acid were held with site personnel. He also spent time driving and walking around the Project and inspecting process facilities.

2.4.5 Ms. Dawn Garcia

Ms. Garcia visited the site on September 11, 2024. During the site visit, she met with the Minera Real del Oro site environmental supervisor and the community relations supervisor. She toured the plant nursery, the process ponds, open pit, and a portion of the Town of San Juan del Rio.

2.5 Effective Dates

The Report has a number of effective dates including:

- Close-out date for the database used in Mineral Resource estimation: August 1, 2024;
- Date of Mineral Resource estimates: November 30, 2024;
- Date of Mineral Reserve estimates: November 30, 2024;

The overall Report effective date is the date of the Mineral Reserve estimates, and is November 30, 2024.

2.6 Information Sources and References

The reports and documents listed in Section 2.7 and Section 27 of this Report were used to support the preparation of the Report.

Additional information was sought from Heliostar personnel where required.

2.7 Previous Technical Reports

Heliostar has not previously filed a technical report on the Project.

Prior to Heliostar's Project interest, the following technical reports had been filed:

- Lane, T., Samari, H., Defilippi, C., and Breckenridge, L., 2024: San Agustin Gold/Silver Mine, Durango, Mexico, NI 43-101 Technical Report: report prepared for Florida Canyon Gold Inc., effective date 20 June, 2024;
- Leduc, M., Nicholls, O., and Defilippi, C., 2024: San Agustin Gold/Silver Mine, Durango, Mexico, NI 43-101 Technical Report: report prepared for Argonaut Gold Inc., effective date 15 May, 2024;
- Arkell, B., Carron, J., and Defilippi, C., 2021: San Agustin Gold/Silver Mine, Durango, Mexico, NI 43-101 Technical Report: report prepared for Argonaut Gold Inc., effective date 1 August, 2021;
- Lechner, M., Tinucci, J., Swanson, B., Olin, E., Osborn, J., and Willow, M.A., 2018, NI 43-101 Technical Report on Resources and Reserves, El Castillo Complex, Durango, Mexico: report prepared for Argonaut Gold Inc., effective date 7 March, 2018;
- Defilippi, C.E., Lechner, M.J., and Rhoades, R., 2016, Technical Report and Updated Preliminary Economic Assessment, San Agustin Heap Leach Project, Durango, Mexico: report prepared for Argonaut Gold Inc., effective date 29 April, 2016;
- Defilippi, C.E., and Lechner, M.J., 2015, Technical Report and Preliminary Economic Assessment, San Agustin Heap Leach Project, Durango, Mexico: report prepared for Argonaut Gold Inc., effective date 3 October, 2014;
- Lechner, M.J., Defilippi, C.E., 2014, Oxide Resource Estimate, San Agustin Project, Durango, Mexico: report prepared for Argonaut Gold Inc., effective date 8 July, 2014;
- Stryhas, B., Swanson, B., and Olin, E., 2011: NI 43-101 Technical Report on Resources and Reserves, El Castillo Mine, Durango State, Mexico: Report prepared by SRK Consulting for Argonaut Gold Inc., effective date 6 November, 2010;

- Arseneau, G., Maunula, T., Wells, P., 2009a, San Agustin Resource Estimate - May 2009: report prepared for Silver Standard Resources Inc., effective date 5 May 2009;
- Arseneau, G., Maunula, T., Wells, P., 2009b, San Agustin Resource Estimate - March 2009: report prepared for Silver Standard Resources Inc., effective date 30 March 2009;
- Arseneau, G., Maunula, T., Wells, P., 2008, San Agustin Resource Estimate - December 2008: report prepared for Geologix Explorations Inc., effective date 18 December, 2008;
- Arseneau, G., Maunula, T., Wells, P., 2008, San Agustin Resource Estimate - July 2008: report prepared for Geologix Explorations Inc., effective date 11 July, 2008;
- McCrea, J.A., 2006, Technical Report on the San Agustin Property: report prepared for Geologix Explorations Inc., effective date10 October, 2006.

3.0 RELIANCE ON OTHER EXPERTS

3.1 Introduction

The QPs have relied upon the following other expert reports, which provided information on mineral tenure, taxation, and marketing assumptions.

3.2 Mineral Tenure, Surface Rights, and Royalties

The QPs have not independently verified the information on mineral tenure, surface rights, royalties. They have fully relied upon and disclaim responsibility for information derived from the following expert reports:

- ALN Abogados, 2024: Legal Opinion on Minera Real Del Oro, S.A. de C.V. concession titles: report prepared by ALN Abogados for Heliostar, 6 November 2024, 10 p.
- ALN Abogados, 2024b: Update on Non-Possessory Pledge Agreement: opinion prepared for ALN Abogados for Heliostar, 12 January 2025.
- Heliostar, 2025: Surface Rights, Royalties and Agreements Information, San Agustin Technical Report: letter prepared for the Qualified Persons, 12 January 2025, 7 p.

This information is used in Section 4 of the Report and supports the Mineral Resource estimates in Section 14, the Mineral Reserve estimates in Section 15, and the economic analysis in Section 22.

3.3 Taxation

The QP has not independently verified the information on taxation and royalties applied in the financial model. He has fully relied upon and disclaim responsibility for information derived from the following expert report:

- Heliostar, 2025: Contracts and Taxation Information, San Agustin Technical Report: letter prepared for Mr. Jeffrey Choquette, 10 January, 2025, 2 p.

This information is used in Section 22 of the Report, and supports the Mineral Reserve estimate in Section 15.

3.4 Contracts

The QP has not independently verified the information on taxation and royalties applied in the financial model. He has fully relied upon and disclaim responsibility for information derived from the following expert report:

- Heliostar, 2025: Contracts and Taxation Information, San Agustin Technical Report: letter prepared for Mr. Jeffrey Choquette, 10 January, 2025, 2 p.

This information is used in Section 19 of the Report, and supports the Mineral Reserve estimate in Section 15 and the economic analysis in Section 22.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Introduction

The San Agustin Operations are located in the northern San Lucas de Ocampo District in the State of Durango, 4 km north of the village of San Agustin de Ocampo and approximately 100 km north of the city of Durango.

The Project is located at the approximate latitude and longitude coordinates: 24° 47’ 21’’ north latitude and 104° 36’ 8’’ west longitude.

4.2 Project Ownership

The San Agustin Mine is owned and operated by Minera Real del Oro, S.A. de C.V., a wholly-owned Heliostar subsidiary.

4.3 Mineral Tenure

The San Agustin Operations consist of 15 mineral concessions totalling 5,884 ha. The mineral tenure is shown in Figure 4-1 (El Castillo), and Figure 4-2 (San Agustin) and summarized in Table 4-1.

The mining operations and the Mineral Resources and Mineral Reserves presented in this Report are located within the following mineral concessions: San Agustin 1, San Agustin, Mkt - A+B Fracc 1, and Mkt - A Fracc 1.

As per Mexican requirements for grant of tenure, the concessions were surveyed on the ground by a licensed surveyor.

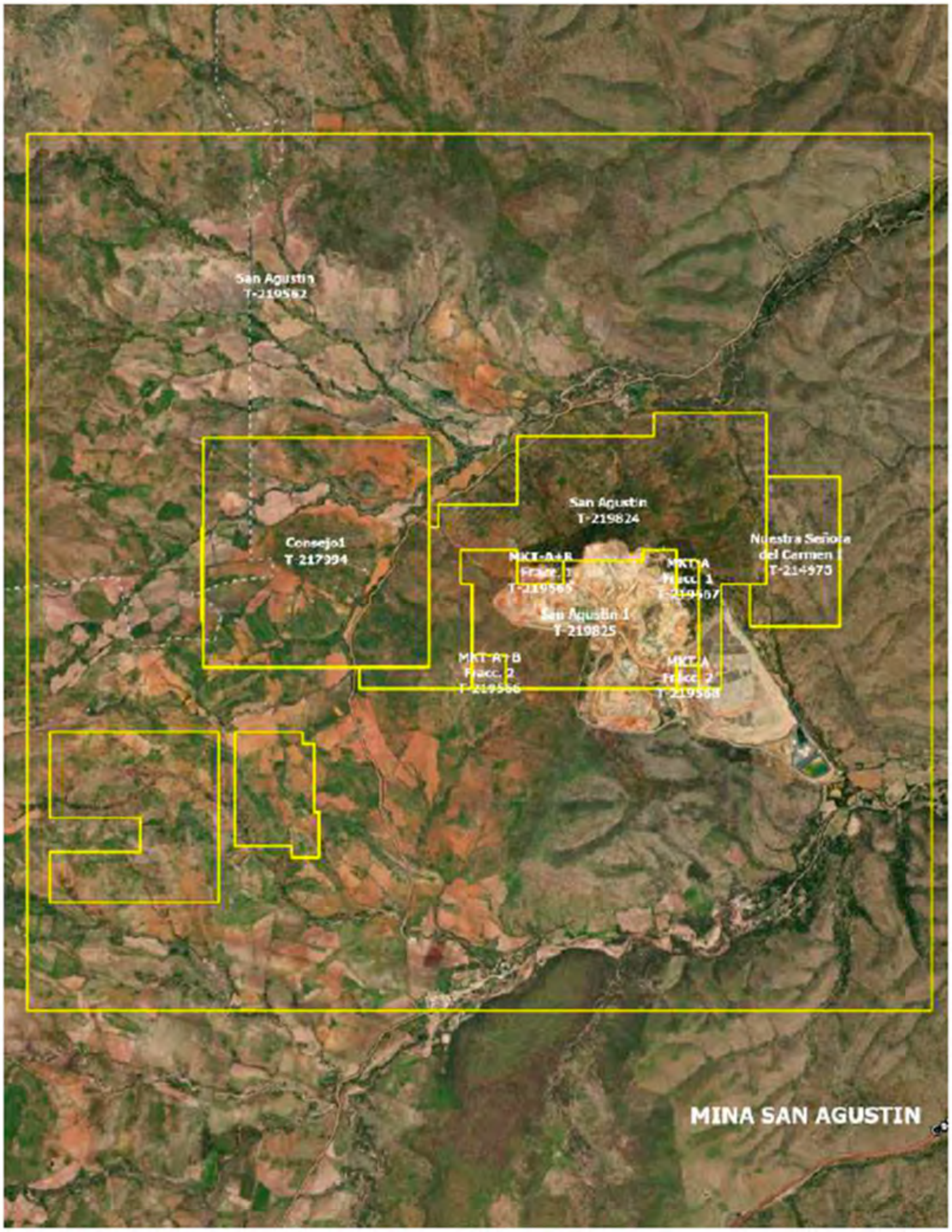
All applicable payments and reports were submitted to the relevant authorities, and the licenses were in good standing as at the Report effective date.

At the date of the legal opinion, selected concessions were subject to non-possessory pledge agreements executed between Minera Pitalla and Macquire Bank Limited, and between Minera Pitalla and the Bank of Montreal. Subsequent to that opinion date, Heliostar’s legal counsel advised that the executed non-possessory pledge agreements with Macquire Bank Limited and the Bank of Montreal had been terminated in their entirety. Depending on the concession, the termination registry has been recorded with the Public Mining Registry or is the registration of the termination record is pending.

Figure 4-1: Mineral Concession Map, El Castillo Area

Note: Figure prepared by Heliostar, 2024

Figure 4-2: Mineral Concession Map, San Agustin Area



Note: Figure prepared by Heliostar, 2024

Table 4-1: Mineral Tenure Summary Table

Concession	Title No.	Area (ha)	Valid Dates		Title Holder	Comment
			From	To		
La Victoria	211133	11.33	31 March, 2000	30 March, 2050	Minera Real del Oro	
El Cairo	220073	25.00	5 June, 2003	4 June, 2053	Minera Real del Oro	
Justicia	220074	20.90	5 June, 2003	4 June, 2053	Minera Real del Oro	
El Cairo	220075	95.15	5 June, 2003	4 June, 2053	Minera Real del Oro	
Oro	220076	75.00	5 June, 2003	4 June, 2053	Minera Real del Oro	
San Juan	220078	420.36	5 June, 2003	4 June, 2053	Minera Real del Oro	
Nuestra Señora Del Carmen II	214975	89.75	23 January, 2002	22 January, 2052	Minera Real del Oro	
Consejo 1	217994	400.00	30 September, 2002	29 September, 2052	Minera Real del Oro	
San Agustin	219562	4,790.94	14 March, 2003	13 March, 2053	Minera Real del	

Concession	Title No.	Area (ha)	Valid Dates		Title Holder	Comment
			From	To		
					Oro	
MKT-A+B fracción 1	219565	8.00	14 March, 2003	13 March, 2053	Minera Real del Oro	
MKT-A+B fracción 2	219566	9.00	14 March, 2003	13 March, 2053	Minera Real del Oro	
MKT-A fracción 1	219567	6.00	14 March, 2003	13 March, 2053	Minera Real del Oro	
MKT-A fracción 2	219568	4.00	14 March, 2003	13 March, 2053	Minera Real del Oro	
San Agustin	219824	373.24	22 April, 2003	21 April, 2053	Minera Real del Oro	2% NSR payable to Silver Standard Resources, Inc. (Silver Standard) on sulphide production. Silver Standard royalty interest later acquired by EMX Royalty Corp. in 2021.
San Agustin I	219825	203.00	22 April, 2003	21 April, 2053	Minera Real del Oro	2% NSR payable to Silver Standard Resources, Inc. (Silver Standard) on sulphide production. Silver Standard royalty interest later acquired by EMX Royalty Corp. in 2021.

4.4 Surface Rights

Heliostar owns 207 ha of surface rights at San Agustin. An additional 218 ha are held under agreements with two local ejidos and an individual landowner (Table 4-2).

A land access agreement was entered into for part of the southwest portion of the deposit on August 4, 2023 with a private group. As a condition of this agreement, Heliostar must obtain a change of use of soils permit, and at that time the final payment for access will be made and the agreement will be in effect. Heliostar expects to receive the permit during Q2 2025.

Heliostar will need to purchase or lease surface rights in the southwest portion of the mine for the final layback in Phase 4 of the proposed open pit.

4.5 Water Rights

Heliostar maintains a single underground water right totaling 1,000,000 m^3/yr, and a water discharge permit in the amount of 1,100 m^3/yr.

Additional information on water usage is provided in Section 18.6.

4.6 Royalties and Encumbrances

In 2013, the Mexican Federal government introduced a mining duty in the Federal Ley de Derechos. Effective January 1, 2014, the duty functions similar to an income tax collecting 8.5% of taxable earnings before interest and depreciation. In addition, precious metal mining companies must pay a 1% duty on revenues from gold, silver, and platinum.

The San Agustin concessions are not subject to any royalties on the oxide Mineral Resources, but EMX Royalty Corp. (EMX) holds a 2% net smelter return (NSR) royalty on any sulphide mineralization that may be developed in the future. This royalty was originally owned by Silver Standards Resources Inc. (Silver Standard) but was sold to EMX in 2021.

4.7 Permitting Considerations

Permitting considerations are discussed in Section 20.

4.8 Environmental Considerations

Environmental considerations are discussed in Section 20.

4.9 Social License Considerations

Social licence considerations are discussed in Section 20.

Table 4-2: Surface Rights Summary Table

Land Owner	Area (ha)	Signing Date	Term (years)	Expiration Date
Minera Real del Oro	207	July 15, 2016	N/A	N/A
San Agustin de Ocampo	90	May 19, 2015	18	May 18, 2033
San Lucas de Ocampo	120	May 09, 2015	18	May 08, 2033
Rene Graciano	8	December 12, 2018	15	December 11, 2033
Hermanas Amador	36	August 4, 2023	N/A	N/A

Note: N/A = not applicable

4.10 QP Comments on Section 4

Information from legal and Heliostar experts support that the mining tenure held is valid and is sufficient to support declaration of Mineral Resources and Mineral Reserves.

Heliostar will need to purchase or obtain an access agreement to mine a small portion of the final Phase 4 pit; this is in progress with reasonable expectation of obtaining it before mining commences in this area.

The site experienced a blockade in early 2024 (see Section 20). This blockade issue was resolved, but did suspend production for four weeks.

To the extent known to the QP, there are no other significant factors and risks that may affect access, title, or the right or ability to perform work on the Project that are not discussed in this Report.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

5.1 Accessibility

Initial access to the Project can be gained via paved Highway 45 for 90 km north from the city of Durango to San Lucas de Ocampo. The Project can be reached from San Lucas de Ocampo by a 10 km all-weather gravel road.

Well maintained dirt roads provide access to most of the concession area. A north access road primarily serves to connect the San Agustin Mine to Heliostar's closed El Castillo Mine. The distance between the two mines is approximately 11 km.

A port facility in Mazatlan is located approximately 360 km south of the Project and railway access is available in Torreón and Durango. Torreón is located approximately 260 km to the northeast of the Project on two-lane paved Mexican Highway 40D.

There are daily flights to the city of Durango from Mexico City and Dallas, Texas.

5.2 Climate

The Project is situated in a zone classified as semi-dry and receives an average annual rainfall of 550.5 mm. The climate is temperate with an average annual temperature of 18°C; maximum temperatures reach 35°C and minimum temperatures reach 2°C. The region averages 17 frost events per year beginning in October and extending to April.

The dominant wind direction is from northwest to southeast.

The rainy season is from June to August, while minimal rainfall occurs from September to May.

Mining operations are conducted year-round.

5.3 Local Resources and Infrastructure

The village of San Agustin de Ocampo is located about 4 km from the mine and has a small supply of unskilled labour (±150 inhabitants).

The town of San Juan del Rio is located approximately 15 km from the mine and has a slightly larger supply of unskilled labour (±2,500 inhabitants), as well as a limited supply of housing. Some basic supplies are available in San Juan del Rio

Durango is a major regional population centre, and the state capital, with approximately 600,000 inhabitants. Most supplies and some contractors for construction and mining are available in Durango.

Project infrastructure is discussed in more detail in Section 18. The local resources and infrastructure are adequate to support mining operations.

5.4 Physiography

The San Agustin mine area consists of low hills with a maximum relief of 100 m with much of the area comprising flat lying zones that form aprons around the central hills. Absolute relief varies from 1,875 mamsl in stream gullies to near 2,000 mamsl in areas of highest relief. The elevation of the area containing the bulk of the known mineralization ranges from 1,550–1,950 mamsl.

Numerous intermittent streams bisect the landscape and drainage is fan-like away from the higher hills within the San Agustin Project. Locally, drainages are linear and appear to be topographic expressions of fault structures.

Vegetation in the area consists of various species of cactus, mesquite, and other thorny bushes. Fertile areas of the flat-lying fans near prominent streams are under cultivation (corn, beans) while the remainder is used as pasture for cattle.

5.5 QP Comments on Section 5

Surface rights are discussed in Section 4.5.

In the opinion of the QPs, the existing and planned infrastructure, availability of staff, the existing power, water, and communications facilities, the methods whereby goods could be transported to any proposed mine, and any planned modifications or supporting studies are well-established, or the requirements to establish such, are well understood by Heliostar, and can support the estimation of Mineral Resources and Mineral Reserves.

6.0 HISTORY

6.1 Exploration History

The Project history is summarized in Table 6-1.

Mining started in 2017. Mining and crushing activities ceased in August 2024; however, metals production continued from re-leaching of the heap leach piles.

Since Project acquisition, Heliostar has continued re-leaching of the heap leach piles.

6.2 Production

The production history is summarized in Table 6-2.

Table 6-1: Exploration and Development History

Year	Operator	Work Completed
Pre-1980s		Limited artisanal mining activity.
1980s	Consejo de Recursos Minerales	Focused on the evaluation of narrow high-grade veins. Completed 1:10,000 scale geological mapping, 283 m of trenching, collection of 872 surface and underground channel samples, and 151 m of underground exploration including a 93 m deep shaft, 27 m of drift, 22 m of cross-cut, and 9 m of raise. Completed 4,339 m in 35 drill holes. Only paper copies and maps are available from this work and none of these data were used in Mineral Resource or Mineral Reserve estimation.
1996–1998	Monarch Mining Corporation (Monarch)	La Cuesta International Inc. (La Cuesta), working on behalf of Monarch, conducted exploration in 1996. Collected 229 rock chip samples and 37 stream sediment samples. Defined a distinct gold anomalous zone over a 1.5 km^2 area. Additional silver, lead, zinc, arsenic, and mercury anomalies were also detected. Collected 3,214 soil samples and 209 rock chip samples. Between May and July 1997, drilled 35 RC drill holes totaling 3,703 m, and four core drill holes totaling 1,002 m to test gold-in-soil anomalies. Identified gold-mineralized zones. In 1998, an additional 29 RC drill holes totaling 5,651 m were completed. Monarch relinquished the Project in 1999.
2002–2013	Silver Standard Resources Inc. (Silver Standard)	Pegged claims in San Agustin area. Completed an extensive mapping and sampling program including the collection of 1,257 surface rock chip samples. This program was followed by an RC drilling program that consisted of 23 drill holes totaling 3,917 m, following up on anomalies generated by Monarch.
2006–2009	Geologix Explorations Inc. (Geologix)	Option agreement with Silver Standard. Completed geological and alteration mapping; a 19.25 line km of induced polarization (IP) survey; collected 135 soil and 262 rock chip and grab samples; excavated 25 trenches (5,416.5 m sampled); completed 898.5 m of road cut sampling; drilled 176 drill holes totaling 40,717 m; completed 95 m of sampling of underground workings; re-logged earlier RC drill hole chip samples and drill core; completed a mineral resource estimate. Returned property to Silver Standard in 2009.
2013–2024	Argonaut	Purchased property from Silver Standard. Completed major infill and metallurgical drill programs in 2014–2015, and annual infill and exploration drilling campaigns from 2018 onward. Completed mining studies, mineral resource and mineral reserve estimates, environmental and social studies. Project development work started in early 2017, culminating in the announcement of commercial operational status as of 1 October, 2017.
2024	Heliostar	Acquired Project from Argonaut

Table 6-2: Production History (2017–2024)

Year	Gold (ozs)	Silver (ozs)
2017	12,992	62,035
2018	65,322	244,697
2019	61,842	219,463
2020	59,696	333,713
2021	68,131	508,661
2022	65,840	310,024
2023	42,205	193,734
2024	28,729	96,221

Note: 2024 production from January 1 to December 31, 2024.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

The San Agustin Project is located in Northwest Mexico in the east flank of the Sierra Madre Occidental, bordering the great Mesa Central Mexicana (Raisz, 1964). The oldest rocks in the region are mica schists and mylonites reported in nearby San Lucas de Ocampo. These are correlated with Permian rocks which the Mexican Geological Survey dated at 251 Ma ± 20 Ma. These are overlain by a sedimentary flysch sequence mainly consisting of an alternating sequence of shale and fine-grained sandstone with occasional horizons of calcareous shale and thin layers of limestone. These units are correlated with the Mezcalera Formation of the Parral Group and are assigned an age of Upper Jurassic to Lower Cretaceous.

The volcanic complex of the Sierra Madre Occidental is present in the Project area. The Lower Volcanic Complex (LVC) can be seen in the San Lucas de Ocampo area as agglomerates, tuffs, and andesitic flows. The Upper Volcanic Complex (UVC) consists of a sequence of rhyolite tuffs, crystal tuffs, and ash tuffs. Discordantly covering all previously mentioned lithological units is a package of welded rhyolite tuffs that are correlated with a young hyperalkaline event covering large portions of northwest Mexico, which is anorogenic and therefore post formation of the Sierra Madre Occidental.

The most recent igneous unit observed comprises Pleistocene vesicular basalt flows that cover some of the valleys southeast of the Project, in the areas near the town of San Agustin and San Lucas de Ocampo, as well as on the highway to San Juan del Río.

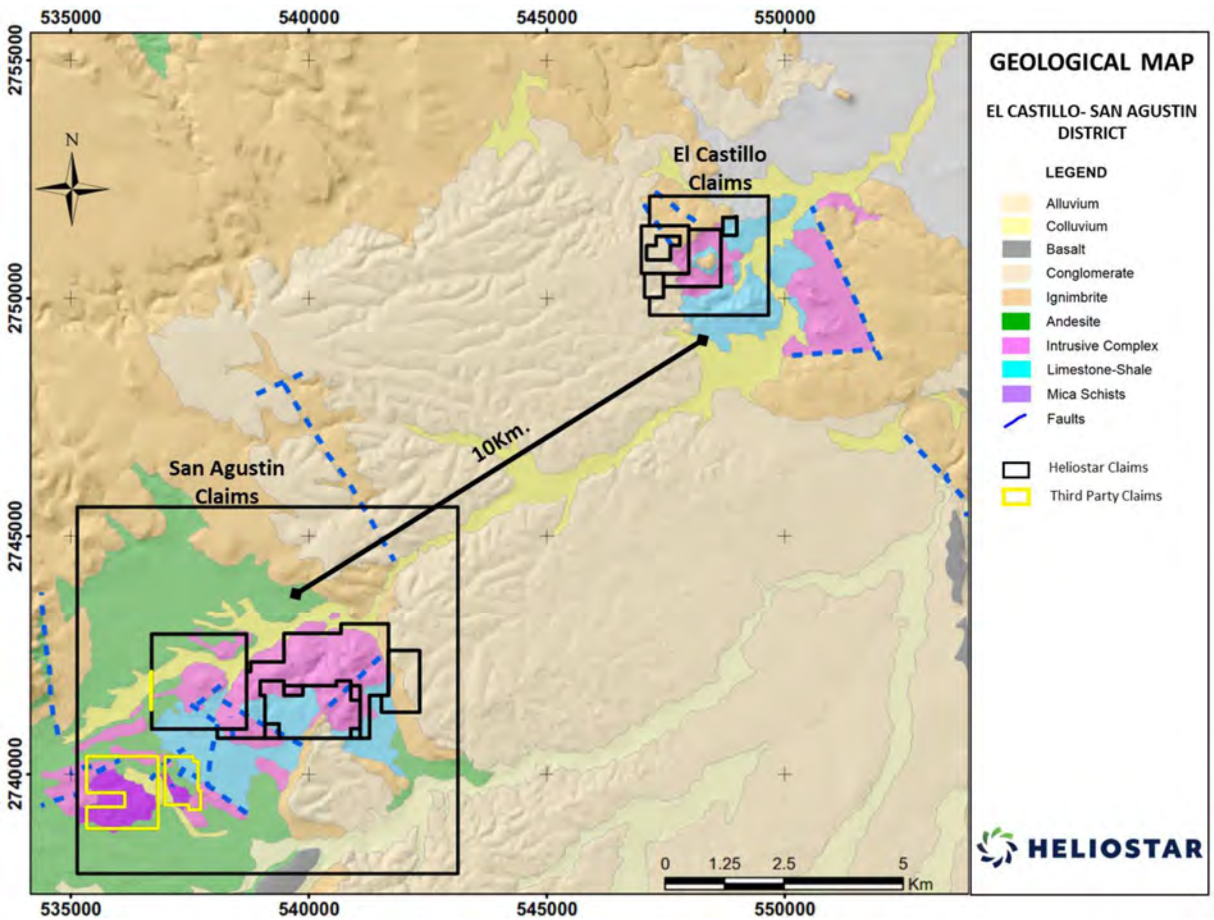
There is a widespread occurrence of a poorly consolidated conglomerate that fills wide valleys associated with basin-and-range extensional normal faulting. At the nearby El Castillo mine, drilling shows that the conglomerate is up to 200 m thick.

In the area east of the El Castillo mine, a biotite-rich volcanic rhyolite dome was identified and dated at 41.3 Ma ± 0.5 Ma (Paz-Moreno, 2013). It appears fresh and does not seem to be associated with or affected by any mineralization event. The rhyolite does not crop out within the main San Agustin Project area but can be seen northeast of the Nuestra Señora del Carmen I concession, where it forms sub-horizontal bodies less than 1 m in thickness. The rhyolite post-dates the Sierra Madre Occidental.

A package of ash and crystal tuffs was dated at 31.2 Ma ± 0.5 Ma (Paz-Moreno, 2013). These tuffs are post-mineralization and correspond to the Upper Volcanic Complex of the Sierra Madre Occidental.

Figure 7-1 is a geological map that shows the generalized geology surrounding the San Agustin Mine.

Figure 7-1: Regional Geology Map



Note: Figure prepared by Heliostar, 2024

7.2 Project Geology

The area of known mineralization at the Project is dominated by an igneous, quartz monzonite dome complex intruding a clastic sedimentary sequence composed of shale, mudstone, and less abundant sandstone. Occasionally some calcareous layers are observed in the sedimentary sequence. Both the intrusive complex and the sedimentary sequence occur on a dominant northwest trend with sub-vertical dips. These two main units are unconformably covered by post mineralization rhyolites of the Sierra Madre Occidental and younger conglomerates.

Figure 7-2 is a geological map of the San Agustin Mine area. Figure 7-3 is a representative cross section of the San Agustin Mine area. The location of the cross section is shown in Figure 7-2. Table 7-1 presents a lithological summary of the Project-area geology.

7.3 Deposit Descriptions

7.3.1 Deposit Dimensions

The San Agustin deposit is roughly 1,500 m long by 800 m wide.

The average depth of oxide material is 65–100 m below surface. Sulphide mineralization extends, where drilled, down to an average depth of about 200 m with the deepest tested areas extending to 400 m below surface.

The oxide portion of the deposit remains open to the northwest and to the southwest. The sulphide portion of the deposit is open in all directions and at depth.

7.3.2 Lithology

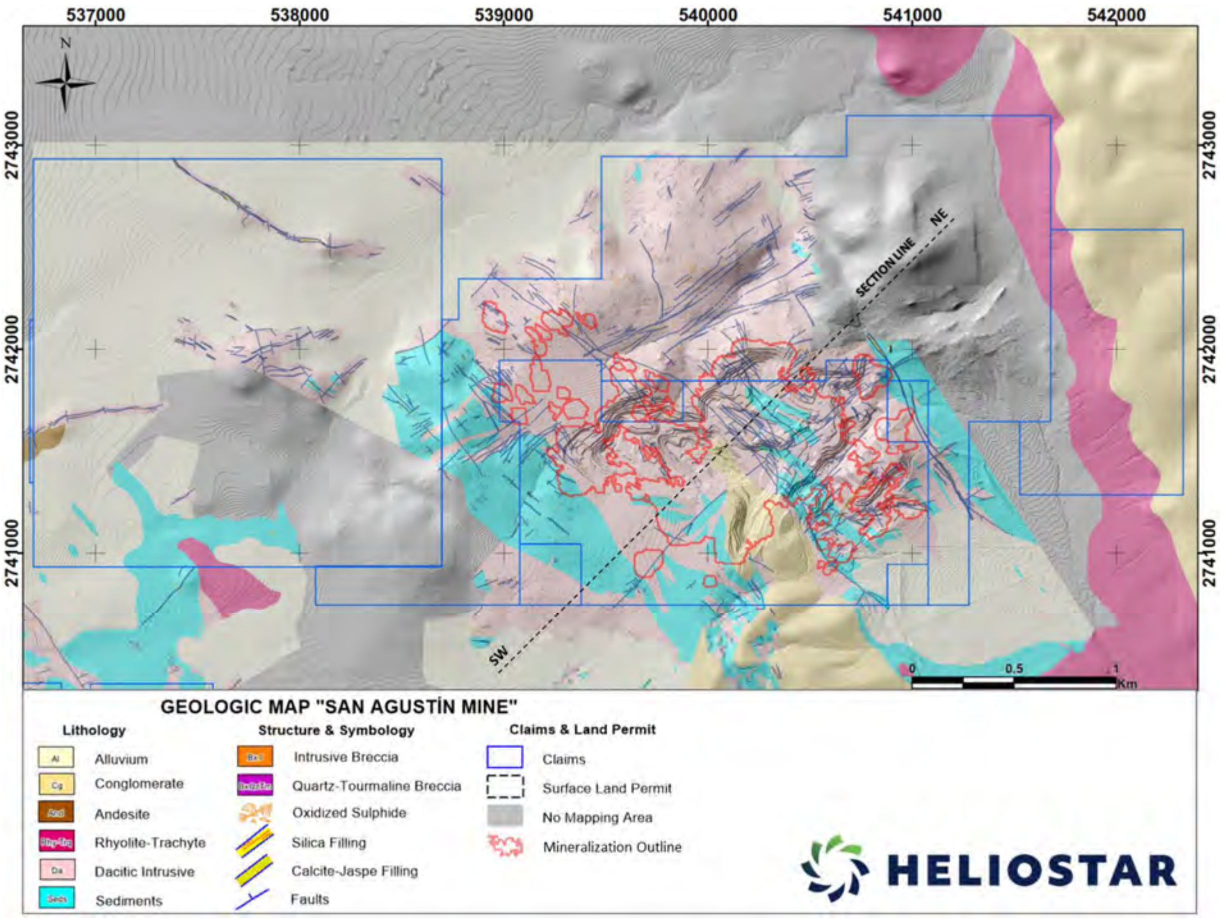
The host rocks for mineralization at San Agustin are quartz monzonite-dacite bodies and the sedimentary sequence they intrude. Gold mineralization is found along faults and fractures within the host igneous and sedimentary rocks and as disseminations in halos across the deposit.

7.3.3 Structure

The Principal Fault, a significant northwest striking and westerly dipping post-mineral fault, bisects the mineralized area. There are distinct differences in the mineralization on either side of the fault.

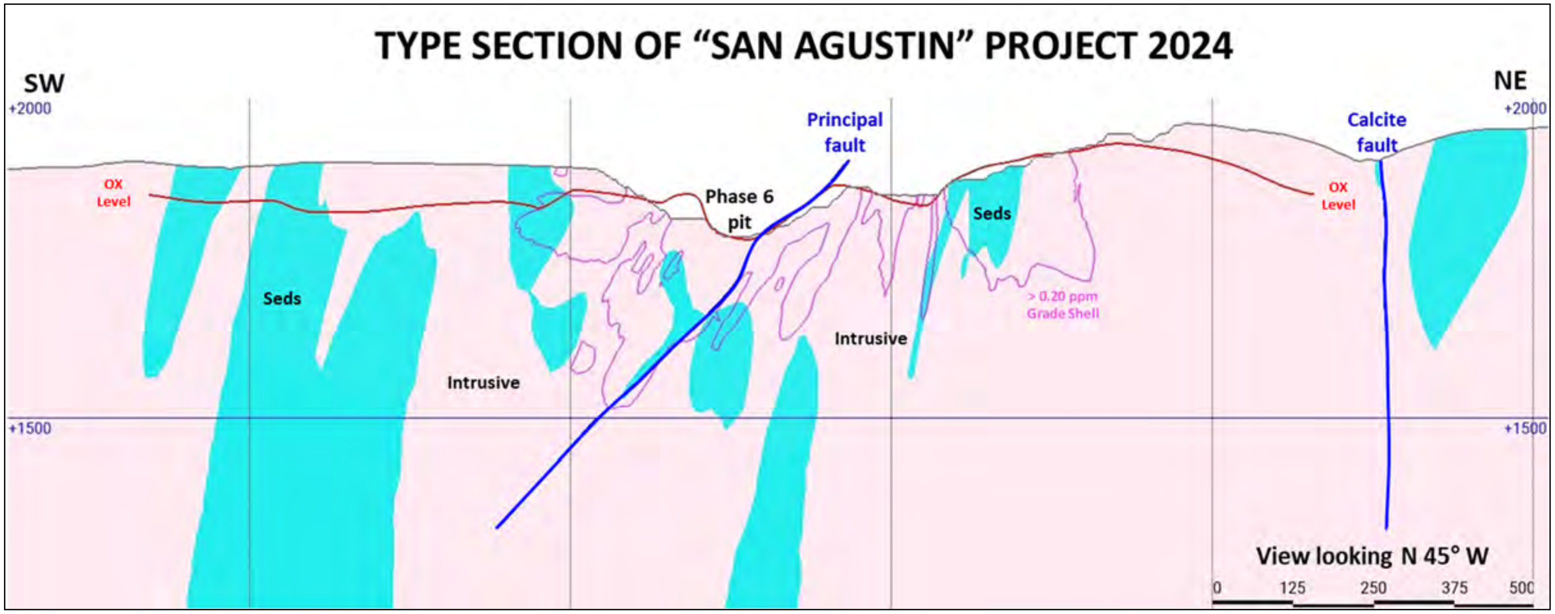
On the hanging wall (west side), it is common to find structures rich in manganese and barite that are not observed in the footwall. The hanging wall block also has higher silver and lead grades than the footwall block.

Figure 7-2: Project Geology Map



Note: Figure prepared by Heliostar, 2024

Figure 7-3: Generalized Geological Cross Section



Note: Figure prepared by Heliostar, 2024

Table 7-1: Project Lithologies

Unit	Age	Description	Note
Mezcalera Formation	Upper Jurassic to Lower Cretaceous	Flysch-type sedimentary sequence consists of alternating shales, mudstones, and fine-grained sandstones with rare calcareous horizons. Layers are thinly stratified, strike northwest, and have sub-vertical dips	Folds can be observed in outcrop scale, with some folds being isoclinal.
Quartz monzonite porphyry	48.5 Ma ± 0.5 Ma	Phaneritic and glomeroporphyritic texture rich in plagioclase and feldspars. Quartz eyes are common but vary in proportion. There are also well-developed biotite and hornblende crystals in a smaller proportion. In petrographic studies, depending on textural variations, has also been classified as a dacite or porphyritic rhyodacite.	Typically shows intense phyllic alteration in the San Agustin mine area. In more distal zones of the mineralizing system, alteration decreases but moderate propylitic alteration with chloritized biotite and hornblende is still present
Banded dacite		Porphyritic texture with an arrangement of phenocrysts in bands. In petrographic studies, classified as a subvolcanic flow of dacitic composition	Cross-cuts the quartz monzonite porphyry, sometimes developing carapace-type breccias on its borders. Seriticized. Disseminated pyrite follows flow bands
Dacite pebble dikes		Rounded dacite fragments to 5 cm and surrounding rock types cemented in a dacite porphyritic matrix	Typically only a few metres thick. Locally cut by mineralized structures
Dacite breccia		Carapace-type breccias that were typically formed by angular flow fragments to 30 cm that were broken and rotated.	Can reach 10 m in thickness. Locally can be cut by mineralized structures.
Intrusive breccia		Multi-lithic breccia containing quartz monzonite and sedimentary rock clasts characterized by silicification and irregular quartz and pyrite vug and fracture fillings	Generally emplaced along a northeasterly trend and appear to be associated with mineralization
Conglomerate		Polymictic, continental, poorly consolidated, with a predominance of rhyolite clasts	Occur in the southern Project area. Can reach 200 m in thickness. Deposited as fill material in basin-and-range associated valleys

7.3.4 Alteration

The predominant alteration type is phyllic alteration characterized as an assemblage of sericite-quartz–pyrite mineralization. In some areas it appears that the host rock was pervasively altered, destroying the original texture, and converting biotite and feldspars to sericite. The matrix also shows the presence of sericite, silicification, and disseminated pyrite. In some areas veinlets of jarosite and alunite are observed and thought to be products associated with acid leaching of pyrite as opposed to hydrothermal alteration.

A phase of early potassic alteration was observed but is less common. These zones are characterized by the presence of moderate to pervasive secondary biotite associated with veinlets of quartz-magnetite and disseminated magnetite. Phyllic alteration is superimposed on this early potassic alteration with the latter being closely associated with mineralization.

In the areas more distal to mineralization, the intrusion is typically phaneritic with a coarse porphyritic texture with only propylitic alteration shown by moderate chlorite replacement of ferromagnesian minerals.

7.3.5 Mineralization

Mineralization was emplaced through a strong and widespread system of sulphide rich veins, veinlets, and fissure fillings that make the system similar to a disseminated deposit.

Fracture systems follow two main trends that run northeast and northwest. Locally, mineralization can be observed following lithological controls in the sedimentary rocks, especially where they run parallel to sediment-intrusive rock contacts.

Mineralization is also observed in the flow facies of the intrusion and is usually characterized by disseminated pyrite and in parallel veinlets. A component of the pyrite is thought to be pre-mineralization and associated with early phyllic alteration.

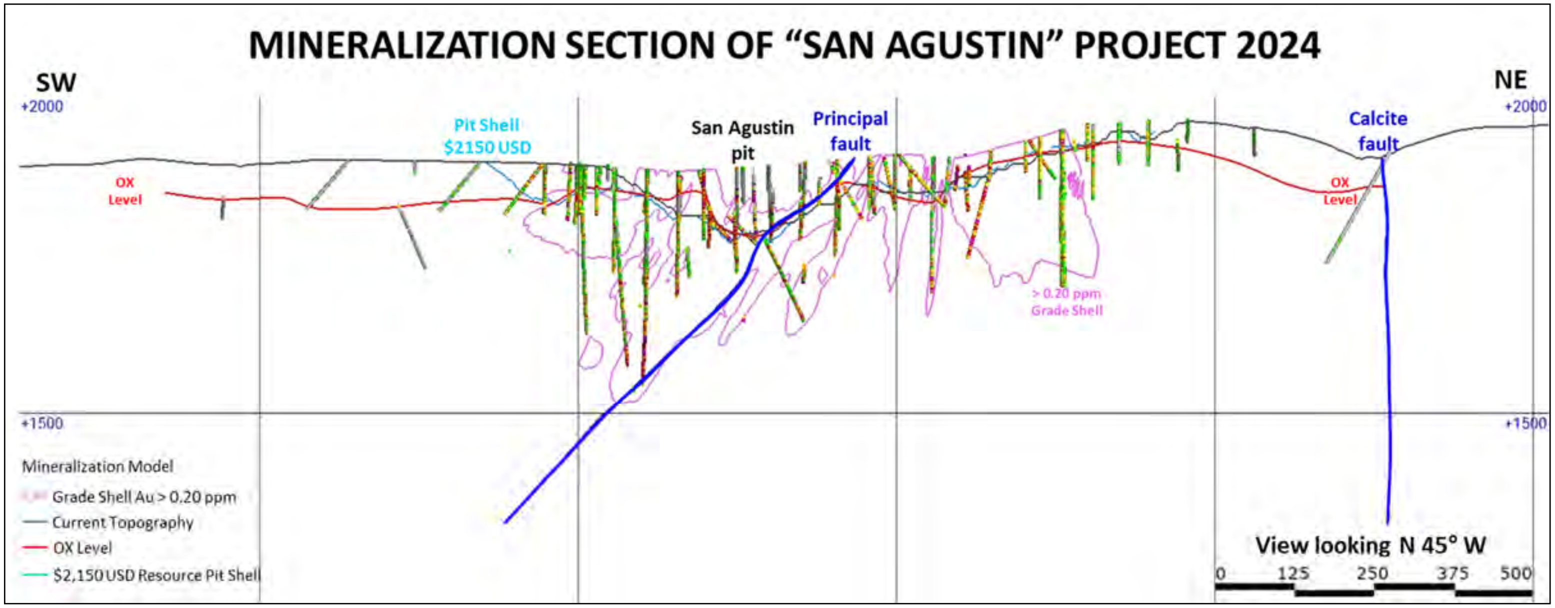
The mineral system has very little silica and is more related to sulphide fracture filling. Epithermal boiling textures were observed locally such as bladed textures, coliform silica, or drusy quartz. These epithermal textures are not common. Some structures with cryptocrystalline jasperoid have also been found in deeper drill intercepts within sulphide zones.

Two late phases of mineralization were identified with one carrying sphalerite and pyrite, and the other, galena and sphalerite. This mineralization is related to an epithermal low sulphidation system superimposed over the intrusion-related gold system

The sulphide boundary is located within a range of 30–170 m below the surface with an average depth of about 65 m. The boundary is reached when the rock colour turns grey and disseminated pyrite becomes visible. The transition zone is commonly <1 m wide. The boundary surface is undulating and erratic across the deposit, primarily due to the many faults and fractures controlling ground water in the area.

Figure 7-4 is a representative mineralization cross section of the San Agustin Mine area; the location of the cross section is shown in Figure 7-2.

Figure 7-4: Mineralization Cross Section, San Agustin



Note: Figure prepared by Heliostar, 2024.

8.0 DEPOSIT TYPES

8.1 Overview

The San Agustin deposit is an example of a porphyry deposit that was subsequently overprinted by a late-stage epithermal event.

8.1.1 Porphyry Deposit Type

Porphyry deposits occur throughout the world in a series of extensive, relatively narrow, linear metallogenic provinces. They are predominantly associated with Mesozoic to Cenozoic orogenic belts in western North and South America and around the western margin of the Pacific Basin, particularly within the South East Asian Archipelago. However, major deposits also occur within Paleozoic orogens in Central Asia and eastern North America and, to a lesser extent, within Precambrian terranes (Sinclair, 2006).

Porphyry deposits are large and typically contain hundreds of millions of tonnes of mineralization, although they range in size from tens of millions to billions of tonnes. Grades for the different metals vary considerably but generally average less than 1%. In porphyry copper deposits, copper grades range from 0.2% to more than 1% Cu; molybdenum content ranges from approximately 0.005–0.03%; gold contents range from 0.004–0.35 g/t; and silver content ranges from 0.2–5 g/t. Rhenium is also a significant by-product from some porphyry copper deposits. Some gold-rich porphyry copper deposits have relatively high contents of platinum group elements (PGE) (Mutschler and Mooney, 1995; Tarkian and Stribrny, 1999, in Sinclair, 2006).

Most gold-rich porphyry intrusive-related deposits consist of a series of both pre- and post-mineralization intrusions. The pre-mineralization intrusions are generally equigranular in texture and genetically related to the porphyry stock, and often intrude along the shoulders of the pre-mineralization intrusion. Post-mineralization dikes and plugs and diatremes are also commonly associated. Various hydrothermal breccias occur as early orthomagmatic (strong K-silicate altered) and/or late phreatic and phreatomagmatic varieties.

Copper and gold grades in the early orthomagmatic breccias may be substantially higher than in the surrounding porphyry rocks, while later breccia types are generally of sub-economic grade. Large (>0.5 km wide) low-grade or barren diatreme breccias and minor pebble dikes often conclude the evolution of gold-rich porphyry systems (Sillitoe, 2000).

Most gold-rich porphyry systems consist of varying quantities of six principal alteration types (Sillitoe, 2000):

- Ca–Na silicate alteration;
- K–silicate (potassic) alteration;
- Propylitic alteration;

- Intermediate argillic (sericite–clay–chlorite) alteration;
- Sericitic alteration;
- Advanced argillic alteration.

Most gold in gold-rich porphyry systems is associated with the K–silicate alteration phases

8.1.2 Epithermal Gold–Silver Deposit Type

Epithermal-type gold–silver deposits in the Pacific Rim and in Eurasia were the source of much of the world's gold supply. This has resulted in an improved understanding of epithermal-type precious metal deposits and has allowed for construction of models which could be very useful in future exploration of the San Agustin Project. The following comments are based largely on papers by Hedenquist (2000) and Simmons (2005).

Epithermal deposits are found in the shallow parts of subaerial high-temperature hydrothermal systems and are very important in Tertiary to Recent calc-alkaline and alkaline volcanic rocks. Host rocks are variable and include volcanic and sedimentary rocks, diatremes, and domes. Structural controls include dilatant zones related to extensional faulting and favourable lithologies in permeable or brecciated host strata in the near-surface environment. Although some mineralization can be disseminated, most commonly mineralization is hosted by steeply-dipping vein systems.

Mineral textures include banded, crustiform–colliform and lattice textures composed of platey calcite sometimes pseudomorphed by quartz. An important feature of epithermal deposits is a pronounced vertical zonation, with quartz veins carrying base metal sulphide mineralization at depth, becoming silver-rich higher in the system and finally gold-rich near the top.

Low-sulphidation deposits typically range from veins, through stockworks and breccias to disseminated zones. Mineralized bodies in low-sulphidation systems are commonly associated with quartz and adularia, with carbonate minerals or sericite as the major gangue minerals. Major metallic minerals can include pyrite/marcasite, pyrrhotite, arsenopyrite and high-iron sphalerite. Less abundant metallic minerals include native gold and electrum, cinnabar, stibnite, gold-silver selenides, sulphosalts, galena, chalcopyrite, and tetrahedrite/tennantite. Hedenquist (2000) stated that hot spring sinter can form above a low-sulphidation deposit and that the clay alteration associated with a deposit can extend above the deposit towards the surface and have an aerial extent significantly larger than the actual mineral deposit. In some cases, mercury mineralization, and/or geochemically anomalous arsenic, antimony and tellurium are found near the top of the deposit and in the overlying siliceous sinter.

8.2 Features of the San Agustin Deposit

The San Agustin Project does not fit entirely into an epithermal classification. The San Agustin deposit appears genetically and spatially related to a quartz monzonite stock with intense phyllic alteration and local tourmaline breccias. These factors may point towards a telescoped system associated with a deeper porphyry centre. This is supported by broad zones of potassic alteration that are overlapped by pervasive phyllic alteration; however, locally on the surface and in some drill holes, boiling textures, suggestive of an epithermal system do occur. Mineralization is mainly associated with pyrite that fills fractures, is disseminated, and occurs in the matrix of hydrothermal breccias. These form an extensive system of sulphide stockworks and disseminated mineralization dominated by pyrite.

The San Agustin deposit is interpreted to be a porphyry-style gold system related to Eocene-aged intrusions emplaced into Cretaceous clastic and carbonate sedimentary rocks in an extensional tectonic setting. Gold mineralization occurs throughout the magmatic-hydrothermal system in space and time and is spatially related to early potassic development and an overprint of phyllic alteration. Supergene alteration, formed as a product of acid leaching, resulted in argillic–quartz alteration assemblages within the oxide zone of the deposit. The main gold event is associated with magmatic hydrothermal fluids corresponding to phyllic alteration. The gold system was overprinted by a younger, structurally-controlled epithermal low sulphidation system dominated by silver and zinc.

8.3 QP Comments on Section 8

The QP considers the use of a gold porphyry model, with a late epithermal overprint to be a reasonable basis for exploration targeting for gold–silver mineralization in the Project area.

9.0 EXPLORATION

9.1 Introduction

All of the exploration activity discussed in this Report section was completed prior to Heliostar's Project interest. Subsequent to acquisition, Heliostar has focused on verification and validation of the data provided by Argonaut.

9.2 Grids and Surveys

Argonaut used the UTM Zone 13 coordinate system within the 1927 North American Datum for Mexico (NAD27 Mx). This coordinate system was used for all mapping and drill hole surveying.

9.3 Geological Mapping

In the mid-1980s, Consejo de Recursos Minerales completed 1:10,000 scale geological mapping. Reconnaissance geological mapping was undertaken by Silver Standard in 2003. Geologix, from 2006–2008, mapped an area of 3 km^2 over the San Agustin deposit.

Argonaut's surface work included detailed (1:1,500 scale) geological mapping over an area of approximately 330 ha. Mapping was completed in four campaigns during 2015, 2018–2020, 2020–2021, and 2023–2024, and was focused on structure, fracture density, alteration, and rock type. This information is reflected in the compilation geology map provided in Figure 7-2. Project Geology

The area of known mineralization at the Project is dominated by an igneous, quartz monzonite dome complex intruding a clastic sedimentary sequence composed of shale, mudstone, and less abundant sandstone. Occasionally some calcareous layers are observed in the sedimentary sequence. Both the intrusive complex and the sedimentary sequence occur on a dominant northwest trend with sub-vertical dips. These two main units are unconformably covered by post mineralization rhyolites of the Sierra Madre Occidental and younger conglomerates.

Figure 7-2 is a geological map of the San Agustin Mine area. Figure 7-3 is a representative cross section of the San Agustin Mine area. The location of the cross section is shown in Figure 7-2. Table 7-1 presents a lithological summary of the Project-area geology.

9.4 Deposit Descriptions

9.4.1 Deposit Dimensions

The San Agustin deposit is roughly 1,500 m long by 800 m wide.

The average depth of oxide material is 65–100 m below surface. Sulphide mineralization extends, where drilled, down to an average depth of about 200 m with the deepest tested areas extending to 400 m below surface.

The oxide portion of the deposit remains open to the northwest and to the southwest. The sulphide portion of the deposit is open in all directions and at depth.

9.4.2 Lithology

The host rocks for mineralization at San Agustin are quartz monzonite-dacite bodies and the sedimentary sequence they intrude. Gold mineralization is found along faults and fractures within the host igneous and sedimentary rocks and as disseminations in halos across the deposit.

9.4.3 Structure

The Principal Fault, a significant northwest striking and westerly dipping post-mineral fault, bisects the mineralized area. There are distinct differences in the mineralization on either side of the fault.

On the hanging wall (west side), it is common to find structures rich in manganese and barite that are not observed in the footwall. The hanging wall block also has higher silver and lead grades than the footwall block.

Figure 7-2In the Project area numerous small mining prospects dot the landscape. The majority of these were excavated on small polymetallic veins that appear to be a peripheral expression of the San Agustin mineralized system. Argonaut staff visited most of these small workings and mapped their locations and orientations.

9.5 Geochemical Sampling

Early sampling efforts included:

- Consejo de Recursos Minerales: Completed 283 m of trenching, the collection of 872 surface and underground channel samples, and 151 m of underground exploration including a 93 m deep shaft, 27 m of drift, 22 m of cross-cut, and 9 m of raise. Only paper copies and maps are available from this work;
- La Cuesta: 229 rock chip samples and 37 stream sediment samples. Three well developed multi-element anomalies and two others were determined as areas of interest;
- Monarch: 3,214 soil samples and 209 rock chip samples;
- Silver Standard: 1,257 rock chip samples;
- Geologix: 262 rock samples, continuous chip sampling of 5,416.5 m in 25 trenches, continuous chip sampling of 898.5 m of road cuts, systematic sampling of 95 m of underground workings.

The Monarch, Silver Standard, and Geologix programs identified a strong gold-in-soil anomaly (>0.3 ppm Au) over the main San Agustin deposit area, but also revealed a lower strength anomaly (0.1 ppm Au) as a halo around the main zone that covers most of the San Agustin and San Agustin 1 concessions (Figure 9-1).

Regionally, the gold and silver anomalies identified through the Monarch, Silver Standard, and Geologix programs appear to follow northwest and northeast structural trends that were identified by Argonaut through its geological mapping efforts.

Argonaut collected 939 rock chip samples from surface exposures. The samples represent continuous rock chips over an area averaging 1.5 m wide. When possible, sampling was done along 50 m to 100 m spaced sample lines that were oriented perpendicular to the main recognized structural trends. These samples were combined in the database with the existing surface rock samples that were collected by previous operators.

Handheld global positioning system (GPS) units were used to locate the surface rock samples and the samples were tagged in the field with aluminum tags. Outcrop exposure was variable along the sample lines and sample spacing varied because of this. Where there were good rock exposures, samples were taken approximately 3 m apart.

The results of the rock chip sampling program showed mineralization occurs in most of the San Agustin and San Agustin 1 concessions and is strongest in the Main Zone area (Figure 9-2). Gold was the most widespread anomalous element, followed by zinc. Silver and lead were more restricted to certain structural trends.

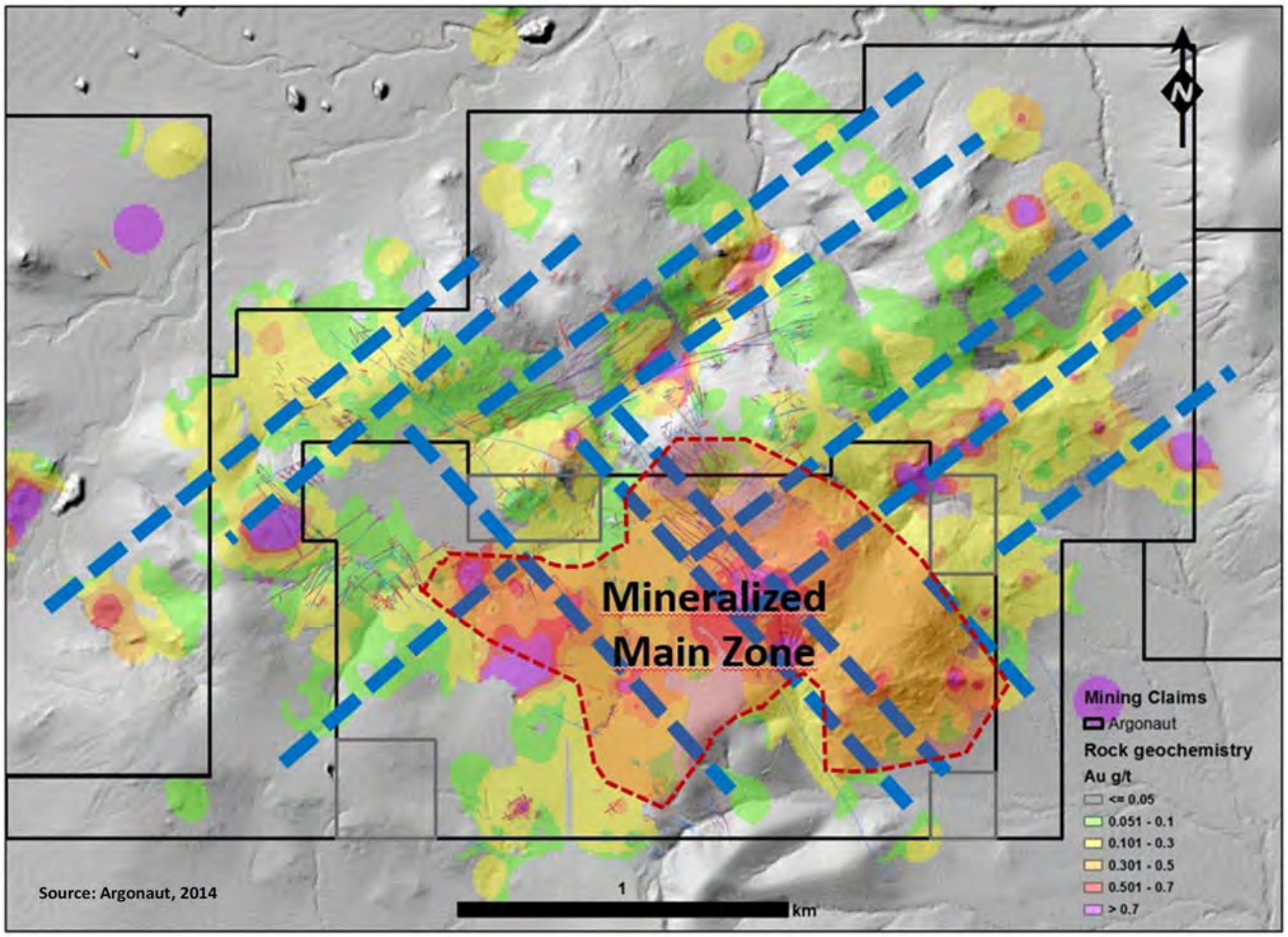
9.6 Geophysical Surveys

Zonge International Inc. (Zonge) was contracted by Silver Standard in 2010 to conduct geophysical work. Several chargeability anomalies were observed and used as part of the information for targeting drill holes at the San Agustin Project. Figure 9-3 shows the IP chargeability contours based on the Zonge survey.

9.7 Petrology, Mineralogy, and Research Studies

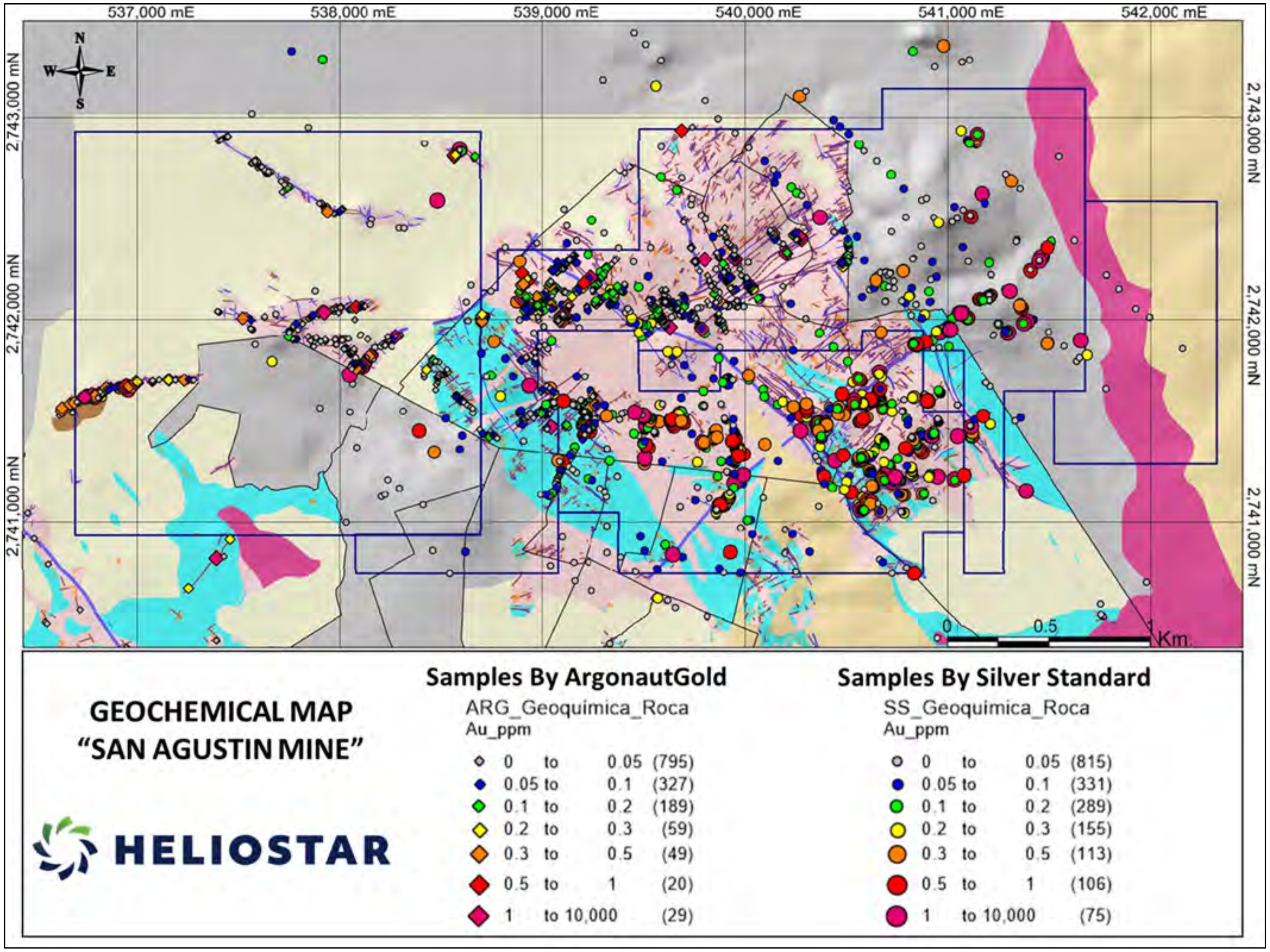
Silver Standard completed a petrology study on thin sections from four mineralized samples from three core holes completed in 2007. This work performed by R.P Bowen in 2010 (Bowen, 2010) was focused on understanding the sulphide mineralization at San Agustin. Disseminated pyrite; sphalerite in quartz carbonate vein with galena, and arsenopyrite; tennantite and tetrahedrite in breccia; gold with arsenopyrite with sphalerite and pyrite; gold in pyrite; and disseminated pyrite, chalcopyrite, arsenopyrite, and stibnite were identified in the specimens.

Figure 9-1: Geochemical Anomaly Map, Monarch, Silver Standard, and Geologix Programs



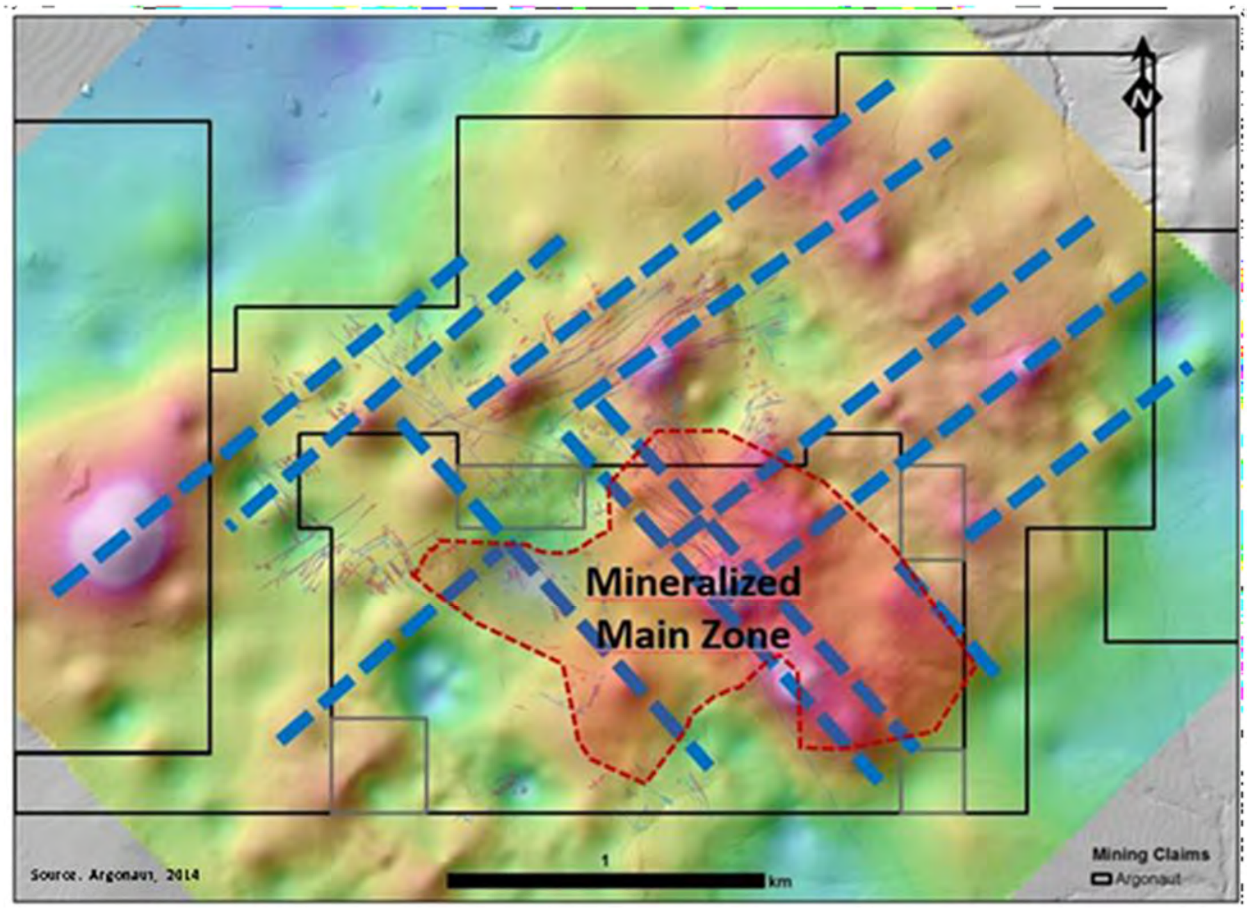
Note: Figure prepared by Argonaut, 2014. Blue dashed lines indicate interpreted structural trends.

Figure 9-2: Silver Standard and Argonaut Rock Chip Geochemistry Map



Note: Figure prepared by Heliostar, 2024

Figure 9-3: 2010 Induced Polarization Chargeability Map



Note: Figure prepared by Argonaut, 2014. Warmer colours (red and orange) indicate higher chargeability that is interpreted to reflect sulphide conductors at depth. Significant northwest and northeast trending structures are shown by dashed blue lines.

9.8 Exploration Potential

Heliostar recognizes a range of opportunities for exploration at the San Agustin Mine.

9.8.1 Near Mine Oxide Exploration

There are several areas around the San Agustin pit where mineralized corridors defined in mining extend beyond the pit into areas that have little or no drill testing. These corridors are commonly controlled by northeast-striking faults that focus gold mineralization and can be effectively tested by shallow drilling. These zones represent the potential to identify shallow oxide material. This includes areas such as MKT, Phase 5 and Phase 3 (Figure 9-4).

9.8.2 Phase 4 SW Trend

This area represents the most significant potential to expand oxide mineralization (Figure 9-5). Mineralization defined in drilling in the Phase 4 open pit is open to the southwest and several lines of evidence including trenching, rocks, and soils indicate that mineralization extends beyond the current planned pit limits. A major northeast-striking structure that localized high-grade gold mineralization in the San Agustin pit and Phase 4 is open and is poorly tested by drilling to the southeast.

9.8.3 Sulphide Potential

The San Agustin Mine has significant exploration potential in sulphide material below the ultimate pit design, which has not been a historical focus of exploration (refer to Figure 9-5). Past exploration and mining have focused almost exclusively on oxide gold mineralization that was amenable to heap leach processing.

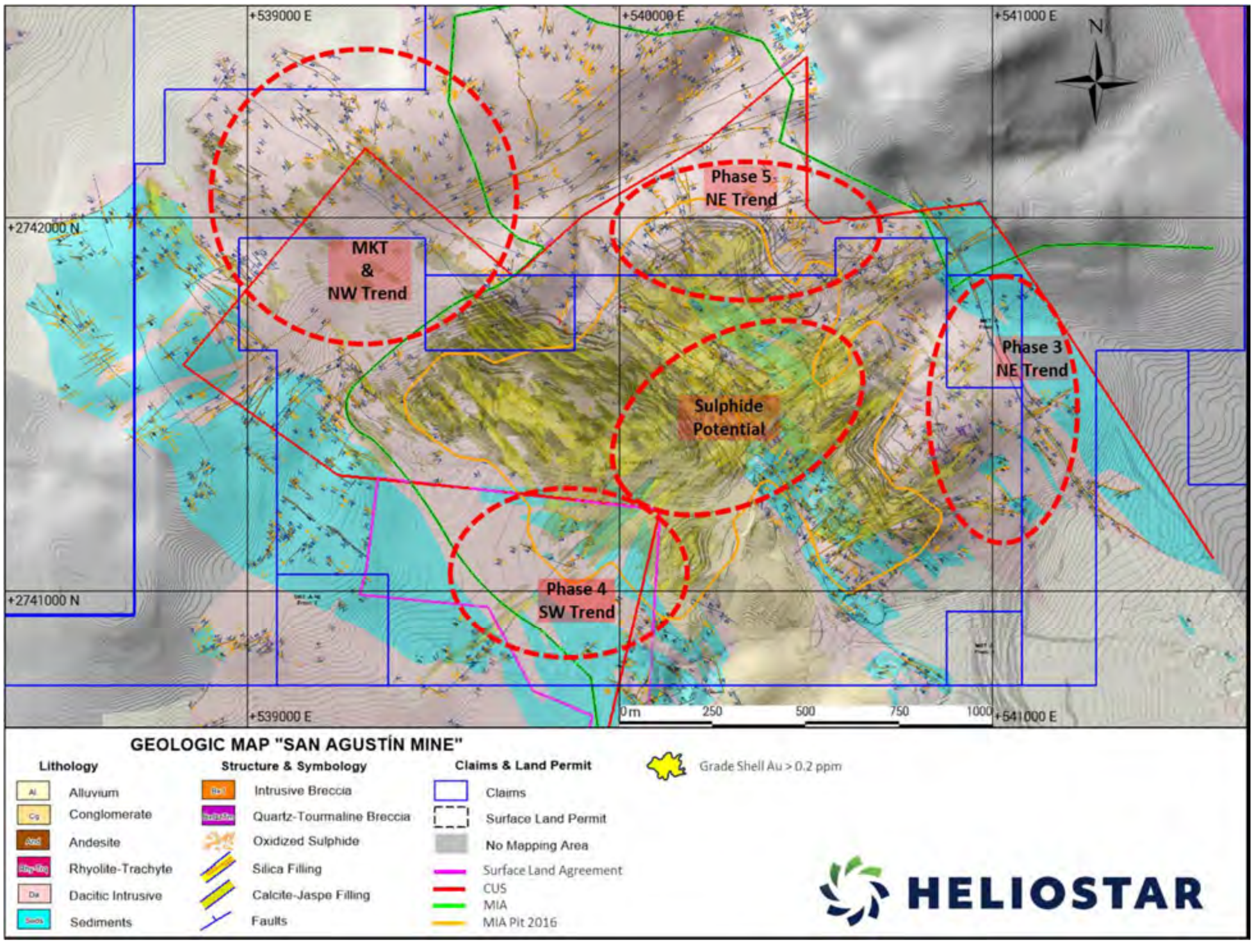
Historically, gold mineralization in sulphide material was not tested because of low metallurgical recoveries of gold and silver with heap leach processing. However, other processing techniques, which incorporate and recover other metals present such as silver, lead, and zinc in the sulphide zone, are being evaluated. Historical deep drilling demonstrates the potential for this style of mineralization. The lateral and depth extent of this mineralization style remain unconstrained.

9.8.4 District Exploration Potential

In 2021, Argonaut acquired a large land package. The concessions within the acquisition have seen little to no exploration since the acquisition. One prospect, the Consejo Zone, is an underground gold and base metals prospect (Figure 9-6). It was drilled in the 1980s but has not been explored since. This will be a priority area of exploration for Heliostar.

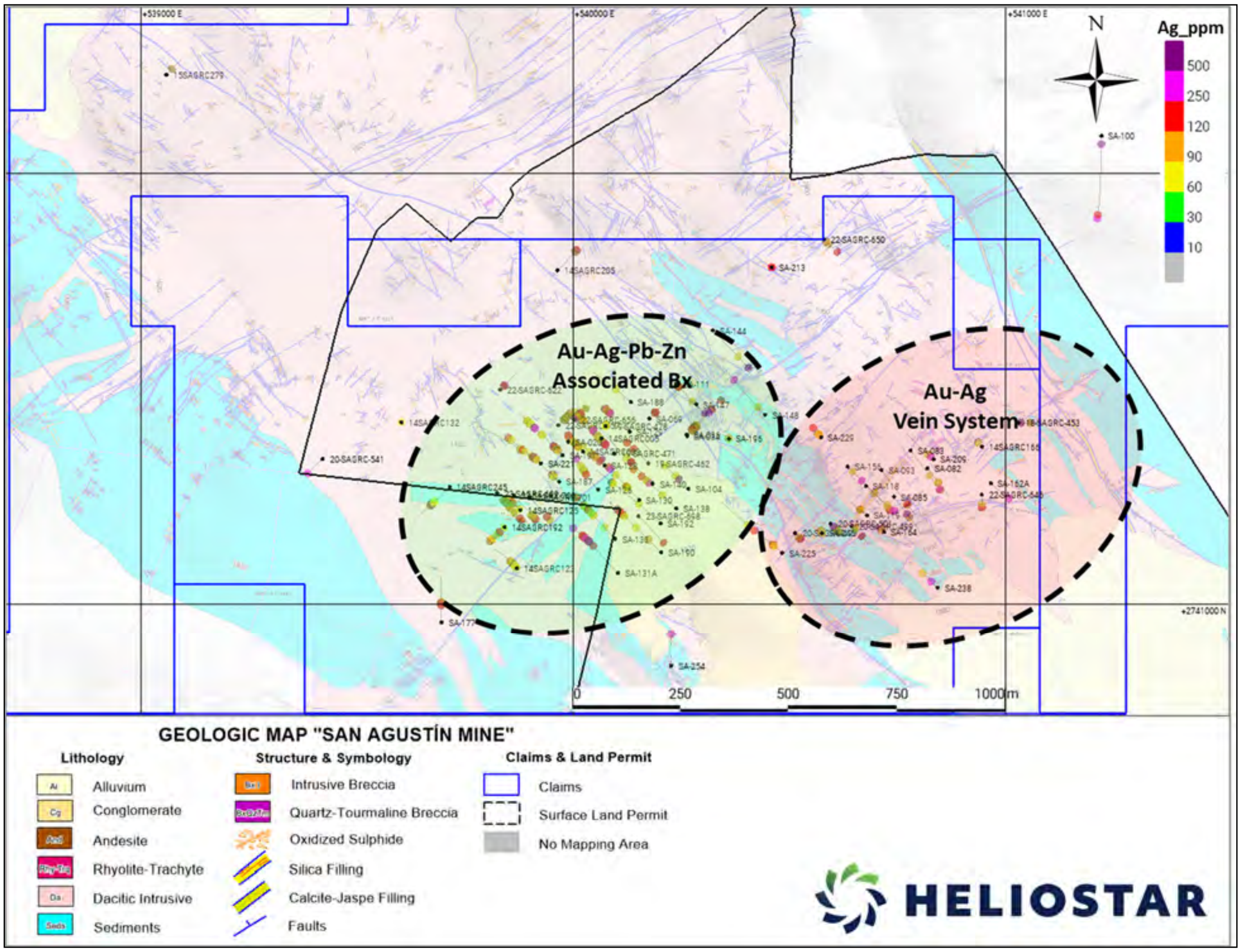
Additional areas that warrant exploration include a number of colour anomalies and pathfinder elements in soils anomalies surrounding San Agustin. Several major northeast-striking structures, which localize gold mineralization in the San Agustin pit, are regional through-going structures, and have also received minimal drill testing beyond the pit limits.

Figure 9-4: Prospects Within the San Agustin Mine Area



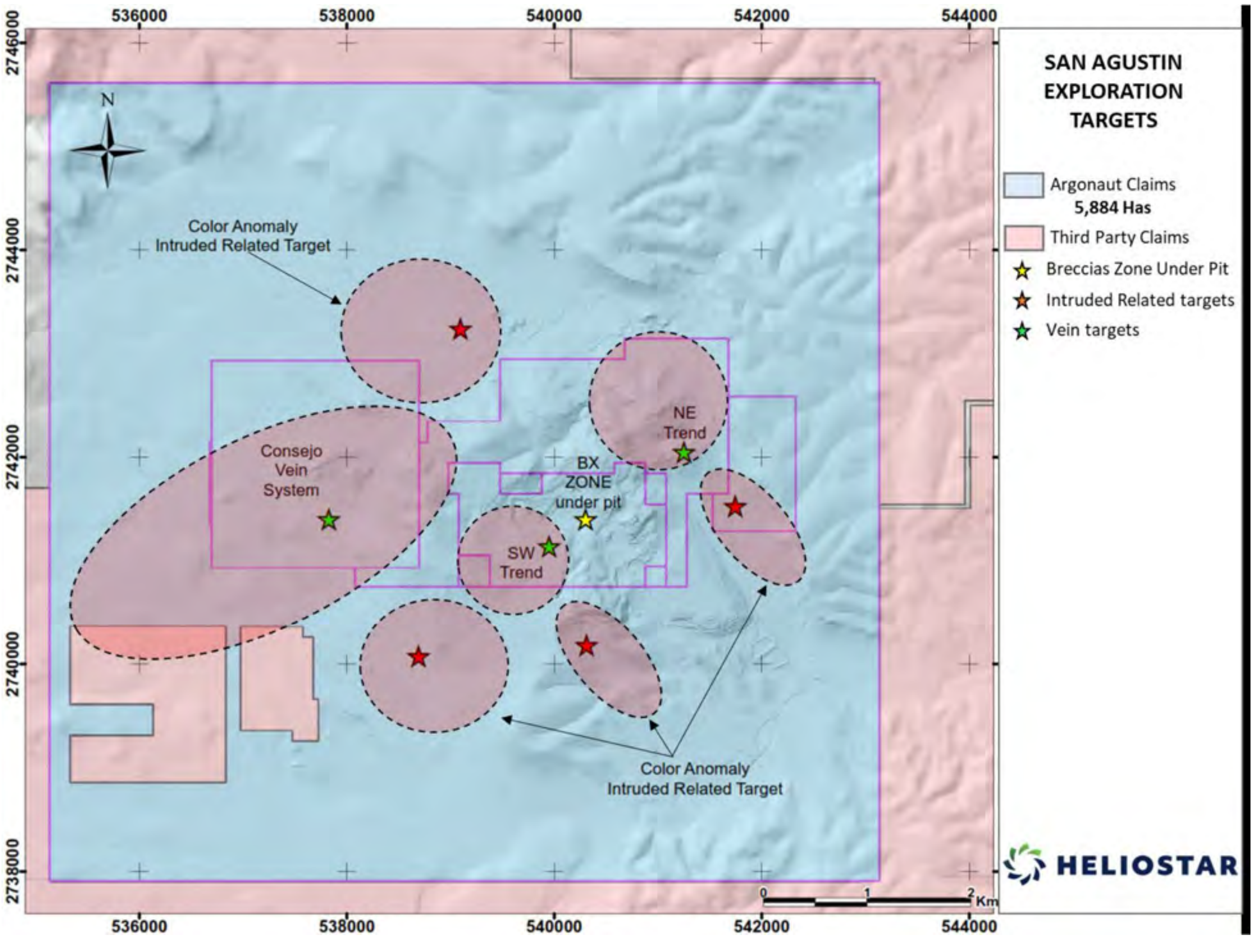
Note: Figure prepared by Heliostar, 2024.

Figure 9-5: Exploration Potential Below the Ultimate Pit



Note: Figure prepared by Heliostar, 2024.

Figure 9-6: Prospects within San Agustin Concession



Note: Figure prepared by Heliostar, 2024.

10.0 DRILLING

10.1 Introduction

Heliostar has completed no drilling at the Report effective date.

10.2 Project Drilling

Argonaut, Fresnillo, Monarch, Silver Standard, and Geologix conducted drill programs from 1997–2023.

Drilling totals 1,013 holes for 131,720 m, consisting of 808 RC drill holes (85,426 m) and 205 core holes (46,294 m). A project drill summary table is provided as Table 10-1, and a drill collar location plan in Figure 10-1.

10.3 Drilling Used in Mineral Resource Estimates

Drilling used in estimation consisted of 948 holes for 123,335 m, comprising 783 RC drill holes (82,416 m) and 165 core holes (38,919 m). The drilling that supports Mineral Resource estimation is summarized in Table 10-2, and a drill collar location plan for that drilling is shown in Figure 10-2. There has been no drilling on the Project since the database close-out date of August 1, 2024.

Drilling excluded from estimation support included drill holes outside the model limits, drill holes with no quality assurance or quality control (QA/QC) information, drilling completed for metallurgical or water purposes.

10.4 Drill Methods

Where known, drill contractors and drill rigs used are summarized in Table 10-3.

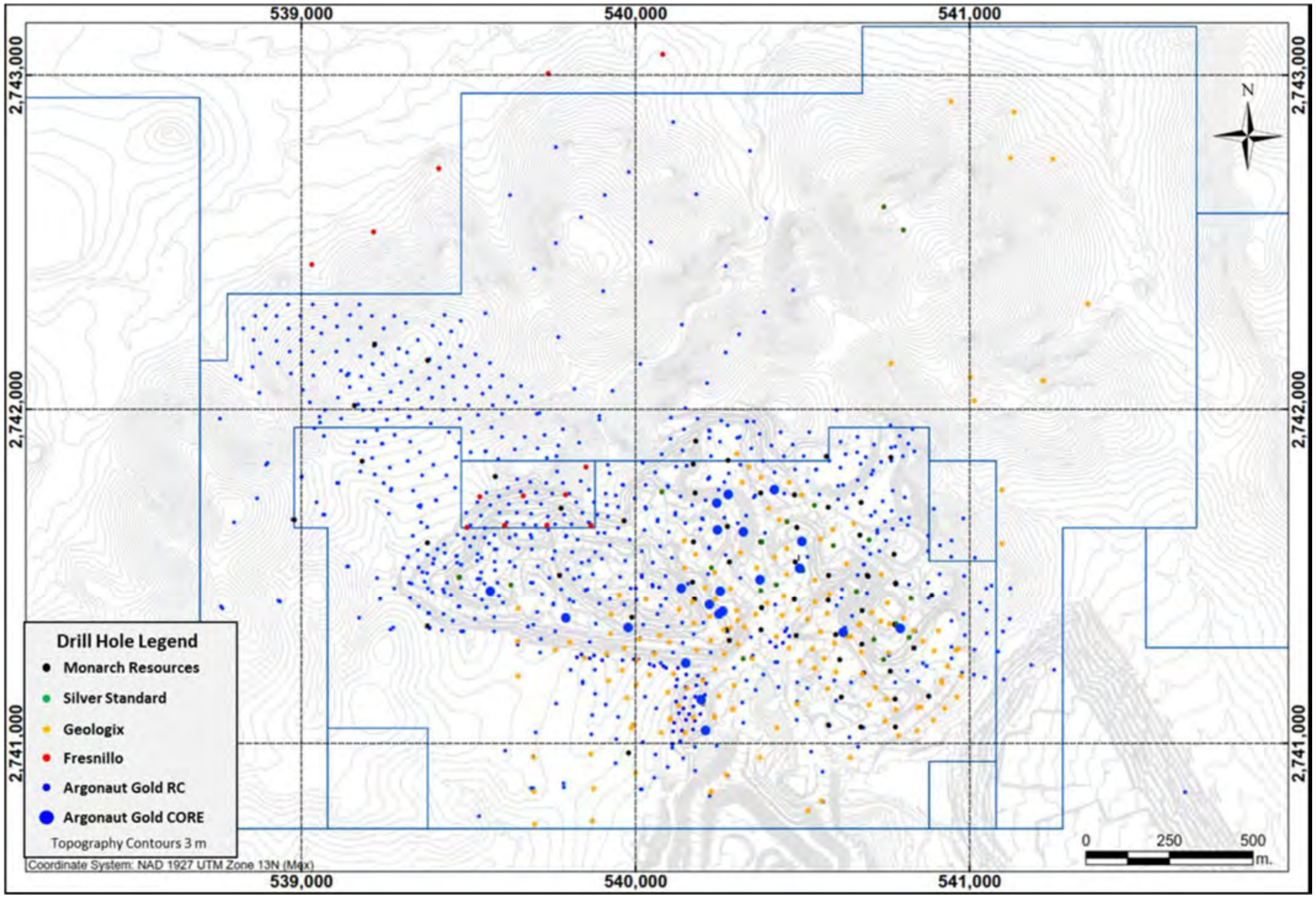
There is no record of the drill diameters used in the pre-Argonaut RC drilling. Argonaut RC drill diameters ranged from 5⅛ to 5¾ inches.

Core sizes were drilled at HQ size (63.5 mm core diameter) for exploration and resource drilling, reducing to NQ (47.6 mm) size in difficult ground conditions. PQ (85 mm) core was drilled for metallurgical purposes.

Table 10-1: Project Drill Summary Table

Year	Operator	Purpose	RC/Percussion Drill Holes		Core Drill Holes (incl. with RC pre-collar)	
			Number	**Metres**	**Number**	**Metres**
1997–1998	Monarch	Initial drilling of targets identified by surface exploration	62	9,154	4	1,002
2004	Silver Standard	Follow-up exploration of targets identified by Monarch	23	3,917	—	—
2007–2008	Geologix	Deposit definition drilling	13	2,350	162	38,169
2014–2023	Argonaut	Definition, infill, and exploration drilling	710	70,005	21	2,366
2020	Fresnillo	Exploration drilling	—	—	18	4,757
Total			***808***	***85,426***	***205***	***46,294***

Figure 10-1: Project Drill Collar Location Plan

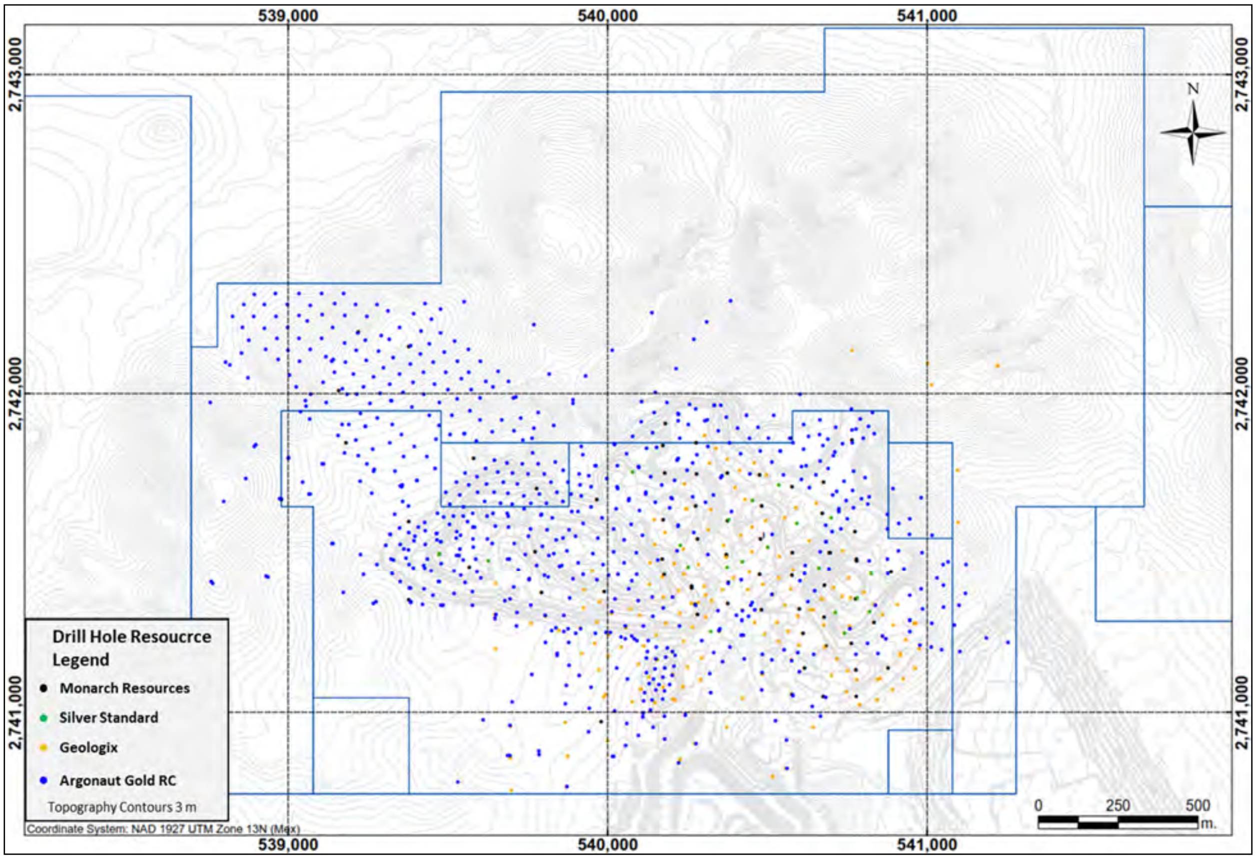


Note: Figure prepared by Heliostar, 2024.

Table 10-2: Drilling Supporting Mineral Resource Estimation

Year	Operator	RC/Percussion Drill Holes		Core Drill Holes (inc. RC pre-collar)	
		Number	Metres	Number	Metres
1997–1998	Monarch	62	9,154	3	750
2004	Silver Standard	21	3,517	—	—
2007–2008	Geologix	9	1,552	162	38,169
2014–2023	Argonaut	691	68,193	—	—
Total		***783***	***82,416***	***165***	***38,919***

Figure 10-2: Drill Collar Location Plan, Drilling Supporting Mineral Resource Estimation



Note: Figure prepared by Heliostar, 2024.

Table 10-3: Drill Contractors

Year	Operator	Program	Drilling Company	Drill Rig
1997–1998	Monarch	RC	Unknown	Ingersol-Rand TH-100 and TH-75 drills
1997–1998	Monarch	Core	Unknown	CS-1000 rig drilling HQ
2004	Silver Standard	RC	Unknown	Unknown
2007–2008	Geologix	Core	Intercore Limited	Skid mounted drill
2014	Argonaut	Core	Falcon Drilling Ltd. (Falcon)	F3000
2014–2022	Argonaut	Core	Layne de México SA de CV. (Layne)	CS 1500 truck mounted rig drilling HQ and PQ
	Argonaut	RC	Layne de México SA de CV. (Layne)	Truck-mounted Model 1500
2023	Argonaut	RC	Globexplore Drilling	ET642

10.5 Logging

No information is available regarding the logging procedures for the Monarch, Silver Standard, and Geologix drill campaigns.

Core material was collected by drilling personnel in plastic core boxes that were previously marked with the drill hole and box numbers. The core boxes were then transported by Argonaut personnel by field vehicle to a core warehouse located in San Lucas de Ocampo, where the core was logged in detail by Argonaut geologists.

Logging of core was accomplished on a series of paper formats customized by Argonaut, which included descriptions of lithology, structures, redox boundaries, alteration, mineralization, and geotechnical data.

Data from the paper drill logs were entered into an Argonaut customized Microsoft Excel data form which was then imported into the master Microsoft Access database.

All RC samples were logged by Argonaut geologists in the field using a hand lens and sometimes a binocular microscope. A small amount of RC cuttings was stored in plastic chip trays previously marked with the drill hole number, the interval depth, and sample number. These chip trays were later transported to Argonaut's field office in San Juan del Rio.

Paper log forms were used to record lithology, structure, alteration, mineralization, and redox boundaries (the contact between oxide and sulphide material) for RC samples. The information was later entered into a Microsoft Excel data form and then imported into the master Microsoft Access database.

10.6 Recovery

No information is available regarding sample recovery for the Monarch, Silver Standard, and Geologix drill campaigns.

During the Argonaut programs, sample recoveries were strictly monitored in both core and RC drill programs and controls were established in the logging formats. Core recoveries normally exceeded 95% and RC recoveries exceeded 90%.

10.7 Collar Surveys

10.7.1 Pre-Argonaut

There is no documentation for methods of drill site location and surveying for any of the Monarch or Silver Standard drill holes. For most drill holes, a cement plug or block was poured around the casing indicating drill hole position.

Layout of drill hole locations by Geologix was by hand-held GPS units with an accuracy of 2–4 m. The collar was marked by plastic polyvinyl chloride (PVC) pipe left in the drill hole and the drill hole location was surveyed by hand-held GPS after drilling was completed. Geologix surveyed several control points around the Project area and resurveyed most Monarch and Silver Standard drill hole collars using a total station surveying instrument.

10.7.2 Argonaut

The initial position of drill pads for the RC and core drill holes was established by Argonaut geologists using a handheld GPS device. After the drill holes were completed, the sites were marked with a section of PVC pipe, which was encased in a cement monument that was labelled with the corresponding drill hole number.

After the drill hole monuments were in place all the drill holes were surveyed by Argonaut personnel using a high-precision Trimble GPS survey instrument (model R8-M3GNSS). The surveyed coordinates of the drill holes were sent to Argonaut database personnel and then updated in the master Microsoft Access database.

10.8 Downhole Surveys

10.8.1 Pre-Argonaut

No downhole surveys were collected during the Monarch and Silver Standard drilling programs. Because a majority of these drill holes were drilled to depths of <200 m, all drill holes were at angles greater than -50°, and drilling was RC, which has a thicker RC drill string, downhole deviation was probably minimal.

Geologix collected downhole survey information at approximately every 50 m using a digital Reflex downhole survey instrument.

10.8.2 Argonaut

Thirteen of the metallurgical core drill holes were oriented with nominal azimuths of 135° or 315° with inclinations ranging between -55° and -65°. Two had the same azimuths with steeper inclinations. Four of the metallurgical core holes were oriented with a nominal azimuth of 45° with inclinations ranging between -55° and -60°. The remaining four drill holes were oriented at various azimuths and inclinations. The planned orientation of the drill hole was indicated on the drill pad using a Brunton compass and rope so the drill rig could be aligned parallel to the oriented rope.

Approximately 20% of RC drill holes were oriented with azimuth of 315°; approximately 20% were oriented with azimuth of 135°; approximately 30% were oriented with azimuth of 045°; and approximately 10% were drilled vertically. Approximately 70% of the RC drill holes were inclined at either -45° or -60°, and the remaining drill holes varied between -65° and -85°.

Downhole surveys were conducted by trained drilling personnel using a Reflex camera and directed and supervised by Argonaut geologists. Readings were transferred to Argonaut geologists on prepared forms and signed by the drilling contractors.

On the longer drill holes, downhole readings were made every 50 m. Downhole surveys were recorded at the middle and bottom of shallow drill holes.

If the drill hole appeared to deviate more than 10° to 12° from a previous survey point the process was repeated. Suspect survey readings were discarded by the field geologists or database personnel.

For the 2023 drilling campaign, a Stockholm Precision Tool (SPT) GyroMaster was used to survey the drill hole deviations. The drill holes were surveyed by the driller under the supervision of Argonaut staff. The data collected were transferred to Argonaut through digital reports.

10.9 Metallurgical Drilling

During 2014, 2021, and 2022, three core drilling campaigns were carried out to obtain samples for metallurgical tests. A total of 21 PQ core drill holes were drilled to obtain material from each modeled material type. The whole core from the mineralized zones was sent to the metallurgical laboratory for test work. The 2021 and 2022 campaigns were designed to test sulphide material.

10.10 Grade Control Drilling

Grade control drilling was conducted by the drilling contractor Construplan using an Epiroc DM-45 blast hole drill rig. Blast holes were completed to 7 m depth (6 m bench height plus 1 m subdrill) on a nominal 4-5 m orthogonal grid spacing depending on the material type. Argonaut grade control technicians collected grade control samples by excavating cuttings from four trenches in a cross pattern in the blast hole pile, homogenizing the material on a tarp, and splitting the material from the trenches using a Jones splitter to 3-4 kg in the field. Argonaut geologists logged the blast hole cuttings for lithology, alteration type (silicified or argillized), and oxidation state (oxide, transition, or sulphide) on all blast holes.

10.11 Sample Length/True Thickness

Drilling was designed to intersect mineralization as close as possible to the true thickness. Most of the early drilling was completed on northwest–southeast oriented section lines with drill holes collared at 50 m intervals. Most of the drill holes were oriented with an azimuth of 315º or 135º with inclinations from -55º to -65º. Some drill holes were drilled vertically. The inclined drill intercepts range from 60% to 75% of true width and the vertical drill intercepts represent about 50% of true width. Later Argonaut drilling was oriented based on a better understanding of the controls of mineralization and the drill orientation was redirected according to the localized fractures and faulting. These drill intercepts represent an average of 70% of the true width.

A representative cross section showing drill traces in relation to the mineralization is included in Figure 7-4.

10.12 QP Comments on Section 10

In the QP's opinion the quantity and quality of the lithological, geotechnical, collar, and down- hole survey data collected in the exploration and infill drill programs are sufficient to support Mineral Resource estimation.

- Drilling was conducted in accordance with industry-standard practices;
- The drilling as performed provides suitable coverage of the zones of gold–silver mineralization;
- Collar and down hole survey methods used generally provide reliable sample locations;
- Drilling methods provide good recovery;
- Logging procedures provide consistency in descriptions;
- The collected sample data adequately reflect deposit dimensions, true widths of mineralization, and the style of the deposits;
- Drill orientations are generally appropriate for the mineralization style for the bulk of the deposit area.

There are no known sampling or recovery factors with these programs that could materially impact the accuracy and reliability of the results.

11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Sampling

Heliostar had completed no analytical programs at the Report effective date.

11.1.1 Geochemical Sampling

The sampling methods of pre-Argonaut geochemical programs are not known.

Argonaut collected rock chip samples from surface exposures. The samples represented continuous rock chips over an area averaging 1.5 m wide. When possible, sampling was done along 50–100 m spaced sample lines that were oriented perpendicular to the main recognized structural trends.

Handheld GPS units were used to locate the surface rock samples. Along the sample lines the actual sample locations were a function of outcrop exposure and sample spacing varied because of this. Where there were good rock exposures, samples were taken approximately 3 m apart. Argonaut's samples were tagged in the field with aluminum tags.

No geochemical samples were included in the database used for Mineral Resource estimation.

11.1.2 Drilling

No information regarding the sampling methods is available from the Monarch, Silver Standard, and Geologix drill campaigns.

11.1.2.1 RC Drilling

Argonaut trained local technicians to collect samples at the drill rig. Those technicians were always under the supervision of a project geologist. RC cuttings were systematically collected every 1.52 m (5 ft), regardless of their geological characteristics.

The RC drill rig was equipped with a cyclone that had both vertical and lateral discharge ports. With the exception of the field duplicate samples, all material from the vertical discharge port was passed through a riffle splitter to obtain two samples of equal weight and volume. One sample (representing half of the total) was completely discarded, and the other half was split again to obtain two sub-samples, each representing ¼ of the original sample. Those final two samples were bagged in 6-mil poly bags, sealed with plastic ties, and marked with the sample number. A ¼ split was sent for assay and the other ¼ split saved as a backup sample.

Field duplicate samples were collected at a rate of approximately one duplicate for every 30 samples. When preparing field duplicates, the sample splitting process at the drill rig was slightly different than for regular samples. The material from the vertical discharge was riffle split to generate two samples. Instead of discarding one of the half splits, it was set aside to be used as a backup sample. Two sub-samples were then split from one of the initial half splits so that two ¼ split samples were created. One of the ¼ splits was assayed as an original and the other ¼ split assayed as a duplicate sample.

All the sample bags were transported to the San Lucas de Ocampo warehouse by Argonaut personnel where they were inventoried, checked for tears or rips, weighed, and loaded into rice bags for transportation to ALS Chemex Laboratories (ALS) in Zacatecas, Mexico (ALS Zacatecas). Sample dispatch forms covering 40–60 samples were prepared for each shipment. Samples from different drill holes were not mixed in the sample batches. The samples were picked up about every three days by an ALS employee who drove them to Zacatecas.

Technicians under the supervision of an Argonaut geologist, inserted one of three QA/QC samples (standard, blank, or duplicate) into the sample stream. Argonaut's sampling protocol resulted in the submission of one control sample for every nine drill hole samples which meant that every batch of samples contained at least three QA/QC samples.

11.1.2.2 Core Drilling

No information regarding the core sampling methods is available from the Monarch and Geologix drill campaigns. Core from the Monarch and Geologix programs were sent for analysis.

The entire drill core volume from select sections of the Argonaut metallurgical drill programs was consumed for metallurgical testwork. These metallurgical drill holes were not assayed and were not used to estimate Mineral Resources.

11.2 Density Determinations

In 2018, 166 bulk density determinations were completed for the San Agustin Project. The majority of these data were obtained from Silver Standard and little is known as to what methods were used to determine bulk density values except the drill hole intervals that were tested.

Argonaut sent 29 representative oxide samples collected from their 2014 metallurgical core hole drilling program to Oestec de México (Oestec) in Hermosillo for bulk density determination.

Based on a review of the available density data, Heliostar assigned bulk density values of 2.27 g/cm^3 to oxide and transition blocks and 2.76 g/cm^3 to sulphide blocks.

11.3 Sample Preparation and Analytical Laboratories

The laboratories used for sample preparation and analysis are summarized in Table 11-1.

Table 11-1: Analytical Laboratories

Laboratory	Period	Accreditation	Independent	Comments
Bondar Clegg Laboratories (Bondar Clegg)	1997	Unknown	Yes	Pre-Argonaut drilling and geochemical samples
Rocky Mountain Geochemical, Reno	Unknown	Unknown	Yes	Pre-Argonaut geochemical samples
BSI Inspectorate de Mexico, S.A. de C.V., Durango	Unknown	Unknown	Yes	Pre-Argonaut drilling and geochemical samples
ALS Guadalajara	2007–2008	Unknown	Yes	Pre-Argonaut geochemical samples
ALS Vancouver	2007–2008	Unknown	Yes	Pre-Argonaut geochemical samples
Analytical Laboratories (Acme), Vancouver	Unknown	Unknown	Yes	Pre-Argonaut drilling
Oestec, Hermosillo	2014	Unknown	Yes	Bulk density determinations
SGS	Unknown	Unknown	Yes	Check assay laboratory
Inspectorate, Hermosillo	2014, 2015, 2018	ISO/IEC 17025:2005	Yes	Check assay laboratory
ALS Chemex	2014–2024	ISO/IEC 17025:2017	Yes	Argonaut drilling and geochemical samples

11.4 Sample Preparation

11.4.1 Geochemical Samples

Sample preparation methods for the geochemical samples collected by Monarch are not recorded.

Surface rock samples collected by Silver Standard were forwarded to BSI Inspectorate de Mexico, S.A. de C.V. (BSI) for preparation. Samples were crushed to -10 mesh (2 mm) and a 300 g split was retrieved using a riffle splitter for preparation of a pulp.

Geologix trench samples were sent to the ALS laboratory in Guadalajara, Mexico (ALS Guadalajara) where they were weighed and dried before being crushed to 70% passing 10 mesh (2 mm). A 250 g sub-sample was then split off and pulverized in its entirety to 85% passing 200 mesh (75 µm).

Argonaut's rock chip samples were picked up by ALS directly on site and prepared in the ALS Zacatecas laboratory.

11.4.2 RC Drill Samples

Monarch's RC drilling samples were weighed and dried before being crushed to 70% passing -10 mesh (2 mm). A 250 g sub-sample was then split off and pulverized in its entirety to 75% passing 200 mesh (75 µm).

Samples from Silver Standard and Geologix drilling programs were first sent to ALS Guadalajara where they were weighed and dried before being crushed to 70% passing -10 mesh (2 mm). A 250 g sub-sample was then split off and pulverized in its entirety to 85% passing 200 mesh (75 µm).

When Argonaut samples arrived at the ALS Zacatecas, they were logged into a tracking system that assigned a unique laboratory number to each sample with an associated bar code label that was attached to the sample bag. Excessively wet samples were dried in ovens at a maximum temperature of 120°C. The samples were then crushed so that greater than 70% of the sample passed a 2 mm sieve. The crushed samples were then split using a riffle splitter until around 250 g was obtained. The sample splits were pulverized to greater than 85% of the sample passing 75 µm. The resulting pulps were then shipped to be assayed at ALS's Vancouver, Canada, laboratory (ALS Vancouver).

11.4.3 Core Samples

Monarch's core drilling samples were weighed and dried before being crushed to 70% passing -10 mesh (2 mm). A 250 g sub-sample was then split off and pulverized in its entirety to 75% passing 200 mesh (75 µm).

Samples from Geologix core drilling programs were first sent to ALS Guadalajara where they were weighed and dried before being crushed to 70% passing -10 mesh (2 mm). A 250 g sub-sample was then split off and pulverized in its entirety to 85% passing 200 mesh (75 µm).

Select intervals of Argonaut's metallurgical core were sent for metallurgical testwork, and were not analyzed.

11.5 Analysis

11.5.1 Geochemical Samples

Monarch rock samples were analyzed for gold, silver, copper, lead, zinc, arsenic, antimony, mercury, bismuth, and molybdenum by Bondar Clegg Laboratories (Bondar Clegg). Gold was determined by fire assay on a 30 g charge with an atomic absorption (AA) finish. Mercury was determined by aqua regia digestion and cold vapor AA. Silver and seven other elements were analyzed by aqua regia digestion and ICP determination.

Silver Standard pulps were shipped to Rocky Mountain Geochemical (Rocky Mountain) in Nevada, USA where they were analyzed for gold, silver, mercury, and seven additional elements.

The Geologix pulps were sent to ALS Vancouver for analysis of gold by fire assay and an additional 35 elements by aqua regia digestion and ICP determination.

Argonaut's rock samples were sent to ALS Vancouver for fire assay of gold and ICP multielement analysis (ALS method codes Au AA-23 and ME-ICP 41).

11.5.2 RC Drill Samples

Gold was determined by fire assay on a 30 g charge with an AA finish on the Monarch RC samples. Silver and seven other elements were analyzed by aqua regia digestion and ICP determination. Mercury was determined by aqua regia digestion and cold vapor AA.

Silver Standard and Geologix pulps were shipped to ALS Vancouver for analysis of gold by fire assay on a 50 g charge with AA finish and an additional 35 elements by aqua regia digestion and ICP determination. Samples with initial fire assay results >10 g/t Au were re-assayed on a separate pulp by fire assay with a gravimetric finish. Overlimit assays for Ag (> 100 g/t), Zn (>10,000 ppm), and Pb (>10,000 ppm) were completed by ore grade aqua regia digestion with either ICP or AA finish.

Argonaut samples were assayed for gold using ALS method Au-AA23, which is a 30 g fire assay with atomic absorption finish. The detection limit for the Au-AA23 method was 0.005 ppm with an upper detection limit of 10 ppm. Over limit assays were automatically re-analyzed using fire assay/gravimetric methods (ALS method Au-GRA21). Trace element geochemistry was analyzed for the 2014 RC samples using ALS method ME ICP41 which uses conventional ICP methods to generate values for 35 elements.

11.5.3 Core Samples

Gold was determined by fire assay on a 30 g charge with an AA finish on the Monarch core samples. Silver and seven other elements were analyzed by aqua regia digestion and ICP determination. Mercury was determined by aqua regia digestion and cold vapor AA.

Geologix pulps were shipped to ALS Vancouver for analysis of gold by fire assay on a 50 g charge with AA finish and an additional 35 elements by aqua regia digestion and ICP determination. Samples with initial fire assay results >10 g/t Au were re-assayed on a separate pulp by fire assay with a gravimetric finish. Overlimit assays for Ag (> 100 g/t), Zn (>10,000 ppm), and Pb (>10,000 ppm) were completed by ore grade aqua regia digestion with either ICP or AA finish.

Select intervals of Argonaut's metallurgical core were sent for metallurgical testwork, and were not analyzed.

11.6 Quality Assurance and Quality Control

Assay QA/QC results from the initial Monarch and Silver Standard drilling programs were limited (Arseneau, 2009).

Geologix located coarse rejects from the Monarch and Silver Standard drilling programs and sent approximately 5% (182 samples) of those samples to ALS Vancouver for check assaying along with certified reference materials (standards) at a rate of one standard for every 20 samples.

Geologix used commercially prepared standards from CDN Laboratories, RockLabs, and Ore Research & Exploration for their drilling programs at San Agustin at a rate of one standard for every 20 samples. They used pre-packaged pool filter sand as a blank. Duplicate samples were collected by Geologix for about 5% of the drilling data. They also sent 5% of their ALS Vancouver pulps to Analytical Laboratories (Acme) in Vancouver for check assay analysis.

Argonaut implemented formal QA/QC programs for the 2014–2023 drill campaigns. These included submission of blanks, standards, field duplicates, and completion of a check assay program.

From 2014–2023, the material used for the blanks was purchased from RockLabs in Auckland, New Zealand. Blanks reporting gold grades >0.015 ppm Au were considered a failure. Standard values reporting more than three standard deviations from the best value were considered a failure.

Eight standards were also purchased from ROCKLABS and inserted at a rate of approximately three to four standards per 100 samples. These were used during the 2014–2023 drilling programs, covering low-grade gold to a maximum of 1.027 ppm Au.

Only field duplicates used in in-house Argonaut's QA/QC program. The field duplicate was used just for RC holes, and it was taken from the cyclone splitter reject outlet weighing approximately 10–15 lbs. For 2004 to 2023 drilling programs, field duplicate samples were taken at a rate of about three per 100 samples.

Duplicate samples were evaluated using the Spearman Rank correlation coefficient, Pearson's coefficient, the coefficient of determination (R2), scatter diagrams, and quantile-quantile (QQ) diagrams. Argonaut requested repeat analyses where the duplicate was ± 50% different than the original sample and the original sample grade was >0.1 g/t Au.

Argonaut also sent pulp and bulk reject samples to Inspectorate Hermosillo for check assay purposes during 2014, 2015, and 2018 drilling programs. Approximately 10% of the samples from each drill campaign were sent for check assay based on the geographic distribution and gold grade variability. The acceptance threshold for coarse rejects was set at 90% of the pairs within ± 30% of each other. The tolerance for pulp rejects was tighter where 90% of the samples must be within ± 10% of each other.

11.7 Databases

Since 2022, San Agustin drilling information has been managed in a GeoSequel database (GeoSequel). The initial configuration of GeoSequel and data migration was completed by an external consultant coordinating with Argonaut staff using original files, Access, and Excel templates. Since the migration to GeoSequel, geological logging has been performed using the GeoSequel Logger where geologists directly enter all geological information into the database, including preliminary collar coordinates, azimuth, dip, and hole depth. The preliminary information is replaced once the final coordinates and downhole survey measurements are received.

Assay data are imported directly from digital laboratory certificate files using GeoSequel Tools, retaining the original laboratory codes. QA/QC procedures are performed within the program. After the QA/QC validation, the information is available for reporting.

An Access file is connected to the GeoSequel database, from which tables for collars, surveys, assays, lithology, minerals, and structures are exported in CSV format. These tables are then imported into MinePlan software using MinePlan Drillhole Manager version 7.1.1.2062 for visualization and modeling purposes.

11.8 Sample Security

There is no information as to security measures taken with regards to pre-Argonaut drill hole samples.

The Argonaut samples were always in the custody of employees, drill contractors, and commercial trucking firms. The sample bags were secured with plastic zip ties and placed into larger zip tie secured rice bags for transport to the sample preparation facility.

11.9 Sample Storage

Drill core, RC cuttings, and sample pulps from the Project are stored in a warehouse located in the town of San Agustin. The warehouse is locked and guarded when not being used.

11.10 QP Comments on Section 11

No information regarding the sampling methods is available from the Monarch, Silver Standard, and Geologix drill campaigns. Also, no original assay certificates are available to Heliostar for the Monarch, Silver Standard, and Geologix drilling campaigns.

Comparison of the exploration drilling with blasthole data from mine production concluded that the Monarch, Silver Standard, and Geologix data compare well with the blasthole data and are acceptable for inclusion in Mineral Resource estimation.

The QP is of the opinion that the sample preparation, sample security, and analytical procedures undertaken by Argonaut for the San Agustin Project are adequate. The QA/QC procedures and subsequent results demonstrate that the drill hole data are reasonable and suitable for estimating Mineral Resources.

12.0 DATA VERIFICATION

12.1 Argonaut Data Verification

Argonaut data validation included automatic validation of sample numbers and analytical methods of received analytical certificates in GeoSequel. Before the analytical results were imported, a validation report was generated indicating any discrepancies between sample numbers and requested analysis compared to the sample dispatch. Any inconsistencies were corrected by the database manager. When there were no discrepancies, the data were imported and results were available in the database.

Argonaut performed the following data verification in support of the 2021 and 2024 technical reports (Arkell et al., 2021; Leduc et al., 2024; Lane et al., 2024):

- Reviewed geological data and sample collection methodology;
- Reviewed RC chips and drill core logging procedures;
- Reviewed blast hole sampling and mapping procedures;
- Reviewed QA/QC procedures and results;
- Reviewed assay database completeness and correctness;

12.2 Heliostar Data Verification

Heliostar data validation includes automatic validation of sample numbers and analytical methods of received analytical certificates in GeoSequel. Before the analytical results are imported, a validation report is generated indicating any discrepancies between sample numbers and requested analysis compared to the sample dispatch. Any inconsistencies are corrected by the database manager. When there are no discrepancies, the data is consistent is imported and results are available in the database.

12.3 Third-Party Data Verification

Over the Project history, a number of third parties have completed data verification in support of technical reports and mining studies (Table 12-1).

The QPs reviewed the findings of, and information in, these reports and studies as part of their data verification steps.

Table 12-1: Third-Party Data Verification

Year	Company/ Author	Purpose	Notes
2018	Resource Modeling Inc. (RMI)	Database review	Reviewed and examined Argonaut's drill hole database that contained assay, survey, and geological information for Argonaut and pre-Argonaut drill campaigns. Approximately 28,000 gold and silver records were compared for seven drill campaigns representing about 62% of the 2018 San Agustin Project drill hole assay database. No significant errors were discovered in this review. A 100% check of the database was undertaken to check for overlapping assay intervals and abnormally high or unexplained negative values. No errors were found. RMI checked for potentially mis-located drill holes by comparing collar locations against the provided topographic surface. Approximately 15 drill holes were found with collar elevations more than 3 m above surface topography. Nearly all those locations were outside the area of Mineral Resources at San Agustin and represent older pre-Argonaut drill holes. he remaining high drill hole collars were re- surveyed by Argonaut and the correct elevations were entered into the database. RMI compared a small population of drill hole logs for metallurgical core drill holes and infill RC drill holes to drill core and RC cuttings and found that the Argonaut drill hole logs were constructed in a professional manner and were consistent with standard industry practice. RMI reviewed Argonaut's QA/QC protocols and results. RMI concluded that Argonaut's QA/QC program was designed within acceptable industry practices and the results demonstrated that the Argonaut assays were reproducible and suitable for estimating Mineral Resources.
2024	Global Resource Engineering (GRE); Kappes Cassidy and Associates (KCA)	Data review in support of technical report	For pre-Argonaut drilling programs, prior to 2014, including 264 holes containing 29,217 assays for 54,592 m drilling, there are no data available on the QA/QC programs. For drill holes from this period the database contains collar, survey, assay, and geology information. GRE manually audited about 14% of the original assay certificates with the database, and found no material errors. GRE performed an independent analysis of Argonaut's data relevant to the 2014–2023 drilling programs, comparing the data with the provided assay certificates. Approximately 10% of all original assay certificates for 710 holes, from the 2014–2023 drilling programs were manually spot-checked with the database for accuracy, and no errors were found. GRE verified Argonaut's in-house QA/QC data from the 2014–2023 drilling programs. The data showed satisfactory blank, standard, and field duplicate results. The locations of 21 hole collars were verified in the field using a hand-held GPS. GRE completed a manual audit of the digital pre-Argonaut Project database. About 14% of original assay certificates for all drill holes were spot-checked with the database for accuracy and any clerical errors. The manual audit revealed no discrepancies between the hard-copy information and digital database.

Year	Company/ Author	Purpose	Notes
			GRE completed a manual audit of the digital Argonaut Project database. About 11% of original assay certificates were compared with the database for the 2014–2023 drill campaigns. No material errors were found.
			GRE reviewed the database used for the 2024 Mineral Resource estimate. No material issues were identified and the database was considered suitable for Mineral Resource estimation purposes.
			KCA inspected transition and sulphide core intervals, reviewed site column leach tests, and discussed placing sulphide containing materials on the heap to minimize generation of acid with site personnel. KCA concluded that the metallurgical test procedures and results at San Agustin met industry standards. Metallurgical sample locations were reviewed and the material came from throughout the mineralized area and that the samples were reasonably representative with regards to material type and grade with the material planned to be processed so as to support the current processing method and assumptions regarding recoveries.
			The San Agustin mine has been in operation since 2017. Mining and processing methods, costs and infrastructure needs were based on the current operations. All costs used in the analysis were verified and reviewed by GRE, and found to be current and appropriate for use.

12.4 Data Verification Performed by the QPs

12.4.1 Mr. Todd Wakefield

Mr. Wakefield completed a site visit, see Section 2.4.1.

He conducted an audit of the drilling database used to estimate mineral resources at San Agustin. A total of 18 drill holes were randomly selected from a list of 178 drill holes material to resource estimation and database entries were checked against original records.

Collar coordinates for 17 of the 18 selected drill holes matched the original survey coordinates exactly. A drill hole from the Silver Standard campaign was not audited because Heliostar does not have the original collar survey record.

Three discrepancies were found between the database values and the original survey records out of 222 downhole survey values audited for an error rate of 1.3%. An error rate of <1.0% is considered acceptable in the industry.

Lithology codes in the database were checked against the original geological logs for the 18 selected drill holes. Only one data entry error was found out of 479 lithology codes audited for an error rate of 0.2%.

Database assay values for gold and silver were compared to original assay certificates for 10 of the 18 selected drill holes. The remaining drill holes were not audited because Heliostar does not have the original assay certificates for the Monarch, Silver Standard, and Geologix drill campaigns. No data entry errors were found for gold and silver assay values for 422 samples audited.

Mr. Wakefield reviewed the content in Sections 9, 10, 11, and 12 from the past three technical reports for the Project (Lane et al. 2024; Leduc et al., 2024; and Arkell et al., 2021).

The QP finds the San Agustin drilling database to be acceptably accurate to support Mineral Resource estimation. However, no original records for assays are available to Heliostar for the Monarch, Silver Standard, and Geologix drilling campaigns and these data are considered less reliable than the Argonaut drilling data.

12.4.2 Mr. David Thomas

Mr. Thomas performed a site visit (Section 2.4.2).

The Mineral Resource estimate for the San Agustin mineral deposit relies partly on RC and core drilling completed by previous operators (Argonaut, Monarch, Silver Standard, and Geologix). Limited information is available regarding the sampling and analytical procedures of the legacy drill programs. The QA/QC programs conducted by Monarch and Silver Standard are unknown.

Mr. Thomas completed comparisons of the exploration drilling with the blasthole data collected during mine production. A gold grade block model (6 x 6 x 6 m) using blastholes was prepared using an average of the closest four blastholes. He estimated nearest-neighbour gold grade models using 6 m composites from Argonaut data and historical data. Blocks were selected falling within 3 m of an exploration drill hole. The results of the comparisons are shown in Table 12-2. The results show that in the oxides the Argonaut drill hole data are more positively biased than the legacy data types with respect to the blastholes. A portion of the differences observed are a result of the orientation of the drilling with respect to the structural controls to the mineralization. Mr. Thomas concluded that the Argonaut and legacy data are suitable for Mineral Resource estimation.

12.4.3 Mr. Jeff Choquette

Mr. Choquette performed a site visit, see Section 2.4.3.

He checked the geotechnical studies to make sure they met industry standards and practices. Reconciliation reports were checked to test the performance of the resource estimates and determine appropriate dilution and ore loss parameters. Actual operating and capital cost reports were reviewed and used in the forecasting of the ongoing Project costs.

Mr. Choquette concluded that the data were acceptable for use in Mineral Reserve estimation, mine planning and in the cashflow analysis.

Table 12-2: Comparison of Drillhole Gold Grades with Blastholes by Operator and Material Type

Operator	Global % Difference	Oxide % Difference	Sulphide % Difference
Argonaut	17.2	20.3	-10.7
Silver Standard	1.1	-5.3	11.4
Geologix	4.0	9.9	-14.0
Monarch	2.9	2.2	-0.2

12.4.4 Mr. Carl Defilippi

Mr. Defilippi performed a site visit, see Section 2.4.4. During his site visits he personally:

- Inspected transition and sulphide core intervals;
- Reviewed site column leach tests;
- Discussed placing sulphide containing materials on the heap to minimize generation of acid with site personnel.

As a result of his data verification, Mr. Defilippi concluded that the metallurgical test procedures and results at San Agustin met industry standards. Metallurgical sample locations were reviewed and the material came from throughout the mineralized area and that the samples were reasonably representative with regards to material type and grade with the material planned to be processed so as to support the current processing method and assumptions regarding recoveries.

12.4.5 Ms. Dawn Garcia

Ms. Garcia completed a site visit (see Section 2.4.5).

During the site visit, she received copies of key permitting and environmental compliance documents, recent environmental monitoring data, a closure plan and community relations information.

The studies and documents received were selectively reviewed and used to support the environmental, permitting, and social conditions descriptions.

There are currently no environmental issues known to the QP that could materially impact Minera Real del Oro's ability to extract the Mineral Resources or Mineral Reserves. Minera Real del Oro has experienced disputes with the local ejidos that have resulted in roadblocks and negotiations. Future conflicts remain a risk that will require monitoring and mitigation.

Should the mine plan be advanced to execution, a land use change permit will be required. A permit submittal was previously submitted, denied, and resubmitted. Minera Real del Oro has indicated a high level of confidence that the Mexican environmental authority will approve the revised permit. There is no certainty on when, or if, the permitting will be successful under the current government administration. Inability to obtain the required permit would be a material risk to the mine plan.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

The San Agustin Project is an open pit mine with a heap leach operation using a multiple-lift, single-use leach pad. Historical metallurgical testwork was conducted on San Agustin material at independent laboratories as follows: in 2009 by PRA Laboratories (PRA); in 2009 by McClelland Laboratories Inc. (McClelland); in 2014 by Kappes, Cassiday & Associates (KCA); and on-site at the non-independent El Castillo mine metallurgical laboratory in 2014..

Since start-up of the mine in 2017, routine column testing of monthly production composites was conducted at the El Castillo laboratory. In 2021 and 2022 bottle roll and column leach tests on transition and sulphide composites were conducted at the El Castillo laboratory.

13.2 Oxide Metallurgical Testwork

13.2.1 PRA Laboratories

During 2009 PRA conducted metallurgical testing on a total of 15 drill hole samples consisting of oxide and transition oxide–sulphide materials. The metallurgical testing consisted of fire assays and multi-element head analyses, bottle roll leach tests for each sample at two separate crush sizes, and column leach tests on two composite samples at two different crush sizes.

Gold head grades ranged from 0.14–0.73 g/t (average 0.3 6 g/t Au), and silver grades from 3.3–101.5 g/t (average 23.3 g/t Ag). Cyanide soluble results for gold and silver averaged 0.29 g/t and 15.1 g/t, respectively..

Bottle roll leach tests were conducted at crush sizes of 100% passing 19 mm and 9.5 mm. These leach tests were run for a total of 10 days at 50% solids. Throughout the testing period the level of sodium cyanide was maintained at about 2 g/L with a target pH of 10.5.

At a 9.5 mm crush size gold extraction ranged from 18.6–83.1% and averaged 64.9%. At the coarser crush size of 19 mm, gold extraction ranged from 21.2–80.5% and averaged 55.8%. Gold extraction did not correlate with head grade. The results of these tests are summarized in Table 13-1.

Column leach tests were run on two composite samples, labelled ENC and HPAL, at crush sizes of 100% passing 19 mm and 9.5 mm. All four column leach tests were dosed with 1 kg/t of lime to provide protective alkalinity and agglomerated with 5 kg/t of cement. After 75 days of leaching, gold recoveries for the coarse crush size (19 mm) were reported at 62.7% for the ENC composite and 62.8% for HPAL composite.

Table 13-1: Bottle Roll Tests for the PRA Test Samples

Sample ID	Measured Head		Calculated Head		Extraction		Consumption	
	Au (g/t)	Ag (g/t)	Au (g/t)	Ag (g/t)	Au (%)	Ag (%)	NaCN (kg/t)	Lime (kg/t)
9.5 mm Crush								
SA -113 TR	0.29	5.7	0.28	6.2	57.8	19.8	3.26	1.11
SA -113 OX	0.41	7.9	0.52	6.6	57.6	60.5	3.39	1.41
SA -129 OX	0.73	18.6	0.59	19.7	18.6	5.5	2.56	0.89
SA -140 OX	0.54	22.1	0.41	24.0	75.5	50.4	2.83	1.05
SA -144 TR	0.34	3.5	0.55	4.3	61.5	21.4	3.28	1.74
SA -144 OX	0.41	3.3	0.62	3.1	55.1	48.0	3.64	2.47
SA -145 OX	0.18	9.9	0.22	8.9	60.0	34.9	3.80	1.53
SA -150 TR	0.41	15.4	0.53	16.3	53.3	30.5	3.66	1.13
SA -154 OX	0.28	17.1	0.44	18.9	63.7	14.9	3.43	1.20
SA -164 OX	0.40	101.5	0.56	122.0	76.7	37.7	4.52	1.22
SA -192 OX	0.14	26.4	0.24	33.6	79.1	24.7	2.47	0.89
SA -221 OX	0.45	36.5	0.62	42.4	78.9	38.5	3.50	1.16
SA -227 OX-1	0.44	30.8	0.53	38.6	83.1	28.3	3.29	1.27
SA -227 OX-2	0.24	23.1	0.31	25.1	77.5	27.6	3.16	0.95
SA -239 OX	0.16	27.9	0.20	32.1	74.9	35.6	2.97	1.15
Average	***0.36***	***23.3***	***0.44***	***26.8***	***64.9***	***31.9***	***3.32***	***1.28***
19 mm Crush								
SA -113 TR	0.29	5.7	0.36	8.1	44.5	11.9	2.54	0.95
SA -113 OX	0.41	7.9	0.66	7.5	49.7	52.3	2.10	1.26
SA -129 OX	0.73	18.6	0.75	21.0	21.2	5.5	1.44	0.69
SA -140 OX	0.54	22.1	0.44	16.5	61.4	31.1	1.85	0.73
SA -144 TR	0.34	3.5	0.56	4.6	64.0	18.0	1.61	1.66
SA -144 OX	0.41	3.3	0.65	3.6	75.5	49.7	1.72	3.04
SA -145 OX	0.18	9.9	0.51	15.6	35.0	16.7	1.70	1.42
SA -150 TR	0.41	15.4	0.53	17.9	64.2	27.9	1.43	1.41
SA -154 OX	0.28	17.1	0.29	20.1	39.3	12.3	1.29	1.10
SA -164 OX	0.4	101.5	0.40	122.6	60.0	35.7	1.91	1.35
SA -192 OX	0.14	26.4	0.14	32.9	48.8	22.1	1.63	0.54
SA -221 OX	0.45	36.5	0.36	40.3	55.7	40.4	2.77	0.90
SA -227 OX-1	0.44	30.8	0.29	39.7	69.1	26.5	1.75	1.03
SA -227 OX-2	0.24	23.1	0.19	24.2	68.3	21.1	1.68	0.74

Sample ID	Measured Head		Calculated Head		Extraction		Consumption	
	Au (g/t)	Ag (g/t)	Au (g/t)	Ag (g/t)	Au (%)	Ag (%)	NaCN (kg/t)	Lime (kg/t)
SA -239 OX	0.16	27.9	0.21	31.5	80.5	29.1	1.19	0.88
Average	***0.36***	***23.3***	***0.42***	***27.1***	***55.8***	***26.7***	***1.77***	***1.18***

At the fine crush size (9.5 mm) gold recovery was 69.7% for the ENC composite and 80% for the HPAL composite. Gold recoveries for all four composite columns stabilized and reached a plateau, whereas silver recovery was still rising after 75 days. The results of these tests are shown in Figure 13-1 and Figure 13-2.

13.2.2 McClelland Laboratories

During 2009 McClelland conducted metallurgical testwork on three test composites identified as Main Zone, Zone 2, and Zone 4, which were formulated from 54 drill core intervals (McClelland, 2009).

The metallurgical testing program included head grade analyses, bottle roll tests, and column leach tests. Gold head grades ranged from 0.39–0.76 g/t Au, and silver head grades ranged from 13.9–23.0 g/t Ag.

Column leach tests were conducted in 4 inch diameter columns on each of the three oxide composite samples at a crush size of P_{80} 19 mm and cyanide solution concentration of 1.0 g/L NaCN with lime additions of 3–5 kg/t to provide protective alkalinity.

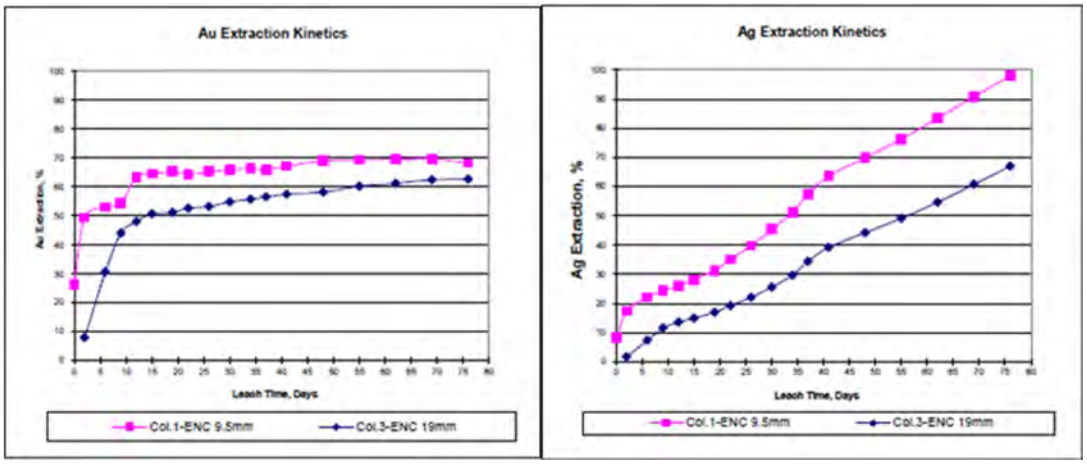
Each sample was leached for a total of 100 days with an additional 18 days of rinse. The results of the column leach tests ranged from 73.8%–81.1% and averaged 78.1% for gold. Silver recoveries ranged from 8.5%–36.6% with a final average of 21.7%. Sodium cyanide consumptions ranged from 2.01–2.29 kg/t and additional lime throughout the tests was not required. Cyanide consumption was relatively high and likely due to the high concentration of cyanide in the leach solution (1.0 g/L NaCN). The results of these tests are presented in Table 13-2 and shown in Figure 13-3.

13.2.3 Argonaut El Castillo Metallurgical Laboratory

Argonaut's El Castillo mine site metallurgical laboratory conducted metallurgical investigations for San Agustin as well as routine metallurgical tests for production monitoring.

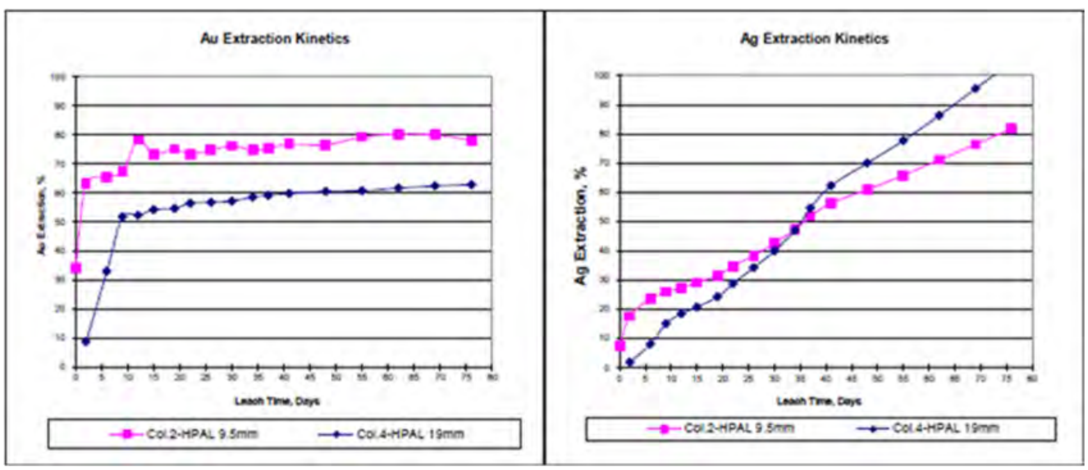
During 2014 Argonaut conducted metallurgical studies on four trench composites (Minera Real del Oro, 2014). The composites were chosen to have good spatial and lithological distribution and to be representative of the average grade of the deposit. Because intrusive rocks were the main lithology encountered in drilling, three composites were made from intrusive intervals and one was made from sedimentary intervals. The head analyses for each test composite are provided in Table 13-3.

Figure 13-1: Column Leach Test Results on ENC Composite



Note: Figure prepared by PRA, 2009

Figure 13-2: Column Leach Test Results on HPAL Composite

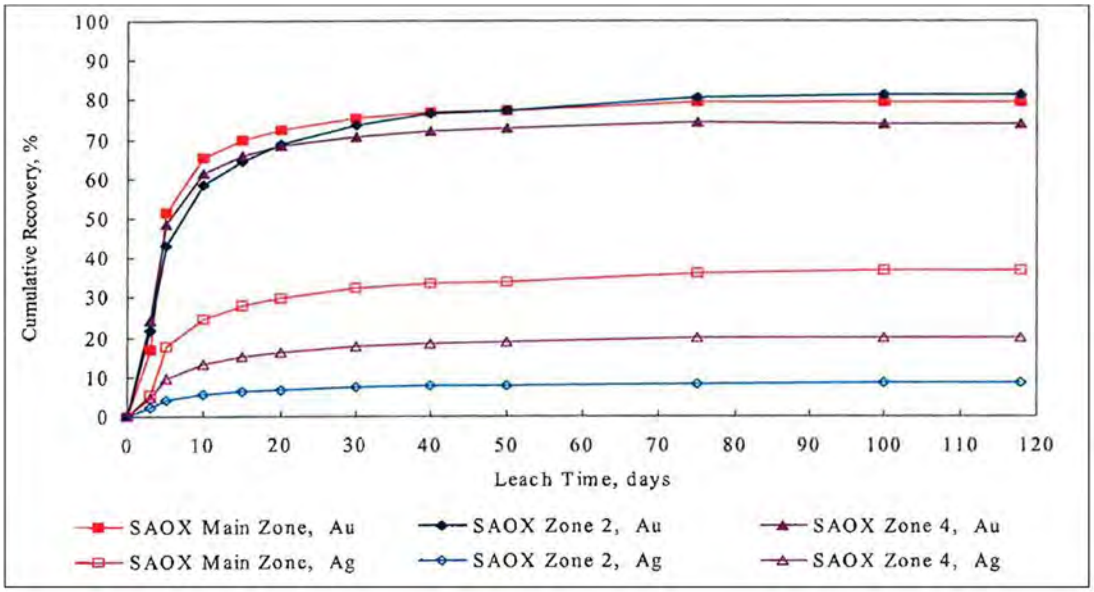


Note: Figure prepared by PRA, 2009

Table 13-2: Column Leach Tests on MLI Test Composites

Extraction (%)	Main Zone		Zone 2		Zone 4	
	Au	**Ag**	**Au**	**Ag**	**Au**	**Ag**
First effluent	17.0	5.4	21.7	2.2	24.4	4.8
5 days	51.5	17.5	43.1	4.0	48.6	9.5
10 days	65.3	24.8	58.4	5.4	61.4	13.3
15 days	69.7	27.9	64.4	6.2	66.0	15.1
20 days	72.4	29.9	68.6	6.6	68.3	16.2
30 days	75.3	32.2	73.4	7.2	70.7	17.6
40 days	77.0	33.6	76.4	7.5	72.0	18.4
50 days	77.3	34.0	77.2	7.7	72.7	18.7
75 days	79.3	35.9	80.5	8.1	73.8	19.7
100 days	79.5	36.6	81.1	8.3	73.8	20.0
End of leach/rinse	79.5	36.6	81.1	8.5	73.8	20.0
Head Grade (g/t)	**Au**	**Ag**	**Au**	**Ag**	**Au**	**Ag**
Calculated head	0.73	13.1	0.37	21.3	0.42	18.0
Average head	0.76	13.9	0.39	22.9	0.46	19.2
Consumables & Rinse	**Main Zone**		**Zone 2**		**Zone 4**	
NaCN consumed, kg/t mineralization	2.01		2.19		2.29	
Lime added, kg/t mineralization	2.0		1.7		2.6	
Final solution pH	10.5		10.2		10.4	
pH after rinse	9.9		9.9		9.7	
Leach/rinse cycle, days	118		118		118	

Figure 13-3: Gold and Silver Extraction versus Days of Leaching



Note: Figure prepared by MLI, 2009

Table 13-3: Trench Composites Head Analyses

Composite	Crush Size	Average Head Au (g/t)	Average Head Ag (g/t)	Weighted Average Head Au (g/t)	Weighted Average Head Ag (g/t)
SA 1	ROM	0.45	18.61	0.43	16.94
	-51 mm	0.48	18.06	0.41	16.75
	-13 mm	0.45	21.29	0.45	20.97
SA 2	ROM	0.29	8.93	0.24	8.85
	-51 mm	0.30	9.89	0.27	11.14
	-13 mm	0.38	8.45	0.43	9.66
SA 3	ROM	0.40	7.84	0.40	8.32
	-51 mm	0.41	8.29	0.40	11.47
	-13 mm	0.43	8.60	0.45	11.39
SA 4	ROM	0.58	4.48	0.55	4.97
	-51 mm	0.59	4.07	0.57	4.13
	-13 mm	0.66	4.07	0.72	4.14

Column leach tests were conducted on the three intrusive composites and the sedimentary composite sample at three different sizes (run-of-mine (ROM), P_{100} 51 mm, and P_{100} 13 mm). ROM column tests were conducted in 36 inch diameter (81.28 cm) columns loaded with approximately 5,700 kg of sample material. The P_{100} 51 mm material was leached in 12 inch diameter (300 mm) columns loaded with approximately 160 kg of material, and the P_{100} 13 mm material was leached in 8 inch diameter (200 mm) columns loaded with about 60 kg of sample material. The column tests were run over durations of 78–113 days. The results of these column tests are shown in Table 13-4.

Gold recovery from the ROM samples ranged from 56–68% and averaged 57%. Gold recovery at the P_{100} 51 mm crush size ranged from 45–84% and average 67%, and gold recovery at the P_{100} 13 mm crush size ranged from 61–82% and averaged 73%. Except for one sample (SA-3), gold extraction at the P_{100} 51 mm crush size was about 2–3% less than the gold extraction obtained at the P_{100} 13 mm crush size.

Silver extraction was sensitive to crush size and averaged 11% for the ROM test columns, 16% for the P_{100} 51 mm columns, and 25% for the P_{100} 13 mm columns.

13.2.4 Kappes, Cassiday & Associates

During 2014 KCA conducted metallurgical testwork on six drill core composites from the San Agustin deposit. Table 13-5 provides a description of the rock types and drill holes used to formulate each composite.

Gold head grades ranged from 0.285–5.276 g/t Au, and silver head grades from 7.10–47.40 g/t Ag. Head analyses for each composite are shown in Table 13-6 and the crushing index and other physical characteristics of the test composites are shown in Table 13-7.

Column leach tests were conducted on each composite at crush sizes of 100% passing 51 mm and 13 mm. Each test column was operated for 73 days with a sodium cyanide solution. For column test material crushed to P_{100} 51 mm (P_{80} 39–44 mm), gold extractions ranged from 46–81% and NaCN consumption ranged from 0.17–0.70 kg/t. For column test material crushed to P_{100} 13 mm (P_{80} 9.8 mm) gold extractions ranged from 50–84% and sodium cyanide consumption ranged from 0.34–0.80 kg/t. Both crush sizes required over 4 kg/t of hydrated lime to maintain protective alkalinity. The results of these column tests are summarized in Table 13-8.

The carbon samples from the column tests were dried and assayed for soluble mercury and copper content. Results indicated mercury extracted onto the carbon ranged from 0.38–2.94 mg/kg and copper ranged from 4.3–12.8 mg/kg. Mercury levels were relatively high and will require the use of a mercury retort to extract the mercury prior to smelting. The copper content and soluble copper levels were relatively low. The mercury and copper concentrations are shown in Table 13-9.

Table 13-4: Trench Composites Column Leach Tests

Description	Calculated Head Au (g/t)	Average Tails Au (g/t)	Extracted (% Au)	Calculated Tail P80 Size (mm)	Days Of Leach	Consumption NaCN (kg/t)	Addition $Ca(OH)_2$ (kg/t)
SA (1) ROM	0.454	0.144	68	86	105	0.66	3.2
SA (1) 100 % -51 mm	0.402	0.063	84	38	105	1.54	3.8
SA (1) 100 % -13 mm	0.425	0.075	82	6	113	1.49	4.0
SA (2) ROM	0.242	0.131	46	97	98	0.56	3.1
SA (2) 100 % -51 mm	0.290	0.105	64	33	98	0.87	3.6
SA (2) 100 % -13 mm	0.249	0.097	61	9	106	1.05	3.9
SA (3) ROM	0.456	0.189	58	209	98	0.58	3.2
SA (3) 100 % -51 mm	0.410	0.224	45	36	90	1.23	3.7
SA (3) 100 % -13 mm	0.690	0.168	76	7	98	1.32	4.0
SA (4) ROM	0.630	0.278	56	133	78	0.56	3.0
SA (4) 100 % -51 mm	0.652	0.178	73	44	72	1.19	3.1
SA (4) 100 % -13 mm	0.650	0.186	71	8	80	1.27	3.3
Avg. ROM	0.446	0.186	57	131	95	0.59	3.1
Avg. 100% -51 mm	0.438	0.142	67	38	91	1.21	3.6
Avg. 100% -13 mm	0.504	0.132	73	7	99	1.28	3.8
SA (1) ROM	20.30	17.65	13	86	105	0.66	3.2
SA (1) 100 % -51 mm	22.21	17.83	20	38	105	1.54	3.8
SA (1) 100 % -13 mm	25.14	18.18	28	6	113	1.49	4.0
SA (2) ROM	10.00	9.85	1	97	98	0.56	3.1
SA (2) 100 % -51 mm	8.84	8.43	5	33	98	0.87	3.6
SA (2) 100 % -13 mm	10.01	9.20	8	9	106	1.05	3.9
SA (3) ROM	9.40	8.04	14	209	98	0.58	3.2
SA (3) 100 % -51 mm	9.04	7.88	13	36	90	1.23	3.7
SA (3) 100 % -13 mm	11.26	8.12	28	7	98	1.32	4.0
SA (4) ROM	3.87	3.36	13	133	78	0.56	3.0
SA (4) 100 % -51 mm	4.38	3.18	27	44	72	1.19	3.1
SA (4) 100 % -13 mm	3.92	2.51	36	8	80	1.27	3.3
Avg. ROM	10.89	9.73	11	131	95	0.59	3.13
Avg. 100% -51 mm	11.12	9.33	16	38	91	1.21	3.55
Avg. 100% -13 mm	12.58	9.50	25	8	99	1.28	3.80

Table 13-5: San Agustin Core Composites Information

Description	Rock Type	Drill Hole Name	Estimated Au Grade (g/t)	Estimated Ag Grade (g/t)	Weight Received (kg)
Met_Core_SA_01	Dacite	4, 5	0.29	13.5	291.59
Met_Core_SA_02	Dacite	2, 3	0.90	46.7	284.51
Met_Core_SA_03	Sedimentary	6, 9, 11	0.63	13.8	307.81
Met_Core_SA_04	Dacite	7, 12, 13	0.56	7.9	300.78
Met_Core_SA_05	Dacite	10	0.42	7.2	289.96
Met_Core_SA_06	Dacite, high-grade	8	3.13	43.8	310.26

Table 13-6: San Agustin Core Composites Head Analyses

Description	Rock Type	Average Assay Au (g/t)	Average Assay Ag (g/t)	Weighted Average Head Assay Au (g/t)	Weighted Average Head Assay Ag (g/t)
Met_Core_SA_1	Dacite	0.285	16.45	0.323	16.44
Met_Core_SA_2	Dacite	0.571	27.00	0.506	26.04
Met_Core_SA_3	Sedimentary rocks	0.710	10.41	0.676	9.95
Met_Core_SA_4	Dacite	0.662	7.10	0.518	6.70
Met_Core_SA_5	Dacite	0.453	7.30	0.417	6.72
Met_Core_SA_6	Dacite high-grade	5.276	47.40	4.614	45.28

Table 13-7: San Agustin Core Composite Physical Characteristics

Bulk Sample	Specific Gravity	Crush Work Indices (kWh/t)	Abrasion Indices	Unconfined Compressive Strength (MPa)
1	2.35	4.8	0.051	–
2	2.23	6.4	0.027	76.3
3	2.38	6.9	0.034	–
Average	***2.32***	***6.0***	***0.037***	***76.3***

Table 13-8: San Agustin Core Composites Column Tests

Description	Calculated Head Au (g/t)	Extracted (% Au)	Calculated Tail P80 Size (mm)	Days of Leach	Consumption NaCN (kg/t)	Hydrated Lime (kg/t)
Met_Core_SA_1	0.301	46	39	73	0.17	4.14
Met_Core_SA_1	0.344	50	9.7	73	0.34	4.11
Met_Core_SA_2	0.508	81	36	73	0.31	4.10
Met_Core_SA_2	0.516	84	9.8	73	0.43	4.11
Met_Core_SA_3	0.612	66	40	73	0.70	4.22
Met_Core_SA_3	0.632	74	9.5	73	0.75	4.19
Met_Core_SA_4	0.492	70	39	73	0.54	4.17
Met_Core_SA_4	0.512	75	9.7	73	0.64	4.14
Met_Core_SA_5	0.385	56	44	73	0.68	4.10
Met_Core_SA_5	0.363	68	9.8	73	0.80	4.07
Met_Core_SA_6	4.179	72	44	73	0.65	4.25
Met_Core_SA_6	4.609	71	9.8	73	0.80	4.22
Met_Core_SA_1	13.26	12	39	73	0.17	4.14
Met_Core_SA_1	11.59	24	9.7	73	0.34	4.11
Met_Core_SA_2	19.67	12	36	73	0.31	4.10
Met_Core_SA_2	16.84	18	9.8	73	0.43	4.11
Met_Core_SA_3	8.68	19	40	73	0.70	4.22
Met_Core_SA_3	8.57	28	9.5	73	0.75	4.19
Met_Core_SA_4	5.95	18	39	73	0.54	4.17
Met_Core_SA_4	5.39	25	9.7	73	0.64	4.14
Met_Core_SA_5	5.71	17	44	73	0.68	4.10
Met_Core_SA_5	4.75	24	9.8	73	0.80	4.07
Met_Core_SA_6	39.85	17	44	73	0.65	4.25
Met_Core_SA_6	45.50	22	9.8	73	0.80	4.22

Table 13-9: Mercury and Copper Concentrations on Loaded Carbon

Description	Cyanide Soluble Mercury (mg/kg)	Total Copper (mg/kg)	Cyanide Soluble Copper (mg/kg)	Cyanide Soluble Copper (%)
Met_Core_SA_1	2.94	141	9.4	7
Met_Core_SA_2	2.14	151	12.8	8
Met_Core_SA_3	1.50	152	12.1	8
Met_Core_SA_4	0.48	84	4.7	6
Met_Core_SA_5	0.38	41	8.1	20
Met_Core_SA_6	0.53	14	4.3	31

Compacted permeability tests were performed on tailings material from each column using material previously crushed to 100% passing 13 mm. The purpose of the compacted permeability testwork was to examine the permeability of the crushed material under compaction loading equivalent to heap heights of 40, 60, and 80 m. The flow rate, slump, pellet breakdown and solution colour and clarity were monitored to assess permeability at higher loadings. All compaction tests on tailings material passed the internal criteria that KCA uses.

13.3 Sulphide Metallurgical Testwork

In 2019 Argonaut embarked on a detailed in-house sulphide testing campaign which included investigations centred on trench samples of the existing sulphide stockpile, which actually contains a mix of transition and sulphide material. The stockpile testwork consisted of preliminary bottle rolls and column tests followed by a detailed program that consisted of hot cyanide shake tests, bottle roll tests, column tests, and pilot leach pads. In 2021 and 2022, detailed column test programs based on samples obtained from metallurgical drill holes were also conducted that included bottle roll tests and column tests. Summary results of these programs are presented and discussed in the subsections that follow.

13.3.1 Preliminary Sulphide Work

Sulphide stockwork tests evaluated a range of sizes from ROM size to 17 mm of both transition and sulphide materials. Both gold and silver recoveries were generally very low, even for crushed material. Summary metallurgical results of preliminary tests from samples taken at the sulphide stockpile are presented in Table 13-10.

Table 13-10: Preliminary Sulphide Testwork Results

Year	Test Name	P80 (mm)	Calculated Au Head (g/t)	Rec. Au (%)	Rec. Ag (%)	Ratio L/S	Reagent Consumption		Test days
							CaO (kg/t)	NaCN (kg/t)	
2019	Col transition ROM	125	0.67	23.77	7.66	4.79	7.00	2.08	39
	Col transition -150 mm	114.1	0.78	31.47	11.77	4.99	7.00	2.31	39
	Col transition 17 mm	17	0.69	40.38	17.06	6.07	7.00	2.52	39
	Col sulphide -150 mm	97,2	0.52	20.21	8.07	4.87	8.00	2.19	39
	Col sulphide 17 mm	16.8	0.50	31.45	12.09	6.02	8.00	2.53	39
	Bottle roll sulphide (avg. of 6 each)	P_{100} 25 mm	0.52	27.77	ND	1.50	3.33	0.74	5
2020	Col ROM sulphide argillic	101.52	0.34	29.32	10.19	3.74	9.00	0.85	57
	Col ROM sulphide silicic	164.19	0.89	17.24	10.33	3.97	9.00	0.94	57
	Col argillic 100% -37 mm	25.85	0.42	33.44	12.20	3.32	9.00	0.94	69
	Col silicic 100% -37 mm	30.15	0.93	19.63	11.27	3.35	9.00	0.88	69

Note: Ratio L/S is the ratio of liquid to solids or tonnes of solution per tonne of mineralization; ND = not determined; Col = column.

13.3.2 Pilot Leach Pad Program

The pilot leach pad program was a substantial program conducted in 2020 and early 2021. The program consisted of samples obtained from nine trenches of the sulphide stockpile, with hot cyanide shake tests and bottle roll tests from each trench, and column tests from some of the trenches (some were also blended with oxide material for column tests); and two pilot scale leach pads with a column test composited from each pilot heap.

13.3.3 Sulphide Stockpile Trench Samples

The trench samples selected for hot cyanide shake tests (pulverized) had sulphide content between 3.72–6.05% with gold grades between 0.390–13.399 g/t and silver grades between 5.1–23 g/t. The samples yielded gold recoveries between 24–47%, and silver recoveries between 36–94%.

Bottle roll tests were conducted on P100 38 mm material from each trench sample, and run for 96 hours with 3 kg of sample. Some samples blended with oxide material were also evaluated. The average gold recovery of the 9 trench samples was 50.3% and silver recovery was 29.1%. The samples blended with oxide material realized even greater recoveries. The results of these tests are presented in Table 13-11.

Column tests were run using material from trenches SS-04 and SS-06 as they reported grades close to the average grade of the deposit. SS-04 was crushed to P_{80} 39 mm and SS-06 was crushed to P_{80} 68 mm. The samples yielded similar gold recoveries (30.8% for SS-04 and 35% for SS-06), but reagent consumption was much greater for SS-06 (9 kg/t vs 30 kg/t CaO consumption and 0.76 kg/t versus 1.02 kg/t NaCN consumption).

Additional columns were run using the same material blended with 10% and 20% mineralized oxide material, mainly for evaluation of reagent consumption against sulphide material. The blended columns were crushed to P_{80} 25 mm. The blended samples realized much greater gold recoveries (average 57.9%) with less reagent consumptions (average 7.0 kg/t CaO consumption and 0.63kg/t NaCN consumption). Results of these column tests are shown in Table 13-12.

A small percolation test program was also run on the trench samples. The tests were a simple pass/fail test based on solution flow through a column, both with and without 3.6 kg/t cement addition (the usual amount added in recent plant production). The tests passed at 3.6 kg/t cement, and the tests with no cement addition failed, thus, indicating that agglomeration might be required.

13.3.4 Test Sulphide Heap Leach Pads

A total of 42,408 t of material from the sulphide stockpile were crushed nominally to P_{80} 22 mm and agglomerated at 3.6 kg/t cement through the production crushing plant and stacked onto two separate lined leach pads. A total of 120 samples were taken at the stacker to serve as head samples and splits for column tests. Every tenth sample was assayed for sulphide content, and the overall average sulphide content was 2.91%. The sulphide material was stacked in 6 m lifts onto 35 m x 80 m high density polyethylene (HDPE) lined pads and irrigated for 158 days using driptube under standard production operating conditions.

The final tabulations of tonnes and grades for each test pad were:

- Test Pad 1: 18,920 t at 0.683 g/t Au and 13.9 g/t Ag;
- Test Pad 2: 23,488 t at 0.630 g/t Au and 18.0 g/t Ag.

Table 13-11: Bottle Roll Test Results (P100 38 mm)

Test Sample	Calc. Head Au (g/t)	Tail Au (g/t)	Au Rec. (%)	Ag Rec. (%)	CaO Cons. (kg/t)	NaCN Cons. (kg/t)	pH Final	NaCN Initial (ppm)	Hrs
SS-01	1.459	0.628	57	22.7	2.0	0.41	10.7	300	96
SS-02	1.580	0.842	46.7	29.5	4.2	0.41	10.5	300	96
SS-03	0.865	0.365	57.8	29.9	0.9	0.39	10.5	300	96
SS-04	0.554	0.272	50.9	32.6	2.3	0.40	11.4	300	96
SS-05	0.477	0.268	43.8	29.6	5.6	0.40	10.5	300	96
SS-06	0.517	0.299	42.1	29.6	6.3	0.42	11.0	300	96
SS-07	0.745	0.353	52.6	33	6.5	0.4	10.6	300	96
SS-08	0.631	0.280	55.6	32.8	4.3	0.39	10.7	300	96
SS-09	1.027	0.548	46.6	22.5	3.2	0.41	10.9	300	96
Average SS-01 through SS-09	***0.873***	***0.428***	***50.3***	***29.1***	***3.9***	***0.40***			
SS-04 90% sulph-10% ox blend	0.841	0.284	66.2	44.6	2.8	0.41	10.5	300	96
SS-04 80% sulph -20% ox blend	0.531	0.214	59.7	36	2.5	0.41	10.5	300	96
SS-06 90% sulph -10% ox blend	0.765	0.202	73.6	36.5	3.5	0.41	10.5	300	96
SS-06 80% sulph -20% ox blend	0.558	0.253	54.6	32.4	6.3	0.41	10.5	300	96

Table 13-12: Trench Sample Column Test Results

Column Test	P80 (mm)	Calc. Head (Au g/t)	Au Rec. (%)	Ag Rec. (%)	CaO Cons. (kg/t)	NaCN Cons. (kg/t)	pH Preg. Soln (avg)	NaCN Preg Soln (avg ppm)	Days Leaching
SS-04	39.2	0.966	30.8	13.6	9.0	0.76	11.0	132	57
SS-06	68.1	0.556	35.0	9.9	30.0	1.02	11.5	68	59
SS-04 (90% sulph -10% oxide blend)	22.2	0.372	58.2	30.2	7.0	0.65	12.0	127	46
SS-04 (80% sulph -20% oxide blend)	24.1	0.438	62.5	27.2	7.0	0.65	11.9	124	46
SS-06 (90% sulph -10% oxide blend)	25.1	0.331	54.5	24.2	7.0	0.61	12.0	116	58
SS-06 (80% sulph -20% oxide blend)	29.9	0.356	56.4	19.7	7.0	0.61	11.8	114	59

The general parameters of the test heap leach pads are presented in Table 13-13.

Detailed solution flowrate measurement and assaying were conducted throughout the test and draindown solutions were measured and assayed, along with heap trenching to capture six tails samples for each test heap for assay and moisture analysis. From these data, a calculated head assay was generated for each test heap. Barren and pregnant solutions were also assayed by multi-element ICP and nothing unusual was noted.

Gold and silver recoveries for the test heap leach pads averaged 42.0% and 13.4% for Pad 1, and 47.7% and 20.6% for Pad 2, as shown in Table 13-14 and Table 13-15.

A sample split was taken from each heap leach pad as they were used for column testing. Although the material had been belt agglomerated with 3.6 kg/t cement, the column test for Pad 2 had percolation problems and eventually was abandoned. The recovery results from the column test representing Pad 1 over 107 days of leaching are in close agreement with the test pad results (40.3% and 14.2% gold and silver recovery, respectively). The column test results are presented in Table 13-16.

13.3.5 2021 SAGMET Drill Hole Campaign

During 2021 two metallurgical drill holes (PQ core) were drilled (SAGMET-01 and SAGMET-02) to intersect sulphide mineralization at San Agustin (SAGMET drill hole campaign). The core samples were used to make seven composites for column testing, grouped by lithology and alteration type (argillic and silicic). The drill core intervals, lithology type, and alteration type for each composite are shown in Table 13-17.

The material for the column tests was crushed to P_{80} 25 mm and agglomerated with 10 kg/t lime and leached for 56 days. Additionally, after these initial columns, three more column tests were run, two of which were a differentiation between high clay and low clay within one composite (Composite 3), and one repeat of the lowest recovery composite (Composite 6). This work was completed in October 2021. The column tests realized poor recoveries, with the argillic samples performing the best at an average of 30.9% gold recovery (not including white clay composite 3). Results for the column tests are presented in Table 13-18. The recovery curves for the seven column test composites are presented in Figure 13-4. Some composites show a small amount of ongoing leaching at the end of the tests (40 days).

Two samples for pulverized bottle roll tests were split from each of the seven column test composites. The bottle roll tests performed slightly better, with the argillic and silicic samples both averaging 42% gold recovery (not including white clay composite 3). The results for the pulverized bottle roll tests are presented in Table 13-19.

Table 13-13: Test Heap Leach Pad General Parameters

Test Pad	P80 (mm)	Sample Head (Au g/t)	CaO Cons. (kg/t)	NaCN (ppm)	pH Preg. Soln (avg)	NaCN Preg Soln (avg ppm)	Days Leaching
Sulphide Pad 1	18.6	0.683	6.9	292	10.6	49	158
Sulphide Pad 2	17.2	0.630	12.2	292	11.1	50	158

Table 13-14: Test Heap Leach Pad Gold Recovery Results

Test Pad	Sampled Head (Au g/t)	Calc. Head (Au g/t)	Tail Au (g/t)	Recovery by Head-Tail (Au %)	Recovery by Solutions and Sampled Head (Au %)	Recovery by Calc. Head (Au %)	Average (%)
Sulphide Pad 1	0.683	0.557	0.356	47.9	29.5	36.1	42.0
Sulphide Pad 2	0.630	0.570	0.313	50.3	40.8	45.1	47.7

Table 13-15: Test Heap Leach Pad Silver Recovery Results

Test Pad	Head (Ag g/t)	Calc. Head (Ag g/t)	Tail (Ag g/t)	Recovery by Head-Tail (Ag %)	Recovery by Solutions and Sampled Head (Ag %)	Recovery by Calc. Head (Ag %)	Average (%)
Sulphide Pad 1	13.9	11.3	10.8	22.3	NA	4.4	13.4
Sulphide Pad 2	18.0	14.2	12.6	30.0	NA	11.3	20.6

Table 13-16: Test Heap Leach Pad Sample Column Test Results

Column Test	P80 mm	Calc. Head (Au g/t)	Au Rec. (%)	Ag Rec. (%)	CaO Cons. (kg/t)	NaCN Cons. (kg/t)	pH Preg. Soln (avg)	NaCN Preg Soln (avg ppm)	Days Leaching
Sulphide Pad 1	21.2	0.499	40.3	14.2	7.0	1.03	10.8	62	107
Sulphide Pad 2*	23.9	0.57	14.2	0.4	7.0	0.39	10.9	31	36

Note: *Percolation problems - abandoned

Table 13-17: 2021 SAGMET Core Composites

Composite	Drill Hole	Total Interval (m)	Alteration
1	21-SAGMET-01	25.25	Argillic
2	21-SAGMET-01	22.05	Silicic
3	21-SAGMET-01	22.05	Argillic
4	21-SAGMET-01	25.80	Silicic
5	21-SAGMET-02	28.40	Argillic
6	21-SAGMET-02	17.35	Argillic
7	21-SAGMET-02	25.20	Silicic

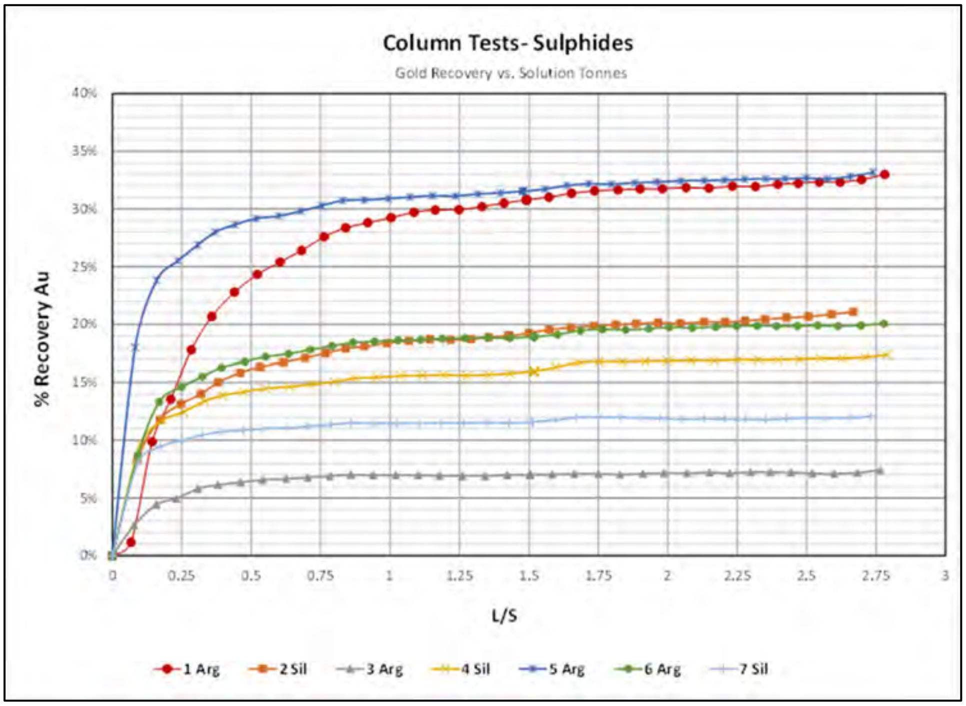
Table 13-18: 2021 SAGMET Column Test Results

Column	Type	P80 (mm)	Calculated Head		Tail		Recovery		L/S Ratio	Reagent Consumption		pH Pregnant Solution	NaCN PLS (ppm)	Leach Days
			Au (g/t)	Ag (g/t)	Au (g/t)	Ag (g/t)	Au (%)	Ag (%)		CaO (kg/t)	NaCN (kg/t)			
CLT Comp. Sulph. S.A.-1	Argillic	25.4	0.628	5.04	0.424	4.22	32.5	16.3	3.69	10.00	0.42	11.4	204	56
CLT Comp. Sulph. S.A.-2	Silicic	25.4	1.496	5.71	1.173	4.83	21.6	15.4	3.58	10.00	0.46	11.9	249	56
CLT Comp. Sulph. S.A.-3	Argillic	25.4	0.714	5.16	0.645	4.29	9.7	16.8	3.68	10.00	0.42	11.4	240	56
CLT Comp. Sulph. S.A.-4	Silicic	25.4	1.021	8.77	0.794	7.22	22.2	17.7	3.71	10.00	0.41	12.1	307	56
CLT Comp. Su Sulph. S.A.-5	Argillic	25.4	0.813	5.49	0.557	4.38	31.4	20.2	3.66	10.00	0.44	11.7	274	56
CLT Comp. Sulph. S.A.-6	Argillic	25.4	0.733	4.45	0.572	3.33	21.9	25.2	3.70	10.00	0.42	11.8	260	56

Column	Type	P80 (mm)	Calculated Head		Tail		Recovery		L/S Ratio	Reagent Consumption		pH Pregnant Solution	NaCN PLS (ppm)	Leach Days
			Au (g/t)	Ag (g/t)	Au (g/t)	Ag (g/t)	Au (%)	Ag (%)		CaO (kg/t)	NaCN (kg/t)			
CLT Comp. Sulph. S.A.-7	Silicic	25.4	0.908	12.43	0.771	10.37	15.1	16.6	3.65	10.00	0.44	12.1	305	56
CLT Comp. Sulph. S.A.-3 (High Clay)	Argillic	23.4	0.428	5.51	0.417	3.16	2.5	8.8	3.06	10.00	0.76	11.0	291	40
CLT Comp. Sulph. S.A.-3 (Low Clay)	Argillic	23.4	1.039	10.12	0.944	8.69	9.2	14.1%	3.08	10.00	0.75	11.4	329	40
CLT Comp. Sulph. S.A.-6 (Repeat)	Argillic	23.4	0.843	6.52	0.526	4.76	37.6	27.0%	3.55	10.00	0.32	12.0	307	40
Average argillic (1, 5 and 6)		***24.9***	***0.754***	***5.38***	***0.520***	***4.18***	***30.9***	***22.2***	***3.65***	***10.00***	***0.40***	***11.7***	***261***	***56/40***
Average argillic - white clay (3)		***24.1***	***0.727***	***6.93***	***0.669***	***5.38***	***7.1***	***13.3***	***3.27***	***10.00***	***0.65***	***11.3***	***286***	***56/40***
Average silicified (2, 4 and 7)		***25.4***	***1.142***	***8.97***	***0.913***	***7.47***	***19.6***	***16.6***	***3.65***	***10.00***	***0.44***	***12.0***	***287***	***56/40***

Note: Ratio L/S is the ratio of liquid to solids or tonnes of solution per tonne of ore; CLT = column leach test; Sulph = sulphide

Figure 13-4: 2021 SAGMET Column Test Recovery Curves



Note: Figure prepared by Argonaut, 2021

Table 13-19: 2021 SAGMET Bottle Roll Test Results

BRT Conditions: 3kg of material at -200 mesh (0.074 mm) in 4.5 Liters of Solution at 1000 ppm NaCN, 96 hr leach time																		
Drill Hole	**Type**	**Composite CLTs**	**Composite BRTs**	**Head Assay**			**Tails Assay**			**Calculated Head**			**Consumption,**		**Recovery**			
				Au (g/t)	**Ag (g/t)**	**Cu (g/t)**	**Au (g/t)**	**Ag (g/t)**	**Cu (g/t)**	**Au (g/t)**	**Ag (g/t)**	**Cu (g/t)**	**CaO (kg/t)**	**NaCN (kg/t)**	**Au (%)**	**Ag (%)**	**Cu (%)**
21SAGMET01	Argillic	Column 1	PB-Sulphides 1	0.705	4.81	370	0.476	3.57	216	0.916	5.35	402	3.33	4.74	48	33	46
			PB-Sulphides 2	0.275	2.01	250	0.178	1.15	100	0.328	1.87	193	4.00	3.95	46	38	48
	Silicic	Column 2	PB-Sulphides 3	1.651	6.19	128	0.841	3.52	73	1.651	5.42	123	4.00	2.93	49	35	41
			PB-Sulphides 4	1.507	5.05	119	0.734	4.30	68	1.240	7.06	141	3.33	3.44	41	39	52
	Argillic	Column 3	PB-Sulphides 5	1.116	5.50	94	0.765	4.42	73	1.041	6.42	115	3.33	3.13	27	31	37
			PB-Sulphides 6	0.987	4.95	108	0.752	3.82	79	1.022	5.49	118	3.33	3.64	26	30	33
	Silicic	Column 4	PB-Sulphides 7	1.448	11.22	229	1.101	8.38	145	1.553	13.37	281	3.33	3.44	29	37	48
			PB-Sulphides 8	1.146	8.25	143	0.772	4.95	81	1.371	10.39	137	3.33	2.75	44	52	41
21SAGMET02	Argillic	Column 5	PB-Sulphides 9	0.576	4.00	74	0.468	2.61	54	0.704	3.88	78	3.33	1.81	33	33	31
			PB-Sulphides 10	0.627	5.66	62	0.458	3.27	62	0.787	4.64	86	4.00	2.39	42	30	29
	Argillic	Column 6	PB-Sulphides 11	0.686	4.76	128	0.551	2.97	69	0.904	4.65	111	5.00	2.36	39	36	37
			PB-Sulphides 12	0.585	2.81	150	0.432	1.82	123	0.770	3.01	173	3.33	2.12	44	40	29
	Silicic	Column 7	PB-Sulphides 13	0.777	5.83	131	0.364	4.31	75	0.714	8.70	110	3.33	1.78	49	50	32
			PB-Sulphides 14	0.859	7.11	110	0.633	3.61	47	1.052	8.10	125	3.33	2.38	40	55	63
Average argillic (1, 5 & 6)				***0.576***	***4.01***	***172***	***0.427***	***2.57***	***104***	***0.735***	***3.90***	***174***	***3.83***	***2.90***	***42***	***35***	***37***
Argillized with white clays (3)				***1.052***	***5.23***	***101***	***0.759***	***4.12***	***76***	***1.032***	***5.96***	***117***	***3.33***	***3.39***	***27***	***31***	***35***
Average silicic (2, 4 & 7)				***1.231***	***7.28***	***143***	***0.741***	***4.85***	***82***	***1.264***	***8.84***	***153***	***3.44***	***2.79***	***42***	***45***	***46***

Note: Ratio L/S is the ratio of liquid to solids or tonnes of solution per tonne of ore; CLT = column leach test

13.3.6 2022 SAGMET Drill Hole Campaign and Testwork

During 2022 six metallurgical drill holes (PQ core) were drilled (SAGMET-03 to SAGMET-08) to intersect sulphide mineralization at San Agustin (SAGMET drill hole campaign). The core samples were used to make 11 composites for metallurgical testing, grouped by lithology and alteration type (argillic and silicic). This work was completed during September 2022

A series of hot cyanide shake tests were conducted on composites from the 2022 drilling program. The results indicate low gold (42%) and silver (29%) recoveries. There is some variability in the cyanide soluble copper results. There does not appear to be sufficient copper in solution to significantly impact operations. Additional work on copper cyanide solubility is required. These results are presented in Table 13-20.

A series of bottle roll tests were conducted on the composites at crush sizes of 25.4 mm, 2 mm, and 0.075 mm. Two composites were also tested at 9.5 mm. The results indicate generally low gold and silver recoveries at the three sizes tested, but also indicate increased gold and silver recoveries with finer crush sizes. Average gold recoveries for the argillic composites ranged from 24.9% at 25.4 mm up to 52.9% on pulverized samples. Average gold recoveries for the silicic composites ranged from 26.1% at 25.4 mm up to 47.3% on pulverized samples. Cyanide consumptions were moderate to high. Lime requirements were generally moderate. These results are presented in Table 13-21.

A series of column leach tests were conducted on the eleven composites at a crush size of 25.4 mm. Two column tests were conducted on select composites at a crush size of 9.5 mm. Three duplicate column tests were conducted at a crush size of 25.4 mm. These results are presented in Table 13-22.

Gold recoveries were generally low in all the column leach tests on composites crushed to both the 9.5 mm and 25.4 mm crush sizes. Gold recoveries averaged 20.8% for the argillic samples tested and 18.2% for the silicic samples, a minor difference. The results of the two 9.5 mm column tests indicate that finer crushing would not result in an increase in gold recovery.

Silver recoveries were also generally low in the 25.4 mm series of column tests. Silver recoveries averaged 20.7% for the argillic samples and 21.5% for the silicic samples. However, there does appear to be a significant increase in silver recovery in the column leach tests conducted at 9.5 mm as compared to the 25.4 mm tests on the same composites. Silver recovery increased from 31% at 25.4 mm to 46.6% at 9.5 mm in composite 12 and from 12% to 65% in composite 8.

The three sets of column leach tests that were conducted in duplicate show some variability in results. However, the duplicate tests were shut down early (only 53 days of leaching as compared to 122 days for the other tests) so results comparison is difficult.

Table 13-20: 2022 SAGMET Hot Cyanide Shake Test Results

Sample ID		Head Assay			Cyanide Soluble			
Drill Hole	**Composite**	**Au (g/t)**	**Ag (g/t)**	**Cu (g/t)**	**Au (g/t)**	**Ag (g/t)**	**Cu (g/t)**	**Au CN Sol (%)**
22-SAGMET-03	08	0.568	25.74	121	0.084	10.19	62	15
	09	0.765	31.41	566	0.279	7.09	100	36
	10	0.728	15.82	101	0.307	7.75	39	42
22-SAGMET-04	11	0.58	7.36	67	0.241	2.96	10	42
	12	0.592	9.19	70	0.272	3.05	24	46
22-SAGMET-05	13	0.739	4.2	46	0.366	1.41	24	50
	14	0.724	3.13	33	0.418	0.81	12	58
22-SAGMET-06	15	0.415	16.81	33	0.15	4.05	7	36
22-SAGMET-07	16	0.379	21.52	150	0.16	4.48	18	42
22-SAGMET-08	17	0.693	7.57	277	0.338	1.8	47	49
	18	0.404	3.77	174	0.174	0.98	62	43
Averages	***08-18***	***0.599***	***13.3***	***149***	***0.254***	***4.1***	***37***	***42***

Table 13-21: 2022 SAGMET Bottle Roll Test Results

Sample ID		BRT ID	p80 (mm)	Calc Head (g/t Au)	Tails (g/t Au)	Lime (kg/t)	NaCN (kg/t)	Au Extracted (%)	Ag Extracted (%)	Leach Time (hrs)
		Comp Sulph SA 03-C08	25.4	0.392	0.315	2.00	2.56	19.6	49.4	196
	Moderate	C-10# Sulph SA 03-C08	2	0.547	0.413	4.00	3.15	24.5	55.5	168
		C-200# Sulph SA 03-08 Rep	0.075	0.726	0.494	2.00	3.39	32.0	70.0	168
		Comp Sulph SA 03-C09	25.4	1.339	1.087	2.00	3.32	18.8	23.2	196
	Weak	C-10# Sulph SA 03-C09	2	0.918	0.660	2.33	4.02	28.1	48.1	168
		C-200# Sulph SA 03-C09	0.075	0.910	0.099	2.22	3.14	89.1	69.7	168
		Comp Sulph SA 03-C10	25.4	0.683	0.479	2.00	2.00	29.9	45.1	196
	Deep/ moderate	C-10# Sulph SA 03-C10	2	0.756	0.504	2.00	1.91	33.3	51.0	168
		C-200# Sulph SA 03-10	0.075	0.621	0.333	2.00	2.58	46.4	0.0	168
		Comp Sulph SA 03-C11	25.4	0.513	0.328	2.00	2.63	36.1	43.3	196
Argillic	Moderate	C-10# Sulph SA 03-C11	2	0.588	0.354	3.33	3.12	39.8	51.3	168
		C-200# Sulph SA 03-C11	0.075	0.691	0.28	3.00	3.47	59.5	65.4	168
		Comp Sulph SA 03-C13	25.4	0.813	0.691	2.00	2.49	15.0	12.1	196
	Moderate	C-10# Sulph SA 03-C13	2	0.952	0.691	2.67	2.79	27.4	18.2	168
		C-200# Sulph SA 03-C13	0.075	0.863	0.539	2.00	4.13	37.5	0.0	168
		Comp Sulph SA 03-C17	25.4	0.899	0.669	2.00	2.34	25.6	18.8	192
	Moderate	C-10# Sulph SA 03-C17	2	1.945	1.534	2.33	2.79	21.1	21.1	168
		C-200# Sulph SA 03-C17	0.075	1.021	0.473	2.00	2.99	53.7	39.5	168
		Comp Sulph SA 03-C18	25.4	0.409	0.29	2.00	2.30	29.1	21.9	192
	Weak	C-10# Sulph SA 03-C18	2	0.522	0.37	2.67	3.09	29.1	22.6	168
		C-200# Sulph SA 03-C18	0.075	0.488	0.233	2.00	3.39	52.3	35.4	168

Sample ID		BRT ID	p80 (mm)	Calc Head (g/t Au)	Tails (g/t Au)	Lime (kg/t)	NaCN (kg/t)	Au Extracted (%)	Ag Extracted (%)	Leach Time (hrs)
Silicic	Weak	Comp Sulph SA 03-C12	25.4	0.515	0.329	2.00	2.05	36.1	39.3	196
		C-10# Sulph SA 03-C12	2	0.620	0.407	2.00	2.87	34.4	39.2	168
		C-200# Sulph SA 03-C12	0.075	0.709	0.233	2.00	2.52	67.1	58.9	168
	Weak	Comp Sulph SA 03-C14	25.4	0.735	0.559	2.00	2.27	23.9	8.7	196
		C-10# Sulph SA 03-C14	2	0.730	0.538	2.00	2.05	26.3	12.4	168
		C-200# Sulph SA 03-C14	0.075	0.881	0.485	2.00	2.25	44.9	0.0	168
	Moderate	Comp Sulph SA 03-C15	25.4	0.273	0.202	2.00	1.42	26.0	21.0	192
		C-10# Sulph SA 03-C15	2	0.421	0.317	2.00	4.02	24.7	33.3	168
		C-200# Sulph SA 03-C15	0.075	0.391	0.261	2.00	3.00	33.2	0.0	168
	Moderate/ weak	Comp Sulph SA 03-C16	25.4	0.419	0.342	2.00	2.58	18.4	17.9	196
		C-10# Sulph SA 03-C16	2	0.382	0.254	2.67	2.22	33.5	30.8	168
		C-200# Sulph SA 03-C16	0.075	0.375	0.211	2.00	2.31	43.7	65.3	168
Argillic	Moderate	Comp Sulph SA-08 (3/8)	9.5	0.480	0.384	2.00	4.28	20.0	60.9	192
Silicic	Weak	Comp Sulph SA-12 (3/8)	9.5	0.784	0.614	2.00	3.06	21.7	34.1	192
Average argillic			***25.4***	***0.721***	***0.551***	***2.00***	***2.52***	***24.9***	***30.5***	***195***
			2	***0.890***	***0.647***	***2.76***	***2.98***	***29.1***	***38.3***	***168***
			0.075	***0.760***	***0.350***	***2.17***	***3.30***	***52.9***	***40.0***	***168***
Average silicic			***25.4***	***0.486***	***0.358***	***2.00***	***2.08***	***26.1***	***21.7***	***195***
			2	***0.538***	***0.379***	***2.17***	***2.79***	***29.7***	***28.9***	***168***
			0.075	***0.589***	***0.298***	***2.00***	***2.52***	***47.3***	***31.1***	***168***

Table 13-22: 2022 SAGMET Column Test Results

Column ID	Ore Type	P80 (mm)	Head Au (g/t)	Head Ag (g/t)	Head Cu (g/t)	Extraction		Ratio, (t soln/ t solids)	Reagents,		pH Pregnant Solution	Average NaCN in Pregnant Solutions (ppm)	Leach Time (days)
						Au (%)	Ag (%)		Lime (kg/t)	NaCN (kg/t)			
CLT Comp. Sulph. S.A.-8	Moderate argillic	25.4	0.516	19.96	62.57	13.8	12.0	7.06	10.00	2.84	11.91	208	122
CLT Comp. Sulph. S.A.-9	Weak argillic	25.4	0.737	51.61	447.08	23.5	35.0	7.93	10.00	3.16	12.24	185	122
CLT Comp. Sulph. S.A.-10	Moderate/ deep argillic	25.4	0.611	16.68	118.17	29.3	39.6	7.64	10.00	2.73	12.41	228	122
CLT Comp. Sulph. S.A.-11	Moderate argillic	25.4	0.613	8.90	78.59	22.3	17.9	7.90	10.00	2.65	11.94	221	122
CLT Comp. Sulph. S.A.-13	Moderate argillic	25.4	0.700	4.15	41.74	17.5	18.0	7.42	10.00	2.64	12.55	235	122
CLT Comp. Sulph. S.A.-17	Moderate argillic	25.4	0.779	7.30	273.67	19.7	11.3	7.84	10.00	2.65	13.88	257	122
CLT Comp. Sulph. S.A.-18	Weak argillic	25.4	0.467	3.90	216.75	19.2	10.8	7.63	10.00	2.92	11.65	204	122
Averages	*Argillic*	*25.4*	*0.632*	*16.1*	*176.9*	*20.8*	*20.7*	*7.6*	**10.00**	**2.80**	**12.37**	**220**	**122**

Column ID	**Ore Type**	**P80 (mm)**	**Head Au (g/t)**	**Head Ag (g/t)**	**Head Cu (g/t)**	**Extraction**		**Ratio, (t soln/ t solids)**	**Reagents,**		**pH Pregnant Solution**	**Average NaCN in Pregnant Solutions (ppm)**	**Leach Time (days)**
						Au (%)	**Ag (%)**		**Lime (kg/t)**	**NaCN (kg/t)**			
CLT Comp. Sulph. S.A.-12	Weak silicic	25.4	0.583	9.09	72.76	31.0	33.7	7.45	10.00	2.40	12.86	276	122
CLT Comp. Sulph. S.A.-14	Weak silicic	25.4	0.806	3.96	30.59	13.6	8.8	8.07	10.00	2.15	12.95	286	122
CLT Comp. Sulph. S.A.-15	Moderate silicic	25.4	0.393	10.04	27.60	11.4	21.7	7.56	10.00	2.25	13.01	277	122
CLT Comp. Sulph. S.A.-16	Weak/moderate silicic	25.4	0.368	11.97	101.92	16.9	22.0	7.66	10.00	2.45	13.00	276	122
Averages	*Silicic*	*25.4*	*0.538*	*8.8*	*58.2*	*18.2*	*21.5*	*7.7*	*10.00*	**2.31**	**12.95**	**279**	**122**
CLT Comp. Sulph. S.A.-12 (3/8)	Weak silicic	9.5	0.598	7.23	39.20	22.0	46.6	7.08	10.00	2.66	12.86	259	122
CLT Comp. Sulph. S.A.-8 (3/8)	Moderate argillic	9.5	0.686	28.50	76.50	14.0	65.0	7.77	10.00	3.10	12.30	191	122
CLT Comp. Sulph. S.A.-8 Rep	Moderate argillic	25.4	0.715	23.20	94.47	16.6	29.7	3.05	10.00	1.67	12.08	99.3	53
CLT Comp. Sulph. S.A.-10 Rep	Moderate/ deep argillic	25.4	1.013	15.96	111.93	21.6	27.0	3.04	10.00	1.23	11.71	186.2	53

Column ID	Ore Type	P80 (mm)	Head Au (g/t)	Head Ag (g/t)	Head Cu (g/t)	Extraction		Ratio, (t soln/ t solids)	Reagents,		pH Pregnant Solution	Average NaCN in Pregnant Solutions (ppm)	Leach Time (days)
						Au (%)	Ag (%)		Lime (kg/t)	NaCN (kg/t)			
CLT Comp. Sulph. S.A.-18 Rep.	Weak argillic	25.4	0.458	4.31	218.21	20.4	20.8	3.35	10.00	1.48	11.79	129.8	53

Lime addition of 10 kg/t in the column tests resulted in relatively high pH values in the pregnant leach solutions in the column leach tests. However, these column tests were conducted for a relatively short period of time and the solution pH values could possibly decrease over much longer periods of time. As at November 2024, approximately 7.5 kg/t of lime (as CaO) is being added at San Agustin.

Sodium cyanide consumption in the column tests can be considered to be moderate. Cyanide consumption averaged 2.8 kg/t for the argillic samples and 2.3 kg/t for the silicic samples. Field consumption will be considerably lower, probably in the 0.75–1 kg/t range.

13.3.7 Sulphide Testwork Conclusions

The 2021 testwork indicated that the sulphide stockpile, which contains some transition material, at existing plant production crush size, had higher gold recovery (~40%) than the true sulphide material in the deposit.

The 2021 column testwork results show the best gold recovery is 31% for the argillic material. The 2022 column testwork results also show that the best gold recovery is for the argillic material, but at 21%.

The silicic sulphide material reports even lower gold recovery, at 20% in the 2021 test program and 18% in the 2022 test program. The clay materials report 10% recovery or less in the 2021 tests.

Cyanide consumptions in the 2021 program were considerably lower than those in the 2022 tests. The 2021 column tests ran for less than 60 days while the column tests in 2022 ran for 122 days, which accounts for some of the differences. Since the transition and sulphide material leached in the field will be leached for 75 days, plus will continue to be leached during upper lift leaching, the field consumptions of sodium cyanide will be more in line with the 2022 results, including a factor to estimate field consumptions from laboratory column test results. A field cyanide consumption of 0.8 kg/t for the sulphide material, and an estimated 0.35 kg/t for the sulphide stockpile are reasonable.

Lime consumption is high. The sulphide stockpile material required 9.8 kg/t lime in addition to 3.6 kg/t cement for agglomeration. Lime was added at 10 kg/t for the sulphide material in the tests from the drill holes, but solution pH values were fairly high. San Agustin is currently adding 7.5 kg/t which should be sufficient, but needs to be monitored carefully and lime addition adjustments made as needed.

Blending of the argillic sulphide material with other transition/sulphide material may be a viable treatment strategy, although a detailed economic evaluation of this concept and the practicality of selectively mining only this material type should be done. Further, environmental testing of the sulphides should be conducted to evaluate the long-term effects of heap leaching this material, including acid generation potential. Copper should be specifically followed as it could be an issue in heap and plant performance.

Finer crushing studies are also recommended if treatment of the sulphide material by heap leach is to be advanced further. Other treatment schemes could also be considered if preliminary economic studies warrant.

13.4 Argonaut Site Production Composite Column Tests

Since the beginning of production, monthly or bi-weekly ore production composites were subjected to column testing for gold and silver recovery at the production crush size of P_{80} 22 mm. The column tests were conducted at the El Castillo metallurgical laboratory. A summary of the results from 2017 to September 2024 is provided in Figure 13-5.

The average column test recoveries up to September 2024 are 63.3% gold recovery and 20.5% silver recovery.

By deducting 2% of gold recovery and 5% silver recovery to reflect laboratory to field inefficiencies, a 61.3% field gold recovery and 15.5% silver recovery would be expected for ore stacked as of the end of September 2024.

This includes preliminary results of latest production composites from July to September 2024, mainly consisting of transition and sulphide materials still leaching, that average a gold recovery of 39%, expected to increase to the end of the test. These results are in agreement with the sulphide testwork conclusions discussed in Section 13.3.7.

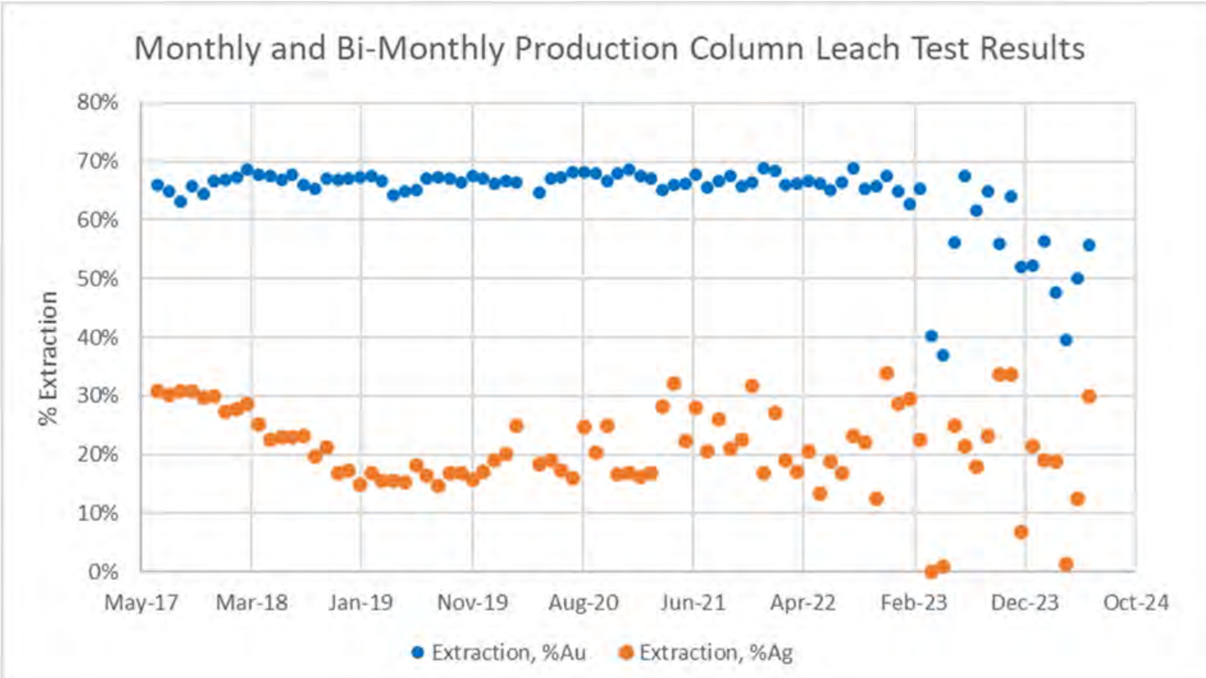
13.5 Recovery Estimates

Actual project to date (PTD) realized gold and silver recoveries are 59.5% for gold and 8.9% for silver. The PTD recovery curves since Project inception are shown in Figure 13-6.

Metals delivered to the heap leach pad and recovered (sold) since inception are shown in Figure 13-7 and Figure 13-8 for gold and silver, respectively.

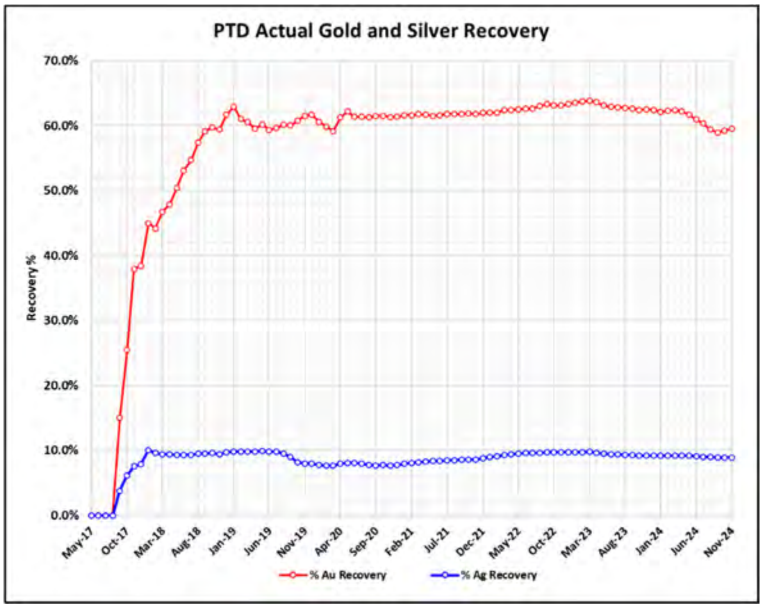
The difference between realized recovery to date and assumed endpoint recoveries is reflected in the booked metals inventories. Through end-of-month November 2024, the booked gold inventory was 11,590 oz Au, and the silver inventory was 1,441,468 oz Ag based on the field recoveries stated in Section 13.4.

Figure 13-5: Production Column Test Results



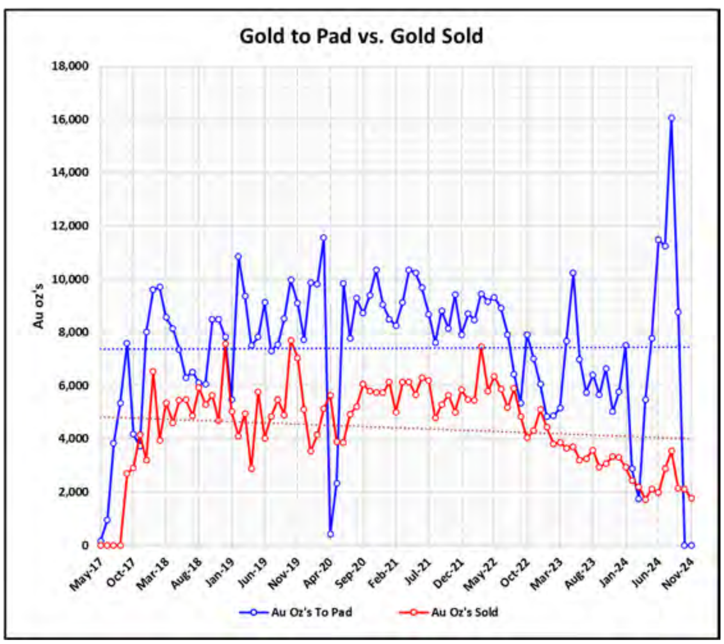
Note: Figure prepared by KCA, 2024.

Figure 13-6: Gold and Silver Project To Date Recovery



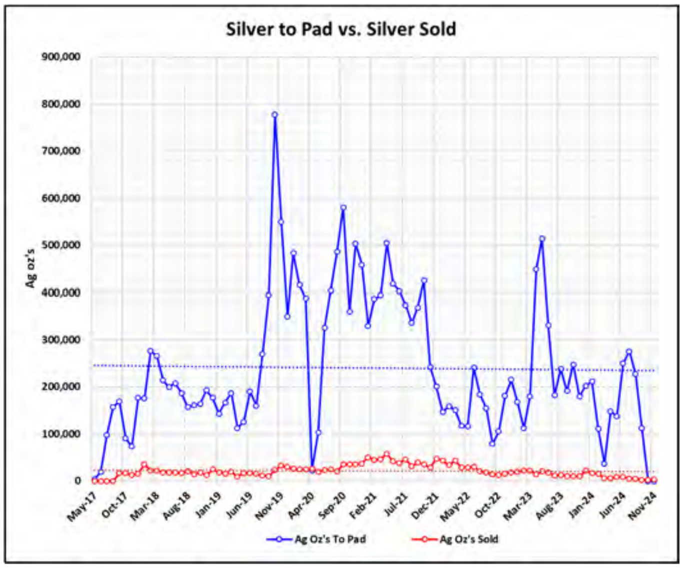
Note: Figure prepared by KCA, 2024

Figure 13-7: Gold Stacked and Recovered



Note: Figure prepared by KCA, 2024

Figure 13-8: Silver Stacked and Recovered



Note: Figure prepared by KCA, 2024

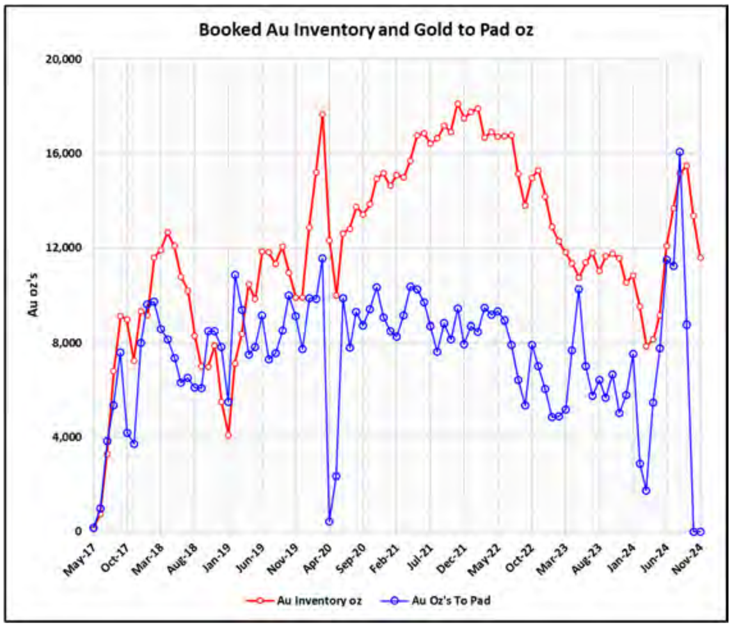
The booked gold inventory since inception is shown in Figure 13-9 and shows that booked gold inventory has been decreasing since about mid-2022 and started to increase from June 2024. Figure 13-10 shows booked silver inventory since inception.

Figure 13-11 presents a comparison of modeled theoretical gold recovery with gold actually produced. Theoretical recoverable ounces of gold and actual ounces of gold produced agree fairly well since inception indicating that estimated recoveries are reasonably accurate.

Inventories include metals in solutions, on carbon, in precipitate and in-heap within partially-leached ore, unleached ore, and side slopes. In the case of the San Agustin Mine, where production rates and ore grades were generally constant prior to February 2024, and assumed endpoint recoveries are correct, inventory would be expected to be within a relatively constant range, which appears to be true with respect to gold as can be seen in Figure 13-9. The booked inventory decrease is partially caused by the reduction in gold ounces stacked, but also could be partially due to gold recoveries being slightly higher than projected, especially for transition and sulphide ores. The booked inventory is currently low with respect to similar operations elsewhere.

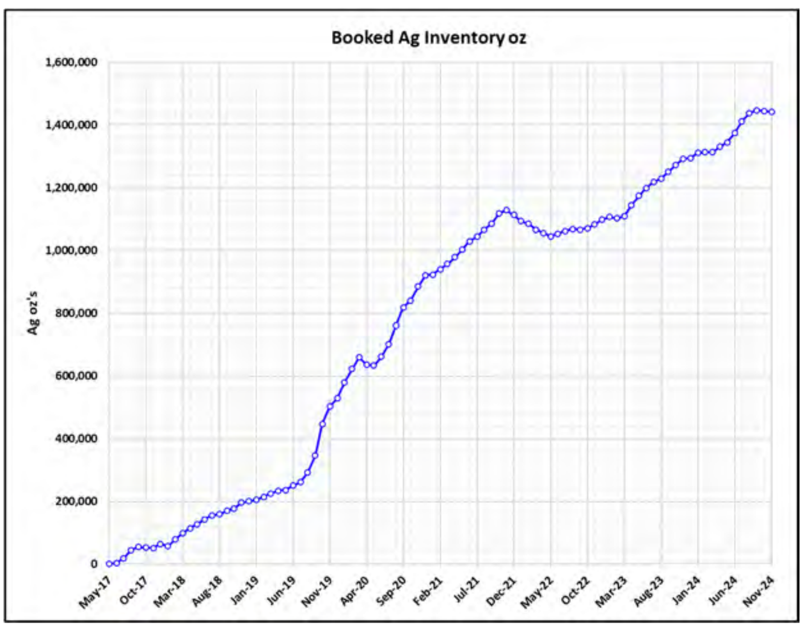
Silver inventory has been generally rising since Project inception. There appears to be some valid reasons for this. The circuit was not operated to maximize silver recovery, and in fact, since start-up, the opposite was true. Because silver can displace gold loading on carbon in the adsorption circuit, the carbon is advanced quickly to avoid silver loading, leaving much of the silver in solution and forced to recirculate within the solution circuit.

Figure 13-9: Booked Gold Inventory



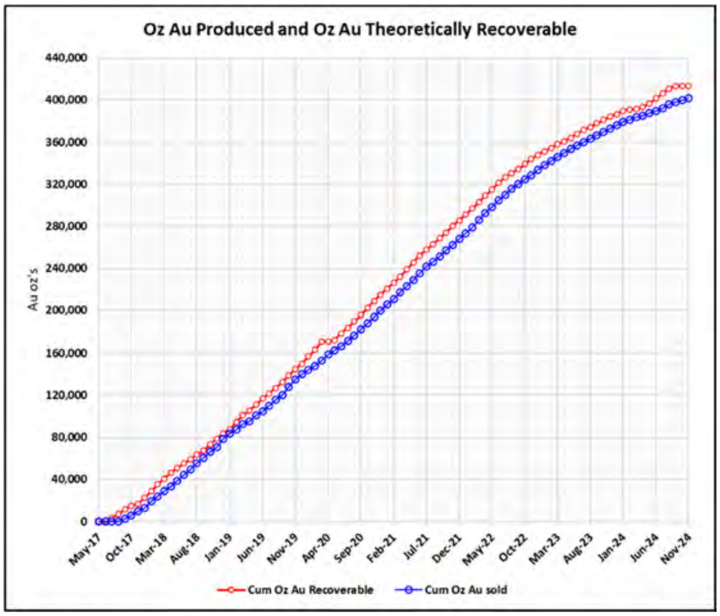
Note: Figure prepared by KCA, 2024

Figure 13-10: Booked Silver Inventory



Note: Figure prepared by KCA, 2024

Figure 13-11: Comparison of Gold Produced and Theoretical Gold Recoverable



Note: Figure prepared by KCA, 2024

The operation is not geared towards silver recovery in general, where much higher concentrations of cyanide would ordinarily be used in the leach solutions as well as much longer leach cycles to maximize silver recovery. The original decision to use carbon at San Agustin was made solely to use existing capacity at Heliostar's La Colorada carbon stripping facility, which is the current procedure.

In an effort to lower silver in solution, a small Merrill-Crowe plant (250 m^3/hr) was installed during November 2020 to treat a portion of the pregnant solution (total adsorption capacity is 1,200 m^3/hr) for silver removal. Since that time, the pregnant solution silver grades have dropped from 4.0 g/t to <1.0 g/t, reducing the amount of silver in permanent recirculation. The Merrill-Crowe plant was shut down in April 2024 due to the low silver values in pregnant leach solutions.

Even though silver heap leaches are well known to exhibit prolonged recovery times, the current assumed recovery of 15.5% may be overstated given the results to date. Additional leaching time will be required to extract all the recoverable silver at the end of the Project, after ore stacking has been completed. However, it may not be economically feasible to continue leaching long enough to reach the assumed ultimate silver recovery.

The "booked inventory" of silver at San Agustin (1.44 million oz Ag as of the end of November 2024) is not supported by the recent Ag production, especially since the crushing and stacking circuits were shut down in late September 2024. Recent Ag production (September to November 2024) is in the 3,000 oz/month range.

The test results, including those conducted on site on monthly crusher composites, site pilot leach tests and a significant number of site tests on core as well as those on composites by independent laboratories support an overall average silver recovery in the 15 % range (with a 5% deduct to estimate field recoveries from lab results).

However, the Ag booked inventory of 1.44 million oz does not appear to be economically achievable based on recent Ag production. Silver will continue to leach for years, but it is difficult to estimate when it will become uneconomic to continue leaching.

The revised Ag recoveries as shown in the table below are based on an annual estimated Ag production from previously stacked ore of about 40,000 oz during future mining of new ore. Once mining ends, it is estimated that a similar but probably slightly lower annual Ag production will be economically recoverable for at least 4 years (along with residual gold leaching). The small Merrill-Crowe plant may be needed periodically to recover Ag.

For future ore to be processed, the recoveries in Table 13-23 are recommended:

If the above revised Ag recoveries are applied to all ore types stacked since startup, then the “booked inventory” for Ag would be approximately 400,000 ounces as of the end of November 2024.

13.6 Metallurgical Variability

The processed ore was demonstrated to be very consistent in recovery until April 2023 when additional transition/sulphide ore was treated. As shown in the production column leach test results, recoveries are quite variable and generally lower starting in April 2023. This trend is expected to continue to the end of the mine life due to the increased processing of transition and sulphide ores. Samples taken for testing purposes are reasonably representative of the different ore types processed.

13.7 Deleterious Elements

The oxide ore at San Agustin contains minor amounts of copper with low solubility. From tests on oxide samples, soluble copper ranges from 3–12 ppm; these values are low enough to not raise any processing concerns. The cyanide shake tests conducted in 2022 on sulphide samples showed low to moderate cyanide soluble copper. Processing of sulphides may lead to increased copper values in pregnant leach solutions. The increase is not expected to be enough to cause processing problems. The latest bottle roll and column leach testwork program on sulphides did not follow copper. Future production column leach tests should track copper to confirm that it will not be an issue.

Table 13-23: Metallurgical Recovery Forecasts

Material Type	Recovery		
	Au (%)	Ag (Original %)	Ag (Revised %)
Crushed oxide, P_{80} 22 mm	66	16	10
Crushed transition, $P_8$0 22 mm	38	16	10
Crushed transition from stockpiles, P_{80} 22 mm	28	9	6
Crushed argillic transition, P_{80} 22 mm	26	16	10
Crushed silicic transition, P_{80} 22 mm	17	14	9
Crushed sulphide (stockpile), P_{80} 22 mm	22	9	6
ROM oxide	47	6	4

No preg-rob effects were observed.

Mercury in the ore typically ranges from 0.3–3.0 ppm, and retorting for health, safety, environmental and regulatory reasons is conducted prior to smelting.

There are no significant deleterious elements from the metallurgical perspective in San Agustin ores.

13.8 QP Comment on Section 13 "Mineral Processing and Metallurgical Testing"

Overall, gold recovery and reagents usage projections from the testwork are in close agreement with production results.

Actual silver recovery is lower than testwork results and silver inventory is relatively high due to poor silver recovery in the carbon adsorption plant and lower levels of sodium cyanide in the leach solutions (both intentional to favour gold recovery), and insufficient leach times. However, the 2020 addition of the Merrill-Crowe plant and continued leaching will lead to increased silver recovery but not in line with expectations. The recent shutdown of the Merrill-Crowe plant due to low silver grades indicates silver recovery is slowing and that silver will not be recovered as indicated in the test work. Silver recoveries were adjusted down based on recent actual silver production at site and estimated future leaching of previously-stacked ore.

Reagent usage is in line with expectations based upon metallurgical test work and is well within industry norms and benchmarks for similar types of operations.

14.0 MINERAL RESOURCE ESTIMATES

14.1 Introduction

Argonaut technical staff performed annual updates to the Mineral Resource model. Information from infill drilling, blast hole data, and pit mapping were incorporated into the annual updates. In each update, the interpolation parameters were adjusted to improve reconciliation to the short-range block model used for grade control.

In November 2024, Heliostar updated the resource block model using the drilling database that includes 1,000 drill holes totaling 127,612.15 m and 75,023 samples to support interpolation of gold and silver grades.

A three-dimensional block model was setup for the purpose of estimating Mineral Resources. Table 14-1summarizes key parameters for the non-rotated block model based on NAD27 Mexico Zone 13 UTM coordinates.

14.2 Modelling

Argonaut's geological staff and geological consultants constructed a number of wireframe solids using Leapfrog software. These three-dimensional solids included shapes for the gold grade shell using a 0.13 g/t Au cut-off, key lithological units, oxidation units, and critical fault planes. Figure 14-1 shows the gold grade shell.

The lithological solids included shapes for alluvium, conglomerate, dacite, breccias, and sedimentary rocks. Oxidation shapes included sulphide, transition, and oxide wireframes. The lithological shapes honour the logged data and are suitable for coding model blocks. The grade shell, and oxidation solids were used to code drill holes and model blocks.

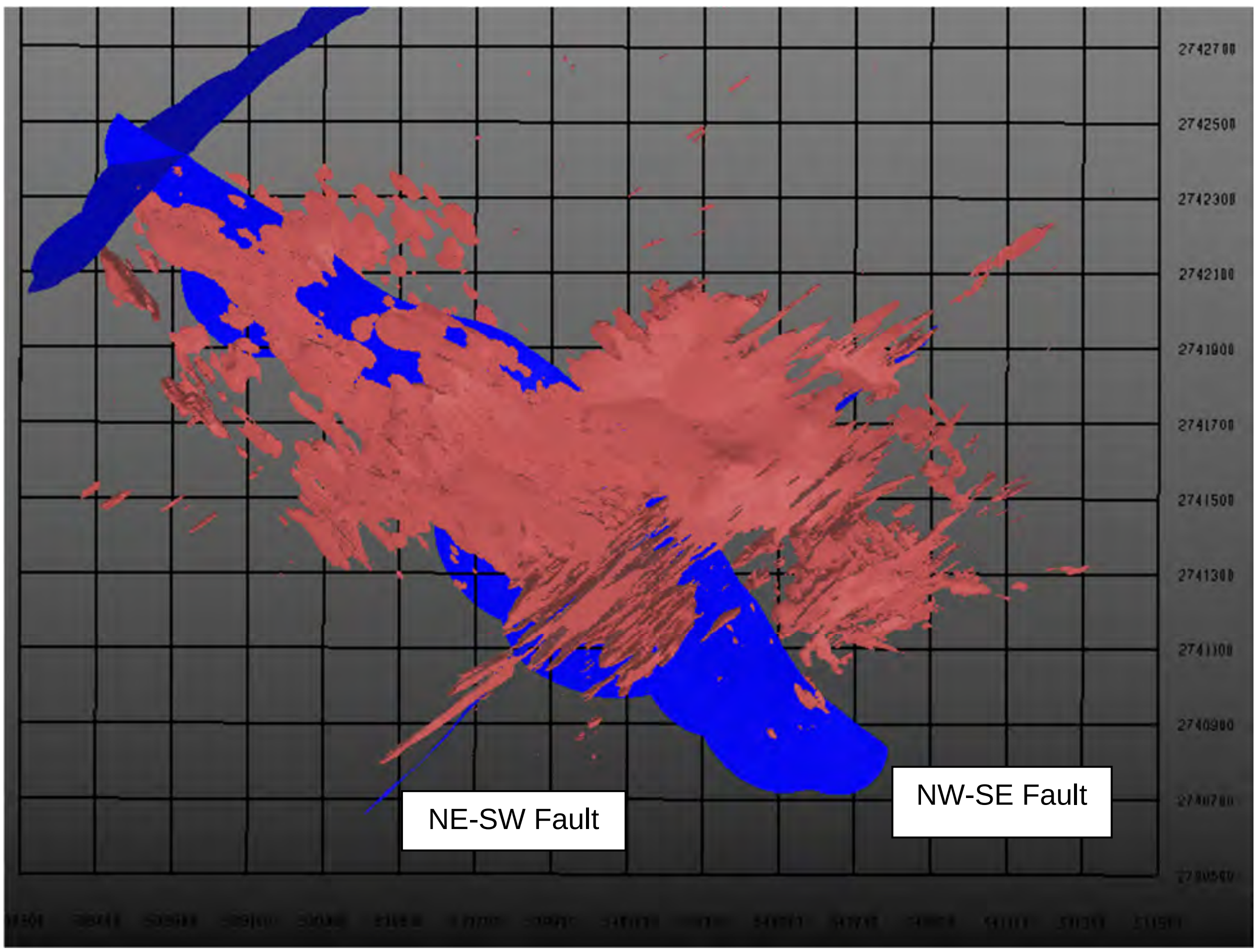
The oxide material at San Agustin is distinctive due to the intensity of oxidation and the presence of iron oxides. There is very little in the way of a transition zone with oxide material in close contact with relatively fresh pyritic material.

The block model was subdivided into seven domains based on the dominant direction of mineralization, veins systems observed in the pit walls, lithological controls, and trends of gold grades in production blast holes. The orientation in each domain changes slightly compared to the orientation of the main trends (azimuth 320° and 045°). However, there are some areas where mineralization is more erratic, such as Domain 6 and the southeast area.

Table 14-1: Block Model Dimensions

Parameter	NAD27 Coordinates		Block Size (m)	Number of Blocks	Areal Extent (m)
	Minimum (m)	Maximum (m)			
Easting	538,750	541,324	6	429	2,574
Northing	2,740,700	2,742,344	6	274	1,644
Elevation	1,500	1,986	6	81	486

Figure 14-1: Gold Grade Shell



Note: Figure prepared by MTS, 2024

14.3 Data Analysis and Capping

Heliostar completed a review of cumulative probability plots of gold and silver assays to determine grade capping limits.

Based on the break in the cumulative probability plots, Heliostar elected to cap raw gold assays at 7.0 g/t (Table 14-2) and silver assays were capped at 300 g/t (Table 14-3). About 64 gold and 61 silver samples were capped resulting in approximately 11% and 3% metal loss by capping, respectively.

In addition, the influence of higher-grades (outlier restriction) was restricted with parameters selected based on mine production reconciliation.

The QP used blasthole data to confirm that there is no significant change in the gold grades across the contact from oxide to sulphide mineralization types. As a result, the QP concluded that the boundary may be used as a soft boundary for grade estimation.

14.4 Compositing

Most of the original assay data intervals were in the range of 1.52–2.00 m long. Drill hole assays were composited to 3 m fixed lengths. The composite length was selected to reduce the number of original data intervals being split and to conform to half the bench height that will be mined.

A summary of the composite gold grades is provided in Table 14-4.

14.5 Variography

In 2014, RMI generated a number of gold variograms (correlograms) using the MineSight MSDA package. Downhole correlograms were produced using original drill hole assay data and 6 m long drill hole composites to establish the nugget effect. Directional correlograms were generated at 30° azimuth and 30° dip increments using a ±15° selection window.

RMI also constructed variogram maps. The variogram maps reflect the northeasterly and northwesterly grade trends observed at San Agustin.

For the sulphides, the QP used blasthole indicator variograms above incrementally higher cut-offs to select an outlier grade threshold of 4.5 g/t Au and a distance of 12 m. The grade and distance chosen coincide with a deterioration in the grade continuity displayed by the indicator variograms.

14.6 Indicator Sub-Domaining

The anticipated cut-off grade for the sulphide mineralization is >0.4 g/t Au (refer to discussion in Section 14.11). Heliostar constructed a 0.35 g/t Au grade shell by inverse distance interpolation of an indicator probability into the blocks. The blocks above a threshold of 0.55 were coded separately from the blocks below the threshold. The threshold was selected based on a tonnage reconciliation with the blasthole sulphide grade model.

Table 14-2: Gold Assay Statistics

Redox Domain	Code	Number	Minimum (g/t Au)	Maximum (g/t Au)	Mean (g/t Au)	CV	Capped Mean (g/t)	Capped CV	Number Capped	Metal Removed (%)
Oxide	1	18,127	0.00	46.90	0.35	2.44	0.34	1.59	34	4.2
Transition	2	880	0.03	11.73	0.30	1.97	0.29	1.61	1	2.3
Sulphide	3	18,397	0.00	1,380.00	0.46	20.79	0.39	1.34	29	15.8
Combined		37,484	0.00	1,380.00	0.41	16.90	0.36	1.46	64	10.9

Table 14-3: Silver Assay Statistics

Redox Domain	Code	Number	Minimum (g/t Ag)	Maximum (g/t Ag)	Mean (g/t Ag)	CV	Capped Mean (g/t)	Capped CV	Number Capped	Metal Removed (%)
Oxide	1	18,127	0.1	1500.0	9.3	3.0	9.0	2.34	26	3.1
Transition	2	880	0.1	271.0	10.6	2.2	10.6	2.19	0	0.0
Sulphide	3	18,397	0.1	2740.0	11.2	2.7	10.8	2.06	35	3.0
Combined		37,484	0.1	2740.0	10.3	2.8	10.0	2.19	61	3.0

Table 14-4: 3 m Composite Statistics, Gold

Grade	Number	Minimum (g/t Au)	Maximum (g/t Au)	Mean (g/t Au)	CV
Au capped	21,102	0.00	7.00	0.36	1.19
Au uncapped	21,102	0.00	705.95	0.41	12.11

14.7 Density

Based on a review of the available density data, Argonaut assigned bulk density values of 2.27 g/cm^3 to oxide and transition blocks and 2.76 g/cm^3 to sulphide blocks.

Oxide blocks coded as alluvium and conglomerate were assigned the oxide bulk density of 2.27 g/cm^3. This value may be appropriate for those surficial deposits, but some additional work should be undertaken to support more accurate estimates to support mine planning.

14.8 Estimation Methodology

14.8.1 Gold

Heliostar constructed gold and silver grade models using an inverse distance weighting to the second power (ID2) estimator.

In the San Agustin deposit, gold grades are transitional across the primary lithological and oxidation state contacts. These contacts were used as soft boundaries for the grade estimation plan which allowed composites from the various rock types and oxidation states to contribute to the estimation of blocks across their boundaries.

The gold grade shell of 0.13 g/t Au was used as a hard boundary for grade estimation purposes. In the sulphides, the 0.35 g/t probability-based grade shell was used as a hard boundary for grade estimation.

Grade estimation was carried out in three passes for each of the seven structural domains.

For the oxide and transition material types, the low grade passes (passes 1–2) were estimated first using capped composites inside the 0.13 g/t Au gold grade shell (Table 14-5). The low-grade passes used an outlier restriction method to restrict the influence of grades <0.35 g/t Au to 10 m.

The high-grade pass (pass 3) overwrote blocks with grades ≥0.35 g/t Au and did not employ outlier restriction (Table 14-6). The high grade pass used more anisotropic search ellipse dimensions, to mimic the distribution of higher gold grade zones along narrow sub-vertical structures and breccia zones.

The grade estimation of the sulphide material type used a similar approach except the outlier restriction in the low-grade pass was changed to 0.5 g/t (Table 14-7), and the high-grade pass used an additional outlier restriction with a threshold of 4.5 g/t and a maximum distance of 12 m (Table 14-8).

The number of composites and drill holes used to estimate each block and the estimation pass number were stored in each block. The distance to the closest drill hole and average distance of all composites were also stored in the blocks.

Table 14-5: Oxide and Transition Gold Grade Estimation Parameters, Low Grade Passes

Domain	Pass	Number of Composites			Ellipse Dimensions (m)			Ellipse Orientation (º)			Outlier Restriction	
		Min.	Max.	Max. Per Drill Hole	Major	Minor	Vertical	Z Rotation (LHR)	X Rotation (RHR)	Y Rotation (LHR)	Au (g/t)	Max. Distance (m)
Dom 1	1	3	10	2	50	37.5	37.5	-45	0	0	0.35	10
	2	3	10	2	75	55	55	-45	0	0	0.35	10
Dom 2	1	3	10	2	50	37.5	37.5	45	0	0	0.35	10
	2	3	10	2	70	65	45	45	0	0	0.35	10
Dom 3	1	3	10	2	50	37.5	37.5	45	0	0	0.35	10
	2	3	10	2	75	55	55	45	0	0	0.35	10
Dom 4	1	3	10	2	50	37.5	37.5	-35	0	0	0.35	10
	2	3	10	2	75	55	55	-35	0	0	0.35	10
Dom 5	1	3	10	2	50	37.5	37.5	40	0	0	0.35	10
	2	3	10	2	75	55	55	40	0	0	0.35	10
Dom 6	1	3	10	2	50	20	20	-42	0	0	0.35	10
	2	3	10	2	75	30	30	-42	0	0	0.35	10
Dom 7	1	3	10	2	40	35	35	45	0	0	0.35	10
	2	3	10	2	75	55	55	45	0	0	0.35	10

Table 14-6: Oxide and Transition Gold Grade Estimation Parameters, High Grade Pass

Domain	Pass	Number of Composites			Ellipse Dimensions (m)			Ellipse Orientation (º)		
		Min.	Max.	Max. Per Drill Hole	Major	Minor	Vertical	Z Rotation (LHR)	X Rotation (RHR)	Y Rotation (LHR)
Dom 1	3	3	6	2	50	10	75	-45	0	-20
Dom 2	3	3	6	2	50	10	75	45	0	-20
Dom 3	3	3	6	2	50	10	65	75	0	-5
Dom 4	3	3	6	2	50	10	45	-35	0	-20
Dom 5	3	3	6	2	80	10	65	50	0	-5
Dom 6	3	3	6	2	50	10	15	-42	0	-5
Dom 7	3	3	6	2	40	10	35	45	0	-5

Table 14-7: Sulphide Gold Grade Estimation Parameters, Low Grade Passes

Domain	Pass	Number of Composites			Ellipse Dimensions (m)			Ellipse Orientation (º)			Outlier Restriction	
		Min.	Max.	Max. Per Drill Hole	Major	Minor	Vertical	Z Rotation (LHR)	X Rotation (RHR)	Y Rotation (LHR)	Au (g/t)	Max. Distance (m)
Dom 1	1	3	10	2	50	37.5	37.5	-45	0	0	0.5	10
	2	3	10	2	75	55	55	-45	0	0	0.5	10
Dom 2	1	3	10	2	50	37.5	37.5	45	0	0	0.5	10
	2	3	10	2	70	65	45	45	0	0	0.5	10
Dom 3	1	3	10	2	50	37.5	37.5	45	0	0	0.5	10
	2	3	10	2	75	55	55	45	0	0	0.5	10
Dom 4	1	3	10	2	50	37.5	37.5	-35	0	0	0.5	10
	2	3	10	2	75	55	55	-35	0	0	0.5	10
Dom 5	1	3	10	2	50	37.5	37.5	40	0	0	0.5	10
	2	3	10	2	75	55	55	40	0	0	0.5	10
Dom 6	1	3	10	2	50	20	20	-42	0	0	0.5	10
	2	3	10	2	75	30	30	-42	0	0	0.5	10
Dom 7	1	3	10	2	40	35	35	45	0	0	0.5	10
	2	3	10	2	75	55	55	45	0	0	0.5	10

Table 14-8: Sulphide Gold Grade Estimation Parameters (High Grade Pass)

Domain	Pass	Number of Composites			Ellipse Dimensions (m)			Ellipse Orientation (º)				Outlier Restriction
		Min.	Max.	Max. Per Drill Hole	Major	Minor	Vertical	Z Rotation (LHR)	X Rotation (RHR)	Y Rotation (LHR)	Au (g/t)	Max. Distance (m)
Dom 1	3	3	6	2	50	10	75	-45	0	-20	4.5	12
Dom 2	3	3	6	2	50	10	75	45	0	-20	4.5	12
Dom 3	3	3	6	2	50	10	65	75	0	-5	4.5	12
Dom 4	3	3	6	2	50	10	45	-35	0	-20	4.5	12
Dom 5	3	3	6	2	80	10	65	50	0	-5	4.5	12
Dom 6	3	3	6	2	50	10	15	-42	0	-5	4.5	12
Dom 7	3	3	6	2	40	10	35	45	0	-5	4.5	12

14.8.2 Silver

Silver grades were estimated by ID2 using four passes with outlier restriction varying by structural domain. Similar estimation parameters were used for silver as were used for gold. The domains, number of composites, ellipse dimensions, and ellipse orientation were the same, but the outlier restriction parameters were different and there was no separation of low-grade and high-grade domains.

14.9 Model Validation

Estimated block grades were verified visually, using statistical methods, and by reconciliation with the mine short-term model.

Figure 14-2 is a vertical cross-section that shows the block grades, composite grades and the conceptual pit used to constrain the Mineral Resources estimate. The block grades accurately reproduce the grades of the composites used to estimate the blocks.

Statistical comparisons were made with a nearest neighbour model. The differences are within 5%, demonstrating that the Mineral Resource model shows no significant global grade bias.

Table 14-9 shows the results of a comparison between the Mineral Resource block model and the mine blasthole model with the differences shown as percentages. The Mineral Resource model generally falls within ±15% of the tonnes, grade, and metal from the blasthole model.

14.10 Mineral Resource Confidence Classification

Estimated block grades for the San Agustin deposit were classified as Indicated and Inferred Mineral Resources.

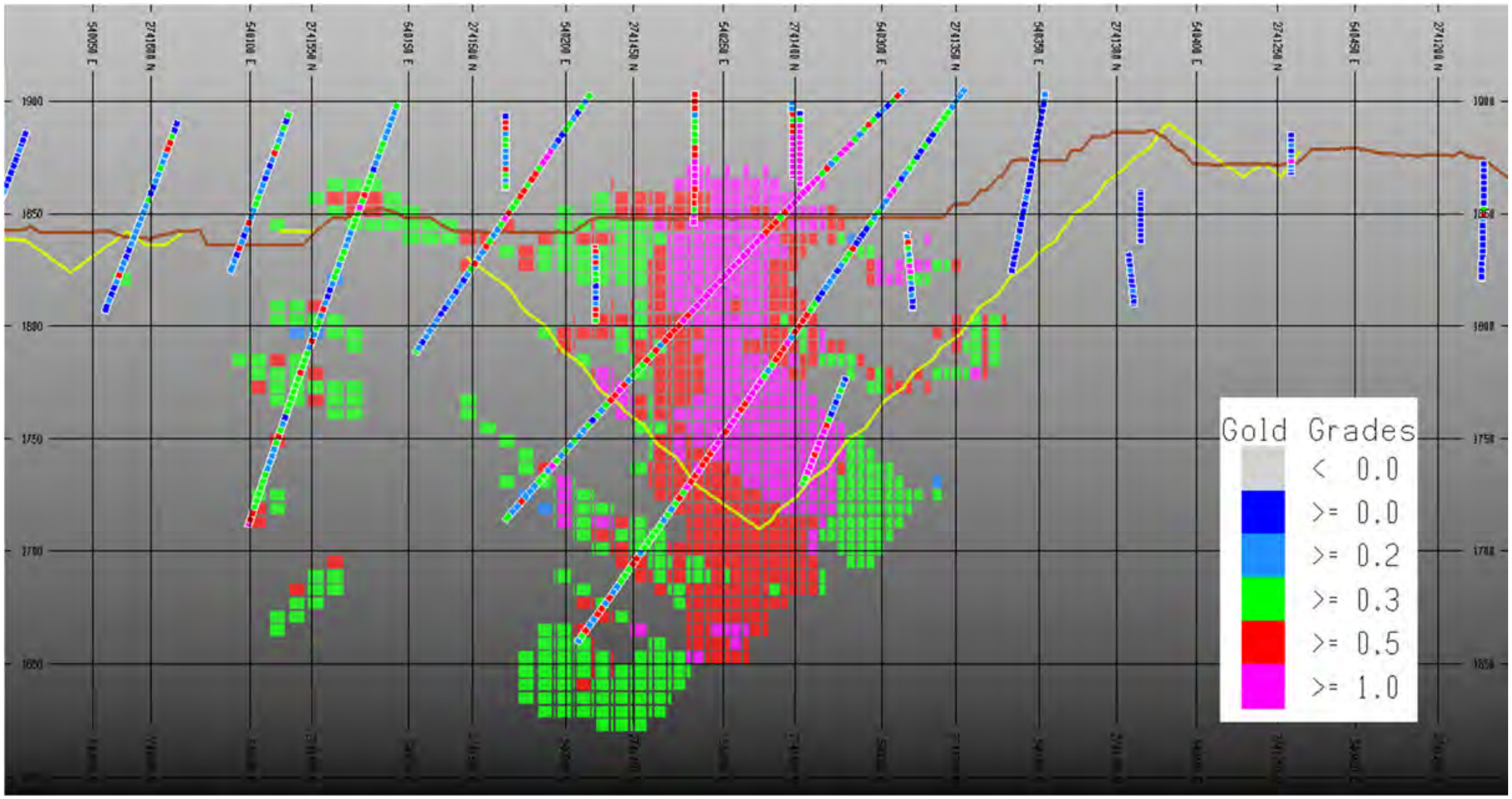
For the oxide and transition material types, Argonaut constructed a three-dimensional solid that represents mineralized continuity based on a visual inspection of the spacing and grades of drill holes. This wireframe solid generally included oxide and transition material with a drill spacing of 50 m or less and was used to code model blocks as Indicated Mineral Resources.

Estimated blocks falling outside the Indicated classification wireframe, but within the 0.13 g/t grade shell wireframe, were classified as Inferred Mineral Resources.

Heliostar classified sulphide material to the Indicated category based on a 50 m drill spacing and blocks falling within the 0.35 g/t Au grade shell (demonstrating grade continuity above a 0.35 g/t Au cut-off grade). Isolated Inferred category blocks were manually removed.

Reconciliation with the blasthole short-term mine production model shows that the Mineral Resource model agrees to within ±15% on an annual basis for tonnage, grade and contained metal.

Figure 14-2: Block Model Cross Section



Note: Figure prepared by MTS, 2024

Table 14-9: Model Validation with Blasthole Model

Period	Percent Relative Difference (%)				
	Tonnage	Gold Grade	Silver Grade	Gold Ounces	Silver Ounces
2018 Jan - Nov	103	108	110	112	114
2018_12 - 2020_08	109	105	114	115	124
2020_09 - 2021_12	115	112	128	129	148
2022	98	102	149	100	146
2023	99	106	161	105	159
2024	107	99	104	105	111

14.11 Reasonable Prospects of Eventual Economic Extraction

Argonaut generated a conceptual Lerchs–Grossmann (LG) pit to constrain the Mineral Resource estimate to support reasonable prospects of eventual economic extraction. Table 14-10 summarizes the parameters that were used to generate the conceptual pit.

14.12 Cut-off Grades

Internal gold equivalent (AuEq) cut-off grades were used to summarize Mineral Resources and varied by material type as follows:

- Oxide: 0.14 g/t AuEq;
- Transition: 0.27 g/t AuEq;
- Sulphide argillic: 0.41 g/t AuEq;
- Sulphide silicified: 0.60 g/t AuEq.

The AuEq grades were calculated using ratios of metal prices and metal recoveries in the following equation:

- AuEq = (Au + Ag/equivalency factor)

Where equivalency factor = ((Au price in US$/g * Au recovery) / (Ag price in US$/g * Ag recovery))

Table 14-10: Conceptual Pit Parameters

Item	Units	Value
Metal Prices		
Gold price	$/oz	2,150
Silver price	$/oz	26.00
Costs		
Mining cost	$/t	2.00
Mining cost increase/ 6 m bench	$/6 bench	0.014
Oxides fixed cost	$/t mineralization	0.448
Oxides variable cost	$/t mineralization	3.784
Oxides extra cost	$/t mineralization	0.00
Oxides total process cost	$/t mineralization	4.232
Transition fixed cost	$/t mineralization	0.448
Transition variable cost	$/t mineralization	4.692
Transition extra cost	$/t mineralization	0.000
Transition total process cost	$/t mineralization	5.140
Sulphides argillic fixed cost	$/t mineralization	0.448
Sulphides argillic variable cost	$/t mineralization	4.909
Sulphides argillic extra cost	$/t mineralization	0.000
Sulphides argillic total process cost	$/t mineralization	5.357
Sulphides silicic fixed cost	$/t mineralization	0.448
Sulphides silicic variable cost	$/t mineralization	4.494
Sulphides silicic extra cost	$/t mineralization	0.000
Sulphides silicic total process cost	$/t mineralization	4.942
General and administrative	$/t mineralization	1.400
Selling and finishing cost	$/t mineralization	0.66
Process Recoveries		
Au rec oxides crushed	%	66
Ag rec oxides crushed	%	10
Au rec transition crushed	%	38
Ag rec transition crushed	%	10
Au rec sulphide argillic crushed	%	26
Ag rec sulphide argillic crushed	%	10
Au rec sulphide silicified crushed	%	17
Ag rec sulphide silicified crushed	%	9

Item	Units	Value
Pit Slope		
Pit slope angles	º	45
Gold Equivalent Ratios		
Equivalent gold ratio oxide	Ag/Au	546
Equivalent gold ratio transition	Ag/Au	314
Equivalent gold ratio sulphide argillic	Ag/Au	215
Equivalent gold ratio sulphide silicified	Ag/Au	156
Gold Equivalency		
Oxide AuEq calculated	g/t	0.138
Transition AuEq calculated	g/t	0.274
Sulphide argillic AuEq calculated	g/t	0.413
Sulphide silicified AuEq calculated	g/t	0.596

14.13 Mineral Resource Statement

Mineral Resources are reported insitu, using the 2014 CIM Definition Standards, and are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

The Qualified Person for the estimate is Mr. David Thomas, P.Geo., Associate Mineral Resource Estimator with MTS.

Mineral Resources for San Agustin were tabulated inside the conceptual pit that was generated using the parameters listed in Table 14-10 and using variable cut-off grades, depending on the oxidation state of the mineralization.

Mineral Resources are tabulated in Table 14-11 and have a November 30, 2024 effective date.

14.14 Factors that May Affect the Mineral Resource Estimates

Areas of uncertainty that may materially impact the Mineral Resource estimate include:

- Changes to the long-term gold and silver prices and exchange rates;
- Changes in interpretation of mineralization geometry and continuity of mineralization zones;
- Changes to design parameter assumptions that pertain to the conceptual pit design that constrains the Mineral Resources;
- Modifications to geotechnical parameters and mining recovery assumptions;
- Changes to metallurgical recovery assumptions;

Table 14-11: Mineral Resource Statement

Material Type	AuEq Cutoff (g/t AuEq)	Confidence Classification	Tonnes (kt)	Gold Grade (g/t Au)	Silver Grade (g/t Ag)	Contained Gold (koz)	Contained Silver (koz)
Oxide	0.14	Indicated	17,154	0.30	11.5	165	6,333
Transitional	0.27		700	0.44	17.4	10	391
Sulphide argillic	0.41		5,348	0.80	14.0	138	2,403
Sulphide silicified	0.60		427	0.90	7.4	12	102
Total			***23,629***	***0.43***	***12.2***	***325***	***9,229***
Oxide	0.14	Inferred	1,273	0.29	9.2	12	378
Transitional	0.27		5	0.32	25.6	0	4
Sulphide argillic	0.41		121	0.64	9.6	2	38
Sulphide silicified	0.60		2	0.68	6.0	0	0
Total			***1,401***	***0.32***	***9.4***	***14***	***421***

Notes to accompany San Agustin Mineral Resource table:

1. Mineral Resources are reported insitu, using the 2014 CIM Definition Standards, and have an effective date of 30 November, 2024. The Qualified Person for the estimate is Mr. David Thomas, PGeo., Associate Mineral Resource Estimator with MTS.
2. Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
3. Mineral Resource estimates are defined by end of month July 2024 topography.
4. Mineral Resources are constrained by a conceptual pit shell using the following assumptions: a gold price of US$2,150/oz Au; a silver price of US$26.0/oz Ag; mining cost of US$2.0/t mined; oxide process and leaching cost of US$4.23/t processed; transition process and leaching cost of US$5.14/t processed; sulphide argillic process and leaching cost of US$5.36/t processed; sulphide silicic process and leaching cost of US$4.94/t processed; general and administrative cost of US$1.4/t processed; selling cost of US$0.66/t processed; gold metallurgical recoveries from 17–66%; silver metallurgical recoveries from 9–10%; and pit slope angles of 45º.
5. Totals may not sum due to rounding.

- Changes to environmental, permitting, and social license assumptions;
- Ability to obtain or maintain land access agreements.

QP Comments on Section 14

There are no other environmental, legal, title, taxation, socioeconomic, marketing, political or other relevant factors known to the QP that would materially affect the estimation of Mineral Resources that are not discussed in this Report.

There is upside potential for the estimates if mineralization that is currently classified as Inferred can be upgraded to higher-confidence Mineral Resource categories.

15.0 MINERAL RESERVE ESTIMATES

15.1 Overview

Mineral Reserves were estimated for the San Agustin Project which is an open pit operation with a heap leach pad and carbon adsorption–desorption–recovery (ADR) plant for processing. The operations are currently on care and maintenance.

Mineral Reserves were based on the economic balance between the value per tonne of rock and the cost to mine and process each tonne of rock. The value was based on estimated metal concentration, estimated metal value and leach recovery. The costs included development, mining, processing, and operating overhead.

Blocks were converted from Indicated Mineral Resources to Probable Mineral Reserves based on positive cash flow pit optimization results, pit designs and geological classification of Indicated Mineral Resources. Inferred Mineral Resources were set to waste.

Gold equivalency (AuEq) grades were calculated using ratios of metal prices and metal recoveries in the following equation:

AuEq = (Au + Ag/equivalency factor)

Where equivalency factor = ((Au price in US$/g * Au recovery) / (Ag price in US$/g * Ag recovery)).

15.2 Estimation Parameters

The San Agustin deposit was mined from 2017 and was put on care and maintenance in November 2024 as Heliostar works to finalize the land use change authorization for phase 4B of the pit which where the Mineral Reserves estimate is located. Heliostar expects to receive final resolution of the land use change authorization in Q2 2025.

The open pit design completed on the San Agustin deposit was evaluated with the updated Indicated Mineral Resources and was demonstrated to be economically viable, therefore Indicated Mineral Resources within the pit designs were converted to Probable Mineral Reserves. All Inferred material has been classified as waste and scheduled to the appropriate WRSF.

The Mineral Reserves were limited to only oxide and transition material; all sulphide material was classified as waste. The Mineral Reserves for the oxide and transitional material were reported using a 0.156 g/t and 0.310 AuEq cutoff respectively inside the pit designs, which are discussed in more detail in the following sub-sections together with the pit design parameters.

15.2.1 Pit Slopes

The pit slopes follow recommendations provided by SRK Consulting (U.S.) Inc. (SRK); see discussion in Section 16.2.1.

For the purpose of the pit optimizations, the inter-ramp slope angle was set to 45° based on the recommendations and past operating practices. The pit is shallow and thus not very sensitive to overall slope angles.

15.2.2 Ore Loss and Dilution

Ore loss and dilution are discussed in Section 16.5.

15.2.3 Pit Optimization

The Mineral Resources for the deposit were evaluated using an L–G pit optimizer to generate optimized pit shells. Pit shells were generated based on varying metal prices, with base prices of US$1,900/oz Au and US$23/oz Ag. Starting with the current topography from a November 30, 2024 survey, a total of 51 pit shells were generated to determine optimal break points for developing pit phases and for determining the ultimate final pit phase for the deposit.

Table 15-1 shows the cost and slope parameters used for each optimization. The operating costs were determined based on historical costs provided by Heliostar, and Hard Rock Consulting's and KCA's industry knowledge and prior experience. As discussed previously, all sulphide material was treated as waste.

Figure 15-1 shows the optimization results for the Indicated material within the resource model for San Agustin. Values in the figure are based on optimized pit shells before the design process, and do not include the haulage ramps and catch benches.

The final pit was limited to a US$1,900/oz AuEq pit shell. The pit was designed as two phases for the Mineral Reserve evaluation, with the first phase providing a shorter haulage route to the crusher.

15.2.4 Cut-off

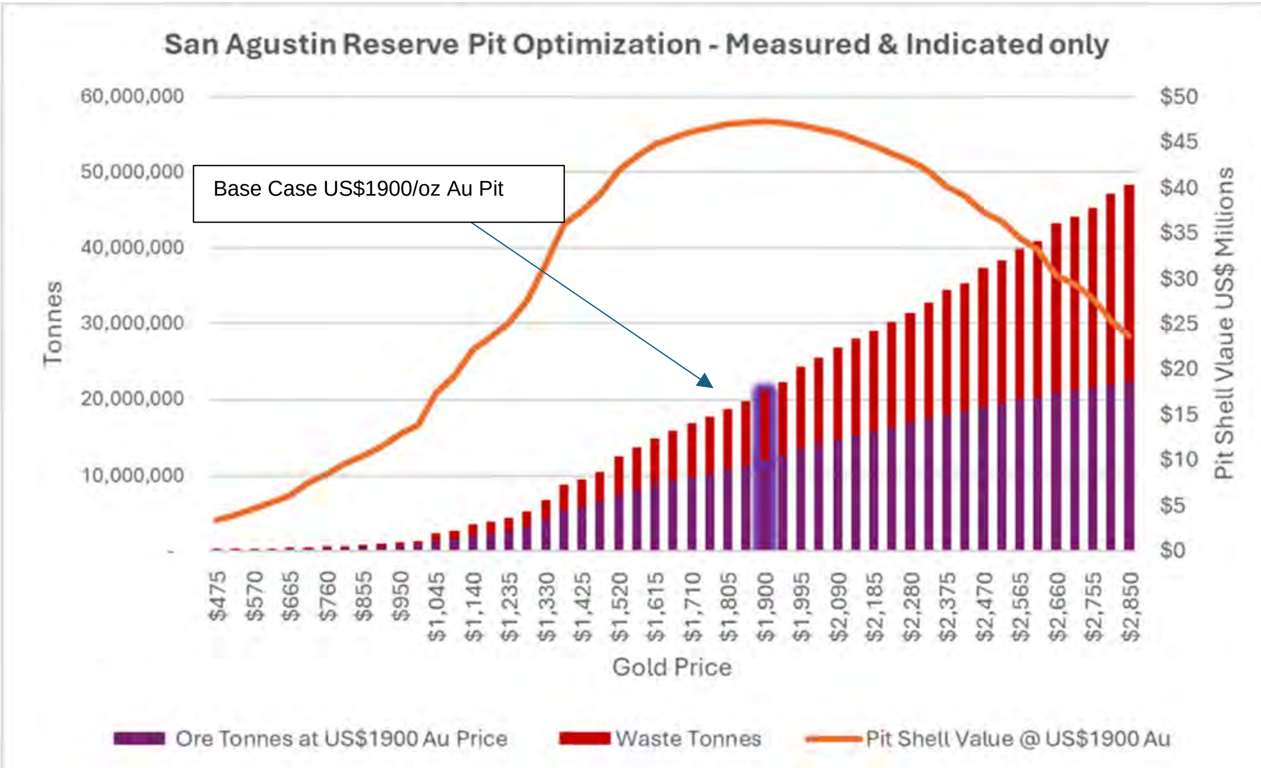
The Mineral Reserves are reported using a 0.156 g/t AuEq cut-off for oxide material and a 0.310 g/t AuEq cut-off for transition material inside the final San Agustin pit design. The AuEq cut-off includes the estimated metallurgical recoveries, plant operating costs, all general and administrative costs, and refining and selling costs during pit operations as shown in Table 15-2.

For the Mineral Reserves, the gold:silver equivalency factor results in a Au:Ag ratio of 1:545 for oxide material and 1:314 for transition material.

Table 15-1: Reserve Pit Optimization Parameters

Parameter	Units	Value	
Metal Prices			
Gold price	US$/oz	1,900	
Silver price	US$/oz	23.00	
Mining, Processing and General and Administrative Costs			
Mining cost, surface	US$/t mined	2.00	
Mining cost increase/ 6 m bench	US$/t mined	0.014	
Crushing and conveying	US$/t processed	0.93	
Process and leaching, oxides	US$/t processed	3.30	
Process and leaching, transition	US$/t processed	4.21	
General and administrative	US$/t processed	1.40	
Selling cost	US$/t processed	0.66	
Metal Recoveries (crushed)	**Units**	**Gold**	**Silver**
Oxide	%	66	10
Transition	%	38	10
Geotechnical Considerations			
Pit slope angles	º	45	

Figure 15-1: Reserve Pit Optimization Results



Note: Figure prepared by Hard Rock Consulting, 2025.

Table 15-2: Mineral Reserve Cutoffs

Item	Unit	Oxide	Transition
Metal price			
Gold price	$/oz	1900	1900
Silver price		23.00	23.00
Cost centre			
Processing	$/ore tonne	4.23	5.14
General and administrative	$/ore tonne	1.40	1.40
Selling/finishing	$/ore tonne	0.66	0.66
Au recovery	%	66	38
Ag recovery	%	10	10
Total cost	***$/ore tonne***	***6.29***	***7.20***
Gold selling price	$/oz	1900	1900
Cut-off Grade AuEq	***g/t AuEq***	***0.156***	***0.310***

15.3 Mineral Reserves Statement

The Mineral Reserve estimates are reported at the point of delivery to the process plant, using the 2014 CIM Definition Standards. The QP for the estimate is Mr. Jeffrey Choquette P.E., of Hard Rock Consulting.

The Mineral Reserves are reported using AuEq cutoffs inside of the final pit as shown in Table 15-3. The estimates have an effective date of 30 November, 2024.

15.4 Factors that May Affect the Mineral Reserves

Other areas of uncertainty that may materially impact the Mineral Reserves include the following:

- Variations in the forecast commodity price;
- Variations to the assumptions used in the constraining L–G pit shells, including mining loss/dilution, metallurgical recoveries, geotechnical assumptions including pit slope angles, and operating costs;
- Variations in assumptions as to permitting, environmental, and social license to operate;
- Ability to obtain or maintain land agreements;
- Changes in taxation conditions.

Table 15-3: Mineral Reserves Statement

Classification	Material Type	AuEq Cut-off (g/t AuEq)	Tonnes (kt)	Gold Grade (Au g/t)	Silver Grade (Ag g/t)	Contained Gold (koz)	Contained Silver (koz)
Probable	Oxide	0.156	7,281	0.29	16.24	67	3,803
	Transition	0.310	77	0.39	31.39	1	77
	Total		***7,358***	***0.29***	***16.40***	***68***	***3,880***

Notes to accompany Mineral Reserves table:

1. Mineral Reserves are reported at the point of delivery to the process plant, using the 2014 CIM Definition Standards.
2. Mineral Reserves have an effective date of 30 November 2024. The Qualified Person for the estimate is Mr. Jeffrey Choquette, PE, of Hard Rock Consulting, LLC.
3. A 0.156 g/t AuEq cut-off is used for reporting the Mineral Reserves in oxide, and a 0.310 g/t AuEq cut-off is used for reporting Mineral Reserves in transitional material. Cut-offs were calculated based on a gold price of US$1,900/oz Au, silver price of US$23/oz Ag, processing costs of US$4.23/t for oxide, processing costs of US$5.14/t for transitional, general, and administrative costs of US$1.40/t, refining and selling costs of US$0.66/t, gold recovery of 66% for oxide and 38% for transitional and a silver recovery of 10% for oxide and transitional. The AuEq calculation uses the formula AuEq = (Au + Ag/equivalency factor) where equivalency factor = ((Au price in US$/g * Au recovery) / (Ag price in US$/g * Ag recovery)).
4. Mineral Reserves are reported within the ultimate reserve pit design. An external dilution factor of 5% and a metal loss of 3% have been factored into the Mineral Reserve estimate.
5. Tonnage and grade estimates are in metric units.
6. Mineral Reserve tonnage and contained metal have been rounded to reflect the accuracy of the estimate, and numbers may not add due to rounding

15.5 QP Comments on Section 15

Mineral Reserves are reported using the 2014 CIM Definition Standards.

As the economic analysis in Section 22 used higher metal prices than were used in the Mineral Reserve estimates, the QP performed a check to ensure that the Mineral Reserves returned positive economics at the Mineral Reserve commodity pricing. The results showed a positive after tax cashflow, thus verifying the Mineral Reserve estimates.

There are no other environmental, legal, title, taxation, socioeconomic, marketing, political or other relevant factors known to the QP that would materially affect the estimation of Mineral Reserves that are not discussed in this Report.

16.0 MINING METHODS

16.1 Overview

The San Agustin Mine contains mineralization at or near the surface that is ideal for open pit mining methods. The mine is a relatively low-grade gold deposit that benefits from a low strip ratio and disseminated mineralization that is amenable to bulk mining activities and good heap leach recoveries. Situated in a semi-arid environment surrounded by moderate topography, the oxide material that hosts the mineralization is relatively shallow with no major impediments to mining.

The mine is currently on care and maintenance but mine plans have been developed for restarting the operation. The mine has been mined with eight separate phases in the past with a portion of the fourth phase remining in the LOM plan which is Phase 4B. The final pit dimensions are approximately 0.9 km long (east–west) by 0.7 km wide (north–south) and up to 115 m deep.

As was used in the past operations, the mine plan includes a contract operated conventional truck and loader open pit operation. The major production unit operations will include drilling, blasting, loading, hauling, and dumping. These activities are planned to be completed with a contractor fleet. Ore will be delivered to the crusher at 19,000 t/d and conveyed by overland conveyor to a mobile conveyor stacking system on the leach pad where the ore will be stacked in 10 m lifts. The mine plan is based on Probable Mineral Reserves only.

A total of 7.3 Mt is planned to be processed during the 1.2-year mine life. A total of 6.5 Mt will be sent to the waste rock storage facilities which results in an overall LOM plan strip ratio of 0.9:1.

Heliostar has retained the majority of the mine planning and operational staff at San Agustin, so the restart of the operations should be a smooth transition. Strategic planning is also carried out in the Heliostar corporate office located in Hermosillo, Mexico.

16.2 Geotechnical Considerations

The San Agustin Mine started production in October 2017. At that time, no site-specific geotechnical characterization data was available for the San Agustin deposit area. In 2017 as part of a Mineral Reserve estimate for San Agustin, SRK estimated the factor of safety (FOS) of the proposed slope walls. SRK estimated the equivalent Mohr–Coulomb strength parameters based on the worst rock mass conditions observed during their site visit and the geotechnical core logging of two available drill holes. SRK assumed conservative geological strength index (GSI) values (GSI of 30–40) and a uniaxial compressive strength (UCS) range of 40–50 MPa as no laboratory test results and limited rock mass quality data were available.

SRK assumed low confinement (shallow pit) and estimated the cohesion and internal friction angle using the lower boundaries of the GSI (50) and UCS (40 MPa). The equivalent Mohr-

Coulomb properties were estimated to have a cohesive strength of approximately 400 kPa and an internal friction angle of 38°.

SRK applied the circular failure chart method to estimating the FOS of the highest walls for each phase. Table 16-1 shows the inter-ramp design parameters. Based on their empirical assessment, SRK endorsed the mine designs at a conceptual-level and stated their opinion that because the pit is shallow, future adjustments to this angle will result in minor changes in stripping requirements.

During 2021, GCM Engineering S.A. (GCM) conducted a series of geotechnical studies in conjunction with Argonaut staff (GCM, 2021). The studies included mapping and structural measurements of pit workings, rock mechanics, and structural analyses. The work concluded the San Agustin pit has generally good competent rock and confirmed the 45º inter-ramp angle.

The QP noted during the November 2024 site visit that the current highwalls all appear stable with no significant failures but recommends Heliostar perform further geotechnical work to continually confirm the geotechnical parameters including pit mapping, geotechnical analysis of core samples, groundwater monitoring, and pit wall stability monitoring.

16.3 Hydrogeological Considerations

The mine has in the past encountered the water table when mining to depth. When this has occurred, the use of in-pit sumps and pumps have been used to collect and remove the water from the open pit to permit continuous operations. Additionally, hydrogeological investigations (GCM, 2023) have been performed to determine areas where increased levels of groundwater infiltration could occur, such as fault zones. In these localized identified areas, short interceptor wells were drilled to aid in dewatering the slopes. During 2023 this method of managing groundwater in Phases 6 and 7 proved successful and mining continued successfully to approximately 40 m below the original ground water table elevation.

The current mine plan involves mining in Phases 4B to levels only 6 m below the current pit bottom elevation. It is anticipated that similar groundwater conditions and flows to those experienced previously will exist and, that through a similar application of pit sumps, pumps, and short interceptor wells, the groundwater can be managed.

16.4 Pit Designs

As discussed in Section 15.2.3, the final San Agustin pit design was limited to a US$1,900/oz AuEq pit shell. The pit was designed into two phases for the Mineral Reserve evaluation with the first phase allowing for a shorter haulage route to the crusher. Pit Phase 4B.1 is shown in Figure 16-1 and Phase 4B.2 is shown in Figure 16-2.

Table 16-1: Pit Design Slope Recommendations

Design Sector	Geotechnical Unit	Pit Wall Slope Azimuth (º)	Inter-ramp Angle (°)
One area	All rock unit	All	45

For the pit designs, haul roads are designed at a width of 25 m, which provides a safe truck width (6.7 m wide for Caterpillar 777 size truck) to running surface width ratio of 1:3 with an additional 5 m for a berm and a drainage ditch. Maximum grade of the haul roads is 10%, except for the lower benches where the grade is increased to 12%, and the ramp width is narrowed to 15 m to minimize excessive waste stripping. The pit design criteria are presented in Table 16-2.

Mining levels are planned on 6 m benches with a safety catch bench every 12 m that are 7 m wide. Bench face angles are planned to be 66° with the overall inter-ramp angles at 45° as outlined in Table 16-1.

The final pit dimensions will be approximately 0.9 km long (east–west) by 0.7 km wide (north–south) and up to 115 m deep.

16.5 Dilution and Mining Losses

The Mineral Resource estimate is considered to be internally diluted by compositing and the subsequent block grade interpolation to 6 m x 6 m x 6 m blocks.

However, based on past reconciliation reports, the QP has also applied a 5% external dilution factor and a 3% metal loss factor in the Mineral Reserve estimates to better align with reported crusher tonnages and grades from the previously-mined portions of both deposits.

16.6 Mine Production Schedule

Pre-production activities are minimal with ore outcropping at surface and being delivered during month 1 of Year 1. Given that only one pit area is available for production the maximum tonnes per day mined was limited to 45,000 t/d which resulted in a maximum ore delivery rate of 18,000 t/d, which is well within the maximum capacity of the crushers at 30,000 t/d. Production was limited mainly to keep the maximum benches mined per month at approximately three, and the maximum number of required haul trucks at seven.

The average LOM stripping ratio is estimated to be 0.9:1 with 6.47 Mt of waste and 7.36 Mt of ore with 99% of the ore being oxide and only 1% being transitional. The total tonnes of ore and waste that will be mined during the 1.2-year Project life are summarized in Table 16-3. The annual ore production schedule by pit phase is shown in Figure 16-3.

Figure 16-1: Phase 4B.1 Pit Design

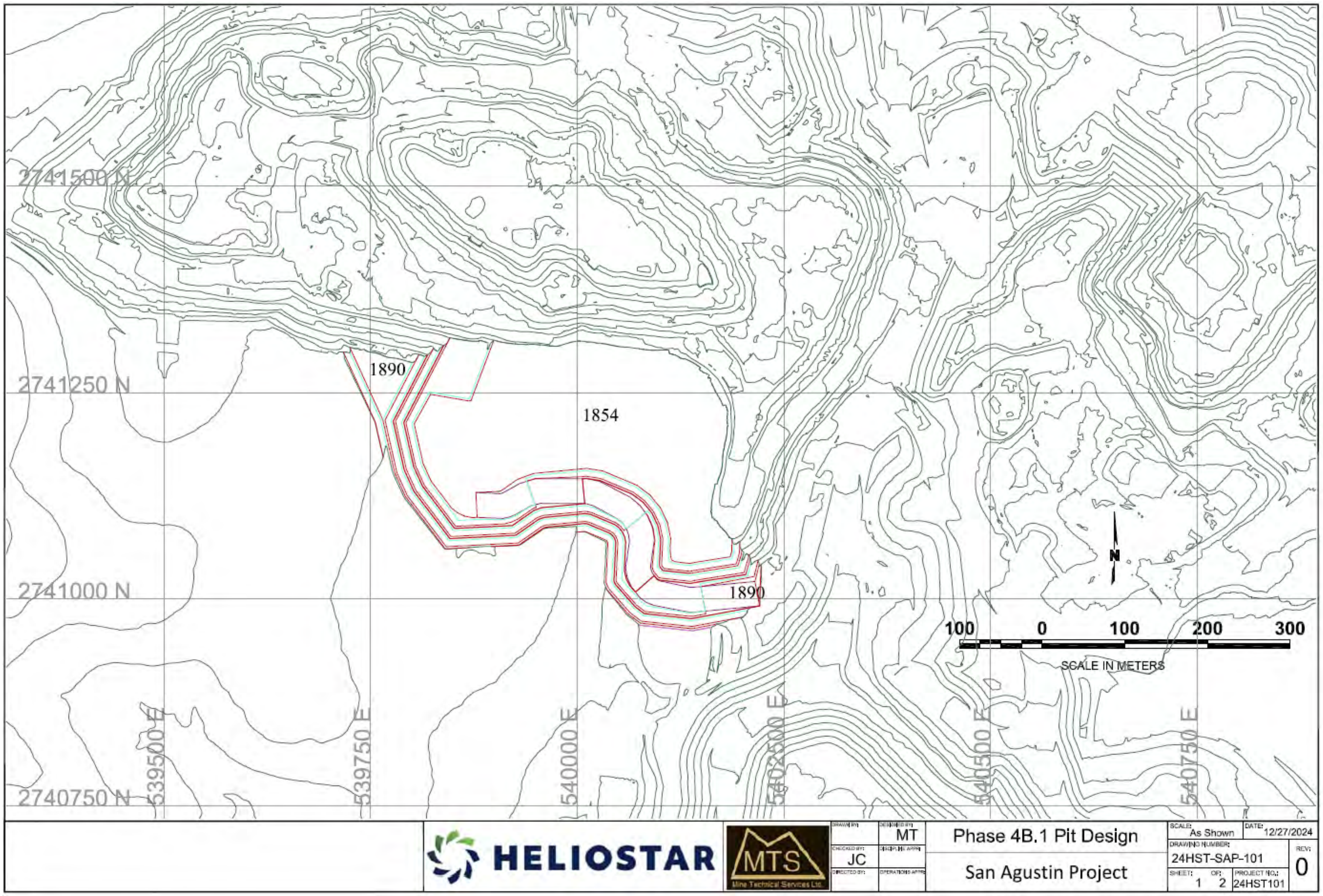


Figure 16-2: Phase 4B.2 Pit Design

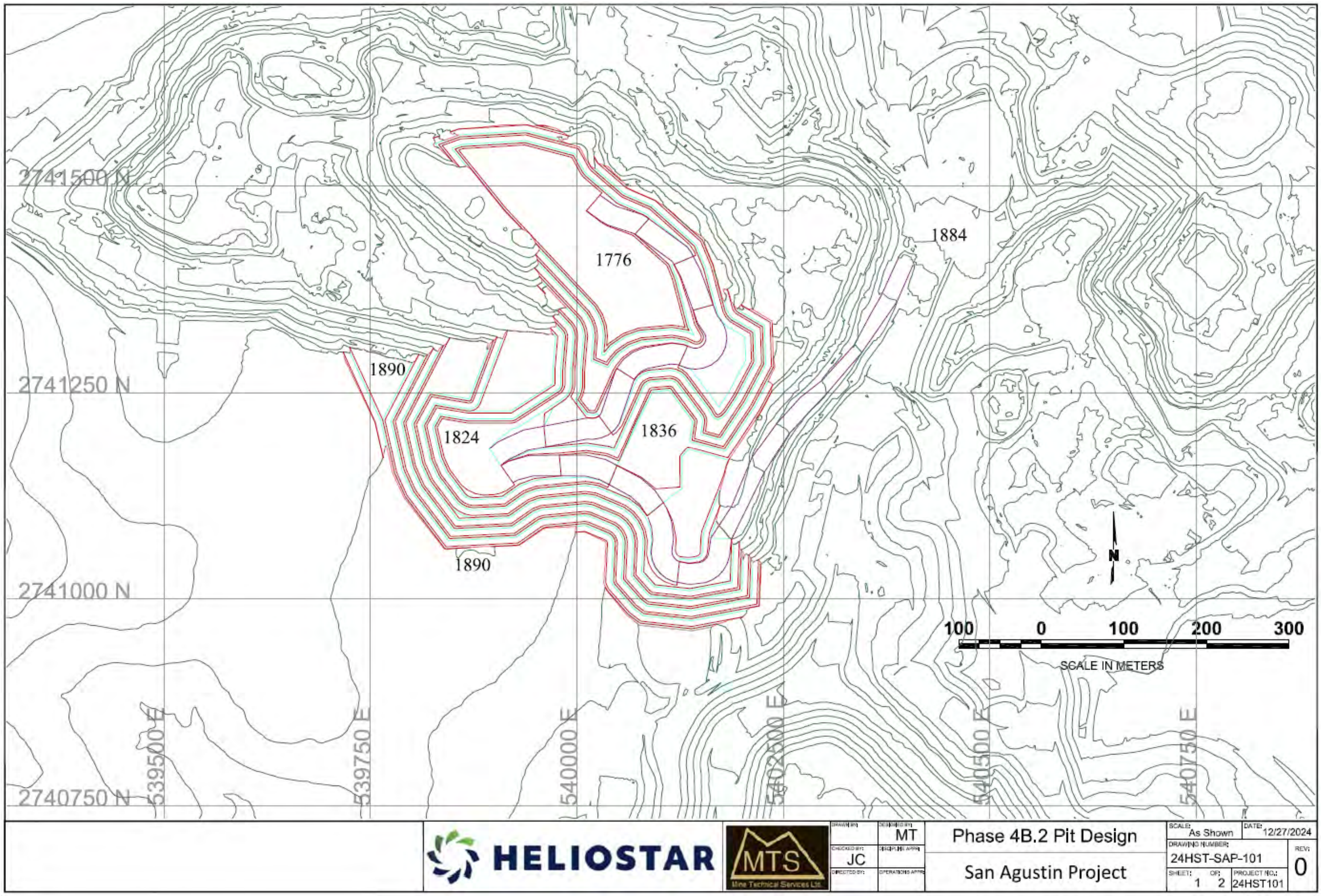


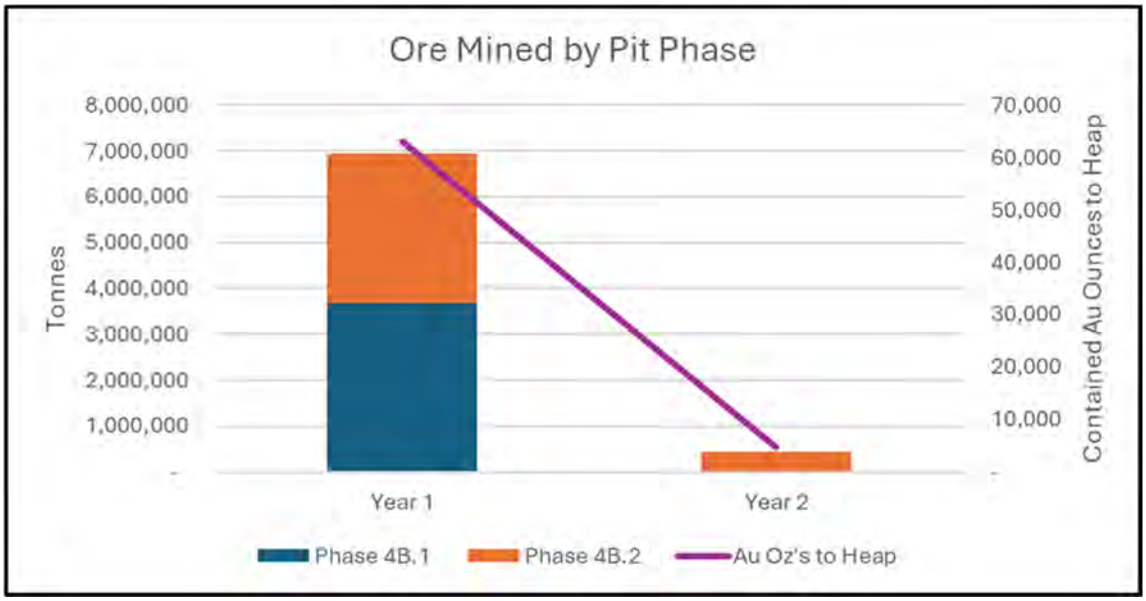
Table 16-2: Pit Design Criteria

Category	Unit	Value
Ramp widths	m	25
Ramp grade	%	10
Ramp widths pit bottom	m	15
Ramp grade pit bottom	%	12
Mining level heights	m	5

Table 16-3: Annual Mine Production Schedule Forecast

Item	Units	Year 1	Year 2	LOM
Mine Production				
Tonnes oxide ore mined	kt	6,890	392	7,281
Ag grade	g/t	15.96	21.31	16.24
Au grade	g/t	0.28	0.34	0.29
Tonnes transition ore mined	kt	47	30	76
Ag grade	g/t	29.71	33.90	31.35
Au grade	g/t	0.34	0.47	0.39
Fill	kt	2	0	2
Waste	kt	5,809	665	6,474
Total tonnes mined	kt	12,747	1,087	13,833
Total tonnes oxide/trans ore mined	kt	6,936	422	7,358
Ag grade	g/t	16.05	22.2	16.4
Au grade	g/t	0.28	0.35	0.29
Total alluvium	kt	2	0	2
Total waste	kt	5,809	665	6,474
Total tonnes mined	***kt***	***12,747***	***1,087***	***13,833***
Strip ratio	ratio	0.8	1.6	0.9
Other tonnes	kt	120	20	140
Total tonnes moved	***kt***	***12,867***	***1,107***	***13,973***
Process Production				
Tonnes ore to heap	***kt***	***6,936***	***422***	***7,358***
Au grade	g/t	0.28	0.35	0.29
Ag grade	g/t	16.05	22.20	16.40

Figure 16-3: Annual Ore Schedule Forecast



Note: Figure prepared by Hard Rock Consulting, 2024.

Figure 16-4 shows the annual waste production schedule by mine area and pit phase. The waste is delivered to two WRSF which are designs that backfill mined out portions of the pit on the north end. The WRSFs have a combined capacity of 6.5 Mt, which is sufficient to provide storage for all waste defined in the production schedule (see also discussion in Section 18.4).

16.7 Mining Equipment

As with the past operations at San Agustin the mining equipment is planned to be supplied by a mining contractor. All loading, hauling, drilling, basting and support services are planned to be included within the mining contract.

The previous contractor used Caterpillar 777 size haul trucks, Caterpillar 992 class front-end loaders, and support equipment. The current designs have been developed, assuming a similar sized mining fleet will be used for the LOM plan.

The haul profiles are calculated on a monthly basis and form the basis for the truck and loader fleet requirements for the LOM plan shown in Table 16-4. The haul profiles are also used to calculate the required diesel fuel requirements which is assumed to be supplied by the Owner along with the explosives.

Figure 16-4: Annual Waste Schedule

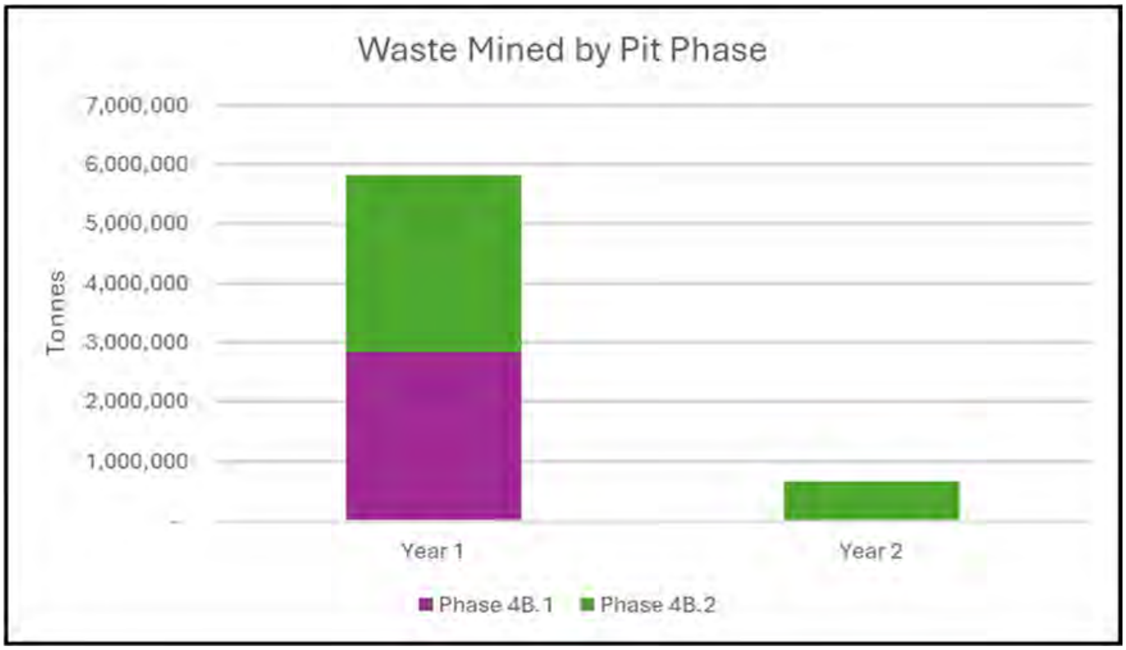


Figure prepared by Hard Rock Consulting, 2024.

Table 16-4: Mine Equipment

Item	Year 1	Year 2
Production Equipment		
100 t trucks	6	7
12 m^3 loaders	2	2
DM45 size drills	2	2
Pre-shear drills	1	1
Support Equipment		
Cat D8 dozer	2	2
Cat D9 dozer	2	2
16' grader	1	1
Water truck	1	1

17.0 RECOVERY METHODS

17.1 Introduction

The process plant is conventional and uses conventional, industry-proven technology. The plant was based on the test work summarized in Section 13. The heap leach has been in operation since 2017. Crushing and stacking were stopped late in September 2024.

The San Agustin Project is an open pit mine with a heap leach operation using a multiple-lift, single-use leach pad. There are two crushing plants at San Agustin: a 17,000 t/d plant and a 13,000 t/d plant. Prior to suspending crushing and stacking operations, the ore was crushed to P_{80} 22 mm, stockpiled, reclaimed, agglomerated, and stacked on the leach pad with a mobile conveyor stacking system. Up until early 2023, ore was processed at a total rate of approximately 30,000 t/d which had decreased starting in early 2023 and averaged approximately 20,000 t/d to the end of September 2024.

The stacked ore is leached with a low-grade cyanide solution and the resulting pregnant solution is processed through a 1,200 m^3/hr gravity-cascade carbon adsorption circuit to extract gold and silver. A small 250 m^3/hr Merril Crowe plant was added in November 2020 to treat pregnant solutions for some gold extraction and additional silver recovery from the overall circuit and was shut down in April 2024 due to low silver values in the pregnant leach solutions.

Loaded carbon is trucked to the La Colorada mine for carbon stripping and smelting. Precipitate from the Merrill-Crowe plant was shipped to La Colorada for smelting when the Merrill-Crowe plant was operating.

17.2 Plant Design Criteria

A summary of the process design criteria is presented in Table 17-1.

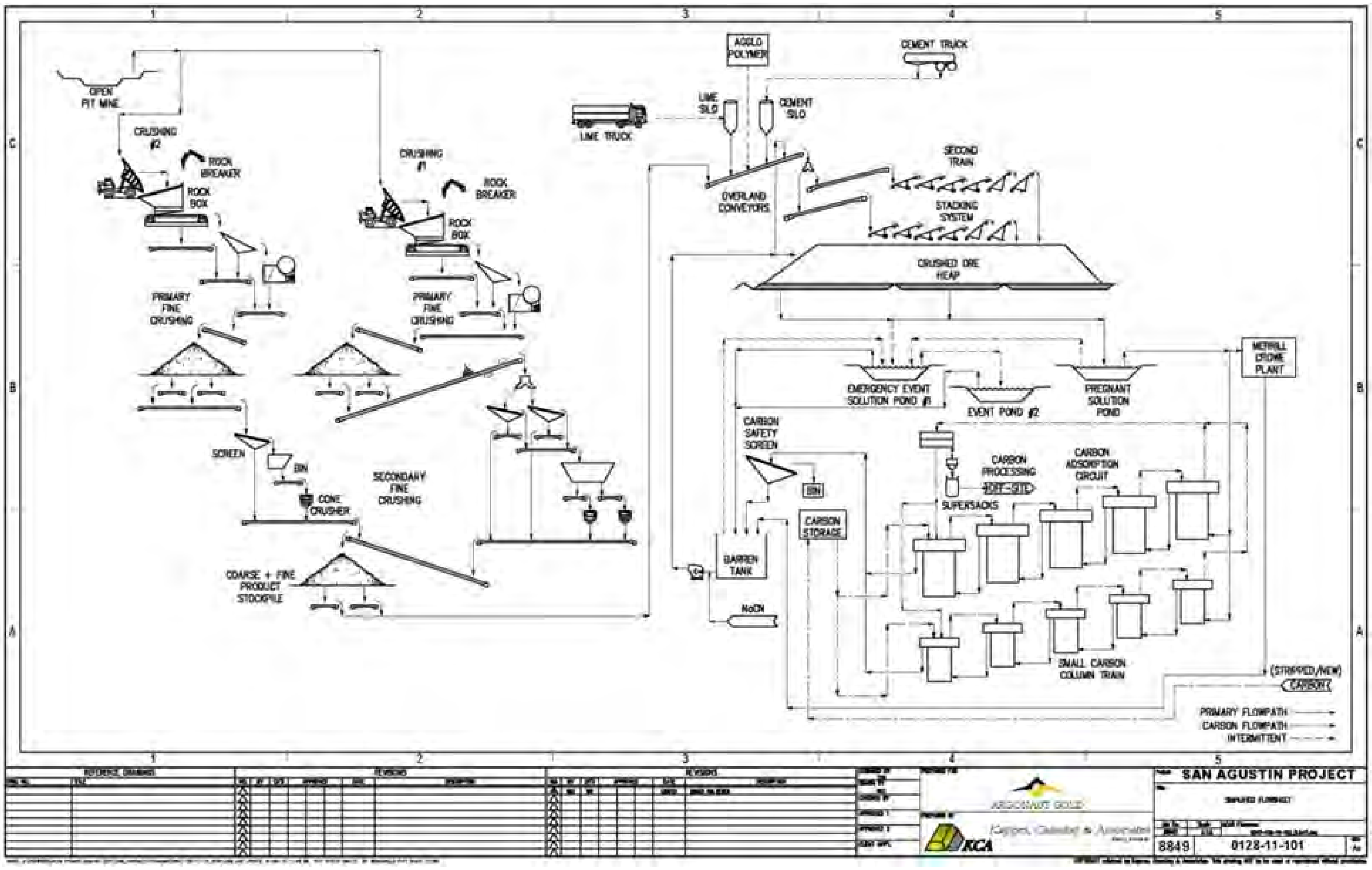
17.3 Process Flow Sheet

A simplified process flowsheet is included as Figure 17-1.

Table 17-1: Process Design Criteria Summary

Item	Design Criteria
Annual design tonnage	10,095,000 tonnes
Crushing production rate	30,000 tonnes/day average
Crushing operation	12 hours/shift, 2 shifts/day, 7 days/week
Crusher availability	75%
Crushing product size	80%; -22 mm
Conveyor stacking system availability	80%
Leaching Cycle, days (Total)	75
Design solution application rate	8 L/h/m^2
Heap lift height	8 m
Recovery plant type	Carbon adsorption with offsite carbon processing / Merrill-Crowe

Figure 17-1: Process Flowsheet



17.4 Plant Design

17.4.1 Crushing and Conveying

The crushing and conveying circuits include the following major equipment:

- 2 each primary jaw crushers (4460 jaw and 4450 jaw), 250 HP each;
- 3 each K500 secondary cone crushers, 500 HP each;
- 3 each double deck vibrating screens, 2.4 m width x 6.1 m length, 75 HP;
- 1 each 150 ton (136 t) lime silo and associated dust control and feeding equipment;
- 1 each 150 ton (136 t) cement silo and associated dust control and feeding equipment;
- 2 each overland conveyors, 42” (1.07 m) belt width;
- 47 each grasshopper transfer conveyors, 42” (1.07 m) belt width, 60 HP each;
- 2 each index feed conveyor, 42” (1.07 m) belt width;
- 2 each horizontal index conveyor, 42” (1.07 m) belt width;
- 2 each radial stacker with extendable stinger, 42” (1.07 m) belt width.

The Plant 1 crushing circuit includes a primary jaw crusher followed by secondary crushing with two cone crushers operated in open circuit to produce a final crush size of P_{80} 22 mm. A hopper in front of the primary crusher is fed directly by haul trucks, or by a front-end loader from stockpile. From the dump hopper, ore is fed across a vibrating grizzly with oversize being directed to the jaw crusher and the undersize directed to the primary crushed ore stockpile.

The primary crushed ore is reclaimed from the primary stockpile and conveyed to two double-deck vibratory screens. Screen oversize is combined and conveyed to a surge bin, which feeds two secondary cone crushers. The secondary crushing circuit operates in open circuit with the crushed product combined with the undersize material from the vibrating screens and directed to the crushed ore stockpile.

The Plant 2 crushing circuit is nearly identical to the Plant 1 crushing circuit, except the equipment is slightly smaller and the secondary circuit uses one only one vibrating screen and cone crusher rather than two.

The two streams of crushed product join at a common crushed product stockpile. Ore from the crushed product stockpile is conveyed 0.5 km to the heap leach pad on two overland conveyors and then onto the heap leach pad with a system of 47 grasshopper field conveyors and stacked in 8 m high lifts with index conveyors and mobile radial stackers. Two separate sets of stacking equipment were used when stacking at 30,000 t/d.

Prior to April 2021, the ore was belt-agglomerated with 2 kg/t to 3 kg/t cement (2019 excluded) and 5.6 kg/t lime as required for improved percolation. Since April 2021, an agglomeration polymer (DustTreat) has been used in place of cement at an addition rate that started at 0.05 kg/t and was at 0.0065 kg/t as of September 2024. The lime addition during 2024 is estimated at approximately 7.5 kg/t.

17.4.2 Heap Leaching

The existing heap leach pad is a multiple-lift, single-use type pad designed with a total capacity of 64 Mt of ore. As of end of September 2024, a total of 61Mt has been stacked, leaving 3 Mt of remaining capacity. Heliostar plans to add two small leach pad extensions, one into the northwest, which is currently 75% complete and a southeast pad in 2026, adding an additional 15.5 Mt capacity.

Leach solution containing 350 ppm to 450 ppm NaCN is pumped from the barren tank and applied to the ore at an application rate of 8 L/hr/m^2 over a 75 day leach cycle. The cyanide leach solution percolates through the ore and is collected on the geomembrane liner at the base of the heap. A series of drainage pipes below the ore and above the liner collect gold and silver-bearing pregnant leach solution (PLS) which flows by gravity to the PLS pond.

The heap leach pad is constructed on a prepared surface including a compacted subgrade lined with 0.3 m of low permeability soil. The prepared surface is covered with a single layer of 1.5 mm linear low-density polyethylene (LLDPE) plastic liner, overlain with 0.6 m of drainage gravel embedded with perforated drainage pipes all graded to drain to the PLS pond.

The PLS pond and the event ponds are double lined with 1.5 mm HDPE plastic liners and incorporate a leak detection system. Lined spillways located between the ponds allow for the capacity of adjacent ponds to be used in the event of upset conditions (for example, large storms or extended pump shutdowns in the pregnant solution pond).

The PLS pond is designed to have sufficient capacity for a minimum operating volume for a 24 hour period, capacity for an 8 hr pump shutdown or leach pad solution draindown, and capacity to contain inflows generated by average rainfall events over the leach pad footprint, and capacity to maintain the design freeboard.

17.4.3 Adsorption Circuit

PLS is pumped from the PLS pond to the carbon-in-column (CIC) adsorption circuit with submersible pumps. The 1,200 m^3/hr CIC circuit consists of two trains of five cascade-style adsorption columns each. The columns in the larger train have a holding capacity for 14 t of activated carbon while the columns in the smaller train have a carbon holding capacity of 1.5 t.

Carbon in the CIC is pumped counter-current to the solution flow. Carbon transfer between columns is accomplished with recessed impeller pumps. Loaded carbon from the lead adsorption columns is pumped to a dewatering screen and fed into 500 kg super-sacks for transport to the carbon processing and gold recovery plant at Heliostar's La Colorada Mine. Following adsorption of the gold and silver values onto carbon, the barren solution flows by gravity to the barren solution tank, where the cyanide concentration is adjusted and is then pumped back to the heap leach pad to continue the heap leaching process.

17.4.4 Merrill-Crowe

In an effort to increase silver recovery and to lower overall silver in the leaching circuit, a small stand-alone Merrill-Crowe plant was installed in November 2020 to treat a 250 m^3/hr stream of PLS by zinc precipitation and the resulting precipitate was shipped to La Colorada for smelting. This plant was shut down in April 2024 due to low silver values in the pregnant leach solutions.

17.4.5 Carbon Treatment

The carbon treatment process, including desorption, acid washing and thermal regeneration, is performed at Heliostar's La Colorada Mine. There is sufficient spare capacity at La Colorada to handle the loaded carbon from San Agustin.

The metals are finally extracted by electro-winning from desorption and the resulting sludge is retorted for mercury removal and smelting into doré bars. Stripped and regenerated carbon is shipped back to San Agustin for reuse in the process.

17.5 Energy, Water, and Process Materials Requirements

17.5.1 Energy

A description of the power supply is presented in Section 18. The average Project electrical power consumption is 5,331 kW, with a total attached power of 5,733 kW.

17.5.2 Water

Process water is recirculated within the operations for ore leaching. Additional make-up water is obtained though authorizations from the CONAGUA.

The make-up solution (fresh + recycled) required by the heap leach system is met from several potential sources including solution previously stored in the emergency event solution ponds and well water and/or water from pit dewatering.

Process water is sourced from wells, and stored in either a tank or water ponds. Water from the storage tank is gravity fed to the process plant.

Additional details on water are presented in Section 18.

17.5.3 Consumables

The following consumables are required in the process:

- Synthetic polymer (DustTreat DC9119E); 0.0065 kg/t;

- Sodium cyanide; 0.8 kg/t;
- Lime; 7.5 kg/t;
- Carbon; forecast at 4% carbon fines loss;
- Antiscalant; 10 ppm barren and pregnant.

18.0 PROJECT INFRASTRUCTURE

18.1 Introduction

The San Agustin Project has well established infrastructure in place including:

- An open pit mine;
- Explosive storage;
- Crushing plant;
- Cyanide heap leach pad;
- Carbon gold recovery plant;
- Merrill-Crowe gold recovery plant;
- Reagent storage;
- Waste rock storage facilities;
- A truck shop and warehouse;
- A sample preparation laboratory and atomic absorption gold analysis laboratory;
- Offices for administration, operations, and technical services;
- Change and dining facilities;
- Water tanks;
- Various Project access roads.

An infrastructure layout plan is included as Figure 18-1.

18.2 Road and Logistics

The current access and transport routes to the Project are discussed in Section 5.

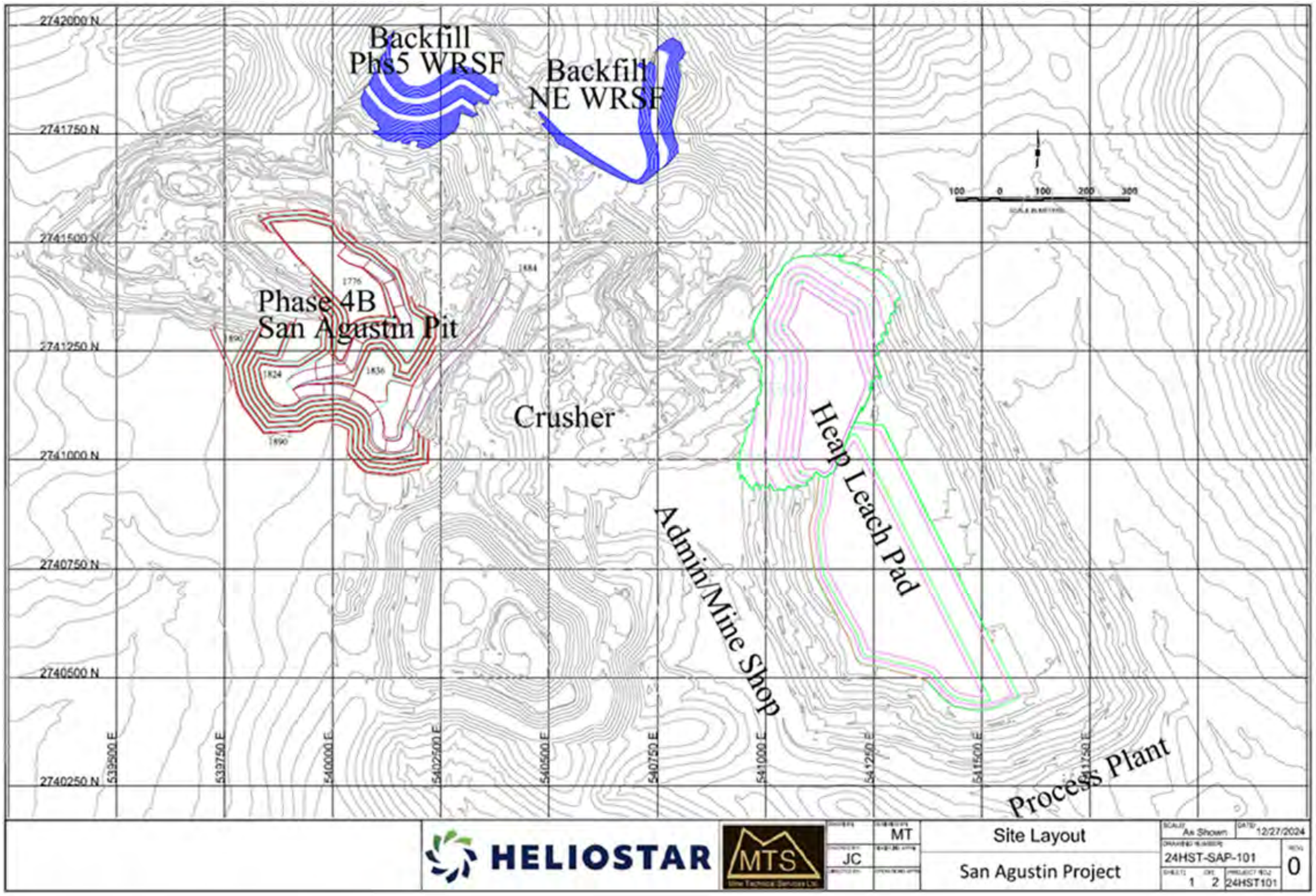
18.3 Stockpiles

The only planned stockpile for the LOM plan is the crusher stockpile, which will be used to balance consistent ore feed to the crusher.

18.4 Waste Rock Storage Facilities

For the LOM plan, there are two WRSFs planned. The Backfill Phs5 WRSF has a capacity of 3.7 Mt and the Backfill NE WRSF has a capacity of 2.9 Mt. Together, the WRSFs have a combined capacity that is adequate to receive all of the waste within the LOM plan. The WRSF locations were included in Figure 18-1.

Figure 18-1: Infrastructure Layout Plan



18.5 Tailings Storage Facility

No tailings storage facilities are required for the LOM plan.

18.6 Water Supply

Water for the Project is pumped directly from water wells to an event pond or alternatively to a water tank with a volume of approximately 42,000 m^3.

Water supply is predominantly for in-process use with minor volumes for drilling, dust control, construction, and potable uses.

The dust control system includes a booster pump at the secondary raw water tank.

18.7 Water Management

Stormwater is managed through facility-specific diversion ditches, as necessary.

18.8 Camps and Accommodation

There is no camp site at the San Agustin Mine; all employees and contractors live off-site in nearby towns.

18.9 Power and Electrical

Power is supplied by the large state-owned electric company, Comisión Federal de Electricidad (CFE), via a 34.5 kV power line. A 6,000 kVA transformer decreases voltage from 34.5 kV to 4,160 V.

Power is distributed on-site by 4,160 VAC (3-phase, 60 hertz) electrical lines. Power is stepped-down to 480 volts and 120 volts accordingly where needed. All motors at the Project are <447 kW (600 hp) and therefore use 480 VAC. Electrical outlets, control systems, and lighting have the option of using 120 or 220 VAC.

The average Project electrical power consumption is 5,331 kW, with a total attached power of 5,733 kW.

The electrical system has a backup power plant with three 480 VAC (three-phase, 60 hertz) generators near the crushing system.

18.10 Fuel Supply

Fuel supplies for mining, processing and other requirements are supplied by contractor from Durango, Mexico. Diesel fuel is stored on site in a 250,000 L storage tank, and there is a gasoline storage facility of 15,000 L capacity.

19.0 MARKET STUDIES AND CONTRACTS

19.1 Market Studies

Gold markets are mature: global markets with reputable smelters and refiners located throughout the world. Markets for doré are readily available.

19.2 Commodity Price Projections

Assumed metal prices for estimation of Mineral Reserves took into consideration current market, historical prices, values used in other recent projects, and forecasts in the public domain. On 30 November 2024, according to the London Bullion Market Association (LBMA), the average daily AM Fix gold price for 2024 was US$2,364/oz. The three-year and five-year rolling average prices through the end of 30 November 2024 are US$2,020/oz and US$1,920/oz, respectively. Although the metal prices can be volatile, a gold price of US$1,900/oz and a silver price of US$23/oz were used for estimation of Mineral Reserves to reflect a long-term conservative price forecast.

Figure 19-1 presents the historical gold prices. As can be seen in the graph gold prices have been on a steep upward trend during 2024 and have reached record highs. Figure 19-2 presents the historical silver prices, which have also been on a steep upward trend during 2024 but have not reached the historic highs in 2011.

Higher metal prices of US$2,150/oz Au and US$26.00/oz Ag were used for the Mineral Resource estimates to ensure the Mineral Reserves are a sub-set of, and not constrained by, the Mineral Resources, in accordance with industry-accepted practice.

19.3 Contracts

San Agustin was a contract mining operation with an Owner-operated process facility that is currently on care and maintenance. With restart of operations the mining, explosives and blasting and leach pad construction contracts will have to be negotiated. Contracts are entered into with third parties, where required. The principal contracts in place at the Report effective date included:

- Diesel and fuel: Mexico S Comercial S.A. de C.V.;
- Lime: Caleras De La Laguna S.A. de C.V.;
- Cyanide: Cyplus Idesa, Sapi de C.V.;
- Security Service: Seguridad Privada Profesional Duna S.A. de C.V.

Contracts are negotiated and renewed as needed. Contract terms are typical of similar contracts in Mexico that Heliostar is familiar with.

Figure 19-1: Historical Gold Prices

Note: Figure prepared by Hard Rock Consulting, 2024, based on London Bullion Market Association prices.

Figure 19-2: Historical Silver Prices

Note: Figure prepared by Hard Rock Consulting, 2024, based on London Bullion Market Association prices.

19.4 QP Comments on Item 19 "Market Studies and Contracts"

The QP notes the following:

- The doré to be produced by the Project would be readily marketable;
- The QP reviewed commodity pricing assumptions, marketing assumptions and the current major contract areas, and considers the information acceptable for use in estimating Mineral Resources and Mineral Reserves and in the economic analysis that supports the mine plan and Mineral Reserves.

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

20.1 Introduction

The mining operations were put into temporary closure after the QP's site visit, and the impacts of the temporary closure are not discussed in any detail in this section.

The QP notes that during temporary closure the environmental monitoring program is continued. There would be significant impacts on stakeholders, such as employees and local communities, during temporary closure.

20.2 Baseline Environmental Studies

Baseline studies were initiated in 2014 as part of the environmental impact assessment process required to permit mining activities. Baseline studies included aspects such as water, climate, hydrology, soil and geomorphology, geology, biodiversity, mining waste geochemistry (waste rock and leached ore), and socio-economic aspects.

Environmental baseline studies were conducted over a study area of 8,935 ha. The social-economic study considered the nearby communities of San Agustin, San Lucas de Ocampo, El Resbalon and San Juan del Rio.

Water sampling characterization was conducted for 13 monitoring points (eight underground and five surface), including the water well that serves as potable water sources for San Agustin community and the potable water well for the Las Cruces community.

The area is classified as semi-arid, with rains occurring primarily in summer. Agriculture and grazing, as well as wind erosion, have caused impacts to the soil fertility and organic content. Vegetation is classified as live oak forest and desert brush. The number of species of flora and fauna was relatively low, and it is not considered to be an area of high biodiversity. No threatened or endangered species of flora or fauna were predicted to be impacted by the mining operations. The mining operations are not within any federally protected or special status areas.

20.3 Waste Management and Environmental Monitoring Programs

The operations generate the following mining wastes:

- Waste rock from the open pit mining operations;
- Spent ore associated with the mineral processing using the heap leach system;
- Spent activated carbon from the hydrometallurgical processing.

Because San Agustin is a heap leaching operation, no tailings are generated that require management and disposal. The operations produce wastes classified as hazardous, non-hazardous, and regulated wastes.

Routine environmental monitoring and waste management practices are carried out to comply with environmental permit for the mine. The mining wastes characterization and recent environmental monitoring findings are described in the following sub-sections.

20.3.1 Mining Wastes Characterization

Geochemical characterization evaluated the environmental stability of waste rock and leached ore. The program focused on determining the potential for generation of acid rock drainage (ARD) and metal leaching (ML).

During 2014, a geochemical characterization program was conducted to evaluate the environmental stability of the San Agustin Project waste rock and leached ore. The program focused on determining the potential for the generation of acid rock drainage and metal leaching. One sample of leached ore and 14 samples of waste rock were analyzed to determine their potential for acid rock drainage and metal leaching. The program for waste rock analysis was conducted following Mexican regulation NOM-157-SEMARNAT-2009, which requires analyzing each sample (dry base) for 10 elements, including antimony, arsenic, barium, beryllium, cadmium, chromium, mercury, silver, lead, and selenium. If the total concentration of any element is above the NOM-157 parameters, a mobility procedure test must be applied to the sample. The spent ore was characterized using the NOM-155-SEMARNAT-2007, which requires analysis of analysis of metals leaching using meteoric water per NOM-052-SEMARNAT-2005 and potential for acid rock drainage.

Based on the 2014 test results, most waste rock samples were classified as non-acid-generating with some metals concentrations exceeding the total concentration permissible limits (for example, arsenic, cadmium, and lead) but not the soluble permissible limits of the Mexican regulatory guidelines. Waste rock sample DAC 09 was classified as acid-generating; no information was provided regarding the lithology of the sample. The spent ore sample was classified as acid-generating; however, the soluble metals concentrations did not exceed the Mexican regulatory guidelines.

During operations, Mexican regulations require the analysis, on an annual basis, of a composite sample based on two samples per month of mining waste (waste rock and leached ore) until the end of the Project life. The most recent waste rock composite sample was collected in June 2023. The results for total metals indicated exceedances of antimony, arsenic, and lead, but none of the static leach test results indicated exceedances per the NOM-157-SEMARNAT-2009 permissible limits. The result for acid-base accounting indicated that the sample was acid-generating. The spent ore sample collected in June 2023 was analyzed following the NOM-155-SEMARNAT-2007 criteria for gold and silver heap leach operations. The results indicated that the material is not acid-generating and that leachable metal concentrations did not exceed permissible limits.

Similar to the waste rock testing (NOM-157), the NOM-155 leach test was a static test using meteoric water.

The QP notes that the mining wastes characterization information provided does not show how a representative sample is obtained. Mexican regulations have higher permissible limits than international industry standards, and there is no guidance in Mexican regulations regarding a complete geochemistry study. Some of the sample results that are classified as not acid-generating would be classified as acid-generating under other jurisdictions. In Mexico if there is no calcium carbonate detected, then the ratio of potentially acid-neutralizing versus acid-generating is not calculated, even if an acid-generating material is detected. The QP's opinion is that the material should be considered as potentially acid-generating. The QP also notes a concern with the laboratory reports not including detection limits on all analyses.

20.3.2 Hazardous and Non-Hazardous Waste Management

Non-hazardous waste from San Agustin is managed in agreement with the municipal service. Trash containers are strategically located on the mine premises, promoting the recycling of wood, cardboard, plastics, and scrap metals. Current buyers of recycled materials from the San Agustin mine also recycle industrial wastes such as conveyor belts, geomembrane scraps from leach pad liner and air filters. Current buyers are approved by the state government to recycle the different materials mentioned.

Hazardous waste management infrastructure is included for the operation to collect, transfer and store the different types of waste that will be generated by the operation. Minera Real del Oro is registered with SEMARNAT as a hazardous waste generator. Hazardous waste must be identified using specific labels and containers must be specific for each type of waste. Storage of any hazardous waste must not exceed three months in this warehouse. Minera Real del Oro uses a SEMARNAT-authorized company for transport and disposal of hazardous waste, and the transport company issues a manifest document for transport and disposal activities.

20.3.3 Water Characterization

Sampling is carried out to monitor surface water and groundwater quality. The following sections summarize monitoring locations and sampling results.

20.3.3.1 Surface Water Monitoring Locations

Surface water quality is monitored at upstream and downstream locations from the mining operations indicated in Figure 20-1, and as described in Table 20-1. Regional surface water flow is from the northwest to the southeast; however, within the Project area the surface water flow direction is determined by the local topography and can vary widely from the regional direction. At the mine site there are no permanent surface water bodies; stream flows are only temporary during the rainy season.

Figure 20-1: Surface Water Monitoring Locations

Note: Figure prepared by Stantec, 2024.

Table 20-1: Surface Water Monitoring Points and Monitoring Frequency

<table>
<tr><th>Monitoring Point Identifier</th><th>Description</th><th>Frequency</th><th>Mexican Regulation</th><th>Required Monitoring Parameters</th></tr>
<tr><td>ASA1, ASA2</td><td>Upstream monitoring point. Ephemeral surface water stream in the project area</td><td>Biannual</td><td rowspan="2">NOM-001-SEMARNAT-2021</td><td rowspan="2">Temperature, oil & grease, total suspended solids, BOQ, total organic carbon, total nitrogen, total phosphorus, Helminth eggs, Escherichia Coli, fecal enterococci, pH, true color, As, Cd, CN, Cu, Cr, Hg, Ni, Pb, Zn</td></tr>
<tr><td>Wastewater treatment plant</td><td>Discharge from the wastewater treatment plant</td><td>Quarterly</td></tr>
<tr><td>Mine water discharge, San Lucas creek</td><td>Mine water discharge</td><td rowspan="2">Quarterly</td><td rowspan="2">CE-CCA-001/89</td><td rowspan="2">Al, Sb, As, B, Be, Cd, CN, Cl, Cu, fecal coliforms, electrical conductivity, pH, Fe, F, floating matter, Ni, Pb, Se, total dissolved solids, total suspended solids, sulfate, Zn, Hg, nitrates, nitrites</td></tr>
<tr><td>Mine water from Phase 3 and Phase 6 development areas</td><td>Water for irrigation and human consumption in the Las Cruces and San Agustin communities</td></tr>
<tr><td>Dining room San Agustin</td><td>Dining room restrooms</td><td>Annual</td><td>NOM-127-SSA1-2021</td><td>pH, Pb, Zn, Fe, As, Cd, Cu, total Cr, Mn, Hg, Na, total cyanide (CN), nitrates, nitrites, ammoniacal nitrogen, total hardness, sulfates, Cl, F, active substances for methylene blue (detergents), free residual chlorine, total dissolved solids, total coliforms fecal coliforms, Escherichia Coli</td></tr>
</table>

In October 2023, the San Agustin mine notified CONAGUA of their intention to discharge water to the environment at the location Mine Water Discharge (Figure 20-1). In response, CONAGUA required that the water quality of the discharges comply with ecological standards based on agricultural and livestock usages (SEMARNAT, 1989). Additionally, the mine must monitor the locations listed in Table 20-1. CONAGUA required Minera Real del Oro to monitor the water quality at the site but has not specified the frequency of monitoring nor reporting of results. In lieu of monitoring specifications from CONAGUA, Minera Real del Oro conducts monitoring in accordance with Mexican regulations (Table 20-1).

Although the mine is not required to monitor the San Lucas Creek discharge point, it is doing so to assess how the water quality discharged at the Mine Water Discharge point varies along the creek within the mine area. The mine monitors the water quality at this location for internal purposes.

20.3.3.2 Mine Water Discharge

The mine discharged water to the environment from October 2023 through August 2024; however, the discharge was halted when it was discovered that certain parameters exceeded the ecological standards. The parameters that exceeded the permissible limits at the Mine Water Discharge point included cadmium, fluoride, electrical conductivity, total dissolved solids, total suspended solids, and sulfates. However, parameters such as antimony, boron, beryllium, chlorides, electrical conductivity, iron, fluorides, selenium, mercury, nitrates, and nitrites were not consistently reported, and some sample results did not include these parameters.

20.3.3.3 Wastewater Discharge

Discharge from the wastewater treatment plant exceeded Mexican surface water discharge NOM-001-SEMARNAT-2021 permissible limits in 2024 for total nitrogen (first quarter) and fecal coliform (third quarter).

20.3.3.3.1 Upstream and Downstream Monitoring Points

The mine monitors upstream (ASA1) and downstream (ASA2) surface waters mine to evaluate if the mine activities affect water quality. The mine must comply with the permissible limits for wastewater discharge NOM-001. The 2023 and 2024 results indicate that all the parameters at the upstream location (ASA1) were within the permissible limits, except for the chemical oxygen demand. ASA2 was not monitored in 2024 because it was dry during the sampling event.

20.3.3.3.2 Open Pit Phases 3 and 6 Surface Water Monitoring

Additional surface water sampling at the pit lake was conducted during Phase 3 and Phase 6 of the pit mining operations (Figure 20-1) for internal control purposes. These sampling points are not subject to Mexican surface water discharge standards; however, CONAGUA has required compliance with ecological criteria. When the pit water was previously discharged to the environment, the discharge was monitored at the Mine Water Discharge Point.

The 2023–2024 monitoring results from the Phases 3 and 6 locations indicate that parameters exceeding the ecological standards include cadmium, copper, fluoride, lead, total dissolved solids, total suspended solids, sulfates, zinc, and mercury. Some parameters, such as aluminum, antimony, boron, beryllium, chloride, electrical conductivity, iron, fluoride, nickel, selenium, and total dissolved solids, were not consistently reported. These results are for internal use only.

20.3.3.3.3 Dining Room San Agustin

The San Agustin Mine also monitored the dining room water supply Dining Room San Agustin point. In 2023 and 2024, the mine has been using water from the pit for sanitary purposes, which did not include cooking or drinking. The 2023 results indicate that water quality generally met the NOM-127 standards, with the exceptions of cadmium, fluoride, and fecal coliform standards. In

2024 water quality results exceeded the NOM-127 standards for total chloride, fecal coliforms, fluorides, and lead.

20.3.3.4 Groundwater Monitoring

The mine currently monitors groundwater quality at the locations indicated in Figure 20-2 and described in Table 20-2. CONAGUA has issued an official document stating that the mine must comply with Mexican standards for drinking water (NOM-127-SSA1-2021) and NOM-155-SEMARNAT-2022, which establishes environmental protection requirements for gold and silver mineral leaching systems. While NOM-155 provides guidelines and a list of groundwater parameters to be monitored, it does not establish permissible limits. Therefore, the monitoring results were compared to NOM-127 standards. Although CONAGUA did not specify the monitoring frequency, the mine conducts the monitoring according to Table 20-2.

20.3.3.4.1 Upstream and Downstream Monitoring Wells

The 2023 groundwater monitoring results for the upstream well PM2-SA were within the limits set by NOM-127, except for fecal coliforms, which exceeded NOM-127 standards in October 2023. However, the laboratory method detection limits (MDL) for cadmium, fecal coliforms, nickel, lead, and chromium were higher than the NOM-127 standards in the May 2023 monitoring results. This well was dry in 2024, so no sampling was conducted during this period.

The QP notes that total coliforms are not typically found in groundwater and could be indicative of a migration of contamination due to a poor well seal at surface. The QP also notes that upgradient and downgradient groundwater flow directions have not been established. The terms “upstream” and “downstream” are commonly used in Mexico but cannot be assumed to correlate to groundwater flow directions.

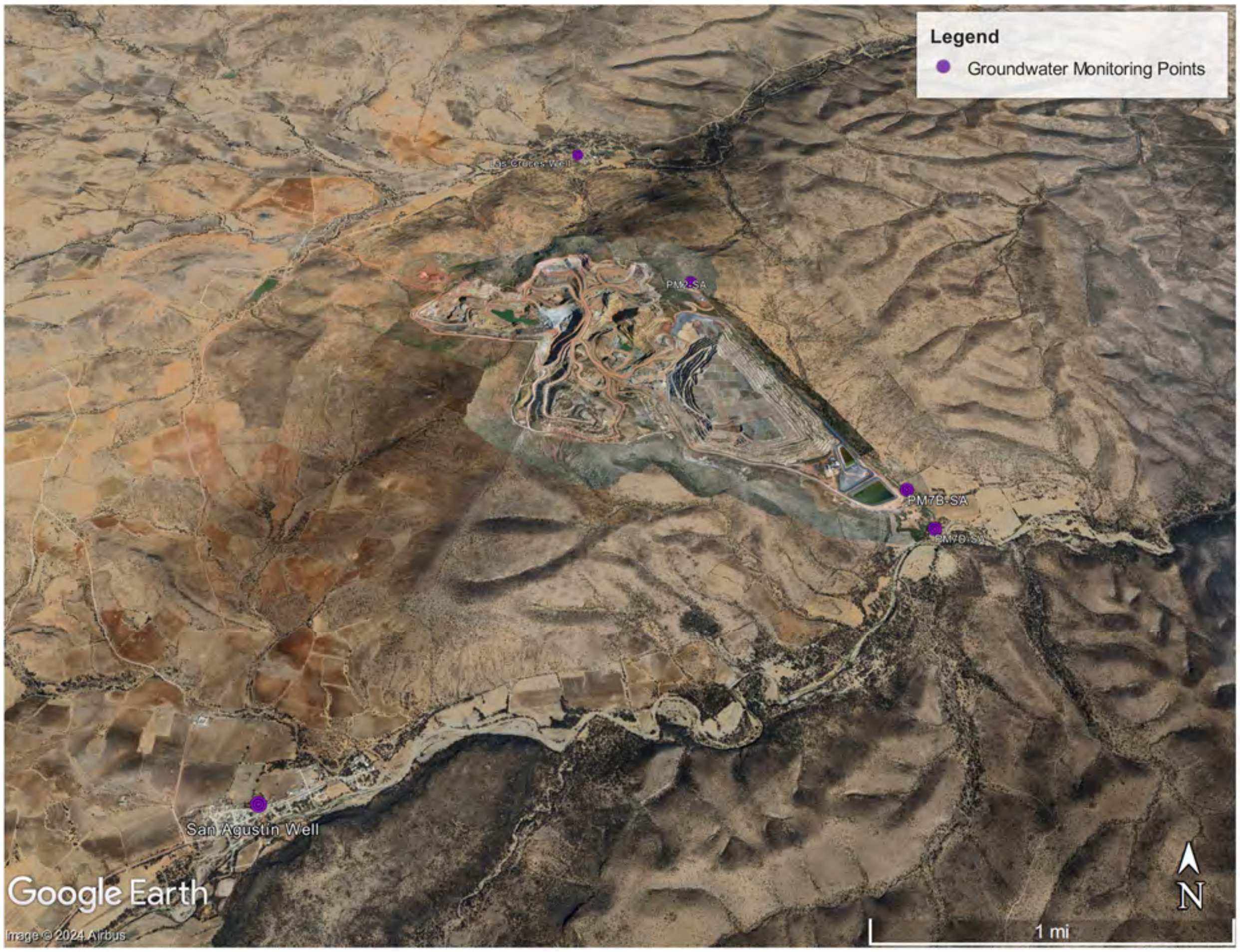
The 2023 monitoring results for the two wells (PM7B-SA and PM7D-SA) used to monitor downstream groundwater quality exceeded the NOM-127 permissible limit for cadmium.

The 2024 monitoring results for the two wells (PM7B-SA and PM7D-SA) exceeded the NOM-127 standards for cadmium, fecal coliforms, lead, and sulfate. However, the laboratory method detection limits (MDL) for cadmium, fecal coliforms, nickel, lead, and chromium were higher than the NOM-127 standards.

20.3.3.4.2 Las Cruces and San Agustin Wells

The San Agustin mine is actively monitoring groundwater wells in the towns of San Agustin and Las Cruces. The 2023 results indicate that the wells in both towns generally met the NOM-127 standards, with the exceptions of fluoride, fecal coliform, and manganese (only Las Cruces). Notably, only the San Agustin well exceeded the fecal coliform limit, significantly surpassing the NOM-127 threshold. Although other fecal coliform results were below the laboratory's MDL, it is important to note that the MDL itself was higher than the NOM-127 limit.

Figure 20-2: Groundwater Monitoring Wells Locations



Note: Figure prepared by Stantec, 2024.

Table 20-2: Groundwater Monitoring Points, Required Parameters, and Frequency

Monitoring Point	Description	Frequency	Mexican Regulation	Required Monitoring Parameters
PM2-SA, PM7B-SA, PM7D-SA	Upstream monitoring point below the powder magazine	Biannual	NOM-155-SEMARNAT-2007	pH, total CN, As, Cd, Cu, Cr, Hg, Ni, Pb, Zn, Ca, Na, K, total dissolved solids, sulfate, nitrates, nitrites, total hardness, fecal coliforms
Las Cruces Well and San Agustin Well	Water for irrigation and human consumption in the Las Cruces and San Agustin communities	Annual	NOM-127-SSA1-2021	pH, Pb, Zn, Fe, As, Cd, Cu, total Cr, Mn, Hg, Na, total CN, nitrates, nitrites, ammoniacal nitrogen, total hardness, sulfates, Cl, F, active substances for methylene blue (detergents), free residual chlorine, total dissolved solids, total coliforms, fecal coliforms, *Escherichia Coli*

In 2024, the results for the wells in San Agustin and Las Cruces generally met the NOM-127 standards, with exceptions for fluoride and chloride. Similar to the previous year, while other fecal coliform results were below the laboratory's MDL, the MDL remained higher than the NOM-127 limit.

20.3.4 Air and Noise Emissions

Exhaust, dust and noise emissions are present at San Agustin mine. Machinery and equipment operation results in machine exhaust and noise emissions. Ore and waste rock haulage (trucks and belts), road operations, crushing, and vegetation clearing are the main activities that generate fugitive dust emissions. Total suspended particles are monitored by a certified laboratory to assure the levels comply with the Official Mexican Standard NOM-035-SEMARNAT-1993.

The air sampling plan was based on potential sources of pollutants and the surroundings. The prevailing wind conditions and their strength were also taken into account to ensure the accurate and reliable placement of the measurement equipment. The following locations were selected as sampling points for suspended PM10 particles in the ambient air:

- Point #1: Northwest side, next to the main gate. Entrance and exit for vehicles and trucks;
- Point #2: Northeast side, below powder magazine #5. Dirt road, vehicle entrance;
- Point #3: Southwest side, next to the supplier curve road. Dirt road, mountainous area;
- Point #4: Southeast side, next to the monitoring well. Entrance and exit for vehicles

The 2023 and 2024 testing for total suspended particulates, PM10 particulates and combustion gases were all within regulatory limits. Air quality results for the fourth quarter (Q4) of 2024 were not provided, so the 2024 data only covers the first three quarters. The Q4 air test is scheduled to take place in mid-December 2024. During the site visit by the QP, visible dust was observed at the fines stockpile and there was dust covering the areas adjacent to the fines stockpile.

The San Agustin Mine is required to monitor noise levels from machinery and equipment operations both day and night, in accordance with NOM-081-SEMARNAT-1994. This regulation mandates that noise monitoring be conducted semi-continuously at each point, recording 35 measurements (approximately one measurement every five seconds). Calibration of the sound level meter must be performed before and after each measurement in each critical area. In 2023, the noise levels recorded during the day and night were within the permissible limits of 68.0 decibels and 65.0 decibels, respectively. At the Report effective date, the 2024 noise measurements were scheduled for mid-December 2024.

20.3.5 Water Management

The San Agustin mine is a zero-discharge operation, using lined process water ponds and ditches to convey cyanide solutions to and from the heap leach pads. Stormwater is managed through facility-specific diversion ditches.

Sewage water is treated using septic tanks that meet the specification of the Official Mexican Standard NOM-006-CNA-1997. The effluent of the septic tanks is analyzed according to the Official Mexican Standard NOM-001-ECOL-1996, which establishes the permissible discharge parameters limits.

Process water is recirculated within the operations for ore leaching. Additional make-up water is obtained though authorizations from CONAGUA. Currently, the San Agustin mine maintains one water extraction concession for 1,000,000 m^3/year (permit no. 07DGO158666/36FMDL17), and a water discharge permit (permit no. 07DGO159027/36EMDL18) in the amount of 1,095 m^3/year. The company has also applied to CONAGUA for an additional 1,200,000 m^3/year water extraction concession.

20.3.6 Environmental Violations

Documents from the Procuraduría Federal de Protección al Ambiente (PROFEPA, which is the enforcement branch of the environmental agency) covering the period from 2018 to 2024 were reviewed. All cited violations during this time period have been resolved.

The primary violation identified was the unauthorized installation of the Merrill-Crowe process plant, which was not included in the environmental permit. The Merrill-Crowe process does not increase cyanide usage beyond what was already authorized for the ADR plant, and it was installed within the environmental permit boundaries. PROFEPA did not impose any corrective measures other than a fine. The fine was duly paid, and the mine received a letter from PROFEPA confirming that this infraction was resolved and the case closed.

20.4 Environmental Permitting Requirements in Mexico

20.4.1 Overview

Most mining regulations in Mexico are promulgated at the federal level. The Mexican mining law is a comprehensive legal framework that regulates mining activities in Mexico. Key articles include:

- Article 4: lists the minerals and substances that are considered part of the national mining reserves;
- Article 7: outlines the rights and duties of the Ministry of Economy in regulating the mining industry, including issuing technical regulations and receiving confidential information on mine activities;
- Article 10: specifies that only individuals with Mexican nationality, ejidos (communal lands), agricultural communities and corporations incorporated under Mexican law can hold mining concessions;
- Article 11: defines the legal qualifications required to hold mining concessions, emphasizing the need for companies to be incorporated under Mexican law;
- Article 27: regulates the exploration, exploitation, and beneficiation of minerals, ensuring these activities are conducted in a manner that benefits the nation.

Guidance for the federal environmental requirements, including conservation of soils, water quality, flora and fauna, noise emissions, air quality, and hazardous waste management, derives primarily from the Ley General del Equilibrio Ecológico y la Protección al Ambiente (General Law of Ecological Balance and Environmental Protection) (LGEEPA), the Ley General para la Prevención y Gestión Integral de los Residuos and the Ley de Aguas Nacionales (General Law for the Prevention and Comprehensive Management of Waste and the National Water Law) (LAN). Article 28 of the LGEEPA specifies that SEMARNAT must issue prior approval to parties intending to develop a mine and mineral processing plant.

On June 7, 2013, the Federal Law of Environmental Liability (Ley Federal de Responsabilidad Ambiental) was enacted. According to this law, any person or entity that by its action or omission, directly or indirectly, causes damage to the environment will be liable and obliged to repair the damage, or to pay compensation if the repair is not possible. This liability is in addition to penalties imposed under any other judicial, administrative, or criminal proceeding.

On May 8, 2023, the Mexican Government enacted a decree amending several provisions of the Mining Law, the Law on National Waters, the Law on Ecological Equilibrium and Environmental Protection and the General Law for the Prevention and Integral Management of Waste, which became effective on May 9, 2023 (the Decree). This Decree amends the Mexican mining and water laws, including: (i) the duration of the mining concession titles, (ii) the process to obtain new mining concessions (through a public tender), (iii) imposing conditions on water use and availability for the mining concessions, (iv) the elimination of "free land and first applicant" scheme; (iv) new social and environmental requirements in order to obtain and keep mining concessions, (v) the authorization by the Mexican Ministry of Economy of any mining concession's transfer, (vi) new penalties and cancellation of mining concessions grounds due to non-compliance with the applicable laws, (vii) the automatic dismissal of any application for new concessions, and (viii) new financial instruments or collateral that should be provided to guarantee the preventive, mitigation and compensation plans resulting from the social impact assessments, among other amendments.

Over 500 constitutional challenges, known as "amparos", have been filed against the new law. The challenges include arguments that the reforms violate due process and impose burdensome requirements on mining companies, and there was a lack of debate and transparency in the Senate during the passage of the reforms. Additional implementing regulations associated with the mining law reforms were expected to be issued within 180 days (that is, early November 2023); however, none had been issued as at the Report effective date.

SEMARNAT is the main regulatory body in charge of enacting and enforcing environmental regulations throughout Mexico, including the issuance of environmental permits. SEMARNAT is comprised of multiple autonomous agencies with administrative, technical, and advisory functions, which are summarized in Table 20-3.

SEMARNAT oversees the Official Mexican Standards (*Normas Oficiales Mexicanas*, NOMs), which are mandatory technical regulations that establish the rules, specifications, and/or requirements. Key NOMs relevant to the mining operations are listed in Table 20-4.

20.4.2 Other Laws and Regulations

20.4.2.1 Water Resources

Water resources are regulated under the National Water Act of December 1, 1992, and its bylaws of January 12, 1994 (amended on December 4, 1997). In Mexico, ecological criteria for water quality are set forth in the Regulation by which the Ecological Criteria for Water Quality are Established, CE-CCA-001/89, dated December 2, 1989. These criteria are used to classify bodies of water for suitable uses including drinking water supply, recreational activities, agricultural irrigation, livestock use, aquaculture use, and for the development and preservation of aquatic life. The quality standards listed in the regulation indicate the maximum acceptable concentrations of chemical parameters and are used to establish wastewater effluent limits. Ecological water quality standards are defined for water used for drinking water, protection of aquatic life, agricultural irrigation and irrigation water and livestock. Discharge limits were established for industrial sources, although limits specific to mining projects have not been developed.

Table 20-3: Overview of SEMARNAT Agencies

SEMARNAT Unit	Function
National Water Commission (*Comisión Nacional del Agua*, CONAGUA)	Responsible for the management of national water, including issuing water concessions, water extraction permits (both surface water and groundwater), and wastewater discharge permits.
National Forestry Commission (*Comisión Nacional Forestal*, CONAFOR)	Mandate is to develop, support, and promote the conservation and restoration of Mexico's forests.
Attorney General for Environmental Protection (*Procuraduría Federal de Protección al Ambiente*, PROFEPA)	Monitors compliance with environmental regulations and responsible for the enforcement of environmental law.
National Commission for Natural Protected Areas (*Comisión Nacional de Areas Naturales Protegidas*, CONANP)	Oversees the management and protection of 192 protected areas throughout Mexico.
The Safety, Energy and Environment Agency (*Agencia de Seguridad, Energía y Ambiental*, ASEA)	Regulates and oversees industrial safety and environmental protection, and integrated waste management specifically with respect to hydrocarbon-related activities.
General Directorate of Environmental Impact and Risk (Subsecretaría de Gestión para la Protección Ambiental con la Dirección General de Impacto y Riesgo Ambiental, DGIRA)	Responsible for issuing environmental permits and authorizations.

Table 20-4: List of Official Mexican Standards Applicable to Heliostar's Mining Operations

NOM	Description
NOM-001-SEMARNAT-2021	Wastewater discharge into national waters and national lands
NOM-003-CONAGUA-1996	Water extraction and well construction
NOM-011-CNA-2000	Water conservation and evaluation of water availability
NOM-035-SEMARNAT-1993	Methodology to measure total suspended particles in air
NOM-043-SEMARNAT-1993	Maximum permissible limits of solid particles from fixed source emissions
NOM-045- SEMARNAT-1996	Maximum permissible limits for opacity of exhaust from vehicles
NOM-052-SEMARNAT-2005	Identification, classification and lists of hazardous waste
NOM-054-SEMARNAT-1993	Procedure to determine hazardous waste segregation
NOM-059-SEMARNAT-2010	Flora and fauna protection, including at-risk species
NOM-080-SEMARNAT-1994	Maximum permissible limits for noise from vehicle emissions
NOM-081-SEMARNAT-1996	Noise emissions
NOM-083-SEMARNAT-2003	Urban solid waste management
NOM-087-SEMARNAT-1995	Medical (biological and infectious) hazardous waste management requirements
NOM-120-SEMARNAT-2011	Environmental protection specifications for mining exploration activities
NOM-138-SEMARNAT/SS-2003	Hazardous waste management requirements
NOM-141-SEMARNAT-2003	Project, construction, operation, and post-operation of tailings dams
NOM-147-SEMARNAT/SSA-2004	Soil metal contamination management and remediation
NOM-155-SEMARNAT-2007	Environmental protection requirements for gold and silver leach pad systems
NOM-157-SEMARNAT-2009	Mine waste management plans
NOM-161-SEMARNAT-2011	Special handling waste and management plans

Official Mexican Standard NOM-001-ECOL-1996, published on January 6, 1997, establishes maximum permissible limits of contaminants in wastewater discharges to waters under the jurisdiction of the CONAGUA.

Daily and monthly effluent limits are listed for discharge to rivers used for agricultural irrigation, urban public use and for protection of aquatic life; for discharges to natural and artificial reservoirs used for agricultural irrigation and urban public use; for discharges to coastal waters used for recreation, fishing, navigation, and other uses and to estuaries; and discharges to soils and to wetlands. Effluent limitations for discharges to rivers used for agricultural irrigation, for protection of aquatic life, and for discharges to reservoirs used for agricultural irrigation have also been established. Specific measures and permissible parameters quality will be mentioned in the document where the discharge permit concession is given by CONAGUA.

20.4.2.2 Ecological Resources

In 2000, CONANP (formerly CONABIO, the National Commission for Knowledge and Use of Biodiversity) was created as a decentralized entity of SEMARNAT. As of November 2001, 127 land and marine Natural Protected Areas had been proclaimed, including biosphere reserves, national parks, national monuments, flora and fauna reserves, and natural resource reserves.

Ecological resources are protected under the Ley General de Vida Silvestre (General Wildlife Law). NOM-059-ECOL-2000 specifies protection of native flora and fauna of Mexico. It also includes conservation policy, measures and actions, and a generalized methodology to determine the risk category of a species.

Other laws and regulations include the Forest Law, December 22, 1992, amended November 31, 2001, and the Forest Law Regulation, September 25, 1998.

20.4.3 Expropriations and Land Negotiations

Use and Exploitation of Goods and Land Expropriation of ejido and communal properties are subject to the provisions of agrarian laws. The following government agencies coordinate surface land management:

- SEDATU (Secretariat for Agrarian Development; Territorial and Urban): Oversees promoting land ownership legal compliance, especially in rural areas. This institution oversees public policies aimed at agrarian development;
- RAN (National Agrarian Registry): Controls land ownership of ejidos and communities (communal landowners). This agency oversees all the legal procedures regarding land ownership legalization, issuing of land titles and certificates, regulation of land authorities (ejidos, communities), registration and validation of any process regarding land ownership and ejidatarios deposit their succession lists;
- PA (Agrarian Prosecutor Agency): Social service institution that serves to protect the rights of agrarian individuals. Its services include legal counselling for possession's conciliation or legal representation.

20.4.4 USMCA

Canada, the United States and Mexico participate in the United States-Mexico-Canada Agreement (USMCA, formerly NAFTA). USMCA addresses the issue of environmental protection, but each country is responsible for establishing its own environmental rules and regulations. However, the three countries must comply with the treaties between themselves, and the countries must not reduce their environmental standards as a means of attracting trade.

20.5 Permitting Process

Environmental permits are required from various federal and state agencies. Environmental permits are required in Mexico for exploration activities and road construction as well as mining construction and operation activities. A closure plan is required prior to cessation of mining activities, and recently some mining companies are being requested to submit a closure permit; however, a closure permit is not part of the current Mexican regulations for mining.

The main environmental permits required in Mexico for mining and exploration are the *Resolución de Impacto Ambiental* for Construction and Operation (RIA) and the Change in Land Use Permit (CUS) that are issued by SEMARNAT. Four primary documents must be submitted for the approval and issuance of these permits by SEMARNAT:

- Manifestación de Impacto Ambiental (MIA): Mexican Environmental Impact Assessment, including MIA Modifications for any changes to project planning and operations. MIAs describe potential environmental and social impacts that may occur in all stages of the operation as well as the measures to prevent, control, mitigate or compensate for these impacts;
- Estudio Técnico Justificativo (ETJ): Technical Justification Study for the Change in Land Use;
- Estudio de Riesgo Ambiental: Environmental Risk Assessment;
- Programa para la Prevención de Accidentes (PPA): accident prevention program.

Federal environmental licenses (Licencia Ambiental Unica, LAUs) are issued, which set out the acceptable limits for air emissions, hazardous waste, and water impacts, as well as the environmental impact and risk of the proposed operation.

Figure 20-3 summarizes the environmental permitting process for the authorization of mining operations in Mexico.

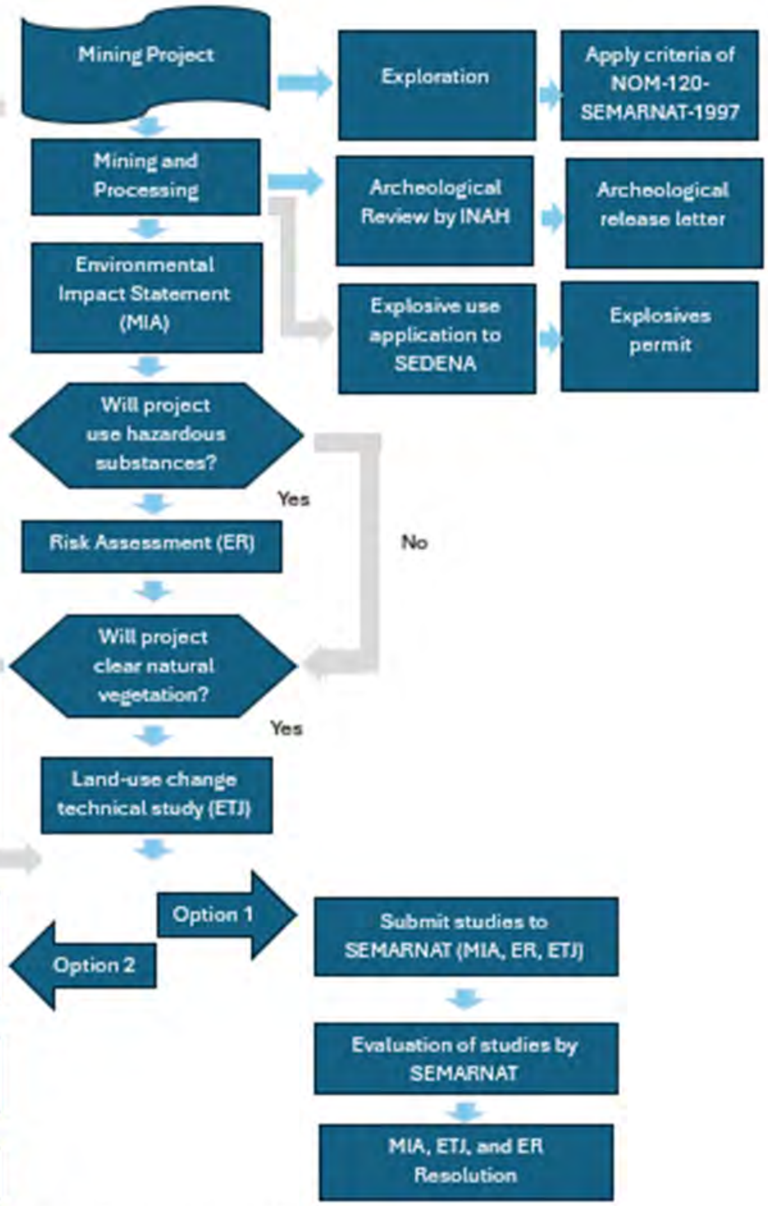
20.5.1 Operating License

The Operating License is not a permit but a registration which compiles information from the operator´s MIA authorizations, water use and discharges permits, and hazardous waste generation and disposal registration.

The San Agustin mine received its Operating License (Licencia Ambiental Unica, or LAU) on 03/08/2019 from SEMARNAT with registry LAU-10/055-2019.

The document is valid for the duration of the site environmental authorization, if the operator does not change the location, or the activity manifested in the application. It must be updated in case of an operator´s name change, production increases, process changes, installation upgrades, and/ or hazardous waste generation changes (waste type or volume).

Figure 20-3: Overview of Environmental Permitting Process for Mining Operations in Mexico



1 SEMARNAT: Mexican Secretariat of Environment and Natural Resources
2 INAH: Mexican National Institute of Anthropology and History
3 SEDENA: Mexican Secretariat of National Defense
4 DTE: Document that integrates the MIA, ER, and ETJ application in a single submittal, as an optional procedure

Note: Figure prepared by Stantec 2024

In terms of air quality, it reiterates the obligation to comply with limits imposed by the LGEEPA Bylaws on Atmospheric Pollution Control and Prevention, the LGEEPA Bylaws on Registration of Emissions and Pollutants Transference, and applicable Mexican Official Standards.

Based on the information manifested for the issuance of the LAU, the operator must submit monitoring information for the Annual Operating Report (Cédula de Operación Anual, or COA) on an annual basis. The information includes results from air quality monitoring, surface and underground water analysis, mining waste characterization, and hazardous waste disposal manifest. Greenhouse gas emissions must be quantified in accordance with guidelines provided by the LGEEPA Bylaws on Registration of Emissions and Pollutants Transference.

20.5.2 San Agustin Mine Permitting Status

Minera Real del Oro has three environmental impact authorizations and two land use change authorizations (CUS) for San Agustin (Table 20-5).

The mine plan proposes to expand the pit to the southwest. The boundaries of the environmental impact and land use change permits are not the same; the land use change permit does not include an area to the southwest. Minera Real del Oro has obtained an agreement with the landowners to purchase the property when the land use permit is granted. A specialized third-party consultant was subcontracted to assist in a new application submittal. The application for the land use change permit was submitted in September 2024 to the environmental authority. The legal timeframes for review and approval of a permit are 60 business days to review the application and issue a decision. This timeframe can be extended if additional information or clarification is requested by SEMARNAT. If a public consultation process is required, additional time can be added to the permitting process. After review of any additional information and public consultations, SEMARNAT will issue a final decision. The timeframes can vary depending on the project complexity, and SEMARNAT is known to extend timeframes well beyond the legal timeframes. Minera Real del Oro has a high level of confidence that approval of the permit will be granted.

Minera Real del Oro holds a water concession (07DGO158666/36FMDL17) from CONAGUA for an annual extraction up to 1,000,000 m^3 of groundwater. A wastewater discharge permit from CONAGUA allows a discharge of 1,100 m^3 annually (permit no. 07DGO159027/36EMDL18).

20.6 Social and Community

Five towns are located within the San Agustin Project area: San Agustin, Las Cruces, San Lucas de Ocampo, El Resbalon, and San Juan del Rio. San Agustin and Las Cruces are the nearest towns to the mine. The town population, density, and distance to the Project site are presented in Table 20-6.

Table 20-5: Environmental Impact Authorizations

Project name	Document type	Surface (ha)	Status	Expiration
Mining Exploitation and Ore Processing San Agustin	MIA	538.70	Active	Aug. 2032
San Agustin North WRSF	MIA	47.28	Active	Sep. 2026
San Agustin Freshwater Pipeline	MIA	0.65	Active	Oct. 2029
Mining Exploitation and Ore Dressing San Agustin	CUS	319.81	Expired	Oct. 2023
San Agustin Mine Expansion	CUS	66.55	Active	Nov. 2029

Table 20-6: Towns Near the San Agustin Project Site

Town	Population	Number of Houses	Straight Line Distance to San Agustin Project (km)
San Agustin	226	90	1.6
Las Cruces	26	10	3.3
San Lucas de Ocampo	1,500	639	7.0
El Resbalon	280	74	8.4
San Juan del Rio	2,912	1,061	12.4

Minera Real del Oro has implemented social programs in the local communities, such as:

- Academic scholarships;
- Water reservoirs;
- Agricultural support program for local farmers;
- Community roads maintenance;
- Employment program;
- Food baskets;
- Support to cultural and sports activities.

Minera Real del Oro has developed a stakeholder matrix for the local stakeholders, including local ejido and municipality leadership. The QP notes that the stakeholder matrix does not include employees, nor are regional and state entities listed. Minera Real del Oro personnel have noted that El Castillo and San Agustin operations are not considered separately by stakeholders, hence any concerns about El Castillo will impact San Agustin.

There have been historic disputes between the local ejidos and Minera Real del Oro. In 2022 and 2023, there were disputes regarding compensation for the use of ejido land under the Mining Law, which was elevated to the Agrarian Prosecutor's office and subsequently elevated to the Secretariat of Economic Development [Secretaria de Desarrollo Económico (SEDECO)] in conjunction with the Agrarian Prosecutor's Office. An agreement was made between Minera Real del Oro and multiple ejido and private landowner parties. Minera Real del Oro paid MXN$21,249,999.50 (about US$1,041,250 per December 2, 2024, currency conversion rate) to the claimant group. In February 2024, while El Castillo Mine was under a blockade, the San Agustin ejido formed a blockade of the San Agustin Mine with a demand list of 19 items. The blockade lasted until March 24, 2024, when final negotiations were carried out with representatives of the San Agustin ejido, as well as representatives of the group that blockaded El Castillo. As part of the negotiation agreement, Minera Real del Oro made a variety of commitments to support local water supply, ejido building and pavement improvements and schools.

It is not clear if Minera Real del Oro has a strong mechanism to disseminate the Company's positive social and environmental actions to the communities in the area influence, and among employees.

Surface access agreements were negotiated with the ejidos of San Agustin and San Lucas de Ocampo Agrarian Community, which hold surface rights in the Project area.

Argonaut has a written grievance mechanism that outlines goals, assigns responsibilities per department, and has a process to follow when a complaint or request is made. The grievance mechanism is lacking an explanation of how stakeholders can make a grievance or request to Argonaut, nor to Minera Real del Oro. Stakeholders should have multiple methods to contact the company, so that the stakeholder will have an easy and convenient method to submit a grievance.

20.7 Closure Plan

The Mexican mining law reforms, which were published on May 8, 2023, included specific directives regarding mine closure obligations. These are the key points:

- Mine Closure Plan. Mining concession holders must submit a mine closure plan for approval by the Ministry of Economy. This plan outlines the procedures and actions needed for environmental repair, restoration, rehabilitation, or remediation, as well as social mitigation or compensation when mining operations cease;
- Financial Guarantees. Concession holders are required to provide a financial guarantee, such as an insurance policy, letter of credit, or deposit, to ensure the fulfillment of the prevention, mitigation and compensation measures specified in the mine closure plan;
- New Grounds for Termination. The law allows the mining concession to be terminated if a mine closure plan is not presented.

Additional implementing regulations associated with the mining law reforms were expected to be issued within 180 days (that is, early November 2023); however, none have been issued. While Mexico requires the preparation of a reclamation and closure plan, as well as a commitment on the part of the operator to implement the plan, the requirement for financial guarantees is still pending implementation. Environmental damages, if not remediated by the owner/operator, can give rise to civil, administrative, and criminal liability, depending on the action or omission carried out. PROFEPA is responsible for the enforcement and recovery for those damages, or any other person or group of people with an interest in the matter. Also, recent reforms introduced class actions as a means to demand environmental responsibility from damage to natural resources.

An Asset Retirement Obligation was prepared by Argonaut in 2023 to define the closure liabilities associated with the San Agustin mine. An Asset Retirement Obligation calculation is for a present closure liability based on current conditions and does not include the LOM designs. The Asset Retirement Obligation included an activity, unit areas, and general unit rates for closure of the mine facilities. Administration of the closure activities was costed at 9%. The activities and costs include:

- Demobilization of equipment and machinery such as the primary and secondary crushers, conveyor, and lime plant. Costs include dismantling and removal from site;
- Open pit closure including removal of surface water conveyance channel, construction of perimeter berm, recontouring slopes fencing and placement of boulders;
- Waste rock storage facility closure including final grading of 3V:1H of slopes, surface water conveyances, construction of berms and scarification of roads;
- Process plant and ponds closure by dismantling of equipment, dismantling and demolition of infrastructure, backfilling ponds and disposing of wastes;
- Heap leach facility closure by rinsing the pad with fresh water for one year (depending on precipitation) and rinsing the cyanide handling equipment with hypochlorite, and recontouring the pad slopes 2.5H:1V and regarding area of the ponds;
- Closure of ancillary areas such as workshop, fuel depot and offices by dismantling and demolition, and waste disposal;
- Revegetation of crushing areas;
- Post-closure monitoring of water at six monitoring points quarterly for three years; acid mine drainage from the heap leach facility, waste rock and open pit twice annually for three years; and physical stability of the waste rock and heap leach facilities for one year, plus monitoring of plant survival for one year;
- The disturbed areas and organic soil stockpile will be revegetated. The areas of the open pit, waste rock facility, heap leach facility, process plant and ponds, and ancillary areas where infrastructure was removed will be revegetated;

- Administration of the closure activities.

The QP notes that the closure activities do not include decommissioning equipment, regrading, cover placement or revegetation of all disturbances. The post-monitoring periods of one to three years do not meet industry standards for minimum periods.

In preparation for future concurrent reclamation or final closure, an organic soil stockpile has been developed. The on-site plant nursery produces mesquite tree stock from seeds gathered within Minera Real del Oro property. The trees are currently used for El Castillo mine reclamation.

The closure costs were estimated using first order equations, and the costs for personnel were based on two salary sources (https://www.inegi.org.mx/temas/uma/ and https://www.gob.mx/stps/prensa/entran-en-vigor-salarios-minimos-2023-en-todo-el-pais). The QP notes the lack of detail in the closure cost calculations.

The total costs for closure and reclamation of the site (including a 10% contingency) were estimated at MXN$99,859,735 or US$5,528,108 based on a currency exchange rate of MXN$18.064 to US$1 for October 31, 2023. The forecast closure cost for 2024 conditions, including increases in prices and increased volumes compared to 2023 conditions, was MXN$167,839,408 or US$9,291,376, as shown in Table 20-7.

The environmental permitting process requires that an environmental compensation cost is calculated and paid to SEMARNAT; however, that compensation cost is not held to cover final closure costs. Several of the environmental regulations include aspects of closure, but only in general terms of requirements to reclaim areas and to provide for physical stability of remaining facilities and that any post-closure discharges meet environmental permissible limits.

Environmental damages, if not remediated by the owner/operator, can give rise to civil, administrative, and criminal liability, depending on the action or omission carried out. Mexican environmental laws establish joint-and-several liability between owners and possessors of a contaminated site for its remediation, even if the owner or possessor is not responsible for causing the damage.

The Federal Attorney General for the Protection of the Environment (PROFEPA) is responsible for the enforcement and recovery for those damages, or any other person or group of people with an interest in the matter. Class action lawsuits to demand environmental responsibility from damage to natural resources are allowed under Mexican laws, although they are not commonly used.

Heliostar currently has a US$1 M liability insurance policy for damages caused to third-party property.

Table 20-7: Asset Retirement Obligation Estimates for 2023 and 2024

Item	2024 Forecast			2023		
	Surface Area (ha)	Closure Cost (MXN)	Closure Cost (US$)	Surface Area (ha)	Closure Cost (MXN)	Closure Cost (US$)
Demobilization of equipment and machinery	—	5,296,015	293,181	—	4,809,574	247,067
Open pit	93.52	47,027,729	2,603,395	90.56	3,133,767	160,981
Waste rock storage facilities	33.84	9,045,800	500,764	36.93	7,302,009	375,103
Heap leach facility	78.07	38,736,707	2,144,415	78.07	32,374,782	1,663,085
Processing plant and ponds	10.58	11,767,208	651,418	10.58	11,028,089	566,510
Support areas	48.21	13,179,384	729,594	48.02	11,298,574	580,405
Disturbed areas and organic soil stockpile	26.55	1,163,975	64,436	22.28	883,959	45,409
Revegetation	264.22	13,766,008	762,069	264.16	12,455,097	639,816
Administration (9%)	—	12,598,454	697,434	—	7,495,727	385,054
Estimated Cost	*290.77*	*152,581,280*	*8,446,705*	*286.44*	*90,781,577*	*4,663,429*
Contingency (10%)	—	15,258,128	844,671	—	9,078,158	466,343
Total Closure Cost	***290.77***	***167,839,408***	***9,291,376***	***286.439***	***99,859,735***	***5,528,108***

Notes:

1. Currency exchange rate used was US$1:18.064 MXN, www.dof.gob.mx, dated October 31, 2023.
2. Construction general prices increase of 4.0% vs 2023 was due to inflation of up to 4.3%; the skilled labour costs increased a little more than 10% in accordance with the minimum salary in Mexico; steps to transfer the machinery to the storage pad, dismantling of the mining infrastructure were maintained. Backfill at the open pit is planned to meet closure criteria of pit lake water quality. During 2023, the water table reached level 1821 in the pit areas of Phases 6 and 7, requiring surface water control.
3. Waste rock area increases 3.0 ha; waste rock slopes maintained at 3:1, minimizing erosion and runoff.
4. Heap leach slopes at 2.5H:1V.
5. In 2023, electricity supplied by CFE is based on consumption during the period.
6. The generators remain as backup as long as they continue to operate with electricity supplied by CFE. Generators that exceed basic operating needs may be relocated to other mining units once the required study has been carried out.
7. Increased 4.3 ha, calculated based on Google Earth Pro image, dated October 2023, which made it possible to quantify and detect all areas that do not have vegetation. For the 2023 forecast, 264.16 ha with disturbances and 22.28 ha devoid of vegetation, including organic soil stockpile, were quantified, for a total of 286.44 ha. For the 2024 forecast, 264.22 ha were measured with disturbances and 26.55 ha devoid of vegetation, including organic soil stockpile, for a total of 290.77 ha.

21.0 CAPITAL AND OPERATING COSTS

21.1 Capital Cost Estimates

21.1.1 Basis of Estimate

Capital cost estimates were derived from Heliostar's 2024 operating budget, mining contract quotes, Hard Rock Consulting's and KCA's in-house database of projects and studies including experience from similar operations.

21.1.2 Initial Capital Costs

The Project started operations in 2017, so all of the mining infrastructure, heap leach pad and primary plant equipment are in place. The total initial capital for the Project is estimated at US$4.15 M. The majority of these costs are US$3.4 M of owners costs are primarily required for equipment maintenance at the process facilities and land acquisitions. A total of US$0.6 M is also included for definition drilling and US$0.15 M for the mining contractor mobilization.

21.1.3 Sustaining Capital Costs

A phase 4 leach pad expansion was initiated in the summer of 2024 with 75% of the expansion completed. The completion of this expansion is required to allow for an extra 6.6 Mt of capacity to the heap leach pad for the ore contained within the LOM plan. The remaining 0.8 Mt of ore will be placed on the top of the existing heap (refer to Figure 18-1). The extra lift on top of the existing heap has been approved by Golder for geotechnical purposes. The remaining costs for the leach pad expansion are estimated by Heliostar at US$0.61 M and were verified by KCA based on their in-house database of leach pad construction costs in Mexico. A 15% contingency was added to the estimated leach pad costs.

The mining contractor de-mobilization costs were included as part of the sustaining capital at US$0.05 M. In addition, the estimated closure costs of US$13.57 M were included as part of the sustaining capital for a total estimated sustaining cost of US$14.3 M.

21.1.4 Capital Cost Summary

The total capital cost estimate is provided in Table 21-1.

Table 21-1: Capital Cost Summary

Capital Costs	Initial (US$ M)	Sustaining (US$ M)	Total LOM (US$ M)
Definition drilling Phase 4 Pit	0.60	0.00	0.60
Mine contractor mobilization and demobilization	0.15	0.05	0.20
Leach pad expansion	0.00	0.61	0.61
Total direct costs	*0.75*	*0.66*	*1.41*
Owner Costs and reclamation	3.40	13.57	16.97
Indirects and contingency	0.00	0.09	0.09
Total indirect costs	*3.40*	*13.67*	*17.07*
Total	***4.15***	***14.33***	***18.48***

21.2 Operating Cost Estimates

21.2.1 Basis of Estimate

The operating costs include the ongoing cost of operations related to mining, processing, and general administration activities. Operating cost estimates were derived from actual historical costs, mining contract quotes, the Heliostar's 2024 operating budget, and Hard Rock Consulting's and KCA's in-house database of projects and studies including experience from similar operations.

Operating cost estimates use terms that are non-International Financial Reporting Standards measures:

- All-in sustaining costs (AISC): as set out in the World Gold Council in its 2018 guidance note. AISC are the sum of operating costs (as defined and calculated above), royalty expenses, sustaining capital, corporate expenses and reclamation cost accretion related to current operations. Corporate expenses include general and administrative expenses, net of transaction related costs, severance expenses for management changes and interest income. AISC excludes growth capital expenditures, growth exploration expenditures, reclamation cost accretion not related to current operations, interest expense, debt repayment and taxes;
- Cash operating costs: include mine site operating costs such as mining, processing, and administration, but exclude royalty expenses, depreciation and depletion and share based payment expenses and reclamation costs.

21.2.2 Mine Operating Costs

Mine operating costs are calculated using recent mining contracts and quotes from Heliostar's operations in Mexico. Support services are estimated from historic actuals and from base principles for equipment, consumables, supplies, services, and manpower requirements based on the mine schedule. Equipment fuel requirements are calculated based on required operating hours for each unit and haulage route profiles for the trucks. Diesel costs were estimated at US$1.10/L.

The costs details by department over the life of the mine are shown in Table 21-2. Figure 21-1 shows the distribution of these costs by department.

21.2.3 Process Operating Costs

Process operating costs for the San Agustin Mine have been estimated by KCA from first principles with input from Heliostar on power costs, reagent supply costs and historic mine operating costs. Labour costs were estimated using project specific staffing, salary and wage and benefit requirements. Unit consumptions of reagents, materials, supplies, and power were also estimated. The first principles operating costs were then compared against the historic process operating costs and budget operating estimates for reasonableness.

The operating costs estimates consider fixed costs (labour, support equipment, etc.) which are expected to be the same regardless of the material type or tonnes being processed and variable costs (reagents, power, wear, etc.) which are expected to change based on material type or total tonnes being processed and have been estimated for the oxide, transition, sulphide, silicic transition, and argillic transition material types. Based on the design production rate of 10.95 Mt/a to be processed, the average processing cost fore each material type is estimated as follows:

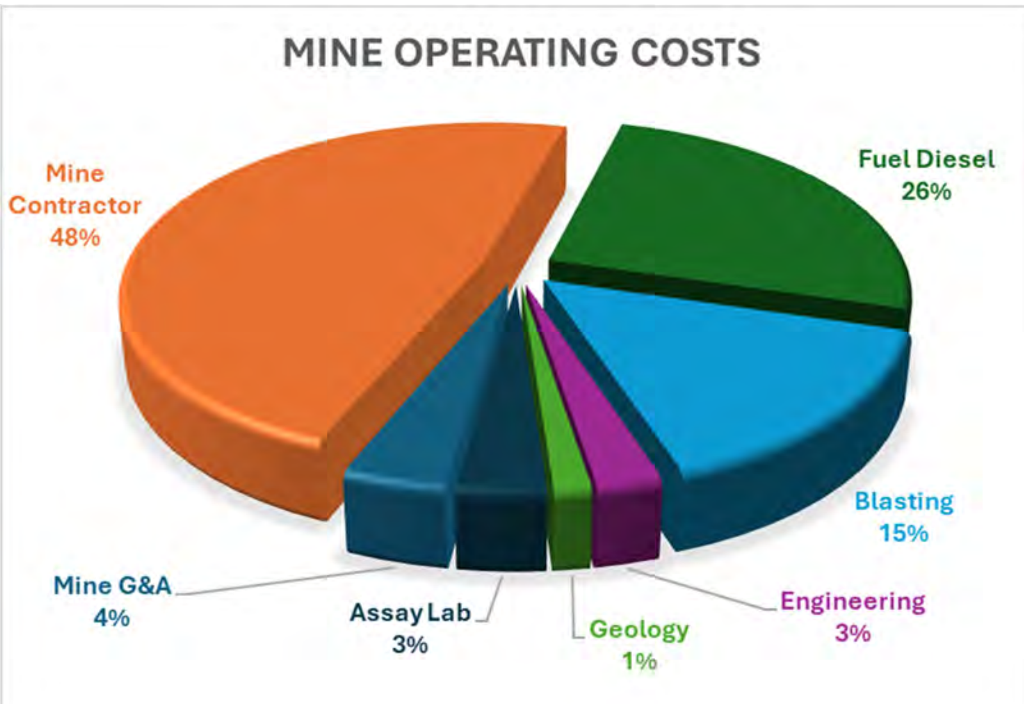
- Oxide: US$4.18/t;
- Transition: US$4.92/t;
- Sulphide: US$4.86/t;
- Silicic transition: US$4.74/t;
- Argillic transition: US$5.12/t.

The operating costs presented are based upon the assumption of Heliostar ownership of all process production equipment and site facilities. The Owner will employ and direct all operating maintenance and support personnel for all site activities.

Table 21-2: Mine Operating Costs

Department	Operating Cost US$/t mined	Operating Cost US$/t ore
Mine general and administrative	0.09	0.18
Mine contractor	1.13	2.13
Fuel diesel	0.60	1.13
Blasting	0.36	0.68
Engineering	0.06	0.11
Geology	0.03	0.06
Assay laboratory	0.08	0.15
Total	***2.36***	***4.44***

Figure 21-1: Mine Operating Cost Distribution



Note: Figure prepared by Hard Rock Consulting, 2024.

Operating costs estimates were based upon information obtained from the following sources:

- Project metallurgical test work, historical production, and process engineering;
- Reagent and fuel costs from Heliostar based on existing contracts;
- Labour rates based on KCA experience and site data;
- Power supply costs from Heliostar and estimated power consumption by KCA and historical production;
- Recent KCA project file data;
- Experience of KCA staff with other similar operations.

Where specific data do not exist, cost allowances have been based upon historical site operating data and benchmarking against other operations from which reliable data exists. All reagent costs are based on reagents delivered to site.

Operating costs were estimated based on fourth quarter 2024 US dollars and are presented with no added contingency. Where costs are provided in Mexican Pesos an exchange rate of 19 MXN to 1 US$ was used. Operating costs are considered to have an accuracy of ±15%.

The average annual process operating costs for oxide, transition, sulphide, silicic transition, and argillic transition material types as previously presented were based on first principles estimates, were compared with historic operating cost data, and were determined to be reasonable. Average annual process operating costs by material type are summarized in Table 21-3.

Staffing requirements for process personnel have been estimated by KCA based on experience with similar sized operations and prevailing wages for similar operations in Mexico. Total process personnel is estimated at 139 persons including 23 laboratory workers and 18 recovery plant operators which are at Heliostar's La Colorada Mine and working for the benefit of San Agustin. Process labour costs are summarized in Table 21-4.

Power usage for the process and process-facilities was derived from historic power consumptions at the San Agustin Mine and estimated power consumption for stripping carbon at the La Colorada Mine based on estimated number of strips per year.

Line power is used to supply the Project site at a charge rate of US$0.16/kWh. It is assumed that loaded carbon will be processed at the La Colorada Mine and that some of the estimated power consumption will be incurred at the La Colorada Mine for the benefit of the San Agustin Mine. These power costs were included in the process operating cost estimates.

Table 21-3: Average Process Operating Costs

Description	Operating Cost (US$/t processed)				
	Oxide	Transition	Sulphide	Silicic Transition	Argillic Transition
Labour	0.268	0.268	0.268	0.268	0.268
Power	0.399	0.394	0.393	0.394	0.395
Reagents and consumables	2.574	3.351	3.313	3.178	3.538
Wear and maintenance	0.745	0.745	0.745	0.745	0.745
Support services	0.109	0.109	0.109	0.109	0.109
Carbon transport	0.087	0.054	0.031	0.043	0.065
Total	***4.181***	***4.920***	***4.859***	***4.736***	***5.119***

Table 21-4: Process Labour Requirements

Description	Number of Workers	Cost (US$,000/yr)
Process supervision	8	661.2
Crushing and reclaim	12	184.5
Heap leach	32	456.8
Recovery plant	26	391.9
Process maintenance	38	788.6
Subtotal process	*116*	*2,483*
Laboratory	23	449
Total	***139***	***2,932***

Operating supplies were estimated based upon unit costs and consumption rates predicted by metallurgical tests and have been broken down by area. Reagent unit costs have been based on recent supplier quotes in KCA's files and reagent pricing at San Agustin and La Colorada provided by Heliostar. Freight costs are included in all operating supply and reagent estimates. Reagent consumptions have been derived from test work and historic usage. Other consumable items have been estimated by KCA based on KCA's experience with other similar operations. Operating costs for consumable items have been distributed based on tonnage and gold production/carbon batches, as appropriate.

Heap leach consumables were estimated as follows:

- Pipes, fittings, and emitters: the heap pipe costs include expenses for broken pipe, fittings, and valves, and abandoned tubing;

- Sodium cyanide (NaCN): primarily consumed in the heap leach and consumptions have been estimated ford each material type as follows:
  - Oxide: 0.38 kg/t;
  - Transition: 0.76 kg/t;
  - Sulphide: 0.76 kg/t;
  - Silicic transition: 0.69 kg/t;
  - Argillic transition: 0.84 kg/t;
- Pebble lime (CaO): consumed as needed for pH control at the heap and is added at a rate of 7.5 kg/t for all material types;
  - Antiscale agent (scale inhibitor): added to the barren and pregnant pumping systems to prevent the buildup of scale within the process piping systems. Approximately 10 ppm of antiscalant is assumed to be added based on historical heap irrigation rates.

Recovery plant consumables include:

- Carbon: used for the adsorption of gold and silver from pregnant solution for the heap circuit. Carbon consumption is estimated at 4% per tonne of carbon processed due to attrition at a cost of US$5.83/kg based on cost information provided by Heliostar;
- Sodium cyanide: consumed as part of the stripping process and is based on a 0.5% NaCN strip solution and approximately one third of the strip solution being discarded each strip. Stripping of carbon will be performed at Heliostar's La Colorada mine for the benefit of San Agustin;
- Caustic: consumed in the acid wash and strip circuits at Heliostar's La Colorada Mine for the benefit of San Agustin. Caustic is delivered in 25 kg bags and consumption is based on a 2% caustic strip solution with approximately one third of the strip solution being discarded each strip;
- Diatomaceous earth: used as a filter media for the clarification and precipitate filters in the Merrill-Crowe plant. Diatomaceous earth consumption is based on one precoat per day for the active clarification and precipitate filters and body feed to each of the systems;
- Zinc: ultra fine zinc dust is consumed in the Merrill-Crowe recovery plant for the precipitation of gold and silver from the deaerated pregnant leach solution. Zinc is assumed to be consumed at a rate of 2 kg per kg of metal in solution.

Diesel fuel is consumed in the process by the carbon regeneration kiln and smelting furnace at Heliostar's La Colorada Mine, as well as for mobile process support equipment at San Agustin.

Wear, overhaul and maintenance costs for equipment along with miscellaneous operating supplies for each area have been estimated as allowances based on tonnes processed. The allowances for each area were developed based on published data as well as KCA's experience with similar operations and historic site data.

Costs for mobile and support equipment, such as fork lifts, heap dozer, trucks, etc. which are required to support processing activities have been estimated based on equipment requirements for other similar operations. The costs to operate and maintain each piece of equipment have been estimated primarily using published information and site-specific fuel costs.

Transportation costs for transferring loaded carbon to La Colorada for processing and returning barren carbon to San Agustin has been estimated based on shipping rates in Mexico and the distance between the two sites. Carbon is transported in secured transportation containers and is transported in 20 t batches at an estimated cost of US$8,800 per shipment.

21.2.4 General and Administrative Costs

The general and administrative costs were developed from the QP's knowledge and experience as well as historical costs from past operations. The major general and administrative cost component is staff and labor, but general and administrative also covers such items as security, office equipment, heat and lighting, communications, overtime, property insurance, office supplies, computer system license fees, admin building maintenance, janitorial services, outside services and allowances for travel and meetings.

The costs details by department over the LOM are shown in Table 21-5.

Figure 21-2 shows the distribution of these costs by department.

21.2.5 Operating Cost Summary

The LOM average cash operating cost is projected to be US$1,543/oz AuEq sold.

The LOM average base case total operating cost (including royalties and production taxes) is expected to be US$1,605/oz AuEq.

The total AISC summary per tonne of mill feed and per ounce of gold equivalent is expected to US$12.96/t and US$1,990/oz Au respectively, as shown in Table 21-6.

Table 21-5: General and Administrative Operating Costs

Department	General and Administrative Operating Cost (US$/t ore)
Administration	0.36
Human relations	0.09
Security and safety	0.12
Accounting	0.06
Purchasing	0.04
Environmental	0.13
Total	***0.80***

Figure 21-2: General and Administrative Operating Cost Distribution

Note: Figure prepared by Hard Rock Consulting, 2024.

Table 21-6: Total Operating Cost Summary

Operating Costs	Operating Cost ($/oz AuEq)	Operating Cost ($/t ore)	Operating Cost (US$/t mined)
Total mining	681.41	4.44	2.36
Total processing	699.96	4.56	
Total site general and administrative	123.57	0.80	
Refinery and transport	38.47	0.25	
Cash operating costs	***1,543.41***	***10.05***	
Production taxes	40.10	0.26	
Royalties	21.00	0.14	
Total cash costs	***1,604.51***	***10.45***	
Capital costs	385.59	2.51	
Total AISC	***1,990.09***	***12.96***	

22.0 ECONOMIC ANALYSIS

22.1 Cautionary Statement

The results of the economic analyses discussed in this section represent forward-looking information as defined under Canadian securities law. The results depend on inputs that are subject to a number of known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from those presented here. Information that is forward-looking includes:

- Mineral Resource and Mineral Reserve estimates;
- Assumed commodity prices and exchange rates;
- Proposed mine production plan;
- Projected mining and process recovery rates;
- Assumptions as to mining dilution;
- Sustaining costs and proposed operating costs;
- Assumptions as to closure costs and closure requirements;
- Assumptions as to environmental, permitting, and social risks.

Additional risks to the forward-looking information include:

- Changes to costs of production from what is assumed;
- Unrecognized environmental risks;
- Unanticipated reclamation expenses;
- Unexpected variations in quantity of mineralized material, grade, or recovery rates;
- Geotechnical or hydrogeological considerations during mining being different from what was assumed;
- Failure of plant, equipment, or processes to operate as anticipated;
- Changes to assumptions as to salvage values;
- Ability to maintain the social license to operate;
- Accidents, labour disputes and other risks of the mining industry;
- Changes to interest rates;
- Changes to tax rates.

22.2 Methodology Used

The Project has been evaluated using a constant US dollar, after-tax discounted cashflow methodology based on a 5% discount rate. For personnel costs and material sourced in Mexico, an exchange rate of 19 pesos per US dollar was assumed. This valuation method requires projecting material balances estimated from operations and calculating economic analysis. Cashflows are calculated from sales of metal, less cash outflows such as operating costs, capital costs, working capital changes, royalties, any applicable taxes, and reclamation costs. Resulting annual cash flows are used to calculate the net present value (NPV) and internal rate of return (IRR) of the Project. Tax calculations involve complex variables that can only be accurately determined during operations, and as such, the actual post-tax results may differ from those estimated.

22.3 Financial Model Parameters

The economic analysis was performed assuming a base case gold selling price of US$2,100/oz. Gold metal prices are elevated in the economic analysis to reflect current metal price trends and recognizes the short LOM period remaining. Base case silver selling price is assumed to be US$26/oz.

No price inflation or escalation factors were taken into account. Commodity prices can be volatile, and there is the potential for deviation from the forecast.

The economic analysis also used the following assumptions:

- The current care and maintenance costs of the Project are not included in the analysis and are assumed to be offset by the ongoing residual leaching of gold and silver.
- The mine production life is 1.2 years, with residual leaching of gold and silver continuing until the end of Year 2;
- Cost estimates are in constant Q4 2024 US dollars for capital and operating costs, with no inflation or escalation factors considered;
- Results are based on 100% ownership with a 1% government NSR on revenue from gold and silver production;
- Capital costs are funded with 100% equity (no financing assumed);
- All cash flows are discounted to the start of the construction period using a mid-period discounting convention;
- Closure costs are estimated based on the full closure requirements for the Project. Thus, the summary cashflow and NPV are calculated based on the estimated production life of the mine. Closure costs occurring after the production life of the mine are excluded from summary to calculations to reflect the value of the remaining Mineral Reserves. A full LOM

cashflow with closure costs is provided in Section 22.5; note that the full closure costs are included in Year 3 but will most likely be spread over several years.

- All metal products will be sold in the same year they are produced;
- Project revenue will be derived from the sale of gold and silver doré.

22.4 Taxes and Royalties

22.4.1 Taxes

The Project has been evaluated on a post-tax basis to provide an approximate value of potential economics. The Project was assumed to be subject to the following tax regimes:

- The Mexican corporate income tax system (Federal Income Tax) consists of 30% income tax. Federal income tax is applied on Project income after deductions of eligible expenses including depreciation of assets, earthworks and indirect construction costs, exploration costs, special mining tax, extraordinary mining duty and any losses carried forward;
- Mining tax in Mexico (Special Mining Tax) consists of 8.5% on earnings before interest, taxes, depreciation, and amortization. The special mining duty is applied on Project income after deduction of eligible exploration, earthworks, and indirect costs expenses. Income subject to the special mining tax does not allow deductions for depreciation or allow losses carried forward.

At the assumed metal prices, total payments are estimated to be US$7.8 M over the LOM.

The Mexican value-added tax (Impuesto al Valor Agregado) is outside the economic valuation of this Project. The value-added tax is a 16% value added tax applied to all goods and services and is considered to be fully refundable. For the economic model, value-added taxes are not considered in the capital or operating cost estimate as it is assumed that value-added taxes paid versus value-added tax credits will be a net zero value during the period in which they occur.

Mexican tax law allows for the carry-forward of operating losses for the development of a property. The historic loss carry-forward is almost used up and is currently estimated at US$1,170,000 for the Mexican subsidiary company, Minera Real del Oro.

22.4.2 Royalties

Royalties payable for the La Colorada include a 1.0% royalty due to the Mexican government as an “Extraordinary Mining Duty”. The 1.0% extraordinary mining duty represents US$1.0 M over the LOM and is included in the Project economics.

22.5 Economic Analysis

The financial analysis for the Project shows an after-tax net present value at a discount rate of 5% of US$12.67 M, an after-tax internal rate of return of 156%, and a payback period of 0.79 years.

Table 22-1 summarizes the projected cashflow; net present value at varying rates; internal rate of return; years of positive cash flows to repay the negative cash flow (payback period); multiple of positive cash flows compared to the maximum negative cash flow (payback multiple) for the project on both an after-tax and before-tax basis.

The projected total lifespan of the Project is 1.2 years with 0.8 years of residual leaching. Approximately 67,800 oz of gold is projected to be mined, with 44,500 oz recovered and produced for sale. The economic analysis was completed on an annual cashflow basis. The production schedule and cashflow output is shown in Table 22-2.

22.6 Sensitivity Analysis

22.6.1 Metal Price Sensitivity Analysis

The Project, like almost all precious metals projects, is very responsive to changes in the price of its chief commodity, gold. From the base case price of US$2,100/oz, a 10% change in the average gold price (or US$210/oz Au) would change the NPV at a 5% discount rate by 42%, or approximately US$5.3 M (Figure 22-1).

As shown in Figure 22-1, the NPV is not very sensitive to the silver price as it only represents approximately 9% of the gross revenue.

Table 22-3 shows the economic sensitivities, due to the change in gold price, in the net cash flow, the net present value at 5%, the internal rate of return, the payback period, and the payback multiple.

22.6.2 Grade, Operating and Capital Costs Sensitivity Analysis

The Project is most sensitive to grade experiencing an approximate 55% change in the NPV at a 5% discount rate for each 10% increase or decrease in grade. The Project is very sensitive to the cost of operations, incurring an approximately 39% decline in the NPV at a 5% discount rate for each increase of 10% in the operating costs. The Project is less sensitive to variances in the cost of capital, experiencing an approximate 2.4% decline in the NPV at a 5% discount rate for each increase of 10% in the capital costs, as shown in Figure 22-2.

Table 22-1: Summary Economic Results

Project Valuation Overview	Units	After Tax	Before Tax
Total cashflow	US$ M	14.83	19.69
NPV @ 5.0% (base case)	***US$ M***	***12.67***	***19.46***
NPV @ 7.5%	US$ M	11.74	18.10
NPV @ 10.0%	US$ M	10.88	16.86
Internal rate of return	***%***	***156.1***	***218.9***
Payback period	Years	0.79	0.59
Payback multiple		1.09	1.66
Total initial capital	US$ M	4.15	4.15

Table 22-2: Cashflow Statement on Annual Basis

Item	Units	Year -1	Year 1	Year 2	Year 3	LOM
Open Pit Mine Production						
Oxide ore mined	kt	—	6,890	392	—	7,281
Ag grade	g/t	—	16.0	21.3	—	16.2
Au grade	g/t	—	0.28	0.34	—	0.29
Transition ore mined	kt	—	47	30	—	76
Ag grade	g/t	—	29.7	33.9	—	31.3
Au grade	g/t	—	0.34	0.47	—	0.39
Fill	kt	—	1,782	-	—	1,782
Waste	kt	—	5,809	665	—	6,474
Total tonnes mined	*kt*	—	*12,747*	*1,087*	—	*13,833*
Total tonnes oxide/trans ore mined	*kt*	—	*6,936*	*422*	—	*7,358*
Ag grade	g/t	—	16.0	22.2	—	16.4
Au grade	g/t	—	0.28	0.35	—	0.29
Total alluvium	kt	—	2	-	—	2
Total waste	kt	—	5,809	665	—	6,474
Total tonnes mined	***kt***	—	***12,747***	***1,087***	—	***13,833***
Strip ratio	ratio	—	0.8	1.6	—	0.9
Other tonnes	kt	—	120,000	20,000	—	140,000
Total tonnes moved		—	**12,867**	**1,107**	—	**13,973**
Process Production						
Tonnes ore to heap	*kt*	—	*6,936*	*422*	—	*7,358*
Au grade	g/t	—	0.28	0.35	—	0.29
Ag grade	g/t	—	16.0	22.2	—	16.4
Income Statement						
Revenue						
Au ozs placed on pad	koz	—	63.1	4.8	—	67.8
Au ozs recovered	koz	—	32.6	11.9	—	44.5
Au cumulative recovery %	%	65.7	65.7	65.7	65.7	65.7
Ag ozs placed on pad	koz	—	3,579.0	300.9	—	3,880.0
Ag ozs recovered	koz	—	278.9	109.1	—	388.0
Ag cumulative recovery %	%	10.0	10.0	10.0	10.0	10.0
Au revenue	US$ x 1,000	—	68,513	25,027	—	93,540
Ag revenue	US$ x 1,000	—	6,414	2,510	—	8,924

Item	Units	Year -1	Year 1	Year 2	Year 3	LOM
Gross revenue	US$ x 1,000	—	74,927	27,538	—	102,464
Au refining and shipping	US$ x 1,000	—	(597)	(218)	—	(815)
Ag refining and shipping	US$ x 1,000	—	(739)	(289)	—	(1,028)
Net revenue	US$ x 1,000	—	73,591	27,030	—	100,621
Royalties	US$ x 1,000	—	(736)	(270)	—	(1,006)
Net revenue	***US$ x 1,000***	—	***72,855***	***26,760***	—	***99,615***
Operating Expenses						
Mining						
Mine general and administrative	US$ x 1,000	—	1,183	106	—	1,289
Mine contractor	US$ x 1,000	—	14,143	1,499	—	15,642
Fuel diesel	US$ x 1,000	—	7,623	710	—	8,334
Blasting	US$ x 1,000	—	4,582	429	—	5,010
Engineering	US$ x 1,000	—	747	65	—	812
Geology	US$ x 1,000	—	424	37	—	462
Assay laboratory	US$ x 1,000	—	1,037	63	—	1,100
Total Mining	***US$ x 1,000***	—	***29,739***	***2,910***	—	***32,650***
Processing						
Plant general and administrative	US$ x 1,000	—	661	187	—	848
Crushing	US$ x 1,000	—	5,440	400	—	5,840
Reclaim and stacking	US$ x 1,000	—	1,523	118	—	1,641
Heap	US$ x 1,000	—	1,511	104	—	1,615
Reagents	US$ x 1,000	—	15,909	989	—	16,898
Recovery plant	US$ x 1,000	—	2,643	167	—	2,810
Electrowinning and refinery	US$ x 1,000	—	318	59	—	377
Water supply and distribution	US$ x 1,000	—	154	9	—	164
Support services/plant maintenance	US$ x 1,000	—	1,149	349	—	1,498
Assay laboratory	US$ x 1,000	—	1,395	453	—	1,848
Total Processing	***US$ x 1,000***	—	***30,704***	***2,834***	—	***33,538***
Site General and Administrative						
Administration	US$ x 1,000	—	2,245	398	—	2,643
Human relations	US$ x 1,000	—	513	175	—	688
Security and safety	US$ x 1,000	—	637	252	—	889
Accounting	US$ x 1,000	—	279	175	—	454
Purchasing	US$ x 1,000	—	246	58	—	304
Environmental	US$ x 1,000	—	729	213	—	942

Item	Units	Year -1	Year 1	Year 2	Year 3	LOM
Total General and Administrative	***US$ x 1,000***	—	***4,649***	***1,272***	—	***5,921***
Special Mining Tax	US$ x 1,000	—	503	1,418	—	1,921
Cash Operating Costs	***US$ x 1,000***	—	***65,596***	***8,434***	—	***74,030***
EBITDA	***US$ x 1,000***	—	***7,259***	***18,326***	—	***25,585***
Depreciation	US$ x 1,000	—	1,840	3,061	—	4,902
Income - before net operating loss & percentage depletion	***US$ x 1,000***	—	***5,419***	***15,265***	—	***20,683***
Net operating loss adjustment	US$ x 1,000	—	(1,170)	0	—	(1,170)
Corporate income tax	US$ x 1,000	—	(1,275)	(4,579)	—	(5,854)
Taxable Income, less Tax	***US$ x 1,000***	—	***2,974***	***10,685***	—	***13,659***
Cash Flow Calculation						
Adjustments for Non-Cash Items						
Depreciation/reclamation/salvage	US$ x 1,000	—	1,840	3,061	—	4,902
Net operating loss adjustment	US$ x 1,000	—	1,170	—	—	1,170
Total Adjustments for Non-Cash Items	***US$ x 1,000***	—	***3,011***	***3,061***	—	***6,072***
Initial Capital						
Investment, exploration expenditure	US$ x 1,000	600	—	—	—	600
Investment, mine	US$ x 1,000	150	—	—	—	150
Capital indirects and contingency	US$ x 1,000	3,400	—	—	—	3,400
Total initial capital	***US$ x 1,000***	***4,150***	—	—	—	***4,150***
Sustaining capital, mine	US$ x 1,000	—	—	—	—	50
Sustaining capital, plant	US$ x 1,000	—	610	—	—	610
Sustaining capital, indirects and contingency	US$ x 1,000	—	92	—	—	92
Reclamation	US$ x 1,000	—	—	—	13,574	13,574
Total Capital	***US$ x 1,000***	***4,150***	***(4,150)***	***1,133***	***14,829***	—
Beginning Cash	***US$ x 1,000***	—	***5,283***	***13,696***	***(13,574)***	***1,256***
Period Net Cash Flow	***US$ x 1,000***	***(4,150)***	***1,133***	***14,829***	***1,256***	***1,256***
Ending Cash	**US$ x 1,000**	**(4,150)**	***(4,150)***	***1,133***	***14,829***	—

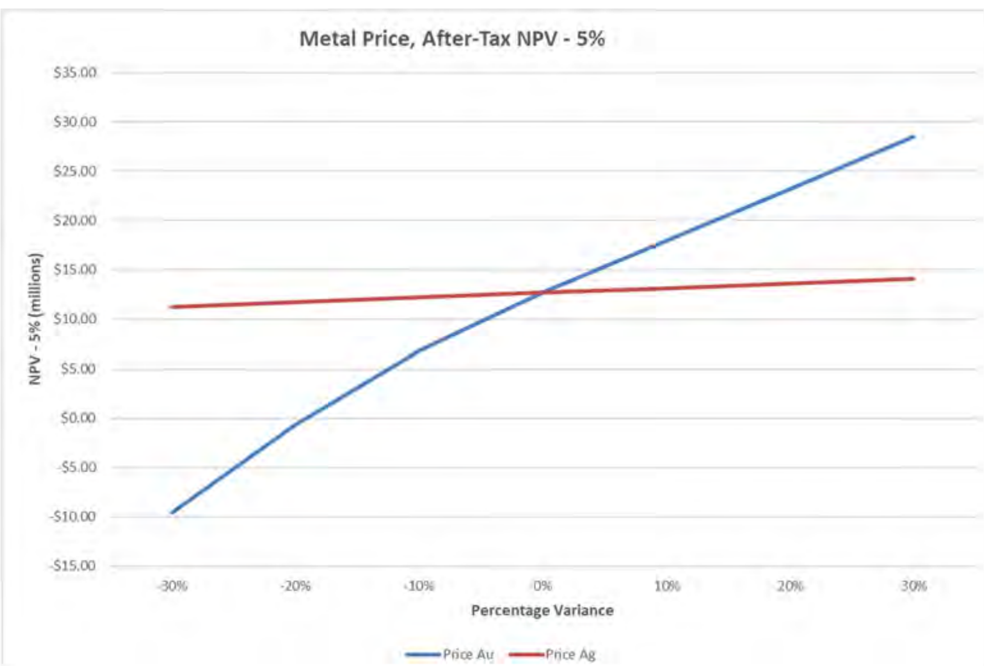
Note: EBITDA = earnings before interest, taxes, depreciation, and amortization

Table 22-3: Gold Price Sensitivity Analysis

Au Price (US$/oz Au)	Net Cash Flow (US$ M)	After-Tax NPV @ 5% (US$ M)	IRR (%)	Payback Period (years)	Payback Multiple
1,000	-34.64	-31.50	—	—	—
1,200	-24.16	-22.18	—	—	—
1,400	-13.69	-12.86	—	—	—
1,600	-3.22	-3.53	-19.6	—	—
1,800	4.75	3.62	38.2	1.6	0.4
2,000	12.03	10.16	119.8	1.1	0.9
2,100	***14.83***	***12.67***	***156.1***	***0.8***	***1.1***
2,200	17.63	15.18	194.8	0.6	1.3
2,400	23.23	20.20	277.4	0.4	1.8
2,600	28.84	25.22	365.0	0.3	2.2
2,800	34.44	30.23	455.6	0.2	2.7
3,000	40.05	35.25	548.3	0.2	3.2

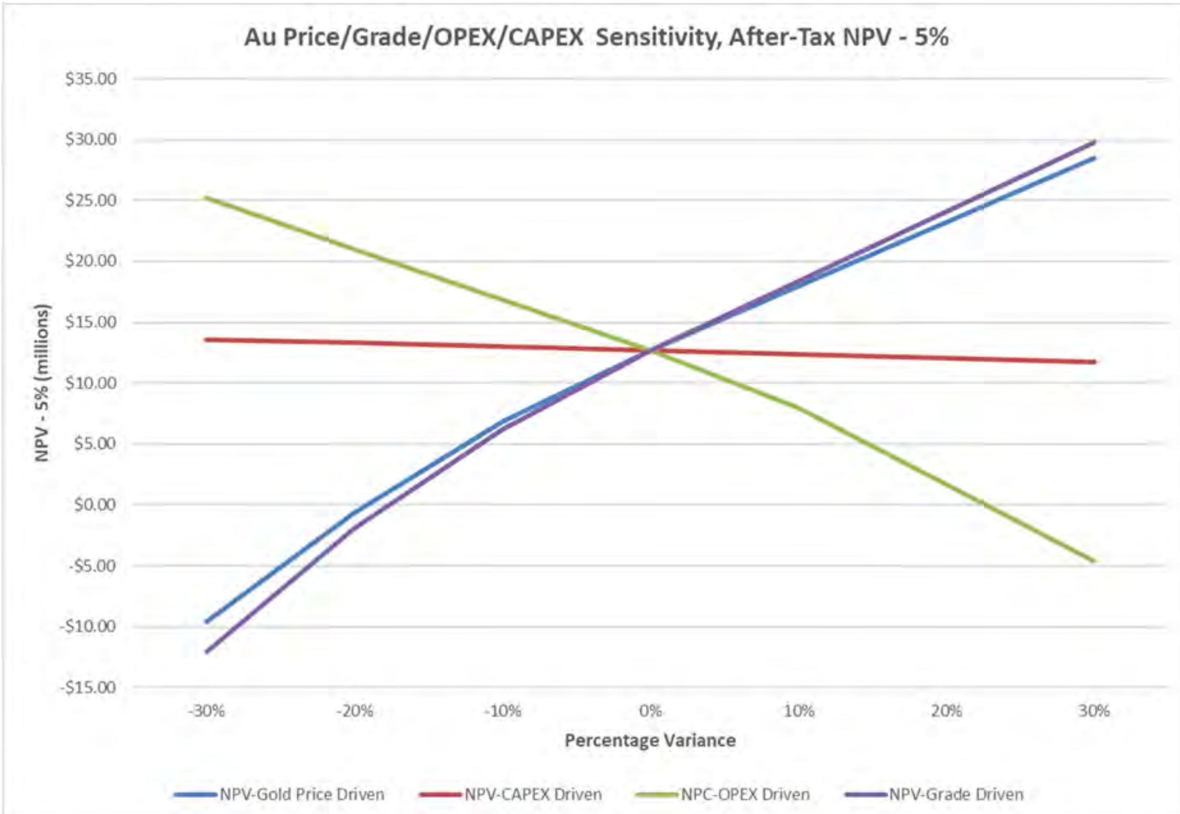
Note: Base case is bolded.

Figure 22-1: Metal Price Sensitivity Analysis



Note: Figure prepared by Hard Rock Consulting, 2024.

Figure 22-2: Project Gold Price, Grade, Operating Cost and Capital Cost Sensitivity Analysis



Note: Figure prepared by Hard Rock Consulting, 2024. CAPEX = capital cost estimate; OPEX = operating cost estimate

23.0 ADJACENT PROPERTIES

This section is not relevant to this Report.

24.0 OTHER RELEVANT DATA AND INFORMATION

This section is not relevant to this Report.

25.0 INTERPRETATION AND CONCLUSIONS

25.1 Introduction

The QPs note the following interpretations and conclusions in their respective areas of expertise, based on the reviews and interpretations of data available for this Report.

25.2 Mineral Tenure, Surface Rights, Water Rights, Royalties and Agreements

The mineral tenure held is valid, and the granted mining licence is sufficient to support Mineral Resource and Mineral Reserve estimation.

Heliostar holds a number of granted surface rights. A land access agreement was entered into for part of the southwest portion of the deposit on August 4, 2023 with a private group. As a condition of this agreement, Heliostar must obtain the change of use of soils permit, and at that time the final payment for access will be made and the agreement will be in effect. Heliostar expects to receive the permit during Q2, 2025. Heliostar will need to purchase or lease surface rights in the southwest portion of the mine for the final layback in Phase 4 of the proposed open pit.

Heliostar holds sufficient water rights for the proposed LOM plan.

There are no royalties that affect the Mineral Resource or Mineral Reserve estimates. The Mexican Government imposes a mining duty of 8.5% of taxable earnings before interest and depreciation. In addition, precious metal mining companies must pay a 1.0% duty on revenues from gold, silver, and platinum.

25.3 Geology and Mineralization

The San Agustin deposit is an example of a porphyry deposit that was subsequently overprinted by a late-stage epithermal event.

The geological understanding of the settings, lithologies, and structural and alteration controls on mineralization in the different zones is sufficient to support estimation of Mineral Resources and Mineral Reserves. The geological knowledge of the area is also considered sufficiently acceptable to reliably inform mine planning.

The mineralization style and setting are well understood and can support declaration of Mineral Resources and Mineral Reserves.

There are several areas around the San Agustin pit where mineralized corridors defined in mining extend beyond the pit into areas that have little or no drill testing. These corridors are commonly controlled by northeast striking faults that focus gold mineralization and can be effectively targeted by shallow drilling. These zones represent the potential to identify shallow oxide material.

Mineralization defined in drilling in Phase 4 is open to the southwest and several lines of evidence including trenching, rocks, and soils indicate that mineralization extends beyond the current planned pit limits. A major northeast-striking structure that localized high-grade gold mineralization in the San Agustin pit and Phase 4 is open, and is poorly tested by drilling to the southeast.

The San Agustin Mine has significant exploration potential in sulphide material below the ultimate pit design, which has not been a historical focus of exploration. Past exploration and mining have focused almost exclusively on oxide gold mineralization that was amenable to heap leach processing.

A land package acquisition completed in 2016 has seen little exploration. The Consejo Zone is an underground gold and base metals prospect. It was drilled in the 1980s but has not been explored since. Additional prospects include a number of color anomalies and pathfinder elements in soils anomalies surrounding San Agustin. Several major northeast-striking structures, which localize gold mineralization in the pit, are regional through-going structures and have received minimal drill testing beyond the pit limits.

25.4 Exploration, Drilling and Analytical Data Collection in Support of Mineral Resource Estimation

The exploration programs completed to date are appropriate for the deposit style.

Sampling methods are acceptable for Mineral Resource and Mineral Reserve estimation.

Sample preparation, analysis and security are generally performed in accordance with exploration best practices and industry standards.

The quantity and quality of the lithological, collar and down-hole survey data collected during the exploration and delineation drilling programs are sufficient to support Mineral Resource and Mineral Reserve estimation. The collected sample data adequately reflect deposit dimensions, true widths of mineralization, and the deposit style. Sampling is representative of the gold and silver grades in the deposits, reflecting areas of higher and lower grades.

The QA/QC programs adequately address issues of precision, accuracy, and contamination. Drilling programs typically included blanks, duplicates, and CRM samples. QA/QC submission rates meet industry-accepted standards.

The data verification programs concluded that the data collected adequately support the geological interpretations and constitute a database of sufficient quality to support the use of the data in Mineral Resource and Mineral Reserve estimation.

25.5 Metallurgical Testwork

San Agustin has been an operating mine since 2017. Metallurgical testwork was conducted from 2009 to the present. All the test results support the realized gold recovery of 59.5% as of the end of November 2024. In 2023, processing of transition ore increased significantly and overall recoveries are decreasing slightly but are in line with testwork results. Actual silver recovery is less than that predicted by the testwork. Actual silver recovery is lower than predicted by the testwork due to operational conditions that do not favour silver recovery. Continued leaching is expected lead to increased silver recovery but will not ultimately be in line with testwork expectations. Silver recoveries were adjusted downward based on actual recent silver production.

The processed ore has generally followed the results from the monthly composite column test data and prior tests.

Testwork on transition and sulphide material indicates gold recoveries of 38% for transition, 26% for argillic transition, 17% for silicic transition, 28% for transition from stockpiles, and 22% for the sulphides. Overall gold recovery is projected to be 61.3%, for ore stacked as of the end of September 2024. Cyanide consumption is reasonable and lime consumption is high for the transition and sulphide materials.

Blending of the argillic sulphide material with other transition/sulphide material may be a viable treatment strategy, although a detailed economic evaluation of this concept and the practicality of selectively mining only this material type is required. Preliminary environmental testing of the transition and sulphide samples was conducted to evaluate the long-term effects of heap leaching this material. These results indicate a potential for transition and sulphide materials to generate acid over time. They should be stacked on the heap leach pad in such a manner to allow them to be surrounded by oxide ore to minimize long term exposure to precipitation events which could lead to acid drainage from the heap.

There are no significant deleterious elements in San Agustin ores.

25.6 Mineral Resource Estimates

Mineral Resources are reported insitu, using the 2014 CIM Definition Standards, and are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Areas of uncertainty that may materially impact the Mineral Resource estimate include: changes to the long-term gold and silver prices and exchange rates; changes in interpretation of mineralization geometry and continuity of mineralization zones; changes to design parameter assumptions that pertain to the conceptual pit design that constrains the Mineral Resources; modifications to geotechnical parameters and mining recovery assumptions; changes to metallurgical recovery assumptions; changes to environmental, permitting, and social license assumptions; and the ability to obtain or maintain land access agreements.

There is upside potential for the estimates if mineralization that is currently classified as Inferred can be upgraded to higher-confidence Mineral Resource categories.

25.7 Mineral Reserve Estimates

Mineral Reserves are reported using the 2014 CIM Definition Standards.

As the economic analysis in Section 22 used higher metal prices than were used in the Mineral Reserve estimates, the QP performed a check to ensure that the Mineral Reserves returned positive economics at the Mineral Reserve commodity pricing. The results showed a positive after tax cashflow, thus verifying the Mineral Reserve estimates.

The San Agustin deposit was mined from 2017 and was put on care and maintenance in November 2024 as Heliostar works to finalize the land use change authorization for phase 4B of the pit which where the Mineral Reserves estimate is located. Heliostar expects to receive final resolution of the land use change authorization in Q2 2025.

Areas of uncertainty that may materially impact the Mineral Reserves include the following: variations in the forecast commodity price; variations to the assumptions used in the constraining L–G pit shells, including mining loss/dilution, metallurgical recoveries, geotechnical assumptions including pit slope angles, and operating costs; variations in assumptions as to permitting, environmental, and social license to operate; ability to obtain or maintain land agreements; and changes in taxation conditions.

25.8 Mine Plan

The mine is currently on care and maintenance but mine plans have been developed for restarting the operation. A conventional truck and shovel operation is envisaged.

The El Crestón pit design slopes follow recommendations provided by SRK, and checked by GCM. The QP noted during the November 2024 site visit that the current highwalls all appear stable with no significant failures but recommends Heliostar perform further geotechnical work to continually confirm the geotechnical parameters including pit mapping, geotechnical analysis of core samples, groundwater monitoring, and pit wall stability monitoring.

It is anticipated that similar groundwater conditions and flows to those experienced previously will exist and, that through a similar application of pit sumps, pumps, and short interceptor wells, the groundwater can be managed.

The final San Agustin pit design was limited to a US$1,900/oz AuEq pit shell. The pit was designed into two phases for the Mineral Reserve evaluation with the first phase allowing for a shorter haulage route to the crusher.

Pre-production activities are minimal with ore outcropping at surface and being delivered during month 1 of Year 1. Given that only one pit area is available for production the maximum tonnes per day mined was limited to 45,000 t/d which resulted in a maximum ore delivery rate of 18,000 t/d, which is well within the maximum capacity of the crushers at 30,000 t/d.

The average LOM stripping ratio is estimated to be 0.9:1 with 6.47 Mt of waste and 7.36 Mt of ore with 99% of the ore being oxide and only 1% being transitional. The estimated mine life is 1.2 years.

The mining equipment is planned to be supplied by a mining contractor. All loading, hauling, drilling, basting and support services are planned to be included within the mining contract.

25.9 Recovery Plan

Processing at San Agustin is based on industry standards. Crushing and stacking equipment were operable when shut down in late September 2024. Pumping, solution handling and gold/silver adsorption onto carbon are still in operation with loaded carbon periodically being shipped to La Colorada for treatment.

The Merrill-Crowe plant was shut down in April 2024 due to low silver values in the pregnant leach solutions but can be re-started when required in the future.

Realized gold recovery is 59.5% against the assumed endpoint recovery of 61.3% (from testwork and past production results) of the gold stacked to date. Realized silver recovery (8.9%) was lower than what would be otherwise possible (15.5% endpoint recovery) from the stacked silver to date due to poor silver recovery in the carbon adsorption plant and lower levels of sodium cyanide in the leach solutions (both intentional to favour gold recovery), and insufficient leach times. This led to a relatively high booked silver inventory. However, the addition of the Merrill-Crowe plant in November 2020 and continued leaching will lead to increased silver recovery, but it will not be ultimately in line with expected endpoint recovery. Silver recoveries were adjusted down based on current silver production.

Reagents usage is in line with expectations based upon metallurgical testwork and is well within industry norms and benchmarks for similar types of operations.

25.10 Infrastructure

All infrastructure required to support the LOM plan is in place.

The only planned stockpile for the LOM plan is the crusher stockpile which is used to balance consistent ore feed to the crusher.

Two WRSFs will be used in the LOM plan. There is sufficient capacity within the WRSFs for LOM requirements.

Water for the Project is pumped directly from water wells to an event pond or alternatively to a water tank with a volume of approximately 42,000 m^3.

There is no camp site at the San Agustin Mine; all employees and contractors live off-site in nearby towns.

Power is supplied by CFE. No upgrade to the power infrastructure is required and the current supply will support the proposed LOM plan.

25.11 Environmental, Permitting and Social Considerations

Environmental baseline data collection and monitoring of the area occurred as part of initial permitting. Baseline studies were completed for the current open pit mining operation. Operations conduct environmental monitoring per the requirements of the environmental permit, although the QP did not receive documentation of all the monitoring activities.

During the site visit by the QP, visible dust was observed at the fines stockpile and there was dust covering the areas adjacent to the fines stockpile. High levels of dust can impact worker health and the environment.

Water samples from mine discharges have exceeded the ecological criteria that would allow discharge to the environment. The water management plan will need to implement water treatment should discharge to the environment be desired in the future. The evaluation of water treatment alternatives should consider predictions of future mine water quality based on the lithologies that will be encountered during the life of mine, including operations, closure, and post-closure.

The groundwater system, in particular the occurrence and quality of groundwater, is not well understood. The groundwater monitoring program does not meet industry standards for the number, placement, design, or sampling methods of monitor wells.

The initial geochemical test program indicated that neither the waste nor the ore was expected to be acid generating or solubilize metals in amounts that exceed Mexican standards; however later tests indicated that ARD and potential metals leaching may occur. A geochemistry study that characterizes all mining wastes and predicts future, long-term water quality has not been completed.

Minera Real del Oro requires approval of the land use change permit application for planned expansion. The land use change permit is currently under review by the environmental authority. Since the environmental permit is already approved, the landowners have made an agreement with Minera Real del Oro, and a specialized third-party consultant was engaged, Minera Real del Oro considers that approval of the permit will be granted. The timing of the permit decision can be difficult to estimate, even though Mexico has established some timeframes for permit reviews. Should Minera Real del Oro's application be denied, this will have a material impact on the ability to mine the LOM Mineral Reserves; however, the QP considers this to be a moderate risk because Minera Real del Oro has taken steps to ensure approval.

Mine closure planning is at a preliminary stage. A LOM closure plan and closure cost estimate have not been developed. An Asset Retirement Obligation has been prepared, but there are closure aspects that are missing from the cost estimate, and the period of post-closure monitoring is less than what would be considered industry standard.

The following conclusions are made by the QP regarding community and social aspects:

- There are multiple local stakeholders who desire to use social issues to advance their own interests. Local stakeholders are willing to use blockades to halt mine operations.
- The QP considers that the social risk is high, and grievances with the local stakeholders could result in a blockade, which would have a material impact on the mine's ability to operate.

The QP visited the site prior to the temporary mine closure, and impacts of the temporary closure are not assessed as part of this Report; however, the QP notes that temporary closure implies significant impacts to stakeholders, especially employees and local communities. Those impacts can also carry into the restart of operations.

25.12 Markets and Contracts

Markets for doré are readily available.

A gold price of US$1,900/oz and a silver price of US$23/oz were used for estimation of Mineral Reserves to reflect a long-term conservative price forecast.

Higher metal prices of US$2,150/oz Au and US$26.00/oz Ag were used for the Mineral Resource estimates to ensure the Mineral Reserves are a sub-set of, and not constrained by, the Mineral Resources, in accordance with industry-accepted practice.

San Agustin was a contract mining operation with an Owner-operated process facility that is currently on care and maintenance. With restart of operations the mining, explosives and blasting and leach pad construction contracts will have to be negotiated. Contracts are entered into with third parties, where required.

25.13 Capital Cost Estimates

Capital cost estimates were derived from Heliostar's 2024 operating budget, mining contract quotes, Hard Rock Consulting's and KCA's in-house database of projects and studies including experience from similar operations.

Total capital costs are estimated at US$18.48 M over the LOM, consisting of US$4.15 M in total direct costs and US$14.3 M in sustaining capital costs.

25.14 Operating Cost Estimates

Operating costs include the ongoing cost of operations related to mining, processing, and general administration activities. Operating cost estimates were derived from actual historical costs, mining contract quotes, Heliostar's 2024 operating budget, and Hard Rock Consulting's and KCA's in-house database of projects and studies including experience from similar operations.

Total cash operating costs are estimated at US$1,543/oz AuEq, or US$10.05/t ore. Total cash costs are estimated at US$1,605/oz AuEq or US$10.45/t ore. All-in sustaining costs are estimated at US$1,990/oz Au or US$12.96/t ore.

25.15 Economic Analysis

The mine production life is 1.2 years, with residual leaching of gold and silver continuing until the end of Year 2.

The financial analysis for the Project shows an after-tax net present value at a discount rate of 5% of US$12.67 M, an after-tax internal rate of return of 156%, and a payback period of 0.79 years.

The Project is most sensitive to changes in the gold price and gold grade. It is less sensitive to operating cost changes, and least sensitive to changes in capital costs. It is not sensitive to changes in the silver price or silver grade.

25.16 Risks

25.16.1 Mineral Resources

Grade trends in the mineralization display multiple orientations (predominantly northeast- and northwest-striking). Mineral Resources have been defined using drill holes that are not always ideally oriented to provide intercepts perpendicular to the trend of mineralization.

There is a risk that the estimated tonnage of the Mineral Resource is locally inaccurate.

25.16.2 Process

Production data and site column leach test results as of November 2024 indicate that processing of transition materials is a viable option. Finer crushing improves silver recovery but not gold recovery. Long term effects include potential acid generation which will cause increased lime consumptions and, as a worst case scenario, may cause the heap to go acidic and release deleterious elements (such as copper), which can have the potential to significantly adversely affect metal production, and increase operating costs.

Ongoing studies are underway to better-define the acid rock drainage and metals leaching mitigation costs upon site closure. These studies will upgrade the current estimated closure costs to a value with a more robust engineering underpinning.

25.16.3 Environmental

Minera Real del Oro has experienced disputes with the local ejidos that have resulted in roadblocks and negotiations. Future conflicts remain a risk that will require monitoring and mitigation.

Should the mine plan be advanced to execution, a land use change permit will be required. A permit submittal was previously submitted, denied, and resubmitted. Minera Real del Oro has indicated a high level of confidence that the Mexican environmental authority will approve the revised permit. There is no certainty on when, or if, the permitting will be successful under the current government administration. Inability to obtain the required permit would be a material risk to the mine plan.

25.17 Opportunities

There is upside potential for the Mineral Resource estimates if mineralization that is currently classified as Inferred can be upgraded to higher-confidence Mineral Resource categories.

The Mineral Resource estimate is currently evaluated using reasonable prospects of eventual economic extraction parameters for a heap-leach operation. There is potential to evaluate the polymetallic sulphide mineralization using parameters for a milling operation with floatation recovery of sulphide concentrates.

25.18 Conclusions

An economic analysis was performed in support of estimation of the Mineral Reserves; this indicated a positive cash flow using the assumptions detailed in this Report.

26.0 RECOMMENDATIONS

26.1 Introduction

A single phase work program is proposed for all disciplines other than exploration, where a two-phase program is recommended, and provided by discipline area. The total budget required to complete the suggestions is approximately US$6.1–US$6.6 M, depending on whether the work is completed internally or a consultant is used. The majority of the work can be conducted concurrently. The second work phase proposed for exploration would depend on the results of the proposed sulphide studies, and the regional, grassroots exploration program in the first exploration work phase.

26.2 Exploration

The proposed exploration program is broken into two phases.

The first work phase consists of drilling known prospects and regional, grassroots exploration activities, and totals approximately US$2.2 M.

The Phase 4 SW Trend area and other oxide prospective zones should be drill tested and evaluated.

Two additional drill programs are recommended in the area, the first to test for mineralization immediately outside the Phase 4 highwall, and the second to test the mineralization potentially controlled by the northeast-striking, as supported by gold values in trench and rock chip sampling programs.

The sulphide prospect has existing drilling that provides a baseline of information. It is recommended that this prospect be evaluated to determine the overall size potential and amenability of mineralization to various processing techniques.

District exploration should also be undertaken and would involve geological mapping and rockchip/soil sampling.

The second work phase would consist of drill testing any areas of potential arising from the sulphide prospectivity studies and drilling of any significant anomalism identified from the regional grassroots exploration program. The recommended budget for this program is approximately US$2.8 M.

A proposed budget for these activities is provided in Table 26-1. The assumed all-in cost for core drilling, including drilling, surveying, logging, and assaying, is US$185/m. The sulphide prospect work budget is based on three geologists logging for two months, specialized geological consulting, metallurgical and metal deportment studies, limited sampling and assaying, and multivariate geochemical analysis. The district exploration mapping and sampling budget is based on two geologists mapping and sampling for six months, and sample collection and assaying of 3,650 rock and soil samples.

Table 26-1: Proposed Exploration Program

Program Phase	Exploration Program	Budget (US$)	Drilling (m)
Recommendations phase 1	Near mine oxide drilling	555,000	3,000
	Phase 4 pit margin drilling	647,500	3,500
	Phase 4 SW trend extension drilling	370,000	2,000
	Sulphide potential scoping work	400,000	
	District exploration (geological mapping and geochemical sampling)	250,000	
	Subtotal	*2,222,500*	*8,500*
Recommendations phase 2	Sulphide follow-up drilling	1,850,000	10,000
	District exploration drilling	925,000	5,000
	Subtotal	*2,775,000*	*15,000*
Total		***4,997.500***	***23,500***

26.3 Mining

The following mining-related studies and analyses should be completed as the project advances to the next study phase. The work can be conducted concurrently. Recommendations include:

- Additional mining scenario evaluations are recommended for the sulphide portion of the deposit to assess use of a milling scenario and flotation plant;
- Geotechnical pit wall stability data is very limited at the Project. There is no site-specific geotechnical data on the Project aside from pit wall mapping and logging of two core drill holes. Geotechnical criteria have been based on conceptual level study and analogies to similar mines in the district. A full geotechnical study including detailed pit mapping combined with core drilling and rock strength analyses is recommended for the pit to advance into mining the deeper sulphides;
- Additional studies should also investigate the mining and re-processing potential of some or all of the heap through the mill to recover some of the gold that is locked up in sulphides;
- The current mining scenario is the use of contract mining. Additional studies are recommended to be completed to verify the cost benefit of this approach versus an Owner-operated fleet with either a purchased or leased mining equipment fleet for the sulphide mining scenario.

These activities are estimated to cost approximately in the range of US$250,000 to US$300,000.

26.4 Process

All recommendations in this subsection can be conducted concurrently.

A fairly extensive metallurgical testing program has been completed on representative samples of transition and sulphide material at San Agustin. However, additional data on cyanide soluble copper are required that could be leached from transition and sulphide materials. It is recommended that the site monthly column leach tests analyze solutions for copper.

There appears to be a relationship between crush size and silver recovery in the sulphide material. A trade-off study should be conducted to determine if finer crushing is an economically feasible option to consider. The approximate cost of such a study is US$15,000.

If at all possible, any transition/sulphide material stacked on the heap, should be placed such that it can be enveloped by oxide material to minimize the potential for future acid generation.

Additional density testing is recommended for the sulphide mineralized material. The program should be based on drill core or samples from exposures in the pit. The cost of this will be approximately US$5,000.

26.5 Environmental

Recommendations have been divided into two sections, depending on whether they are aimed at general improvements, or require investigation and data collection. These programs can be conducted concurrently.

26.5.1 Studies

An evaluation of the dust suppression activities and equipment should be carried out, particularly to reduce dust at the fines stockpile.

Continued use of the waste rock storage facility should consider whether problematic waste rock lithologies are properly managed to prevent long-term environmental impacts. A plan to manage the production of acid mine drainage and potential future metal leaching should be developed for current operations and for post-closure conditions.

The waste rock storage facility operation should also consider post-closure slope stability. This would require understanding the geotechnical properties of the waste rock and the erosion potential based on slope lengths and slope angles.

A future pit lake study should be carried out to understand the future pit lake water quality and potential impacts to groundwater quality and management at closure.

The groundwater monitoring program should be improved, including evaluation of the number and locations of wells to adequately monitor seepage, preparation of groundwater contour maps and calculation of groundwater flow direction and gradient, the sampling method should conform with an industry standard method that obtains a sample representative of the aquifer, quality assurance/quality control samples should be included in the water sampling program, and each sampling event should be documented and interpreted as part of a written summary report.

A written environmental monitoring plan should be developed that includes a description of all media monitoring requirements based on Heliostar's and regulatory agency requirements, and should describe sampling procedures, protocol for the management of results and interpretation, action levels, corrective action, and documentation procedures.

The environmental monitoring plan should include fauna and flora monitoring.

The site weather station has operational issues. The station should be evaluated to improve operation and quality of data.

It is recommended that the social program be aligned with a corporate vision and strategy, and that the socio-economic diagnosis be carried out on a routine basis. The stakeholder matrix should be expanded to include employees and any regional and state stakeholders. Specific mitigation measures should be developed for the highest risk stakeholders.

The grievance mechanism should be updated for the Minera Real del Oro operations.

The closure plan and closure cost estimate should be updated to reflect the updated LOM plan and unit rates. The post-closure monitoring period should be extended to a minimum of 20 years to align with industry standards. The closure planning should be advanced with supporting studies and engineering designs.

These activities are estimated to cost approximately in the range of US$340,000 to US$650,000.

26.5.2 Investigations and Data Collection

Fauna and flora monitoring studies should be carried out.

An environmental geochemistry study that includes representative sampling from all areas and lithologies in the mine plan should be completed. These data would be used to assess long-term conditions, be used to guide mine designs and to support closure planning.

A geotechnical characterization of the waste rock and erosion modeling should be completed.

The hydrology study should be updated with more recent climate data, and a climate change analysis should be carried out. The results should be applied to designs of water conveyances and ponds.

These activities are estimated to cost approximately in the range of US$400,000 to US$630,000.

27.0 REFERENCES

Item 27 Requirements: Include a detailed list of all references cited in the technical report

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